

HARKEN



2010 NEW PRODUCTS

HARKEN[®]

2009 - 2010

Catalog Guide

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Micro

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Ordering Big Boat Blocks

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Travelers and Genoa Leads

Ordering Mainsail Travelers/
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Midrange CB
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Custom Yacht Mainsail Traveler
Grand Prix Mainsail Traveler
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Slider Genoa Lead Cars
T-Track Genoa Lead Cars
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& Slides
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T-Track
Custom Yacht Genoa Lead Cars
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Battcar Systems
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Battcar Systems
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Battcar Systems
Furling Mainsail Cars
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Carbo Racing Foil
Small Boat Furling
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Code Zero Furling
Ordering Furling
Unit 00AL
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Cruising
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MKIII
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Ordering Winches
▶ NEW: Aluminum Radial
▶ NEW: Aluminum Radial Quattro
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▶ NEW: Chrome Radial
Stainless Steel & All-Chrome
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▶ Powered Radial Winches
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▶ NEW: Jackets
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Hydraulics

▶ NEW: Cylinders
▶ NEW: Valves & Manifolds
▶ NEW: Power Units
▶ NEW: Reservoirs
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▶ NEW: Custom Yacht Hydraulics
▶ NEW: HydroTrim
▶ NEW: Hydraulic Accessories
McLube™/Harken® Hoister
New Products

REFERENCE

SMALL BOAT BLOCKS



BIG BOAT BLOCKS



COMPLEMENTARY HARDWARE



TRAVELERS & GENOA LEADS



MAINSAIL HANDLING SYSTEMS



HEADSAIL HANDLING SYSTEMS



WINCHES



HARKEN SPORT



HYDRAULICS



NEW PRODUCTS



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Peter Harken
Chairman



Olaf Harken
Chairman



Giampaolo Spera
Global CEO



Bill Goggins
Harken USA CEO



Arthur Mitchel
Director of Operations

STRENGTH OF INNOVATION

In difficult times, Harken has proven that we are a company of caring people, dedicated to innovation. Today is no different. Despite the down economy and the fears that might exist in our industry, NEVER has Harken introduced such a strong line of new products and we plan to back it up with the best customer service in the industry.

Why?

Because that is the Harken Way—it is what we do to serve you.

Harken's Radial Winch Range

We proudly introduce Harken's new Radial Winch line. In close to two decades, nothing this big has happened in the winch world! Our new full range of winches represents years of invested time and a completely new manufacturing approach for us. Harken Italy's new purpose-built facility embraces the most modern concepts in lean manufacturing, with a goal of creating innovative products that meet the needs of the modern sailor. Everything about the Radial winch is new and fresh—from the way it mounts to the deck to the innovative grip that holds your line. Take a close look—you'll be impressed.

Harken Hydraulics

How many companies introduce a new division when the economy is pulling back? In our minds, not enough. We learned about hydraulics in the Custom Yacht and Grand Prix worlds and are pleased to announce the rollout of a full range of hydraulic products for all keelboat sailors. Our goal is to supply you with total hydraulic solutions delivered with the same high levels of quality and service we've maintained while building our hardware and winch business. Take a close look and you'll see the attention to technical detail we're putting into this new division and its products—designed with a blank sheet, best-of-all-worlds approach.

Beyond winches and hydraulics, we have many other new products to share: Harken Sport's latest and greatest shorts, jackets, and sunglasses; electric furling, and small boat underdeck furling.

Enjoy paging through our new products, and as always, good sailing!

Peter, Olaf, Giampaolo, Bill, Art, Patrick, Andy, Erich, Carl, Mitja, Garry & Magdalena



Patrick Rieuepeyrou
Managing Director
France



Andy Ash-Vie
Managing Director
United Kingdom



Erich Hagen
Managing Director
Sweden



Carl Watson
Managing Director
Australia



Mitja Margon
Managing Director
Slovenia



Garry Lock
Managing Director
New Zealand



Magdalena Rakowicz
Managing Director
Poland

Worldwide Limited Warranty

COVERAGE. HARKEN® warrants that each HARKEN product, when properly used and maintained, will be free from defects in material and workmanship from the date of receipt of the product by the final customer. HARKEN products are covered by two different kinds of warranties, on the basis of the purchaser and use made of them.

1. The Private Customer Warranty

2. The Professional Customer Warranty

THE LIMITED PRIVATE CUSTOMER WARRANTY. This limited warranty applies to all Harken products purchased for final use by private individuals only and installed on boats used exclusively for recreational purposes. Harken products installed on boats used for any other purpose or by any other entity are covered by the limited PROFESSIONAL CUSTOMER WARRANTY.

The Owner's sole and exclusive remedy under this limited PRIVATE CUSTOMER WARRANTY for original defects in materials or workmanship of a HARKEN product shall be the repair or replacement, in HARKEN's sole discretion, of the defective part or component, at no charge to the owner of the product.

THE LIMITED PROFESSIONAL CUSTOMER WARRANTY. This limited warranty applies to all Harken products purchased for final use by or on behalf of any entity other than a private individual (such as by corporations, partnerships, competitive race groups, etc.) or installed on boats used for any purpose other than recreational use, such as for hire, charter or other professional or commercial events or activities. Such Professional Customers may include, but are not limited to, America's Cup Syndicates, international competitive syndicates, racers in transoceanic and globe-circling events, one-design racers with boats 40 feet and up racing in major competitive and international competition.

The Owner's sole and exclusive remedy under this limited PROFESSIONAL CUSTOMER WARRANTY for original defects in materials or workmanship of a HARKEN product shall be the repair or replacement, in HARKEN's sole discretion, of the defective part or component, in accordance with the terms of this warranty.

WARRANTOR. For products originally sold in the United States, the limited warranty for the products is supplied by HARKEN, INC.. For products originally sold in the European Union, the limited warranty for the products is supplied by the dealer who sold the product through the Harken Distributors in that country. For products originally sold in the rest of the World, the limited warranty for the products is supplied directly by the Harken Distributors in that country. When "HARKEN" is mentioned throughout this Limited Warranty, it refers to the entity as defined in this paragraph.

OWNER – NON-TRANSFERABLE WARRANTY. This warranty is made by HARKEN with only the original purchaser of the product and does not extend to any third parties. The rights of the original purchaser under this warranty may not be assigned or otherwise transferred to any third party.

WARRANTY TERM. The limited PRIVATE CUSTOMER WARRANTY covers any original defects in material or workmanship manifested **within five (5) years** of the date of receipt of the product by the final customer. However, the warranty terms under the limited PRIVATE CUSTOMER WARRANTY for the following products are as indicated below by the date of receipt of the product by the final customer:

1. **Jib Reefing and Furling systems** are warranted for seven (7) years.
Hydraulic and Electric Furling systems are warranted for five (5) years.
Electric furling motor, switches, control boxes and breakers are warranted for two (2) years.
2. **Code Zero furlers, and associated fairleads, 2:1 sheave adapters, snap shackles and thimbles** are warranted for three (3) years.
3. **Carbo Racing Foils** are warranted for three (3) years.
4. **Winches and handles, hydraulic power units** are warranted for three (3) years. Electric/hydraulic winch motors, switches, control boxes and breakers are warranted for two (2) years.
5. **Custom products, pedestals, gearboxes, push buttons, drive shafts, carbon fiber products and/or high performance applications** of standard catalog products for extraordinary use applications are warranted for two (2) years.
6. **Harken Sailing Gear clothing, shoes, gloves, sunglasses, and related accessories** are warranted for the period of time and under the conditions noted on their hang tags.

The limited **PROFESSIONAL CUSTOMER WARRANTY** covers any original defects in material or workmanship manifested **within 12 months of the** date of receipt of the product by the final customer.

NOT COVERED. Neither the limited PRIVATE CUSTOMER WARRANTY nor the limited PROFESSIONAL CUSTOMER WARRANTY applies to, nor shall HARKEN have any liability or responsibility for, damages or expenses relating to defects caused by misuse, abuse, failure to install, use, maintain or store the HARKEN product as specified in the warranty booklet, service booklet, manuals, catalogue or other literature available from HARKEN.

Neither the limited PRIVATE CUSTOMER WARRANTY nor the limited PROFESSIONAL CUSTOMER WARRANTY applies to, and neither HARKEN shall have any liability or responsibility in respect of, damages or expenses relating to:

- defects in material or workmanship that did not exist when the product was first delivered;
 - defects in material or workmanship that are manifested outside the warranty period;
 - defects which are not reported to HARKEN within sixty (60) days of discovery;
 - a product that has been altered or modified from factory specifications;
 - damage or deterioration of cosmetic surface finishes, including cracking, crazing, discoloration or fading;
 - accidents, misuse, abuse, abnormal use, improper use, lack of reasonable or proper maintenance or storage;
 - installation, wiring, service or repairs improperly performed or replacement parts or accessories not conforming to HARKEN's specifications;
 - use exceeding the recommended and permitted limits or loads of the product and/or the vessel on which the product is installed;
 - normal wear or deterioration occasioned by the use of the product or its exposure to the elements;
 - besides HARKEN's Hoister products used to store watercraft and bicycles, any use outside, other than or besides normal sailing or sailboat applications;
 - ropes, lines, LOUPS™, buckles and webbing;
 - clear coat finishes on carbon fiber;
 - loss of time, loss of use, inconvenience, travel expense, costs related to procuring any substitute boat, transportation costs, towing costs, any incidental or consequential damages arising out of the non-use of the boat, or compensation for inconvenience or loss of use while the boat is being repaired or otherwise not available, or other matters not specifically covered hereunder;
 - the costs to remove, disassemble or re-install the product;
 - hauling out, storage and re-launching of the boat on which the product has been installed, even where this is necessary to carry out the warranty service.
- The limited PROFESSIONAL CUSTOMER WARRANTY does not cover, nor shall HARKEN have any liability or responsibility in respect of, damages or expenses relating to, the following products and/or components:
- pawls and pawl springs in winches;
 - components and gears in titanium;
 - washers and spacers;
 - winch drum grip;
 - ball bearings, roller bearings, thrust bearings;
 - winch handles.

PROCEDURE. In the event of a defect covered by this limited warranty, the Owner shall contact one of HARKEN's worldwide Distributors (there is a list of them on the www.harken.com site). If the product was originally sold in European Union the Owner shall contact the dealer that sold the product. To obtain warranty service for or replacement of your HARKEN product, your specific and detailed claim must be reported to and received by HARKEN, in writing, in accordance with the terms of this warranty and within the applicable warranty period. Also provide your name, address, phone number, original sales receipt, a description of the application of the product, and an explanation of the defect and conditions under which the product was used. The Owner is responsible for all expenses associated with transporting the product to and from HARKEN or a HARKEN dealer. If the examination of the product and the warranty claim reveals that the defect is not covered by this warranty, you will be contacted and advised of the cost of repair of your product. If you accept this estimate, the product will be repaired outside of this warranty.

DAMAGES OR OTHER COSTS. Except as expressly provided by this warranty, **HARKEN SHALL NOT BE RESPONSIBLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR OTHER COSTS, WHETHER THE CLAIM IS BASED IN CONTRACT, TORT OR OTHERWISE, including but not limited to any costs, taxes, fees, levies or other expenses imposed by any location in which the product was originally sold.** The foregoing statements of warranty are exclusive and in lieu of all other remedies. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so this limitation or exclusion may not apply to you.

Worldwide Limited Warranty

DISCLAIMER. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE AND ALL IMPLIED WARRANTIES ARISING FROM A COURSE OF DEALING, USAGE OF TRADE, BY STATUTE OR OTHERWISE, IS HEREBY STRICTLY LIMITED TO THE TERM OF THIS WRITTEN LIMITED WARRANTY. This Agreement shall be the sole and exclusive remedy available to the Owner with respect to this product. In the event of any alleged breach of any warranty or any legal action brought by the purchaser based on alleged negligence or other tortious conduct by HARKEN, the Owner's sole and exclusive remedy will be repair or replacement of defective materials as stated above. No dealer and no other agent of HARKEN is authorized to modify, extend or enlarge this warranty.

APPLICABLE LAW. This warranty is governed by the laws of the State of Wisconsin for all products originally sold outside European Union. This warranty is governed by the laws of the Member State of the European Union where the product was originally sold. The exclusive jurisdiction and venue for any court action commenced by you under or relating to this limited warranty or any implied warranty(ies) shall be decided in the Courts of Waukesha County, Wisconsin or in the competent European Union State Member Court if the product was originally sold in European Union. In the

event HARKEN prevails in any court action, the claimant shall reimburse HARKEN for the expenses, including attorney fees and expenses of litigation, reasonably incurred by HARKEN in defending against such claim.

OTHER RIGHTS. Claimant's acceptance of delivery of the warranted HARKEN product constitutes acceptance of the terms of this limited warranty. This warranty gives specific legal rights, and claimant may also have other rights under the laws of the jurisdiction involved.

ENTIRE AGREEMENT. This document contains the entire warranty given by HARKEN in respect of your product and supersedes any and all oral or express warranties, statements or undertakings that may previously have been made. Any and all warranties not contained in this warranty are specifically excluded. There are no terms, promises, conditions or warranties regarding your product other than those contained herein. HARKEN specifically does not authorize any person to extend the time or scope of this warranty or to create or assume for HARKEN any other obligation or liability with respect to HARKEN products.

June 2008/112616.1

General Warnings and Instructions

Sailing is an exciting sport that can provide hours of enjoyment for you, your family, and friends. However, there are risks inherent in the sport, as well as with the equipment involved, that must be respected in order to avoid an accident, damage to your vessel, personal injury or death.

WARNINGS AND INSTRUCTIONS. You must carefully read, understand, and follow all of the warnings and instructions provided by Harken in order to avoid an accident. These warnings and instructions can be found on the equipment, in its packaging, in our brochures, on our website, or through our customer service department.

TRAINING AND EXPERIENCE. Even though Harken equipment appears simple and easy to operate (as intended by our design), our equipment should never be used unless you have a sufficient level of training and experience in sailing in general and with the equipment in particular. The amount of training and experience depends on a number of factors, including the size and type of your vessel, the weather conditions, and the task you are trying to complete. If you have any doubt whatsoever about your training or experience, please do not use the equipment. Please contact Harken or seek additional training.

AVOID ACCIDENT & INJURY. Regardless of your skill level, in order to avoid an accident, damage to your vessel, personal injury, or death:

1. Loads on hardware can be significant, and shock loading from heavy winds or seas can quickly multiply that load to extremely high levels. Maximum line diameter is a guide to sheave groove size and not intended to provide the maximum working load of the block. All persons selecting, installing, or maintaining Harken gear must be aware and cautious of such loads.

Select appropriate Harken hardware by using the loading formulas and charts provided in the Harken catalog or online at www.harken.com. You can also use Compu-Spec, Harken's online software that can help you select hardware for your boat. Always confirm your selection with a rigging professional or contact Harken directly.

2. Never, under any circumstances, exceed the capacity or **Maximum Working Load (MWL)** of any piece of equipment. The maximum working load may be found in our catalog, on our website, or through our technical service department. Loads above the MWL can cause the equipment to fail suddenly and unexpectedly.

The Breaking Load (BL) is the load at which a product is likely to fail. It

is much higher than the highest load a product should ever experience, and should not, under any circumstances, ever be considered in selecting equipment. It is published for informational purposes only.

3. Harken hardware and winches are used exclusively on sailing boats for normal sailboat rigging applications. It is mandatory that customers/users of any human suspension system involving Harken components undertake the necessary compliance with regulations of their country applicable to human suspension systems. For example, inside European Union, any system involving Harken components used for human suspension must be certified under European Union regulations.

4. Keep fingers, hands, hair, loose clothing, gloves, and tools away from moving parts.

5. If you are securing any equipment to the vessel with screws or other fasteners, be sure you are installing the screw into solid structure, or that you use anchor bolts, and that the attachment is sufficient to hold the anticipated load. Otherwise, the screw could become loose over time, or otherwise fail unexpectedly, resulting in an accident.

6. NYLOCK® nuts must not be used after being removed three times. When you replace shackles and fasteners, use the correct Harken parts to maintain the proper strength.

7. Always have all components of your vessel, down to the smallest pulleys, inspected for wear, corrosion or deterioration at least yearly, and replace as necessary.

8. Before manipulating any piece of equipment, be sure that all persons and objects are clear of the path of movement of all reacting components.

9. As part of your maintenance procedures, and to keep your equipment in optimum working order, frequently flush it with fresh water.

10. Always wear a personal flotation device and/or harness while on board any vessel, and especially while manipulating equipment.

11. Always be sure all safety equipment and electronics are in good working order before you set out on your journey.

12. For general boating safety information, visit the maritime organization in your sailing destination country (such as the United States Coast Guard at www.uscgboating.org).

Maintenance

Harken® equipment is designed for minimal maintenance. However, some upkeep is required to give the best service and comply with the Harken® limited warranty. Harken installation manuals are available at no charge online at www.harken.com, or by contacting a Harken® dealer.

Always flush frequently with fresh water and periodically inspect all products for damage.

Do not let deck hardware come in contact with leak cleaner or other caustic solutions as this causes discoloration and damage to the finish.

Product	General Information	Inspection	Cleaning	Lubrication	Fasteners
Small Boat and Midrange Block	Tape cotter rings to prevent snagging. Do not leave heavy loads on blocks when not in use as this may slightly deform the bearings. Normally bearings will return to their proper shape after rotation, but an initial resistance to rolling may be felt.	1	4 5		11
Big Boat Blocks	Big Boat bearings are resistant to deformation, but we recommend releasing heavy loads on any hardware when not in use.	1	4 Black Magic® Airblocks® disassembled, solution on rollers		12
Cams			4 Apply to bearings		11 On cam screws
Travelers and Battcars		1	4 Apply to bearings	7 On balls 8 Slider cars only	11 On bolts 13
Furling	Refer to the owner's manual for detailed maintenance instructions.	2	4 Apply to bearings		11 On Cruising foil clamp screws 14 On foil screws Cruising 15 On foil screws MKIV
Winches	Refer to the owner's manual for detailed maintenance instructions. Overapplication of grease can cause salt and water deposits to become trapped in the winch. Clear drain ports of sealants or grease. Lubricate pawls with Harken Pawl Oil. Do not grease pawls.	3	4 Plastic parts 4 Winch top 6 Metal parts	9 On gears 10 On pawl	12 On socket bolt 13

1 **Inspect frequently:** shackles and shackle posts for signs of corrosion, cracks, or elongation.
Inspect: lashings and loops for UV damage, wear, or chafe. When replacing loops, lashings, or shackles use Harken parts to maintain the proper strength.

2 **Inspect frequently:** wire terminals, turnbuckle components, toggles, shackles, clevis and cotter pins below and inside drum assembly for signs of loosening, corrosion, or cracks.

3 **Check for wear and corrosion:** Check pawls and springs, bearings, gears, and spindles.

4 **Clean:** Keep your equipment clean and free-running by frequently flushing with fresh water. Periodically clean with mild detergent and water solution. Spin sheaves, rotate cams, and roll cars back and forth to distribute soap solution evenly.

5 **Clean:** with Scotch Brite™ pad on Classic block sideplate and stainless steel strap.

6 **Degrease:** Remove grease with de-greaser. Harken recommends environmentally friendly citrus degreasers.

7 **Condition:** Use only a single drop of McLube OneDrop™ ball bearing conditioner. Too much oil attracts dirt.

8 **Lubricate:** Dry lubricants such as McLube™ Sailkote, dry Teflon®, and dry silicon sprays which will not attract dirt may be used on slider cars.

9 **Grease lightly:** with Harken winch grease.

10 **Lubricate:** winch pawls with a drop of Harken Pawl Oil. Do not grease winch pawls.

11 **Adhesive:** Blue Loctite®. Temporary adhesive. Can be removed without heating.

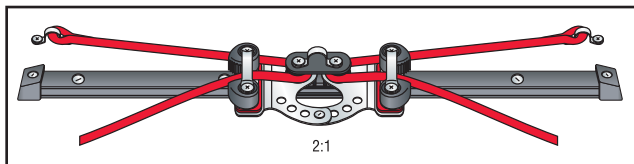
12 **Anti-seize:** Coat stainless fasteners that pass through aluminum blocks with an anti-seize compound such as Tef-Gel®.

13 **Replace:** nylock nuts after the third removal.

14 **Adhesive:** Red Loctite®. Semi-permanent adhesive can be removed with heat. Electric heat gun will not raise temperature enough to break adhesive seal.

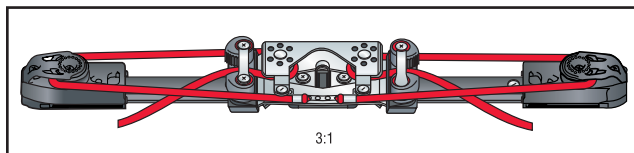
15 **Adhesive:** 5200. Semi permanent adhesive. Electric heat gun will not raise temperature enough to break adhesive seal.

Traveler

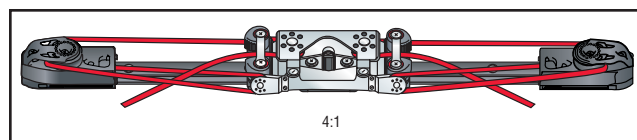


2:1

2:1 Cam on Car: This system features cleats on adjustable arms that can be angled. On flush deck boats face cleats down the length of the track. On boats with seat backs angle the cleats forward or aft.

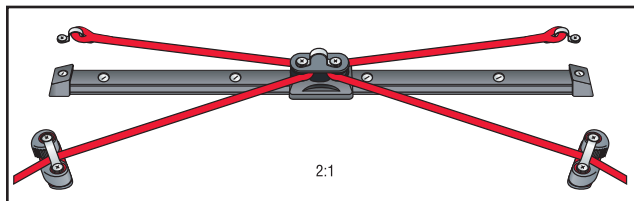


3:1



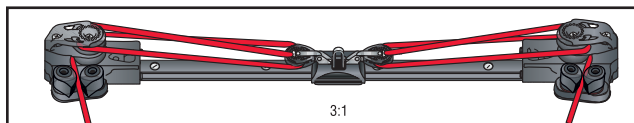
4:1

Windward Sheeting: The windward sheeting traveler lets crew pull the car above the centerline without releasing the leeward control line. Tack and the car stays in the same position, ready to be pulled to the new windward side.



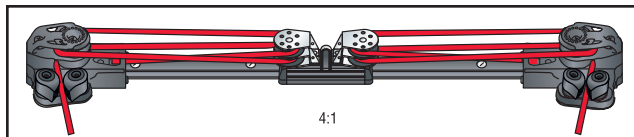
2:1

2:1 Remote Cleat: Use this 2:1 system on flush deck boats like the J/24 where crew sit outboard of the traveler and loads are nearly vertical.



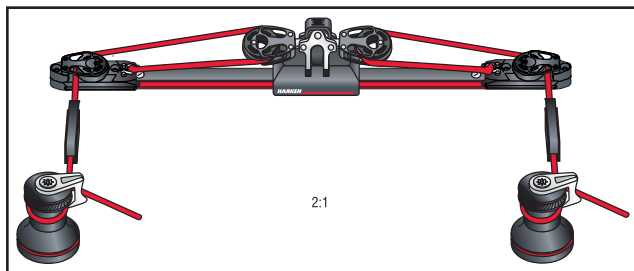
3:1

Standard 3:1: This system, with cleats on the track, is used on boats under 35 ft (10.7 m).



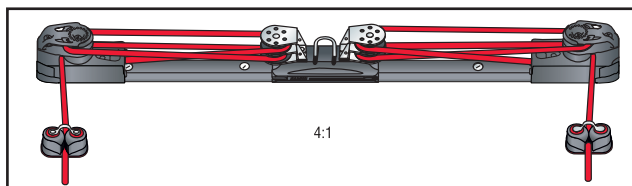
4:1

Standard 4:1: This 4:1 system is used on moderately-sized cruising and racing boats. Control blocks and cleats mount on track ends.



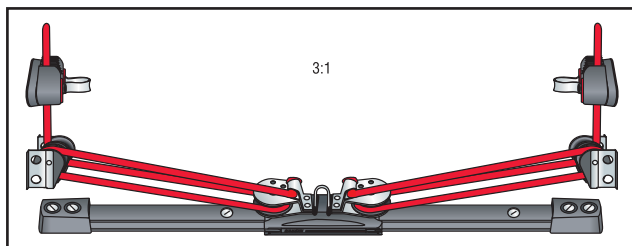
2:1

2:1 with Dedicated Winch: Install this system on big boats when winches are used to adjust the traveler.



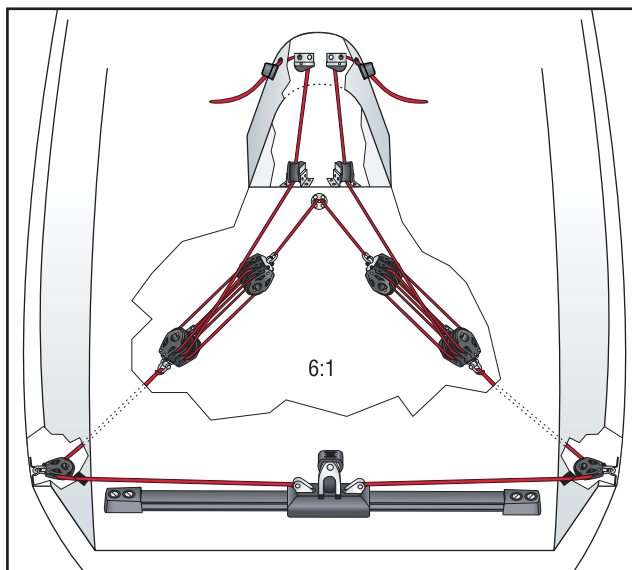
4:1

4:1 Remote Cleat: If the traveler is mounted ahead of the companionway, place the cleats at the aft-edge of the cabin house.



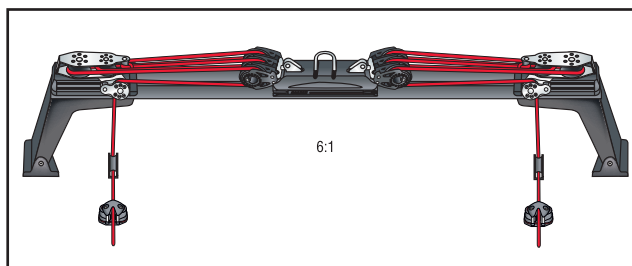
3:1

3:1 Remote Cleat: When the crew sits above the traveler, lead control lines up the cockpit sides to a convenient cleat on the coaming.



6:1

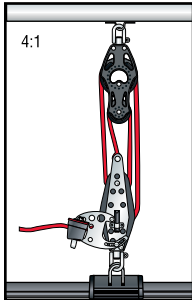
Under Deck Traveler Control: Racing boats often keep decks clean by running the traveler tackle below deck. This system has a 6:1 purchase that exits at a central control pod forward of the wheel or tiller, which allows the mainsheet trimmer to easily adjust the traveler. Popular on boats like the Farr® 40.



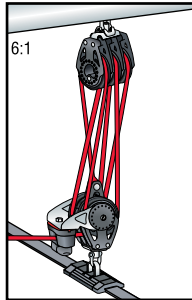
6:1

6:1 Dodger Block: This system works well with a dodger. Triple control blocks give the traveler a 6:1 purchase.

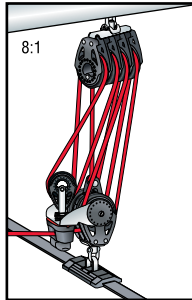
Mainsheet



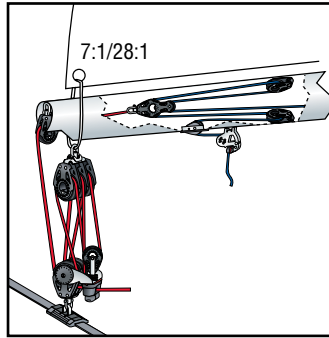
4:1 Fiddle: This 4:1 tackle is the most common system on boats under 28 ft (8.5 m).



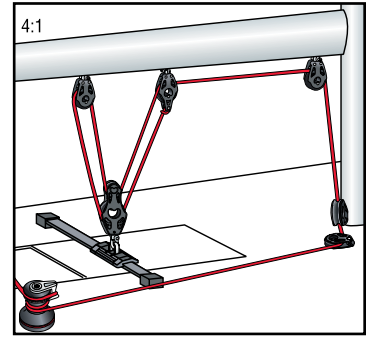
6:1 Reeved Right Angle: Boats with mainsails to 375 ft² (35 m²) often use a 6:1 system.



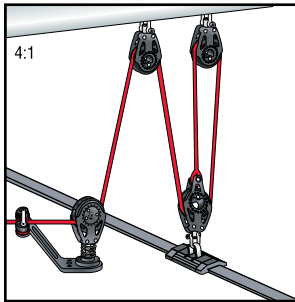
8:1 Beachcat: This 8:1 purchase handles high mainsheet loads on Beachcats up to 20 ft (6 m).



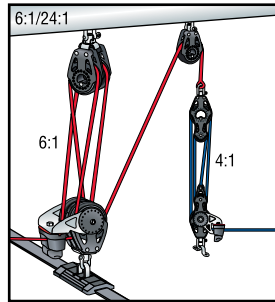
7:1/28:1 Gross/Fine: This gross trim/fine tune system is found on racing multihulls where it is desirable to split the gross trim from the fine tune. Placing the fine tune in the boom provides a very clean system that the trimmer can get a hold of and put his weight into it. The powerful cascading fine tune portion is used to haul the boom in that last little bit.



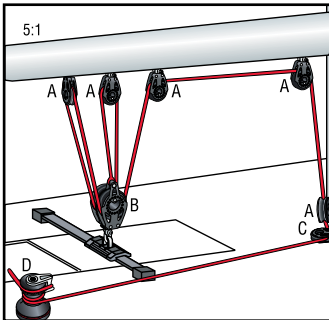
4:1 with Dedicated Winch: This system moves the traveler over the companionway to clean up the cockpit. A favorite on cruising boats.



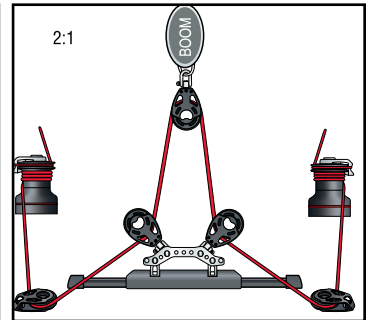
4:1 Swivel Base: Position the swivel base block off the traveler car to allow mainsail adjustment without dragging the car to windward in light air. To avoid tightening the leech, curve the track ends up.



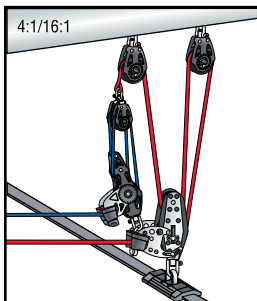
6:1/24:1 Gross/Fine: This 6:1/24:1 cascading system is used on boats with end-boom sheeting and mains as large as 275 ft² (25.5 m²) and end-boom sheeting.



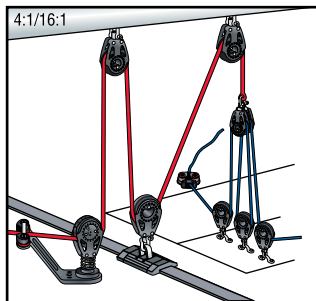
5:1 with Dedicated Winch: This system is popular on cruising boats with cabintop travelers. The sheet leads forward to the gooseneck and then down and back to a winch on the aft edge of the cabintop.



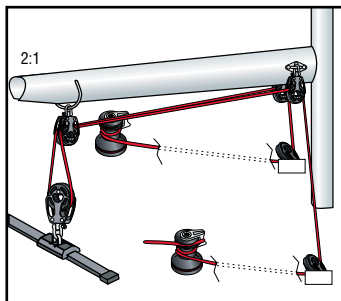
2:1 with Dedicated Winches: This simple double-ended system lets the mainsheet run freely through the blocks which allows the traveler car to move easily. The trimmer makes sail adjustments from the high side.



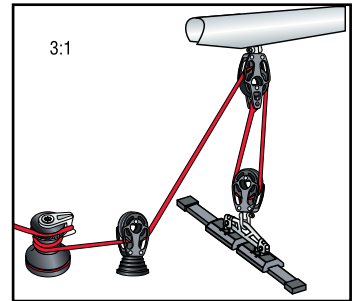
4:1/16:1 Gross/Fine: This powerful gross-trim/fine-tune cascading system allows crew to use the 4:1 gross-trim for most trimming and the 16:1 fine-tune for precise adjustments.



4:1/16:1 Double-ended Fine Tune: This 4:1/16:1 system uses a dinghy-like double-ended tackle that locates the sheet ends on the cockpit sides.



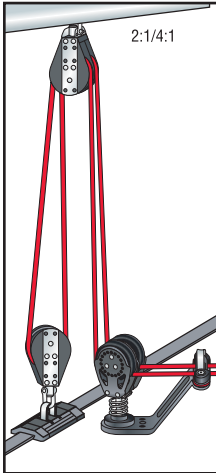
Admiral's Cup 2:1 with Dedicated Winches: In this system, the traveler is independent of the mainsheet so it rolls freely. The sheet leads forward along the boom before it turns down and aft to winches. Used on race boats like the Farr[®] 40.



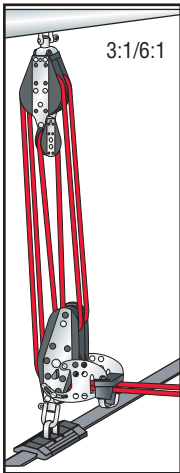
3:1 with Dedicated Winch: Many large boats use this simple 3:1 system. A block on deck turns the sheet to a winch.

Mainsheet

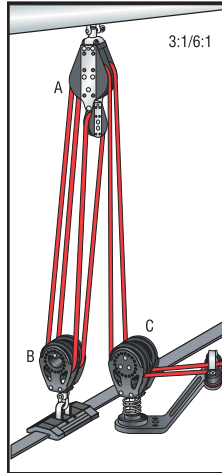
Two-Speed Mainsheets



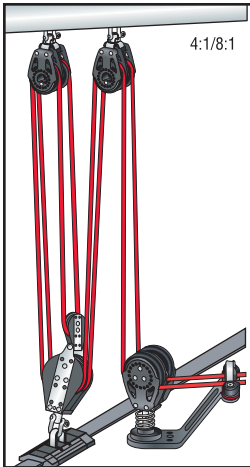
2:1/4:1 Swivel Base: This system is often found on boats like J/24s where a center-mounted swivel base is desired.



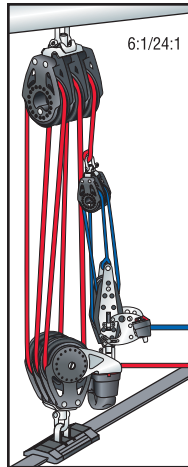
3:1/6:1: This 3:1/6:1 two-speed system is used on boats end-boom sheeting and mainsails up to 240 ft² (22.3 m²) and end-boom sheeting.



3:1/6:1 Swivel Base: This 3:1/6:1 system allows the mainsheet trimmer to be positioned anywhere on the boat. A great setup for sportboats.

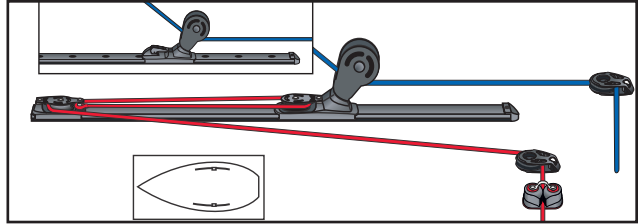


4:1/8:1 Swivel Base: Similar to the 3:1/6:1 swivel base system, but uses a 4:1/8:1 tackle for more power.

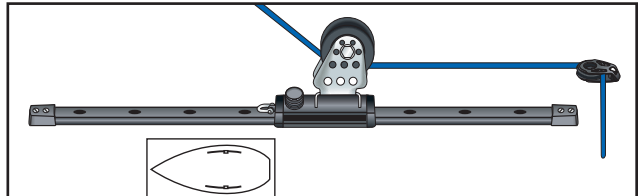


6:1/24:1 Cascaded: This 6:1/24:1 system is used on boats with mains as large as 275 ft² (25.5 m²) and end-boom sheeting.

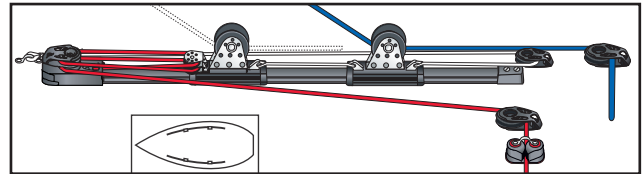
Genoa Lead Cars



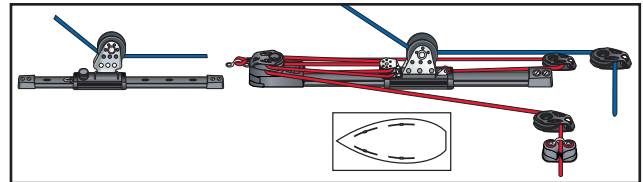
2:1 Slider: Some prefer the simplicity of T-Track lead cars. Use the 1997 as a pinstop car. Use the 1998 T-track car with a 2:1 adjuster system.



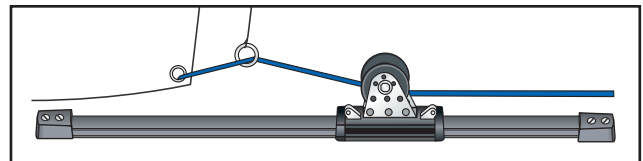
Pinstop Slider: A pinstop slider car on ball bearing track is recommended for cruising boats that might upgrade to adjustable ball bearing cars.



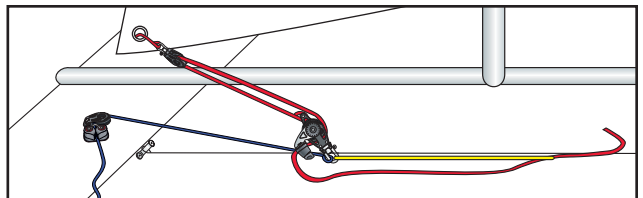
4:1 Tandem: Two cars placed on a long track allow the new sheet to be set and the car correctly positioned before sail changes. A cable or line joins the cars.



Multi-track: Use an adjustable car for the #1 and #2 genoas. Use a pinstop car for the #3 and #4 jibs. Adjust the forward car with a pinstop slider or T-Track car.

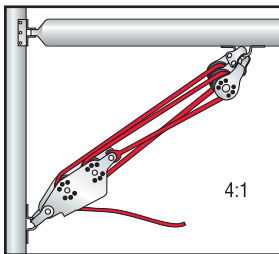


Barbarhauler: Use this low-profile system on racing boats with non overlapping jibs like the Farr[®] 40 and One Design 35. An inhaul is used to control slot size.

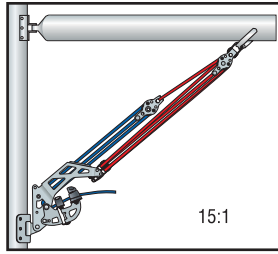


Beachcat Jib Controls: This jib traveler is used to haul the jib sheet block outboard for slot adjustment on Multihulls up to 21 ft (6.4 m).

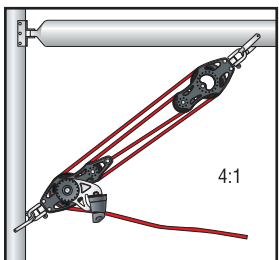
Boom Vangs



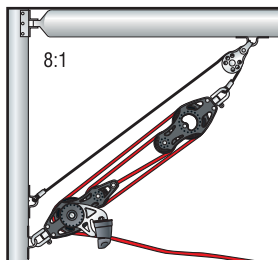
4:1 V-jam: This simple 4:1 self-cleating vang is used on small dinghies.



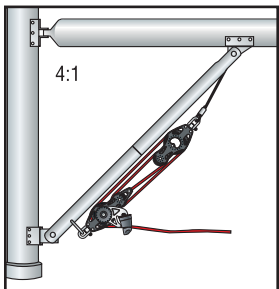
15:1 Cascaded Vang: The 15:1 Dinghy vang uses a 3:1 cascade inside a 5:1 purchase to create a powerful system. Suited for dinghies and light daysailers with mains to 125 ft² (11.6m²).



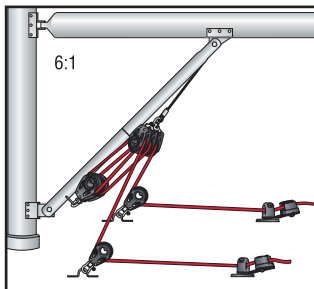
4:1 Fiddle: The basic 4:1 fiddle block vang is commonly used on dinghies and small keelboats.



8:1 Cascaded Fiddle: A doubling block increases the purchase of the vang to 8:1. The load on the fiddle blocks is halved so they can be used safely on larger boats.

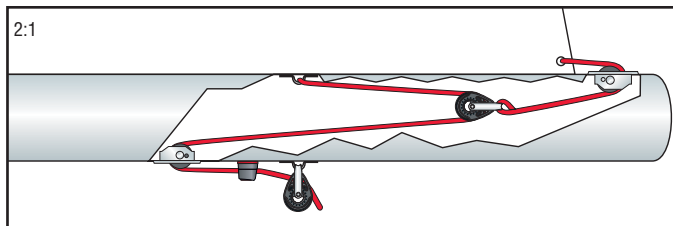


4:1 Cascaded Kicker: This rigid rod vang utilizes a simple 4:1 tackle. The rod also serves as a topping lift for the boom. Used on cruising and racing boats.

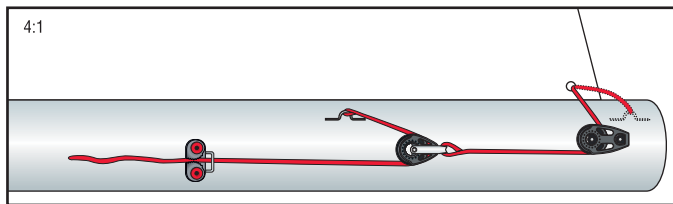


6:1 Double-ended Cascaded Kicker: Many racers rig the vang with a double-ended control line led down each side of the boat.

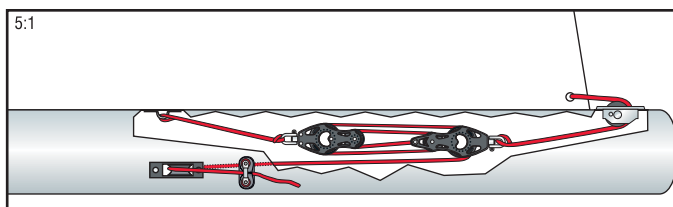
Outhaul Systems



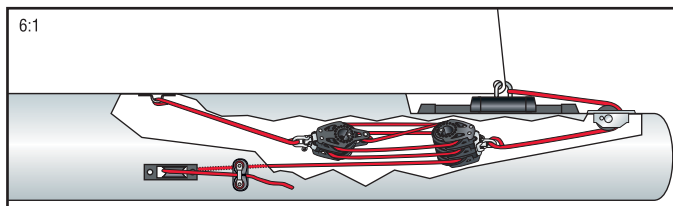
2:1 Internal: Suitable for dinghies or small keelboats. A flexible cable shackles to the sail and enters the boom through a wire block. Placing a block aft of the cleat allows the crew to pull from a variety of positions.



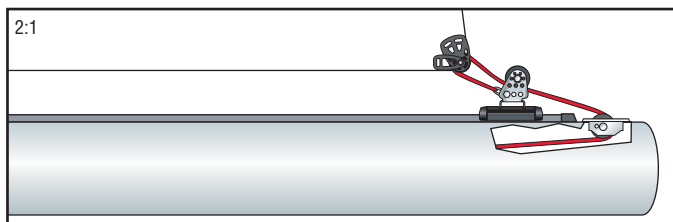
4:1 External Cascade: A simple external outhaul system. A cascade of two 2:1 tackles produces a 4:1 advantage.



5:1 Internal: This 5:1 internal outhaul is popular on small offshore boats.

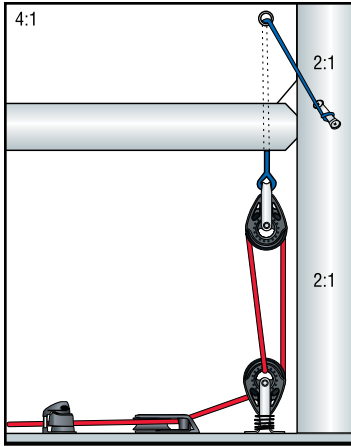


6:1 Internal: A 6:1 internal outhaul system is popular on small-to medium-sized offshore boats using a traveler car to carry the clew of the mainsail.

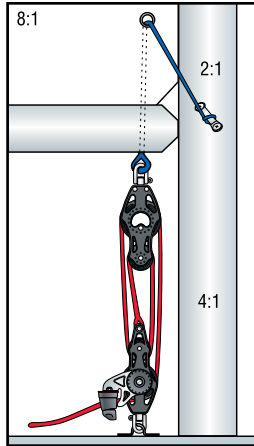


2:1 Furling Main: Mainsails that furl into the mast are loose-footed and usually have a ball bearing outhaul car that rides the length of the boom. The outhaul starts at the car, leads through the clew block on the sail, back to the sheave on the car, and into the boom where it leads to a winch.

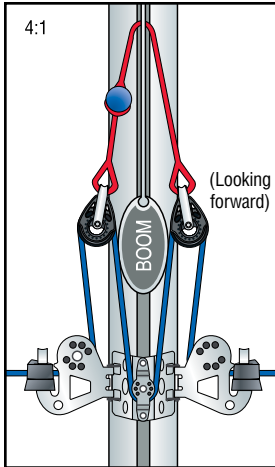
Cunninghams



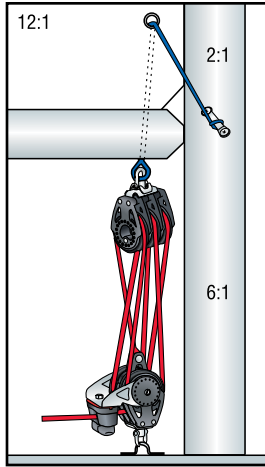
4:1 Cascaded: This simple 4:1 system leads aft to the cockpit. A favorite on small keelboats and daysailers.



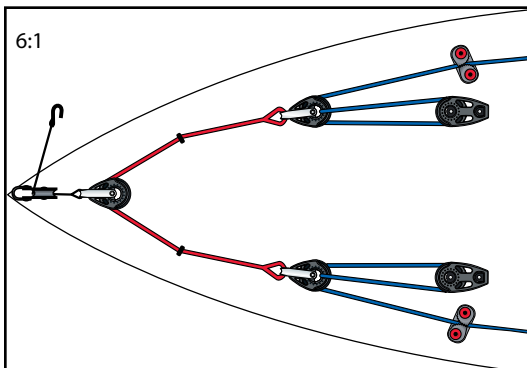
8:1 Cascaded: The most basic cunningham is a self-cleeting 4:1 tackle positioned at the mastbase.



4:1 Double-ended Cascaded: This system is easy to adjust from the trapeze. It's easy to rig and unrig. Popular on smaller beach cats.

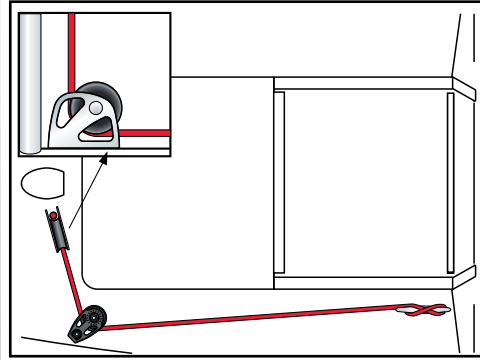


12:1 Cascaded: This simple 2:1 purchase is attached to a 6:1 cascade for a 12:1 system. Used on larger racing and cruising boats.

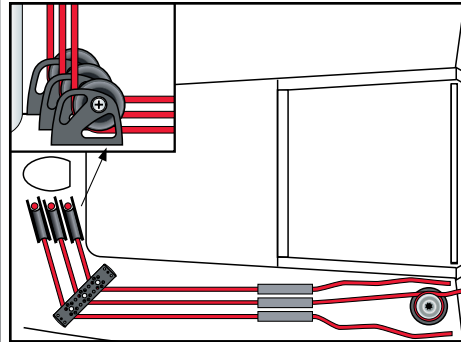
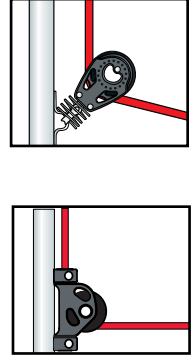


6:1 Double-ended Jib Downhaul: Small boats like J/24s use a double-ended genoa cunningham system to adjust draft from the weather rail.

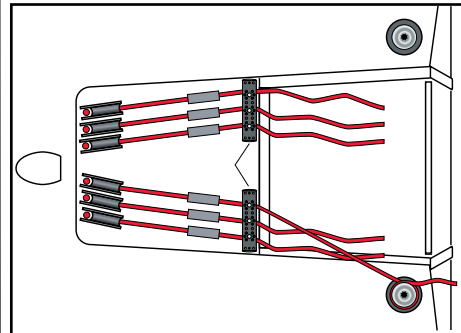
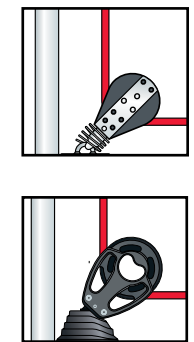
Mastbase & Cabintop Blocks



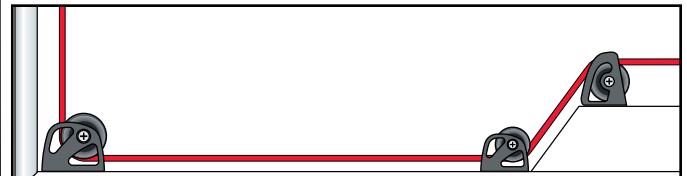
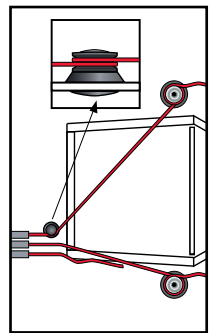
1 Halyard: This simple system leads principle halyards aft. Used by boats under 30 ft (9 m).



3 Halyards: Larger boats use special mastbase halyard lead blocks. Lines are routed out to deck organizers then aft to stoppers and winches. Stand-up blocks on a base are sometimes preferred for their complete articulation, but they hold halyards higher off the deck than specialized mastbase blocks.

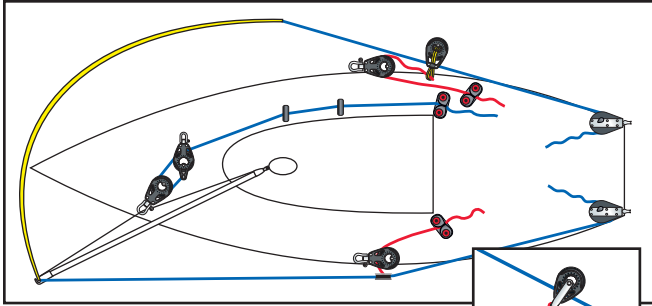


6 Halyards: Modern race boats lead halyards and control lines straight aft through deck organizers so they can be used on either cabintop winch.

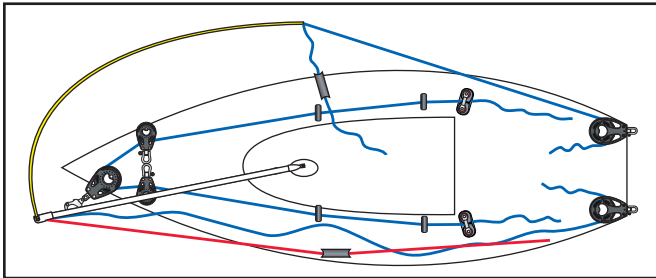
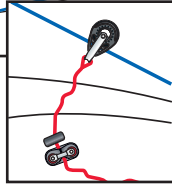


Over the Top: Special "over-the-top" blocks are required to route lines over an outside corner like the front of a doghouse or coaming.

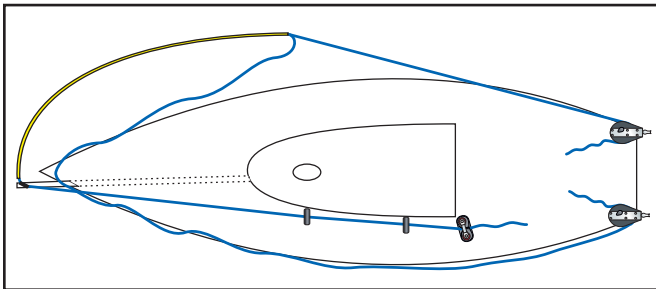
Spinnaker



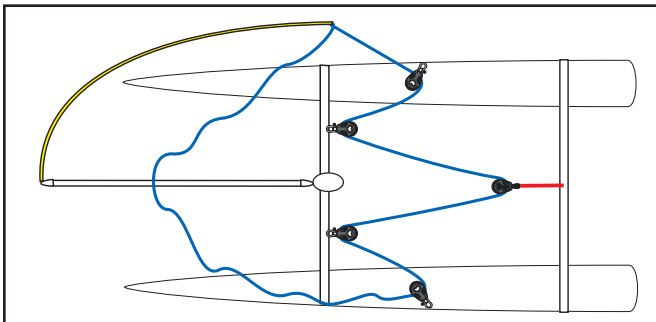
Standard Sheets: Masthead rigs to 28 ft (8.5 m) and fractional rigs to 32 ft (9.7 m) use one pair of lines which lead to turning blocks at the transom. Tweakers bring the guy to the deck near the point of maximum beam to provide additional control over the spinnaker pole. One foreguy line is appropriate for these boats.



Standard Sheets & Guys: Offshore boats over 30 ft (9 m) use separate sheets and guys. The sheets lead to turning blocks at the transom, while the guys lead to blocks at the point of maximum beam and then to a winch. A double-ended foreguy adjusts from either side of the boat.

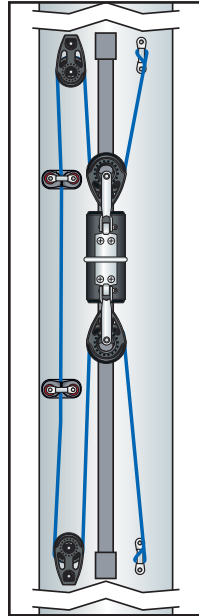


Asymmetrical on Sprit: Boats with asymmetrical spinnakers and retractable (or removable) bowsprits are rigged with a tack line leading through a block on the end of the sprit, and aft to a cleat or stopper. Two sheets attach to the clew of the sail, with the lazy sheet leading aft ahead of the headstay, over the sprit, and outside the shrouds and sheets.

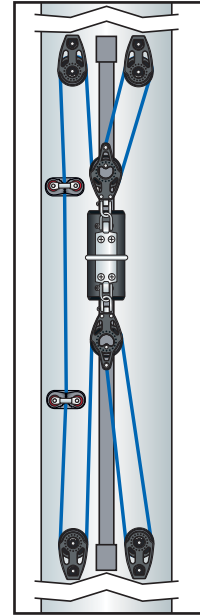


Continuous Line: Beachcats install two carbo auto ratchets on each side of the boat to manage high spinnaker sheet loads. Use 57 mm ratchets on catamarans up to 20 ft (6 m). Use 75 mm ratchets on multihulls to 30 ft (9 m).

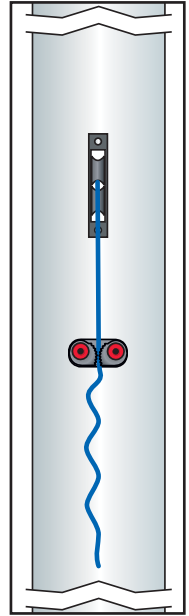
Spinnaker Pole Handling & Halyards



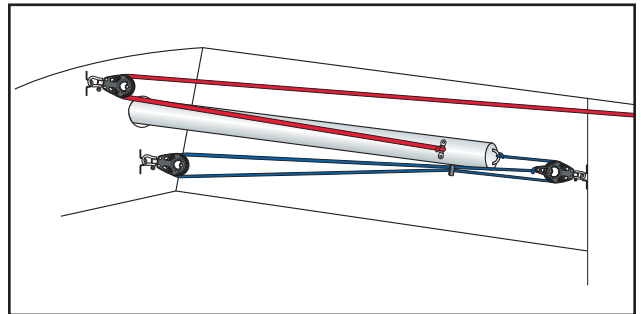
2:1 Spinnaker Pole: This system allows the inboard end of the pole to be moved under load. It features a continuous adjuster line and 2:1 controls.



3:1 Spinnaker Pole: This adjustable system features 3:1 controls for more power.

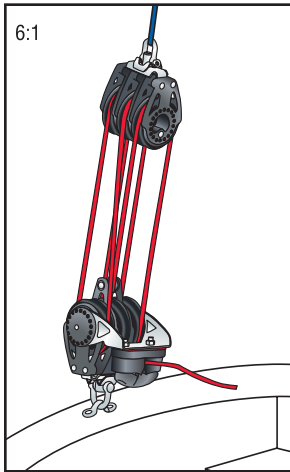


Spinnaker Halyard through Spar: Smaller offshore boats often mount a cam cleat below the spinnaker halyard exit so crew can jump the halyard and cleat it to the mast when setting the spinnaker. The cam also holds the line should the sail fill prematurely.

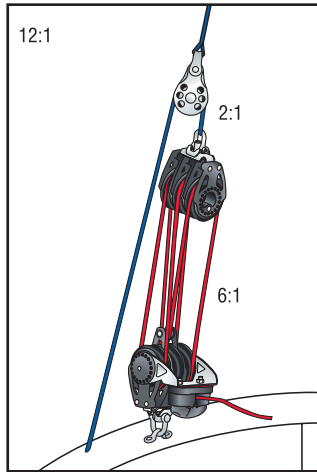


Pole Launcher: Many racing boats have asymmetrical spinnakers and retractable bowsprits. This system features a launcher line on top of the pole, with strong shock chord on the bottom to automatically retract the pole when the launcher line is uncleated.

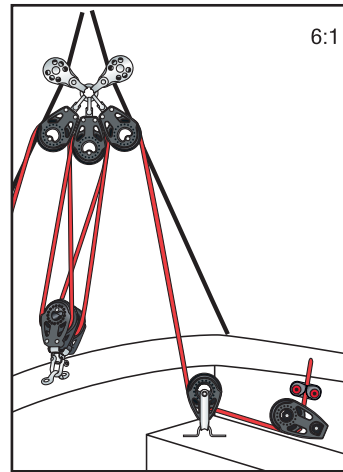
Backstay Adjuster



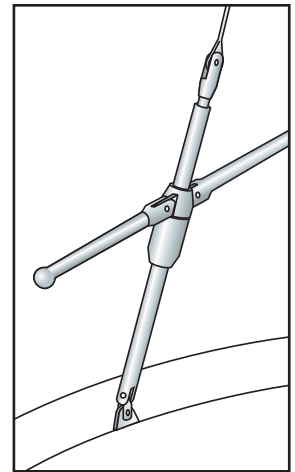
6:1 Right Angle: This simple 6:1 system is used on small cruising boats with a single line or wire backstay.



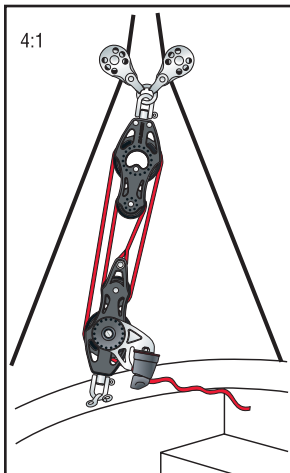
12:1 Cascaded: This cascading 2:1/6:1 system provides a 12:1 purchase and is used on small racer/cruisers and daysailers.



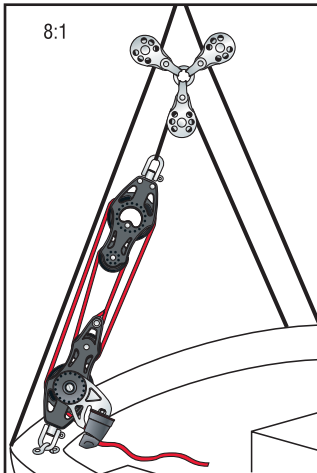
6:1 Double-ended Split: This double-ended split backstay system leads lines forward to cam cleats mounted just ahead of the helmsman so adjustments can be made from either side of the boat.



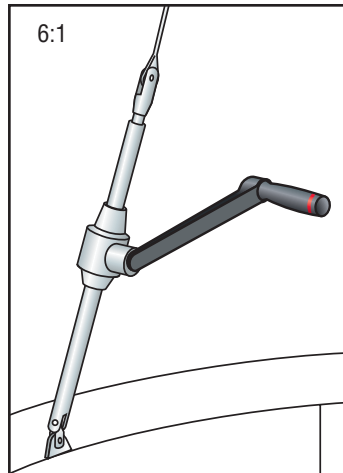
Backstay Adjuster: This adjuster is ideal for small racer/cruisers and daysailers. The handles fold down when not in use.



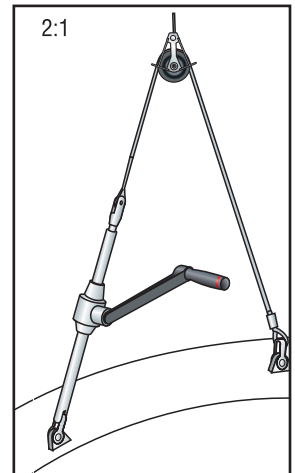
4:1 Split Backstay: This 4:1 system is used on small keelboats with split backstay systems. Pinching the wires together tightens the backstay and increases headstay tension to flatten the genoa, decrease weather helm, and stabilize the rig in heavy air.



8:1 Split Backstay: A more powerful version of the split backstay adjuster uses a doubling wire running through a wire block for a purchase of 8:1.

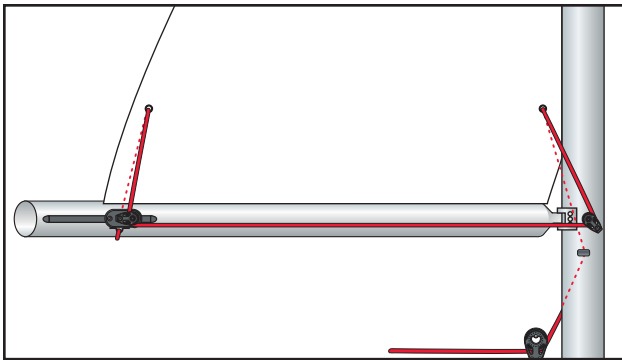


Backstay Adjuster with Winch Handle: This powerful backstay system operates without hydraulics. It is an excellent choice for larger racer/cruisers. The stay tensioner adjusts using a standard winch handle.

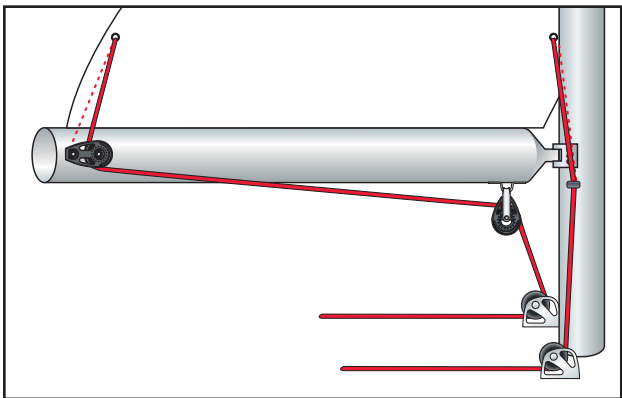


2:1 Backstay Adjuster with Winch Handle: This 2:1 backstay adjuster is for boats with a split backstay. To rig, replace the two lower wires with a single wire and add a runner block at the top of the split. Size the block to match the breaking strength of the wire.

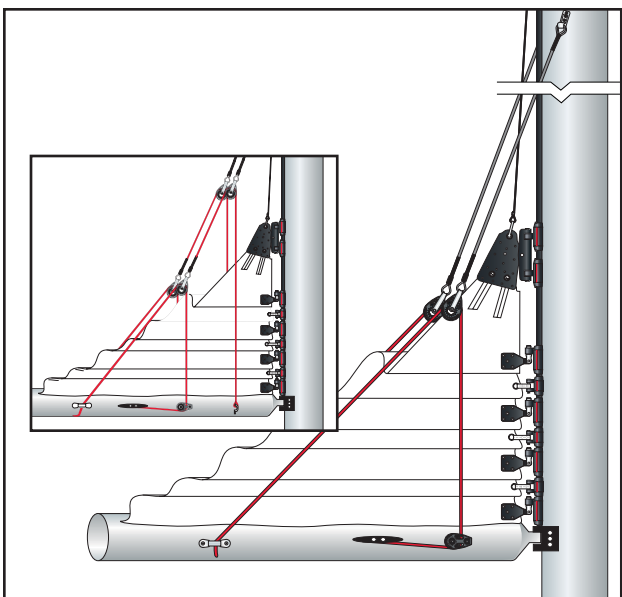
Mainsail Reefing



Single Line: The single line reefing kit is easy to install and use. To reef, simply ease the halyard to a predetermined mark and pull the single reef line taut. Ideal for boats from 22 ft to 27 ft (6.7 m to 8.2 m) with a maximum sail area of 150 ft² (14 m²).

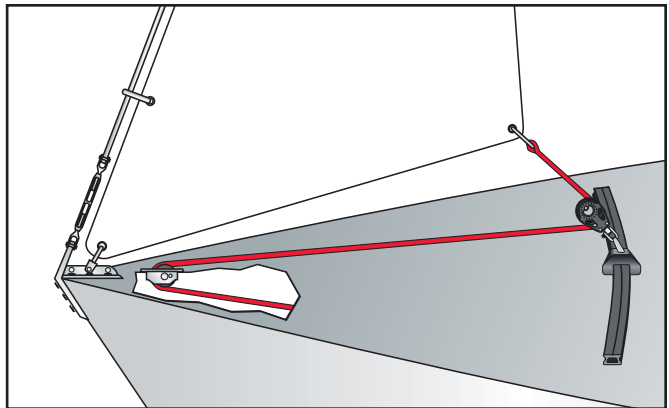


Dual Line: This dual-line system is common on boats 30 ft (9 m) and larger. Position blocks so line pulls down and out to keep the sail flat and prevent lateral loads on the luff rope or luff sliders.

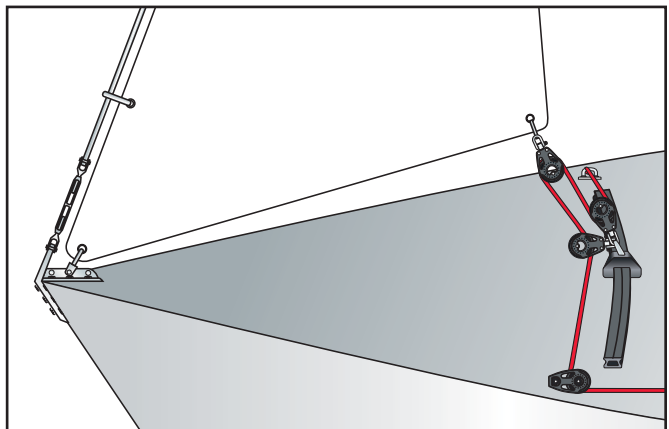


Lazy Jacks: Lazy Jacks contain mainsails during reefing and dousing. They work exceptionally well with full-battened mains, but are also used with conventional sails.

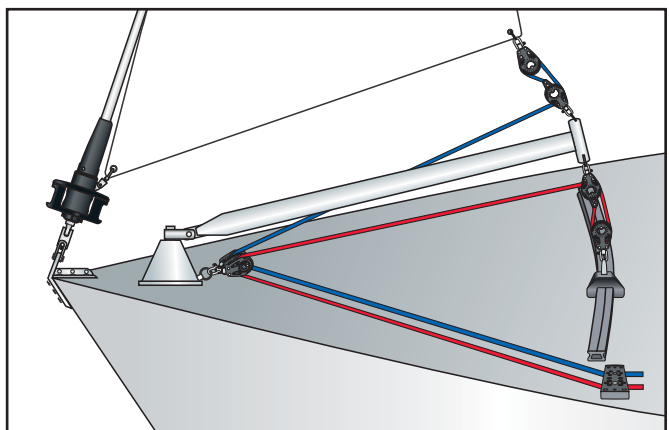
Self-Tacking Jibs & Staysails



Standard Self-tacker: This system is often used on course racing keelboats like Solings. The traveler track is bent in a radius equal to the distance from the headstay to the sheeting point along the LP of the sail.



2:1 Self-tacker: Self-tacking jibs are popular because they keep the foredeck clean.



Self-tacker on Jib Boom: Self-tacking jibs and staysails work well with furling systems and jib booms. This system features two “sheets”—one controls the in and out movement of the sail much like an outhaul. The other controls the boom.

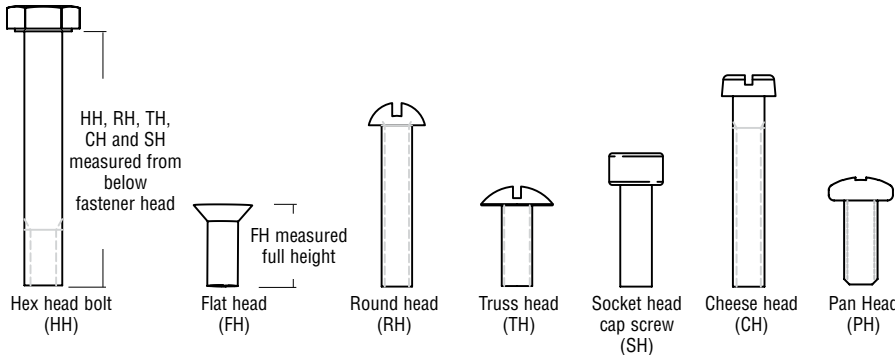
Metric Conversions

This catalog shows both imperial and metric. In most cases, the metric dimension shown is calculated from the imperial measurement and rounded to a whole number. For example, $\frac{5}{16}$ " is generally shown as 8 mm, while an exact conversion would be 7.9375 mm. When referring to a line diameter, it is sufficient to approximate the conversion. In cases where a dimension is critical, exact metric dimensions are shown. For example, a clevis pin for a furling unit with a diameter of $\frac{1}{2}$ " is shown as 12.7 mm.

Length			Area		
When you know	Multiply by	To find	When you know	Multiply by	To find
Inches	25.40	Millimeters	Square inches	645.2	Square millimeters
Inches	2.540	Centimeters	Square inches	6.452	Square centimeters
Feet	304.80	Millimeters	Square feet	929.0	Square centimeters
Feet	30.48	Centimeters	Square feet	0.0929	Square meters
Feet	0.3048	Meters	Square yards	0.8361	Square meters
When you know	Divide by	To find	When you know	Divide by	To find
Millimeters	25.40	Inches	Square millimeters	645.2	Square inches
Centimeters	2.540	Inches	Square centimeters	6.452	Square inches
Millimeters	304.8	Feet	Square centimeters	929.0	Square feet
Centimeters	30.48	Feet	Square meters	0.0929	Square feet
Meters	0.3048	Feet	Square meters	0.8361	Square yards
Weight					
When you know	Multiply by	To find	When you know	Divide by	To find
Ounces	28.35	Grams	Grams	28.35	Ounces
Pounds	0.4535	Kilograms	Kilograms	0.4535	Pounds

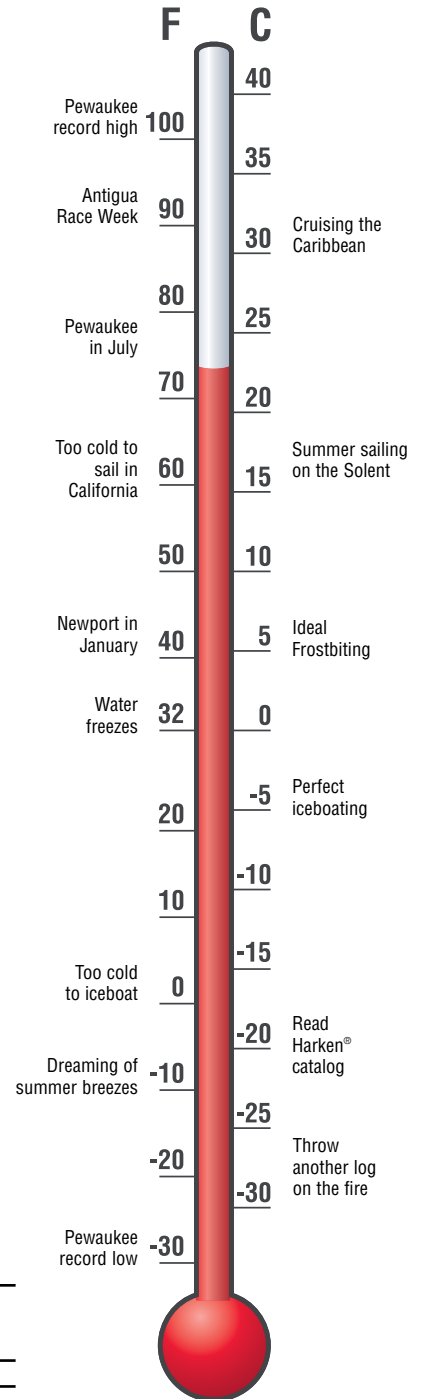
To use the online calculator for finding length, area and weight go to www.harken.com

Fastener Types



Drilling Guide

Fastener mm	Drill for clearance hole mm	Drill for tapping mm	Fastener	Drill for	
				clearance hole in	tapping
2	2.25	1.6	6-32	$\frac{9}{64}$	#36
2.5	2.75	2.05	8-32	$\frac{11}{64}$	#29
3	3.25	2.5	10-24	$\frac{13}{64}$	#25
4	4.25	3.25	10-32	$\frac{13}{64}$	#21
5	5.25	4.25	$\frac{1}{4}$ -20	$\frac{17}{64}$	#7
6	6.25	5	$\frac{5}{16}$ -18	$\frac{21}{64}$	#F
8	8.25	6.75	$\frac{3}{8}$ -16	$\frac{25}{64}$	$\frac{5}{16}$ "
10	10.25	8.5	$\frac{7}{16}$ -14	$\frac{29}{64}$	#T
12	12.25	10.25	$\frac{1}{2}$ -13	$\frac{33}{64}$	$\frac{21}{64}$ "
16	16.26	14	$\frac{5}{8}$ -11	$\frac{41}{64}$	$\frac{11}{32}$ "



Ball Bearing Replacement Chart

Identify your car							Ordering Information			
	Part No.	Description	Length		Balls/ Car	Ball Material	Order Part No.	Balls/ Set	Ball Ø	
			in	mm					in	mm
Traveler	2700/2701/2702/2703	Micro CB	2 ³ / ₁₆	56	40	Torlon®	2708	20	3 ¹ / ₁₆	5
	156/157/171/211	Small Boat	2 ¹ / ₈	73	42	Delrin®	176	21	1 ¹ / ₄	6
	158/159/172/210/212	Small Boat high-load	2 ¹ / ₈	73	42	Torlon®	177	21	1 ¹ / ₄	6
	214/215/247/440/441	Small Boat 1250 Series	4 ³ / ₈	111	64	Torlon®	177	21	1 ¹ / ₄	6
	2726/2728/2730/2732/2744	Small Boat CB	2 ¹ / ₈	73	40	Delrin®	176	21	1 ¹ / ₄	6
	2727/2729/2731/2733/2734/2745	Small Boat CB high-load	2 ¹ / ₈	73	40	Torlon®	177	21	1 ¹ / ₄	6
	2735/2736/2737/2738/2746	Small Boat CB 1250 Series	4 ¹ / ₈	105	60	Torlon®	177	21	1 ¹ / ₄	6
	1508/1575/1594	Midrange	4 ¹ / ₄	108	48	Torlon®	1526	25	5 ¹ / ₁₆	8
	1509/1576/1595	Midrange long	5 ¹ / ₄	133	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	1604	Midrange w/2 toggles	7 ¹ / ₄	184	86	Torlon®	1526	25	5 ¹ / ₁₆	8
	1624/1626/1628/1635/1640	Midrange CB	4 ¹ / ₄	108	48	Torlon®	1526	25	5 ¹ / ₁₆	8
	1625/1627/1629/1636/1641	Midrange CB long	5 ³ / ₁₆	132	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	515/608/1928/1930	Big Boat 3000 Series	5 ¹ / ₄	133	50	Torlon®	547	25	3 ¹ / ₈	10
	558/609/1929/1931	Big Boat 4500 Series	7 ¹ / ₄	184	72	Torlon®	547	25	3 ¹ / ₈	10
	1939	Big Boat 5000 Series w/2 toggles/shackles	8 ¹ / ₂	216	90	Torlon®	547	25	3 ¹ / ₈	10
	1941	Big Boat 6000 Series w/3 toggles/shackles	10 ¹ / ₂	267	110	Torlon®	547	25	3 ¹ / ₈	10
	3163/3164/3176/3177/3160	Big Boat CB 3000 Series	5 ³ / ₈	136	50	Torlon®	547	25	3 ¹ / ₈	10
	3165/3166/3178/3179/3161	Big Boat CB 4500 Series	7 ¹ / ₁₆	188	72	Torlon®	547	25	3 ¹ / ₈	10
	3167	Big Boat CB 5000 Series w/2 toggles/shackles	9 ¹ / ₈	231	90	Torlon®	547	25	3 ¹ / ₈	10
	3068	Mini-Maxi	10	254	72	Torlon®	HBB21	1	1 ¹ / ₂	12
3070	Maxi	13 ³ / ₈	353	104	Torlon®	HBB21	1	1 ¹ / ₂	12	
3074	Big Boat	5	127	102	Torlon®	H-38349A			Rollers	
3075	Big Boat	7 ¹ / ₂	191	148	Torlon®	H-38349A			Rollers	
3084/3085	Big Boat	10	254	204	Torlon®	H-38349A			Rollers	
Spinnaker Pole	3188	Small Boat ring	4 ⁸³ / ₆₄	126	60	Torlon®	177	21	1 ¹ / ₄	6
	3189	Midrange ring	5 ⁶¹ / ₆₄	151	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	1578	Midrange 120/130 bell	5 ¹ / ₄	133	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	1579/1580	Midrange toggle	5 ¹ / ₄	133	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	782	Big Boat 120/130 bell	7 ¹ / ₄	184	72	Torlon®	547	25	3 ¹ / ₈	10
	783/784	Big Boat toggle	7 ¹ / ₄	184	72	Torlon®	547	25	3 ¹ / ₈	10
Genoa Lead	249	Small Boat	4 ³ / ₈	111	64	Torlon®	177	21	1 ¹ / ₄	6
	1537	Midrange	5 ¹ / ₄	133	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	554	Big Boat	7 ¹ / ₄	184	72	Torlon®	547	25	3 ¹ / ₈	10
	587	Big Boat	5 ¹ / ₄	133	50	Torlon®	547	25	3 ¹ / ₈	10
	3072	Mini-Maxi	12	305	84	Torlon®	HBB21	1	1 ¹ / ₂	12
Outhaul	1615	Midrange	5 ¹ / ₄	133	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	595	Big Boat	5 ¹ / ₄	133	50	Torlon®	547	25	3 ¹ / ₈	10
	1771	Big Boat	7 ¹ / ₄	184	72	Torlon®	547	25	3 ¹ / ₈	10
Battcars	3813	System AA headboard	5 ³ / ₁₆	132	40	Torlon®	2708	20	3 ¹ / ₁₆	5
	3815	System AA intermediate car	2 ³ / ₁₆	56	40	Delrin®	2708	20	3 ¹ / ₁₆	5
	3816	System AA battcar	2 ³ / ₁₆	56	40	Torlon®	2708	20	3 ¹ / ₁₆	5
	3811	System A headboard	8 ³ / ₈	213	60	Torlon®	177	21	1 ¹ / ₄	6
	3812	System A intermediate car	2 ¹ / ₄	57	32	Torlon®	177	21	1 ¹ / ₄	6
	3829/3830/3831	System A battcar	2 ¹ / ₈	73	40	Delrin®/Torlon®*	176/177*	21	1 ¹ / ₄	6
	3852	System B headboard	10 ¹ / ₂	267	60	Torlon®	1526	25	5 ¹ / ₁₆	8
	3863	System B intermediate car	2 ³ / ₁₆	68	28	Delrin®/Torlon®*	1583/1526*	25	5 ¹ / ₁₆	8
	3856/3857/3859/3879	System B battcar	4 ³ / ₁₆	109	48	Delrin®/Torlon®*	1583/1526*	25	5 ¹ / ₁₆	8
	3860	System B reef car	5 ³ / ₁₆	132	60	Delrin®/Torlon®*	1583/1526*	25	5 ¹ / ₁₆	8
	3867	System C headboard	18 ³ / ₈	473	90	Torlon®	547	25	3 ¹ / ₈	10
	3871	System C intermediate car	3 ³ / ₄	96	34	Torlon®	547	25	3 ¹ / ₈	10
	3868/3869/3870/3872	System C battcar	5 ³ / ₈	136	50	Torlon®	547	25	3 ¹ / ₈	10
	3873	System C reef car	9 ¹ / ₈	231	90	Torlon®	547	25	3 ¹ / ₈	10

*Torlon® used on all high-load "HL" cars.

Typical Rigging Breaking Loads[§]

Dyform® or compacted strand high strength stainless steel wire						Type 316 1 x 19* Stainless Wire Rope						Navtec/OYS Nitronic 50 Stainless Rod Rigging						Dacron® Double Braid Rope						Vectran® Core Rope w/Dacron® Cover§		
Size in	Breaking load		Size mm	Breaking load		Size in	Breaking load		Size in	Breaking load		Size mm	Breaking load		Size in	Breaking load		Size in	Breaking load							
	lb	kg		lb	kg		lb	kg		lb	kg		lb	kg		lb	kg		lb	kg	lb	kg	lb	kg		
3/16	4928	2235	5	5380	2440	3/16	3960	1800	3/8	14500	6580	-4	4700	2130	4	4100	1860	1/4	1800	815	6	1800	815	3/16	634	288
1/4	8844	4011	6	7828	3550	7/32	5445	2470	1/2	25680	11650	-6	6300	2860	4.5	4718	2140	5/16	2800	1270	7	2800	1270	1/4	1179	535
9/32	10802	4899	7	10827	4910	1/4	7090	3220	—	—	—	-8	8200	3720	5	6283	2850	3/8	3750	1700	9	3750	1700	5/16	1677	761
5/16	13530	6136	8	13561	6150	Type 302 1 X 19* Stainless Wire Rope						-10	10300	4670	5.7	8157	3700	7/16	5500	2490	11	5500	2490	3/8	2630	1193
3/8	19272	8740	10	21544	9770	in	lb	kg	in	lb	kg	-12	12500	5670	6.35	10317	4680	1/2	7000	3175	12	7000	3175	7/16	3174	1439
7/16	26620	12072	11	26620	12072	1/16	500	227	9/32	10300	4671	-15	14250	6460	7.1	12500	5670	9/16	10000	4535	14	10000	4535	1/2	3809	1727
1/2	34833	15797	14	42460	19256	3/32	1200	544	5/16	12500	5669	-17	17500	7940	7.5	14550	6600	5/8	14000	6350	15	14000	6350	V12 Vectran		
9/16	42460	19256	16	56320	25541	1/8	2100	952	3/8	17500	7936	-22	22500	10200	8.5	17323	7858	3/4	16000	7250	19	16000	7250	in	lb	kg
5/8	56320	25541	19	70400	31926	5/32	3300	1497	7/16	23400	10612	-30	30000	13600	8.35	17636	8000	7/8	25000	11340	22	25000	11340	1/8	2000	907
3/4	70400	31926	—	—	—	3/16	4700	2131	1/2	29700	13469	-40	38000	17200	9.5	22530	10220	100% Spectra®/Dyneema® Core Rope w/Dacron® Cover			5/32	3500	1587			
Type 316 1 x 19 ** Stainless Wire Rope						7/32	6300	2857	9/16	36500	16553	-48	48000	21800	10.3	26434	11991	Size	Breaking load	3/16	4750	2154				
mm	lb	kg	mm	lb	kg	1/4	8200	3719	5/8	44000	19954	-60	60000	27200	11.1	29981	13600	in	lb	kg	1/4	7800	3537			
2	706	320	9	12944	5870	Type 316 7 x 19** Stainless Wire Rope						-76	76000	34500	12.7	40583	18409	1/4	5100	2313	5/16	11500	5215			
2.5	1103	500	9.53	14509	6580	in	lb	kg	mm	lb	kg	-91	90000	40800	13.5	44244	20070	5/16	6200	2812	3/8	16800	7618			
3	1588	720	10	15987	7250	3/16	2830	1285	3	1120	510	-115	115000	52200	14.3	48058	21800	3/8	9800	4444	S12 Spectra					
4	2822	1280	11	19338	8770	7/32	3865	1750	4	2130	970	—	—	—	15.3	55207	25043	7/16	14000	6349	in	lb	kg			
4.76	3969	1800	12	22933	10400	1/4	5040	2280	5	3130	1420	—	—	—	16.76	66135	30000	1/2	21000	9524	1/8	2100	952			
5	4410	2000	12.7	25689	11650	3/8	11350	5150	6 (-8)	4490	2040	—	—	—	17.9	76018	34483				5/32	—	—			
5.56	5447	2470	14	31268	14180	1/2	20165	9140	7 (-12)	6120	2780	—	—	—	19.5	91022	41289				3/16	5800	2630			
6	6351	2880	16	40926	18560	—	—	—	8	8000	3630	—	—	—	22.2	115026	52178				1/4	9800	4443			
6.35	7100	3220	19	47674	21620	—	—	—	10	12500	5670											5/16	13300	6032		
7	7828	3550	22	64101	29070	—	—	—	12	17990	8160											3/8	19000	8617		
8	10232	4640	26	89526	40600	—	—	—	14	24470	11100															
						—	—	—	16	29980	13600															

*Typical American wire **Typical European wire §Breaking load may vary widely by manufacturer

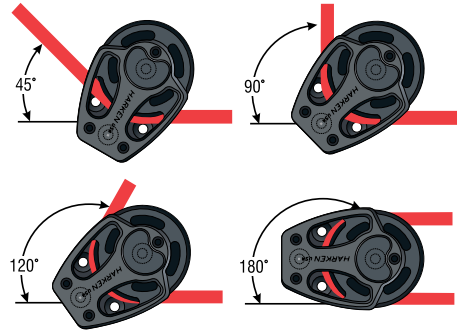
Loading Formulas

Block Loading vs Angle of Deflection

Load on a block is a combination of the load on the line passing through the block, plus a block-loading factor, which is determined by the angle by which the block turns the sheet. For example, a foot-block that turns a sheet 180-degrees will see a load equal to twice the load on the sheet. A deck organizer, which turns a halyard only 30-degrees, will see just 52 percent of the load on the halyard.

Boat Type

Most load formulas assume a medium displacement monohull, but you can easily correct for other boat types. Multihulls and boats with canting keels or water ballast have great form stability and speed and will often carry sails very high in the apparent wind speed, so calculations must be done with this wind speed in mind. ULDBs are typically tender and often change sails or reef quite early, so loading may be done at relatively low wind speeds. For example, a modern trimaran may carry its blade jib in 25 knots of wind at speeds over 15 knots for an apparent wind of nearly 40 knots, whereas a ULDB will probably remove its #1 genoa at about 15 knots of apparent wind.



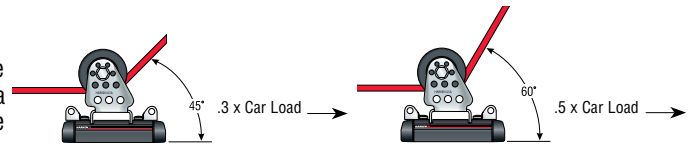
Angle of deflection	Load factor	Angle of deflection	Load factor	Angle of deflection	Load factor
30°	52%	90°	141%	150°	193%
45°	76%	105°	159%	160°	197%
60°	100%	120°	173%	180°	200%
75°	122%	135°	185%		

Genoa System Loading

Because wind speed is squared, it is the most important variable and can greatly influence loading. Wind speed (the apparent wind) should be calculated for the specific sail being analyzed. For example, the #1 genoa on a 25 ft (7 m) boat might only be carried in 15 knots of wind while the #3 blade on a Maxi-boat could well be carried in 40 knots.

To calculate loading on a genoa lead car, multiply sheet load by the load factor of the sheet. Most #1 genoas will deflect about 45-degrees, while a #3 genoa may deflect 75-degrees or more.

Lead car adjuster tackle load is dependent on the angle of deflection of the sheet in the lead car, but is generally assumed to be .3 of lead car load when deflection is 45-degrees and .5 of lead car load when deflection is 60-degrees.

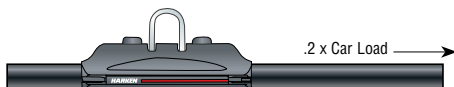


Genoa Sheet Load			
English		Metric	
SL = SA x V ² x 0.00431		SL = SA x V ² x 0.02104	
SL	Sheet load in pounds	SL	Sheet load in kilograms
SA	Sail area in square feet	SA	Sail area in square meters
V	Wind speed in knots	V	Wind speed in knots

Mainsheet System Loading

The formula for mainsheet loading is not as widely accepted as that for genoa sheet loads and should only be used as a rough guide for offshore boats from 30 ft to 60 ft (9 m to 18 m).

Traveler car adjuster load is generally considered to be .2 times car load.

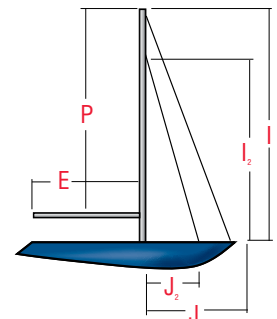


Mainsheet Load			
English		Metric	
ML = E ² x P ² x 0.00431 x V ²		ML = E ² x P ² x 0.02104 x V ²	
$(\sqrt{P^2 + E^2}) \times (E - X)$		$(\sqrt{P^2 + E^2}) \times (E - X)$	
ML	Mainsheet load in pounds	ML	Mainsheet load in kilograms
E	Foot length of main in feet	E	Foot length of main in meters
P	Luff length of main in feet	P	Luff length of main in meters
V	Wind speed in knots	V	Wind speed in knots
X	Distance from aft end of boom to mainsheet attachment point in feet	X	Distance from aft end of boom to mainsheet attachment point in meters

Rig Dimensions

The following abbreviations are often used to describe various measurements on a sailboat. Precise technical definitions exist for each abbreviation, but the following is a list of simple descriptions:

LOA	Length Overall - overall tip-to-tip length of the boat	I ₂	Height of staysail halyard above deck
LWL	Length Waterline - length of waterline of the boat	J	Base of the foretriangle measured from the front of the mast to the intersection of the forestay and deck
DWL	Design Waterline - theoretical waterline length of boat as opposed to LWL, which is actual waterline length	J ₂	Base of staysail triangle
BMX	Beam Maximum - width of the boat at the widest point	P	Luff length of the mainsail
BWL	Beam Waterline - widest beam of boat at the waterline	E	Foot length of the mainsail
I	Height of the foretriangle measured from the top of the highest sheave to the sheerline	LP	Shortest distance from headstay to the clew of the jib





Gotta Love It 7, 18-Foot Skiff, Iain Murray,
Van Munster Boats — Luca Villata photo

SMALL BOAT BLOCKS

Carbo AirBlocks®

STRONG AND COMPACT

Low-friction Carbo AirBlocks® are lightweight, strong, reliable—and affordable. Companions to the popular Harken® Black Magic® line, these small, compact blocks have very high working loads for safe, easy trimming no matter how hard the wind blows. Sideplates of high-strength resin are UV-stabilized to provide excellent protection against long-term exposure to saltwater and sun. Carbo blocks are perfect for the small-diameter lines favored by racers.



1. High-Strength Material

Lightweight nylon resin sideplates replace stainless steel straps found in Classic blocks. Densely-packed, long-glass fibers reinforce resin for strength.

2. Load Carrying Curved Bearing Races

High-load ball bearings roll smoothly on curved bearing races.

Grooved races increase ball-to-race contact for greater load capacity in a lighter, smaller block.

DETAILS MAKE THE DIFFERENCE

LIGHTWEIGHT, STRONG DESIGN

Blocks are 30% lighter with a 60% higher working load than Classic blocks. Open AirBlock® design eliminates unnecessary material and weight.

LONG-LASTING PROTECTION

Ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection.

THREE-WAY CAM-LOCK

Patented switch locks shackle in front or side positions, or lets block swivel to keep line from twisting.

29 mm Carbo

The compact 29 mm Carbo is extremely strong. Use our miniature Carbo as a mainsheet block on small dinghies such as the Optimist, or for low-friction control blocks on any size boat.

Doubles and triples feature U-Locks to hold the swivel in front/side position, or to let it spin freely. The triple's compact cam arm supports high-load purchases of 5:1 or 6:1. The line-shedding cheek block features a small mounting footprint and drainholes. The low-profile Ti-Lite replaces the headpost, shackle, and spring with high-tech line.

Use for:

- Outhauls
- Cunninghams
- Vangs
- Traveler controls
- Barberhaulers
- Flag halyards



Use as becket block without the additional height of a becket

Noncorrosive and UV-resistant for longer block life



The double and triple swivel blocks can lock in two directions or swivel



Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
340	Single/swivel	1 1/8	29	2 5/8	66	0.9	26	5/32	4	5/16	8	330	150	1000	454
341	Single/swivel/becket	1 1/8	29	3 1/16	78	1.0	28	5/32	4	5/16	8	330	150	1000	454
342	Double/swivel	1 1/8	29	2 7/8	73	1.8	51	3/16	5	5/16	8	660	299	1625	737
343	Double/swivel/becket	1 1/8	29	3 3/8	85	1.9	54	3/16	5	5/16	8	660	299	1625	737
344	Triple/swivel	1 1/8	29	2 7/8	73	2.6	74	3/16	5	5/16	8	990	449	2000	907
345	Triple/swivel/becket	1 1/8	29	3 3/8	85	2.7	77	3/16	5	5/16	8	990	449	2000	907
346	Triple/423 Carbo-Cam®**	1 1/8	29	2 7/8	73	4.6	130	3/16	5	1/4	6	750	340	1500	680
347	Triple/423 Carbo-Cam®/becket**	1 1/8	29	3 3/8	85	4.7	133	3/16	5	1/4	6	900	408	1800	816
348	Single/fixed*	1 1/8	29	1 15/16	49	0.8	23	—	—	5/16	8	330	150	1000	454
349	Stand-up/fixed*	1 1/8	29	2 9/16	56	1.1	31	—	—	5/16	8	330	150	1000	454
350	Cheek	1 1/8	29	2 1/8	53	0.6	17	—	—	5/16	8	330	150	1000	454
351	Ti-Lite*	1 1/8	29	1 3/4	44	0.5	15	—	—	5/16	8	330	150	1000	454
352	90° Fixed head*	1 1/8	29	2 1/16	52	0.9	26	—	—	5/16	8	330	150	1000	454
353	Traveler	1 1/8	29	3 5/8	92	1.2	34	—	—	5/16	8	330	150	1000	454
371	Clew block assembly	1 1/8	29	4 7/8	124	1.8	51	—	—	5/16	8	330	150	1000	454
381	Double/fixed	1 1/8	29	2 1/8	54	1.2	34	—	—	5/16	8	660	299	1625	737

*Can be used as becket block **Maximum working loads and breaking loads for blocks based on cam strengths

40 mm Carbo

Carbo AirBlocks® are 60% stronger and 30% lighter than our Classic blocks. Use the 40 mm Carbo for jib and mainsheet systems on high-performance dinghies and for loaded control lines on small keelboats.

The nylon-resin sideplates are densely packed with long-glass fibers for a compact block with a high strength-to-weight ratio. Sheaves spin on high-load ball bearings with fitted races for low-friction operation. Ball bearings, sheave, and sideplates are UV-stabilized with carbon black for maximum protection.

Use for:

- Main/jib sheets
- Mainsheet fine-tune
- Control lines
- Vangs
- Cunninghams
- Outhauls

Accepts line up to 3/8 in (10 mm) for easy sheet control

Reversible cam arms



RS400 — Paul Wyeth photo/LDC Racing Sailboats



Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
2636	Single/swivel	1 ⁹ / ₁₆	40	3 ³ / ₈	86	1.6	44	5 ¹ / ₃₂	4	3 ³ / ₈	10	485	220	1620	735
2637	Single/swivel/becket	1 ⁹ / ₁₆	40	4	102	1.7	48	5 ¹ / ₃₂	4	3 ³ / ₈	10	485	220	1620	735
2644	Cheek	1 ⁹ / ₁₆	40	2 ³ / ₄	70	1.2	34	—	—	3 ³ / ₈	10	485	220	1620	735
2645	Single/swivel/423 Carbo-Cam***	1 ⁹ / ₁₆	40	3 ³ / ₈	86	4.2	119	5 ¹ / ₃₂	4	1 ¹ / ₄	6	150	68	300	136
2646	Single/swivel/423 Carbo-Cam*/becket**	1 ⁹ / ₁₆	40	4	102	4.3	122	5 ¹ / ₃₂	4	1 ¹ / ₄	6	300	136	600	272
2649	Traveler	1 ⁹ / ₁₆	40	4 ¹ / ₄	108	1.8	52	—	—	5 ¹ / ₁₆	8	330	150	1000	454
2650	Single/fixe*	1 ⁹ / ₁₆	40	2 ¹ / ₂	64	1.4	40	—	—	3 ³ / ₈	10	485	220	1620	735
2651	Ti-Lite*	1 ⁹ / ₁₆	40	2 ¹ / ₄	57	1.0	28	—	—	3 ³ / ₈	10	485	220	1200	544
2652	Stand-up/fixe*	1 ⁹ / ₁₆	40	2 ³ / ₄	70	1.7	48	—	—	3 ³ / ₈	10	485	220	1620	735
2659	90° Fixed head*	1 ⁹ / ₁₆	40	2 ¹⁵ / ₁₆	75	1.6	44	—	—	3 ³ / ₈	10	485	220	1620	735

*Can be used as becket block **Maximum working loads and breaking loads for blocks based on cam strengths

40 mm Carbo



Swivel blocks can lock in two directions or swivel



2638



2639



2640



2641



2642



2643



2647



2648



2654

Use with 2619 for a powerful 8:1 purchase



2655



2656



2657



2658



Actual Size

Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
2638	Double/swivel	1 ⁹ / ₁₆	40	3 ¹¹ / ₁₆	94	3.2	86	3 ⁹ / ₁₆	5	3 ⁷ / ₈	10	970	440	2380	1080
2639	Double/swivel/becket	1 ⁹ / ₁₆	40	4 ⁵ / ₁₆	110	3.4	90	3 ⁹ / ₁₆	5	3 ⁷ / ₈	10	970	440	2380	1080
2640	Triple/swivel	1 ⁹ / ₁₆	40	3 ¹¹ / ₁₆	94	4.6	118	3 ⁹ / ₁₆	5	3 ⁷ / ₈	10	1455	660	3050	1383
2641	Triple/swivel/becket	1 ⁹ / ₁₆	40	4 ⁵ / ₁₆	110	4.7	122	3 ⁹ / ₁₆	5	3 ⁷ / ₈	10	1455	660	3050	1383
2642	Double/fixed	1 ⁹ / ₁₆	40	3 ¹ / ₂	89	2.8	80	3 ¹⁵ / ₁₆	5	3 ⁷ / ₈	10	970	440	2380	1080
2643	Double/fixed/becket	1 ⁹ / ₁₆	40	4 ³ / ₁₆	106	2.9	84	3 ¹⁵ / ₁₆	5	3 ⁷ / ₈	10	970	440	2380	1080
2647	Triple/swivel/423 Carbo-Cam®**	1 ⁹ / ₁₆	40	3 ¹¹ / ₁₆	94	8.2	232	3 ⁹ / ₁₆	5	1 ¹ / ₄	6	750	340	1500	680
2648	Triple/swivel/423 Carbo-Cam®/becket**	1 ⁹ / ₁₆	40	4 ⁵ / ₁₆	110	8.3	235	3 ⁹ / ₁₆	5	1 ¹ / ₄	6	900	408	1800	816
2654	Quad/swivel	1 ⁹ / ₁₆	40	3 ¹¹ / ₁₆	94	6	170	3 ⁹ / ₁₆	5	3 ⁷ / ₈	10	1455	660	3050	1383
2655	Fiddle	1 ⁹ / ₁₆	40	4 ¹ / ₂	115	1.8	51	5 ³ / ₃₂	4	3 ⁷ / ₈	10	485	220	1620	735
2656	Fiddle/becket	1 ⁹ / ₁₆	40	5 ¹ / ₈	131	1.9	54	5 ³ / ₃₂	4	3 ⁷ / ₈	10	485	220	1620	735
2657	Fiddle/423 Carbo-Cam®	1 ⁹ / ₁₆	40	4 ¹ / ₂	115	4.4	125	5 ³ / ₃₂	4	1 ¹ / ₄	6	485	220	1620	735
2658	Fiddle/423 Carbo-Cam®/becket	1 ⁹ / ₁₆	40	5 ¹ / ₈	131	4.5	128	5 ³ / ₃₂	4	1 ¹ / ₄	6	485	220	1620	735

**Maximum working loads and breaking loads for blocks based on cam strengths

57 mm & 75 mm Carbo

Carbo AirBlocks® are 60% stronger and 30% lighter than our Classic blocks.

The nylon resin sideplates are densely packed with long-glass fibers for a compact block with a high strength-to-weight ratio. Ball bearings, sheave, and sideplates are UV-stabilized with carbon black for maximum protection.

Blocks feature Cam-Lock or U-Lock locking systems to lock the shackle in front or side positions, or swivel to keep line from twisting.

57 mm

The high-load 57 mm Carbo has a broad working range. Use for main and jib sheets on centerboard and keelboats like Lightnings, Dragons, Solings, and J/24s, and for mainsheet systems on catamarans.

75 mm

The 75 mm Carbo has a safe working load of 1200 lbs (500 kg). It releases easily under load and is perfect for mainsheet systems on sport boats like the Melges 24, J/105, and Henderson 30.

Use for:

- Main/jib sheets
- Mainsheet fine-tune
- Control lines
- Vangs
- Cunninghams
- Outhauls

Curved bearing race fits ball for more ball-to-race contact. Disperses load for higher strength, smaller block

AirBlock® design with high-tech, long-glass fibers and nylon material for high strength-to-weight ratio

Eliminates heavy stainless sideplates



Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
57 mm															
2600	Single/swivel	2 1/4	57	4 5/16	110	3.1	87	3/16	5	7/16	10	792	360	2380	1080
2601	Single/swivel/becket	2 1/4	57	5 3/16	132	3.4	96	3/16	5	7/16	10	792	360	2380	1080
2606	Cheek	2 1/4	57	3 5/8	92	2.4	68	—	—	7/16	10	792	360	2380	1080
2607	Ti-Lite*	2 1/4	57	3 1/16	78	2.4	68	—	—	7/16	10	792	360	2380	1080
2615	Single/swivel/150 Cam-Matic®**	2 1/4	57	4 5/16	110	9.5	269	3/16	5	7/16	10	300	136	750	340
2616	Single/swivel/150 Cam-Matic®/becket**	2 1/4	57	5 3/16	132	15.6	442	3/16	5	7/16	10	600	272	1500	680
2621	Fiddle	2 1/4	57	6	153	3.7	105	3/16	5	7/16	10	792	359	2380	1079
2622	Fiddle/becket	2 1/4	57	6 7/8	175	4.0	113	3/16	5	7/16	10	792	359	2380	1079
2623	Fiddle/150 Cam-Matic®	2 1/4	57	6	153	10.1	286	3/16	5	7/16	10	792	359	2380	1079
2624	Fiddle/150 Cam-Matic®/becket	2 1/4	57	6 7/8	175	10.4	295	3/16	5	7/16	10	792	359	2380	1079
75 mm															
2660	Single/swivel	2 5/16	75	5 3/8	137	6.9	195	—	6	9/16	14	1213	550	3638	1650
2661	Single/swivel/becket	2 5/16	75	6 1/2	165	7.5	214	—	6	9/16	14	1213	550	3638	1650
2666	Single/swivel/150 Cam-Matic®**	2 5/16	75	5 3/8	137	13.4	381	—	6	1/2	12	300	136	750	340
2667	Single/swivel/150 Cam-Matic®/becket**	2 5/16	75	6 1/2	165	14	397	—	6	1/2	12	600	272	1500	680

*Can be used as becket block **Maximum working loads and breaking loads for blocks based on cam strengths

57 mm & 75 mm Carbo



Swivel blocks can lock in two directions or swivel



2602
2662



2603
2663



2604
2664



2605
2665



2617
2668



2618
2669



2631
2677



Use with 2632 for a powerful 8:1 purchase

Hobie 16, 2008 European Championships
— Pierrick Contin photo



Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
57 mm															
2602	Double/swivel	2 ¹ / ₄	57	4 ³ / ₄	121	6.3	178	—	6	7 ¹ / ₁₆	10	1584	720	3300	1500
2603	Double/swivel/becket	2 ¹ / ₄	57	5 ⁵ / ₈	142	6.6	187	—	6	7 ¹ / ₁₆	10	1584	720	3300	1500
2604	Triple/swivel	2 ¹ / ₄	57	4 ³ / ₄	121	9	255	—	6	7 ¹ / ₁₆	10	2380	1080	5000	2270
2605	Triple/swivel/becket	2 ¹ / ₄	57	5 ⁵ / ₈	142	9.3	264	—	6	7 ¹ / ₁₆	10	2380	1080	5000	2270
2617	Triple/swivel/150 Cam-Matic [®] **	2 ¹ / ₄	57	4 ³ / ₄	121	15.2	431	—	6	7 ¹ / ₁₆	10	1500	680	3750	1700
2618	Triple/swivel/150 Cam-Matic [®] /becket**	2 ¹ / ₄	57	5 ⁵ / ₈	142	15.6	442	—	6	7 ¹ / ₁₆	10	1800	816	4500	2040
2631	Quadruple/swivel	2 ¹ / ₄	57	4 ³ / ₄	121	12	340	—	6	7 ¹ / ₁₆	10	2380	1080	5000	2270
75 mm															
2662	Double/swivel	2 ¹⁵ / ₁₆	75	6	152	14.2	402	5 ⁹ / ₁₆	8	9 ¹ / ₁₆	14	2426	1100	6000	2722
2663	Double/swivel/becket	2 ¹⁵ / ₁₆	75	7	178	14.8	419	5 ⁹ / ₁₆	8	9 ¹ / ₁₆	14	2426	1100	6000	2722
2664	Triple/swivel	2 ¹⁵ / ₁₆	75	6	152	20.5	580	5 ⁹ / ₁₆	8	9 ¹ / ₁₆	14	3639	1650	10000	4535
2665	Triple/swivel/becket	2 ¹⁵ / ₁₆	75	7	178	21.1	599	5 ⁹ / ₁₆	8	9 ¹ / ₁₆	14	3639	1650	10000	4535
2668	Triple/swivel/150 Cam-Matic [®] **	2 ¹⁵ / ₁₆	75	6	152	27.8	788	5 ⁹ / ₁₆	8	1 ¹ / ₂	12	1500	680	3750	1700
2669	Triple/swivel/150 Cam-Matic [®] /becket**	2 ¹⁵ / ₁₆	75	7	178	28.4	805	5 ⁹ / ₁₆	8	1 ¹ / ₂	12	1800	816	4500	2040
2677	Quadruple/swivel	2 ¹⁵ / ₁₆	75	6 ¹ / ₄	159	27.2	772	5 ⁹ / ₁₆	8	9 ¹ / ₁₆	14	3639	1650	10000	4535

**Maximum working loads and breaking loads for blocks based on cam strengths

Carbo Ratchets

Carbo Ratchets allow sailors to hand-hold loaded lines and offer balance between holding power and controlled easing.

Nylon resin sideplates are densely packed with long-glass fibers for a compact block with a high strength-to-weight ratio. Machined aluminum sheaves are Hardkote anodized for strength and corrosion resistance. Eight facets hold line securely. Ball bearings, sheave, and sideplates are UV-stabilized with carbon black for maximum protection.

40 mm

The 40 mm ratchets are ideal for jib sheets and spinnakers where size and weight are critical. The 2608, 2609, and 2614 have on/off switches; other 40 mm ratchets are always in ratchet mode.

57 mm and 75 mm

The 57 mm and 75 mm switchable ratchets provide precise on/off control with accessible, easy-to-operate on/off switches on both sides of the block.

For the ultimate system, mount a switchable ratchet in the cockpit and a boom-mounted Ratchamatic® directly above for double holding power in heavy air and a free-running mainsheet when it's light. The 75 mm provides up to 15:1 holding power; the 57mm 10:1.

Use for:

- Main/jib/spinnaker sheets
- Mainsheet fine-tune
- Traveler controls
- Genoa leads
- Foreguys

Carbo sideplates provide lightweight line control

On/off switch operates from both sides

Cam assembly adjusts and locks in a wide range of positions for crew accessibility



2139

Sheaves offer balance between holding power and controlled easing



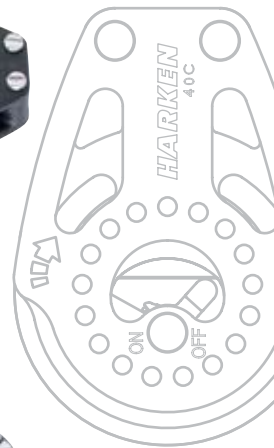
2608
2135
2670



2609
2136
2671



2614
2137
2672



40 mm
Actual Size



2138



2610



2611

Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
40 mm															
2608	Single/swivel	1 ⁹ / ₁₆	40	3 ⁹ / ₈	86	1.7	49	5 ⁹ / ₃₂	4	3 ⁹ / ₈	10	300	136	1000	454
2609	Single/swivel/becket	1 ⁹ / ₁₆	40	4	102	1.8	52	5 ⁹ / ₃₂	4	3 ⁹ / ₈	10	300	136	1000	454
2610	Single/swivel/423 Carbo-Cam®**	1 ⁹ / ₁₆	40	3 ⁹ / ₈	86	4.6	129	5 ⁹ / ₃₂	4	1 ¹ / ₄	6	150	68	300	136
2611	Single/swivel/423 Carbo-Cam®/becket**	1 ⁹ / ₁₆	40	4	102	4.7	132	5 ⁹ / ₃₂	4	1 ¹ / ₄	6	300	136	600	272
2614	Cheek*	1 ⁹ / ₁₆	40	2 ³ / ₄	70	1.6	44	—	—	3 ⁹ / ₈	10	300	136	1000	454
57 mm															
2135	Single/swivel	2 ¹ / ₄	57	4 ¹ / ₁₆	103	3.0	85	3 ¹ / ₁₆	5	3 ⁹ / ₈	10	500	227	2000	907
2136	Single/swivel/becket	2 ¹ / ₄	57	4 ¹⁵ / ₁₆	125	3.3	94	3 ¹ / ₁₆	5	3 ⁹ / ₈	10	500	227	2000	907
2137	Cheek*	2 ¹ / ₄	57	3 ¹ / ₄	83	2.5	71	—	—	3 ⁹ / ₈	10	500	227	2000	907
2138	Single/swivel/150 Cam-Matic®**	2 ¹ / ₄	57	4 ¹ / ₁₆	103	8.7	247	3 ¹ / ₁₆	5	3 ⁹ / ₈	10	300	136	750	340
2139	Single/swivel/150 Cam-Matic®/becket**	2 ¹ / ₄	57	4 ¹⁵ / ₁₆	125	9.0	255	3 ¹ / ₁₆	5	3 ⁹ / ₈	10	600	272	1500	680
75 mm															
2670	Single/swivel	2 ⁵ / ₁₆	75	5 ⁹ / ₈	137	8.0	227	1 ¹ / ₄	6	7 ¹ / ₁₆	12	750	341	3000	1361
2671	Single/swivel/becket	2 ⁵ / ₁₆	75	6 ¹ / ₂	165	8.75	248	1 ¹ / ₄	6	7 ¹ / ₁₆	12	750	341	3000	1361
2672	Cheek*	2 ⁵ / ₁₆	75	4 ¹ / ₁₆	103	6.3	179	—	—	7 ¹ / ₁₆	12	750	341	3000	1361

*Includes RH fasteners and mounting pad. **Maximum working loads and breaking loads for blocks based on cam strengths

Carbo Ratchets



2140



2141



2612

Use with 2654 for a powerful 8:1 purchase



2613



2619



Nacra F18 — Performance Catamarans, Inc. photo

Part No.	Description	Sheave Ø		Length		Weight w/shackle		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
40 mm															
2612	Triple/swivel/423 Carbo-Cam®*	1 ³ / ₁₆	40	3 ¹¹ / ₁₆	94	8.5	242	3 ³ / ₁₆	5	1/4	6	750	340	1500	680
2613	Triple/swivel/423 Carbo-Cam®/becket*	1 ³ / ₁₆	40	4 ⁹ / ₁₆	110	8.6	245	3 ³ / ₁₆	5	1/4	6	900	408	1800	816
2619	Triple/423 Carbo-Cam®/29 mm block/becket*	1 ³ / ₁₆	40	4 ³ / ₄	121	9.5	269	3 ³ / ₁₆	5	1/4	6	900	408	1800	816
57 mm															
2140	Triple/swivel/150 Cam-Matic®*	2 ¹ / ₄	57	4 ¹ / ₁₆	103	15.4	435	3 ³ / ₈	10	1/4	6	1500	680	3750	1700
2141	Triple/swivel/150 Cam-Matic®/becket*	2 ¹ / ₄	57	4 ¹⁵ / ₁₆	125	15.7	445	3 ³ / ₈	10	1/4	6	1800	816	4500	2041

*Maximum working loads and breaking loads for blocks based on cam strengths

Carbo Ratchamatic®

The Carbo Ratchamatic® is a load-sensing ratchet block that rolls freely in both directions under low loads and automatically engages the ratchet as loads increase. Shifting between ratchet and light-air modes is seamless. Unloaded main and jib sheets run out freely during mark roundings and asymmetrical spinnakers free instantly during jibes.

Ratchet engagement may be adjusted to a higher or lower load according to strength and sailing style. The Ratchamatic® cheek block mounts on either port or starboard. The holding power of the 57 mm is as high as 10:1. The 75 mm is up to 15:1.

For the ultimate system, mount a Ratchamatic® on the boom above a cockpit-mounted switchable ratchet to allow the mainsheet to run freely in light air and to double holding power in heavy air.

Use the 2634 with a 402 or 403 swivel arm for a versatile two-speed mainsheet system.

Use for:

Main/Jib Sheets

Asymmetric spinnakers



Ratchet engages automatically

Adjustable ratchet engagement adapts block to a variety of applications

Eight-faceted, Hardkote-anodized aluminum sheave holds line securely

Durable stainless steel pawl for high-load conditions



2625
2680

75 mm
Actual Size

57 mm
Actual Size



2628
2684



2633
2682



2626
2681



2627
2683



Laser® — Chris Haliburton photo

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load		Holding power w/180° wrap 50 lb (23 kg)
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
57 mm																
2625	Single	2¼	57	4½	103	3.7	104	⅜	10	⅜	5	500	227	2000	907	10:1
2626	Single/becket	2¼	57	4½	125	4.0	113	⅜	10	⅜	5	500	227	2000	907	10:1
2627	Single/150 Cam-Matic®‡	2¼	57	4½	103	9.4	266	⅜	10	⅜	5	300	136	750	340	10:1
2628	Single/150 Cam-Matic®/becket‡	2¼	57	4½	125	9.7	275	⅜	10	⅜	5	600	272	1500	680	10:1
2633	Cheek**	2¼	57	3¼	83	3.1	89	⅜	10	—	—	500	227	2000	907	10:1
75 mm																
2680	Single	2½	75	5½	137	8.4	238	7/16	12	¼	6	750	341	3000	1361	15:1
2681	Single/becket	2½	75	6½	165	9.0	255	7/16	12	¼	6	750	341	3000	1361	15:1
2682	Cheek**	2½	75	4½	103	6.5	184	7/16	12	—	—	750	341	3000	1361	15:1
2683	Single/150 Cam-Matic®‡	2½	75	5½	138	15.5	440	7/16	12	¼	6	300	136	750	340	15:1
2684	Single/150 Cam-Matic®/becket‡	2½	75	6½	165	15.5	440	7/16	12	¼	6	600	272	1500	680	15:1

**Includes RH fasteners and mounting pad. ‡Maximum working loads and breaking loads for blocks based on cam strengths

Carbo Ratchamatic®



"Twelve" One Design, Studio Lostuzzi, SeaTechnology Srl — Max Ranchi photo

Use with 2631
for a powerful
8:1 purchase



Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load		Holding power w/180° wrap 50 lb (23 kg)
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
57 mm																
2629	Triple/150 Cam-Matic®‡	2 1/4	57	4 1/16	103	14.9	421	3/8	10	1/4	6	1500	680	3750	1700	10:1
2630	Triple/150 Cam-Matic®/becket‡	2 1/4	57	4 15/16	125	15.2	431	3/8	10	1/4	6	1800	816	4500	2041	10:1
2632	Triple/150 Cam-Matic®/40 mm block/becket‡	2 1/4	57	6 1/8	156	18.3	520	3/8	10	1/4	6	1800	816	4500	2041	10:1
2634	Double	2 1/4	57	4 9/16	116	7.2	204	3/8	10	3/16	5	750	340	1875	851	10:1
75 mm																
2685	Triple/150 Cam-Matic®‡	2 5/16	75	6 3/16	137	31.0	879	7/16	12	5/16	8	1500	680	3750	1700	15:1
2686	Triple/150 Cam-Matic®/becket‡	2 5/16	75	6 1/2	165	31.6	896	7/16	12	5/16	8	1800	816	4500	2041	15:1
2687	Triple/150 Cam-Matic®/57 mm block/becket‡	2 5/16	75	6 1/2	165	34.7	984	7/16	12	5/16	8	1800	816	4500	2041	15:1

‡Maximum working loads and breaking loads for blocks based on cam strengths

Small Boat 57 & 75 mm Flip-Flop Blocks

NEW: 2142, 2143

Small Boat Flip-Flop blocks pivot around the line axis to keep line close to the deck. Hinged construction allows for various lead angles.

Lightweight, machined 6061-T6 aluminum cheeks pivot on fiber-reinforced plastic chocks. Sheave runs exclusively on a ball bearing system for fast trim and release under any load. Ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection.

Ratchamatic® versions roll freely in both directions under low loads and automatically engage a ratchet mechanism as loads increase, giving sailors a holding power of up to 15:1. The ratchet engagement can be adjusted to a higher or lower load depending on the sailor's strength, sailing style and system usage.

Reversible cam arms adjust and lock in a wide range of positions for crew accessibility and to accommodation of changing lead angles.

Cam arms lock in a wide range of positions

Hardkote-anodized aluminum sideplates for lightweight strength

Available with plain sheaves or Ratchamatic®



2145
2689



Block pivots around the line axis to keep line entry height low

Open 5.70, Finot-Conq Architects, Phileas Boats — Pierrick Contin photo



2142
2678

2143
2679

2144
2688

Part No.	Description	Sheave Ø		Width		Length		Height		Max line Ø		Weight oz	Weight g	Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	in	mm	in	mm			lb	kg	lb	kg
2142	57 mm	2 1/4	57	2	50	4 5/16	110	2 1/8	54	3/8	10	5	141	792	360	1584	718
2143	57 mm/150 Cam	2 1/4	57	2 5/8	66	4 5/16	110	4 5/16	110	3/8	10	11	304	300	136	600	272
2144	57 mm Ratchamatic®	2 1/4	57	2	50	4 5/16	110	2 5/8	67	3/8	10	5.5	156	500	227	1000	554
2145	57 mm Ratchamatic®/150 Cam-Matic®*	2 1/4	57	2 5/8	66	4 5/16	110	4 3/16	106	3/8	10	12	329	300	136	600	272
2678	75 mm	3	75	2 1/2	64	5 5/8	143	3 3/4	95	9/16	14	9.7	275	1213	550	2426	1100
2679	75 mm/150 Cam-Matic®*	3	75	2 5/8	67	5 5/8	143	5 5/16	141	9/16	14	17	485	300	136	600	272
2688	75 mm Ratchamatic®	3	75	2 1/2	64	5 5/8	143	3 1/2	89	7/16	12	11	304	750	340	1500	680
2689	75 mm Ratchamatic®/150 Cam-Matic®*	3	75	2 5/8	67	5 5/8	143	5 5/8	137	7/16	12	18	514	300	136	600	272

*Maximum working loads and breaking loads for blocks based on cam strengths

16 mm

The 16 mm is Harken's® smallest block. It is perfect for small synthetic control lines found on high-tech dinghies.

The patented bearing system uses stainless steel balls in a captive grooved race and has a 250 lb (113 kg) safe working load—the highest on the market compared to similarly sized blocks.

The 442 uses a spacer and the 404 uses an O-ring to keep the line in the sheave during intermittent loading.

The 467 uses a narrow sheave for extremely small control lines and has a ferrule head for soft attachments.

Use for:

Dinghy control lines
Big Boat leech lines
Downhauls
Traveler controls

Spinnaker pole trip lines
Outhauls
Cunninghams
Halyards on prams

Headstrap spreads load for a compact, tough block

Narrow sheave for dinghy control lines

Ferrule head for soft attachment

Hardened stainless steel inner race for maximum strength-to-weight ratio

High-strength stainless steel sideplates distribute load evenly, resist corrosion



467

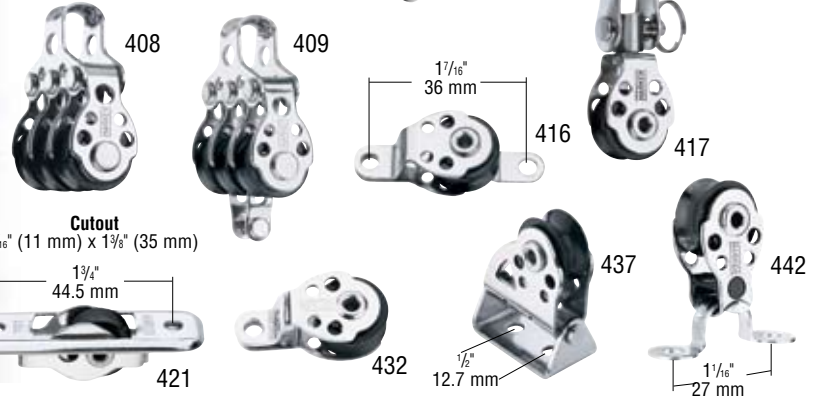


Cutout
7/16" (11 mm) x 1 1/8" (41 mm)
2 3/8"
60.3 mm



368

Actual Size



Cutout
7/16" (11 mm) x 1 3/8" (35 mm)
1 3/4"
44.5 mm



421



416



Optimist, McLaughlin Boat Works — Bob Nagy photo

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg
368	In-line exit*	5/8	16	3	76	.94	27	7/32	5	250	113	1200	544
376	Forkhead	5/8	16	1 1/8	29	.38	11	7/32	5	250	113	1200	544
391	Hook-in halyard	5/8	16	1 3/8	41	.5	13	7/32	5	250	113	400	181
404	Single***	5/8	16	1 1/8	29	.33	10	7/32	5	250	113	1200	544
405	Single/becket	5/8	16	1 1/2	38	.44	12	7/32	5	250	113	1200	544
406	Double	5/8	16	1 11/16	43	.94	27	7/32	5	450	204	1200	544
407	Double/becket	5/8	16	2 1/8	54	1	28	7/32	5	450	204	1200	544
408	Triple	5/8	16	1 13/16	46	1.44	41	7/32	5	700	318	1200	544
409	Triple/becket	5/8	16	2 1/4	57	1.5	43	7/32	5	700	318	1200	544
416	Cheek*	5/8	16	1 13/16	46	.44	12	7/32	5	250	113	1200	544
417	Single/swivel**	5/8	16	1 13/16	46	.63	18	7/32	5	250	113	750	339
421	Thru-deck*	5/8	16	2 3/8	60	.63	18	7/32	5	250	113	1200	544
432	Pivot cheek block*	5/8	16	1 3/8	35	.38	11	7/32	5	250	113	750	339
437	Flip-flop block*	5/8	16	1 5/8	34	.75	21	7/32	5	250	113	1200	544
442	Block/eyestay assembly*	5/8	16	1 3/8	35	.44	12	7/32	5	250	113	1200	544
467	Narrow ferrule head	5/8	16	1 15/32	37	.44	12	5/32	4	250	113	750	339

*#8 (4 mm) RH fasteners **Shackle pin diameter 5/32" (4 mm) ***Contact Harken® for replacement O-rings HSB340

Micro

Low-friction Micro blocks are compact and lightweight. They are ideal for sailboards, smaller dinghies, and lightly loaded control lines on boats of all sizes.

Micro block sheaves run exclusively on ball bearing systems for fast trim and release under any load. Delrin® ball bearings and sideplates are UV stabilized with carbon black for maximum protection. Stainless steel sideplates add strength.

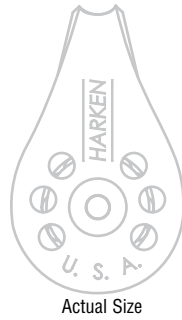
Use for:

- Cunninghams/outhauls
- Vangs
- Traveler controls
- Barberhaulers
- Flag halyards
- Leech cords
- Lead car return tackles

Offset sheaves prevent lines from chafing each other inside block

244

Large-diameter Delrin® sheaves increase mechanical advantage



Micro fiddle with rounded V-jam, or triples with cam make compact self-cleaning tackles

Spacer keeps line in sheave



Sheaves see page 86.

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
224	Single	7/8	22	1 1/2	38	.5	14	1/4	6	—	—	200	91	1200	544
225	Single/becket	7/8	22	2	51	.75	21	1/4	6	—	—	200	91	1200	544
226	Double	7/8	22	2	51	1.5	43	1/4	6	—	—	350	159	1200	544
227	Double/becket	7/8	22	2 1/2	64	1.5	43	1/4	6	—	—	350	159	1200	544
228	Triple	7/8	22	2	51	2	57	1/4	6	—	—	500	227	1200	544
229	Triple/becket	7/8	22	2 1/2	64	2.25	64	1/4	6	—	—	500	227	1200	544
230	Triple/423 Carbo-Cam®	7/8	22	2	51	3.5	99	1/4	6	—	—	500	227	1200	544
231	Triple/423 Carbo-Cam®/becket	7/8	22	2 1/2	64	3.5	99	1/4	6	—	—	500	227	1200	544
232	Traveler	7/8	22	2 3/4	71	1.25	35	1/4	6	—	—	200	91	1200	544
233	Cheek***	7/8	22	2 1/2	64	.75	21	1/4	6	—	—	200	91	1200	544
234	Single/shackle	7/8	22	2 1/4	57	.75	21	1/4	6	3/16	5	200	91	1200	544
235	Single/shackle/becket	7/8	22	2 3/4	71	1	28	1/4	6	3/16	5	200	91	1200	544
242	Thru-deck***	7/8	22	2 5/8	67	1	28	1/4	6	—	—	200	91	1200	544
243	Upright***	7/8	22	1 1/2	38	1	28	1/4	6	—	—	200	91	1200	544
244	Fiddle/V-jam*	7/8	22	3 1/2	89	2	57	1/4	6	3/16	5	350	159	1200	544
245	Fiddle/V-jam/becket**	7/8	22	4	102	2	57	1/4	6	3/16	5	350	159	1200	544
292	Single/swivel	7/8	22	2 3/8	60	1	28	1/4	6	5/32	4	200	91	1200	544
377	Forkhead	7/8	22	1 21/32	42	.56	16	1/4	6	—	—	200	91	1200	544
443	Block/eyestraps assembly‡	7/8	22	1 3/4	45	.56	16	1/4	6	—	—	200	91	1000	454

*Use w/225 or 235 **Use w/226 ***#10 (5 mm) RH fasteners ‡#8 (4 mm) RH fasteners

Classic Blocks

STRONG, DEPENDABLE, EXCEPTIONALLY FREE RUNNING

Own an older boat you love? Systems still work great, but you'd like to replace blocks with performance hardware that will enhance its traditional look? Harken's® Classic blocks are the answer. Strong, dependable and exceptionally free running, these blocks are the foundation of the Harken® line, with a vast library of hardware choices available to complement your boat's style.

Classic blocks come in multiple sizes, dozens of configurations and are ideal for almost every trimming task.



1

2

1. Three-Way Head

Set screw in three-way head locks shackle in front or side positions, or lets block swivel to keep line from twisting.

2. Free-Running Ball Bearings

Free-running Delrin® ball bearings roll on flat races for fast trim and release under high or low loads.

DETAILS MAKE THE DIFFERENCE

LONG LASTING PROTECTION

Ball bearings, sheave and sideplates are UV-stabilized with carbon-black additive for maximum protection.

HIGH-STRENGTH STRAPS

Stainless steel straps reinforce blocks and resist corrosion.

Bullet

Low-friction Bullet blocks lead control lines aft. They are compact and lightweight, with fast trim and release under high or low loads. A range of styles lets these blocks adapt to almost all control line applications.

Delrin® ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection.

Wire Bullet blocks use roller bearings to carry higher loads and feature Hardkote-anodized Teflon® impregnated aluminum sheaves for strength and corrosion resistance. Mast exit blocks with cams used for halyard controls and under boom mainsheets.

Pivoting exit blocks with cams are often used for halyard controls and as “head knockers” for sheeting directly from the boom. The 140 has a high safe working load and is designed for spar-mounted halyards and control lines. The 141 is also ideal for control lines.

Use for:

Outhauls
Barberhaulers
Traveler controls
Flag halyards

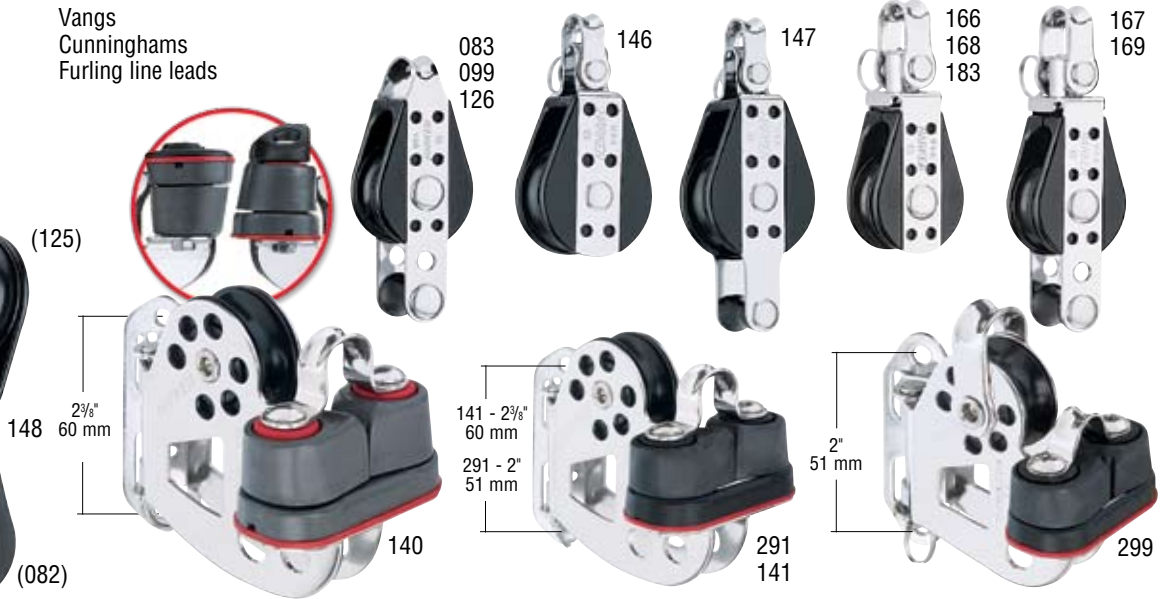
Vangs
Cunninghams
Furling line leads

Integrated shackle minimizes block length for purchase power in limited space

High-strength stainless steel straps reinforce blocks



082
098
125



Sheaves see page 86.

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
Bullet															
082	Single	1 1/8	29	2	51	1	28	5/16	8	—	—	300	136	2000	907
083	Single/becket	1 1/8	29	2 3/4	70	1.25	35	5/16	8	—	—	300	136	2000	907
098	Wire single	1 1/8	29	2	51	1	28	5/16	8	—	—	500	227	2000	907
099	Wire single/becket	1 1/8	29	2 3/4	70	1.25	35	5/16	8	—	—	500	227	2000	907
166	Single/swivel	1 1/8	29	2 3/4	70	1.5	43	5/16	8	3/16	5	300	136	2000	907
167	Single/swivel/becket	1 1/8	29	3 1/2	89	1.75	50	5/16	8	3/16	5	300	136	2000	907
183	Wire swivel	1 1/8	29	2 3/4	70	1.5	43	5/16	8	3/16	5	500	227	2000	907
291	Pivoting exit/472 Carbo-Cam®*	1 1/8	29	2 3/4	70	3.75	106	1/4	6	—	—	150	68	2000	907
299	Pivoting exit/472 Carbo-Cam®/becket*	1 1/8	29	2 3/4	70	4	113	1/4	6	3/16	5	150	68	2000	907
Big Bullet															
125	Single	1 1/2	38	2 1/2	64	1.5	43	3/8	10	—	—	300	136	2000	907
126	Single/becket	1 1/2	38	3 1/2	89	2	57	3/8	10	—	—	300	136	2000	907
140	Pivoting exit/150 Cam-Matic®*	1 1/2	38	3 1/8	79	8	227	3/8	10	—	—	300	136	2000	907
141	Pivoting exit/365 Carbo-Cam®*	1 1/2	38	3 1/8	79	7	206	3/8	10	—	—	200	91	2000	907
146	Single/shackle	1 1/2	38	3 1/8	79	2	57	3/8	10	3/16	5	300	136	2000	907
147	Single/shackle/becket	1 1/2	38	4	102	2.25	64	3/8	10	3/16	5	300	136	2000	907
148	Traveler	1 1/2	38	4 1/4	108	2.5	71	3/8	10	—	—	300	136	2000	907
168	Single/swivel	1 1/2	38	3 1/4	83	2.25	64	3/8	10	3/16	5	300	136	2000	907
169	Single/swivel/becket	1 1/2	38	4	102	2.5	71	3/8	10	3/16	5	300	136	2000	907

*#10 (5 mm) RH fasteners

Bullet



The 392 is used for a downhaul/cunningham assembly on catamarans and as a base for a 4:1 double-ended system



Persson Snipe, DB Marine — Michele Postinghei photo



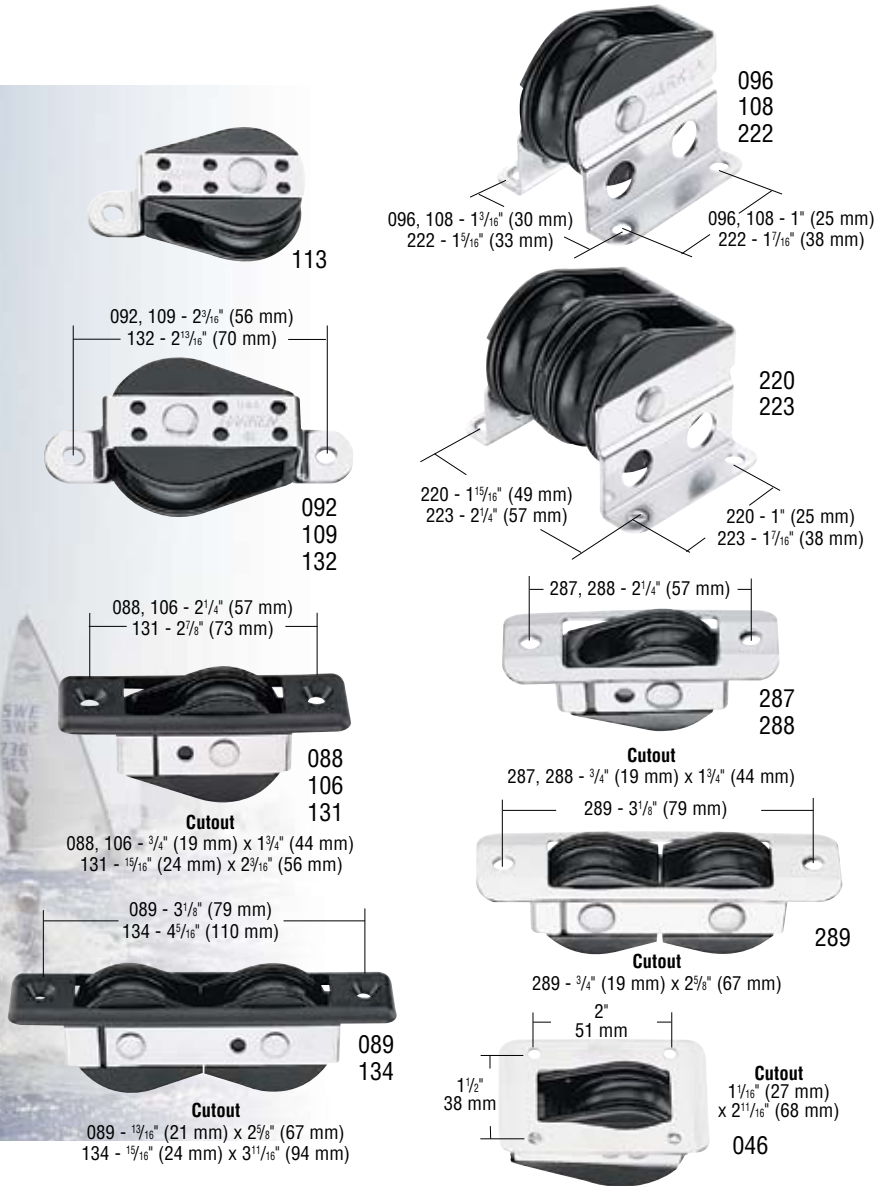
Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
Bullet															
084	Double	1 1/8	29	2 3/4	70	2.5	71	5/16	8	3/16	5	400	181	2000	907
085	Double/becket	1 1/8	29	3 1/2	89	2.75	78	5/16	8	3/16	5	400	181	2000	907
086	Triple	1 1/8	29	3	76	3.75	106	5/16	8	3/16	5	600	272	2000	907
087	Triple/becket	1 1/8	29	3 3/4	95	4.5	128	5/16	8	3/16	5	600	272	2000	907
094	Triple/365 Carbo-Cam®	1 1/8	29	3 3/4	95	7	198	5/16	8	3/16	5	600	272	2000	907
095	Triple/365 Carbo-Cam®/becket	1 1/8	29	4	102	7.25	205	5/16	8	3/16	5	600	272	2000	907
100	Double wire	1 1/8	29	2 1/4	70	2.75	78	5/16	8	3/16	5	750	340	2000	907
197	Exit/150 Cam-Matic® (port/stbd)*	1 1/8	29	3	76	4.5	128	5/16	8	—	—	300	136	2000	907
392	4:1 Downhaul/468 Cam-Matic®*	1 1/8	29	8	203	11	313	1/4	6	—	—	400	181	2000	907
Big Bullet															
127	Double	1 1/2	38	3 1/2	89	4.25	120	3/8	10	1/4	6	600	272	2000	907
128	Double/becket	1 1/2	38	4 1/2	114	4.75	135	3/8	10	1/4	6	600	272	2000	907
129	Triple	1 1/2	38	3 3/4	95	6.5	184	3/8	10	1/4	6	750	340	2000	907
130	Triple/becket	1 1/2	38	4 3/4	121	6.75	191	3/8	10	1/4	6	750	340	2000	907
362	Single/472 Carbo-Cam®/becket	1 1/2	38	4 3/16	106	5	142	1/4	6	3/16	5	150	68	2000	907

*#10 (5 mm) RH fasteners

Bullet & Dinghy



40^{ème} Semaine Olympique Française de Voile — Linda Wright photo



Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
Bullet															
088	Thru-deck*	1 ¹ / ₈	29	3	76	1.25	35	5 ⁵ / ₁₆	8	—	—	300	136	2000	907
089	In-line exit*	1 ¹ / ₈	29	3 ³ / ₄	95	1.75	50	5 ⁵ / ₁₆	8	—	—	400	181	2000	907
092	Cheek**	1 ¹ / ₈	29	2 ⁷ / ₈	73	1.25	35	5 ⁵ / ₁₆	8	—	—	300	136	2000	907
096	Upright**	1 ¹ / ₈	29	1 ¹ / ₂	38	1.5	43	5 ⁵ / ₁₆	8	—	—	300	136	2000	907
106	Wire thru-deck*	1 ¹ / ₈	29	3	76	1.25	35	5 ⁵ / ₁₆	8	—	—	500	227	2000	907
108	Wire upright**	1 ¹ / ₈	29	1 ¹ / ₂	38	1.5	43	5 ⁵ / ₁₆	8	—	—	500	227	2000	907
109	Wire cheek**	1 ¹ / ₈	29	2 ⁷ / ₈	73	1.25	35	5 ⁵ / ₁₆	8	—	—	500	227	2000	907
113	Pivoting cheek**	1 ¹ / ₈	29	1 ¹ / ₈	29	1	28	5 ⁵ / ₁₆	8	—	—	300	136	2000	907
220	Double upright**	1 ¹ / ₈	29	1 ¹ / ₂	38	2.25	64	5 ⁵ / ₁₆	8	—	—	400	181	2000	907
287	Thru-deck**	1 ¹ / ₈	29	3	76	1.25	35	5 ⁵ / ₁₆	8	—	—	300	136	2000	907
288	Wire thru-deck**	1 ¹ / ₈	29	3	76	1.5	43	5 ⁵ / ₁₆	8	—	—	400	181	2000	907
289	In-line exit**	1 ¹ / ₈	29	3 ³ / ₄	95	2	60	5 ⁵ / ₁₆	8	—	—	400	181	2000	907
Big Bullet															
131	Thru-deck*	1 ¹ / ₂	38	3 ¹ / ₂	89	2.25	64	3 ³ / ₈	10	—	—	300	136	2000	907
132	Cheek*	1 ¹ / ₂	38	3 ¹ / ₂	89	2	57	3 ³ / ₈	10	—	—	300	136	2000	907
134	In-line exit*	1 ¹ / ₂	38	5	127	3.25	92	3 ³ / ₈	10	—	—	600	272	2000	907
222	Upright**	1 ¹ / ₂	38	2 ¹ / ₄	57	2.5	71	3 ³ / ₈	10	—	—	300	136	2000	907
223	Double upright**	1 ¹ / ₂	38	2 ¹ / ₄	57	3.25	92	3 ³ / ₈	10	—	—	600	272	2000	907
Dinghy															
046	Thru-deck‡	1 ³ / ₄	44	3	76	4	113	3 ³ / ₈	10	—	—	350	159	2000	907

*#10 (5 mm) FH fasteners **#10 (5 mm) RH fasteners ‡#8 (4 mm) RH fasteners Contact Harken for other dinghy 1¹/₄" (44 mm) blocks

2.25 in & 3.00 in

The 2.25 in (57 mm) and 3.00 (76 mm) are compact and lightweight, with fast trim and release under high or low loads. Perfect for dinghies, scows, beachcats and iceboats, as well as small offshore racers and cruisers.

Delrin® ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection.

The 3.00 in (76 mm) single block comes in high-load or low-load configurations. High-load blocks feature Torlon® bearings and forged stainless steel shackles.

The wire version features Hardkote-anodized, Teflon®-impregnated aluminum sheaves for strength and corrosion resistance.

Use for:

- Main and jib sheets
- Spinnaker halyards
- Control lines

Shackle can lock in either direction or can swivel to keep line from twisting

High-strength stainless steel straps reinforce blocks

Multiple sheave configurations use a bridge coupler to spread the load

Removable becket allow attachment of spliced line



002

3.00" Actual Size



US Olympic 2.4 m, John Ruf — Walter Cooper photo



001

005



011

202



012

013 - 1 1/8" (41 mm)



013

1 1/2" 38 mm

3/16" 14 mm



2 1/2" 63 mm

047

Cutout 1 1/16" x 3/4" (27 mm x 83 mm)

2.25" Actual Size



003



004



076



1 1/2" 38 mm

206

1 1/2" 38 mm

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
2.25"															
001	Single	2 1/4	57	4 1/4	108	4 1/2	128	7/16	12	3/16	5	500	227	2500	1134
002	Single/becket	2 1/4	57	5	127	5	142	7/16	12	3/16	5	500	227	2500	1134
003	Double	2 1/4	57	4 1/2	114	8 1/2	241	7/16	12	1/4	6	1000	454	3000	1361
004	Double/becket	2 1/4	57	5 1/2	138	9 1/2	269	7/16	12	1/4	6	1000	454	3000	1361
013	Cheek†*	2 1/4	57	3 1/4	83	5	142	7/16	12	—	—	500	227	2500	1134
047	Thru-deck*	2 1/4	57	3 1/2	89	5 1/2	156	7/16	12	—	—	500	227	2500	1134
076	Triple/becket	2 1/4	57	5 3/4	146	13 1/2	383	7/16	12	1/4	6	1200	544	3000	1361
206	Upright lead**	2 1/4	57	3 1/4	83	5 1/2	156	7/16	12	—	—	500	227	2500	1134
3.00"															
005	Single	3	76	5	127	7	198	7/16	12	3/16	5	750	340	2500	1134
011	Heavy-duty single	3	76	5 1/4	133	8	227	7/16	12	1/4	6	750	340	3000	1361
012	Heavy-duty single/becket	3	76	6 1/4	159	8 1/2	241	7/16	12	1/4	6	750	340	3000	1361
202	Wire single	3	76	5 1/4	133	9 1/2	269	7/16	12	1/4	6	850	386	3000	1361

†Includes fasteners & mounting pad *#8 (4 mm) RH fasteners **#10 (5 mm) RH fasteners

Hexaratchets®

Hexaratchets® grip loaded sheets, yet allow sailors to ease and trim quickly and with complete control. A switch on the side engages and disengages the ratchet mechanism.

Ratchets feature Hardkote-anodized, Teflon®-impregnated eight-sided sheaves machined from solid aluminum for strength and corrosion resistance. Free-rolling Delrin® ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection. High-strength stainless steel straps reinforce blocks.

Reverse Ratchets

Use the 043 or 044 reverse ratchets with the 019 and 009 singles or 050 single with becket on spinnaker and jib sheets where ratchets rotate in opposite directions and on/off switches face up.

Hexa-Cat Bases

Combine the 193 and 170 Hexa-Cat bases with Big Bullet or 2.25 in (57 mm) blocks for purchases from 5:1 to 8:1.

Use for:

- Mainsheet systems
- Jib sheets
- Spinnaker sheets
- Vangs
- Furling Lines



Cam cleats reverse for up or down engagement/disengagement

Ratchet on/off switch works even when loaded.



Removable becket allows insertion of spliced eye

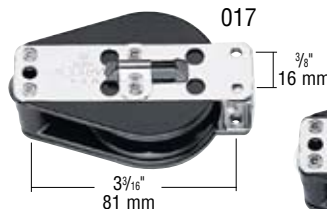
188

Eight-sided aluminum sheave for 10:1 or 15:1 holding power with 180° wrap

Shackle can lock in either direction or can swivel to keep line from twisting



015



017



018



009



016



050



019



043



044



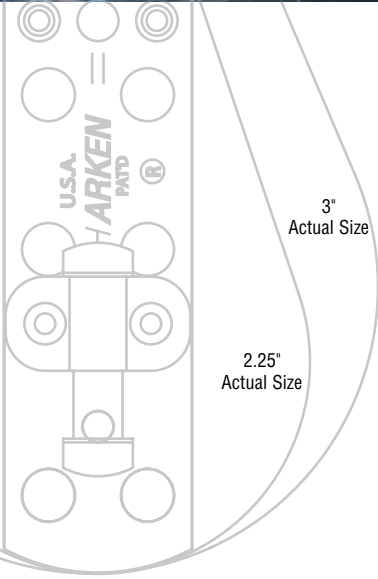
187

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load		Holding power w/180° wrap 50 lb (23 kg)	Turns
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg		
2.25"																	
017	Cheek (stbd)‡	2 1/4	57	3 3/4	95	4 1/2	128	3/8	10	—	—	500	227	1000	454	10:1	Clockwise
018	Cheek (port)‡	2 1/4	57	3 3/4	95	4 1/2	128	3/8	10	—	—	500	227	1000	454	10:1	Counterclockwise
019	Single	2 1/4	57	4 1/4	108	5	142	3/8	10	3/16	5	500	227	2000	907	10:1	Clockwise
043	Single	2 1/4	57	4 1/4	108	5	142	3/8	10	3/16	5	500	227	2000	907	10:1	Counterclockwise
187	Single/150 Cam-Matic®	2 1/4	57	4 1/4	108	10 1/2	298	3/8	10	3/16	5	500	227	2000	907	10:1	Clockwise
188	Single/150 Cam-Matic®/becket	2 1/4	57	5	127	11	312	3/8	10	3/16	5	500	227	2000	907	10:1	Clockwise
3.00"																	
009	Single	3	76	5	127	8 1/2	241	7/16	12	3/16	5	750	341	2000	907	15:1	Clockwise
015	Cheek (stbd)‡	3	76	4	102	7 1/2	213	7/16	12	—	—	750	341	1500	680	15:1	Clockwise
016	Cheek (port)‡	3	76	4	102	7 1/2	213	7/16	12	—	—	750	341	1500	680	15:1	Counterclockwise
044	Single	3	76	5	127	8 1/2	241	7/16	12	3/16	5	750	341	2000	907	15:1	Counterclockwise
050	Single/becket	3	76	6	152	9	255	7/16	12	3/16	5	750	341	2000	907	15:1	Clockwise

‡Includes #8 (4 mm) RH fasteners and mounting pad

Hexaratchets®

40^{ème} Semaine Olympique Française de Voile — Linda Wright photo








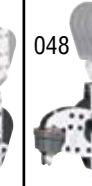


Hexa-Cat maximum working loads

	Base	5:1		6:1		7:1		8:1	
		lb	kg	lb	kg	lb	kg	lb	kg
Little Hexa-Cats	193	1100	499	1100	499	1250	567	1250	567
Hexa-Cats	170	1500	680	1500	680	1500	680	1500	680

Boom blocks (single block on boom)

5:1		6:1		7:1		8:1	
Little Hexa-Cat	Hexa-Cat	Little Hexa-Cat	Hexa-Cat	Little Hexa-Cat	Hexa-Cat	Little Hexa-Cat	Hexa-Cat
128	004/2603/ 2663	129	048/2604 or 2664	130	076/2605 or 2665	2654	2677 2631

Boom blocks (multiple blocks on boom)

126/125	001/002 or 2601/2600 2660/2661	125/127	001/003 or 2602/2600 2662/2660	126/127	002/003 or 2603/2600 2663/2660	2 x 127	2 x 003 or 2 x 2602 2 x 2662
							
193	170	193	170	193	170	193	170

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load		Use with
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
2.25"																
194	Triple/light-duty/swivel/150 Cam-Matic®	2 1/4	57	4 1/2	114	18	510	7/16	12	1/4	6	500	227	2000	907	004 - 5:1/048 - 6:1
397	Double	2 1/4	57	4 1/8	105	10	284	3/8	12	3/16	5	750	341	2500	1134	—
Bases																
170	Hexa-Cat/150 Cam-Matic®	3	76	7 1/4	184	16 1/2	468	7/16	12	1/4	6	—	—	3000	1361	—
193	Little Hexa-Cat/150 Cam-Matic®	2 1/4	57	5 3/4	146	12	340	3/8	10	1/4	6	—	—	2500	1134	—

Fiddle

Low-friction Fiddle blocks build three- and four-part purchases. They come in a variety of configurations, including Fiddles with Cam-Matic cleats on adjustable arms and Fiddles with on/off Hexaratchet® switches that toggle the ratchet mechanism. Fast trim and release under high or low loads.

Ratchets grip loaded sheets, yet allow line to be eased with complete control. They feature Hardkote-anodized, Teflon®-impregnated eight-sided sheaves machined from solid aluminum for strength and corrosion resistance. Delrin® ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection. High-strength stainless steel straps reinforce blocks.

For easy removal, add a 111 snap shackle to the Little Fiddle and a 112 to the Fiddle.

Use for:
Mainsheets
Vangs

Removable becket allows insertion of spliced eye

Offset sheaves prevent lines from chafing each other inside block

Cam arms adjust to change angle of line into cam

Ratchet on/off switch works even when loaded

Cam reverses for up or down engagement/disengagement



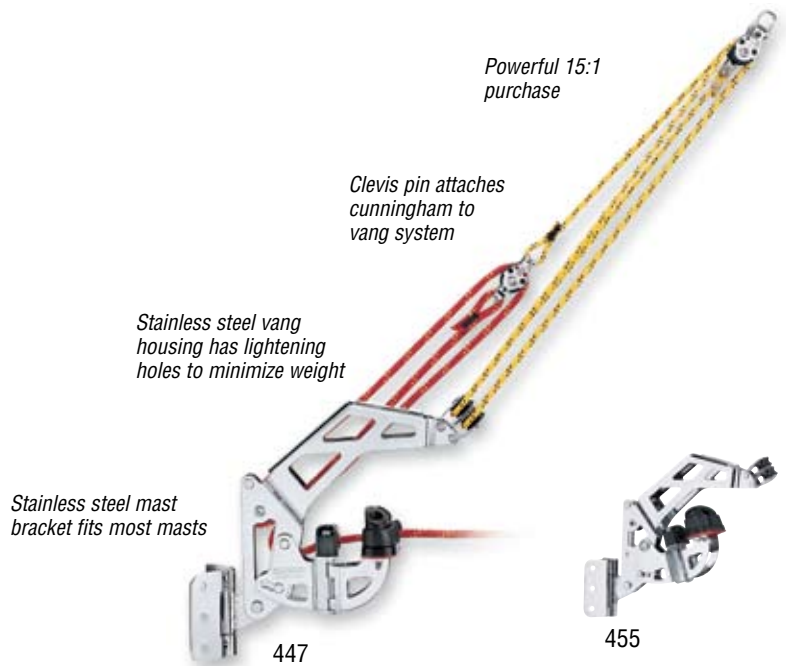
Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load		Use with
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
Little Fiddle																
053	Little Fiddle	2 1/4	57/38	6	152	6 1/2	184	3/8	10	3/16	5	500	227	2000	907	002 for 3:1
054	Little Fiddle/becket	2 1/4	57/38	6 3/4	171	7	198	3/8	10	3/16	5	500	227	2000	907	053 for 4:1
055	Little Fiddle/ratchet	2 1/4	57/38	6	152	7	198	3/8	10	3/16	5	500	227	2000	907	002 for 3:1
056	Little Fiddle/ratchet/becket	2 1/4	57/38	6 3/4	171	7 1/2	213	3/8	10	3/16	5	500	227	2000	907	053 for 4:1
057	Little Fiddle/150 Cam-Matic®	2 1/4	57/38	6	152	12	340	3/8	10	3/16	5	500	227	2000	907	002 for 3:1
058	Little Fiddle/150 Cam-Matic®/becket	2 1/4	57/38	6 3/4	171	12 1/2	354	3/8	10	3/16	5	500	227	2000	907	053 for 4:1
059	Little Fiddle/ratchet/150 Cam-Matic®	2 1/4	57/38	6	152	12	340	3/8	10	3/16	5	500	227	2000	907	002 for 3:1
060	Little Fiddle/ratchet/150 Cam-Matic®/becket	2 1/4	57/38	6 3/4	171	13	367	3/8	10	3/16	5	500	227	2000	907	053 for 4:1
Fiddle																
028	Fiddle	3 1/4	76/44	7 1/4	184	11	312	3/8	10	1/4	6	750	340	2500	1134	2661 for 3:1
030	Fiddle/becket	3 1/4	76/44	8 1/2	241	11 1/2	326	3/8	10	1/4	6	750	340	2500	1134	028 for 4:1
038	Fiddle/150 Cam-Matic®/becket	3 1/4	76/44	8 1/2	241	16 1/2	468	3/8	10	1/4	6	750	340	2500	1134	2661 for 3:1
042	Fiddle/ratchet/150 Cam-Matic®/becket	3 1/4	76/44	8 1/2	241	18	510	3/8	10	1/4	6	750	340	2500	1134	028 for 4:1

Dinghy Vang System

The Dinghy Vang comes pre-reeved with low-stretch polyester line. It is constructed with a 3:1 cascade inside a 5:1 purchase for a powerful 15:1 system.

16 mm blocks handle high loads. A Micro Carbo-Cam® allows precise trimming; it's easy to cleat because it pivots for a fair lead and angles up and down to accommodate different mounting heights.

The Dinghy Vang has a maximum mast-to-boom distance of 30 in (760 mm). A simple line adjustment shortens the system.



Part No.	Description	Length		Weight		Max sail area		Maximum working load		Breaking load	
		in	mm	oz	g	ft²	m²	lb	kg	lb	kg
447	System/423 Carbo-Cam®	30	760	20	567	125	11.6	450	204	1200	544
455	Lower unit/423 Carbo-Cam®*	9	229	15	425	125	11.6	450	204	1200	544

*Order your own line, a 407 and 405 block to complete system

Two-Speed Mainsheet Systems

Harken gross-trim/fine-tune mainsheet systems are easy to install and use. These optimized systems decrease overall line clutter because they use less line than traditional gross-trim/fine-tune systems. For fast trimming, pull both tails of the mainsheet. To fine-tune or to trim using a higher purchase, pull a single tail.

Two-speed mainsheet systems come in three configurations for boats from 22 ft to 39 ft (6.5 m to 11.8 m), with mains as large as 350 ft² (32.4 m²).

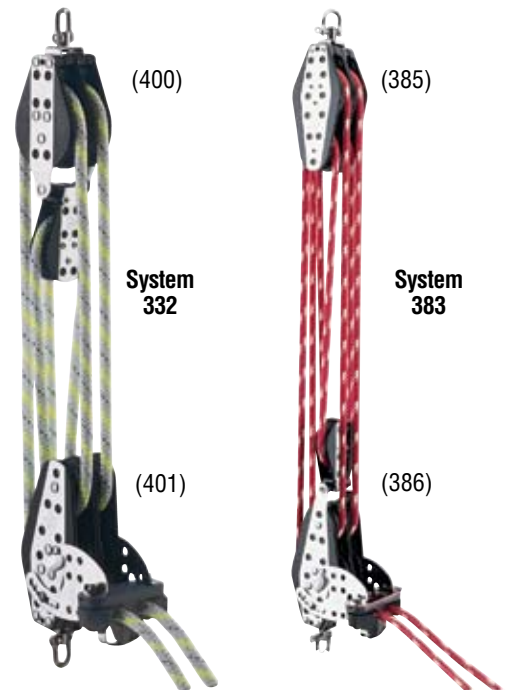
Systems

Part No.	Description	Line Ø				Max mainsail area			
		Min		Max		End-boom		Mid-boom	
		in	mm	in	mm	ft²	m²	ft²	m²
332	3:1/6:1 Self-contained system*	5/16	8	3/8	10	240	22.3	180	16.9
383	4:1/8:1 Self-contained system*	5/16	8	3/8	10	350	32.4	275	25.5

*Line not included

Components

Part No.	Description	Sheave Ø				Length		Weight	
		Primary		Secondary		in	mm	oz	g
385	Double fiddle	3	76	1 3/4	44	7 3/4	197	21	595
386	Double fiddle/ratchet/cross block/412 Cam-Matic®	3	76	2 1/4/1 3/4	57/44	11 1/2	292	37	1049
400	Double/cross block	3	76	2 1/4	57	9 1/2	241	22	625
401	Double ratchet/fiddle/412 Cam-Matic®	3	76	1 3/4	44	7 1/4	184	31	885



Ordering Midrange Blocks

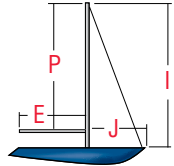
1. Determine block size and type

The tables below are guidelines for typical applications. Additional rigging tips are available at <http://www.harken.com>.

2. Contact

If you have any questions, please contact your dealer or Harken Technical Service.

Note: Multihulls and heavy displacement monohulls should reduce the maximum sail areas shown by as much as 25%.



Mainsheet

The farther forward a mainsheet system is on the boom, the higher the loads. Systems with multiple attachment points spread the load over the boom. Use the table to determine if Midrange blocks are strong enough for your mainsail area. See pages 18-19 for common configurations.

Mainsheet

		Maximum mainsail area (P x E x .5 x 1.1*)	
		ft ²	m ²
End-Boom System	Single Attachment	500	46
	Multiple Attachment†	540	50
Mid-Boom System	Single Attachment	425	39
	Multiple Attachment†	500	46

*Assumes 10% roach †Assumes two or more shackles share load on both boom and deck

Genoa Footblocks

Determine the area of your foretriangle and how many degrees the footblock will deflect the line to select footblock size. For system loading details, see the **Block Loading vs. Angle of Deflection and Genoa System Loading** sections on page 28. See page 19 for common configurations.

Genoa Footblocks

	Maximum 100% foretriangle sail area at 35 knots (I x J x .5)	
	ft ²	m ²
180° Turn	150	14
90° Turn	215	20

Spinnaker: Symmetrical/asymmetrical

Use the spinnaker's sail area to determine what size Midrange or high-load Midrange blocks to use for the sheet and afterguy controls. See page 22 for common configurations.

Spinnaker

		Maximum spinnaker area (P x E x .5 x 1.8)			
		Standard blocks		High-load blocks	
		ft ²	m ²	ft ²	m ²
Sheet Blocks	Plain	1100	100	1300	120
	Ratchet	900	83	—	—
Afterguy Blocks*	Mounted Amidships	1100	100	1250	115
	Mounted on Transom	900	83	1000	93
		Maximum "I" dimension			
Masthead Halyard Block		48	14.6	53	16

*Assumes maximum deflection of 45°

Mastbase Lead Blocks

Attach blocks to padeyes or 1634 Midrange ESP stand-up bases, or mount mastbase halyard leads to the deck. Use mainsail luff length and foretriangle height to determine what size Midrange or high-load Midrange blocks to use. Carbo blocks or 1986 mastbase halyard leads may be appropriate for applications with lower loads. See page 21 for common configurations.

Mastbase Lead Blocks

	Standard blocks		High-load blocks	
	ft	m	ft	m
Maximum "P" dimension				
Main Halyard Lead Block	48	14.6	52	15.8
Maximum "I" dimension				
Genoa Halyard Lead Block	46	14	50	15.3
Maximum "I" dimension				
Spinnaker Halyard Lead Block	48	14.6	53	16

Running Backstays

The table below shows if Midrange or high-load Midrange blocks are strong enough for your backstay, based on the breaking strength of your runner wire.

Running Backstays

	Maximum breaking load of runner wire			
	Standard blocks		High-load blocks	
	lb	kg	lb	kg
2:1 Flying Blocks				
1:1 Afterguy Deck Block	2200	998	2800	1270
2:1 Afterguy Becket Deck Block	3600	1633	3600	1633
2:1 Afterguy Single Deck Block	4500	2040	5000	2268

Vang

See page 20 for common configurations.

Vang

	Maximum mainsail area (P X E x .5 X 1.1*)	
	ft ²	m ²
Fiddle Blocks	400	37
Triple Blocks	450	42

*Assumes 10% roach

Midrange

Midrange blocks' robust construction makes them ideal to handle the high loads found on medium and large offshore boats. Sheave runs exclusively on a ball bearing system for fast trim and release under any load.

Delrin® ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection. A stainless steel sidestrap wraps across the block head for increased strength and safety.

The wide-diameter 3.00 in (76 mm) ball bearing sheave accepts 9/16 in (14 mm) line. High-load Midrange blocks use Torton® ball bearings.

Use for:

Mainsheets
Halyards
Spinnaker sheets
Control lines

Shackle can lock in either direction or can swivel to keep line from twisting

Aluminum sheave versions accept wire



Fiddle
Actual Size

Midrange
Actual Size



Removable becket allows insertion of spliced eye

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load		Use with
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
1540	Single	3	76	6 1/8	156	13	367	9/16	14	5/16	8	1800	816	5000	2268	
1541	Single/becket	3	76	7 1/8	184	14	397	9/16	14	5/16	8	1800	816	5000	2268	
1542	Single/aluminum sheave	3	76	6 1/8	156	15	425	9/16	14	5/16	8	1800	816	5000	2268	
1544	Double	3	76	7 1/2	191	25 1/2	723	9/16	14	5/16	8	2800	1270	7000	3175	
1545	Double/becket	3	76	8 1/2	216	26 1/2	751	9/16	14	5/16	8	2800	1270	7000	3175	
1546	Triple	3	76	7 3/4	197	36	1020	9/16	14	5/16	8	3800	1724	8500	3856	
1548	Cheek*	3	76	4 3/8	111	11	312	9/16	14	—	—	1500	680	4200	1905	
1559	Fiddle	3/2	76/51	8 1/2	216	17	482	9/16	14	5/16	8	1800	816	5000	2268	1541 for 3:1
1560	Fiddle/becket	3/2	76/51	9 1/2	241	18	510	9/16	14	5/16	8	1800	816	5000	2268	1559 for 4:1
1564	Fiddle/280 Cam-Matic®/becket	3/2	76/51	9 1/2	241	24 1/2	695	9/16	14	5/16	8	1800	816	5000	2268	1559 for 4:1
1586	Single/high-load	3	76	6 1/8	156	13	367	9/16	14	5/16	8	2300	1043	5000	2268	

*1/4" (6 mm) RH fasteners

Midrange Hexaratchets®

Midrange Hexaratchets® grip loaded sheets, yet allow sailors to ease and trim quickly and with complete control. A switch on the side engages and disengages the ratchet mechanism.

Ratchets feature Hardkote-anodized, Teflon®-impregnated, eight-sided sheaves machined from solid aluminum for strength and corrosion resistance. Free-rolling Delrin® ball bearings, sheave, and sideplates are UV stabilized with carbon black for maximum protection. High-strength stainless steel straps reinforce blocks.

Use for:
Mainsheets
Tackles
Jib-spinnaker sheets

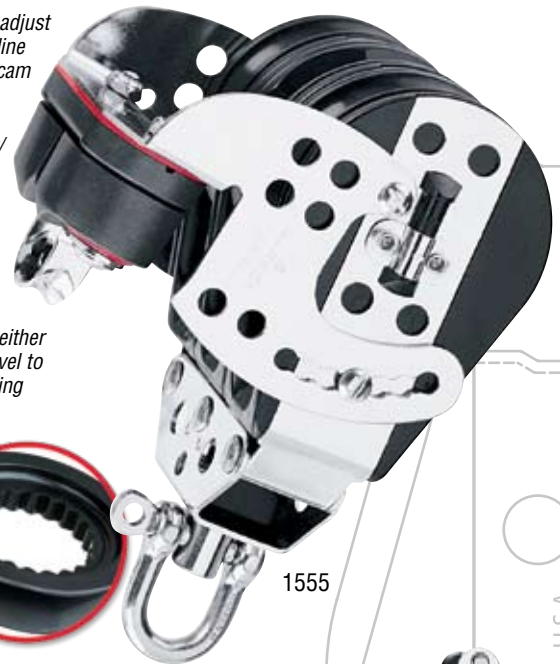
Cam arms adjust to change line angle into cam

Cam reverses for up or down engagement/disengagement

Ratchet on/off switch works even when loaded

Shackle can lock in either direction or can swivel to keep line from twisting

Eight-sided sheave for 8:1 holding power with 180° wrap



1555



1549



1550



1571



1556

Removable becket



1565



1566

Midrange Actual Size

Fiddle Actual Size



Comet 41S, A. Vallicelli & C., Comar Yachts

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load		Turns
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
1549	Single	3	76	6 ¹ / ₈	156	14	397	9 ¹ / ₁₆	14	5 ¹ / ₁₆	8	1800	816	5000	2268	Clockwise
1550	Single/becket	3	76	7 ¹ / ₈	184	15	425	9 ¹ / ₁₆	14	5 ¹ / ₁₆	8	1800	816	5000	2268	Clockwise
1555	Triple/280 Cam-Matic®	3	76	7 ³ / ₄	197	49	1389	9 ¹ / ₁₆	14	5 ¹ / ₁₆	8	3800	1724	8500	3856	Clockwise
1556	Triple/280 Cam-Matic®/becket	3	76	8 ³ / ₄	222	51	1446	9 ¹ / ₁₆	14	5 ¹ / ₁₆	8	3800	1724	8500	3856	Clockwise
1571	Single	3	76	6 ¹ / ₈	156	14	397	9 ¹ / ₁₆	14	5 ¹ / ₁₆	8	1800	816	5000	2268	Counterclockwise
1565	Fiddle/280 Cam-Matic®	3/2	76/51	8 ¹ / ₂	216	26 ¹ / ₂	751	9 ¹ / ₁₆	14	5 ¹ / ₁₆	8	1800	816	5000	2268	Clockwise
1566	Fiddle/280 Cam-Matic®/becket	3/2	76/51	9 ¹ / ₂	241	27 ¹ / ₂	780	9 ¹ / ₁₆	14	5 ¹ / ₁₆	8	1800	816	5000	2268	Clockwise

Line/Wire High Strength

Lightweight, low-friction wire blocks carry wire halyards and high-strength control lines on boats of all sizes.

High-load composite bearings carry axial loads. Hardkote-anodized Teflon® impregnated sheave for strength and corrosion resistance.

25 mm (1.00 in) wire blocks use low-friction thrust washers. 38 mm (1.50 in) and 51 mm (2.00 in) wire blocks feature sideload balls between the sheave and the sideplate to minimize friction from unfair leads.

466 Features a forkhead and becket making it useful for vang, halyards and control lines.

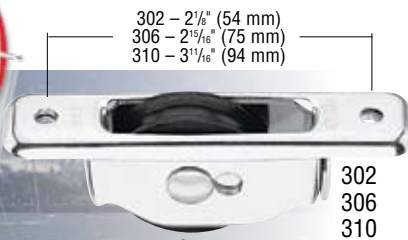
Use for:

- Wire halyards
- Vangs
- Control lines

Narrow forkhead to create snug fit on tang and to allow for minimal friction

High load composite bearings handle wire and high-strength line

Sideplates rotate to insert pre-swaged/Nico pressed wire fittings



Cutout
 302 13/32" (11 mm) x 1 17/32" (39 mm)
 306 17/32" (13 mm) x 2 5/16" (59 mm)
 310 9/16" (14 mm) x 2 29/32" (73 mm)



Rocket 22, Sylvana Yachts — Ivan Ivandic photo

Part No.	Description	Sheave Ø		Weight		Max wire Ø		Max line Ø		Shackle pin Ø		Maximum working load		Breaking load	
		in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg	lb	kg
300	Single	1	25	1	28	3/32	2	5/32	4	3/16	5	1000	454	2000	907
301	Cheek†*	1	25	1.25	35	3/32	2	5/32	4	—	—	1000	454	2000	907
302	Thru-deck*	1	25	1	28	3/32	2	5/32	4	—	—	1000	454	2000	907
304	Single	1 1/2	38	2.75	78	1/8	3	3/16	5	1/4	6	1500	680	3000	1361
305	Cheek†**	1 1/2	38	3.25	92	1/8	3	3/16	5	—	—	1500	680	3000	1361
306	Thru-deck*	1 1/2	38	3.25	92	1/8	3	3/16	5	—	—	1500	680	3000	1361
308	Single	2	51	5.25	149	3/16	5	1/4	6	5/16	8	2000	907	4000	1814
309	Cheek†***	2	51	6	170	3/16	5	1/4	6	—	—	2000	907	4000	1814
310	Thru-deck**	2	51	5.75	163	3/16	5	1/4	6	—	—	2000	907	4000	1814
312	Single/becket	1	25	1.25	35	3/32	2	5/32	4	3/16	5	1000	454	2000	907
313	Single/becket	1 1/2	38	3	85	1/8	3	3/16	5	1/4	6	1500	680	3000	1361
314	Single/becket	2	51	5.75	163	3/16	5	1/4	6	5/16	8	2000	907	4000	1814
320	Ferrule head	1 1/2	38	3	85	1/8	3	3/16	5	—	—	1500	680	3000	1361
321	Small split backstay plate for 304	—	—	—	1	28	—	—	—	—	—	—	—	—	—
322	Split backstay plate for 308	—	—	1.19	34	—	—	—	—	—	—	—	—	—	—
466	Single forkhead/becket	1	25	1.02	29	3/32	2	5/32	4	3/16	5	1000	454	2000	907

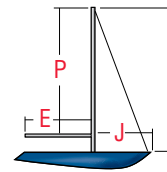
†Fasteners included *#10 (5 mm) RH fasteners **1/4" (6 mm) RH fasteners ***5/16" (8 mm) RH fasteners



Puma, VO70 — Billy Black Photo

BIG BOAT BLOCKS

Ordering Big Boat Blocks



1. Determine block size and type

The tables below are a guideline for typical applications. Additional rigging tips are available at <http://www.harken.com>.

2. Contact

If you have any questions, please contact your dealer or Harken Technical Service.

Note: These hardware specifications assume a boat of moderate displacement sailing in normal conditions. Ultra Light Displacement Boats may use smaller hardware. Heavy displacement boats and multihulls often require stronger hardware.

Mainsheet

Mainsheets are usually attached near the end or the middle of the boom, depending on accessibility and whether the boat is used for racing or cruising. The farther forward a mainsheet system is on the boom, the higher the loads it sees. Systems with multiple attachment points spread the load over the boom. Use the table to choose the appropriate Black Magic®, ESP, or stainless steel blocks for your mainsail area. See pages 18-19 for common configurations.

	Maximum mainsail area (P x E x .5 x 1.1*)													
	57 mm Low-load Black Magic®		57 mm High-load Black Magic®		75 mm Low-load Black Magic®/ 75 mm ESP		75 mm High-load Black Magic®/ 75 mm Stainless		100 mm Black Magic® 100 mm Stainless		125 mm Black Magic®		150 mm Black Magic®/ 150 mm Stainless	
	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²
End-boom														
Single Attachment	450	41	550	51	600	56	750	70	900	84	1250	116	1550	144
Multiple Attachment* †	500	46	675	63	720	67	900	84	1100	102	1500	139	1750	163
Mid-boom														
Single Attachment	400	37	400	37	450	42	550	51	700	65	1000	93	1375	128
Multiple Attachment*	450	41	575	53	600	56	700	65	950	88	1300	121	1525	142

*Assumes 10% roach †Assumes two or more shackles share load on both boom and deck

Running Backstays

Crews use running backstays to adjust mast bend for different wind conditions. This controls headsail sag as well as the camber (depth) of the mainsail. Use Black Magic® or stainless runner blocks with higher breaking strengths than your runner wire.

	Maximum breaking load of runner wire													
	57 mm Black Magic® Air Runner®		75 mm Black Magic® Air Runner®/ 3" Stainless steel runner		4" Stainless steel runner		100 mm Black Magic® Air Runner		5" Stainless steel runner		125 mm Black Magic® Air Runner		150 mm Black Magic® Air Runner	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Flying Blocks	2500	1134	10000	4535	12500	5670	15000	6800	19000	8618	22000	10000	30000	13605
2:1 Separate Deck Blocks	3025	1372	12100	5490	15250	6920	17550	7960	23150	10500	26500	12020	36136	16388
2:1 Becket Deck Blocks	1875	850	7500	3400	9470	4295	10900	4945	16500	7485	16500	7485	22500	10204
3:1 Deck Blocks (Block #1)	3713	1684	14850	6735	18750	8505	21600	9800	28500	12928	32700	14835	44550	20203
3:1 Deck Blocks (Block #2)	4525	2052	18100	8210	22875	10375	26300	11930	34750	15760	39850	18075	54300	24625

Mastbase Lead Blocks

Leading halyards and control lines aft allows crews to raise and lower sails or make tuning adjustments from the cockpit. Attach blocks to the mastcollar post or padeyes, or mount mastbase halyard leads to the deck. The table below sizes Black Magic®, stainless steel, ESP, and mastbase blocks for different foretriangle heights and luff lengths. See page 21 for common configurations.

	57 mm Low-load Black Magic®/ESP		57 mm High-load Black Magic®/fixed MBL* blocks		75 mm Low-load Black Magic®/ Mastcollar post block/ 75 mm ESP		75 mm High-load Black Magic®/fixed MBL* blocks/ 75 mm Stainless		100 mm Black Magic®/ 100 mm Stainless		125 mm Black Magic®	
	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
	Maximum "P" Dimension											
Main Halyard	47	14.3	52	15.8	60	18.3	74	22.6	80	25	90	27.5
	Maximum "I" Dimension											
Genoa Halyard	45	13.7	50	15.2	58	17.7	72	21.9	76	23.2	87	26.5
Spinnaker Halyard	47	14.3	53	16.1	60	18.3	74	22.6	82	25	93	28.4

*MBL = Mastbase Lead blocks

Ordering Big Boat Blocks



GY53, MP Design, Gieffe Yachts

Spinnaker: Symmetrical/Asymmetrical

Use the spinnaker's sail area to determine what size Black Magic®, stainless steel, or ESP blocks to use for the sheet and aftergy controls. See page 22 for common configurations.

	Maximum spinnaker area (I x J x 1.8)													
	57 mm Low-load Black Magic®		57 mm High-load Black Magic®		75 mm Low-load Black Magic®/ 75 mm ESP		75 mm High-load Black Magic®/ 75 mm Stainless		100 mm Black Magic®/ 100 mm Stainless		125 mm Black Magic®		150 mm Black Magic®/ 150 mm Stainless	
	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²
Spinnaker Sheet, Tack Line	720	67	1200	111	1400	130	2000	186	2650	246	4300	400	5600	520
Aftergy*	790	73	1320	123	1500	140	2200	204	2900	269	4700	437	6100	567

*Assumes maximum deflection of 45° to winch

Genoa Footblocks

Footblocks route genoa controls from the lead car to a winch. Double footblocks or snatch blocks enable faster sheet changes. Determine the area of your foretriangle and how many degrees the footblock will deflect the line to select footblock size. For system loading details, refer to the **Block Loading vs Angle of Deflection** and **Genoa System Loading** sections on page 28. See page 19 for common configurations.

Single Genoa Footblocks

	Maximum 100% foretriangle sail area at 40 knots (I x J x .5)											
	57 mm Low-load Black Magic®		57 mm High-load Black Magic®		75 mm Black Magic®/ 75 mm Stainless		100 mm Black Magic®/ 100 mm Stainless		125 mm Black Magic®		150 mm Black Magic®/ 150 mm Stainless	
	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²
180° Turn	110	10	180	17	365	34	540	50	800	74	1100	102
120° Turn	125	12	210	20	420	39	630	59	920	85	1256	117
90° Turn	155	14	260	24	515	48	770	72	1130	105	1540	143

Double Genoa Footblocks

	Maximum 100% foretriangle sail area at 40 knots* (I x J x .5)									
	57 mm Low-load Black Magic®		57 mm High-load Black Magic®		75 mm Black Magic®		100 mm Black Magic®		125 mm Black Magic®	
	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²
180° Turn	75	7	120	11	240	22	360	33	530	49
120° Turn	85	8	140	13	275	26	415	39	610	57
90° Turn	105	10	175	16	340	32	510	47	750	70

*Based on load on upper sheave

Black Magic® AirBlocks®

STRONG, LIGHTWEIGHT AND FREE ROLLING

Weekend cruiser? Around-the-world racer? You'll want Black Magic® AirBlocks® aboard. With high strength-to-weight ratios and free-rolling high-load roller bearings, these versatile blocks are the workhorses of the Harken® line. Use for sail controls that see lots of action including mainsheet, runner, halyard, and spinnaker systems.

AirBlocks® are very easy to clean and service. They have few parts and no loose balls or rollers to misplace. Unlike blocks that are riveted together, three fasteners allow quick disassembly for service.



1. Isolated Metals

Dissimilar metals isolated to prevent corrosion: plastic isolators under all fastener heads and headposts.

Three-Way Head

Set screw in three-way head locks shackle in front or side positions, or lets block swivel to keep line from twisting.

2. Easy Maintenance

AirBlocks® are designed for easy maintenance. Three fasteners allow quick disassembly using an Allen wrench. Blocks have few parts, and there are no loose balls or rollers.

DETAILS MAKE THE DIFFERENCE

LOW-FRICTION CAGED BEARINGS

The center cage keeps Torlon® roller bearings separated and parallel to reduce friction. Dirt and salt falls between rollers. Captive Delrin® balls carry sideloads.

STRONG, LIGHTWEIGHT SIDEPLATES & SHEAVES

6061-T6 aluminum sideplates CNC sculpted to remove excess weight.

Thin-profile, deep-groove aluminum sheaves have radiused edges to protect high-tech line.

LONG-LASTING PROTECTIVE FINISH

Sheaves and sideplates are deep-saturation Hardkote-anodized for strength and durability, and UV-stabilized with black additive for maximum protection. Teflon®-impregnated for a smooth, slippery surface.

57 mm

Black Magic®

NEW: 3195

Use 57 mm Black Magic® AirBlocks® on offshore boats. These strong, lightweight blocks are sculpted aluminum, with Torton® rollers and carbon-black balls for strength and UV protection. Rollers are housed in a unique center cage and are isolated for less friction. Blocks feature a three-way head system for strength and UV protection. Blocks feature a three-way head system and come in high- and low-load configurations.

The 3195 soft attachment Loop block has a removable dead-end post for attachment to a padeye. Lashings can also be used.

Use for:

- Sheets
- Halyards
- Running backstays
- Control lines

Three-way head system—shackle can lock in either direction or can swivel to keep line from twisting

Headpost rides on plastic bushing

Three fasteners for quick disassembly

Torton® roller bearings for strength and reduced wear

Easy to open integrated becket

Low-load blocks have red isolators



1951
1959



Sly 42, Studio Lostuzzi Yacht Design & Engineering, Sly Yachts — Sly Yachts photo

See page 96

Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max Line Ø		Maximum working load		Breaking load	
		mm	in	mm	in	oz	g	in	mm	in	mm	lb	kg	lb	kg
1950	Single/swivel/low-load	57	4 ¹ / ₁₆	119	5.0	142	1/4	6	7/16	12	1655	750	3310	1500	
1951	Single/swivel/low-load/becket	57	5 ¹ / ₂	140	5.5	155	1/4	6	7/16	12	1655	750	3310	1500	
1952	Double/swivel/low-load	57	5 ³ / ₁₆	132	10.1	286	5/16	8	7/16	12	2755	1250	5510	2500	
1954	Triple/swivel	57	5 ³ / ₁₆	132	13.2	375	5/16	8	7/16	12	4850	2200	9700	4400	
1958	Single/swivel/high-load	57	4 ¹ / ₁₆	119	5.0	142	1/4	6	7/16	12	2500	1134	5000	2268	
1959	Single/swivel/high-load/becket	57	5 ¹ / ₂	140	5.5	155	1/4	6	7/16	12	2500	1134	5000	2268	
1960	Double/swivel/high-load	57	5 ³ / ₁₆	132	10.1	286	5/16	8	7/16	12	3600	1633	7200	3267	
1961	Double/swivel/high-load/becket	57	6	152	10.6	302	5/16	8	7/16	12	3600	1633	7200	3267	
1965	Stand-up/high-load*	57	4 ¹ / ₂	114	7.4	210	1/4	6	7/16	12	2500	1134	5000	2268	
3195	Single loop block**	57	3	76	3.25	92	—	—	7/16	12	2500	1134	5000	2268	

*Includes padeye 1/4" (6 mm)—Fastener circle: 1 1/8" (37 mm) **Loop not included

75 mm *Black Magic*

NEW: 3196

75 mm Black Magic® AirBlocks® feature Torlon® roller bearings for strength and reduced wear. The unique center cage separates rollers for less friction. Sideload ball bearings are protected by sculpted aluminum sideplates. Dissimilar metals are isolated to minimize corrosion. Low-load blocks use Delrin® rollers and type 316 stainless steel shackles.

Like all AirBlocks®, the three-way head swivels/locks in front/side positions. Blocks are easily disassembled with a single Allen wrench.

Use straphead blocks with LOUPS™ or straps aligned fore/aft or side to side.

The 3196 soft attachment Loop block has a removable dead end post for attachment to a padeye. Lashings can also be used.

Use for:

- Sheets
- Halyards
- Running backstays
- Control lines

Low-load blocks have red isolators



Soft Loop attaches securely through sheave center

Sheave center carries primary load for a lightweight block

Dead end post for attachment to a closed bail

Post removes for alternative attachment methods



3196



Marten 49 — Andrea Francolini photo/Azzura Marine

Part No.	Description	Sheave Ø		Length	Weight w/shackle		Shackle pin Ø		Max Line Ø		Maximum working load		Breaking load	
		mm	in		mm	oz	g	in	mm	in	mm	lb	kg	lb
1962	Spriddle/becket	75/57	8 ⁷ / ₈	225	16.8	476	5 ¹ / ₁₆	8	9 ¹ / ₁₆	14	5000	2268	10000	4536
1969	Single/swivel	75	5 ¹ / ₈	129	11.5	325	5 ¹ / ₁₆	8	9 ¹ / ₁₆	14	5000	2268	10000	4536
1970	Single/swivel/becket	75	6 ³ / ₁₆	157	12.4	351	5 ¹ / ₁₆	8	9 ¹ / ₁₆	14	5000	2268	10000	4536
1971	Double/swivel	75	5 ¹ / ₄	134	25.7	728	3 ¹ / ₈	10	9 ¹ / ₁₆	14	7500	3402	15000	6804
1974	Stand-up*	75	5 ⁹ / ₁₆	151	15.5	440	—	—	9 ¹ / ₁₆	14	5000	2268	10000	4536
1975	Spriddle	75/57	7 ¹³ / ₁₆	199	15.9	452	5 ¹ / ₁₆	8	9 ¹ / ₁₆	14	5000	2268	10000	4536
3088	Straphead spriddle	75/57	7 ³ / ₃₂	180	12.8	362	—	—	9 ¹ / ₁₆	14	5000	2268	10000	4536
3090	Single/swivel/low-load	75	5 ¹ / ₈	129	11.5	325	5 ¹ / ₁₆	8	9 ¹ / ₁₆	14	3000	1361	6000	2722
3095	Double/straphead	75	4 ¹¹ / ₁₆	119	19.2	545	—	—	9 ¹ / ₁₆	14	7500	3402	15000	6804
3196	Single loop block**	75	3 ¹⁵ / ₁₆	100	7.27**	206	—	—	9 ¹ / ₁₆	14	5000	2268	10000	4536

*Includes padeye. Uses holespacing and base dimensions of 627 padeye. Maximum working load decreases at varying angles, refer to page 97

**Loop not included

100 mm *Black Magic*

NEW: 3199

100 mm Black Magic® AirBlocks® are used on offshore boats where weight and performance are critical. They feature free-rolling, large-diameter aluminum sheaves with Turlon® roller bearings housed in a unique center cage. UV-resistant, carbon-black Delrin® balls carry sideloads. Corrosion is minimized by isolating dissimilar metals.

Blocks are Hardkote-anodized and have 17-4 PH stainless headposts and shackles. Easily disassembled.

The 3199 soft attachment Loop block has a removable dead-end post for attachment to a padeye. Lashings can also be used.

Use for:

- Sheets
- Halyards
- Running backstays
- Control lines



Web attachments allow articulation under load

Orient straphead block fore/aft, or side to side

High speed computer-machined from solid 6061-T6 aluminum bar stock

Toughest and hardest anti-corrosion protection in the industry

The center becket provides block with additional stiffness for dead-ending purchases



3089

Primary and small sheave handle same loads

Waisted sideplates for use as spreader



3012



C8213



3007



3008



3009



1993

Soft Loop attaches securely through sheave center



Sheave carries primary load for a lightweight block



3199

Dead end post for attachment to a closed bail

See page 96



Spirit of Lexus, Farr 42 — Photo courtesy Austral Yachts

Part No.	Description	Sheave Ø		Length		Weight w/shackle		Shackle pin Ø		Max Line Ø		Maximum working load		Breaking load	
		mm	in	mm	in	oz	g	in	mm	in	mm	lb	kg	lb	kg
1993	Spriddle	100/75	11 ¹¹ / ₁₆	297	26.5	752	3/8	10	5/8	16	7500	3402	15000	6804	
3007	Single/swivel	100	8	203	20.1	570	3/8	10	5/8	16	7500	3402	15000	6804	
3008	Single/swivel/becket	100	9 ¹ / ₂	241	22.6	641	3/8	10	5/8	16	7500	3402	15000	6804	
3009	Double/swivel	100	8 ⁵ / ₁₆	227	48.3	1370	1/2	12	5/8	16	11000	4990	22000	9979	
3012	Stand-up*	100	7 ¹¹ / ₁₆	195	30.3	859	—	—	5/8	16	7500	3402	15000	6804	
3089	Straphead spriddle	100/75	9 ¹ / ₄	235	24	680	—	—	5/8	16	7500	3402	15000	6804	
3199	Single loop block**	100	5 ¹ / ₁₆	128	13.06	370	—	—	5/8	16	7500	3402	15000	6804	
C8213	Center becket for 100 mm	100	1.83	46.5	2.4	67	—	—	—	—	2500	1134	—	—	

*Includes padeye. Uses hole spacing and base dimensions of 648 padeye, refer to page 97 **Loop not included

125 mm & 150 mm **Black Magic**

NEW: 3201

125 mm and 150 mm AirBlocks® feature Torlon® rollers in a self-contained center cage. Rollers stay parallel for low-friction efficiency. UV-resistant, carbon-black Delrin® balls carry sideloads.

Used on offshore boats, these blocks offer a no “climb-out” deep groove sheave with radiused edges to protect line. Sculpted aluminum sideplates and thin-profile sheaves make these blocks very lightweight. No stainless-to-aluminum contact prevents corrosion.

The 3201 soft attachment Loop block has a removable dead end post for attachment to a padeye. Lashings can also be used.

Use for:

- Sheets
- Halyards
- Running backstays
- Control lines

Three-way head can be locked in either direction or can swivel to keep line from twisting

Sideplate protects ball bearings

Easy disassembly for service

Sideload balls prevent friction from unfair leads

Deep-groove sheave

3016
3021

Removable dead end post for attachment to a closed bail

3201

Sheave center carries primary load for a lightweight block



Soft Loop attaches securely through sheave center

See page 96



Comet 62, A. Vallicelli & C., Comar Yachts

The center becket provides block with additional stiffness for dead-ending purchases



3018
3022



C7971
C7592

Part No.	Description	Sheave Ø		Length	Weight w/shackle		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		mm	in		mm	oz	g	in	mm	in	mm	lb	kg	lb
125 mm														
3016	Single/swivel	125	10	254	36.8	1042	1/2	12	3/4	19	11000	4990	22000	9977
3018	Stand-up*	125	9 1/16	230	43.9	1246	—	—	3/4	19	11000	4990	22000	9977
3201	Single Loop block ‡	125	6	163	23.20 ‡	658 ‡	—	—	3/4	19	11000	4990	22000	9977
C7971	Center becket for 125 mm	—	2 3/8	60	4.9	140	—	—	—	—	3667	1663	—	—
150 mm														
3021	Single/swivel	150	12	305	61	1730	5/8	16	1	25	15000	6802	30000	13605
3022	Stand-up**	150	11 1/8	283	66	1878	—	—	1	25	15000	6802	30000	13605
C7592	Center becket for 150 mm	—	2 3/4	71	9.4	270	—	—	—	—	5000	2268	—	—

*Includes padeye. Uses holespacing and base dimensions of 648 padeye. Maximum working load decreases at varying angles, refer to page 97

**Uses holespacing and base dimensions of 629 padeye. Maximum working load decreases at varying angles, refer to page 97 ‡Loop not included

Stainless Steel Blocks

Hand-polished stainless steel sideplates are the trademark of these beautiful blocks. But it's the sheave design that gives them their strength and durability. Sheaves use a low-friction composite sleeve bearing for extreme radial loads. Ball bearings handle side loads for unfair leads and let sheaves spin easily at low loads.

Block details include low-profile screw adaptors and stainless-on-stainless construction for easy service. Sheaves on footblocks remove without unbolting the block. Headposts on swivel blocks lock or swivel freely.

Three-way head system can lock in either direction or can swivel to keep line from twisting

Hand polished to a mirror finish

Low-profile screws

Ball bearings handle side loads for unfair leads and let sheaves spin easily at low loads



Low-friction AC-type composite sleeve bearing handles extreme loads



3129
3132
3181
3135



3130
3133
3184
3136



3138
3152
3182
C6866



3131
3134
3183
3137

Tartan 4300 — Billy Black photo/Tartan Yachts

Part No.	Description	Includes padeye	Sheave Ø		Length		Weight		Max Line Ø		Maximum working load		Breaking load	
			in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg
75 mm														
3129	Single	—	3	75	6 ³ / ₁₆	157	25.6	726	9 ¹ / ₁₆	14	5000	2268	10000	4536
3130	Single/becket	—	3	75	7 ³ / ₁₆	187	26.9	763	9 ¹ / ₁₆	14	5000	2268	10000	4536
3131	Footblock*	—	3	75	4 ⁵ / ₁₆	110	24.8	703	9 ¹ / ₁₆	14	5250	2382	10500	4763
3138	Stand-up**	627	3	75	5 ¹³ / ₁₆	148	29.6	839	9 ¹ / ₁₆	14	5000	2268	10000	4536
100 mm														
3132	Single	—	4	100	8 ¹ / ₈	206	49.6	1406	3 ³ / ₄	19	7500	3402	15000	6804
3133	Single/becket	—	4	100	9 ³ / ₄	248	54.4	1542	3 ³ / ₄	19	7500	3402	15000	6804
3134	Footblock*	—	4	100	5 ³ / ₄	146	53.4	1514	3 ³ / ₄	19	7750	3515	15500	7031
3152	Stand-up**	648	4	100	7 ¹¹ / ₁₆	195	59.2	1678	3 ³ / ₄	19	7500	3402	15000	6804
125 mm														
3181	Single	—	5	125	10 ¹ / ₁₆	256	97.9	2775	7 ⁷ / ₈	22	11000	4989	22000	9977
3182	Stand-up**	648	5	125	9 ⁹ / ₁₆	233	104.9	2974	7 ⁷ / ₈	22	11000	4989	22000	9977
3183	Footblock*	—	5	125	7 ⁷ / ₈	181	100.3	2844	7 ⁷ / ₈	22	11250	5102	22500	10204
3184	Single/becket	—	5	125	12 ¹ / ₁₆	306	106.4	3016	7 ⁷ / ₈	22	11000	4989	22000	9977
150 mm														
3135	Single	—	6	150	12 ⁵ / ₈	321	154.4	4377	7 ⁷ / ₈	22	18000	8165	36000	16329
3136	Single/becket	—	6	150	15	381	168.8	4785	7 ⁷ / ₈	22	18000	8165	36000	16329
3137	Footblock*	—	6	150	8 ⁵ / ₈	219	157.6	4468	7 ⁷ / ₈	22	18250	8278	36500	16556
C6866	Stand-up**	629	6	150	11	279	167.0	4734	7 ⁷ / ₈	22	18000	8165	36000	16329

*See page 74 for hole spacing **Refer to page 97 for hole spacing and base dimensions

Teardrop *Black Magic*

Teardrop blocks are ideal for use as mastbase leads and for other applications where limited articulation or direct attachment is desired. When attached to an appropriate padeye, Teardrop blocks will not hit the deck when lines are slack, yet allow sufficient movement to ensure fair leads when jumping halyards. They are often used on permanent backstays of fractionally rigged boats where the backstay can be spliced directly to the head of the block.

The 3042 and 3046 are low-load blocks designed for use on production boats that have mounting posts on the mastcollar.

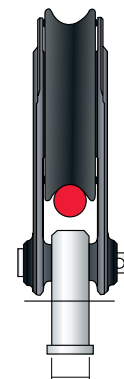
Block won't hit deck

Caged roller bearings with balls for side-loads

Low-profile mastbase lead block

Limited articulation permits jumping halyards

Simple clevis pin attachment



12 mm (3042)
14 mm (3046)

Pyewacket IV, Reichel/Pugh 94, Cookson Boats/Westerly Marine/Salthouse Boatbuilders — Sharon Green photo

Part No.	Description	Sheave Ø		Clevis pin Ø		Length		Weight		Max Line Ø		Maximum working load		Breaking load		Use padeye
		in	mm	in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg	
57 mm																
3042	Mastcollar/low-load	2 1/4	57	—	6	3 3/8	86	3.6	102	3/8	10	1655	750	3310	1500	—
3044	Padeye/high-load	2 1/4	57	5/16	8	3 3/8	86	3.9	110	3/8	10	2500	1134	5000	2268	627
75 mm																
3046	Mastcollar/low-load	3	75	5/16	8	4 7/16	113	8.5	240	9/16	14	3000	1361	6000	2721	—
3047	Padeye	3	75	3/8	10	4 7/16	113	9	250	9/16	14	5000	2268	10000	4535	648/689
100 mm																
3050	Padeye	4	100	1/2	12.7	5 13/16	148	15.3	436	5/8	16	7500	3402	15000	6804	—

Mastbase Halyard Lead

Low-profile mastbase halyard lead blocks are lightweight and can be grouped in a small area at the mastbase. Flared cheeks prevent chafe on the halyards.

Keeps line close to deck

High-load bearing system has Teflon® composite bushing, sideload balls

Hardkote-anodized aluminum sheave for additional strength



1986



1988
1990
3123
C8508

Part No.	Description	Sheave Ø		Width		Length		Height		Max line Ø		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
1986	Halyard lead block*	1 ³ / ₄	44	7 ⁷ / ₈	22	3 ¹³ / ₁₆	97	2 ¹ / ₄	57	3 ³ / ₈	10	3.36	95	750	340	1500	680
1988	Mastbase block/fixe**	2 ¹ / ₄	57	1 ³ / ₈	35	3 ¹³ / ₁₆	81	2 ¹ / ₈	73	3 ³ / ₈	10	6.2	175	2500	1136	5000	2273
1990	Mastbase block/fixe***	3	76	1 ⁵ / ₈	41	4 ⁵ / ₈	117	3 ³ / ₄	95	1 ¹ / ₂	12	11.5	326	5000	2273	10000	4545
3123	Mastbase block/fixe‡	4	102	1 ⁵ / ₈	41	5 ¹ / ₈	130	5 ¹ / ₈	130	1 ¹¹ / ₁₆	18	24.9	708	11000	4990	22000	9980
C8508	Mastbase block/fixe‡‡	4 ¹⁵ / ₁₆	125	1 ¹⁵ / ₁₆	49	7 ¹ / ₄	184	6 ⁷ / ₃₂	158	3 ³ / ₄	19	44.5	1261	15000	6804	30000	13608

*1/4" (6 mm) RH **3/4" (6 mm) FH ***5/16" (8 mm) FH ‡5/8" 16 mm HH ‡‡Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com

Over-the-Top

Over-the-top blocks lead lines aft over cabin houses, coamings, and splashguards. They feature high-load sheaves and come in single, double, and triple configurations.

C8322
3002
C8624



3003

3004

Part No.	Description	Sheave Ø		Width		Length		Height		Max line Ø		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
3002	Single over-the-top block*	2 ¹ / ₄	57	1 ³ / ₈	35	3 ¹ / ₄	83	3 ¹ / ₄	83	3 ³ / ₈	10	6.4	181	2500	1136	5000	2272
3003	Double over-the-top block*	2 ¹ / ₄	57	2 ¹ / ₁₆	62	3 ¹ / ₄	83	3 ¹ / ₄	83	3 ³ / ₈	10	12.2	346	2500	1136	5000	2272
3004	Triple over-the-top block*	2 ¹ / ₄	57	3 ¹ / ₂	89	3 ¹ / ₄	83	3 ¹ / ₄	83	3 ³ / ₈	10	18.1	513	2500	1136	5000	2272
C8322	Single over-the-top block**	1 ³ / ₄	45	1 ¹ / ₁₆	36	3 ¹ / ₁₆	78	3 ⁷ / ₃₂	82	1 ¹ / ₂	12	5.6	159	2500	1136	5000	2272
C8624	Single over-the-top block**	2 ¹⁵ / ₁₆	75	1 ¹¹ / ₁₆	43	4	101	4	101	3 ³ / ₁₆	14	18.5	526	5000	2272	10000	4536

*1/4" (6 mm) FH **Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com

Flip-Flop

The low-profile Flip-Flop blocks are light weight and can be used for various leads on your boat including halyard leads, mainsheet leads and spinnaker sheet leads.

The Flip-Flop block has aluminum Hardkote-anodized side plates and features Hardkote-anodized Teflon impregnated aluminum sheaves for strength and corrosion resistance.

The high-load flip-flop blocks pivot around the line axis to keep line close to the deck. Hinged construction allows variable leads. Lockoff provides a temporary stop to free up winches.

Hollow axle runs line close to deck

High-load bearing system has Teflon® composite bushing, sideload balls



3194
1989



3122
1987

Block mounts on machined aluminum feet. Pivots easily on plastic isolators

Part No.	Description	Sheave Ø		Width		Length		Height		Max line Ø		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
1987	Flip-flop block*	3	76	2 ¹ / ₈	72	6	152	4	100	1 ¹ / ₂	12	17.37	493	5000	2273	10000	4545
1989	Flip-flop block/lockoff*	3	76	2 ¹ / ₈	72	6	152	4	100	1 ¹ / ₂	12	21.1	598	5000	2273	10000	4545
3122	Flip-flop block**	2 ¹ / ₄	57	2 ¹ / ₄	57	4 ³ / ₈	111	2 ¹ / ₈	73	3 ³ / ₈	10	9	255	2500	1136	5000	2273
3194	Flip-flop block/lockoff**	2 ¹ / ₄	57	2 ¹ / ₄	57	4 ³ / ₈	111	2 ¹ / ₈	73	3 ³ / ₈	10	11.2	317.8	2500	1136	5000	2273

*5/16" (8 mm) SH **1/4" (6 mm) SH

Crossover

Crossover blocks provide a cleaner, more efficient deck. These easy-to-install blocks mount behind the stopper bank on each side of the cabin house and can route any line to the winch on the opposite side. Use the 1984 for boats to 38 ft (11.5 m) and the 1981 for boats to 48 ft (15 m).

Fastener included

Built-in riser

Large, strong base protects cored decks

Sculpted backing plates



1984
1981

Part No.	Description	Sheave Ø		Length		Height		Max Line Ø		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
1981	Crossover block	2 ³ / ₁₆	56	2 ⁵ / ₈	66	1 ⁷ / ₁₆	36	7 ⁷ / ₁₆	12	8	227	3000	1361	6000	2721
1984	Crossover block	1 ³ / ₄	44	2 ¹ / ₁₆	52	1 ¹ / ₄	32	3 ³ / ₈	10	4.2	119	2000	907	4000	1814

Footblocks

Black Magic® footblocks carry some of the highest loads imposed by running rigging. The Torlon® rollers on these lightweight, free-running blocks are housed in a center cage, with no contact between bearings. UV-resistant, carbon-black Delrin® balls handle sideloads.

Either metric or imperial flathead fasteners may be used for mounting and are not exposed.

Use for:

Genoas
Spinnakers

Lockoff temporarily secures sheets

Clean, sculpted shape

No stainless-to-aluminum contact

Full-saturation Hardkote anodizing

Single/double sheave models

UV-protected, caged Torlon® rollers



1967
3005



1963
1972
3010
3017
3023



1964
1973
3011
3033



1968
3006

Refer to page 74 for hole spacing

Part No.	Description	Sheave Ø		Length		Height		Weight		Max Line Ø		Maximum working load		Breaking load		Fasteners (FH)	
		in	mm	in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg	in	mm
57 mm																	
1963	Single/high-load	2 ¹ / ₄	57	3 ⁵ / ₁₆	84	1	25	4.2	119	7 ⁷ / ₁₆	12	2500	1134	5000	2268	4 x 1/4	4 x 6
1964	Double/high-load	2 ¹ / ₄	57	3 ⁵ / ₁₆	84	1 ¹³ / ₁₆	46	6.9	195	7 ⁷ / ₁₆	12	1650	750	3300	1500	4 x 1/4	4 x 6
1967	Single/high-load/lockoff*	2 ¹ / ₄	57	3 ⁵ / ₁₆	84	1	25	5.3	150	7 ⁷ / ₁₆	12	2500	1134	5000	2268	4 x 1/4	4 x 6
1968	Double/high-load/lockoff*	2 ¹ / ₄	57	3 ⁵ / ₁₆	84	1 ¹³ / ₁₆	46	9.6	272	7 ⁷ / ₁₆	12	1650	750	3300	1500	4 x 1/4	4 x 6
75 mm																	
1972	Single	3	75	4 ³ / ₈	111	1 ¹ / ₄	32	10.2	288	9 ⁹ / ₁₆	14	5250	2380	10500	4762	4 x 5/16	4 x 8
1973	Double	3	75	4 ³ / ₈	111	2 ¹ / ₄	57	18	508	9 ⁹ / ₁₆	14	3465	1572	6930	3143	4 x 5/16	4 x 8
3005	Single/lockoff*	3	75	4 ³ / ₈	111	1 ¹ / ₄	32	11.7	333	9 ⁹ / ₁₆	14	5250	2380	10500	4762	4 x 5/16	4 x 8
3006	Double/lockoff*	3	75	4 ³ / ₈	111	2 ¹ / ₄	57	20.7	586	9 ⁹ / ₁₆	14	3465	1572	6930	3143	4 x 5/16	4 x 8
100 mm																	
3010	Single	4	100	5 ⁵ / ₈	143	1 ⁵ / ₁₆	33	20.6	584	5 ⁵ / ₈	16	7500	3402	15000	6803	4 x 3/8	4 x 10
3011	Double	4	100	5 ⁵ / ₈	143	2 ¹ / ₁₆	62	36.2	1025	5 ⁵ / ₈	16	4950	2250	9900	4500	4 x 3/8	4 x 10
125 mm																	
3017	Single	5	125	6 ¹³ / ₁₆	176	1 ¹¹ / ₁₆	43	35.7	1012	3 ³ / ₄	19	11000	4990	22000	9977	4 x 1/2	4 x 12
3033	Double	5	125	6 ¹³ / ₁₆	176	2 ¹³ / ₁₆	71.5	62.2	1762	3 ³ / ₄	19	7260	3292	14520	6585	4 x 1/2	4 x 12
150 mm																	
3023	Single	6	150	8 ¹ / ₁₆	205	1 ⁷ / ₈	48	60.6	1719	1	25	15000	6818	30000	13636	4 x 5/8	4 x 16

*Lockoffs are intended to hold lines temporarily and should not be used in place of line stoppers or clutches

Air Runners® *Black Magic*®

Black Magic® Air Runners® are strong, lightweight blocks with extremely free-rolling sheaves. Blocks feature Tordon® roller bearings in a center cage for strength. Sideload bearing strips dampen rig vibration.

Integrated sideplate bails and recessed cotter key help produce a smooth design that won't snag lifelines.

Heads are offered with parallel/perpendicular shackles. Tangs attach turnbuckles, toggles, and other fittings. No tools required for installation.

Foam padded Block Socks easily install over Air Runners® to protect your blocks, deck, and crew.

Cotter key protected in sculpted detent

Quiet—sideload bearing strips dampen rig vibrations



Caged roller bearings for high-load efficiency

Clean, smooth design won't snag lifelines



1991
3013
3019
3024



Block Sock on Tommy Hilfeger Freedom America — Billy Black Photo



1992
3014
3020
3025



3035
3036
3037
3038



3039



Shackle Posts



Parallel

Perpendicular

Tang Plate

Runner Blocks

Part No.	Description	Sheave Ø		Length		Weight		Clevis pin Ø		Max Line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
57 mm															
3039	Single	2 1/4	57	3 3/8	86	4.4	124	3/8	10	1/2	12	2500	1134	5000	2268
75 mm															
1991	Single	3	75	4 7/8	118	9.3	264	1/2	12.7	9/16	14	5000	2268	10000	4544
1992	Single/becket	3	75	5 3/4	146	10.3	293	1/2	12.7	9/16	14	5000	2268	10000	4544
100 mm															
3013	Single	4	100	6 1/16	157	17.5	495	5/8	15.9	5/8	16	7500	3402	15000	6802
3014	Single/becket	4	100	7 9/16	193	19.4	550	5/8	15.9	5/8	16	7500	3402	15000	6802
125 mm															
3019	Single	5	125	7 11/16	195	29.0	824	3/4	19	3/4	19	11000	4990	22000	9980
3020	Single/becket	5	125	9 1/2	240	32.6	922	3/4	19	3/4	19	11000	4990	22000	9980
150 mm															
3024	Single	6	150	8 3/4	221	49.4	1400	3/4	19	1	25	15000	6802	30000	13605
3025	Single/becket	6	150	10 9/16	275	55.2	1566	3/4	19	1	25	15000	6802	30000	13605

Heads

Tangs

Block Socks

Perpendicular Part No.	Parallel Part No.	Weight		Tang Part No.	Weight		Runner pin Ø		Checkstay pin Ø		Block Socks Part No.	Fits
		oz	g		oz	g	in	mm	in	mm		
3048	3048	3.8	108	747	3	85	7/16	11.1	1/4	6	3035	1991/1992
3051	3051	7.4	210	3052	5.5	156	5/8	15.9	3/8	10	3036	3013/3014
3030	3030	13.8	381	3031	9	255	3/4	19	7/16	11.1	3037	3019/3020
3028*	3026*	19	537	3027*	11	310	3/4	19	1/2	12.7	3038	3024/3025

*150 mm Runner post and tang adapters made to order

Stainless Steel Runners

Harken® stainless steel runner blocks feature sleeve bearings to handle high, static loads and sideload balls so sheaves spin freely when loads are released.

Heads are offered with parallel/perpendicular shackles. Tangs attach turnbuckles, toggles, and other fittings.

Accepts tangs or shackle posts

Highly polished stainless steel

High-load sheaves

Legal for all rating rules



737

1863

1853
1855



Shackle Posts



Parallel

Perpendicular

Tang Plate

Samba Pa Ti, TP52, Botin/Carkeek/Cookson Boats — J.H. Peterson photo

Runner Blocks

Part No.	Description	Sheave Ø		Length		Weight		Clevis pin Ø		Max Line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
737	Single	3	76	4 ¹ / ₈	124	14	397	1/2	12.7	9/16	14	5000	2268	10000	4544
1853	Single	4	102	6 ¹ / ₈	156	21	595	9/16	14.3	9/16	14	6250	2835	12500	5670
1855	Single	5	127	7 ³ / ₄	197	44	1247	1 ¹ / ₁₆	17.5	5/8	16	9500	4310	19000	8618
1863	Single/becket	4	102	7 ⁵ / ₁₆	186	27	768	9/16	14.3	9/16	14	6250	2835	12500	5670

Heads

Tangs

Perpendicular Part No.	Parallel Part No.	Weight		Tang Part No.	Weight		Runner pin Ø		Checkstay pin Ø		Fits
		oz	g		oz	g	in	mm	in	mm	
740	740	7	198	747	3	85	7/16	11.1	1/4	6.35	737
1859	—	10	280	1857	5 ¹ / ₂	156	1/2	12.7	3/8	9.5	1853/1863
1861	1862	13	369	1858	9	255	5/8	16	7/16	11.1	1855

Snatch Blocks

Harken® Snatch blocks feature low-friction roller/ball bearing sheaves and a unique push-button latch for one-handed operation. The opening side allows sheets to be inserted without reeving.

Urethane sideplates prevent damage to decks, spars, and cabin houses. An integral bail allows blocks to hang from lifelines with shockcord. Snap shackles attach to padeyes and bails, while trunnion shackles attach to toerails and other fixtures.

Snatch blocks are offered in high-load and low-load configurations and are used on offshore boats of all sizes.

Use for:

- Genoa leads
- Mast base reefing blocks
- Protected trip buttons
- Changing sheets
- Spinnaker sheet deflector blocks



Integrated hanging bail

Free-running roller/ball bearing sheaves

Urethane sideplates

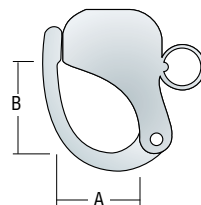
High-load

Snap/trunnion shackle

One-handed latch



1609



1608



1601



1600

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		A		B		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg	lb	kg
1600	Snatch block	2 1/2	64	5 3/4	146	18	510	5/8	16	5/8	16	3/4	19	2250	1021	4500	2041
1601	High-load	2 1/2	64	6 1/4	159	19	552	5/8	16	5/8	16	11/16	26	3500	1588	7000	3175
1608	Midrange/trunnion	2 1/2	64	5 13/16	147	18	510	5/8	16	11/16	17	13/16	21	2250	1021	4500	2041
1609	Midrange/high-load/trunnion	2 1/2	64	5 9/16	166	20	564	5/8	16	7/8	22	11/16	26	3500	1588	7000	3175

High-Load Snatch Blocks

Crew can quickly fasten these opening blocks wherever needed. ULC bearing technology ensures sheaves turn smoothly and maintain efficiency at high loads. Snap-fit Torton® ball bearings handle thrust loads, and the integral head-spacer prevents the Hardkote-anodized sideplates from binding the sheave. The articulating Loop carries the block's primary load.

Use for:

Static line applications

Sideplate pivots around the sheave axis, making it easy to attach to rigged line

Strong, lightweight Velcro® strap holds block closed when sideplates are aligned



HC8796
HC8832



HC8910
HC8628

Part No.	Description	Sheave Ø		Length		Weight*		Loop Ø		Max line Ø		Maximum working load		Breaking load		Use Loop
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
HC8796	2.3T Snatch block	1 1/2	38.5	2 3/8	60	3.95	112	5/16	7	7/16	11	5070	2300	10140	4600	HCP1800
HC8832	5T Snatch block	2 1/4	56	2 3/8	86	8.64	245	3/8	10	5/8	16	10805	5000	21610	9800	HCP1772
HC8910	8T Snatch block	3	75	4 1/2	114	20.28	575	1/2	12	3/4	18	18080	8000	36160	16400	HCP1868
HC8628	12T Snatch block	4	100	5 13/16	148	47.62	1350	11/16	17	1 3/16	30	26460	12000	52920	24000	HCP1852

Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com *Includes weight of Loop and Velcro® strap

Cruising ESP

Cruising ESP blocks complement our existing blocks in looks and function, but are simpler in design and construction. Sheaves feature sleeve bearings to handle high static loads and are ideal for halyards or limited purchase systems on cruising boats. Available in aluminum or hand-polished stainless steel.

Teardrops

Use teardrop blocks for direct attachment to padeyes, mast collar posts, perforated mast collars, or in mastbase situations where leads might change.

Footblocks

Use footblocks to redirect lines on the deck. Footblocks with lockoffs temporarily secure sheets and are designed for port or starboard installation by flipping them over.

Swivels and Fiddles

Use cruising ESP swivel and fiddle blocks in winch-driven purchases of 4:1 or less. Perfect for vang or mainsheet systems on cruising boats from 35 ft to 45 ft (10 m to 14 m).

Flip block over to mount on opposite side of boat

6077
6078



Can be double stacked

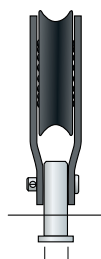
Lockoff temporarily secures sheets

Lockoff blocks feature aluminum sheaves



Plastic sleeve bearing for high static loads

Ball bearings handle low loads and side loads from unfair leads



14 mm (6050, 6056)



6091
6092
6093



Billy Black photo

6050
6056
6095

6065
6057

6096
6097
6098

Refer to page 74 for 6077/6078/6091/6092/6093 hole spacing.

Part No.	Description	Sheave Ø		Length		Weight		Clevis pin Ø		Max line Ø		Maximum working load		Breaking load		Max lockoff load		Fasteners (FH)	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	lb	kg	in	mm
57 mm																			
6050	Mastcollar	2 1/4	57	3 11/16	93.5	4.3	122	5/16	8	5/8	16	2100	850	4190	1900	—	—	—	—
6065	Padeye block	2 1/4	57	3 11/16	93.5	4.5	128	5/16	8	5/8	16	2100	850	4190	1900	—	—	—	—
6077	Footblock/lockoff** ‡	2 1/4	57	3 7/8	99	8	226	—	—	3/8	16	2500	1135	5000	2272	1200	550	5/16	8
6091	Footblock‡	2 1/4	57	3 7/8	99	5.4	153	—	—	3/8	16	2500	1135	5000	2272	—	—	5/16	8
6095	Mastcollar/low-load	2 1/4	57	4 7/8	117	4	113	—	6	5/8	16	1650	750	3300	1500	—	—	—	—
6096	Narrow Mastcollar	2 1/4	57	3 1/2	89	3.3	94	—	6	3/8	10	1650	748	3300	1497	—	—	—	—
6097	Narrow Mastcollar	2 1/4	57	3 1/2	89	3.5	99	5/16	8	3/8	10	1650	748	3300	1497	—	—	—	—
75 mm																			
6056	Mastcollar	3	75	4 7/8	117	7.8	221	5/16	8	3/4	19	3000	1361	6000	2721	—	—	—	—
6057	Padeye block	3	75	4 11/16	119	8.4	238	3/8	10	3/4	19	3500	1587	7000	3175	—	—	—	—
6078	Foot/lockoff** ‡	3	75	4 7/8	112	12	340	—	—	3/4	19	3500	1587	7000	3175	1200	550	5/16	8
6092	Footblock‡	3	75	4 7/8	112	10.3	293	—	—	3/4	19	3500	1587	7000	3175	—	—	5/16	8
6098	Narrow Mastcollar	3	75	4 7/16	113	6.4	181	5/16	8	1/2	12	2500	1134	5000	2268	—	—	—	—
100 mm																			
6093	Footblock‡	4	100	5 11/16	144	22.6	642	—	—	3/4	19	7500	3402	15000	6804	—	—	1/2	12

**Lockoffs are intended to hold lines temporarily and should not be used in place of line stoppers or clutches

‡If double stacked, upper block is two-thirds of listed MWL and breaking load

Cruising ESP

Set screw in three-way head locks shackle in front or side positions, or lets block swivel to keep line from twisting



6059
6058
6100



6094
6084



6085



6086



6099

Elan 410, Rob Humphreys, Elan Marine — Val Nautika photo

Part No.	Description	Sheave Ø		Length		Weight		Shackle pin Ø		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
57 mm															
6059	Single/swivel	2¼	57	5½	140	7.7	218	⅝	8	⅝	16	2500	1135	5000	2272
6094	Single/swivel/becket	2¼	57	6⅞	170	9	255	⅝	8	⅝	16	2500	1135	5000	2272
75 mm															
6058	Single/swivel	3	75	6¼	159	12	340	⅝	8	¾	19	3500	1587	7000	3175
6084	Single/swivel/becket	3	75	7¼	184	13	369	⅝	8	¾	19	3500	1587	7000	3175
6085	Fiddle	3/1⅞	75/46	8⅝	213	14.7	415	⅝	8	¾	19	3500	1587	7000	3175
6086	Fiddle/becket	3/1⅞	75/46	9½	241	15.6	444	⅝	8	¾	19	3500	1587	7000	3175
6099	Fiddle/becket/280 Cam-Matic®	3/1⅞	75/46	9½	241	25.2	715	⅝	8	¾	19	2000	907	4000	1814
100 mm															
6100	Single/swivel	4	100	8⅞	206	28.5	808	¾	10	¾	19	4870	2209	9740	4418

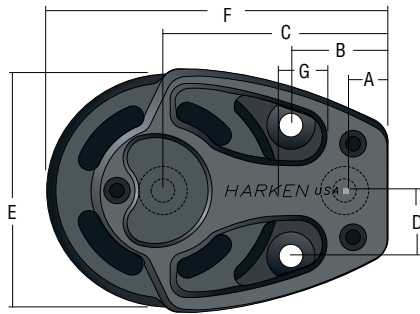
Stainless Steel Cruising ESP



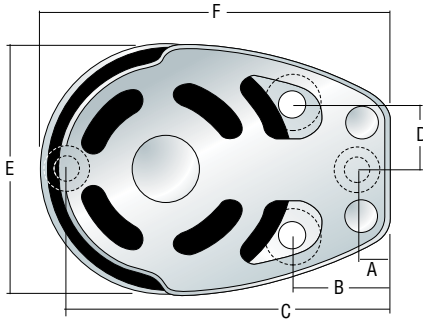
Part No.	Description	Sheave Ø		Length	Weight	Clevis/Shackle pin Ø		Max line Ø		Maximum working load	Breaking load‡	Max lockoff load	Fasteners (RH)						
		in	mm			in	mm	in	mm				in	mm					
57 mm																			
6068	Single/swivel	2 1/4	57	5 1/2	140	11	312	5/16	8	5/8	16	2500	1135	5000	2272	—	—	—	—
6069	Mastcollar	2 1/4	57	3 11/16	93.5	7	198	5/16	8	5/8	16	2500	1135	5000	2272	—	—	—	—
6070	Single foot/lockoff* ‡	2 1/4	57	3 3/4	132	9	255	—	—	5/8	16	2500	1135	5000	2272	650	295	3/8	10
6076	Footblock* ** ‡	2 1/4	57	3 3/4	95	7	198	—	—	5/8	16	2500	1135	5000	2272	—	—	3/8	10
6089	Single/swivel/becket	2 1/4	57	6 11/16	170	12.5	354	5/16	8	5/8	16	2500	1135	5000	2272	—	—	—	—
75 mm																			
6072	Single/swivel	3	75	6 1/4	159	19	539	5/16	8	3/4	19	3500	1587	7000	3175	—	—	—	—
6073	Mastcollar	3	75	4 5/8	117	16	454	5/16	8	3/4	19	3000	1361	6000	2721	—	—	—	—
6074	Single foot/lockoff* ‡	3	75	4 3/8	111	17	482	—	—	3/4	19	3500	1587	7000	3175	750	340	3/8	10
6079	Footblock* ** ‡	3	75	4 1/2	114	16	454	—	—	3/4	19	3500	1587	7000	3175	—	—	3/8	10
6080	Fiddle	3 1/16	75/46	8 3/8	213	24	680	5/16	8	3/4	19	3500	1587	7000	3175	—	—	—	—
6081	Fiddle/becket	3 1/16	75/46	9 1/2	241	26.25	744	5/16	8	3/4	19	3500	1587	7000	3175	—	—	—	—
6087	Single/swivel/becket	3	75	7 1/4	184	21.25	602	5/16	8	3/4	19	3500	1587	7000	3175	—	—	—	—
Deck Organizers																			
6071	Deck organizer/3-sheave‡	2 1/4	57	9 5/16	252	21	595	—	—	5/8	16	6000	2721	12000	5442	—	—	3/8	10
6075	Deck organizer/3-sheave‡	1 1/2	40	7 11/16	179	10	284	—	—	1/2	12	3000	1361	6000	2721	—	—	5/16	8

*Lockoffs are intended to hold lines temporarily and should not be used in place of line stoppers or clutches **Refer to page 74 for 6076/6079 hole spacing ‡If double stacked, upper block/organizer is two-thirds of listed MWL and breaking load

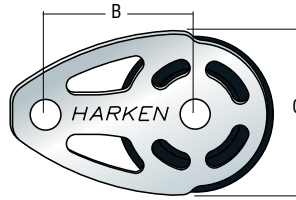
Specifications



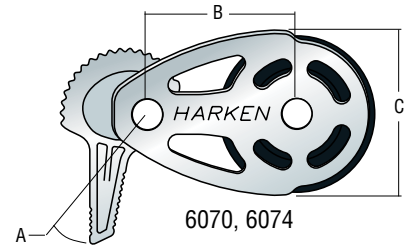
1963, 1964, 1967, 1968,
1972, 1973, 3005, 3006, 3010,
3011, 3017, 3023, 3033



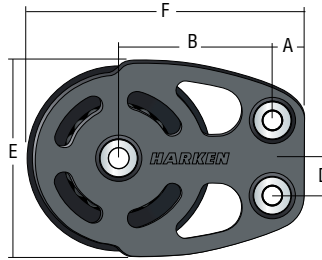
3131, 3134, 3137, 3183



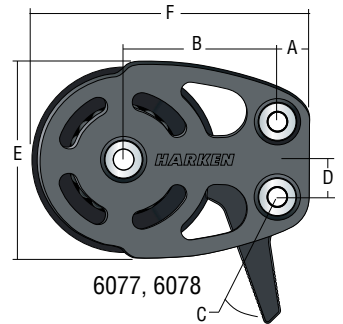
6076, 6079



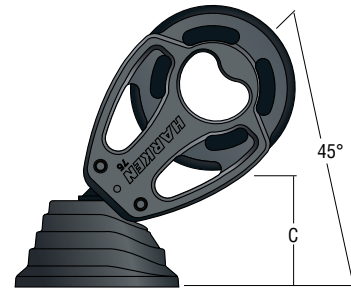
6070, 6074



6091, 6092, 6093



6077, 6078

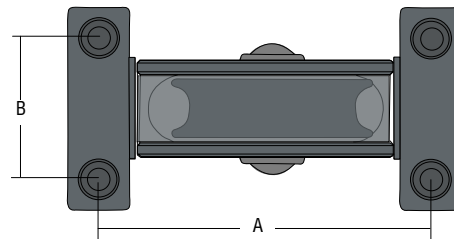


1965, 1974
3012, 3018
3022, 3138
3152, 3182

Stand-Up Blocks

Part No.	A		B		C	
	in	mm	in	mm	in	mm
1965	2 ⁷ / ₃₂	57	2 ⁹ / ₁₆	56	1 ¹ / ₄	32
1974	3	76	3	76	1 ¹¹ / ₁₆	43
1987/1989*	4 ¹⁵ / ₁₆	125	1 ¹⁵ / ₁₆	50	—	—
3122/3194**	3 ¹¹ / ₁₆	93.6	1 ⁹ / ₁₆	39.7	—	—
3012	3 ²¹ / ₃₂	93	3 ²⁷ / ₃₂	97	2 ⁵ / ₁₆	59
3018	3 ²¹ / ₃₂	93	4 ¹ / ₃₂	103	2 ¹ / ₄	57
3022	3 ³ / ₄	95	5 ⁵ / ₃₂	131	3 ³ / ₈	92
3138	3	76	3 ¹ / ₁₆	78	1 ²⁵ / ₃₂	45
3152	3 ²¹ / ₃₂	93	3 ²⁷ / ₃₂	97	2 ¹ / ₄	57
3182	3 ²¹ / ₃₂	93	4 ¹ / ₄	108	2 ¹ / ₁₆	62

*5/16" (8 mm) SH cap screw fasteners **1/4" (6 mm) SH cap screw fasteners



1987, 1989
3122, 3194

Footblocks

Part No.	Fasteners (FH)		A		B		C		D		E		F		G	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
1963/1964/1967/1968	1/4	6	9/32	7	7/8	23	2 ¹ / ₃₂	52	5/8	16	2 ⁹ / ₃₂	58	3 ⁵ / ₁₆	84	1 ⁵ / ₃₂	12
1972/1973/3005/3006	5/16	8	3/8	10	1 1/8	29	2 ¹³ / ₁₆	71	1 ³ / ₁₆	21	3	76	4 ⁵ / ₁₆	110	5/8	34
3010/3011	3/8	10	7/16	11	1 1/2	38	3 ⁵ / ₈	93	1 1/8	28	3 ¹⁵ / ₁₆	100	5 ⁵ / ₈	143	1 ³ / ₁₆	21
3017/3033	1/2	12	1 ⁷ / ₃₂	14	1 ²⁵ / ₃₂	50	4 ⁷ / ₁₆	113	1 ¹¹ / ₃₂	35	4 ²⁹ / ₃₂	125	6 ²⁹ / ₃₂	176	2 ⁹ / ₃₂	23
3023	5/8	16	1 ⁹ / ₃₂	15	2 ³ / ₃₂	53	5 ³ / ₃₂	129	1 ⁵ / ₈	41	5 ²⁹ / ₃₂	150	8 ¹ / ₁₆	204	1 ⁵ / ₁₆	24
3131	5/16	8	3/8	10	1 1/4	32	4	102	1 ³ / ₁₆	22	1 ⁵ / ₃₂	80	4 ¹³ / ₃₂	112	—	—
3134	3/8	10	1 ⁵ / ₃₂	12	1 1/2	40	5 ⁵ / ₃₂	131	1 ³ / ₃₂	28	4 ¹ / ₈	105	5 ³ / ₄	146	—	—
3137	5/8	16	1 ¹¹ / ₁₆	18	2 ⁵ / ₁₆	60	7 ²⁵ / ₃₂	198	1 ²³ / ₃₂	44	6 ³ / ₁₆	157	8 ⁵ / ₈	219	—	—
6070	3/8	10	1 ³¹ / ₃₂	50	2 ⁵ / ₃₂	55	2 ¹ / ₄	57	—	—	—	—	—	—	—	—
6074	3/8	10	2	51	2 ¹ / ₂	63	2 ²⁹ / ₃₂	74	—	—	—	—	—	—	—	—
6076	3/8	10	—	—	2 ⁵ / ₃₂	55	2 ¹ / ₄	57	—	—	—	—	—	—	—	—
6077	5/16	8	1/2	13	2 ⁵ / ₃₂	55	2	51	9/16	14	2 ¹ / ₄	57	3 ²⁵ / ₃₂	96	—	—
6078	5/16	8	1/2	13	2 ¹³ / ₃₂	61	2	51	9/16	14	2 ¹ / ₈	74	4 ⁵ / ₁₆	110	—	—
6079	3/8	10	—	—	2 ¹ / ₂	63	2 ³¹ / ₃₂	75	—	—	—	—	—	—	—	—
6091	5/16	8	1/2	13	2 ⁵ / ₃₂	55	—	—	9/16	14	2 ¹ / ₄	57	2 ²¹ / ₃₂	67	—	—
6092	5/16	8	1/2	13	2 ¹³ / ₃₂	61	9/16	14	1 ⁹ / ₃₂	15	2 ³¹ / ₃₂	75	4 ³ / ₈	111	—	—
6093	1/2	12	1 ¹¹ / ₁₆	17	3 ¹ / ₃₂	77	—	—	1 ¹¹ / ₁₆	18	4 ¹ / ₈	105	3 ¹⁵ / ₁₆	100	—	—
3183	1/2	12	1 ⁹ / ₃₂	15	1 ²⁵ / ₃₂	45	6 ¹⁷ / ₃₂	166	1 ³ / ₁₆	21	5 ⁵ / ₁₆	131	7 ¹ / ₈	181	—	—

Megayacht Blocks

NEW

Megayacht blocks are designed to handle the extremely high loads generated by today's large ocean-going monohulls and multihulls. The Teflon®-impregnated ultra-light composite bearing system (ULC) rides on a heat-treated 17-4 PH stainless steel inner race to handle primary loads. Snap-fit Torlon® ball bearings carry thrust loads. Megayacht blocks are available in Hardkote-anodized 6061-T6 aluminum and mirror-polished stainless steel.

ULC bearing construction allows a narrower sheave to reduce weight

Use hollow inner race as a bucket attachment for weight reduction



HC8670
HC8657
HC8639
HC8635



HC8667
HC8640
HC8633
HC8631

HC9076
HC9081
HC9086
HC9091

HC8671
HC8663
HC8661
HC8636

HC9080
HC9085
HC9090
HC9095

Part No.		Description	Sheave Ø		Max line Ø		Maximum working load		Breaking load	
Aluminum	Stainless		in	mm	in	mm	lb	kg	lb	kg
100 mm										
HC8673	HC9076	Stand-up block	3.94	100	5/8	16	11025	5000	22050	10000
HC8670	HC9077	Swivel block	3.94	100	5/8	16	11025	5000	22050	10000
HC8667	HC9078	Teardrop	3.94	100	5/8	16	11025	5000	22050	10000
HC8928	HC9080	Single footblock	3.94	100	5/8	16	11025	5000	22050	10000
HC8671	HC9079	Double footblock	3.94	100	5/8	16	7350	3333	14699	6666
125 mm										
HC8674	HC9081	Stand-up block	4.92	125	3/4	19	15435	7000	30870	14000
HC8657	HC9082	Swivel block	4.92	125	3/4	19	15435	7000	30870	14000
HC8640	HC9083	Teardrop	4.92	125	3/4	19	15435	7000	30870	14000
HC8929	HC9085	Single footblock	4.92	125	3/4	19	15435	7000	30870	14000
HC8663	HC9084	Double footblock	4.92	125	3/4	19	10187	4620	20374	9240
150 mm										
HC8675	HC9086	Stand-up block	5.91	150	1	25	22050	10000	44100	20000
HC8639	HC9087	Swivel block	5.91	150	1	25	22050	10000	44100	20000
HC8633	HC9088	Teardrop	5.91	150	1	25	22050	10000	44100	20000
HC8930	HC9090	Single footblock	5.91	150	1	25	22050	10000	44100	20000
HC8661	HC9089	Double footblock	5.91	150	1	25	14699	6666	29398	13332
175 mm										
HC8932	HC9091	Stand-up block	6.89	175	1	25	33075	15000	66150	30000
HC8635	HC9092	Swivel block	6.89	175	1	25	33075	15000	66150	30000
HC8631	HC9093	Teardrop	6.89	175	1	25	33075	15000	66150	30000
HC8931	HC9095	Single footblock	6.89	175	1	25	33075	15000	66150	30000
HC8636	HC9094	Double footblock	6.89	175	1	25	22050	10000	44100	20000

Grand Prix

TTR Blocks

The TTR (Titanium Roller) AirBlock® surpasses all other blocks with 98% efficiency, increasing trimming speed and harnessing power other blocks lose to friction. 6061-T6 Hardkote-anodized Teflon®-impregnated sideplates don't flex, so sheaves run smoothly. High-load titanium rollers handle bearing loads. Snap-fit Torton® ball bearings carry side loads.

ULC Loop Blocks

ULC (Ultra Light Composite) blocks feature lightweight, strong materials and Harken's standard bearing system for an exceptionally high strength-to-weight ratio. ULC blocks excel in static line applications that require small adjustments.

Articulating Loop attachments and sculpted head ensure a fair lead

C8734

Soft attachment Loops carry the primary load for a lightweight block

Inner and outer bearing races are made of titanium for strength

Block opens easily for maintenance



Soft attachment Loops can be configured as becket or fiddle block



Numbers, Judel/Vrolijk 66', Goetz Custom Boats — Sharon Green photo



C8488



C8878



C8580

Part No.	Description	Sheave Ø		Length		Weight		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg
ULC Loop*													
C7915	40 mm Tall wide	1 ⁹ / ₁₆	40	2.95	75	5.36	152	2 x 1/2	2 x 12	5100	2313	10201	4626
C8291	40 mm Short wide	1 ⁹ / ₁₆	40	2.44	62	5.19	147	2 x 1/2	2 x 12	5100	2313	10201	4626
C8488	40 mm Short narrow	1 ⁹ / ₁₆	40	2.40	61	3.88	110	1/2	12	5100	2313	10201	4626
TTR**													
C8878	3.0T AirBlock®	2.24	57	2.79	71	3.84	109	3/8	10	6614	3000	13228	6000
C8491	5.0T Narrow AirBlock®	3	75	3.82	97	7.77	220	1/2	12	11025	5000	22050	10000
C8580	5.0T Wide AirBlock®	3	75	3.82	97	9.32	264	2 x 1/2	2 x 12	11025	5000	22050	10000
C8723	5.0T Narrow footblock	3	75	4.29	109	16.16	458	9/16	14	11025	5000	22050	10000
C8724	5.0T Wide footblock	3	75	4.68	119	17.6	499	2 x 9/16	2 x 14	11025	5000	22050	10000
C8727	5.0T Sheave	3	75	—	—	6.56	186	9/16	14	11025	5000	22050	10000
C8575	6.5T Narrow AirBlock®	4	100	4.92	125	16.03	454	5/8	16	14333	6500	28666	13000
C9161	6.5T Wide AirBlock®	4	100	5.79	147	22.4	635	2 x 3/4	2 x 20	14333	6500	28666	13000
C9015	6.5T Sheave	4	100	—	—	14.1	400	3/4	20	14333	6500	28666	13000
C8462	8.0T Narrow AirBlock®	5	125	6.06	154	29.48	835	11/16	18	17641	8000	35281	16000
C8757	8.0T Wide AirBlock®	5	125	5.94	151	34.39	975	2 x 5/8	2 x 16	17641	8000	35281	16000
C8807	8.0T Footblock	5	125	6.49	165	48.78	1383	3/4	19	17641	8000	35281	16000
C8754	10.0T Narrow AirBlock®	6	150	7.1	181	48.29	1368	9/16	20	22046	10000	44092	20000
C8957	10.0T Wide AirBlock®	6.1	155	7.67	195	72.77	2063	2 x 7/8	2 x 22	22046	10000	44092	20000
C8755	12.0T AirBlock®	7	175	8.3	221	66.86	1894	7/8	22	26455	12000	52910	24000
C8734	15.0T AirBlock®	8	200	9.537	242	109.04	3089	1	26	33069	15000	66138	30000

Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com *Max loop Ø: 1/4" (7 mm) **Loops not included



Pegasus Racing, Melges 32 —
Eric Simonson Photo



COMPLEMENTARY HARDWARE

Ball Bearing Cam Cleats



PERFECT SAIL TRIM EVERY TIME

Tired of banging on the mainsheet to uncleat, or watching the cleat let go at just the wrong moment? Harken® ball bearing cam cleats hold lines securely and release instantly for easy, precise trimming. With a downward flick of the wrist, the sheet snaps into the cam—and stays exactly where you want it. Pull up and the cleat immediately releases—even under the highest loads. Smooth teeth grip line of all sizes including the small diameter hard line preferred by racers.

Accessories include flairleads, fairleads, adapter plate, wedge kits, risers, bases and color-coded cam caps.

DETAILS MAKE THE DIFFERENCE

EASY-OPEN BALL BEARING CAMS

Multiple rows of high-load ball bearings reduce friction so cams open easily for snap-down, rather than draw-through cleating.

The cam horns and smooth V-shape guide line for easy entry. This allows precise sail control without having to readjust the cleated line.

The Teflon® surface of the aluminum Cam-Matic® improves the cleat's fast line engagement. The Cam-Matic® is the only cleat that will engage under maximum line tension.

PROTECTIVE TOOTH DESIGN

Rounded teeth hold securely by squeezing rather than cutting into line to reduce wear.

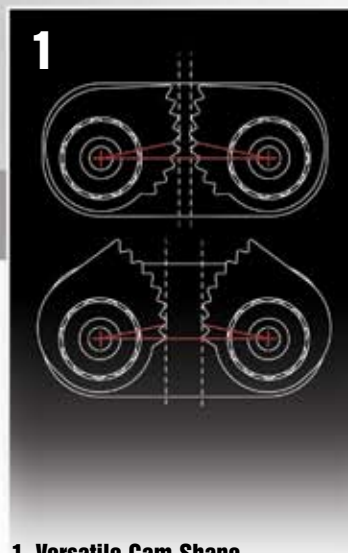
HIGH-WEAR OR LIGHTWEIGHT MODELS

Aluminum Cam-Matics® are Hardkote-anodized for high-load, high-wear, continuous adjustment applications. Available in Micro, standard and Offshore sizes.

Lightweight fiber-reinforced Carbo-Cams® for racing where weight is critical, or where adjustments are less frequent. Available in Micro and standard sizes.

LONG-LASTING PROTECTION

Ball bearings and Carbo-Cams® UV-stabilized with carbon-black additive for maximum protection.



1. Versatile Cam Shape

Cam design allows each line size to be held by the most teeth for superior holding power.

Ball Bearing Cam Cleats

NEW: 468, 471



468 and 471: available January 2009

Part No.	Description	Height		Length		Width		Weight		Line Ø min - max		Fastener spacing		Maximum working load		Breaking load		Pawls
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
150	Cam-Matic®*	1 ³ / ₁₆	30	2 ⁹ / ₁₆	65	1 ¹ / ₄	32	2.50	71	1/8 - 1/2	3 - 12	1 ¹ / ₂	38	300	136	750	340	Aluminum
280	Offshore Cam-Matic®****	1 ¹ / ₄	32	3 ³ / ₈	85	1 ¹ / ₂	38	5.25	148	1/4 - 5/8	6 - 16	2 ¹ / ₁₆	52	500	227	1000	454	Aluminum
468	Micro Cam-Matic®**	7/8	22	1 ⁷ / ₈	48	1 ⁵ / ₁₆	24	0.93	26	3/32 - 1/4	2 - 6	1 ¹ / ₁₆	27	200	91	400	181	Aluminum
365	Carbo-Cam®*	1 ³ / ₃₂	28	2 ⁹ / ₁₆	65	1 ¹ / ₄	32	1.44	42	1/8 - 3/8	3 - 10	1 ¹ / ₂	38	200	91	500	227	Plastic carbon-matrix
412	Double Cam-Matic®****	2 ¹ / ₁₆	53	3 ⁷ / ₃₂	81	1 ¹ / ₄	32	4.50	126	5/16 - 3/8	8 - 10	2 ¹ / ₁₆	62	500	227	750	340	Aluminum
471	Micro Carbo-Cam®**	7/8	22	1 ⁷ / ₈	48	1 ⁵ / ₁₆	24	0.67	19	1/8 - 1/4	3 - 6	1 ¹ / ₁₆	27	150	68	300	136	Plastic carbon-matrix

*#10 (5 mm) FH fasteners **#8 (4 mm) RH fasteners ***1/4" (6 mm) FH fasteners ****#10 (5 mm) TH fasteners

Cam Kits

NEW: 472, 473, 474, 469, 470



Micro Kits

469, 470, 472, 473, 474: available January 2009

Standard Kits

Part No.	Description	Cam	Wedge	Fairlead	Weight		Part No.	Description	Cam	Wedge	Fairlead	Weight	
					oz	g						oz	g
472	Carbo-Cam®/wedge/wire fairlead	471	297	475	1.2	33	326	Carbo-Cam®/wire fairlead	365	—	298	2.00	54
469	Cam-Matic®/wire fairlead	468	—	475	1.2	33	327	Cam-Matic®/wire fairlead	150	—	298	3.00	85
473	Carbo-Cam®/wire fairlead	471	—	475	0.9	26	458	Carbo-Cam®/X-Treme Angle Fairlead	365	—	380	2.00	54
474	Carbo-Cam®/X-Treme Angle Fairlead	471	—	476	1.7	47	459	Cam-Matic®/X-Treme Angle Fairlead	150	—	375	2.06	58
470	Cam-Matic®/X-Treme Angle Fairlead	468	—	476	1.9	55							

Cam Cleat Accessories

NEW: 475, 476

Use these accessories to adapt our cleats for many applications, such as cleaning up your cockpit controls with color-coding or leading a line cleanly to a cleat.

Wire fairleads maintain a low profile while holding the line close to the cleat.

The X-Treme Angle Fairlead allows releasing and recleating at angles up to 90° to the cleat. This sets it apart from other fairleads where line uncleats at extreme angles, and can't recleat without centering the line. The low-friction stainless bail provides a bulletproof turning point. Perfect for traveler and cabintop controls or deck cleats—a must for the new Laser® deck cleating system.

Low-profile top-mounted fairleads can also be used to guide lines. They feature stainless wearguards and are available in various colors for color-coding your cams. We offer a wide range of eyestraps to hold line at the cleat and to provide fair leads.



Stainless steel loop provides low-friction turning post

Cleat and uncleat at angles up to 90 degrees

Base plate ensures optimal cleating height

Ideal for Laser® outhaul/cunningham controls

476

Use with risers and angled wedges

475 and 476: available January 2009

Part No.	Description	Height above cam		Height		Length		Width		Weight		Fastener Spacing		Fits
		in	mm	in	mm	in	mm	in	mm	oz	g	in	mm	
Micro														
281	Eyestraps	1/2	12	—	—	17/16	36	7/16	11	.16	4.5	1 1/16	27	468/471
475	Wire fairlead	—	—	15/16	23	1 1/8	48	15/16	24	.29	8	1 1/16	27	468/471
293	Flat cam riser	—	—	5/8	16	1 1/8	48	15/16	24	.50	14	1 1/16	27	468/471
294	15° Angled micro cam riser	—	—	3/4	19	1 1/8	48	15/16	24	.75	21	1 1/16	27	468/471
297	Cam wedge kit	—	—	—	—	1 1/8	48	15/16	24	.16	5	1 1/16	27	468/471
476	X-Treme Angle Fairlead	7/8	22	1 1/16	37	1 5/16	33	2	51	1	29	1 1/16	27	468/471
424	Flairlead‡‡	7/16	11	—	—	1 5/8	41	5/8	16	.13	3.5	1 1/16	27	468/471
Standard														
137	Eyestraps	3/4	19	—	—	2	51	9/16	14	.32	9	1 1/2	38	150/365
145	Cam wedge kit	—	—	—	—	2 9/16	65	1 1/4	32	1.00	28	1 1/2	38	150/365
201	Low-profile eyestraps	3/8	10	—	—	1 1/8	48	7/16	11	.16	4.5	1 1/2	38	150/365
295	Flat cam riser	—	—	1	28	2 9/16	65	1 1/4	32	1.50	38	1 1/2	38	150/365
296	15° Angled cam riser	—	—	1	25	2 9/16	65	1 1/4	32	1.25	35	1 1/2	38	150/365
298	Wire fairlead	—	—	1 1/4	32	2 9/16	65	1 1/4	32	.50	14	1 1/2	38	150/365
375	X-Treme Angle Fairlead‡	15/16	24	2 1/4	57	1 13/16	46	2 9/16	65	1.92	56	1 1/2	38	150
380	X-Treme Angle Fairlead‡	15/16	24	2 3/16	54	1 13/16	46	2 9/16	65	1.92	56	1 1/2	38	365
425	Flairlead‡‡	5/8	16	—	—	2 3/16	56	1 3/16	21	.25	7	1 1/2	38	150/365
431	Colored cam caps‡‡	blue/yellow/green/black/red												150/468/365/471
438	Cam adapter plate	—	—	9/16	14	3	76	1 1/16	36	2.50	71	1 1/2	38	150/365
Offshore														
282	Large eyestraps	15/16	23	—	—	2 13/16	71	3/4	19	.80	23	2 1/16	52	280
283	Offshore cam wedge kit	—	—	—	—	3 3/8	85	1 1/2	38	1.50	43	2 1/16	52	280

‡Max line Ø: 3/8" (10 mm) ‡‡ Indicate color: BL (blue), Y (yellow), G (green), B (black), R (red)

Cam Cleat Accessories

Micro

Standard

Offshore



297



145



283

Wedge kits and risers are available to improve the angle of your cams. Underdeck shims are included with angled risers and wedges for easy mounting



294



296



293



295



431

Color code your cams with replaceable cam caps. These fit over the standard caps on standard and micro cleats



475



298



476



375
380



424



425



424
425

Lightweight, fiber-reinforced flairleads feature stainless wearguards for long life and are available in various colors for color-coding your cams



281



137



201



282



438



The 438 adapter plate is perfect for use on masts and booms. It raises the cleat off the mast to improve the cleating angle and control

Cam Bases

Use cam swivel bases when leads must rotate to face the trimmer.

Ball bearing swivel bases feature dual rows of Delrin® ball bearings that swivel freely even under high loads. Bases include stand-up springs and a U-adaptor to accept a variety of appropriate blocks.

The 144 is the standard configuration with a tall arm. It is ideal for mounting in the cockpit or for use on larger keelboats and small offshore boats that use 3.00 in (76 mm) plastic blocks. The low-profile 205 is used when installation is at deck level and when smaller blocks are used. The 1574 accepts Midrange blocks.

The 216 features a second cleat for lines led vertically through the base of the swivel. It is frequently used to combine vang or backstay controls in the same swivel base that handles the mainsheet.

The 240 and 241 are simple swivel bases for main and jib sheets on very small boats or for control lines on boats of all sizes.

The 402 and 403 are fitted with a double cam for use in two-speed mainsheet systems.

The 462 swivel base with 338 Micro Cam-Matic® provides precise cleating. The 16 mm sheaves feature low-friction stainless steel ball bearings to handle high loads. Ideal for controls where cleating angles change dramatically.

Use for:

Mainsheets
Jib sheets
Control lines

Cam-Matic® ball bearing cam cleats

Swivels freely under load

Stops on base prevent swivel from over-rotating and fouling line



144 and 360 include adapter for 75 mm Carbo block and 57 mm double

144
205
1574



238
239
379

462

402
403



360
361

216

240
241

Part No.	Description	Height		Weight		Line Ø				Fastener spacing		Maximum working load		Use with
		in	mm	oz	g	Min	Max	in	mm	in	mm	lb	kg	
144	Swivel base/150 Cam-Matic®*	5 3/4	146	13	369	1/8	3	1/2	12	3/4	19	—	—	57mm/75mm/2.25"/3.00"/ratchets
205	Little swivel base/150 Cam-Matic®*	4 1/2	114	12	340	1/8	3	1/2	12	3/4	19	—	—	57mm/Big Bullet/Dinghy/2.25"/little ratchets
216	Duocam swivel base/365, 423 Carbo-Cam®*	5 3/4	146	16	454	—	—	—	—	3/4	19	—	—	57mm/2.25"/3.00"/ratchets
238	150 Cam-Matic® on plate/bullseye‡	1 5/16	33	4	113	1/8	3	1/2	12	1 1/2	38/25	300	139	
239	365 Carbo-Cam® on plate/bullseye‡	1 5/16	33	3	85	1/8	3	3/8	10	1 1/2	38/25	200	91	
240	Bullseye swivel base/150 Cam-Matic®*	1 5/16	49	7.5	213	1/8	3	1/2	12	1 1/32	26	300	136	
241	Bullseye swivel base/365 Carbo-Cam®*	1 1/2	38	6 1/2	184	1/8	3	3/8	10	1 1/32	26	150	68	
360	Swivel base/Trigger cleat*	5 1/2	138	15.25	433	1/8	3	1/2	12	3/4	19	—	—	57mm/75mm/2.25"/3.00"/ratchets
361	Little swivel base/Trigger cleat*	4 5/16	110	14	398	1/8	3	1/2	12	3/4	19	—	—	Big Bullet/Dinghy/2.25"/little ratchets
379	423 Micro Carbo-Cam® on plate/bullseye‡‡	7/8	22	1.75	50	1/8	3	1/4	6	1 1/16	27	150	68	
402	Small swivel base/412 Cam-Matic®*	4 3/8	111	12.75	362	5/16	8	7/16	11	3/4	19	—	—	57mm/2.25" Double ratchets
403	Swivel base/412 Cam-Matic®*	5 1/4	146	14	398	5/16	8	7/16	11	3/4	19	—	—	57mm/2.25"/3.00" Double ratchets
462	Swivel base/338 Micro Cam-Matic®/16 mm sheaves	1 13/16	46	4.8	136	1/8	3	1/4	6	1 1/32	26	200	91	
1574	Midrange swivel base/280 Cam-Matic®**	5 15/16	151	23	652	1/4	6	5/8	16	1 1/16	27	—	—	Midrange

*#10 (5 mm) FH fastener **1/4" (6 mm) FH fastener ‡#10 (5 mm) RH fastener ‡‡#8 (4 mm) RH fastener

Trigger Cleat

The Nash Trigger cleat has a unique mechanism that allows you to release highly loaded lines with complete control. Pulling the sheet down on the trigger trips the pawls and frees the sheet. The trigger serves as a snubbing surface to control release.

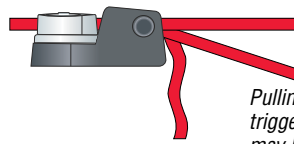
In light air, or once the trigger releases the load, the cleat operates like a normal cam cleat. The Trigger cleat is constructed of rugged stainless steel. It is very reliable in heavy air.

Trigger cleats are ideal on highly loaded systems like mainsheets, vang, and even for some halyards. They have developed a cult-like following in some classes where the crew loves the ability to spill the mainsail reliably during close-quarters maneuvering.

The 355 cam mounting bracket attaches the Trigger cleat to 3.00 in (75 mm) low-profile triples.

Use for:

Mainsheets
Halyards
Vangs
Control lines



Spring-loaded cams close to cleat line

Pulling line down against trigger opens cams so line may be eased

Fasteners included

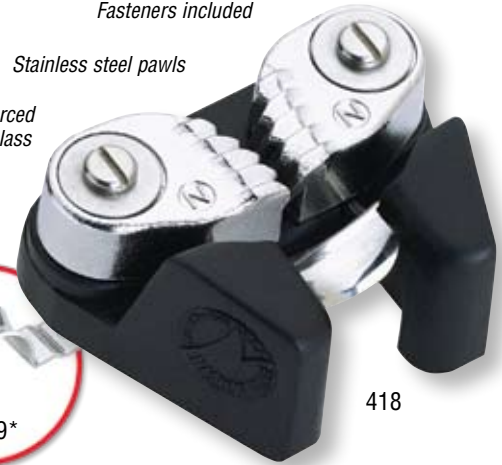
Stainless steel pawls

Base reinforced with long glass

Stainless trigger lever



419*



418



355

Part No.	Description	Length		Width		Height		Weight oz	Weight g	Line Ø				Maximum working load		Fasteners
		in	mm	in	mm	in	mm			Min in	Max in	Min mm	Max mm	lb	kg	
418	Trigger cleat	2 1/2	64	3	76	1 3/8	35	5.6	159	3/16	5	1/2	12	500	227	#10 TH 5 mm TH
355	Trigger cleat adaptor plate	3 3/4	79	1 1/2	31	1/4	6	1.3	36	—	—	—	—	—	—	—

*See page 97 for specifications

Stay Tensioners

Harken® stay tensioners are reliable mechanical adjusters that are easy to install and simple to use. Tensioners are made of polished stainless steel and chromed bronze, and feature bronze worm gears and thread drives to prevent galling under load. Moving components are mounted on greased roller bearings for easy adjustment.

Tensioners come in four sizes for boats from 27 ft to 50 ft (8 m to 15 m) with backstays from 9/32 in to 1/2 in (7 mm to 12 mm). B1722 tensioners have fold-down adjustment handles. The other tensioners accept a standard winch handle and are available in custom lengths.

Use for:

Backstays
Inner forestays
Babystays

Simple, reliable mechanism

Bronze bevel gear and thread drive

Handles fold up

B1722



No exposed threads

Polished stainless steel/chromed bronze components



B500
B502



B501
B503

Part No.	Description	Pin Ø		Pin-to-pin closed		Stroke		Jaw width		Jaw depth		Weight		Max wire Ø		Maximum working load		Breaking load		Adjust with
		in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	in	mm	lb	kg	lb	kg	
B500	Small	9/16	14	23 1/8	587	7	180	9/16	15	1 3/16	30	9.9	4.5	3/8	10	8377	3800	16755	7600	Winch handle
B501	Large	5/8	16	26 1/4	667	8 1/16	220	11 1/16	17	1 3/8	35	18.1	8.24	1/2	12	14330	6500	28660	13000	Winch handle
B502	Small	5/8	16	23 1/8	587	7	180	5/8	16	1 3/16	30	9.9	4.5	3/8	10	8377	3800	16755	7600	Winch handle
B503	Large	3/4	19	26 1/4	667	8 1/16	220	3/4	19	1 3/8	35	21.0	9.53	1/2	12	14330	6500	28660	13000	Winch handle
B1722	Large	1/2	12	19	483	6 1/4	160	1/2	12	1	25	8.3	3.75	9/32	7	5732	2600	11464	5200	Handle

Stand-Up Bases

Stand-up bases allow a wide variety of blocks to be held upright, swivel freely, or pivot so lines have a fair lead under load.

Ball and Socket Swivel Bases

The ball-and-socket design lets blocks articulate up to 45 degrees and swivel freely. The 460 and 461 bases (high-load versions of the 010 and 029) have stainless steel reinforcement plates to handle the high load capacities of 57 mm and 75 mm Carbo blocks. Bases may be fitted with springs, but blocks won't hit the deck without them.

Stanchion Mount Base

The 061 stanchion mount base attaches blocks to 7/8 in or 1 in (22 or 25 mm) stanchions or pulpits and is often used to lead furling lines to the cockpit. Allows blocks to swivel and pivot for fairleads.

Midrange Cruising ESP Stand-Up

Use the 1634 stand-up base with Midrange blocks and 57 mm or 75 mm Cruising ESP blocks. Block headpost fits into socket without shackle. The low-profile design is ideal for mastbase and halyard lead blocks.

Springs

Springs support blocks on padeyes, eyestraps, bases, and traveler cars, and prevent blocks from hitting the deck.

Stand-Up Boots

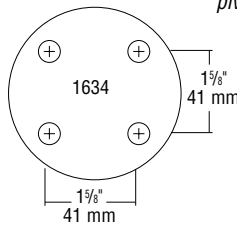
Made of durable, flexible PVC, stand-up boots hold blocks up without snagging lines. The 369 fits 40 mm and 57 mm Carbo and Black Magic® blocks. The 370 fits 75 mm Carbo blocks.

Blocks will not hit deck

Accepts a variety of blocks

Low-profile design

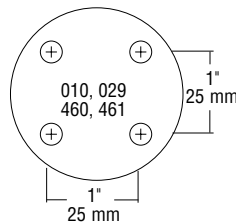
Swivels and pivots freely



Midrange and ESP Cruising block stand-up base



1634



010
029



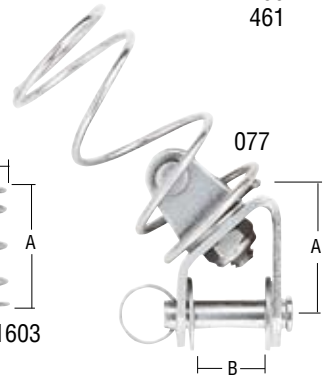
460
461



061

369
370

097, 071, 1603



077

Bases

Part No.	Description	Height		Weight		Base Ø		Inside socket Ø		Pin Ø		Maximum working load		Breaking load		Use with
		in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg	lb	kg	
010	Ball/socket*	1 3/4	44	3	85	2 1/8	54	3/8	10	3/16	5	400	181	1300	590	2.25"/Little Fiddle/ratchets
029	Large ball/socket*	2	51	4	113	2 1/8	54	7/16	12	1/4	6	400	181	1300	590	Fiddle/3.00" cruiser/ratchets
061	Stanchion mount	1 1/4	32	2	57	—	—	3/8	10	3/16	5	350	159	—	—	Bullet/Big Bullet/2.25"/ratchets
460	Ball/socket/high-load*	1 3/4	44	4	113	2 1/8	54	3/8	10	3/16	5	800	363	2500	1134	57 mm Carbo
461	Large ball/socket/high-load*	2	51	4.5	128	2 1/8	54	7/16	12	1/4	6	1000	454	2500	1134	75 mm Carbo
1634	Midrange/Cruising ESP stand-up**	1 1/16	49	9	255	2 7/8	73	3/16	15	3/16	8	3500	1588	7000	3175	Midrange/Cruising ESP

Base accessories

Part No.	Description	Weight		A		B		Shackle pin Ø	
		oz	g	in	mm	in	mm	in	mm
071	Stand-up spring	.32	9.1	2	51	7/8	22	—	—
077	DN adaptor	2.4	69	1/4	32	1 1/16	17	3/16	5
097	Small stand-up spring	.13	3.7	1	25	3/4	19	—	—
369	Small stand-up boot	.45	12.7	2	51	1 9/16	40	—	—
370	Large stand-up boot	1.1	30.8	2 3/8	67	2 3/16	55	—	—
1603	Midrange stand-up spring	.74	21	2 1/2	64	1 3/8	35	—	—

*#10 (5 mm) FH fasteners **1/4" (6 mm) RH fasteners

Accessories

Accessories are designed to make standard blocks more versatile or fill a special need.

Handhold

The 062 handhold is popular on boats like Solings and scows to help hiking crew re-enter the boat. It can also be used as a handle for things like engine covers. It has drain holes.

Bullseye Fairlead

Use the 237 and 339 where there is little deflection in the line such as when routing a spinnaker pole foreguy aft along the cabin house.

Sail Chafe Protectors

Use 285 to ease genoas over lifelines or past shrouds and to help large roach mainsails clear backstays.

Prefeeder

Use 947 with racing foils or furling systems.

Dinghy Clew Hook

The 433 and 394 dinghy clew hooks are designed for Lasers[®] and other loose-footed dinghies. They install permanently on the boom and allow you to instantly attach and adjust your sail in high wind and waves.



Malango 8.70, Pierre Rolland, idbmarine — Pierrick Contin photo

Part No.	Description	A		B		Part No.	Description	Weight	
		in	mm	in	mm			oz	g
062	Handhold*	5 ³ / ₄	146	3 ¹ / ₂	89	394	Dinghy clew hook/404	1.00	28.4
237	Bullseye fairlead**	1 ¹ / ₄	32	1 ¹ / ₂	38	433	Dinghy clew hook	.65	18.4
285	Sail chafe protector set (2)	2 ³ / ₄	70	—	—	947	Prefeeder	.13	3.7
339	Micro bullseye fairlead‡	1 ¹ / ₁₆	27	3 ³ / ₄	19				

*#10 (5 mm) FH fasteners **#10 (5 mm) RH fasteners ‡#8 (4 mm) RH fasteners, max line Ø 1/4" (6 mm)

Self-Contained Sheaves

Self-contained sheaves are designed for sailors to use in custom applications.

The Micro, Bullet and Big Bullet sheaves are Delrin® with Delrin® ball bearings. They are scored for rope. 16 mm AirBlock® sheaves are Delrin® and feature stainless ball bearings that ride in a grooved race. Midrange sheaves come in either Delrin® or aluminum for wire.

Wire sheaves ride on high-load composite bearings. They are Hardkote-anodized aluminum with Teflon® impregnation.

Ball bearings in the 1½ in (38 mm) and 2 in (51 mm) sheaves minimize friction. The 1 in (25 mm) wire sheave uses low-friction washers for this purpose.

Two 160 sheaves make up the 161 dual sheave universal lead. Use this sheave to divert a line that must turn in either direction.

Use Cruising ESP sheaves to handle high static loads from halyards and reef lines. Sheaves are carbon-black Delrin® for UV protection and turn on stainless steel spacers. Contained sideload ball bearings allow sheaves to spin freely when loads are released. Sheaves require a sideplate for the sideload balls to roll on.

Use for:

Custom applications



Plastic sleeve bearing for high static loads

6064

Ball bearings handle low loads and sideloads from unfair leads



6062

6063



161

265



415

277

160

1533
1534

303

307

311

VLC 35, NautaTec, Muller Yachts — Muller Yachts photo

Part No.	Description	Sheave Ø		Width		Weight		Line		Max Ø Wire		Center Pin Ø		Maximum working load	
		in	mm	in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg
160	Bullet	1 1/8	29	1/2	12	.25	7	5/16	8	—	—	1/4	6.27	300	136
161	Dual sheave	1 1/8	29	7/8	22	1	28	5/16	8	—	—	1/4	6.27	300	136
265	Big Bullet	1 1/2	38	9/16	14	.5	14	3/8	10	—	—	1/4	6.27	300	136
277	Micro	7/8	22	13/32	10	.1	3	1/4	6	—	—	3/16	4.75	200	91
303	Wire	1	25	9/32	7	.25	7	5/32	4	3/32	2	3/16	4.75	1000	454
307	Wire	1 1/2	38	13/32	10	1	28	3/16	5	1/8	3	1/4	6.27	1500	680
311	Wire	2	51	13/32	10	1.5	43	1/4	6	3/16	5	5/16	8.10	2000	907
415	16 mm	5/8	16	5/16	8	.13	4	3/16	5	—	—	3/16	4.75	250	113
1533	Small Midrange	2	51	7/8	22	1.5	43	5/8	16	—	—	1/4	6.27	500	227
1534	Small Midrange/aluminum	2	51	7/8	22	2.5	71	5/8	16	3/16	5	1/4	6.27	500	227
6062	Cruising ESP	1 9/16	40	11/16	17	.8	23	1/2	12	—	—	5/16	8.10	1250	567
6063	Cruising ESP	2 1/4	57	13/16	21	1.6	46	5/8	16	—	—	3/8	10.00	2500	1134
6064	Cruising ESP	2 15/16	75	7/8	22	4.4	126	3/4	19	—	—	3/8	10.00	3500	1588

Big Boat Sheaves

Big Boat sheaves are available for special applications as well as for replacement sheaves in Big Boat blocks. Made of Hardkote-anodized, Teflon®-impregnated 6061-T6 aluminum, sheaves feature Torkon® rollers to carry high radial loads and carbon-black Delrin® balls to support sideloads and provide UV protection. Select sheaves based on load-carrying capability.

Installation requires clamping or securing inner race.

Use for:

Mainsheets
Spinnaker sheets
Afterguy/foreguy
Footblocks

Carbon-black balls
for UV protection

Torkon® roller/ball
bearing system

Hardkote-anodized,
Teflon®-impregnated
6061-T6 aluminum



657



500



640
500
603



1539



518
519
520



550

Solaris One 48, Bill Tripp, Cantiere SE RI GI of Aquileia S.p.A. —
Carlo Borlenghi/Tassotto & Max

Part No.	Sheave Ø		Width		Weight		Center pin Ø		Fasteners		Fastener circle		Max line Ø		Maximum working load		Breaking load	
	in	mm	in	mm	oz	g	in	mm	in	mm	in	mm	in	mm	lb	kg	lb	kg
500	3	76	7/8	22	6	170	3/8	10.00	3/8	10	—	—	9/16	14	4950	2245	9900	4490
518	4 1/2	114	1	25	16	454	3/4	19.10	3/8	10	1 1/8	35	3/4	18	7500	3401	15000	6803
519	5 1/2	140	1 1/8	29	27	765	7/8	22.28	3/8	10	1 5/8	41	7/8	22	9100	4127	18200	8254
520	7	178	1 1/8	29	45	1280	1 1/2	38.00	1/2	12	2 1/2	64	7/8	22	14000	6349	28000	12698
550	4	102	7/8	22	10	284	3/8	10.00	3/8	10	—	—	9/16	14	4950	2245	9900	4490
603	3	76	1 3/16	40	10	284	3/8	10.00	3/8	10	—	—	3/4	18	4950	2245	9900	4490
640	2 1/2	64	1 1/4	32	6	170	5/16	8.10	5/16	8	—	—	9/16	14	2000	907	4000	1814
657	4 1/2	114	1 3/8	41	25	709	3/4	19.10	3/8	10	1 5/8	35	7/8	18	14850	6736	29700	13472
1539	2 1/2	64	1 3/8	35	7	198	5/16	8.10	5/16	8	—	—	1/2	12	3000	1361	6000	2721

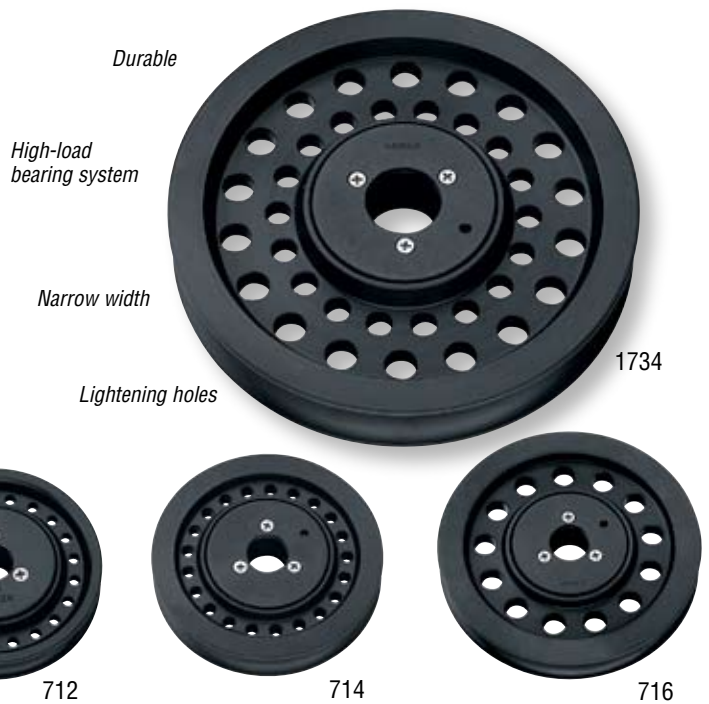
High-Load Sheaves

High-load sheaves are offered as replacement parts or for use in special applications. Their bearing system combines sideload-carrying balls with a Teflon® composite bushing to carry radial loads. While not as free-rolling as the standard Harken® ball/roller bearing system, this compact bearing system is extremely durable and perfect for carrying high loads in a restricted diameter.

Installation requires clamping or securing inner race.

Use for:

Masts
Booms
Deck organizers
Through-the-transom running backstays



Part No	Sheave Ø		Width		Weight		Center pin Ø		Line		Max Ø		Maximum working load		Breaking load*	
	in	mm	in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg	lb	kg
712	4	102	1/8	22	10	284	11/16	17.60	1/2	12	5/16	8	12000	5443	32000	14515
714	5	127	1	25	17	481	7/8	22.28	5/8	16	5/16	8	15000	6804	51000	23133
716	6	152	1	25	23	652	7/8	22.28	5/8	16	3/8	10	18000	8165	51000	23133
727	2 1/4	57	7/8	22	4	113	3/8	10.00	1/2	12	5/16	8	4950	2245	9900	4491
754	3	76	7/8	22	5	142	1/2	12.70	1/2	12	5/16	8	7000	3175	16500	7484
1734	8	203	1 3/8	35	46	1300	1 1/4	31.70	7/8	22	1/2	12	37000	16783	100000	45360

*Based on use of solid 304 stainless shafts

Narrow Halyard & Steering Sheaves

Narrow high load sheaves in mastheads improve sail handling, speed sail changes, and allow the use of smaller, lighter halyard winches. Used in steering systems, these sheaves return "feel" to wheel-steered boats.

Sheaves combine sideload-carrying balls with a Teflon® composite bushing for radial loads. These durable sheaves are made of 6061-T6 aluminum and are well-suited for masthead and steering installations.

Installation requires clamping or securing inner race.

Use for:

Masthead/halyard sheaves
Steering systems



Part No.	Sheave Ø		Width		Weight		Center pin Ø		Line		Max Ø		Maximum working load		Breaking load*	
	in	mm	in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg	lb	kg
691	3	76	5/8	16	4 1/2	128	1/2	12.70	3/8	10	3/16	5	4000	1814	16500	7484
692	4	102	3/4	19	8	227	1/2	12.70	7/16	12	5/16	8	8250	3742	16500	7484
693	5	127	3/4	19	12	340	3/4	19.10	7/16	12	5/16	8	12000	5443	37100	16828
694	6	152	7/8	22	19	539	3/4	19.10	1/2	12	3/8	10	16000	7258	37100	16828
695	7	178	1	25	27	765	1	25.42	9/16	14	7/16	12	21000	9526	66000	29937

*Based on use of solid 304 stainless shafts

Small Boat & Midrange Deck Organizers

Deck organizers lead halyards and control lines aft, allowing crew to sail from the security of the cockpit. Deck organizers lead a large number of lines through a small space. Harken® deck organizers feature ball bearing sheaves and are available in double, triple, and stacked double and triple configurations.

Use for:
 Halyards
 Control lines
 Reef lines
 Outhauls
 Pole lifts

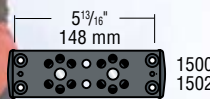
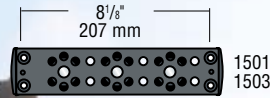
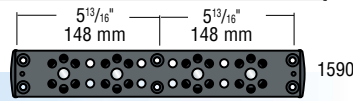
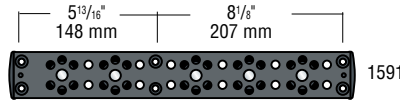
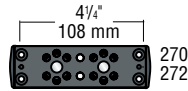
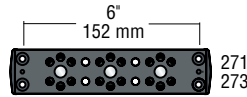
Self-contained sheaves
 Large-diameter, ball bearing sheaves

Compact length and low-profile construction

Stacked 2-sheave saves deck space



272
1502



270
1500



271
1501



273
1503



1590



1591



Beneteau 10R — Beneteau USA photo

Part No.	Description	Sheave Ø		Length		Height		Weight		Max line Ø		Maximum working load/sheave‡		Breaking load‡	
		in	mm	in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg
270	Small Boat/2-sheave*	1 1/2	38	5 1/16	129	7/8	22	4 1/2	128	3/8	10	300	136	2000	907
271	Small Boat/3-sheave*	1 1/2	38	6 3/16	173	7/8	22	6 1/2	184	3/8	10	300	136	2000	907
272	Small Boat/stacked 2-sheave*	1 1/2	38	5 1/16	129	1 9/16	40	7 1/2	191	3/8	10	300	136	2000	907
273	Small Boat/stacked 3-sheave*	1 1/2	38	6 3/16	173	1 9/16	40	12 1/2	355	3/8	10	300	136	2000	907
1500	Midrange/2-sheave**	2	51	6 7/8	175	1 1/8	29	9 1/2	269	5/8	16	500	227	2500	1134
1501	Midrange/3-sheave**	2	51	9 9/16	233	1 1/8	29	13 1/2	383	5/8	16	500	227	2500	1134
1502	Midrange/stacked 2-sheave**	2	51	6 7/8	175	2 1/8	54	16 1/2	468	5/8	16	500	227	2500	1134
1503	Midrange/stacked 3-sheave**	2	51	9 9/16	233	2 1/8	54	23 1/2	666	5/8	16	500	227	2500	1134
1590	Midrange/4-sheave**	2	51	12 3/4	324	1 1/8	29	16	454	5/8	16	500	227	3750	1700
1591	Midrange/5-sheave**	2	51	15	381	1 1/8	29	19	539	5/8	16	500	227	3750	1700

DO NOT use Harken equipment for human suspension. *#10 (5 mm) FH fasteners **1/4" (6 mm) FH fasteners
 ‡If double stacked, upper block/organizer is two-thirds of listed MWL and breaking load

Cruising ESP Deck Organizers

NEW: 6102, 6103, 6104

Deck organizers lead halyards and control lines aft, allowing crew to sail from the security of the cockpit. They lead a large number of lines through a small space. Harken® deck organizers feature ball bearing sheaves and are available in double, triple, and stacked double and triple configurations.

The ESP Deck Organizer features aluminum Hardkote-anodized side plates for strength and corrosion resistance.

Mount organizers with large fasteners directly through the sheaves. If you need an additional sheave, use the same holes and simply drill another hole to mount the longer organizer.

Match Cruising ESP mastbase blocks with organizers for a complete system.

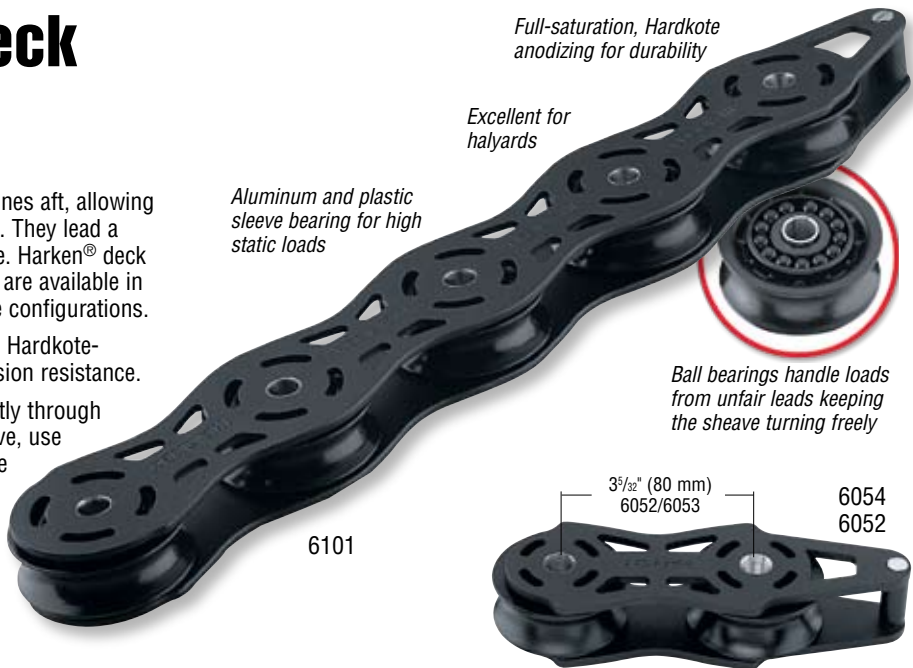
6102 is pre-assembled as a double and shares a common center plate.

Full-saturation, Hardkote anodizing for durability

Excellent for halyards

Aluminum and plastic sleeve bearing for high static loads

Ball bearings handle loads from unfair leads keeping the sheave turning freely



6101



6054
6052

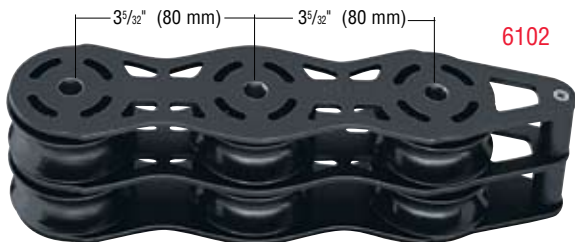


6055
6056

6075 Available in 6071 stainless steel



6066
6067



6102



2 1/4" (57 mm)
6103

3 5/32" (80 mm)
6104

6103
6104

Part No.	Description	Sheave Ø		Length		Weight		Height		Max line Ø	Maximum working load/sheave		Maximum working load*		Breaking load*		Fasteners (RH)	
		in	mm	in	mm	oz	g	in	mm		in	mm	lb	kg	lb	kg		in
6052	Aluminum 2-sheave	2 1/4	57	6 3/4	172	7.5	213	1 1/16	27	5/8	16	2500	1134	4000	1814	8000	3628	3/8 10
6053	Aluminum 3-sheave	2 1/4	57	9 15/16	252	11.5	326	1 1/16	27	5/8	16	2500	1134	6000	2721	12000	5442	3/8 10
6054	Aluminum 2-sheave	1 9/16	40	4 13/16	122	3.5	99	15/16	24	1/2	12	1250	567	2000	907	4000	1814	5/16 8
6055	Aluminum 3-sheave	1 9/16	40	7 11/16	179	5.5	156	15/16	24	1/2	12	1250	567	3000	1361	6000	2721	5/16 8
6066	Aluminum 4-sheave	1 9/16	40	9 5/16	237	7.5	213	15/16	24	1/2	12	1250	567	4000	1814	8000	3628	5/16 8
6067	Aluminum 4-sheave	2 1/4	57	13 1/16	332	15.5	439	1 1/16	27	5/8	16	2500	1134	8000	3628	16000	7256	3/8 10
6071	Stainless Steel 3-sheave	2 1/4	57	9 15/16	252	21	595	—	—	5/8	16	2500	1134	6000	2721	12000	5442	3/8 10
6075	Stainless Steel 3-sheave	1 9/16	40	7 11/16	179	10	284	—	—	1/2	12	1250	567	3000	1361	6000	2721	5/16 8
6101	Aluminum 5-sheave	2 1/4	57	16 7/32	412	18.4	522	—	—	5/8	16	2500	1134	10000	4535	20000	9070	3/8 10
6102	Aluminum 6-sheave	2 1/4	57	9 15/16	252	20.7	588	2 1/32	52	5/8	16	2500	1134	6000	2721	12000	5442	3/8 10
6103	Aluminum 6-sheave	1 9/16	40	13 3/4	348	11.5	326	15/16	24	1/2	12	1250	567	6000	2721	12000	5442	5/16 8
6104	Aluminum 6-sheave	2 1/4	57	19 5/16	490	21.3	604	1 1/16	27	5/8	16	2500	1134	12000	5442	24000	10884	3/8 10

DO NOT use Harken equipment for human suspension. *If double stacked, upper block/organizer is two-thirds of listed MWL and breaking load

Big Boat Deck Organizers

Use Big Boat deck organizers to lead multiple lines aft to halyard stoppers or winches. Organizers are also perfect for many other applications that call for a multiple-sheave, cheek-mounted lead block.

Use for:

- Halyards
- Reef lines
- Outhauls
- Pole lifts
- Control lines

High-load composite bearing sheaves

Polished, machined bolt heads

Low-profile construction

Compact length

Self-contained sheaves

Hardkote-anodized aluminum



724

2 3/4" 70 mm
2 7/16" 62 mm



725



726



1867



1868



Esmeralda, Club Swan 42, German Frers, Nautor — Nautor Swan Italia photo



725



726



1867



1868

Big Boat Deck Organizers are available with up to 10 sheaves by custom order.

Part No.	Description	Sheave Ø		Length		Height		Weight		Max Ø				Maximum working load/ sheave		Breaking load/ sheave		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	lb	kg	lb	kg
724	Big Boat/2-Sheave*	2 1/4	57	7 9/16	192	1 1/8	29	19 1/2	553	1/2	12	5/16	8	4950	2245	9900	4491	4950	2245	9900	4491
725	Big Boat/3-Sheave*	2 1/4	57	10 9/16	262	1 1/8	29	27 1/2	780	1/2	12	5/16	8	4950	2245	9900	4491	7425	3368	14850	6736
726	Big Boat/4-Sheave*	2 1/4	57	13 1/16	332	1 1/8	29	35	992	1/2	12	5/16	8	4950	2245	9900	4491	9900	4491	19800	8981
1867	Big Boat/5-Sheave*	2 1/4	57	15 13/16	402	1 1/8	29	44	1247	1/2	12	5/16	8	4950	2245	9900	4491	12375	5613	24750	11227
1868	Big Boat/6-Sheave*	2 1/4	57	18 9/16	471	1 1/8	29	45	1276	1/2	12	5/16	8	4950	2245	9900	4491	14850	6736	29700	13472

DO NOT use Harken equipment for human suspension. *Fasteners included — 3/8" (10 mm) x 3" (75 mm) HH

Spinnaker Pole Cars

Harken spinnaker pole cars feature recirculating ball bearings to permit adjustment under any load. They roll freely on low-beam traveler track to allow crew to adjust for optimal sail shape. Machined aluminum Hardkote-anodized races permit Torlon® bearings to transition smoothly from active to return race for smooth trimming or easing.

Small Boat 3188 and Midrange 3189 cars feature captive ball bearings making them easy to load and maintain. The one-piece solid aluminum construction is lightweight and strong. Stainless steel wire guides keep the balls captive when the car is off the track. Their ring fittings accept piston pole ends for end-for-end jibing. Midrange and Big Boat cars accept two popular toggle studs and Harken® bell end fittings. Cars are also available from the Harken® Custom Division.

Use for:

Spinnaker poles
Whisker poles

Captive balls on Small Boat and Midrange ring cars make cars easy to load and maintain. Wire guides circulate bearings smoothly

Accepts most popular pole ends

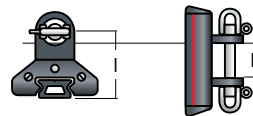
CB cars feature tough one-piece aluminum construction

Recirculating ball bearings



3188
3189

Cars fit low-beam track



782
783
784



1578
1579
1580

Rancho Deluxe, Swan 45, Rolex Big Boat Series — J.H. Peterson photo

Cars

Part No.	Description	Max spin area		Length		Weight		Pin Ø		H		I		Maximum working load		Track	Pole end
		ft²	m²	in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg		
782	Big Boat/bell*	2000	186	7 1/4	184	46.4	1315	1 5/32	12	1 1/2	38	—	—	4050	1837	3154	B120/B130 bell end
783	Big Boat/toggle*	2000	186	7 1/4	184	47.2	1338	9/8	16	1 3/16	30	2 1/2	63	4050	1837	3154	Sparcraft® toggle
784	Big Boat/toggle*	2000	186	7 1/4	184	45.6	1293	1/2	12.7	1	25	2 3/16	59	4050	1837	3154	Forespar® toggle
1578	Midrange/bell*	1500	140	5 1/4	133	23.2	658	1 5/32	12	1 1/2	38	—	—	2300	1043	1616	B120/B130 bell end
1579	Midrange/toggle*	1500	140	5 1/4	133	24	680	9/8	16	1 3/16	30	2 1/8	54	2300	1043	1616	Sparcraft® toggle
1580	Midrange/toggle*	1500	140	5 1/4	133	22.4	635	1/2	12.7	1	25	2	51	2300	1043	1616	Forespar® toggle
3188	Small Boat CB/ring*	900	85	4 5/8	126	12	340	—	—	—	—	—	—	1125	510	2720	Piston
3189	Midrange CB/ring*	1350	125	5 5/8	151	23.2	657.7	—	—	—	—	—	—	2100	953	1616	Piston

*See page 26 for replacement balls

Spinnaker Pole End Fittings

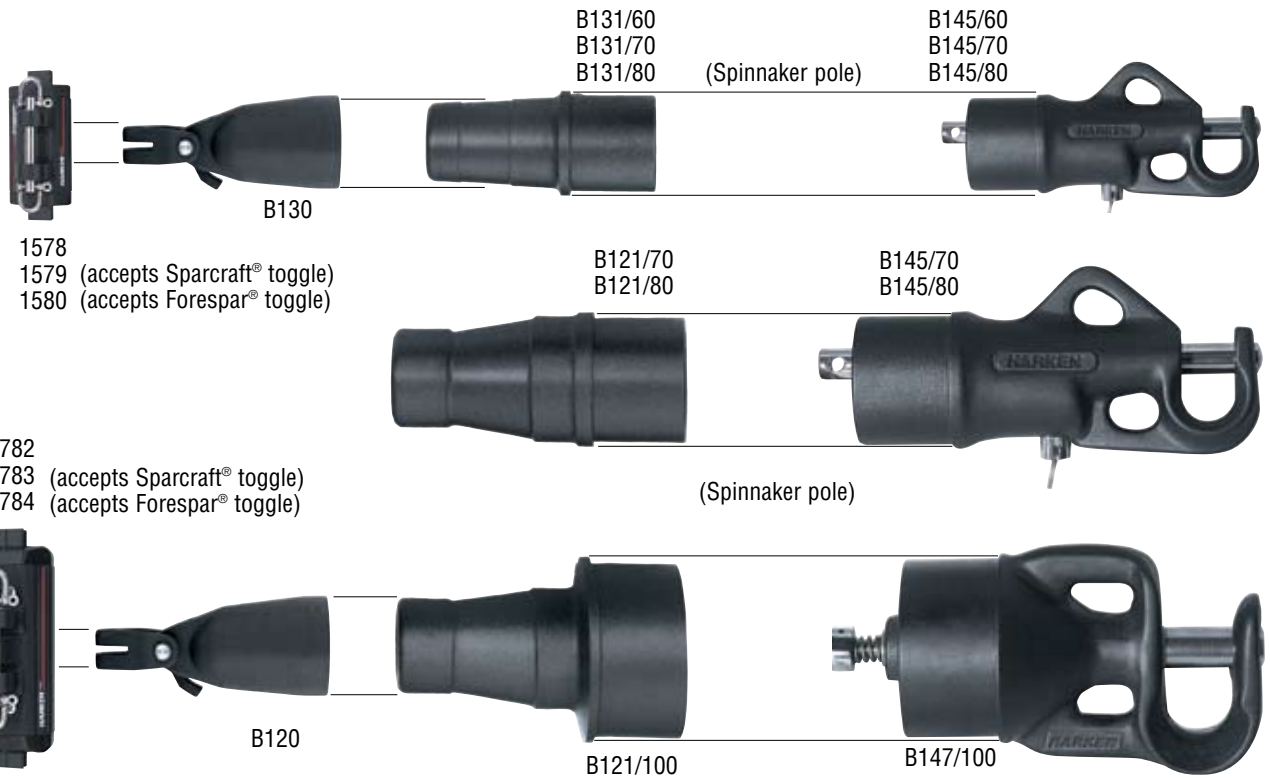
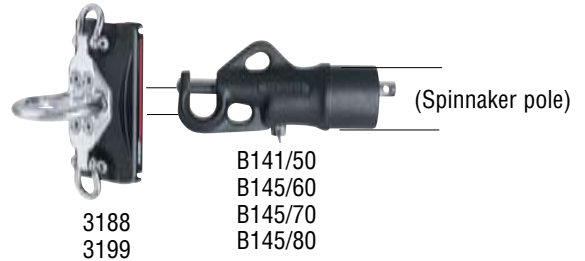
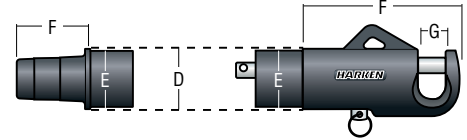
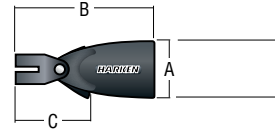
Spinnaker pole end fittings are strong, simple to operate, and reliable. All pole ends are hard-anodized aluminum with stainless steel pistons and pins.

Piston-type ends offer internal and external release levers. Use on outboard and inboard ends of poles for small and mid-sized offshore boats.

Use bell fittings on medium and large boats that dip pole jibe. The bell and socket arrangement is strong, easy to engage, and allows the pole to articulate properly in all conditions.

Toggle track slides accept bells and come with or without pinstops.

Use for:
Spinnaker poles
Whisker poles



End Fittings

Part No.	Description	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight oz	g	Fits
B120	Large bell socket**	82	168	85	—	—	—	—	24.7	700	B121
B121/70	Pole end for bell	—	—	—	70	65	110	—	17.6	500	B120
B121/80	Pole end for bell	—	—	—	80	75	110	—	21.2	600	B120
B121/100	Pole end for bell	—	—	—	100	94	110	—	21.2	600	B120
B130	Small bell socket**	66	154	80	—	—	—	—	17.6	500	B131
B131/60	Pole end for bell	—	—	—	60	55	85	—	8.8	250	B130
B131/70	Pole end for bell	—	—	—	70	65	85	—	10.6	300	B130
B131/80	Pole end for bell	—	—	—	80	75	85	—	15.9	450	B130
B141/50	Piston pole end	—	—	—	50	46	93	20	14.1	400	
B145/60	Piston pole end	—	—	—	60	55	146	28	35.3	1000	
B145/70	Piston pole end	—	—	—	70	65	175	30	56.4	1600	
B145/80	Piston pole end	—	—	—	80	75	175	30	63.5	1800	
B147/100	Piston pole end/trigger	—	—	—	100	94	134	36	52.9	1500	

*See page 26 for replacement balls **Do not use B120/B130 bell sockets for vertical spinnaker/whisker pole storage

Stainless Steel Shackles

Forged

The stainless steel shackles we use on Harken® blocks are available separately. We have increased the range in both configurations and sizes.

Stamped Shackles

The 072, 138, and 246 shackles are used on most of the Small Boat blocks. They are also useful for a wide range of other applications.

Snap Shackles

The 111, 112, and 1584 snap shackles fit a wide variety of blocks and make them removable. Many use a snap shackle on the lower vang block so that it can be moved from the mastbase to the toerail to use it as a preventer.

U-Adaptor

The 093 U-adaptor allows blocks with 3/8 in (10 mm) posts to be attached to swivel bases or to other blocks with 3/8 in (10 mm) posts.

The 1598 U-adaptor allows blocks with 9/16 in (14 mm) posts to be attached to swivel bases or to other blocks with 9/16 in (14 mm) posts.

The 463 U-Adaptor adapts 75 mm Carbo singles to swivel bases.

C & C 115 — Bob Grieser photo

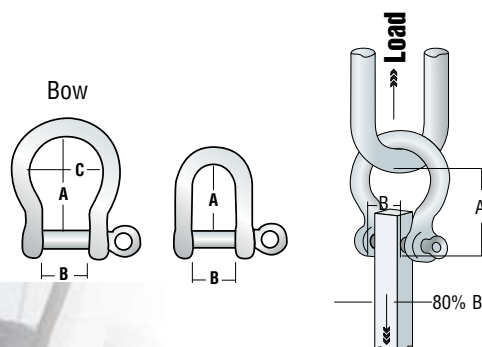
Shackles are electro-polished and tumbled to a high luster

Number on shackle denotes screw diameter in millimeters



Harken® shackles are electric forged from 316 and 17-4 PH stainless steel

High-resistance shackles are marked "HR"



The breaking strengths shown are derived from tests that supported 80% of the length of the screw pin that is unsupported, which is similar to the area of a post in a block. Safe working loads are no more than half the minimum breaking strength.



Forged Shackles



2103, 2110
2117, 2124



2131, 2132



2108, 2115
2122, 2126



2109, 2116
2123, 2127

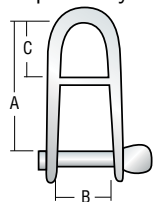
Part No.	Description	Shackle pin Ø		Weight		A		B		C		Maximum working load		Breaking load	
		in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg	lb	kg
Bow															
2103	5 mm	3/16	5	.64	18	1	25	3/8	10	11/16	17	1190	540	2380	1080
2110	6 mm	1/4	6	1.04	29.5	1 1/16	27	9/16	14	3/4	19	1650	750	3300	1500
2117	8 mm	5/16	8	2.48	70.5	1 1/2	38	11/16	17	1 1/8	29	3040	1380	6080	2760
2124	10 mm	13/32	10	4.88	138.5	1 7/8	48	7/8	22	1 1/4	32	4870	2210	9740	4420
Shallow Bow															
2131	4 mm	5/32	4	.3	8.5	5/8	16	5/16	8	7/16	11	810	367	1620	735
2132	5 mm	3/16	5	.51	14.5	11/16	17	7/16	11	9/16	14	1190	540	2380	1080
Forged "D"															
2108	6 mm	1/4	6	.88	25	3/4	19	9/16	14	—	—	1650	750	3300	1500
2115	8 mm	5/16	8	2.08	59	1	25	11/16	17	—	—	3040	1380	6080	2760
2122	10 mm	13/32	10	4.22	120	1 1/4	32	13/16	20	—	—	4870	2210	9740	4420
2126	12 mm	1/2	12	6.70	190	1 1/2	38	15/16	24	—	—	7120	3230	14240	6460
High-Resistance (HR) "D"															
2109	6 mm	1/4	6	.80	22.5	3/4	19	9/16	14	—	—	2770	1260	5540	2510
2116	8 mm	5/16	8	2	56.5	1	25	5/8	16	—	—	5130	2330	10260	4650
2123	10 mm	13/32	10	3.92	111	1 1/4	32	13/16	20	—	—	8210	3720	16420	7450
2127	12 mm	1/2	12	6.8	193	1 3/4	44	1	25	—	—	12000	5440	24000	10880

DO NOT use Harken equipment for human suspension.

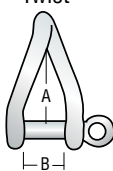
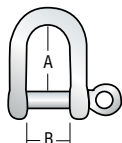
Stainless Steel Shackles

Forged Shackles

Captive Halyard



Twist



2107



2104, 2111
2118



2106



2105, 2112
2119, 2125

Stamped Shackles



072
138
246

U-Adaptors



093, 1598



463

Snap Shackles



111
112



1584



Fusion 40 — Fusion Catamarans photo

Part No.	Description	Shackle pin Ø		Weight		A		B		C		Maximum working load		Breaking load	
		in	mm	oz	g	in	mm	in	mm	in	mm	lb	kg	lb	kg
Long															
2104	5 mm	3/16	5	.78	22	1 1/2	38	3/8	10	—	—	1190	540	2380	1080
2111	6 mm	1/4	6	1.34	38	1 3/4	44	1/2	13	—	—	1650	750	3300	1500
2118	8 mm	5/16	8	3.01	85.5	2 1/4	57	5/8	16	—	—	3040	1380	6080	2760
Twist															
2105	5 mm	3/16	5	.78	22	1 7/16	37	3/8	10	—	—	1190	540	2380	1080
2112	6 mm	1/4	6	1.12	32	1 1/8	29	1/2	12	—	—	1650	750	3300	1500
2119	8 mm	5/16	8	1.84	52	1 5/8	41	11/16	17	—	—	3040	1380	6080	2760
2125	10 mm	13/32	10	4.96	140.5	1 7/8	48	3/4	19	—	—	4870	2210	9740	4420
Large Open															
2106	5 mm	3/16	5	.88	25	1 5/8	33	13/16	20	—	—	770	350	2200	1000
Captive Halyard															
2107	5 mm	3/16	5	1.12	32	1 3/8	35	9/16	14	3/16	14	1190	540	2380	1080
Stamped Shackles															
072	Small	3/16	5	.29	8	1/2	12	7/16	11	—	—	1250	567	2500	1134
138	Large	1/4	6	.54	15.5	1 1/8	17	5/8	16	—	—	1500	680	3000	1360
246	Micro	5/32	4	.18	5	7/16	11	3/8	9	—	—	600	270	1200	545
Snap Shackles															
111	Snap shackle	3/16	5	3	85	2 9/16	65	—	—	—	—	1000	454	2000	907
112	Large Snap shackle	1/4	6	4.5	128	3 3/8	86	—	—	—	—	1500	680	3000	1361
1584	Midrange Snap shackle	5/16	8	4	113	3 1/8	78	—	—	—	—	1800	816	3600	1633
U-adaptors															
093	U-adaptor	3/16	5	.48	13.6	1/2	12	7/16	11	—	—	1250	567	2500	1134
463	U-adaptor	3/16/1/4	5/6	.58	16.3	9/16	14	13/32	10	—	—	1250	567	2500	1134
1598	Midrange U-adaptor	5/16	8	1.57	44.4	1/2	12	7/8	22	—	—	1800	817	3600	1633

DO NOT use Harken equipment for human suspension.

LOUPS™

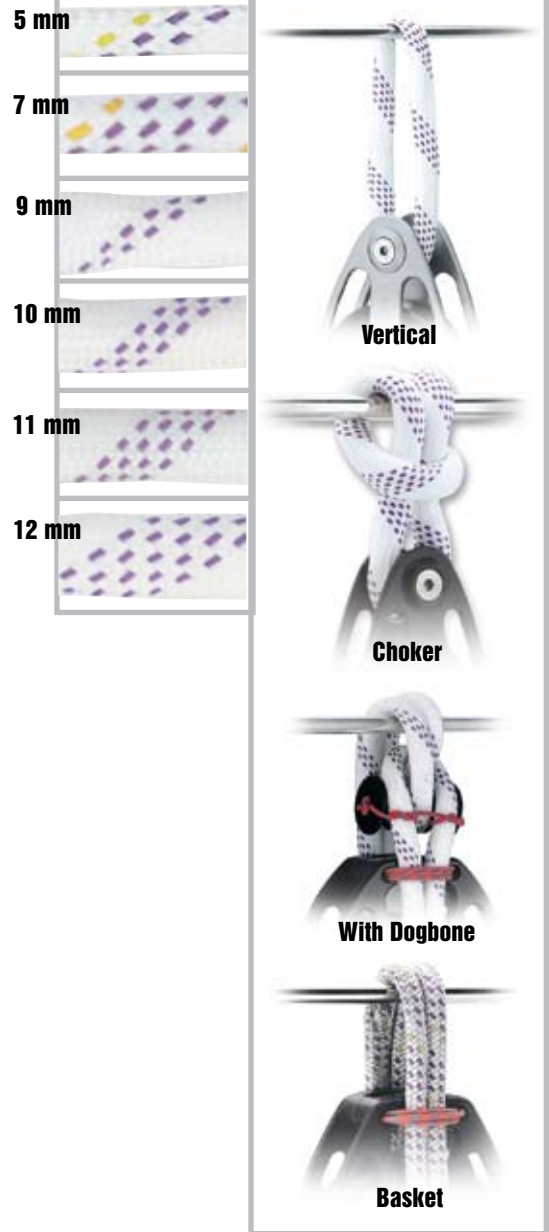
NEW: 3202, 3203

LOUPS™ are ready-made soft attachments that replace heavy stainless steel shackles on racing and cruising boats. Weight savings on large offshore boats can be as much as 200 lb (91 kg).

Strong and lightweight, LOUPS™ are constructed using multiple coils of tough Dyneema® covered with Spectra®—one of the most durable materials made. An annealing process ensures loads are equal on all coils. Colored tracers on the cover specify LOUPS™ strength by indicating the number of Dyneema® coils.

Most LOUPS™ configurations are made by taking the block apart. If the block can't be opened a pin called a "Dogbone" joins the LOUPS™ to itself.

When fitting hardware, choose the LOUPS™ that matches the attachment method shown in the chart. Custom length LOUPS™ are also available.



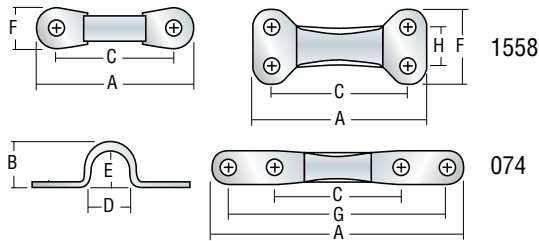
Part No.	Ø mm	Length		Weight		Vertical maximum working load			Choker maximum working load			With dogbone maximum working load			Basket maximum working load		
		in	mm	oz	g	lb	kg	Fits blocks	lb	kg	Fits blocks	lb	kg	Fits blocks	lb	kg	Fits blocks
3202	5	8	203	.3	9	1275	578	—	1000	453	—	—	—	2550	1156	3195	
3203	7	10	254	.49	14	2550	1155	—	2040	920	—	—	—	5100	2310	3196	
3139	9	4	100	0.7	20	3600	1630	—	2880	1305	—	—	—	7200	3265	—	
3140	9	8	200	1.4	40	3600	1630	—	2880	1305	—	—	—	7200	3265	3088	
3141	9	11	280	2	55	3600	1630	—	2880	1305	—	—	—	7200	3265	3088	
3142	10	5	125	1.1	30	5400	2445	—	4325	1960	—	—	—	10810	4900	—	
3143	10	9	230	2	55	5400	2445	—	4325	1960	—	—	—	10810	4900	3089/3095	
3144	10	15	380	3.3	94	5400	2445	—	4325	1960	5645	2560	3088	10810	4900	3089/3095/3199	
3145	11	5	125	1.7	50	7200	3265	3088	5765	2610	—	—	—	14415	6535	—	
3146	11	9	230	3.1	88	7200	3265	3088	5765	2610	—	—	—	14415	6535	—	
3147	11	16	400	5.4	154	7200	3265	3088	5765	2610	—	—	—	14415	6535	3201	
3148	12	6	150	2.3	65	9010	4085	3089	7200	3265	—	—	—	18020	8170	—	
3149	12	11	280	4.2	120	9010	4085	3089	7200	3265	—	—	—	18020	8170	—	
3150	12	17	430	6.5	180	9010	4085	3089	7200	3265	—	—	—	18020	8170	—	
3151	—	—	35	0.8	23	Dogbone fits 3144 LOUP											

DO NOT use Harken equipment for human suspension.

Eyestraps

Eyestraps are useful accessories. They form light-duty mounting bases for blocks, serve as lash-down points, and can be used for fairleads.

Forged eyestraps are extremely strong and their smooth shape won't chafe line.



Part No.	Weight		Fasteners (RH)		A		B		C		D		E		F		G		H		Fits		Breaking load	
	oz	g	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	cam	lb	kg	
073	.16	4.5	#10	5	1 ¹¹ / ₁₆	43	1/2	12	1 ¹ / ₄	32	7 ⁷ / ₁₆	11	3/8	10	7 ⁷ / ₁₆	11	—	—	—	—	—	—	1600	726
074	.64	18	1/4"	6	3 ¹ / ₄	83	3/4	19	1 ¹ / ₂	38	5/8	16	5/8	16	9/16	14	2 ¹ / ₄	70	—	—	—	—	4000	1814
137	.32	9	1/4"	6	2	51	3/4	19	1 ¹ / ₂	38	5/8	16	5/8	16	9/16	14	—	—	—	—	—	150/365	3000	1361
201	.16	4.5	#10	5	1 ⁷ / ₈	48	3/8	10	1 ¹ / ₂	38	9/16	14	1/4	6	7/16	11	—	—	—	—	—	150/365	1600	726
281	.16	4.5	#8	4	1 ⁷ / ₁₆	36	1/2	12	1 ¹ / ₁₆	27	7/16	11	3/8	10	7/16	11	—	—	—	—	—	338/423	1000	454
282	.8	23	1/4"	6	2 ¹³ / ₁₆	71	15/16	23	2 ¹ / ₁₆	52	7/8	22	3/4	19	3/4	19	—	—	—	—	—	280	3000	1361
419	.5	14	#10	5	2 ¹ / ₂	64	3/4	19	2	51	3/4	19	5/8	16	1/2	12	—	—	—	—	—	418	1600	726
445	.09	2.5	#8	4	1 ¹ / ₂	38	3/8	10	1 ¹ / ₁₆	27	7/16	11	3/8	10	7/16	11	—	—	—	—	—	—	1000	454
1558	1	28	1/4"	6	2 ¹ / ₄	57	5/8	16	1 ³ / ₄	45	5/8	16	7/16	11	1 ¹ / ₈	29	—	—	5/8	16	—	—	6000	2722
2129	.35	10	#10	5	2 ¹ / ₁₆	53	9/16	14.5	1 ¹¹ / ₁₆	43	1/2	13	3/8	10	3/8	10	—	—	—	—	—	—	2500	1130
2130	.57	14	1/4"	6	2 ¹ / ₁₆	59	3/4	19	1 ⁷ / ₈	47	5/8	16	1/2	12	1/2	12	—	—	—	—	—	—	3500	1588

DO NOT use Harken equipment for human suspension.

Padeyes

Padeyes are great for mounting blocks and are also used as attachment points for staysails, reefing blocks, and hundreds of other items.

Harken® offers a range of stainless steel padeyes. The diamond-shaped padeyes, 688 and 689, are 316 stainless and often used at mastbases where the diamond shape allows them to be mounted very close together. The 627, 629, and 648 padeyes are 17-4 PH stainless.

For maximum strength always align padeye bails to the load.



Part No.	Maximum working load						Breaking load						Fasteners (FH)	
	1		2		3		1		2		3		in	mm
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg		
627	5000	2270	4500	2040	4300	1950	10000	4535	9000	4080	8600	3900	1/4	6
629	20000	9070	12000	5440	14000	6350	40000	18140	24000	10890	28000	12700	1/2	12
648	11800	5358	10375	4705	8500	3855	23600	10716	20750	9430	17000	7710	3/8	10
688	3800	1770	5000	2270	4300	1950	7800	3540	10000	4535	8600	3900	1/4	6
689	8500	3855	8000	3628	7800	3540	19000	8618	17200	7800	15600	7075	5/16	8

Part No.	Description	A		B		C		D		E		F		G		Weight	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	oz	g
627	Small round	2 ¹ / ₄	57	—	—	1 ¹ / ₁₆	27	1 ³ / ₁₆	30	1 ³ / ₁₆	30	5/8	16	1 ⁵ / ₁₆	24	4 ¹ / ₄	118
629	Large round	3 ³ / ₄	95	—	—	1 ³ / ₄	44	1 ⁷ / ₈	48	2	51	1 ¹ / ₁₆	27	1 ³ / ₄	44	23	652
648	High-load medium	3	76	—	—	1 ⁵ / ₁₆	33	1 ⁹ / ₁₆	40	1 ¹⁵ / ₁₆	50	1 ¹ / ₈	29	1 ⁷ / ₁₆	37	11	312
688	Small diamond	3/8	79	2	51	2 ³ / ₈	60	1 ¹ / ₄	32	1 ¹ / ₁₆	30	9/16	14	7/8	22	43/4	135
689	Large diamond	3/8	98	2 ¹ / ₁₆	59	2 ¹ / ₈	73	1 ³ / ₈	35	1 ⁹ / ₁₆	40	7/8	22	1 ¹ / ₁₆	27	7 ¹ / ₂	213

DO NOT use Harken equipment for human suspension.

Grand Prix Padeyes, Fairleads & Jib Leads

Soft padeyes have a deck-mounted aluminum housing that incorporates a soft attachment Loop for TTR or Black Magic® Loop blocks. A stainless steel pin holds the load.

High-load aluminum fairlead deflects control lines and highly-loaded guys, halyards, and sheets.

Strong aluminum jib lead deflects jib sheets to winches preventing over-rides. Lead has two small drilled holes through which a loop can be spliced to attach the “hobble”.

Rubber cap encloses pin underdeck for a waterproof system



C8541
C8154



C8155
C8153



C6398
C6395

Part No.	Description	Deck thickness		Max line Ø		Height		Width		Weight		Maximum working load			
		in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg		
Padeyes															
C6395	High-load loop padeye	1	25	1 ⁹ / ₁₆	40	—	—	—	—	—	—	12.3	350	14994	6800
C6398	Low-load loop padeye	1	25	1 ⁹ / ₁₆	40	—	—	—	—	—	—	7.9	223	5000	2268
Fairleads															
C8153	Big Boat fairlead	—	—	1 ⁵ / ₁₆	34	1 ¹ / ₁₆	18	1 ⁷ / ₁₆	36.5	1 ²¹ / ₃₂	42	5.5	155	5512	2500
C8155	Midrange fairlead	—	—	1 ⁵ / ₁₆	34	9 ⁹ / ₁₆	14	1 ⁷ / ₃₂	30.5	1 ⁵ / ₁₆	34	3.5	99	3968	1800
Jib leads															
C8154	Big Boat jib lead	—	—	—	—	—	—	2 ⁹ / ₃₂	58	4 ³ / ₄	120	9.6	272	4248	1927
C8541	Midrange jib lead	—	—	—	—	—	—	1 ⁵ / ₁₆	34	2 ³ / ₄	70	3.2	91	1499	680

DO NOT use Harken equipment for human suspension. Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com

Custom Yacht Removable Padeyes

Harken® offers a variety of removable padeyes for blocks from 57 mm Black Magic®, to custom blocks with maximum working loads of 26,000 lbs (11,794 kgs). Bases swivel so padeyes align to the load. This prevents the reduction of the block's maximum working load. This unique swivel feature is a Harken® exclusive.

Assembly



Assembly Part No.	Component Part No.		Outer flange Ø		Assembly		Weight		Cup		Fasteners	Maximum working load		Use with padeye	Padeye Ø		Use with stand-up block
	Top	Cup	in	mm	oz	g	oz	g	oz	g		lb	kg		in	mm	
C2569	C6400	C6401	5 ¹ / ₂	139	158.7	4500	92.52	2765	63.74	1807	6 x 1/2"	26000	11794	—	—	—	150 mm
HC6107	HC7388	HC7389	3 ¹ / ₄	83	34.6	980	22	635	13	362	4 x M10	11800*	5358*	648	3	76	100/125 mm
C7343	C7327	C7340	2 ¹ / ₄	57	14	396	10	272	5	127	4 x M6	5000*	2270*	627	2 ¹ / ₄	57	75 mm
HC8224	HC7224	HC7403	4 ¹ / ₄	108	70.1	1987	28.5	807	41.6	1179	4 x M12	20000*	9070*	629	3 ³ / ₄	95	150 mm
C7852	C8207	C7340	2 ¹ / ₄	57	12	340	7.36	209	5	127	4 x M6	4400	2000	—	2 ¹ / ₄	57	—

DO NOT use Harken equipment for human suspension. Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com

*See page 97 for padeye loads

RigTune Pro Digital Rig Tension Gauge

NEW

The award-winning RigTune Pro rig tension gauge lets sailors fine-tune rigging with digital precision to the nearest kilogram, eliminating inaccurate spring-loaded gauges and conversion tables. The RigTune Pro works by deflecting the rigging over three pins on the back of the gauge. A load cell records the pressure on one of the pins and displays the measurement on an easy-to-read screen. Sailors can record their fastest settings and reproduce them for each regatta with dependable repeatability.

The Harken RigTune Pro was conceived and designed by Lou Varney of Diverse Yacht Services/Tropical Engineering and developed by Harken UK.

Use for:

Boats to 24' (7.3 m)

7850

Easy-to-read digital display

Fully precalibrated

Measures to nearest kilogram (MWL 500 kg/1103 lb)

Reference lines on deflection handle provide repeatable settings.



Splash-proof body



Fits 2.5-5.0-mm rigging—wire, rod, high-tensile fiber rigging



Melges 24 2007 Worlds — Eric Simonson photo

Part No.	Description	Stay Ø				Max Stay Tension	
		Min in	Min mm	Max in	Max mm	lb	kg
7850	RigTune Pro	3/32	2.5	3/16	5	1102	500

NEW

Aluminum Tiller Extension

The rigid anodized body of this tiller extension transmits subtle boat and rudder movements, allowing you to steer by the feel of the helm. The elegantly simple and lightweight design has no unnecessary frills—every aspect contributes to its strength, stiffness, or comfort. Its universal joint is reinforced by a rope core for extra durability and the thick UV-protected grip is perfect for full dagger-grip and fingertip steering.



Devoti D-One — Pierrick Conin photo



7101
Base cover snaps off to remove tiller extension



Universal joint rotates 360°



Non-slip foam rubber grip

- 7100.24
- 7100.30
- 7100.33
- 7100.36
- 7100.42
- 7100.48

Part No.	Description	Length		Tube Ø		Weight		Fastener spacing		Fasteners		Joint type	Tube material
		in	mm	in	mm	oz	g	in	mm	in	mm		
7100.24	Tiller extension	24	600	5/8	16	4.1	117	1.25	31.8	3/16	5	universal	aluminum
7100.30	Tiller extension	30	760	5/8	16	4.9	138	1.25	31.8	3/16	5	universal	aluminum
7100.33	Tiller extension	33	840	5/8	16	5.2	149	1.25	31.8	3/16	5	universal	aluminum
7100.36	Tiller extension	36	915	5/8	16	5.6	160	1.25	31.8	3/16	5	universal	aluminum
7100.42	Tiller extension	42	1070	5/8	16	6.3	178	1.25	31.8	3/16	5	universal	aluminum
7100.48	Tiller extension	48	1220	5/8	16	7.1	203	1.25	31.8	3/16	5	universal	aluminum
7101	Tiller extension base*	1.75	44	—	—	.18	5	1.25	31.8	3/16	5	—	—

*Fasteners not included



Club Swan 42 — Billy Black Photo

TRAVELERS & GENOA LEADS

Ordering Mainsail Travelers

1. Determine system size

The **Mainsail Traveler System Selection** table shows the appropriate cars for different boat types and sail areas. Contact Harken if sail area is larger than those listed.

2. Choose car options

Type: Most systems include options such as car-mounted cleats or high-load coupled cars. Racers should consider windward sheeting cars and ultra-lightweight Ti-Lite cars. Use page 17 for common mainsheet traveler configurations.

Purchase: See the **Control Purchase Recommendations** charts on the traveler control pages. Higher purchases are more powerful and easier to adjust under load. Lower purchases are lighter and use less line.

Block attachments: Cars with standup toggles and ears hold the block upright while providing fair control line leads. Cars with shackles and car-mounted sheaves cost less and are slightly lighter.

3. Choose controls

Control Block Selection Guides on the traveler control pages specify blocks and end controls based on system purchase. Use the **Index** in the back of the catalog to find control block details.

4. Determine track and track accessories

High-beam track will span unsupported areas. Metric, English, and variable hole spacing available. The rightmost columns in the track specification charts list compatible accessories. For curved track, see page 102.

5. Contact

If you have any questions, please contact Harken.



Actual size track chart available at www.harken.com

Mainsail Traveler System Selection

Cars	Maximum mainsail area							
	Monohulls				Multihulls			
	End-boom sheeting		Mid-boom sheeting		End-boom sheeting		Mid-boom sheeting	
	ft ²	m ²	ft ²	m ²	ft ²	m ²	ft ²	m ²
Dinghies/Light Daysailers								
Micro CB: 2700/2701/2702/2703	110	10.2	85	8	85	8	70	6.5
Small Boat CB: 2726/2728/2730/2732/2744/2753	125	11.6	100	9.3	100	9.3	80	7.5
Small Boat CB: 2727/2729/2731/2733/2734/2745/2754	160	14.9	135	12.5	135	12.5	110	10.2
Small Boat CB: 2735/2736/2737/2738/2746/382	200	18.6	160	14.9	160	14.9	135	12.5
Midrange CB: 1624/1626/1635/1640	350	32.5	285	26.5	275	25.5	215	20
Small Offshore Boats/Heavy Daysailers								
Small Boat CB: 2727/2729/2731/2733/2734/2745	150	14	125	11.5	135	12.5	110	10.2
Small Boat CB: 2735/2736/2737/2738/2746	190	17.5	150	14	160	14.9	125	11.5
Midrange CB: 1624/1626/1628/1635/1640	260	24	215	20	215	20	160	14.9
Midrange CB: 1625/1627/1629/1636/1641	300	28	240	22	240	22	190	17.5
Large Offshore Boats								
Big Boat CB: 3160/3163/3164/3176/3177	425	39.5	350	32.5	350	32.5	300	28
Big Boat CB: 3161/3165/3166/3178/3179	550	51	450	42	450	42	350	32.5
Big Boat CB: 3167, CRX Roller: 3074	575	53.4	500	46.5	500	46.5	425	39.5
Big Boat CB: 2 - 3163s joined by 580 or 584	700	65	525	49	525	49	450	42
Big Boat CB: 3172, 2 - 3165s joined by 752	800	74	650	60.5	650	60.5	550	51
Mini-Maxi: 3068, CRX Roller: 3075	1100	102	900	83.6	900	83.6	750	69.7
Maxi: 3070, CRX Roller: 3084/3085	1400	130	1100	102	1100	102	900	83.6

Ordering Genoa Lead Cars

The chart below sizes lead cars for the #1, #2, and #3 genoas based on typical loads for these sails. See **Block Loading vs Angle of Deflection** and **Genoa System Loading** on page 28 to size for different deflection angles and wind speeds. Visit www.harken.com or see page 19 for common configurations.

Adjustable Genoa Lead Cars	Maximum sail area										
	Small Boat		Big Boat				Mini-Maxi				
	ft ²	m ²	Midrange	3000	4500	ft ²	m ²	ft ²	m ²	ft ²	
#1 & #2 Genoa	450	41	750	70	1500	139	2700	251	4400	409	Assumes 155% Genoa/25 knots apparent wind/45° sheet lead angle
#3 Genoa	175	16	330	31	435	40	650	60	1300	121	Assumes 100% Genoa/40 knots apparent wind/60° sheet lead angle

Curved Track

Track is often bent to follow the cabin house curve or boom radius. Sometimes track is bent vertically, ends up, to relieve tension on the sail's leech as the traveler car moves off the boat's centerline.

To perform smoothly and carry the correct load, the traveler car's length must suit track radius. Each traveler car page has a chart which shows the minimum radius on which each car will ride. If the load requires a long car, but the radius will be too tight, consider using two short cars joined by a coupler.

Minor bends can often be made when the track is installed. If the track requires more bend, Harken® can provide horizontal, vertical or compound curves to specification for a modest charge. If the bend is continuous, add 2 to 4 inches (50 to 100 mm) to each end because track cannot be bent to its ends. Standard Harken® Mini-Maxi and Maxi traveler cars cannot ride on vertical bends with a radius under 50 ft (15.25 m).

1. Vertical Bend: Ends Down

This bend is used for mainsheet travelers mounted over the cabin house. The curve matches the crown of the cabin house and allows the track to clear the companionway hatch, but minimizes the height of the track risers.

2. Vertical Bend: Ends Up

Some boats use this bend to relieve leech tension when the traveler car moves off centerline. Ends-up bends are also used for staysails. Tracks angled forward to face the clew of the sail mount on risers.

3. Horizontal Bend

Horizontal bends allow the traveler to follow the radius of the boom as it swings across the boat. The track stays flat and the ends curve to the boat's bow or stern. Sometimes horizontal bends are used for boom vang and occasionally for staysails, especially those with booms.

4. Compound Bend

Compound bends are a combination of a vertical and horizontal bend. An example is when the track curves in the horizontal plane to follow the radius of the boom, but mounts to a deck that has a slight crown.



Track	Simple bend		Compound bends	
	Part No.	Major bend Part No.	Simple Part No.	Major Part No.
373/374/2707/2709/2720/2721/2725/2751	274	275	276	286
1602/1616/1617	1527	1528	1529	1581
1618	1530	1531	1532	1582
3154/3155/3159/3162	789	790	791	576
3156/1701/1706/1848	792	793	794	577
660/661	795	795	795	795

Simple Bend—Track length of 2 m (6'6³/₄') or less **and** chord depth less than 200 mm (8").
Major Bend—Track length of 2.1 m (6'10¹/₁₆') or greater **or** chord depth of 200 mm (8") or greater.
Compound Bend—Bend in both horizontal and vertical planes.
Compound Simple Bend—Both bends are simple bends.
Compound Major Bend—One or both bends are major bends.

Ordering Information

To order curved traveler track, please specify the following information:

Boat Model _____

Track Part Number _____

Bend Part Number _____

Chord Length _____

Chord Depth: Horizontal _____ or Radius: Horizontal _____

Chord Depth: Vertical _____ or Radius: Vertical _____

Check One:

Vertical Bend: Ends Down

Vertical Bend: Ends Up

Horizontal Bend: Ends Forward or Aft

Compound Bend:
Horizontal and Vertical (ends down)

Compound Bend:
Horizontal and Vertical (ends up)

CB Captive Ball Bearing Travelers

EASILY ADJUST LEADS UNDER LOAD

Whether racing or cruising, a free-running ball bearing traveler system makes the difference in sail control. Wind light? Adjust the traveler to power up the main. Is it blowing? Depower by easing the car to reduce heel and maintain speed—faster and safer than releasing the sheet, then struggling to retrim.

Systems tailored for end-boom and mid-boom configurations. Use risers and high-profile track to raise the traveler out of the cockpit.



DETAILS MAKE THE DIFFERENCE

STRONG, LIGHT CAR BODY

One-piece solid 6061-T6 aluminum construction for strength and durability. CNC sculpted to remove excess weight.

CAPTIVE BEARINGS

Wire guides keep balls captive making cars easy to load and maintain.

Guides circulate free-rolling Torlon® bearings smoothly under both high and low loads.

LONG-LASTING PROTECTIVE FINISH

Car body and bearing races are deep-saturation Hardkote-anodized and Teflon®-impregnated for durability. UV-stabilized with black additive for maximum protection.

1. Bind-Free Stand-Up Toggle

Stand-up toggle holds mainsheet block upright off deck.

Toggle attaches low inside car so off-angle mainsheet loads apply less leverage on balls, allowing cars to roll freely. Cars accept loads to 40-degrees from vertical without binding.

Carbo or Black Magic® control blocks attach directly to toggle ears to reduce load on car so bearings don't bind.

Micro CB Cars

Micro Captive Ball Traveler Cars are used on small dinghies and catamarans. The one-piece solid aluminum construction is lightweight and strong. Machined aluminum Hardkote-anodized races permit Turlon® balls to transition smoothly from the active to the return race for smooth trimming or easing. Stainless steel wire guides keep the balls captive when the car is off the track. Pivoting shackle cars have low pivot points to handle non-vertical loads.

2703 Ti-Lite cars matched with 29 or 40mm Carbo Ti-Lite blocks provide the ultimate, lightweight, low-profile system. High-tech line replaces shackles and spring. Control lines attach with a loop splice or clove hitch. Consult Use Chart on page 101 to size traveler-to-mainsail area.

Use for:

- Mainsheet cars
- Jib sheet cars
- Vangs on small dinghies
- Controls on small keelboats



Star (Hamish Pepper/Carl Williams) — J.H. Peterson photo

Part No.	Description	Length		Width		Car body height		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
2700	Car/pivoting shackle	2 ³ / ₁₆	56	1 ⁷ / ₁₆	40	3/4	19	1.76	50	310	140	1500	680
2701	Car/pivoting shackle/control blocks	3 ⁷ / ₁₆	87	1 ⁷ / ₁₆	40	3/4	19	2.56	73	310	140	1500	680
2702	Car/pivoting shackle/tangs	2 ³ / ₁₆	61	1 ⁷ / ₁₆	40	3/4	19	2.08	59	310	140	1500	680
2703	Ti-Lite car	2 ³ / ₁₆	56	1 ⁷ / ₁₆	40	3/4	19	1.6	45	310	140	1500	680

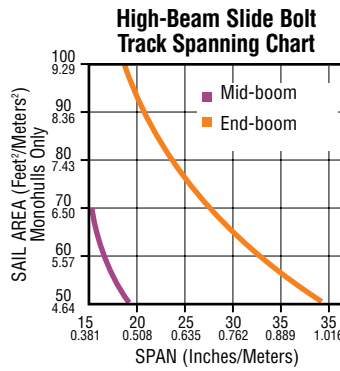
See page 26 for replacement balls

Micro CB Track & Accessories

Micro track comes in low and high-beam configurations. The wide track base adds stability and protects cored decks. A channel on the track bottom makes it easy to install on unfair decks and eliminates rocking on curved surfaces like booms or masts. Fastener holes fit both metric and imperial screws.

16 mm control blocks spin on stainless steel balls that roll freely under high loads. The step-down design keeps the controls low and clear of the mainsheet block.

Super-tough plastic endstops absorb sudden shock loads that can occur during unintentional jibes.



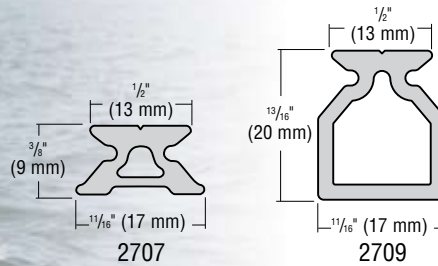
High-strength 16 mm ball bearing control blocks provide 2:1 purchase

Track is Hardkote-anodized for strength and durability

Low-profile, line-shedding endstop with built-in groove deadends 2:1 control line



Mercury — UnderTheSunPhotos.com



Track Bending		
Minimum Radius		
Track	in	m
2707	42	1.07
2709	60	1.52

Accessories

Part No.	Description	Length		Weight each		Height above track		Max line Ø		Maximum working load		Breaking load		Purchase
		in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
2704	Control block (pair)	1 ¹ / ₁₆	33	.39	11	3/4	19	7/32	5	250	113	750	339	2:1
2705	Control tang (pair)	1 ³ / ₁₆	21	.11	3	1 ¹ / ₁₆	17	—	—	250	113	750	339	1:1
2706	Micro endstop (pair)	1 ¹ / ₁₆	27	.11	3	1/8	3	—	—	250	113	750	339	—
2710	High-beam endstop (pair)	1 ¹ / ₁₆	27	.32	9	1/8	3	—	—	250	113	750	339	—

Track

Part No.	Description	Length		Hole spacing		Weight		Fasteners (FH)	Splice link	
		ft	m	in	mm	oz	g			
2707.600mm	Low-beam*	1.97	.6	1 ³¹ / ₃₂	50	4.6	129	#8	4 mm	2711
2707.1m	Low-beam*	3.28	1	1 ³¹ / ₃₂	50	7.6	214	#8	4 mm	2711
2707.1.2m	Low-beam*	3.93	1.2	1 ³¹ / ₃₂	50	9	257	#8	4 mm	2711
2707.2m	Low-beam*	6.56	2	1 ³¹ / ₃₂	50	15.1	429	#8	4 mm	2711
2707.2.5m	Low-beam*	8.20	2.5	1 ³¹ / ₃₂	50	18.9	536	#8	4 mm	2711
2709.1m	High-beam**	3.28	1	3 ¹⁵ / ₁₆	100	13.2	375	#8	4 mm	—
2709.1.2m	High-beam**	3.93	1.2	3 ¹⁵ / ₁₆	100	15.8	449	#8	4 mm	—
2709.2m	High-beam**	6.56	2	3 ¹⁵ / ₁₆	100	26.4	749	#8	4 mm	—

Actual size track chart available at www.harken.com *1st hole 1" (25 mm) **1st hole 1³¹/₃₂" (50 mm)

Small Boat CB Cars

Small Boat Captive Ball Traveler Cars are used on large dinghies, keelboats, beach cats and offshore boats to 27 ft (8 m). The one-piece solid aluminum construction is lightweight and strong. Ball bearings run on machined aluminum Hardkote-anodized races for smooth trimming and easing. Stainless steel wire guides keep the balls captive when the car is off the track.

Cars with a 500 lb (227 kg) safe working load use Delrin® balls. Cars with a higher safe working load use high-strength Torlon® balls.

Ti-Lite cars matched with Ti-Lite blocks provide the ultimate lightweight, low-profile system. High-tech line replaces shackles and spring.

Consult chart on page 101 to size traveler to mainsail area.

Use for:
Mainsheet Systems
Genoa Leads

Blocks attach directly to the toggle for a low-profile, compact system

Pivoting shackle and toggle cars have low pivot points to handle non-vertical loads

Tough one-piece aluminum construction

Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly

The Radial Traveler car has a curved ball race to fit curved track—perfect for radial vang on boats like the Star



2730
2731



CB Cars only fit Small Boat CB track 2720, 2721, 373, 374, 2725, 2751. Non-captive cars available upon request.

Part No.	Description	Length		Width		Car body Height		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
382	1250/Radial/shackle‡	4 1/8	105	2 1/4	57	1 5/16	24	6.24	177	1250	567	2500	1134
2726	Pivoting shackle	2 7/8	73	2 1/4	57	1 5/16	24	4.64	132	500	227	2500	1134
2727	High-load/pivoting shackle	2 7/8	73	2 1/4	57	1 5/16	24	4.64	132	850	386	2500	1134
2728	Fixed sheaves/eyestraps	2 7/8	73	2 1/4	57	1 5/16	24	5.6	159	500	227	2500	1134
2729	High-load/fixed sheaves/eyestraps	2 7/8	73	2 1/4	57	1 5/16	24	5.6	159	850	386	2500	1134
2730	Stand-up toggle	2 7/8	73	2 1/4	57	1 5/16	24	5.12	145	500	227	2500	1134
2731	High-load/stand-up toggle	2 7/8	73	2 1/4	57	1 5/16	24	5.12	145	850	386	2500	1134
2732	Ti-Lite	2 7/8	73	2 1/4	57	1 5/16	24	4	113	500	227	2500	1134
2733	High-load/Ti-Lite	2 7/8	73	2 1/4	57	1 5/16	24	4	113	850	386	2500	1134
2734	High-load/fixed sheaves/adjustable cam arms	6 1/4	171	3 1/8	80	1 5/16	24	14.88	422	850	386	2500	1134
2735	1250/Pivoting toggle	4 1/8	105	2 1/4	57	1 5/16	24	6.72	191	1250	567	2500	1134
2736	1250/Fixed sheaves/eyestraps	4 1/8	105	2 1/4	57	1 5/16	24	7.04	200	1250	567	2500	1134
2737	1250/Pivoting sheaves/eyestraps	4 1/8	105	2 1/4	57	1 5/16	24	9.6	272	1250	567	2500	1134
2738	1250/Pivoting sheaves/swivel cam	4 1/8	105	6 1/8	156	1 5/16	24	19.84	562	1250	567	2500	1134
2753	Pivoting shackle/control tangs	2 7/8	73	2 1/4	57	1 5/16	24	5.28	150	500	227	2500	1134
2754	High-load/pivoting shackle/control tangs	2 7/8	73	2 1/4	57	1 5/16	24	5.28	150	850	386	2500	1134

See page 26 for replacement balls ‡For horizontal curved track only—24"–40" (600–800 mm) radius

Small Boat CB Track & Accessories

Small boat track comes in low or high-beam configurations. Use low-beam track when it's supported at each fastener hole. Use high-beam track when it must span a cockpit or other unsupported area. Choose between variable hole spacing and drilled track.

Endstops and Trim Caps

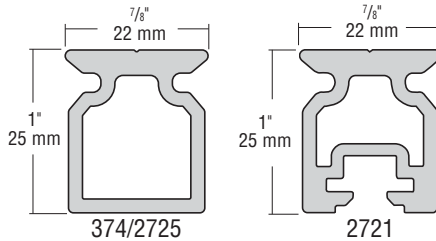
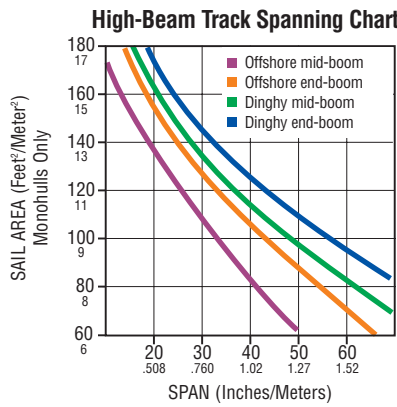
Use 173 and 174 endstops for small dinghies and low-load situations. The 446 line-shedding endstop is low-profile and snag-free. The 263 and 264 heavy duty endstops absorb the shock loads of unintentional jibes and are used on larger dinghies and small keelboats. Use 2722 and 2723 trim caps to finish track ends when using control block assemblies. Sold in pairs. Fasteners not included.

Splice Links

Splice links join track and keep it aligned during installation.

Curved Track

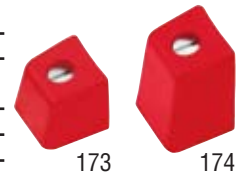
Harken® will bend track to your specifications. See page 102.



2751 (see page 126)

Fastener Hole Distance from Track End			
Metric		Retrofit	
in	mm	in	m
1 ¹⁵ / ₁₆	50	2	51

Track Bending		
Car	Minimum radius	
	in	m
2726 - 2734, 2744 - 2745	42	1.07
2735 - 2738, 2746	80	2.03



Part No.	Description	Length		Hole spacing		Weight		Fasteners		Endstop*‡/trim cap‡	Splice link/line-shedding endstop‡
		ft/in	m	in	mm	oz	g	in	mm		
Metric Track											
2720.600mm	Low-beam	1'11 ¹ / ₈ "	0.6	3 ¹ / ₁₆	100	9.1	258	10FH	5FH	173, 263/2722	2724/446**
2720.1m	Low-beam	3'3 ³ / ₈ "	1	3 ¹ / ₁₆	100	15.2	430	10FH	5FH	173, 263/2722	2724/446**
2720.1.2m	Low-beam	3'11 ¹ / ₄ "	1.2	3 ¹ / ₁₆	100	18.2	516	10FH	5FH	173, 263/2722	2724/446**
2720.1.5m	Low-beam	4'11 ¹ / ₁₆ "	1.5	3 ¹ / ₁₆	100	22.8	645	10FH	5FH	173, 263/2722	2724/446**
2720.1.8m	Low-beam	5'10 ³ / ₁₆ "	1.8	3 ¹ / ₁₆	100	27.3	775	10FH	5FH	173, 263/2722	2724/446**
2720.2.1m	Low-beam	6'10 ¹ / ₁₆ "	2.1	3 ¹ / ₁₆	100	31.9	904	10FH	5FH	173, 263/2722	2724/446**
2720.2.5m	Low-beam	8'2 ¹ / ₁₆ "	2.5	3 ¹ / ₁₆	100	38	1077	10FH	5FH	173, 263/2722	2724/446**
2720.3m	Low-beam	9'10 ¹ / ₁₆ "	3	3 ¹ / ₁₆	100	45.5	1291	10FH	5FH	173, 263/2722	2724/446**
2720.3.6m	Low-beam	11'9 ³ / ₄ "	3.6	3 ¹ / ₁₆	100	54.6	1549	10FH	5FH	173, 263/2722	2724/446**
2720.6m	Low-beam	19'8 ¹ / ₄ "	6	3 ¹ / ₁₆	100	91.1	2582	10FH	5FH	173, 263/2722	2724/446**
2725.1m	High-beam	3'3 ³ / ₈ "	1	3 ¹ / ₁₆	100	21	586	10FH	5FH	174, 264/2723	—
2725.1.2m	High-beam	3'11 ¹ / ₄ "	1.2	3 ¹ / ₁₆	100	24.5	695	10FH	5FH	174, 264/2723	—
2725.1.5m	High-beam	4'11 ¹ / ₁₆ "	1.5	3 ¹ / ₁₆	100	31	879	10FH	5FH	174, 264/2723	—
2725.1.8m	High-beam	5'10 ³ / ₁₆ "	1.8	3 ¹ / ₁₆	100	37	1055	10FH	5FH	174, 264/2723	—
2725.3.6m	High-beam	11'9 ³ / ₄ "	3.6	3 ¹ / ₁₆	100	74	2110	10FH	5FH	174, 264/2723	—
Variable Hole Spacing Track											
2721.1m	High-beam	3'3 ³ / ₈ "	1	Slide bolt	25	709	—	5HH	—	174, 264/2723	—
2721.1.2m	High-beam	3'11 ¹ / ₄ "	1.2	Slide bolt	30	851	—	5HH	—	174, 264/2723	—
2721.1.5m	High-beam	4'11 ¹ / ₁₆ "	1.5	Slide bolt	37.5	1064	—	5HH	—	174, 264/2723	—
2721.1.8m	High-beam	5'10 ³ / ₁₆ "	1.8	Slide bolt	45	1277	—	5HH	—	174, 264/2723	—
2721.3.6m	High-beam	11'9 ³ / ₄ "	3.6	Slide bolt	90.1	2554	—	5HH	—	174, 264/2723	—
Retrofit 4" Hole Spacing Track											
373.6	Low-beam	6	1.83	4	102	28	787	10FH	5FH	173, 263/2722	2724/446**
373.12	Low-beam	12	3.66	4	102	56	1574	10FH	5FH	173, 263/2722	2724/446**
374.4	High-beam	4	1.22	4	102	25	709	10FH	5FH	174, 264/2723	—
374.6	High-beam	6	1.83	4	102	38	1077	10FH	5FH	174, 264/2723	—
374.12	High-beam	12	3.66	4	102	76	2143	10FH	5FH	174, 264/2723	—



Actual size track chart available at www.harken.com *#10 (5 mm) FH fasteners ‡Sold in pairs **Fastens directly to deck

Small Boat Controls

Harken® Small Boat traveler controls allow installation of 2:1 to 4:1 purchases. Compact, high-strength Carbo AirBlock® components combined with Micro Carbo-Cam® cleats keep traveler weight minimal.

The 2755 features an easy-to-grab, spring-loaded knob for ease of adjustment on the water.

Color code cleats using 424 Fairleads. For cleating and releasing at angles up to 45°, use the 372 X-Treme Angle Fairlead.

The 384 traveler block features high-load composite bearings to handle wire and high-strength line. Use with the 382 Radial Traveler car and other Small Boat cars to configure a Radial vang. Do not use as mainsheet traveler.

Use for:

2:1 to 4:1 purchases

Easy to grab,
spring-loaded knob



Dual shock
absorbers cushion
car impact



2740



2741



2742



Integrated bar
for dead-ending
control line



2743



2739



384

Car not included



2747



2748



2749



175

Control Purchase Recommendations

Sail area			Purchase
ft ²	m ²		
Under 140	Under 13		2:1
140-175	13-16		3:1
175-190	16-18		4:1

Control Block Selection Guide

Purchase	Block	End control
2:1	340/348/2608	
	2636/2650/2651	2740/2741
3:1	340*/341/348*/2609	
	2636*/2637/2650*	2742/2743
4:1	342/2638/2642	2742/2743

*Dead-end line through center of sheave

End Controls

Part No.	Description	Sheave Ø		Length		Width		Weight (pair)		Max line Ø		Height above track		Maximum working load		Breaking load		Purchase
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
2740	Single sheave (pair)*	1 1/8	29	3 1/16	87	1 3/8	35	8	228	5/16	8	1	26	300	136	600	272	2:1
2741	Single sheave/423 Carbo-Cam® (pair)*	1 1/8	29	3 1/16	87	3 3/8	80	10.8	306	1/4	6	1 1/8	28	300	136	600	272	2:1
2742	Double sheave (pair)*	1 1/8	29	3 1/16	87	1 3/8	35	10.3	292	5/16	8	1 1/8	41	600	272	1200	544	3:1/4:1
2743	Double sheave/423 Carbo-Cam® (pair)*	1 1/8	29	3 1/16	87	3 3/8	80	13	370	1/4	6	1 1/8	41	600	272	1200	544	3:1/4:1
2755	Pinstop‡	—	—	1 1/8	42	1 3/8	35	1.6**	45**	—	—	13/16	21	—	—	—	—	—

1/4" (6 mm) RH fasteners. *Fits all Small Boat track

‡Use with 2751 Small Boat pinstop track (see page 126)

**Weight each

Accessories

Part No.	Description	Sheave Ø		Length		Width		Weight		Max line Ø		Max wire Ø		Maximum working load		Breaking load		
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
175	Coupler	—	—	3 1/16	94	2 1/16	56	4.5	128	—	—	—	—	1500	680	2500	1134	
384	Wire high-load vang block‡	2	51	2 3/4	70	—	—	3.3	93	1/4	6	3/16	5	1250	567	2500	1134	
2739	Traveler kit/3:1 purchase	Kit Includes 2735/2743/(2) 348. Purchase track, trim caps, and control lines separately.																
2747	Small stand-up toggle	Accepts 40 mm double & triple Carbo AirBlocks®, 57 mm single & fiddle Carbo AirBlocks®.																
2748	Large stand-up toggle	Accepts 57 mm double & triple Carbo AirBlocks®.																
2749	Control tangs (pair)	—	—	7/8	23	—	—	.8	21	—	—	—	—	600	272	1200	544	

‡Fits 382 for radial vang system. Do not use with controls if radius is tight

Midrange CB Cars

Midrange Captive Ball Traveler Cars are built to handle high loads on boats from 27 ft to 34 ft (8 m to 10 m).

The one-piece solid aluminum construction is lightweight and strong. Machined aluminum Hardkote-anodized races permit Torlon® bearings to transition smoothly from the active to return race. Stainless steel wire guides keep the balls captive.

Shackle/toggle cars have low pivot points to handle non-vertical loads. On 1626 and 1627 cars, blocks attach directly to the toggle ears for a low-profile, compact system. 1640 and 1641 cars use car-mounted control blocks. See chart on page 101 to size traveler to mainsail area.

Traveler Kits

Use the 1630 kit for boats to 34 ft (10 m) with maximum mainsail area of 275 ft² (25 m²) for end-boom, or 225 ft² (21 m²) for mid-boom sheeting.

Use for:

Mainsheet systems

Stand-up toggle holds block off deck

Toggle ears accept Carbo control blocks

Control blocks attach to ears to reduce load on car

Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly



1627



1630



1624



1625



1626



1628



1629



1640



1641



Sun Odyssey 42i — Jeanneau photo

CB Cars only fit Midrange CB track 1602, 1616, 1617, 1618. Non-captive cars available upon request.

Part No.	Description	Length		Width		Car body height		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
1624	Car/shackle	4 ¹ / ₄	108	2 ³ / ₄	70	1 ¹ / ₈	28	11.04	313	1800	816	5000	2268
1625	Long car/shackle	5 ³ / ₁₆	132	2 ³ / ₄	70	1 ¹ / ₈	28	12.48	354	2300	1043	5000	2268
1626	Car/stand-up toggle/ears	4 ¹ / ₄	108	2 ³ / ₄	70	1 ¹ / ₈	28	14.4	408	1800	816	5000	2268
1627	Long car/stand-up toggle/ears	5 ³ / ₁₆	132	2 ³ / ₄	70	1 ¹ / ₈	28	15.84	449	2300	1043	5000	2268
1628	Car/shackle/365 Carbo-Cam®	9 ¹ / ₈ *	232*	4 ³ / ₈	111	1 ¹ / ₈	28	25.76	730	1800	816	5000	2268
1629	Long car/shackle/365 Carbo-Cam®	9 ¹ / ₈ *	232*	4 ³ / ₈	111	1 ¹ / ₈	28	27.2	771	2300	1043	5000	2268
1630	Traveler kit/4:1	Kit Includes 1627/1633/(2) 2638. Purchase track, trim caps and control lines separately.											
1640	Car/stand-up toggle	4 ¹ / ₄	108	2 ³ / ₄	70	1 ¹ / ₈	28	13.6	386	1800	816	5000	2268
1641	Long car/stand-up toggle	5 ³ / ₁₆	132	2 ³ / ₄	70	1 ¹ / ₈	28	15.04	426	2300	1043	5000	2268

See page 26 for replacement balls *Length is measured to outer edge of cam plates

Midrange CB Track & Accessories

Midrange track comes in low- or high-beam configurations. Use low-beam track when it's supported at each fastener hole. Use high-beam track when it must span a cockpit or other unsupported area. Choose between variable hole spacing and drilled track.



Pinstop Track

1617 track has $\frac{9}{16}$ in (10 mm) pinstop holes spaced on $1\frac{5}{16}$ in (34 mm) centers to accept Midrange adjustable pinstop cars.

Endstops/Trim Caps

When end controls are not used, add 1522 or 1523 endstops to absorb shock loads. When end control assemblies are used, trim caps finish track ends. Sold in pairs. Fasteners not included.

Splice Links

Splice links join track and keep it aligned during installation.

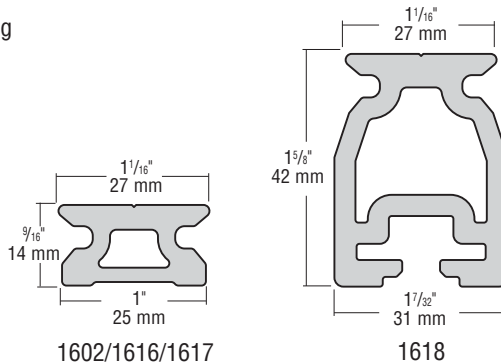
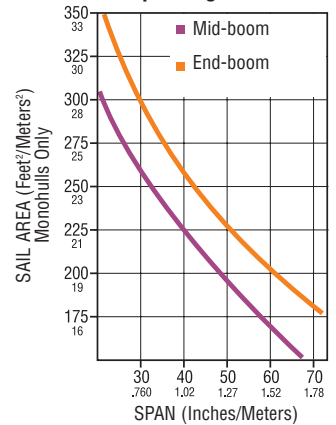
Curved Track

Harken® will bend track to your specifications. See page 102.



Use track risers to clear companionway hatches. See page 112

High-Beam Slide Bolt Track Spanning Chart



Track Bending		
Car	Minimum radius	
	ft	m
1624/1626/1628/1635	8	2.44
1625/1627/1629/1636	9	2.73

Part No.	Description	Length		Mounting hole spacing*		Weight oz	g	Fasteners in	mm	Endstop**/trim cap**	Splice link/track riser**	
		ft/in	m	in	mm							
Metric Track												
1616.1.2m	Low-beam	3'11 1/4"	1.2	3 5/16	100	27	772	1/4FH	6FH	1522/1621	1619/—	
1616.1.5m	Low-beam	4'11 1/16"	1.5	3 5/16	100	34	965	1/4FH	6FH	1522/1621	1619/—	
1616.1.8m	Low-beam	5'10 9/16"	1.8	3 5/16	100	41	1158	1/4FH	6FH	1522/1621	1619/—	
1616.2.1m	Low-beam	6'10 1/16"	2.1	3 5/16	100	48	1351	1/4FH	6FH	1522/1621	1619/—	
1616.2.4m	Low-beam	7'10 1/2"	2.4	3 5/16	100	54	1544	1/4FH	6FH	1522/1621	1619/—	
1616.3m	Low-beam	9'10 5/8"	3	3 5/16	100	68	1930	1/4FH	6FH	1522/1621	1619/—	
1616.3.6m	Low-beam	11'9 3/4"	3.6	3 5/16	100	82	2317	1/4FH	6FH	1522/1621	1619/—	
1616.6m	Low-beam	19'8 1/4"	6	3 5/16	100	136	3860	1/4FH	6FH	1522/1621	1619/—	
1617.1.2m	Low-beam/pinstop holes	3'11 1/4"	1.2	3 5/16	100	26	740	1/4FH	6FH	1522/1621	1619/—	
1617.1.5m	Low-beam/pinstop holes	4'11 1/16"	1.5	3 5/16	100	33	924	1/4FH	6FH	1522/1621	1619/—	
1617.1.8m	Low-beam/pinstop holes	5'10 9/16"	1.8	3 5/16	100	39	1108	1/4FH	6FH	1522/1621	1619/—	
1617.2.1m	Low-beam/pinstop holes	6'10 1/16"	2.1	3 5/16	100	46	1293	1/4FH	6FH	1522/1621	1619/—	
1617.2.4m	Low-beam/pinstop holes	7'10 1/2"	2.4	3 5/16	100	52	1474	1/4FH	6FH	1522/1621	1619/—	
1617.3m	Low-beam/pinstop holes	9'10 5/8"	3	3 5/16	100	65	1845	1/4FH	6FH	1522/1621	1619/—	
1617.3.6m	Low-beam/pinstop holes	11'9 3/4"	3.6	3 5/16	100	78	2215	1/4FH	6FH	1522/1621	1619/—	
1617.6m	Low-beam/pinstop holes	19'8 1/4"	6	3 5/16	100	130	3688	1/4FH	6FH	1522/1621	1619/—	
Variable Hole Spacing Track												
1618.1.2m	High-beam	3'11 1/4"	1.2	Slide bolt	69	1956	1/4HH	6HH	1523/1622	—/1849‡	—/1849‡	
1618.1.5m	High-beam	4'11 1/16"	1.5	Slide bolt	86	2445	1/4HH	6HH	1523/1622	—/1849‡	—/1849‡	
1618.1.8m	High-beam	5'10 9/16"	1.8	Slide bolt	104	2934	1/4HH	6HH	1523/1622	—/1849‡	—/1849‡	
1618.2.1m	High-beam	6'10 1/16"	2.1	Slide bolt	121	3424	1/4HH	6HH	1523/1622	—/1849‡	—/1849‡	
1618.3.6m	High-beam	11'9 3/4"	3.6	Slide bolt	207	5869	1/4HH	6HH	1523/1622	—/1849‡	—/1849‡	
Retrofit 4" Hole Spacing Track												
1602.6	Low-beam	6	1.83	4	102	42	1177	1/4FH	6FH	1522/1621	1619/—	
1602.8	Low-beam	8	2.44	4	102	56	1588	1/4FH	6FH	1522/1621	1619/—	
1602.12	Low-beam	12	3.66	4	102	83	2354	1/4FH	6FH	1522/1621	1619/—	

Actual size track chart available at www.harken.com *1st hole 50 mm (2") **Sold in pairs ‡Track riser 1849 shown on page 112



Bolt slides included Fasteners not included

Midrange Stand-Up Toggles

The 1561 holds blocks upright on travelers. The 1638 holds blocks upright and allows attachment of control blocks.

Toggles include 1/4" (6 mm) and 5/16" (8 mm) mainsheet block pins. They accept 57 mm and 75 mm Carbo doubles and triples, 75 mm Carbo singles, 3.00" Small Boat single, Fiddle, Midrange blocks and 57 mm AirBlocks®.

To attach Carbo control blocks to the stand-up toggle, choose 1626, 1627 cars or 1638 toggles. Refer to chart for block compatibility.



Control blocks attach to ears to reduce load on car



1638

Attach low-weight, high-strength Carbo blocks

Low pivot point handles non-vertical loads



1561

Part No.	Description	Length		Weight		Maximum working load	
		in	mm	oz	g	lb	kg
1561	Stand-up toggle	2 ⁵ / ₁₆	59	3 ¹ / ₂	99	2500	1134
1638	Stand-up toggle/control tangs	2 ⁵ / ₁₆	59	4 ³ / ₈	124	2500	1134

Control Block Selection Guide		
Purchase	Block	End control
2:1	2650	1631
3:1	2650*	1632/1633
4:1	2638	1632/1633

*Dead-end line through center of sheave

Midrange Car Controls

Blocks

Car-mounted control blocks feature ball bearing sheaves and mount to 1624 and 1625 cars.

Couplers

1557 and 1614 couplers connect cars to allow higher mainsheet loads. Short coupled cars can roll on a tighter radius than one long car.



1623



1512

1513



1514



1515



1557



1614

Akilaria 9,50, Marc Lombard, MC-TEC — Kervilor-Vanek photo

Part No.	Description	Length		Weight each		Height above track		Max line Ø		Maximum working load		Breaking load		Purchase	Joins
		in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg		
1512	Control tangs (pair)	1 ³ / ₁₆	30	.625	18.2	1 ¹ / ₁₆	27	—	—	1000	454	2000	907	1:1	
1513	Single control blocks (pair)	2 ⁵ / ₈	67	2.5	71	1 ³ / ₈	35	3/8	10	300	136	2000	907	2:1	
1514	Single control blocks/becket (pair)	2 ⁵ / ₈	67	3	87	1 ¹ / ₈	48	3/8	10	300	136	2000	907	3:1	
1515	Double control blocks (pair)	2 ⁵ / ₈	67	4	113	2	51	3/8	10	600	272	2000	907	4:1	
1557	Car coupler↔	5 ¹ / ₂	130	7.625	194	—	—	—	—	2000	907	4000	1816	—	2 1624 cars
1614	Flat plate coupler↔	4 ¹ / ₂	114	2.5	71	—	—	—	—	2760	1250	6000	2722	—	2 1624/1625 cars
1623	ESP control block*	4 ³ / ₄	120	7.4	211	1 ¹ / ₁₆	37	3/8	10	600	272	2000	907	3:1	

*Fits 1624, 1625 cars ↔Coupler load 30% of mainsheet load

Midrange End Controls

Harken® Midrange traveler controls allow installation of 2:1 to 4:1 purchases. Assemblies secure to the track, eliminating additional holes. Tough one-piece bases and cam arms are machined from a single piece of aluminum. Compact, high-strength Carbo AirBlock® components combined with a Carbo-Cam® cleats keep traveler weight minimal. For angled cleating, install the 380 X-Treme Angle Fairlead.

Use 1620 double-sheave ESP end controls for cabintop travelers where lines lead to the aft edge of the cabintop. Use the 1623 car control for a 3:1 purchase, the 1845 (see page 116) for a 4:1 purchase. Contact Harken® to order special length 1618 track with mounting holes for 1620 end controls.

End controls feature 40 mm Carbo AirBlock® sheaves with free-running Torton® ball bearings

Installs with single screw

Dual shock absorbers cushion car impact

Integral bar for dead-ending control line



1631



1620



1632



1633



1642

Control Purchase Recommendations

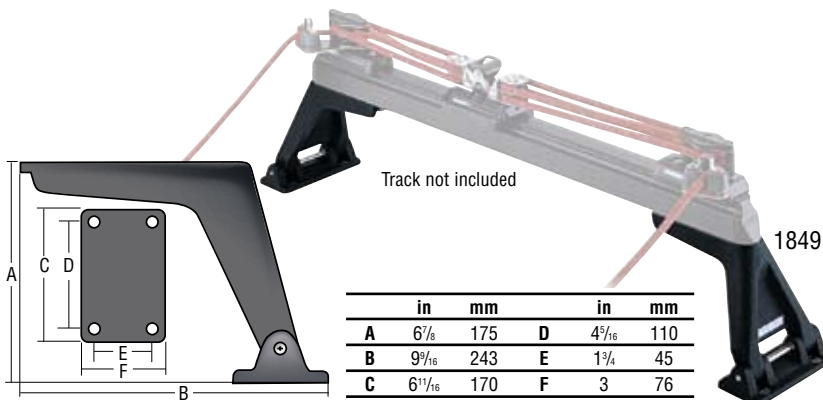
Sail area				
End-boom sheeting		Mid-boom sheeting		Purchase
ft²	m²	ft²	m²	
Under 140	Under 13	Under 125	Under 12	2:1
140-235	13-22	125-200	12-19	3:1
235-275	22-25	200-250	19-23	4:1

Part No.	Description	Sheave Ø		Length		Width		Weight		Max line Ø		Height above track		Maximum working load		Breaking load		Purchase
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
1620	ESP Double sheave (pair)‡‡	1 9/16	40	5 1/2	140	1 9/16	40	16	454	3/8	10	1 9/16	40	600	272	1500	680	3:1/4:1
1631	Single sheave (pair)***	1 9/16	40	4 1/2	114	1 15/16	49	20	574	3/8	10	1 15/16	33	350	159	875	397	2:1/3:1
1632	Double sheave (pair)***	1 9/16	40	4 1/2	114	1 15/16	49	26	730	3/8	10	2	50	700	318	1750	794	3:1/4:1
1633	Double sheave/365 Carbo-Cam® (pair)***	1 9/16	40	4 1/2	114	3 15/16	100	36	1020	3/8	10	2	50	600	272	1500	680	3:1/4:1
1642	Pinstop‡	—	—	2 5/16	59	1 15/16	49	4.8	136	—	—	1 1/8	33	—	—	—	—	—

Fits Midrange track ***Includes 3/16" (8 mm) RH fasteners ‡Requires 1617 track ‡‡Requires special track

Track Risers

Use 1849 risers for mid-boom travelers that must clear companionway hatches. Risers fit most cabintops and articulate for use with either straight or curved track. Sold in pairs.



Track not included

1849

	in	mm		in	mm
A	6 7/8	175	D	4 7/16	110
B	9 9/16	243	E	1 1/4	45
C	6 11/16	170	F	3	76

Part No.	Description	Fits	Weight	
			oz	g
1849	Track riser (pair)	1618/3156	131.2	3720

Big Boat CB Cars

Big Boat Captive Ball Traveler Cars are built to handle high loads on boats from 32 to 50 ft (9.5 to 15 m) and up to 70 ft (21 m) with coupled cars.

The one-piece solid aluminum construction is lightweight and strong. Machined aluminum Hardkote-anodized races permit Torlon® bearings to transition smoothly from the active to return race for smooth trimming or easing. Stainless steel wire guides keep the balls captive when the car is off the track.

Shackle/toggle cars have low pivot points to handle non-vertical loads. On 3164 and 3166 cars, blocks attach directly to the toggle ears for a low-profile, compact system. 3160 and 3161 cars use car-mounted control blocks. The 3172 high-load coupled traveler features two cars joined by a recessed stainless steel coupler that adjusts to fit curved track. See chart on page 101 to size traveler to mainsail area.

Traveler Kits

Use the 3175 kit for boats to 45 ft (13.5 m) with maximum mainsail area of 425 ft² (39.5 m²) for end-boom, or 350 ft² (32.5 m²) for mid-boom sheeting.

Control blocks attach to ears to reduce load on car

Toggle ears accept Carbo control blocks

Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly



3164



3175



GP42, Farr® Yacht Design, Latini Marine Srl
— Latini Marine Srl photo



See page 115

CB Cars only fit Big Boat CB track 3154, 3155, 3156, 3159, 3162. Non-captive cars available upon request.

Part No.	Description	Length		Width		Height		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
3160	3000 Series/stand-up toggle	5 ³ / ₈	136	3 ³ / ₈	85	1 ¹ / ₈	35	24.32	689	3000	1361	7000	3175
3161	4500 Series/stand-up toggle	7 ⁷ / ₁₆	188	3 ³ / ₈	85	1 ¹ / ₈	35	28.64	812	4500	2041	9000	4081
3163	3000 Series/shackle	5 ³ / ₈	136	3 ³ / ₈	85	1 ¹ / ₈	35	20	567	3000	1361	7000	3175
3164	3000 Series/stand-up toggle/ears	5 ³ / ₈	136	3 ³ / ₈	85	1 ¹ / ₈	35	25.28	717	3000	1361	7000	3175
3165	4500 Series/shackle	7 ⁷ / ₁₆	188	3 ³ / ₈	85	1 ¹ / ₈	35	24	680	4500	2041	9000	4081
3166	4500 Series/stand-up toggle/ears	7 ⁷ / ₁₆	188	3 ³ / ₈	85	1 ¹ / ₈	35	29.44	835	4500	2041	9000	4081
3167	5000 Series/2 toggles	9 ¹ / ₈	231	3 ³ / ₈	85	1 ¹ / ₈	35	41.12	1166	5000	2268	10000	4536
3172	4500 Series/coupled	15	381	3 ³ / ₈	85	1 ¹ / ₇	35	66.4	1882	9000	4082	18000	8163
3175	Traveler kit/4:1 purchase	Kit includes 3164, (2) 2642, 3170. Purchase track, trim caps and control lines separately.											

See page 26 for replacement balls

Big Boat CB Track & Accessories

Big Boat track comes in low- or high-beam configurations. Use low-beam track when it's supported at each fastener hole. Use high-beam track when it must span a cockpit or other unsupported area. Choose between variable hole spacing and drilled track.

Pinstop Track

3155 track has 7/16 in (12 mm) pinstop holes spaced on 1 5/16 in (34 mm) centers to accept 3124 and 3125 pinstop cars.

Endstops/Trim Caps

When end controls are not used, add 548 or 562 endstops to absorb shock loads. When end controls assemblies are used, trim caps finish track ends. Sold in pairs. Fasteners not included.

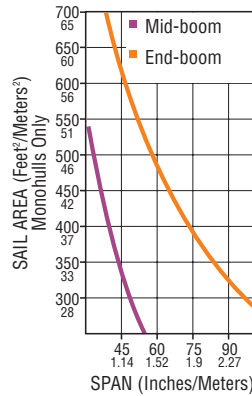
Splice Links

Splice links join track and keep it aligned during installation.

Curved Track

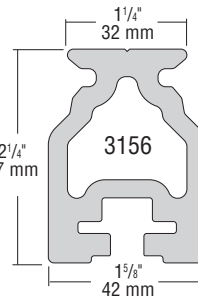
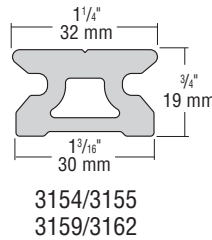
Harken® will bend track to your specifications. See page 102.

High-Beam Slide Bolt Track Spanning Chart



Use track risers to clear companionway hatches. See page 115

Track Bending		
Traveler car	Minimum radius	
	ft	m
3160/3163/3164/3176/3177	8	2.44
3161/3165/3166 3172/3178/3179	18	5.49
2 x 3163	8	2.44
3167	24	7.32



548



562



3157



3158



3153



3154



3159

Part No.	Description	Length		Mounting hole spacing		Weight		Fasteners		Endstop#/trim cap‡	Splice link/track riser‡
		ft/in	m	in	mm	oz	kg	in	mm		
Metric Track											
3154.1.2m	Low-beam	3'11 1/4"	1.2	3 1/16	100**	43	1.22	5/16FH	8FH	548/3157	3153/—
3154.1.5m	Low-beam	4'11 1/16"	1.5	3 1/16	100**	54	1.52	5/16FH	8FH	548/3157	3153/—
3154.1.8m	Low-beam	5'10 7/8"	1.8	3 1/16	100**	65	1.83	5/16FH	8FH	548/3157	3153/—
3154.2.1m	Low-beam	6'10 1/16"	2.1	3 1/16	100**	75	2.13	5/16FH	8FH	548/3157	3153/—
3154.2.4m	Low-beam	7'10 1/2"	2.4	3 1/16	100**	86	2.44	5/16FH	8FH	548/3157	3153/—
3154.3m	Low-beam	9'10 3/8"	3	3 1/16	100**	107	3.04	5/16FH	8FH	548/3157	3153/—
3154.3.6m	Low-beam	11'9 3/4"	3.6	3 1/16	100**	129	3.65	5/16FH	8FH	548/3157	3153/—
3154.6m	Low-beam	19'8 3/4"	6	3 1/16	100**	215	6.09	5/16FH	8FH	548/3157	3153/—
3155.1.2m	Low-beam/pinstop holes	3'11 1/4"	1.2	3 1/16	100**	41	1.15	5/16FH	8FH	548/3157	3153/—
3155.1.5m	Low-beam/pinstop holes	4'11 1/16"	1.5	3 1/16	100**	51	1.44	5/16FH	8FH	548/3157	3153/—
3155.1.8m	Low-beam/pinstop holes	5'10 7/8"	1.8	3 1/16	100**	61	1.73	5/16FH	8FH	548/3157	3153/—
3155.2.1m	Low-beam/pinstop holes	6'10 1/16"	2.1	3 1/16	100**	71	2.01	5/16FH	8FH	548/3157	3153/—
3155.2.4m	Low-beam/pinstop holes	7'10 1/2"	2.4	3 1/16	100**	81	2.3	5/16FH	8FH	548/3157	3153/—
3155.3m	Low-beam/pinstop holes	9'10 3/8"	3	3 1/16	100**	101	2.86	5/16FH	8FH	548/3157	3153/—
3155.3.6m	Low-beam/pinstop holes	11'9 3/4"	3.6	3 1/16	100**	122	3.45	5/16FH	8FH	548/3157	3153/—
3155.6m	Low-beam/pinstop holes	19'8 3/4"	6	3 1/16	100**	203	5.74	5/16FH	8FH	548/3157	3153/—
3162.1.5m	Air Track®	4'11 1/16"	1.5	3 1/16	100**	45	1.29	5/16FH	8FH	548/3157	3153/—
3162.2.4m	Air Track®	7'10 1/2"	2.4	3 1/16	100**	73	2.06	5/16FH	8FH	548/3157	3153/—
3162.3.6m	Air Track®	11'9 3/4"	3.6	3 1/16	100**	109	3.1	5/16FH	8FH	548/3157	3153/—
3162.6m	Air Track®	19'8 3/4"	6	3 1/16	100**	182	5.16	5/16FH	8FH	548/3157	3153/—
Variable Hole Spacing Track											
3156.1.2m	High-beam	3'11 1/4"	1.2		Slide bolt	134	3.79	5/16HH	8HH	562/3158	—/1849‡‡
3156.1.5m	High-beam	4'11 1/16"	1.5		Slide bolt	167	4.74	5/16HH	8HH	562/3158	—/1849‡‡
3156.1.8m	High-beam	5'10 7/8"	1.8		Slide bolt	201	5.69	5/16HH	8HH	562/3158	—/1849‡‡
3156.2.1m	High-beam	6'10 1/16"	2.1		Slide bolt	234	6.64	5/16HH	8HH	562/3158	—/1849‡‡
3156.2.4m	High-beam	7'10 1/2"	2.4		Slide bolt	268	7.59	5/16HH	8HH	562/3158	—/1849‡‡
3156.3.6m	High-beam	11'9 3/4"	3.6		Slide bolt	402	11.38	5/16HH	8HH	562/3158	—/1849‡‡
Retrofit 4" Hole Spacing Track											
3159.6	Low-beam	6	1.83	4	102**	66	1.86	5/16FH	8FH	548/3157	3153/—
3159.8	Low-beam	8	2.44	4	102**	89	2.48	5/16FH	8FH	548/3157	3153/—
3159.12	Low-beam	12	3.66	4	102**	131	3.71	5/16FH	8FH	548/3157	3153/—



3156

Bolt slides included. Fasteners not included



3155



3162



1846***

Fasteners not included

Actual size track chart available at www.harken.com **1st hole 50 mm (2") ‡Sold in pairs ‡‡Track riser 1849 shown on page 115

***Contact Harken®

Big Boat Car Couplers

Often found on curved track, couplers join two cars to form high-load assemblies.

Use high-load 580 and 752 couplers for single-point attachments. Use 1799 control block with 580 or 1770 couplers. Use single, double or triple Black Magic® AirBlocks® with the 752 coupler.



Cars not included

Part No.	Description	Length		Weight		Maximum working load		Breaking load		Fits
		in	mm	oz	g	lb	kg	lb	kg	
580	Coupler	7 ¹ / ₄	184	21	595	6000	2722	12000	5443	3163
584	Mainsheet carrier	10	254	44	1247	6000	2722	12000	5443	3163
752	Coupler	10 ³ / ₄	273	28	794	9000	4082	18000	8165	3165
1770	Flat plate coupler*	4 ³ / ₈	111	3	84	3600	1630	8400	3810	3160/3163/3164

*Custom flat plate coupler & modified 3165 & 3166 car assemblies available upon request

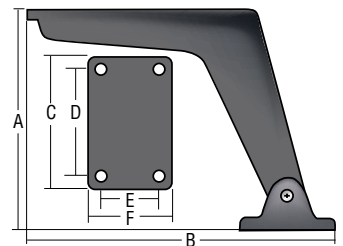
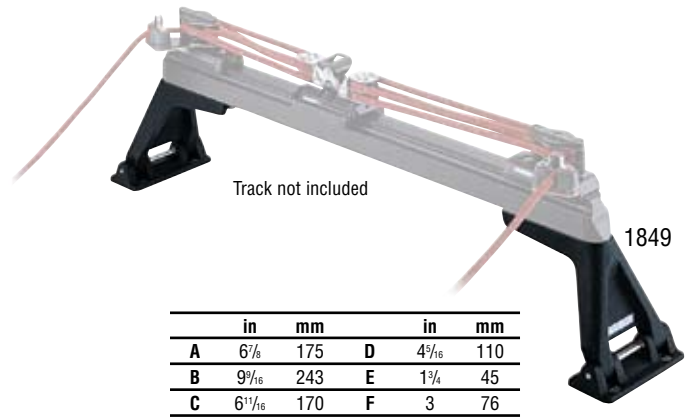
Track Risers & Dodger Blocks

Track Risers

Use 1849 risers for mid-boom travelers that must clear companionway hatches. Risers fit most cabintops and articulate for use with either straight or curved track. Sold in pairs.

Dodger Blocks

These blocks route control lines to the deck from bridge-mounted travelers and pass under the dodger to cam cleats mounted within reach of the crew.



Part No.	Description	Fits	Weight	
			oz	g
1849	Track riser (pair)	1618/3156	131.2	3720
1985	6:1 Dodger block conversion kit (pair)	3185 Traveler control blocks	8	227

Big Boat Stand-Up Toggles

The 1896 and 1994 hold blocks upright. The 598 and 669 hold blocks upright and allow attachment of control blocks.

Toggles include a 5/16" (8 mm) mainsheet block pin that accepts Midrange blocks, 57 mm double and triple AirBlocks® and 75 mm single Black Magic® AirBlocks®.

To attach Carbo control blocks to the stand-up toggle, choose 3163, 3165 cars or 598, 669 toggles. Refer to chart for block compatibility.

Holds mainsheet block in upright position



Control blocks attach to ears to reduce load on car

Attach low-weight, high-strength Carbo and Black Magic® blocks



1896
1994



598
669

Low pivot point handles non-vertical loads

Part No.	Description	Length		Weight		Maximum working load	
		in	mm	oz	g	lb	kg
598	Stand-up toggle/control tangs	2 ³ / ₁₆	56	8.2	231.3	4500	2041
669	Stand-up toggle/high load/control tangs*	2 ³ / ₁₆	56	10.9	308.4	7500	3401
1896	Stand-up toggle	1 ³ / ₈	41	5.8	163.3	4500	2041
1994	Stand-up toggle/high load*	1 ³ / ₈	41	9.1	258.6	7500	3401

*Includes a replacement headpost for 1971 75 mm Black Magic® AirBlocks® and 1993, 3007 and 3008 100 mm Black Magic® AirBlocks®

Control Block Selection Guide		
Purchase	Block	End control
2:1	2600	3168*
2:1 High-load	1950	3173*
3:1	2601	3169/3170*
3:1 High-load	1951	3174*
4:1	2642	3169/3170
4:1 High-load	2602	3174

*Stop knot required to keep block from hitting end control

Big Boat Car Controls

Car mounted control blocks feature ball bearing sheaves and mount to the car clear of track and end controls. 1514 single/becket and 1515 doubles are low-load controls for 3163 cars. The strong, lightweight 3187 control block assembly's low-friction 57 mm Black Magic® sheaves fit between the toggles of the 3172 coupled traveler car for a compact system with maximum travel. Use on 2:1 and 4:1 mainsheet systems on catamarans and monohulls from 50 ft (15 m) to 70 ft (21 m).



1512 659



1514 1798 1515 1799 1513 1797



3187 6090 1845 1935

Part No.	Description	Sheave Ø		Length		Weight each		Height above track		Max line Ø		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg
659	Swivel brackets (pair)	—	—	1 ³ / ₈	35	2	58.1	2 ³ / ₄	70	—	—	1000	454	2000	907
1512	Control tangs (pair)	—	—	1 ³ / ₁₆	30	.6	18.2	1 ¹ / ₄	32	—	—	1000	454	2000	907
1513	Single control blocks (pair)	1 ¹ / ₂	38	2 ⁵ / ₈	67	2.5	71	1 ³ / ₈	35	3/8	10	300	136	2000	907
1514	Single/becket (pair)	1 ¹ / ₂	38	2 ⁵ / ₈	67	3.1	88.1	1 ³ / ₄	45	3/8	10	300	136	2000	907
1515	Double (pair)	1 ¹ / ₂	38	2 ⁵ / ₈	67	4	113.5	1 ⁷ / ₈	48	3/8	10	600	272	2000	907
1797	Single/high-load (pair)	1 ³ / ₁₆	46	3	76	4	115.5	1 ¹ / ₁₆	40	3/8	10	750	340	2500	1134
1798	Single/high-load/becket (pair)	1 ³ / ₁₆	46	3	76	5	140.7	2 ¹ / ₄	60	3/8	10	1125	510	2500	1134
1799	Double/high-load (pair)	1 ³ / ₁₆	46	3	76	6.5	185.2	2 ¹ / ₄	60	3/8	10	1500	680	2500	1134
1845	Double/low-profile (pair)	1 ³ / ₈	35	2 ⁵ / ₁₆	59	5.9	166.2	1 ³ / ₄	45	3/8	10	1000	454	2500	1134
1935	Triple/low-profile (pair)	1 ³ / ₈	35	2 ⁵ / ₄	70	7.2	205.2	1 ³ / ₄	45	3/8	10	1500	680	2500	1134
3187	2-Sheave control block*	2 ¹ / ₄	57	5 ⁵ / ₈	143	8.8	249	1 ¹¹ / ₁₆	43	7/16	12	2500	1134	5000	2268
6090	ESP control block/3:1**	1 ³ / ₁₆	40	5	126	10.3	291	1 ³ / ₈	41	3/8	10	1000	454	2500	1134

*For 3172 coupled traveler car only **Fits 3163 and 3165 cars

Big Boat End Controls

Big Boat end controls secure to track, eliminating additional holes. Tough one-piece bases and cam arms are machined from a single piece of aluminum.

Ball bearing sheaves let cars adjust under load and release instantly. Compact, high-strength Carbo AirBlock® components keep traveler weight minimal. Cam-Matic® cleats provide precise cleating.

Use 3171 to route control lines to the deck from a bridge-mounted traveler.

High-Load Controls

High-load controls allow 2:1 to 6:1 purchases on offshore boats with mainsails over 400 ft² (37 m²). The 3185, 3186 and 3193 use multiple rows of ball bearings. The 3173 and 3174 feature 57 mm Black Magic® Big Boat ball/roller sheaves and high-load aluminum sideplates.

ESP End Controls

Use 6088 double-sheave ESP end controls for cabintop travelers where lines lead to the aft edge of the cabintop. Use the 6090 control block for a 3:1 purchase or the 1845 (see page 116) for a 4:1 purchase. Contact Harken® to order special length 3156 track with control mounting holes.

End controls feature 40 mm Carbo AirBlock® sheaves with free-running Torlon® ball bearings

Installs with single screw

Dual shock absorbers cushion car impact

Integral bar for dead-ending control line



3170



3168

3169



3171

3124



3125

6088



3173

3174

3185

3186

3193

Control Purchase Recommendations

Sail area				
End-boom sheeting		Mid-boom sheeting		Purchase
ft²	m²	ft²	m²	
Under 260	Under 24	Under 240	Under 22	3:1
260-450	24-42	240-400	22-37	4:1
450-600	42-56	400-550	37-51	6:1
Over 600	Over 56	Over 550	Over 51	2:1 w/winch

Part No.	Description	Sheave Ø		Length		Width		Weight		Max line Ø		Height above track		Maximum working load		Breaking load		Purchase
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
3124	Adjustable pinstop	—	—	2 ⁹ / ₁₆	65	2 ¹ / ₄	57	8	227	—	—	1 ⁵ / ₁₆	33	—	—	—	—	—
3125	Adjustable pinstop/shackle	—	—	4 ¹ / ₁₆	113	2 ¹ / ₄	57	15.2	431	—	—	1 ²⁷ / ₃₂	46	3500	1588	—	—	—
3168	Single sheave (pair)	1 ⁹ / ₁₆	40	4 ¹³ / ₁₆	122	2 ¹ / ₄	57	27	767	3/8	10	1 ¹ / ₁₆	36	450	204	1600	725	1:1/2:1
3169	Double sheave (pair)	1 ⁹ / ₁₆	40	4 ¹³ / ₁₆	122	2 ¹ / ₄	57	31	887	3/8	10	2	51	900	408	2300	1040	3:1/4:1
3170	Double sheave/150 Cam-Matic® (pair)	1 ⁹ / ₁₆	40	4 ¹³ / ₁₆	122	4 ¹ / ₈	104	39	1116	3/8	10	2	51	900	408	2300	1040	3:1/4:1
3171	Double sheave for dodger (pair)*	1 ⁹ / ₁₆	40	4 ¹³ / ₁₆	122	2 ⁷ / ₈	73	29	822	3/8	10	1 ¹ / ₁₆	36	900	408	2300	1040	3:1/4:1
3173	High-load single (pair)	2 ¹ / ₄	57	6 ⁷ / ₁₆	164	2 ¹ / ₄	57	35	981	7/16	12	1 ¹ / ₁₆	28	2500	1134	5000	2268	1:1/2:1
3174	High-load double (pair)	2 ¹ / ₄	57	6 ⁷ / ₁₆	164	2 ¹ / ₄	57	41	1169	7/16	12	1 ¹⁵ / ₁₆	49	1650	750	3300	1500	3:1/4:1
3185	High-load double/becket (pair)	1 ¹³ / ₁₆ /1 ³ / ₈	46/35	6 ⁷ / ₁₆	164	2 ¹ / ₄	57	51.2	1452	3/8	10	1 ⁹ / ₁₆	39	1100	499	2500	1134	4:1
3186	High-load triple/becket (pair)	1 ¹³ / ₁₆ /1 ³ / ₈	46/35	6 ⁷ / ₁₆	164	2 ¹ / ₄	57	54.4	1542	3/8	10	2 ³ / ₈	60	1500	680	2500	1134	5:1/6:1
3193	High-load triple/becket/150 Cam-Matic® (pair)	1 ¹³ / ₁₆ /1 ³ / ₈	46/35	6 ¹ / ₂	165	4 ⁷ / ₈	124	32	908	3/8	10	2 ⁹ / ₈	60	1500	680	2500	1134	5:1/6:1
6088	ESP Double sheave (pair)**	2 ¹ / ₄	57	7 ⁷ / ₁₆	180	2 ¹ / ₄	57	37	1050	3/8	10	1 ³ / ₈	35	700	318	2000	907	3:1/4:1

Fit all Big Boat track *Requires high-beam track or fitted support for low-beam track **Requires special track

Windward Sheeting CB Cars

Race once with the windward sheeting traveler car and you'll never race without one again. Pull the car above the centerline without releasing the leeward control line. Tack, and the car stays in the same position, ready to be pulled to the new windward side.

Cars are one-piece solid aluminum construction with captive balls. Mount track in the cockpit or near deck level. For dinghies to large offshore boats.



Captive balls make cars easy to load and maintain. Wire guides help circulate bearings smoothly

Ball bearing control line sheaves

Big Boat and Midrange cars accept stand-up toggle

Special slide-activated Cam-Matic® cleats



1635
1636



2744
2745



3176
3178



2752



2746



3177
3179



1637



3180



Windward Sheeting Adapter Kits

Part No.	Description	Max line Ø		Fits cars	Purchase
		in	mm		
1637	Midrange CB	3/8	10	1624/1625	3:1/4:1
2752	Small Boat CB	5/16	8	2726/2727/2728	2:1/3:1/2740
				2729/2730/2731/2735/2736/2753/2754	
3180	Big Boat CB	3/8	10	3163/3165	4:1/5:1/6:1

Tsunami, NYYC Swan 42 — J.H. Peterson photo

Part No.	Description	Length		Width		Weight		Max line Ø		Maximum working load		Breaking load		Purchase/control blocks
		in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg	
1635	Midrange CB**	6 3/4	171	4 1/8	105	35	990	3/8	10	1800	816	5000	2268	3:1/1631 4:1/1631
1636	Midrange CB/long**	6 3/4	171	4 1/8	105	36	1020	3/8	10	2300	1043	5000	2268	3:1/1631 4:1/1631
2744	Small Boat CB‡	6 1/8	175	3 1/16	78	24.75	702	5/16	8	500	227	2500	1134	2:1/3:1/2740
2745	Small Boat CB/high-load‡	6 1/8	175	3 1/16	78	24.75	702	5/16	8	850	386	2500	1134	2:1/3:1/2740
2746	1250 Series Small Boat CB‡	6 1/8	175	3 1/16	78	26	737	5/16	8	1250	567	2500	1134	2:1/3:1/2740
3176	3000 Series Big Boat CB***	9 1/16	243	5	127	57	1618	3/8	10	3000	1361	7000	3175	4:1/3168 5:1/6:1/3169
3177	3000 Series Big Boat CB/standup***	9 1/16	243	5	127	62	1747	3/8	10	3000	1361	7000	3175	4:1/3168 5:1/6:1/3169
3178	4500 Series Big Boat CB***	9 1/16	243	5	127	61	1723	3/8	10	4500	2041	9000	4081	4:1/3168 5:1/6:1/3169
3179	4500 Series Big Boat CB/standup***	9 1/16	243	5	127	65	1851	3/8	10	4500	2041	9000	4081	4:1/3168 5:1/6:1/3169

‡Fits Small Boat CB track **Fits Midrange CB track ***Fits Big Boat CB track See page 26 for replacement balls

Mini-Maxi & Maxi Cars & Controls

Mini-Maxi and Maxi travelers bring the ease of dinghy traveler adjustment to large offshore boats. Cars ride on two rows of recirculating Torton® ball bearings and roll freely under high, non-vertical loads. Custom configurations or cars for horizontally curved track available on request.

End controls feature energy-absorbing bumpers and come in several configurations.

Use for:
Mainsheet systems
Self-tacking jibs



Integral control blocks
Low-profile design

3068

Recirculating Torton® ball bearings Black Magic® control blocks High-load pivoting shackle 2:1 Traveler control system



Custom cars available with stainless steel sideplate blocks



3070



1707



3069
3071



Latini 52 Race, Felci Yacht Design, Latini Marine Srl — Latini Marine Srl photo

Cars

Part No.	Description	Length		Width		Height		Weight		Minimum track radius		Maximum working load		Breaking load			
		in	mm	in	mm	in	mm	oz	kg	ft	m	ft	m	lb	kg	lb	kg
3068	Mini-Maxi	10	254	4 ³ / ₈	111	3 ³ / ₄	95	81	2.3	50	15.25	50	15.25	8750	3969	18000	8164
3070	Maxi	14	357	5 ¹ / ₄	133	5	127	179	5.1	100	30.5	50	15.25	12000	5443	25000	11340

See page 26 for replacement balls

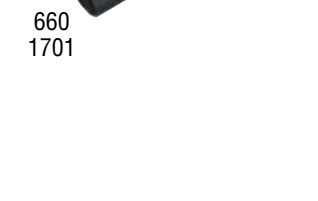
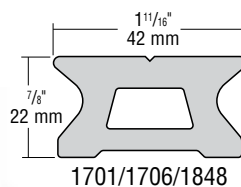
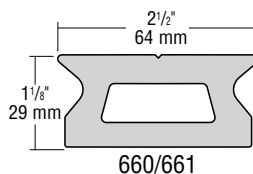
Controls

Part No.	Description	Length		Width		Height		Weight		Maximum working load		Track
		in	mm	in	mm	in	mm	oz	g	lb	kg	
1707	Mini-Maxi end control/padeye	5 ¹ / ₄	133	2 ⁵ / ₈	67	3 ¹ / ₈	79	29	822	7800	3540	1701/1706/1848
3069	Mini-Maxi end control/footblock/becket	5 ⁵ / ₈	143	2 ⁵ / ₈	67	2 ³ / ₄	70	25	710	2500	1134	1701/1706/1848
3071	Maxi end control/footblock/becket	7 ¹ / ₈	181	3 ³ / ₄	95	3 ³ / ₈	86	56	1596	5250	2380	660/661

Mini-Maxi & Maxi Track & Accessories

Use 1701 and 660 track for mainsheets on large yachts. 1706 and 661 track with pinstop holes are ideal for genoa tracks. 1848 Mini-Maxi Air Track® has many applications on racing boats and is a popular choice for custom Battcar systems on large cruisers.

Harken® will bend track to your specifications. See page 102.



H₂O, Vallicelli 78' Sloop, A. Vallicelli & C. Yacht Designers, C.N. Yacht 2000 S.r.l. — Fabio Taccola photo

Track

Part No.	Description	Length		Weight		Fasteners (FH)		Hole spacing		Endstop Part No.
		ft/in	m	oz	kg	in	mm	in	mm	
Mini-Maxi Track										
1701.1.5m‡	Low-beam	4'11 ¹¹ / ₁₆ "	1.5	84.3	2.39	3/8	10	2 ¹⁵ / ₁₆	75	1702
1701.1.8m‡	Low-beam	5'10 ⁷ / ₈ "	1.8	100.9	2.86	3/8	10	2 ¹⁵ / ₁₆	75	1702
1701.2.4m‡	Low-beam	7'10 ¹ / ₂ "	2.4	134.7	3.82	3/8	10	2 ¹⁵ / ₁₆	75	1702
1701.3m‡	Low-beam	9'10 ³ / ₈ "	3	168.3	4.77	3/8	10	2 ¹⁵ / ₁₆	75	1702
1701.3.6m‡	Low-beam	11'9 ³ / ₄ "	3.6	201.8	5.72	3/8	10	2 ¹⁵ / ₁₆	75	1702
1701.6m‡	Low-beam	19'8 ¹ / ₄ "	6	336.5	9.54	3/8	10	2 ¹⁵ / ₁₆	75	1702
1706.1.5m‡	Low-beam/pinstops	4'11 ¹¹ / ₁₆ "	1.5	81.5	2.31	3/8	10	2 ¹⁵ / ₁₆	75	1702
1706.1.8m‡	Low-beam/pinstops	5'10 ⁷ / ₈ "	1.8	97.7	2.77	3/8	10	2 ¹⁵ / ₁₆	75	1702
1706.2.4m‡	Low-beam/pinstops	7'10 ¹ / ₂ "	2.4	130.5	3.70	3/8	10	2 ¹⁵ / ₁₆	75	1702
1706.3m‡	Low-beam/pinstops	9'10 ³ / ₈ "	3	163	4.62	3/8	10	2 ¹⁵ / ₁₆	75	1702
1706.3.6m‡	Low-beam/pinstops	11'9 ³ / ₄ "	3.6	195.4	5.54	3/8	10	2 ¹⁵ / ₁₆	75	1702
1706.6m‡	Low-beam/pinstops	19'8 ¹ / ₄ "	6	325.9	9.24	3/8	10	2 ¹⁵ / ₁₆	75	1702
1848.1.5m‡	Air Track®	4'11 ¹¹ / ₁₆ "	1.5	68.8	1.95	3/8	10	2 ¹⁵ / ₁₆	75	1702
1848.3.6m‡	Air Track®	11'9 ³ / ₄ "	3.6	165.1	4.68	3/8	10	2 ¹⁵ / ₁₆	75	1702
1848.6m‡	Air Track®	19'8 ¹ / ₄ "	6	275.1	7.80	3/8	10	2 ¹⁵ / ₁₆	75	1702
Maxi Track										
660.2.1m‡‡	Low-beam	6'10 ¹ / ₁₆ "	2.1	229.6	6.51	1/2	12	3 ¹⁵ / ₁₆	100	662
660.3m‡‡	Low-beam	9'10 ³ / ₈ "	3	328	9.3	1/2	12	3 ¹⁵ / ₁₆	100	662
660.3.6m‡‡	Low-beam	11'9 ³ / ₄ "	3.6	393.7	11.16	1/2	12	3 ¹⁵ / ₁₆	100	662
660.6m‡‡	Low-beam	19'8 ¹ / ₄ "	6	655.7	18.59	1/2	12	3 ¹⁵ / ₁₆	100	662
661.2.1m‡‡	Low-beam/pinstops	6'10 ¹ / ₁₆ "	2.1	221.5	6.28	1/2	12	3 ¹⁵ / ₁₆	100	662
661.3m‡‡	Low-beam/pinstops	9'10 ³ / ₈ "	3	316.4	8.97	1/2	12	3 ¹⁵ / ₁₆	100	662
661.3.6m‡‡	Low-beam/pinstops	11'9 ³ / ₄ "	3.6	379.9	10.77	1/2	12	3 ¹⁵ / ₁₆	100	662
661.6m‡‡	Low-beam/pinstops	19'8 ¹ / ₄ "	6	632.8	17.94	1/2	12	3 ¹⁵ / ₁₆	100	662

Actual size track chart available at www.harken.com ‡First hole 37.5 mm (1¹/₂") ‡‡First hole 50 mm (1¹⁵/₁₆")

Accessories

Part No.	Description	Length		Width		Height		Weight		Track
		in	mm	in	mm	in	mm	oz	g	
662	Maxi endstop*	4 ³ / ₄	121	3 ³ / ₄	95	2	51	28.8	816	660/661
664	Maxi adjustable stop	3 ⁷ / ₈	98	3 ³ / ₄	95	2 ¹ / ₂	64	26	737	660/661
1702	Mini-Maxi endstop**	3 ³ / ₄	95	2 ⁵ / ₈	67	1 ¹ / ₂	38	13	369	1701/1706/1848
1708	Mini-Maxi adjustable stop	3 ¹ / ₂	89	2 ⁵ / ₈	67	2 ¹ / ₁₆	52	15	425	1701/1706/1848

*5/8" (16 mm) FH fasteners **1/2" (12 mm) FH fasteners

CRX Roller Traveler

The CRX Roller Traveler carries almost double the load at half the weight of similarly sized traveler cars. Torlon® rollers provide greatly increased bearing contact over balls to provide low friction performance—even after months of extreme loading.

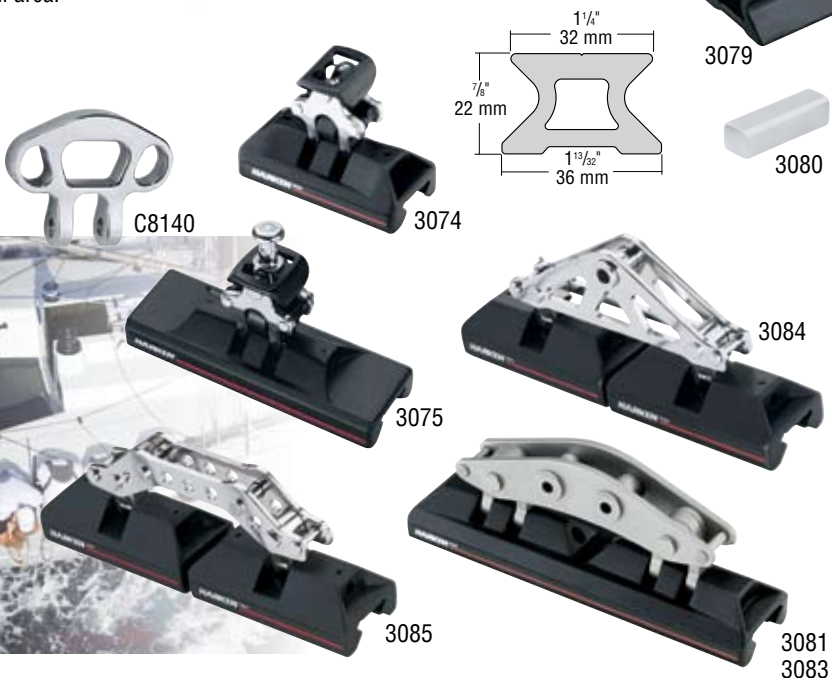
The Roller Traveler made its successful debut at the 2000 America's Cup. Developed by Jack Roeser of Otto Engineering, Harken engineers put on the finishing touches and the company was granted an exclusive patent license.

Toggle cars have low pivot points to handle non-vertical loads. Blocks attach directly to the toggle for a low-profile, compact system. The toggle serves as a stand-up for the mainsheet block.

Mini-Maxi cars available with titanium couplers, toggles and cross pins.

Use Roller Travelers with straight track only. Contact Harken® for curved traveler applications. CRX track uses 548 end stops and 3173 or 3174 end controls (requires custom drilled track). Mini-Maxi cars use custom CRX track and standard Mini-Maxi end controls.

Consult chart on page 101 to size traveler to mainsail area.



Artemis, TP52, Reichel/Pugh, Cookson Boats — Thierry Martinez photo

Cars

Part No.	Description	Length		Width		Height		Weight		Number of rollers	Maximum working load		Breaking load		Track
		in	mm	in	mm	in	mm	oz	g		lb	kg	lb	kg	
3074	Big Boat/single block	5	127	2 1/2	64	3 13/32	86	22	624	102	5000	2268	10000	4535	3079
3075	Big Boat/single block ‡	7 1/2	191	2 1/2	64	3 13/32	86	39	1106	152	7500	3401	15000	6803	3079
3081	Mini-Maxi/two-block	12	305	3	76	4 1/2	114	99	2808	280	15000	6803	30000	13605	Custom*
3083	Mini-Maxi/two-block/titanium coupler	12	305	3	76	4 1/2	114	68	1928	280	15000	6803	30000	13605	Custom*
3084	Big Boat/single block	10	254	2 1/2	64	3 11/16	93	48	1360	204	10000	4535	20000	9070	3079
3085	Big Boat/two-block	10	254	2 1/2	64	4 13/32	112	42	1190	204	10000	4535	20000	9070	3079
C8140	Loop toggle for 3074/3075	3 3/16	81	3/4	19	—	—	6.69	189	—	7500	3400	15000	6800	—

*Contact Harken® ‡Includes adapter to fit 100 mm Black Magic® AirBlocks®

Big Boat CRX Track

Part No.	Description	Length		Hole spacing		Weight		Fasteners (FH)		Endstop/splice link
		ft/in	m	in	mm	oz	g	in	mm	
3079.2m	Low-beam	6'6 3/4"	2	3	75	72.8	2064	5/16	8	548/3080
3079.3m	Low-beam	9'10 1/8"	3	3	75	109.2	3096	5/16	8	548/3080
3079.4.5m	Low-beam	14'9 1/8"	4.5	3	75	163.8	4644	5/16	8	548/3080

Actual size track chart available at www.harken.com

Custom Yacht Mainsail Traveler Systems

High-load roller bearing traveler systems are strong and lightweight with free-running control on all points of sail. Captive bearings make cars easy to load and maintain.

The CRX roller bearing traveler handles extreme loads in a compact, lightweight package. Cars range in size from Big Boat to Megayacht, and handle loads from 7200 lb (3265 kg) to 26,504 lb (12,020 kg). CRX travelers can be configured to suit a variety of mainsheet purchases and traveler control set-ups.

Mainsheet blocks are webbed to the coupler pins



C6924

Salperton, Dubois Naval Architects Ltd., Fitzroy Yachts Ltd.



C5879



C6070



C7183



C8583



C7746

Part No.	Description	Length		Width		Car body height		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
C5879	Mini-Maxi CRX traveler	12	305	3	77	4 1/2	115	94.5	2680	15000	6818	30000	13636
C6070	Big Boat CRX traveler system	13 9/16	345	2 1/2	64	3 3/8	85	64.2	1820	7200	3265	14400	6530
C6924	Maxi CRX traveler	16 1/4	413	4 1/4	108	2 7/8	73	263	7457	26504	12020	24040	53008
C7183	Mini-Maxi titanium traveler	20 1/2	521	4 3/16	106	2	52	352.7	10000	17700	8028	35400	16056
C7746	Mini-Maxi CRX traveler/125 mm Megayacht blocks	12	305	3 1/32	77	2 1/8	54	140.7	3990	15000	6804	30000	13608
C8583	Maxi traveler	28 1/4	718	5 7/32	132	2 7/32	56	537.6	15241	21168	9600	42336	19200

Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com

Grand Prix Mainsail Traveler Systems

High-load roller traveler systems are strong, lightweight and offer free-running control on all points of sail. Captive bearings make cars easy to load and maintain.

CRX Cars

The CRX roller bearing traveler system handles extreme loads in a compact, lightweight package. Cars range in size from Big Boat to Megayacht and handle loads from 10,000 lb (4,535 kg) to 33,076 lb (15,000 kg). CRX travelers can be configured to suit a variety of mainsheet purchases and traveler control set-ups.

PCRX System

The award-winning PCRX mainsheet traveler features a hinged track that pivots as the mainsheet angle changes so the car remains aligned to the load. The result is less friction, more load capacity, and a lighter weight design. The elimination of the toggle also reduces the car's height and weight. Mini-Maxi PCRX traveler systems are used on America's Cup boats and Volvo ocean racers, with Big Boat versions on TP52s and IRC 70s. The Mega PCRX is aboard the 100 ft (30.4 m) Maxi, *Speedboat*.



C7792

Blocks not included

Carbon bobbins are laminated into the deck, eliminating track fasteners to reduce weight



Part No.	Description	Length		Width		Car body height		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg
Big Boat													
C8570	CRX traveler/titanium coupler/single block/fix track**	10 1/4	260	2 1/2	64	1 11/16	43	45.6	1293	10000	4536	20000	9072
C8819	CRX traveler/titanium coupler/two-block/fix track**	10 1/4	260	2 1/2	64	1 11/16	43	45.3	1284	9920	4500	19840	9000
C8914	CRX low-profile endstop/short/fix track (pair)**	2	52	1 1/4	32	—	—	3.1	88	—	—	—	—
C8720	PCRX low-profile endstop/pivoting track (pair)*	3 5/8	92	1 1/4	32	—	—	3.28	93	—	—	—	—
C8818	PCRX traveler/titanium coupler/pivoting track*	10 1/4	260.35	2 1/2	64	1 13/16	47	34.9	989	9920	4500	19840	9000
Mini-Maxi													
C8378	CRX low-profile endstop/fix track*	3 5/8	92	1 1/4	32	7/16	11	6.02	170.6	—	—	—	—
C8850	CRX endstop for Loop/fix track*	4	102	2 7/32	56	1 7/8	48	1.92	54	—	—	—	—
C8862	CRX traveler/titanium coupler/two-block/fix track*	15 1/2	394	3 3/32	77	1 7/8	48	97.32	2759	15000	6804	30000	13608
C7792	PCRX traveler/pivoting track*	15 1/2	394	3 3/32	77	2 7/8	72	5.99	2.72	16000	7257	32000	14514
C7794	PCRX endstop/pivoting track (pair)*	3 5/8	92	1 1/4	32	7/16	11	3.2	91	—	—	—	—
Mega													
C8770	Mega PCRX low-profile endstop/pivoting track*	3 5/8	92	2 7/16	62	7/16	11	3.2	91	—	—	—	—
C8786	Mega PCRX traveler/pivoting track*	16 1/8	410	4 1/4	108	2 7/8	73	157.6	4468	30000	13608	60000	27216

Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com *Custom track **3079 Big Boat CRX track: see page 121

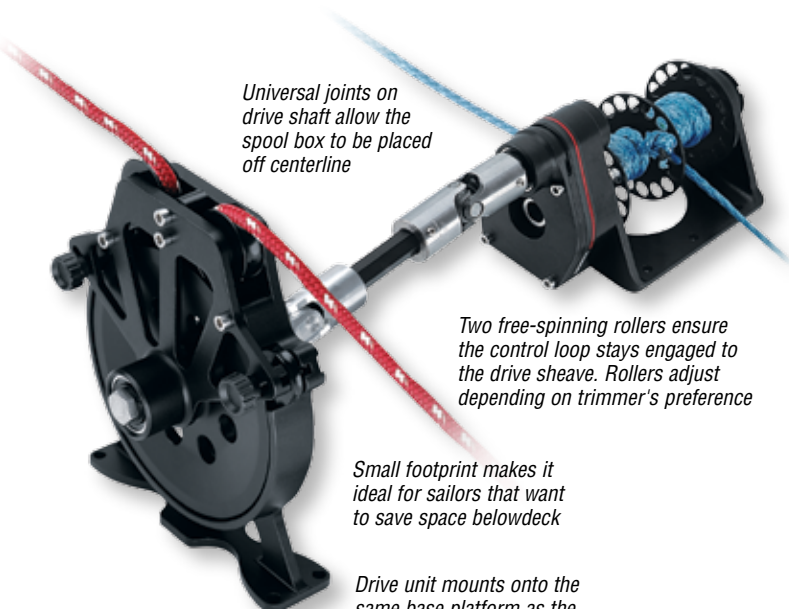
Pro-Trim Control Systems

The Harken Pro-Trim (HPT) traveler system is the first of many applications of the award-winning Pro-Trim series. Compact and clean, this belowdeck system provides the trimmer with increased mechanical advantage and fingertip responsiveness simply by pulling the control line. The traveler system's small footprint takes up far less space than other multiple purchase belowdeck systems and eliminates the need for heavy winches on deck.

A drive shaft connects a large diameter drive sheave to the take-up spools via a gear set that increases mechanical advantage and gives the trimmer an increased power ratio, making traveler control easier and smoother. The lines on the take-up spools pull the traveler car on the track with minimal friction, while the continuous loop on the control line creates a slack-free traveler system.

Major components of the Harken Pro-Trim, including the drive sheave, base box and one larger gear, are CNC machined 6061-T6 aluminum, constructed for strength and durability. Spool shaft, small gears and spool shaft bearings are precision cut stainless steel. Plastic roller bearings from Harken's racing winches support the drive shafts, while high-strength Torlon® ball bearings handle thrust loads.

Expect to see Pro-Trim systems used for other control line applications such as backstays, athwartship jib systems and fore and aft genoa car systems.



Universal joints on drive shaft allow the spool box to be placed off centerline

Two free-spinning rollers ensure the control loop stays engaged to the drive sheave. Rollers adjust depending on trimmer's preference

Small footprint makes it ideal for sailors that want to save space belowdeck

Drive sheave can be located at a distance from the traveler and optimized to the main trimmer's position

Drive unit mounts onto the same base platform as the spool unit for simplified installation and maintenance



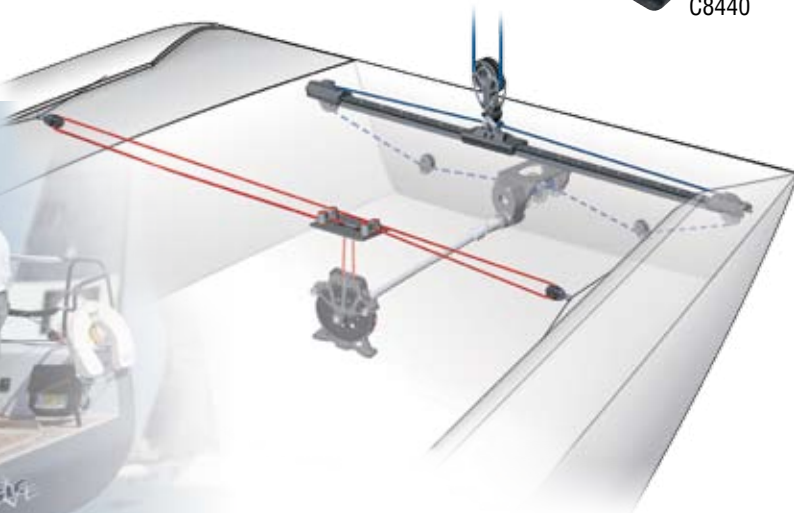
C8986



C8440



Magic Glove, Ker 50, Ker Associates Limited Design, Latitude Yachting Builder — J.H. Peterson Photo



Pro-Trim systems are custom designed to fit specific applications. For questions, or to place an order, please contact Harken®.

Part No.	Description	Sheave/spool		Dimensions (L x W x H)		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	oz	g	lb	kg	lb	kg
C8986	Drive sheave	6	150	3.232 x 6.84 x 8.559	82 x 174 x 217	39.47	1119	500	227	1500	680
C8440	Dual spool assembly	1	25.4	9.203 x 5.5 x 4.799	234 x 140 x 122	70.864	2009	1500	680	3000	1361

Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com

Ball Bearing Adjustable Genoa Lead Cars

Recirculating Torton® ball bearings allow genoa lead cars to adjust easily under full sheet loads.

Sheaves feature ball/roller bearings with sideload balls for easy trimming and fore/aft adjustment under load. Wide sheaves accommodate two sheets during sail changes. Sheave carriers pivot to accommodate changing lead angles.

1869 and 3072 Mini-Maxi cars come with control blocks for a 2:1 purchase or puller tangs for a 1:1 system.

Low-friction, roller/ball bearing aluminum sheave

Pivoting sheave carrier

Accepts Midrange and Big Boat control blocks

Recirculating ball bearings or Torton® rods



See the CB Track and Accessories pages to order track



1537

Dehler 34, Simonis Voogd — Dehler Yachts photo



249



554



1869



3072

For sheet-loading formulas see page 28.

		Cars					
Purchase	Blocks on	249/323	554/1874	587/1873	1537/1599	1869/3072	
1:1	Track	2740	3173	3173	1631	3069	
2:1	Car	348/2650	1540/1950	1797	1513	—	
2:1	Track	2740	3173	3168	1631	3069	
3:1	Car	348/2650	1541/1951	1798	1514	—	
3:1	Track	2742	3174	3169	1632	—	
4:1	Car	—	1952	1515	1515	—	
4:1	Track	—	3174	3169	1632	—	

Part No.	Description	Sheave Ø		Length		Width		Weight		Maximum working load		Breaking load		
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg	
249	Small Boat	2½	64	4⅞	111	2⅞	56	18	510	1250	567	2500	1134	2720
554	Big Boat 4500 Series	3	76	9¾	248	3⅓	85	59	1673	4500	2041	9000	4082	3154
587	Big Boat 3000 Series	2½	64	8	203	3⅓	85	37	1049	3000	1361	6000	2722	3154
1537	Midrange	2½	64	5¼	133	2¼	70	27	765	2300	1043	4600	2086	1616
1869	Mini-Maxi/puller tang	4½	114	16⅞	417	4⅞	111	160	4536	9000	4082	18000	8164	1701/1706/1848
3072	Mini-Maxi/adjuster block	4½	114	13⅞	348	4⅞	111	164	4649	9000	4082	18000	8164	1701/1706/1848

See page 26 for replacement balls

Pinstop Jib Leads

Dinghy

These easy-to-adjust cars combine a spring-loaded pinstop with precise track spacing. Use on dinghies and small sport boats with jibs up to 140 ft² (13 m²). Car and track are built of tough 6061-T6 aluminum that is Hardkote-anodized black with Teflon[®] impregnation for durability.

The 450 pinstop jib lead has a removable bail to attach a spring and block. The 452 bullseye lead has a controlled pivot angle so the cleat is always within easy reach. Use 451 bullseye cars when line deflection is small.

Small Boat

Spring loaded pinstop cars offer two lead solutions for small keel boats from 22 ft to 27 ft (6 to 8 m).

The 2750 is for racers like the J/80 or Melges 24. Attach lightweight 57 or 75 mm Carbo blocks. Combine with 370 stand-up boot or use the 57 mm Ti-Lite.

The 393 genoa lead uses an axle bearing sheave. The sheave carrier pivots to accept unfair leads. Removable stop limits inboard pivoting so lead can mount near cabin side.

Carbo-Cam[®] with 57-degree rotation keeps line within reach

Radiused edges on bullseye fairlead protects line

Track bottom relieved to accept curved spars

Lightweight aluminum cam arm

365 Carbo-Cam[®] for precise line entry



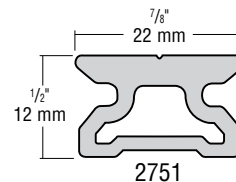
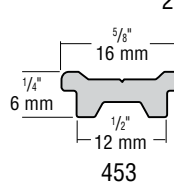
452P
452S

For the ultimate light-weight system, lash on the 2651 40 mm Ti-Lite



453

2751



2750

393P
393S

451

Cars

Part No.	Description	Length		Width		Height		Weight		Maximum working load		Breaking load		Track
		in	mm	in	mm	in	mm	oz	g	lb	kg	lb	kg	
450	Dinghy jib lead/bail/pinstop	2 ⁵ / ₈	67	1 ⁵ / ₁₆	23	1 ¹ / ₁₆	27	2	55	350	159	700	318	453
451	Dinghy jib lead/bullseye/pinstop	2 ⁵ / ₈	67	1 ⁵ / ₁₆	23	1 ¹³ / ₁₆	46	3	77	250	113	500	227	453
452P	Dinghy jib lead/bullseye/swivel/365 Carbo-Cam [®] (Port)	3 ¹ / ₈	79	3 ⁷ / ₁₆	87	2 ⁷ / ₁₆	62	7	194	250	113	500	227	453
452S	Dinghy jib lead/bullseye/swivel/365 Carbo-Cam [®] (Stbd)	3 ¹ / ₈	79	3 ⁷ / ₁₆	87	2 ⁷ / ₁₆	62	7	194	250	113	500	227	453
393P	Small Boat jib lead/tang (Port)	3 ³ / ₄	95	2 ¹ / ₁₆	52	4	102	18.4	522	1250	567	2500	1134	2751
393S	Small Boat jib lead/tang (Stbd)	3 ³ / ₄	95	2 ¹ / ₁₆	52	4	102	18.4	522	1250	567	2500	1134	2751
2750	Small Boat jib lead/pinstop	3 ⁷ / ₁₆	87.5	1 ⁵ / ₁₆	33	1 ³ / ₈	34	4.6	130	1100	500	2200	1000	2751

Track

Part No.	Description	Length		Mounting hole spacing		Weight		Fasteners (FH)		Endstop	Trim cap
		ft/in	m	in	mm	oz	g	in	mm		
453.9.5	Dinghy low-beam/pinstop holes*	9 ¹ / ₂ "	.24	3	76	1.22	35	#10	5	—	—
453.12	Dinghy low-beam/pinstop holes*	11 ¹¹ / ₁₆ "	.3	3	76	1.5	43	#10	5	—	—
453.15	Dinghy low-beam/pinstop holes*	14 ¹¹ / ₁₆ "	.37	3	76	1.8	52	#10	5	—	—
453.18	Dinghy low-beam/pinstop holes*	17 ¹¹ / ₁₆ "	.45	3	76	2.3	65	#10	5	—	—
453.24	Dinghy low-beam/pinstop holes*	23 ¹¹ / ₁₆ "	.6	3	76	3.1	87	#10	5	—	—
2751.600mm	Small Boat low-beam/pinstop holes**	1'11 ⁵ / ₈ "	.6	3 ¹⁵ / ₁₆	100	8.9	252	#10	5	173/263/446	2722
2751.1m	Small Boat low-beam/pinstop holes**	3'3 ³ / ₈ "	1	3 ¹⁵ / ₁₆	100	14.8	420	#10	5	173/263/446	2722
2751.1.5m	Small Boat low-beam/pinstop holes**	4'11 ¹ / ₁₆ "	1.5	3 ¹⁵ / ₁₆	100	22.2	629	#10	5	173/263/446	2722
2751.2m	Small Boat low-beam/pinstop holes**	6'6 ³ / ₄ "	2	3 ¹⁵ / ₁₆	100	29.6	838	#10	5	173/263/446	2722
2751.3.6m	Small Boat low-beam/pinstop holes**	11'9 ³ / ₄ "	3.6	3 ¹⁵ / ₁₆	100	53.3	1510	#10	5	173/263/446	2722

Actual size track chart available at www.harken.com *1st hole 1³/₈" (34 mm) **1st hole 50 mm (1¹⁵/₁₆")

Slider Genoa Lead Cars

Slider cars run on ball bearing track. Roller/ball bearing sheaves pivot 60 degrees for easy trimming.

The 323, 1599, 1873 and 1874 have inner-race slider rods to help lower friction. Slider rods can be replaced with ball bearings to make the car adjustable under load. The 1663 car uses Polyslide material to help slide car. Car can be towed or used as a pinstop car.

Choose pinstop genoa lead cars for applications where lead positions change infrequently. Select Harken® pinstop track.

The 1995 and 1996 sheaves have roller bearings, while the 1613 and 1639 have axle bearings. Cars remove easily from the track to clean up deck.

Use for:
Genoa leads
Caprail leads

Removable stop limits inboard pivoting so lead can mount near cabin side

Sheave carrier pivots to accept unfair leads

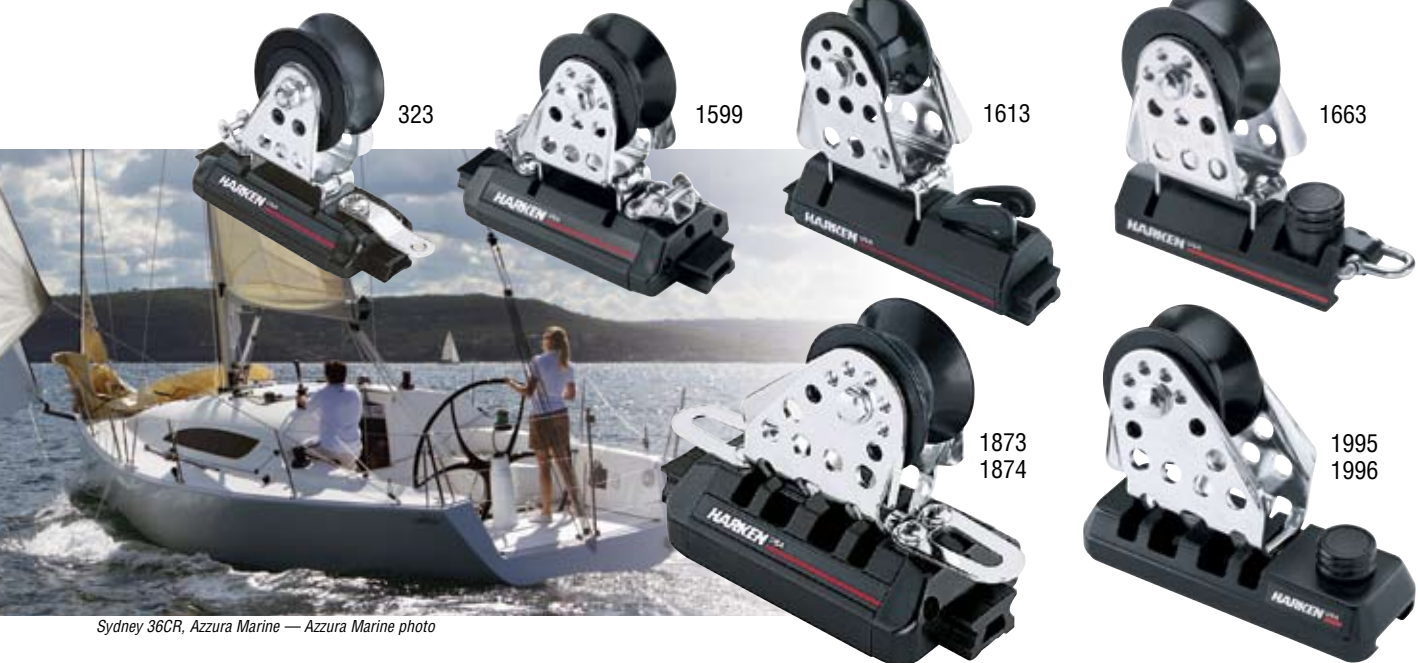
Easy-to-operate lever pinstop



To order track see mainsail traveler track for the appropriate size car



1639P
1639S



Sydney 36CR, Azzura Marine — Azzura Marine photo

For sheet-loading formulas see page 28.

Part No.	Description	Sheave Ø		Length		Width		Weight		Max line Ø		Sheet height above track		Maximum working load		Breaking load		Track
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
323	Small Boat/slider rods	2½	64	4½	114	2⅞	56	19	539	½	12	1¾	45	1250	567	2500	1134	2720
1599	Midrange/slider rods	2½	64	5¼	133	2¾	70	28	804	½	12	2⅞	56	2300	1043	4600	2086	1616
1613	Midrange/pinstop	2	51	4½	114	2¼	57	18	510	½	12	2¼	57	3000	1361	6000	2722	1617
1639P	Midrange/pinstop (port)	2	51	4½	114	2¼	57	18.4	522	½	12	2¼	57	3000	1361	6000	2722	1617
1639S	Midrange/pinstop (stbd)	2	51	4½	114	2¼	57	18.4	522	½	12	2¼	57	3000	1361	6000	2722	1617
1663	Midrange Polyslide/pinstop	2½	64	5	127	2¼	57	22	620	½	12	2¼	57	3000	1361	6000	2722	1617
1873	Big Boat 3000 Series/slider rods	2½	64	8	203	3⅜	85	37	1049	½	12	2¼	57	3000	1361	6000	2722	3154
1874	Big Boat 4500 Series/slider rods	3	76	9¾	248	3⅜	85	59	1673	¾	19	2½	64	4500	2041	9000	4082	3154
1995	Big Boat 3000 Series/pinstop	2½	64	6	152	2¼	57	31	879	½	12	2⅞	54	3000	1361	6000	2722	3155
1996	Big Boat 4500 Series/pinstop	3	76	7½	191	2¼	57	46	1304	¾	19	2⅞	59	4500	2041	9000	4082	3155

T-Track Genoa Lead Cars

1997 and 1998 cars have roller/ball bearing sheaves for easy trimming. The sheave carrier pivots 45-degrees side-to-side, swivels and articulates fore and aft to handle changing lead angles. Cars ride on low-friction plastic slides.

The 1997 pinstop lever locks open to move car along the track. The 1998's car-mounted high-load sheave makes a 2:1 adjuster tackle when paired with the B1877 or 1844.

Use for:
Genoa leads
Caprail leads

Multi-axis sheave carrier accommodates changing lead angles

Wide sheave passes two sheets

Lever locks open

Delrin® sliders isolate track and car

Accepts shackle for towing line

Available for metric or English track



1997
1997E

To order track see page 130



1998
1998E

1844

B1877

Pogo 8,50, Pierre Rolland, Structures Chantier Naval — B. Stichelbaut photo

For sheet-loading formulas see page 28.

Part No.	Description	Sheave Ø		Length		Width		Weight		Max line Ø		Sheet height above track		Maximum working load		Breaking load		Track
		in	mm	in	mm	in	mm	oz	g	in	mm	in	mm	lb	kg	lb	kg	
1844	End control/2:1/Retrofit	2½	64	4½	114	2	51	8	227	¾	10	2¼	57	3000	1361	—	—	1¼/32 mm
B1877	End control/2:1	1⅞	46	4⅞	109	1⅞	48	9.1	258	½	12	1½	38	1653	750	3307	1500	32 mm
1997	Lead car/pinstop	2½	64	6½	165	2	51	16	454	½	12	2¼	57	3000	1361	6000	2722	32 mm
1997E	Lead car/pinstop	2½	64	6½	165	2	51	16	454	½	12	2¼	57	3000	1361	6000	2722	1¼"
1998	Lead car/adjuster sheave	2½	64	6½	165	2	51	16	454	½	12	2¼	57	3000	1361	6000	2722	32 mm
1998E	Lead car/adjuster sheave	2½	64	6½	165	2	51	16	454	½	12	2¼	57	3000	1361	6000	2722	1¼"

Tri-Roller Genoa Lead Cars & Slides

The tri-roller car sheets close to the deck to handle low- and high-clewed genoas. They don't flog during tacks. They accept two sheets for easy sail changes. The vertical side rollers protect sheets and reduce friction, even with unfair leads.

The B1872CM, B1873CM, B1875AM and B1875ABB tri-roller cars come with a towing bail for adjustment. The B1875AM, B1875ABB and B1878AM tri-rollers feature an integrated pinstop that can lock in the raised position.

B157M and B158M track slides provide convenient attachment points for snatch blocks or other lead blocks. Plastic sliders reduce friction and protect tracks.

Low profile B2056M and 2057M track stops are easy to open.

Note: T-Track genoa lead cars cannot be adjusted under load.



B1875AM
B1875ABB



To order track see page 130



For sheet-loading formulas see page 28.

Part No.	Description	Fits track		Sheave Ø		Length		Width		Height		Weight		Max line Ø		Maximum working load		Breaking load	
		mm	in	in	mm	in	mm	in	mm	in	mm	oz	g	in	mm	lb	kg	lb	kg
B154CM	Genoa lead car**	32	2	52	3 ³ / ₄	95	2 ¹ / ₂	54	4 ¹ / ₂	115	31.7	900	3/16	14	1895	860	3850	1750	
B155CM	Genoa lead car**	40	2 ¹¹ / ₁₆	68	5 ⁹ / ₁₆	142	2 ³ / ₄	70	5 ⁷ / ₈	150	58.2	1650	7/8	22	4475	2030	9920	4500	
B157M	Slide**	32	—	—	3 ³ / ₄	95	1 ¹¹ / ₁₆	46	2 ³ / ₁₆	56	17.6	500	—	—	3950	1800	8150	3700	
B158M	Slide**	40	—	—	5 ⁹ / ₁₆	142	2 ³ / ₁₆	56	2 ³ / ₄	70	38.8	1100	—	—	5500	2500	12300	5600	
B1872CM	Tri-roller lead car**	32	1 ¹⁵ / ₁₆	50	4 ¹⁵ / ₁₆	125	2 ³ / ₄	70	4 ¹ / ₁₆	110	31.5	900	3/16	14	4950	2250	9900	4500	
B1873AM	Tri-roller lead car*	40	2 ³ / ₈	60	6 ¹¹ / ₁₆	170	3 ³ / ₈	85	5 ¹ / ₈	130	56.4	1600	3/4	20	4630	2100	9900	4500	
B1873CM	Tri-roller lead car**	40	2 ³ / ₈	60	6 ¹¹ / ₁₆	170	3 ³ / ₈	85	5 ¹ / ₈	130	112.9	3200	3/4	20	6945	3150	14300	6500	
B1875ABB	Tri-roller/pinstop*	3155‡	1 ¹⁵ / ₁₆	50	6	152	2 ³ / ₄	70	4 ¹ / ₁₆	106	32.5	923	3/16	14	3300	1500	7050	3200	
B1875AM	Tri-roller/pinstop*	32	1 ¹⁵ / ₁₆	50	6	152	2 ³ / ₄	70	4 ¹ / ₁₆	106	31.7	900	3/16	14	3300	1500	7050	3200	
B1876AM	Tri-roller/control sheave*	32	1 ¹⁵ / ₁₆	50	6	152	2 ³ / ₄	70	4 ¹ / ₁₆	106	31.7	900	3/16	14	3300	1500	7050	3200	
B1878AM	Tri-roller/pinstop*	26	1 ³ / ₄	45	4	103	2 ¹ / ₂	63	3 ³ / ₈	85	17.6	500	3/8	10	2205	1000	4410	2000	
B2056M	Stop*	40	—	—	1 ¹⁵ / ₁₆	50	2 ³ / ₁₆	56	1	25	3.5	100	—	—	2650	1200	5500	2500	
B2057M	Stop*	32	—	—	1 ¹⁵ / ₁₆	50	2 ³ / ₁₆	56	1 ⁵ / ₁₆	23	4	113	—	—	1750	800	3850	1750	

*Aluminum **Chrome ‡Refers to Big Boat track part number

Aluminum & Stainless Steel T-Track

Anodized aluminum T-Track features rounded top edges for protection and impact resistance. Drilled and tapped holes at ends make endstop and B1877 end control installation easy. Track comes in clear or black-anodized finishes.

32 mm High-Performance Track features black Hardkote-anodizing. It has precise 33 mm pinstop hole spacing.

Stainless steel track is available in 32 and 40 mm. The high luster finish makes it ideal for luxury cruisers/racers from 33 ft to 140 ft (9.5 m to 42 m).



1836
1889



B809
B810



B811

B204
3087
B206

B205
3086
B207

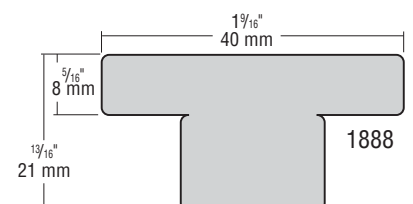
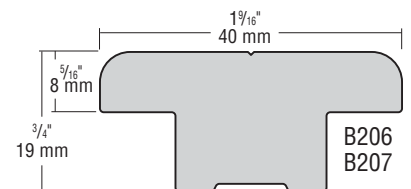
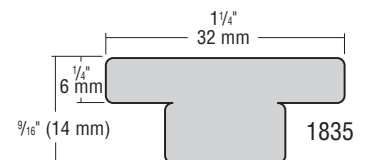
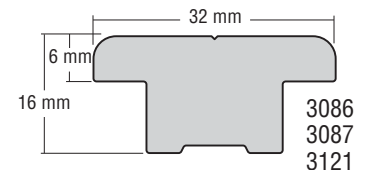
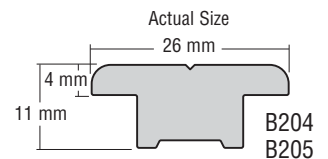
3121

1835

1888

Part No.	Length		Weight		Fasteners (FH)		Pinstop hole spacing		Endstop Part No.
	ft/in	m	oz	kg	in	mm	in	mm	
26 mm Anodized Aluminum: B204 Clear & B205 Black									
B204/B205.1m	3'3 3/8"	1	18.17	0.52	1/4	6	3 19/16	100	B809
B204/B205.1.5m	4'11 1/16"	1.5	27.25	0.77	1/4	6	3 19/16	100	B809
B204/B205.2m	6'6 3/4"	2	36.33	1.03	1/4	6	3 19/16	100	B809
B204B/B205.2.5m	8'2 1/16"	2.5	45.5	1.29	1/4	6	3 19/16	100	B809
B204/B205.3m	9'10 1/8"	3	54.50	1.55	1/4	6	3 19/16	100	B809
B204/B205.6m	19'8 1/4"	6	108.99	3.09	1/4	6	3 19/16	100	B809
32 mm Anodized Aluminum: 3086 Black & 3087 Clear									
3086/3087.1m	3'3 3/8"	1	31.7	0.9	5/16	8	3 19/16	100	B810
3086/3087.1.5m	4'11 1/16"	1.5	45.5	1.29	5/16	8	3 19/16	100	B810
3086/3087.2m	6'6 3/4"	2	63.46	1.8	5/16	8	3 19/16	100	B810
3086/3087.2.5m	8'2 1/16"	2.5	79.32	2.24	5/16	8	3 19/16	100	B810
3086/3087.3m	9'10 1/8"	3	95.22	2.69	5/16	8	3 19/16	100	B810
3086/3087.4m	13'1 1/2"	4	126.98	3.59	5/16	8	3 19/16	100	B810
3086/3087.6m	19'8 1/4"	6	190.5	5.39	5/16	8	3 19/16	100	B810
32 mm High-Performance Hardkote-Anodized Aluminum									
3121.1m	3'3 3/8"	1	30.3	0.86	5/16	8	1 15/16	33	B810
3121.1.2m	3'11 1/16"	1.2	37	1.05	5/16	8	1 15/16	33	B810
3121.1.5m	4'11 1/16"	1.5	45.5	1.29	5/16	8	1 15/16	33	B810
3121.2.5m	8'2 1/16"	2.5	75.3	2.13	5/16	8	1 15/16	33	B810
32 mm Stainless Steel									
1835.2m	6'6 3/4"	2	169.31	4.8	5/16	8	1 15/16	50	1836
1835.4m	13'1 1/2"	4	338.62	9.6	5/16	8	1 15/16	50	1836
40 mm Anodized Aluminum: B206 Clear & B207 Black									
B206/B207.1m	3'3 3/8"	1	48.85	1.39	5/16	8	3 19/16	100	B811
B206/B207.1.8m	5'10"	1.8	87.94	2.49	5/16	8	3 19/16	100	B811
B206/B207.2m	6'6 3/4"	2	97.71	2.77	5/16	8	3 19/16	100	B811
B206/B207.2.5m	8'2 1/16"	2.5	122.13	3.46	5/16	8	3 19/16	100	B811
B206/B207.3m	9'10 1/8"	3	146.56	4.16	5/16	8	3 19/16	100	B811
B206/B207.3.5m	11'5 15/16"	3.5	170.99	4.85	5/16	8	3 19/16	100	B811
B206/B207.4m	13'1 1/2"	4	195.41	5.54	5/16	8	3 19/16	100	B811
B206/B207.6m	19'8 1/4"	6	293.12	8.31	5/16	8	3 19/16	100	B811
40 mm Stainless Steel									
1888.2m	6'6 3/4"	2	282.91	8	—	12	1 15/16	50	1889
1888.4m	13'1 1/2"	4	564.37	16	—	12	1 15/16	50	1889

‡1st hole (1 15/16") 40 mm ††1st hole (1 15/16") 50 mm Mounting hole spacing (3 19/16") 100 mm



Custom Yacht Genoa Lead Cars

We offer a variety of genoa cars for 26, 32 and 40 mm T-Track, including custom 50 mm T-Track, as well as Big Boat, Mini-Maxi and Maxi tracks. Car bodies are made of either Hardkote-anodized aluminum or high-luster stainless steel. Sheaves are Teflon®-impregnated with an ultra-light composite bearing system (ULC). Maximum working loads range from 8500 lb (3856 kg) to 50,000 lb (26,680 kg). Custom cars can be designed to handle higher loads.

Mirror-polished
stainless

Composite-
bearing sheave



C7181



C7399
C7401



C6869



C8077



C8836



C7268



C5900
HC5754



C4219
C7788



Swan 90 — Nautor Swan photo

Part No.	Description	Length		Width		Weight		Maximum working load		Breaking load	
		in	mm	in	mm	lb	kg	lb	kg	lb	kg
C4219	40 mm T-track genoa slider*	9	229	2 ⁹ / ₁₆	65	6.54	2.97	12860	5845	25720	11690
C5900	Mini-Maxi lead car/slider rods	12	305	3	75	13	5.9	19625	8900	39249	17800
C6869	Maxi jib slider/slider rods	10	254	3 ⁵ / ₈	93	8.7	3.94	20322	9218	40644	18436
C7181	50 mm T-track jib/slider rods	14	356	3 ³ / ₈	86	38	17.24	50000	22680	100000	45360
C7268	Maxi genoa slider	14	356	3 ⁵ / ₈	92	13	6	25000	11339	50000	22678
C7399	40 mm stainless steel genoa lead/pinstop	10	254	2 ¹ / ₂	63	14	6	22567	10236	45134	20472
C7401	40 mm stainless steel/pivot stops	10	254	2 ¹ / ₂	63	14	6	22567	10236	45134	20472
C7788	40 mm T-track genoa for B206 track	9	229	2 ⁹ / ₁₆	65	6.54	2.97	8500	3856	17000	7712
C8077	Big Boat jib slider/125 mm Black Magic® block	8	203	2 ¹¹ / ₃₂	59	4.1	1.86	8818	4000	17636	8000
C8836	Mini-Maxi jib slider/Loop block	10	254	2 ⁹ / ₁₆	75	6.2	2.82	19824	9000	39648	27200
HC5754	40 mm T-track jib/Maxi sheave*	11	279	2 ⁹ / ₁₆	65	11.5	5.22	19625	8900	39249	17800

Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com *Stainless steel track only

Grand Prix Athwartship Systems

Harken offers athwartship systems in ball bearing and CRX versions with either 1:1 or 2:1 up/down controls and in/out controls in a variety of configurations. Teflon®-impregnated anodizing allows line to run smoothly. Extremely compact, high-load floating blocks or rings are supplied to match the car's up/down design. Athwartship cars can handle loads up to 19,840 lb (4509 kg).

Simple design allows versatility when used with soft attachments

"Soft" radiused surfaces eliminate chafe

Up/down control line through center slot allows sheet to be pulled low



C8728



C4040



C8684



C8882



C6584



C8955
C9200



C8823



C6585



Mutua Madrileña, TP52, Judel/Vrolijk & Co. — Thierry Martinez photo

Part No.	Description	Sheave Ø		Length		Car body height		Weight oz	Weight g	Maximum working load		Breaking load	
		in	mm	in	mm	in	mm			lb	kg	lb	kg
Ring leads													
C8684	Floating jib lead thimble/1:1	2	50.8	—	—	—	—	1.8	51	10000	4536	20000	9072
C8882	Floating ring sheet lead/2:1	3	76.2	—	—	—	—	6.8	193	7200	3266	14400	6532
Midrange													
C4040	Ball bearing genoa lead car	—	—	5/8	130	1 1/32	29	17.2	489	2300	1043	4600	2086
Big Boat													
C8728	CRX Loop car	—	—	3/8	86	2	51	11.6	330	3300	1497	6600	2994
C8823	CRX athwartship car/2:1	—	—	7 11/32	191	1 1/4	45	31.9	905	7500	3402	15000	6804
C8895	CRX low-profile fairlead endstop (pair)	—	—	1 1/4	44	7/8	22	1.9	55	—	—	—	—
Mini-Maxi													
C6584	CRX athwartship car/2:1 dead-ends	—	—	8	203	3 13/16	97	42.3	1200	9920	4509	19840	9018
C6585	Endstop	—	—	3/4	95	1 1/2	39	23.4	663	4410	2000	8820	4000
C8955	CRX Loop car	—	—	7 1/2	191	2 1/4	57	29.2	827	7937	3600	15874	7200
C9200	CRX Loop car	—	—	8	203	2 1/4	57	30.0	852	9900	4500	19800	9000

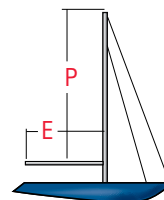
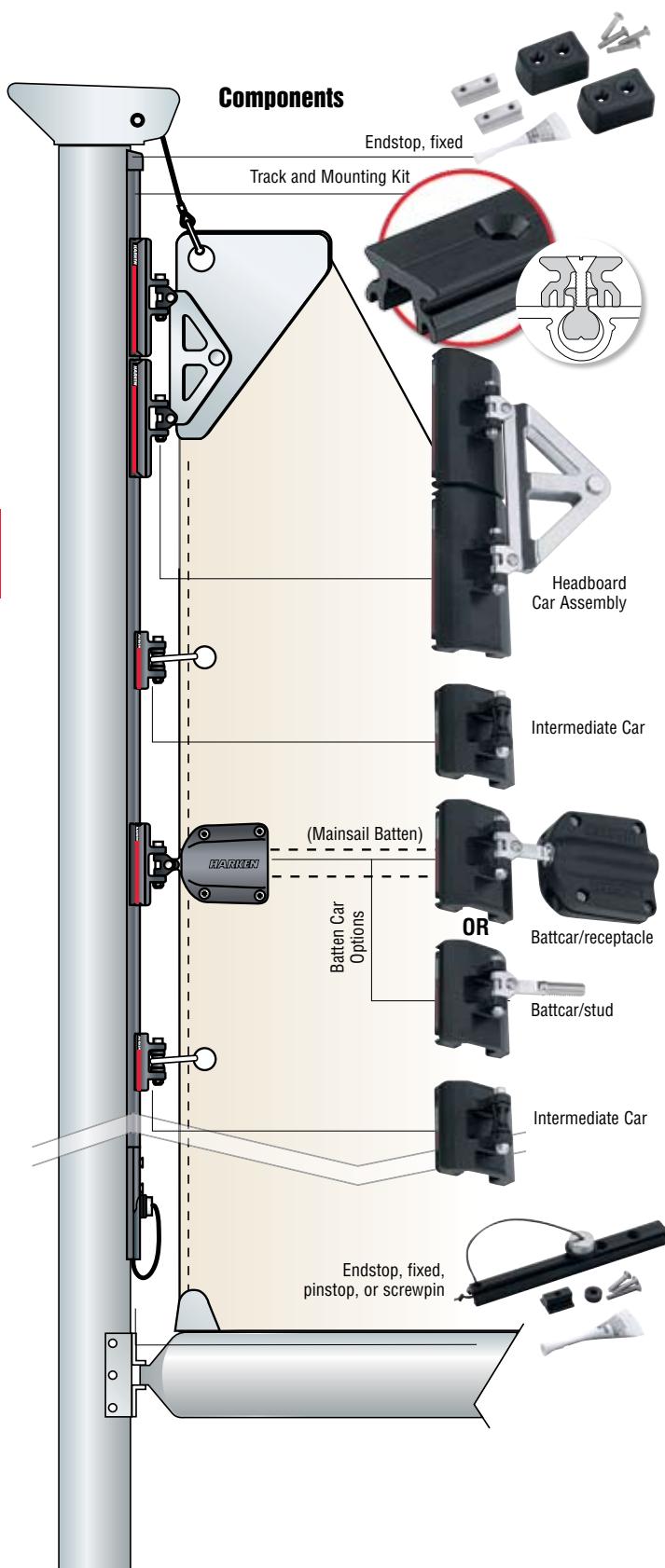
Contact Harken to request quote and lead time. For full product line, visit www.harkencustom.com



Paula Rosa, Shipman 80', J & J Design, Seaway Group
— Studio 37 Photo

MAINSAIL HANDLING SYSTEMS

Ordering Battcar Systems



Mainsail Area
P x E x .5

1. Determine system size

The four sizes, Systems AA, A, B, and C, are based on sail area (pages 136–143). If you need to reduce car stack height on mast, see **Switch T-Track Battcar Systems** (pages 144-146).

System size	Maximum sail area				Typical boat length			
	Monohull		Multihull		Monohull		Multihull	
	ft ²	m ²	ft ²	m ²	ft	m	ft	m
AA	350	32	275	25	to 37	to 11.3	to 30	to 9.1
A	600	56	500	46	37 - 50	11.3 - 15.2	30 - 40	9.1 - 12.2
B	900	83	700	65	50 - 60	15.2 - 18.3	40 - 50	12.2 - 15.2
C	1940	180	1510	140	60 - 90	18.3 - 27	50 - 70	15.2 - 21

2. Determine track quantity and type

Use **Mainsail Luff Length** chart on each system page to determine number of track sections.

Slug-mount: Most common. Requires 1 slug-mount kit per track section. Select slug that matches the mast's bolt rope groove shape.

Drill-tap: For masts without a bolt rope groove. Requires 1 splice link at each track joint.

3. Choose endstop kit

Quick-release: Includes screwpin or pinstop endstop for bottom of mast and fixed endstop for the top.

Fixed: Includes two fixed endstops.

4. Choose cars

Order 1 headboard, 1 Battcar for every full batten, and use the Intermediate Car Chart to determine number of intermediate cars.

CB system: All captive ball bearing components. Lowest friction system for fast sail hoists, douses, and reefs.

Combination system: CB headboard and Battcars, Slider intermediate cars. Reduces cost but uses CB in the most critical load areas.

Slider system: All Slider components. Raise and lower sails without battling a sail that gets jammed in the groove.

Intermediate Cars

Distance between battens*	Distance between battens*		Intermediate cars between battens
	ft	m	
8 or less		2.4 or less	1
9 - 13		2.7 - 4	2
14 - 16		4.3 - 4.9	3

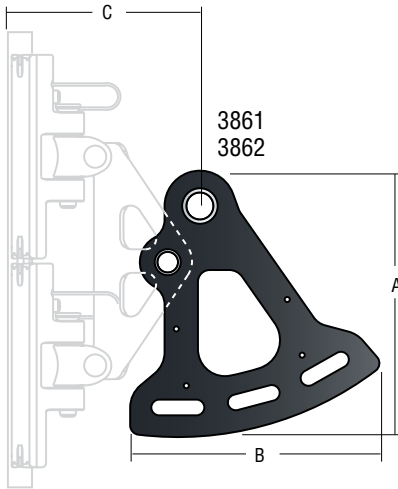
*Boats without full battens should use 1 intermediate CB or Slider car per 1.2 m (4 ft) and no Battcars.

5. Contact

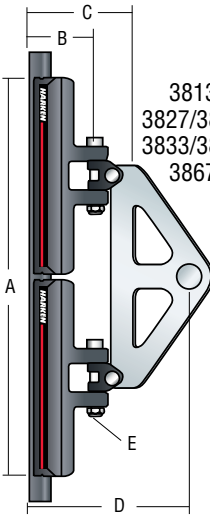
If you have any questions, please contact your dealer or Harken Technical Service.

Battcar Dimensions

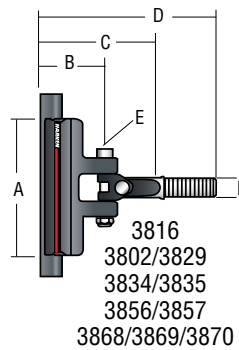
Headboard Plate



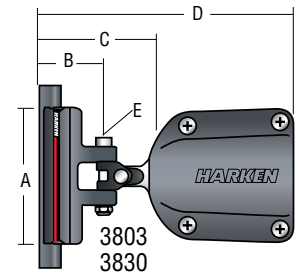
Headboard Car Assembly



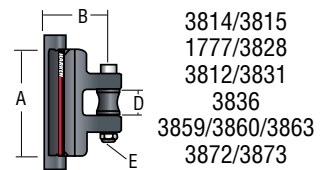
Battcar/Stud



Battcar/Receptacle



Intermediate Car Reef Car Universal Battcar



Dimensions (measured from aft face of mast)

Part No.	Description	A		B		C		D		E		F
		in	mm	in	mm	in	mm	in	mm	Pin Ø	Stud Ø	
System AA CB												
3813	Headboard car assembly	5 ⁷ / ₁₆	132	1	25	1 ¹³ / ₁₆	46	—	—	—	5	—
3814	Intermediate car	1 ³ / ₄	44	1 ⁹ / ₁₆	24	—	—	3 ¹ / ₄	19	—	5	—
3815	Intermediate car	2 ⁷ / ₁₆	56	1	25	—	—	3 ¹ / ₄	19	—	5	—
3816	Battcar/10 mm stud	2 ⁷ / ₁₆	56	1	25	1 ¹³ / ₁₆	46	3 ⁵ / ₁₆	84	—	5	10
System A Slider												
3827	Headboard car assembly	6	153	1 ¹ / ₁₆	27	2 ¹ / ₈	54	3 ¹¹ / ₁₆	94	3 ⁷ / ₁₆	5	—
1777	Intermediate car/low-load	2	51	1 ¹ / ₈	28	—	—	3 ¹ / ₄	19	3 ⁷ / ₁₆	5	—
3828	Intermediate car	1 ³ / ₄	44	1 ¹ / ₁₆	27	—	—	2 ¹ / ₃₂	17	3 ⁷ / ₁₆	5	—
3802	Battcar/10 mm stud	1 ³ / ₄	44	1 ¹ / ₁₆	27	2 ¹ / ₈	54	—	—	3 ⁷ / ₁₆	5	10
3803	Battcar/receptacle	1 ³ / ₄	44	1 ¹ / ₁₆	27	2 ¹ / ₈	54	5 ¹ / ₈	130	3 ⁷ / ₁₆	5	—
System A CB												
3811	Headboard car assembly	8 ³ / ₈	213	1 ³ / ₈	35	2 ¹ / ₄ /2 ¹ / ₈ * [†]	57/73* [†]	4	102	3 ⁷ / ₁₆	5	—
3812	Intermediate car	2 ¹ / ₄	57	1 ³ / ₈	35	—	—	3 ¹ / ₄	19	3 ⁷ / ₁₆	5	—
3829	Battcar/10 mm stud	2 ¹ / ₈	73	1 ³ / ₈	35	2 ¹ / ₄	57	3 ¹¹ / ₁₆	94	3 ⁷ / ₁₆	5	10
3830	Battcar/receptacle	2 ¹ / ₈	73	1 ³ / ₈	35	2 ¹ / ₈	73	5 ¹ / ₄	146	3 ⁷ / ₁₆	5	—
3831	Universal Battcar	2 ¹ / ₈	73	1 ³ / ₈	35	—	—	3 ¹ / ₄	19	3 ⁷ / ₁₆	5	—
System B Slider												
3833	Headboard car assembly	7 ¹ / ₂	190	1 ¹ / ₄	32	2 ⁵ / ₁₆	59	4 ⁵ / ₈	119	1 ¹ / ₄	6	—
3836	Intermediate car	2 ⁷ / ₁₆	56	1 ¹ / ₄	32	—	—	—	—	1 ¹ / ₄	6	—
3834	Battcar/10 mm stud	2 ⁷ / ₁₆	56	1 ¹ / ₄	32	2 ⁵ / ₁₆	59	3 ⁹ / ₁₆	91	1 ¹ / ₄	6	10
3835	Battcar/12 mm stud	2 ⁷ / ₁₆	56	1 ¹ / ₄	32	2 ⁵ / ₁₆	59	3 ³ / ₄	96	1 ¹ / ₄	6	12
System B CB												
3852	Headboard car assembly	10 ¹ / ₂	267	1 ³ / ₁₆	39	3 ¹ / ₁₆	78	4 ¹ / ₁₆	102	3 ⁷ / ₈	10	—
3863	Intermediate car	2 ⁷ / ₁₆	68	1 ³ / ₁₆	39	—	—	3 ¹ / ₄	19	1 ¹ / ₄	6	—
3856	Battcar/10 mm stud	4 ³ / ₁₆	109	1 ³ / ₁₆	39	3 ¹ / ₁₆	78	4 ³ / ₈	111	3 ⁷ / ₈	10	10
3857	Battcar/12 mm stud	4 ³ / ₁₆	109	1 ³ / ₁₆	39	3 ¹ / ₁₆	78	4 ³ / ₈	111	3 ⁷ / ₈	10	12
3859	Universal Battcar	4 ¹ / ₄	108	1 ³ / ₁₆	39	—	—	1	26	3 ⁷ / ₈	10	—
3860	Reef car	5 ³ / ₁₆	132	1 ³ / ₁₆	39	—	—	1	26	3 ⁷ / ₈	10	—
3861	Headboard plate	6 ¹³ / ₁₆	172	6 ³ / ₈	161	4 ⁷ / ₈	124	—	—	—	—	—
3862	Headboardplate/flat-top	5 ³ / ₁₆	147	6 ³ / ₁₆	157	5 ²³ / ₃₂	145	—	—	—	—	—
System C CB												
3867	Headboard car assembly	18 ³ / ₈	473	2	51	3 ³ / ₈	92	5	126	1 ¹ / ₂	12	—
3871	Intermediate car	3 ³ / ₄	95	2	51	—	—	1	26	3 ⁷ / ₈	10	—
3868	Battcar/12 mm stud	5 ⁵ / ₈	136	2	51	3 ³ / ₈	92	5 ¹ / ₁₆	128	1 ¹ / ₂	12	12
3869	Battcar/14 mm stud	5 ⁵ / ₈	136	2	51	3 ³ / ₈	92	5 ¹ / ₁₆	128	1 ¹ / ₂	12	14
3870	Battcar/16 mm stud	5 ⁵ / ₈	136	2	51	3 ⁵ / ₈	92	5 ¹ / ₁₆	128	1 ¹ / ₂	12	16
3872	Universal Battcar	5 ⁵ / ₈	136	2	51	—	—	1 ¹ / ₁₆	33	1 ¹ / ₂	12	—
3873	Reef car	9 ¹ / ₈	231	2	51	—	—	1 ⁵ / ₁₆	33	1 ¹ / ₂	12	—

*Batten car 3829/Batten car 3830

Battcar Systems

TAME YOUR MAIN

Handling a big mainsail? Wrestling a flogging main onto the boom? Raising the genoa, but not the main when it's windy? Sailing solo?

A Harken® Battcar system helps raise, douse and reef with ease and acts as extra crew if you're sailing shorthanded. Battcar systems outperform in-mast or in-boom furling, cost less, and you don't need to recut your sail.



DETAILS MAKE THE DIFFERENCE

CARS AND TRACK BUILT TO LAST

Made of one-piece high-grade aluminum, cars and track are strong, lightweight, and will last for years. They are deep-saturation Hardkote-anodized with a black additive to resist the corrosive effects of salt, sun and long-term wear.

SLIDER CARS—A COST EFFECTIVE WAY TO TAME YOUR MAIN

Low-friction plastic slider insert lets you raise and lower sails without battling bolt ropes or slugs that stick in mast groove.

CB CAPTIVE BALL CARS—THE ULTIMATE IN LOW-FRICTION

Torlon® ball bearings circulate smoothly for fast sail hoists, douses and reefs.

Captive bearings allow cars to easily roll off the track for cleaning and maintenance.

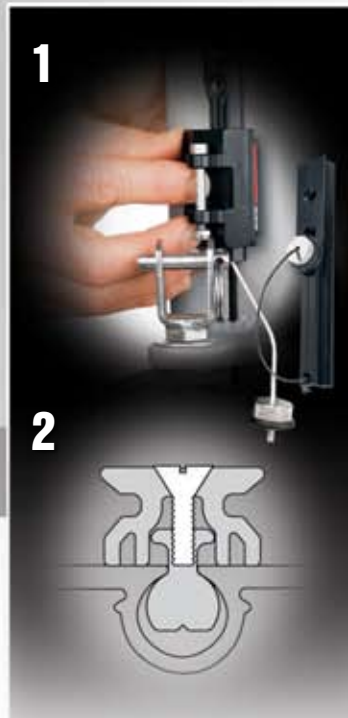
Batten toggle moves freely in all directions to prevent the sail from binding when reefing under load.

MIX CB AND SLIDER BATTCARS

CB and Slider Battcar systems use the same track. Mix Slider cars with CB cars to get the perfect system for your boat and budget.

1

2



1. Quick Sail Removal

Cars and sails slide off the track by removing the screwpin endstop—no tools needed.

2. Easy Mast-up Installation

Battcar track is designed to screw directly into slugs that slide into mast groove—no drilling or tapping.

System AA

Typical Boat Size:

Monohulls: length to 37 ft (11.3 m);
mainsail area under 350 ft² (32 m²)

Multihulls: length to 30 ft (9.1 m);
mainsail area under 275 ft² (26 m²)

The one-piece solid aluminum construction is lightweight and strong. The free-rolling ball bearing cars let you hoist and reef the main quickly on all points of sail. Cars are easily removed from the track by freeing the screwpin endstop and sliding them off. Stainless steel wire guides keep the balls captive when the car is off the track.

CB Ball Bearing Cars

Headboard Car Assembly



Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly



Battcars use high-strength Torton® ball bearings

3813

Intermediate Cars



3815

Slider Car



3814

Batten Car



3816

Threaded stud and toggle design handles twisting and angled loads for quick hoisting and dousing



Tartan 3400 — Billy Black photo

Part No.	Description	Length		Width		Weight		Max headboard thickness		Maximum working load	
		in	mm	in	mm	oz	g	in	mm	lb	kg
Typical Boat Length: Monohulls to 37 ft (11.3 m); Multihulls to 30 ft (9.1 m)											
3813	CB Headboard car assembly	5 ⁹ / ₁₆	132	1 ⁹ / ₁₆	40	6.7	188	1/2	12	440	200
3814	Slider intermediate car	1 ³ / ₄	44	1	25	0.5	15	—	—	130	59
3815	CB intermediate car	2 ³ / ₁₆	56	1 ⁹ / ₁₆	40	1.7	48	—	—	130	59
3816	CB Battcar/10 mm stud**	2 ³ / ₁₆	56	1 ⁹ / ₁₆	40	3	85	—	—	220	100

See page 26 for replacement balls **Batten receptacle not included

System AA

NEW: 3837

Track

Track is extruded from high-grade 6061-T6 aluminum and Hardkote-anodized for a hard, long-lasting surface. 3817 track mounts to mast using a unique slug system that allows mast-up installation.

For masts without internal sail track, attach 2707 Micro traveler track by drilling and tapping the spar. Join track sections with splice links. Order one per track joint. Order one low-beam endstop (sold in pairs). See chart below.

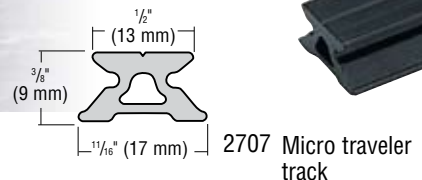
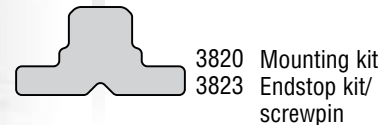
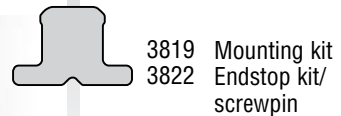
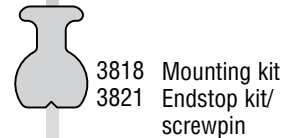
Mast Track: Slug Mount

Part No.	Description	Length		Weight		Fastener spacing		Fastening method
		in	m	oz/ft	g/m	in	mm	
3817	Slug-mount track	80 ³ / ₄	2.05	2.84	264	3 ¹⁵ / ₁₆	100	Mounting slugs

Traveler Track: Drill/Tap

Part No.	Description	Splice link	Endstop	Ordering information	Fastening method

Mainsail luff length		Number of track sections
ft	m	
20'10" - 27'6"	6.35 - 8.38	4
27'7" - 34'3"	8.41 - 10.44	5
34'4" - 40'11"	10.47 - 12.47	6
41'0" - 47'8"	12.50 - 14.53	7



Salona 37, J & J Design, AD Boats

Mounting Kits and Endstops

Mounting kit slugs are available for flat or round mast grooves. Order one kit per track section.

Use screwpin endstop to easily remove cars and mainsail. Order one kit.



Endstop kit/screwpin



Track Mounting Kits: Slug Mount*

Part No.	Description	Mounting slug				Mounting slugs/kit	Connector slug				Fits flat mast groove gap				
		Length in	mm	Weight oz	g		Length in	mm	Weight oz	g	Connector slugs/kit	Min in	mm	Max in	mm
3818	Round mast groove	3/4	19	.14	4	19	2 ⁵ / ₈	67	.54	15	1	—	—	—	—
3819	Flat mast groove	3/4	19	.17	5	19	2 ⁵ / ₈	67	.60	17	1	5/16	8	7/16	11
3820	Wide flat mast groove	3/4	19	.25	6	19	2 ⁵ / ₈	67	.94	23	1	7/16	11	1/2	13

Endstop Kits: Slug Mount & Drill/Tap*

Part No.	Description	Track end length		Weight		Mounting slugs/kit
		in	mm	oz	g	
3821	Round mast groove/screwpin	6	152	2.4	70	2
3822	Flat mast groove/screwpin	6	152	2.4	70	2
3823	Wide flat mast groove/screwpin	6	152	2.4	70	2
3837	Micro track/screwpin	6	152	2.2	62	—

*Includes M4 x .7 x 20 or 25 mm fasteners

System A

Typical Boat Size:

Monohulls: length 37 - 50 ft (11.3 - 15.2 m); mainsail area under 600 ft² (56 m²)

Multihulls: length 30 - 40 ft (9.1 - 12.2 m); mainsail area under 500 ft² (46 m²)

The one-piece solid aluminum construction is lightweight and strong. Cars are easily removed from the track by freeing the screwpin endstop and sliding them off. Both CB and Slider Battcar systems use the same track. Mix and match sliders and ball bearing cars for optimal performance and cost.

CB Cars

The free-rolling ball bearing cars let you hoist and reef the main quickly on all points of sail. Stainless steel wire guides keep the balls captive when the car is off the track.

Slider Cars

Slider Battcars offer a lightweight, cost-effective way to raise, reef, and douse mainsails. Hardkote-anodized aluminum cars slide on low-friction plastic inserts. The compact car size translates into reduced weight and stack height.

CB Ball Bearing Cars



Headboard Car Assemblies



Intermediate Cars



Batten Cars



Wyliecat 44 — Walter Cooper Photo

Part No.	Description	Length		Width		Weight		Max headboard thickness		Max batten			Batten	Maximum working load		
		in	mm	in	mm	oz	g	in	mm	in	mm	Ø		mm	lb	kg
CB Cars: Typical Boat Length: Monohulls 37 - 50 ft (11.3 - 15.2 m); Multihulls 30 - 40 ft (9.1 - 12.2 m)																
3811	Headboard car assembly	8 ³ / ₈	213	2 ¹ / ₄	57	18	518	9 ¹ / ₁₆	14	—	—	—	—	—	1600	725
3812	Intermediate car	2 ¹ / ₄	57	2 ¹ / ₄	57	4	109	—	—	—	—	—	—	—	—	—
3829	Battcar/10 mm stud**	2 ⁷ / ₈	73	2 ¹ / ₄	57	6	157	—	—	—	—	—	—	—	600	272
3830	Battcar/40 mm receptacle	2 ⁷ / ₈	73	2 ¹ / ₄	57	9	253	—	—	1 ⁵ / ₈	41	5/8	16	Flat/Round	600	272
3831	Universal Battcar**	2 ⁷ / ₈	73	2 ¹ / ₄	57	4.3	122	—	—	—	—	—	—	—	600	272
Slider Cars: Typical Boat Length: Monohulls 37 - 50 ft (11.3 - 15.2 m); Multihulls 30 - 40 ft (9.1 - 12.2 m)																
3827	Headboard car assembly	6	153	1 ⁵ / ₈	35	10	269	9 ¹ / ₁₆	14	—	—	—	—	—	1600	725
1777	Low-load intermediate car*	2	51	1 ¹ / ₄	32	1.1	32	—	—	—	—	—	—	—	200	91
3828	Intermediate car	1 ³ / ₄	44	1 ⁵ / ₈	35	1.6	45	—	—	—	—	—	—	—	350	159
3802	Battcar/10 mm stud**	1 ³ / ₄	44	1 ⁵ / ₈	35	2.8	80	—	—	—	—	—	—	—	350	159
3803	Battcar/40 mm receptacle	1 ³ / ₄	44	1 ⁵ / ₈	35	6.4	181	—	—	1 ⁵ / ₈	41	5/8	16	Flat/Round	350	159

See page 26 for replacement balls *Max. sail area: Monohull 350 ft² (33m²), Multihull 300 ft² (28 m²) **Batten receptacle not included

System A

Track

Track is extruded from high-grade 6061-T6 aluminum and Hardkote-anodized for a hard, long-lasting surface. 3807 track mounts to mast using a unique slug system that allows mast-up installation.

For masts without internal sail track, attach 2720 Small Boat traveler track by drilling and tapping the spar. Join track sections with splice links. Order one per track section. Order one low-beam endstop (sold in pairs). See chart below.

Use flanged track when mounting to carbon spars. Track features a groove for racing sails with boltropes or slugs.

Mainsail luff length		Number of track section
ft	m	
27'9" - 34'5"	8.46 - 10.49	5
34'6" - 41'1"	10.52 - 12.52	6
41'2" - 47'10"	12.55 - 14.58	7
47'11" - 54'7"	14.61 - 16.62	8
54'8" - 61'4"	16.66 - 18.69	9

Mast Track

Part No.	Description	Length		Weight		Fastener spacing		Fastening method
		in	m	oz/ft	g/m	in	mm	
3807	Slug-mount track	80 ³ / ₄	2.05	4.44	413	4 ¹⁵ / ₁₆	125	Mounting slugs
3878.2M	Flanged track	78 ³ / ₄	2	2.24	209	—	—	Adhesive
3878.6M	Flanged track	236 ¹ / ₄	6	2.24	209	—	—	Adhesive

Traveler Track: Drill/Tap

Part No.	Description	Splice link	Endstop	Ordering information	Fastening method

Mounting Kits and Endstops

Mounting kit slugs are available for flat or round mast grooves. Order one kit per track section.

Use screwpin endstop to easily remove cars and mainsail. Order one kit only.

Mounting kit

3804
3805
3806



Endstop kit/fixd

3808
3809
3810



Endstop kit/screwpin

3824
3825
3826



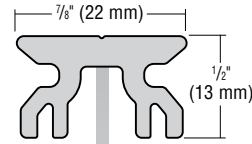
Track Mounting Kits: Slug Mount*

Part No.	Description	Mounting slug				Connector slug				Fits flat mast groove gap					
		Length in	Length mm	Weight oz	Weight g	Mounting slugs/kit	Length in	Length mm	Weight oz	Weight g	Connector slugs/kit	Min in	Min mm	Max in	Max mm
3804	Round mast groove	3/4	19	.14	4	15	2 ⁵ / ₈	67	.54	15	1	—	—	—	—
3805	Flat mast groove	3/4	19	.17	5	15	2 ⁵ / ₈	67	.60	17	1	9/16	8	7/16	11
3806	Wide flat mast groove**	3/4	19	.25	6	15	2 ⁵ / ₈	67	.94	23	1	7/16	11	9/8	16

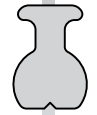
Endstop Kits: Slug Mount*

Part No.	Description	Track end length		Weight		Mounting slugs/kit
		in	mm	oz	g	
3808	Round mast groove/fixd (pair)	—	—	.5	14	2
3809	Flat mast groove/fixd (pair)	—	—	.52	15	2
3810	Wide flat mast groove/fixd (pair)**	—	—	.67	19	2
3824	Round mast groove/screwpin	8	203	5.4	155	3
3825	Flat mast groove/screwpin	8	203	5.5	157	3
3826	Wide flat mast groove/screwpin**	8	203	6.1	174	3

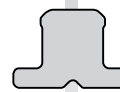
*Includes M5 X .8 X 20/25 mm or 25 mm fasteners **For Selden mast slugs contact Harken®



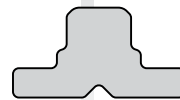
3807 Slug-mount track



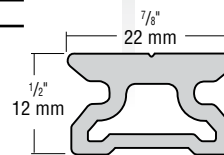
3804 Mounting kit
3808 Endstop kit/fixd
3824 Endstop kit/screwpin



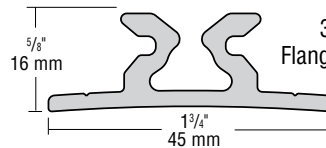
3805 Mounting kit
3809 Endstop kit/fixd
3825 Endstop kit/screwpin



3806 Mounting kit
3810 Endstop kit/fixd
3826 Endstop kit/screwpin



2720 Small Boat traveler track



3878 Flanged track

System B

NEW: 3879

Typical Boat Size:

Monohulls: length 50 - 60 ft (15.2 - 18.3 m);
mainsail area under 900 ft² (83 m²)

Multihulls: length 40 - 50 ft (12.2 - 15.2 m);
mainsail area under 700 ft² (65 m²)

The one-piece solid aluminum construction is lightweight and strong. Cars and headboard plates are deep-saturation Hardkote anodized and Teflon[®] impregnated for durability. UV stabilized with black additive for maximum protection. Both CB and Slider Battcar systems use the same track. Mix and match sliders and ball bearing cars for optimal performance and cost.

CB Cars

The free-rolling ball bearing cars let you hoist and reef the main quickly on all points of sail. The quick-release button lets you easily load and remove the mainsail. Stainless steel wire guides keep the balls captive when the car is off the track.

Web-On Headboard Plates

Aluminum web-on headboard plates are easy for sailmakers to install. Plates have radiused edges to protect the sail and fit 1 in (25 mm) webbing strap. Holes threaded into plates accept 416 cheek blocks for leech line. Web-on plates are required for the 3852 System B CB headboard car.

Sold separately.

Slider Cars

Slider Battcars offer a lightweight, cost-effective way to raise, reef, and douse mainsails. Hardkote-anodized aluminum cars slide on low-friction plastic inserts. The compact car size translates into reduced weight and stack height.

CB Ball Bearing Cars

Battcars use high-strength Torlon[®] ball bearings



Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly

Captive pin features a quick-release button to remove sail quickly, while allowing car to remain on the mast



Slider Cars

Headboard Car Assemblies

Low-friction plastic slider compound



3833

3852

Intermediate Cars



3863



3836

3860

Batten Cars



3859



3856
3857
3879



3834
3835



3861



3862

Part No.	Description	Length		Width		Weight		Max headboard thickness		Maximum working load	
		in	mm	in	mm	oz	g	in	mm	lb	kg
CB Cars: Typical Boat Length: Monohulls 50 - 60 ft (15.2 - 18.3 m); Multihulls 40 - 50 ft (12.2 - 15.2 m)											
3852	Headboard car assembly	10 ¹ / ₂	267	2 ³ / ₄	70	41.4	1173	7 ⁷ / ₁₆	12	3200	1450
3863	Intermediate car	2 ⁹ / ₁₆	68	2 ³ / ₄	70	6.8	191	—	—	524	238
3856	Battcar/10mm Stud**	4 ⁵ / ₁₆	109	2 ³ / ₄	70	14.3	406	—	—	1260	571
3857	Battcar/12mm Stud**	4 ⁵ / ₁₆	109	2 ³ / ₄	70	14.6	413	—	—	1260	571
3879	Battcar/14mm Stud	4 ⁵ / ₁₆	109	2 ³ / ₄	70	15.1	429	—	—	1260	571
3859	Universal Battcar**	4 ⁵ / ₁₆	109	2 ³ / ₄	70	12.3	348	—	—	1260	571
3860	Reef Car	5 ⁹ / ₁₆	132	2 ³ / ₄	70	14.4	408	—	—	1600	725
3861	Web-on headboard plate*	6 ³ / ₄	172	6 ³ / ₈	161	10.3	292	—	—	—	—
3862	Web-on headboard plate/flat-top*	5 ¹³ / ₁₆	148	6 ³ / ₁₆	157	11.2	317	—	—	—	—
Slider Cars: Typical Boat Length: Monohulls 50 - 60 ft (15.2 - 18.3 m); Multihulls 40 - 50 ft (12.2 - 15.2 m)											
3833	Headboard car assembly†	7 ¹ / ₂	190	1 ¹¹ / ₁₆	42	14.8	420	9 ⁹ / ₁₆	16	3200	1450
3836	Intermediate Car	2 ⁹ / ₁₆	56	1 ¹¹ / ₁₆	42	2.9	82	—	—	1260	570
3834	Battcar/10mm stud**	2 ³ / ₁₆	56	1 ¹¹ / ₁₆	42	4.5	128	—	—	1260	570
3835	Battcar/12mm stud**	2 ³ / ₁₆	56	1 ¹¹ / ₁₆	42	4.9	140	—	—	1260	570

*Contact Harken for headboard plate for non-CB systems

**Batten receptacle not included

†Fits standard sailmaker-supplied headboard

System B

Track

Track is extruded from high-grade 6061-T6 aluminum and Hardkote-anodized for a hard, long-lasting surface. 3844 track mounts to mast using a unique slug system that allows mast-up installation.

For masts without internal sail track, attach 1616 Midrange traveler track by drilling and tapping the spar. Join track sections with splice links. Order one per track section. Order one low-beam endstop (sold in pairs). See chart below.

Use flanged track when mounting to carbon spars. Track features a groove for racing sails with boltropes or slugs.

Mainsail luff length		Number of track section
ft	m	
41'6" - 48'2"	12.65 - 14.68	7
48'3" - 54'11"	14.71 - 16.74	8
55'0" - 61'8"	16.76 - 18.80	9
61'9" - 68'5"	18.82 - 20.85	10
68'6" - 75'2"	20.90 - 22.91	11

Mast Track

Part No.	Description	Length		Weight		Fastener spacing		Fastening method
		in	m	oz/ft	g/m	in	mm	
3844	Slug-mount track	81 ¹ / ₈	2.06	5.66	527	3 ¹⁵ / ₁₆	100	Mounting slugs
3849.2M	Flanged track	78 ³ / ₄	2	12	1119	—	—	Adhesive
3849.6M	Flanged track	236 ¹ / ₄	6	12	1119	—	—	Adhesive

Traveler Track: Drill/Tap

Part No.	Description	Splice link	Endstop	Ordering information	Fastening method
1616	Midrange track	1619	1522	2007-2008 catalog	Drilling and tapping

Mounting Kits and Endstops

Mounting kit slugs are available for flat or round mast grooves. Order one kit per track section.

Use pinstop endstop to easily remove cars and mainsail. Order one kit only.

Mounting kit
3845
3846
3864



Endstop kit/fixd

3850
3851
3865



Endstop kit/pinstop

3847
3848
3866



Track Mounting Kits: Slug Mount*

Part No.	Description	Mounting slug				Connector slug				Fits flat mast groove gap					
		Length in	Length mm	Weight oz	Weight g	Mounting slugs/kit	Length in	Length mm	Weight oz	Weight g	Connector slugs/kit	Min in	Min mm	Max in	Max mm
3845	Round mast groove	7 ⁷ / ₈	22	.43	12	19	3	76	1.27	36	1	7 ¹ / ₁₆	11	9 ⁵ / ₈	16
3846	Flat mast groove	7 ⁷ / ₈	22	.56	16	19	3	76	1.71	48	1	7 ¹ / ₁₆	11	9 ⁵ / ₈	16
3864	Flat mast groove/Selden‡	7 ⁷ / ₈	22	.48	14	19	3	76	1.29	37	1	3 ³ / ₈	9.5	7 ¹ / ₁₆	11

Endstop Kits: Slug Mount*

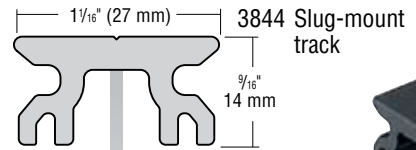
Part No.	Description	Track end length		Weight		Mounting slugs/kit
		in	mm	oz	g	
3847	Round mast groove/pinstop*	9 ¹ / ₂	241	8.3	234	3
3848	Flat mast groove/pinstop*‡	9 ¹ / ₂	241	11.3	322	3
3850	Round mast groove/fixd (pair)*	—	—	3.3	94	2
3851	Flat mast groove/fixd (pair)*‡	—	—	3.7	105	2
3865	Flat mast groove/fixd/Selden‡	—	—	3.5	100	2
3866	Flat mast groove/pinstop/Selden‡	9 ¹ / ₂	241	11.1	316	3

*includes M6 x 1.0 x 20 or 30 mm fasteners

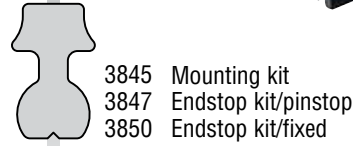
‡Weights include fasteners

*Not for flanged track

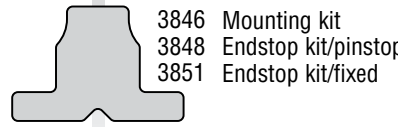
‡For Selden mast section C installations



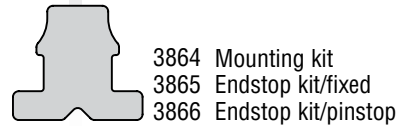
3844 Slug-mount track



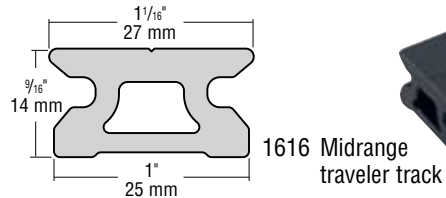
3845 Mounting kit
3847 Endstop kit/pinstop
3850 Endstop kit/fixd



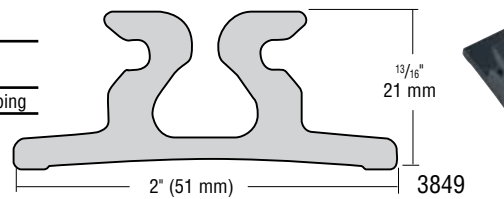
3846 Mounting kit
3848 Endstop kit/pinstop
3851 Endstop kit/fixd



3864 Mounting kit
3865 Endstop kit/fixd
3866 Endstop kit/pinstop



1616 Midrange traveler track



3849 Flanged track

System C

Typical Boat Size:

Monohulls: length 60 - 90 ft (18.3 - 27 m);
mainsail area under 1940 ft² (180 m²)

Multihulls: length 50 - 70 ft (15.2 - 21 m);
mainsail area under 1510 ft² (140 m²)

The one-piece solid aluminum construction is lightweight and strong. Cars and headboard plates are deep-saturation Hardkote anodized and Teflon[®] impregnated for durability. UV stabilized with black additive for maximum protection.

CB Cars

The free-rolling ball bearing cars let you hoist and reef the main quickly on all points of sail. The quick-release button lets you easily load and remove the mainsail. Stainless steel wire guides keep the balls captive when the car is off the track.

Web-On Headboard Plates

Aluminum web-on headboard plates are easy for sailmakers to install. Plates have radiused edges to protect the sail and fit 1 in (25 mm) webbing strap. Holes threaded into plates accept 416 cheek blocks for leech line. Web-on plates are required for the 3867 System C CB headboard car. Sold separately.

Headboard Car Assembly

Battcars use high-strength Torlon[®] ball bearings



Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly



Captive pin features a quick-release button to remove sail quickly, while allowing car to remain on the mast



3867

Intermediate Cars



3873



3871

Batten Cars



3872



3868
3869
3870

Headboard Plates



3876



3877



Gunboat 48, Morrelli & Melvin/Peter Johnstone — Walter Cooper Photo

Part No.	Description	Length		Width		Weight		Max headboard thickness		Maximum working load	
		in	mm	in	mm	oz	g	in	mm	lb	kg
CB Cars: Typical Boat Length: Monohulls 60 - 90 ft (18.3 - 27 m); Multihulls 50 - 70 ft (15.2 - 21 m)											
3867	Headboard car assembly*	18 ³ / ₈	473	3 ³ / ₈	85	107	2980	9 ¹ / ₁₆	15	6300	2858
3871	Intermediate car	3 ³ / ₄	96	3 ³ / ₈	85	17	493	—	—	1530	695
3868	Battcar/12 mm stud**	5 ³ / ₈	136	3 ³ / ₈	85	29	834	—	—	2100	953
3869	Battcar/14 mm stud**	5 ³ / ₈	136	3 ³ / ₈	85	30	844	—	—	2100	953
3870	Battcar/16 mm stud**	5 ³ / ₈	136	3 ³ / ₈	85	105	2980	—	—	2100	953
3872	Universal Battcar**	5 ³ / ₈	136	3 ³ / ₈	85	24	676	—	—	2100	953
3873	Reef car	9 ¹ / ₈	231	3 ³ / ₈	85	38	1071	—	—	3150	1429
3876	Web-on headboard plate*	10 ³ / ₁₆	268	7 ¹⁵ / ₁₆	201	29	828	1/2	13	—	—
3877	Web-on headboard plate/flat-top*	10 ³ / ₄	273	11 ¹ / ₈	282	43	1343	1/2	13	—	—

*Contact Harken for headboard plate for older systems

**Batten receptacle not included

System C

Track

Track is extruded from high-grade 6061-T6 aluminum and Hardkote-anodized for a hard, long-lasting surface. 3853 track mounts to mast using a unique slug system that allows mast-up installation.

For masts without internal sail track, attach 3154 or 3162 Big Boat traveler track by drilling and tapping the spar. Join track sections with splice links. Order one per track section. Order one low-beam endstop (sold in pairs). See chart below.

Use flanged track when mounting to carbon spars. Track features a groove for racing sails with boltropes or slugs.

Mast Track

Part No.	Description	Length		Weight		Fastener spacing		Fastening method
		in	m	oz/ft	g/m	in	mm	
3853	Slug-mount track	81 ¹⁵ / ₁₆	2.08	9.28	863	3 ³ / ₁₆	100	Mounting slugs
3858.2M	Flanged track	78 ³ / ₄	2	17.38	1619	—	—	Adhesive
3858.6M	Flanged track	236 ¹ / ₄	6	17.38	1619	—	—	Adhesive

Traveler Track: Drill/Tap

Part No.	Description	Splice link	Endstop	Ordering information	Fastening method
3154/3162	Big Boat track	3153	548	page 114	Drilling and tapping

Mounting Kits and Endstops

Mounting kit slugs are available for flat mast grooves. Order one kit per track section.

Use pinstop endstop to easily remove cars and mainsail. Order one kit only.

Mounting kit
3854



Endstop kit/fixd
3855



Endstop kit/pinstop
3875



Track Mounting Kits: Slug Mount

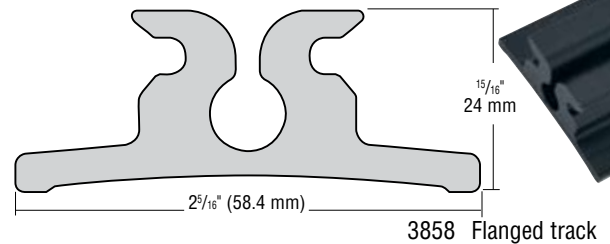
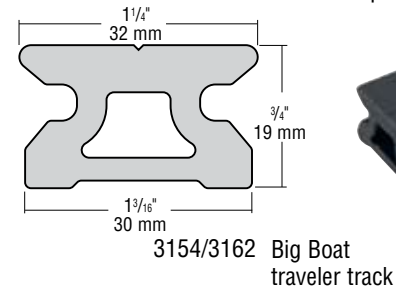
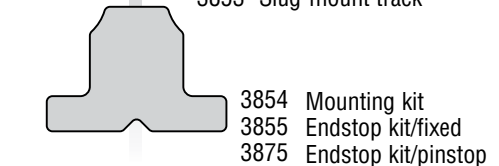
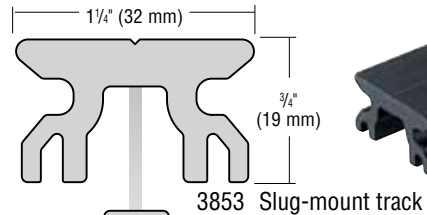
Part No.	Description	Mounting slug				Mounting slugs/kit	Connector slug				Fits flat mast groove gap				
		Length in	Length mm	Weight oz	Weight g		Length in	Length mm	Weight oz	Weight g	Connector slugs/kit	Min in	Min mm	Max in	Max mm
3854	Flat mast groove	1	25	.60	17	19	4 ⁷ / ₈	105	2.49	70	1	⁷ / ₁₆	11	⁵ / ₈	16

Endstop Kits: Slug Mount

Part No.	Description	Track end length		Weight		Mounting slugs/kit
		in	mm	oz	g	
3855	Flat mast groove/fixd (pair)*	—	—	1.21	34	2
3875	Flat mast groove/pinstop*	17	432	30	853	5

M8 x 1.25 x 40 mm fasteners *Not for flanged track

Mainsail luff length		Number of track sections
ft	m	
56'3" - 61'6"	17.15 - 18.75	9
61'7" - 68'4"	18.77 - 20.83	10
68'5" - 75'2"	20.85 - 22.91	11
75'3" - 82'	22.94 - 24.99	12
82'1" - 88'10"	25.02 - 27.08	13
88'11" - 95'8"	27.10 - 29.16	14
95'9" - 97'2"	29.19 - 29.62	15



18 mm Switch T-Track Battcar Systems

The 18 mm car bodies are built of fiber-reinforced, lubricated plastic that is UV stabilized with black additive for maximum protection. 18 mm high-load car bodies are machined aluminum with low-friction Delrin® sliders. Aluminum cars and T-Track are Hardkote anodized for durability.

Fits Boats:

18 mm: Monohulls: 37-45 ft (11 m - 13.5 m);

Multihulls: 30-35 ft (9 - 10.5 m);

18 mm High-Load:

Monohulls 45 - 50 ft (13.5 m - 15 m);

Multihulls 35 - 40 ft (10.5 - 12 m)



HC7905



HC8537



HC7905HL



HC7904HL
HC8537HL



HC7906



HC7906HL

INTERMEDIATE CARS

BATTEN CARS

HEADBOARD CARS

Cars

Part No.	Description	Length		Width		Weight		Max headboard thickness		Maximum sail area				Maximum working load	
		in	mm	in	mm	oz	g	in	mm	ft ²	m ²	ft ²	m ²	lb	kg
18 mm															
HC7906	Headboard car	7 ³ / ₁₆	198	1 ²¹ / ₃₂	42	12.8	359	9 ¹ / ₁₆	14	450	40	325	30	700	318
HC7905	Intermediate car	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	1.6	45	—	—	450	40	325	30	300	103
HC8537	Batten car/10 mm stud	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	3.2	91	—	—	450	40	325	30	300	103
18 mm High-Load (HL)															
HC7906HL	Headboard car	7 ³ / ₁₆	198	1 ²¹ / ₃₂	42	14.4	408	9 ¹ / ₁₆	14	610	55	500	45	1600	725
HC7905HL	Intermediate car	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	3.2	91	—	—	610	55	500	45	600	272
HC7904HL	Batten car/12 mm stud	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	4.9	139	—	—	610	55	500	45	600	272
HC8537HL	Batten car/10 mm stud	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	4.8	136	—	—	610	55	500	45	600	272

Xc 42, Niels Jeppesen — X-Yachts



Cut car stack height in half by flaking the sail alternately to port and starboard of the boom.

BATTCAR Q&A

WHY DO I WANT A SWITCH BATTCAR SYSTEM?

A Switch Battcar system cuts stack height in half, so putting on a sail cover or connecting/disconnecting your halyard is a much easier task. The system works by alternately dropping mainsail cars onto port and starboard storage racks. Headboard cars articulate and pass through the switch, reducing stack height even more.

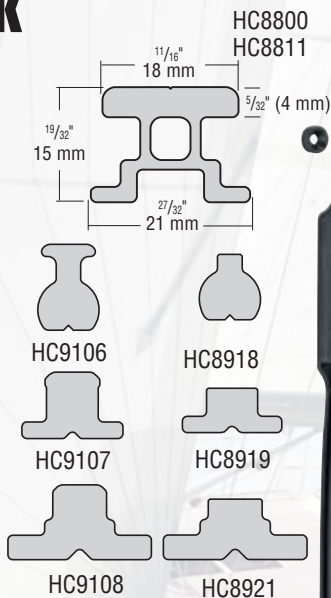
18 mm Switch T-Track Battcar Systems

Switch system track is machined or extruded from 6061-T6 aluminum and Hardkote anodized for a long-lasting surface. For masts with sail grooves, 18 mm slug-mount track uses a unique system that allows mast-up installation. Use high-load slug-mount tracks on boats over 40' (12.2 m) at sail headboard locations at full hoist and when sail is reefed. Drill/tap track and switches fit masts without sail grooves. Join drill/tap track sections with splice links. Order one per track section. Boats with larger sail areas should use long switches to accommodate more cars.

Mounting Kits and Endstops

Slug mounting kits are available for flat or round mast grooves. Order one kit per track section.

Switch track includes screwpin stops for easy car and sail removal below switch. Stop at masthead also included.



Xc 42, X-Yachts, Per Heegaard Photo



SLUG MOUNT

Mounting Kits: Slug Mount

Part No.	Description	Mounting slug				Connector slug				Flat mast groove gap	
		Length in	Weight mm oz	g	Mounting slugs/kit	Length in	Weight mm oz	g	Connector slugs/kit	Min in mm	Max in mm
Switch Mounting Kits											
HC8918	Round mast groove	2	51	.32	9	3	—	—	—	—	—
HC8919	Flat mast groove	1 3/4	45	.28	8	3	—	—	—	5/16	8 7/16 11
HC8921	Wide flat mast groove	1 3/4	45	.56	16	3	—	—	—	7/16	11 5/8 16
Track Mounting Kits											
HC9106	Round mast groove	3/4	19	.14	4	19	2 5/8	67	.54	15	1
HC9702	Round mast groove, extras*	3/4	19	.14	4	10	—	—	—	—	—
HC9107	Flat mast groove	3/4	19	.17	5	19	2 5/8	67	.60	17	1
HC9703	Flat mast groove, extras*	3/4	19	.17	5	10	—	—	—	—	5/16 8 7/16 11
HC9108	Wide flat mast groove	3/4	19	.25	6	19	2 5/8	67	.94	23	1
HC9704	Wide flat mast groove, extras*	3/4	19	.25	6	10	—	—	—	—	7/16 11 5/8 16

*Extra slug kit for HC8811 track. Order one kit in addition to HC9106, HC9107 or HC9108 for sail headboard location at full hoist and when sail is reefed.

Track

Part No.	Description	Length		Width		Weight		Fasteners mm	Fastener spacing mm
		in	mm	in	mm	oz	g		
Slug Mount									
HC8798	Switch/short	24	610	2 5/8	67	32	907	5	—
HC8799	Switch/long	33 3/4	857	2 5/8	67	47	1336	5	—
HC8800	T-Track	80 13/16	2051	2 1/32	21	27	758	5	100
HC8811	T-Track/high-load	80 13/16	2051	2 1/32	21	26	748	5	50
Drill/Tap									
HC8218	Switch/short	23 13/16	605	3	76	20.1	571	5	75
HC8219	Switch/long **	33 25/32 *	858	3	76	26.7	758	5	75
HC7827	3 m T-Track	118 1/8	3000	2 3/32	18	38.9	1106	5	75
HC9597	2 m T-Track/high load	78 3/4	2000	2 3/32	18	25.5	723	5	50
HC8230	Splice link	—	—	—	—	—	—	—	—

**Includes storage tracks



DRILL/TAP

HC8218
HC8219

26 mm, 32 mm, 50 mm Switch T-Track Battcar Systems

NEW: HC9045, HC9046

Battcar switch systems cut sail stack height in half by automatically splitting cars onto two tracks.

Aluminum cars are deep-saturation Hardkote anodized, Teflon® impregnated for durability. UV stabilized with black additive for maximum protection. Cars run on low-friction plastic slides. Aluminum T-Track is Hardkote anodized for durability. Use HC8879 and HC8880 for headboard reefed position. See page 146. Gate track is removed to load and unload cars.

Bushings let headboard cars pass through switch.

Fits Boats:

- 26 mm: Monohulls 50 - 80 ft (15 - 24 m)
Multihulls 40 - 60 ft (12 - 18 m)
- 32 mm: Monohulls 80 - 140 ft (24 - 43 m)
Multihulls 60 - 90 ft (18 - 27 m)
- 50 mm: Monohulls over 140 ft (43 m);
Multihulls over 90 ft (27 m)



Mirabella — Dane Blackburn Photo



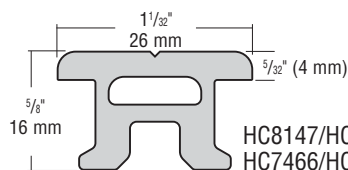
Cars

Part No.	Description	Length		Width		Weight		Max headboard thickness		Maximum sail area				Maximum working load	
		in	mm	in	mm	oz	g	in	mm	ft²	m²	ft²	m²	lb	kg
26 mm															
HC9045	Headboard car	10 ⁵ / ₈	270	2 ³ / ₈	60	34.3	973	2 ¹ / ₃₂	17	1730	160	1300	120	4500*	2045*
HC7493	Intermediate car	2 ⁵ / ₈	60	2 ³ / ₈	60	5.6	159	—	—	1730	160	1300	120	1000	455
HC7324	Batten car/12mm stud	2 ⁵ / ₁₆	75	2 ³ / ₈	60	8.8	250	—	—	1730	160	1300	120	1500	682
HC7325	Reef car	3 ¹⁷ / ₃₂	90	2 ³ / ₈	60	7.2	205	—	—	1730	160	1300	120	2100*	955*
HC8125	Tack car	3 ¹⁷ / ₃₂	90	4 ³ / ₈	111.2	14.4	409	—	—	1730	160	1300	120	3800	1727
32 mm															
HC9046	Headboard car	11	280	2 ³ / ₄	70	44.7	1266	2 ¹ / ₃₂	17	3780	350	2400	225	8000*	3635*
HC7322	Intermediate car	2 ⁵ / ₁₆	75	2 ³ / ₄	70	10.4	297	—	—	3780	350	2400	225	2800	1273
HC8098	Batten car/12mm stud	3 ¹⁷ / ₃₂	90	2 ³ / ₄	70	11.2	319	—	—	3780	350	2400	225	4000	1818
HC7316	Batten car/14mm stud	3 ¹⁷ / ₃₂	90	2 ³ / ₄	70	11.2	319	—	—	3780	350	2400	225	4000	1818
HC8076	Reef car	4 ¹⁷ / ₃₂	115	2 ³ / ₄	70	14.4	409	—	—	3780	350	2400	225	4000*	1818*
HC8099	Tack car	4 ¹⁷ / ₃₂	115	5 ¹ / ₁₆	132	29.2	830	—	—	3780	350	2400	225	7900	3590
50 mm															
C7811	Intermediate car**	3 ⁵ / ₁₆	100	4 ³ / ₁₆	110	36.8	1043	—	—	3780 +	350 +	2400 +	275 +	4500	2045
C7814	Batten car/16mm stud**	5 ⁹ / ₁₆	141	4 ³ / ₁₆	110	60.8	1724	—	—	3780 +	350 +	2400 +	275 +	7500	3408
C9313	Reef car**	7 ¹ / ₈	200	4 ³ / ₁₆	110	168	4763	—	—	3780 +	350 +	2400 +	275 +	12500	5670
C9475	Headboard car**	17 ³ / ₄	450	4 ³ / ₁₆	110	309	8754	1	25	3780 +	350 +	2400 +	275 +	16500	7500

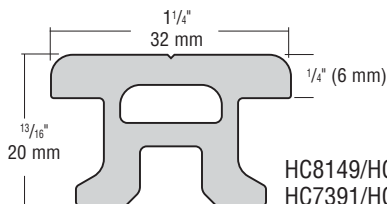
*May increase by using track with closer hole spacing; contact Harken **Allow 4 - 6 weeks lead time ‡Contact Harken for headboard plate for older systems and boats with sail areas at the high and low ends of the size range †If your boat or sail area is larger than the lengths and sail areas listed, please contact Harken.

26 mm, 32 mm, 50 mm Switch T-Track Battcar Systems

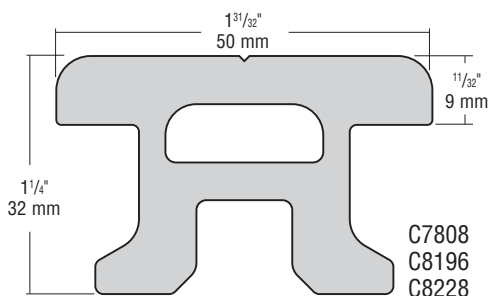
NEW: HC8879, HC8880



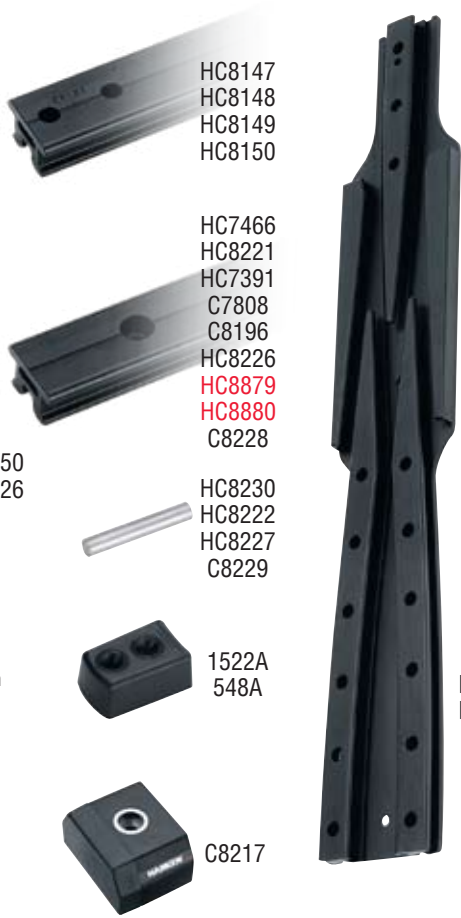
HC8147/HC8148
HC7466/HC8221



HC8149/HC8150
HC7391/HC8226



C7808
C8196
C8228



HC8147
HC8148
HC8149
HC8150

HC7466
HC8221
HC7391
C7808
C8196
HC8226
HC8879
HC8880
C8228

HC8230
HC8222
HC8227
C8229

1522A
548A

C8217

Cars alternate automatically

HC8220
HC7382
C7807

Gate Track

Switch

Track & Accessories

Part No.	Description	Length		Width		Weight		Fasteners	Fastener spacing
		in	mm	in	mm	oz	g		
26 mm									
HC8220	Switch	25 1/4	641	4	102	43.1	1225	6	—
HC8147	500 mm Storage track	19 11/16	500	1 1/32	26	10.2	291	6	50
HC8148	725 mm Storage track	28 17/32	725	1 1/32	26	14.8	419	6	50
HC7466	3 m T-Track	118 1/8	3000	1 1/32	26	61.1	1736	6	75
HC8879	2 m T-Track/high-load	78 3/4	2000	1 1/32	26	40.3	1141	6	50
HC8221	Gate track	11 13/16	300	1 1/32	26	6.1	174	6	75
HC8222	Splice link	—	—	1 1/32	26	0.1	3	—	—
1522A	Endstop	2 5/32	55	1 17/32	39	—	—	—	—
32 mm									
HC7382	Switch	28 1/2	724	5	127	72.8	2068	8	—
HC8149	800 mm Storage track	31 1/2	800	1 1/4	32	25.6	728	8	50
HC8150	1025 mm Storage track	40 11/32	1025	1 1/4	32	32.8	933	8	50
HC7391	3 m T-Track	118 1/8	3000	1 1/4	32	96.2	2734	8	75
HC8880	2 m T-Track/high-load	78 3/4	2000	1 1/4	32	63.1	1790	8	50
HC8226	Gate track	11 13/16	300	1 1/4	32	9.6	273	8	75
HC8227	Splice link	—	—	—	—	0.2	5	—	—
548A	Endstop	2 27/32	72	2 1/32	52	—	—	—	—
50 mm									
C7807	Switch*	44 1/2	1134	7 13/16	198.44	276	7838	12	—
C7808	3 m T-Track*	118 1/8	3000	1 31/32	50	232	6589	12	75
C8196	6 m T-Track*	236 1/4	6000	1 31/32	50	464	13173	12	75
C8228	Gate track*	11 13/16	300	1 31/32	50	23	659	12	75
C8229	Splice link*	—	—	—	—	0.46	13	—	—
C8217	Endstop*	2 27/32	72	2 1/32	52	19	537	12	—

*Allow 8 - 10 weeks lead time

Storage Tracks



Furling Mainsail Outhaul Systems

NEW: 1771

Use furling outhaul cars with in-mast or behind-the-mast furlers on boats up to 45 ft (13.5 m). Sheave carriers pivot side-to-side to accommodate changing lead angles. Systems have 2:1 purchase and ride on cars with Torton® ball bearings. A dead-end outhaul shackle is included.

The 1615 Midrange car has an axle-bearing sheave.

The sheaves on the 595 and 1771 Big Boat cars use Torton® rollers.

Clew Block

This strong, lightweight block uses the 75 mm ESP sheave. Plates angle so attachment straps fit shape of clew. Use with 595 and 1615 outhaul cars.



1615
595
1771



6061



To order track see mainsail traveler track for the appropriate size car

Part No.	Description	Sheave Ø		Length		Weight		Car width		Maximum working load		Max sail area		Track
		in	mm	in	mm	oz	g	in	mm	lb	kg	ft²	m²	
595	Outhaul car	2½	64	5¼	133	41	1162	3⅓	85	3000	1361	425	40	3154
1615	Outhaul car	2	51	5¼	133	24	680	2¾	70	2300	1043	300	28	1616
1771	Outhaul car	3	75	7¼	184	63	1786	3⅓	85	4500	2041	550	51	3154
6061	Clew block	3	75	5½	140	13	370	—	—	3000	1361	425	40	—

See page 26 for replacement balls

Single Line Reefing

Single line reefing kits let you shorten the mainsail in three easy steps: ease the halyard to a predetermined mark, tension the reef line, and trim the sail. Sails with reef points do not need modifying.



430

See "Single line" on page 24



252
253
254

See "Lazy Jacks" on page 24



Lazy Jacks

Lazy Jacks contain mainsails while reefing and dousing. They work extremely well with full-batten mains, but can also be used with conventional sails.

Single Line Reefing Kit

Part No.	Description	Max boat length		Max mainsail area	
		ft	m	ft²	m²
430	Medium	27	8.2	150	14

Lazy Jack Kits

Part No.	Description	Boat length		Boom length		Mainsail luff length	
		ft	m	ft	m	ft	m
252	Small	21 - 28	6.4 - 8.5	7 - 13	2.13 - 3.96	21 - 32	6.4 - 9.75
253	Medium	27 - 37	8.2 - 11.3	10'6" - 16	3.2 - 4.9	32 - 42	9.75 - 12.8
254	Large	35 - 42	10.7 - 12.8	12 - 16	3.7 - 4.9	35'7" - 48	10.88 - 14.63



*J/105, 2006 Rolex Big Boat Series
— Sharon Green photo*

HEADSAIL HANDLING SYSTEMS

Carbo Racing Foil

NEW: 7000.30, 7001.30, 7002.30

The engineering resins in these strong, lightweight head foils offer significant advancements over the weaker PVC materials used by other manufacturers. The low-friction twin headsail grooves are ultra-smooth, allowing hoists, douses and headsail changes to be easily and efficiently executed. Impact resistance is unmatched, with far less foil damage from loaded spinnaker poles, especially in cold weather. Heat has little effect on stiffness.

Foils are UV protected and easy for the trimmer to see. For mast-up installation, simply uncoil the foil and snap onto the stay.

Aluminum Chafe Guard

An aluminum chafe guard keeps spinnaker sheets from damaging the foil during high-speed jibes. Testing shows this guard weighs the same as Kevlar® or composite, and is impervious to wear, unlike UHMW plastic tape which wears away quickly. A Harken chafe guard is included free with the purchase of a 7000, 7001, or 7002 kit.

Low Friction:
Loaded luff tapes run more easily in ultra-smooth sail grooves

High Strength:
More resistant to line wear and impact damage than PVC

Feeder for Smooth Hoists:
Funnel-shaped stainless feeder smoothly guides boltrope into head foil for fast hoists

Prefeeder:
Hardkote-anodized, Teflon®-impregnated aluminum rollers spin freely on low-friction bushings



Trim Cap



Feeder



Prefeeder

7000
7001
7002

Kit includes
prefeeder 7003

Actual Size
Unit 3

Unit 2

Unit 1

Unit 0

7006

7000.30
7001.30
7002.30



2007 Big Boat Series — Eric Simonson photo

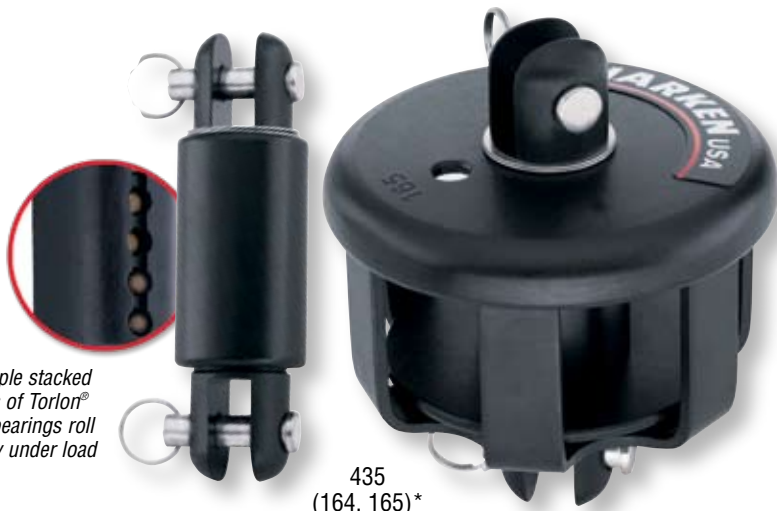
Part No.	Description	Max wire Ø		Max rod Ø		Extrusion length		Max headstay length		Spacer tube length		Extrusion weight		Full system weight*		Luff tape size	
		in	mm	dash	mm	ft/in	m	ft/in	m	ft/in	m	lb/ft	kg/m	lb	kg	in	mm
7000.9m	Unit 0	1/4	6	-10	6.35	29'6"	9	33'6"	10.2	3'3"	1	.102	.152	3.29	1.50	#5 (5/32)	4
7000.12m	Unit 0	1/4	6	-10	6.35	39'4"	12	43'4"	13.2	3'3"	1	.102	.152	4.29	1.95	#5 (5/32)	4
7000.15m	Unit 0	1/4	6	-10	6.35	49'2"	15	53'2"	16.2	3'3"	1	.102	.152	5.30	2.41	#5 (5/32)	4
7001.12m	Unit 1	3/16	8	-17	8.38	39'4"	12	43'4"	13.2	3'3"	1	.162	.241	6.99	3.18	#6 (5/32)	5
7001.16m	Unit 1	3/16	8	-17	8.38	52'6"	16	56'5"	17.2	3'3"	1	.162	.241	9.13	4.14	#6 (5/32)	5
7001.20m	Unit 1	3/16	8	-17	8.38	65'7"	20	69'6"	21.2	3'3"	1	.162	.241	11.25	5.10	#6 (5/32)	5
7002.16m	Unit 2	3/8	10	-25	10.31	52'6"	16	56'6"	17.2	3'3"	1	.185	.275	10.43	4.73	#6 (5/32)	5
7002.20m	Unit 2	3/8	10	-25	10.31	65'7"	20	69'7"	21.2	3'3"	1	.185	.275	12.90	5.83	#6 (5/32)	5
7002.24m	Unit 2	3/8	10	-25	10.31	78'9"	24	82'9"	25.2	3'3"	1	.185	.275	15.29	6.93	#6 (5/32)	5
7003.24m	Unit 3	7/16	11	-30	11.1	78'8.5"	24	82'9"	25.2	3'3"	1	.245	.365	20.08	9.10	#6 (5/32)/#7 (1/32)	5/6
7003.28m	Unit 3	7/16	11	-30	11.1	91'10"	28	95'9"	29.2	3'3"	1	.245	.365	23.31	10.57	#6 (5/32)/#7 (1/32)	5/6
7006	Replacement prefeeder	—	—	—	—	—	—	—	—	—	—	—	—	3 oz	85 g	—	—
7000.30	Unit 0 chafe guard	—	—	—	—	3'3"	1	—	—	—	—	—	—	2.5 oz	70 g	—	—
7001.30	Unit 1 chafe guard	—	—	—	—	3'3"	1	—	—	—	—	—	—	2.9 oz	82 g	—	—
7002.30	Unit 2 chafe guard	—	—	—	—	3'3"	1	—	—	—	—	—	—	3 oz	85 g	—	—

Small Boat Furling

Harken® Small Boat furling systems allow the trailerable cruising or dinghy sailor to set and furl the jib from the cockpit. The drums and halyard swivels of these furling systems feature multiple stacked races of Delrin® or Torlon® bearings to ensure smooth rotation under load. All Small Boat furling systems require a jib with a luff wire properly seized to the sail. Small boat units are not suitable for reefing.

Use for:

- 434** Dinghies under 16 ft (4.9 m)
- 435** Dinghies to 20 ft (6.1 m)
Catamarans to 18 ft (5.5 m)
- 436** Cruising boats to 25 ft (7.6 m)
Catamarans to 23 ft (7 m)

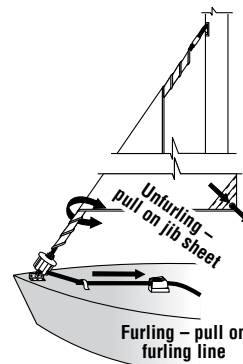


Hardkote-anodized,
Teflon®-impregnated
6061-T6 aluminum

435
(164, 165)*

Furl or set your jib
from the safety of
the cockpit

Lightweight, high-
strength design



Components

Part No.	Description	Weight		Fits furler
		oz	g	
162	Swivel	2.6	74	434
163	Drum	5	142	434
164	Swivel	2.6	74	435
165	Drum	5	142	435
207	Swivel	9.2	261	436
208	Drum	13.6	386	436

*If ordering separately

Furlers

Part No.	Description	Pin-to-pin length		Drum Ø		Line Ø		Jaw width		Max luff wire Ø		Clevis pin Ø		Weight		Maximum working load	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg
434	Furler**	2½	64	2⅞	73	⅝ ₃₂	4	⅞ ₁₆	8	⅛	3	¼	6	7.6	215	500	227
435	High-load furler**	2½	64	2⅞	73	⅝ ₃₂	4	⅞ ₁₆	8	⅛	3	¼	6	7.6	215	950	431
436	Cruising furler**	4	102	4⅞ ₁₆	106	¼	6	⅜ ₈	10	⅜ ₁₆	5	⅝ ₁₆	8	22.8	646	2000	907

**Includes drum and swivel

Norseboat 17.5 — Elizabeth Wendt photo

Small Boat Furling

Underdeck Furler

A ball bearing underdeck furler minimizes windage and provides a clean, uncluttered bow for easier mooring and anchoring. It also allows the tack of the sail to be at deck level for better sail shape and more forward power. Its single through-deck spherical joint provides a low-profile, nearly watertight system that aligns the spool to the headstay. Like all small boat furlers, the underdeck furler is not suitable for reefing and it requires a jib with an embedded luff wire. Swivels must be purchased separately.

Hoistable Swivels

Hoistable ball bearing swivels slide over your headstay and work in conjunction with your normal upper swivel. Since normal swivels are attached to the masthead, you usually need to take down the mast or tip the boat on its side to detach the sail. By attaching the head of your sail to the hoistable swivel instead, you can simply lower the swivel with the jib halyard and unshackle the sail. In addition to making it much easier to change or remove your headsail, the swivel is independent from the headstay so it gives you a way to tension the luff independently of the mast rake. Hoistable swivels are compatible with any Harken small boat furler.

Furler Kit with Hoistable Swivel

This kit is similar to Harken's existing 435 high-load furler kit but includes everything you need for a hoistable halyard swivel. The kit includes a 164 swivel, HC7744 hoistable swivel, 165 drum, and a tang to attach the forestay and sail tack to the lower unit.



UNDERDECK FURLER



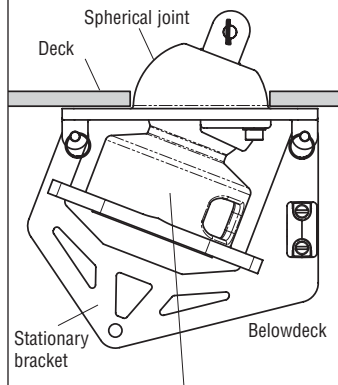
HC7744
HC9330

HOISTABLE SWIVEL



HSB463

FURLER KIT



Spool pivots to align with load



Turnbuckle eye on stationary bracket attaches to an underdeck chainplate



Fairlead feeds line onto the spool

Part No.	Upper swivel	Use with	
		Lower drum	Hoistable swivel
HC7744	164	165 or HC9226	—
HC9330	207	208	—
HC9226	164	—	HC7744

Part No.	Description	Pin-to-pin length		Drum Ø		Line Ø		Jaw width		Max luff wire Ø		Clevis pin Ø		Weight		Maximum working load	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg
HC7744	Halyard swivel/hole for 4 mm wire	4 ³ / ₁₆ *	124*	—	—	—	—	—	—	5 ³ / ₃₂	4	5 ³ / ₃₂	4	2.9	82	810	367
HC9226	Underdeck furler	6 ¹ / ₈	156	3 ¹ / ₈	79	5 ³ / ₃₂	4	5 ¹ / ₁₆	8	1 ¹ / ₈	3	1 ¹ / ₄	6	23.3	661	950	431
HC9330	Halyard swivel/hole for 5 mm wire	5 ¹¹ / ₁₆ *	144*	—	—	—	—	—	—	3 ¹ / ₁₆	5	3 ¹ / ₁₆	5	8.9	252	1190	540
HSB463	Furler kit/hoistable halyard	2 ¹ / ₂ **	64**	2 ¹ / ₈	73	5 ³ / ₃₂	4	5 ¹ / ₁₆	8	5 ³ / ₃₂	4	1 ¹ / ₄	6	11.2	318	950	431

*Shackle to shackle **Tang hole to tang hole

Spinnaker Staysail & Gennaker®

Spinnaker Staysail

Furled staysails are easy to hoist rolled and can be deployed or doused from the cockpit. In marginal conditions the sail can be struck instantly without changing the trim of the boat. Multiple stacked races of Torlon® ball bearings ensure smooth operation under load. Systems include a lower drum with snap shackle, fairlead and Cam-Matic® cleats, and an upper swivel with provision for halyard attachment.

Gennaker® Furling

Gennaker® furling was developed for large single-handed boats and huge oceangoing multihulls. The 1900 Gennaker® furler is ideal for drifters and reachers on multihulls to 45 ft (14 m). Smaller boats use the 3049. The drum unit features a fairlead, while the upper swivel is designed for direct halyard attachment. Custom designs are available for larger boats.

Screecher Furling

Use screecher furling systems on multihulls up to 32 ft (9.60 m) and easily driven sport boats. Perfect for jib reaching, screechers are set on the bowsprit. They are often carried upwind in light to moderate conditions and used as storm spinnakers when it's blowing.

Systems are sized to handle loads of 2:1 halyards and multiple stacked races of Torlon® ball bearings ensure smooth rotation under load. Fairleads allow the furling line to lead aft to the cockpit.

Hardkote-anodized with Teflon® impregnation

Lightweight aluminum construction

Narrow-diameter swivel allows max luff lengths

Integrated fairlead prevents line overrides

Direct halyard attachment

Multiple stacked races of Torlon® ball bearings roll easily under load



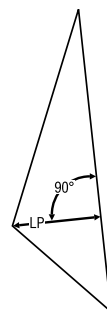
1900



Corsair F31



1851
1852
1899



The LP is a perpendicular line measured from the luff to clew.



3029
3049

Part No.	Description	Ø		Length				Max line Ø*		Max halyard load		Weight		Max luff length		Max LP			
		in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg	oz	g	ft	m	ft	m
1851	Small staysail furler	2 ⁷ / ₈	73	1	25	5 ³ / ₁₆	132	4 ³ / ₁₆	106	5 ³ / ₃₂	4	950	431	13	366	50	15.25	13.5	4.1
1852	Large staysail furler	4 ¹ / ₄	108	1 ⁷ / ₁₆	37	7 ⁷ / ₁₆	186	5 ⁷ / ₈	149	1 ¹ / ₄	6	2000	907	28	800	70	21.33	20	6
1899	Maxi staysail furler	5 ¹ / ₂	138	1 ³ / ₄	44	7 ¹ / ₂	191	7	178	5 ¹ / ₁₆	8	3000	1361	34	964	80	24	28	8.5
1900	Gennaker® furler	5 ¹ / ₂	138	1 ³ / ₄	44	6	152	6	152	5 ¹ / ₁₆	8	3000	1361	29	822	50	15.25	28	8.5
3029	Small screecher furler	2 ⁷ / ₈	73	1	25	3 ³ / ₄	83	4 ¹ / ₈	105	5 ³ / ₃₂	4	950	431	9	255	30	9.14	13.5	4.1
3049	Large screecher furler	4 ¹ / ₄	108	1 ⁷ / ₁₆	37	5	127	5 ⁷ / ₈	149	1 ¹ / ₄	6	2000	907	24.5	695	40	12.19	20	6

*Smaller line may be required for spinnaker staysails with long foot lengths

Code Zero Furling

Originally built for Volvo 60s, Code Zero furlers are used with free-flying asymmetrical headsails and staysails. Suitable for boats up to 125 ft (38 m), they tame Code Zero sails, screechers, Gennakers® and staysails.

The eight-faceted sheave-drive grips line aggressively to furl huge sails with minimal line. The large diameter makes furling smooth and easy. The 3126, 3127, 3128 and 3115 Code Zero's spring-loaded arms hold line captive in the sheave. Arms open to remove the line for quick unfurling, or to strike the furler. A built-in stripper safely guides line out of the furler. The lower unit incorporates a quick sail disconnect by pushing a spring-loaded button.

Compact hardened steel roller thrust bearings handle extremely high luff loads. Furler heights are kept to a minimum to maximize luff length.

Since furling a Code Zero sail requires very high luff tension, a 2:1 adapter is available. This fits either the upper or the lower unit, but installation on the upper is advised to prevent halyard twisting. A snap shackle adapter allows quick disconnect.

To minimize twisting, we recommend using a dual luff cord system. This system uses thimbles to loop the cords around the tack and head of the sail. Talk to your sailmaker. Code Zero furlers are not for reefing.

Fits boats:

- C0-00: 20 ft - 30 ft (6 - 9 m)
- C0-0: 25 ft - 40 ft (8 - 12 m)
- C0-1: 35 ft - 50 ft (11 - 15 m)
- C0-2: 45 ft - 70 ft (14 - 21 m)
- C0-3: 60 ft - 95 ft (18 - 29 m)
- C0-4: 85 ft - 125 ft (26 - 38 m)

3126
3127
3128
3115

Compact height allows long luff lengths

Spring-loaded button for quick sail disconnect

Arms allow easy line removal, but snap shut to keep line captive

Aggressive, large-diameter sheave drive for easy furling

Sealed hardened-steel thrust bearing system for extreme loading

Integrated stripper to peel line out of unit safely

Lower unit comes with D-ring shackle that can be replaced with accessories



3100
3101

Lightspeed 32, Van Peteghem/Lauriot Prévost, al fresco Composites — Billy Black Photo

Part No.	Description	Drum Ø		Swivel Ø		Line Ø				Pin/shackle Ø				Weight w/ schackle		Maximum working load		Breaking load	
		in	mm	in	mm	Min	Max	in	mm	in	mm	Lower	Upper	oz	kg	lb	kg	lb	kg
3100	Unit 00	4	102	1 7/8	47	3/16	5	1/4	6	—	6	15.6	.44	10	.28	2750	1250	5500	2500
3101	Unit 0	5	127	2 1/8	54	1/4	6	5/16	8	5/16	8	26.2	.74	16.8	.47	5000	2272	10000	4545
3126	Unit 1	6	152	2 3/8	61	1/4	6	5/16	8	—	10	46.4	1.32	25.9	.73	8000	3628	16000	7256
3127	Unit 2	7	178	2 3/4	70	5/16	8	3/8	10	—	12	74.9	2.12	44.2	1.26	12000	5442	24000	10884
3128	Unit 3	8	203	3 3/8	86	3/16	8	3/8	10	3/8	16	119.9	3.40	79	2.24	18000	8163	36000	16326
3115	Unit 4	11	279	4 1/2	114	3/8	10	1/2	12	—	20	271.9	7.71	172.1	4.88	29500	13409	59000	26818

Code Zero Accessories

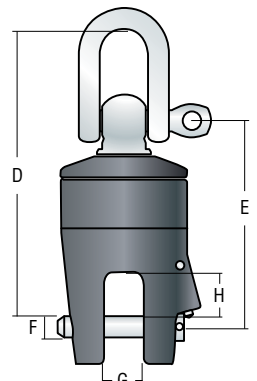
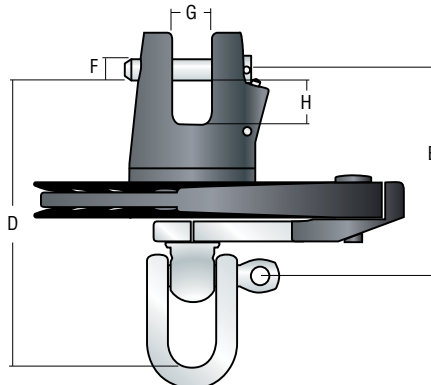
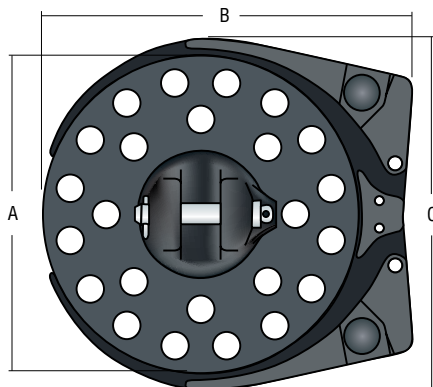
Part No.	Description	Fits	Pin/shackle Ø		Weight		Maximum working load		Breaking load	
			in	mm	oz	g	lb	kg	lb	kg
3105	2:1 Fairlead	Code Zero 00	—	6	8	227	2750	1250	5500	2500
3106	2:1 Fairlead	Code Zero 0	5/16	8	11	312	5000	2272	10000	4545
3107	2:1 Sheave adapter	Code Zero 1	—	10	10	284	8000	3628	16000	7256
3108	2:1 Sheave adapter	Code Zero 2	—	12	24	680	12000	5442	24000	10884
3109	2:1 Sheave adapter	Code Zero 3	5/8	16	40	1134	18000	8163	36000	16326
3110	Snap shackle adapter	Code Zero 00	—	6	6	170	2750	1250	5500	2500
3111	Snap shackle adapter	Code Zero 0	5/16	8	8	227	5000	2272	10000	4545
3112	Snap shackle adapter	Code Zero 1	—	10	17	482	8000	3628	16000	7256
3113	Snap shackle adapter	Code Zero 2	—	12	34	964	12000	5442	24000	10884
3114	Snap shackle adapter	Code Zero 3	5/8	16	57	1616	18000	8163	36000	16326
3116	Thimble set (pair)	Code Zero 00	—	6	1.9*	54*	2750	1250	5500	2500
3117	Thimble set (pair)	Code Zero 0	5/16	8	3.7*	105*	5000	2272	10000	4545
3118	Thimble set (pair)	Code Zero 1	—	10	6.2*	176*	8000	3628	16000	7256
3119	Thimble set (pair)	Code Zero 2	—	12	12.6*	357*	12000	5442	24000	10884
3120	Thimble set (pair)	Code Zero 3	5/8	16	24.4*	692*	18000	8163	36000	16326

*Weight (pair)



Code Zero Furling Dimensions

Unit	A	B	C	D	E	F	G	H
C0-00	3 ¹⁵ / ₁₆ " 100 mm	4 ¹ / ₄ " 108 mm	4 ¹ / ₄ " 108 mm	3 ³ / ₁₆ " 81 mm	3" 77 mm	1/4" 6 mm	1/2" 12.7 mm	9/16" 14 mm
C0-0	4 ¹⁵ / ₁₆ " 126 mm	5 ¹ / ₄ " 134 mm	5 ¹ / ₄ " 134 mm	4 ¹ / ₂ " 115 mm	3 ³ / ₁₆ " 87 mm	3/16" 8 mm	5/8" 16 mm	5/8" 16 mm
C0-1	5 ¹⁵ / ₁₆ " 151 mm	7" 177 mm	6 ⁹ / ₁₆ " 167 mm	5 ⁷ / ₁₆ " 139 mm	4" 101 mm	3/8" 10 mm	3/4" 19 mm	1 ³ / ₁₆ " 20 mm
C0-2	6 ¹⁵ / ₁₆ " 177 mm	8 ¹ / ₈ " 207 mm	7 ¹¹ / ₁₆ " 195 mm	5 ⁵ / ₁₆ " 135 mm	4 ¹ / ₂ " 115 mm	7/16" 12 mm	7/8" 22 mm	1" 25 mm
C0-3	7 ¹⁵ / ₁₆ " 202 mm	9 ⁵ / ₁₆ " 236 mm	8 ¹³ / ₁₆ " 224 mm	6 ³ / ₄ " 172 mm	5 ¹ / ₂ " 140 mm	5/8" 16 mm	1 ¹ / ₁₆ " 27 mm	1 ¹ / ₈ " 29 mm
C0-4	10 ¹⁵ / ₁₆ " 278 mm	12 ¹³ / ₁₆ " 325 mm	12" 305 mm	9 ³ / ₄ " 248 mm	7" 178 mm	1 ⁹ / ₁₆ " 20 mm	1 ¹ / ₂ " 38 mm	1 ¹¹ / ₁₆ " 42 mm



Ordering Furling

1. Choose furler type

The table below is based on sailing style and approximate boat size.

This table is only a guideline. Do not use it to determine unit size.

Comparison Chart

	OOAL Small Cruising Boats	MKIV Racers/Performance Cruisers	MKIII Racers/Performance Cruisers	CRUISING Cruising Boats
Note: Typical boat lengths are listed as a guideline but are not the determining factor. Check with Harken® if your length varies.				
Typical Boat Lengths	Unit 00: 20 - 26 ft (6 - 8 m)	Unit 0: 22 - 30 ft (6.5 - 9.1 m) Unit 1: 28 - 36 ft (8.5 - 11 m) Unit 2: 35 - 46 ft (10 - 14.2 m) Unit 3: 45 - 60 ft (13.7 - 18.3 m) Unit 4: 65 - 80 ft (19.8 - 24.4 m)	Unit 4: 75 - 90 ft (22.9 - 27.4 m) Unit 4.5: 85 - 110 ft (25.9 - 33.5 m)	Unit 1: 28 - 36 ft (8.5 - 11 m) Unit 2: 35 - 46 ft (10 - 14.2 m)
Foils	Double groove Air Foil® Stainless steel feeder	Double groove Air Foil® Stainless steel feeder	Double groove Air Foil® Stainless steel feeder	Single Groove Round Foil
Halyard and Tack Swivel	Fixed	Independent swivels for improved sail shape	Independent swivels for improved sail shape	Fixed
Drum	Removable split drum for racing	Removable split drum for racing	Removable split drum for racing	—
Line	Included	Included on Units 0, 1, 2	Not included	Included

2. Determine unit size

Size is based on the headstay and clevis pin diameters listed on unit pages.

3. Determine if additional foils needed

Use the I and J measurements to determine the length of the headstay. If the existing headstay is longer than the standard length listed under **Headstay Length** on unit pages, order additional foils and connectors.

4. Determine chainplate attachment

For Unit OOAL, determine the diameter of the existing clevis pin to select a clevis pin assembly. MKIII units include attachment. For other units, see the **MKIV & Cruising Toggle Options** page 165 to find a toggle that fits your existing hardware.

5. Choose lead block kit and accessories

Harken recommends equipping every furling system with a ratchet lead block kit. Other parts on the **Furling Accessories** page 172 include mounting equipment and racing hardware for faster sail changes.

6. Prepare sail and headstay

Have a luff tape added to your genoa. See sizing information on page 166.

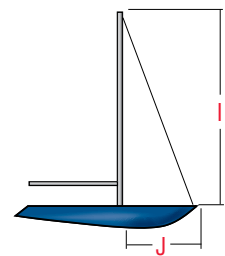
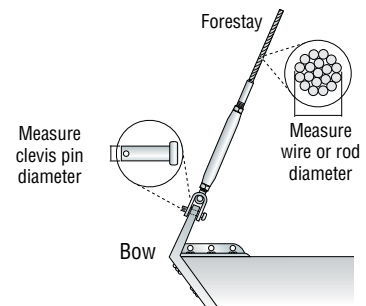
OOAL, MKIV, and Cruising furlers install over the existing turnbuckle. The turnbuckle is accessible for adjustment by raising the drum. Some headstays will require cutting and shortening to fit Harken toggle. If the turnbuckle can be shortened by using an eye stud to Harken jaw/jaw toggle, the headstay can remain uncut. Check with a professional rigger on stay condition before reusing stay.

MKIII furlers include terminals with threaded stud end fittings to attach the headstay to the drum assembly.

For all units, rod rigging requires a Harken rod adapter stud and it must be cut and coldheaded by an authorized rod service center.

7. Contact

If you have any questions, please contact your dealer or Harken Technical Service.



$$\text{Headstay Length} = \sqrt{I^2 + J^2}$$

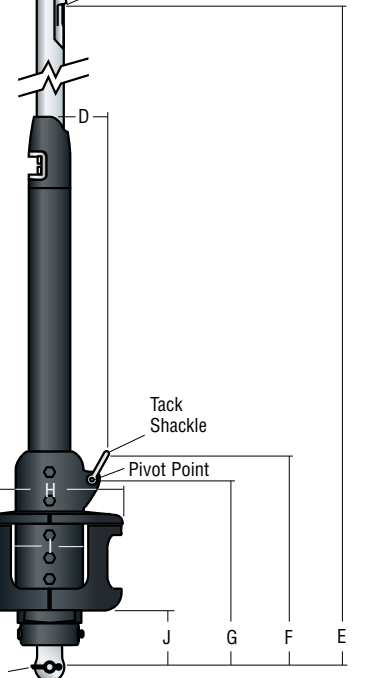
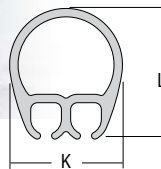
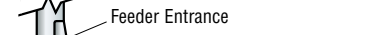
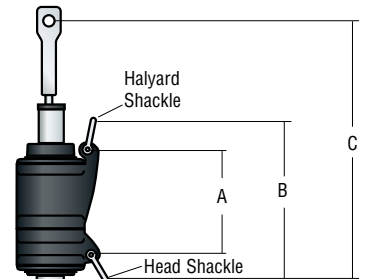
Furling Dimensions

System	Unit	A	B	C		E		F		G		J		
		Max	D	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	
OOAL	OOAL	3 ³ / ₄ "	6 ⁵ / ₁₆ "	9"	5 ⁵ / ₈ "	38"	33"	7 ⁷ / ₈ "	—	6 ¹ / ₈ "	—	5 ⁹ / ₄ "	2 ² / ₈ "	2 ¹ / ₂ "
		95 mm	160 mm	229 mm	16 mm	965 mm	838 mm	187 mm	—	156 mm	—	146 mm	66 mm	63 mm
MKIV*	0	3 ³ / ₄ "	5 ¹ / ₈ "	9 ¹ / ₈ "	1 ⁷ / ₈ "	41"	39 ¹ / ₂ "	8 ³ / ₈ "	8 ¹ / ₄ "	7 ³ / ₁₆ "	7 ³ / ₁₆ "	5 ¹ / ₂ "	2 ² / ₈ "	2 ³ / ₁₆ "
		96 mm	150 mm	250 mm	47 mm	1041 mm	1003 mm	213 mm	209 mm	186 mm	183 mm	140 mm	66 mm	59 mm
	1	4 ³ / ₄ "	7"	13"	2"	46 ¹ / ₄ "	42 ¹ / ₄ "	13 ¹ / ₈ "	9 ¹ / ₂ "	11"	8 ¹ / ₂ "	6 ⁵ / ₈ "	3 ¹ / ₁₆ "	5 ¹ / ₁₆ "
		120 mm	178 mm	330 mm	51 mm	1175 mm	1073 mm	333 mm	241 mm	279 mm	216 mm	167 mm	78 mm	129 mm
	2	5 ⁵ / ₈ "	9 ¹ / ₈ "	16"	2 ³ / ₁₆ "	51 ³ / ₄ "	46 ³ / ₄ "	15 ¹ / ₈ "	12 ¹ / ₁₆ "	13 ¹⁵ / ₁₆ "	10 ⁷ / ₈ "	8 ³ / ₁₆ "	3 ¹³ / ₁₆ "	6 ⁷ / ₁₆ "
		143 mm	231 mm	406 mm	66 mm	1314 mm	1187 mm	384 mm	306 mm	348 mm	276 mm	208 mm	97 mm	164 mm
	3	7 ⁷ / ₁₆ "	11 ⁵ / ₈ "	18"	3 ³ / ₈ "	50 ⁹ / ₈ "	50 ⁹ / ₁₆ "	18 ¹¹ / ₁₆ "	18 ¹ / ₁₆ "	16 ¹³ / ₁₆ "	16 ¹ / ₂ "	9 ⁹ / ₄ "	4 ³ / ₄ "	7 ¹¹ / ₁₆ "
		186 mm	296 mm	457 mm	86 mm	1293 mm	1278 mm	474 mm	460 mm	427 mm	413 mm	247 mm	121 mm	195 mm
	4	8 ⁵ / ₁₆ "	**	21"	**	55 ⁹ / ₁₆ "	55 ¹ / ₁₆ "	**	**	20 ¹ / ₄ "	19 ⁹ / ₁₆ "	11 ¹ / ₁₆ "	5 ¹ / ₈ "	8 ¹ / ₈ "
		227 mm	**	533 mm	**	1411 mm	1399 mm	**	**	515 mm	503 mm	280 mm	130 mm	225 mm
MKII	3.25	7 ⁷ / ₄ "	12"	16 ¹ / ₈ "	1 ³ / ₄ "	55 ¹ / ₄ "	41 ³ / ₄ "	20 ¹ / ₂ "	17 ¹ / ₂ "	17"	14"	12"	11 ¹ / ₈ "	9"
		197 mm	305 mm	410 mm	44 mm	1403 mm	1060 mm	521 mm	445 mm	432 mm	356 mm	305 mm	302 mm	229 mm
	3.5	9 ¹ / ₁₆ "	13 ³ / ₁₆ "	17"	1 ³ / ₄ "	59"	53"	23"	19 ⁹ / ₄ "	19 ¹ / ₂ "	16 ¹ / ₄ "	12"	11 ⁷ / ₈ "	11 ¹ / ₂ "
		233 mm	335 mm	432 mm	44 mm	1499 mm	1346 mm	584 mm	502 mm	495 mm	413 mm	305 mm	302 mm	292 mm
	4	10 ⁹ / ₁₆ "	15 ¹ / ₄ "	31"	2 ³ / ₄ "	68"	60"	29"	25"	24"	20"	13 ¹ / ₁₆ "	13 ³ / ₄ "	14"
	270 mm	387 mm	787 mm	70 mm	1727 mm	1524 mm	737 mm	635 mm	610 mm	508 mm	342 mm	337 mm	356 mm	
4.5	14"	18 ¹ / ₈ "	36"	3"	68 ¹ / ₂ "	63 ¹ / ₂ "	31"	26"	26"	21"	13 ¹ / ₁₆ "	13 ³ / ₄ "	15 ¹ / ₂ "	
	356 mm	460 mm	914 mm	76 mm	1740 mm	1613 mm	787 mm	660 mm	660 mm	533 mm	342 mm	337 mm	394 mm	
Cruising*	1	3 ³ / ₈ "	6"	12"	1 ³ / ₈ "	40 ¹ / ₁₆ "	33 ¹ / ₄ "	11 ¹ / ₈ "	9 ¹ / ₄ "	10 ¹³ / ₁₆ "	8 ¹ / ₄ "	6 ⁵ / ₈ "	3 ¹ / ₁₆ "	5 ¹ / ₁₆ "
		93 mm	152 mm	305 mm	35 mm	1027 mm	845 mm	302 mm	235 mm	275 mm	210 mm	167 mm	78 mm	129 mm
	2	4 ¹ / ₂ "	8"	16"	1 ¹ / ₁₆ "	50 ³ / ₄ "	42 ¹ / ₁₆ "	14 ⁷ / ₈ "	11 ³ / ₄ "	13 ¹ / ₂ "	10 ³ / ₈ "	8 ³ / ₁₆ "	3 ¹ / ₁₆ "	6 ¹ / ₂ "
	114 mm	203 mm	406 mm	42 mm	1289 mm	1078 mm	378 mm	298 mm	343 mm	264 mm	208 mm	97 mm	165 mm	

**Soft attachment tack, head, and halyard; distance varies

Unit	Clevis pin	Add
Unit 1	1/2" (12.7 mm) Clevis pin	Add 13 1/4" - 6 3/8" (337 - 162 mm)
	5/8" (15.9 mm) Clevis pin	Add 11 1/4" - 4 3/8" (286 - 111 mm)
Unit 2	5/8" (15.9 mm) Clevis pin	Add 16 1/8" - 8 1/4" (410 - 210 mm)
	3/4" (19.1 mm) Clevis pin	Add 13 3/16" - 5 1/16" (344 - 144 mm)
Unit 3	3/4" (19.1 mm) Clevis pin	Add 19 9/16" - 10 11/16" (497 - 271 mm)
	7/8" (22.2 mm) Clevis pin	Add 19 7/8" - 11" (505 - 279 mm)

*Note: If a long link plate is used, add the following dimensions to feeder (E), shackle (F), pivot point (G) and drum height (J) (based on whether plate is used full-length or shortened to one of five hole positions). Do not add to halyard swivel or top terminal dimensions.



Alerion 38 — Billy Black photo

Foil Dimensions

System	Unit	K		L		Foil length		Luff tape
		in	mm	in	mm	ft	m	
OOAL	OOAL	3/4	20	1	25	7	2.13	#6 5/32" (5 mm)
	0	7/8	23	1 1/32	26	7	2.13	#6 5/32" (5 mm)
MKV	1	1	25	1 1/8	29	7	2.13	#6 5/32" (5 mm)
	2	1 1/4	32	1 3/8	36	7	2.13	#6 5/32" (5 mm)
	3	1 1/2	38	1 11/16	43	7	2.13	#6 5/32" (5 mm)
	4	1 3/4	44	1 27/32	47	7	2.13	#6 5/32" (5 mm)
MKIII	3.25	1 5/16	33	1 11/16	43	7	2.13	#6 5/32" (5 mm)
	3.5	1 9/16	40	1 15/16	49	9	2.74	#6 5/32" (5 mm)
	4	1 15/16	49	2 1/16	61	9	2.74	#6 5/32" (5 mm), #7 1/32" (6 mm)
	4.5	2 1/16	68	3 3/16	81	12	3.66	#6 5/32" (5 mm), #7 1/32" (6 mm)
Cruising	1	1 3/8	35	1 3/8	35	7	2.13	#6
	2	1 3/4	44	1 3/8	42	7	2.13	#6

Unit 00AL

Jib Reefing & Furling

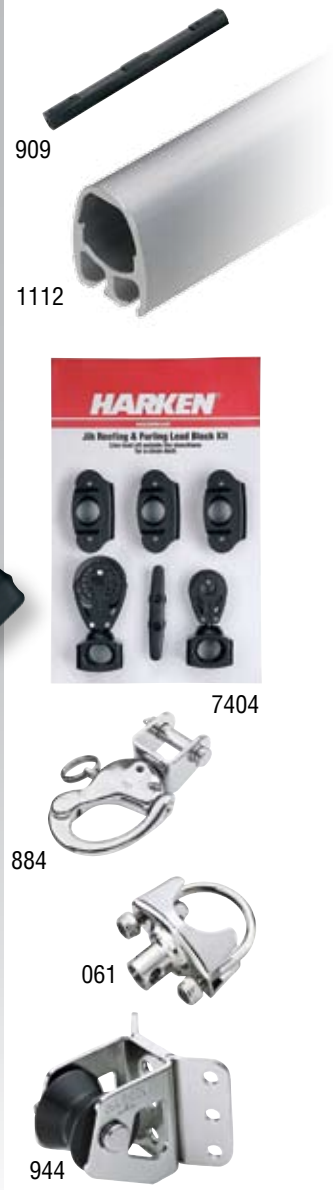
Unit 00AL is the perfect jib reefing and furling system for small cruising boats under 26 ft (8 m). It combines most of the features of larger Harken® furling systems in a simpler unit. Like other Harken® systems, the main components of the 00AL are 6061-T6 Hardkote-anodized aluminum with Teflon® impregnation.

Features include a free-spinning, omnidirectional bearing system with multiple ball bearing races, a double grooved foil for racing sail changes, and a light-weight halyard swivel to minimize windage and weight aloft. The furler's large inside spool provides plenty of mechanical advantage for smooth, easy reefing and furling.

There are enough aluminum foil sections to build a headstay with a pin-to-pin measurement to 31 ft 6 in (9.60 m). Harken® offers an additional foil and connector to extend headstay length to 35 ft (10.7 m).

Note: You must cut your headstay to install 00AL furling. You must also purchase a Harken® clevis pin to match your chainplate.

Optional Parts



Bearing shields protect Air Swivel® and tack bearings from UV and dirt

Small Air Swivels® turn freely on computer-designed bearing races to reduce windage and weight aloft

Large-diameter ball bearings minimize friction, require no lubrication or isolating seals

Pressure-cast sculpted aluminum line guard is open for easy line access

Large inner spool diameter increases mechanical advantage for more powerful reefing and furling

Unit 00AL

Typical Boat Length 20' - 26' (6 - 8 m)

	Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
	1/8", 5/32", 3/16" (3, 4, 5 mm)	-4 (4.37 mm)	1/4", 5/16", 3/8", 7/16" (6, 8, 9.5, 11 mm)
Headstay Length	Standard 9.60 m (31' 6"); max 10.67 m (35')		
Part No.	Description		
1110	Furling system		
Clevis Pin Assembly Required - sold separately			
1106	1/4" (6 mm)		
1107	5/16" (8 mm)		
1108	3/8" (9.5 mm)		
1109	7/16" (11 mm)		
Optional Parts			
909	Extra 6" (152 mm) connector		
1112	Extra 3.5' (1.07 m) foil extrusion		
7404	Lead block kit: 3 x 7403/1 x 7402/1 x 7401/1 cleat		
884	Snap shackle for tack/head (each shackle)		
061	Stanchion mount base		
944	Halyard restrainer (use only when required)		

Consult with Harken® if boat length exceeds specifications above

MKIV Jib Reefing & Furling

FOR RACING AND PERFORMANCE CRUISING SAILORS

MKIV furling systems are strong, lightweight and aerodynamic, with the performance and features Harken® is known for. Longevity, ease of use and simplicity of installation are crucial components of the design. These free-rolling furlers make all the difference in headsail control by allowing racers and cruisers to quickly furl and reef from the safety of the cockpit, while maintaining great sail shape and optimal speed.

DETAILS MAKE THE DIFFERENCE

EASY REEFING AND FURLING

Multiple rows of large-diameter Torlon® ball bearings used in high-load areas to minimize friction for easy reefing and furling; require no lubrication or isolating seals.

MORE FURLING POWER

Large inner spool diameter increases mechanical advantage for powerful reefing and furling. Smaller outside dimension allows unit to fit narrow bows or below deck. Unit rotates around rod or wire headstay so furling bearings do not carry the headstay load for easy furling.

LONG-LASTING PROTECTIVE FINISH

Aluminum line guard, torque tube and swivels are deep-saturation Hardkote-anodized for no-fade UV-stabilization, strength and durability. The Hardkote-anodized line guard is urethane coated for additional corrosion protection.

Specially formulated low-stretch black line is abrasion and UV resistant; standard on units 0, 1 and 2.

1. Halyard Swivel Turns Freely

Strong, lightweight halyard swivel reduces windage and weight aloft to minimize pitching and heeling. Stacked bearing races evenly distribute radial and thrust loads to ball bearings; foils turn freely under halyard loads.

Independent halyard and tack swivels furl sail center before head and tack for improved sail shape and upwind pointing.

2. Strong Foil Joints

Tough triple-interlock foil joints withstand years of torque loading. Connector's geometric shape interlocks to foil and secures with a syringe-injected adhesive into an engineered channel. Screws provide final lock.

3. Easy to Assemble Foils

C-shaped open connectors with low-friction plastic isolators slip onto the headstay wire and into foil for easy installation.

4. Drum Installs Over Existing Turnbuckle

Units are adaptable to a variety of rigging options for easy installation. Harken toggle assembly accepts standard turnbuckle using swage, rod, Norseman® or Sta-Lok® terminals. Toggle flips for fork or tang chainplate installation. A single stainless steel clevis pin provides access to the turnbuckle for adjustment.

5. Stainless Steel Feeder

Stainless steel feeder allows fast singlehanded hoist and quick sail changes.

6. Removable Split Drum

Line guard and spool come off easily for racing.

7. Double Foil Grooves for Racing

Aerodynamic aluminum Air Foils® handle extreme reefing loads. Double foil grooves allow fast hoists, douses and sail changes.

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MKIV Unit 0 Typical Boat Length 22' - 30' (6.5 - 9.1 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
$\frac{3}{16}$ ", $\frac{7}{32}$ " (5, 6 mm)	-4, -6 (4.37, 5.03 mm)	$\frac{3}{8}$ ", $\frac{7}{16}$ " (9.5, 11.1 mm)

Headstay Length Standard 38' 7" (11.77 m); max 45' 7" (13.9 m)

Part No.	Description
7410.10	Furling system

Toggle Assembly Required - sold separately

7410.20 3/8	Eye/Jaw reversible toggle assembly with $\frac{3}{8}$ " (9.5 mm) clevis pin
7410.20 7/16	Eye/Jaw reversible toggle assembly with $\frac{7}{16}$ " (11.1 mm) clevis pin

Optional Parts

7410.30	Extra 7' (2.13 m) luff foil extrusion
7410.31	Extra $6\frac{1}{2}$ " (165 mm) connector with bushings
7420 -4	-4 Rod adaptor stud (thread Ø UNF $\frac{7}{16}$ "*)
7421 -6	-6 Rod adaptor stud (thread Ø UNF $\frac{7}{16}$ "*)

*Use with conventional turnbuckle

7410.30
7411.30



7410.31
7411.31

7420 -4
7421 -6
7422 -8
7423 -10
7424 -12



7410.20 3/8
7410.20 7/16
7411.20 1/2

MKIV Unit 1 Typical Boat Length 28' - 36' (8.3 - 11 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
$\frac{1}{4}$ ", $\frac{3}{32}$ ", $\frac{3}{16}$ " (6, 7, 8 mm)	-8, -10, -12 (5.72, 6.35, 7.14 mm)	$\frac{1}{2}$ ", $\frac{5}{8}$ " (12.7, 15.9 mm)

Headstay Length Standard 45' 11" (13.99 m); max 52' 11" (16.12 m)

Part No.	Description
7411.10	Furling system

Toggle Assembly Required - sold separately

7411.20 1/2	Eye/Jaw reversible toggle assembly with $\frac{1}{2}$ " (12.7 mm) clevis pin
7311.20 1/2	Jaw/Jaw toggle assembly with $\frac{1}{2}$ " (12.7 mm) clevis pin
7311.20 5/8	Stud/Jaw toggle assembly with $\frac{5}{8}$ " (15.9 mm) clevis pin (thread Ø UNF $\frac{5}{8}$ " LH)
7311.21 1/2	Long link plate with toggle assembly with $\frac{1}{2}$ " (12.7 mm) clevis pin
7311.21 5/8	Long link plate with toggle assembly with $\frac{5}{8}$ " (15.9 mm) clevis pin

Optional Parts

7411.30	Extra 7' (2.13 m) luff foil extrusion
7411.31	Extra 7" (178 mm) connector with bushings
7422 -8	-8 Rod adaptor stud (thread Ø UNF $\frac{1}{2}$ "*)
7423 -10	-10 Rod adaptor stud (thread Ø UNF $\frac{1}{2}$ "*)
7424 -12	-12 Rod adaptor stud (thread Ø UNF $\frac{5}{8}$ "*)

*Use with conventional turnbuckle

7311.20 1/2



7311.20 5/8



7311.21 1/2
7311.21 5/8



Outward Bound 46 — Swiftsure Yachts Seattle photo

MKIV Unit 2 Typical Boat Length 35' - 46' (10.6 - 14.2 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
5/16", 3/8" (8, 10 mm)	-12, -17, -22 (7.14, 8.38, 9.53 mm)	5/8", 3/4" (15.9, 19.1 mm)

Headstay Length Standard 60'4" (18.38 m); max 67'4" (20.51 m)

Part No.	Description
7412.10	Furling system

Toggle Assembly Required - sold separately

7412.20 5/8	Eye/Jaw reversible toggle assembly with 5/8" (15.9 mm) clevis pin
7312.20 5/8	Jaw/Jaw toggle assembly with 5/8" (15.9 mm) clevis pin
7312.20 3/4	Stud/Jaw toggle assembly with 3/4" (19.1 mm) clevis pin (thread Ø UNF 3/4" LH)
7312.21 5/8	Long link plate with toggle with 5/8" (15.9 mm) clevis pin
7312.21 3/4	Long link plate with toggle with 3/4" (19.1 mm) clevis pin

Optional Parts

7412.30	Extra 7' (2.13 m) luff foil extrusion
7412.31	Extra 9" (229 mm) connector with bushings
7424 -12	-12 Rod adaptor stud (thread Ø UNF 5/8")*
7425 -17	-17 Rod adaptor stud (thread Ø UNF 5/8")*
7426 -22	-22 Rod adaptor stud (thread Ø UNF 3/4")*

*Use with conventional turnbuckle

NEW

MKIV Unit 3 Typical Boat Length 45' - 60' (13.7 - 18.3 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/16", 1/2" (11, 12 mm)	-22, -30 (9.53, 11.10 mm)	3/4", 7/8" (19.1, 22.2 mm)

Headstay Length Standard 74'8" (22.76 m); max 81'8" (24.89 m)

Part No.	Description
7413.10	Furling system*

Toggle Assembly Required - sold separately

7413.20 3/4	Jaw/Jaw with short link plate with 3/4" (19.1 mm) clevis pin
7413.20 7/8	Jaw/Jaw with short link plate with 7/8" (22.2 mm) clevis pin
7313.21 3/4	Long link plate with toggle with 3/4" (19.1 mm) clevis pin
7313.21 7/8	Long link plate with toggle with 7/8" (22.2 mm) clevis pin

Optional Parts

7413.30	Extra 7' (2.13 m) luff foil extrusion
7413.31	Extra 9 3/4" (248 mm) connector with bushings
7426 -22	-22 Rod adaptor stud (thread Ø UNF 3/4")**
7427 -30	-30 Rod adaptor stud (thread Ø UNF 7/8")**

Available January 2009 *Line not included **Use with conventional turnbuckle

NEW

MKIV Unit 4 Typical Boat Length 65' - 80' (19.8 - 24.4 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
1/2", 9/16", 5/8" (12, 14, 16 mm)*	-30, -40, -48 (11.10, 12.7, 14.3 mm)	7/8", 1", 1 1/8" (22.2, 25.4, 28.57 mm)

Headstay Length Standard 75'1" (22.88 m); max 89'1" (27.15 m)

Part No.	Description
7414.10	Furling system**

Toggle Assembly Required - sold separately

7414.20 7/8	Jaw/Jaw with short link plate with 7/8" (22.2 mm) clevis pin
7414.20 1	Jaw/Jaw with short link plate with 1" (25.4 mm) clevis pin
7414.20 1 1/8	Jaw/Jaw with short link plate with 1 1/8" (28.57 mm) clevis pin

Optional Parts

7414.30	Extra 7' (2.13 m) luff foil extrusion
7414.31	Extra 10 3/4" (270 mm) connector
7427 -30	-30 Rod adaptor stud***
7428 -40	-40 Rod adaptor stud***
7429 -48	-48 Rod adaptor stud***

Available January 2009 *For 3/4" (19 mm) wire Ø contact Harken **Line not included

***Use with conventional turnbuckle

7412.30
7413.30
7414.30



7412.31
7413.31
7414.31

7424 -12
7425 -17
7426 -22
7427 -30
7428 -40
7429 -48



7412.20 5/8



7312.20 5/8



7312.20 3/4

7413.20 3/4
7413.20 7/8
7414.20 7/8
7414.20 1
7414.20 1 1/8



7413.20 3/4
7413.20 7/8
7414.20 7/8
7414.20 1
7414.20 1 1/8

7312.21 5/8
7312.21 3/4
7313.21 3/4
7313.21 7/8

MKIV Under-Deck Jib Reefing & Furling

FOR PERFORMANCE RACING AND CRUISING SAILORS

Harken's MKIV Under-Deck Furling is the perfect solution for performance racers and cruisers that want an aerodynamic system with a minimal amount of equipment above deck. The spool mounts underneath the deck, reducing windage and providing an uncluttered bow. The sail's tack is at deck level so wind can flow smoothly across the sail and bow for efficient forward power. The headsail disconnects from the drum, leaving the lower unit in place. This makes servicing and storage easier and the mast simpler to step.

DETAILS MAKE THE DIFFERENCE

EASY REEFING AND FURLING

Two rows of ball bearings between the center hub and deck bearing provide low-friction furling.

LONG-LASTING PROTECTIVE FINISH

Aluminum line guard, torque tube and swivels are deep-saturation Hardkote-anodized for no-fade UV-stabilization, strength and durability. The Hardkote-anodized line guard is urethane coated for additional corrosion protection.

The threaded height adjuster uses dissimilar metals (stainless steel and bronze) to prevent galling.

EASY TO MAINTAIN

The furler can be flushed clean with detergent water like traditional furling.

The through-deck bearing minimizes water seepage into the underdeck compartment.

1. Torque Tube Houses

Full-Length Turnbuckle

The torque tube houses a full-length turnbuckle for optimal mast rake and tension adjustment.

2. Headstay Toggle

with Universal Joint

The headstay disconnects from the toggle at deck level, leaving the lower unit in place for maintenance or storage.

A foil universal joint allows ample headstay sag when sailing downwind.

3. Belowdeck Drum Fits Narrow Bows

The small outside drum diameter lets unit fit inside narrow bows.

4. Threaded Height Adjuster

Self-locking threaded height adjuster adapts the furler to fit the distance between the chainplate and deck.

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MKIV Under-Deck Unit 1

Typical Boat Length 28' - 36' (8.3 - 11 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
1/4", 9/32", 5/16" (6, 7, 8 mm)	-8, -10 (5.72, 6.35 mm)	1/2" (12.7 mm)

Headstay Length Standard 45'11" (13.99 m); max 52'11" (16.12 m)

Part No.	Description
7411.11 1/2	Under-Deck Furling system with 1/2" (12.7 mm) clevis pin

Optional Parts

7411.30	Extra 7' (2.13 m) luff foil extrusion
7411.31	Extra 7" (178 mm) connector with bushings

MKIV Under-Deck Unit 2

Typical Boat Length 35' - 46' (10.6 - 14.2 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
5/16", 3/8" (8, 10 mm)	-12, -17 (7.14, 8.38 mm)	5/8" (15.9 mm)

Headstay Length Standard 60'4" (18.38 m); max 67'4" (20.51 m)

Part No.	Description
7412.11 5/8	Under-Deck Furling system with 5/8" (15.9 mm) clevis pin

Optional Parts

7412.30	Extra 7' (2.13 m) luff foil extrusion
7412.31	Extra 9" (229 mm) connector with bushings

MKIV Under-Deck Unit 3

Typical Boat Length 45' - 60' (13.7 - 18.3 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/16", 1/2" (11, 12 mm)	-22, -30 (9.53, 11.10 mm)	3/4", 7/8" (19.1, 22.2 mm)

Headstay Length Standard 75'1" (22.88 m); max 82'1" (25.02 m)

Part No.	Description
7413.11 3/4	Under-Deck Furling system with 3/4" (19.1 mm) clevis pin
7413.11 7/8	Under-Deck Furling system with 7/8" (22.2 mm) clevis pin

Optional Parts

7413.30	Extra 7' (2.13 m) luff foil extrusion
7413.31	Extra 9 3/4" (248 mm) connector with bushings

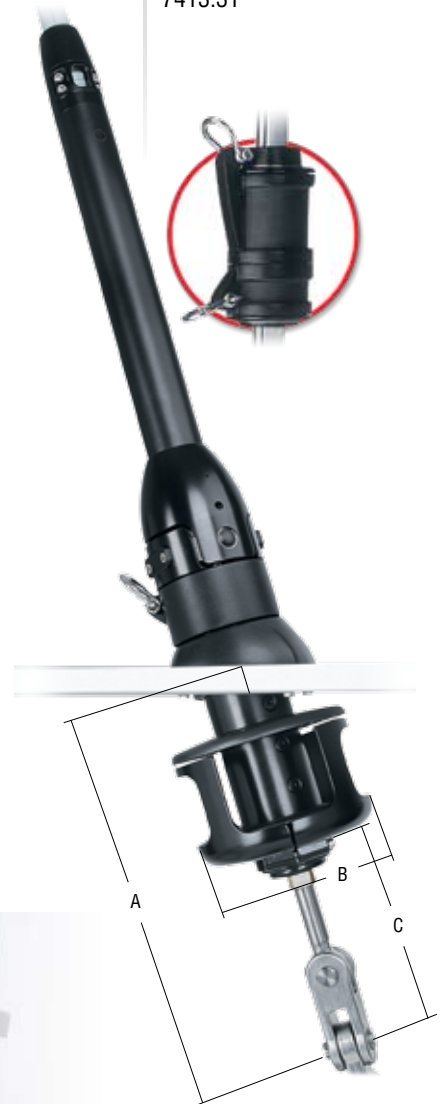
Dimensions

Unit	Part No.	A		B		C					
		Min in	Max mm	Min in	Max mm	Min in	Max mm				
1	7411.11 1/2	10 ⁵ / ₈	270	15 ⁵ / ₈	397	5 ¹ / ₂	140	4 ⁵ / ₈	117	9 ⁵ / ₈	244
2	7412.11 5/8	12 ¹¹ / ₁₆	322	18 ⁹ / ₁₆	471	6 ⁵ / ₈	167	5 ⁵ / ₈	137	11 ⁵ / ₁₆	287
3	7413.11 3/4	16 ¹ / ₈	410	23 ³ / ₈	600	8 ³ / ₁₆	208	6 ⁷ / ₈	175	14 ³ / ₈	365
3	7413.11 7/8	16 ⁷ / ₁₆	421	24 ¹ / ₄	616	8 ³ / ₁₆	208	7 ⁵ / ₁₆	186	15	381



7411.30
7412.30
7413.30

7411.31
7412.31
7413.31



Cruising Jib Reefing & Furling



FOR CRUISING SAILORS

The Harken® Cruising Furlers are engineered with strength, longevity, ease of use and price crucial to the design. This dependable system lets you smoothly unfurl your headsail, furl and reef safely in a blow, and control boat speed when maneuvering in a crowded harbor—all from the safety of the cockpit.

DETAILS MAKE THE DIFFERENCE

EASY REEFING AND FURLING

Multiple rows of large-diameter Torlon® ball bearings in the halyard swivel minimize friction for smooth furling, require no lubrication or isolating seals.

MORE FURLING POWER

Large inner spool diameter increases mechanical advantage for powerful reefing and furling. Smaller outside diameter allows unit to fit narrow bows or belowdeck.

STANDS UP TO THE ELEMENTS

Halyard swivel, line guard, torque tube and bearing races are deep-saturation Hardkote anodized for strength and durability, with a black additive to resist the corrosive effects of saltwater and sun and to provide long-term wear. The line guard is powder coated for added corrosion resistance.

Line is kept on the spool with super-tough polymer drum cap and anodized aluminum line guard. High-strength, low-stretch line is included.

1. Strong Foil Joints

Tough foil joints withstand years of torque loading. Connector interlocks to foil and secures with screws and adhesive.

2. Single-Groove Round Foil

Round foil profile withstands extreme reefing loads for safe furling. Rolls more easily than aerodynamic foil shapes.

3. Easy-to-Assemble Foils

C-shaped open connectors with low-friction plastic isolators slip onto the headstay wire and into foil for easy installation.

4. Drum Installs Over Existing Turnbuckle

Units are adaptable to a variety of rigging options for easy installation. Harken® toggle assembly accepts standard turnbuckle using swage, rod, Norseman® or Sta-Lok® terminals, or fits directly to a marine eye. A single stainless steel clevis pin provides access to the turnbuckle for adjustment.



Cruising Unit 1

Typical Boat Length 28' - 36' (8.3 - 11 m)

Wire Ø	Rod Ø	Clevis Pin Ø
1/4", 3/32", 5/16" (6, 7, 8 mm)	-8, -10, -12 (5.72, 6.35, 7.14 mm)	1/2", 5/8" (12.7, 15.9 mm)

Headstay Length Standard 45' 8" (13.92 m); max 52' 8" (16.05 m)

Part No.	Description
7311.10	Furling system

Toggle Assembly Required - sold separately

7411.20 1/2	Eye/Jaw reversible toggle assembly with 1/2" (12.7 mm) clevis pin
7311.20 1/2	Jaw/Jaw toggle assembly with 1/2" (12.7 mm) clevis pin
7311.20 5/8	Stud/Jaw toggle assembly with 5/8" (15.9 mm) clevis pin (thread Ø UNF 5/8" LH)
7311.21 1/2	Long link plate with toggle assembly with 1/2" (12.7 mm) clevis pin
7311.21 5/8	Long link plate with toggle assembly with 5/8" (15.9 mm) clevis pin

Optional Parts

7311.30	Extra 7' (2.13 m) luff foil extrusion
7311.31	Extra 6" (152 mm) connector with isolator
7422 -8	-8 Rod adaptor stud (thread Ø UNF 1/2")*
7423 -10	-10 Rod adaptor stud (thread Ø UNF 1/2")*
7424 -12	-12 Rod adaptor stud (thread Ø UNF 5/8")*

*Use with conventional turnbuckle

Cruising Unit 2

Typical Boat Length 35' - 46' (10.6 - 14.2 m)

Wire Ø	Rod Ø	Clevis Pin Ø
5/16", 3/8", 7/16" (8, 10, 11, 12 mm)	-12 -17, -22 (7.14, 8.38, 9.53 mm)	5/8", 3/4" (15.9, 19.1 mm)

Headstay Length Standard 60' 1" (18.31 m); max 67' 1" (20.45 m)

Part No.	Description
7312.10	Furling system

Toggle Assembly Required - sold separately

7412.20 5/8	Eye/Jaw reversible toggle assembly with 5/8" (15.9 mm) clevis pin
7312.20 5/8	Jaw/Jaw toggle assembly with 5/8" (15.9 mm) clevis pin
7312.20 3/4	Stud/Jaw toggle assembly with 3/4" (19.1 mm) clevis pin (thread Ø UNF 3/4" LH)
7312.21 5/8	Long link plate with toggle with 5/8" (15.9 mm) clevis pin
7312.21 3/4	Long link plate with toggle with 3/4" (19.1 mm) clevis pin

Optional Parts

7312.30	Extra 7' (2.13 m) luff foil extrusion
7312.31	Extra 9" (229 mm) connector with isolator
7424 -12	-12 Rod adaptor stud (thread Ø UNF 5/8")*
7425 -17	-17 Rod adaptor stud (thread Ø UNF 5/8")*
7426 -22	-22 Rod adaptor stud (thread Ø UNF 3/4")*

*Use with conventional turnbuckle

7311.30
7312.30



7311.31
7312.31



7422 -8
7423 -10
7424 -12
7425 -17
7426 -22



7411.20 1/2
7412.20 5/8



7311.20 1/2
7312.20 5/8



7311.20 5/8
7312.20 3/4



Morris 36, Sparkman & Stephens, Morris Yachts — Onne van der Wal photo



7311.21 1/2
7311.21 5/8
7312.21 5/8
7312.21 3/4

Electric Jib Reefing & Furling



PUSH-BUTTON SAIL CONTROL

Designed for large cruising boats, electric furling is a headsail system that helps you get the most out of your boat, while letting you comfortably reef, furl and set sails from the cockpit with the push of a button.

DETAILS MAKE THE DIFFERENCE

HIGH-STRENGTH MATERIALS, SCULPTED DESIGN

The torque tube, motor, and gear housing are deep-saturation Hardkote-anodized, UV-stabilized aluminum. The sculpted gear box and streamlined motor housing is sealed with high-quality lip seals. The motor mounts vertically into pulpits, clearing anchor tackle and providing low windage.

HIGH-TORQUE, HIGH-EFFICIENCY MOTOR

The motor is a permanent magnet design and features high torque and low power consumption. Inside, the hardened steel gears are permanently lubricated. The reversible drive uses a high-reduction worm gear set to prevent reefed sails from unfurling under load.

EASY TO INSTALL OR UPGRADE

C-shaped connectors slip over the headstay without feeding wire through the connector. The lower unit fits over the existing turnbuckle allowing easy length adjustment. Easy upgrade from a Cruising Unit 2 and MKIV Unit 3 manual unit.

1



2



3



4



1. Strong Foil Joints

Tough triple-interlock foil joints withstand years of torque loading.

2. 12- or 24-Volt Systems

Available in 12 or 24 volts; switches and 12- or 24-volt control box and circuit breaker included.

3. Emergency Manual Operation

Use supplied crank handle or cordless drill adapter.

4. Scratch-Resistant Link Plates

Stainless steel link plates fit over standard turnbuckle, resist scratches, and can be easily repolished.

Electric Jib Reefing & Furling



PUSH-BUTTON SAIL CONTROL

Designed for large cruising boats, electric furling is a headsail system that helps you get the most out of your boat, while letting you comfortably reef, furl and set sails from the cockpit with the push of a button.

DETAILS MAKE THE DIFFERENCE

HIGH-STRENGTH MATERIALS, SCULPTED DESIGN

The torque tube, motor, and gear housing are deep-saturation Hardkote-anodized, UV-stabilized aluminum. The sculpted gear box and streamlined motor housing is sealed with high-quality lip seals. The motor mounts vertically into pulpits, clearing anchor tackle and providing low windage.

HIGH-TORQUE, LOW-POWER MOTOR

The motor is a permanent magnet design and features high torque and low power consumption. Inside, the hardened steel gears are permanently lubricated. The reversible drive uses a high-reduction worm gear set to prevent reefed sails from unfurling under load.

EASY TO INSTALL OR UPGRADE

C-shaped connectors slip over the headstay without feeding wire through the connector. The lower unit fits over the existing turnbuckle allowing easy length adjustment. Easy upgrade from a Cruising Unit 2 and MKIV Unit 3 manual unit.



1. Strong Foil Joints

Tough triple-interlock foil joints withstand years of torque loading.

2. 12- or 24-Volt Systems

Available in 12 or 24 volts; switches and 12- or 24-volt control box and circuit breaker included.

3. Emergency Manual Operation

Use supplied crank handle or cordless drill adapter.

4. Scratch-Resistant Link Plates

Stainless steel link plates fit over standard turnbuckle, resist scratches, and can be easily repolished.

Unit 2E Typical Boat Length 35' - 46' (10.6 - 14.2 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
5/16", 3/8", 7/16" (8, 10, 11, 12 mm)	-12 -17, -22 (7.14, 8.38, 9.53 mm)	5/8", 3/4" (15.9, 19.1 mm)

Headstay Length Standard 60'3" (18.36 m); max 67'3" (20.49 m)

Part No.	Description
7312.13 12V	Electric Furler 12 Volt with control box, switches, and circuit breaker
7312.13 24V	Electric Furler 24 Volt with control box, switches, and circuit breaker

Toggle Assembly Required - sold separately

7312.22 5/8	Jaw/Jaw with link plate with 5/8" (15.9 mm) clevis pin
7413.22 3/4	Jaw/Jaw with link plate with 3/4" (19.1 mm) clevis pin

Optional Parts

7312.12V.CONV	Conversion Kit Cruising manual to electric*
7312.24V.CONV	Conversion Kit Cruising manual to electric*
7312.30	Extra 7' (2.13 m) luff foil extrusion
7312.31	Extra 9" (229 mm) connector with isolator
7424 -12	-12 Rod adaptor stud (thread Ø UNF 5/8")**
7425 -17	-17 Rod adaptor stud (thread Ø UNF 3/4")**
7426 -22	-22 Rod adaptor stud (thread Ø UNF 3/4")**

* Includes switches and 12- or 24-volt control box and circuit breaker **Use with conventional turnbuckle

Unit 3E Typical Boat Length 45' - 60' (13.7 - 18.3 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/16", 1/2" (11, 12 mm)	-22, -30 (9.53, 11.10 mm)	3/4", 7/8" (19.1, 22.2 mm)

Headstay Length Standard 75'1" (22.88 m); max 82'1" (25.02 m)

Part No.	Description
7413.13 12V	Electric Furler 12 Volt with control box, switches, and circuit breaker
7413.13 24V	Electric Furler 24 Volt with control box, switches, and circuit breaker

Toggle Assembly Required - sold separately

7413.22 3/4	Jaw/Jaw with link plate with 3/4" (19.1 mm) clevis pin
7413.22 7/8	Jaw/Jaw with link plate with 7/8" (22.2 mm) clevis pin

Optional Parts

7413.12V.CONV	Conversion Kit MKIV manual to electric*
7413.24V.CONV	Conversion Kit MKIV manual to electric*
7413.30	Extra 7' (2.13 m) luff foil extrusion
7413.31	Extra 9 3/4" (248 mm) connector with bushings
7426 -22	-22 Rod adaptor stud (thread Ø UNF 3/4")**
7427 -30	-30 Rod adaptor stud (thread Ø UNF 7/8")**

* Includes switches and 12- or 24-volt control box and circuit breaker **Use with conventional turnbuckle

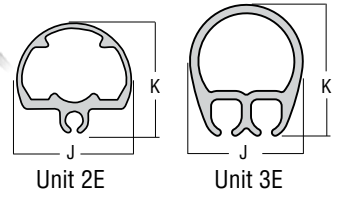
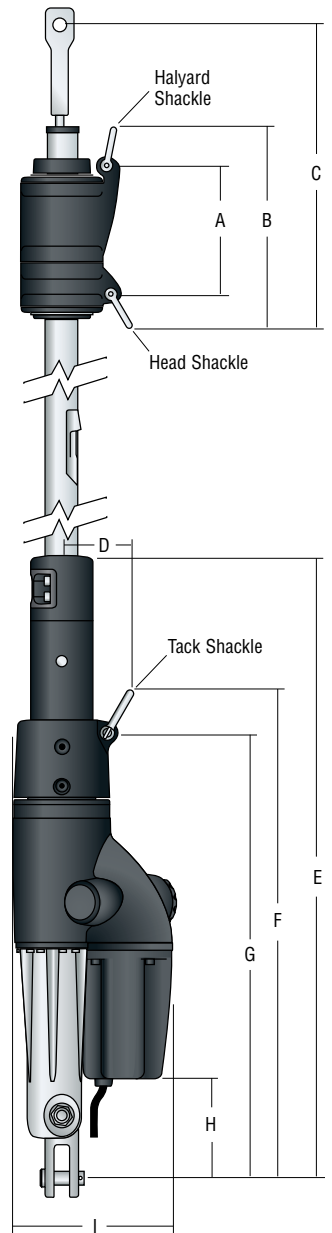


Foil Dimensions

Unit	J		K		Foil length		Luff tape
	in	mm	in	mm	ft	m	
2E	1 3/4	44	1 5/8	42	7	2.13	#6 5/32" (5 mm)
3E	1 1/2	38	1 11/16	43	7	2.13	#6 5/32" (5 mm)

Electric Furler Dimensions

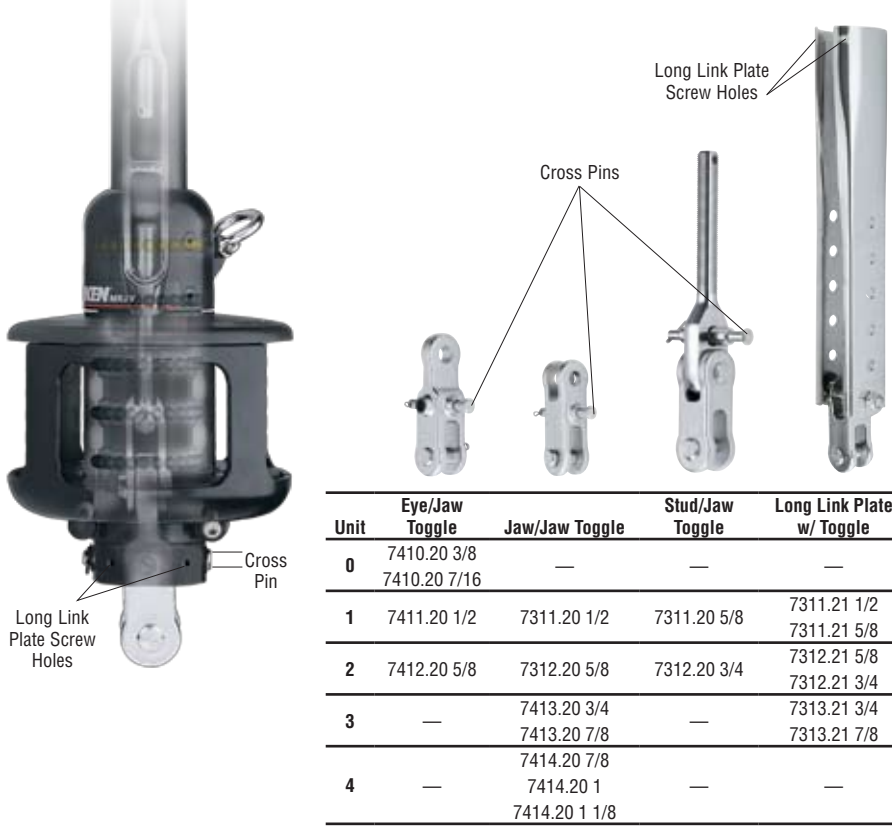
Part No.	A		B		C (Max)		D		E		F		G		H		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
7312.13 with 7312.22 5/8 toggle	4 1/2	114	8	203	16	406	3 1/4	82	31 7/8	810	24 1/2	622	22 39/64	574	4 1/2	116	8 11/32	212
7312.13 with 7413.22 3/4 toggle	4 1/2	114	8	203	16	406	3 1/4	82	32 1/2	826	25 3/32	637	23 1/4	590	5 3/16	132	8 11/32	212
7413.13 with 7413.22 3/4 toggle	7 9/16	186	11 5/8	296	18	457	3 1/4	82	32 1/2	826	25 3/32	637	23 1/4	590	5 3/16	132	8 11/32	212
7413.13 with 7413.22 7/8 toggle	7 9/16	186	11 5/8	296	18	457	3 1/4	82	33 7/16	840	25 11/16	652	23 13/16	605	5 3/4	146	8 11/32	212



7312.13 12V
7312.13 24V
7413.13 24V
7413.13 24V

MKIV & Cruising Toggle Options

Use these rigger-supplied options to fit Harken toggles shown below.
Harken Toggle assemblies sold separately.

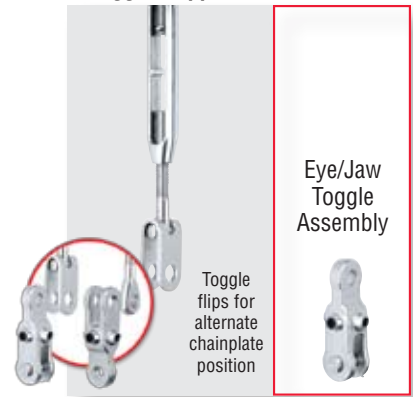


Unit	Eye/Jaw Toggle	Jaw/Jaw Toggle	Stud/Jaw Toggle	Long Link Plate w/ Toggle
0	7410.20 3/8	—	—	—
	7410.20 7/16	—	—	—
1	7411.20 1/2	7311.20 1/2	7311.20 5/8	7311.21 1/2 7311.21 5/8
2	7412.20 5/8	7312.20 5/8	7312.20 3/4	7312.21 5/8 7312.21 3/4
3	—	7413.20 3/4	—	7313.21 3/4
	—	7413.20 7/8	—	7313.21 7/8
	—	7414.20 7/8	—	—
4	—	7414.20 1	—	—
	—	7414.20 1 1/8	—	—

Model	Toggle Part No.	Description	Thread Ø	Clevis Pin		Fits Unit	Furler Part No.
				in	mm		
MKIV	7410.20 3/8	Eye/Jaw (reversible)	—	3/8	9.5	0	7410.10
	7410.20 7/16	Eye/Jaw (reversible)	—	7/16	11.1	0	7410.10
	7411.20 1/2	Eye/Jaw (reversible)	—	1/2	12.7	1	7411.10
	7311.20 1/2	Jaw/Jaw	—	1/2	12.7	1	7411.10
	7311.20 5/8	Stud/Jaw	5/8 - 18 LH	5/8	15.9	1	7411.10
	7311.21 1/2	Long link plate w/ toggle	—	1/2	12.7	1	7411.10
	7311.21 5/8	Long link plate w/ toggle	—	5/8	15.9	1	7411.10
	7412.20 5/8	Eye/Jaw (reversible)	—	5/8	15.9	2	7412.10
	7312.20 5/8	Jaw/Jaw	—	5/8	15.9	2	7412.10
	7312.20 3/4	Stud/Jaw	3/4 - 16 LH	3/4	19.1	2	7412.10
	7312.21 5/8	Long link plate w/ toggle	—	5/8	15.9	2	7412.10
	7312.21 3/4	Long link plate w/ toggle	—	3/4	19.1	2	7412.10
	7413.20 3/4	Jaw/Jaw w/ short link plate	—	3/4	19.1	3	7413.10
	7413.20 7/8	Jaw/Jaw w/ short link plate	—	7/8	22.2	3	7413.10
	7313.21 3/4	Long link plate w/ toggle	—	3/4	19.1	3	7413.10
	7313.21 7/8	Long link plate w/ toggle	—	7/8	22.2	3	7413.10
	7414.20 7/8	Jaw/Jaw w/ short link plate	—	7/8	22.2	4	7414.10
	7414.20 1	Jaw/Jaw w/ short link plate	—	1	25.4	4	7414.10
	7414.20 1 1/8	Jaw/Jaw w/ short link plate	—	1 1/8	28.57	4	7414.10
	CRUISING	7411.20 1/2	Eye/Jaw (reversible)	—	1/2	12.7	1
7311.20 1/2		Jaw/Jaw	—	1/2	12.7	1	7311.10
7311.20 5/8		Stud/Jaw	5/8 - 18 LH	5/8	15.9	1	7311.10
7311.21 1/2		Long link plate w/ toggle	—	1/2	12.7	1	7311.10
7311.21 5/8		Long link plate w/ toggle	—	5/8	15.9	1	7311.10
7412.20 5/8		Eye/Jaw (reversible)	—	5/8	15.9	2	7312.10
7312.20 5/8		Jaw/Jaw	—	5/8	15.9	2	7312.10
7312.20 3/4		Stud/Jaw	3/4 - 16 LH	3/4	19.1	2	7312.10
7312.21 5/8		Long link plate w/ toggle	—	5/8	15.9	2	7312.10
7312.21 3/4		Long link plate w/ toggle	—	3/4	19.1	2	7312.10

Rigger Supplied

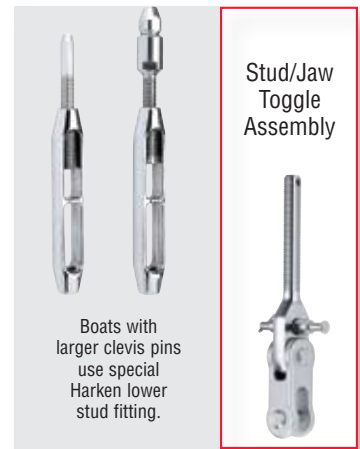
Harken



Eye/Jaw Toggle Assembly



Jaw/Jaw Toggle Assembly



Stud/Jaw Toggle Assembly



Long Link Plate w/ Toggle

MKIII Jib Reefing & Furling

MKIII jib reefing and furling systems are designed for large performance racing and cruising boats. Strong, lightweight, and aerodynamic, these systems feature large-diameter drums and friction-free bearings to make furling and reefing smooth and easy.

Head and tack swivels feature Torlon® ball bearings and operate independently to improve the shape of a partially furled sail for added power through the water. Non-corrosive Hardkote-anodized swivels require no lubrication.

The furler's built-in turnbuckle makes rig installation and tuning painless. The turnbuckle is made of nickel-plated silicon bronze and stainless steel, and adapts to rod, Norseman® or Sta-Lok® terminals.

1. Strong Foils

Aerodynamic Air Foils® handle extreme reefing loads.

Triple-interlock foil joints match foil shape and are secured with screws and adhesive.

2. Removable Split Drum

Line guard and spool are easily removed for racing



Spirited 380 — Spirited Designs photo



MKIII Unit 4 Typical Boat Length 75' - 90' (22.9 - 27.4 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/8" (22 mm)*	-60, -76 (16.75, 17.91 mm)	1 1/4", (31.8 mm)

Max Dyform® size 19 mm - Requires custom Sta-Lok® terminal. Contact Harken®.

Headstay Length Standard 87'5" (26.64 m); max 114'5" (34.87 m)

Part No.	Description
1084	Furling system for wire with stud**
1085	Furling system for rod with stud** (specify Navtec® or Riggarna®/OYS)

Optional Parts

1086	Extra 9' (2.74 m) luff foil extrusion
1069	Extra 12" (305 mm) connector

*For 3/4" (19 mm) wire Ø contact Harken **Line not included **Continuous rod only. If sectional order 4.5**

MKIII Unit 4.5 Typical Boat Length 85' - 110' (25.9 - 33.5 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
1" (25 mm)	-76, -91, -115 (17.91, 19.50, 22.20 mm)	1 1/4", 1 3/8", 1 9/16" (31.8, 34.9, 39.7 mm)

Headstay Length Standard 102'10" (31.34 m); max 126'10" (38.67 m)

Part No.	Description
1087	Furling system for wire with stud*
1088	Furling system for rod with stud* (specify Navtec® or Riggarna®/OYS)

Optional Parts

1050	Extra 12' (3.66 m) luff foil extrusion
1051	Extra 13 1/2" (343 mm) connector

*Line not included



Carbon Reefing & Furling Systems

Harken carbon furlers are the ultimate lightweight reefing and furling solution. Featuring all-carbon foils and carbon components in the drum and torque tube, these units can save you from 25 to 200 pounds (11-90 kg). The lower weight fore and aloft not only reduces pitching and heeling, but also reduces the amount of lead needed in the keel.

Carbon furlers have a smooth, elegant finish and are UV resistant. The fiber, the same used in most carbon masts (T300 or equivalent), is laid in the direction of the load to optimize strength and weight. High-strength Spectra® line on the tack, head, and halyard swivels replaces heavy metal attachments. The independent swivels improve sail shape by letting the sail center furl before the head.

Foils are made of filament-wound carbon to maximize torsional strength. For faster sail changes, contact Harken to order foils with double sail grooves instead of the standard single groove. Built-in turnbuckles make installation and mast tuning easy. Foil kits include an extra foil and connector. Installation by an authorized professional required.

Luff Tape

Use #6 luff tape only ($\frac{9}{32}$ in or 5 mm).



Unit 3C

Typical Boat Length 45' - 60' (13.7 - 18.3 m)

Rod Ø	Clevis Pin Ø
-22, -30 (9.5, 11.1 mm)	3/4", 7/8" (19.1, 22.2 mm)

Headstay Length Standard 75'1" (22.88 m); max 82'4" (25.1 m)

Part No.	Description
1120*	Carbon furling system — specify rod and clevis pin

Optional Parts

1125	7.25' (2.21 m) Carbon foil/connector kit
------	--

*Line not included



Soft Spectra® line attachments are used for the halyard, head and tack and eliminate the need for heavy welded lugs and shackles

Unit 3.25C

Typical Boat Length 55' - 70' (16.8 - 21.3 m)

Rod Ø	Clevis Pin Ø
-40 (12.7 mm)	7/8", 1" (22.2, 25.4 mm)

Headstay Length Standard 75'2" (22.91 m); max 89'8" (27.33 m)

Part No.	Description
1121*	Carbon furling system — specify rod and clevis pin

Optional Parts

1125	7.25' (2.21 m) Carbon foil/connector kit
------	--

1116	14.5' (4.42 m) Carbon foil/connector kit
------	--

*Line not included

Unit 3.5C

Typical Boat Length 65' - 80' (19.8 - 24.4 m)

Rod Ø	Clevis Pin Ø
-48 (14.3 mm)	7/8", 1", 1 1/8" (22.2, 25.4, 28.6 mm)

Headstay Length Standard 75'7" (23.04 m); max 97'4" (29.67 m)

Part No.	Description
1122*	Carbon furling system — specify rod and clevis pin

Optional Parts

1126	7.25' (2.21 m) Carbon foil/connector kit
------	--

1117	14.5' (4.42 m) Carbon foil/connector kit
------	--

*Line not included

Optional Parts



- 1116
- 1117
- 1118
- 1119
- 1125
- 1126
- 1127
- 1128

Optional double groove foil. To order, add "DG" to part number

Unit 4C

Typical Boat Length 75' - 90' (22.9 - 27.4 m)

Rod Ø	Clevis Pin Ø
-60, -76 (16.8, 17.9 mm)*	1 1/4" (31.8 mm)

Headstay Length Standard 90'6" (27.58 m); max 112'3" (34.21 m)

Part No.	Description
1123**	Carbon furling system — specify rod and clevis pin

Optional Parts

1127	7.25' (2.21 m) Carbon foil/connector kit
------	--

1118	14.5' (4.42 m) Carbon foil/connector kit
------	--

*Continuous rod only. If rod is sectional, order 4.5 **Line not included

Unit 4.5C

Typical Boat Length 85' - 110' (25.9 - 33.5 m)

Rod Ø	Clevis Pin Ø
-76, -91, -115 (17.9, 19.5, 22.2 mm)	1 1/4", 1 3/8", 1 7/8" (31.8, 34.9, 39.7 mm)

Headstay Length Standard 105'7" (32.18 m); max 127'4" (38.81 m)

Part No.	Description
1124*	Carbon furling system — specify rod and clevis pin

Optional Parts

1128	7.25' (2.21 m) Carbon foil/connector kit
------	--

1119	14.5' (4.42 m) Carbon foil/connector kit
------	--

*Line not included

MKIII Hydraulic Jib Reefing and Furling

MKIII hydraulic furling allows you to reef, furl, or set sails with the touch of a button. The MKIII hydraulic furler is made of Hardkote-anodized aluminum and mirror-polished investment-cast stainless steel. The streamlined housing fits easily within existing pulpits. Double swivels at the tack and head help shape sails when reefing.

The furler's lower toggle fixes at 90-degree intervals to accept any chainplate direction. The reversible hydraulic drive uses a high-reduction, double-enveloping worm gear to prevent reefed sails from unfurling under load.

Hydraulic MKIII furlers are suitable for cruising boats from 50 to 120 feet (15-36.6 m) with headstays of up to 1-inch wire (25 mm) or -115 rod (22.2 mm).

Worldwide parts and service.

DETAILS MAKE THE DIFFERENCE

TORLON® BALL BEARINGS

Large-diameter Torlon® ball bearings in halyard and tack swivel minimize friction, require no lubrication or isolating seals.

HEADSTAY ADJUSTMENT SYSTEM

The winch handle system for headstay adjustment and tensioning uses a self-locking bevel gear leadscrew.

CARBON HYDRAULIC JIB REEFING AND FURLING

Proven in the extreme conditions found in around-the-world sailing, carbon hydraulic jib reefing and furling systems combine the beauty of stainless with the elegant finish of carbon. Single groove foils are filament-wound with standard modulus carbon fiber that maximizes torsional strength and saves 30 to 200 pounds (13-90 kg). The lower unit features a carbon fiber torque tube and cowling. Call for availability.

1. Independent Swivels

Independent head and tack swivels improve sail shape when partially furled.

2. Strong Foils

Aerodynamic Air Foils® handle extreme reefing loads. Tough triple-interlock foil joints withstand years of torque loading.

3. Stainless Steel Gear Housing

Stainless steel investment-cast gear housing features hardened steel gears running in oil.

4. Manual Override System

MKIII hydraulic furlers feature a unique manual override system. Fluid is automatically diverted when a winch handle is inserted for safe manual operation.

5. Soft Attachment for Halyard, Head and Tack on Carbon Units

Soft line attachment is extremely strong and takes the place of heavy stainless steel shackles.

6. Filament-Wound Carbon Foils

Maximized torsional resistance foils save weight forward and aloft where it is critical. Smooth elegant carbon fiber finish is UV resistant.

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Unit 3

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/16", 1/2" (11, 12 mm)	-22, -30 (9.53, 11.10 mm)	3/4", 7/8" (19, 22.2 mm)

Headstay Length	Standard 75'6" (23.01 m); max 82'6" (25.15 m)
Part No.	Description
1027	Furling system with Sta-Lok®/Norseman® terminal
1028	Furling system for rod terminal (specify Navtec® or Riggarna®)
958	Extra 7' (2.13 m) luff foil extrusion
960	Extra 10' (254 mm) connector*
997	Extra 10' (254 mm) connector* for -22 rod

*Order one for each foil extrusion Max Dyform® size 7/16" or 12 mm; requires special terminal

Available in carbon fiber. Contact Harken



Unit 3.25

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
3/16" (14 mm)	-40 (12.70 mm)	7/8", 1" (22.2, 25.40 mm)

Headstay Length	Standard 75'6" (23.01 m); max 89'6" (27.28 m)
Part No.	Description
1044	Furling system with Sta-Lok®/Norseman® terminal
1045	Furling system for rod terminal (specify Navtec® or Riggarna®)
958	Extra 7' (2.13 m) luff foil extrusion
1032	Extra 10' (254 mm) connector*
960	Extra 10' (254 mm) connector* for rod and 1/2" (12 mm) Dyform®

*Order one for each foil extrusion Max Dyform® size 1/2" or 12 mm; requires special terminal

Optional Parts



958
1079
1086
1050



960
997
1032
1066
1069
1051

Unit 3.5

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
5/8", 3/4" (16, 19 mm)	-48 (14.30 mm)	7/8", 1", 1 1/8" (22.2, 25.40, 28.60 mm)

Headstay Length	Standard 77'4" (23.57 m); max 95'4" (29.06 m)
Part No.	Description
1063	Furling system with Sta-Lok®/Norseman® terminal
1064	Furling system for rod terminal (specify Navtec® or Riggarna®/OYS)
1079	Extra 9' (2.74 m) luff foil extrusion
1066	Extra 10' (254 mm) connector*

*Order one for each foil extrusion Max Dyform® size 5/8" or 14 mm; requires special terminal

Unit 4

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/8" (22 mm)	-60, -76 (16.80, 17.90 mm)	1 1/4" (31.80 mm)

Headstay Length	Standard 87'11" (26.80 m); max 114'11" (35.03 m)
Part No.	Description
1067	Furling system with Sta-Lok®/Norseman® terminal
1068	Furling system for rod terminal (specify Navtec® or Riggarna®/OYS). If rod is sectional order 4.5.
1086	Extra 9' (2.74 m) luff foil extrusion
1069	Extra 12" (305 mm) connector*

*Order one for each foil extrusion Max Dyform® size 3/4" or 19 mm requires special terminal

Unit 4.5

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
1" (25 mm)	-76, -91, -115 (17.90, 19.50, 22.20 mm)	1 1/4", 1 3/8", 1 1/2" (31.80, 34.90, 39.70 mm)

Headstay Length	Standard 102'7" (31.27 m); max 126'7" (38.58 m)
Part No.	Description
1072	Furling system with Sta-Lok®/Norseman® terminal
1073	Furling system for rod terminal (specify Navtec® or Riggarna®/OYS)
1050	Extra 12' (3.66 m) luff foil extrusion
1051	Extra 13 1/2" (343 mm) connector*

*Order one for each foil extrusion

To order hydraulic power units see page 199



Ordering Information

Unit	Wire Ø*	Rod Ø**	Headstay Length		Clevis pin Ø	Luff tape		
			Standard	Max		#	in	mm
3	$7/16", 1/2"$	-22, 9.53 mm	75'6"	82'6"	$3/4"$ (19.10 mm)	6	$5/32"$	5
	11, 12 mm	-30, 11.10 mm	23.01 m	25.15 m	$7/8"$ (22.20 mm)			
3.25	$9/16"$	-40, 12.70 mm	75'6"	89'6"	$7/8"$ (22.20 mm)	6	$5/32"$	5
	14 mm		23.01 m	27.28 m	1" (25.40 mm)			
3.5	$5/8", 3/4"$	-48, 14.30 mm	77'4"	95'4"	$7/8"$ (22.20 mm)	6	$5/32"$	5
	16, 19 mm		23.57 m	29.06 m	1" (25.40 mm), $1\ 1/8"$ (28.60 mm)			
4	$7/8"$	-60, 16.80 mm	87'11"	114'11"	$1\ 1/4"$ (31.80 mm)	6	$5/32"$	5
	22 mm	-76‡, 17.90 mm	26.80 m	35.03 m				
4.5	1"	-76, 17.90 mm	102'7"	126'7"	$1\ 1/4"$ (31.80 mm)	6	$5/32"$	5
	25 mm	-91, 19.50 mm, -115, 22.20 mm	31.27 m	38.58 m	$1\ 3/8"$ (34.90 mm), $1\ 9/16"$ (39.70 mm)			

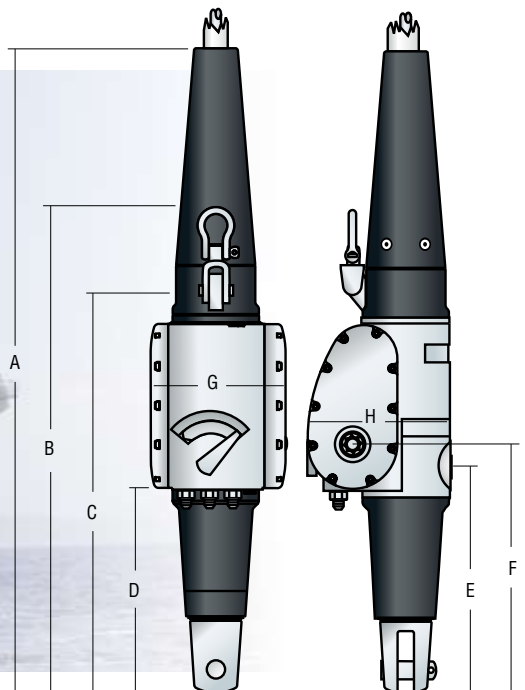
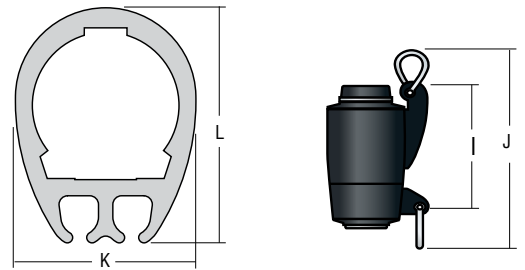
* Sizes do not apply to Dyform® wire **Contact Harken® if other than Nitronic® 50 rod. Carbon units use rod only ‡Continuous rod only. If sectional order 4.5

Furling Dimensions

Unit	A	B	C	D	E	F	G	H	I	J
3	34 1/2"	24 1/8"	20 5/8"	9 1/2"	10 3/4"	12"	7 1/4"	7 3/8"	7 3/4"	12"
	876 mm	613 mm	524 mm	241 mm	273 mm	305 mm	184 mm	200 mm	197 mm	305 mm
3.25	35"	24 3/8"	21 1/8"	10"	11 1/4"	12 1/2"	7 3/4"	7 5/8"	7 3/4"	12"
	889 mm	625 mm	537 mm	254 mm	286 mm	318 mm	197 mm	200 mm	197 mm	305 mm
3.5	37 3/4"	25"	21 1/2"	10 5/8"	11 5/8"	12 7/8"	7 7/8"	7 11/16"	9 9/16"	13 3/16"
	959 mm	635 mm	546 mm	264 mm	295 mm	327 mm	194 mm	195 mm	233 mm	335 mm
4	47 1/4"	31 3/8"	27 1/4"	14"	15"	17"	8 1/2"	9 3/8"	10 5/8"	15 1/4"
	1200 mm	797 mm	692 mm	357 mm	381 mm	432 mm	216 mm	244 mm	270 mm	387 mm
4.5	48 5/8"	32 1/2"	28 3/4"	14 7/8"	15 7/8"	17 7/8"	8 7/8"	9 5/8"	14"	18 1/8"
	1235 mm	826 mm	718 mm	378 mm	403 mm	454 mm	216 mm	244 mm	356 mm	460 mm

Foil Dimensions

Unit	K	L	Foil length	Luff tape
3	1 1/4"	1 11/16"	7'	#6
	33 mm	43 mm	2.13 m	$5/32"$ (5 mm)
3.25	1 1/4"	1 11/16"	7'	#6
	33 mm	43 mm	2.13 m	$5/32"$ (5 mm)
3.5	1 9/16"	1 5/16"	9'	#6
	40 mm	49 mm	2.74 m	$5/32"$ (5 mm)
4	2"	2 7/16"	9'	#6
	50 mm	61 mm	2.74 m	$5/32"$ (5 mm)
4.5	2 1/16"	3 3/16"	12'	#6
	68 mm	81 mm	3.66 m	$5/32"$ (5 mm)



Dragon Fly, 35m Ketch, Karatas Yacht Design

Furling Accessories

Carbo Furling Lead Block Assemblies

Harken recommends equipping every system with Carbo lead blocks for safe furling from the cockpit. The 7404 kit's lightweight, UV-stabilized Carbo blocks run exclusively on ball bearings for fast trimming under any load.

A 7402 ratchet maintains tension when spooling so the unit can furl smoothly and easily. The 7403 outboard assembly allows furling line to travel outboard of the stanchion to keep the sidedeck clear. Block mounts with a strong four-screw clamp without removing the stanchion or lifelines. Use the 7401 40 mm block on the bow pulpit as an inboard lead. Both the 7401, 7402 have ball and socket bases to align blocks for smooth leads aft. The 7404 lead block kit provides a complete system for most boats.

Stanchion Mount Bases

The 061 and 319 bases for Classic blocks leads furling line inside the stanchion.

Halyard Restrainers

Halyard restrainers prevent the halyard from wrapping around the foil on boats where the swivel isn't mounted near the masthead. Stainless steel brackets feature Hardkote-anodized aluminum sheaves that accommodate both wire and rope. Halyard restrainers should not be used unless required.

Prefeeder and Snap Shackles

Prefeeder and snap shackles facilitate fast sail changes. The 7006 prefeeder features Hardkote-anodized rollers with low-friction bushings.



7404



Part No.	Description	Sheave Ø		Weight		Max line Ø		Maximum working load		Use with	
		in	mm	oz	g	in	mm	lb	kg		
061	Stanchion mount base	—	—	2	57	—	—	350	159	7/8", 1" (22, 25 mm) stanchions**	
319	Stanchion mount double lead	1/2	38	6	170	—	—	350	159	7/8", 1" (22, 25 mm) stanchions	
448	Fixed lead for bulwark	1 1/2	38	2.1	60	3/8	10	300	136	0/1/2	
449	Fixed lead for bulwark	1 3/8	35	2.1	60	3/8	10	500	227	3/3.25	
884	Snap shackle	—	—	2.3	65	—	—	1500	680	00AL/0/1	
885	Snap shackle	—	—	5	141	—	—	2300	1040	2	
944	Halyard restrainer‡	15/16	25	3	85	—	—	—	—	00AL/0/1	
945	Halyard restrainer‡	1 1/4	31	6	170	—	—	—	—	2/3/3.25	
947	Prefeeder	—	—	1	28	—	—	—	—	All	
7006	Carbo racing foil prefeeder	—	—	3	85	—	—	—	—	All	
7401	40 mm Carbo lead block assembly	1 9/16	40	3.7	106	3/8	10	485	220	1" (25 mm) stanchions	
7402	57 mm Carbo ratchet lead block assembly	2 1/4	57	5.4	152	3/8	10	500	227	1" (25 mm) stanchions	
7403	29 mm Outboard lead block assembly	1 1/8	29	3.0	84	3/8	10	—	—	1" (25 mm) stanchions	
7404	Lead block kit***	Kit includes 3 x 7403/1 x 7401/1 x 7402/1 cleat						—		—	1" (25 mm) stanchions

‡#10 RH (5 mm) **Fits Classic Bullet/Big Bullet/2.25"/ratchet blocks with swivel post ***Max line Ø: 3/8" (10 mm); Weight: 19.2 oz (544 g)



Samba Pa Ti, TP52 — Sharon Green photo



WINCHES

Radial

REVOLUTION



HARKEN ITALY'S TECHNICAL DIRECTOR ANDREA MERELLO TELLS THE INSIDE STORY BEHIND THE DEVELOPMENT OF RADIAL WINCHES

Editor's Note: Harken entered the winch business in 1987, adapting original Barbarossa designs for Harken's standard line and adding a pure Grand Prix racing line. Grand Prix racers have always demanded constant innovation, but most sailors just wanted solid, efficient winches that would last for 30 years. Now sailors and boatbuilders want all that and more—faster installations, easier maintenance, and simpler upgrades.

“We started from a blank sheet of paper, addressing the needs of specific types of sailors.”

— Andrea Merello
Technical Director

A Blank Sheet of Paper

Radial winches were designed from the deck up with three key ideas in mind: safety and long-lasting performance, streamlined installations, and hydraulic and electric upgrades as integral parts of the design rather than afterthoughts. We started from a blank sheet of paper, addressing the needs of specific types of sailors. For example, racers mainly want the most

power for the lightest weight. A cruiser with a child on the other hand asks, “Wait a minute, if my kid puts hands on the winch while the electric power is turning it ...” They are more concerned with safety.



Radial REVOLUTION



New Product, New Process

No winch line has ever been designed with yacht builders in mind. No one asked, “What can we do to help boatbuilders who assemble in bigger quantities?” That’s because if you went to a boatbuilding yard 10 years ago, they weren’t using the highly efficient “lean” assembly systems used in automotive companies. These days, there’s a bigger focus on the time required to install a winch, the weight and ease-of-handling from a worker’s point of view, and the complexity of the assembly process.

Grip with a Twist

The grip is one of the most critical areas of a winch. With a high-friction drum there will be more line wear, so designers must balance the need for controlled easing with line longevity. We also have to consider that the winch is interfacing with a product we don’t make—we needed to find a grip that performed as well with high-tech line as with older cordage. So while we were happy with the sandblasting and knurling we had before, we wanted to find out if there was more we could do.

The new grip is very different from other winches with grooves or ribs. Other winches tend to push the line wraps up when easing. The Radial grip works more like a screw, driving the wraps down when easing to keep them on the part of the drum where you have the best control.

“The Radial grip works more like a screw, driving the wraps down when easing [for] the best control.”

— Andrea Merello
Technical Director



20 SERIES

35 SERIES

40 SERIES

46 SERIES



What Lean Manufacturing Means For You

By Adriano Rubinaccio
Production Director

When we started talking about this project our aim was to use it as an opportunity to dramatically improve not just the product, but also the process. We wanted to actually change the company's manufacturing culture so we could increase production speed and eliminate waste while maintaining—even improving—the level of quality. We adopted “lean manufacturing” principles to increase speed and implemented a very simple “zero defect” approach. No defective components or products are allowed to move to the next step in the process. Any worker can stop a product moving through the process if a problem appears, and every worker is directly responsible for customer satisfaction.

Winch #001

Product tracking is one benefit of the new process. Every molded component has a batch number, allowing for much tighter quality control. In addition, each finished product has a serial number (#001 is already in the museum). Customers calling in for support benefit directly because we can access very specific information on that customer's winch.

Winch Abuse

Each size of each winch had to pass a minimum of 13 tests covering things such as wet and dry line grip, pulling power versus number of wraps, stress deformation, ease of servicing, and safety. The most grueling test was the endurance test, where our parameter was to have little to no wear after thousands of nonstop pulls at the Maximum Working Load.

Combating Corrosion

Extensive testing helped us determine weak points for corrosion, where we needed to either replace or strengthen the materials we were using. We even removed the drum and lubrication for certain tests to see how well the internal components resisted corrosion from saltwater spray. The results of these tests are why we're using more stainless and one of several reasons we use composites in Radials. For example, the extremely strong “metal replacement” material we use in the roller bearings is completely nonreactive to saltwater and most chemicals, has very good wear and abrasion resistance under tremendous loads, doesn't require lubrication, and doesn't gall or seize. Its low friction and hardness properties make it ideal for high-efficiency bearing systems.

The Future

“No comments! No comments!” I can't go into details of course, but I can say we designed the Radial to be flexible and may add more options for end customers. Beyond the Radial, we're working on some totally new ideas at Harken for needs that aren't addressed by current winches. The prototypes haven't completed testing yet, but keep an eye out in the upcoming months.

“We implemented a very simple ‘zero defect’ approach.”

— Adriano Rubinaccio
Production Director



Complete Radial Line: aluminum and chrome; plain-top and self-tailing; electric and hydraulic; UniPower; Quattro



50 SERIES

60 SERIES

70 SERIES

80 SERIES

Radial Winches

POWERFUL, EFFICIENT, DEPENDABLE

We have reached a new level of performance with the introduction of our Radial Winch line. Details you'll like include reduced wear on the line: the gripping surfaces of Radial Winches are shaped and do not depend on friction to hold the line. Also, we've completely covered the winch tops so fingers and clothing don't get caught in moving parts. Seasonal maintenance is now exceptionally easy—the top lifts out as a single unit, making reassembly quick and mistake-free.



DETAILS MAKE THE DIFFERENCE

MULTIPLE STYLES AND FINISHES

Radial winches are available in aluminum alloy and chrome. Choices include 1-, 2-, and 3-speed self-tailing or plain-top styles; and manual, electric or hydraulic drives.

INTEGRATED STRIPPER ARM

The strong, one-piece stripper arm completely covers the winch top for a stable platform that prevents fingers and clothing from catching in moving parts—an important safety feature, particularly when operating powered winches. The arm can be adjusted to multiple positions after the winch is mounted, and is shaped to smoothly feed line into and out of the self-tailing jaws.

LIGHTWEIGHT, HIGH-STRENGTH MATERIALS

Composite roller bearings and bushings reduce friction under load, have excellent corrosion resistance, and don't require lubrication.

Snap-fit design keeps bearings captive in high-strength Delrin® cage when drum is removed for maintenance.

Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Weight savings of 25 to 50 percent compared to the Classic Harken line.

EASY TO SERVICE AND MAINTAIN

Winches can be disassembled and serviced on deck. The socket, washer, and screw-top snap-fit together to simplify maintenance and for mistake-free assembly.

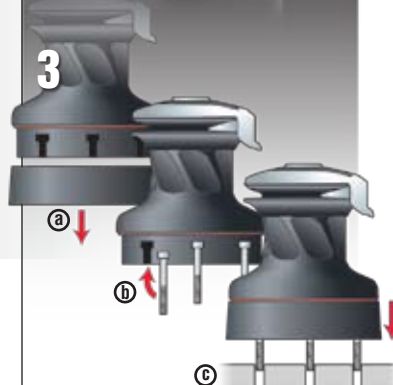
1



2



3



1. Power-Grip Jaws

Composite self-tailing jaws of long-glass fiber are shaped for easy line entry and optimum gripping power.

The spring-loaded upper jaw adjusts under line pressure to accept a variety of line sizes. Teeth grip evenly with or without load.

2. Radial Shaped Surface Grip

The drum's gripping surface is shaped for each winch size and drum material and features diagonal ribs (rather than textured abrasive materials) to maximize gripping power and greatly reduce line wear. When easing, the angle of the ribs stops line from rising, preventing overrides and providing a smooth controlled release as the line exits the winch.

3. Quick Installation

Patent-pending stud-bolt mounting system allows one person to quickly install a winch without removing the drum.

- Snap off the skirt at the base of the winch.
- Slide bolts through the slots in the winch base and snap the plastic skirt back on.
- Place the stud bolts into the predrilled holes on the deck and tighten from belowdeck.

Ordering Winches

1. Choose Drum Material, Speed & Style

Aluminum: Aluminum Radial winches in 1-, 2-, and 3-speed self-tailing or plain-top.

Aluminum Classic single-speed, plain-top winches in sizes 6 and 8; 2- and 3-speed self-tailing winches sizes 980 and up in aluminum or aluminum/stainless.

Chrome: Chrome Radial winches feature chrome drums with black composite bases and tops; 1-, 2-, and 3-speed self-tailing.

All-chrome Classic winches have chrome bases, drums, and tops; 1-, 2- and 3-speeds; self-tailing or plain-top.

Stainless Steel: Stainless steel winches have stainless bases, drums, and tops; 2-, and 3-speed self-tailing; 4-speed winches in some larger sizes.

Bronze: Bronze winches in 1-, 2- and 3-speeds; self-tailing or plain-top styles.

Carbon Fiber: Carbon fiber winches in 2- and 3-speed self-tailing or top-cleating.

To order large cruising, Megayacht and Grand Prix racing winches, please contact Harken.

Powered Winches: Choose electric or hydraulically driven winches and components. To order hydraulic winches, please contact Harken.

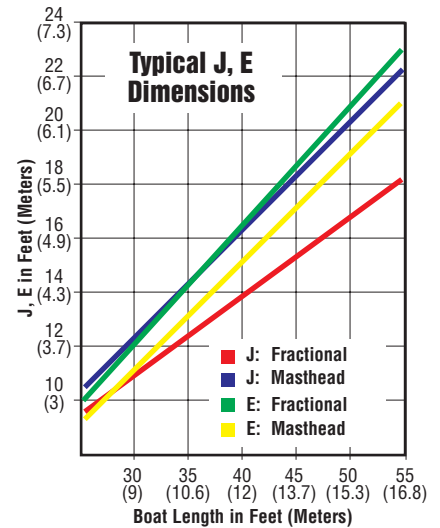
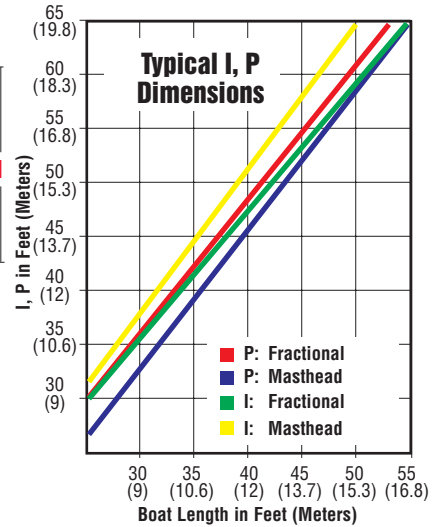
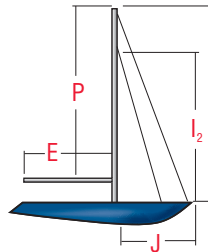
2. Determine size

The **Sizing Chart** selects winches for different applications and rig dimensions. If unsure of the dimensions, use the **Typical Dimensions** graphs. To order large Grand Prix and Megayacht winches, please contact Harken.

3. Choose Ball Bearing Handle

Plain or lock-in handles in chromed bronze, bronze and aluminum; Speedgrip and Standard styles in 8- and 10-inch (203- and 254-mm) lengths.

Rig Dimensions



Sizing Chart

Winch size	Genoa				Mainsail						Spinnaker						Staysail	
	Sheet		Halyard		End-boom mainsheet	Halyard		Reef		Sheet		Halyard		Topping lift/foreguy		Halyard		
	Max sail area 100% foretriangle (I x J x .5)		Max I		4:1 Sheet max sail area (P x E x .5)		Max P		Max P		Max sail area (I x J x 1.8)		Max I		Max I		Max I ₂	
	ft ²	m ²	ft	m	ft ²	m ²	ft	m	ft	m	ft ²	m ²	ft	m	ft	m	ft	m
6	75	7	25	7.6	—	—	25	7.6	34	10.4	500	46.5	25	7.6	35	10.7	25	7.6
8	115	10.5	36	11	150	14	32	9.8	40	12.2	800	74	36	11	44	13.4	37	11.3
16	155	14.5	42	12.8	230	21	38	11.6	46	14	975	91	42	12.8	50	15.2	42	12.8
20	155	14.5	42	12.8	230	21	38	11.6	46	14	975	91	42	12.8	50	15.2	42	12.8
32	225	21	48	14.6	335	30	43	13.1	53	16.2	1135	105	48	14.6	56	17	48	14.6
35	225	21	48	14.6	335	30	43	13.1	53	16.2	1135	105	48	14.6	56	17	48	14.6
40	270	25	54	16.5	410	38	49	14.9	57	17.4	1240	115	54	16.5	61	18.6	54	16.5
44	340	31.5	64	19.5	560	52	59	18	68	20.7	1400	130	64	19.5	73	22.2	64	19.5
46	365	34	69	21	625	58	64	19.5	73	22.2	1530	142	68	20.7	78	23.8	69	21
48	390	36	73	22.2	700	65	68	20.7	78	23.8	1750	162	74	22.5	82	25	73	22.2
50	390	36	73	22.2	700	65	68	20.7	78	23.8	1750	162	74	22.5	82	25	73	22.2
53	435	40	77	23.5	765	72	73	22.2	85	25.9	1960	182	79	24	90	27.4	77	23.5
60	525	49	82	25	850	79	80	24.4	92	28	2200	204	85	25.9	98	29.9	82	25
70	590	55	86	26.2	1000	93	85	25.9	97	29.6	3000	279	91	27.7	108	33	86	26.2
74	950	88	100	30.5	1350	125	102	31.1	—	—	—	—	105	32	—	—	—	—
80	950	88	100	30.5	1350	125	102	31.1	—	—	—	—	105	32	—	—	—	—

Aluminum Radial

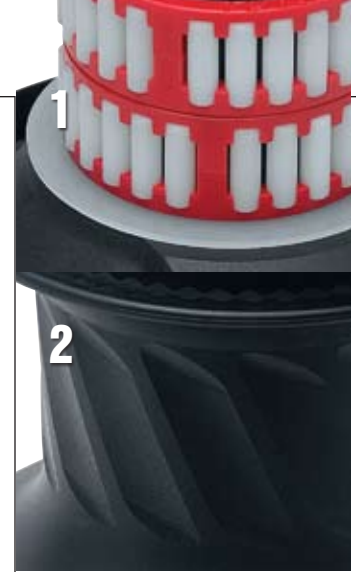
Aluminum Radial winches are designed for sailors who want lightweight, extremely strong winches with plenty of power.

The drum's gripping surface is shaped for each winch size and drum material and features diagonal ribs (rather than textured abrasive materials) to maximize gripping power and greatly reduce line wear. When easing, the angle of the ribs stops line from rising, preventing overrides and providing a smooth controlled release as the line exits the winch. Aluminum drums and high-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Small boat winches are available in single speed. Self-tailing models sizes 60 and up come in two or three speeds.



Series 20 Radial winches use composite bushings to handle high loads in a small package.



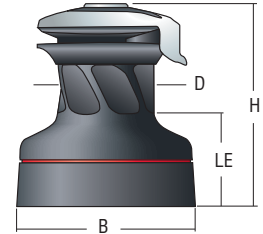
1. Roller Bearings

Snap-fit design keeps bearings captive in a high-strength Delrin® cage when drum is removed for maintenance.

Composite roller bearings don't require lubrication.

2. Gripping surface

Each winch size has its own radial grip shape to optimize holding power and for smooth, controlled easing.



Part No.	Drum (D) in mm	Base (B) in mm	Height (H)		Weight		Line entry height (LE)		Line Ø (Min - Max)		Fastener circle		Fasteners (SH or HH)		Gear ratio			Power ratio				
			in	mm	lb	kg	in	mm	in	mm	in	mm	in	mm	1	2	3	1	2	3		
Classic Plain-Top																						
B6A	2 ³ / ₈	60	3 ¹ / ₁₆	90	3 ¹ / ₄	82	1.5	.7	1 ¹ / ₁₆	33	—	—	2 ¹ / ₁₆	65	6 x 1/4*	6 x 6*	1	—	—	8.4	—	—
B8A	2 ¹¹ / ₁₆	68	4 ¹ / ₂	115	3 ⁹ / ₁₆	90	2.4	1.1	1 ¹ / ₂	38	—	—	3 ¹ / ₁₆	90	4 x 5/16*	4 x 8*	1	—	—	7.5	—	—
Radial Plain-Top																						
20.2PTA	2 ¹ / ₈	73	5 ¹ / ₈	137	5 ¹ / ₁₆	128	4.4	2.0	2 ⁵ / ₈	61	—	—	4 ³ / ₈	110	5 x 1/4	5 x 6	1	2.76	—	6.95	19.20	—
35.2PTA	3 ¹ / ₈	80	5 ⁷ / ₈	149	5 ¹³ / ₁₆	148	6.8	3.1	3 ¹ / ₈	79	—	—	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	5.65	—	13.50	35.90	—
40.2PTA	3 ¹ / ₈	80	6 ¹ / ₁₆	157	6 ¹ / ₈	175	8.4	3.8	3 ¹ / ₄	82	—	—	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	6.28	—	13.50	39.90	—
46.2PTA	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹ / ₁₆	179	11.3	5.1	3 ³ / ₁₆	90	—	—	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2PTA	4 ⁵ / ₁₆	110	7 ⁷ / ₈	194	7 ¹ / ₂	190	13.0	5.9	3 ⁷ / ₈	97	—	—	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.40	10.90	—	10.90	50.40	—
Radial Self-Tailing																						
20.2STA	2 ¹ / ₈	73	5 ¹ / ₈	137	5 ¹³ / ₁₆	148	5.3	2.4	2 ⁵ / ₈	61	1/4 - 1/2	6 - 12	4 ³ / ₈	110	5 x 1/4	5 x 6	2.76	—	—	19.20	—	—
35.2STA	3 ¹ / ₈	80	5 ⁷ / ₈	149	6 ¹¹ / ₁₆	170	7.9	3.6	3 ¹ / ₈	79	5/16 - 1/2	8 - 12	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	5.65	—	13.50	35.90	—
40.2STA	3 ¹ / ₈	80	6 ¹ / ₁₆	157	6 ¹ / ₈	175	8.4	3.8	3 ¹ / ₄	82	5/16 - 1/2	8 - 12	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	6.28	—	13.50	39.90	—
46.2STA	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹⁵ / ₁₆	201	11.5	5.2	3 ³ / ₁₆	90	9/16 - 5/8	8 - 14	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2STA	4 ⁵ / ₁₆	110	7 ⁷ / ₈	194	8 ¹ / ₈	206	13.2	6.0	3 ⁷ / ₈	97	5/16 - 9/16	8 - 14	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STA	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	22.5	10.2	4 ⁷ / ₁₆	116	5/16 - 5/8	8 - 16	8	204	6 x 5/16	6 x 8	4.80	14.40	—	20.30	61.00	—
60.3STA	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	25.8	11.7	4 ⁷ / ₁₆	116	5/16 - 5/8	8 - 16	8	204	6 x 5/16	6 x 8	2.20	4.80	14.40	9.20	20.30	61.00
70.2STA	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	24.9	11.3	4 ¹ / ₂	115	3/8 - 11/16	10 - 18	8 ¹ / ₈	205	6 x 5/16	6 x 8	5.70	18.50	—	22.20	72.00	—
70.3STA	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	28.3	12.8	4 ¹ / ₂	115	3/8 - 11/16	10 - 18	8 ¹ / ₈	205	6 x 5/16	6 x 8	2.30	5.70	18.50	9.00	22.20	72.00
80.2STA	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	46.8	21.2	6 ¹ / ₁₆	164	3/8 - 13/16	10 - 20	9 ¹ / ₁₆	233	8 x 3/8	8 x 10	9.40	28.10	—	32.10	93.00	—
80.3STA	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	50.1	22.7	6 ¹ / ₁₆	164	3/8 - 13/16	10 - 20	9 ¹ / ₁₆	233	8 x 3/8	8 x 10	2.23	9.40	28.10	6.50	32.10	93.00

*Classic plain-top winches use flat head (FH) fasteners

Aluminum Radial Quattro

The patented Quattro is an innovative all-in-one winch used on boats that require extremely fast winches to handle large asymmetrical spinnakers, but also need power to trim the genoa upwind.

Radial Quattro winches are offered in lightweight aluminum alloy and feature composite self-tailing jaws and skirt to save weight. High-strength composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

The Quattro features two drum diameters and four line speeds. The upper drum features Harken's new shaped radial grip for reduced sheet wear and controlled easing. The wide-diameter lower drum has a sand-blasted gripping surface used for fast trimming.



40STQ
46STQ

Team Heiner 38, VO70 — Marc Antony Taminau photo



The upper drum's gripping surface is shaped for each winch size to reduce line wear and to provide maximum gripping power for smooth, controlled easing.

Part No.	Gear ratio		Power ratio		Fastener circle		Fasteners (SH or HH)	
	1	2	1	2	in	mm	in	mm
40STQ	2.13	6.28	13.50	39.90	4 ⁷ / ₈	123	5 x 1/4	5 x M6
46STQ	2.30	9.17	11.70	46.50	5 ⁷ / ₈	150	5 x 5/16	5 x M8

Part No.	Drum Ø				Base Ø		Height	Weight	Line Ø			Line entry height						
	Lower		Upper		in	mm			in	mm	in	mm	Lower	Upper				
40STQ	6 ¹ / ₁₆	154	3 ¹ / ₈	80	7 ¹ / ₈	180	6 ⁷ / ₈	175	10.2	4.6	5/16	8	1/2	12	1 ⁵ / ₁₆	34	3/4	82
46STQ	7 ¹³ / ₃₂	188	3 ¹⁵ / ₁₆	100	8 ¹ / ₂	218	7 ¹⁵ / ₁₆	201	13.7	6.2	5/16	8	9/16	14	1 ⁵ / ₁₆	23	3 ³ / ₁₆	90

NEW

B1000.2STA, B1000.3STA, B1145.3STA

Aluminum Combinations

These self-tailing winches raise and trim sails on the largest yachts. They are available in 2 or 3 speeds, and come in marine-grade aluminum, or with aluminum base, stainless drum, and aluminum top combinations to maximize durability and corrosion resistance. Load-carrying gears are 17-4PH stainless steel. Self-tailing jaws accept a wide range of line sizes.

Modern-style winches integrate the stripper support arm into the self-tailing jaw assembly for a clean, smooth look. Classic winches are traditionally styled with a one-piece stripper arm that attaches to the top of the winch, encompassing the self-tailing jaws.

Winches have power ratios of up to 100:1 and are often used with either hydraulic or electric drives. The 3-speed 1140ST features a backwind to ease the loads on the winch before the sheet is released.

Hanuman (Endeavour II) — On Deck photo



B990.2STA
B990.3STA

B1145.3STA

MODERN SELF-TAILING



B1150STASA



B1120STASA



B1000.2STA
B1000.3STA

CLASSIC SELF-TAILING

B990, B1130 and B1145 are available in grey-anodized aluminum by special order. Contact Harken Italy.

Part No.	Ø		Base (B)		Height (H)		Weight		Line entry height (LE)		Fastener circle		Fasteners		Gear ratio			Power ratio		
	in	mm	in	mm	in	mm	lb	kg	in	mm	in	mm	in	mm	1	2	3	1	2	3
Classic Self-Tailing																				
B1000.2STA	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	13 ⁹ / ₁₆	335	46.8	21.2	6 ⁷ / ₁₆	164	9 ⁹ / ₁₆	233	8 x 3/8 SH/HH	8 x 10 SH/HH	9.40	28.10	—	32.10	93.00	—
B1000.3STA	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	13 ⁹ / ₁₆	335	50.1	22.7	6 ⁷ / ₁₆	164	9 ⁹ / ₁₆	233	8 x 3/8 SH/HH	8 x 10 SH/HH	2.23	9.40	28.10	6.50	32.10	93.00
B1120STASA	11 ¹³ / ₁₆	300	16 ¹⁵ / ₃₂	418	14 ⁹ / ₁₆	370	127.8	58	6 ¹³ / ₃₂	163	14 ³ / ₈	365	12 x 3/8 SH	12 x 10 SH	2.0	11.4	33.3	3.4	19.3	56.3
B1140STASA	14 ⁹ / ₁₆	360	22 ¹ / ₈	562	18 ⁹ / ₁₆	462	299.9	136	8 ¹ / ₃₂	212	18 ¹ / ₈	460	8 x 1/2 SH	8 x 12 SH	2.9	11.6	42.6	4.0	16.4	60.1
B1150STASA	16 ⁶ / ₃₂	410	25 ³ / ₁₆	640	19 ³ / ₄	502	485	220	8 ² / ₃₂	225	22 ¹ / ₁₆	560	12 x 1/2 SH	12 x 12 SH	3.4	15.3	64.9	4.2	19	80.4
Modern Self-Tailing																				
B990.2ST*	8	203	11 ¹ / ₃₂	280	11 ³ / ₁₆	294	43.2	19.6	5 ³¹ / ₃₂	151.7	9 ³ / ₁₆	233	8 x 3/8 SH	8 x 10 SH	9.9	40.0	—	24.8	100	—
B990.3ST*	8	203	11 ¹ / ₃₂	280	11 ³ / ₁₆	294	43.2	19.6	5 ³¹ / ₃₂	151.7	9 ³ / ₁₆	233	8 x 3/8 SH	8 x 10 SH	1.0	9.9	40.0	2.5	24.8	100
B1110STASA	10 ³¹ / ₃₂	279	13 ¹ / ₃₂	339	9 ³ / ₄	246.5	—	—	3 ¹ / ₂	89	10 ²⁹ / ₃₂	272	8 x 3/8 SH	8 x 10 SH	1.0	9.43	43.6	1.8	17.2	79.4
B1130.3ST*	12 ³ / ₄	324	16 ³ / ₃₂	409	12 ¹ / ₈	308	86.0	39.0	4 ¹ / ₃₂	115	12 ³ / ₄	324	9 x 1/2 SH	9 x 12 SH	1.0	10.8	55.2	1.6	16.9	86.6
B1135.3STASA	12 ³ / ₄	324	16 ³ / ₃₂	410	12 ¹ / ₈	308	220.5	100	4 ¹ / ₃₂	110	12 ³ / ₄	324	9 x 1/2 SH	9 x 12 SH	1.1	10.8	55.2	1.6	16.9	86.5
B1145.3ST*	14 ¹ / ₄	362	21 ³ / ₁₆	538	16 ¹ / ₂	419	192.9	87.5	8 ³ / ₁₆	208	17 ³ / ₄	450	14 x 1/2 SH	14 x 12 SH	2.9	11.9	53.6	4.1	16.6	75.6

*Available in black-anodized or grey-anodized aluminum. For black add A to part number. For grey-anodized add GGG

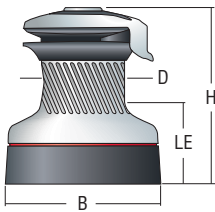
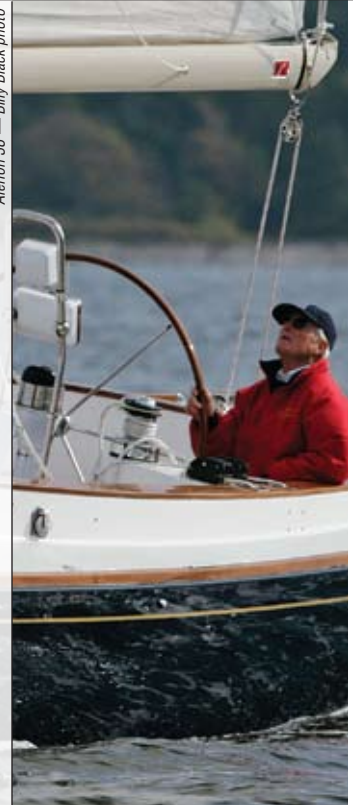
Chrome Radial

Chrome Radial Winches are designed for sailors that want the elegance of mirror-polished chrome to enhance their yacht's lines. They feature chrome drums, black composite bases and tops, and come in 1-, 2-, or 3-speed self-tailing styles.

The drum's gripping surface is shaped for each winch size and drum material and features diagonal ribs (rather than textured abrasive materials) to maximize gripping power and greatly reduce line wear. When easing, the angle of the ribs stops line from rising, preventing overrides and providing a smooth controlled release as the line exits the winch. High-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Small Boat winches are available in single speed. Self-tailing models sizes 60 and up come in two or three speeds.

Alerion 38 — Billy Black photo



WINCH Q&A

WHY DOES MY CHROME RADIAL WINCH HAVE A DIFFERENT GRIP PATTERN THAN AN ALUMINUM RADIAL?

Chrome has a more slippery finish than aluminum, so the ribs on chrome Radial winches are spaced closer together to increase friction. This optimizes your grip for trimming as well as for easing the sail in a smooth, controlled manner.

Part No.	Drum (D)		Base (B)		Height (H)		Weight		Line entry height (LE)		Line Ø (Min - Max)		Fastener circle		Fasteners (SH or HH)		Gear ratio			Power ratio		
	in	mm	in	mm	in	mm	lb	kg	in	mm	in	mm	in	mm	in	mm	1	2	3	1	2	3
20STC	2 ⁷ / ₈	73	5 ⁵ / ₈	137	5 ¹³ / ₁₆	148	7.5	3.4	2 ⁵ / ₈	61	1 ¹ / ₄ - 1 ¹ / ₂	6 - 12	4 ³ / ₈	110	5 x 1 ¹ / ₄	5 x 6	2.76	—	—	19.20	—	—
35.2STC	3 ¹ / ₈	80	5 ⁷ / ₈	149	6 ¹¹ / ₁₆	170	10.6	4.8	3 ¹ / ₈	79	5 ⁷ / ₁₆ - 1 ¹ / ₂	8 - 12	4 ⁷ / ₈	123	5 x 1 ¹ / ₄	5 x 6	2.13	5.65	—	13.50	35.90	—
40.2STC	3 ¹ / ₈	80	6 ³ / ₁₆	157	6 ⁷ / ₈	175	11.9	5.4	3 ³ / ₄	82	5 ⁷ / ₁₆ - 1 ¹ / ₂	8 - 12	4 ⁷ / ₈	123	5 x 1 ¹ / ₄	5 x 6	2.13	6.28	—	13.50	39.90	—
46.2STC	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹⁵ / ₁₆	201	17.2	7.8	3 ⁹ / ₁₆	90	5 ⁷ / ₁₆ - 3 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 3 ¹ / ₁₆	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2STC	4 ⁵ / ₁₆	110	7 ⁷ / ₈	194	8 ³ / ₈	206	20.3	9.2	3 ⁷ / ₈	97	5 ⁷ / ₁₆ - 3 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 3 ¹ / ₁₆	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STC	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	30.7	13.9	4 ¹ / ₁₆	116	5 ⁷ / ₁₆ - 5 ⁷ / ₈	8 - 16	8	204	6 x 3 ¹ / ₁₆	6 x 8	4.80	14.40	—	20.30	61.00	—
60.3STC	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	34.0	15.4	4 ¹ / ₁₆	116	5 ⁷ / ₁₆ - 5 ⁷ / ₈	8 - 16	8	204	6 x 3 ¹ / ₁₆	6 x 8	2.20	4.80	14.40	9.20	20.30	61.00
70.2STC	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	33.3	15.1	4 ¹ / ₂	115	3 ⁷ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 3 ¹ / ₁₆	6 x 8	5.70	18.50	—	22.20	72.00	—
70.3STC	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	36.6	16.6	4 ¹ / ₂	115	3 ⁷ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 3 ¹ / ₁₆	6 x 8	2.30	5.70	18.50	9.00	22.20	72.00
80.2STC	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	63.4	28.7	6 ⁷ / ₁₆	164	3 ⁷ / ₈ - 1 ¹ / ₁₆	10 - 20	9 ⁷ / ₁₆	233	8 x 3 ¹ / ₈	8 x 10	9.40	28.10	—	32.10	93.00	—
80.3STC	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	66.7	30.2	6 ⁷ / ₁₆	164	3 ⁷ / ₈ - 1 ¹ / ₁₆	10 - 20	9 ⁷ / ₁₆	233	8 x 3 ¹ / ₈	8 x 10	2.23	9.40	28.10	6.50	32.10	93.00

Stainless Steel & All-Chrome

Stainless steel and all-chrome winches combine the elegance of highly-polished finishes with the dependable, low-friction pulling power of Harken gearing systems.

Stainless steel self-tailing winches come in 2- or 3-speed self-tailing and feature polished marine-grade stainless bases, drums and tops to maximize durability and corrosion resistance.

All-chrome winches come in 1-, 2-, and 3-speeds, in self-tailing or plain-top styles, with polished marine-grade chrome bases, drums, and tops. Single-speed, plain-top chrome winches use a Delrin® sleeve bearing.

Both stainless steel and all-chrome winches feature 17-4PH stainless steel gears for strength. 2- and 3-speed self-tailing winches feature stainless steel roller bearings for strength and durability.

Power ratios range from 40:1 in the 2-speed winches to 80:1 in the wide-body three-speed models, which are often used with electric or hydraulic drives to handle sheets and halyards on the largest yachts. The wide drums provide extra surface area to hold high loads and for fast retrieval speed when sheeting. Wide-body modern-style winches integrate the stripper support arm into the self-tailing jaw assembly for a clean, smooth look. Classic winches are traditionally-styled with a one-piece stripper arm that attaches to the top of the winch, encompassing the self-tailing jaws.

Tartan 4300 — Tartan Yachts photo



B6CCA
B8CCA

B32.2CCC

B44.2ST

B48.2ST

B60.2ST
B60.3ST

PLAIN-TOP CHROME

CLASSIC SELF-TAILING CHROME OR STAINLESS STEEL



Self-tailing jaws accept a wide range of line sizes



B1110ST

B1130ST
B1135ST

B1140ST

MODERN SELF-TAILING STAINLESS STEEL

CLASSIC SELF-TAILING STAINLESS STEEL

Bronze

Bronze winches enhance your yacht's classic look, while providing the low-friction pulling power of Harken's gearing systems. They come in 1, 2, and 3 speeds, with wide or standard drums, and in both plain-top and self-tailing configurations.

Marine-grade, polished-bronze materials maximize durability and corrosion resistance. Strong load-carrying gears are 17-4PH stainless steel for strength. Stainless self-tailing jaws accept a wide range of line sizes.

Single-speed, plain-top winches use Delrin® bearing sleeves. 2- and 3-speed winches feature 17-4PH stainless steel roller bearings for strength and durability.

Power ratios range from 40:1 in the 2-speed winches to 80:1 in the wide-body 3-speed models which are often used with electric or hydraulic drives to handle sheet and halyards on the largest yachts. The wide drums provide extra surface area to hold high loads and fast retrieval speed when sheeting.

Cotton Blossom II, C-Boat, Johan Anker, Jensen Shipyard — Bob Griesser photo



B6BBA
B8BBA

PLAIN-TOP



B718BBB



B1111.3PTBBB



B44.2STBBB



B48.2STBBB



B74.2STBBB
B74.3STBBB

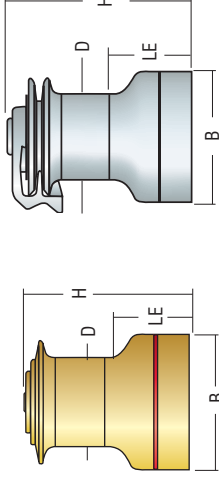


B980.2STBBB
B980.3STBBB

SELF-TAILING

Stainless Steel, All-Chrome, & Bronze

Ordering Information:
Specify material by adding
letter code to part number.
See chart for availability.



Part No.	Materials			Drum (D)	Base (B)	Height (H)		CCA/BBA	CCS/CC/BBB	SSS	Line entry height (LE)		Fasteners			Gear ratio			Power ratio						
	CCA	CCS	SSS			BBA	BBB				in	mm	in	mm	in	mm	in	mm	1	2	3	1	2	3	
Classic Plain-Top																									
B6	✓	—	—	✓	2 3/16	60	3 3/16	90	3 3/4	82	3 3/4	—	1 9/16	33	2 1/8	65	6 x 1/4 FH	6 x 6 FH	1	—	—	8.4	—		
B8	✓	—	—	✓	2 1/8	68	4 1/2	115	3 11/16	90	4 3/8	—	1 1/2	38	3 3/16	90	4 x 3/8 FH	4 x 8 FH	1	—	—	7.5	—		
B16.2	—	✓	—	—	2 3/4	70	4 3/4	120	4 1/8	112	—	—	2	50	3 3/16	90	5 x 1/4 FH	5 x 6 FH	1	2.3	—	7.2	16.5		
B30.2	—	✓	—	—	2 9/16	74	5 1/32	137	5 1/4	134	—	—	2 3/4	70	4 1/8	105	5 x 1/4 FH	5 x 6 FH	1	4.7	—	6.8	32.2		
B40.2	—	✓	—	—	3	76	5 1/16	145	5 9/16	148	—	—	2 3/4	70	4 1/8	112	5 x 1/4 FH	5 x 6 FH	1	6.1	—	6.7	40.7		
B980.2	—	✓	—	—	6 1/8	175	10 7/16	265	11 3/4	298	—	—	5 13/16	148	8 1/8	225	6 x 3/8 FH	6 x 10 FH	7.3	27.8	—	21.2	80.7		
B980.3	—	✓	—	—	6 1/8	175	10 7/16	265	11 3/4	298	—	—	5 13/16	148	8 1/8	225	6 x 3/8 FH	6 x 10 FH	2.75	7.3	27.8	8	21.2	80.7	
B1111.3PT	—	✓	—	—	11 1/32	280	14 3/16	360	9 7/32	236	—	—	3 5/8	80	10 5/16	278	8 x 3/8 SH	8 x 10 SH	1	9.7	44.7	1.8	17.6	81.1	
Classic Self-Tailing																									
B16ST	—	✓	—	✓	2 3/4	70	4 3/4	120	5 1/8	142	—	—	1/4 - 1/2	2	50	3 3/16	90	5 x 1/4 FH	5 x 6 FH	2.3	—	—	16.6	—	
B32.2ST	—	✓	—	✓	2 9/16	74	5 1/8	139	6 1/8	164	—	—	3/16 - 1/2	8-12	2 3/4	70	4 1/8	105	5 x 1/4 FH	5 x 6 FH	2.4	4.7	—	16.4	32.2
B40.2ST	—	✓	—	✓	3	76	6	152	6 1/8	176	—	—	1/2	2 3/4	70	4 1/8	112	5 x 1/4 FH	5 x 6 FH	2	6	—	13.4	40.1	
B44.2ST	—	✓	—	✓	3 3/8	92	6 3/4	172	7 3/4	196	—	—	5/16 - 9/16	8-14	3 3/8	85	5 1/8	128	5 x 3/8 FH	5 x 8 FH	2.5	8	—	13.8	44.2
B46.2ST	—	✓	—	✓	4	102	6 15/16	176	8 3/8	210	—	—	5/16 - 9/16	8-14	3 3/8	90	5 1/2	140	5 x 3/8 FH	5 x 8 FH	2.5	9.1	—	12.4	45.3
B48.2ST	—	✓	—	✓	4	102	7 1/16	189	8 3/4	222	—	—	5/16 - 9/16	8-14	3 3/8	100	6 1/8	155	6 x 3/8 FH	6 x 8 FH	2.5	9.7	—	12.4	48.3
B53.2ST	—	✓	—	✓	4 7/16	112	8 1/16	221	9 1/8	245	—	—	5/16 - 9/16	8-14	4 3/8	105	7 1/8	180	6 x 3/8 FH	6 x 8 FH	3.1	12	—	14	53
B60.2ST	—	✓	—	✓	4 3/4	120	8 7/8	225	10 3/8	270	—	—	5/16 - 9/16	8-16	4 15/16	125	7 1/8	195	6 x 3/8 FH	6 x 8 FH	4.8	14.4	—	20.3	61
B60.3ST	—	✓	—	✓	4 3/4	120	8 7/8	225	10 3/8	270	—	—	5/16 - 9/16	8-16	4 15/16	125	7 1/8	195	6 x 3/8 FH	6 x 8 FH	2.2	4.8	14.4	9.3	20.3
B70.2ST	—	✓	—	✓	5 1/8	130	9 5/8	245	12 1/8	308	—	—	3/8 - 3/4	10-18	5 1/8	150	8 1/4	210	5 x 3/8 FH	5 x 10 FH	5.7	18	—	22.3	70
B70.3ST	—	✓	—	✓	5 1/8	130	9 5/8	245	12 1/8	308	—	—	3/8 - 3/4	10-18	5 1/8	150	8 1/4	210	5 x 3/8 FH	5 x 10 FH	2.7	5.7	18	10.6	22.3
B74.2ST	—	✓	—	✓	5 7/8	150	10 7/16	265	11 3/8	300	—	—	3/8 - 13/16	10-20	5 7/8	150	8 3/8	225	6 x 3/8 FH	6 x 10 FH	7.3	21.7	—	24.7	74
B74.3ST	—	✓	—	✓	5 7/8	150	10 7/16	265	11 3/8	300	—	—	3/8 - 13/16	10-20	5 7/8	150	8 3/8	225	6 x 3/8 FH	6 x 10 FH	2.7	7.3	21.7	9.5	24.7
B980.2ST	—	✓	—	✓	6 1/8	175	10 7/16	265	11 3/8	300	—	—	3/8 - 13/16	10-20	5 7/8	148	8 3/8	225	6 x 3/8 FH	6 x 10 FH	7.3	27.8	—	21.2	80.7
B980.3ST	—	✓	—	✓	6 1/8	175	10 7/16	265	11 3/8	300	—	—	3/8 - 13/16	10-20	5 7/8	148	8 3/8	225	6 x 3/8 FH	6 x 10 FH	2.75	7.3	27.8	8	21.2
B1120ST	—	✓	—	✓	—	—	—	—	—	—	—	—	9/16 - 1	14-25	6 13/32	163	14 3/8	365	12 x 3/8 SH	12 x 10 SH	2	11.4	33.3	3.4	19.3
B1140ST	—	✓	—	✓	—	—	—	—	—	—	—	—	3/4 - 1 1/4	19-32	8 1/32	212	18 1/8	460	8 x 1/2 SH	8 x 12 SH	2.9	11.6	42.6	4	16.4
B1150ST	—	✓	—	✓	—	—	—	—	—	—	—	—	9/16 - 1	14-25	8 27/32	225	22 1/8	560	12 x 1/2 SH	12 x 12 SH	3.4	15.3	64.9	4.2	19
Modern Self-Tailing																									
B1110ST	—	✓	—	✓	—	—	—	—	—	—	—	—	7/4 - 3/8	16-22	3 1/2	89	10 3/32	272	8 x 3/8 SH	8 x 10 SH	1	9.43	43.6	1.8	17.2
B1130.3ST*	—	✓	—	✓	—	—	—	—	—	—	—	—	3/8 - 1	16-25	4 17/32	115	12 3/4	324	9 x 1/2 SH	9 x 12 SH	1	10.8	55.2	1.6	16.9
B1135.3ST*	—	✓	—	✓	—	—	—	—	—	—	—	—	3/8 - 1	16-25	4 17/32	115	12 3/4	324	9 x 1/2 SH	9 x 12 SH	1	10.8	55.2	1.6	16.9

*4-Speed option available. Contact Harken

NEW

B500.2STR, B650.3STR, B650.3TCR

Carbon Fiber

Carbon winches are standard in many racing classes and are also the choice of performance-oriented fast cruisers.

Winches feature carbon skirts and tops, aluminum drums, and strong composite jaws with one-piece sculpted line guide and peeler. PEEK® roller bearings are low-maintenance, reliable, and efficient. They ride in large-diameter cages, allowing more bearings to carry the load. Stainless steel drive gears are strong and durable. The AC versions of the 65.3ST and 65.2ST winches feature titanium gears for extremely high strength-to-weight ratios and exceptional resistance to corrosion.

Carbon winches come with up to three speeds and can be driven by handle, pedestal, or by electric or hydraulic motors. Harken's 50.3STR is the smallest three-speed direct drive self-tailing winch in the industry.

Options include self-tailing arms, top cleats, free-spinning or ratcheting base sheave additions, and left-handed rotation.

If class rules dictate, winches are also available in all-aluminum with stainless steel gears.



B50.3STR



B50.2STR



B500.3TCR



B500.2STR



B55.3TCR



B55.2STR



B650.3TCR



B650.3STR



B65.3TCR



B65.3STAC



B65.2STAC

VEOLIA



NEW

B1145.3STR, B1145.3TCR

Carbon Fiber

These powerful carbon winches are aboard large megayachts, performance cruisers, and racing monohulls and multihulls over 60 feet (18 m).

Winches feature carbon skirts and tops, aluminum drums, and strong composite jaws with one-piece sculpted line guide and peeler. PEEK® roller bearings are low-maintenance, reliable and efficient. They ride in large-diameter cages, allowing more bearings to carry the load. Stainless steel drive gears are strong and durable. The AC versions of the 1111PT and 990.3ST winches feature titanium gears for extremely high strength-to-weight ratios and exceptional resistance to corrosion.

Drives are pedestal, electric or hydraulic. Wide-diameter drums provide extra surface area to hold line securely under high loads. Fewer wraps speed line retrieval when sheeting.

Other options include self-tailing, top cleats, four speeds, free-spinning or ratcheting base sheave additions, and left-handed rotation.

If class rules dictate, winches are also available in all-aluminum with stainless steel gears.



B990.3TCR



B990.3STAC



B880.3VTOP



B880.3STR



B1111.3PTAC



B1111.3STR



B1125STR



B1130.3TCR



B1130.3STR



B1135.3STR

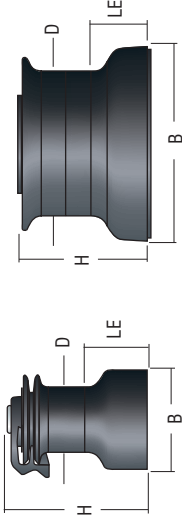


B1145.3TCR



B1145.3STR

Carbon Fiber



Use base sheaves for cross-sheeting and lazy sheets. Availability varies by winch size.

Base riser required to mount B50, B55, and B65 winches above deck. Specify above deck or flush deck version when ordering.

Part No.	Drum (D)		Base (B)		Height (H)	Weight	Line Ø		Line entry height (LE)		Fastener circle		Fasteners				Gear ratio				Power ratio					
	in	mm	in	mm			Min	Max	in	mm	in	mm	in	mm	1	2	3	4	1	2	3	4	1	2	3	4
B480.0TCR	4 ³ / ₄	120	7 ¹³ / ₃₂	188	8 ⁷ / ₁₆	208	17.4	7.9	—	—	3 ⁵ / ₁₆	92	6 ¹ / ₈	155	6 x 5/16 HH	6 x 8 HH	1:1	2.5:1	10:1	—	—	4.2:1	10.8:1	43:1	—	—
B50.2STR	4 ⁹ / ₁₆	116	7 ¹ / ₄	184	6 ⁵ / ₈	168	11.7	5.3	5/16	8	9/16	14	2 ³ / ₁₆	65	6 ⁵ / ₃₂	164	6 x 5/16 FH	6 x 8 FH	2.7:1	11.4:1	—	—	11.7:1	50.7:1	—	—
B50.3STR	4 ⁹ / ₁₆	116	7 ¹ / ₄	184	6 ⁷ / ₈	175	13.7	6.2	5/16	8	9/16	14	2 ⁹ / ₁₆	65	6 ¹³ / ₃₂	164	6 x 5/16 FH	6 x 8 FH	1:1	2.7:1	11.4:1	—	—	4.4:1	11.7:1	49.8:1
B500.2STR	4 ⁹ / ₁₆	116	7 ¹ / ₄	184	6 ⁵ / ₈	168	11.0	5.0	5/16	8	9/16	14	2 ³ / ₁₆	65	6 ⁵ / ₃₂	164	6 x 5/16 FH	6 x 8 FH	2.7:1	11.4:1	—	—	—	11.7:1	50.7:1	—
B500.3TCR	5 ¹ / ₈	130	7 ¹ / ₄	184	6 ⁵ / ₈	175	13.7	6.2	5/16	8	9/16	14	2 ³ / ₁₆	55	6 ⁵ / ₃₂	164	6 x 5/16 FH	6 x 8 FH	1:1	2.7:1	11.4:1	—	—	3.9:1	10.4:1	44.5:1
B530.0TCR	5 ¹ / ₈	130	8 ⁹ / ₁₆	218	9 ⁹ / ₁₆	243	23.8	10.8	—	—	—	—	4 ³ / ₈	111	7 ³ / ₃₂	180	6 x 5/16 HH	6 x 8 HH	1:1	3.1:1	12:1	—	—	3.9:1	12.1:1	47:1
B55.2STR	5 ⁷ / ₈	149	10	255	7 ¹³ / ₃₂	199	20.9	9.5	5/16	8	5/8	16	3 ¹ / ₄	83	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	4.6:1	16.3:1	—	—	—	15.7:1	55.6:1	—
B55.2STAC	5 ⁷ / ₈	149	10	255	7 ¹⁹ / ₃₂	199	—	—	5/16	8	5/8	16	3 ¹ / ₃₂	85	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	4.6:1	16.3:1	—	—	—	15.7:1	55.6:1	—
B55.3STR	5 ⁷ / ₈	149	10	255	8 ²³ / ₃₂	226	26	11.8	5/16	8	5/8	16	3 ¹ / ₄	83	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	1:1	4.6:1	16.3:1	—	—	3.4:1	15.7:1	55.6:1
B55.3TCR	5 ⁷ / ₈	149	10	255	8 ²³ / ₃₂	226	25.4	11.5	—	—	—	—	3 ¹ / ₄	83	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	1:1	4.6:1	16.3:1	—	—	3.4:1	15.7:1	55.6:1
B65.2STR	5 ⁷ / ₈	149	10	255	7 ¹³ / ₃₂	199	20.9	9.5	5/16	8	5/8	16	3 ¹ / ₄	83	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	4.6:1	19.2:1	—	—	—	15.7:1	65.5:1	—
B65.2STAC	5 ⁷ / ₈	149	10	255	7 ¹⁹ / ₃₂	199	—	—	5/16	8	5/8	16	3 ¹ / ₃₂	85	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	4.6:1	19.2:1	—	—	—	15.7:1	65.5:1	—
B65.3STR	5 ⁷ / ₈	149	10	255	8 ²³ / ₃₂	226	26	11.8	5/16	8	5/8	16	3 ¹ / ₄	83	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	1:1	4.6:1	19.2:1	—	—	3.4:1	15.7:1	65.5:1
B65.3TCR	5 ⁷ / ₈	149	10	255	8 ²³ / ₃₂	226	25.4	11.5	—	—	—	—	3 ¹ / ₄	83	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	1:1	4.6:1	19.2:1	—	—	3.4:1	15.7:1	65.5:1
B650.3TCR	5 ⁷ / ₈	149	10	255	8 ²³ / ₃₂	226	20.6	9.3	—	—	—	—	3 ¹ / ₄	83	8 ⁹ / ₃₂	226	6 x 5/16 FH	6 x 8 FH	1:1	4.6:1	19.2:1	—	—	3.4:1	15.7:1	65.5:1
B990.3STR	8	203	10 ⁹ / ₁₆	274	9 ¹ / ₂	241	44.8	20.3	7/16	11	3/4	19	3 ³ / ₃₂	98	12	305	8 x 5/16 FH	8 x 8 FH	1:1	9.9:1	40:1	—	—	2.5:1	24.8:1	100:1
B990.3STAC	8	203	12 ¹ / ₈	314	9 ¹ / ₁₆	240	—	—	7/16	11	3/4	19	3 ³ / ₃₂	98	12	305	8 x 5/16 FH	8 x 8 FH	1:1	9.9:1	40:1	—	—	2.5:1	24.8:1	100:1
B990.3TCR	8	203	10 ⁹ / ₁₆	274	9 ¹ / ₁₆	240	41.5	18.8	—	—	—	—	3 ³ / ₃₂	98	12	305	8 x 5/16 FH	8 x 8 FH	1:1	9.9:1	32:1	—	—	2.5:1	24.8:1	80:1
B880.3STR	10	254	13 ¹ / ₃₂	344	8 ¹ / ₃₂	212	40.4	18.3	3/8	10	3/4	19	2 ¹ / ₄	70	10 ²³ / ₃₂	272	8 x 5/16 FH	8 x 8 FH	2.5:1	9.9:1	40:1	—	—	5:1	19.7:1	79.5:1
B880.3VTOP	10	254	13 ¹ / ₃₂	344	8 ¹¹ / ₃₂	212	38.6	17.5	—	—	—	—	2 ¹ / ₄	70	10 ²³ / ₃₂	272	8 x 5/16 FH	8 x 8 FH	2.5:1	9.9:1	40:1	—	—	5:1	19.7:1	79.5:1
B1111.3STR*	11 ¹ / ₃₂	280	14 ⁹ / ₁₆	360	9 ⁹ / ₁₆	236	50.3	22.8	7/16	11	3/4	19	3 ¹ / ₁₆	94	10 ⁹ / ₃₂	271	8 x 3/8 SH	8 x 10 SH	1:1	9.7:1	44.7:1	—	—	1.8:1	17.6:1	81:1
B1111.3TCR	11 ¹ / ₃₂	280	14 ⁹ / ₁₆	360	8 ⁵ / ₃₂	207	41.0	18.6	—	—	—	—	3 ¹ / ₁₆	94	10 ¹ / ₁₆	271	8 x 3/8 SH	8 x 10 SH	1:1	9.7:1	44.7:1	—	—	1.8:1	17.6:1	81:1
B1111.3PTAC*	11 ¹ / ₃₂	280	14 ⁹ / ₁₆	360	8 ⁹ / ₃₂	218	—	—	—	—	—	—	3 ¹ / ₁₆	94	10 ¹ / ₁₆	271	8 x 3/8 SH	8 x 10 SH	1:1	3:1	9.7:1	44.7:1	1.8:1	5.4:1	17.6:1	81:1
B1111.3STAC	11 ¹ / ₃₂	280	14 ⁹ / ₁₆	360	9 ⁹ / ₃₂	236	—	—	7/16	11	3/4	19	3 ¹ / ₁₆	94	10 ¹ / ₁₆	271	8 x 3/8 SH	8 x 10 SH	1:1	3:1	9.7:1	44.7:1	1.8:1	5.4:1	17.6:1	81:1
B1112.5	11 ³ / ₁₆	300	—	—	9 ¹ / ₁₆	249	—	—	7/16	11	3/4	19	4 ¹ / ₈	105	11 ¹⁵ / ₃₂	303	9 x 1/2 SH	9 x 12 SH	1:1	4:1	13.5:1	54.7:1	1.69:1	6.8:1	22.8:1	92.6:1
B1130.3STR	12 ¹ / ₄	324	16 ¹ / ₃₂	409	12 ¹ / ₈	308	86.0	39.0	5/8	16	1	25	4 ¹ / ₈	115	12 ³ / ₈	324	9 x 1/2 SH	9 x 12 SH	1:1	10.8:1	55.2:1	—	—	1.6:1	16.9:1	86.6:1
B1130.3TCR	12 ¹ / ₄	324	16 ¹ / ₃₂	409	11 ¹ / ₃₂	293	86.0	39.0	—	—	—	—	4 ¹ / ₃₂	115	12 ³ / ₈	324	9 x 1/2 SH	9 x 12 SH	1:1	10.8:1	55.2:1	—	—	1.6:1	16.9:1	86.6:1
B1135.3STR*	12 ¹ / ₄	324	16 ¹ / ₃₂	409	12 ¹ / ₈	308	92.6	42.0	5/8	16	1	25	4 ¹ / ₃₂	115	12 ³ / ₈	324	9 x 1/2 SH	9 x 12 SH	1:1	10.8:1	55.2:1	—	—	1.6:1	16.9:1	86.6:1
B1135.3TCR	12 ¹ / ₄	324	16 ¹ / ₃₂	409	11 ¹ / ₃₂	293	77.0	35.0	—	—	—	—	4 ¹ / ₃₂	115	12 ³ / ₈	324	9 x 1/2 SH	9 x 12 SH	1:1	10.8:1	55.2:1	—	—	1.6:1	16.9:1	86.6:1
B1140.3STR	14 ⁹ / ₁₆	360	22 ¹ / ₈	562	18 ¹ / ₁₆	462	249.2	113.0	5/8	16	1	25	8 ¹ / ₃₂	212	18 ¹ / ₁₆	460	8 x 1/2 SH	8 x 12 SH	2.9:1	11.6:1	42.6:1	—	—	4:1	16.4:1	60:1
B1145.3STR	14 ¹ / ₄	362	2 ¹ / ₁₆	538	16 ¹ / ₂	419	192.9	87.5	5/8	16	1 ¹ / ₁₆	22	8 ¹ / ₁₆	208	17 ³ / ₄	450	14 x 1/2 SH	14 x 12 SH	2.9:1	11.9:1	53.6:1	—	—	4.1:1	16.6:1	75.6:1
B1145.3TCR	14 ¹ / ₄	362	2 ¹ / ₁₆	538	16 ¹ / ₂	419	187.1	84.9	3/4	19	1 ¹ / ₄	32	8 ⁹ / ₁₆	208	17 ³ / ₄	450	14 x 1/2 SH	14 x 12 SH	2.9:1	11.9:1	53.6:1	—	—	4.1:1	16.6:1	75.6:1

*4-Speed option available. Contact Hartken

Racing Pedestals

Harken® racing pedestals allow crew members to trim from powerful standing positions. Customized to meet each yacht's requirements, these pedestal systems can be linked together, allowing crew to work in tandem to produce more power for faster, more efficient maneuvers.

Belt-Drive Pedestals

Harken® belt-drive pedestals are molded from carbon fiber and epoxy. Prepreg lamination and autoclave curing maximize stiffness and strength. Components are made of Hardkote-anodized aluminum and 17-4PH stainless steel. Roller bearings, thermoplastic belt sprockets, and carbon-fiber reinforced drive belts result in the lowest possible weight.

Below-deck belt-drive pedestals are also offered in above-deck/mid-drive styles. These pedestals can be removed and winches converted to manual operation to make more room in the cockpit during a long-distance race or cruise.

MX Pedestals

Harken's MX carbon pedestals drive winches on small Grand-Prix racers like GP42s, GP52s and Open 60s. The patented overdrive system features two chains inside the pedestal, eliminating the weight of an external overdrive box. Two drive sprockets allow trimmers to select the gear ratio, switching between the 1:1 direct-drive and the fast 1:3 drive chain without reversing grinding directions.



Pedestal Handles

Pedestal handles are offered in aluminum or carbon fiber and in single-, double-, or SpeedGrip styles.

A SpeedGrip pedestal handle is a great solution for solo sailors because it frees up a hand for another task. SpeedGrip winch handles can be special-ordered from Harken.



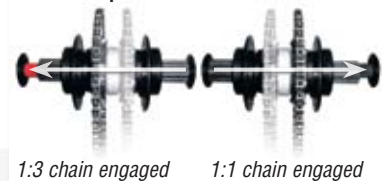
Twisted Belt-Drive Pedestal: Harken's twisted belt-drive pedestal eliminates the weight of the 90° gear box when grinder faces fore and aft.

Straight Belt-Drive Pedestal: A disconnect lever for an above-deck/mid-drive belt pedestal system is available.

Angled Belt-Drive Pedestal: An angled pedestal is customized to optimize the deck layout or tailored to the grinder for maximum comfort.

MX Pedestal: The red shaft of the left button indicates the 1:3 overdrive is engaged. Every turn of the handle produces three turns of the winch.

MX Drive Sprockets



1:3 chain engaged

1:1 chain engaged



Racing Pedestal Drive Components

Gear Boxes

The bevel gear box is the basic building block of belt-drive pedestal systems. The B606 gear box is designed for up to a six-man, three-pedestal input. The B701 accommodates up to an eight-man, three-plus pedestal input.

Gear box housings are CNC-machined from a solid piece of aluminum, Hardkote-anodized for strength and durability. Gears, shafts, and rollers are 17-4PH stainless steel and are lubricated in a sealed oil bath for minimal maintenance.

Drive Shafts

Harken® offers two types of drive shafts. Extruded, splined, aluminum drive shafts may be cut to length. Carbon tubular drive shafts are available with bonded end fittings for U-joints or spherical CV joints. Shaft choice is determined by load, cost, and weight considerations. Your Harken® representative can provide details on the best drive shaft for your boat.

Disconnects

System disconnects can be activated with either levers and control lines for hand operation, or a two-position push button for foot activation. The Harken foot button has fewer than 10 components, compared to almost 100 in other buttons, minimizing the possibility of losing or breaking parts. Foot button tops come in red, black or blue to distinguish functions above deck.

Support Shafts

To space and support a gear box beneath a winch, Harken® supplies tubes for the B606 and B701 series gear boxes. Tubes are made to length from carbon fiber/epoxy with bonded aluminum ends.



B606



B701



Universal Joint



B606 with overdrive

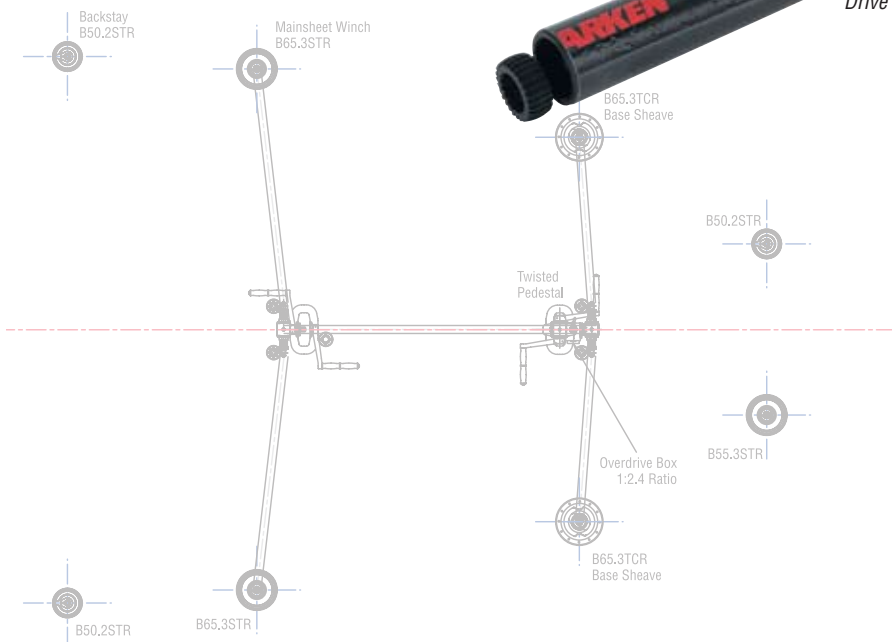


Drive shafts



Foot button disconnect

PUMA, V070 — Billy Black photo



Powered Radial Winches



PUSH-BUTTON CONTROL

Powered Radial winches allow crew to trim any size sail with the push of a button. Winches mount in minutes without removing the drum and can be quickly disassembled and serviced on deck. Seasonal maintenance is painless. Snap-fit socket, washer and screw top lift out as a unit, making reassembly fast and mistake free, with no leftover or misplaced parts to worry about.

DETAILS MAKE THE DIFFERENCE

MULTIPLE STYLES AND FINISHES

Winches available in aluminum alloy, chrome and in 2- and 3-speed self-tailing. Powered electric or hydraulic.

EASY TO CONVERT, INSTALL, SERVICE

The same drilling pattern is used to mount manual and electric winches of the same size. Other manufacturers must uninstall the existing manual winch, fill the old holes, and drill new holes before converting to electric winch power.

Builders can pre-drill a 3.00 inch (7.6 cm) gear shaft hole into the deck to simplify future conversion from manual to electric. Harken offers removable gaskets to seal the holes until upgrades are made.

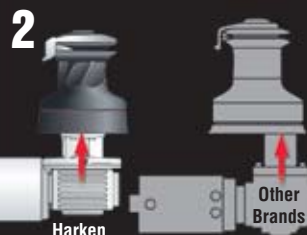
Patent-pending stud-bolt mounting option allows quick installation without removing the drum.

Socket, washer, and screw-top snap-fit together to simplify maintenance and for mistake-free assembly.

INTEGRATED STRIPPER ARM

The strong, one-piece stripper arm completely covers the winch top for a stable platform that prevents fingers and clothing from catching in moving parts—an important safety feature, particularly when operating powered winches. The arm can be adjusted to multiple positions after the winch is mounted, and is shaped to smoothly feed line into and out of the self-tailing jaws.

DO NOT use Harken equipment for human suspension.



1. Manual Override

A Harken® locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation.

2. More Efficient Operation

Harken motors attach to the central drive shaft and drive through the winch gears for a two-speed mechanical advantage—the low-power first gear for fast trimming, the higher-power second gear for fine-tuning loaded sheets. The result is reduced battery drain, allowing more efficient use of the motor.

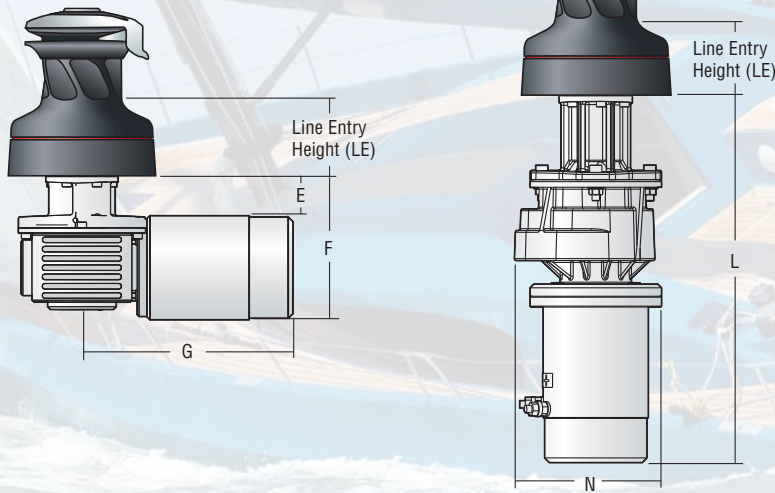
3. Reliable Switches

Winches operate with waterproof switches and reliable easy-to-service electric controls.

4. Winch Load Controller

This electronic system protects Harken® winches from overload by temporarily interrupting the power supply to the winch. The Load Controller comes installed with standard overload settings, but can be customized by request.

Electric Motors



Zeydon 60 — René Dupont photo



Dimensions

Part No.	E		F		G		L		N	
	in	mm	in	mm	in	mm	in	mm	in	mm
40.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	8 ⁷ / ₈	227	—	—	—	—
46.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	8 ⁷ / ₈	227	—	—	—	—
46.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
50.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
50.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
60.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
60.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
60.3STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
60.3STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
70.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
70.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
70.3STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
70.3STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
80.2STEH	3 ³ / ₁₆	81	8 ¹¹ / ₁₆	221	10 ¹¹ / ₁₆	272	—	—	—	—
80.2STEV	—	—	—	—	—	—	16 ³ / ₄	425	6 ¹ / ₁₆	160
80.3STEH	3 ³ / ₁₆	81	8 ¹¹ / ₁₆	221	10 ¹¹ / ₁₆	272	—	—	—	—
80.3STEV	—	—	—	—	—	—	16 ³ / ₄	425	6 ¹ / ₁₆	160

WINCH Q&A

CAN I USE A WINCH HANDLE TO MANUALLY OPERATE MY ELECTRIC WINCH?

Yes. Inserting the winch handle into an unloaded winch automatically disconnects the electric motor and allows you to use 1st and 2nd speeds just like a manual winch. This is important if you've lost power on the boat. If power is restored, the lockout prevents the winch handle from turning.

Winch size	Motor configuration		Current voltage		Power in Watts	
	Horizontal (STEH)	Vertical (STEV)	12 V	24 V	12 V	24 V
40.2	✓	—	✓	—	700	—
46.2	✓	✓	✓	✓	700	900
50.2	✓	✓	✓	✓	1500	2000
60.2 - 60.3	✓	✓	✓	✓	1500	2000
70.2 - 70.3	✓	✓	✓	✓	1500	2000
80.2 - 80.3	✓	✓	✓	✓	1500	2000

Wire Gauges

Winch size	Current voltage	Total distance between winch and battery							
		Under 16.4 ft AWG	Under 5 m mm ²	16.4 - 32.8 ft AWG	5 m - 10 m mm ²	32.8 - 49.2 ft AWG	10 m - 15 m mm ²	49.2 - 65.6 ft AWG	15 m - 20 m mm ²
40.2	12 V	2	32	0	50	00	70	000	95
46.2	12 V	2	32	0	50	00	70	000	95
46.2	24 V	5	16	3	25	2	35	0	50
50.2	12 V	2	32	0	50	00	70	000	95
50.2	24 V	5	16	3	25	2	35	0	50
60.2 - 60.3	12 V	2	32	0	50	00	70	000	95
60.2 - 60.3	24 V	5	16	3	25	2	35	0	50
70.2 - 70.3	12 V	2	32	0	50	00	70	000	95
70.2 - 70.3	24 V	5	16	3	25	2	35	0	50
80.2 - 80.3	12 V	2	32	0	50	00	70	000	95
80.2 - 80.3	24 V	5	16	3	25	2	35	0	50

NEW

RADIAL WINCH LINE

UniPower Radial

The UniPower is a single-speed winch that combines the advantages of a low-profile manual winch with the power of a 12-volt or 24-volt, low-amp-draw motor. What makes it unique is that the motor is partially imbedded inside the drum, so that it extends only 4 1/8 inches (105 mm) below the winch base—a critical feature for small boats where space under the cabin top is limited.

Winch drums come in durable lightweight aluminum or mirror-finished chrome. High-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. The stripper arm and load-carrying gears on both aluminum and chrome versions are 17-4PH stainless steel for strength and durability.

The UniPower is designed with a maximum pull of 900 kg (1,984 lb). Harken's WLC200R load controller keeps the winch from exceeding this limit. In case the boat loses power, the winch can be operated manually using a winch handle.

The UniPower winch package includes a winch, one-speed control box, WLC200R Harken load controller, and a waterproof switch.

Dehler 34, Simonis Voodyg — Dehler Yachts photo



WINCH Q&A

I'D LIKE TO MOUNT AN ELECTRIC WINCH ON THE CABIN TOP, BUT IT LIMITS SPACE BELOW. ANY SUGGESTIONS?

The motor on the Harken UniPower winch is partially embedded inside the drum and extends only 4 1/8 inches (105 mm) below the base. This gives crew more headroom as well as space to move around.

Part No.	Ø		Height				Weight			Line Ø (Min - Max)		Fastener Circle	Fasteners (SH or HH)		Line entry height (LE)		Gear ratio	Power ratio				
	Drum (D)	Base (B)	Abovedeck	Belowdeck	A	C	in	mm	in	mm	in		mm	in	mm	in			mm			
900UPW	3 7/8	100	7 1/2	190	8 1/2	215	4 7/8	105	26.5	12.0	32.0	14.5	5/16 - 9/16	8 - 14	6 5/16	160	5 x 1/4	5 x 6	3 15/16	100	100	9.75

Electric Components

Each electric winch requires one control box, one breaker, and two switches. Harken recommends adding an optional load controller. For winches larger than B980, please contact Harken. Hydraulic units require two switches.

Switches

Harken® offers simple, waterproof switches for electric and hydraulic winches. Order two switches for each winch.

Electrical Control Boxes

Electric control boxes contain solenoids to operate the winches. Based on winch size and voltage, select one control box for each electric winch.

High-Amperage Circuit Breakers

Harken® offers five panel-mount, high-amperage circuit breakers. They are compact, waterproof, weather-resistant, and ignition-protected. Circuit breakers are available for 12 or 24 volts DC systems.

Load Controllers

The winch load controller is an electronic system that protects Harken® winches from overload by temporarily interrupting the power supply to the winch. The Load Controller comes installed with standard overload settings, but can be customized on request. Use WLC200R with Radial winches. For further information contact Harken® Italy.



BRS104/P

BRS102/P

BRS102/S

BEB500.12.1
BEB1000.12.1
BEB1000.24.1HCP1717
HCP1718
HCP1719
HCP1720WLC200.12.1
WLC200.12.2
WLC200.12.3
WLC200.24.1
WLC200.24.2
WLC200R.40.12
WLC200R.46.12
WLC200R.46.24
WLC200R.50.12
WLC200R.50.24
WLC200R.60-70.12
WLC200R.60-70.24

WINCH Q&A

DOES IT MATTER WHETHER I HAVE A 12- OR 24-VOLT SYSTEM?

Yes. Check your system and specify voltage before ordering. A 24-volt system requires half as much amperage, so the wire and circuit breaker (fuse) can have lower amperage rating. Larger winches, such as the 1110, 1120 and 1140, are available in 24-volt. Most boats in the USA are 12-volt. Boats using 24-volt systems are more common in Europe.

Deck Switches

Part No.	Description	Length		Width		Height		Weight	
		in	mm	in	mm	in	mm	oz	g
BRS102/P/S	Remote switch w/guard	2 ¹¹ / ₁₆	68	2 ¹¹ / ₁₆	68	¹⁹ / ₁₆	21	4.5	128
BRS104/P	Remote switch w/guard	3 ³ / ₈	85	3	76	⁹ / ₄	19	3.4	95

Electric Control Boxes

Part No.	Voltage	Length		Width		Height		Weight		Use with winch
		in	mm	in	mm	in	mm	oz	g	
BEB500.12.1	12	5 ¹ / ₂	140	3 ⁵ / ₃₂	80	4 ¹¹ / ₃₂	110	35.3	1000	Classic: B40.2STE
BEB1000.12.1	12	5 ¹ / ₂	140	3 ⁵ / ₃₂	80	4 ¹¹ / ₃₂	110	35.3	1000	Radial: 40.2STE to 70.2STE Classic: B44.2STE to 980.2STE
BEB1000.24.1	24	5 ¹ / ₂	140	3 ⁵ / ₃₂	80	4 ¹¹ / ₃₂	110	35.3	1000	Radial: 46.2STE to 70.2STE Classic: B44.2STE to 980.2STE

Load Controllers

Part No.	Use with winch	Voltage	Motor power watts	Cut-off load*		Length		Width		Height		Weight	
				lb	kg	in	mm	in	mm	in	mm	oz	g
Radial													
WLC200R.40.12	40	12	700	1320	600	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.46.12	46	12	700	1740	790	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.46.24	46	24	900	1740	790	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.50.12	50	12	1500	1880	850	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.50.24	50	24	2000	1880	850	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.60-70.12	60/70	12	1500	2535/3530	1150/1600	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.60-70.24	60/70	12	2000	2535/3530	1150/1600	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
Classic													
WLC200.12.1	B40	12	500	1210	550	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.12.2	B44/B46	12	1500	1985/2051	900/930	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.24.1	B44/B46	24	2000	1985/2051	900/930	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.12.3	B48/B53	12	1500	2205/2425	1000/1100	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.24.2	B48/B53	24	2000	2205/2425	1000/1100	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210

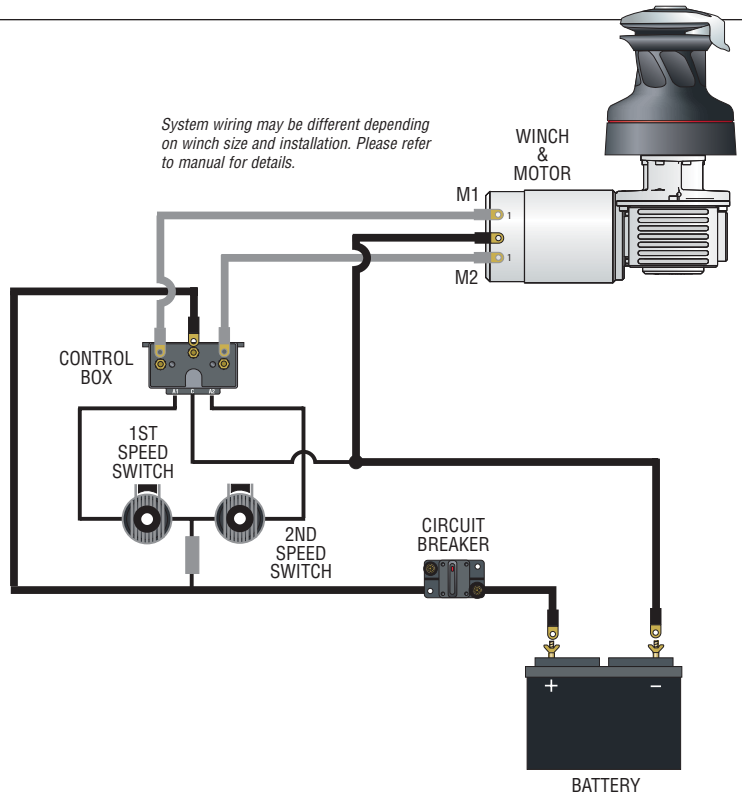
*Contact Harken Italy for customized load presets

Electric Systems

Battery voltage and winch size determine which control boxes, circuit breakers, and load controllers you should use. For winches size B1110 and above, contact Harken for appropriate components.

Electric Winch Kits

Kits are offered for the most common winches. Kits include the winch and a horizontal motor, a control box, a circuit breaker, and two BRS104/P switches. Please include the full part number of the winch, including materials code and voltage, when ordering a kit.



Kit



Winch size	Control box		Circuit breaker		Load controller (optional)*		Kit**
	12 V	24 V	12 V	24 V	12 V	24 V	
Radial							
40.2STE	BEB1000.12.1	—	HCP1717	—	WLC200R.40.12	—	K40.2STE
46.2STE	BEB1000.12.1	BEB1000.24.1	HCP1717	HCP1717	WLC200R.46.12	WLC200R.46.24	K46.2STE
50.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.50.12	WLC200R.50.24	K50.2STE
60.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.60-70.12	WLC200R.60-70.24	K60.2STE
60.3STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K60.3STE
70.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.60-70.12	WLC200R.60-70.24	K70.2STE
70.3STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K70.3STE
80.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K80.2STE
80.3STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K80.3STE
Classic							
B40.2STE	BEB500.12.1	—	HCP1717	—	WLC200.12.1	—	BK40.2STE
B44.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.2	WLC200.24.1	BK44.2STE
B46.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.2	WLC200.24.1	BK46.2STE
B48.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.3	WLC200.24.2	BK48.2STE
B53.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.3	WLC200.24.2	BK53.2STE
B60.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1717	—	—	BK60.2STE
B70.2STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	BK70.2STE
B74.2STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	BK74.2STE
B980.2STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	—
B980.3STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	—

*Load controller not included in kit

**Kits not available from all dealers

Hydraulic Radial

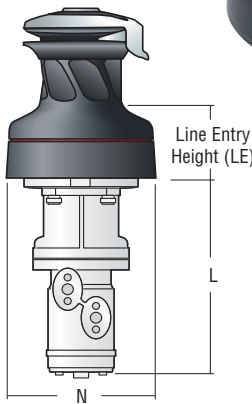
Hydraulic Radial winches let you relax in luxury and trim any size sail with the push of a button.

Lightweight aluminum or mirror-finished chrome drums, and high-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Manual Radials easily convert to power. They don't require an adapter plate and the identical stud pattern means no filling and drilling holes. Boatbuilders can make future upgrades even easier by precutting and sealing a 3.00 inch (7.6 cm) drive shaft hole.

Winches mount vertically and operate using waterproof switches located near the winch. A locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation.

Sunreef 70



Part No.	Line entry height (LE)		L		N	
	in	mm	in	mm	in	mm
46.2STH	3 ³ / ₁₆	90	9 ¹ / ₄	234	5 ¹ / ₈	130
50.2STH	3 ⁷ / ₈	97	9 ¹ / ₄	234	5 ¹ / ₈	130
60.2STH	4 ⁹ / ₁₆	116	9 ¹ / ₄	234	5 ¹ / ₈	130
60.3STH	4 ⁹ / ₁₆	116	9 ¹ / ₄	234	5 ¹ / ₈	130
70.2STH	4 ¹ / ₂	115	9 ¹ / ₄	234	5 ¹ / ₈	130
70.3STH	4 ¹ / ₂	115	9 ¹ / ₄	234	5 ¹ / ₈	130
80.2STH	6 ¹ / ₁₆	164	9 ⁷ / ₈	250	5 ¹ / ₈	130
80.3STH	6 ⁷ / ₁₆	164	9 ⁷ / ₈	250	5 ¹ / ₈	130

Harken motors attach to the central drive shaft and drive through the winch gears for a two-speed mechanical advantage—the low-power first gear for fast trimming, the higher-power second gear for fine-tuning loaded sheets. This results in a smaller, more efficient motor that saves weight and cost.

Part No.	Ø		Base (B)		Height (H)		Weight				Line Ø (Min - Max)		Fastener circle		Fasteners (SH or HH)		Gear ratio			Power ratio		
	in	mm	in	mm	in	mm	lb	kg	lb	kg	in	mm	in	mm	in	mm	1	2	3	1	2	3
46.2STH	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹⁵ / ₁₆	201	28.0	12.7	33.8	15.3	5 ⁵ / ₁₆ - 9 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 5 ⁵ / ₁₆	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2STH	4 ⁹ / ₁₆	110	7 ³ / ₈	194	8 ¹ / ₈	206	29.8	13.5	36.9	16.7	5 ¹ / ₁₆ - 9 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 5 ⁵ / ₁₆	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STH	4 ⁹ / ₁₆	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	39.1	17.7	47.2	21.4	5 ¹ / ₁₆ - 5 ⁵ / ₈	8 - 16	8	204	6 x 5 ⁵ / ₁₆	6 x 8	4.80	14.40	—	20.30	61.00	—
60.3STH	4 ⁹ / ₁₆	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	42.4	19.2	50.6	22.9	5 ¹ / ₁₆ - 5 ⁵ / ₈	8 - 16	8	204	6 x 5 ⁵ / ₁₆	6 x 8	2.20	4.80	14.40	9.20	20.30	61.00
70.2STH	5 ¹ / ₈	130	9 ⁷ / ₁₆	240	10 ¹ / ₁₆	256	41.5	18.8	49.9	22.6	3 ³ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 5 ⁵ / ₁₆	6 x 8	5.70	18.50	—	22.20	72.00	—
70.3STH	5 ¹ / ₈	130	9 ⁷ / ₁₆	240	10 ¹ / ₁₆	256	44.8	20.3	53.2	24.1	3 ³ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 5 ⁵ / ₁₆	6 x 8	2.30	5.70	18.50	9.00	22.20	72.00
80.2STH	6 ⁷ / ₁₆	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	66.4	30.1	83.0	37.6	3 ³ / ₈ - 1 ³ / ₁₆	10 - 20	9 ¹ / ₁₆	233	8 x 3 ³ / ₈	8 x 10	9.40	28.10	—	32.10	93.00	—
80.3STH	6 ⁷ / ₁₆	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	69.8	31.6	86.3	39.1	3 ³ / ₈ - 1 ³ / ₁₆	10 - 20	9 ¹ / ₁₆	233	8 x 3 ³ / ₈	8 x 10	2.23	9.40	28.10	6.50	32.10	93.00

Captive Reel Winches

Harken® Captive Reel winches, produced by James Nilsson Winchmakers, provide a convenient push-button solution for megayachts and large cruising boats. Featuring a one- or two-speed hydraulic motor, they are noted for their reliable design, detailed construction, and quality materials.

Components

Modular construction allows servicing without removing the winch assembly. The Hardkote-anodized frame and components are marine-grade 5083 and 6000 aluminum. Lubricated bearings are sealed and dry-run bearings are made with low-maintenance synthetics.

Gearbox

The hub-drive gearbox inside the 316 stainless steel drum uses precision gearing to time the lead screw for exact line placement.

Switches

Proximity switches prevent over-travel. Automatic failsafe switches shut down the winch completely.

Valve block and tensioner

Mounted onto or independently from the winch, the valve block incorporates a counterbalance valve, brake operating shuttle, and line tensioner. The tensioner spools line onto the drum evenly and keeps it clear of the winch housing.

Precise gearing provides even line take-up and release

Automatic disc brake between motor and gearbox is always locked unless system is activated

Choice of port or starboard lead exits

Line tensioner removes slack when spooling and unspooling



Redundant proximity switches prevent over-travel

Lead screw and sheave allow line to lie smoothly on the drum—even when slack



Power/Sheet Size Guide

Part No.	Pull		Hold		Line Ø				Max pressure		Flow rate	
	lb	kg	lb	kg	Min	Max	Min	Max	PSI	Bar	gal/min	L/min
CR22SL	3300	1500	3900	1800	1/2	12	9/16	14	2247	155	14.74	56
CR27SL	5292	2400	6615	3000	1/2	12	5/8	16	3045	210	15.79	60
CR33SLLT	2205	1000	2646	1200	1/2	12	5/8	16	2465	170	10.00	38
CR33SL	8820	4000	11025	5000	1/2	12	13/16	20	3480	240	23.68	90
CR33SLHD	11025	5000	15436	7000	1/2	12	13/16	20	2683	185	36.84	140
CR40SL	17640	8000	24256	10000	5/8	16	1	26	3118	215	52.63	200
CR40SLHD	24256	11000	28666	13000	5/8	16	1	26	3698	255	52.63	200
CR50SL	26461	12000	30871	14000	3/4	18	1 1/16	30	3118	215	68.42	260
CR50SLHD	33076	15000	39691	18000	3/4	18	1 1/16	30	3408	235	68.42	260

Loads and converted sizes are guides only. Winches are customized to application. Line speeds can vary with each winch and power configuration

Active Line Storage Guide

Line Ø		CR22SL		CR27SL		CR33SLLT		CR33SL		CR33SLHD		CR40SL		CR40SLHD		CR50SL		CR50SLHD	
in	mm	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
1/2	12	56	17	115	35	131	40	157	48	213	65	—	—	—	—	—	—	—	—
9/16	14	46	14	98	30	112	34	131	40	184	56	—	—	—	—	—	—	—	—
5/8	16	—	—	89	27	98	30	115	35	161	49	200	61	276	84	—	—	—	—
11/16	18	—	—	—	—	—	—	101	31	141	43	177	54	243	74	220	67	312	95
3/4	20	—	—	—	—	—	—	92	28	128	39	157	48	217	66	197	60	279	85
7/8	22	—	—	—	—	—	—	—	—	—	—	141	43	197	60	177	54	253	77
15/16	24	—	—	—	—	—	—	—	—	—	—	131	40	180	55	164	50	230	70
1	26	—	—	—	—	—	—	—	—	—	—	118	36	165	50	151	46	213	65
1	28	—	—	—	—	—	—	—	—	—	—	—	—	—	—	138	42	197	60
1 1/16	30	—	—	—	—	—	—	—	—	—	—	—	—	—	—	131	40	184	56

Line storage lengths are guides only. Winches are customized to application

Accessories: Ball Bearing Handles

These robust low-friction ball bearing handles match a wide range of cranking needs for both racers and cruisers. Handles feature a ball bearing grip that efficiently transmit power into the winch. All handles fit international standard winch sockets.

Locking vs. Plain

Lock-in handles are easy to engage and release with a thumb switch. Racers prefer plain handles because they are faster to insert.

Handle Length

10 in (254 mm) is the most comfortable handle length for most sailors. Published power ratios are based on this length.

8 in (203 mm) handles grind faster because they swing through a smaller circle, but power is reduced by 20%. 8 in (203 mm) handles are ideal for smaller boats and light air where speed is more important than power.

SpeedGrip

SpeedGrip handles are designed for the serious racer and effective in both light and heavy air conditions. The unique grip permits low-load fast cranking using the palm, and powerful two-handed grinding when loads are high. The low profile B8ASGLP is made for fast, one-handed cranking where speed is the concern, not power.



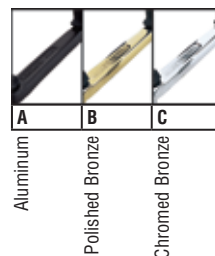
Molded urethane knob for comfortable feel and better grip when palming the handle

Handles feature an independent swivel between the knob and handle to keep the wrist straight and arms in the best power position while grinding

The B10DL handle features a lock-in switch and provides powerful two-handed grinding



Ordering Information:
Specify material by adding 1-letter code to part number after the number indicating length (example: B8L in aluminum = B8AL). See chart for availability.



Part No.	Description	Material			Length (L)		Height (H)		Rise (R)		Weight					
		A	B	C	in	mm	in	mm	in	mm	oz	g	oz	g	oz	g
SpeedGrip																
B8SGLP	Lock-in/low-profile	✓	—	—	8	203	4 ¹³ / ₁₆	122	1 ¹ / ₄	32	14.1	400	—	—	—	—
B8SG	Lock-in	✓	—	✓	8	203	7 ³ / ₁₆	182	1 ¹ / ₄	32	17.6	500	—	—	35.3	1000
B10SG	Lock-in	✓	—	✓	10	254	7 ⁷ / ₁₆	188	1 ¹ / ₂	38	21.2	600	—	—	47.6	1350
Standard																
B8P	No-lock	✓	—	—	8	203	6 ³ / ₈	168	1 ¹ / ₄	32	14.1	400	—	—	—	—
B8L	Lock-in	✓	✓	✓	8	203	6 ³ / ₈	168	1 ¹ / ₄	32	14.1	400	31.7	900	31.7	900
B10P	No-lock	✓	—	—	10	254	7	178	1 ¹ / ₂	38	17.6	500	—	—	—	—
B10L	Lock-in	✓	✓	✓	10	254	7	178	1 ¹ / ₂	38	17.6	500	45.9	1300	45.9	1300
B10DL	Lock-in/double-grip	✓	—	—	10	254	11 ¹ / ₄	286	1 ¹³ / ₁₆	46	21.2	600	—	—	—	—

Accessories: Service Kits

Simple service kits are available to permit routine maintenance of Harken® winches. Kits are available with drum screws, pawls, and springs.

Harken® winch grease is a non-aging, high-adhesive synthetic lubricant. It is resistant to both salt and fresh water and protects metal gears, roller bearings, and all moving winch parts from corrosion and wear. Note: Do not grease pawls, plastic rollers, or balls.

Installation manuals and parts lists are available online at www.harken.com.

Saffier Maritiem 26 DaySailer — Saffier Maritiem b.v. photo



BK4520

BK4521

BK4513

BK4522



BK4512



BK4515
BK4516



BK4517



BK4518



BK4519

WINCH Q&A

WHICH PARTS DO I GREASE AND WHICH DO I OIL ON MY HARKEN WINCHES?

Grease all metal gears and roller bearings with Harken Winch Grease. It's highly resistant to salt and fresh water, works in all temperatures, and protects against corrosion. NEVER grease pawls or springs because grease causes them to stick. Instead, lubricate with Harken Pawl Oil for optimal rotation. Radial winches and carbon winches have composite roller bearings that do not need to be lubricated.

Part No.	Description	Includes	Fits winches
BK4512	Winch service kit	10 pawls/10 springs	Classic B6 - B980, All Radial winches
BK4513	Winch grease	100 ml tube	
BK4515	Racing winch service kit/10 mm	10 17-4 PH pawls/10 springs	B880 - B1120
BK4516	Racing winch service kit/8 mm	10 17-4 PH pawls/10 springs	B50 - B65
BK4517	Lock-in handle repair kit	Lock-in knob/spring pin/lock-in spring/isolator/lock-in plate	All handles
BK4518	Winch drum screw kit	8 screws 8 mm x 20 mm/8 plastic washers	B48 - B980
BK4519	Winch drum screw kit	8 screws 8 mm x 20 mm/8 plastic washers	B16 - B46
BK4520	Winch polish for all metal surfaces		
BK4521	Pawl Oil for pawls and springs		
BK4522	Stainless Steel Cleaner: Use on stainless steel to remove surface rust		



Heidi Harken Photo

HARKEN SPORT

NEW

Men's and Women's Softshell Jacket

The thermal-regulating properties of Harken Softshell make this jacket an all-around favorite. This water-resistant midweight layer is windproof, breathable, and extremely tough. Wear it relaxing on a cool summer evening or during a fierce, wet-and-windy battle on the course.

Men's Size Range: S, M, L, XL, XXL

Women's Size Range: XS, S, M, L, XL

Available Colors (Men's and Women's):
Carbon/Ice



2070



2071



Stowable squall hood. Taped seams and water-shedding DWR treatment. 2-way stretch fabric for mobility. Flattering women's cut.

HARKEN[®]
SPORT

NEW

Ballistic Eco Shorts

These are the extremely tough, comfortable shorts people are talking about. Made from a Harken-exclusive custom fabric, they feature 4-way-stretch fabric and a gusseted crotch so you'll never feel restricted. Naturally wicking materials and a comfortable brushed interior make these shorts perfect on land or on the water. These eco-friendly shorts are made from renewable, sustainable fabrics such as quick-drying bamboo and odor-fighting carbon.

Men's Shorts Size Range: 28, 30, 32, 34, 36, 38, 40, 42



2011



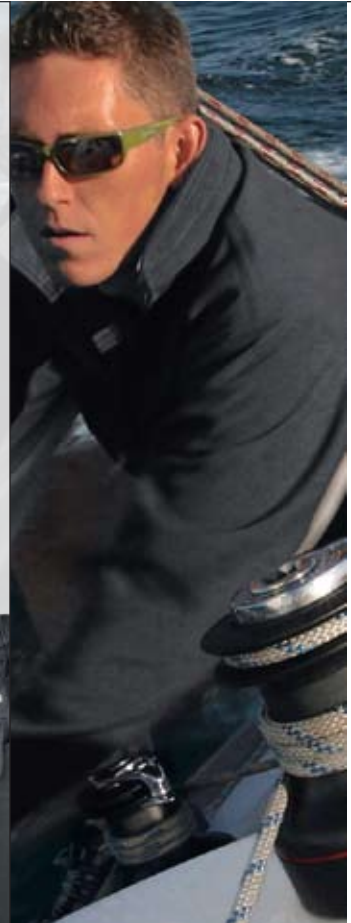
Semi-elastic waist band and YKK® zippers. Highly abrasion-resistant ballistic nylon on rear. Soft, brushed interior. Removable hiking inserts behind the back pockets.



2097

Mariner Sunglasses

Harken sunglasses provide the highest level of protection against sun damage. Polarization blocks 100% of ultraviolet light and 99.9% of reflected glare. Tapered lenses eliminate distortion, reduce eye fatigue, and boost detail and depth perception so you can spot marks or just enjoy that perfect view. The durable frames provide a close wrap-around fit to protect against wind, water, and debris. Now in olive green.



HARKEN[®]
SPORT



Artemis, TP52. Designer: Judel Vrolijk.
Builder: Cookson — Nico Martinez photo

Artemis

SW8 11152

Audi

HARCON



HYDRAULICS

SETTING A NEW COURSE



Speedboat, 100' Juan Yacht Design, Cooksons Boats Ltd. — Gretchen Thor photo



**HYDRAULICS MANAGER
ROBBIE YOUNG TALKS
ABOUT OUR ALL-NEW
HYDRAULICS PRODUCT LINE**

Editors Note: Hydraulic-powered systems are becoming more and more popular on smaller cruising boats, all the way up to the Megayachts. With hydraulic power, you can run winches, furlers, anchor windlasses, bow thrusters, cylinders—basically any function on the boat, even the drive system. It was this increased demand that led us to develop a line of production hydraulic products.

Why Stick with the Status Quo

When developing products you can improve a design you already have, buy a company with existing tooling, or start fresh. We chose to start fresh. And because we could go in any direction we wanted, our only parameters were that loads, pressures, and lengths had to fit within sailboat industry standards. We thought, why stick with the status quo, let's go with something new and innovative to make our product stand above the rest on the market. In the standard Harken way, we took on the hardest jobs first because when we figured out how to do those, it would be easy to do the rest of the product line. We designed custom titanium cylinders for the +39 Challenge (2007 America's Cup) and a powered system for a 52 m Sparkman & Stephens in Turkey. This led directly into a range of cylinders: stainless steel, 6000 series aluminum, and 7000 series aluminum. These materials have different properties for different applications.

“We thought, why stick with the status quo, let's go with something new and innovative to make our product stand above the rest on the market.”

— Robbie Young
Hydraulics Manager



Materials Match Lifestyles

The housings come in different materials to suit the sailor's needs. A cruiser might say, I want a lightweight cylinder that lasts for a long time in salt water. In that case we use Hardkote-anodized 6061 aluminum. If they want a classic look, we use the same cylinder design, but change the material to corrosion-resistant 316 stainless steel bodies with the same mirror-polished finish as the winches.

A Grand Prix racer thinks differently: I want a lightweight cylinder than can handle very high pressure. 7000 series aluminum has nearly twice the strength of 6061 so we can make the walls thinner to save weight, reduce size, and still handle high loads. On Grand Prix sailboats, crew use 7075 aluminum cylinders knowing they have only a 2-year life span in salt water. We won't sell a 7075 cylinder to a non- Grand Prix race boat. It's like selling a Formula 1 chassis to a person who's going to be driving down the bumpy roads of rural Wisconsin. You don't do it. It just won't last.

Titanium is also a favorite cylinder material for Grand Prix racers. It's the strongest and is corrosion resistant, but some class rules don't allow it.

Full Range Of Cylinders

We designed cylinders for mast, sail, and keel controls that fit everything from cruiser/racers (35-40 ft, 9-12 m), up to your megayachts and Grand Prix Maxi

boats. We researched pistons, seal materials, seal types, and applications, and chose bronze-filled Teflon® piston seals and graphite-filled Teflon® rod seals that are extremely low friction and more durable than polyurethane seals. We ended up with a stronger, lighter, more modern cylinder for the same length.

Cylinders include a standard clevis jaw on both ends, but can also be fitted with blocks and different eye types. Single-acting cylinders have hydraulic oil at one end and air at the other (like those used in car hatchbacks). Grand Prix cylinders come in single-acting or in double-acting designs with oil at the ends.

We have a full range of vang cylinders: standard rigid, double-acting, and are working on position indicators to tell you how far the vang extends. It's similar to technology used in the hydraulic crane world.

“We designed cylinders for mast, sail and keel controls that fit everything from cruiser/racers up to your megayachts and Grand Prix Maxi boats.”

— Robbie Young
Hydraulics Manager



SETTING A NEW COURSE

Nazemin V — Mark Lloyd photo



Our HydroTrim line of cylinders is used to trim mainsheets, jib sheets, or whatever function you want. As the cylinder extends, it pulls in a multiplying amount of sheet in 1:4 or 1:6 reverse purchases. These cylinders are used on cruising boats and are available in 11 sizes.

Valves

The big question was, how do we make a good mousetrap even better? We discussed what we did and didn't like, and came up with some innovative ideas. We eliminated the large coil springs—the majority of the weight. We feel hydraulic systems should have a safety feature because in extreme conditions, you can't tell how much pressure is in the system. We built pressure release into every valve with flow controls to adjust the speed of release. We combined pressure relief and release into one part—a patented feature. We also have dump valves for systems to quickly release pressure.



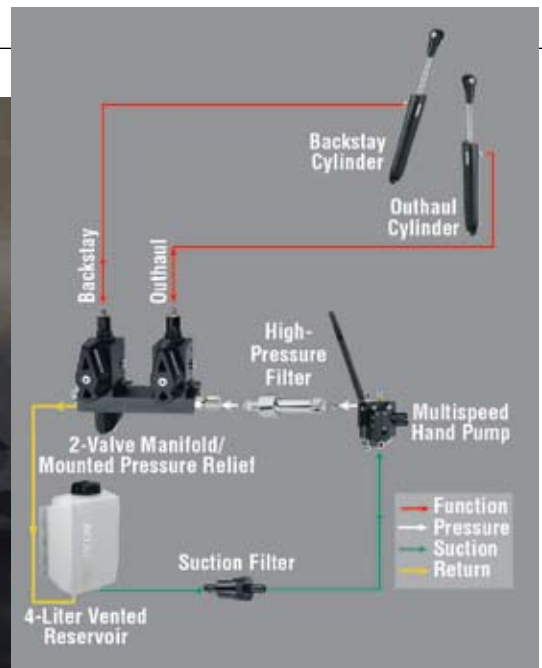
Handles

Valve handles are molded nylon-filled, long-glass fiber like our Carbo blocks. They're contoured so sheets and lines won't wrap around the edges and your hands won't slip. Handles mount in any direction so they can be uniform throughout the boat.

“We built pressure release into every valve with flow controls to adjust the speed of release. We combined pressure relief and release into one part—a patented feature.”

— Robbie Young
Hydraulics Manager





Pumps

Currently, other companies have 2-speed hydraulic pumps. You push hard in first gear, then there's a shift, and it seems like you're pumping forever to get something to happen in second gear. The reason is, there's a big difference in the volume of oil between first and second gear. We decided to add a third speed to push more oil, faster and more efficiently through the system. The pump has preset points that automatically shift to the next speed. Shift points can be adjusted.

“We’re using many off-the-shelf components. Spares for a cruising boat traveling around the world become minimal because these parts are available anywhere they go.”

— Robbie Young
Hydraulics Manager

Power Packs

We have small power units that perform from 1 to 13 functions. For the larger units like those we developed for *Nazenin V*, where we're using computers and PLC's (Programmable Logic Controller), it gets a bit more involved. We've partnered with hydraulic innovators to bring technology from a variety of industries.

Off-The-Shelf

We're using many off-the-shelf components. For example, a standard-size valve we buy in the U.S. can be bought anywhere on the planet. Spares for a cruising boat traveling around the world become minimal because these parts are available anywhere they go.



NEW

HYDRAULIC SYSTEMS

Hydraulic Cylinders

These strong, lightweight cylinders are perfect for mast, sail, and keel controls. Harken cylinders stand up to years of high-stress use in harsh marine environments and have proven themselves on everything from race boats to bluewater cruisers and megayachts. Their efficiency, longevity, and reliability are evident in the high quality of their components and workmanship.

Cylinders are available in stainless steel or Hardkote-anodized*, Teflon®-impregnated 6061-T6 aluminum for strength and corrosion resistance. Graphite-filled Teflon® rod seals and bronze-filled Teflon® piston seals are extremely low friction and are more durable than polyurethane seals. Performance O-rings and slant springs in the seals provide consistent seal pressure for a reliable, long-lasting fit. High-strength Nitronic 50 stainless steel rods and pins provide superior strength and corrosion resistance.

Cylinders include a standard clevis jaw on both ends, but can also be fitted with blocks and different eye types. Standard pull cylinders have air-spring returns. Cylinders include push, pull, and pull/pull styles. Custom cylinder lengths are also available.

Available, Hoogdonk 65 — Billy Black photo



High-performance O-ring and spring-energized seals



HARDKOTE



CLEAR-ANODIZED*



STAINLESS STEEL

*Clear-anodized aluminum is available but offers less protection than Hardkote-anodized.

Hydraulic Cylinders

Part No.	Stroke		Pin center length (closed)*		Weight**				Volume					Diameter			Pull force***										Breaking load										
			mm		in		6061-T6 Aluminum		316 Stainless		in ³		L		Gap/pin		Bore			Rod		Max OD		@ 1000psi 69 bar		@ 2000 psi 140 bar		@ 3000 psi 210 bar		@ 4000 psi 275 bar		@ 5000 psi 345 bar		lb		kg	
			in	mm	in	mm	lb	kg	lb	kg	in ³	L	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in
HYCS2511265	-6	10.4	265	18.7	474	2.2	0.99	4.4	2.00	7	0.11	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903						
HYCS2511360	-6	14.2	360	22.4	569	2.5	1.15	5.2	2.34	9	0.15	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903						
HYCS2511530	-6	20.9	530	29.1	739	3.2	1.44	6.5	2.93	13	0.22	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903						
HYCS3513250	-10	9.8	250	19.4	493	3.5	1.60	7.4	3.37	13	0.21	1/2	12.7	1 3/8	35	1/2	13	1.8	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851						
HYCS3513350	-10	13.8	350	23.4	594	4.2	1.89	8.9	4.04	18	0.29	1/2	12.7	1 3/8	35	1/2	13	1.8	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851						
HYCS3513525	-10	20.7	525	30.3	769	5.5	2.50	12.4	5.61	27	0.44	1/2	12.7	1 3/8	35	1/2	13	1.8	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851						
HYCS4016250	-12	9.8	250	19.6	498	4.6	2.09	9.4	4.28	14	0.24	5/8	15.9	1 1/2	40	5/8	16	2.0	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622						
HYCS4016375	-12	14.8	375	24.5	622	5.7	2.57	11.7	5.29	22	0.35	5/8	15.9	1 1/2	40	5/8	16	2.0	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622						
HYCS4016625	-12	24.6	625	34.4	874	7.7	3.51	16.1	7.30	36	0.59	5/8	15.9	1 1/2	40	5/8	16	2.0	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622						
HYCS4516250	-17	9.8	250	19.6	498	5.5	2.48	11.7	5.30	21	0.34	5/8	15.9	1 1/4	45	5/8	16	2.3	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525						
HYCS4516375	-17	14.8	375	24.5	623	6.7	3.03	14.3	6.51	31	0.51	5/8	15.9	1 1/4	45	5/8	16	2.3	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525						
HYCS4516800	-17	31.5	800	41.3	1050	9.1	4.12	19.7	8.93	66	1.08	5/8	15.9	1 1/4	45	5/8	16	2.3	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525						
HYCS5519275	-22	10.8	275	22.4	569	9.5	4.33	20.8	9.43	36	0.59	3/4	19.1	2 3/16	55	3/4	19	2.9	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059						
HYCS5519400	-22	15.7	400	27.3	693	11.5	5.20	25.1	11.39	52	0.86	3/4	19.1	2 3/16	55	3/4	19	2.9	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059						
HYCS5519930	-22	36.6	930	48.1	1223	19.4	8.80	43.8	19.89	121	1.99	3/4	19.1	2 3/16	55	3/4	19	2.9	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059						
HYCS6522300	-30	11.8	300	25.2	639	13.3	6.04	28.6	12.99	51	0.83	7/8	22.2	2 1/2	65	7/8	22	3.2	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550						
HYCS6522450	-30	17.7	450	31.0	787	15.9	7.22	34.9	15.82	76	1.25	7/8	22.2	2 1/2	65	7/8	22	3.2	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550						
HYCS65221050	-30	41.3	1050	54.6	1387	26.8	12.15	59.0	26.78	178	2.92	7/8	22.2	2 1/2	65	7/8	22	3.2	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550						
HYCS7525300	-40	11.8	300	27.7	704	20.5	9.32	44.7	20.29	74	1.22	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486						
HYCS7525475	-40	18.7	475	34.4	874	24.9	11.30	54.5	24.72	118	1.93	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486						
HYCS75251175	-40	46.3	1175	62.0	1574	42.5	19.29	95.0	43.08	291	4.76	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486						
HYCS8025300	-48	11.8	300	28.3	719	23.7	10.74	52.7	23.89	81	1.33	1 1/8	28.6	3 3/8	80	1	25	4.1	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207						
HYCS8025475	-48	18.7	475	35.1	891	28.8	13.06	64.6	29.29	129	2.11	1 1/8	28.6	3 3/8	80	1	25	4.1	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207						
HYCS80251150	-48	45.3	1150	61.7	1567	48.5	22.01	110.5	50.11	312	5.11	1 1/8	28.6	3 3/8	80	1	25	4.1	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207						
HYCS9032375	-60	14.8	375	31.1	789	34.2	15.53	75.5	34.24	124	2.03	1 1/4	31.8	3 1/2	90	1 1/4	32	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056						
HYCS9032550	-60	21.7	550	38.0	965	41.1	18.62	41.1	40.84	182	2.98	1 1/4	31.8	3 1/2	90	1 1/4	32	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056						
HYCS9032375.W	-76	14.8	375	31.1	789	34.4	15.65	75.9	34.47	124	2.03	1 1/16 / 1/4	33 / 32	3 1/2	90	1 1/4	32	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056						
HYCS9032550.W	-76	21.7	550	38.0	965	41.2	18.70	41.2	40.97	182	2.98	1 1/16 / 1/4	33 / 32	3 1/2	90	1 1/4	32	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056						
HYCS10032400	-90	15.7	400	—	—	48.6	22.04	48.6	49.57	179	2.93	1 3/8	34.9	4	100	1 1/4	32	5.2	132	11339	5143	22678	10287	34018	15430	45357	20573	56696	25717	113400	51437						
HYCS10032625	-90	24.6	625	—	—	58.9	26.72	58.9	60.10	279	4.57	1 3/8	34.9	4	100	1 1/4	32	5.2	132	11339	5143	22678	10287	34018	15430	45357	20573	56696	25717	113400	51437						
HYCS11535475	-110	18.7	475	—	—	71.6	32.48	71.6	71.46	270	4.43	1 1/2	38.1	4 1/2	115	1 3/8	35	5.8	147	14419	6541	28839	13081	43258	19622	57678	26162	72097	32703	144200	65408						
HYCS11535700	-110	27.6	700	—	—	84.6	38.37	84.6	86.56	397	6.51	1 1/2	38.1	4 1/2	115	1 3/8	35	5.8	147	14419	6541	28839	13081	43258	19622	57678	26162	72097	32703	144200	65408						
HYCS13038475	-150	18.7	475	—	—	94.7	42.96	94.7	95.80	353	5.79	1 3/4	44.5	5 1/8	130	1 1/2	38	6.5	165	18862	8556	37724	17111	56585	25667	75447	34222	94309	42778	188600	85548						
HYCS13038700	-150	27.6	700	—	—	110.8	50.26	110.8	110.57	520	8.52	1 3/4	44.5	5 1/8	130	1 1/2	38	6.5	165	18862	8556	37724	17111	56585	25667	75447	34222	94309	42778	188600	85548						
HYCS14548500	-195	19.7	500	—	—	136.1	61.73	136.1	138.87	457	7.49	2 1/8	54	5 1/4	145	1 7/8	48	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279						
HYCS14548750	-195	29.5	750	—	—	160.6	72.85	160.6	162.48	685	11.23	2 1/8	54	5 1/4	145	1 7/8	48	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279						
HYCS16554600	-260	23.6	600	—	—	207.4	94.08	207.4	206.98	700	11.47	2 1/16	61.9	6 1/2	165	2 1/8	54	8.4	213	29637	13443	59273	26886	88910	40329	118546	53772	148183	67214	296400	134445						
HYCS16554800	-260	31.5	800	—	—	232.4	105.41	232.4	237.20	933	15.29	2 1/16	61.9	6 1/2	165	2 1/8	54	8.4	213	29637	13443	59273	26886	88910	40329	118546	53772	148183	67214	296400	134445						
HYCS19064600	-320	23.6	600	—	—	283.0	128.37	283.0	271.41	928	15.21	2 1/16	61.9	7 1/2	190	2 1/2	64	9.7	246	39270	17813	78540	35625	117810	53438	157080	71250	196350	89063	392700	178126						
HYCS19064800	-320	31.5	800	—	—	316.7	143.65	316.7	316.03	1237	20.28	2 1/16	61.9	7 1/2	190	2 1/2	64	9.7	246	39270	17813	78540	35625	117810	5												

Valves & Manifolds

Harken's patent-pending valves and manifolds are a major update to marine hydraulics. Featuring extremely lightweight and low profile designs, Harken has a complete selection for manual systems with options like Grand Prix sculpting and double-sided manifolds.

Valves

Valves turn different functions on and off from a cockpit-mounted valve panel. Harken's patent-pending valves are very low-profile and weigh half as much as comparable valves. Each single- or double-acting valve has its own pressure relief, letting you match hydraulic power to the maximum working loads of your individual mast and sail controls. Standard 5000 psi versions and sculpted 10000 psi Grand Prix versions are machined from Hardkote-anodized 6061-T6 aluminum.

Manifolds

Manifolds are conduits that supply valves with oil from the pump. Harken offers single- and double-sided manifolds that accommodate up to 9 valves. Standard and sculpted Grand Prix versions are machined from Hardkote-anodized 6061-T6 aluminum.

Relief Valves

Inline and manifold-mount relief valves control the maximum pressure of the entire system. Inline reliefs work with any manual system. Manifold-mount reliefs fit any Harken manifold.

Remote Dump Valves

Remote dump valves let you ease sail controls from the helm, rail, and other key positions. Either use it as a quick-release or regulate its speed with an optional adjustable flow control.

Valve Panels

Valve panels can be ordered with or without stainless steel gauges for any of our manifold configurations. Panels are available in 6061-T6 aluminum, mirror-polished 316 stainless, and clear-coated carbon.



VALVE PANELS

Tapered handle sockets guarantee a perfect fit for the lifetime of the handle



STANDARD VALVES & MANIFOLDS



GRAND PRIX VALVES & MANIFOLDS

Quantum Racing, TP52, Botin & Carkeek, Longitud Caro — Thierry Martinez photo



Single- and double-sided manifolds hold up to 9 valves

Handles fit in any of 4 directions so inverted valves have the same open/closed positions and rotation direction as upright valves

Valves & Manifolds



Part No.	Description	Max pressure		Height		Width		Depth		Weight	
		psi	bar	in	mm	in	mm	in	mm	lb	kg
Valves											
HYV1PP	Single-acting panel mount valve	5000	345	3.9	100	1.9	47	2.6	66	0.7	0.33
HYV1PT	Single-acting thru deck mount valve	5000	345	3.9	100	1.9	47	3.7	95	0.8	0.36
HYV2PP	Double-acting panel mount valve	5000	345	3.9	100	2.5	63	3.7	95	1.6	0.72
HYV2PT	Double-acting thru-deck mount valve	5000	345	3.9	100	2.5	63	4.9	124	1.7	0.76
HYV1GP	Single-acting Grand Prix panel mount valve	10000	689	3.9	100	1.9	47	2.6	66	0.6	0.25
HYV1GT	Single-acting Grand Prix thru-deck mount valve	10000	689	3.9	100	1.9	47	3.7	95	0.6	0.29
HYV2GP	Double-acting Grand Prix panel mount valve	10000	689	3.9	100	2.5	63	3.7	95	1.0	0.47
HYV2GT	Double-acting Grand Prix thru-deck mount valve	10000	689	3.9	100	2.5	63	4.9	124	1.1	0.50
HYVDSPF	Remote dump valve/string pull/flow control	10000	689	2.4	60	1.7	42	0.7	19	1.7	0.78
HYVRI	Relief valve/inline	10000	689	1.4	36	1.0	25	3.0	75	0.2	0.08
HYVRM	Relief valve/manifold mount	10000	689	1.1	28	1.1	28	2.8	72	0.2	0.11
Manifolds											
HYMSP61	Single-sided manifold 1 place	5000	345	0.7	19	2.2	55	1.5	38	0.2	0.08
HYMSP62	Single-sided manifold 2 place	5000	345	0.7	19	5.4	137	1.5	38	0.5	0.22
HYMSP63	Single-sided manifold 3 place	5000	345	0.7	19	8.7	220	1.5	38	0.8	0.36
HYMSP64	Single-sided manifold 4 place	5000	345	0.7	19	11.9	302	1.5	38	1.1	0.52
HYMSP65	Single-sided manifold 5 place	5000	345	0.7	19	15.2	385	1.5	38	1.4	0.64
HYMSG61	Single-sided Grand Prix manifold 1 place	10000	689	0.7	19	1.7	42	1.5	38	0.1	0.05
HYMSG62	Single-sided Grand Prix manifold 2 place	10000	689	0.7	19	5.4	137	1.5	38	0.3	0.15
HYMSG63	Single-sided Grand Prix manifold 3 place	10000	689	0.7	19	8.7	220	1.5	38	0.5	0.22
HYMSG64	Single-sided Grand Prix manifold 4 place	10000	689	0.7	19	11.9	302	1.5	38	0.6	0.29
HYMSG65	Single sided Grand Prix manifold 5 place	10000	689	0.7	19	15.2	385	1.5	38	0.8	0.36
HYMZG63	Double-sided Grand Prix manifold 3 place	10000	689	0.7	19	5.4	137	1.5	38	0.3	0.16
HYMZG64	Double-sided Grand Prix manifold 4 place	10000	689	0.7	19	7.0	178	1.5	38	0.4	0.20
HYMZG65	Double-sided Grand Prix manifold 5 place	10000	689	0.7	19	8.7	220	1.5	38	0.5	0.24
HYMZG66	Double-sided Grand Prix manifold 6 place	10000	689	0.7	19	10.3	261	1.5	38	0.6	0.28
HYMZG67	Double-sided Grand Prix manifold 7 place	10000	689	0.7	19	11.9	302	1.5	38	0.7	0.32
HYMZG68	Double-sided Grand Prix manifold 8 place	10000	689	0.7	19	13.5	344	1.5	38	0.8	0.36
HYMZG69	Double-sided Grand Prix manifold 9 place	10000	689	0.7	19	15.2	385	1.5	38	0.9	0.39

Standard valves have -4 JIC port adapters. Grand Prix valves have plugs in all ports.

Hydraulic Power Units

Harken power units are the complete package for electrically powered hydraulic pumps. Their motors run up to 13 functions and 3 simultaneous functions at full power, ranging from backstay and vang cylinders to davits, keels, and windlasses. Preinstalled double-flow capabilities feed power-hungry equipment.

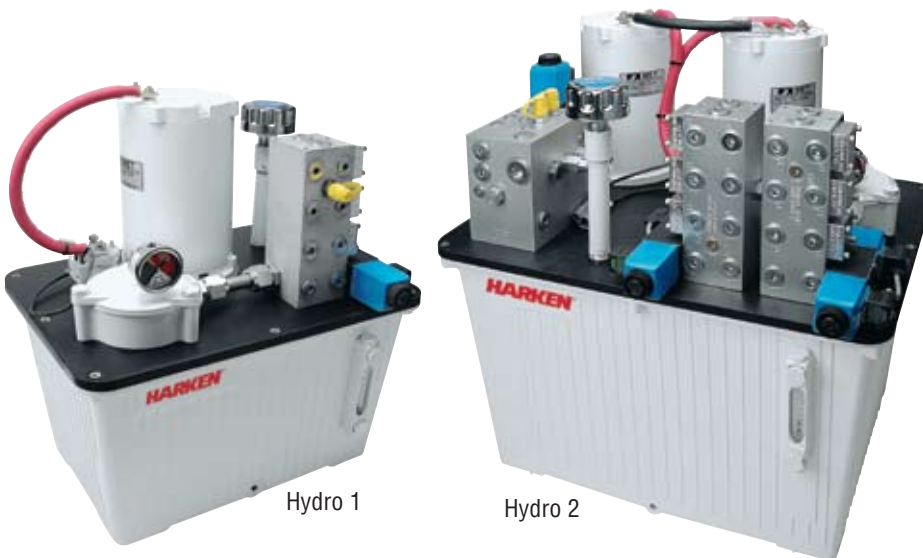
Power units feature highly efficient series-wound motors and IP67-rated motor contactors on the coated aluminum tank's 6061-T6 top. Units have 4000-watt 24V DC motors. 12V DC motors and valves are available by special order. Pumps and clear-anodized manifolds are preinstalled, saving space, installation time, and additional hardware. Drop-in return-line filters provide a no-mess alternative to typical spin-on styles.

Prewired Control Box

Units come with a prewired control box made of tough polycarbonate for motor and valve controls. The terminals and valve wire sets are all sealed and labeled—just connect the functions you need.

Custom Options

Need remote manifolds? Want to integrate an engine-driven pump or use generator power? We will customize a unit to your specifications.



Hydro 1

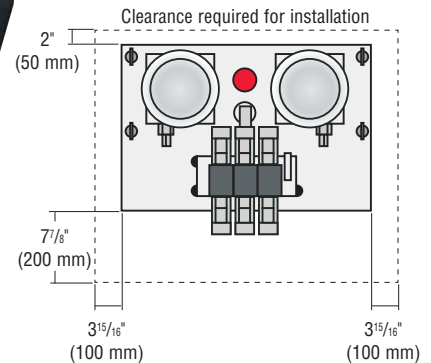
Hydro 2



Drop-in filters and filter status gauges make maintenance fast and easy



Control box



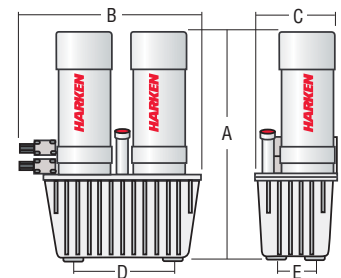
Control Box

Power unit	Height		Width		Depth	
	in	mm	in	mm	in	mm
Hydro 1 / Hydro 2	16.5	419	12.5	318	6.0	152
Hydro 3	19.5	495	17.5	445	10.0	254

Power Unit Dimensions

Power unit	A		B		C		D		E	
	in	mm	in	mm	in	mm	in	mm	in	mm
Hydro 1	22.5	568	19.4	493	14.8	376	12.9	328	7	178
Hydro 2 / Hydro 3	27.4	696	24.2	615	18.6	472	16.9	429	11.2	284

Dimensions subject to change



Hydraulic Power Units

Power unit	Max number of functions	Max simultaneous functions	24V DC Motor	Max current drain amps	Tank capacity		Max operating pressure		Max flow rate		Weight		Fasteners
					gal	L	psi	bar	gpm	L/min	lb	kg	
Hydro 1	4	1	1 x 4 kW	210	7.9	30	2000	140	4	15	119	54	M10
Hydro 2	9*	2**	2 x 4 kW	2 x 210	18.5	70	2000	140	8	30	168	76	M10
Hydro 3	13*	3**	3 x 4 kW	3 x 210	18.5	70	2000	140	12	45	207	94	M10

*One function delivers double flow output (8 gpm) using 2 motors ** This number is reduced by one when a double flow function is in use

Hydraulic Reservoirs

Harken offers pressurized carbon fiber/composite reservoirs and vented blow-molded reservoirs for manual hydraulic systems.

Pressurized Reservoirs

With a 20-liter version that weighs just 3.8 lb (1.736 kg), Harken's pressurized carbon fiber/composite reservoirs are among the lightest in the existence. They are installed in the bilge rather than at pump level for a low center of gravity. Reservoirs include a one-way return line check valve and supply line shutoff valve, both with aluminum -6JIC fittings. A high-quality regulator maintains smooth and consistent oil flow.

A graduated level gauge and translucent sections in the reservoir walls make it easy to monitor oil levels. Pressurized reservoirs require very little maintenance and are cleaner than those that use ambient air pressure.

Custom sizes are available.

Vented Reservoirs

These 2- and 4-liter blow-molded reservoirs are used for smaller Grand Prix systems and production yachts. Reservoirs feature a vented cap to stabilize tank pressure and prevent leaks. Translucent materials allow oil levels to be easily monitored. 3/8 inch (10 mm) hose barbs are welded to the reservoir for supply and return hoses.



VENTED RESERVOIRS



PRESSURIZED RESERVOIRS

Rosebud, STP65, Farr® Yacht Design, Westerly Marine — Eric Simonson photo



Part No.	Description	Maximum capacity		Oil capacity		Height		Maximum dimensions		Depth		Weight	
		gal	L	gal	L	in	mm	in	mm	in	mm	lb	kg
HYRPC20	Pressurized composite reservoir	5.3	20	3.2	12	31.5	800	7.9	200	7.9	200	3.8	1.736
HYRPC14	Pressurized composite reservoir	3.7	14	2.1	8	25.6	650	7.9	200	7.9	200	3.4	1.550
HYRVP04	Vented blow-molded reservoir	1.1	4	1.1	4	11.4	290	8.7	220	4.1	105	1.2	0.545
HYRVP02	Vented blow-molded reservoir	0.5	2	0.5	2	6.7	170	8.7	220	4.1	105	0.8	0.364

NEW

HYDRAULIC SYSTEMS

Grand Prix Cylinders

Used as mast, sail, and keel controls, Harken's highly efficient Grand Prix cylinders outlast and outperform on the hottest raceboats. They've endured hundreds of thousands of cycles in the testing lab and have gone on to prove themselves on champion TP52s and other winning Grand Prix yachts. Meticulous engineering and top-quality components let Harken cylinders excel in constant high-stress racing and harsh marine environments.

Cylinders are available in titanium or Hardkote-anodized, Teflon®-impregnated 7075-T6 aluminum for strength. Graphite-filled Teflon® rod seals and bronze-filled Teflon® piston seals are extremely low friction and are more durable than polyurethane seals. Performance O-rings and slant springs in the seals provide consistent seal pressure for a reliable, long-lasting fit. High-strength titanium, 17-4PH stainless steel, or Nitronic 50 rods and pins provide superior strength and corrosion resistance.

Cylinders include a standard clevis jaw on both ends, but can also be fitted with blocks and different eye types. Cylinders include push, pull, and pull/pull styles.

Speedboat: 100 Juan Yacht Design, Cooksons Boats Ltd. — Billy Black photo



Rods can be fitted with a variety of high-quality end controls



HARDKOTE



TITANIUM

Grand Prix Cylinders

The table below lists common Grand Prix cylinder configurations. Contact Harken for weights and volumes, as these depend on your specifications for materials, pull force, stroke length, and cylinder diameter. 10,000 psi cylinders are available upon request.

Grand Prix cylinders are only intended for systems with a vigorous maintenance schedule, as they are built for extremely high loads at a minimal weight.

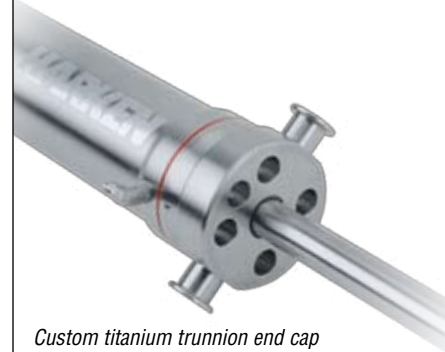


Jaws are standard but eye ends can be special ordered

Custom material combinations available



Custom headstay cylinder with spherical mount



Custom titanium trunion end cap

Part No.*	Cylinder housing material	Gap/pin		Diameter				Pull force			
				Bore		Rod		@ 5000 psi 345 bar		@ 7500 psi 520 bar	
				in	mm	in	mm	lb	kg	lb	kg
HYCS7198xxx	7075-T6 aluminum	5/16	7.9	3/4	19	5/16	8	1824	827	2736	1241
HYCST198xxx	titanium	5/16	7.9	3/4	19	5/16	8	1824	827	2736	1241
HYCS72510xxx	7075-T6 aluminum	3/8	9.5	1	25	3/8	10	3375	1531	5062	2296
HYCST2510xxx	titanium	3/8	9.5	1	25	3/8	10	3375	1531	5062	2296
HYCS73211xxx	7075-T6 aluminum	7/16	11.1	1 1/4	32	7/16	11	5384	2442	8076	3663
HYCST3211xxx	titanium	7/16	11.1	1 1/4	32	7/16	11	5384	2442	8076	3663
HYCS73513xxx	7075-T6 aluminum	1/2	12.7	1 3/8	35	1/2	13	6443	2922	9664	4384
HYCST3513xxx	titanium	1/2	12.7	1 3/8	35	1/2	13	6443	2922	9664	4384
HYCS74013xxx	7075-T6 aluminum	1/2	12.7	1 1/2	40	1/2	13	7854	3563	11781	5344
HYCST4013xxx	titanium	1/2	12.7	1 1/2	40	1/2	13	7854	3563	11781	5344
HYCS74514xxx	7075-T6 aluminum	5/8	15.9	1 3/4	45	9/16	14	10784	4891	16176	7337
HYCST4514xxx	titanium	5/8	15.9	1 3/4	45	9/16	14	10784	4891	16176	7337
HYCS75016xxx	7075-T6 aluminum	5/8	15.9	2	50	5/8	16	14174	6429	21261	9644
HYCST5016xxx	titanium	5/8	15.9	2	50	5/8	16	14174	6429	21261	9644
HYCS75518xxx	7075-T6 aluminum	3/4	19.1	2 1/8	55	11/16	18	15877	7202	23815	10802
HYCST5518xxx	titanium	3/4	19.1	2 1/8	55	11/16	18	15877	7202	23815	10802
HYCS76521xxx	7075-T6 aluminum	7/8	22.2	2 1/2	65	13/16	21	21951	9957	32927	14935
HYCST6521xxx	titanium	7/8	22.2	2 1/2	65	13/16	21	21951	9957	32927	14935
HYCS77525xxx	7075-T6 aluminum	1	25.4	3	75	1	25	31416	14250	47124	21375
HYCST7525xxx	titanium	1	25.4	3	75	1	25	31416	14250	47124	21375
HYCS78029xxx	7075-T6 aluminum	1 1/4	31.8	3 1/8	80	1 1/8	29	33379	15141	50069	22711
HYCST8029xxx	titanium	1 1/4	31.8	3 1/8	80	1 1/8	29	33379	15141	50069	22711
HYCS79035xxx	7075-T6 aluminum	1 3/8	34.9	3 1/2	90	1 3/8	35	40681	18453	61022	27679
HYCST9035xxx	titanium	1 3/8	34.9	3 1/2	90	1 3/8	35	40681	18453	61022	27679
HYCS710038xxx	7075-T6 aluminum	1 1/2	38.1	4	100	1 1/2	38	53996	24492	80994	36738
HYCST10038xxx	titanium	1 1/2	38.1	4	100	1 1/2	38	53996	24492	80994	36738

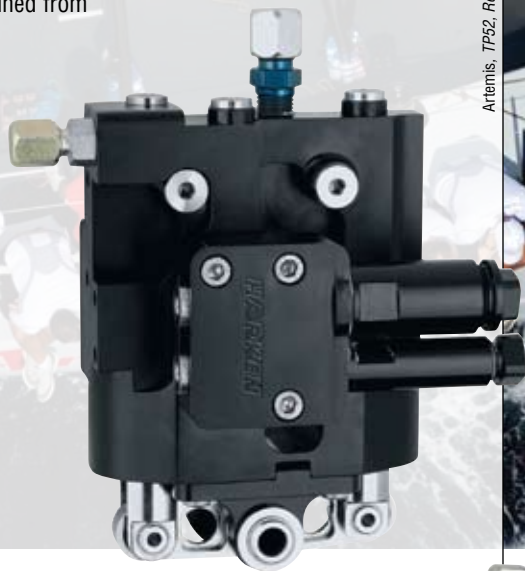
*When ordering, replace xxx with desired stroke length in millimeters.

Hydraulic Pumps

Harken 3-speed pumps push oil faster and more efficiently than other pumps on the market, reducing wasted time and energy. At preset points, the pump automatically shifts to the next speed. Shift points can be adjusted to fit crew strength and sailing style. We also make a 2-speed pump that offers the same high-strength handles, user-adjustable autoshifting, and mounting accessories.

Bolt holes in the Hardkote-anodized 6061-T6 aluminum pump housing are threaded with stainless-steel inserts to prevent corrosion around the stainless bolts. An optional adhered isolation plate improves load distribution even more by transferring torque directly to the mounting surface rather than the bolt holes. The piston shafts and rocker arms are machined from 17-4PH stainless steel.

Pumps have splined shafts to ensure a tight fit and to allow the handle to be mounted at the exact angle you choose. Standard round-tipped handles are made of knurled 6061-T6 Hardkote-anodized aluminum and fit most marine pumps. Grand Prix alternatives include carbon and knurled titanium. An optional square-tipped style allows the handle to be rocked 5 degrees laterally from the pumping direction to store against the cockpit wall.



3-SPEED PUMP



Optional isolation plates made of extremely resilient G10 improve load distribution by transferring torque directly to the mounting surface

CARBON HANDLE



ALUMINUM HANDLE

Handles

Part No.	Description	Ø		Length		Weight	
		in	mm	in	mm	lb	kg
HYPMH6600	Pump Handle 600 mm/aluminum	1¼	32	23⅞	600	1.3	0.58
HYPMH6800	Pump Handle 800 mm/aluminum	1¼	32	31½	800	1.6	0.73
HYPMHC800	Pump Handle 800 mm/carbon	1¼	32	31½	800	1.2	0.55
HYPMHC800S	Pump Handle 800 mm/carbon/square tip	1¼	32	31½	800	1.3	0.58
HYPMHC1000	Pump Handle 1000 mm/carbon	1¼	32	39⅞	1000	1.4	0.65
HYPMHC1000S	Pump Handle 1000 mm/carbon/square tip	1¼	32	39⅞	1000	1.5	0.66
HYPMHT800	Pump Handle 800 mm/titanium	1¼	32	31½	800	1.3	0.57
HYPMHT800S	Pump Handle 800 mm/titanium/square tip	1¼	32	31½	800	1.3	0.58

Pumps

Part No.	Description	Output/stroke (push and pull)						Max pressure	Ports/fittings		Weight		
		1st: Low pressure		2nd: Medium pressure		3rd: High pressure			Suction	Pressure	lb	kg	
		in³	cc	in³	cc	in³	cc						psi
HYPM2	2-Speed pump/auto shift*‡	0.99	16.3	0.25	4.1	—	—	5000	345	3/8" hose barb	1/4" 37° JIC	—	—
HYPM3-1.1R	3-Speed pump/auto shift/round handle socket*	2.03	33.3	0.51	8.3	0.18	3.0	10000	689	3/8" NPT	7/16" ORB	6.9	3.13
HYPM3-1.1S	3-Speed pump/auto shift/square handle socket*	2.03	33.3	0.51	8.3	0.18	3.0	10000	689	3/8" NPT	7/16" ORB	6.9	3.14
HYPM3MP	Pump anti-torque mounting plate	—	—	—	—	—	—	—	—	—	—	0.2	0.09

*M8 fasteners ‡Available 2010



Custom Yacht Hydraulics

Harken® offers cylinders and custom hydraulic power systems for megayachts. These complete solutions allow crew to easily control all hydraulic functions and sail controls, including mainsheet traveler, backstay, halyard tensioner, outhaul, vang, furling, and winch systems. Systems include custom power units, PTO pumps, valve manifolds, and electrical control systems.

Cylinders

Cylinders feature Hardkote-anodized 6061-T6 aluminum housing, high-strength, corrosion-resistant Nitronic 50 stainless rods and pins. As the cylinder moves, low-friction Teflon® seals reduce drag for less wear.

PTO Pumps

Customized for specific hydraulic systems, PTO (power take-off) pumps convert engine power to hydraulic power to handle gear requiring high horsepower such as Captive Reel winches, bow thrusters, or windlasses.

Electro-Hydraulic Valves

Electro-hydraulic valves are electronically controlled by a PLC (programmable logic controller) for a high degree of precision and repeatability. They offer on/off or variable flow rates which can be operated by a push-button or joystick.

Nazemin V — Mark Lloyd photo



CUSTOM CONTROL PANEL



CUSTOM POWER UNIT



CUSTOM VALVE BLOCK



Custom power units are available from 3 to 22 kilowatts in any configuration

HydroTrim

The Harken HydroTrim is true push-button sailing for main and headsail sheeting. Using a 1:4 or 1:6 reverse purchase, it solves the problem of winches that tail line into the cockpit—the hidden belowdecks or in-boom purchase contains all line within the system and saves valuable space on deck.

The cylinder is affixed to the hull or frame with a two-piece retaining bracket. This one-time installation allows the cylinder to be easily removed and serviced without unbolting anything from the hull. The blocks can be removed from the cylinder ends with a single pin so you can service them offsite or leave the rigging intact while servicing the cylinder. Two smaller low-friction sheaves on the cylinder ends replace the larger diameter sheaves typical of most belowdecks trimming systems, reducing the overall length of the system and allowing installation into smaller spaces.

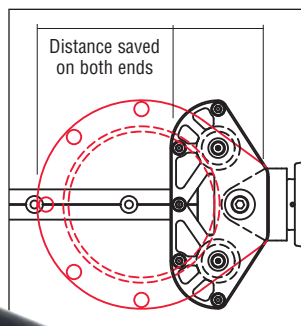
Cylinders feature bronze-filled Teflon® bearings that maintain piston and rod alignment longer than common acetal bearings. Graphite-filled Teflon® rod seals and bronze-filled Teflon® piston seals are extremely low friction and are more durable than polyurethane seals. Performance O-rings and slant springs in the nonabsorbent Teflon® cylinder seals provide consistent seal pressure for a reliable long-lasting fit. Cylinders, rod, T-Track, and mounting brackets are made with Hardkote-anodized, Teflon®-impregnated 6061-T6 aluminum. All fittings and fasteners are stainless steel.

Custom cylinder lengths are available.

Paula Rosa, Shipman 80; J & J Design, Seaway Group — Studio 37 photo



The HydroTrim fits into smaller spaces by using two smaller sheaves in place of one large sheave.



Blocks remove from the cylinder ends with a single pin for easy service.



HydroTrim



Part No.	Bore Ø		Rod Ø		Stroke		Max Housing OD		Reverse purchase	Max sheet load* at pressure				Oil volume cap end	
	in	mm	in	mm	in	mm	in	mm		2000 psi/140 bar	3000 psi/210 bar	lb	kg	gal	L
HYCT453235.4	1 3/4	45	1 1/4	32	14	350	2.27	57.7	4	1203	546	1804	818	0.14	0.5
HYCT453235.6	1 3/4	45	1 1/4	32	14	350	2.27	57.7	6	802	364	1203	546	0.14	0.5
HYCT453270.4	1 3/4	45	1 1/4	32	28	700	2.27	57.7	4	1203	546	1804	818	0.29	1.1
HYCT453270.6	1 3/4	45	1 1/4	32	28	700	2.27	57.7	6	802	364	1203	546	0.29	1.1
HYCT553840.4	2 3/16	55	1 1/2	38	16	400	2.86	72.6	4	1879	852	2819	1279	0.26	1.0
HYCT553840.6	2 3/16	55	1 1/2	38	16	400	2.86	72.6	6	1253	568	1879	852	0.26	1.0
HYCT553880.4	2 3/16	55	1 1/2	38	31	800	2.86	72.6	4	1879	852	2819	1279	0.51	1.9
HYCT553880.6	2 3/16	55	1 1/2	38	31	800	2.86	72.6	6	1253	568	1879	852	0.51	1.9
HYCT654850.4	2 1/2	65	1 7/8	48	20	500	3.17	80.5	4	2454	1113	3682	1670	0.42	1.6
HYCT654850.6	2 1/2	65	1 7/8	48	20	500	3.17	80.5	6	1636	742	2454	1113	0.42	1.6
HYCT6548100.4	2 1/2	65	1 7/8	48	39	1000	3.17	80.5	4	2454	1113	3682	1670	0.84	3.2
HYCT6548100.6	2 1/2	65	1 7/8	48	39	1000	3.17	80.5	6	1636	742	2454	1113	0.84	3.2
HYCT755460.4	3	75	2 1/8	54	24	600	3.8	96.5	4	3534	1603	5301	2405	0.72	2.7
HYCT755460.6	3	75	2 1/8	54	24	600	3.8	96.5	6	2356	1069	3534	1603	0.72	2.7
HYCT7554120.4	3	75	2 1/8	54	47	1200	3.8	96.5	4	3534	1603	5301	2405	1.4	5.5
HYCT7554120.6	3	75	2 1/8	54	47	1200	3.8	96.5	6	2356	1069	3534	1603	1.4	5.5
HYCT906065.4	3 1/2	90	2 1/2	60	26	650	4.57	116.1	4	4811	2182	7216	3273	1.1	4.0
HYCT906065.6	3 1/2	90	2 1/2	60	26	650	4.57	116.1	6	3207	1455	4811	2182	1.1	4.0
HYCT9060130.4	3 1/2	90	2 1/2	60	51	1300	4.57	116.1	4	4811	2182	7216	3273	2.1	8.1
HYCT9060130.6	3 1/2	90	2 1/2	60	51	1300	4.57	116.1	6	3207	1455	4811	2182	2.1	8.1
HYCT1007575.4	4	100	3	75	30	750	5.5	139.7	4	6283	2850	9425	4275	1.6	6.1
HYCT1007575.6	4	100	3	75	30	750	5.5	139.7	6	4189	1900	6283	2850	1.6	6.1
HYCT10075150.4	4	100	3	75	59	1500	5.5	139.7	4	6283	2850	9425	4275	3.2	12.2
HYCT10075150.6	4	100	3	75	59	1500	5.5	139.7	6	4189	1900	6283	2850	3.2	12.2
HYCT1159090.4	4 1/2	115	3 1/2	90	35	900	6	152.4	4	7952	3607	11928	5411	2.4	9.2
HYCT1159090.6	4 1/2	115	3 1/2	90	35	900	6	152.4	6	5301	2405	7952	3607	2.4	9.2
HYCT11590180.4	4 1/2	115	3 1/2	90	71	1800	6	152.4	4	7952	3607	11928	5411	4.9	18.5
HYCT11590180.6	4 1/2	115	3 1/2	90	71	1800	6	152.4	6	5301	2405	7952	3607	4.9	18.5
HYCT130100100.4	5 1/8	130	4	100	39	1000	7	177.8	4	10314	4679	15472	7018	3.5	13.3
HYCT130100100.6	5 1/8	130	4	100	39	1000	7	177.8	6	6876	3119	10314	4679	3.5	13.3
HYCT130100200.4	5 1/8	130	4	100	79	2000	7	177.8	4	10314	4679	15472	7018	7.0	26.6
HYCT130100200.6	5 1/8	130	4	100	79	2000	7	177.8	6	6876	3119	10314	4679	7.0	26.6
HYCT145115115.4	5 3/4	145	4 1/2	115	45	1150	8	203.2	4	12984	5889	19475	8834	5.1	19.3
HYCT145115115.6	5 3/4	145	4 1/2	115	45	1150	8	203.2	6	8656	3926	12984	5889	5.1	19.3
HYCT145115230.4	5 3/4	145	4 1/2	115	91	2300	8	203.2	4	12984	5889	19475	8834	10.2	38.5
HYCT145115230.6	5 3/4	145	4 1/2	115	91	2300	8	203.2	6	8656	3926	12984	5889	10.2	38.5
HYCT165130125.4	6 1/2	165	5 1/8	130	49	1250	9	228.6	4	16592	7526	24887	11289	7.1	26.8
HYCT165130125.6	6 1/2	165	5 1/8	130	49	1250	9	228.6	6	11061	5017	16592	7526	7.1	26.8
HYCT165130250.4	6 1/2	165	5 1/8	130	98	2500	9	228.6	4	16592	7526	24887	11289	14.1	53.5
HYCT165130250.6	6 1/2	165	5 1/8	130	98	2500	9	228.6	6	11061	5017	16592	7526	14.1	53.5
HYCT190145125.4	7 1/2	190	5 3/4	145	49	1250	10	254.0	4	22089	10020	33134	15029	9.4	35.6
HYCT190145125.6	7 1/2	190	5 3/4	145	49	1250	10	254.0	6	14726	6680	22089	10020	9.4	35.6
HYCT190145250.4	7 1/2	190	5 3/4	145	98	2500	10	254.0	4	22089	10020	33134	15029	18.8	71.3
HYCT190145250.6	7 1/2	190	5 3/4	145	98	2500	10	254.0	6	14726	6680	22089	10020	18.8	71.3

*Sheet system friction not calculated

Hydraulic Accessories

Harken offers a complete range of high-quality kits and components for the professional installation, service, and maintenance of your hydraulic system.

Filters

Filtration is essential to the health and longevity of your hydraulic system. Harken recommends the 40-micron suction/return filter between the reservoir and the pump as well as an extremely fine 3-micron filter between the pump and the valves. The 40-micron filter has an anodized aluminum body with a removable, cleanable, and replaceable sintered bronze element. The high pressure 3-micron filter is made from electropolished 17-4PH stainless. It has a replaceable paper element and can handle pressures up to 10,000 psi. -4SAE ports allow the high pressure filter to accept any combination of fittings and adapters.

Pressure Transducers

Pressure transducers use the onboard computer to convert hydraulic pressures of up to 10,000 psi into tons or other load units. Standard lightweight versions and super lightweight Grand Prix versions are available.

Pressure Gauges

Pressure gauges, offered as an alternative to electronic transducers, can be mounted into the valve panel or plumbed remotely into a pressure line. Stainless steel 1.5 in (40 mm) cases are filled with glycerin to dampen needle movement.

Plumbing

Harken has a complete line of high pressure and low pressure plumbing for manual hydraulic systems. All high pressure fittings and adapters are machined from stainless steel. Hoses can be sent to you assembled and preflushed.

Blanking Kits

Use a blanking kit to maintain the functionality of your hydraulic system when a valve is removed. Kits include O-rings and bolts.

Seal Kits

Seal kits are available for all valves, cylinders, and pumps. Kits include all normal wear items such as O-rings, seals, and nylon tip set screws.

Repair Kits

Repair kits are available for all valves, cylinders, and pumps. They include everything in the seal kit with the addition of select machined components that may require occasional replacement.

HAWE Tool

The HAWE tool is used for removing and reinstalling the check valves included in valve and pump repair kits.



Filters



Pressure transducer



Pressure gauge



Plumbing



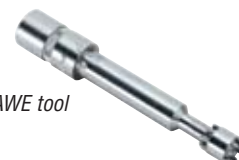
Blanking plate



Seal kit



Repair kit



HAWE tool

Put the Smooth Back in Sailing



SAILKOTE™

High Performance Dry Lubricant

Use on hatches, drawers, sliding doors, sail tracks, mast tracks and slides, engine lower units, propellers and bow thrusters, fishing reel components and fly line, sails, battens and telltales, slider cars and tracks

- Repels water, dirt, salt and contaminants
- Reduces drag in air and water
- Clean, dry and easy-to-use
- Lasts up to 10 times longer than Teflon® additives, oil or wax-based lubricants

HULLKOTE™

High Performance Speed Polish

Use on fiberglass, metal, plexiglass and painted surfaces

- Cleans, polishes and protects
- Reduces drag and repels water
- Environmentally friendly citrus base
- Long-lasting, high-gloss finish
- Superior UV protection

ONEDROP™

Ball Bearing Conditioner

Use on ball bearing traveler cars and battcars

- Repels salt, dirt and other deposits
- Protects, lubricates and conditions bearing surfaces
- Reduces friction so balls to roll freely and evenly, greatly improving performance
- Only one drop needed

Team
McLube™

www.mclubemarine.com

Garage Storage

Store everything from canoes and kayaks to bikes, ladders and roof racks at ceiling level.

Easy to Install • Complete kit • Self-locking

Easy to Use

One person can raise and lower with a single control rope.



7800 Bike/utility lift



7807
Two-point
lift system



7801, 7802
7803, 7806
Storage system

Part No.	Mechanical Advantage	Max vertical lift*		Minimum working load		Working load limit	
		ft	m	lb	kg	lb	kg
7800	2:1	8	2.4	10	4.5	45	20
7801	3:1	8.5	2.6	15	7	60	27
7802	4:1	8.5	2.6	25	11	90	41
7803	6:1	8.5	2.6	45	20	145	66
7806	8:1	8.5	2.6	75	34	200	91
7807	3:1	8.5	2.6	15	7	60	27

*With 10 ft (3 m) ceiling



www.hoister.com



2010 NEW PRODUCTS

NEW

Aluminum Tiller Extension

The rigid anodized body of this tiller extension transmits subtle boat and rudder movements, allowing you to steer by the feel of the helm. The elegantly simple and lightweight design has no unnecessary frills—every aspect contributes to its strength, stiffness, or comfort. Its universal joint is reinforced by a rope core for extra durability and the thick UV-protected grip is perfect for full dagger-grip and fingertip steering.



Devoti D-One — Pierrick Conin photo



Base cover snaps off to remove tiller extension



Universal joint rotates 360°



Non-slip foam rubber grip

- 7100.24
- 7100.30
- 7100.33
- 7100.36
- 7100.42
- 7100.48

Part No.	Description	Length		Tube Ø		Weight		Fastener spacing		Fasteners		Joint type	Tube material
		in	mm	in	mm	oz	g	in	mm	in	mm		
7100.24	Tiller extension	24	600	5/8	16	4.1	117	1.25	31.8	3/16	5	universal	aluminum
7100.30	Tiller extension	30	760	5/8	16	4.9	138	1.25	31.8	3/16	5	universal	aluminum
7100.33	Tiller extension	33	840	5/8	16	5.2	149	1.25	31.8	3/16	5	universal	aluminum
7100.36	Tiller extension	36	915	5/8	16	5.6	160	1.25	31.8	3/16	5	universal	aluminum
7100.42	Tiller extension	42	1070	5/8	16	6.3	178	1.25	31.8	3/16	5	universal	aluminum
7100.48	Tiller extension	48	1220	5/8	16	7.1	203	1.25	31.8	3/16	5	universal	aluminum
7101	Tiller extension base*	1.75	44	—	—	.18	5	1.25	31.8	3/16	5	—	—

*Fasteners not included

18 mm Switch T-Track Battcar Systems

The 18 mm car bodies are built of fiber-reinforced, lubricated plastic that is UV stabilized with black additive for maximum protection. 18 mm high-load car bodies are machined aluminum with low-friction Delrin® sliders. Aluminum cars and T-Track are Hardkote anodized for durability.

Fits Boats:

18 mm: Monohulls: 37-45 ft (11 m - 13.5 m);

Multihulls: 30-35 ft (9 - 10.5 m);

18 mm High-Load:

Monohulls 45 - 50 ft (13.5 m - 15 m);

Multihulls 35 - 40 ft (10.5 - 12 m)



HC7905



HC8537



HC7905HL



HC7904HL
HC8537HL



HC7906



HC7906HL

INTERMEDIATE CARS

BATTEN CARS

HEADBOARD CARS

Cars

Part No.	Description	Length		Width		Weight		Max headboard thickness		Maximum sail area				Maximum working load	
		in	mm	in	mm	oz	g	in	mm	ft ²	m ²	ft ²	m ²	lb	kg
18 mm															
HC7906	Headboard car	7 ³ / ₁₆	198	1 ²¹ / ₃₂	42	12.8	359	9 ¹ / ₁₆	14	450	40	325	30	700	318
HC7905	Intermediate car	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	1.6	45	—	—	450	40	325	30	300	103
HC8537	Batten car/10 mm stud	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	3.2	91	—	—	450	40	325	30	300	103
18 mm High-Load (HL)															
HC7906HL	Headboard car	7 ³ / ₁₆	198	1 ²¹ / ₃₂	42	14.4	408	9 ¹ / ₁₆	14	610	55	500	45	1600	725
HC7905HL	Intermediate car	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	3.2	91	—	—	610	55	500	45	600	272
HC7904HL	Batten car/12 mm stud	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	4.9	139	—	—	610	55	500	45	600	272
HC8537HL	Batten car/10 mm stud	2 ¹ / ₂	63	1 ²¹ / ₃₂	42	4.8	136	—	—	610	55	500	45	600	272

Xc 42, Niels Jeppesen — X-Yachts



Cut car stack height in half by flaking the sail alternately to port and starboard of the boom.

BATTCAR Q&A

WHY DO I WANT A SWITCH BATTCAR SYSTEM?

A Switch Battcar system cuts stack height in half, so putting on a sail cover or connecting/disconnecting your halyard is a much easier task. The system works by alternately dropping mainsail cars onto port and starboard storage racks. Headboard cars articulate and pass through the switch, reducing stack height even more.

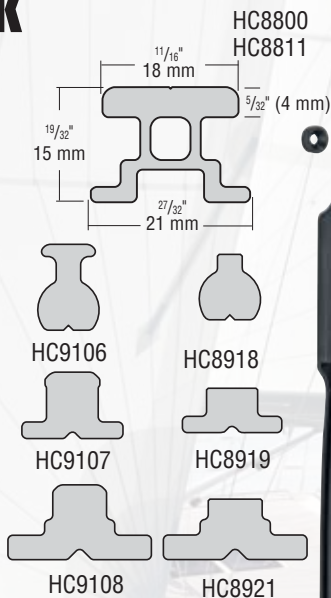
18 mm Switch T-Track Battcar Systems

Switch system track is machined or extruded from 6061-T6 aluminum and Hardkote anodized for a long-lasting surface. For masts with sail grooves, 18 mm slug-mount track uses a unique system that allows mast-up installation. Use high-load slug-mount tracks on boats over 40' (12.2 m) at sail headboard locations at full hoist and when sail is reefed. Drill/tap track and switches fit masts without sail grooves. Join drill/tap track sections with splice links. Order one per track section. Boats with larger sail areas should use long switches to accommodate more cars.

Mounting Kits and Endstops

Slug mounting kits are available for flat or round mast grooves. Order one kit per track section.

Switch track includes screwpin stops for easy car and sail removal below switch. Stop at masthead also included.



Xc 42, X-Yachts, Per Heegaard Photo



SLUG MOUNT

Mounting Kits: Slug Mount

Part No.	Description	Mounting slug				Connector slug				Flat mast groove gap					
		Length in	Weight mm	oz	g	Mounting slugs/kit	Length in	Weight mm	oz	g	Connector slugs/kit	Min in	Max in		
Switch Mounting Kits															
HC8918	Round mast groove	2	51	.32	9	3	—	—	—	—	—	—	—		
HC8919	Flat mast groove	1 3/4	45	.28	8	3	—	—	—	—	5/16	8	7/16	11	
HC8921	Wide flat mast groove	1 3/4	45	.56	16	3	—	—	—	—	7/16	11	5/8	16	
Track Mounting Kits															
HC9106	Round mast groove	3/4	19	.14	4	19	2 5/8	67	.54	15	1	—	—	—	
HC9702	Round mast groove, extras*	3/4	19	.14	4	10	—	—	—	—	—	—	—	—	
HC9107	Flat mast groove	3/4	19	.17	5	19	2 5/8	67	.60	17	1	5/16	8	7/16	11
HC9703	Flat mast groove, extras*	3/4	19	.17	5	10	—	—	—	—	—	5/16	8	7/16	11
HC9108	Wide flat mast groove	3/4	19	.25	6	19	2 5/8	67	.94	23	1	7/16	11	5/8	16
HC9704	Wide flat mast groove, extras*	3/4	19	.25	6	10	—	—	—	—	—	7/16	11	5/8	16

*Extra slug kit for HC8811 track. Order one kit in addition to HC9106, HC9107 or HC9108 for sail headboard location at full hoist and when sail is reefed.

Track

Part No.	Description	Length		Width		Weight		Fasteners	Fastener spacing
		in	mm	in	mm	oz	g		
Slug Mount									
HC8798	Switch/short	24	610	2 5/8	67	32	907	5	—
HC8799	Switch/long	33 3/4	857	2 5/8	67	47	1336	5	—
HC8800	T-Track	80 13/16	2051	2 1/32	21	27	758	5	100
HC8811	T-Track/high-load	80 13/16	2051	2 1/32	21	26	748	5	50
Drill/Tap									
HC8218	Switch/short	23 13/16	605	3	76	20.1	571	5	75
HC8219	Switch/long **	33 25/32 *	858	3	76	26.7	758	5	75
HC7827	3 m T-Track	118 1/8	3000	2 3/32	18	38.9	1106	5	75
HC9597	2 m T-Track/high load	78 3/4	2000	2 3/32	18	25.5	723	5	50
HC8230	Splice link	—	—	—	—	—	—	—	—

**Includes storage tracks



DRILL/TAP

HC8218
HC8219

Electric Jib Reefing & Furling



PUSH-BUTTON SAIL CONTROL

Designed for large cruising boats, electric furling is a headsail system that helps you get the most out of your boat, while letting you comfortably reef, furl and set sails from the cockpit with the push of a button.

DETAILS MAKE THE DIFFERENCE

HIGH-STRENGTH MATERIALS, SCULPTED DESIGN

The torque tube, motor, and gear housing are deep-saturation Hardkote-anodized, UV-stabilized aluminum. The sculpted gear box and streamlined motor housing is sealed with high-quality lip seals. The motor mounts vertically into pulpits, clearing anchor tackle and providing low windage.

HIGH-TORQUE, LOW-POWER MOTOR

The motor is a permanent magnet design and features high torque and low power consumption. Inside, the hardened steel gears are permanently lubricated. The reversible drive uses a high-reduction worm gear set to prevent reefed sails from unfurling under load.

EASY TO INSTALL OR UPGRADE

C-shaped connectors slip over the headstay without feeding wire through the connector. The lower unit fits over the existing turnbuckle allowing easy length adjustment. Easy upgrade from a Cruising Unit 2 and MKIV Unit 3 manual unit.



1. Strong Foil Joints

Tough triple-interlock foil joints withstand years of torque loading.

2. 12- or 24-Volt Systems

Available in 12 or 24 volts; switches and 12- or 24-volt control box and circuit breaker included.

3. Emergency Manual Operation

Use supplied crank handle or cordless drill adapter.

4. Scratch-Resistant Link Plates

Stainless steel link plates fit over standard turnbuckle, resist scratches, and can be easily repolished.

Unit 2E Typical Boat Length 35' - 46' (10.6 - 14.2 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
5/16", 3/8", 7/16" (8, 10, 11, 12 mm)	-12 -17, -22 (7.14, 8.38, 9.53 mm)	5/8", 3/4" (15.9, 19.1 mm)

Headstay Length Standard 60'3" (18.36 m); max 67'3" (20.49 m)

Part No.	Description
7312.13 12V	Electric Furler 12 Volt with control box, switches, and circuit breaker
7312.13 24V	Electric Furler 24 Volt with control box, switches, and circuit breaker

Toggle Assembly Required - sold separately

7312.22 5/8	Jaw/Jaw with link plate with 5/8" (15.9 mm) clevis pin
7413.22 3/4	Jaw/Jaw with link plate with 3/4" (19.1 mm) clevis pin

Optional Parts

7312.12V.CONV	Conversion Kit Cruising manual to electric*
7312.24V.CONV	Conversion Kit Cruising manual to electric*
7312.30	Extra 7' (2.13 m) luff foil extrusion
7312.31	Extra 9" (229 mm) connector with isolator
7424 -12	-12 Rod adaptor stud (thread Ø UNF 5/8")**
7425 -17	-17 Rod adaptor stud (thread Ø UNF 3/4")**
7426 -22	-22 Rod adaptor stud (thread Ø UNF 3/4")**

* Includes switches and 12- or 24-volt control box and circuit breaker **Use with conventional turnbuckle

Unit 3E Typical Boat Length 45' - 60' (13.7 - 18.3 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/16", 1/2" (11, 12 mm)	-22, -30 (9.53, 11.10 mm)	3/4", 7/8" (19.1, 22.2 mm)

Headstay Length Standard 75'1" (22.88 m); max 82'1" (25.02 m)

Part No.	Description
7413.13 12V	Electric Furler 12 Volt with control box, switches, and circuit breaker
7413.13 24V	Electric Furler 24 Volt with control box, switches, and circuit breaker

Toggle Assembly Required - sold separately

7413.22 3/4	Jaw/Jaw with link plate with 3/4" (19.1 mm) clevis pin
7413.22 7/8	Jaw/Jaw with link plate with 7/8" (22.2 mm) clevis pin

Optional Parts

7413.12V.CONV	Conversion Kit MKIV manual to electric*
7413.24V.CONV	Conversion Kit MKIV manual to electric*
7413.30	Extra 7' (2.13 m) luff foil extrusion
7413.31	Extra 9 3/4" (248 mm) connector with bushings
7426 -22	-22 Rod adaptor stud (thread Ø UNF 3/4")**
7427 -30	-30 Rod adaptor stud (thread Ø UNF 7/8")**

* Includes switches and 12- or 24-volt control box and circuit breaker **Use with conventional turnbuckle

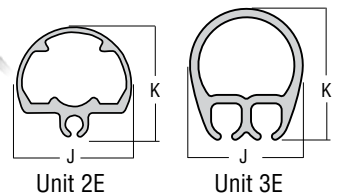
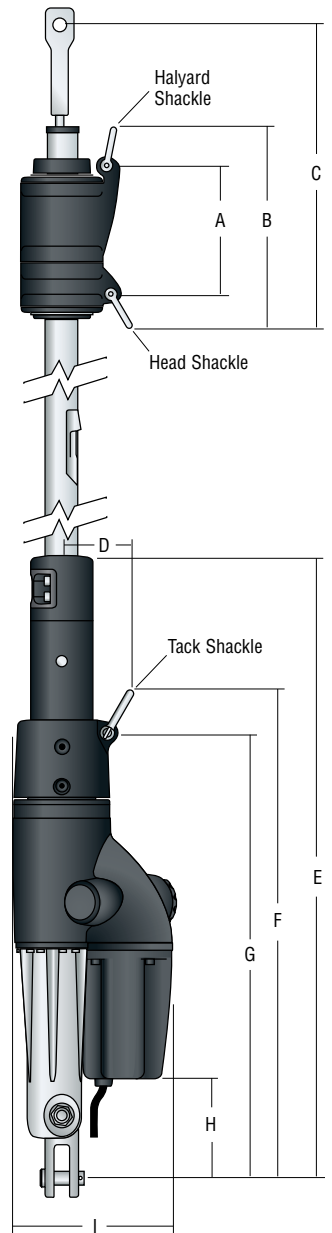


Foil Dimensions

Unit	J		K		Foil length		Luff tape
	in	mm	in	mm	ft	m	
2E	1 3/4	44	1 5/8	42	7	2.13	#6 5/32" (5 mm)
3E	1 1/2	38	1 11/16	43	7	2.13	#6 5/32" (5 mm)

Electric Furler Dimensions

Part No.	A		B		C (Max)		D		E		F		G		H		I	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
7312.13 with 7312.22 5/8 toggle	4 1/2	114	8	203	16	406	3 1/4	82	31 7/8	810	24 1/2	622	22 39/64	574	4 1/2	116	8 11/32	212
7312.13 with 7413.22 3/4 toggle	4 1/2	114	8	203	16	406	3 1/4	82	32 1/2	826	25 3/32	637	23 1/4	590	5 3/16	132	8 11/32	212
7413.13 with 7413.22 3/4 toggle	7 9/16	186	11 5/8	296	18	457	3 1/4	82	32 1/2	826	25 3/32	637	23 1/4	590	5 3/16	132	8 11/32	212
7413.13 with 7413.22 7/8 toggle	7 9/16	186	11 5/8	296	18	457	3 1/4	82	33 7/16	840	25 11/16	652	23 13/16	605	5 3/4	146	8 11/32	212



7312.13 12V
7312.13 24V
7413.13 24V
7413.13 24V

Small Boat Furling

Underdeck Furler

A ball bearing underdeck furler minimizes windage and provides a clean, uncluttered bow for easier mooring and anchoring. It also allows the tack of the sail to be at deck level for better sail shape and more forward power. Its single through-deck spherical joint provides a low-profile, nearly watertight system that aligns the spool to the headstay. Like all small boat furlers, the underdeck furler is not suitable for reefing and it requires a jib with an embedded luff wire. Swivels must be purchased separately.

Hoistable Swivels

Hoistable ball bearing swivels slide over your headstay and work in conjunction with your normal upper swivel. Since normal swivels are attached to the masthead, you usually need to take down the mast or tip the boat on its side to detach the sail. By attaching the head of your sail to the hoistable swivel instead, you can simply lower the swivel with the jib halyard and unshackle the sail. In addition to making it much easier to change or remove your headsail, the swivel is independent from the headstay so it gives you a way to tension the luff independently of the mast rake. Hoistable swivels are compatible with any Harken small boat furler.

Furler Kit with Hoistable Swivel

This kit is similar to Harken's existing 435 high-load furler kit but includes everything you need for a hoistable halyard swivel. The kit includes a 164 swivel, HC7744 hoistable swivel, 165 drum, and a tang to attach the forestay and sail tack to the lower unit.



UNDERDECK FURLER

HC9226



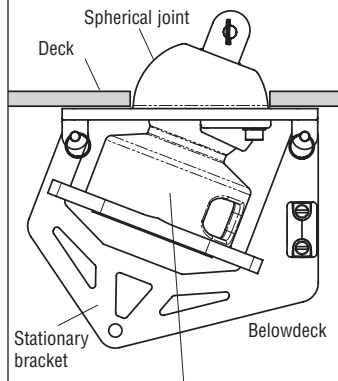
HC7744
HC9330

HOISTABLE SWIVEL



HSB463

FURLER KIT



Spool pivots to align with load



Turnbuckle eye on stationary bracket attaches to an underdeck chainplate



Fairlead feeds line onto the spool

Part No.	Upper swivel	Use with	
		Lower drum	Hoistable swivel
HC7744	164	165 or HC9226	—
HC9330	207	208	—
HC9226	164	—	HC7744

Part No.	Description	Pin-to-pin length		Drum Ø		Line Ø		Jaw width		Max luff wire Ø		Clevis pin Ø		Weight		Maximum working load	
		in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	oz	g	lb	kg
HC7744	Halyard swivel/hole for 4 mm wire	4 ³ / ₁₆ *	124*	—	—	—	—	—	—	5 ³ / ₃₂	4	5 ³ / ₃₂	4	2.9	82	810	367
HC9226	Underdeck furler	6 ¹ / ₈	156	3 ¹ / ₈	79	5 ³ / ₃₂	4	5 ¹ / ₁₆	8	1 ¹ / ₈	3	1 ¹ / ₄	6	23.3	661	950	431
HC9330	Halyard swivel/hole for 5 mm wire	5 ¹¹ / ₁₆ *	144*	—	—	—	—	—	—	3 ¹ / ₁₆	5	3 ¹ / ₁₆	5	8.9	252	1190	540
HSB463	Furler kit/hoistable halyard	2 ¹ / ₂ **	64**	2 ¹ / ₈	73	5 ³ / ₃₂	4	5 ¹ / ₁₆	8	5 ³ / ₃₂	4	1 ¹ / ₄	6	11.2	318	950	431

*Shackle to shackle **Tang hole to tang hole

Radial

REVOLUTION



HARKEN ITALY'S TECHNICAL DIRECTOR ANDREA MERELLO TELLS THE INSIDE STORY BEHIND THE DEVELOPMENT OF RADIAL WINCHES

Editor's Note: Harken entered the winch business in 1987, adapting original Barbarossa designs for Harken's standard line and adding a pure Grand Prix racing line. Grand Prix racers have always demanded constant innovation, but most sailors just wanted solid, efficient winches that would last for 30 years. Now sailors and boatbuilders want all that and more—faster installations, easier maintenance, and simpler upgrades.

“We started from a blank sheet of paper, addressing the needs of specific types of sailors.”

— Andrea Merello
Technical Director

A Blank Sheet of Paper

Radial winches were designed from the deck up with three key ideas in mind: safety and long-lasting performance, streamlined installations, and hydraulic and electric upgrades as integral parts of the design rather than afterthoughts. We started from a blank sheet of paper, addressing the needs of specific types of sailors. For example, racers mainly want the most

power for the lightest weight. A cruiser with a child on the other hand asks, “Wait a minute, if my kid puts hands on the winch while the electric power is turning it ...” They are more concerned with safety.



Radial REVOLUTION



New Product, New Process

No winch line has ever been designed with yacht builders in mind. No one asked, “What can we do to help boatbuilders who assemble in bigger quantities?” That’s because if you went to a boatbuilding yard 10 years ago, they weren’t using the highly efficient “lean” assembly systems used in automotive companies. These days, there’s a bigger focus on the time required to install a winch, the weight and ease-of-handling from a worker’s point of view, and the complexity of the assembly process.

Grip with a Twist

The grip is one of the most critical areas of a winch. With a high-friction drum there will be more line wear, so designers must balance the need for controlled easing with line longevity. We also have to consider that the winch is interfacing with a product we don’t make—we needed to find a grip that performed as well with high-tech line as with older cordage. So while we were happy with the sandblasting and knurling we had before, we wanted to find out if there was more we could do.

The new grip is very different from other winches with grooves or ribs. Other winches tend to push the line wraps up when easing. The Radial grip works more like a screw, driving the wraps down when easing to keep them on the part of the drum where you have the best control.

“The Radial grip works more like a screw, driving the wraps down when easing [for] the best control.”

— Andrea Merello
Technical Director



20 SERIES

35 SERIES

40 SERIES

46 SERIES



What Lean Manufacturing Means For You

By Adriano Rubinaccio
Production Director

When we started talking about this project our aim was to use it as an opportunity to dramatically improve not just the product, but also the process. We wanted to actually change the company's manufacturing culture so we could increase production speed and eliminate waste while maintaining—even improving—the level of quality. We adopted "lean manufacturing" principles to increase speed and implemented a very simple "zero defect" approach. No defective components or products are allowed to move to the next step in the process. Any worker can stop a product moving through the process if a problem appears, and every worker is directly responsible for customer satisfaction.

Winch #001

Product tracking is one benefit of the new process. Every molded component has a batch number, allowing for much tighter quality control. In addition, each finished product has a serial number (#001 is already in the museum). Customers calling in for support benefit directly because we can access very specific information on that customer's winch.

Winch Abuse

Each size of each winch had to pass a minimum of 13 tests covering things such as wet and dry line grip, pulling power versus number of wraps, stress deformation, ease of servicing, and safety. The most grueling test was the endurance test, where our parameter was to have little to no wear after thousands of nonstop pulls at the Maximum Working Load.

Combating Corrosion

Extensive testing helped us determine weak points for corrosion, where we needed to either replace or strengthen the materials we were using. We even removed the drum and lubrication for certain tests to see how well the internal components resisted corrosion from saltwater spray. The results of these tests are why we're using more stainless and one of several reasons we use composites in Radials. For example, the extremely strong "metal replacement" material we use in the roller bearings is completely nonreactive to saltwater and most chemicals, has very good wear and abrasion resistance under tremendous loads, doesn't require lubrication, and doesn't gall or seize. Its low friction and hardness properties make it ideal for high-efficiency bearing systems.

The Future

"No comments! No comments!" I can't go into details of course, but I can say we designed the Radial to be flexible and may add more options for end customers. Beyond the Radial, we're working on some totally new ideas at Harken for needs that aren't addressed by current winches. The prototypes haven't completed testing yet, but keep an eye out in the upcoming months.

"We implemented a very simple 'zero defect' approach."

— Adriano Rubinaccio
Production Director



Complete Radial Line: aluminum and chrome; plain-top and self-tailing; electric and hydraulic; UniPower; Quattro



50 SERIES

60 SERIES

70 SERIES

80 SERIES

Radial Winches



POWERFUL, EFFICIENT, DEPENDABLE

We have reached a new level of performance with the introduction of our Radial Winch line. Details you'll like include reduced wear on the line: the gripping surfaces of Radial Winches are shaped and do not depend on friction to hold the line. Also, we've completely covered the winch tops so fingers and clothing don't get caught in moving parts. Seasonal maintenance is now exceptionally easy—the top lifts out as a single unit, making reassembly quick and mistake-free.

DETAILS MAKE THE DIFFERENCE

MULTIPLE STYLES AND FINISHES

Radial winches are available in aluminum alloy and chrome. Choices include 1-, 2-, and 3-speed self-tailing or plain-top styles; and manual, electric or hydraulic drives.

INTEGRATED STRIPPER ARM

The strong, one-piece stripper arm completely covers the winch top for a stable platform that prevents fingers and clothing from catching in moving parts—an important safety feature, particularly when operating powered winches. The arm can be adjusted to multiple positions after the winch is mounted, and is shaped to smoothly feed line into and out of the self-tailing jaws.

LIGHTWEIGHT, HIGH-STRENGTH MATERIALS

Composite roller bearings and bushings reduce friction under load, have excellent corrosion resistance, and don't require lubrication.

Snap-fit design keeps bearings captive in high-strength Delrin® cage when drum is removed for maintenance.

Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Weight savings of 25 to 50 percent compared to the Classic Harken line.

EASY TO SERVICE AND MAINTAIN

Winches can be disassembled and serviced on deck. The socket, washer, and screw-top snap-fit together to simplify maintenance and for mistake-free assembly.



1. Power-Grip Jaws

Composite self-tailing jaws of long-glass fiber are shaped for easy line entry and optimum gripping power.

The spring-loaded upper jaw adjusts under line pressure to accept a variety of line sizes. Teeth grip evenly with or without load.

2. Radial Shaped Surface Grip

The drum's gripping surface is shaped for each winch size and drum material and features diagonal ribs (rather than textured abrasive materials) to maximize gripping power and greatly reduce line wear. When easing, the angle of the ribs stops line from rising, preventing overrides and providing a smooth controlled release as the line exits the winch.

3. Quick Installation

Patent-pending stud-bolt mounting system allows one person to quickly install a winch without removing the drum.

- Snap off the skirt at the base of the winch.
- Slide bolts through the slots in the winch base and snap the plastic skirt back on.
- Place the stud bolts into the predrilled holes on the deck and tighten from belowdeck.

Ordering Winches

1. Choose Drum Material, Speed & Style

Aluminum: Aluminum Radial winches in 1-, 2-, and 3-speed self-tailing or plain-top.

Aluminum Classic single-speed, plain-top winches in sizes 6 and 8; 2- and 3-speed self-tailing winches sizes 980 and up in aluminum or aluminum/stainless.

Chrome: Chrome Radial winches feature chrome drums with black composite bases and tops; 1-, 2-, and 3-speed self-tailing.

All-chrome Classic winches have chrome bases, drums, and tops; 1-, 2- and 3-speeds; self-tailing or plain-top.

Stainless Steel: Stainless steel winches have stainless bases, drums, and tops; 2-, and 3-speed self-tailing; 4-speed winches in some larger sizes.

Bronze: Bronze winches in 1-, 2- and 3-speeds; self-tailing or plain-top styles.

Carbon Fiber: Carbon fiber winches in 2- and 3-speed self-tailing or top-cleating.

To order large cruising, Megayacht and Grand Prix racing winches, please contact Harken.

Powered Winches: Choose electric or hydraulically driven winches and components. To order hydraulic winches, please contact Harken.

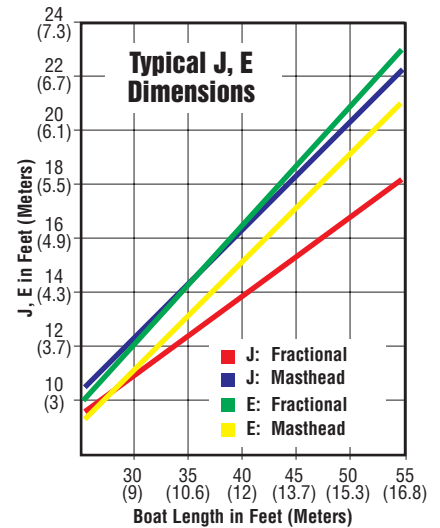
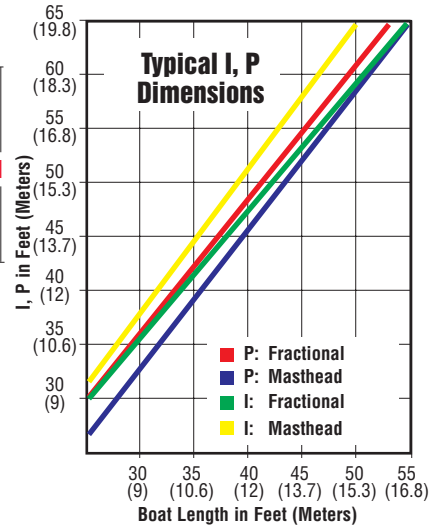
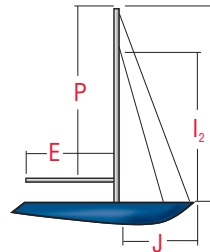
2. Determine size

The **Sizing Chart** selects winches for different applications and rig dimensions. If unsure of the dimensions, use the **Typical Dimensions** graphs. To order large Grand Prix and Megayacht winches, please contact Harken.

3. Choose Ball Bearing Handle

Plain or lock-in handles in chromed bronze, bronze and aluminum; Speedgrip and Standard styles in 8- and 10-inch (203- and 254-mm) lengths.

Rig Dimensions



Sizing Chart

Winch size	Genoa				Mainsail						Spinnaker						Staysail	
	Sheet		Halyard		End-boom mainsheet	Halyard		Reef		Sheet		Halyard		Topping lift/foreguy		Halyard		
	Max sail area 100% foretriangle (I x J x .5)		Max I		4:1 Sheet max sail area (P x E x .5)		Max P		Max P		Max sail area (I x J x 1.8)		Max I		Max I		Max I ₂	
	ft ²	m ²	ft	m	ft ²	m ²	ft	m	ft	m	ft ²	m ²	ft	m	ft	m	ft	m
6	75	7	25	7.6	—	—	25	7.6	34	10.4	500	46.5	25	7.6	35	10.7	25	7.6
8	115	10.5	36	11	150	14	32	9.8	40	12.2	800	74	36	11	44	13.4	37	11.3
16	155	14.5	42	12.8	230	21	38	11.6	46	14	975	91	42	12.8	50	15.2	42	12.8
20	155	14.5	42	12.8	230	21	38	11.6	46	14	975	91	42	12.8	50	15.2	42	12.8
32	225	21	48	14.6	335	30	43	13.1	53	16.2	1135	105	48	14.6	56	17	48	14.6
35	225	21	48	14.6	335	30	43	13.1	53	16.2	1135	105	48	14.6	56	17	48	14.6
40	270	25	54	16.5	410	38	49	14.9	57	17.4	1240	115	54	16.5	61	18.6	54	16.5
44	340	31.5	64	19.5	560	52	59	18	68	20.7	1400	130	64	19.5	73	22.2	64	19.5
46	365	34	69	21	625	58	64	19.5	73	22.2	1530	142	68	20.7	78	23.8	69	21
48	390	36	73	22.2	700	65	68	20.7	78	23.8	1750	162	74	22.5	82	25	73	22.2
50	390	36	73	22.2	700	65	68	20.7	78	23.8	1750	162	74	22.5	82	25	73	22.2
53	435	40	77	23.5	765	72	73	22.2	85	25.9	1960	182	79	24	90	27.4	77	23.5
60	525	49	82	25	850	79	80	24.4	92	28	2200	204	85	25.9	98	29.9	82	25
70	590	55	86	26.2	1000	93	85	25.9	97	29.6	3000	279	91	27.7	108	33	86	26.2
74	950	88	100	30.5	1350	125	102	31.1	—	—	—	—	105	32	—	—	—	—
80	950	88	100	30.5	1350	125	102	31.1	—	—	—	—	105	32	—	—	—	—

Aluminum Radial

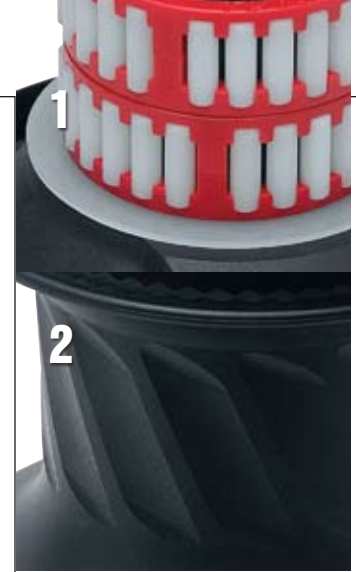
Aluminum Radial winches are designed for sailors who want lightweight, extremely strong winches with plenty of power.

The drum's gripping surface is shaped for each winch size and drum material and features diagonal ribs (rather than textured abrasive materials) to maximize gripping power and greatly reduce line wear. When easing, the angle of the ribs stops line from rising, preventing overrides and providing a smooth controlled release as the line exits the winch. Aluminum drums and high-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Small boat winches are available in single speed. Self-tailing models sizes 60 and up come in two or three speeds.



Series 20 Radial winches use composite bushings to handle high loads in a small package.



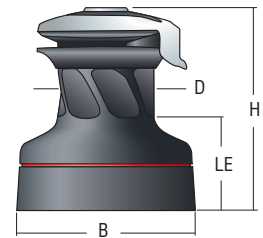
1. Roller Bearings

Snap-fit design keeps bearings captive in a high-strength Delrin® cage when drum is removed for maintenance.

Composite roller bearings don't require lubrication.

2. Gripping surface

Each winch size has its own radial grip shape to optimize holding power and for smooth, controlled easing.



Part No.	Drum (D) in mm	Base (B) in mm	Height (H)		Weight		Line entry height (LE)		Line Ø (Min - Max)		Fastener circle		Fasteners (SH or HH)		Gear ratio			Power ratio				
			in	mm	lb	kg	in	mm	in	mm	in	mm	in	mm	1	2	3	1	2	3		
Classic Plain-Top																						
B6A	2 ³ / ₈	60	3 ¹ / ₁₆	90	3 ¹ / ₄	82	1.5	.7	1 ¹ / ₁₆	33	—	—	2 ⁹ / ₁₆	65	6 x 1/4*	6 x 6*	1	—	—	8.4	—	—
B8A	2 ¹¹ / ₁₆	68	4 ¹ / ₂	115	3 ⁹ / ₁₆	90	2.4	1.1	1 ¹ / ₂	38	—	—	3 ⁹ / ₁₆	90	4 x 5/16*	4 x 8*	1	—	—	7.5	—	—
Radial Plain-Top																						
20.2PTA	2 ⁷ / ₈	73	5 ⁵ / ₈	137	5 ¹ / ₁₆	128	4.4	2.0	2 ⁵ / ₈	61	—	—	4 ³ / ₈	110	5 x 1/4	5 x 6	1	2.76	—	6.95	19.20	—
35.2PTA	3 ¹ / ₈	80	5 ⁷ / ₈	149	5 ¹³ / ₁₆	148	6.8	3.1	3 ¹ / ₈	79	—	—	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	5.65	—	13.50	35.90	—
40.2PTA	3 ¹ / ₈	80	6 ³ / ₁₆	157	6 ¹ / ₈	175	8.4	3.8	3 ¹ / ₄	82	—	—	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	6.28	—	13.50	39.90	—
46.2PTA	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹ / ₁₆	179	11.3	5.1	3 ³ / ₁₆	90	—	—	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2PTA	4 ⁵ / ₁₆	110	7 ⁵ / ₈	194	7 ¹ / ₂	190	13.0	5.9	3 ⁷ / ₈	97	—	—	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.40	10.90	—	10.90	50.40	—
Radial Self-Tailing																						
20.2STA	2 ⁷ / ₈	73	5 ⁵ / ₈	137	5 ¹³ / ₁₆	148	5.3	2.4	2 ⁵ / ₈	61	1/4 - 1/2	6 - 12	4 ³ / ₈	110	5 x 1/4	5 x 6	2.76	—	—	19.20	—	—
35.2STA	3 ¹ / ₈	80	5 ⁷ / ₈	149	6 ¹¹ / ₁₆	170	7.9	3.6	3 ¹ / ₈	79	5/16 - 1/2	8 - 12	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	5.65	—	13.50	35.90	—
40.2STA	3 ¹ / ₈	80	6 ³ / ₁₆	157	6 ¹ / ₈	175	8.4	3.8	3 ¹ / ₄	82	5/16 - 1/2	8 - 12	4 ⁷ / ₈	123	5 x 1/4	5 x 6	2.13	6.28	—	13.50	39.90	—
46.2STA	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹⁵ / ₁₆	201	11.5	5.2	3 ³ / ₁₆	90	9/16 - 5/8	8 - 14	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2STA	4 ⁵ / ₁₆	110	7 ⁵ / ₈	194	8 ¹ / ₈	206	13.2	6.0	3 ⁷ / ₈	97	5/16 - 9/16	8 - 14	5 ¹ / ₈	150	5 x 5/16	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STA	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	22.5	10.2	4 ⁹ / ₁₆	116	5/16 - 5/8	8 - 16	8	204	6 x 5/16	6 x 8	4.80	14.40	—	20.30	61.00	—
60.3STA	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	25.8	11.7	4 ⁹ / ₁₆	116	5/16 - 5/8	8 - 16	8	204	6 x 5/16	6 x 8	2.20	4.80	14.40	9.20	20.30	61.00
70.2STA	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	24.9	11.3	4 ¹ / ₂	115	3/8 - 11/16	10 - 18	8 ¹ / ₈	205	6 x 5/16	6 x 8	5.70	18.50	—	22.20	72.00	—
70.3STA	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	28.3	12.8	4 ¹ / ₂	115	3/8 - 11/16	10 - 18	8 ¹ / ₈	205	6 x 5/16	6 x 8	2.30	5.70	18.50	9.00	22.20	72.00
80.2STA	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	46.8	21.2	6 ¹ / ₁₆	164	3/8 - 13/16	10 - 20	9 ¹ / ₁₆	233	8 x 3/8	8 x 10	9.40	28.10	—	32.10	93.00	—
80.3STA	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	50.1	22.7	6 ¹ / ₁₆	164	3/8 - 13/16	10 - 20	9 ¹ / ₁₆	233	8 x 3/8	8 x 10	2.23	9.40	28.10	6.50	32.10	93.00

*Classic plain-top winches use flat head (FH) fasteners

Aluminum Radial Quattro

The patented Quattro is an innovative all-in-one winch used on boats that require extremely fast winches to handle large asymmetrical spinnakers, but also need power to trim the genoa upwind.

Radial Quattro winches are offered in lightweight aluminum alloy and feature composite self-tailing jaws and skirt to save weight. High-strength composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

The Quattro features two drum diameters and four line speeds. The upper drum features Harken's new shaped radial grip for reduced sheet wear and controlled easing. The wide-diameter lower drum has a sand-blasted gripping surface used for fast trimming.



40STQ
46STQ

Team Heiner 38, VO70 — Marc Antony Taminau photo



The upper drum's gripping surface is shaped for each winch size to reduce line wear and to provide maximum gripping power for smooth, controlled easing.

Part No.	Gear ratio		Power ratio		Fastener circle		Fasteners (SH or HH)	
	1	2	1	2	in	mm	in	mm
40STQ	2.13	6.28	13.50	39.90	4 ⁷ / ₈	123	5 x 1/4	5 x M6
46STQ	2.30	9.17	11.70	46.50	5 ⁷ / ₈	150	5 x 5/16	5 x M8

Part No.	Drum Ø				Base Ø		Height	Weight	Line Ø			Line entry height						
	Lower		Upper		in	mm			in	mm	in	mm	Lower	Upper				
	in	mm	in	mm	in	mm	in	mm	Min	Max	in	mm	in	mm				
40STQ	6 ¹ / ₁₆	154	3 ¹ / ₈	80	7 ¹ / ₈	180	6 ⁷ / ₈	175	10.2	4.6	5/16	8	1/2	12	1 ⁵ / ₁₆	34	3/4	82
46STQ	7 ¹³ / ₃₂	188	3 ¹⁵ / ₁₆	100	8 ¹ / ₂	218	7 ¹⁵ / ₁₆	201	13.7	6.2	5/16	8	9/16	14	1 ⁵ / ₁₆	23	3 ³ / ₁₆	90

Aluminum Combinations

These self-tailing winches raise and trim sails on the largest yachts. They are available in 2 or 3 speeds, and come in marine-grade aluminum, or with aluminum base, stainless drum, and aluminum top combinations to maximize durability and corrosion resistance. Load-carrying gears are 17-4PH stainless steel. Self-tailing jaws accept a wide range of line sizes.

Modern-style winches integrate the stripper support arm into the self-tailing jaw assembly for a clean, smooth look. Classic winches are traditionally styled with a one-piece stripper arm that attaches to the top of the winch, encompassing the self-tailing jaws.

Winches have power ratios of up to 100:1 and are often used with either hydraulic or electric drives. The 3-speed 1140ST features a backwind to ease the loads on the winch before the sheet is released.

Hanuman (Endeavour II) — On Deck photo



B990.2STA
B990.3STA

B1145.3STA

MODERN SELF-TAILING



B1150STASA



B1120STASA



B1000.2STA
B1000.3STA

CLASSIC SELF-TAILING

B990, B1130 and B1145 are available in grey-anodized aluminum by special order. Contact Harken Italy.

Part No.	Ø		Base (B)		Height (H)		Weight		Line entry height (LE)		Fastener circle		Fasteners		Gear ratio			Power ratio		
	in	mm	in	mm	in	mm	lb	kg	in	mm	in	mm	in	mm	1	2	3	1	2	3
Classic Self-Tailing																				
B1000.2STA	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	13 ⁹ / ₁₆	335	46.8	21.2	6 ⁷ / ₁₆	164	9 ⁹ / ₁₆	233	8 x 3/8 SH/HH	8 x 10 SH/HH	9.40	28.10	—	32.10	93.00	—
B1000.3STA	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	13 ⁹ / ₁₆	335	50.1	22.7	6 ⁷ / ₁₆	164	9 ⁹ / ₁₆	233	8 x 3/8 SH/HH	8 x 10 SH/HH	2.23	9.40	28.10	6.50	32.10	93.00
B1120STASA	11 ¹³ / ₁₆	300	16 ¹⁵ / ₃₂	418	14 ⁹ / ₁₆	370	127.8	58	6 ¹³ / ₃₂	163	14 ³ / ₈	365	12 x 3/8 SH	12 x 10 SH	2.0	11.4	33.3	3.4	19.3	56.3
B1140STASA	14 ⁹ / ₁₆	360	22 ¹ / ₈	562	18 ⁹ / ₁₆	462	299.9	136	8 ¹ / ₃₂	212	18 ¹ / ₈	460	8 x 1/2 SH	8 x 12 SH	2.9	11.6	42.6	4.0	16.4	60.1
B1150STASA	16 ⁶ / ₃₂	410	25 ³ / ₁₆	640	19 ³ / ₄	502	485	220	8 ² / ₃₂	225	22 ¹ / ₁₆	560	12 x 1/2 SH	12 x 12 SH	3.4	15.3	64.9	4.2	19	80.4
Modern Self-Tailing																				
B990.2ST*	8	203	11 ¹ / ₃₂	280	11 ³ / ₁₆	294	43.2	19.6	5 ³ / ₃₂	151.7	9 ³ / ₁₆	233	8 x 3/8 SH	8 x 10 SH	9.9	40.0	—	24.8	100	—
B990.3ST*	8	203	11 ¹ / ₃₂	280	11 ³ / ₁₆	294	43.2	19.6	5 ³ / ₃₂	151.7	9 ³ / ₁₆	233	8 x 3/8 SH	8 x 10 SH	1.0	9.9	40.0	2.5	24.8	100
B1110STASA	10 ³¹ / ₃₂	279	13 ¹ / ₃₂	339	9 ³ / ₄	246.5	—	—	3 ¹ / ₂	89	10 ²⁹ / ₃₂	272	8 x 3/8 SH	8 x 10 SH	1.0	9.43	43.6	1.8	17.2	79.4
B1130.3ST*	12 ³ / ₄	324	16 ³ / ₃₂	409	12 ¹ / ₈	308	86.0	39.0	4 ¹ / ₃₂	115	12 ³ / ₄	324	9 x 1/2 SH	9 x 12 SH	1.0	10.8	55.2	1.6	16.9	86.6
B1135.3STASA	12 ³ / ₄	324	16 ³ / ₃₂	410	12 ¹ / ₈	308	220.5	100	4 ¹ / ₃₂	110	12 ³ / ₄	324	9 x 1/2 SH	9 x 12 SH	1.1	10.8	55.2	1.6	16.9	86.5
B1145.3ST*	14 ¹ / ₄	362	21 ³ / ₁₆	538	16 ¹ / ₂	419	192.9	87.5	8 ³ / ₁₆	208	17 ³ / ₄	450	14 x 1/2 SH	14 x 12 SH	2.9	11.9	53.6	4.1	16.6	75.6

*Available in black-anodized or grey-anodized aluminum. For black add A to part number. For grey-anodized add GGG

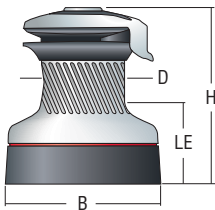
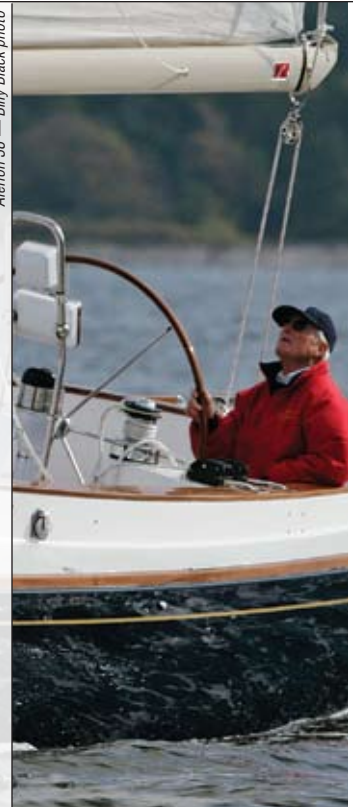
Chrome Radial

Chrome Radial Winches are designed for sailors that want the elegance of mirror-polished chrome to enhance their yacht's lines. They feature chrome drums, black composite bases and tops, and come in 1-, 2-, or 3-speed self-tailing styles.

The drum's gripping surface is shaped for each winch size and drum material and features diagonal ribs (rather than textured abrasive materials) to maximize gripping power and greatly reduce line wear. When easing, the angle of the ribs stops line from rising, preventing overrides and providing a smooth controlled release as the line exits the winch. High-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Small Boat winches are available in single speed. Self-tailing models sizes 60 and up come in two or three speeds.

Alerion 38 — Billy Black photo



WINCH Q&A

WHY DOES MY CHROME RADIAL WINCH HAVE A DIFFERENT GRIP PATTERN THAN AN ALUMINUM RADIAL?

Chrome has a more slippery finish than aluminum, so the ribs on chrome Radial winches are spaced closer together to increase friction. This optimizes your grip for trimming as well as for easing the sail in a smooth, controlled manner.

Part No.	Drum (D)		Base (B)		Height (H)		Weight		Line entry height (LE)		Line Ø (Min - Max)		Fastener circle		Fasteners (SH or HH)		Gear ratio			Power ratio		
	in	mm	in	mm	in	mm	lb	kg	in	mm	in	mm	in	mm	in	mm	1	2	3	1	2	3
20STC	2 ⁷ / ₈	73	5 ⁵ / ₈	137	5 ¹³ / ₁₆	148	7.5	3.4	2 ⁵ / ₈	61	1 ¹ / ₄ - 1 ¹ / ₂	6 - 12	4 ³ / ₈	110	5 x 1 ¹ / ₄	5 x 6	2.76	—	—	19.20	—	—
35.2STC	3 ¹ / ₈	80	5 ⁷ / ₈	149	6 ¹¹ / ₁₆	170	10.6	4.8	3 ¹ / ₈	79	5 ¹ / ₁₆ - 1 ¹ / ₂	8 - 12	4 ⁷ / ₈	123	5 x 1 ¹ / ₄	5 x 6	2.13	5.65	—	13.50	35.90	—
40.2STC	3 ¹ / ₈	80	6 ³ / ₁₆	157	6 ⁷ / ₈	175	11.9	5.4	3 ³ / ₄	82	5 ¹ / ₁₆ - 1 ¹ / ₂	8 - 12	4 ⁷ / ₈	123	5 x 1 ¹ / ₄	5 x 6	2.13	6.28	—	13.50	39.90	—
46.2STC	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹⁵ / ₁₆	201	17.2	7.8	3 ⁹ / ₁₆	90	5 ¹ / ₁₆ - 3 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 3 ¹ / ₁₆	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2STC	4 ⁵ / ₁₆	110	7 ⁷ / ₈	194	8 ³ / ₈	206	20.3	9.2	3 ⁷ / ₈	97	5 ¹ / ₁₆ - 3 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 3 ¹ / ₁₆	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STC	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	30.7	13.9	4 ¹ / ₁₆	116	5 ¹ / ₁₆ - 5 ¹ / ₈	8 - 16	8	204	6 x 3 ¹ / ₁₆	6 x 8	4.80	14.40	—	20.30	61.00	—
60.3STC	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	34.0	15.4	4 ¹ / ₁₆	116	5 ¹ / ₁₆ - 5 ¹ / ₈	8 - 16	8	204	6 x 3 ¹ / ₁₆	6 x 8	2.20	4.80	14.40	9.20	20.30	61.00
70.2STC	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	33.3	15.1	4 ¹ / ₂	115	3 ³ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 3 ¹ / ₁₆	6 x 8	5.70	18.50	—	22.20	72.00	—
70.3STC	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	36.6	16.6	4 ¹ / ₂	115	3 ³ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 3 ¹ / ₁₆	6 x 8	2.30	5.70	18.50	9.00	22.20	72.00
80.2STC	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	63.4	28.7	6 ⁷ / ₁₆	164	3 ¹ / ₈ - 1 ¹ / ₁₆	10 - 20	9 ⁷ / ₁₆	233	8 x 3 ¹ / ₈	8 x 10	9.40	28.10	—	32.10	93.00	—
80.3STC	6 ⁷ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	66.7	30.2	6 ⁷ / ₁₆	164	3 ¹ / ₈ - 1 ¹ / ₁₆	10 - 20	9 ⁷ / ₁₆	233	8 x 3 ¹ / ₈	8 x 10	2.23	9.40	28.10	6.50	32.10	93.00

NEW

B500.2STR, B650.3STR, B650.3TCR

Carbon Fiber

Carbon winches are standard in many racing classes and are also the choice of performance-oriented fast cruisers.

Winches feature carbon skirts and tops, aluminum drums, and strong composite jaws with one-piece sculpted line guide and peeler. PEEK® roller bearings are low-maintenance, reliable, and efficient. They ride in large-diameter cages, allowing more bearings to carry the load. Stainless steel drive gears are strong and durable. The AC versions of the 65.3ST and 65.2ST winches feature titanium gears for extremely high strength-to-weight ratios and exceptional resistance to corrosion.

Carbon winches come with up to three speeds and can be driven by handle, pedestal, or by electric or hydraulic motors. Harken's 50.3STR is the smallest three-speed direct drive self-tailing winch in the industry.

Options include self-tailing arms, top cleats, free-spinning or ratcheting base sheave additions, and left-handed rotation.

If class rules dictate, winches are also available in all-aluminum with stainless steel gears.



B50.3STR



B50.2STR



B500.3TCR



B500.2STR



B55.3TCR



B55.2STR



B650.3TCR



B650.3STR



B65.3TCR



B65.3STAC



B65.2STAC

VEOLIA



NEW

B1145.3STR, B1145.3TCR

Carbon Fiber

These powerful carbon winches are aboard large megayachts, performance cruisers, and racing monohulls and multihulls over 60 feet (18 m).

Winches feature carbon skirts and tops, aluminum drums, and strong composite jaws with one-piece sculpted line guide and peeler. PEEK® roller bearings are low-maintenance, reliable and efficient. They ride in large-diameter cages, allowing more bearings to carry the load. Stainless steel drive gears are strong and durable. The AC versions of the 1111PT and 990.3ST winches feature titanium gears for extremely high strength-to-weight ratios and exceptional resistance to corrosion.

Drives are pedestal, electric or hydraulic. Wide-diameter drums provide extra surface area to hold line securely under high loads. Fewer wraps speed line retrieval when sheeting.

Other options include self-tailing, top cleats, four speeds, free-spinning or ratcheting base sheave additions, and left-handed rotation.

If class rules dictate, winches are also available in all-aluminum with stainless steel gears.



B990.3TCR



B990.3STAC



B880.3VTOP



B880.3STR



B1111.3PTAC



B1111.3STR



B1125STR



B1130.3TCR



B1130.3STR



B1135.3STR



B1145.3TCR



B1145.3STR

Powered Radial Winches



PUSH-BUTTON CONTROL

Powered Radial winches allow crew to trim any size sail with the push of a button. Winches mount in minutes without removing the drum and can be quickly disassembled and serviced on deck. Seasonal maintenance is painless. Snap-fit socket, washer and screw top lift out as a unit, making reassembly fast and mistake free, with no leftover or misplaced parts to worry about.

DETAILS MAKE THE DIFFERENCE

MULTIPLE STYLES AND FINISHES

Winches available in aluminum alloy, chrome and in 2- and 3-speed self-tailing. Powered electric or hydraulic.

EASY TO CONVERT, INSTALL, SERVICE

The same drilling pattern is used to mount manual and electric winches of the same size. Other manufacturers must uninstall the existing manual winch, fill the old holes, and drill new holes before converting to electric winch power.

Builders can pre-drill a 3.00 inch (7.6 cm) gear shaft hole into the deck to simplify future conversion from manual to electric. Harken offers removable gaskets to seal the holes until upgrades are made.

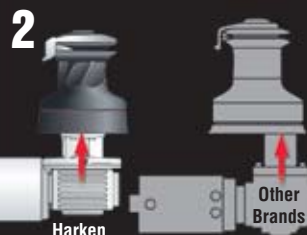
Patent-pending stud-bolt mounting option allows quick installation without removing the drum.

Socket, washer, and screw-top snap-fit together to simplify maintenance and for mistake-free assembly.

INTEGRATED STRIPPER ARM

The strong, one-piece stripper arm completely covers the winch top for a stable platform that prevents fingers and clothing from catching in moving parts—an important safety feature, particularly when operating powered winches. The arm can be adjusted to multiple positions after the winch is mounted, and is shaped to smoothly feed line into and out of the self-tailing jaws.

DO NOT use Harken equipment for human suspension.



1. Manual Override

A Harken® locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation.

2. More Efficient Operation

Harken motors attach to the central drive shaft and drive through the winch gears for a two-speed mechanical advantage—the low-power first gear for fast trimming, the higher-power second gear for fine-tuning loaded sheets. The result is reduced battery drain, allowing more efficient use of the motor.

3. Reliable Switches

Winches operate with waterproof switches and reliable easy-to-service electric controls.

4. Winch Load Controller

This electronic system protects Harken® winches from overload by temporarily interrupting the power supply to the winch. The Load Controller comes installed with standard overload settings, but can be customized by request.

Electric Radial

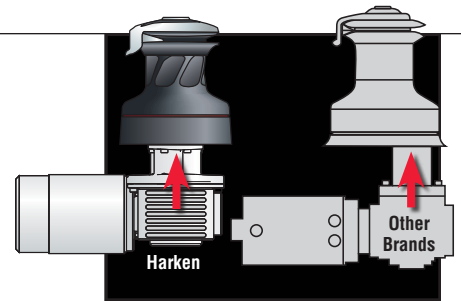
Electric Radial winches let you relax in luxury and trim any size sail with the push of a button.

Lightweight aluminum or mirror-finished chrome drums, and high-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Manual Radials easily convert to power. They don't require an adapter plate, and the identical stud pattern means no filling old holes and drilling new ones. Boatbuilders can make upgrades even easier by precutting and sealing a 3.00 in (7.6 cm) drive-shaft hole into the boat.

Winches can be mounted vertically or horizontally and operate using waterproof switches located near the winch. A locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation.

Size 40 available in 12 volt only. Sizes 46 through 80 available in 12 or 24 volts.



Harken motors attach to the central drive shaft and drive through the winch gears for a two-speed mechanical advantage—the low power first gear for fast trimming, the higher power second gear for fine-tuning loaded sheets. The result is reduced battery drain, allowing more efficient use of the motor.



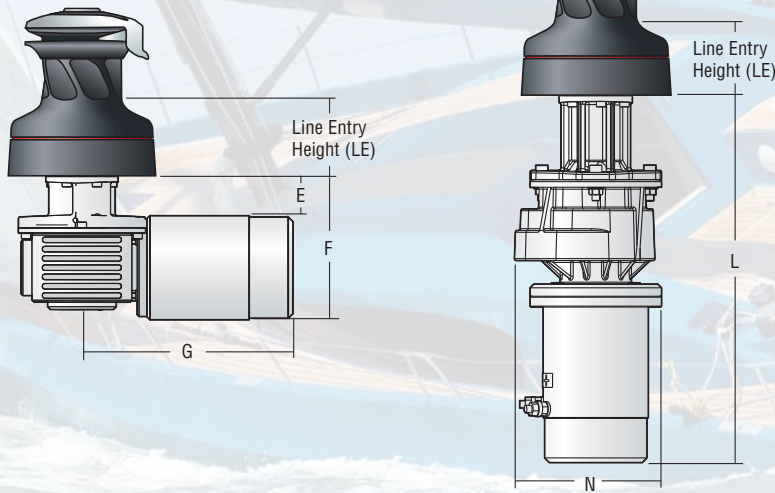
HORIZONTAL



VERTICAL

Part No.	Ø		Weight				Fastener Circle		Fasteners (SH or HH)		Line entry height (LE)		Gear ratio			Power ratio						
	Drum (D)	Base (B)	Height (H)	A	C	Circle	Fasteners	Circle	Fasteners	Circle	Fasteners	1	2	3	1	2	3					
	in	mm	in	mm	in	mm	lb	kg	lb	kg	in	mm	in	mm	in	mm	1	2	3			
Horizontal																						
40.2STE	3/8	80	6 ⁵ / ₁₆	157	6 ⁷ / ₈	175	29.7	13.5	33.2	15.1	4 ⁷ / ₈	123	5 x 1/4	5 x 6	3/4	82	2.13	6.28	—	13.50	39.90	—
46.2STE	3/8	100	7 ¹ / ₄	184	7 ⁹ / ₁₆	201	32.8	14.9	38.5	17.5	5 ⁷ / ₈	150	5 x 5/16	5 x 8	3 ⁹ / ₁₆	90	2.30	9.17	—	11.70	46.50	—
50.2STE	4 ⁵ / ₁₆	110	7 ⁷ / ₈	194	8 ¹ / ₈	206	37.1	16.8	44.2	20.0	5 ⁷ / ₈	150	5 x 5/16	5 x 8	3 ⁷ / ₈	97	2.40	10.90	—	10.90	50.40	—
60.2STE	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	46.4	21.0	54.5	24.7	8	204	6 x 5/16	6 x 8	4 ⁹ / ₁₆	116	4.80	14.40	—	20.30	61.00	—
60.3STE	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	49.7	22.5	57.8	26.2	8	204	6 x 5/16	6 x 8	4 ⁹ / ₁₆	116	2.20	4.80	14.40	9.20	20.30	61.00
70.2STE	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	48.8	22.1	57.2	25.9	8 ¹ / ₈	205	6 x 5/16	6 x 8	4 ¹ / ₂	115	5.70	18.50	—	22.20	72.00	—
70.3STE	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	52.1	23.6	60.5	27.4	8 ¹ / ₈	205	6 x 5/16	6 x 8	4 ¹ / ₂	115	2.30	5.70	18.50	9.00	22.20	72.00
80.2STE	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	70.6	32.0	87.2	39.5	9 ³ / ₁₆	233	8 x 3/8	8 x 10	6 ¹ / ₁₆	164	9.40	28.10	—	32.10	93.00	—
80.3STE	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	74.0	33.5	90.5	41.0	9 ³ / ₁₆	233	8 x 3/8	8 x 10	6 ¹ / ₁₆	164	2.23	9.40	28.10	6.50	32.10	93.00
Vertical																						
46.2STE	3/8	100	7 ¹ / ₄	184	7 ⁹ / ₁₆	201	36.9	16.7	42.6	19.3	5 ⁷ / ₈	150	5 x 5/16	5 x 8	3 ⁹ / ₁₆	90	2.30	9.17	—	11.70	46.50	—
50.2STE	4 ⁵ / ₁₆	110	7 ⁷ / ₈	194	8 ¹ / ₈	206	38.6	17.5	45.7	20.7	5 ⁷ / ₈	150	5 x 5/16	5 x 8	3 ⁷ / ₈	97	2.40	10.90	—	10.90	50.40	—
60.2STE	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	47.9	21.7	56.1	25.4	8	204	6 x 5/16	6 x 8	4 ⁹ / ₁₆	116	4.80	14.40	—	20.30	61.00	—
60.3STE	4 ³ / ₄	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	51.2	23.2	59.4	26.9	8	204	6 x 5/16	6 x 8	4 ⁹ / ₁₆	116	2.20	4.80	14.40	9.20	20.30	61.00
70.2STE	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	50.3	22.8	58.7	26.6	8 ¹ / ₈	205	6 x 5/16	6 x 8	4 ¹ / ₂	115	5.70	18.50	—	22.20	72.00	—
70.3STE	5 ¹ / ₈	130	9 ¹ / ₁₆	240	10 ¹ / ₁₆	256	53.6	24.3	62.0	28.1	8 ¹ / ₈	205	6 x 5/16	6 x 8	4 ¹ / ₂	115	2.30	5.70	18.50	9.00	22.20	72.00
80.2STE	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	72.2	32.7	88.7	40.2	9 ³ / ₁₆	233	8 x 3/8	8 x 10	6 ¹ / ₁₆	164	9.40	28.10	—	32.10	93.00	—
80.3STE	6 ¹ / ₈	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	75.5	34.2	92.1	41.7	9 ³ / ₁₆	233	8 x 3/8	8 x 10	6 ¹ / ₁₆	164	2.23	9.40	28.10	6.50	32.10	93.00

Electric Motors



Zeydon 60 — René Dupont photo



Dimensions

Part No.	E		F		G		L		N	
	in	mm	in	mm	in	mm	in	mm	in	mm
40.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	8 ⁷ / ₈	227	—	—	—	—
46.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	8 ⁷ / ₈	227	—	—	—	—
46.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
50.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
50.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
60.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
60.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
60.3STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
60.3STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
70.2STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
70.2STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
70.3STEH	1 ³ / ₄	43	6 ¹ / ₈	155	9 ⁵ / ₈	244	—	—	—	—
70.3STEV	—	—	—	—	—	—	15 ³ / ₈	391	6 ¹ / ₈	157
80.2STEH	3 ³ / ₁₆	81	8 ¹¹ / ₁₆	221	10 ¹¹ / ₁₆	272	—	—	—	—
80.2STEV	—	—	—	—	—	—	16 ³ / ₄	425	6 ¹ / ₁₆	160
80.3STEH	3 ³ / ₁₆	81	8 ¹¹ / ₁₆	221	10 ¹¹ / ₁₆	272	—	—	—	—
80.3STEV	—	—	—	—	—	—	16 ³ / ₄	425	6 ¹ / ₁₆	160

WINCH Q&A

CAN I USE A WINCH HANDLE TO MANUALLY OPERATE MY ELECTRIC WINCH?

Yes. Inserting the winch handle into an unloaded winch automatically disconnects the electric motor and allows you to use 1st and 2nd speeds just like a manual winch. This is important if you've lost power on the boat. If power is restored, the lockout prevents the winch handle from turning.

Winch size	Motor configuration		Current voltage		Power in Watts	
	Horizontal (STEH)	Vertical (STEV)	12 V	24 V	12 V	24 V
40.2	✓	—	✓	—	700	—
46.2	✓	✓	✓	✓	700	900
50.2	✓	✓	✓	✓	1500	2000
60.2 - 60.3	✓	✓	✓	✓	1500	2000
70.2 - 70.3	✓	✓	✓	✓	1500	2000
80.2 - 80.3	✓	✓	✓	✓	1500	2000

Wire Gauges

Winch size	Current voltage	Total distance between winch and battery							
		Under 16.4 ft AWG	Under 5 m mm ²	16.4 - 32.8 ft AWG	5 m - 10 m mm ²	32.8 - 49.2 ft AWG	10 m - 15 m mm ²	49.2 - 65.6 ft AWG	15 m - 20 m mm ²
40.2	12 V	2	32	0	50	00	70	000	95
46.2	12 V	2	32	0	50	00	70	000	95
46.2	24 V	5	16	3	25	2	35	0	50
50.2	12 V	2	32	0	50	00	70	000	95
50.2	24 V	5	16	3	25	2	35	0	50
60.2 - 60.3	12 V	2	32	0	50	00	70	000	95
60.2 - 60.3	24 V	5	16	3	25	2	35	0	50
70.2 - 70.3	12 V	2	32	0	50	00	70	000	95
70.2 - 70.3	24 V	5	16	3	25	2	35	0	50
80.2 - 80.3	12 V	2	32	0	50	00	70	000	95
80.2 - 80.3	24 V	5	16	3	25	2	35	0	50

UniPower Radial

The UniPower is a single-speed winch that combines the advantages of a low-profile manual winch with the power of a 12-volt or 24-volt, low-amp-draw motor. What makes it unique is that the motor is partially imbedded inside the drum, so that it extends only 4 1/8 inches (105 mm) below the winch base—a critical feature for small boats where space under the cabin top is limited.

Winch drums come in durable lightweight aluminum or mirror-finished chrome. High-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. The stripper arm and load-carrying gears on both aluminum and chrome versions are 17-4PH stainless steel for strength and durability.

The UniPower is designed with a maximum pull of 900 kg (1,984 lb). Harken's WLC200R load controller keeps the winch from exceeding this limit. In case the boat loses power, the winch can be operated manually using a winch handle.

The UniPower winch package includes a winch, one-speed control box, WLC200R Harken load controller, and a waterproof switch.



Dehler 34, Simonis Voogd — Dehler Yachts photo



WINCH Q&A

I'D LIKE TO MOUNT AN ELECTRIC WINCH ON THE CABIN TOP, BUT IT LIMITS SPACE BELOW. ANY SUGGESTIONS?

The motor on the Harken UniPower winch is partially embedded inside the drum and extends only 4 1/8 inches (105 mm) below the base. This gives crew more headroom as well as space to move around.

Part No.	Ø		Height				Weight			Line Ø (Min - Max)		Fastener Circle	Fasteners (SH or HH)		Line entry height (LE)		Gear ratio	Power ratio				
	Drum (D)	Base (B)	Abovedeck	Belowdeck	A	C	in	mm	in	mm	in		mm	in	mm	in			mm			
900UPW	3 7/8	100	7 1/2	190	8 1/2	215	4 7/8	105	26.5	12.0	32.0	14.5	5/16 - 9/16	8 - 14	6 5/16	160	5 x 1/4	5 x 6	3 15/16	100	100	9.75

Electric Components

Each electric winch requires one control box, one breaker, and two switches. Harken recommends adding an optional load controller. For winches larger than B980, please contact Harken. Hydraulic units require two switches.

Switches

Harken® offers simple, waterproof switches for electric and hydraulic winches. Order two switches for each winch.

Electrical Control Boxes

Electric control boxes contain solenoids to operate the winches. Based on winch size and voltage, select one control box for each electric winch.

High-Amperage Circuit Breakers

Harken® offers five panel-mount, high-amperage circuit breakers. They are compact, waterproof, weather-resistant, and ignition-protected. Circuit breakers are available for 12 or 24 volts DC systems.

Load Controllers

The winch load controller is an electronic system that protects Harken® winches from overload by temporarily interrupting the power supply to the winch. The Load Controller comes installed with standard overload settings, but can be customized on request. Use WLC200R with Radial winches. For further information contact Harken® Italy.



BRS104/P

BRS102/P

BRS102/S

BEB500.12.1
BEB1000.12.1
BEB1000.24.1HCP1717
HCP1718
HCP1719
HCP1720WLC200.12.1
WLC200.12.2
WLC200.12.3
WLC200.24.1
WLC200.24.2
WLC200R.40.12
WLC200R.46.12
WLC200R.46.24
WLC200R.50.12
WLC200R.50.24
WLC200R.60-70.12
WLC200R.60-70.24

WINCH Q&A

DOES IT MATTER WHETHER I HAVE A 12- OR 24-VOLT SYSTEM?

Yes. Check your system and specify voltage before ordering. A 24-volt system requires half as much amperage, so the wire and circuit breaker (fuse) can have lower amperage rating. Larger winches, such as the 1110, 1120 and 1140, are available in 24-volt. Most boats in the USA are 12-volt. Boats using 24-volt systems are more common in Europe.

Deck Switches

Part No.	Description	Length		Width		Height		Weight	
		in	mm	in	mm	in	mm	oz	g
BRS102/P/S	Remote switch w/guard	2 ¹¹ / ₁₆	68	2 ¹¹ / ₁₆	68	¹⁹ / ₁₆	21	4.5	128
BRS104/P	Remote switch w/guard	3 ³ / ₈	85	3	76	⁹ / ₄	19	3.4	95

Electric Control Boxes

Part No.	Voltage	Length		Width		Height		Weight		Use with winch
		in	mm	in	mm	in	mm	oz	g	
BEB500.12.1	12	5 ¹ / ₂	140	3 ⁵ / ₃₂	80	4 ¹¹ / ₃₂	110	35.3	1000	Classic: B40.2STE
BEB1000.12.1	12	5 ¹ / ₂	140	3 ⁵ / ₃₂	80	4 ¹¹ / ₃₂	110	35.3	1000	Radial: 40.2STE to 70.2STE Classic: B44.2STE to 980.2STE
BEB1000.24.1	24	5 ¹ / ₂	140	3 ⁵ / ₃₂	80	4 ¹¹ / ₃₂	110	35.3	1000	Radial: 46.2STE to 70.2STE Classic: B44.2STE to 980.2STE

Load Controllers

Part No.	Use with winch	Voltage	Motor power watts	Cut-off load*		Length		Width		Height		Weight	
				lb	kg	in	mm	in	mm	in	mm	oz	g
Radial													
WLC200R.40.12	40	12	700	1320	600	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.46.12	46	12	700	1740	790	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.46.24	46	24	900	1740	790	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.50.12	50	12	1500	1880	850	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.50.24	50	24	2000	1880	850	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.60-70.12	60/70	12	1500	2535/3530	1150/1600	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200R.60-70.24	60/70	12	2000	2535/3530	1150/1600	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
Classic													
WLC200.12.1	B40	12	500	1210	550	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.12.2	B44/B46	12	1500	1985/2051	900/930	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.24.1	B44/B46	24	2000	1985/2051	900/930	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.12.3	B48/B53	12	1500	2205/2425	1000/1100	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210
WLC200.24.2	B48/B53	24	2000	2205/2425	1000/1100	3 ¹¹ / ₃₂	85	2 ¹ / ₃₂	56	1 ³ / ₈	35	7.4	210

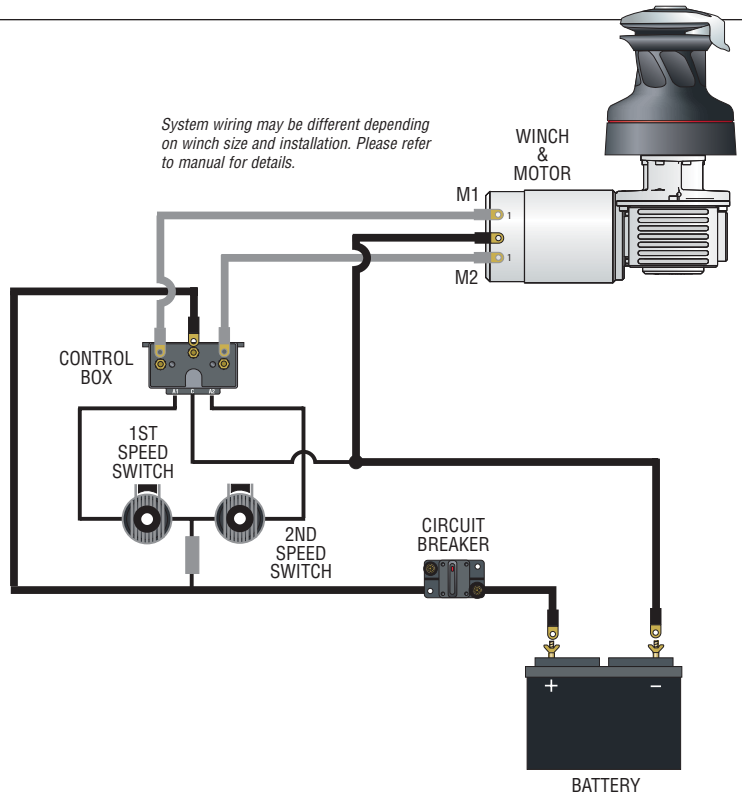
*Contact Harken Italy for customized load presets

Electric Systems

Battery voltage and winch size determine which control boxes, circuit breakers, and load controllers you should use. For winches size B1110 and above, contact Harken for appropriate components.

Electric Winch Kits

Kits are offered for the most common winches. Kits include the winch and a horizontal motor, a control box, a circuit breaker, and two BRS104/P switches. Please include the full part number of the winch, including materials code and voltage, when ordering a kit.



Kit



Winch size	Control box		Circuit breaker		Load controller (optional)*		Kit**
	12 V	24 V	12 V	24 V	12 V	24 V	
Radial							
40.2STE	BEB1000.12.1	—	HCP1717	—	WLC200R.40.12	—	K40.2STE
46.2STE	BEB1000.12.1	BEB1000.24.1	HCP1717	HCP1717	WLC200R.46.12	WLC200R.46.24	K46.2STE
50.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.50.12	WLC200R.50.24	K50.2STE
60.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.60-70.12	WLC200R.60-70.24	K60.2STE
60.3STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K60.3STE
70.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.60-70.12	WLC200R.60-70.24	K70.2STE
70.3STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K70.3STE
80.2STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K80.2STE
80.3STE	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—	K80.3STE
Classic							
B40.2STE	BEB500.12.1	—	HCP1717	—	WLC200.12.1	—	BK40.2STE
B44.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.2	WLC200.24.1	BK44.2STE
B46.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.2	WLC200.24.1	BK46.2STE
B48.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.3	WLC200.24.2	BK48.2STE
B53.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.3	WLC200.24.2	BK53.2STE
B60.2STE	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1717	—	—	BK60.2STE
B70.2STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	BK70.2STE
B74.2STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	BK74.2STE
B980.2STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	—
B980.3STE	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—	—

*Load controller not included in kit

**Kits not available from all dealers

Hydraulic Radial

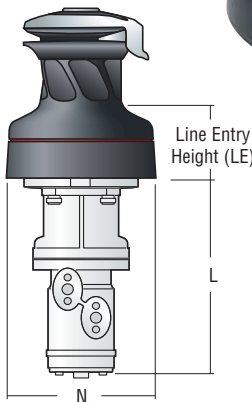
Hydraulic Radial winches let you relax in luxury and trim any size sail with the push of a button.

Lightweight aluminum or mirror-finished chrome drums, and high-strength composite self-tailing jaws and skirt save weight. Composite roller bearings reduce friction under load and don't require lubrication. Load-carrying gears and pins are 17-4PH stainless steel for strength and durability.

Manual Radials easily convert to power. They don't require an adapter plate and the identical stud pattern means no filling and drilling holes. Boatbuilders can make future upgrades even easier by precutting and sealing a 3.00 inch (7.6 cm) drive shaft hole.

Winches mount vertically and operate using waterproof switches located near the winch. A locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation.

Sunreef 70



Part No.	Line entry height (LE)		L		N	
	in	mm	in	mm	in	mm
46.2STH	3 ³ / ₁₆	90	9 ¹ / ₄	234	5 ¹ / ₈	130
50.2STH	3 ⁷ / ₈	97	9 ¹ / ₄	234	5 ¹ / ₈	130
60.2STH	4 ⁹ / ₁₆	116	9 ¹ / ₄	234	5 ¹ / ₈	130
60.3STH	4 ⁹ / ₁₆	116	9 ¹ / ₄	234	5 ¹ / ₈	130
70.2STH	4 ¹ / ₂	115	9 ¹ / ₄	234	5 ¹ / ₈	130
70.3STH	4 ¹ / ₂	115	9 ¹ / ₄	234	5 ¹ / ₈	130
80.2STH	6 ¹ / ₁₆	164	9 ⁷ / ₈	250	5 ¹ / ₈	130
80.3STH	6 ⁷ / ₁₆	164	9 ⁷ / ₈	250	5 ¹ / ₈	130

Harken motors attach to the central drive shaft and drive through the winch gears for a two-speed mechanical advantage—the low-power first gear for fast trimming, the higher-power second gear for fine-tuning loaded sheets. This results in a smaller, more efficient motor that saves weight and cost.

Part No.	Ø		Weight				Line Ø (Min - Max)		Fastener circle		Fasteners (SH or HH)		Gear ratio			Power ratio						
	Drum (D)	Base (B)	Height (H)		A		C		in	mm	in	mm	1	2	3	1	2	3				
46.2STH	3 ⁷ / ₈	100	7 ¹ / ₄	184	7 ¹⁵ / ₁₆	201	28.0	12.7	33.8	15.3	5 ⁵ / ₁₆ - 9 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 5 ⁵ / ₁₆	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2STH	4 ⁹ / ₁₆	110	7 ³ / ₈	194	8 ¹ / ₈	206	29.8	13.5	36.9	16.7	5 ¹ / ₁₆ - 9 ¹ / ₁₆	8 - 14	5 ⁷ / ₈	150	5 x 5 ⁵ / ₁₆	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STH	4 ⁹ / ₁₆	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	39.1	17.7	47.2	21.4	5 ¹ / ₁₆ - 5 ⁵ / ₈	8 - 16	8	204	6 x 5 ⁵ / ₁₆	6 x 8	4.80	14.40	—	20.30	61.00	—
60.3STH	4 ⁹ / ₁₆	120	9 ¹ / ₈	232	9 ¹¹ / ₁₆	246	42.4	19.2	50.6	22.9	5 ¹ / ₁₆ - 5 ⁵ / ₈	8 - 16	8	204	6 x 5 ⁵ / ₁₆	6 x 8	2.20	4.80	14.40	9.20	20.30	61.00
70.2STH	5 ¹ / ₈	130	9 ⁷ / ₁₆	240	10 ¹ / ₁₆	256	41.5	18.8	49.9	22.6	3 ³ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 5 ⁵ / ₁₆	6 x 8	5.70	18.50	—	22.20	72.00	—
70.3STH	5 ¹ / ₈	130	9 ⁷ / ₁₆	240	10 ¹ / ₁₆	256	44.8	20.3	53.2	24.1	3 ³ / ₈ - 1 ¹ / ₁₆	10 - 18	8 ¹ / ₈	205	6 x 5 ⁵ / ₁₆	6 x 8	2.30	5.70	18.50	9.00	22.20	72.00
80.2STH	6 ⁷ / ₁₆	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	66.4	30.1	83.0	37.6	3 ³ / ₈ - 1 ³ / ₁₆	10 - 20	9 ¹ / ₁₆	233	8 x 3 ³ / ₈	8 x 10	9.40	28.10	—	32.10	93.00	—
80.3STH	6 ⁷ / ₁₆	175	11 ⁵ / ₁₆	287	12 ⁹ / ₁₆	320	69.8	31.6	86.3	39.1	3 ³ / ₈ - 1 ³ / ₁₆	10 - 20	9 ¹ / ₁₆	233	8 x 3 ³ / ₈	8 x 10	2.23	9.40	28.10	6.50	32.10	93.00

SETTING A NEW COURSE



Speedboat, 100' Juan Yacht Design, Cooksons Boats Ltd. — Gretchen Thor photo



**HYDRAULICS MANAGER
ROBBIE YOUNG TALKS
ABOUT OUR ALL-NEW
HYDRAULICS PRODUCT LINE**

Editors Note: Hydraulic-powered systems are becoming more and more popular on smaller cruising boats, all the way up to the Megayachts. With hydraulic power, you can run winches, furlers, anchor windlasses, bow thrusters, cylinders—basically any function on the boat, even the drive system. It was this increased demand that led us to develop a line of production hydraulic products.

Why Stick with the Status Quo

When developing products you can improve a design you already have, buy a company with existing tooling, or start fresh. We chose to start fresh. And because we could go in any direction we wanted, our only parameters were that loads, pressures, and lengths had to fit within sailboat industry standards. We thought, why stick with the status quo, let's go with something new and innovative to make our product stand above the rest on the market. In the standard Harken way, we took on the hardest jobs first because when we figured out how to do those, it would be easy to do the rest of the product line. We designed custom titanium cylinders for the +39 Challenge (2007 America's Cup) and a powered system for a 52 m Sparkman & Stephens in Turkey. This led directly into a range of cylinders: stainless steel, 6000 series aluminum, and 7000 series aluminum. These materials have different properties for different applications.

“We thought, why stick with the status quo, let's go with something new and innovative to make our product stand above the rest on the market.”

— Robbie Young
Hydraulics Manager



Materials Match Lifestyles

The housings come in different materials to suit the sailor's needs. A cruiser might say, I want a lightweight cylinder that lasts for a long time in salt water. In that case we use Hardkote-anodized 6061 aluminum. If they want a classic look, we use the same cylinder design, but change the material to corrosion-resistant 316 stainless steel bodies with the same mirror-polished finish as the winches.

A Grand Prix racer thinks differently: I want a lightweight cylinder than can handle very high pressure. 7000 series aluminum has nearly twice the strength of 6061 so we can make the walls thinner to save weight, reduce size, and still handle high loads. On Grand Prix sailboats, crew use 7075 aluminum cylinders knowing they have only a 2-year life span in salt water. We won't sell a 7075 cylinder to a non- Grand Prix race boat. It's like selling a Formula 1 chassis to a person who's going to be driving down the bumpy roads of rural Wisconsin. You don't do it. It just won't last.

Titanium is also a favorite cylinder material for Grand Prix racers. It's the strongest and is corrosion resistant, but some class rules don't allow it.

“We designed cylinders for mast, sail and keel controls that fit everything from cruiser/racers up to your megayachts and Grand Prix Maxi boats.”

— Robbie Young
Hydraulics Manager

Full Range Of Cylinders

We designed cylinders for mast, sail, and keel controls that fit everything from cruiser/racers (35-40 ft, 9-12 m), up to your megayachts and Grand Prix Maxi

boats. We researched pistons, seal materials, seal types, and applications, and chose bronze-filled Teflon® piston seals and graphite-filled Teflon® rod seals that are extremely low friction and more durable than polyurethane seals. We ended up with a stronger, lighter, more modern cylinder for the same length.

Cylinders include a standard clevis jaw on both ends, but can also be fitted with blocks and different eye types. Single-acting cylinders have hydraulic oil at one end and air at the other (like those used in car hatchbacks). Grand Prix cylinders come in single-acting or in double-acting designs with oil at the ends.

We have a full range of vang cylinders: standard rigid, double-acting, and are working on position indicators to tell you how far the vang extends. It's similar to technology used in the hydraulic crane world.



SETTING A NEW COURSE

Nazemin V — Mark Lloyd photo



Our HydroTrim line of cylinders is used to trim mainsheets, jib sheets, or whatever function you want. As the cylinder extends, it pulls in a multiplying amount of sheet in 1:4 or 1:6 reverse purchases. These cylinders are used on cruising boats and are available in 11 sizes.

Valves

The big question was, how do we make a good mousetrap even better? We discussed what we did and didn't like, and came up with some innovative ideas. We eliminated the large coil springs—the majority of the weight. We feel hydraulic systems should have a safety feature because in extreme conditions, you can't tell how much pressure is in the system. We built pressure release into every valve with flow controls to adjust the speed of release. We combined pressure relief and release into one part—a patented feature. We also have dump valves for systems to quickly release pressure.



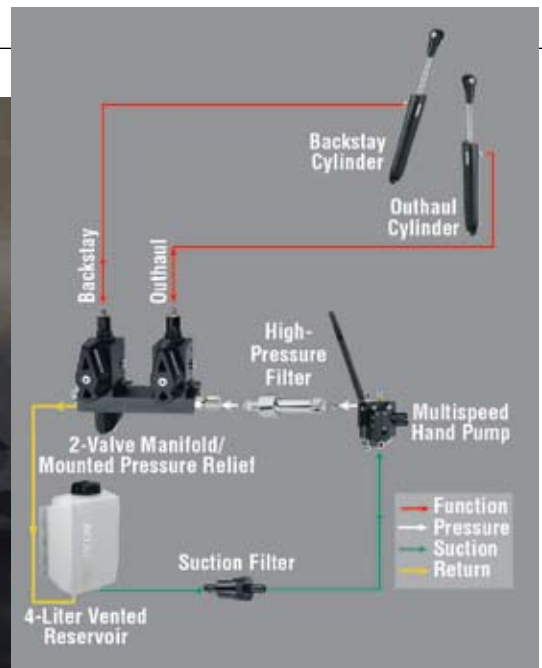
Handles

Valve handles are molded nylon-filled, long-glass fiber like our Carbo blocks. They're contoured so sheets and lines won't wrap around the edges and your hands won't slip. Handles mount in any direction so they can be uniform throughout the boat.

“We built pressure release into every valve with flow controls to adjust the speed of release. We combined pressure relief and release into one part—a patented feature.”

— Robbie Young
Hydraulics Manager





Pumps

Currently, other companies have 2-speed hydraulic pumps. You push hard in first gear, then there's a shift, and it seems like you're pumping forever to get something to happen in second gear. The reason is, there's a big difference in the volume of oil between first and second gear. We decided to add a third speed to push more oil, faster and more efficiently through the system. The pump has preset points that automatically shift to the next speed. Shift points can be adjusted.

“We’re using many off-the-shelf components. Spares for a cruising boat traveling around the world become minimal because these parts are available anywhere they go.”

— Robbie Young
Hydraulics Manager

Power Packs

We have small power units that perform from 1 to 13 functions. For the larger units like those we developed for *Nazenin V*, where we're using computers and PLC's (Programmable Logic Controller), it gets a bit more involved. We've partnered with hydraulic innovators to bring technology from a variety of industries.

Off-The-Shelf

We're using many off-the-shelf components. For example, a standard-size valve we buy in the U.S. can be bought anywhere on the planet. Spares for a cruising boat traveling around the world become minimal because these parts are available anywhere they go.



NEW

HYDRAULIC SYSTEMS

Hydraulic Cylinders

These strong, lightweight cylinders are perfect for mast, sail, and keel controls. Harken cylinders stand up to years of high-stress use in harsh marine environments and have proven themselves on everything from race boats to bluewater cruisers and megayachts. Their efficiency, longevity, and reliability are evident in the high quality of their components and workmanship.

Cylinders are available in stainless steel or Hardkote-anodized*, Teflon®-impregnated 6061-T6 aluminum for strength and corrosion resistance. Graphite-filled Teflon® rod seals and bronze-filled Teflon® piston seals are extremely low friction and are more durable than polyurethane seals. Performance O-rings and slant springs in the seals provide consistent seal pressure for a reliable, long-lasting fit. High-strength Nitronic 50 stainless steel rods and pins provide superior strength and corrosion resistance.

Cylinders include a standard clevis jaw on both ends, but can also be fitted with blocks and different eye types. Standard pull cylinders have air-spring returns. Cylinders include push, pull, and pull/pull styles. Custom cylinder lengths are also available.

Available, Hoogdonk 65 — Billy Black photo



High-performance O-ring and spring-energized seals



HARDKOTE



CLEAR-ANODIZED*



STAINLESS STEEL

*Clear-anodized aluminum is available but offers less protection than Hardkote-anodized.

Hydraulic Cylinders

Part No.	Stroke in	Pin center length (closed)* in	Weight**		Volume in ³	Gap/pin in	Diameter		Rod in	Max OD in	Pull force***																				
			6061-T6 Aluminum				Stainless Steel				@ 1000psi 69 bar		@ 2000 psi 140 bar		@ 3000 psi 210 bar		@ 4000 psi 275 bar		@ 5000 psi 345 bar												
			lb	kg			lb	kg			in	mm	in	mm	lb	kg	lb	kg	lb	kg	lb	kg									
HYS2511265	-6	10.4	265	18.7	474	2.2	0.99	4.4	2.00	7	0.11	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903
HYS2511360	-6	14.2	360	22.4	569	2.5	1.15	5.2	2.34	9	0.15	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903
HYS2511530	-6	20.9	530	29.1	739	3.2	1.44	6.5	2.93	13	0.22	7/16	11.1	1	25	7/16	11	1.5	38	635	288	1270	576	1905	864	2540	1152	3175	1440	6400	2903
HYS351250	-10	9.8	250	19.4	493	3.5	1.60	7.4	3.37	13	0.21	1/2	12.7	1.8	46	1.88	48	1.8	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYS3513350	-10	13.8	350	23.4	594	4.2	1.89	8.9	4.04	18	0.29	1/2	12.7	1.8	46	1.88	48	1.8	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYS3513525	-10	20.7	525	30.3	769	5.5	2.50	12.4	5.61	27	0.44	1/2	12.7	1.8	46	1.88	48	1.8	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYS4016250	-12	9.8	250	19.4	498	4.6	2.09	9.4	4.28	14	0.24	5/8	15.9	1.8	46	1.88	48	2.0	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYS4016375	-12	14.8	375	24.5	622	5.7	2.57	11.7	5.29	22	0.35	5/8	15.9	1.8	46	1.88	48	2.0	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYS4016625	-12	24.6	625	34.4	874	7.7	3.51	16.1	7.30	36	0.59	5/8	15.9	1.8	46	1.88	48	2.0	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYS4516250	-17	9.8	250	19.4	498	5.5	2.48	11.7	5.30	21	0.34	5/8	15.9	1.8	46	1.88	48	2.3	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYS4516375	-17	14.8	375	24.5	623	6.7	3.03	14.3	6.51	31	0.51	5/8	15.9	1.8	46	1.88	48	2.3	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYS4516800	-17	31.5	800	41.3	1050	9.1	4.12	19.7	8.93	66	1.08	5/8	15.9	1.8	46	1.88	48	2.3	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYS5519275	-22	10.8	275	22.4	569	9.5	4.33	20.8	9.43	36	0.59	3/4	19.1	2.1	54	1.99	55	1.9	49	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYS5519400	-22	15.7	400	27.3	693	11.5	5.20	25.1	11.39	52	0.86	3/4	19.1	2.1	54	1.99	55	1.9	49	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYS5519930	-22	36.6	930	48.1	1223	19.4	8.80	43.8	19.89	121	1.99	3/4	19.1	2.1	54	1.99	55	1.9	49	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYS6522300	-30	11.8	300	25.2	639	13.3	6.04	28.6	12.99	51	0.83	7/8	22.2	2.2	57	2.03	65	2.2	57	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYS6522450	-30	17.7	450	31.0	787	15.9	7.22	34.9	15.82	76	1.25	7/8	22.2	2.2	57	2.03	65	2.2	57	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYS65221050	-30	41.3	1050	54.6	1387	26.8	12.15	59.0	26.78	178	2.92	7/8	22.2	2.2	57	2.03	65	2.2	57	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYS7525300	-40	11.8	300	27.7	704	20.5	9.32	44.7	20.29	74	1.22	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486
HYS7525475	-40	18.7	475	34.4	874	24.9	11.30	54.5	24.72	118	1.93	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486
HYS75251175	-40	46.3	1175	62.0	1574	42.5	19.29	95.0	43.08	291	4.76	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486
HYS8025300	-48	11.8	300	28.3	719	23.7	10.74	52.7	23.89	81	1.33	1 1/8	28.6	3	80	1	25	4.1	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYS8025475	-48	18.7	475	35.1	891	28.8	13.06	64.6	29.29	129	2.11	1 1/8	28.6	3	80	1	25	4.1	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYS80251150	-48	45.3	1150	61.7	1567	48.5	22.01	110.5	50.11	312	5.11	1 1/8	28.6	3	80	1	25	4.1	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYS9032375	-60	14.8	375	31.1	789	34.2	15.53	75.5	34.24	124	2.03	1 1/4	31.8	3	90	1	25	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYS9032550	-60	21.7	550	38.0	965	41.1	18.62	41.1	40.84	182	2.98	1 1/4	31.8	3	90	1	25	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYS9032375.W	-76	14.8	375	31.1	789	34.4	15.65	75.9	34.47	124	2.03	1 1/4	31.8	3	90	1	25	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYS9032550.W	-76	21.7	550	38.0	965	41.2	18.70	41.2	40.97	182	2.98	1 1/4	31.8	3	90	1	25	4.6	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYS10032400	-90	15.7	400	—	—	48.6	22.04	48.6	49.57	179	2.93	1 3/8	34.9	4	100	1	25	5.2	132	11339	5143	22678	10287	34018	15430	45357	20573	56696	25717	113400	51437
HYS10032625	-90	24.6	625	—	—	58.9	26.72	58.9	60.10	279	4.57	1 3/8	34.9	4	100	1	25	5.2	132	11339	5143	22678	10287	34018	15430	45357	20573	56696	25717	113400	51437
HYS11535475	-110	18.7	475	—	—	71.6	32.48	71.6	71.46	270	4.43	1 1/2	38.1	4	100	1	25	5.8	147	14419	6541	28839	13081	43258	19622	57678	26162	72097	32703	144200	65408
HYS11535700	-110	27.6	700	—	—	84.6	38.37	84.6	86.56	397	6.51	1 1/2	38.1	4	100	1	25	5.8	147	14419	6541	28839	13081	43258	19622	57678	26162	72097	32703	144200	65408
HYS13038475	-150	18.7	475	—	—	94.7	42.96	94.7	95.80	353	5.79	1 3/4	44.5	5	130	1	25	6.5	165	18862	8556	37724	17111	56585	25667	75447	34222	94309	42778	188600	85548
HYS13038700	-150	27.6	700	—	—	110.8	50.26	110.8	110.57	520	8.52	1 3/4	44.5	5	130	1	25	6.5	165	18862	8556	37724	17111	56585	25667	75447	34222	94309	42778	188600	85548
HYS14548500	-195	19.7	500	—	—	136.1	61.73	136.1	138.87	457	7.49	2 1/8	54	5	145	1	25	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279
HYS14548750	-195	29.5	750	—	—	160.6	72.85	160.6	162.48	685	11.23	2 1/8	54	5	145	1	25	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279
HYS16554600	-260	23.6	600	—	—	207.4	94.08	207.4	208.98	700	11.47	2 1/8	61.9	6	165	1	25	8.4	213	29637	13443	59273	26886	88910	40329	118546	53772	148183	67214	296400	134445
HYS16554800	-260	31.5	800	—	—	232.4	105.41	232.4	237.20	933	15.29	2 1/8	61.9	6	165	1	25	8.4	213	29637	13443	59273	26886	88910	40329	118546	53772	148183	67214	296400	134445
HYS19064600	-320	23.6	600	—	—	283.0	128.37	283.0	271.41	928	15.21	2 1/8	61.9	7	190	1	25	9.7	246	39270	17813	78540	35625	117810	53438	157080	71250	196350	89063	392700	178126
HYS19064800	-320	31.5	800	—	—	316.7	143.65	316.7	316.03	1237	20.28	2 1/8	61.9	7	190	1	25	9.7	246	39270	17813	78540	35625	117810	53438	157080	71250	196350	89063	392700	178126

*For pin center length open add stroke length to pin center length closed **Root ends (forks) included in weights *** Max relief setting is 5,000 psi / 345 bar

Valves & Manifolds

Harken's patent-pending valves and manifolds are a major update to marine hydraulics. Featuring extremely lightweight and low profile designs, Harken has a complete selection for manual systems with options like Grand Prix sculpting and double-sided manifolds.

Valves

Valves turn different functions on and off from a cockpit-mounted valve panel. Harken's patent-pending valves are very low-profile and weigh half as much as comparable valves. Each single- or double-acting valve has its own pressure relief, letting you match hydraulic power to the maximum working loads of your individual mast and sail controls. Standard 5000 psi versions and sculpted 10000 psi Grand Prix versions are machined from Hardkote-anodized 6061-T6 aluminum.

Manifolds

Manifolds are conduits that supply valves with oil from the pump. Harken offers single- and double-sided manifolds that accommodate up to 9 valves. Standard and sculpted Grand Prix versions are machined from Hardkote-anodized 6061-T6 aluminum.

Relief Valves

Inline and manifold-mount relief valves control the maximum pressure of the entire system. Inline reliefs work with any manual system. Manifold-mount reliefs fit any Harken manifold.

Remote Dump Valves

Remote dump valves let you ease sail controls from the helm, rail, and other key positions. Either use it as a quick-release or regulate its speed with an optional adjustable flow control.

Valve Panels

Valve panels can be ordered with or without stainless steel gauges for any of our manifold configurations. Panels are available in 6061-T6 aluminum, mirror-polished 316 stainless, and clear-coated carbon.



VALVE PANELS

Tapered handle sockets guarantee a perfect fit for the lifetime of the handle



STANDARD VALVES & MANIFOLDS



GRAND PRIX VALVES & MANIFOLDS

Quantum Racing, TP52, Botin & Carkeek, Longitud Caro — Thierry Martinez photo



Single- and double-sided manifolds hold up to 9 valves

Handles fit in any of 4 directions so inverted valves have the same open/closed positions and rotation direction as upright valves

Valves & Manifolds



Part No.	Description	Max pressure		Height		Width		Depth		Weight	
		psi	bar	in	mm	in	mm	in	mm	lb	kg
Valves											
HYV1PP	Single-acting panel mount valve	5000	345	3.9	100	1.9	47	2.6	66	0.7	0.33
HYV1PT	Single-acting thru deck mount valve	5000	345	3.9	100	1.9	47	3.7	95	0.8	0.36
HYV2PP	Double-acting panel mount valve	5000	345	3.9	100	2.5	63	3.7	95	1.6	0.72
HYV2PT	Double-acting thru-deck mount valve	5000	345	3.9	100	2.5	63	4.9	124	1.7	0.76
HYV1GP	Single-acting Grand Prix panel mount valve	10000	689	3.9	100	1.9	47	2.6	66	0.6	0.25
HYV1GT	Single-acting Grand Prix thru-deck mount valve	10000	689	3.9	100	1.9	47	3.7	95	0.6	0.29
HYV2GP	Double-acting Grand Prix panel mount valve	10000	689	3.9	100	2.5	63	3.7	95	1.0	0.47
HYV2GT	Double-acting Grand Prix thru-deck mount valve	10000	689	3.9	100	2.5	63	4.9	124	1.1	0.50
HYVDSPF	Remote dump valve/string pull/flow control	10000	689	2.4	60	1.7	42	0.7	19	1.7	0.78
HYVRI	Relief valve/inline	10000	689	1.4	36	1.0	25	3.0	75	0.2	0.08
HYVRM	Relief valve/manifold mount	10000	689	1.1	28	1.1	28	2.8	72	0.2	0.11
Manifolds											
HYMSP61	Single-sided manifold 1 place	5000	345	0.7	19	2.2	55	1.5	38	0.2	0.08
HYMSP62	Single-sided manifold 2 place	5000	345	0.7	19	5.4	137	1.5	38	0.5	0.22
HYMSP63	Single-sided manifold 3 place	5000	345	0.7	19	8.7	220	1.5	38	0.8	0.36
HYMSP64	Single-sided manifold 4 place	5000	345	0.7	19	11.9	302	1.5	38	1.1	0.52
HYMSP65	Single-sided manifold 5 place	5000	345	0.7	19	15.2	385	1.5	38	1.4	0.64
HYMSG61	Single-sided Grand Prix manifold 1 place	10000	689	0.7	19	1.7	42	1.5	38	0.1	0.05
HYMSG62	Single-sided Grand Prix manifold 2 place	10000	689	0.7	19	5.4	137	1.5	38	0.3	0.15
HYMSG63	Single-sided Grand Prix manifold 3 place	10000	689	0.7	19	8.7	220	1.5	38	0.5	0.22
HYMSG64	Single-sided Grand Prix manifold 4 place	10000	689	0.7	19	11.9	302	1.5	38	0.6	0.29
HYMSG65	Single sided Grand Prix manifold 5 place	10000	689	0.7	19	15.2	385	1.5	38	0.8	0.36
HYMZG63	Double-sided Grand Prix manifold 3 place	10000	689	0.7	19	5.4	137	1.5	38	0.3	0.16
HYMZG64	Double-sided Grand Prix manifold 4 place	10000	689	0.7	19	7.0	178	1.5	38	0.4	0.20
HYMZG65	Double-sided Grand Prix manifold 5 place	10000	689	0.7	19	8.7	220	1.5	38	0.5	0.24
HYMZG66	Double-sided Grand Prix manifold 6 place	10000	689	0.7	19	10.3	261	1.5	38	0.6	0.28
HYMZG67	Double-sided Grand Prix manifold 7 place	10000	689	0.7	19	11.9	302	1.5	38	0.7	0.32
HYMZG68	Double-sided Grand Prix manifold 8 place	10000	689	0.7	19	13.5	344	1.5	38	0.8	0.36
HYMZG69	Double-sided Grand Prix manifold 9 place	10000	689	0.7	19	15.2	385	1.5	38	0.9	0.39

Standard valves have -4 JIC port adapters. Grand Prix valves have plugs in all ports.

Hydraulic Power Units

Harken power units are the complete package for electrically powered hydraulic pumps. Their motors run up to 13 functions and 3 simultaneous functions at full power, ranging from backstay and vang cylinders to davits, keels, and windlasses. Preinstalled double-flow capabilities feed power-hungry equipment.

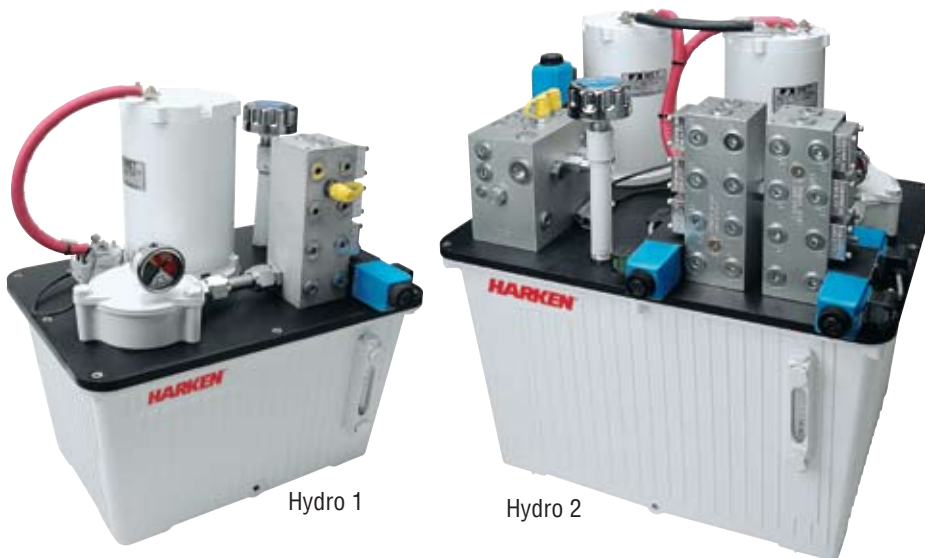
Power units feature highly efficient series-wound motors and IP67-rated motor contactors on the coated aluminum tank's 6061-T6 top. Units have 4000-watt 24V DC motors. 12V DC motors and valves are available by special order. Pumps and clear-anodized manifolds are preinstalled, saving space, installation time, and additional hardware. Drop-in return-line filters provide a no-mess alternative to typical spin-on styles.

Prewired Control Box

Units come with a prewired control box made of tough polycarbonate for motor and valve controls. The terminals and valve wire sets are all sealed and labeled—just connect the functions you need.

Custom Options

Need remote manifolds? Want to integrate an engine-driven pump or use generator power? We will customize a unit to your specifications.

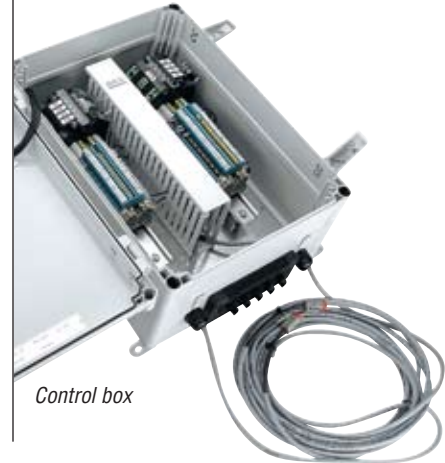


Hydro 1

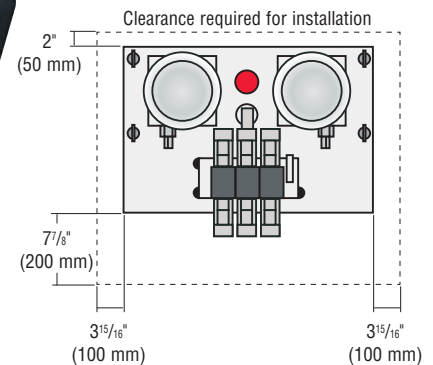
Hydro 2



Drop-in filters and filter status gauges make maintenance fast and easy



Control box



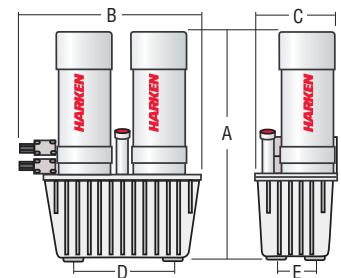
Control Box

Power unit	Height		Width		Depth	
	in	mm	in	mm	in	mm
Hydro 1 / Hydro 2	16.5	419	12.5	318	6.0	152
Hydro 3	19.5	495	17.5	445	10.0	254

Power Unit Dimensions

Power unit	A		B		C		D		E	
	in	mm	in	mm	in	mm	in	mm	in	mm
Hydro 1	22.5	568	19.4	493	14.8	376	12.9	328	7	178
Hydro 2 / Hydro 3	27.4	696	24.2	615	18.6	472	16.9	429	11.2	284

Dimensions subject to change



Hydraulic Power Units

Power unit	Max number of functions	Max simultaneous functions	24V DC Motor	Max current drain amps	Tank capacity		Max operating pressure		Max flow rate		Weight		Fasteners
					gal	L	psi	bar	gpm	L/min	lb	kg	
Hydro 1	4	1	1 x 4 kW	210	7.9	30	2000	140	4	15	119	54	M10
Hydro 2	9*	2**	2 x 4 kW	2 x 210	18.5	70	2000	140	8	30	168	76	M10
Hydro 3	13*	3**	3 x 4 kW	3 x 210	18.5	70	2000	140	12	45	207	94	M10

*One function delivers double flow output (8 gpm) using 2 motors ** This number is reduced by one when a double flow function is in use

Hydraulic Reservoirs

Harken offers pressurized carbon fiber/composite reservoirs and vented blow-molded reservoirs for manual hydraulic systems.

Pressurized Reservoirs

With a 20-liter version that weighs just 3.8 lb (1.736 kg), Harken's pressurized carbon fiber/composite reservoirs are among the lightest in the existence. They are installed in the bilge rather than at pump level for a low center of gravity. Reservoirs include a one-way return line check valve and supply line shutoff valve, both with aluminum -6JIC fittings. A high-quality regulator maintains smooth and consistent oil flow.

A graduated level gauge and translucent sections in the reservoir walls make it easy to monitor oil levels. Pressurized reservoirs require very little maintenance and are cleaner than those that use ambient air pressure.

Custom sizes are available.

Vented Reservoirs

These 2- and 4-liter blow-molded reservoirs are used for smaller Grand Prix systems and production yachts. Reservoirs feature a vented cap to stabilize tank pressure and prevent leaks. Translucent materials allow oil levels to be easily monitored. 3/8 inch (10 mm) hose barbs are welded to the reservoir for supply and return hoses.



VENTED RESERVOIRS



PRESSURIZED RESERVOIRS

Rosebud, STP65, Farr® Yacht Design, Westerly Marine — Eric Simonson photo



Part No.	Description	Maximum capacity		Oil capacity		Height		Maximum dimensions		Depth		Weight	
		gal	L	gal	L	in	mm	in	mm	in	mm	lb	kg
HYRPC20	Pressurized composite reservoir	5.3	20	3.2	12	31.5	800	7.9	200	7.9	200	3.8	1.736
HYRPC14	Pressurized composite reservoir	3.7	14	2.1	8	25.6	650	7.9	200	7.9	200	3.4	1.550
HYRVP04	Vented blow-molded reservoir	1.1	4	1.1	4	11.4	290	8.7	220	4.1	105	1.2	0.545
HYRVP02	Vented blow-molded reservoir	0.5	2	0.5	2	6.7	170	8.7	220	4.1	105	0.8	0.364

NEW

HYDRAULIC SYSTEMS

Grand Prix Cylinders

Used as mast, sail, and keel controls, Harken's highly efficient Grand Prix cylinders outlast and outperform on the hottest raceboats. They've endured hundreds of thousands of cycles in the testing lab and have gone on to prove themselves on champion TP52s and other winning Grand Prix yachts. Meticulous engineering and top-quality components let Harken cylinders excel in constant high-stress racing and harsh marine environments.

Cylinders are available in titanium or Hardkote-anodized, Teflon®-impregnated 7075-T6 aluminum for strength. Graphite-filled Teflon® rod seals and bronze-filled Teflon® piston seals are extremely low friction and are more durable than polyurethane seals. Performance O-rings and slant springs in the seals provide consistent seal pressure for a reliable, long-lasting fit. High-strength titanium, 17-4PH stainless steel, or Nitronic 50 rods and pins provide superior strength and corrosion resistance.

Cylinders include a standard clevis jaw on both ends, but can also be fitted with blocks and different eye types. Cylinders include push, pull, and pull/pull styles.

Speedboat: 100 Juan Yacht Design, Cooksons Boats Ltd. — Billy Black photo



Rods can be fitted with a variety of high-quality end controls



HARDKOTE



TITANIUM

Grand Prix Cylinders

The table below lists common Grand Prix cylinder configurations. Contact Harken for weights and volumes, as these depend on your specifications for materials, pull force, stroke length, and cylinder diameter. 10,000 psi cylinders are available upon request.

Grand Prix cylinders are only intended for systems with a vigorous maintenance schedule, as they are built for extremely high loads at a minimal weight.

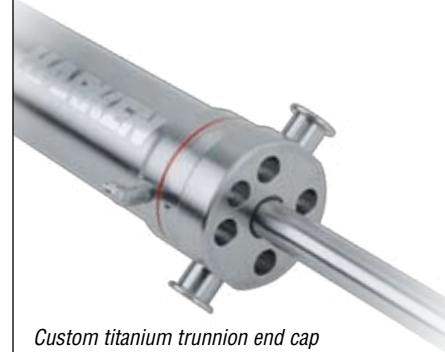


Jaws are standard but eye ends can be special ordered

Custom material combinations available



Custom headstay cylinder with spherical mount



Custom titanium trunion end cap

Part No.*	Cylinder housing material	Gap/pin		Diameter				Pull force			
				Bore		Rod		@ 5000 psi 345 bar		@ 7500 psi 520 bar	
				in	mm	in	mm	lb	kg	lb	kg
HYCS7198xxx	7075-T6 aluminum	5/16	7.9	3/4	19	5/16	8	1824	827	2736	1241
HYCST198xxx	titanium	5/16	7.9	3/4	19	5/16	8	1824	827	2736	1241
HYCS72510xxx	7075-T6 aluminum	3/8	9.5	1	25	3/8	10	3375	1531	5062	2296
HYCST2510xxx	titanium	3/8	9.5	1	25	3/8	10	3375	1531	5062	2296
HYCS73211xxx	7075-T6 aluminum	7/16	11.1	1 1/4	32	7/16	11	5384	2442	8076	3663
HYCST3211xxx	titanium	7/16	11.1	1 1/4	32	7/16	11	5384	2442	8076	3663
HYCS73513xxx	7075-T6 aluminum	1/2	12.7	1 3/8	35	1/2	13	6443	2922	9664	4384
HYCST3513xxx	titanium	1/2	12.7	1 3/8	35	1/2	13	6443	2922	9664	4384
HYCS74013xxx	7075-T6 aluminum	1/2	12.7	1 1/2	40	1/2	13	7854	3563	11781	5344
HYCST4013xxx	titanium	1/2	12.7	1 1/2	40	1/2	13	7854	3563	11781	5344
HYCS74514xxx	7075-T6 aluminum	5/8	15.9	1 3/4	45	9/16	14	10784	4891	16176	7337
HYCST4514xxx	titanium	5/8	15.9	1 3/4	45	9/16	14	10784	4891	16176	7337
HYCS75016xxx	7075-T6 aluminum	5/8	15.9	2	50	5/8	16	14174	6429	21261	9644
HYCST5016xxx	titanium	5/8	15.9	2	50	5/8	16	14174	6429	21261	9644
HYCS75518xxx	7075-T6 aluminum	3/4	19.1	2 1/8	55	11/16	18	15877	7202	23815	10802
HYCST5518xxx	titanium	3/4	19.1	2 1/8	55	11/16	18	15877	7202	23815	10802
HYCS76521xxx	7075-T6 aluminum	7/8	22.2	2 1/2	65	13/16	21	21951	9957	32927	14935
HYCST6521xxx	titanium	7/8	22.2	2 1/2	65	13/16	21	21951	9957	32927	14935
HYCS77525xxx	7075-T6 aluminum	1	25.4	3	75	1	25	31416	14250	47124	21375
HYCST7525xxx	titanium	1	25.4	3	75	1	25	31416	14250	47124	21375
HYCS78029xxx	7075-T6 aluminum	1 1/4	31.8	3 1/8	80	1 1/8	29	33379	15141	50069	22711
HYCST8029xxx	titanium	1 1/4	31.8	3 1/8	80	1 1/8	29	33379	15141	50069	22711
HYCS79035xxx	7075-T6 aluminum	1 3/8	34.9	3 1/2	90	1 3/8	35	40681	18453	61022	27679
HYCST9035xxx	titanium	1 3/8	34.9	3 1/2	90	1 3/8	35	40681	18453	61022	27679
HYCS710038xxx	7075-T6 aluminum	1 1/2	38.1	4	100	1 1/2	38	53996	24492	80994	36738
HYCST10038xxx	titanium	1 1/2	38.1	4	100	1 1/2	38	53996	24492	80994	36738

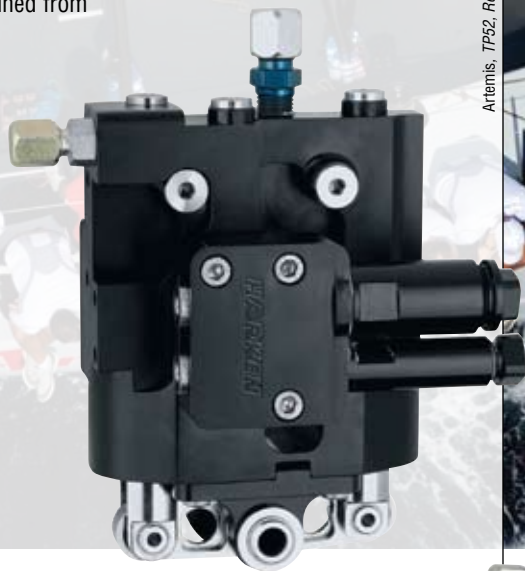
*When ordering, replace xxx with desired stroke length in millimeters.

Hydraulic Pumps

Harken 3-speed pumps push oil faster and more efficiently than other pumps on the market, reducing wasted time and energy. At preset points, the pump automatically shifts to the next speed. Shift points can be adjusted to fit crew strength and sailing style. We also make a 2-speed pump that offers the same high-strength handles, user-adjustable autoshifting, and mounting accessories.

Bolt holes in the Hardkote-anodized 6061-T6 aluminum pump housing are threaded with stainless-steel inserts to prevent corrosion around the stainless bolts. An optional adhered isolation plate improves load distribution even more by transferring torque directly to the mounting surface rather than the bolt holes. The piston shafts and rocker arms are machined from 17-4PH stainless steel.

Pumps have splined shafts to ensure a tight fit and to allow the handle to be mounted at the exact angle you choose. Standard round-tipped handles are made of knurled 6061-T6 Hardkote-anodized aluminum and fit most marine pumps. Grand Prix alternatives include carbon and knurled titanium. An optional square-tipped style allows the handle to be rocked 5 degrees laterally from the pumping direction to store against the cockpit wall.



3-SPEED PUMP



Artemis, TP52, Reichel/Pugh, Cookson Boats — Thierry Martinez photo



Optional isolation plates made of extremely resilient G10 improve load distribution by transferring torque directly to the mounting surface

CARBON HANDLE



ALUMINUM HANDLE

Handles

Part No.	Description	Ø		Length		Weight	
		in	mm	in	mm	lb	kg
HYPMH6600	Pump Handle 600 mm/aluminum	1¼	32	23⅞	600	1.3	0.58
HYPMH6800	Pump Handle 800 mm/aluminum	1¼	32	31½	800	1.6	0.73
HYPMHC800	Pump Handle 800 mm/carbon	1¼	32	31½	800	1.2	0.55
HYPMHC800S	Pump Handle 800 mm/carbon/square tip	1¼	32	31½	800	1.3	0.58
HYPMHC1000	Pump Handle 1000 mm/carbon	1¼	32	39⅞	1000	1.4	0.65
HYPMHC1000S	Pump Handle 1000 mm/carbon/square tip	1¼	32	39⅞	1000	1.5	0.66
HYPMHT800	Pump Handle 800 mm/titanium	1¼	32	31½	800	1.3	0.57
HYPMHT800S	Pump Handle 800 mm/titanium/square tip	1¼	32	31½	800	1.3	0.58

Pumps

Part No.	Description	Output/stroke (push and pull)						Max pressure	Ports/fittings		Weight		
		1st: Low pressure		2nd: Medium pressure		3rd: High pressure			Suction	Pressure	lb	kg	
		in³	cc	in³	cc	in³	cc						psi
HYPM2	2-Speed pump/auto shift*‡	0.99	16.3	0.25	4.1	—	—	5000	345	3/8" hose barb	1/4" 37° JIC	—	—
HYPM3-1.1R	3-Speed pump/auto shift/round handle socket*	2.03	33.3	0.51	8.3	0.18	3.0	10000	689	3/8" NPT	7/16" ORB	6.9	3.13
HYPM3-1.1S	3-Speed pump/auto shift/square handle socket*	2.03	33.3	0.51	8.3	0.18	3.0	10000	689	3/8" NPT	7/16" ORB	6.9	3.14
HYPM3MP	Pump anti-torque mounting plate	—	—	—	—	—	—	—	—	—	—	0.2	0.09

*M8 fasteners ‡Available 2010

Custom Yacht Hydraulics

Harken® offers cylinders and custom hydraulic power systems for megayachts. These complete solutions allow crew to easily control all hydraulic functions and sail controls, including mainsheet traveler, backstay, halyard tensioner, outhaul, vang, furling, and winch systems. Systems include custom power units, PTO pumps, valve manifolds, and electrical control systems.

Cylinders

Cylinders feature Hardkote-anodized 6061-T6 aluminum housing, high-strength, corrosion-resistant Nitronic 50 stainless rods and pins. As the cylinder moves, low-friction Teflon® seals reduce drag for less wear.

PTO Pumps

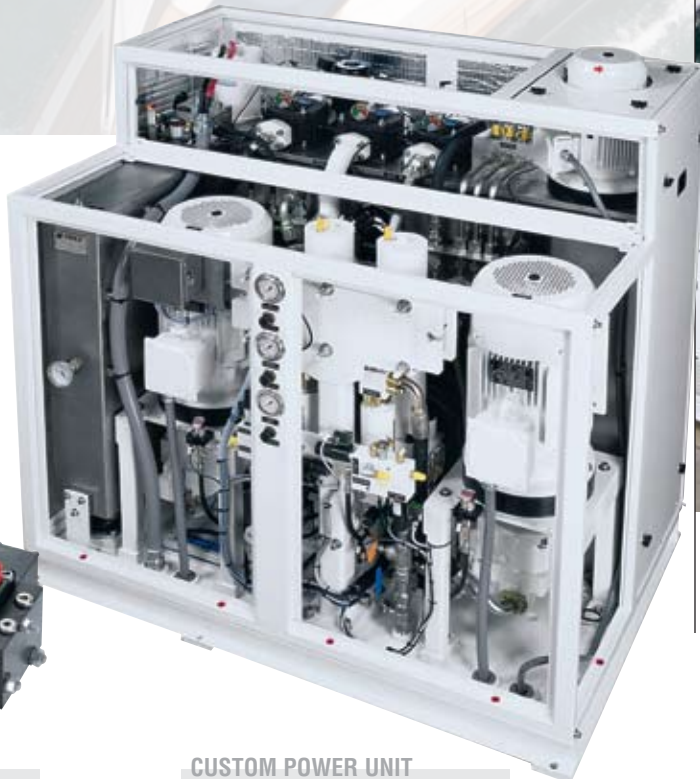
Customized for specific hydraulic systems, PTO (power take-off) pumps convert engine power to hydraulic power to handle gear requiring high horsepower such as Captive Reel winches, bow thrusters, or windlasses.

Electro-Hydraulic Valves

Electro-hydraulic valves are electronically controlled by a PLC (programmable logic controller) for a high degree of precision and repeatability. They offer on/off or variable flow rates which can be operated by a push-button or joystick.



CUSTOM CONTROL PANEL



CUSTOM POWER UNIT



CUSTOM VALVE BLOCK

Nazemin V — Mark Lloyd photo



Custom power units are available from 3 to 22 kilowatts in any configuration

HydroTrim

The Harken HydroTrim is true push-button sailing for main and headsail sheeting. Using a 1:4 or 1:6 reverse purchase, it solves the problem of winches that tail line into the cockpit—the hidden belowdecks or in-boom purchase contains all line within the system and saves valuable space on deck.

The cylinder is affixed to the hull or frame with a two-piece retaining bracket. This one-time installation allows the cylinder to be easily removed and serviced without unbolting anything from the hull. The blocks can be removed from the cylinder ends with a single pin so you can service them offsite or leave the rigging intact while servicing the cylinder. Two smaller low-friction sheaves on the cylinder ends replace the larger diameter sheaves typical of most belowdecks trimming systems, reducing the overall length of the system and allowing installation into smaller spaces.

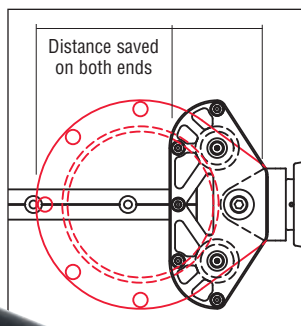
Cylinders feature bronze-filled Teflon® bearings that maintain piston and rod alignment longer than common acetal bearings. Graphite-filled Teflon® rod seals and bronze-filled Teflon® piston seals are extremely low friction and are more durable than polyurethane seals. Performance O-rings and slant springs in the nonabsorbent Teflon® cylinder seals provide consistent seal pressure for a reliable long-lasting fit. Cylinders, rod, T-Track, and mounting brackets are made with Hardkote-anodized, Teflon®-impregnated 6061-T6 aluminum. All fittings and fasteners are stainless steel.

Custom cylinder lengths are available.

Paula Rosa, Shipman 80; J & J Design, Seaway Group — Studio 37 photo



The HydroTrim fits into smaller spaces by using two smaller sheaves in place of one large sheave.



Blocks remove from the cylinder ends with a single pin for easy service.



HydroTrim



Part No.	Bore Ø		Rod Ø		Stroke		Max Housing OD		Reverse purchase	Max sheet load* at pressure				Oil volume cap end	
	in	mm	in	mm	in	mm	in	mm		2000 psi/140 bar	3000 psi/210 bar	lb	kg	gal	L
HYCT453235.4	1 3/4	45	1 1/4	32	14	350	2.27	57.7	4	1203	546	1804	818	0.14	0.5
HYCT453235.6	1 3/4	45	1 1/4	32	14	350	2.27	57.7	6	802	364	1203	546	0.14	0.5
HYCT453270.4	1 3/4	45	1 1/4	32	28	700	2.27	57.7	4	1203	546	1804	818	0.29	1.1
HYCT453270.6	1 3/4	45	1 1/4	32	28	700	2.27	57.7	6	802	364	1203	546	0.29	1.1
HYCT553840.4	2 3/16	55	1 1/2	38	16	400	2.86	72.6	4	1879	852	2819	1279	0.26	1.0
HYCT553840.6	2 3/16	55	1 1/2	38	16	400	2.86	72.6	6	1253	568	1879	852	0.26	1.0
HYCT553880.4	2 3/16	55	1 1/2	38	31	800	2.86	72.6	4	1879	852	2819	1279	0.51	1.9
HYCT553880.6	2 3/16	55	1 1/2	38	31	800	2.86	72.6	6	1253	568	1879	852	0.51	1.9
HYCT654850.4	2 1/2	65	1 7/8	48	20	500	3.17	80.5	4	2454	1113	3682	1670	0.42	1.6
HYCT654850.6	2 1/2	65	1 7/8	48	20	500	3.17	80.5	6	1636	742	2454	1113	0.42	1.6
HYCT6548100.4	2 1/2	65	1 7/8	48	39	1000	3.17	80.5	4	2454	1113	3682	1670	0.84	3.2
HYCT6548100.6	2 1/2	65	1 7/8	48	39	1000	3.17	80.5	6	1636	742	2454	1113	0.84	3.2
HYCT755460.4	3	75	2 1/8	54	24	600	3.8	96.5	4	3534	1603	5301	2405	0.72	2.7
HYCT755460.6	3	75	2 1/8	54	24	600	3.8	96.5	6	2356	1069	3534	1603	0.72	2.7
HYCT7554120.4	3	75	2 1/8	54	47	1200	3.8	96.5	4	3534	1603	5301	2405	1.4	5.5
HYCT7554120.6	3	75	2 1/8	54	47	1200	3.8	96.5	6	2356	1069	3534	1603	1.4	5.5
HYCT906065.4	3 1/2	90	2 1/2	60	26	650	4.57	116.1	4	4811	2182	7216	3273	1.1	4.0
HYCT906065.6	3 1/2	90	2 1/2	60	26	650	4.57	116.1	6	3207	1455	4811	2182	1.1	4.0
HYCT9060130.4	3 1/2	90	2 1/2	60	51	1300	4.57	116.1	4	4811	2182	7216	3273	2.1	8.1
HYCT9060130.6	3 1/2	90	2 1/2	60	51	1300	4.57	116.1	6	3207	1455	4811	2182	2.1	8.1
HYCT1007575.4	4	100	3	75	30	750	5.5	139.7	4	6283	2850	9425	4275	1.6	6.1
HYCT1007575.6	4	100	3	75	30	750	5.5	139.7	6	4189	1900	6283	2850	1.6	6.1
HYCT10075150.4	4	100	3	75	59	1500	5.5	139.7	4	6283	2850	9425	4275	3.2	12.2
HYCT10075150.6	4	100	3	75	59	1500	5.5	139.7	6	4189	1900	6283	2850	3.2	12.2
HYCT1159090.4	4 1/2	115	3 1/2	90	35	900	6	152.4	4	7952	3607	11928	5411	2.4	9.2
HYCT1159090.6	4 1/2	115	3 1/2	90	35	900	6	152.4	6	5301	2405	7952	3607	2.4	9.2
HYCT11590180.4	4 1/2	115	3 1/2	90	71	1800	6	152.4	4	7952	3607	11928	5411	4.9	18.5
HYCT11590180.6	4 1/2	115	3 1/2	90	71	1800	6	152.4	6	5301	2405	7952	3607	4.9	18.5
HYCT130100100.4	5 1/8	130	4	100	39	1000	7	177.8	4	10314	4679	15472	7018	3.5	13.3
HYCT130100100.6	5 1/8	130	4	100	39	1000	7	177.8	6	6876	3119	10314	4679	3.5	13.3
HYCT130100200.4	5 1/8	130	4	100	79	2000	7	177.8	4	10314	4679	15472	7018	7.0	26.6
HYCT130100200.6	5 1/8	130	4	100	79	2000	7	177.8	6	6876	3119	10314	4679	7.0	26.6
HYCT145115115.4	5 3/4	145	4 1/2	115	45	1150	8	203.2	4	12984	5889	19475	8834	5.1	19.3
HYCT145115115.6	5 3/4	145	4 1/2	115	45	1150	8	203.2	6	8656	3926	12984	5889	5.1	19.3
HYCT145115230.4	5 3/4	145	4 1/2	115	91	2300	8	203.2	4	12984	5889	19475	8834	10.2	38.5
HYCT145115230.6	5 3/4	145	4 1/2	115	91	2300	8	203.2	6	8656	3926	12984	5889	10.2	38.5
HYCT165130125.4	6 1/2	165	5 1/8	130	49	1250	9	228.6	4	16592	7526	24887	11289	7.1	26.8
HYCT165130125.6	6 1/2	165	5 1/8	130	49	1250	9	228.6	6	11061	5017	16592	7526	7.1	26.8
HYCT165130250.4	6 1/2	165	5 1/8	130	98	2500	9	228.6	4	16592	7526	24887	11289	14.1	53.5
HYCT165130250.6	6 1/2	165	5 1/8	130	98	2500	9	228.6	6	11061	5017	16592	7526	14.1	53.5
HYCT190145125.4	7 1/2	190	5 3/4	145	49	1250	10	254.0	4	22089	10020	33134	15029	9.4	35.6
HYCT190145125.6	7 1/2	190	5 3/4	145	49	1250	10	254.0	6	14726	6680	22089	10020	9.4	35.6
HYCT190145250.4	7 1/2	190	5 3/4	145	98	2500	10	254.0	4	22089	10020	33134	15029	18.8	71.3
HYCT190145250.6	7 1/2	190	5 3/4	145	98	2500	10	254.0	6	14726	6680	22089	10020	18.8	71.3

*Sheet system friction not calculated

Hydraulic Accessories

Harken offers a complete range of high-quality kits and components for the professional installation, service, and maintenance of your hydraulic system.

Filters

Filtration is essential to the health and longevity of your hydraulic system. Harken recommends the 40-micron suction/return filter between the reservoir and the pump as well as an extremely fine 3-micron filter between the pump and the valves. The 40-micron filter has an anodized aluminum body with a removable, cleanable, and replaceable sintered bronze element. The high pressure 3-micron filter is made from electropolished 17-4PH stainless. It has a replaceable paper element and can handle pressures up to 10,000 psi. -4SAE ports allow the high pressure filter to accept any combination of fittings and adapters.

Pressure Transducers

Pressure transducers use the onboard computer to convert hydraulic pressures of up to 10,000 psi into tons or other load units. Standard lightweight versions and super lightweight Grand Prix versions are available.

Pressure Gauges

Pressure gauges, offered as an alternative to electronic transducers, can be mounted into the valve panel or plumbed remotely into a pressure line. Stainless steel 1.5 in (40 mm) cases are filled with glycerin to dampen needle movement.

Plumbing

Harken has a complete line of high pressure and low pressure plumbing for manual hydraulic systems. All high pressure fittings and adapters are machined from stainless steel. Hoses can be sent to you assembled and preflushed.

Blanking Kits

Use a blanking kit to maintain the functionality of your hydraulic system when a valve is removed. Kits include O-rings and bolts.

Seal Kits

Seal kits are available for all valves, cylinders, and pumps. Kits include all normal wear items such as O-rings, seals, and nylon tip set screws.

Repair Kits

Repair kits are available for all valves, cylinders, and pumps. They include everything in the seal kit with the addition of select machined components that may require occasional replacement.

HAWE Tool

The HAWE tool is used for removing and reinstalling the check valves included in valve and pump repair kits.



Filters



Pressure transducer



Pressure gauge



Plumbing



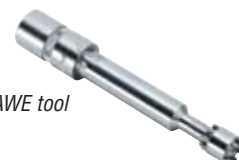
Blanking plate



Seal kit



Repair kit



HAWE tool

NEW

Men's and Women's Softshell Jacket

The thermal-regulating properties of Harken Softshell make this jacket an all-around favorite. This water-resistant midweight layer is windproof, breathable, and extremely tough. Wear it relaxing on a cool summer evening or during a fierce, wet-and-windy battle on the course.

Men's Size Range: S, M, L, XL, XXL

Women's Size Range: XS, S, M, L, XL

Available Colors (Men's and Women's):
Carbon/Ice



2070



2071



Stowable squall hood. Taped seams and water-shedding DWR treatment. 2-way stretch fabric for mobility. Flattering women's cut.

HARKEN[®]
SPORT

NEW

Ballistic Eco Shorts

These are the extremely tough, comfortable shorts people are talking about. Made from a Harken-exclusive custom fabric, they feature 4-way-stretch fabric and a gusseted crotch so you'll never feel restricted. Naturally wicking materials and a comfortable brushed interior make these shorts perfect on land or on the water. These eco-friendly shorts are made from renewable, sustainable fabrics such as quick-drying bamboo and odor-fighting carbon.

Men's Shorts Size Range: 28, 30, 32, 34, 36, 38, 40, 42



2011



Semi-elastic waist band and YKK® zippers. Highly abrasion-resistant ballistic nylon on rear. Soft, brushed interior. Removable hiking inserts behind the back pockets.

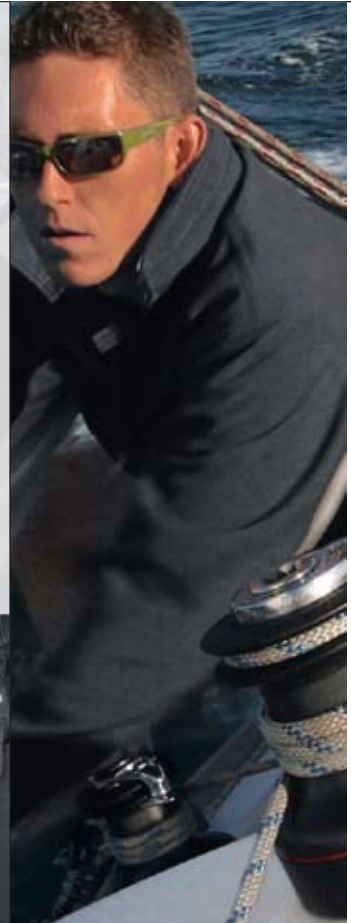


2097

Mariner Sunglasses

Harken sunglasses provide the highest level of protection against sun damage. Polarization blocks 100% of ultraviolet light and 99.9% of reflected glare. Tapered lenses eliminate distortion, reduce eye fatigue, and boost detail and depth perception so you can spot marks or just enjoy that perfect view. The durable frames provide a close wrap-around fit to protect against wind, water, and debris. Now in olive green.

HARKEN[®]
SPORT





Laser®
clew sleeve

404

Laser®
Mainsheet Block

Laser®
Mainsheet Block

404

407

466

407

407

2135

476/468

376

Laser®
clew sleeve

404

407

466

376

476

468

2135



NEW!

LASER BALL BEARING MAINSHEET BLOCKS

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