Yani, *Marten 49, Reichel/Pugh, Marten Yachts — Billy Black photo*

Catalog Guide

REFERENCE

SMALL BOAT BLOCKS
- Carbo
- Classic
- Midrange

BIG BOAT BLOCKS
- Black Magic®
- Stainless Steel
- Cruising ESP

COMPLEMENTARY HARDWARE
- Cam Cleats
- Deck Organizers
- Shackles & Eyestraps

TRAVELERS & GENOA LEADS
- CB Captive Ball Cars
- CRX Captive Roller Cars

MAINSAIL HANDLING SYSTEMS
- AA, A, B, C Battcar Systems
- Switch T-Track Battcar Systems
- Single Line Reefing & Lazy Jacks

HEADSAIL HANDLING SYSTEMS
- MKIV
- Cruising
- Powered

WINCHES
- Radial®
- Performa™
- Classic

HYDRAULICS
- Cylinders
- Valves & Manifolds
- Power Systems

HARKEN®

2012

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 Unites 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, cylinders, valves, pumps, reservoirs, control panels** are warranted for three (3) years. Electric/hydraulic winch motors, hydraulic power units, 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 SPORT 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 relaunching 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.

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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 for use exclusively on sailing boats for normal sailboat applications for rigging. Do not use Harken equipment for human suspension unless specifically stated in the Harken product catalog, manual, or website. Aloft rigging and maintenance must be left to rigging professionals only.

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 teak 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 degreaser. 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 antiseize 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 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.

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 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.

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

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

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

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.

4:1 Dodger Block: This system works well with a dodger.

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 ft^2 (35 m^2) 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. 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 ft^2 (25.5 m^2) 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 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

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

Barbarhauler: Use this low-profile system on racing boats with nonoverlapping 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 ft^2 (11.6m^2).

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-cleating 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.

Asymetrical 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 ft^2 (14 m^2).

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 measurements. In most cases, the metric dimension shown is calculated from the imperial measurement and rounded to a whole number. For example, 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 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
Liquid					
When you know	**Multiply by**	**To find**	**When you know**	**Multiply by**	**To find**
Liters	0.26417	Gallons	Gallons	3.7854	Liters
Liters	2.1134	Pints	Pints	.4731	Liters

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	Drill for tapping
2	2.25	1.6	6-32	9/64	#36
2.5	2.75	2.05	8-32	11/64	#29
3	3.25	2.5	10-24	13/64	#25
4	4.25	3.25	10-32	13/64	#21
5	5.25	4.25	1/4-20	17/64	#7
6	6.25	5	5/16-18	21/64	#F
8	8.25	6.75	3/8-16	25/64	5/16"
10	10.25	8.5	7/16-14	29/64	#T
12	12.25	10.25	1/2-13	33/64	27/64"
16	16.26	14	5/8-11	41/64	17/32"

Equivalency Table

Fraction	Decimal	mm
1/32	0.0313	.7938
1/16	0.0625	1.5875
3/32	0.0938	2.3813
1/8	0.125	3.175
5/32	0.1563	3.9688
3/16	0.1875	4.7625
7/32	0.2188	5.5563
1/4	0.25	6.35
9/32	0.2813	7.1438
5/16	0.3125	7.9375
11/32	0.3438	8.7313
3/8	0.375	9.525
13/32	0.4063	10.3188
7/16	0.4375	11.1125
15/32	0.4688	11.9063
1/2	0.5	12.7
17/32	0.5313	13.4938
9/16	0.5625	14.2875
19/32	0.5938	15.0813
5/8	0.625	15.875
21/32	0.6563	16.6688
11/16	0.6875	17.4625
23/32	0.7188	18.2563
3/4	0.75	19.05
25/32	0.7813	19.8438
13/16	0.8125	20.6375
27/32	0.8438	21.4313
7/8	0.875	22.225
29/32	0.9063	23.0188
15/16	0.9375	23.8125
31/32	0.9688	24.6063

Ball Bearing Replacement Chart

	Identify your car						Ordering Information			
	Car Part No.	Description	Length in	Length mm	Balls/ Car	Ball Material	Order Ball Part No.	Balls/ Set	Ball Ø in	Ball Ø mm
Traveler	2700/2701/2702/2703	Micro CB	2 3/16	56	40	Torlon®	2708	20	3/16	5
	156/157/171/211	Small Boat	2 7/8	73	42	Delrin®	176	21	1/4	6
	158/159/172/210/212	Small Boat high-load	2 7/8	73	42	Torlon®	177	21	1/4	6
	214/215/247/440/441	Small Boat 1250 Series	4 3/8	111	64	Torlon®	177	21	1/4	6
	2726/2728/2730/2732/2744	Small Boat CB	2 7/8	73	40	Delrin®	176	21	1/4	6
	2727/2729/2731/2733/2734/2745	Small Boat CB high-load	2 7/8	73	40	Torlon®	177	21	1/4	6
	2735/2736/2737/2738/2746	Small Boat CB 1250 Series	4 1/8	105	60	Torlon®	177	21	1/4	6
	1508/1575/1594	Midrange	4 1/4	108	48	Torlon®	1526	25	5/16	8
	1509/1576/1595	Midrange long	5 1/4	133	60	Torlon®	1526	25	5/16	8
	1604	Midrange w/2 toggles	7 1/4	184	86	Torlon®	1526	25	5/16	8
	1624/1626/1628/1635/1640/T27xxB	Midrange CB	4 1/4	108	48	Torlon®	1526	25	5/16	8
	1625/1627/1629/1636/1641/T27xxB.HL	Midrange CB long	5 3/16	132	60	Torlon®	1526	25	5/16	8
	515/608/1928/1930	Big Boat 3000 Series	5 1/4	133	50	Torlon®	547	25	3/8	10
	558/609/1929/1931	Big Boat 4500 Series	7 1/4	184	72	Torlon®	547	25	3/8	10
	1939	Big Boat 5000 Series w/2 toggles/shackles	8 1/2	216	90	Torlon®	547	25	3/8	10
	1941	Big Boat 6000 Series w/3 toggles/shackles	10 1/2	267	110	Torlon®	547	25	3/8	10
	3163/3164/3176/3177/3160/T32xxB	Big Boat CB 3000 Series	5 3/8	136	50	Torlon®	547	25	3/8	10
	3165/3166/3178/3179/3161/T32xxB.HL	Big Boat CB 4500 Series	7 7/16	188	72	Torlon®	547	25	3/8	10
	3167/T32x4B	Big Boat CB 5000 Series w/2 toggles/shackles	9 1/8	231	90	Torlon®	547	25	3/8	10
	T32x4B.HL	Big Boat CB 2 high-load cars w/2 toggles	15	381	144	Torlon®	547	25	3/8	10
	3068	Mini-Maxi	10	254	72	Torlon®	HBB21	1	1/2	12
	3070	Maxi	13 7/8	353	104	Torlon®	HBB21	1	1/2	12
	3074	Big Boat CRX	5	127	102	Torlon®	H-38349A	Rollers		
	3075	Big Boat CRX	7 1/2	191	148	Torlon®	H-38349A	Rollers		
Spinnaker Pole	3188	Small Boat ring	4 63/64	126	60	Torlon®	177	21	1/4	6
	3189	Midrange ring	5 61/64	151	60	Torlon®	1526	25	5/16	8
	1578	Midrange 120/130 bell	5 1/4	133	60	Torlon®	1526	25	5/16	8
	1579/1580	Midrange toggle	5 1/4	133	60	Torlon®	1526	25	5/16	8
	1645/1646/1647	Midrange CB	5 3/16	132	60	Torlon®	1526	25	5/16	8
	782	Big Boat 120/130 bell	7 1/4	184	72	Torlon®	547	25	3/8	10
	783/784	Big Boat toggle	7 1/4	184	72	Torlon®	547	25	3/8	10
Genoa Lead	249	Small Boat	4 3/8	111	64	Torlon®	177	21	1/4	6
	G22xB/G22x7B	Small Boat CB	4 1/8	105	60	Torlon®	177	21	1/4	6
	1537	Midrange	5 1/4	133	60	Torlon®	1526	25	5/16	8
	G27xB/G27x7B	Midrange CB	5 3/16	132	60	Torlon®	1526	25	5/16	8
	G27xB.HL/G27x7B.HL	Midrange CB	9	229	96	Torlon®	1526	25	5/16	8
	554	Big Boat	7 1/4	184	72	Torlon®	547	25	3/8	10
	587	Big Boat	5 1/4	133	50	Torlon®	547	25	3/8	10
	G32xB/G32x7B	Big Boat CB	9 1/8	231	90	Torlon®	547	25	3/8	10
	3072	Mini-Maxi	12	305	84	Torlon®	HBB21	1	1/2	12
Outhaul	1615	Midrange	5 1/4	133	60	Torlon®	1526	25	5/16	8
	1648	Midrange CB	5 3/16	132	60	Torlon®	1526	25	5/16	8
	595	Big Boat	5 1/4	133	50	Torlon®	547	25	3/8	10
	1771	Big Boat	7 1/4	184	72	Torlon®	547	25	3/8	10
Battcars	3813	System AA headboard	5 3/16	132	40	Torlon®	2708	20	3/16	5
	3815	System AA intermediate car	2 3/16	56	40	Delrin®	2708	20	3/16	5
	3816	System AA battcar	2 3/16	56	40	Torlon®	2708	20	3/16	5
	3811	System A headboard	8 3/8	213	60	Torlon®	177	21	1/4	6
	3812	System A intermediate car	2 1/4	57	32	Torlon®	177	21	1/4	6
	3829/3830/3831	System A battcar	2 7/8	73	40	Delrin®/Torlon®*	176/177*	21	1/4	6
	3852	System B headboard	10 1/2	267	60	Torlon®	1526	25	5/16	8
	3863	System B intermediate car	2 9/16	68	28	Delrin®/Torlon®*	1583/1526*	25	5/16	8
	3856/3857/3859/3879	System B battcar	4 5/16	109	48	Delrin®/Torlon®*	1583/1526*	25	5/16	8
	3860	System B reef car	5 3/16	132	60	Delrin®/Torlon®*	1583/1526*	25	5/16	8
	3867	System C headboard	18 5/8	473	90	Torlon®	547	25	3/8	10
	3871	System C intermediate car	3 3/4	96	34	Torlon®	547	25	3/8	10
	3868/3869/3870/3872	System C battcar	5 3/8	136	50	Torlon®	547	25	3/8	10
	3873	System C reef car	9 1/8	231	90	Torlon®	547	25	3/8	10

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

Typical Rigging Breaking Loads§

Type 316 x 19 Compacted Stainless Strand, example Dyform®

Size	Breaking load		Size	Breaking load	
in	lb	kg	mm	lb	kg
3/16	4928	2235	5	5380	2440
1/4	8844	4011	6	7828	3550
9/32	10802	4899	7	10827	4910
5/16	13530	6136	8	13561	6150
3/8	19272	8740	10	21544	9770
7/16	26620	12072	11	26620	12072
1/2	34833	15797	14	42460	19256
9/16	42460	19256	16	56320	25541
5/8	56320	25541	19	70400	31926
3/4	70400	31926	—	—	—

Type 316 1 x 19 ** Stainless Wire Rope

mm	lb	kg	mm	lb	kg
2	706	320	9	12944	5870
2.5	1103	500	9.53	14509	6580
3	1588	720	10	15987	7250
4	2822	1280	11	19338	8770
4.76	3969	1800	12	22933	10400
5	4410	2000	12.7	25689	11650
5.56	5447	2470	14	31268	14180
6	6351	2880	16	40926	18560
6.35	7100	3220	19	47674	21620
7	7828	3550	22	64101	29070
8	10232	4640	26	89526	40600

Type 316 1 x 19* Stainless Wire Rope

Size	Breaking load		Size	Breaking load	
in	lb	kg	in	lb	kg
3/16	3960	1800	3/8	14500	6580
7/32	5445	2470	1/2	25680	11650
1/4	7090	3220	—	—	—
5/16	7800	3550	—	—	—
3/8	11350	5150	6 (-8)	4490	2040
1/2	20165	9140	7 (-12)	6120	2780
—	—	—	8	8000	3630
—	—	—	10	12500	5670
—	—	—	12	17990	8160
—	—	—	14	24470	11100
—	—	—	16	29980	13600

Type 302 1 X 19* Stainless Wire Rope

in	lb	kg	in	lb	kg
1/16	500	227	9/32	10300	4671
3/32	1200	544	5/16	12500	5669
1/8	2100	952	3/8	17500	7936
5/32	3300	1497	7/16	23400	10612
3/16	4700	2131	1/2	29700	13469
7/32	6300	2857	9/16	36500	16553
1/4	8200	3719	5/8	44000	19954

Type 316 7 x 19 Stainless Wire Rope**

in	lb	kg	mm	lb	kg
3/16	2830	1285	3	1120	510
7/32	3865	1750	4	2130	970
1/4	5040	2280	5	3130	1420
3/8	11350	5150	6 (-8)	4490	2040
1/2	20165	9140	7 (-12)	6120	2780
—	—	—	8	8000	3630
—	—	—	10	12500	5670
—	—	—	12	17990	8160
—	—	—	14	24470	11100
—	—	—	16	29980	13600

Nitronic 50 Stainless Rod Rigging, example Navtec

-	Size in	Size mm	Breaking load lb	Breaking load kg
-4	0.172	4.37	4700	2130
-6	0.198	5.03	6300	2860
-8	0.225	5.72	8200	3720
-10	0.250	6.35	10300	4670
-12	0.281	7.14	12500	5670
-15	0.296	7.52	14250	6460
-17	0.33	8.38	17500	7940
-22	0.375	9.53	22500	10200
-30	0.437	11.1	30000	13600
-40	0.500	12.7	38000	17200
-48	0.562	14.27	48000	21800
-60	0.660	16.76	60000	27200
-76	0.705	17.91	76000	34500
-91	0.768	19.51	90000	40800
-115	0.875	22.23	115000	52200
-150	1.000	25.40	150000	68000
-170	1.066	27.08	170000	77100
-195	1.125	28.58	190000	86200
-220	1.191	30.25	217000	98400
-260	1.313	33.35	260000	118000
-320	1.500	38.10	320000	145000

Dacron® Double Braid Rope

Size	Breaking load		Size	Breaking load	
in	lb	kg	mm	lb	kg
1/4	1800	815	6	1800	815
5/16	2800	1270	7	2800	1270
3/8	3750	1700	9	3750	1700
7/16	5500	2490	11	5500	2490
1/2	7000	3175	12	7000	3175
9/16	10000	4535	14	10000	4535
5/8	14000	6350	15	14000	6350
3/4	16000	7250	19	16000	7250
7/8	25000	11340	22	25000	11340

100% Spectra®/Dyneema® Core Rope w/Dacron® Cover

Size	Breaking load	
in	lb	kg
1/4	5100	2313
5/16	6200	2812
3/8	9800	4444
7/16	14000	6349
1/2	21000	9524

Vectran® Core Rope w/Dacron® Cover§

Size	Breaking load	
in	lb	kg
3/16	634	288
1/4	1179	535
5/16	1677	761
3/8	2630	1193
7/16	3174	1439
1/2	3809	1727

V12 Vectran

in	lb	kg
1/8	2000	907
5/32	3500	1587
3/16	4750	2154
1/4	7800	3537
5/16	11500	5215
3/8	16800	7618

S12 Spectra

in	lb	kg
1/8	2100	952
5/32	—	—
3/16	5800	2630
1/4	9800	4443
5/16	13300	6032
3/8	19000	8617

*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	
$SL = SA \times V^2 \times 0.00431$		$SL = SA \times V^2 \times 0.02104$	
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

Formulas are for typical cruising monohulls with fixed keel and Dacron sails, sheets, and halyards. For all other types, please contact Harken for technical assistance in calculating loads.

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	
$ML = \frac{E^2 \times P^2 \times 0.00431 \times V^2}{(\sqrt{P^2 + E^2}) \times (E - X)}$		$ML = \frac{E^2 \times P^2 \times 0.02104 \times V^2}{(\sqrt{P^2 + E^2}) \times (E - X)}$	
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

Formulas are for typical cruising monohulls with fixed keel and Dacron sails, sheets, and halyards. For all other types, please contact Harken for technical assistance in calculating loads.

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

NEW FOR 2012

Carbo T2™ & T18™ Soft-Attach®
See page 19

2010 Optimist Heavy Weather Regatta, San Francisco—Erik Simonson 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.

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.

1. High-Strength Material
Lightweight nylon resin sideplates replace stainless steel straps found in Classic blocks. Densely packed 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.

DO NOT use Harken equipment for human suspension.

NEW

Carbo T2™ Soft-Attach Blocks

The high-strength composite T2™ is the first block with no metal shackles or rivets. It is used for traveler controls, mainsheets and vangs, cascades, bridles, and other systems where small, lightweight blocks are called for.

T2 blocks come in two styles. One uses a loop, the other a length of line. Both route the attachment line through the block head and sheave, decreasing the load on the sideplates and acting as a safety backup for the system.

The composite sheave spins freely on ball bearings with curved bearing races. Composite sideplates are fiber-reinforced, high-strength nylon resin.

T2™ Loop

The T2 Loop's on/off loop system slides through the block head and over the anchor post for a secure connection. A SK75 Dyneema® loop is included. Replacement loops available.

T2™

The T2 can be tied, spliced, or lashed to almost anything. A length of Spectra® line is included.

T2™ with open center
Line ties, splices, or lashes to almost anything: cascades, bridles, traveler controls.

T2 Loop™ with anchor post
Loops on anchor post for easy installation. No knots, splices, or tools needed.

Slide the loop through the head and over the anchor post for a secure connection.

T2™

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
T2™													
2146	Single	1 1/8	29	1 11/16	43	0.4	12	5/16	8	330	150	1000	454
2149	Single	1 9/16	40	2 1/4	57	0.9	25	3/8	10	485	220	1200	544
2152	Single	2 1/4	57	3 1/16	79	2	57	7/16	10	792	359	2380	1080
T2™ Loop													
2148	Single*	1 9/16	40	2 1/4	57	0.9	26	3/8	10	485	220	1200	544
2151	Single**	2 1/4	57	3 1/16	79	2	59	7/16	10	792	359	2380	1080

*Includes 2154 loop **Includes 2155 loop Replacement loops see page 86.

Carbo T18™ Soft-Attach Blocks

The T18™ complements the T2™ line. At 7.2 g (.25 oz), it ties, splices, lashes anywhere—perfect for downhauls, outhauls, and other lightweight control systems on dinghies, skiffs, and beachcats. Composite sheave and sideplates, stainless steel ball bearings, integrated stainless inner race and rivet for optimal strength-to-weight.

A length of 1.8 mm (1/16 in) line is included.

T18™ features composite sheave and sideplates, stainless steel ball bearings, and integrated stainless inner race and rivet.

T18™

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
2698	Single	23/32	18	1 1/8	28	.25	7.2	3/16	5	275	125	992	450

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.

Use for:
Outhauls
Cunninghams
Vangs
Traveler controls
Barberhaulers
Flag halyards

340

341

342

343

344

345

346

347

348

349

350

352

353

371

381

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

Use as becket block without the additional height of a becket

Actual Size

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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/471 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/471 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 3/16	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
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

Reversible cam arms

Use as becket block without the additional height of a becket

Rustler 24, Rustler Yachts Ltd.

Actual Size

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
2636	Single/swivel	1 9/16	40	3 3/8	86	1.6	44	5/32	4	3/8	10	485	220	1620	735
2637	Single/swivel/becket	1 9/16	40	4	102	1.7	48	5/32	4	3/8	10	485	220	1620	735
2644	Cheek	1 9/16	40	2 3/4	70	1.2	34	—	—	3/8	10	485	220	1620	735
2645	Single/swivel/471 Carbo-Cam®**	1 9/16	40	3 3/8	86	4.2	119	5/32	4	1/4	6	150	68	300	136
2646	Single/swivel/471 Carbo-Cam®/becket**	1 9/16	40	4	102	4.3	122	5/32	4	1/4	6	300	136	600	272
2649	Traveler	1 9/16	40	4 1/4	108	1.8	52	—	—	5/16	8	330	150	1000	454
2650	Single/fixed*	1 9/16	40	2 1/2	64	1.4	40	—	—	3/8	10	485	220	1620	735
2652	Stand-up/fixed*	1 9/16	40	2 3/4	70	1.7	48	—	—	3/8	10	485	220	1620	735
2659	90° Fixed head*	1 9/16	40	2 15/16	75	1.6	44	—	—	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

2638

2639

2640

2641

2642

2643

2647

2648

2654

Thistle — J.H. Peterson photo

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
2638	Double/swivel	1 9/16	40	3 11/16	94	3.2	86	3/16	5	3/8	10	970	440	2380	1080
2639	Double/swivel/becket	1 9/16	40	4 5/16	110	3.4	90	3/16	5	3/8	10	970	440	2380	1080
2640	Triple/swivel	1 9/16	40	3 11/16	94	4.6	118	3/16	5	3/8	10	1455	660	3050	1383
2641	Triple/swivel/becket	1 9/16	40	4 5/16	110	4.7	122	3/16	5	3/8	10	1455	660	3050	1383
2642	Double/fixed	1 9/16	40	3 1/2	89	2.8	80	3/16	5	3/8	10	970	440	2380	1080
2643	Double/fixed/becket	1 9/16	40	4 3/16	106	2.9	84	3/16	5	3/8	10	970	440	2380	1080
2647	Triple/swivel/471 Carbo-Cam®**	1 9/16	40	3 11/16	94	8.2	232	3/16	5	1/4	6	750	340	1500	680
2648	Triple/swivel/471 Carbo-Cam®/becket**	1 9/16	40	4 5/16	110	8.3	235	3/16	5	1/4	6	900	408	1800	816
2654	Quad/swivel	1 9/16	40	3 11/16	94	6	170	3/16	5	3/8	10	1455	660	3050	1383

**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

2600
2660

2601
2661

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

Swivel blocks can lock in two directions or swivel

75 mm Actual Size

57 mm Actual Size

2606

2615
2666

2616
2667

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
57 mm															
2600	Single/swivel	2 1/4	57	4 5/16	110	3.1	87	3/16	5	3/8	10	792	359	2380	1079
2601	Single/swivel/becket	2 1/4	57	5 3/16	132	3.4	96	3/16	5	3/8	10	792	359	2380	1079
2606	Cheek	2 1/4	57	3 5/8	92	2.4	68	—	—	3/8	10	792	359	2380	1079
2615	Single/swivel/150 Cam-Matic®*	2 1/4	57	4 5/16	110	9.5	269	3/16	5	3/8	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	3/8	10	600	272	1500	680
75 mm															
2660	Single/swivel	2 15/16	75	5 3/8	137	6.9	195	—	6	9/16	14	1213	550	3638	1650
2661	Single/swivel/becket	2 15/16	75	6 1/2	165	7.5	214	—	6	9/16	14	1213	550	3638	1650
2666	Single/swivel/150 Cam-Matic®*	2 15/16	75	5 3/8	137	13.4	381	—	6	1/2	12	300	136	750	340
2667	Single/swivel/150 Cam-Matic®/becket*	2 15/16	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

2602
2662

2603
2663

2604
2664

2605
2665

2631
2677

Howie Hamlin and crew — Luca Villata photo

Use with 2632 for a powerful 8:1 purchase

2617
2668

2618
2669

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
57 mm															
2602	Double/swivel	2 1/4	57	4 3/4	121	6.3	178	—	6	7/16	10	1584	720	3300	1500
2603	Double/swivel/becket	2 1/4	57	5 5/8	142	6.6	187	—	6	7/16	10	1584	720	3300	1500
2604	Triple/swivel	2 1/4	57	4 3/4	121	9	255	—	6	7/16	10	2380	1080	5000	2270
2605	Triple/swivel/becket	2 1/4	57	5 5/8	142	9.3	264	—	6	7/16	10	2380	1080	5000	2270
2617	Triple/swivel/150 Cam-Matic®**	2 1/4	57	4 3/4	121	15.2	431	—	6	7/16	10	1500	680	3750	1700
2618	Triple/swivel/150 Cam-Matic®/becket**	2 1/4	57	5 5/8	142	15.6	442	—	6	7/16	10	1800	816	4500	2040
2631	Quadruple/swivel	2 1/4	57	4 3/4	121	12	340	—	6	7/16	10	2380	1080	5000	2270
75 mm															
2662	Double/swivel	2 15/16	75	6	152	14.2	402	5/16	8	9/16	14	2426	1100	6000	2722
2663	Double/swivel/becket	2 15/16	75	7	178	14.8	419	5/16	8	9/16	14	2426	1100	6000	2722
2664	Triple/swivel	2 15/16	75	6	152	20.5	580	5/16	8	9/16	14	3639	1650	10000	4535
2665	Triple/swivel/becket	2 15/16	75	7	178	21.1	599	5/16	8	9/16	14	3639	1650	10000	4535
2668	Triple/swivel150 Cam-Matic®**	2 15/16	75	6	152	27.8	788	5/16	8	1/2	12	1500	680	3750	1700
2669	Triple/swivel150 Cam-Matic®/becket**	2 15/16	75	7	178	28.4	805	5/16	8	1/2	12	1800	816	4500	2040
2677	Quadruple/swivel	2 15/16	75	6 1/4	159	27.2	772	5/16	8	9/16	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 57 mm 10:1.

Use for:
Main/jib/spinnaker sheets
Mainsheet fine-tune
Traveler controls
Genoa leads
Foreguy
Vangs

2608
2135
2670

2609
2136
2671

On/off switch operates from both sides

2614
2137
2672

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

2139

2138

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

2610

2611

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
40 mm															
2608	Single/swivel	1 9/16	40	3 3/8	86	1.7	49	5/32	4	3/8	10	300	136	1000	454
2609	Single/swivel/becket	1 9/16	40	4	102	1.8	52	5/32	4	3/8	10	300	136	1000	454
2610	Single/swivel/471 Carbo-Cam®**	1 9/16	40	3 3/8	86	4.6	129	5/32	4	1/4	6	150	68	300	136
2611	Single/swivel/471 Carbo-Cam®/becket**	1 9/16	40	4	102	4.7	132	5/32	4	1/4	6	300	136	600	272
2614	Cheek*	1 9/16	40	2 3/4	70	1.6	44	—	—	3/8	10	300	136	1000	454
57 mm															
2135	Single/swivel	2 1/4	57	4 1/16	103	3.0	85	3/16	5	3/8	10	500	227	2000	907
2136	Single/swivel/becket	2 1/4	57	4 15/16	125	3.3	94	3/16	5	3/8	10	500	227	2000	907
2137	Cheek*	2 1/4	57	3 1/4	83	2.5	71	—	—	3/8	10	500	227	2000	907
2138	Single/swivel/150 Cam-Matic®**	2 1/4	57	4 1/16	103	8.7	247	3/16	5	3/8	10	300	136	750	340
2139	Single/swivel/150 Cam-Matic®/becket**	2 1/4	57	4 15/16	125	9.0	255	3/16	5	3/8	10	600	272	1500	680
75 mm															
2670	Single/swivel	2 15/16	75	5 3/8	137	8.0	227	1/4	6	7/16	12	750	341	3000	1361
2671	Single/swivel/becket	2 15/16	75	6 1/2	165	8.75	248	1/4	6	7/16	12	750	341	3000	1361
2672	Cheek*	2 15/16	75	4 1/16	103	6.3	179	—	—	7/16	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

2612

2613

2619

2140

2141

CARBO RATCHETS Q&A

I SAIL WITH MY SON ON A RHODES 19 AND HE HAS TROUBLE TRIMMING THE MAINSHEET WHEN THE WIND PICKS UP. ANY SUGGESTIONS?

A Carbo ratchet block would increase the mainsheet load your son could handle by as much as 15:1. For example, a Harken ratchet could stop an unanticipated gust from yanking the line through his hands, allowing him to release and then retrim the sheet under complete control.

29er — FRIED ELLIOTT/friedbits.com photo

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
40 mm															
2612	Triple/swivel/471 Carbo-Cam®*	1 9/16	40	3 11/16	94	8.5	242	3/16	5	1/4	6	750	340	1500	680
2613	Triple/swivel/471 Carbo-Cam®/becket*	1 9/16	40	4 5/16	110	8.6	245	3/16	5	1/4	6	900	408	1800	816
2619	Triple/471 Carbo-Cam®/29 mm block/becket*	1 9/16	40	4 3/4	121	9.5	269	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	3/8	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	3/8	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

2625
2680

2628
2684

2626
2681

2627
2683

2633
2682

Adjustable ratchet engagement adapts block to a variety of applications

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

Snipe, DonQ Rum Keg Regatta — FRIED ELLIOTT/friedbits.com photo

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Holding power w/180° wrap 50 lb (23 kg)
57 mm																
2625	Single	2 1/4	57	4 1/16	103	3.7	104	3/8	10	3/16	5	500	227	2000	907	10:1
2626	Single/becket	2 1/4	57	4 15/16	125	4.0	113	3/8	10	3/16	5	500	227	2000	907	10:1
2627	Single/150 Cam-Matic®‡	2 1/4	57	4 1/16	103	9.4	266	3/8	10	3/16	5	300	136	750	340	10:1
2628	Single/150 Cam-Matic®/becket‡	2 1/4	57	4 15/16	125	9.7	275	3/8	10	3/16	5	600	272	1500	680	10:1
2633	Cheek**	2 1/4	57	3 1/4	83	3.1	89	3/8	10	—	—	500	227	2000	907	10:1
75 mm																
2680	Single	2 15/16	75	5 3/8	137	8.4	238	7/16	12	1/4	6	750	341	3000	1361	15:1
2681	Single/becket	2 15/16	75	6 1/2	165	9.0	255	7/16	12	1/4	6	750	341	3000	1361	15:1
2682	Cheek**	2 15/16	75	4 1/16	103	6.5	184	7/16	12	—	—	750	341	3000	1361	15:1
2683	Single/150 Cam-Matic®‡	2 15/16	75	5 7/16	138	15.5	440	7/16	12	1/4	6	300	136	750	340	15:1
2684	Single/150 Cam-Matic®/becket‡	2 15/16	75	6 1/2	165	15.5	440	7/16	12	1/4	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®

Mach 2 Foiling Moth, Andrew McDougall, McConaghy Boats — Andrea Francolini photo

Use with 2631 for a powerful 8:1 purchase

2629
2685

2630
2686

2632
2687

2634

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Holding power w/180° wrap 50 lb (23 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	1/4	6	750	340	1875	851	10:1
75 mm																
2685	Triple/150 Cam-Matic®‡	2 15/16	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 15/16	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 15/16	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

Carbo Fiddles

Carbo fiddle line features high-load ball bearings with fitted races for low-friction operation. The 40 mm fiddle is an excellent choice for 3:1 and 4:1 tackles on dinghy vangs and mainsheets, as well as for controls such as cunninghams and internal boom outhauls on larger boats.

The 57 mm fiddle features the Cam-Lock locking system. The patented switch allows the jaw to lock at 90-degree intervals, or to swivel freely.

Ratchets

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.

Use for:
Vangs
Cunninghams
Outhauls
Mainsheet fine-tune

2657
2623
2692

2658
2624
2693

2675
2696

2655
2621
2690

2656
2622
2691

2673
2694

2674
2695

2676
2697

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
40 mm															
2655	40 mm	1 9/16	40	4 1/2	115	1.8	51	5/32	4	3/8	10	485	220	1620	735
2656	40 mm/becket	1 9/16	40	5 1/8	131	1.9	54	5/32	4	3/8	10	485	220	1620	735
2657	40 mm/471 Carbo-Cam®	1 9/16	40	4 1/2	115	4.4	125	5/32	4	1/4	6	485	220	1620	735
2658	40 mm/471 Carbo-Cam®/becket	1 9/16	40	5 1/8	131	4.5	128	5/32	4	1/4	6	485	220	1620	735
57 mm															
2621	57 mm	2 1/4	57	6	153	3.7	105	3/16	5	7/16	10	792	359	2380	1079
2622	57 mm/becket	2 1/4	57	6 7/8	175	4.0	113	3/16	5	7/16	10	792	359	2380	1079
2623	57 mm/150 Cam-Matic®	2 1/4	57	6	153	10.1	286	3/16	5	7/16	10	792	359	2380	1079
2624	57 mm/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
2673	57 mm/ratchet	2 1/4	57	4 5/8	118	4.0	113	3/16	5	3/8	10	793	360	2380	1080
2674	57 mm/ratchet/becket	2 1/4	57	5 5/8	143	4.3	121	3/16	5	3/8	10	793	360	2380	1080
2675	57 mm/ratchet/150 Cam-Matic®	2 1/4	57	4 5/8	118	10.4	294	3/16	5	3/8	10	793	360	2380	1080
2676	57 mm/ratchet/150 Cam-Matic®/becket	2 1/4	57	5 5/8	143	10.7	303	3/16	5	3/8	10	793	360	2380	1080
75 mm															
2690	75 mm	2 15/16	75	6 3/16	157	8.4	238	1/4	6	9/16	14	1212	550	3637	1650
2691	75 mm/becket	2 15/16	75	7 7/16	189	9.1	257	1/4	6	9/16	14	1212	550	3637	1650
2692	75 mm/150 Cam-Matic®*	2 15/16	75	6 3/16	157	15.0	424	1/4	6	1/2	12	900	408	2250	1020
2693	75 mm/150 Cam-Matic®/becket	2 15/16	75	7 7/16	189	15.6	443	1/4	6	1/2	12	1212	550	3637	1650
2694	75 mm/ratchet	2 15/16	75	6 3/16	157	9.5	270	1/4	6	1/2	12	1212	550	3637	1650
2695	75 mm/ratchet/becket	2 15/16	75	7 7/16	189	10.2	289	1/4	6	1/2	12	1212	550	3637	1650
2696	75 mm/ratchet/150 Cam-Matic®*	2 15/16	75	6 3/16	157	16.1	456	1/4	6	1/2	12	900	408	2250	1020
2697	75 mm/ratchet/150 Cam-Matic®/becket	2 15/16	75	7 7/16	189	16.8	475	1/4	6	1/2	12	1212	550	3637	1650

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

Small Boat 57 & 75 mm Flip-Flop Blocks

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.

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

Alphena One, Tanguy Le Bihan/Loïck Peyron, Alphena Shipyard — Yvan Zedda photo

2145
2689

2142
2678

2143
2679

2144
2688

Part No.	Description	Sheave Ø in	Sheave Ø mm	Width in	Width mm	Length in	Length mm	Height in	Height mm	Max line Ø in	Max line Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
2142	57 mm	2 1/4	57	2	50	4 5/16	110	2 1/8	54	3/8	10	5	141	500	227	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	750	340	2426	1100
2679	75 mm/150 Cam-Matic®*	3	75	2 5/8	67	5 5/8	143	5 9/16	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 3/8	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	Spinnaker pole trip lines
Big Boat leech lines	Outhauls
Downhauls	Cunninghams
Traveler controls	Halyards on prams

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

Actual Size

Optimist, McLaughlin Boat Works — Bob Nagy photo

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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 5/8	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 5/16	34	.75	21	7/32	5	250	113	1200	544
442	Block/eyestrap 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-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

Actual Size

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

Sheaves see page 73

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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/471 Carbo-Cam®	7/8	22	2	51	3.5	99	1/4	6	—	—	500	227	1200	544
231	Triple/471 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/eyestrap 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. 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.

DO NOT use Harken equipment for human suspension.

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

082
098
125

083
099
126

Integrated shackle minimizes block length for purchase power in limited space

146

166
168
183

Cam cleats reverse for up or down engagemant/disengagement

147

167
169

140

291
141

299

Sheaves see page 73

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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/471 Carbo-Cam®*	1 1/8	29	2 3/4	70	3.75	106	1/4	6	—	—	150	68	2000	907
299	Pivoting exit/471 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
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

2010 International Naples Sabot Senior Nationals, ABYC — Rich Roberts photo

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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
100	Double wire	1 1/8	29	2 3/4	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
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

*#10 (5 mm) RH fasteners

Bullet & Dinghy

Zach Railey, Kieler Woch 2010 — FRIED ELLIOTT/friedbits.com photo

113

092
109
132

088
106
131

Cutout
088, 106 - 3/4" (19 mm) x 1 3/4" (44 mm)
131 - 15/16" (24 mm) x 2 9/16" (56 mm)

089
134

Cutout
089 - 13/16" (21 mm) x 2 5/8" (67 mm)
134 - 15/16" (24 mm) x 3 11/16" (94 mm)

096
108
222

220
223

287
288

Cutout
287, 288 - 3/4" (19 mm) x 1 3/4" (44 mm)

289

Cutout
289 - 3/4" (19 mm) x 2 5/8" (67 mm)

Cutout
1 1/16" (27 mm)
x 2 11/16" (68 mm)

046

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

Removable beckets allow attachment of spliced line

US Olympic 2.4 m, John Ruf — Walter Cooper photo

Cutout
1 1/16" x 3¼"
(27 mm x 83 mm)

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
2.25"															
001	Single	2¼	57	4¼	108	4½	128	7/16	12	3/16	5	500	227	2500	1134
002	Single/becket	2¼	57	5	127	5	142	7/16	12	3/16	5	500	227	2500	1134
003	Double	2¼	57	4½	114	8½	241	7/16	12	¼	6	1000	454	3000	1361
004	Double/becket	2¼	57	5½	138	9½	269	7/16	12	¼	6	1000	454	3000	1361
013	Cheek‡*	2¼	57	3¼	83	5	142	7/16	12	—	—	500	227	2500	1134
047	Thru-deck*	2¼	57	3½	89	5½	156	7/16	12	—	—	500	227	2500	1134
206	Upright lead**	2¼	57	3¼	83	5½	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	5¼	133	8	227	7/16	12	¼	6	750	340	3000	1361
012	Heavy-duty single/becket	3	76	6¼	159	8½	241	7/16	12	¼	6	750	340	3000	1361
202	Wire single	3	76	5¼	133	9½	269	7/16	12	¼	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 and170 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

015

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

Removable becket allows insertion of spliced eye

009

016

018

019

043

044

050

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Holding power w/180° wrap 50 lb (23 kg)	Turns
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
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®

Melges 20 — JH Peterson photo

Hexa-Cat maximum working loads

	Base	5:1 lb	5:1 kg	6:1 lb	6:1 kg	7:1 lb	7:1 kg	8:1 lb	8:1 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**
128	004/2603/ 2663	129	048/2604 or 2664	130	2605 or 2665	2654
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
127 193	003 170	128 193	004 170	129 193	048 170	130 193

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
2.25"															
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

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.

455

447

Stainless steel vang housing has lightening holes to minimize weight. Stainless steel mast bracket fits most masts

Part No.	Description	Length in	Length mm	Weight oz	Weight g	Max sail area ft²	Max sail area m²	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
447	System/471 Carbo-Cam®	30	760	20	567	125	11.6	450	204	1200	544
455	Lower unit/471 Carbo-Cam®*	9	229	15	425	125	11.6	450	204	1200	544

*Order your own line, 407 and 405 blocks 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 Min in	Line Ø Min mm	Line Ø Max in	Line Ø Max mm	Max mainsail area End-boom ft²	Max mainsail area End-boom m²	Max mainsail area Mid-boom ft²	Max mainsail area Mid-boom 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 Primary in	Sheave Ø Primary mm	Sheave Ø Secondary in	Sheave Ø Secondary mm	Length in	Length mm	Weight oz	Weight 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 6-7 for common configurations.

Mainsheet

		Maximum mainsail area (P x E x .5 x 1.1*)	
		ft²	m²
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 16. See page 7 for common configurations.

Genoa Footblocks

	Maximum 100% foretriangle sail area at 35 knots (I x J x .5)	
	ft²	m²
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 10 for common configurations.

Spinnaker

		Maximum spinnaker area (P x E x .5 x 1.8)			
		Standard blocks		High-load blocks	
		ft²	m²	ft²	m²
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 9 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	
2:1 Flying Blocks	lb	kg	lb	kg
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 8 for common configurations.

Vang

	Maximum mainsail area (P X E x .5 X 1.1*)	
	ft²	m²
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 Torlon® ball bearings.

Use for:
Mainsheets
Halyards
Spinnaker sheets
Control lines

1540
1542
1586

1548

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

Fiddle
Actual Size

Removable becket allows insertion of spliced eye

1541

1544

Midrange
Actual Size

1545

1546

1559

1560

1564

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Use with
1540	Single	3	76	6⅛	156	13	367	9/16	14	5/16	8	1800	816	5000	2268	
1541	Single/becket	3	76	7⅛	184	14	397	9/16	14	5/16	8	1800	816	5000	2268	
1542	Single/aluminum sheave	3	76	6⅛	156	15	425	9/16	14	5/16	8	1800	816	5000	2268	
1544	Double	3	76	7½	191	25½	723	9/16	14	5/16	8	2800	1270	7000	3175	
1545	Double/becket	3	76	8½	216	26½	751	9/16	14	5/16	8	2800	1270	7000	3175	
1546	Triple	3	76	7¾	197	36	1020	9/16	14	5/16	8	3800	1724	8500	3856	
1548	Cheek*	3	76	4⅜	111	11	312	9/16	14	—	—	1500	680	4200	1905	
1559	Fiddle	3/2	76/51	8½	216	17	482	9/16	14	5/16	8	1800	816	5000	2268	1541 for 3:1
1560	Fiddle/becket	3/2	76/51	9½	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	9½	241	24½	695	9/16	14	5/16	8	1800	816	5000	2268	1559 for 4:1
1586	Single/high-load	3	76	6⅛	156	13	367	9/16	14	5/16	8	2300	1043	5000	2268	

*¼" (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

1549

1550

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

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

Cam arms adjust to change line angle into cam

Cam reverses for up or down engagement/disengagement

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

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

Use for:
Wire halyards
Vangs
Control lines

High-load composite bearings handle wire and high-strength line

Sideplates rotate to insert preswaged/ Nico pressed wire fittings

Delphia 24, Andrzej Skrzat, Delphia Yachts

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)

Part No.	Description	Sheave Ø in	Sheave Ø mm	Weight oz	Weight g	Max wire Ø in	Max wire Ø mm	Max line Ø in	Max line Ø mm	Shackle pin Ø in	Shackle pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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

BIG BOAT BLOCKS

Titan XV, *Reichel/Pugh, New England Boatworks — Billy Black photo*

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 6-7 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®		100 mm Black Magic® Air Runner		125 mm Black Magic® Air Runner		150 mm Black Magic® Air Runner	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Flying Blocks	2500	1134	10000	4535	15000	6800	22000	10000	30000	13605
2:1 Separate Deck Blocks	3025	1372	12100	5490	17550	7960	26500	12020	36136	16388
2:1 Becket Deck Blocks	1875	850	7500	3400	10900	4945	16500	7485	22500	10204
3:1 Deck Blocks (Block #1)	3713	1684	14850	6735	21600	9800	32700	14835	44550	20203
3:1 Deck Blocks (Block #2)	4525	2052	18100	8210	26300	11930	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 9 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

Altair³, *Scuderia 50', Felci Yacht Design, Adriasail Custom Yachts — Fabio Taccola/fabiotac@tim.it photo*

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 afterguy controls. See page 10 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
Afterguy*	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 16. See page 7 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.

DO NOT use Harken equipment for human suspension.

57 mm Black Magic®

Use 57 mm Black Magic® AirBlocks® on offshore boats. These strong, lightweight blocks are sculpted aluminum, with Torlon® 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 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

1951
1959

1950
1958

Low-load blocks have red isolators.

1952
1960

1961

1954

1965

3195

Soft Loop attaches securely through sheave center. Loop not included, see page 86.

Grand Soleil 43' ot, Botin Carkeek Yacht Design, Cantiere del Pardo

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

Part No.	Description	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max Line Ø in	Max Line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
1950	Single/swivel/low-load	57	4 11/16	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 11/16	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 15/32" (37 mm) **Loop not included

75 mm Black Magic®

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

1969
3090

1970

1971

3095

3196

1974

Sheave center carries primary load for a lightweight block. Loop not included, see page 86.

Low-load blocks have red isolators.

TYKE, *Felci 61 (18.85 m), Felci Yacht Design, C.N. Yacht 2000 — Tim Wright photo*

3088

1975

1962

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

*Includes padeye. Uses hole spacing and base dimensions of 627 padeye. Maximum working load decreases at varying angles, refer to page 83 **Loop not included

100 mm Black Magic®

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 Torlon® 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

3012

C8213

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

Dead end post for attachment to a closed bail. Loop not included, see page 86.

3007

3008

3009

3199

3089

1993

Alegre, *Mills Design Limited, New England Boat Works — Rolex/Kurt Arrigo photo*

Part No.	Description	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max Line Ø in	Max Line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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 15/16	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 83 **Loop not included

125 mm & 150 mm

Black Magic®

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

3201

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

3016
3021

3018
3022

C7971
C7592

Soft Loop attaches securely through sheave center. Loop not included.

Conrad 66, Juliusz Strawinski, Conrad Shipyard—Mikołaj Król photo

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

Part No.	Description	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
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 hole spacing and base dimensions of 648 padeye. Maximum working load decreases at varying angles, refer to page 83

**Uses hole spacing and base dimesions of 629 padeye. Maximum working load decreases at varying angles, refer to page 83 ‡Loop not included

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.

Caged roller bearings with balls for sideloads

12 mm (3042)
14 mm (3046)

Gazelle, *Gunboat 66, Morrelli and Melvin, Gunboat (Pty) Ltd. — Michael Eudenbach photo*

Part No.	Description	Sheave Ø in	Sheave Ø mm	Clevis pin Ø in	Clevis pin Ø mm	Length in	Length mm	Weight oz	Weight g	Max Line Ø in	Max Line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Use padeye
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	—

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. Blocks feature built-in risers and sculpted backing plates. The large, strong bases protect cored decks. Use the 1984 for boats to 38 ft (11.5 m) and the 1981 for boats to 48 ft (15 m).

1984
1981

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

Fastener included

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. Full-saturation Hardkote anodizing. No stainless-to-aluminum contact prevents corrosion.

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

Use for:
Genoas
Spinnakers

1963
1972
3010
3017
3023

1967
3005

1964
1973
3011
3033

1968
3006

Refer to page 64 for hole spacing

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Height in	Height mm	Weight oz	Weight g	Max Line Ø in	Max Line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Fasteners (FH) in	Fasteners (FH) mm
57 mm																	
1963	Single/high-load	2 1/4	57	3 5/16	84	1	25	4.2	119	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	7/16	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	7/16	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	7/16	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	9/16	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	9/16	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	9/16	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	9/16	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	5/8	16	7500	3402	15000	6803	4 x 3/8	4 x 10
3011	Double	4	100	5 5/8	143	2 7/16	62	36.2	1025	5/8	16	4950	2250	9900	4500	4 x 3/8	4 x 10
125 mm																	
3017	Single	5	125	6 15/16	176	1 11/16	43	35.7	1012	3/4	19	11000	4990	22000	9977	4 x 1/2	4 x 12
3033	Double	5	125	6 15/16	176	2 13/16	71.5	62.2	1762	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 Torlon® 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.

1991
3013
3019
3024

Caged roller bearings for high-load efficiency

1992
3014
3020
3025

Block Sock on Tommy Hilfiger Freedom America — Billy Black photo

3039

3035
3036
3037
3038

3026

3028

3048
3051
3030

3052
3031
3027

SHACKLE POSTS

PARALLEL

PERPENDICULAR

TANG PLATE

Runner Blocks

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Clevis pin Ø in	Clevis pin Ø mm	Max Line Ø in	Max Line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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 5/8	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 3/16	157	17.5	495	5/8	15.9	5/8	16	7500	3402	15000	6802
3014	Single/becket	4	100	79/16	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 13/16	275	55.2	1566	3/4	19	1	25	15000	6802	30000	13605

Heads

Perpendicular Part No.	Parallel Part No.	Weight oz	Weight g
3048	**3048**	3.8	108
3051	**3051**	7.4	210
3030	**3030**	13.8	381
3028*	**3026***	19	537

Tangs

Tang Part No.	Weight oz	Weight g	Runner pin Ø in	Runner pin Ø mm	Checkstay pin Ø in	Checkstay pin Ø mm
3052	5.5	156	1/2	12.7	3/8	10
3031	9	255	3/4	19	7/16	11.1
3027*	11	310	3/4	19	1/2	12.7

Block Socks

Block Socks Part No.	Fits
3035	1991/1992
3036	3013/3014
3037	3019/3020
3038	3024/3025

*150 mm Runner post and tang adapters made to order

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 vangs or mainsheet systems on cruising boats from 35 ft to 45 ft (10 m to 14 m).

TECH TIP

To convert 57 mm and 75 mm blocks to stand-up blocks, remove the shackle and insert the headpost of the block into the 1634 stand-up base.

Replace your shackle with a 1584 snap shackle and you can move your 57 and 75 mm blocks around the boat. For example, use on spinnaker guys and sheets, or as a preventer.

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
57 mm															
6059	Single/swivel	2 1/4	57	5 1/2	140	7.7	218	5/16	8	5/8	16	2205	1000	4409	2000
6094	Single/swivel/becket	2 1/4	57	6 11/16	170	9	255	5/16	8	5/8	16	2205	1000	4409	2000
6105	Forkhead	2 1/4	57	4 1/2	114	4.5	129	1/4	6	3/8	10	1650	748	3300	1496
75 mm															
6058	Single/swivel	3	75	6 1/4	159	12	340	5/16	8	3/4	19	3500	1587	7000	3175
6084	Single/swivel/becket	3	75	7 1/4	184	13	369	5/16	8	3/4	19	3500	1587	7000	3175
6085	Fiddle	3/1 13/16	75/46	8 3/8	213	14.7	415	5/16	8	3/4	19	3500	1587	7000	3175
6086	Fiddle/becket	3/1 13/16	75/46	9 1/2	241	15.6	444	5/16	8	3/4	19	3500	1587	7000	3175
6099	Fiddle/becket/280 Cam-Matic®	3/1 13/16	75/46	9 1/2	241	25.2	715	5/16	8	3/4	19	2000	907	4000	1814
100 mm															
6100	Single/swivel	4	100	8 1/8	206	28.5	808	3/8	10	3/4	19	4870	2209	9740	4418

Cruising ESP

Elan 340 — Max Ranchi photo

6077
6078

6091
6092
6093

14 mm
(6050, 6056)

Ball bearings handle low loads and side loads from unfair leads

Lockoff blocks feature aluminum sheaves

6106

6050
6056
6095

6065
6057

6096
6097
6098

Refer to page 64 for 6077/6078/6091/6092/6093 hole spacing.

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Clevis pin Ø in	Clevis pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Max lockoff load lb	Max lockoff load kg	Fasteners (FH) in	Fasteners (FH) mm
40 mm																			
6106	Teardrop Footblock ‡	1 9/16	40	2 19/32	65.5	1.8	50	—	—	1/2	12	1250	567	2500	907	—	—	5/16, 5/32	8, 4
57 mm																			
6050	Teardrop Mastcollar	2 1/4	57	3 11/16	93.5	4.3	122	5/16	8	5/8	16	2100	850	4190	1900	—	—	—	—
6065	Teardrop 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	—	—	5/8	16	2205	1000	4409	2000	1200	550	5/16	8
6091	Footblock‡	2 1/4	57	3 7/8	99	5.4	153	—	—	5/8	16	2205	1000	4409	2000	—	—	5/16	8
6095	Teardrop Mastcollar/low-load	2 1/4	57	4 5/8	117	4	113	—	6	5/8	16	1650	750	3300	1500	—	—	—	—
6096	Narrow Teardrop Mastcollar	2 1/4	57	3 1/2	89	3.3	94	—	6	3/8	10	1650	748	3300	1497	—	—	—	—
6097	Narrow Teardrop 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	Teardrop Mastcollar	3	75	4 5/8	117	7.8	221	5/16	8	3/4	19	3000	1361	6000	2721	—	—	—	—
6057	Teardrop 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 3/8	112	12	340	—	—	3/4	19	3500	1587	7000	3175	1200	550	5/16	8
6092	Footblock‡	3	75	4 3/8	112	10.3	293	—	—	3/4	19	3500	1587	7000	3175	—	—	5/16	8
6098	Narrow Teardrop 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

Stainless Steel Cruising ESP

6076
6079

6080

6068
6072

6081

6089
6087

6069
6073

14 mm
(6069, 6073)

6070
6074

6075
6071

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Clevis/Shackle pin Ø in	Clevis/Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load‡ lb	Breaking load‡ kg	Max lockoff load lb	Max lockoff load kg	Fasteners (RH) in	Fasteners (RH) mm
57 mm																			
6068	Single/swivel	2¼	57	5½	140	11	312	5/16	8	5/8	16	2205	1000	4409	2000	—	—	—	—
6069	Mastcollar	2¼	57	3 11/16	93.5	7	198	5/16	8	5/8	16	2205	1000	4409	2000	—	—	—	—
6070	Single foot/lockoff*‡	2¼	57	3¾	132	9	255	—	—	5/8	16	2205	1000	4409	2000	650	295	3/8	10
6076	Footblock**‡	2¼	57	3¾	95	7	198	—	—	5/8	16	2205	1000	4409	2000	—	—	3/8	10
6089	Single/swivel/becket	2¼	57	6 11/16	170	12.5	354	5/16	8	5/8	16	2205	1000	4409	2000	—	—	—	—
75 mm																			
6072	Single/swivel	3	75	6¼	159	19	539	5/16	8	¾	19	3500	1587	7000	3175	—	—	—	—
6073	Mastcollar	3	75	4⅝	117	16	454	5/16	8	¾	19	3000	1361	6000	2721	—	—	—	—
6074	Single foot/lockoff*‡	3	75	4⅜	111	17	482	—	—	¾	19	3500	1587	7000	3175	750	340	3/8	10
6079	Footblock**‡	3	75	41/2	114	16	454	—	—	¾	19	3500	1587	7000	3175	—	—	3/8	10
6080	Fiddle	3/1 13/16	75/46	8⅜	213	24	680	5/16	8	¾	19	3500	1587	7000	3175	—	—	—	—
6081	Fiddle/becket	3/1 13/16	75/46	9½	241	26.25	744	5/16	8	¾	19	3500	1587	7000	3175	—	—	—	—
6087	Single/swivel/becket	3	75	7¼	184	21.25	602	5/16	8	¾	19	3500	1587	7000	3175	—	—	—	—
Deck Organizers																			
6075	Deck organizer/3-sheave‡	1½	40	7 11/16	179	10	284	—	—	½	12	3000	1361	6000	2721	—	—	5/16	8
6071	Deck organizer/3-sheave‡	2¼	57	9 15/16	252	21	595	—	—	⅝	16	6000	2721	12000	5442	—	—	3/8	10

*Lockoffs are intended to hold lines temporarily and should not be used in place of line stoppers or clutches **Refer to page 64 for 6076/6079 hole spacing
‡If double stacked, upper block/organizer is two-thirds of listed MWL and breaking load

Stainless Steel Blocks

Harken's line of stainless steel blocks reflect the traditional beauty of your yacht's classic lines. Stainless sideplates are mirror-polished for durability and unmatched esthetics. The ultralight composite bearing system (ULC) rides on a heat-treated stainless steel inner race to handle extremely high loads. Snap-fit Torlon® ball bearings carry thrust loads.

ULC bearing construction allows a narrower sheave to reduce weight

HC9077
HC9082
HC9087
HC9092

HC9078
HC9083
HC9088
HC9093

HC9076
HC9081
HC9086
HC9091
HC10102

HC9080
HC9085
HC9090
HC9095

HC9079
HC9084
HC9089
HC9094

100, 125, 150 & 175 MM

Part No.	Description	Sheave Ø in	Sheave Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
75 mm									
HC9985	Swivel block	3	75	9/16	14	5000	2268	10000	4536
HC9986	Stand-up block	3	75	9/16	14	5000	2268	10000	4536
HC9987	Swivel block/becket	3	75	9/16	14	5000	2268	10000	4536
HC9990	Teardrop	3	75	9/16	14	5000	2268	10000	4536
HC10041	Single footblock	3	75	9/16	14	5250	2382	10500	4763
100 mm									
HC9076	Stand-up block	3.94	100	5/8	16	11025	5000	22050	10000
HC9077	Swivel block	3.94	100	5/8	16	11025	5000	22050	10000
HC9078	Teardrop	3.94	100	5/8	16	11025	5000	22050	10000
HC9080	Single footblock	3.94	100	5/8	16	11025	5000	22050	10000
HC9079	Double footblock	3.94	100	5/8	16	7350	3333	14699	6666
125 mm									
HC9081	Stand-up block	4.92	125	3/4	19	15435	7000	30870	14000
HC9082	Swivel block	4.92	125	3/4	19	15435	7000	30870	14000
HC9083	Teardrop	4.92	125	3/4	19	15435	7000	30870	14000
HC9085	Single footblock	4.92	125	3/4	19	15435	7000	30870	14000
HC9084	Double footblock	4.92	125	3/4	19	10187	4620	20374	9240
150 mm									
HC9086	Stand-up block	5.91	150	1	25	22050	10000	44100	20000
HC9087	Swivel block	5.91	150	1	25	22050	10000	44100	20000
HC9088	Teardrop	5.91	150	1	25	22050	10000	44100	20000
HC9090	Single footblock	5.91	150	1	25	22050	10000	44100	20000
HC9089	Double footblock	5.91	150	1	25	14699	6666	29398	13332
HC10102	Stand-up block/U-bolt	5.91	150	1	25	22050	10000	44100	20000
175 mm									
HC9091	Stand-up block	6.89	175	1	25	33075	15000	66150	30000
HC9092	Swivel block	6.89	175	1	25	33075	15000	66150	30000
HC9093	Teardrop	6.89	175	1	25	33075	15000	66150	30000
HC9095	Single footblock	6.89	175	1	25	33075	15000	66150	30000
HC9094	Double footblock	6.89	175	1	25	22050	10000	44100	20000

Contact Harken East for custom sizes

HC9985

HC9986

HC9987

HC9990

HC10041

75 MM

Aluminum Megayacht Blocks

The clean, crisp look of aluminum is perfect for performance-oriented yachts. Sideplates are constructed of Hardkote-anodized 6061-T6 aluminum for strength and corrosion resistance. The ultralight composite bearing system (ULC) rides on a heat-treated stainless steel inner race to handle extremely high loads. Snap-fit Torlon® ball bearings carry thrust loads.

Use the hollow inner race as a becket attachment for weight reduction

HC8670
HC8657
HC8639
HC8635

HC8667
HC8640
HC8633
HC8631

HC8673
HC8674
HC8675
HC8932
HC10088

HC8928
HC8929
HC8930
HC8931

HC8671
HC8663
HC8661
HC8636

Part No.	Description	Sheave Ø in	Sheave Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
100 mm									
HC8673	Stand-up block	3.94	100	5/8	16	11025	5000	22050	10000
HC8670	Swivel block	3.94	100	5/8	16	11025	5000	22050	10000
HC8667	Teardrop	3.94	100	5/8	16	11025	5000	22050	10000
HC8928	Single footblock	3.94	100	5/8	16	11025	5000	22050	10000
HC8671	Double footblock	3.94	100	5/8	16	7350	3333	14699	6666
125 mm									
HC8674	Stand-up block	4.92	125	3/4	19	15435	7000	30870	14000
HC8657	Swivel block	4.92	125	3/4	19	15435	7000	30870	14000
HC8640	Teardrop	4.92	125	3/4	19	15435	7000	30870	14000
HC8929	Single footblock	4.92	125	3/4	19	15435	7000	30870	14000
HC8663	Double footblock	4.92	125	3/4	19	10187	4620	20374	9240
150 mm									
HC8675	Stand-up block	5.91	150	1	25	22050	10000	44100	20000
HC8639	Swivel block	5.91	150	1	25	22050	10000	44100	20000
HC8633	Teardrop	5.91	150	1	25	22050	10000	44100	20000
HC8930	Single footblock	5.91	150	1	25	22050	10000	44100	20000
HC8661	Double footblock	5.91	150	1	25	14699	6666	29398	13332
HC10088	Stand-up block/U-bolt	5.91	150	1	25	22050	10000	44100	20000
175 mm									
HC8932	Stand-up block	6.89	175	1	25	33075	15000	66150	30000
HC8635	Swivel block	6.89	175	1	25	33075	15000	66150	30000
HC8631	Teardrop	6.89	175	1	25	33075	15000	66150	30000
HC8931	Single footblock	6.89	175	1	25	33075	15000	66150	30000
HC8636	Double footblock	6.89	175	1	25	22050	10000	44100	20000

Contact Harken East for custom sizes

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.

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 in	Sheave Ø mm	Width in	Width mm	Length in	Length mm	Height in	Height mm	Max line Ø in	Max line Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
1986	Halyard lead block*	1 3/4	44	7/8	22	3 13/16	97	2 1/4	57	3/8	10	3.36	95	750	340	1500	680
1988	Mastbase block/fixed**	2 1/4	57	1 3/8	35	3 3/16	81	2 7/8	73	3/8	10	6.2	175	2500	1136	5000	2273
1990	Mastbase block/fixed***	3	76	1 5/8	41	4 5/8	117	3 3/4	95	1/2	12	11.5	326	5000	2273	10000	4545
3123	Mastbase block/fixed‡	4	102	1 5/8	41	5 1/8	130	5 1/8	130	11/16	18	24.9	708	11000	4990	22000	9980
C8508	Mastbase block/fixed‡‡	4 15/16	125	1 15/16	49	7 1/4	184	6 7/32	158	3/4	19	44.5	1261	15000	6804	30000	13608

*1/4" (6 mm) RH **1/4" (6 mm) FH ***5/16" (8 mm) FH ‡5/8" 16 mm HH ‡‡Contact Harken to request quote and lead time.

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 in	Sheave Ø mm	Width in	Width mm	Length in	Length mm	Height in	Height mm	Max line Ø in	Max line Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
3002	Single over-the-top block*	2 1/4	57	1 3/8	35	3 1/4	83	3 1/4	83	3/8	10	6.4	181	2500	1136	5000	2272
3003	Double over-the-top block*	2 1/4	57	2 7/16	62	3 1/4	83	3 1/4	83	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	3/8	10	18.1	513	2500	1136	5000	2272
C8322	Single over-the-top block**	1 3/4	45	1 7/16	36	3 1/16	78	3 7/32	82	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	9/16	14	18.5	526	5000	2272	10000	4536

*1/4" (6 mm) FH **Contact Harken to request quote and lead time.

Flip-Flop

The low-profile Flip-Flop blocks are lightweight 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.

3194
1989

3122
1987

Part No.	Description	Sheave Ø in	Sheave Ø mm	Width in	Width mm	Length in	Length mm	Height in	Height mm	Max line Ø in	Max line Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
1987	Flip-flop block*	3	76	2 7/8	72	6	152	4	100	1/2	12	17.37	493	5000	2273	10000	4545
1989	Flip-flop block/lockoff*	3	76	2 7/8	72	6	152	4	100	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 7/8	73	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 7/8	73	3/8	10	11.2	317.8	2500	1136	5000	2273

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

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 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

www.practical-sailor.com
BEST CHOICE 2008

1601

1609

One-handed latch

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	A in	A mm	B in	B mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
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
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 Torlon® 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. Strong, lightweight Velcro® strap holds block closed when sideplates are aligned.

Use for:
Static line applications

HC8796
HC8832

HC8910
HC8628

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

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight* oz	Weight* g	Loop Ø in	Loop Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Use Loop
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. *Includes weight of Loop and Velcro® strap

TTR AirBlocks®

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 Torlon® ball bearings carry side loads.

SAIL 2009 PITTMAN INNOVATION AWARD

Soft attachment Loops can be configured as becket or fiddle block

Articulating Loop attachments and sculpted head ensure a fair lead

Bella Mente, *Reichel/Pugh, New England Boatworks — Billy Black photo*

C8723

C9940

C8575

C8734

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
C9273	3.0T TTR AirBlock®	2.36	60	2.79	71	4.80	136	3/8	10	6614	3000	13228	6000
C8491	5.0T TTR AirBlock®	3	75	3.82	97	7.77	220	1/2	12	11025	5000	22050	10000
C8723	5.0T TTR footblock	3.27	83	4.29	109	16.16	458	1/2	12	11025	5000	22050	10000
C8724	5.0T Wide TTR footblock	3.27	83	4.68	119	17.6	499	2 x 1/2	2 x 12	11025	5000	22050	10000
C8727	5.0T TTR sheave	3	75	—	—	6.56	186	1/2	12	11025	5000	22050	10000
C9940	5.0T Wide TTR AirBlock®	3	75	4.22	107	11.85	336	2 x 1/2	2 x 12	11025	5000	22050	10000
C8575	6.5T TTR AirBlock®	4	100	4.92	125	16.16	458	5/8	16	14333	6500	28666	13000
C9015	6.5T TTR sheave	4	100	—	—	13.62	386	5/8	16	14333	6500	28666	13000
C9161	6.5T Wide TTR AirBlock®	4	100	5.79	147	22.42	635	2 x 3/4	2 x 20	14333	6500	28666	13000
C9388	6.5T Wide TTR footblock	4	100	6.17	157	41.06	1164	2 x 11/16	2 x 18	14333	6500	28666	13000
C8462	8.0T TTR AirBlock®	5	125	6.06	154	27.23	772	11/16	18	17641	8000	35281	16000
C9162	8.0T Wide TTR AirBlock®	5	125	7.24	184	37.6	1066	2 x 3/4	2 x 20	17641	8000	35281	16000
C8807	8.0T TTR footblock	5	125	6.49	165	47.20	1338	11/16	18	17641	8000	35281	16000
C9406	8.0T TTR Self-contained sheave	5	125	—	—	23.60	669	5/8	16	17641	8000	35281	16000
C8754	10.0T TTR AirBlock®	5.91	150	7.1	181	48.29	1368	13/16	20	22046	10000	44092	20000
C8957	10.0T Wide TTR AirBlock®	5.91	150	7.67	195	72.77	2063	2 x 7/8	2 x 22	22046	10000	44092	20000
C8755	12.0T TTR AirBlock®	7	175	8.3	221	66.86	1894	7/8	22	26455	12000	52910	24000
C8734	15.0T TTR AirBlock®	8	200	9.537	242	109.04	3089	1	26	33069	15000	66138	30000

Contact Harken to request quote and lead time Loops not included

Specifications

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

6076, 6079

6070, 6074

6106

6091, 6092, 6093

1965, 1974, 3012, 3018, 3022

6077, 6078

Stand-Up Blocks

Part No.	A in	A mm	B in	B mm	C in	C mm
1965	$2\frac{7}{32}$	57	$2\frac{3}{16}$	56	$1\frac{1}{4}$	32
1974	3	76	3	76	$1\frac{11}{16}$	43
1987/1989*	$4\frac{15}{16}$	125	$1\frac{15}{16}$	50	—	—
3122/3194**	$3\frac{11}{16}$	93.6	$1\frac{9}{16}$	39.7	—	—
3012	$3\frac{21}{32}$	93	$3\frac{27}{32}$	97	$2\frac{5}{16}$	59
3018	$3\frac{21}{32}$	93	$4\frac{1}{32}$	103	$2\frac{1}{4}$	57
3022	$3\frac{3}{4}$	95	$5\frac{5}{32}$	131	$3\frac{5}{8}$	92

*$\frac{5}{16}$" (8 mm) SH cap screw fasteners **$\frac{1}{4}$" (6 mm) SH cap screw fasteners

1987, 1989, 3122, 3194

Footblocks

Part No.	Fasteners (FH) in	Fasteners (FH) mm	A in	A mm	B in	B mm	C in	C mm	D in	D mm	E in	E mm	F in	F mm	G in	G mm
1963/1964/1967/1968	$\frac{1}{4}$	6	$\frac{9}{32}$	7	$\frac{7}{8}$	23	$2\frac{1}{32}$	52	$\frac{5}{8}$	16	$2\frac{9}{32}$	58	$3\frac{5}{16}$	84	$\frac{15}{32}$	12
1972/1973/3005/3006	$\frac{5}{16}$	8	$\frac{3}{8}$	10	$1\frac{1}{8}$	29	$2\frac{13}{16}$	71	$\frac{13}{16}$	21	3	76	$4\frac{5}{16}$	110	$\frac{5}{8}$	34
3010/3011	$\frac{3}{8}$	10	$\frac{7}{16}$	11	$1\frac{1}{2}$	38	$3\frac{5}{8}$	93	$1\frac{1}{8}$	28	$3\frac{15}{16}$	100	$5\frac{5}{8}$	143	$\frac{13}{16}$	21
3017/3033	$\frac{1}{2}$	12	$\frac{17}{32}$	14	$1\frac{25}{32}$	50	$4\frac{7}{16}$	113	$1\frac{11}{32}$	35	$4\frac{29}{32}$	125	$6\frac{29}{32}$	176	$\frac{29}{32}$	23
3023	$\frac{5}{8}$	16	$\frac{19}{32}$	15	$2\frac{3}{32}$	53	$5\frac{3}{32}$	129	$1\frac{5}{8}$	41	$5\frac{29}{32}$	150	$8\frac{1}{16}$	204	$\frac{15}{16}$	24
6070	$\frac{3}{8}$	10	$1\frac{31}{32}$	50	$2\frac{5}{32}$	55	$2\frac{1}{4}$	57	—	—	—	—	—	—	—	—
6074	$\frac{3}{8}$	10	2	51	$2\frac{1}{2}$	63	$2\frac{29}{32}$	74	—	—	—	—	—	—	—	—
6076	$\frac{3}{8}$	10	—	—	$2\frac{5}{32}$	55	$2\frac{1}{4}$	57	—	—	—	—	—	—	—	—
6077	$\frac{5}{16}$	8	$\frac{1}{2}$	13	$2\frac{5}{32}$	55	2	51	$\frac{9}{16}$	14	$2\frac{1}{4}$	57	$3\frac{25}{32}$	96	—	—
6078	$\frac{5}{16}$	8	$\frac{1}{2}$	13	$2\frac{13}{32}$	61	2	51	$\frac{9}{16}$	14	$2\frac{7}{8}$	74	$4\frac{5}{16}$	110	—	—
6079	$\frac{3}{8}$	10	—	—	$2\frac{1}{2}$	63	$2\frac{31}{32}$	75	—	—	—	—	—	—	—	—
6091	$\frac{5}{16}$	8	$\frac{1}{2}$	13	$2\frac{5}{32}$	55	—	—	$\frac{9}{16}$	14	$2\frac{1}{4}$	57	$2\frac{21}{32}$	67	—	—
6092	$\frac{5}{16}$	8	$\frac{1}{2}$	13	$2\frac{13}{32}$	61	$\frac{9}{16}$	14	$1\frac{9}{32}$	15	$2\frac{31}{32}$	75	$4\frac{3}{8}$	111	—	—
6093	$\frac{1}{2}$	12	$\frac{11}{16}$	17	$3\frac{1}{32}$	77	—	—	$\frac{11}{16}$	18	$4\frac{1}{8}$	105	$3\frac{15}{16}$	100	—	—
6106	$\frac{5}{16}$, $\frac{5}{32}$	8, 4	—	—	$1\frac{9}{16}$	39	$1\frac{9}{16}$	40	—	—	—	—	—	—	—	—

COMPLEMENTARY HARDWARE

Dufour 40E , Umberto Felci and Dufour Yacht Design —
© Yves RONZIER / DUFOUR photo

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.

1

2

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

2. Accessories
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.

DO NOT use Harken equipment for human suspension.

Ball Bearing Cam Cleats

CAM-MATIC®

CARBO-CAM®

TRIGGER CLEAT

Part No.	Description	Height in	Height mm	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Line Ø min - max in	Line Ø min - max mm	Fastener spacing in	Fastener spacing mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Pawls
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	15/16	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 17/32	81	1 1/4	32	4.50	126	5/16 - 3/8	8 - 10	2 7/16	62	500	227	750	340	Aluminum
471	Micro Carbo-Cam®**	7/8	22	1 7/8	48	15/16	24	0.67	19	1/8 - 1/4	3 - 6	1 1/16	27	150	68	300	136	Plastic carbon-matrix
Trigger Cleat																		
418	Trigger cleat****	1 3/8	35	2 1/2	64	3	76	5.6	159	3/16 - 1/2	5 - 12	2	51	500	227	1000	454	Stainless steel
355	Trigger cleat adaptor plate	1/4	6	3 9/64	79	1 9/32	31	1.3	36	—	—	2 5/8	66	—	—	—	—	—

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

Cam Kits

Micro Kits

Part No.	Description	Cam	Wedge	Fairlead	Weight oz	Weight g
472	Carbo-Cam®/wedge/wire fairlead	471	297	475	1.2	33
469	Cam-Matic®/wire fairlead	468	—	475	1.2	33
473	Carbo-Cam®/wire fairlead	471	—	475	0.9	26
474	Carbo-Cam®/X-Treme Angle Fairlead	471	—	476	1.7	47
470	Cam-Matic®/X-Treme Angle Fairlead	468	—	476	1.9	55

Standard Kits

Part No.	Description	Cam	Wedge	Fairlead	Weight oz	Weight g
326	Carbo-Cam®/wire fairlead	365	—	298	2.00	54
327	Cam-Matic /wire fairlead	150	—	298	3.00	85
458	Carbo-Cam®/X-Treme Angle Fairlead	365	—	380	3.36	98
459	Cam-Matic®/X-Treme Angle Fairlead	150	—	375	4.42	127

Cam Cleat Accessories

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 flairleads 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.

Cleat and uncleat at angles up to 90 degrees

Stainless steel loop provides low-friction turning post

Base plate ensures optimal cleating height

Ideal for Laser® outhaul/ cunningham controls

Devoti D-One, Phil Morrison, Devoti Sailing — Pierrick Contin photo

Part No.	Description	Height above cam in	Height above cam mm	Height in	Height mm	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Fastener Spacing in	Fastener Spacing mm	Fits
Micro														
281	Eyestrap	1/2	12	—	—	1 7/16	36	7/16	11	.16	4.5	1 1/16	27	468/471
475	Wire fairlead	—	—	15/16	23	1 7/8	48	15/16	24	.29	8	1 1/16	27	468/471
293	Flat cam riser	—	—	5/8	16	1 7/8	48	15/16	24	.50	14	1 1/16	27	468/471
294	15° Angled micro cam riser	—	—	3/4	19	1 7/8	48	15/16	24	.75	21	1 1/16	27	468/471
297	Cam wedge kit	—	—	—	—	1 7/8	48	15/16	24	.16	5	1 1/16	27	468/471
476	X-Treme Angle Fairlead	7/8	22	1 7/16	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	Eyestrap	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 eyestrap	3/8	10	—	—	1 7/8	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 7/16	36	2.50	71	1 1/2	38	150/365
Offshore														
282	Large eyestrap	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
	294	296	
	293	295	
	475	298	
	476	375 380	
	424	425	
		137	
	281	201	282

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

431

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

424
425

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

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 468 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

144
205
1574

Cam-Matic® ball bearing cam cleats

Swivels freely under load

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

361

144 includes adapter for 57 and 75 mm Carbo blocks

462

238
239
379

402
403

216

241
240

Part No.	Description	Height in	Height mm	Weight oz	Weight g	Line Ø Min in	Line Ø Min mm	Line Ø Max in	Line Ø Max mm	Fastener spacing in	Fastener spacing mm	Maximum working load lb	Maximum working load kg	Use with
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, 471 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 1/2/1	38/25	300	139	
239	365 Carbo-Cam® on plate/bullseye‡	1 5/16	33	3	85	1/8	3	3/8	10	1 1/2/1	38/25	200	91	
240	Bullseye swivel base/150 Cam-Matic®*	1 15/16	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	
361	Little swivel base/Trigger cleat*	4 9/16	110	14	398	1/8	3	1/2	12	3/4	19	—	—	Big Bullet/Dinghy/2.25"/little ratchets
379	471 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	3/8	10	3/4	19	—	—	57mm/2.25" Double ratchets
403	Swivel base/412 Cam-Matic®*	5 3/4	146	14	398	5/16	8	3/8	10	3/4	19	—	—	57mm/2.25"/3.00" Double ratchets
462	Swivel base/468 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

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 the1634 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.

1634: Midrange and ESP Cruising block stand-up base

Swivels and pivots freely

Blocks will not hit deck

1634

460
461

061

369
370

077

097, 071, 1603

010
029

Bases

Part No.	Description	Height in	Height mm	Weight oz	Weight g	Base Ø in	Base Ø mm	Inside socket Ø in	Inside socket Ø mm	Pin Ø in	Pin Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Use with
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 15/16	49	9	255	2 7/8	73	9/16	15	5/16	8	3500	1588	7000	3175	Midrange/Cruising ESP

Base accessories

Part No.	Description	Weight oz	Weight g	A in	A mm	B in	B mm	Shackle pin Ø in	Shackle pin Ø mm
071	Stand-up spring	.32	9.1	2	51	7/8	22	—	—
077	DN adaptor	2.4	69	1/4	32	11/16	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 5/8	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 reenter 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.

Pogo 2, *Mini TransAt, Finot-Conq Architect Group, Open Sailing, Inc. — Didier Ravon photo*

Part No.	Description	A in	A mm	B in	B mm	Part No.	Description	Weight oz	Weight 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	3/4	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

Ball bearings handle low loads and sideloads from unfair leads

Plastic sleeve bearing for high static loads

6062

6063

6064

MIA NOI, *YS750, Y.S. Design, Yachting Siam — Peter Plant photo*

415

277

160

161

265

1533
1534

303

307

311

Part No.	Description	Sheave Ø in	Sheave Ø mm	Width in	Width mm	Weight oz	Weight g	Line in	Line mm	Max Ø Wire in	Max Ø Wire mm	Center Pin Ø in	Center Pin Ø mm	Maximum working load lb	Maximum working load 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 Torlon® 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

Torlon® roller/ball bearing system

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

Carbon-black balls for UV protection

Catana 50, Christophe Barreau, Catana Catamarans — Jérôme Kelagopian photo

500

640
603

1539

518
519
520

657

550

Part No.	Sheave Ø in	Sheave Ø mm	Width in	Width mm	Weight oz	Weight g	Center pin Ø in	Center pin Ø mm	Fasteners in	Fasteners mm	Fastener circle in	Fastener circle mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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 3/8	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 9/16	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 5/8	41	25	709	3/4	19.10	3/8	10	1 3/8	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

727

Lightening holes

754

712

714

716

1734

Part No.	Sheave Ø in	Sheave Ø mm	Width in	Width mm	Weight oz	Weight g	Center pin Ø in	Center pin Ø mm	Max Ø Line in	Max Ø Line mm	Max Ø Wire in	Max Ø Wire mm	Maximum working load lb	Maximum working load kg	Breaking load* lb	Breaking load* kg
712	4	102	7/8	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

691

692

693

694

695

Part No.	Sheave Ø in	Sheave Ø mm	Width in	Width mm	Weight oz	Weight g	Center pin Ø in	Center pin Ø mm	Max Ø Line in	Max Ø Line mm	Max Ø Wire in	Max Ø Wire mm	Maximum working load lb	Maximum working load kg	Breaking load* lb	Breaking load* 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

270
1500

272
1502

271
1501

273
1503

Rimar 41.3 Race, Ceccarelli Yacht Design, Rimar Yachts — Andrea Pisapia, SeaAndSAil photo

1590

1591

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Height in	Height mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load/sheave‡ lb	Maximum working load/sheave‡ kg	Breaking load‡ lb	Breaking load‡ 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 13/16	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 13/16	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 3/16	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 3/16	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

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 preassembled as a double and shares a common center plate.

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

Aluminum and plastic sleeve bearing for high static loads

Available in stainless steel

6075
6071

6054
6052

6055
6053

6102

6066
6067

6101

6103
6104

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Height in	Height mm	Max line Ø in	Max line Ø mm	Maximum working load/sheave lb	Maximum working load/sheave kg	Maximum working load* lb	Maximum working load* kg	Breaking load* lb	Breaking load* kg	Fasteners (RH) in	Fasteners (RH) mm
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.

Deck organizers feature aluminum Hardkote-anodized side plates for strength and corrosion resistance.

Use for:
Halyards
Reef lines
Outhauls
Pole lifts
Control lines

Rapid Transit, *Antrim 49, Antrim Associates, Berkeley Marine Center — Louis Benainous photo*

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

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Height in	Height mm	Weight oz	Weight g	Max Ø Line in	Max Ø Line mm	Max Ø Wire in	Max Ø Wire mm	Maximum working load/ sheave lb	Maximum working load/ sheave kg	Breaking load/ sheave lb	Breaking load/ sheave kg	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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 5/16	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 and Midrange 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

CB cars feature tough one-piece aluminum construction

Cars fit low-beam track

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

3188
3189

782
783
784

1578
1579
1580

Cars

Part No.	Description	Max spin area ft²	Max spin area m²	Length in	Length mm	Weight oz	Weight g	Pin Ø in	Pin Ø mm	H in	H mm	I in	I mm	Maximum working load lb	Maximum working load kg	Track	Pole end*
782	Big Boat/bell	2000	186	7 1/4	184	46.4	1315	15/32	12	1 1/2	38	—	—	4050	1837	R32	B120/B130 bell end
783	Big Boat/toggle	2000	186	7 1/4	184	47.2	1338	5/8	16	1 3/16	30	2 1/2	63	4050	1837	R32	Sparcraft® toggle
784	Big Boat/toggle	2000	186	7 1/4	184	45.6	1293	1/2	12.7	1	25	2 5/16	59	4050	1837	R32	Forespar® toggle
1578	Midrange/bell	1500	140	5 1/4	133	23.2	658	15/32	12	1 1/2	38	—	—	2300	1043	R27	B120/B130 bell end
1579	Midrange/toggle	1500	140	5 1/4	133	24	680	5/8	16	1 3/16	30	2 1/8	54	2300	1043	R27	Sparcraft® toggle
1580	Midrange/toggle	1500	140	5 1/4	133	22.4	635	1/2	12.7	1	25	2	51	2300	1043	R27	Forespar® toggle
3188	Small Boat CB/ring	900	85	4 63/64	126	12	340	—	—	—	—	—	—	1125	510	2720	Piston
3189	Midrange CB/ring	1350	125	5 61/64	151	23.2	657.7	—	—	—	—	—	—	2100	953	R27	Piston

See page 14 for replacement balls *Check dimensions of pole end toggle from suppliers listed

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

3188
3189

B141/50
B145/60
B145/70
B145/80

1578
1579 (accepts Sparcraft® toggle)
1580 (accepts Forespar® toggle)

782
783 (accepts Sparcraft® toggle)
784 (accepts Forespar® toggle)

End Fittings

Part No.	Description	A mm	B mm	C mm	D mm	E mm	F mm	G mm	Weight oz	Weight 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	

**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.

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.

Number on shackle denotes screw diameter in millimeters.

High-resistance shackles are marked "HR" .

U-Adaptors attach blocks to swivel bases or to other blocks.

Bow

Captive Halyard

Twist

2103, 2110
2117, 2124

2131, 2132

2108, 2115
2122, 2126

2109, 2116
2123, 2127

2107

2104, 2111
2118

2106

2105, 2112
2119, 2125

FORGED SHACKLES

111
112

1584

SNAP SHACKLES

072
138
246

STAMPED SHACKLES

093, 1598

463

U-ADAPTORS

DO NOT use Harken equipment for human suspension.

Stainless Steel Shackles

Morris M29, Sparkman & Stephens, Morris Yachts — Billy Black Photo

Part No.	Description	Shackle pin Ø in	Shackle pin Ø mm	Weight oz	Weight g	A in	A mm	B in	B mm	C in	C mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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
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 5/16	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	9/16	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	11/16	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 1/16	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.

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.

1558

074

Part No.	Weight oz	Weight g	Fasteners (RH) in	Fasteners (RH) mm	A in	A mm	B in	B mm	C in	C mm	D in	D mm	E in	E mm	F in	F mm	G in	G mm	H in	H mm	Fits cam	Breaking load lb	Breaking load kg
073	.16	4.5	#10	5	1 11/16	43	1/2	12	1 1/4	32	7/16	11	3/8	10	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 3/4	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 5/16	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.

627
648
629

688

689

Part No.	Maximum working load 1 lb	1 kg	2 lb	2 kg	3 lb	3 kg	Breaking load 1 lb	1 kg	2 lb	2 kg	3 lb	3 kg	Fasteners (FH) in	mm
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

Maximum working load

Part No.	Description	A in	A mm	B in	B mm	C in	C mm	D in	D mm	E in	E mm	F in	F mm	G in	G mm	Weight oz	Weight 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 1/8	79	2	51	2 3/8	60	1 1/4	32	1 3/16	30	9/16	14	7/8	22	43/4	135
689	Large diamond	3 7/8	98	2 5/16	59	2 7/8	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.

Folding Padeyes

Folding padeyes keep your deck and passageways clear. They're ready when you need to attach a snatch block or fender, but fold safely out of the way when you don't.

Bolt-down bases and D-rings are 316 stainless steel. A vulcanized thermoplastic pad prevents rattling and holds the D-ring in position.

Use for:
Loops/soft attachments
Jacklines and tethers
Leads
Tie downs
Lifting points
Fenders

3206

3207

Part No.	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Fasteners (FH) in	Fasteners (FH) mm
3206	1760	800	3520	1600	1/4	6
3207	3080	1400	6160	2800	1/4	6

FOLDING PADEYES Q&A

HOW SHOULD I ALIGN THE LOAD ON A FOLDING PADEYE?

Folding padeyes differ from conventional padeyes in that the load should be perpendicular to the hinge and bail instead of in line with it. The strongest positions are with the D-ring vertical or leaning towards the fold-down position, which focuses the load on the side anchored with two screws.

Part No.	Description	A in	A mm	B in	B mm	C in	C mm	D in	D mm	E in	E mm	F in	F mm	Weight oz	Weight g
3206	6 mm Low-load	1	26	1 5/8	41.5	7/8	23	—	—	19/32	14.9	1 1/8	28	2 1/4	65
3207	6 mm	1 7/8	47	1 5/8	42.25	1 1/8	28	15/16	23	19/32	14.9	1 1/8	28	2 3/4	78

Grand Prix Jib Leads & Fairleads

High-load aluminum fairleads deflect control lines.

Strong aluminum jib leads deflect jib sheets to winches preventing overrides. Lead has two small drilled holes through which a loop can be spliced to attach the "hobble".

Use ring leads with athwartship systems to raise or lower the clew.

C8155
C8153

FAIRLEADS

C8684
C8882

C8541
C8154

JIB LEADS

Part No.	Description	Height in	Height mm	Width in	Width mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg
Fairleads											
C8153	Big Boat fairlead	1 7/16	36.5	1 21/32	42	5.5	155	5/8	16	5512	2500
C8155	Midrange fairlead	1 7/32	30.5	1 5/16	34	3.5	99	3/8	10	3968	1800
Jib leads											
C8154	Big Boat jib lead	2 9/32	58	4 3/4	120	9.6	272	7/8	22	4248	1927
C8541	Midrange jib lead	1 5/16	34	2 3/4	70	3.2	91	1/2	12	1499	680
C8684	Floating jib lead thimble/1:1	2	50.8	2	50.8	1.8	51	7/8	22	10000	4536
C8882	Floating ring sheet lead/2:1	3	76.2	3	76.2	6.8	193	15/16	24	7200	3266

DO NOT use Harken equipment for human suspension. Contact Harken to request quote and lead time.

Fixed & Removable Padeyes

Fixed Padeyes

In-deck loop padeyes are recessed into the deck creating a discreet, low-profile design. Lightweight and compact, our padeyes work well with almost any soft-attach block, including Black Magic® Loop blocks, snatch blocks and TTR blocks. U-Bolt padeyes work with both soft and hard attachments.

Padeyes are available in mirror-polished, 17-4PH stainless steel to complement the look of classic and modern yachts and lightweight aluminum for high-performance yachts.

Removable Padeyes

Harken® offers a variety of removable padeyes for blocks from 57 mm Black Magic®, to custom blocks with maximum working loads of 50,715 lbs (23,000 kg). 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.

C9064
C8997

Block not included

In-deck loop padeyes provide a clutter-free deck.

629
See page 83

C9374

C7852

HC8224

C9511

C9775

REMOVABLE PADEYES

C9153
C9057

C6398
C6395

FIXED PADEYES

Fixed Padeyes

Part No.	Description	Above deck Ø in	Above deck Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Use with
C6398	Low-load soft attachment/aluminum	2	51	7.9	223	5000	2268	HC8796
C9064	5T Soft attachment/stainless steel	3 11/32	85	41.6	1179	11025	5000	HC8832
C9153	5T U-Bolt/stainless steel	—	—	17.8	505	11025	5000	HC8832
C6395	High-load soft attachment/aluminum	2 3/8	60	12.3	350	14994	6800	—
C9057	9T U-Bolt/stainless steel	—	—	37.4	1060	19845	9000	HC8910
C10063	12T U-Bolt/stainless steel	—	—	106	3006	26460	12000	HC8628
C8997	12T Soft attachment/stainless steel	4 3/16	106	88.2	2500	26460	12000	HC8628

Removable Padeyes

Assembly Part No.	Component Part No. Deck cup	Component Part No. Top	Description	Above deck Ø in	Above deck Ø mm	Weight Deck cup oz	Weight Deck cup g	Weight Top oz	Weight Top g	Fasteners	Maximum working load lb	Maximum working load kg	Use with
C7852	HC7340	C8207	Bolt-down deck cup/bail top	2 1/4	57	4.5	127	7.4	209	4 x M6	4410	2000	—
HC7343	HC7340	HC7327	Bolt-down deck cup/swivel top	2 1/4	57	4.5	127	9.6	272	4 x M6	5005	2270	627
HC6107	HC7389	HC7388	Bolt-down deck cup/swivel top	3 1/4	83	12.8	362	22.4	635	4 x M10	11814	5358	648
HC8224	HC7403	HC7224	Bolt-down deck cup/swivel top	4 1/4	108	41.6	1179	28.5	807	4 x M12	20000	9070	629/C6779
—	HC7403	C6779	Bolt-down deck cup/stand-up toggle top	4 1/4	108	41.6	1179	54.8	1553	4 x M12	20000	9070	HC9222/HC9598
C9527	C9511	C9374	Stud deck cup/stand-up toggle top	3 15/16	100	71.1	2016	—	—	—	33075	15000	HC9289
—	—	C9954	Soft attachment top	—	—	—	—	59.6	1689	—	33075	15000	C9511/C9775/C9452
—	C9775	—	Bolt-down deck cup	5 1/2	139	63.2	1792	—	—	6 x M16	33075	15000	C9374
C9758	C9240	C9238	Bolt-down deck cup/stand-up toggle top	6 1/2	165	88.8	2517	166.4	4717	6 x M20	50715	23000	—
—	C9761	—	Stand-up toggle top	4 3/8	111	—	—	176.3	4999	—	50715	23000	C9760
—	C9760	—	Stud deck cup	4 1/2	114	148	4196	—	—	—	50715	23000	C9761

DO NOT use Harken equipment for human suspension. Contact Harken to request quote and lead time.

Soft Attachments

LOUPS™

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® with Spectra® cover—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.

T2™ Loops

Use T2 Loops in Carbo T2 blocks. These strong, lightweight soft attachments are woven of Dyneema fibers, and are load-set and locked stitched to prevent stretch after installation.

See page 19

Replacement T2™ Loops

Part No.	Ø mm	Length in	Length mm	Weight oz	Weight g	Use with
2154	3	5 1/8	130	.03	.9	2148
2155	3	5 7/8	155	.04	1	2151

2154 2155

3151

Part No.	Ø mm	Length in	Length mm	Weight oz	Weight g	Vertical maximum working load lb	Vertical maximum working load kg	Fits blocks	Choker maximum working load lb	Choker maximum working load kg	With dogbone maximum working load lb	With dogbone maximum working load kg	Fits blocks	Basket maximum working load lb	Basket maximum working load 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.

Halyard Tensioners

Designed for rope or wire halyards on large cruisers, the Harken halyard tensioner locks halyards at full hoist and frees your halyard winch for other functions.

One-piece aluminum car body and track are deep-saturation, Hardkote-anodized and Teflon® impregnated for durability. UV stabilized for maximum protection.

Choose the 40 mm version in single-pin or double-pin configurations based on required working load. 32 mm version available in single pin only.

HC9733
HC9503
HC9953

HC9639
HC9504

To lock pin in up position, pull the handle up with a lanyard or by hand and twist 90 degrees.

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg
32 mm T-Track									
HC9639	Single-pin car	6.0	152	2.25	57	18.67	529	6615	3000
HC9733	Self-locking 32 mm track	29.5	750	1.26	32	—	—	—	—
40 mm T-Track									
HC9504	Single-pin car	6.3	160	2.563	65.1	20.34	577	8818	4000
HC9498	Double-pin car	8.268	210	2.563	65.1	28.54	809	13227	6000
HC9503	Self-locking 40 mm track	29.5	750	1.563	40	—	—	—	—
HC9953	Self-locking 40 mm track	59.055	1500	1.563	40	—	—	—	—

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

B1722

B500
B502

B501
B503

Part No.	Description	Pin Ø in	Pin Ø mm	Pin-to-pin closed in	Pin-to-pin closed mm	Stroke in	Stroke mm	Jaw width in	Jaw width mm	Jaw depth in	Jaw depth mm	Weight lb	Weight kg	Max wire Ø in	Max wire Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Adjust with
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 11/16	220	11/16	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 11/16	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

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 simple and lightweight design has no unnecessary frills—every aspect contributes to its strength, stiffness, or comfort. The universal joint and nonslip foam grip are UV-protected and perfect for full dagger-grip and fingertip steering.

7100.24
7100.30
7100.33
7100.36
7100.42
7100.48

7102

7101

Base cover snaps off to remove tiller extension

Universal joint rotates 360°

Nonslip foam rubber grip

A-Class Catamaran — Luigi Ciccarone photo

Part No.	Description	Length in	Length mm	Tube Ø in	Tube Ø mm	Weight oz	Weight g	Fastener spacing in	Fastener spacing mm	Fasteners in	Fasteners mm	Joint type	Tube material
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	—	—
7102	Replacement universal joint	—	—	5/8	16	.46	13	—	—	—	—	universal	—

*Fasteners not included

NEW FOR 2012

CB Adjustable Genoa Lead Cars
Pages 97, 102-103, 110

TRAVELERS & GENOA LEADS

Corsair Dash 750, Corsair Marine — Billy Black photo

Dinghy Pinstop Jib Leads

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 ft^2 (13 m^2). 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.

453

452P
452S

450

451

Flexible, lightweight, lashing attachment allows block to articulate freely on 450 jib car.

453

49er — FRIED ELLIOTT/friedbits.com photo

Cars

Part No.	Description	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
450	Dinghy jib lead/bail/pinstop	2 5/8	67	15/16	23	1 1/16	27	2	55	350	159	700	318	453
451	Dinghy jib lead/bullseye/pinstop	2 5/8	67	15/16	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

Track

Part No.	Description	Length ft/in	Length m	Mounting hole spacing in	Mounting hole spacing mm	Weight oz	Weight g	Fasteners (FH) in	Fasteners (FH) 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

*1st hole 1 3/8" (34 mm)

Ordering Travelers & Genoa Lead Cars

1. Determine System Size
System size is based on boat type and sail area. Contact Harken for sail areas larger than listed.

2. Select Track and Accessories
High-beam track spans unsupported areas. Metric, English, and variable hole spacing available. Check track specification charts for compatible accessories. For curved track, see page 92.

3. Choose Car Options
Type: Options include car-mounted sheaves, high-load coupled cars, windward sheeting, and lightweight Loop cars. For genoa lead cars, choose between a pinstop or adjustable system. See pages 5 and 7 for common configurations.

Purchase: Cars with car-mounted blocks have purchases from 1:1 to 4:1. Choose cars based on desired purchase.

Mainsheet Block Attachments: Cars offered with stand-up toggles, toggles with ears, shackles, and soft-attach options.

4. Select End Controls
Control Block Selection Guides: See pages 116-117 to specify blocks and end controls based on system purchase.

5. Contact
Please contact Harken with questions.

27 mm & 32 mm System Part Numbers

T2701B.HL

Part type
R = Track
T = Traveler car
G = Genoa lead car
E = End control

System size
(top of track in mm)

Number of sheaves/deadend
0 = None
1 = Deadend
2 = Control sheave
3 = Control sheave & deadend
4 = 2 Control sheaves
5 = 2 Control sheaves & deadend (end controls only)
6 = Pinstop (genoa lead cars only)
7 = 3 Control sheaves & deadend (end controls only)

Block attachment
0 = None
1 = Shackle
2 = Stand-up toggle
3 = Stand-up toggle/ears
4 = 2 Stand-up toggles
5 = Soft attachment
6 = Cam cleat (end controls only)
7 = Black sheave carrier (genoa cars only)

Bearing type
B = Ball bearing
S = Slider

Additional options
HL = High-load

Mainsail Traveler System Size Selection

	Maximum mainsail area							
	Monohulls				Multihulls			
	End-boom sheeting		Mid-boom sheeting		End-boom sheeting		Mid-boom sheeting	
Cars	ft²	m²	ft²	m²	ft²	m²	ft²	m²
Dinghies/Light Daysailers								
13 mm Micro CB	110	10.2	85	8	85	8	70	6.5
22 mm Small Boat CB: standard	125	11.6	100	9.3	100	9.3	80	7.5
22 mm Small Boat CB: high-load	160	14.9	135	12.5	135	12.5	110	10.2
22 mm Small Boat CB: 1250 Series	200	18.6	160	14.9	160	14.9	135	12.5
27 mm Midrange CB: standard	350	32.5	285	26.5	275	25.5	215	20
Small Offshore Boats/Heavy Daysailers								
22 mm Small Boat CB: high-load	150	14	125	11.5	135	12.5	110	10.2
22 mm Small Boat CB: 1250 Series	190	17.5	150	14	160	14.9	125	11.5
27 mm Midrange CB: standard	260	24	215	20	215	20	160	14.9
27 mm Midrange CB: high-load	300	28	240	22	240	22	190	17.5
Large Offshore Boats								
32 mm Big Boat CB: standard	425	39.5	350	32.5	350	32.5	300	28
32 mm Big Boat CB: high-load	550	51	450	42	450	42	350	32.5
32 mm Big Boat CB: 2 stand-up toggles/32 mm CRX Roller: 3074	575	53.4	500	46.5	500	46.5	425	39.5
32 mm Big Boat CB: 2 T3201Bs joined by 580	700	65	525	49	525	49	450	42
32 mm Big Boat CB: 2 stand-up toggles or 2 T3201B.HL joined by 752	800	74	650	60.5	650	60.5	550	51
42 mm Mini-Maxi: 3068/32 mm CRX Roller: 3075	1100	102	900	83.6	900	83.6	750	69.7
64 mm Maxi: 3070	1400	130	1100	102	1100	102	900	83.6

Genoa Lead System Size Selection

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 16 to size for different deflection angles and wind speeds. Visit www.harken.com or see page 7 for common configurations.

	Maximum sail area										
	22 mm Small Boat		27 mm Midrange		32 mm Big Boat Standard		32 mm Big Boat High-load		Mini-Maxi		
Adjustable Genoa Lead Cars	ft²	m²	ft²	m²	ft²	m²	ft²	m²	ft²	m²	
#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 vangs 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.

			Compound bends	
Track	**Simple bend Part No.**	**Major bend Part No.**	**Simple Part No.**	**Major Part No.**
2707	485	486	—	—
2709	487	488	—	—
373/374/2720/2721/2725/2751	274	275	276	286
1602/R27	1527	1528	1529	1581
R27HB	1530	1531	1532	1582
R32/3159	789	790	791	576
R32HB/1706	792	793	794	577
661	795	795	795	795

Simple Bend—Track length of 2 m (6'6 3/4") or less **and** chord depth less than 200 mm (8").

Major Bend—Track length of 2.1 m (6'10 11/16") 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)

Harken® does not cut track to length

CB Travelers & Genoa Leads

EASILY ADJUST UNDER LOAD

Harken ball bearing traveler and genoa lead cars with multipart purchases allow easy adjustment of loaded sails from the cockpit. Whether racing or cruising, these smooth-rolling systems pay huge dividends in sail control and are safer and faster than playing the sheet.

Harken travelers are tailored for end-boom and mid-boom configurations and used with high-beam track when raising the traveler out of the cockpit. Available in seven size ranges to fit any boat from the smallest dinghy or beach cat to the largest megayacht.

1. High-Performance Systems
Cars feature stand-up toggles with ears, allowing attachment of separate Carbo or Black Magic® ball or roller bearing control blocks for a free-running, high-performance system.

Pair with Carbo ball bearing end controls for reduced friction and a smooth-running system.

2. ESP Systems
27 mm Midrange and 32 mm Big Boat cars feature built-in, axle-bearing control blocks. Cars with car-mounted controls are value-oriented options for the installation of 2:1 to 5:1 systems.

Pair with axle bearing ESP end controls for durability and strength.

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.

DO NOT use Harken equipment for human suspension.

CB Traveler Cars: 13 mm Micro

Harken® Micro CB traveler cars are used on small dinghies and catamarans. The one-piece solid aluminum construction is lightweight and strong. Delrin® ball bearings run on machined aluminum Hardkote-anodized races for smooth trimming and easing. Stainless steel wire guides keep balls captive when the car is off the track.

Loop cars matched with Carbo T2 AirBlocks® attached with high-tech line provide the ultimate lightweight, low-profile system.

Car Controls

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.

Mercury — UnderTheSunPhotos.com

Block not included

Use the Loop car with 29 or 40 mm Carbo T2 AirBlocks®

Pivoting shackle cars have low pivot points to handle nonvertical loads

2701

2702

2700

2703

CARS

2704

2705

CAR CONTROLS

Cars

Part No.	Description	Length in	Length mm	Width in	Width mm	Car body Height in	Car body Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
2700	Car/pivoting shackle	2 3/16	56	1 9/16	40	3/4	19	1.76	50	310	140	1500	680
2701	Car/pivoting shackle/control blocks	3 7/16	87	1 9/16	40	3/4	19	2.56	73	310	140	1500	680
2702	Car/pivoting shackle/tangs	2 3/8	61	1 9/16	40	3/4	19	2.08	59	310	140	1500	680
2703	Loop car	2 3/16	56	1 9/16	40	3/4	19	1.6	45	310	140	1500	680

See page 14 for replacement balls

Car Controls

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Purchase
2704	Control block (pair)	5/8	16	1 5/16	33	.39	11	7/32	5	250	113	750	339	2:1
2705	Control tang (pair)	—	—	13/16	21	.11	3	—	—	250	113	750	339	1:1

CB Track & Accessories: 13 mm Micro

Track
Track comes in low- and high-beam configurations, predrilled with holes for mounting fasteners.

Endstops
Endstops absorb shock loads. Use the built-in groove to deadend 2:1 control line. 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 92.

2706 2710

LINE-SHEDDING ENDSTOPS

2711

SPLICE LINKS

LOW-BEAM

HIGH-BEAM DRILLED

13 mm High-Beam Track Spanning Chart

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

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

	Fastner Hole Distance from Track End	
Track	in	mm
2707	1	25
2709	1 15/16	50

Part No.	Description	Length ft/in	Length m	Hole spacing in	Hole spacing mm	Weight oz	Weight g	Fasteners (FH) in	Fasteners (FH) mm	Line-shedding endstop‡	Splice link
Metric Track											
2707.600mm	Low-beam	1.97	.6	1 31/32	50	4.6	129	#8	4 mm	2706	2711
2707.1m	Low-beam	3.28	1	1 31/32	50	7.6	214	#8	4 mm	2706	2711
2707.1.2m	Low-beam	3.93	1.2	1 31/32	50	9	257	#8	4 mm	2706	2711
2707.2m	Low-beam	6.56	2	1 31/32	50	15.1	429	#8	4 mm	2706	2711
2707.2.5m	Low-beam	8.20	2.5	1 31/32	50	18.9	536	#8	4 mm	2706	2711
2709.1m	High-beam	3.28	1	3 15/16	100	13.2	375	#8	4 mm	2710	—
2709.1.2m	High-beam	3.93	1.2	3 15/16	100	15.8	449	#8	4 mm	2710	—
2709.2m	High-beam	6.56	2	3 15/16	100	26.4	749	#8	4 mm	2710	—

‡Sold in pairs

CB Traveler Cars: 22 mm Small Boat

Small Boat CB traveler cars fit dinghies, keelboats, beachcats, 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 balls captive when the car is off the track.

Small Boat cars with a 500 lb (227 kg) maximum working load use Delrin® balls. Small Boat cars with high maximum working loads use high-strength Torlon® ball bearings.

Loop cars matched with Carbo T2™ blocks attached with high-tech line provide the ultimate lightweight, low-profile system.

2726
2727

2732
2733

2728
2729

2753
2754

2730
2731

2735

2734

382

2738

2736

2737

Use the Loop car with 29 or 40 mm Carbo T2 AirBlocks®

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

Pivoting shackle and toggle cars have low pivot points to handle nonvertical loads

The 382 Radial Traveler car has a curved ball race to fit curved track—perfect for radial vangs on boats like the Star

Part No.	Description	Length in	Length mm	Width in	Width mm	Car body Height in	Car body Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
382	1250/Radial/shackle‡	4⅛	105	2¼	57	15/16	24	6.24	177	1250	567	2500	1134
2726	Pivoting shackle	2⅞	73	2¼	57	15/16	24	4.64	132	500	227	2500	1134
2727	High-load/pivoting shackle	2⅞	73	2¼	57	15/16	24	4.64	132	850	386	2500	1134
2728	Fixed sheaves/eyestrap	2⅞	73	2¼	57	15/16	24	5.6	159	500	227	2500	1134
2729	High-load/fixed sheaves/eyestrap	2⅞	73	2¼	57	15/16	24	5.6	159	850	386	2500	1134
2730	Stand-up toggle	2⅞	73	2¼	57	15/16	24	5.12	145	500	227	2500	1134
2731	High-load/stand-up toggle	2⅞	73	2¼	57	15/16	24	5.12	145	850	386	2500	1134
2732	Loop	2⅞	73	2¼	57	15/16	24	4	113	500	227	2500	1134
2733	High-load/Loop	2⅞	73	2¼	57	15/16	24	4	113	850	386	2500	1134
2734	High-load/fixed sheaves/adjustable cam arms	6¾	171	3⅛	80	15/16	24	14.88	422	850	386	2500	1134
2735	1250/Pivoting toggle	4⅛	105	2¼	57	15/16	24	6.72	191	1250	567	2500	1134
2736	1250/Fixed sheaves/eyestrap	4⅛	105	2¼	57	15/16	24	7.04	200	1250	567	2500	1134
2737	1250/Pivoting sheaves/eyestrap	4⅛	105	2¼	57	15/16	24	9.6	272	1250	567	2500	1134
2738	1250/Pivoting sheaves/swivel cam	4⅛	105	6⅛	156	15/16	24	19.84	562	1250	567	2500	1134
2753	Pivoting shackle/control tangs	2⅞	73	2¼	57	15/16	24	5.28	150	500	227	2500	1134
2754	High-load/pivoting shackle/control tangs	2⅞	73	2¼	57	15/16	24	5.28	150	850	386	2500	1134

See page 14 for replacement balls ‡For horizontal curved track only—24"–40" (600–800 mm) radius

Genoa Lead Cars: 22 mm Small Boat

CB adjustable genoa lead cars feature recirculating Torlon® ball bearings for easy adjustment under full sheet loads.

Stainless steel sheave carriers pivot 60 degrees to accommodate changing lead angles. Wide sheave holds two sheets during sail changes.

Cars feature car-mounted, axle-bearing control blocks for strength and durability. All CB genoa lead cars are compatible with Harken end controls. Kits are available for purchase upgrades up to 4:1.

Performance CB Adjustable

Sheave carriers feature high-performance sheaves with ball bearings to handle radial loads, while sideload balls handle thrust loads for easy trimming and fore and aft adjustment.

ESP CB Adjustable & Pinstop

Sheave carriers feature ESP axle-bearing sheaves.

Use pinstop cars in applications where lead positions change infrequently.

Pinstop and ball bearing genoa lead cars both run on ball bearing track, allowing you to upgrade your system without changing track.

Flexible, lightweight, lashing attachment allows block to articulate freely on 2750 jib car.

GENOA LEADS Q&A

WHY DO I NEED ADJUSTABLE GENOA LEAD CARS?

If you are a cruiser, ball bearing genoa lead cars with multipart purchases allow you to quickly adjust loaded headsail leads from the cockpit. If you race, ball bearing lead cars let you quickly change your sheeting angle, adjusting the twist to optimize sail shape.

G2227B G2247B G222B G224B

PERFORMANCE CB ADJUSTABLE

ESP CB ADJUSTABLE

2750 G226S

ESP PINSTOP

For sheet-loading formulas see page 16.

End Control Selection Guide

Purchase	Car	End Control
2:1	G2227B/G222B	2740
4:1	G2247B/G224B	2742

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
Performance CB Adjustable														
G2227B	Small Boat/sheave	1 3/4	45	4 1/8	105	2 1/4	57	13.71	389	1250	567	2500	1134	22 mm
G2247B	Small Boat/2 sheave	1 3/4	45	4 1/8	105	2 1/4	57	14.3	405	1250	567	2500	1134	22 mm
ESP CB Adjustable														
G222B	Small Boat/sheave	1 1/2	38	4 1/8	105	2 1/4	57	12.87	365	1250	567	2500	1134	22 mm
G224B	Small Boat/2 sheaves	1 1/2	38	4 1/8	105	2 1/4	57	13.33	378	1250	567	2500	1134	22 mm
ESP Pinstop														
2750	Small Boat jib lead/pinstop	—	—	3 7/16	87.5	1 5/16	33	4.6	130	1100	500	2200	1000	2751
G226S	Small Boat/pinstop	1 1/2	38	3 3/4	95	1 3/8	35	9.59	272	1250	567	2500	1134	2751

See page 14 for replacement balls

CB Track & Accessories: 22 mm Small Boat

Variable Hole Spacing Track

CB (Captive Ball) high-beam variable hole spacing track is used to span cockpits or other unsupported areas. Track features internal slide bolts, allowing new track to be installed without drilling additional holes.

High-Beam Drilled Track

374 and 2725 high-beam track is predrilled with holes for mounting fasteners.

Low-Beam Track

Low-beam track is available with or without pinstop holes.

Endstops/Trim Caps

When end controls are not used, add 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 92.

22 mm High-Beam Track Spanning Chart

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

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

Part No.	Description	Length ft/in	Length m	Hole spacing in	Hole spacing mm	Weight oz	Weight g	Fasteners in	Fasteners mm	Low-load/ high-load endstop*‡	Line-shedding endstop‡	Splice link/ Trim cap‡
Metric Track												
2720.600mm	Low-beam	1'11 5/8"	0.6	3 15/16	100	9.1	258	10FH	5FH	173/E2200	446**	2724/2722
2720.1m	Low-beam	3'3 3/8"	1	3 15/16	100	15.2	430	10FH	5FH	173/E2200	446**	2724/2722
2720.1.2m	Low-beam	3'11 1/4"	1.2	3 15/16	100	18.2	516	10FH	5FH	173/E2200	446**	2724/2722
2720.1.5m	Low-beam	4'11 1/16"	1.5	3 15/16	100	22.8	645	10FH	5FH	173/E2200	446**	2724/2722
2720.1.8m	Low-beam	5'10 13/16"	1.8	3 15/16	100	27.3	775	10FH	5FH	173/E2200	446**	2724/2722
2720.2.1m	Low-beam	6'10 11/16"	2.1	3 15/16	100	31.9	904	10FH	5FH	173/E2200	446**	2724/2722
2720.2.5m	Low-beam	8'2 7/16"	2.5	3 15/16	100	38	1077	10FH	5FH	173/E2200	446**	2724/2722
2720.3m	Low-beam	9'10 1/16"	3	3 15/16	100	45.5	1291	10FH	5FH	173/E2200	446**	2724/2722
2720.3.6m	Low-beam	11'9 3/4"	3.6	3 15/16	100	54.6	1549	10FH	5FH	173/E2200	446**	2724/2722
2720.6m	Low-beam***	19'8 1/4"	6	3 15/16	100	91.1	2582	10FH	5FH	173/E2200	446**	2724/2722
2725.1m	High-beam	3'3 3/8"	1	3 15/16	100	21	586	10FH	5FH	174/264	—	—/2723
2725.1.2m	High-beam	3'11 1/4"	1.2	3 15/16	100	24.5	695	10FH	5FH	174/264	—	—/2723
2725.1.5m	High-beam	4'11 1/16"	1.5	3 15/16	100	31	879	10FH	5FH	174/264	—	—/2723
2725.1.8m	High-beam	5'10 13/16"	1.8	3 15/16	100	37	1055	10FH	5FH	174/264	—	—/2723
2725.3.6m	High-beam***	11'9 3/4"	3.6	3 15/16	100	74	2110	10FH	5FH	174/264	—	—/2723
2751.600mm	Low-beam/pinstop holes	1'11 5/8"	.6	3 15/16	100	8.9	252	#10	5	173/E2200	446**	2724/2722
2751.1m	Low-beam/pinstop holes	3'3 3/8"	1	3 15/16	100	14.8	420	#10	5	173/E2200	446**	2724/2722
2751.1.5m	Low-beam/pinstop holes	4'11 1/16"	1.5	3 15/16	100	22.2	629	#10	5	173/E2200	446**	2724/2722
2751.2m	Low-beam/pinstop holes	6'6 3/4"	2	3 15/16	100	29.6	838	#10	5	173/E2200	446**	2724/2722
2751.3.6m	Low-beam/pinstop holes	11'9 3/4"	3.6	3 15/16	100	53.3	1510	#10	5	173/E2200	446**	2724/2722
Variable Hole Spacing Track												
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 13/16"	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/E2200	446**	2724/2722
373.12	Low-beam	12	3.66	4	102	56	1574	10FH	5FH	173/E2200	446**	2724/2722
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

*#10 (5 mm) FH fasteners ‡Sold in pairs **Fastens directly to deck ***Contact Harken®

173 174

2722 2723

E2200

264

2724

446

End Controls & Accessories: 22 mm Small Boat

Performance end controls have an integrated bar for dead-ending control line

Performance End Controls

High-performance end controls allow the installation of 2:1 to 4:1 purchases. Designed for high-performance, free-running systems, Carbo control blocks with Delrin® ball bearings let cars instantly adjust and release under load. Assemblies secure to track, eliminating additional holes. Tough one-piece bases and cam arms are machined from a single piece of aluminum. Compact, low-friction block components combined with Carbo Cam® cleats keep weight minimal.

ESP End Controls

ESP end controls are value-oriented options for the installation of 2:1 to 5:1 systems. Designed for strength and durability, controls feature axle bearing sheaves with sideload ball bearings.

Accessories

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.

Stand-Up Toggles

Stand-up toggles hold blocks upright on travelers. Stand-up toggles with control tangs allow attachment of control blocks.

Refer to chart below for mainsheet block compatibility. See page 116-117 for control block purchase selection guide.

2747
2748

STAND-UP TOGGLES

2749

384

175

ACCESSORIES

2740

2741

2742

2743

2755

PERFORMANCE END CONTROLS

E2230

E2250

ESP END CONTROLS

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Weight (pair) oz	Weight (pair) g	Max line Ø in	Max line Ø mm	Height above track in	Height above track mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Purchase
Performance End Controls																		
2740	Single sheave (pair)	1 1/8	29	3 7/16	87	1 3/8	35	8	228	5/16	8	1 1/32	26	300	136	600	272	2:1
2741	Single sheave/471 Carbo-Cam® (pair)	1 1/8	29	3 7/16	87	3 1/8	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 7/16	87	1 3/8	35	10.3	292	5/16	8	1 5/8	41	600	272	1200	544	3:1/4:1
2743	Double sheave/471 Carbo-Cam® (pair)	1 1/8	29	3 7/16	87	3 1/8	80	13	370	1/4	6	1 5/8	41	600	272	1200	544	3:1/4:1
2755	Pinstop*	—	—	1 5/8	42	1 3/8	35	1.6**	45**	—	—	13/16	21	—	—	—	—	—
ESP End Controls																		
E2230	Single sheave/dead-end (pair)	1	25	3 1/2	89	1 1/2	38	4.4	126	5/16	8	1	25	600	272	1200	544	1:1/2:1
E2250	Double sheave/dead-end (pair)	1	25	3 1/2	89	1 1/2	38	5.0	142	5/16	8	1 5/8	41	600	272	1200	544	3:1/4:1
Accessories																		
175	Coupler	—	—	3 11/16	94	2 3/16	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	—	—	1250	567	2500	1134	—
2749	Control tangs (pair)	—	—	7/8	23	—	—	.8	21	—	—	—	—	600	272	1200	544	2:1

*Use with 2751 Small Boat pinstop track **Weight each ‡Fits 382 for radial vang system. Do not use with controls if radius is tight. Max wire Ø = 3/16" (5 mm)

Stand-Up Toggles

Part No.	Description	Pin Ø in	Pin Ø mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Accepts mainsheet blocks
2747	Small stand-up toggle/control tangs	3/16	5	1 13/16	45	1.5	43	1250	567	40 mm double & triple Carbo AirBlocks®, 57 mm single & fiddle Carbo AirBlocks®
2748	Large stand-up toggle/control tangs	1/4	6	2	51	2	48	1250	567	57 mm double & triple Carbo AirBlocks®

CB Traveler Cars: 27 mm Midrange

Midrange CB 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. Ball bearings run on machined-aluminum, Hardkote-anodized races for smooth trimming and easing. Stainless steel wire guides keep balls captive when the car is off the track. Shackle/toggle cars have low pivot points to handle nonvertical loads.

Cars with car-mounted controls come preassembled with all components. When ordering please specify control block purchase from 1:1 to 4:1.

T2703B and T2703B.HL cars feature stand-up toggles with ears, allowing attachment of separate Carbo control blocks for a free-running, high-performance system.

T2705B and T2705B.HL lightweight soft-attachment cars provide a variety of rigging solutions—athwartship jib or mainsheet systems, for example. Lash Carbo T2™ blocks to the car for traveler control.

TECH TIP

McLube OneDrop™ on traveler track repels salt and dirt so ball bearing cars roll even more smoothly.

T2703B

T2705B

T2701B

T2721B

T2731B

T2741B

T2702B

T2722B

T2732B

T2742B

27 MM MIDRANGE STANDARD

Part No.	Description	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
27 mm Midrange Standard													
T2701B	Car/shackle	4 1/4	108	2 3/4	70	2	50	11.04	313	1800	816	5000	2268
T2702B	Car/stand-up toggle	4 1/4	108	2 3/4	70	3 1/8	80	13.6	386	1800	816	5000	2268
T2703B	Car/stand-up toggle/ears	4 1/4	108	2 3/4	70	3 1/8	80	14.4	408	1800	816	5000	2268
T2705B	Car/soft attachment	4 1/4	108	2 3/4	70	1 1/2	38	10.06	285	1800	816	5000	2268
T2721B	Car/shackle/2:1 ESP controls	4 1/4	108	3	76	2	50	11.04	313	1800	816	5000	2268
T2722B	Car/stand-up toggle/2:1 ESP controls	4 1/4	108	2 3/4	70	3 1/8	80	13.6	386	1800	816	5000	2268
T2731B	Car/shackle/3:1 ESP controls	4 1/4	108	3 7/32	81	2	50	11.04	313	1800	816	5000	2268
T2732B	Car/stand-up toggle/3:1 ESP controls	4 1/4	108	3 1/4	82	3 1/8	80	13.6	386	1800	816	5000	2268
T2741B	Car/shackle/4:1 ESP controls	4 1/4	108	3 3/8	86	2	50	11.04	313	1800	816	5000	2268
T2742B	Car/stand-up toggle/4:1 ESP controls	4 1/4	108	3 3/8	86	3 1/8	80	13.6	386	1800	816	5000	2268

See page 14 for replacement balls

CB Traveler Cars: 27 mm Midrange High-Load

Sun Odyssey 42i — Jeanneau photo

T2703B.HL

T2705B.HL

T2701B.HL

T2721B.HL

T2731B.HL

T2741B.HL

T2702B.HL

T2722B.HL

T2732B.HL

T2742B.HL

T2704B.HL

T2744B.HL

27 MM MIDRANGE HIGH-LOAD

Part No.	Description	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
27 mm Midrange High-Load													
T2701B.HL	High-load car/shackle	5 9/16	132	2 3/4	70	2	50	12.48	354	2300	1043	5000	2268
T2702B.HL	High-load car/stand-up toggle	5 9/16	132	2 3/4	70	3 1/8	80	15.04	426	2300	1043	5000	2268
T2703B.HL	High-load car/stand-up toggle/ears	5 9/16	132	2 3/4	70	3 1/8	80	15.84	449	2300	1043	5000	2268
T2704B.HL	2 Cars/2 stand-up toggles	8 3/4	223	2 3/4	70	3 1/8	80	25.6	726	3600	1633	7200	3266
T2705B.HL	High-load car/soft attachment	5 9/16	132	2 3/4	70	1 1/2	38	12.28	348	2300	1043	5000	2268
T2721B.HL	High-load car/shackle/2:1 ESP controls	5 9/16	132	3	76	2	50	12.48	354	2300	1043	5000	2268
T2722B.HL	High-load car/stand-up toggle/2:1 ESP controls	5 9/16	132	2 3/4	70	3 1/8	80	15.04	426	2300	1043	5000	2268
T2731B.HL	High-load car/shackle/3:1 ESP controls	5 9/16	132	3 7/32	81	2	50	12.48	354	2300	1043	5000	2268
T2732B.HL	High-load car/stand-up toggle/3:1 ESP controls	5 9/16	132	3 1/4	82	3 1/8	80	15.04	426	2300	1043	5000	2268
T2741B.HL	High-load car/shackle/4:1 ESP controls	5 9/16	132	3 3/8	86	2	50	12.48	354	2300	1043	5000	2268
T2742B.HL	High-load car/stand-up toggle/4:1 ESP controls	5 9/16	132	3 3/8	86	3 1/8	80	15.04	426	2300	1043	5000	2268
T2744B.HL	2 cars/2 stand-up toggles/4:1 ESP controls	8 3/4	223	2 3/4	70	3 1/8	80	28.1	798	3600	1633	7200	3266

See page 14 for replacement balls

Genoa Lead Cars: 27 mm Midrange

CB adjustable genoa lead cars feature recirculating Torlon® ball bearings for easy adjustment under full sheet loads.

Stainless steel sheave carriers pivot 60 degrees to accommodate changing lead angles. Wide sheave holds two sheets during sail changes.

Cars feature car-mounted, axle-bearing control blocks for strength and durability. All CB genoa lead cars are compatible with Harken end controls. Kits are available for purchase upgrades up to 4:1.

Performance CB Adjustable

Sheave carriers feature high-performance sheaves with roller bearings to handle radial loads, while sideload balls handle thrust loads for easy trimming and fore and aft adjustment.

ESP CB Adjustable & Pinstop

Sheave carriers feature ESP axle-bearing sheaves.

Use pinstop cars in applications where lead positions change infrequently.

Pinstop and ball bearing genoa lead cars both run on ball bearing track, allowing you to upgrade your system without changing track.

G276S

G276S.HL

ESP PINSTOP

Sydney 36CR, Azzura Marine — Azzura Marine photo

G272B G273B G274B G273B.HL G274B.HL

ESP CB ADJUSTABLE

G2727B G2737B G2747B G2737B.HL G2747B.HL

PERFORMANCE CB ADJUSTABLE

Genoa Lead Cars: 27 mm Midrange

Dehler 34, Simonis Voogd — Dehler Yachts photo

For sheet-loading formulas see page 16.

End Control Selection Guide

Purchase	Car	End Control
2:1	G272B/G2727B	E2730
3:1	G273B/G273B.HL/G2737B/G2737B.HL	E2750
4:1	G274B/G274B.HL/G2747B/G2747B.HL	E2750

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
Performance CB Adjustable														
G2727B	Midrange/sheave	2 1/2	64	5 3/16	132	2 3/4	70	27.52	780	2300	1043	5000	2268	R27
G2737B	Midrange/sheave/dead-end	2 1/2	64	5 3/16	132	2 3/4	70	28.4	805	2300	1043	5000	2268	R27
G2737B.HL	High-load Midrange/sheave/dead-end	2 1/2	64	9	229	2 3/4	70	39.25	1113	3600	1632	7200	3266	R27
G2747B	Midrange/2 sheave	2 1/2	64	5 3/16	132	2 3/4	70	29.76	844	2300	1043	5000	2268	R27
G2747B.HL	High-load Midrange/2 sheave	2 1/2	64	9	229	2 3/4	70	40.64	1152	3600	1632	7200	3266	R27
ESP CB Adjustable														
G272B	Midrange/sheave	2 1/4	57	5 3/16	132	2 3/4	70	23.25	659	2300	1043	5000	2268	R27
G273B	Midrange/sheave/dead-end	2 1/4	57	5 3/16	132	2 3/4	70	24.06	682	2300	1043	5000	2268	R27
G273B.HL	High-load Midrange/sheave/dead-end	2 1/4	57	9	229	2 3/4	70	34.6	981	3600	1632	7200	3266	R27
G274B	Midrange/2 sheaves	2 1/4	57	5 3/16	132	2 3/4	70	25.22	718	2300	1043	5000	2268	R27
G274B.HL	High-load Midrange/2 sheaves	2 1/4	57	9	229	2 3/4	70	35.76	1017	3600	1632	7200	3266	R27
ESP Pinstop														
G276S	Midrange/pinstop	2	51	5	127	1 5/8	41	17.92	508	3000	1361	6000	2722	R27
G276S.HL	High-load Midrange/pinstop	2	51	7 1/4	184	1 5/8	41	22.93	650	3600	1632	7200	3264	R27

See page 14 for replacement balls

CB Track & Accessories: 27 mm Midrange

Variable Hole Spacing Track

CB (Captive Ball) high-beam variable hole spacing track is used to span cockpits or other unsupported areas. Track features internal slide bolts, allowing new track to be installed without drilling additional holes.

Low-Beam Track

All Midrange track is predrilled with holes for mounting fasteners and one pinstop hole between each fastener.

Endstops/Trim Caps

When end controls are not used, add 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 92.

ENDSTOPS

TRIM CAPS

SPLICE LINKS

VARIABLE HOLE SPACING

LOW-BEAM

Track Bending		
	Minimum radius	
Car	ft	m
T27xxB/T27x4B.HL/1635	8	2.44
T27xxB.HL/1636	9	2.73

Part No.	Description	Length ft/in	Length m	Mounting hole spacing in	Mounting hole spacing mm	Weight oz	Weight kg	Fasteners in	Fasteners mm	Endstop**/ trim cap**	Splice link/ track riser‡
Metric Track											
R27.1m	Low-beam/pinstop holes	3'3 3/8"	1	3 15/16	100	22	0.62	5/16FH	8FH	E2700/1621	1619/—
R27.1.2m	Low-beam/pinstop holes	3'11 1/4"	1.2	3 15/16	100	26.46	0.75	5/16FH	8FH	E2700/1621	1619/—
R27.1.5m	Low-beam/pinstop holes	4'11 1/16"	1.5	3 15/16	100	33	0.93	5/16FH	8FH	E2700/1621	1619/—
R27.1.8m	Low-beam/pinstop holes	5'10 13/16"	1.8	3 15/16	100	39	1.11	5/16FH	8FH	E2700/1621	1619/—
R27.2m	Low-beam/pinstop holes	6'6 3/4"	2	3 15/16	100	44	1.24	5/16FH	8FH	E2700/1621	1619/—
R27.2.5m	Low-beam/pinstop holes	8'2 7/16"	2.5	3 15/16	100	55	1.56	5/16FH	8FH	E2700/1621	1619/—
R27.3m	Low-beam/pinstop holes	9'10 1/16"	3	3 15/16	100	66	1.87	5/16FH	8FH	E2700/1621	1619/—
R27.3.6m	Low-beam/pinstop holes	11'9 3/4"	3.6	3 15/16	100	79	2.24	5/16FH	8FH	E2700/1621	1619/—
R27.6m	Low-beam/pinstop holes	19'8 1/4"	6	3 15/16	100	132	3.74	5/16FH	8FH	E2700/1621	1619/—
Variable Hole Spacing Track											
R27HB.1m	High-beam	3'3 3/8"	1	Slide bolt		57	1.63	1/4HH	6HH	1523/1622	—/1849
R27HB.1.5m	High-beam	4'11 1/16"	1.5	Slide bolt		86	2.45	1/4HH	6HH	1523/1622	—/1849
R27HB.1.8m	High-beam	5'10 7/8"	1.8	Slide bolt		104	2.93	1/4HH	6HH	1523/1622	—/1849
R27HB.2.5m	High-beam	8'2 7/16"	2.5	Slide bolt		144	4.08	1/4HH	6HH	1523/1622	—/1849
R27HB.3.6m	High-beam***	11'9 3/4"	3.6	Slide bolt		207	5.87	1/4HH	6HH	1523/1622	—/1849
Retrofit 4" Hole Spacing Track											
1602.8	Low-beam	8	2.44	4	102	56	1588	1/4FH	6FH	E2700/1621	1619/—
1602.12	Low-beam	12	3.66	4	102	83	2354	1/4FH	6FH	E2700/1621	1619/—

*1st hole 50 mm (2") **Sold in pairs. Trim caps not used with E27 end controls ‡Track riser 1849 shown on page 106 ***Contact Harken®

End Controls: 27 mm Midrange

Performance End Controls

High-performance end controls allow the installation of 2:1 to 5:1 purchases. Designed for high-performance, free-running systems, Carbo control blocks with Delrin® ball bearings let cars instantly adjust and release under load. Assemblies secure to track, eliminating additional holes. Tough one-piece bases and cam arms are machined from a single piece of aluminum. Compact, low-friction block components combined with Carbo Cam® cleats keep weight minimal.

ESP End Controls

ESP end controls are value-oriented options for the installation of 2:1 to 5:1 systems. Designed for strength and durability, controls feature axle bearing sheaves with sideload ball bearings. Carbo-Cam® cleats provide precise cleating for the perfect traveler adjustment.

Use E2750HB double-sheave end controls for cabintop travelers with cars using 3:1 or 4:1 purchases. Contact Harken® to order special length track with mounting holes for E2750HB end controls.

Performance end controls have an integrated bar for dead-ending control line

Use E2750HB double-sheave ESP end controls for cabintop travelers where lines lead to the aft edge of the cabintop.

PERFORMANCE END CONTROLS

ESP END CONTROLS

Control Purchase Recommendations				
Sail area				
End-boom sheeting		Mid-boom sheeting		
ft²	m²	ft²	m²	Purchase
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 in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Weight (pair) oz	Weight (pair) g	Max line Ø in	Max line Ø mm	Height above track in	Height above track mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Purchase
Performance End Controls																		
1631	Single sheave (pair)***	1 9/16	40	4 1/2	114	1 15/16	49	20	574	3/8	10	1 5/16	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 5/16	33	—	—	—	—	—
ESP End Controls																		
E2730	Single sheave/dead-end (pair)	1 3/8	35	4 13/16	122	1 13/16	45	19.54	554	3/8	10	1 7/16	36	1800	816	3600	1633	1:1/2:1
E2750HB	High-beam double sheave (pair)*	1 9/16	40	4 1/4	108	1 9/16	40	23.4	662	3/8	10	1	25	600	272	1200	544	3:1/4:1
E2750	Double sheave/dead-end (pair)	1 3/8	35	4 13/16	122	1 13/16	45	24.2	686	3/8	10	2 1/4	56	1800	816	3600	1633	3:1/4:1
E2756	Double sheave/dead-end/Carbo-Cam® cleat (pair)**	1 3/8	35	3 3/4	95	3 13/16	96	23.4	1278	3/8	10	2 1/4	56	600	272	1500	680	4:1

*Requires high-beam track **Maximum working loads and breaking loads based on cam strengths. ***Includes 5/16" (8 mm) RH fasteners

Accessories: 27 mm Midrange

Stand-Up Toggles

Stand-up toggles hold blocks upright on travelers. Stand-up toggles with control tangs allow attachment of control blocks.

Refer to chart below for mainsheet block compatibility. See page 116-117 for control block purchase selection guide.

Control Block Kits

Kits are available for Midrange cars with ESP controls and ESP end controls to upgrade purchase from 1:1 to 4:1.

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.

1561

1638

Control blocks attach to ears to reduce load on car.

Toggles have a low pivot point to handle mainsheet loads up to 40 degrees from vertical, while allowing cars to roll freely.

Stand-Up Toggles

Part No.	Description	Pin Ø in	Pin Ø mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Accepts mainsheet blocks
1561	Stand-up toggle	1/4 / 5/16	6/8	2 5/16	59	3.5	99	2500	1134	75 mm Carbo singles, doubles, & triples, 3.00" Small Boat single, Fiddle, Midrange blocks, 57 mm AirBlocks®
1638	Stand-up toggle/control tangs	1/4 / 5/16	6/8	2 5/16	59	4.4	124	2500	1134	75 mm Carbo singles, doubles, & triples, 3.00" Small Boat single, Fiddle, Midrange blocks, 57 mm AirBlocks®

T27KIT

Control Block Kits

Part No.	Description	Includes
T27KIT	ESP Purchase upgrade kit	Kit includes (4) 25 mm control blocks, (2) Small Boat dead-ends, (8) M5 fasteners

	in	mm		in	mm
A	6 7/8	175	**D**	4 5/16	110
B	9 9/16	243	**E**	1 3/4	45
C	6 11/16	170	**F**	3	76

Track Risers

Part No.	Description	Fits	Weight oz	Weight g
1849	Track riser (pair)	R27HB/R32HB	131.2	3720

CB Traveler Cars: 32 mm Big Boat

Big Boat CB traveler cars handle high loads on boats from 32 to 50 ft (9.5 m to 15 m) and up to 70 ft (21 m) with coupled cars.

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 balls captive when the car is off the track. Shackle/toggle cars have low pivot points to handle nonvertical loads.

Cars with car-mounted controls come preassembled with all components. When ordering please specify control block purchase from 1:1 to 4:1.

T3203B and T3203B.HL cars feature stand-up toggles with ears, allowing attachment of separate Carbo control blocks for a free-running, high-performance system.

T3205B and T3205B.HL lightweight soft-attachment cars provide a variety of rigging solutions—athwartship jib or mainsheet systems, for example. Lash Carbo T2™ or Black Magic® Loop blocks to the car for traveler control.

T3203B

T3205B

TECH TIP

Remove the shackle on the block and insert the block (without shackle) directly to the stand-up toggle. Shackle-to-shackle attachments will not hold the block rigid for a fair lead, but will flop around on the deck.

T3201B

T3221B

T3231B

T3241B

T3202B

T3222B

T3232B

T3242B

32 MM BIG BOAT STANDARD

Part No.	Description	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
32 mm Big Boat Standard													
T3201B	Car/shackle	5 3/8	136	3 11/32	85	2 5/8	73	20	567	3000	1361	7000	3175
T3202B	Car/stand-up toggle	5 3/8	136	3 11/32	85	3 1/2	89	24.32	689	3000	1361	7000	3175
T3203B	Car/stand-up toggle/ears	5 3/8	136	3 11/32	85	3 1/2	89	25.28	717	3000	1361	7000	3175
T3205B	Car/soft attachment	5 3/8	136	3 11/32	85	2	50	20.43	579	3000	1361	7000	3175
T3221B	Car/shackle/2:1 ESP controls	5 3/8	136	3 5/8	98	2 5/8	73	20	567	3000	1361	7000	3175
T3222B	Car/stand-up toggle/2:1 ESP controls	5 3/8	136	3 5/8	98	2 5/8	73	24.32	689	3000	1361	7000	3175
T3231B	Car/shackle/3:1 ESP controls	5 3/8	136	4	101	2 5/8	73	20	567	3000	1361	7000	3175
T3232B	Car/stand-up toggle/3:1 ESP controls	5 3/8	136	4	101	3 1/2	89	24.32	689	3000	1361	7000	3175
T3241B	Car/shackle/4:1 ESP controls	5 3/8	136	4 3/8	111	3 1/2	89	20	567	3000	1361	7000	3175
T3242B	Car/stand-up toggle/4:1 ESP controls	5 3/8	136	4 3/8	111	3 1/2	89	24.32	689	3000	1361	7000	3175

See page 14 for replacement balls

CB Traveler Cars: 32 mm Big Boat High-Load

Acadia — *Bob Grieser photo*

32 MM BIG BOAT HIGH-LOAD

Part No.	Description	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
32 mm Big Boat High-Load													
T3201B.HL	High-load car/shackle	7 7/16	188	3 11/32	85	2 5/8	73	24	680	4500	2041	9000	4081
T3202B.HL	High-load car/stand-up toggle	7 7/16	188	3 11/32	85	3 1/2	89	28.64	812	4500	2041	9000	4081
T3203B.HL	High-load car/stand-up toggle/ears	7 7/16	188	3 11/32	85	3 1/2	89	29.44	835	4500	2041	9000	4081
T3205B.HL	High-load car/soft attachment	7 7/16	188	3 11/32	85	2	50	29.42	834	4500	2041	9000	4081
T3221B.HL	High-load car/shackle/2:1 ESP controls	7 7/16	188	3 5/8	98	2 5/8	73	24	680	4500	2041	9000	4081
T3222B.HL	High-load car/stand-up toggle/2:1 ESP controls	7 7/16	188	3 5/8	98	2 5/8	73	28.64	812	4500	2041	9000	4081
T3231B.HL	High-load car/shackle/3:1 ESP controls	7 7/16	188	4	101	2 5/8	73	24	680	4500	2041	9000	4081
T3232B.HL	High-load car/stand-up toggle/3:1 ESP controls	7 7/16	188	4	101	3 1/2	89	28.64	812	4500	2041	9000	4081
T3241B.HL	High-load car/shackle/4:1 ESP controls	7 7/16	188	4 3/8	111	3 1/2	89	24	680	4500	2041	9000	4081
T3242B.HL	High-load car/stand-up toggle/4:1 ESP controls	7 7/16	188	4 3/8	111	3 1/2	89	28.64	812	4500	2041	9000	4081
T3243B.HL	High-load car/stand-up toggle/ears/4:1 ESP controls*	7 7/16	188	4 3/8	111	3 1/2	89	30	850	4500	2041	9000	4081

See page 14 for replacement balls *Add 2650 blocks to stand-up toggle ears for 6:1 purchase or dead-end on toggle ears for a 5:1. Use with 3197 end control.

CB Traveler Cars: 32 mm Big Boat

32 MM BIG BOAT STANDARD

TRAVELER Q&A

HOW DO I KEEP FAIR TRAVELER LEADS AND STILL ADJUST THEM FROM ANYWHERE IN THE COCKPIT?

Swiveling cam cleats can increase working angles, some to nearly 180 degrees. This is an excellent option that will allow a fair lead to where you happen to be. Harken X-Treme Angle Fairleads, which cleat and uncleat at up to 90 degrees, can also help you deal with poor leads.

32 MM BIG BOAT HIGH-LOAD

Part No.	Description	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
32 mm Big Boat Standard													
T3204B	Car/2 stand-up toggles	9 1/8	231	3 11/32	85	3 1/2	89	41.12	1166	5000	2268	10000	4536
T3224B	Car/2 stand-up toggles/2:1 ESP controls	9 1/8	231	3 5/8	98	3 1/2	89	41.12	1166	5000	2268	10000	4536
T3234B	Car/2 stand-up toggles/3:1 ESP controls	9 1/8	231	4	101	3 1/2	89	41.12	1166	5000	2268	10000	4536
T3244B	Car/2 stand-up toggles/4:1 ESP controls	9 1/8	231	4 3/8	111	3 1/2	89	41.12	1166	5000	2268	10000	4536
32 mm Big Boat High-Load													
T3204B.HL	2 High-load cars/2 Stand-up toggles	15	381	4 3/8	111	3 1/2	89	66.4	1882	9000	4082	18000	8163
T3224B.HL	2 High-load cars/2 stand-up toggles/2:1 ESP controls	15	381	3 5/8	98	3 1/2	89	66.4	1882	9000	4082	18000	8163
T3234B.HL	2 High-load cars/2 stand-up toggles/3:1 ESP controls	15	381	4	101	3 1/2	89	66.4	1882	9000	4082	18000	8163
T3244B.HL	2 High-load cars/2 stand-up toggles/4:1 ESP controls	15	381	4 3/8	111	3 1/2	89	66.4	1882	9000	4082	18000	8163

See page 14 for replacement balls

Genoa Lead Cars: 32 mm Big Boat

CB adjustable genoa lead cars feature recirculating Torlon® ball bearings for easy adjustment under full sheet loads.

Stainless steel sheave carriers pivot 60 degrees to accommodate changing lead angles. Wide sheave holds two sheets during sail changes.

Cars feature car-mounted, axle-bearing control blocks for strength and durability. All CB genoa lead cars are compatible with Harken end controls. Kits are available for purchase upgrades up to 4:1.

Performance CB Adjustable

Sheave carriers feature high-performance sheaves with roller bearings to handle radial loads, while sideload balls handle thrust loads for easy trimming and fore and aft adjustment.

ESP CB Adjustable & Pinstop

Sheave carriers feature ESP axle-bearing sheaves.

Use pinstop cars in applications where lead positions change infrequently.

Pinstop and ball bearing genoa lead cars both run on ball bearing track, allowing you to upgrade your system without changing track.

PERFORMANCE CB ADJUSTABLE

ESP CB ADJUSTABLE

ESP PINSTOP

For sheet-loading formulas see page 16.

End Control Selection Guide

Purchase	Car	End Control
2:1	HC4928	E3230.HL
3:1	G323B/G3237B	E3250.HL/3174
4:1	G324B/G3247B	E3250.HL/3174

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
Performance CB Adjustable														
G3237B	Big Boat/sheave/dead-end	3	76	9 1/8	231	3 3/8	85	63.27	1794	5000	2268	10000	4536	R32
G3247B	Big Boat/2 sheave	3	76	9 1/8	231	3 3/8	85	65.12	1846	5000	2268	10000	4536	R32
ESP CB Adjustable														
G323B	Big Boat/sheave/dead-end	3	76	9 1/8	231	3 3/8	85	59.54	1688	5000	2268	10000	4536	R32
G324B	Big Boat/2 sheaves	3	76	9 1/8	231	3 3/8	85	62.14	1761	5000	2268	10000	4536	R32
HC4928	Big Boat/sheave*‡	3	76	10 1/4	260	3 5/16	84	85.43	2422	7716	3500	15432	7000	R32
ESP Pinstop														
G326S	Big Boat/pinstop	3	76	9 1/8	232	2 1/2	64	53.26	1510	5000	2268	10000	4536	R32
C6795	Big Boat/pinstop‡	3	76	10	254	2 1/4	57	61.83	1753	7716	3500	15432	7000	R32
C9815	Big Boat genoa lead**‡	2 15/16	75	10	254	2 3/8	60	56.44	1600	13228	6000	26448	12000	R32

See page 14 for replacement balls *HC4928 has noncaptive ball bearings **50 mm hole spacing required. Car not available with pinstop ‡Contact Harken to request quote and lead time.

CB Track & Accessories: 32 mm Big Boat

Variable Hole Spacing Track
CB (Captive Ball) high-beam variable hole spacing track is used to span cockpits or other unsupported areas. Track features internal slide bolts, allowing new track to be installed without drilling additional holes.

Low-Beam Track
All Big Boat track is predrilled with holes for mounting fasteners and one pinstop hole between each fastener.

Endstops/Trim Caps
When end controls are not used, add 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 92.

ENDSTOPS

TRIM CAPS

SPLICE LINKS

VARIABLE HOLE SPACING

LOW-BEAM

32 mm High-Beam Track Spanning Chart

Track Bending		
	Minimum radius	
Car	ft	m
T32xxB/3176/3177	8	2.44
T32xxB.HL/T32x4B.HL/3178/3179	18	5.49
2 x T32xxB	8	2.44
T32x4B	24	7.32

Part No.	Description	Length ft/in	Length m	Mounting hole spacing* in	Mounting hole spacing* mm	Weight oz	Weight kg	Fasteners in	Fasteners mm	Endstop**/ trim cap**	Splice link/ track riser‡
Metric Track											
R32.1.5m	Low-beam/pinstop holes	4'11 1/16"	1.5	3 15/16	100	52	1.47	3/8FH	10FH	E3200/3157	3153/—
R32.1.8m	Low-beam/pinstop holes	5'10 13/16"	1.8	3 15/16	100	61.73	1.75	3/8FH	10FH	E3200/3157	3153/—
R32.2.1m	Low-beam/pinstop holes	6'10 11/16"	2.1	3 15/16	100	72	2.05	3/8FH	10FH	E3200/3157	3153/—
R32.2.4m	Low-beam/pinstop holes	7'10 1/2"	2.4	3 15/16	100	81	2.3	3/8FH	10FH	E3200/3157	3153/—
R32.3m	Low-beam/pinstop holes	9'10 1/16"	3	3 15/16	100	103	2.93	3/8FH	10FH	E3200/3157	3153/—
R32.3.6m	Low-beam/pinstop holes	11'9 3/4"	3.6	3 15/16	100	124	3.52	3/8FH	10FH	E3200/3157	3153/—
R32.6m	Low-beam/pinstop holes	19'8 1/4"	6	3 15/16	100	207	5.87	3/8FH	10FH	E3200/3157	3153/—
Variable Hole Spacing Track											
R32HB.1.5m	High-beam	4'11 1/16"	1.5	Slide bolt		167	4.74	5/16HH	8HH	562/3158	—/1849
R32HB.1.8m	High-beam	5'10 7/8"	1.8	Slide bolt		201	5.69	5/16HH	8HH	562/3158	—/1849
R32HB.2.5m	High-beam	8'2 7/16"	2.5	Slide bolt		279	7.9	5/16HH	8HH	562/3158	—/1849
R32HB.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											
3159.8	Low-beam	8	2.44	4	102*	89	2.48	5/16FH	8FH	E3200/3157	3153/—
3159.12	Low-beam	12	3.66	4	102*	131	3.71	5/16FH	8FH	E3200/3157	3153/—

*1st hole 50 mm (2") **Sold in pairs. Trim caps not used with E32 end controls ‡Track riser 1849 shown on page 106 ***Contact Harken®

End Controls: 32 mm Big Boat

Performance End Controls

High-performance end controls allow the installation of 2:1 to 5:1 purchases. Designed for high-performance, free-running systems, Carbo control blocks with Delrin® ball bearings let cars instantly adjust and release under load. Assemblies secure to track, eliminating additional holes. Tough one-piece bases and cam arms are machined from a single piece of aluminum. Compact, low-friction block components combined with Cam-Matic® cleats keep weight minimal.

High-Load Performance End Controls

3173 and 3174 high-load controls allow 2:1 to 6:1 purchases on offshore boats with mainsails over 37 m^2 (400 ft^2). Controls feature 57 mm Black Magic® Big Boat ball/roller sheaves and high-load aluminum sideplates.

ESP End Controls

ESP end controls are value-oriented options for the installation of 2:1 to 5:1 systems. Designed for strength and durability, controls feature axle bearing sheaves with sideload ball bearings. Cam-Matic® cleats provide precise cleating for the perfect traveler adjustment.

Use E3250HB double-sheave end controls for cabintop travelers with cars using 3:1 or 4:1 purchases. Contact Harken® to order special length track with mounting holes for E3250HB end controls.

Performance end controls have an integrated bar for dead-ending control line

Use E3250HB double-sheave ESP end controls for cabintop travelers where lines lead to the aft edge of the cabintop.

3168

3169

3170

3197

PERFORMANCE END CONTROLS

3174

3173

HIGH-LOAD PERFORMANCE END CONTROLS

3212

3213

PINSTOPS

E3230
E3230.HL

E3250
E3250.HL

E3256

E3250HB

ESP END CONTROLS

End Controls: 32 mm Big Boat

TECH TIP

27 mm Midrange and 32 mm Big Boat kits are available for purchase upgrades from 1:1 to 4:1.

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

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Weight (pair) oz	Weight (pair) g	Max line Ø in	Max line Ø mm	Height above track in	Height above track mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Purchase
Performance End Controls																		
3168	Single sheave (pair)	1 9/16	40	4 13/16	122	2 1/4	57	27	767	3/8	10	1 7/16	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
3197	Triple sheave/dead-end (pair)	2 1/4/1 3/8	57/35	6 3/4	171	2 1/4	57	32.4	918	3/8	10	2 1/2	64	1500	680	2500	1134	5:1/6:1
High-Load Performance End Controls																		
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
Pinstops																		
3212	Adjustable pinstop	—	—	2 9/16	65	2 1/4	57	8**	227**	—	—	1 5/16	33	—	—	—	—	—
3213	Adjustable pinstop/shackle	—	—	4 7/16	113	2 1/4	57	15.2**	431**	—	—	1 27/32	46	3500	1588	—	—	—
ESP End Controls																		
E3230	Single sheave/dead-end (pair)	1 3/8	35	4 13/16	122	1 13/16	45	19.54	554	3/8	10	1 7/16	36	1800	816	3600	1633	2:1
E3230.HL	High-load/single sheave/dead-end (pair)	1 9/16	40	4 13/16	122	1 13/16	45	23.4	642	3/8	10	1 1/2	40	2500	1134	5000	2268	2:1
E3250HB	High-beam/double sheave (pair)*	2 1/4	57	6 1/8	155	2 1/4	57	54.6	1547	3/8	10	1	25	700	318	1400	635	3:1/4:1
E3250	Double sheave/dead-end (pair)	1 3/8	35	4 13/16	122	1 13/16	45	24.2	686	3/8	10	2 1/4	56	1800	816	3600	1633	3:1/4:1
E3250.HL	High-load/double sheave/dead-end (pair)	1 9/16	40	4 13/16	122	1 13/16	45	27.8	788	3/8	10	2 1/2	64	2500	1134	5000	2268	3:1/4:1
E3256	Double sheave/dead-end/Cam-Matic® cleat (pair)‡	1 3/8	35	3 3/4	95	4 1/8	104	45.08	1278	3/8	10	2 1/4	56	900	408	2300	1040	4:1

*Requires high-beam track **Weight each ‡Maximum working loads and breaking loads based on cam strengths.

Accessories: 32 mm Big Boat

Stand-Up Toggles

Stand-up toggles hold blocks upright on travelers. Stand-up toggles with control tangs allow attachment of control blocks.

Refer to chart below for mainsheet block compatibility. See page 116-117 for control block purchase selection guide.

Couplers

Big Boat couplers join two cars to form high-load assemblies. The high load 580 and 752 couplers fit T3201B and T3201B.HL cars. Use 580 and 752 couplers for single-point attachments. Use single, double, or triple Black Magic® AirBlocks® with the 752 coupler.

Control Block Kits

Kits are available for Big Boat cars with ESP controls and ESP end controls to upgrade purchase from 1:1 to 4:1.

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. See page 106.

1896
1994

598
669

Control blocks attach to ears to reduce load on car.

Toggles have a low pivot point to handle mainsheet loads up to 40 degrees from vertical, while allowing cars to roll freely.

752

3187

580

T32KIT
T32KIT.HL

Stand-Up Toggles

Part No.	Description	Pin Ø in	Pin Ø mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Accepts mainsheet blocks
598	Stand-up toggle/control tangs	5/16	8	2 3/16	56	8.2	231.3	4500	2041	Midrange blocks, 57 mm double & triple AirBlocks®, 75 mm single Black Magic® AirBlocks®
669	Stand-up toggle/high load/control tangs*	5/16	8	2 3/16	56	10.9	308.4	7500	3401	Midrange blocks, 57 mm double & triple AirBlocks®, 75 mm single Black Magic® AirBlocks®
1896	Stand-up toggle	5/16	8	1 5/8	41	5.8	163.3	4500	2041	Midrange blocks, 57 mm double & triple AirBlocks®, 75 mm single Black Magic® AirBlocks®
1994	Stand-up toggle/high load*	5/16	8	1 5/8	41	9.1	258.6	7500	3401	Midrange blocks, 57 mm double & triple AirBlocks®, 75 mm single Black Magic® AirBlocks®

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

Couplers & Control Block Kits

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
580	Coupler	—	—	7 1/4	184	1 1/2	38	21	595	—	—	6000	2722	12000	5443
752	Coupler	—	—	10 3/4	273	1 1/2	38	28	794	—	—	9000	4082	18000	8165
3187	2-Sheave control block*	2 1/4	57	5 3/8	143	—	—	8.8	249	1/2	12	2500	1134	5000	2268
T32KIT	ESP Purchase upgrade kit	Kit includes (4) 35 mm control blocks, (2) Midrange/Big Boat dead-ends, (8) M6 fasteners													
T32KIT.HL	ESP Purchase upgrade kit/high-load*	Kit includes (4) 40 mm control blocks, (2) Big Boat dead-ends, (8) M8 fasteners													

*Fits T32x4B.HL cars

CB Traveler Cars: Windward Sheeting & 3:1 Cars with Cams

Windward Sheeting 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.

3:1 Midrange Cars with Cams

The 1628 and 1629 cars with 365 Carbo-Cams® provide additional mechanical advantage (3:1 versus 2:1) by trimming from the car as opposed to a fixed point at the end of the track. Cars fit 27 mm Midrange CB track.

2744
2745

2746

1635
1636

3176
3178

3177
3179

WINDWARD SHEETING CARS

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

1628
1629

3:1 MIDRANGE CARS WITH CAMS

*Not windward sheeting

2752

1637

3180

WINDWARD SHEETING ADAPTER KITS

Windward Sheeting Adapter Kits

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

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Purchase/control blocks
22 mm Small Boat Windward Sheeting														
2744	Small Boat CB	6 7/8	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 7/8	175	3 1/16	78	24.75	702	5/16	8	850	386	2500	1134	2:1/3:1/2740
2746	Small Boat CB/1250 Series	6 7/8	175	3 1/16	78	26	737	5/16	8	1250	567	2500	1134	2:1/3:1/2740
27 mm Midrange 3:1 Cars with Cams														
1628	Midrange CB/365 Carbo-Cam®*	9 1/8*	232*	4 3/8	111	25.76	730	3/8	10	1800	816	5000	2268	3:1/1631
1629	Midrange CB/high-load/365 Carbo-Cam®*	9 1/8*	232*	4 3/8	111	27.2	771	3/8	10	2300	1043	5000	2268	3:1/1631
27 mm Midrange Windward Sheeting														
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/high-load	6 3/4	171	4 1/8	105	36	1020	3/8	10	2300	1043	5000	2268	3:1/1631 4:1/1631
32 mm Big Boat Windward Sheeting														
3176	Big Boat CB	9 9/16	243	5	127	57	1618	3/8	10	3000	1361	7000	3175	4:1/3168 5:1/6:1/3169
3177	Big Boat CB/standup	9 9/16	243	5	127	62	1747	3/8	10	3000	1361	7000	3175	4:1/3168 5:1/6:1/3169
3178	Big Boat CB/high-load	9 9/16	243	5	127	61	1723	3/8	10	4500	2041	9000	4081	4:1/3168 5:1/6:1/3169
3179	Big Boat CB/high-load/standup	9 9/16	243	5	127	65	1851	3/8	10	4500	2041	9000	4081	4:1/3168 5:1/6:1/3169

See page 14 for replacement balls *Not windward sheeting. Stop knot required to keep car from hitting end control.

Purchase Systems

For a high-performance system, attach Carbo or Black Magic® ball bearing control blocks to stand-up toggle ears, reducing load on the car so bearings don't bind. Pair with Carbo block end controls for reduced friction and a smooth-running system.

ESP systems feature cars with built-in, axle-bearing control blocks. Pair with axle-bearing ESP end controls for durability and strength.

Purchase Selection Guide

Purchase	Car	End control	Block (cars with toggle ears only)
22 mm Small Boat			
2:1	2728 / 2729 / 2730 / 2731 / 2734 / 2753 / 2754 / 2735 / 2736 / 2737 / 2738	2740 / 2741	340 / 348 / 2608 / 2636 / 2650 / 2149
3:1	2730 / 2731 / 2753 / 2754 / 2735	2742 / 2743	340* / 341 / 348* / 2609 / 2636* / 2637 / 2650*
4:1	2730 / 2731 / 2753 / 2754 / 2735	2742 / 2743	342 / 2638 / 2642
27 mm Midrange			
—	T2701B / T2701B. HL / T2702B / T2702B.HL / T2705B / T2705B.HL	E2700	—
2:1	T2703B / T2703B.HL	1631 / E2730	2650
2:1	T2721B / T2721B.HL / T2722B / T2722B.HL	1631 / E2730	—
3:1	T2703B / T2703B.HL	1632 / 1633 / E2750	2650*
3:1	T2731B / T2731B.HL / T2732B / T2732B.HL	1632 / 1633 / E2750	—
4:1	T2703B / T2703B.HL	1632 / 1633 / E2750 / E2756	2638
4:1	T2741B / T2741B.HL / T2742B / T2742B.HL	1632 / 1633 / E2750 / E2756	—
32 mm Big Boat			
—	T3201B / T3201B.HL / T3202B / T3202B.HL / T3204B / T3205B / T3205B.HL	E3200	—
2:1	T3203B	3168 / E3230	2600
2:1	T3221B / T3222B / T3224B	3168 / E3230	—
2:1 High-load	T3203B.HL	E3230.HL / 3173**	1950
2:1 High-load	T3221B.HL / T3222B.HL / T3224B.HL	E3230.HL / 3173**	—
3:1	T3203B	3169 / 3170 / E3250	2601
3:1	T3231B / T3232B / T3234B	3169 / 3170 / E3250	—
3:1 High-load	T3203B.HL	E3250.HL / 3174**	1951
3:1 High-load	T3231B.HL / T3232B.HL / T3234B.HL	E3250.HL / 3174**	—
4:1	T3203B	3169 / 3170 / E3250 / E3256	2642
4:1	T3241B / T3242B / T3244B	3169 / 3170 / E3250 / E3256	—
4:1 High-load	T3203B.HL	E3250.HL / 3174**	2602
4:1 High-load	T3241B.HL / T3242B.HL / T3243B.HL / T3244B.HL	E3250.HL / 3174**	—
6:1	T3243B.HL	3197**	2650

*Dead-end line through center of sheave **Stop knot required to keep block from hitting end control

Control Blocks

29 MM CARBO

40 MM T2

40 MM CARBO

40 MM CARBO RATCHET

57 MM CARBO

57 MM BLACK MAGIC® AIRBLOCKS®

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight w/shackle oz	Weight w/shackle g	Shackle pin Ø in	Shackle pin Ø mm	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
29 mm Carbo															
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
348	Single/fixed*	1 1/8	29	1 15/16	49	0.8	23	—	—	5/16	8	330	150	1000	454
40 mm Carbo															
2636	Single/swivel*	1 9/16	40	3 3/8	86	1.6	44	5/32	4	3/8	10	485	220	1620	735
2637	Single/swivel/becket	1 9/16	40	4	102	1.7	48	5/32	4	3/8	10	485	220	1620	735
2638	Double/swivel	1 9/16	40	3 11/16	94	3.2	86	3/16	5	3/8	10	970	440	2380	1080
2642	Double/fixed	1 9/16	40	3 1/2	89	2.8	80	3/16	5	3/8	10	970	440	2380	1080
2650	Single/fixed*	1 9/16	40	2 1/2	64	1.4	40	—	—	3/8	10	485	220	1620	735
40 mm Carbo Ratchet															
2608	Single/swivel	1 9/16	40	3 3/8	86	1.7	49	5/32	4	3/8	10	300	136	1000	454
2609	Single/swivel/becket	1 9/16	40	4	102	1.8	52	5/32	4	3/8	10	300	136	1000	454
40 mm Carbo T2™															
2149	Single*	1 9/16	40	2 1/4	57	0.9	25	—	—	3/8	10	485	220	1200	544
57 mm Carbo															
2600	Single/swivel	2 1/4	57	4 5/16	110	3.1	87	3/16	5	7/16	10	792	359	2380	1079
2601	Single/swivel/becket	2 1/4	57	5 3/16	132	3.4	96	3/16	5	7/16	10	792	359	2380	1079
2602	Double/swivel	2 1/4	57	4 3/4	121	6.3	178	—	6	7/16	10	1584	720	3300	1500
57 mm Black Magic® AirBlocks®															
1950	Single/swivel/low-load	2 1/4	57	4 11/16	119	5.0	142	1/4	6	7/16	12	1655	750	3310	1500
1951	Single/swivel/low-load/becket	2 1/4	57	5 1/2	140	5.5	155	1/4	6	7/16	12	1655	750	3310	1500

*Can be used as becket block

CRX Roller Travelers

The Harken® Custom Division has been supplying racers and cruisers with innovative hardware for over 20 years. Whether you use existing custom solutions or require something new, our engineers hold your project to the highest standards: from design, to manufacturing, finishing, installation, and worldwide service.

CRX Cars

The CRX Roller Traveler carries almost double the load at half the weight of similarly sized traveler cars. Torlon® rollers provide increased bearing contact over balls to handle higher loads. Captive bearings make cars easy to load and maintain.

Toggle cars such as the 3074 and 3075 offer a low-profile traveler solution. CRX Loop cars are alternatives for high-load applications.

Use roller travelers with straight track only. Contact Harken® for curved traveler applications. Big Boat CRX track uses E3200 endstops and 3173 or 3174 end controls. Mini-Maxi track uses 1702 or custom endstops.

PCRX System

The award-winning PCRX mainsheet traveler features a hinged track that pivots as the mainsheet angle changes. This design aligns the car to the load for less friction, more load capacity, and lighter weight. Eliminating the toggle reduces the car's height and weight. Mini-Maxi PCRX traveler systems are used on America's Cup and Volvo racers, with Big Boat versions on TP52s and IRC 70s.

3074

3075

Rollers carry extreme loads in a compact, lightweight package

Captive rollers for easy loading and maintenance

C8819

C8728

C8818

C8823

32 MM BIG BOAT

C8862

C7792

C8955
C9642

C9742

C9563

42 MM MINI-MAXI

CRX Roller Travelers

Esimit Europa 2 (ex Alfa Romeo 2), *Reichel-Pugh 100', McConaghy Boats—Edward Rowe photo*

PCRX systems have carbon bobbins laminated into the deck, eliminating track fasteners to reduce weight

Low-profile endstops available for PCRX and CRX roller systems. Contact Harken®.

Part No.	Description	Length in	Length mm	Width in	Width mm	Car body height in	Car body height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
32 mm Big Boat CRX														
3074	CRX Big Boat/single block	5	127	2 1/2	64	3 13/32	86	22	624	5000	2268	10000	4535	3079
3075	CRX Big Boat/single block‡	7 1/2	191	2 1/2	64	3 13/32	86	39	1106	7500	3401	15000	6803	3079
C8728	CRX Big Boat Loop car	3 3/8	86	2 1/2	64	2	51	11.6	330	3300	1497	6600	2994	3079
C8819	CRX traveler/titanium coupler/2-blocks/fixed track	10 1/4	260	2 1/2	64	1 11/16	43	45.3	1284	9920	4500	19840	9000	3079
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	*
C8823	CRX athwartship car/2:1	7 17/32	191	2 1/2	64	1 3/4	45	31.9	905	7500	3402	15000	6804	3079
42 mm Mini-Maxi CRX														
C7792	PCRX traveler/pivoting track	15 1/2	394	3 1/32	77	2 7/8	72	5.99	2.72	16000	7257	32000	14514	*
C8862	CRX traveler/titanium coupler/2-blocks/fixed track	15 1/2	394	3 1/32	77	1 7/8	48	97.32	2759	15000	6804	30000	13608	3200
C8955	CRX Mini-Maxi Loop car	7 1/2	191	3 1/32	77	2 1/4	57	29.2	827	7937	3600	15874	7200	3200
C9563	CRX Mini-Maxi/2 blocks	12	305	3 1/32	77	5 7/16	138	233.58	6622	15000	6804	30000	13608	3200
C9642	CRX Mini-Maxi Loop car	8	203	3 1/32	77	2 5/8	67	34.39	975	9921	4500	19841	9000	3200
C9742	CRX Mini-Maxi/2 sheave carriers	14	356	3 1/32	77	6 1/4	159	120	3402	14881	6750	29762	13500	3200
Mega CRX														
C8786	CRX Mega PCRX traveler/pivoting track	16 1/8	410	4 1/4	108	2 7/8	73	157.6	4468	30000	13608	60000	27216	*
C8990	CRX Mega/coupled	20 1/4	5145	4 1/4	108	6 1/2	165	301.59	8550	33069	15000	66138	30000	*

Contact Harken to request quote and lead time. *Custom track ‡Includes adapter to fit 100 mm Black Magic® AirBlocks®

CRX Track

Part No.	Length ft/in	Length m	Hole spacing in	Hole spacing mm	Weight oz	Weight kg	Fasteners (FH) in	Fasteners (FH) mm	Endstop/ splice link
32 mm Big Boat CRX Low-Beam Roller Track									
3079.2m	6'6 3/4"	2	2 15/16	75	72.8	2.064	5/16	8	E3200/3080
3079.3m	9'10 1/16"	3	2 15/16	75	109.2	3.096	5/16	8	E3200/3080
42 mm Mini-Maxi CRX Low-Beam Roller Track									
3200.3m**	9'10 1/16"	3	2 15/16	75	144.1	4.08	3/8	10	—

**Contact Harken for track profile

Traveler & Genoa Lead Systems: 42 mm

Mainsail Travelers

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

Genoa Lead Cars

All cars are available with a plain body, with pinstops, or puller tangs. Car bodies are made of either Hardkote-anodized aluminum or high-luster stainless steel. Maximum working loads range from 8500 lb (3,856 kg) to 19824 lb (9000 kg). Custom cars can be designed to handle higher loads.

GENOA LEAD CARS

MAINSAIL TRAVELERS

Track

Part No.	Length ft/in	Length m	Hole spacing in	Hole spacing mm	Weight oz	Weight kg	Fasteners (FH) in	Fasteners (FH) mm	Endstop
1706.1.5m‡	4'11 1/16"	1.5	2 15/16	75	81.5	2.31	3/8	10	1702
1706.3m‡	9'10 1/8"	3	2 15/16	75	163	4.62	3/8	10	1702
1706.3.6m‡	11'9 3/4"	3.6	2 15/16	75	195.4	5.54	3/8	10	1702
1706.6m‡	19'8 1/4"	6	2 15/16	75	325.9	9.24	3/8	10	1702

‡First hole 37.5 mm (1½")

Track Bending				
	Minimum track radius			
	Horizontal		Vertical	
Part No.	ft	m	ft	m
1706	50	15.25	50	15.25

Cars

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
Mainsail Travelers																
1702	Mini-Maxi endstop**	—	—	3 3/4	95	2 5/8	67	1 1/2	38	13	369	—	—	—	—	1706
1708	Mini-Maxi adjustable stop	—	—	3 1/2	89	2 5/8	67	2 1/16	52	15	425	—	—	—	—	1706
1707	Mini-Maxi end control/padeye	—	—	5 1/4	133	2 5/8	67	3 1/8	79	29	822	7800	3540	15594	7075	1706
3068	Mini-Maxi traveler***	—	—	10	254	4 3/8	111	3 3/4	95	81	2300	8750	3969	18000	8164	1706
HC10066	Mini-Maxi traveler/stand-up toggle	—	—	10	254	4 3/8	111	4 3/16	106	90.8	2574	8750	3969	18000	8164	1706
3069	Mini-Maxi end control/footblock/becket	—	—	5 5/8	143	2 5/8	67	2 3/4	70	25	710	2500	1134	5000	2268	1706
C7152	Mini-Maxi self-tacking car	—	—	16 1/4	412	4 5/16	110	2	51	255.98	7257	11736	5325	27998	12700	1706
C7183	Mini-Maxi titanium traveler	—	—	20 1/2	521	4 3/16	106	2 1/32	52	332.8	9435	17700	8028	35400	16056	1706
Genoa Lead Cars																
1869	Mini-Maxi/puller tang	4 1/2	114	16 7/16	417	4 3/8	111	8 3/8	213	160	4536	9000	4082	18000	8164	1706
3072	Mini-Maxi/adjuster block	4 1/2	114	13 11/16	348	4 3/8	111	8 3/8	213	164	4649	9000	4082	18000	8164	1706
C5900	Mini-Maxi lead car/slider rods	5 1/2	140	12	305	2 15/16	75	9 3/16	233	208.11	5900	19625	8900	39242	17800	1706
C8836	Mini-Maxi jib slider/loop block	3 15/16	100	10	254	2 15/16	75	8 1/4	210	99.47	2820	19824	9000	39683	18000	1706

**1/2" (12 mm) FH fasteners ***See page 14 for replacement balls Contact Harken to request quote and lead time.

Traveler & Genoa Lead Systems: 64 mm

Mainsail Travelers

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

Genoa Lead Cars

All cars are available with a plain body, with pinstops, or puller tangs. Car bodies are made of either Hardkote-anodized aluminum or high-luster stainless steel. Maximum working loads range from 19841 lb (9000 kg) to 28660 lb (13,000 kg). Custom cars can be designed to handle higher loads.

MAINSAIL TRAVELERS

GENOA LEAD CARS

Track

Part No.	Length ft/in	Length m	Hole spacing in	Hole spacing mm	Weight oz	Weight kg	Fasteners (FH) in	Fasteners (FH) mm	Endstop
661.2.1m‡‡	6'10 11/16"	2.1	3 15/16	100	221.5	6.28	1/2	12	662
661.3m‡‡	9'10 1/8"	3	3 15/16	100	316.4	8.97	1/2	12	662
661.6m‡‡	19'8 1/4"	6	3 15/16	100	632.8	17.94	1/2	12	662

‡‡First hole 50 mm (1 15/16")

Track Bending				
	Minimum track radius			
	Horizontal		Vertical	
Part No.	ft	m	ft	m
661	100	30.5	50	15.25

Cars

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
Mainsail Travelers																
662	Maxi endstop*	—	—	4 3/4	121	3 3/4	95	2	51	28.8	816	—	—	—	—	661
664	Maxi adjustable stop	—	—	3 7/8	98	3 3/4	95	2 1/2	64	26	737	—	—	—	—	661
3070	Maxi traveler***	—	—	14	357	5 1/4	133	5	127	179	5100	12000	5443	25000	11340	661
3071	Maxi end control/footblock/becket	2 15/16	75	7 1/8	181	3 3/4	95	3 3/8	86	56	1596	5250	2380	10500	4762	661
C8441	Maxi traveler	5 15/16	150	27	686	5 3/16	132	12 7/8	327	527.2	14946	30000	13608	60000	27216	661
C8583	Maxi traveler	5 15/16	150	28 1/4	718	5 7/32	132	2 7/32	56	537.6	15241	21168	9600	42336	19200	661
Genoa Lead Cars																
C9368	Maxi slider/dual pinstop	5 15/16	150	12	305	3 9/16	91	12 1/4	311	205.6	5829	19841	9000	39683	18000	Custom
C9543	Maxi genoa lead/forward pull	6 7/8	175	14	356	3 11/16	93	12 11/16	322	293.8	7462	28660	13000	57330	26000	661

*5/8" (16 mm) FH fasteners ***See page 14 for replacement balls Contact Harken to request quote and lead time.

T-Track Genoa Lead Cars

T-Track genoa lead cars are used where frequent lead adjustments are not required. T-Track cars have an integral pinstop to lock the car into position.

The car's one-piece, solid aluminum construction is lightweight and strong. The stainless steel carrier tilts side-to-side to ensure a fair lead. 40 mm cars have roller/ball bearing sheaves to improve trimming performance.

Custom accessories such as remote pinstops and adjustable sliders with tangs to accommodate floating blocks are available. Contact Harken® for information on our complete range.

Note: T-Track genoa lead cars cannot be adjusted under load.

Track

Part No.	Length ft/in	Length m	Pinstop hole spacing in	Pinstop hole spacing mm	Mounting hole spacing in	Mounting hole spacing mm	Weight oz	Weight kg	Fasteners (FH) in	Fasteners (FH) mm	Endstop
32 mm Black-Anodized Aluminum T-Track											
3086.2m‡‡	6'6¾"	2	3 15/16	100	3 15/16	100	63.46	1.8	5/16	8	B810
3086.3m‡‡	9'10⅛"	3	3 15/16	100	3 15/16	100	95.22	2.69	5/16	8	B810
32 mm Stainless Steel T-Track											
1835.2m‡‡	6'6¾"	2	1 15/16	50	3 15/16	100	169.31	4.8	5/16	8	1836
1835.4m‡‡	13'1½"	4	1 15/16	50	3 15/16	100	338.62	9.6	5/16	8	1836
40 mm Anodized Aluminum T-Track: B206 Clear & B207 Black											
B206/B207.1m	3'3⅜"	1	3 15/16	100	3 15/16	100	48.85	1.39	5/16	8	B811
B206/B207.1.8m	5'10"	1.8	3 15/16	100	3 15/16	100	87.94	2.49	5/16	8	B811
B206/B207.2m	6'6¾"	2	3 15/16	100	3 15/16	100	97.71	2.77	5/16	8	B811
B206/B207.2.5m	8'2 7/16"	2.5	3 15/16	100	3 15/16	100	122.13	3.46	5/16	8	B811
B206/B207.3m	9'10⅛"	3	3 15/16	100	3 15/16	100	146.56	4.16	5/16	8	B811
B206/B207.3.5m	11'5 13/16"	3.5	3 15/16	100	3 15/16	100	170.99	4.85	5/16	8	B811
B206/B207.4m	13'1½"	4	3 15/16	100	3 15/16	100	195.41	5.54	5/16	8	B811
B206/B207.6m	19'8¼"	6	3 15/16	100	3 15/16	100	293.12	8.31	5/16	8	B811
40 mm Stainless Steel T-Track											
1888.2m‡‡	6'6¾"	2	1 15/16	50	3 15/16	100	282.91	8	—	12	1889
1888.4m‡‡	13'1½"	4	1 15/16	50	3 15/16	100	564.37	16	—	12	1889

50 mm T-Track available. Contact Harken. ‡First hole 37.5 mm (1½") ‡‡First hole 50 mm (1 15/16")

Cars

For sheet-loading formulas see page 16.

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg	Track
32 mm T-Track																		
B2057M	Stop*	—	—	1 15/16	50	2 3/16	56	15/16	23	4	113	—	—	1750	800	3850	1750	32 mm
GT326S	Genoa lead car/pinstop*	2	51	5⅛	130	2	51	4 7/16	113	22.1	626	½	12	3000	1361	6000	2722	32 mm
40 mm T-Track																		
B158M	Slide**	—	—	5 9/16	142	2 3/16	56	2¾	70	38.8	1100	—	—	5500	2500	12300	5600	B206
B2056M	Stop*	—	—	1 15/16	50	2 3/16	56	1	25	3.5	100	—	—	2650	1200	5500	2500	B206
C4219	Genoa slider***‡	4½	114	9	229	2 9/16	65	8 7/16	214	104.6	2970	⅝	16	12860	5845	25720	11690	1888
C7788	Genoa lead car‡	4½	114	9	229	2 9/16	65	8 7/16	214	104.6	2970	⅝	16	8500	3856	17000	7712	B206
C5754	Jib car/Maxi sheave***‡	5½	140	11	279	2 9/16	65	9¼	235	184	5220	⅞	22	19625	8900	39249	17800	1888
50 mm T-Track‡‡																		
C9242	T-Track slider/puller tang‡	7⅞	200	14	356	3⅜	86	13⅝	346	659.61	18700	1⅛	28	50706	23000	101412	46000	Custom
C9491	T-Track slider‡	7⅞	200	14	356	3⅜	86	13⅝	346	649.03	18400	1⅛	28	50706	23000	101412	46000	Custom

*Aluminum **Chrome ***Stainless steel track only ‡Contact Harken to request quote and lead time. ‡‡ 50 mm T-Track available. Contact Harken.

Access Rail

Harken designed the Access Rail system so crews of very large yachts would have a secure system that allows freedom of movement and the ability to lock into position while working outboard along the hull. The system is made up of two joined cars that allow the attachment of the personal suspension system and the required fall-arrest system. Its CE certification is among the most respected marks in the world and unique in the marine market.

Linked cars are constructed of strong, lightweight, one-piece solid aluminum. Torlon® bearings handle high loads, reducing friction as you smoothly move the pinstop car and lock it to another position on the track. Stainless steel wire guides keep ball bearings captive when the cars are removed for maintenance.

Cars and track come in black Hardkote-anodized or clear-anodized finishes for corrosion protection, durability, and to match the aesthetics of your yacht. Stainless steel systems can be special ordered through the Harken Custom Department.

Pinstop car allows movement of cars along track. Open to move; close to lock in place.

The system has two anchorage points—one anchorage point for a personal suspension system and the second for the fall-arrest system. Add an optional car and coupler to work as your tool service carrier.

Stainless steel wire guides keep the ball bearings captive when cars are off the track for easy maintenance.

Car Assembly

Part No.	Description	Length in	Length mm	Width in	Width mm	Maximum working load lb	Maximum working load kg	Fits track
HC9606.CLEAR*	27 mm Midrange 2-car Access Rail car assembly with coupler	10 3/4	273	2 3/4	70	220	100	1643/1644
HC10567.CLEAR*	27 mm Midrange 2-car Access Rail car assembly with wheel toggle	10 3/4	273	5 15/16	150	220	100	1643/1644

External access cars must only be used with high-load track and endstops listed below. 5/16" (8 mm) track fasteners required.
*To order black Hardkote-anodized, remove ".CLEAR" from end of part number

Track

Part No.	Description	Length ft/in	Length m	Mounting hole spacing in	Mounting hole spacing mm	Fasteners in	Fasteners mm	Endstop	Splice link
1643.3m.CLEAR*	27 mm Midrange high-load pinstop track	9'10 1/16"	3	3 15/16	100	5/16 FH	8 FH	HC9561.CLEAR*	1619
1643.3.6m.CLEAR*	27 mm Midrange high-load pinstop track	11'9 3/4"	3.6	3 15/16	100	5/16 FH	8 FH	HC9561.CLEAR*	1619
1643.6m.CLEAR*	27 mm Midrange high-load pinstop track	19'8 1/4"	6	3 15/16	100	5/16 FH	8 FH	HC9561.CLEAR*	1619
HC9561.CLEAR*	27 mm Midrange track endstops (sold in pairs)	2 1/4"	57 mm	—	—	5/16 FH	8 FH	—	—
1619	Splice link	Purchase one splice link for each track section.							

1644 Track for 6 mm fasteners with 50 mm hole spacing available by special order. Contact Harken for lead time.
*To order black Hardkote-anodized, remove ".CLEAR" from end of part number

NEW FOR 2012

CB Outhaul Car
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MAINSAIL HANDLING SYSTEMS

Chrisco, *Luca Brenta 100', CNB — Nicolas Claris photo*

Ordering Battcar Systems

1. Determine system size

The four sizes, Systems AA, A, B, and C, are based on sail area (pages 128-135). If you need to reduce car stack height on mast, see **Switch T-Track Battcar Systems** (pages 136-139).

Mainsail Area
P x E x .5

System size	Maximum sail area Monohull ft²	Maximum sail area Monohull m²	Maximum sail area Multihull ft²	Maximum sail area Multihull m²	Typical boat length Monohull ft	Typical boat length Monohull m	Typical boat length Multihull ft	Typical boat length Multihull 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* ft	Distance between battens* m	Intermediate cars between battens
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

3816
3802/3829
3834/3835
3856/3857
3868/3869/3870

BATTCAR/RECEPTACLE

3803
3830

INTERMEDIATE CAR
REEF CAR
UNIVERSAL BATTCAR

3814/3815
1777/3828
3812/3831
3836
3859/3860/3863
3871/3872/3873

Dimensions (measured from aft face of mast)

Part No.	Description	A in	A mm	B in	B mm	C in	C mm	D in	D mm	E Pin Ø in	E Pin Ø mm	F Stud Ø mm
System AA CB												
3813	Headboard car assembly	5 3/16	132	1	25	1 13/16	46	—	—	—	5	—
3814	Intermediate car	1 3/4	44	15/16	24	—	—	3/4	19	—	5	—
3815	Intermediate car	2 3/16	56	1	25	—	—	3/4	19	—	5	—
3816	Battcar/10 mm stud	2 3/16	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	3/16	5	—
1777	Intermediate car/low-load	2	51	1 1/8	28	—	—	3/4	19	3/16	5	—
3828	Intermediate car	1 3/4	44	1 1/16	27	—	—	21/32	17	3/16	5	—
3802	Battcar/10 mm stud	1 3/4	44	1 1/16	27	2 1/8	54	—	—	3/16	5	10
3803	Battcar/receptacle	1 3/4	44	1 1/16	27	2 1/8	54	5 1/8	130	3/16	5	—
System A CB												
3811	Headboard car assembly	8 3/8	213	1 3/8	35	2 1/4/2 7/8*	57/73*	4	102	3/16	5	—
3812	Intermediate car	2 1/4	57	1 3/8	35	—	—	3/4	19	3/16	5	—
3829	Battcar/10 mm stud	2 7/8	73	1 3/8	35	2 1/4	57	3 11/16	94	3/16	5	10
3830	Battcar/receptacle	2 7/8	73	1 3/8	35	2 7/8	73	5 3/4	146	3/16	5	—
3831	Universal Battcar	2 7/8	73	1 3/8	35	—	—	3/4	19	3/16	5	—
System B Slider												
3833	Headboard car assembly	7 1/2	190	1 1/4	32	2 5/16	59	4 5/8	119	1/4	6	—
3836	Intermediate car	2 3/16	56	1 1/4	32	—	—	—	—	1/4	6	—
3834	Battcar/10 mm stud	2 3/16	56	1 1/4	32	2 5/16	59	3 9/16	91	1/4	6	10
3835	Battcar/12 mm stud	2 3/16	56	1 1/4	32	2 5/16	59	3 3/4	96	1/4	6	12
System B CB												
3852	Headboard car assembly	10 1/2	267	1 9/16	39	3 1/16	78	4 1/16	102	3/8	10	—
3863	Intermediate car	2 9/16	68	1 9/16	39	—	—	3/4	19	1/4	6	—
3856	Battcar/10 mm stud	4 5/16	109	1 9/16	39	3 1/16	78	4 3/8	111	3/8	10	10
3857	Battcar/12 mm stud	4 5/16	109	1 9/16	39	3 1/16	78	4 3/8	111	3/8	10	12
3859	Universal Battcar	4 1/4	108	1 9/16	39	—	—	1	26	3/8	10	—
3860	Reef car	5 3/16	132	1 9/16	39	—		1	26	3/8	10	—
3861	Headboard plate	6 13/16	172	6 3/8	161	4 7/8	124	—	—	—	—	—
3862	Headboardplate/flat-top	5 13/16	147	6 3/16	157	5 23/32	145	—	—	—	—	—
System C CB												
3867	Headboard car assembly	18 5/8	473	2	51	3 5/8	92	5	126	1/2	12	—
3871	Intermediate car	3 3/4	95	2	51	—	—	1	26	3/8	10	—
3868	Battcar/12 mm stud	5 3/8	136	2	51	3 5/8	92	5 1/16	128	1/2	12	12
3869	Battcar/14 mm stud	5 3/8	136	2	51	3 5/8	92	5 1/16	128	1/2	12	14
3870	Battcar/16 mm stud	5 3/8	136	2	51	3 5/8	92	5 1/16	128	1/2	12	16
3872	Universal Battcar	5 3/8	136	2	51	—	—	1 5/16	33	1/2	12	—
3873	Reef car	9 1/8	231	2	51	—	—	1 5/16	33	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 along with full-length battens 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.

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.

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.

DO NOT use Harken equipment for human suspension.

System AA

Typical Boat Size:
Monohulls: length to 37 ft (11.3 m);
mainsail area under 350 ft^2 (32 m^2)

Multihulls: length to 30 ft (9.1 m);
mainsail area under 275 ft^2 (26 m^2)

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

3813

Tartan 3400 — Billy Black photo

INTERMEDIATE CAR

3815

SLIDER CAR

3814

BATTEN CAR

3816

Battcars use high-strength Torlon® ball bearings. Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly.

Threaded stud and toggle design handles twisting and angled loads for quick hoisting and dousing.

Cars are easily removed from the track by freeing the screwpin endstop and sliding them off.

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max headboard thickness in	Max headboard thickness mm	Maximum working load lb	Maximum working load kg
Typical Boat Length: Monohulls to 37 ft (11.3 m); Multihulls to 30 ft (9.1 m)											
3813	CB Headboard car assembly	5 3/16	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 14 for replacement balls **Batten receptacle not included

System AA

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.

Mainsail luff length ft	Mainsail luff length m	Number of track sections
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

Mast Track: Slug Mount

Part No.	Description	Length in	Length m	Weight oz/ft	Weight g/m	Fastener spacing in	Fastener spacing mm	Fastening method
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
2707	Micro track	2711	2706	page 95	Drilling and tapping

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.

MOUNTING KIT

3818
3819
3820

MICRO TRACK ENDSTOP KIT/SCREWPIN

3837

ENDSTOP KIT/SCREWPIN

3821
3822
3823

Track Mounting Kits: Slug Mount*

Part No.	Description	Mounting slug Length in	Mounting slug Length mm	Mounting slug Weight oz	Mounting slug Weight g	Mounting slugs/kit	Connector slug Length in	Connector slug Length mm	Connector slug Weight oz	Connector slug Weight g	Connector slugs/kit	Fits flat mast groove gap Min in	Fits flat mast groove gap Min mm	Fits flat mast groove gap Max in	Fits flat mast groove gap Max 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 in	Track end length mm	Weight oz	Weight g	Mounting slugs/kit
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.

HEADBOARD CAR ASSEMBLIES

CB BALL BEARING CARS

3811

SLIDER CARS

3827

Battcars use high-strength Torlon® ball bearings. Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly.

Low-friction plastic slider compound

INTERMEDIATE CARS

3812

3828

1777

BATTEN CARS

3830

3803

3831

3829

3802

Wyliecat 44 — Walter Cooper Photo

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max headboard thickness in	Max headboard thickness mm	Max batten Width in	Max batten Width mm	Max batten Ø in	Max batten Ø mm	Batten	Maximum working load lb	Maximum working load 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	9/16	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 3/8	35	10	269	9/16	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 3/8	35	1.6	45	—	—	—	—	—	—	—	350	159
3802	Battcar/10 mm stud**	1 3/4	44	1 3/8	35	2.8	80	—	—	—	—	—	—	—	350	159
3803	Battcar/40 mm receptacle	1 3/4	44	1 3/8	35	6.4	181	—	—	1 5/8	41	5/8	16	Flat/Round	350	159

See page 14 for replacement balls *Max. sail area: Monohull 350 ft² (33m²), Multihull 300 ft² (28 m²) **Batten receptacle not included

System A

Mainsail luff length ft	Mainsail luff length m	Number of track section
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

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.

3807 Slug-mount track

3804 Mounting kit
3808 Endstop kit/fixed
3824 Endstop kit/screwpin

3805 Mounting kit
3809 Endstop kit/fixed
3825 Endstop kit/screwpin

3806 Mounting kit
3810 Endstop kit/fixed
3826 Endstop kit/screwpin

2720 Small Boat traveler track

3878
Flanged track

Mast Track

Part No.	Description	Length in	Length m	Weight oz/ft	Weight g/m	Fastener spacing in	Fastener spacing mm	Fastening method
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	6.7	626	—	—	Adhesive
3878.6M	Flanged track	236 1/4	6	6.7	626	—	—	Adhesive

Traveler Track: Drill/Tap

Part No.	Description	Splice link	Endstop	Ordering information	Fastening method
2720	Small Boat track	2724	263	page 98	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 screwpin endstop to easily remove cars and mainsail. Order one kit only.

MOUNTING KIT

3804
3805
3806

ENDSTOP KIT/FIXED

3808
3809
3810

ENDSTOP KIT/SCREWPIN

3824
3825
3826

Track Mounting Kits: Slug Mount*

Part No.	Description	Mounting slug Length in	Mounting slug Length mm	Mounting slug Weight oz	Mounting slug Weight g	Mounting slugs/kit	Connector slug Length in	Connector slug Length mm	Connector slug Weight oz	Connector slug Weight g	Connector slugs/kit	Fits flat mast groove gap 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	5/16	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	5/8	16

Endstop Kits: Slug Mount*

Part No.	Description	Track end length in	Track end length mm	Weight oz	Weight g	Mounting slugs/kit
3808	Round mast groove/fixed (pair)	—	—	.5	14	2
3809	Flat mast groove/fixed (pair)	—	—	.52	15	2
3810	Wide flat mast groove/fixed (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®

System B

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.

HEADBOARD CAR ASSEMBLIES

CB BALL BEARING CARS

3852

SLIDER CARS

3833

Battcars use high-strength Torlon® ball bearings. Captive balls make cars easy to load and maintain. Wire guides circulate bearings smoothly.

Low-friction plastic slider compound

INTERMEDIATE CARS

3860

3863

3836

BATTEN CARS

3861

3862

3859

3856
3857
3879

3834
3835

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max headboard thickness in	Max headboard thickness mm	Maximum working load lb	Maximum working load 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	7/16	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 3/16	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	9/16	16	3200	1450
3836	Intermediate Car	2 3/16	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 R27 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 ft	Mainsail luff length m	Number of track section
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

3844 Slug-mount track

3845 Mounting kit
3847 Endstop kit/pinstop
3850 Endstop kit/fixed

3846 Mounting kit
3848 Endstop kit/pinstop
3851 Endstop kit/fixed

3864 Mounting kit
3865 Endstop kit/fixed
3866 Endstop kit/pinstop

Mast Track

Part No.	Description	Length in	Length m	Weight oz/ft	Weight g/m	Fastener spacing in	Fastener spacing mm	Fastening method
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

R27 Midrange traveler track

Traveler Track: Drill/Tap

Part No.	Description	Splice link	Endstop	Ordering information	Fastening method
R27	Midrange track	1619	E2700	page 104	Drilling and tapping

3849 Flanged track

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/FIXED

3850
3851
3865

ENDSTOP KIT/SCREWPIN

3847
3848
3866

Track Mounting Kits: Slug Mount*

Part No.	Description	Mounting slug Length in	Mounting slug Length mm	Mounting slug Weight oz	Mounting slug Weight g	Mounting slugs/kit	Connector slug Length in	Connector slug Length mm	Connector slug Weight oz	Connector slug Weight g	Connector slugs/kit	Fits flat mast groove gap Min in	Min mm	Max in	Max mm
3845✧	Round mast groove	7/8	22	.43	12	19	3	76	1.27	36	1	7/16	11	5/8	16
3846✧	Flat mast groove	7/8	22	.56	16	19	3	76	1.71	48	1	7/16	11	5/8	16
3864	Flat mast groove/Selden‡	7/8	22	.48	14	19	3	76	1.29	37	1	3/8	9.5	7/16	11

Endstop Kits: Slug Mount*

Part No.	Description	Track end length in	Track end length mm	Weight oz	Weight g	Mounting slugs/kit
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/fixed (pair)*	—	—	3.3	94	2
3851	Flat mast groove/fixed (pair)*‡	—	—	3.7	105	2
3865	Flat mast groove/fixed/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

System C

Typical Boat Size:
Monohulls: length 60 - 90 ft (18.3 - 27 m); mainsail area under 1940 ft^2 (180 m^2)

Multihulls: length 50 - 70 ft (15.2 - 21 m); mainsail area under 1510 ft^2 (140 m^2)

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

3867

INTERMEDIATE CARS

3873

3871

BATTEN CARS

3872

3868
3869
3870

HEADBOARD PLATES

3876

3877

Nexus 600, Key Yacht Design, Nexus Catamarans — Andrea Paarman photo

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

Cars are easily removed from the track by freeing the screwpin endstop and sliding them off.

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max headboard thickness in	Max headboard thickness mm	Maximum working load lb	Maximum working load 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 5/8	473	3 3/8	85	107	2980	9/16	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 9/16	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 R32 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.

Mainsail luff length ft	Mainsail luff length m	Number of track sections
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

3853 Slug-mount track

3854 Mounting kit
3855 Endstop kit/fixed
3875 Endstop kit/pinstop

R32 Big Boat traveler track

3858 Flanged track

Mast Track

Part No.	Description	Length in	Length m	Weight oz/ft	Weight g/m	Fastener spacing in	Fastener spacing mm	Fastening method
3853	Slug-mount track	81¹⁵/₁₆	2.08	9.28	863	3¹⁵/₁₆	100	Mounting slugs
3858.2M	Flanged track	78¾	2	17.38	1619	—	—	Adhesive
3858.6M	Flanged track	236¼	6	17.38	1619	—	—	Adhesive

Traveler Track: Drill/Tap

Part No.	Description	Splice link	Endstop	Ordering information	Fastening method
R32	Big Boat track	3153	E3200	page 111	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/FIXED

3855

ENDSTOP KIT/SCREWPIN

3875

Track Mounting Kits: Slug Mount

Part No.	Description	Mounting slug Length in	Mounting slug Length mm	Mounting slug Weight oz	Mounting slug Weight g	Mounting slugs/kit	Connector slug Length in	Connector slug Length mm	Connector slug Weight oz	Connector slug Weight g	Connector slugs/kit	Fits flat mast groove gap Min in	Min mm	Max in	Max mm
3854	Flat mast groove	1	25	.60	17	19	4⅛	105	2.49	70	1	¹⁷/₃₂	13	⅝	16

Endstop Kits: Slug Mount

Part No.	Description	Track end length in	Track end length mm	Weight oz	Weight g	Mounting slugs/kit
3855	Flat mast groove/fixed (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

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)

HC7906

HC7905

HC8537

HC7905HL

HC7904HL
HC8537HL

HC7906HL

INTERMEDIATE CARS

BATTEN CARS

HEADBOARD CARS

Xc 42, Niels Jeppensen — 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.

Cars

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max headboard thickness in	Max headboard thickness mm	Maximum sail area Monohull ft²	Maximum sail area Monohull m²	Maximum sail area Multihull ft²	Maximum sail area Multihull m²	Maximum working load lb	Maximum working load kg
18 mm															
HC7906	Headboard car	7 3/16	198	1 21/32	42	12.8	359	9/16	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	9/16	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

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.

HC8800
HC8811

HC7827
HC9597

HC8918
HC8919
HC8921

HC9106
HC9107
HC9108

HC8800
HC8811

HC8798
HC8799

HC8230

HC7827

HC10417

SLUG MOUNT

DRILL/TAP

Mounting Kits: Slug Mount

Part No.	Description	Mounting slug Length in	Mounting slug Length mm	Mounting slug Weight oz	Mounting slug Weight g	Mounting slugs/kit	Connector slug Length in	Connector slug Length mm	Connector slug Weight oz	Connector slug Weight g	Connector slugs/kit	Flat mast groove gap Min in	Flat mast groove gap Min mm	Flat mast groove gap Max in	Flat mast groove gap Max 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	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 in	Length mm	Width in	Width mm	Weight oz	Weight g	Fasteners mm	Fastener spacing mm
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	27/32	21	27	758	5	100
HC8811	T-Track/high-load	80 13/16	2051	27/32	21	26	748	5	50
Drill/Tap									
HC10417	Switch**	33 25/32 *	858	3	76	26.7	758	5	75
HC7827	3 m T-Track	118 1/8	3000	23/32	18	38.9	1106	5	75
HC9597	2 m T-Track/high load	78 3/4	2000	23/32	18	25.5	723	5	50
HC8230	Splice link	7/8	22	1/8	3.2	.02	.57	—	—

**Switch may be shortened to 23 13/16" (605 mm)

26 mm, 32 mm, 50 mm Switch T-Track Battcar Systems

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 142. Gate track is removed to load and unload cars.

Spherical bushings let headboard cars pass through switch.

Fits Boats:
26 mm: Monohullls 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)

HEADBOARD CAR ASSEMBLY

HC9045 and HC9046 use 3876 or 3877 headboard plates‡

HC9045
HC9046
C9475

HC7493

INTERMEDIATE CARS

HC7322
C7811

HEADBOARD PLATES

3876

3877

C9673

REEF CARS

HC7325

HC8076
C9313

BATTEN CARS

HC7324

HC8098

HC7316
C7814
C9299

TACK CAR

HC8125
HC8099
C9314

Cars

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Max headboard thickness in	Max headboard thickness mm	Maximum sail area Monohull ft²	Maximum sail area Monohull m²	Maximum sail area Multihull ft²	Maximum sail area Multihull m²	Maximum working load lb	Maximum working load kg
26 mm															
HC9045	Headboard car*	10 5/8	270	2 3/8	60	34.3	973	21/32	17	1730	160	1300	120	4500	2045
HC7493	Intermediate car	2 3/8	60	2 3/8	60	5.6	159	—	—	1730	160	1300	120	1000	455
HC7324	Batten car/12 mm stud	2 15/16	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	21/32	17	3780	350	2400	225	8000	3635
HC7322	Intermediate car	2 15/16	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 3/16	132	29.2	830	—	—	3780	350	2400	225	7900	3590
50 mm															
C7811	Intermediate car**	3 15/16	100	4 5/16	110	36.8	1043	—	—	3780 +	350 +	2400 +	275 +	4500	2045
C7814	Batten car/16mm stud**	5 9/16	141	4 5/16	110	60.8	1724	—	—	3780 +	350 +	2400 +	275 +	7500	3408
C9299	Batten car/18mm stud**	5 9/16	141	4 5/16	110	63	1782	—	—	3780 +	350 +	2400 +	275 +	7500	3408
C9313	Reef car**	7 7/8	200	4 5/16	110	168	4763	—	—	3780 +	350 +	2400 +	275 +	12500	5670
C9314	Tack car**	7 7/8	200	8 1/16	205.3	168	4763	—	—	3780 +	350 +	2400 +	275 +	19842	9000
C9475	Headboard car**	17 3/4	450	4 5/16	110	214	6078	1	25	3780 +	350 +	2400 +	275 +	16500	7500
Headboard plates															
3876	Web-on headboard plate†	10 9/16	268	7 15/16	201	29	828	1/2	13	—		—		Fits HC9045/HC9046	
3877	Web-on headboard plate/flat-top†	10 3/4	273	11 1/8	282	43	1343	1/2	13	—		—		Fits HC9045/HC9046	
C9673	Web-on headboard plate†	15 1/2	394	16 3/8	416	195	5498	1	25.4	—		—		Fits C9475	

*May increase MWL by using track with closer hole spacing; contact Harken **Allow 8 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

HC8147
HC8148
HC8149
HC8150

HC7466
HC8221
HC8879
HC7391
HC8226
HC8880
C7808
C8196
C8228

HC8222
HC8227
C8229

1522A
548A

C8217

Gate Track

Switch

Cars alternate automatically

HC8220
HC7382
C7807

HC10060

Storage Tracks

Track & Accessories

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Fasteners mm	Fastener spacing mm
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
HC10060	725 mm Double Storage track*	28 17/32	725	3 11/16	93.3	57.2	1623	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 3/4	70	3 23/32	94	19	537	12	—

*Available in black or clear anodized ‡Allow 8 weeks lead time

Trysail Switch System

The trysail switch allows the mainsail and trysail to share a single track, greatly reducing weight aloft. This asymmetrical switch installs above the standard system and provides a crossover for trysail cars to utilize the mainsail track. The trysail cars are loaded at deck level and travel past the gooseneck and flaked mainsail onto the mainsail track. Switching of the cars is totally automatic: only trysail cars can travel onto the trysail track, while the mainsail cars pass through to the standard switch and storage tracks.

Cars are deep-saturation Hardkote-anodized with Teflon® impregnation for durability and low friction. Track is also Hardkote-anodized. The switch plate has no moving parts. Trysail and mainsail systems are available in 26, 32, and 50 mm sizes.

Track

Use standard Switch System T-Track (see page 139).

The track's compound bend wraps around the mast section so cars pass next to the mainsail cars on the storage tracks, past the gooseneck and down to the deck. There, crew can safely load the trysail onto the track and raise the sail, leaving the mainsail flaked on the boom.

The compound track bend is determined by installer. Cars must not be under load in curved section.

C9494
C9342
C9338

C9493
C9341
C9337
C9492
C9340
C9336

The Trysail Switch System integrates with the Switch T-Track Battcar System by sharing a single mast track to reduce weight aloft.

Part No.	Description	Length in	Length mm	Width in	Width mm	Weight oz	Weight g	Fasteners mm	Maximum working load lb	Maximum working load kg	Fits track
26 mm											
C9493	Port Trysail Switch*‡	14 1/2	368	4 25/32	121	27	762	6	—	—	HC7466, HC8879
C9492	Starboard Trysail Switch*‡	14 1/2	368	4 25/32	121	27	762	6	—	—	HC7466, HC8879
C9494	Car body*‡	2 3/8	60	1 1/32	26	5	143	—	1001	454	HC7466, HC8879
32 mm											
C9341	Port Trysail Switch*‡	16	406	5 7/8	149	43	1222	8	—	—	HC7391, HC8880
C9340	Starboard Trysail Switch*‡	16	406	5 7/8	149	43	1222	8	—	—	HC7391, HC8880
C9342	Car body*‡	2 15/16	75	3 1/32	77	11	309	—	595	270	HC7391, HC8880
50 mm											
C9337	Port Trysail Switch*‡	25	635	8 13/16	223	158	4465	12	—	—	C7808, C8196
C9336	Starboard Trysail Switch*‡	25	635	8 13/16	223	158	4465	12	—	—	C7808, C8196
C9338	Car body*‡	3 15/16	100	4 11/16	120	59	1658	—	4500	2041	C7808, C8196

*Available in black or clear anodized ‡Allow 8 weeks lead time

Furling Mainsail Outhaul Systems

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 Torlon® ball bearings. A dead-end outhaul shackle is included.

The 1648 Midrange car has an axle-bearing sheave.

The sheaves on the 595 and 1771 Big Boat cars use Torlon® 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 1648 outhaul cars.

6061

1648

595
1771

Part No.	Description	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Weight oz	Weight g	Car width in	Car width mm	Maximum working load lb	Maximum working load kg	Max sail area ft²	Max sail area m²	Track
595	Outhaul car	2½	64	5¼	133	41	1162	3⅓	85	3000	1361	425	40	R32
1648	CB Outhaul car	2	51	5¼	133	24	680	2¾	70	2300	1043	300	28	R27
1771	Outhaul car	3	75	7¼	184	63	1786	3⅓	85	4500	2041	550	51	R32
6061	Clew block	3	75	5½	140	13	370	—	—	3000	1361	425	40	—

See page 14 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 12

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.

252
253
254

See "Lazy Jacks" on page 12

Single Line Reefing Kit

Part No.	Description	Max boat length ft	Max boat length m	Max mainsail area ft²	Max mainsail area m²
430	Medium	27	8.2	150	14

Lazy Jack Kits

Part No.	Description	Boat length ft	Boat length m	Boom length ft	Boom length m	Mainsail luff length ft	Mainsail luff length 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

HEADSAIL HANDLING SYSTEMS

NEW FOR 2012

MKIV Hydraulic Jib Reefing & Furling
Pages 165-168

New Morning, *54' Chuck Paine & Ed Joy Design, Lyman-Morse Boatbuilding — Billy Black photo*

Carbo Racing Foil

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.

Melges 32 — J.H. Peterson photo

Trim Cap

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*

Kit includes prefeeder

Part No.	Description	Max wire Ø in	Max wire Ø mm	Max rod Ø dash	Max rod Ø mm	Extrusion length ft/in	Extrusion length m	Max headstay length ft/in	Max headstay length m	Spacer tube length ft/in	Spacer tube length m	Extrusion weight lb/ft	Extrusion weight kg/m	Full system weight* lb	Full system weight* kg	Luff tape size in	Luff tape size 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	5/16	8	-17	8.38	39'4"	12	43'4"	13.2	3'3"	1	.162	.241	6.99	3.18	#6 (6/32)	5
7001.16m	Unit 1	5/16	8	-17	8.38	52'6"	16	56'5"	17.2	3'3"	1	.162	.241	9.13	4.14	#6 (6/32)	5
7001.20m	Unit 1	5/16	8	-17	8.38	65'7"	20	69'6"	21.2	3'3"	1	.162	.241	11.25	5.10	#6 (6/32)	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 (6/32)	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 (6/32)	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 (6/32)	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 (6/32)/#7 (7/32)	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 (6/32)/#7 (7/32)	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

Small Boat Furlers

Harken® Small Boat furling systems allow the trailerable cruising or dinghy sailor to set and furl the jib from the cockpit. Drums and halyard swivels feature multiple stacked races of Delrin® or Torlon® bearings for smooth rotation under load. Small Boat units are for furling only, not reefing.

Hoistable Swivels

An optional hoistable ball bearing halyard swivel can be installed on your headstay so you can raise or lower the sail without removing the headstay. Swivels are independent of the headstay, allowing you to tension the luff separately from the mast rake. Hoistable swivels work along with your standard Harken Small Boat furler.

The high-load Small Boat furler with hoistable halyard is available as a kit.

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)

FURLER KIT

HOISTABLE SWIVELS

SMALL BOAT FURLERS

Components (if ordering separately)

Upper swivel Part No.	Hoistable swivel Part No.	Drum Part No.	Weight: Upper swivel oz	Upper swivel g	Hoistable swivel oz	Hoistable swivel g	Drum oz	Drum g	Fits furler
162	—	163	2.6	74	—	—	5	142	434
164	464	165	2.6	74	2.9	82	5	142	435
207	465	208	9.2	261	8.9	252	13.6	386	436

Furlers

Part No.	Description	Pin-to-pin length in	Pin-to-pin length mm	Drum Ø in	Drum Ø mm	Line Ø in	Line Ø mm	Jaw width in	Jaw width mm	Max luff wire Ø in	Max luff wire Ø mm	Clevis pin Ø in	Clevis pin Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg
434	Furler‡	2 1/2	64	2 7/8	73	5/32	4	5/16	8	1/8	3	1/4	6	7.6	215	500	227
435	High-load furler‡	2 1/2	64	2 7/8	73	5/32	4	5/16	8	1/8	3	1/4	6	7.6	215	950	431
436	Cruising furler‡	4	102	4 3/16	106	1/4	6	3/8	10	3/16	5	5/16	8	22.8	646	2000	907
464	Halyard swivel/hole for 4 mm wire	4 3/16*	124*	—	—	—	—	—	—	5/32	4	5/32	4	2.9	82	810	367
465	Halyard swivel/hole for 5 mm wire	5 11/16*	144*	—	—	—	—	—	—	3/16	5	3/16	5	8.9	252	1190	540
482	Halyard swivel/hole for 6 mm wire	7 19/32*	193	—	—	—	—	—	—	7/32	6	7/32	6	16.8	477	3000	1361
483	Furler kit/hoistable halyard***	2 1/2**	64**	2 7/8	73	5/32	4	5/16	8	5/32	4	1/4	6	11.2	318	950	431

*Shackle to shackle **Tang hole to tang hole ***Includes drum, upper swivel, and hoistable swivel ‡Includes drum and upper swivel

Small Boat Underdeck Furling

Underdeck Furlers

Small Boat underdeck furling units are ideal for sportboats and daysailers from 16 to 30 ft (4.8 m to 9 m). The drum is located beneath the deck, lowering the tack height for maximized sail area. The single through-deck ball joint provides a low-profile, nearly watertight system that aligns the spool to the headstay. Like all Small Boat furlers, the underdeck furler is for furling only, not reefing.

Hoistable Swivels

An optional hoistable ball bearing halyard swivel can be installed on your headstay so you can raise or lower the sail without removing the headstay. Swivels are independent of the headstay, allowing you to tension the luff separately from the mast rake. Hoistable swivels work along with your standard Harken Small Boat furler.

Tack Adapter Tangs

Stainless steel tack adapter tangs are used to adapt clevis pin diameters on headstays to the standard clevis pin size that comes on the Harken unit. A third hole accepts lashing to adjust jib luff tension.

HOISTABLE SWIVELS

TACK ADAPTER TANGS

Turnbuckle eye on stationary bracket attaches to an underdeck chainplate

Fairlead feeds line onto the spool

UNDERDECK FURLERS

Components (if ordering separately)

Upper swivel Part No.	Hoistable swivel Part No.	Drum Part No.	Weight: Upper swivel oz	Upper swivel g	Hoistable swivel oz	Hoistable swivel g	Drum oz	Drum g	Fits furler
164	464	HC9226	2.6	74	2.9	82	5	142	477
HCP141	482	HC9976	15	431	16.8	477	81	2296	478

Part No.	Description	Pin-to-pin length in	Pin-to-pin length mm	Drum Ø in	Drum Ø mm	Line Ø in	Line Ø mm	Jaw width in	Jaw width mm	Max luff wire Ø in	Max luff wire Ø mm	Clevis pin Ø in	Clevis pin Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg
477	Underdeck furler/small**	6 1/8	156	3 1/8	79	5/32	4	5/16	8	1/8	3	1/4	6	23.3	661	950	431
478	Underdeck furler/large**	10 7/32	260	5	127	5/32	4	1/2	12	7/32	6	7/16	11	96	2721	3000	1361
479	4 mm tack adapter tang	1 1/2*	38*	—	—	—	—	1/2	12	5/32	4	5/16***	8***	5.2	147	3000	1361
480	5 mm tack adapter tang	1 1/2*	38*	—	—	—	—	1/2	12	3/16	5	3/8***	10***	5.2	147	3000	1361
481	6 mm tack adapter tang	1 1/2*	38*	—	—	—	—	1/2	12	7/32	6	7/16***	11***	5.2	147	3000	1361

*Tang hole to tang hole **Includes drum and upper swivel ***Fits 478. Upper tang hole pin size listed.

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 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.

Multiple stacked races of Torlon® ball bearings roll easily under load

The LP is a perpendicular line measured from the luff to clew.

1851
1852

3029
3049

Corsair F31

Part No.	Description	Ø Drum in	Ø Drum mm	Ø Swivel in	Ø Swivel mm	Length Drum in	Length Drum mm	Length Swivel in	Length Swivel mm	Max line Ø* in	Max line Ø* mm	Max halyard load lb	Max halyard load kg	Weight oz	Weight g	Max luff length ft	Max luff length m	Max LP ft	Max LP m
1851	Small staysail furler	2 7/8	73	1	25	5 3/16	132	4 3/16	106	5/32	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 5/16	186	5 7/8	149	1/4	6	2000	907	28	800	70	21.33	20	6
3029	Small Gennaker®/Screecher furler	2 7/8	73	1	25	3 1/4	83	4 1/8	105	5/32	4	950	431	9	255	30	9.14	13.5	4.1
3049	Large Gennaker®/Screecher furler	4 1/4	108	1 7/16	37	5	127	5 7/8	149	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.

Lower unit comes with D-ring shackle that can be replaced with accessories

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

3100
3101

Lightspeed 32, Van Peteghem/Lauriot Prévost, al fresco Composites — Billy Black Photo

Part No.	Description	Drum Ø in	Drum Ø mm	Swivel Ø in	Swivel Ø mm	Line Ø Min in	Line Ø Min mm	Line Ø Max in	Line Ø Max mm	Pin/shackle Ø in	Pin/shackle Ø mm	Weight w/ schackle Lower oz	Weight w/ schackle Lower kg	Weight w/ schackle Upper oz	Weight w/ schackle Upper kg	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load 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	5/16	8	3/8	10	5/8	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 Unit	Pin/shackle Ø in	Pin/shackle Ø mm	Weight oz	Weight g	Maximum working load lb	Maximum working load kg	Breaking load lb	Breaking load kg
3105	2:1 Fairlead	CO-00	—	6	8	227	2750	1250	5500	2500
3106	2:1 Fairlead	CO-0	5/16	8	11	312	5000	2272	10000	4545
3107	2:1 Sheave adapter	CO-1	—	10	10	284	8000	3628	16000	7256
3108	2:1 Sheave adapter	CO-2	—	12	24	680	12000	5442	24000	10884
3109	2:1 Sheave adapter	CO-3	5/8	16	40	1134	18000	8163	36000	16326
3110	Snap shackle adapter	CO-00	—	6	6	170	2750	1250	5500	2500
3111	Snap shackle adapter	CO-0	5/16	8	8	227	5000	2272	10000	4545
3112	Snap shackle adapter	CO-1	—	10	17	482	8000	3628	16000	7256
3113	Snap shackle adapter	CO-2	—	12	34	964	12000	5442	24000	10884
3114	Snap shackle adapter	CO-3	5/8	16	57	1616	18000	8163	36000	16326
3116	Thimble set (pair)	CO-00	—	6	1.9*	54*	2750	1250	5500	2500
3117	Thimble set (pair)	CO-0	5/16	8	3.7*	105*	5000	2272	10000	4545
3118	Thimble set (pair)	CO-1	—	10	6.2*	176*	8000	3628	16000	7256
3119	Thimble set (pair)	CO-2	—	12	12.6*	357*	12000	5442	24000	10884
3120	Thimble set (pair)	CO-3	5/8	16	24.4*	692*	18000	8163	36000	16326

*Weight (pair)

Thimble set

3116/3117
3118/3119
3120

3105
3106

3107
3108
3109

3110
3111
3112
3113

3114

2:1 Fairlead

Code Zero Furling Dimensions

Unit	A	B	C	D	E	F	G	H
CO-00	3 15/16"	4 1/4"	4 1/4"	3 3/16"	3"	1/4"	1/2"	9/16"
	100 mm	108 mm	108 mm	81 mm	77 mm	6 mm	12.7 mm	14 mm
CO-0	4 15/16"	5 1/4"	5 1/4"	4 1/2"	3 7/16"	5/16"	5/8"	5/8"
	126 mm	134 mm	134 mm	115 mm	87 mm	8 mm	16 mm	16 mm
CO-1	5 15/16"	7"	6 9/16"	5 7/16"	4"	3/8"	3/4"	13/16"
	151 mm	177 mm	167 mm	139 mm	101 mm	10 mm	19 mm	20 mm
CO-2	6 15/16"	8 1/8"	7 11/16"	5 5/16"	4 1/2"	7/16"	7/8"	1"
	177 mm	207 mm	195 mm	135 mm	115 mm	12 mm	22 mm	25 mm
CO-3	7 15/16"	9 5/16"	8 13/16"	6 3/4"	5 1/2"	5/8"	1 1/16"	1 1/8"
	202 mm	236 mm	224 mm	172 mm	140 mm	16 mm	27 mm	29 mm
CO-4	10 15/16"	12 13/16"	12"	9 3/4"	7"	13/16"	1 1/2"	1 11/16"
	278 mm	325 mm	305 mm	248 mm	178 mm	20 mm	38 mm	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

	00AL 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 00AL, 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 161 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 170 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 150.

00AL, 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.

Headstay Length = $\sqrt{I^2 + J^2}$

Furling Dimensions

System	Unit	A	B	C Max	D	E Max	E Min	F Max	F Min	G Max	G Min	H	I	J Max	J Min
00AL	00AL	3 3/4"	6 5/16"	9"	5/8"	38"	33"	7 3/8"	—	6 1/8"	—	5 3/4"	2 5/8"	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 7/8"	9 7/8"	1 7/8"	41"	39 1/2"	8 3/8"	8 1/4"	7 5/16"	7 3/16"	5 1/2"	2 5/8"	2 5/16"	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	56 mm
	1	4 3/4"	7"	13"	2"	46 1/4"	42 1/4"	12"	9 3/4"	11"	8 3/4"	6 5/8"	3 1/16"	5"	2 7/8"
		120 mm	178 mm	330 mm	51 mm	1175 mm	1073 mm	305 mm	247 mm	280 mm	222 mm	167 mm	78 mm	129 mm	71 mm
	2	5 5/8"	9 1/8"	16"	2 9/16"	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"	3 3/8"
		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	85 mm
	3	7 5/16"	11 5/8"	18"	3 3/8"	50 7/8"	50 5/16"	18 11/16"	18 1/16"	16 13/16"	16 1/2"	9 3/4"	4 3/4"	7 11/16"	7 1/8"
		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	180 mm
	4	8 15/16"	**	21"	**	55 9/16"	55 1/16"	**	**	20 1/4"	19 13/16"	11 1/16"	5 1/8"	8 7/8"	8 7/16"
		227 mm		533 mm		1411 mm	1399 mm			515 mm	503 mm	280 mm	130 mm	225 mm	214 mm
MKIII	3.25	7 3/4"	12"	16 7/8"	1 3/4"	55 1/4"	41 3/4"	20 1/2"	17 1/2"	17"	14"	12"	11 7/8"	9"	6"
		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	152 mm
	3.5	9 9/16"	13 3/16"	17"	1 3/4"	59"	53"	23"	19 3/4"	19 1/2"	16 1/4"	12"	11 7/8"	11 1/2"	8 1/4"
		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	209 mm
	4	10 5/8"	15 1/4"	31"	2 3/4"	68"	60"	29"	25"	24"	20"	13 7/16"	13 1/4"	14"	10"
		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	254 mm
	4.5	14"	18 1/8"	36"	3"	68 1/2"	63 1/2"	31"	26"	26"	21"	13 7/16"	13 1/4"	15 1/2"	10 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	267 mm
Cruising*	1	3 5/8"	6"	12"	1 3/8"	40 7/16"	33 1/2"	11 7/8"	9 1/2"	10 13/16"	8 1/2"	6 5/8"	3 1/16"	5 1/16"	2 7/8"
		93 mm	152 mm	305 mm	35 mm	1027 mm	851 mm	302 mm	241 mm	275 mm	216 mm	167 mm	78 mm	129 mm	71 mm
	2	4 1/2"	8"	16"	1 11/16"	50 3/4"	42 7/16"	14 7/8"	11 3/4"	13 1/2"	10 3/8"	8 3/16"	3 13/16"	6 1/2"	3 3/8"
		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	86 mm

**Soft attachment tack, head, and halyard; distance varies

*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.		
Unit 1	1/2" (12.7 mm) Clevis pin	Add 13 1/4" - 6 5/8" (337 - 168 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 9/16" - 5 11/16" (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)

Alerion 38 — Billy Black photo

Foil Dimensions

System	Unit	K in	K mm	L in	L mm	Foil length ft	Foil length m	Luff tape
00AL	00AL	3/4	20	1	25	7	2.13	#6 6/32" (5 mm)
MKIV	0	7/8	23	1 1/32	26	7	2.13	#6 6/32" (5 mm)
	1	1	25	1 1/8	29	7	2.13	#6 6/32" (5 mm)
	2	1 1/4	32	1 3/8	36	7	2.13	#6 6/32" (5 mm)
	3	1 1/2	38	1 11/16	43	7	2.13	#6 6/32" (5 mm)
	4	1 3/4	44	1 27/32	47	7	2.13	#6 6/32" (5 mm)
MKIII	3.25	1 5/16	33	1 11/16	43	7	2.13	#6 6/32" (5 mm)
	3.5	1 9/16	40	1 15/16	49	9	2.74	#6 6/32" (5 mm)
	4	1 15/16	49	2 7/16	61	9	2.74	#6 6/32" (5 mm), #7 7/32" (6 mm)
	4.5	2 11/16	68	3 3/16	81	12	3.66	#6 6/32" (5 mm), #7 7/32" (6 mm)
Cruising	1	1 3/8	35	1 3/8	35	7	2.13	#6
	2	1 3/4	44	1 5/8	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

7404

884

061

944

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.

DO NOT use Harken equipment for human suspension.

MKIV Unit 0 Typical Boat Length 22' - 30' (6.5 - 9.1 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
3/16", 7/32" (5, 6 mm)	-4, -6 (4.37, 5.03 mm)	3/8", 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 3/8" (9.5 mm) clevis pin
7410.20 7/16	Eye/Jaw reversible toggle assembly with 7/16" (11.1 mm) clevis pin
Optional Parts	
7410.30	Extra 7' (2.13 m) luff foil extrusion
7410.31	Extra 6½" (165 mm) connector with bushings
7420 -4	-4 Rod adaptor stud (thread Ø UNF 7/16")*
7421 -6	-6 Rod adaptor stud (thread Ø UNF 7/16")*

*Use with conventional turnbuckle

MKIV 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, -12 (5.72, 6.35, 7.14 mm)	1/2", 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 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	
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 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

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

7311.20 1/2

7311.20 5/8

Outward Bound 46 — Swiftsure Yachts Seattle photo

7311.21 1/2
7311.21 5/8

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

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")**

*Line not included **Use with conventional turnbuckle

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***

*For 3/4" (19 mm) wire Ø contact Harken **Line not included ***Use with conventional turnbuckle

MKIV Underdeck Jib Reefing & Furling

FOR PERFORMANCE RACING AND CRUISING SAILORS

Harken's MKIV Underdeck Furling is the perfect solution for performance racers and cruisers that want an aerodynamic system with a minimal amount of equipment above deck. The drum is located beneath the deck, lowering the tack height for maximized sail area.

DETAILS MAKE THE DIFFERENCE

EASY REEFING AND FURLING

Ball bearings between the center hub and deck bearing provide low-friction furling.

DURABLE MATERIALS AND CONSTRUCTION

Size 1 and larger: Aluminum line guard, torque tube and swivels are deep-saturation Hardkote-anodized for no-fade UV stabilization 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.

Size 0: A one-piece integrated deck bearing and line guard provides durability and corrosion resistance.

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. Articulating Torque Tube Attachment
A torque tube universal joint on Units 1, 2, and 3 provides a high-strength universal connection to allow ample headstay sag when sailing downwind.

The Unit 0 features an articulating ball joint, eliminating the universal joint and toggle to reduce weight and to simplify maintenance.

3. Belowdeck Drum Fits Narrow Bows
The small outside drum diameter lets unit fit inside narrow bows.

4. Installation Options
Units 1 and larger have self-locking threaded height adjusters for a correct fit between the chainplate and deck.

The Unit 0 does not need a height adjuster. The furler and headstay are independent of each other, allowing flexible installation options.

DO NOT use Harken equipment for human suspension.

MKIV Underdeck Unit 0

Typical Boat Length 22' - 30' (6.7 - 9.1 m)

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
3/16", 7/32" (5, 6 mm)	-4, -6 (4.37, 5.03 mm)	—

Headstay Length Standard 38'4" (11.7 m); max 45'4" (13.8 m)

Part No.	Description
7410.11	Underdeck Furling system
Optional Parts	
7410.30	Extra 7' (2.13 m) luff foil extrusion
7410.31	Extra 7" (178 mm) connector with bushings

All MKIV Underdeck Furlers feature a ball bearing halyard swivel

MKIV Underdeck 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	Underdeck 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 Underdeck 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	Underdeck 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 Underdeck 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	Underdeck Furling system with 3/4" (19.1 mm) clevis pin
7413.11 7/8	Underdeck 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 Min in	A Min mm	A Max in	A Max mm	B in	B mm	C Min in	C Min mm	C Max in	C Max mm
0	**7410.11**	6 7/8	175	—	—	5	30.4	—	—	—	—
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 3/8	137	11 5/16	287
3	**7413.11 3/4**	16 1/8	410	23 5/8	600	8 3/16	208	6 7/8	175	14 3/8	365
3	**7413.11 7/8**	16 9/16	421	24 1/4	616	8 3/16	208	7 5/16	186	15	381

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.

DO NOT use Harken equipment for human suspension.

Cruising Unit 1

Typical Boat Length 28' - 36' (8.3 - 11 m)

Wire Ø	Rod Ø	Clevis Pin Ø
1/4", 9/32", 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

Pacific Seacraft 34 Cutter — Bill Kund photo

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

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.

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.

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.

DO NOT use Harken equipment for human suspension.

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 5/8")**
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

7312.31

7312.30

7413.31

7413.30

7424 -12
7425 -17
7426 -22
7427 -30

7312.22 5/8
7413.22 3/4
7413.22 7/8

7312.13 12V
7312.13 24V
7413.13 12V
7413.13 24V

Unit 2E

Unit 3E

Foil Dimensions

	J		K		Foil length		
Unit	in	mm	in	mm	ft	m	Luff tape
2E	1 3/4	44	1 5/8	42	7	2.13	#6 6/32" (5 mm)
3E	1 1/2	38	1 11/16	43	7	2.13	#6 6/32" (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 5/16	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 5/16	186	11 5/8	296	18	457	3 1/4	82	33 3/16	840	25 11/16	652	23 13/16	605	5 3/4	146	8 11/32	212

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	Jaw/Jaw w/ link plate	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	7312.22 5/8 7413.22 3/4	7312.20 3/4	7312.21 5/8 7312.21 3/4
3	—	7413.20 3/4 7413.20 7/8	7413.22 3/4 7413.22 7/8	—	7313.21 3/4 7313.21 7/8
4	—	7414.20 7/8 7414.20 1 7414.20 1 1/8	—	—	—

Model	Toggle Part No.	Description	Thread Ø	Clevis Pin Ø in	Clevis Pin Ø mm	Fits Unit	Furler Part No.
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**	7311.10
	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
ELECTRIC	**7312.22 5/8**	Jaw/Jaw w/ link plate	—	5/8	15.9	**2E**	7312.13 12V/24V
	7413.22 3/4	Jaw/Jaw w/ link plate	—	3/4	19.1	**2E**	7312.13 12V/24V
	7413.22 3/4	Jaw/Jaw w/ link plate	—	3/4	19.1	**3E**	7413.13 12V/24V
	7413.22 7/8	Jaw/Jaw w/ link plate	—	7/8	22.2	**3E**	7413.13 12V/24V

Rigger Supplied | **Harken**

Toggle flips for alternate chainplate position

Eye/Jaw Toggle Assembly

Jaw/Jaw Toggle Assembly

Boats with larger clevis pins use special Harken lower stud fitting.

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.

Aerodynamic Air Foils® handle extreme reefing loads.

Triple-interlock foil joints match foil shape and are secured with screws and adhesive.

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

Marten 72 — Ivor Wilkins photo/Azzura Marine

MKIV Hydraulic Jib Reefing and Furling

PUSH-BUTTON SAIL CONTROL

Harken MKIV Hydraulic Jib Reefing and Furling allow sails to be reefed, furled, or set with the touch of a button. The unit's compact size brings the tack of the sail close to deck level, increasing furling efficiency. Both tack and head have double swivels, improving sail shape when partially reefed.

MKIV hydraulic furlers are used on cruisers and high-performance cruising yachts with headstays up to -260 rod or equivalent fiber stay.

Worldwide parts and service.

DETAILS MAKE THE DIFFERENCE

STANDARD TRANSMISSION REDUCES FRICTION AND PRESSURE LOSSES

A standard transmission rather than a diverter valve engages and disengages the motor and manual gear drive.

Reduces mechanical friction and hydraulic pressure losses for efficient power and manual operation.

The motor has no case drain line, reducing the number of hoses plumbed on the boat from three to two.

Worm gear drive prevents sail from unwinding.

LONG-LASTING MATERIALS

Torque tube, motor, and gear housing are Hardkote-anodized aluminum for long-term wear. UV-stabilized to withstand the effects of salt water and sun.

Large-diameter Torlon® ball bearings in halyard and tack swivel minimize friction, require no lubrication or isolating seals.

Hardened steel gears are permanently lubricated in an oil bath for minimal maintenance.

1. Easy Headstay Adjustment
Over-the-turnbuckle system allows easy headstay adjustment. The lower toggle assembly fixes at 90-degree intervals to accept any chainplate direction.

2. Optional Hydraulic Cylinder
An optional hydraulic cylinder installed below the unit adjusts the headstay so luff tension remains constant. This prevents halyard and tack attachments from overloading when the luff is changing length.

3. Improved Sail Shape
Independent head and tack swivels improve sail shape when reefed.

Hard and Soft Attachments
Unit 3 uses a hard shackle; halyard and tack swivels on Units 4 and larger are lashed on with Spectra® line to evenly distribute loads and eliminate heavy shackles.

4. Double Foil Grooves
Aerodynamic aluminum Air Foils® handle extreme reefing loads. Double foil grooves allow fast hoists, douses, and sail changes.

DO NOT use Harken equipment for human suspension.

NEW

MKIV Hydraulic Jib Reefing & Furling

7413.30
7414.30

7413.31
7414.31

7426 -22
7427 -30
7428 -40
7429 -48

7413.25 3/4
7413.25 7/8
7414.25 7/8
7414.25 1
7414.25 1 1/8

7413.26 3/4
7413.26 7/8
7414.26 7/8
7414.26 1
7414.26 1 1/8

Manual operation switch and gear socket

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*	Alum foil: standard 74'9" (22.77 m), max 81'9" (24.91 m)	
Part No.	**Description**	
7413.15	Unit 3 with aluminum foils	
Toggle Assembly Required - sold separately		
7413.25 3/4	Toggle for 3/4" (19 mm) clevis pin	
7413.25 7/8	Toggle for 7/8" (22.2 mm) clevis pin	
7413.26 3/4	Toggle and hydraulic cylinder for 3/4" (19 mm) clevis pin	
7413.26 7/8	Toggle and hydraulic cylinder for 7/8" (22.2 mm) clevis pin	
Optional Parts		
7413.30	Extra 7' (2.13 m) aluminum 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")**	

*Hydraulic cylinder increases standard and max lengths **Use with conventional turnbuckle
Contact Harken to request quote and lead time

Unit 3

Unit 4

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
1/2", 9/16", 5/8" (12, 14, 16 mm)	-30, -40, -48 (9.53, 12.7, 14.3 mm)	7/8", 1", 1 1/8" (22.2, 25.4, 28.6 mm)
Headstay Length*	Alum foil: standard 75'3" (22.93 m), max 96'3" (29.33 m)	
Part No.	**Description**	
7414.15	Unit 4 with aluminum foils	
Toggle Assembly Required - sold separately		
7414.25 7/8	Toggle for 7/8" (22.2 mm) clevis pin	
7414.25 1	Toggle for 1" (25.4 mm) clevis pin	
7414.25 1 1/8	Toggle for 1 1/8" (28.6 mm) clevis pin	
7414.26 7/8	Toggle and hydraulic cylinder for 7/8" (22.2 mm) clevis pin	
7414.26 1	Toggle and hydraulic cylinder for 1" (25.4 mm) clevis pin	
7414.26 1 1/8	Toggle and hydraulic cylinder for 1 1/8" (28.6 mm) clevis pin	
Optional Parts		
7414.30	Extra 7' (2.13 m) aluminum foil extrusion	
7414.31	Extra 10 3/4" (270 mm) connector with bushings	
7427 -30	-30 Rod adaptor stud (thread Ø UNF 7/8")**	
7428 -40	-40 Rod adaptor stud (thread Ø UNF 1")**	
7429 -48	-48 Rod adaptor stud (thread Ø UNF 1 1/8")**	

*Hydraulic cylinder increases standard and max lengths **Use with conventional turnbuckle
Contact Harken to request quote and lead time

NEW

MKIV Hydraulic Jib Reefing & Furling

7415.26 1 1/8
7415.26 1 1/4
7415.26 X X/X
7416.26 1 1/4
7416.26 1 3/8
7416.26 1 9/16
7416.26 X X/X

7415.30
7416.30

7415.31S
7415.31L
7416.31S
7416.31L

7429 -48

7415.25 1 1/8
7415.25 1 1/4
7415.25 X X/X
7416.25 1 1/4
7416.25 1 3/8
7416.25 1 9/16
7416.25 X X/X

Unit 5

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
5/8", 3/4", 7/8" (16, 19, 22 mm)	-48, -60, -76‡ (14.3, 16.8, 17.9 mm)	1 1/8", 1 1/4" (28.6, 31.8 mm)

Headstay Length*	Alum foil: standard 87' (26.5 m), max 114' (34.7 m)
Part No.	**Description**
7415.15S	Unit 5 with aluminum foils and small bushing; fits -48, -60, -76 rod, 5/8" (16 mm) wire
7415.15L	Unit 5 with aluminum foils and large bushing; fits 3/4", 7/8" (19, 22 mm) wire
Toggle Assembly Required - sold separately	
7415.25 1 1/8	Toggle for 1 1/8" (28.6 mm) clevis pin
7415.25 1 1/4	Toggle for 1 1/4" (31.8 mm) clevis pin
7415.25 X X/X**	Toggle for all other clevis pin sizes (customer-supplied dimensions)
7415.26 1 1/8	Toggle and hydraulic cylinder for 1 1/8" (28.6 mm) clevis pin
7415.26 1 1/4	Toggle and hydraulic cylinder for 1 1/4" (31.8 mm) clevis pin
7415.26 X X/X**	Toggle and hydraulic cylinder for all other clevis pin sizes (customer-supplied dimensions)
Optional Parts	
7415.30	Extra 9' (2.74 m) aluminum foil extrusion
7415.31S	Extra 12" (305 mm) connector with small bushing; fits -48, -60, -76 rod, 5/8" (16 mm) wire
7415.31L	Extra 12" (305 mm) connector with large bushing; fits 3/4", 7/8" (19, 22 mm) wire
7429 -48	-48 Rod adaptor stud***

Contact Harken to request quote and lead time *Hydraulic cylinder increases standard and max lengths
**Specify rigging dimensions when ordering ***Use with conventional turnbuckle
‡Continuous rod only. If rod is sectional, order Unit 6

Unit 6

Wire Ø (1 x 19 SS)	Rod Ø	Clevis Pin Ø
7/8", 1" (22, 25 mm)	-76, -91, -115 (17.9, 19.5, 22.2 mm)	1 1/4", 1 3/8", 1 9/16" (31.8, 34.9, 39.7 mm)

Headstay Length*	Alum foil: standard 94'6" (28.8 m), max 127'6" (38.8 m)
Part No.	**Description**
7416.15S	Unit 6 with aluminum foils and small bushing; fits -76, -91 rod
7416.15L	Unit 6 with aluminum foils and large bushing; fits -115 rod, 7/8", 1" (22, 25 mm) wire
Toggle Assembly Required - sold separately	
7416.25 1 1/4	Toggle for 1 1/4" (31.8 mm) clevis pin
7416.25 1 3/8	Toggle for 1 3/8" (34.9 mm) clevis pin
7416.25 1 9/16	Toggle for 1 9/16" (39.7 mm) clevis pin
7416.25 X X/X**	Toggle for all other clevis pin sizes (customer-supplied dimensions)
7416.26 1 1/4	Toggle and hydraulic cylinder for 1 1/4" (31.8 mm) clevis pin
7416.26 1 3/8	Toggle and hydraulic cylinder for 1 3/8" (34.9 mm) clevis pin
7416.26 1 9/16	Toggle and hydraulic cylinder for 1 9/16" (39.7 mm) clevis pin
7416.26 X X/X**	Toggle and hydraulic cylinder for all other clevis pin sizes (customer-supplied dimensions)
Optional Parts	
7416.30	Extra 11' (3.35 m) aluminum foil extrusion
7416.31S	Extra 13" (330 mm) connector with small bushing; fits -76, -91 rod
7416.31L	Extra 13" (330 mm) connector with large bushing; fits -115 rod, 7/8", 1" (22, 25 mm) wire

Contact Harken to request quote and lead time
*Hydraulic cylinder increases standard and max lengths **Specify rigging dimensions when ordering

Unit 4
Unit 5
Unit 6

NEW

MKIV Hydraulic Jib Reefing & Furling

7417.30
7418.30

7417.31
7418.31

7417.25 1 9/16
7417.25 1 3/4
7417.25 1 7/8
7417.25 X X/X
7418.25 1 7/8
7418.25 2 1/8
7418.25 2 1/4
7418.25 2 7/16
7418.25 X X/X

7417.26 1 9/16
7417.26 1 3/4
7417.26 1 7/8
7417.26 X X/X
7418.26 1 7/8
7418.26 2 1/8
7418.26 2 1/4
7418.26 2 7/16
7418.26 X X/X

Unit 7
Unit 8

Unit 7

Fiber Stay	Rod Ø	Clevis Pin Ø
Customer-supplied dimensions	-115, -150, -170 (22.2, 25.4, 27.1 mm)	1 9/16", 1 3/4", 1 7/8" (39.7, 44.5, 47.6 mm)
Headstay Length	Alum foil: contact Harken with stay length	
Part No.	**Description**	
7417.15	Unit 7 with aluminum foils	
7417.15 X.XXX*	Unit 7 with aluminum foils for all other rigging (customer-supplied dimensions)	
Toggle Assembly Required - sold separately		
7417.25 1 9/16	Toggle for 1 9/16" (39.7 mm) clevis pin	
7417.25 1 3/4	Toggle for 1 3/4" (44.5 mm) clevis pin	
7417.25 1 7/8	Toggle for 1 7/8" (47.6 mm) clevis pin	
7417.25 X X/X*	Toggle for all other clevis pin sizes (customer-supplied dimensions)	
7417.26 1 9/16	Toggle and hydraulic cylinder for 1 9/16" (39.7 mm) clevis pin	
7417.26 1 3/4	Toggle and hydraulic cylinder for 1 3/4" (44.5 mm) clevis pin	
7417.26 1 7/8	Toggle and hydraulic cylinder for 1 7/8" (47.6 mm) clevis pin	
7417.26 X X/X*	Toggle and hydraulic cylinder for all other clevis pin sizes (customer-supplied dimensions)	
Optional Parts		
7417.30	Extra 13' (3.96 m) aluminum foil extrusion	
7417.31	Extra connector with bushings	

Contact Harken to request quote and lead time. *Specify rigging dimensions when ordering

Unit 8

Fiber Stay	Rod Ø	Clevis Pin Ø
Customer-supplied dimensions	-170, -195, -220, -260 (27.1, 28.6, 30.3, 33.4 mm)	1 7/8", 2 1/8", 2 1/4", 2 7/16" (47.6, 54.0, 57.2, 61.9 mm)
Headstay Length	Alum foil: contact Harken with stay length	
Part No.	**Description**	
7418.15	Unit 8 with aluminum foils	
7418.15 X.XXX*	Unit 8 with aluminum foils for all other rigging (customer-supplied dimensions)	
Toggle Assembly Required - sold separately		
7418.25 1 7/8	Toggle for 1 7/8" (47.6 mm) clevis pin	
7418.25 2 1/8	Toggle for 2 1/8" (54.0 mm) clevis pin	
7418.25 2 1/4	Toggle for 2 1/4" (57.2 mm) clevis pin	
7418.25 2 7/16	Toggle for 2 7/16" (61.9 mm) clevis pin	
7418.25 X X/X*	Toggle for all other clevis pin sizes (customer-supplied dimensions)	
7418.26 1 7/8	Toggle and hydraulic cylinder for 1 7/8" (47.6 mm) clevis pin	
7418.26 2 1/8	Toggle and hydraulic cylinder for 2 1/8" (54.0 mm) clevis pin	
7418.26 2 1/4	Toggle and hydraulic cylinder for 2 1/4" (57.2 mm) clevis pin	
7418.26 2 7/16	Toggle and hydraulic cylinder for 2 7/16" (61.9 mm) clevis pin	
7418.26 X X/X*	Toggle and hydraulic cylinder for all other clevis pin sizes (customer-supplied dimensions)	
Optional Parts		
7418.30	Extra 13' (3.96 m) aluminum foil extrusion	
7418.31	Extra connector with bushings	

Contact Harken to request quote and lead time. *Specify rigging dimensions when ordering

Ordering Information

Gweilo, *47 m, Gerald Dykstra & Partners, Mengi-Yay — Kadir Kir (aerial), Captain Marcel van den Houdt (deck) photos*

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 and 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 lead 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.

Prefeeders and Snap Shackles

Prefeeders and snap shackles facilitate fast sail changes. The 7006 prefeeder features Hardkote-anodized rollers with low-friction bushings.

061

319

Stanchion mount base fits Classic Bullet, Big Bullet, 2.25 in, 57 mm Carbo single blocks, and ratchet blocks with swivel post

7431

7430

7401

7402

7403

7404

448
449

884
885

944
945

947

7006

Part No.	Description	Sheave Ø in	Sheave Ø mm	Weight oz	Weight g	Max line Ø in	Max line Ø mm	Maximum working load lb	Maximum working load kg	Use with
061	Stanchion mount base	—	—	2	57	—	—	350	159	7/8", 1" (22, 25 mm) stanchions
319	Stanchion mount double lead	1½	38	6	170	—	—	350	159	7/8", 1" (22, 25 mm) stanchions
448	Fixed lead for bulwark	1½	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, MKIV 0/1
885	Snap shackle	—	—	5	141	—	—	2300	1040	MKIV 2
944	Halyard restrainer‡	15/16	25	3	85	—	—	—	—	00AL/0/1
945	Halyard restrainer‡	1¼	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	2¼	57	5.4	152	3/8	10	500	227	1" (25 mm) stanchions
7403	29 mm Outboard lead block assembly	1⅛	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
7430	Powered furling crank handle	—	—	7	198	—	—	—	—	Electric/hydraulic furling
7431	Powered furling drill adapter	—	—	2.5	71	—	—	—	—	Electric/hydraulic furling

‡#10 RH (5 mm) ***Max line Ø: 3/8" (10 mm); Weight: 19.2 oz (544 g)

NEW FOR 2012

Performa™ Winches
Page 192-194

Captive Reel Winches
Page 209-211

WINCHES

Jeanneau Sun Odyssey 42DS, M. Lombard / V. Garroni — Jeanneau photo

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 Sheet: Max sail area 100% foretriangle (I x J x .5) ft²	m²	Genoa Halyard: Max I ft	m	Mainsail End-boom mainsheet: 4:1 Sheet max sail area (P x E x .5) ft²	m²	Mainsail Halyard: Max P ft	m	Mainsail Reef: Max P ft	m	Spinnaker Sheet: Max sail area (I x J x 1.8) ft²	m²	Spinnaker Halyard: Max I ft	m	Spinnaker Topping lift/foreguy: Max I ft	m	Staysail Halyard: Max I_2 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	—	—	—	—

*Available in stainless steel, all-chrome, or bronze only. See page 191 for material availability by size.

Radial® Winches

POWERFUL, EFFICIENT, DEPENDABLE

We have reached a new level of performance with the introduction of our Radial Winch line. Details you will 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.

Installation manuals and parts lists are available online at www.harken.com.

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.

a. Snap off the skirt at the base of the winch.

b. Slide bolts through the slots in the winch base and snap the plastic skirt back on.

c. Place the stud bolts into the predrilled holes on the deck and tighten from belowdeck.

DO NOT use Harken equipment for human suspension.

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.

CLASSIC PLAIN-TOP

RADIAL® PLAIN-TOP

RADIAL® SELF-TAILING

Part No.	Drum (D) Ø in	Drum (D) Ø mm	Base (B) in	Base (B) mm	Height (H) in	Height (H) mm	Weight lb	Weight kg	Line entry height (LE) in	Line entry height (LE) mm	Line Ø (Min - Max) in	Line Ø (Min - Max) mm	Fastener circle in	Fastener circle mm	Fasteners (SH or HH) in	Fasteners (SH or HH) mm	Gear ratio 1	Gear ratio 2	Gear ratio 3	Power ratio 1	Power ratio 2	Power ratio 3
Classic Plain-Top																						
B6A	2 3/8	60	3 9/16	90	3 1/4	82	1.5	.7	1 5/16	33	—	—	2 9/16	65	6 x 1/4FH	6 x 6FH	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 5/16FH	4 x 8FH	1	—	—	7.5	—	—
Radial® Plain-Top																						
20.2PTA	2 7/8	73	5 3/8	137	5 1/16	128	4.4	2.0	2 3/8	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	153	7.7	3.5	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 9/16	90	—	—	5 7/8	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 7/8	150	5 x 5/16	5 x 8	2.40	10.90	—	10.90	50.40	—
Radial® Self-Tailing																						
20STA	2 7/8	73	5 3/8	137	5 13/16	148	5.3	2.4	2 3/8	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 7/8	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 9/16	90	5/16 - 9/16	8 - 14	5 7/8	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 5/16	212	13.2	6.0	3 7/8	97	5/16 - 9/16	8 - 14	5 7/8	150	5 x 5/16	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STA	4 3/4	120	9 5/16	236	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 5/16	236	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 7/16	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 7/16	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 7/8	175	11 5/16	287	12 9/16	320	46.8	21.2	6 7/16	164	3/8 - 11/16	10 - 18	9 3/16	233	8 x 3/8	8 x 10	9.94	32.12	—	28.85	93.24	—
80.3STA	6 7/8	175	11 5/16	287	12 9/16	320	50.1	22.7	6 7/16	164	3/8 - 11/16	10 - 18	9 3/16	233	8 x 3/8	8 x 10	2.76	9.94	32.12	8.01	28.85	93.24

*SH only

Chrome Radial®

Chrome Radial Winches are designed for sailors who 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, Carl Schumacher — 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) Ø in	Drum (D) Ø mm	Base (B) Ø in	Base (B) Ø mm	Height (H) in	Height (H) mm	Weight lb	Weight kg	Line entry height (LE) in	Line entry height (LE) mm	Line Ø (Min - Max) in	Line Ø (Min - Max) mm	Fastener circle in	Fastener circle mm	Fasteners (SH or HH) in	Fasteners (SH or HH) mm	Gear ratio 1	Gear ratio 2	Gear ratio 3	Power ratio 1	Power ratio 2	Power ratio 3
20STC	2 7/8	73	5 3/8	137	5 13/16	148	7.5	3.4	2 3/8	61	1/4 - 1/2	6 - 12	4 3/8	110	5 x 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	5/16 - 1/2	8 - 12	4 7/8	123	5 x 1/4*	5 x 6	2.13	5.65	—	13.50	35.90	—
40.2STC	3 1/8	80	6 3/16	157	6 7/8	175	11.9	5.4	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	—
46.2STC	3 7/8	100	7 1/4	184	7 15/16	201	17.2	7.8	3 9/16	90	5/16 - 9/16	8 - 14	5 7/8	150	5 x 5/16	5 x 8	2.30	9.17	—	11.70	46.50	—
50.2STC	4 5/16	110	7 5/8	194	8 5/16	212	20.3	9.2	3 7/8	97	5/16 - 9/16	8 - 14	5 7/8	150	5 x 5/16	5 x 8	2.40	10.90	—	10.90	50.40	—
60.2STC	4 3/4	120	9 5/16	236	9 11/16	246	30.7	13.9	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	—
60.3STC	4 3/4	120	9 5/16	236	9 11/16	246	34.0	15.4	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
70.2STC	5 1/8	130	9 7/16	240	10 1/16	256	33.3	15.1	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	—
70.3STC	5 1/8	130	9 7/16	240	10 1/16	256	36.6	16.6	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
80.2STC	6 7/8	175	11 5/16	287	12 9/16	320	63.4	28.7	6 7/16	164	3/8 - 11/16	10 - 18	9 3/16	233	8 x 3/8	8 x 10	9.94	32.12	—	28.85	93.24	—
80.3STC	6 7/8	175	11 5/16	287	12 9/16	320	66.7	30.2	6 7/16	164	3/8 - 11/16	10 - 18	9 3/16	233	8 x 3/8	8 x 10	2.76	9.94	32.12	8.01	28.85	93.24

*SH only

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 5/32 inch (8.0 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.

Installation manuals and parts lists are available online at www.harken.com.

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.

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.

DO NOT use Harken equipment for human suspension.

Electric and Hydraulic Radial®

Electric and 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 electric or hydraulic 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 5/32 inch (8.0 cm) drive-shaft hole into the boat.

Electric motors are available for vertical or horizontal installation. Hydraulic motors mount vertically, and both operate using water-proof switches located near the winch. A locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation.

Electric Radial® size 40 available in 12 volt only. Sizes 46 through 80 available in 12 or 24 volts. Hydraulic Radial® available in sizes 46 through 80.

Harken electric and hydraulic 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 reduced battery drain and a more efficient motor on the electric version. The energy-efficient hydraulic version is also smaller, reducing weight and cost.

HYDRAULIC

ELECTRIC HORIZONTAL

ELECTRIC VERTICAL

Part Numbers

Specify power type, material, voltage, and motor configuration when ordering

44.2STEC12H

Winch size

Number of speeds

Self-tailing

Power type
E = Electric
H = Hydraulic

Material code
A = Aluminum
C = Chrome
(For additional material options in non-Radial winches see pages 186-189 and 191-193)

Voltage
12 = 12V
24 = 24V

Motor configuration (Specify for electric; hydraulic available in vertical only)
H = Horizontal
V = Vertical

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- 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.

Accessories Included

Winches include a waterproof switch and a one-speed control box with built-in current controller to protect hardware by electronically limiting the winch's maximum pull to 1984 lbs (900 kg).

Low-profile electric motor saves head space

Works with handle if power is unavailable

900UPWA

900UPWC

WLC2000UPW

BRS104/P

UniPower Winches

Part No.	Line entry height (LE) in	Line entry height (LE) mm	E in	E mm	F in	F mm	G in	G mm
900UPWA/C	3 15/16	100	1 3/8	35	4 1/8	105	5 1/2	140

Part No.	Ø Drum in	Ø Drum mm	Ø Base in	Ø Base mm	Height (H) in	Height (H) mm	Weight lb	Weight kg	Line Ø (Min - Max) in	Line Ø (Min - Max) mm	Fastener Circle in	Fastener Circle mm	Fasteners (SH or HH) in	Fasteners (SH or HH) mm	Max Pull lb	Max Pull kg
900UPWA	4 3/8	110	7 1/2	190	8 1/2	215	26.5	12.0	5/16 - 9/16	8 - 14	6 5/16	160	5 x 1/4	5 x 6	1984	900
900UPWC	4 3/8	110	7 1/2	190	8 1/2	215	32.0	14.5	5/16 - 9/16	8 - 14	6 5/16	160	5 x 1/4	5 x 6	1984	900

Specify voltage when ordering.

Accessories Included

Part No.	Description	Voltage	Motor power watts	Cut-off load lb	Cut-off load kg	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g
BRS104/P	Remote switch w/guard	—	—	—	—	3 3/8	85	3	76	3/4	19	3.4	95
WLC200UPW	Control box w/current controller	12 V	700 W	1874	850	4 15/16	125	5 5/16	135	2 9/16	65	17.6	500

Rewind™ Radial® Electric Winch

The Rewind™ Radial® electric winch is the latest in Harken's "easy sailing" solutions for cruisers, and the first winch of its kind in the marine market. Activated remotely by twin in/out buttons, the Rewind Radial lets you safely ease and trim highly loaded sails in both directions without ever taking the line out of the self-tailer, a patented feature.

Whether you solo or are passaging with friends, the Rewind will make your cruise relaxing and fun, allowing both you and your guests to take pleasure in the sea's beauty instead of hauling line and cranking winches.

Like all electric Radials, the Rewind operates like a normal Harken two-speed electric winch. A simple flip of the red knob on the winch base turns on the rewind feature. A spring-loaded arm of investment-cast stainless steel funnels and keeps line captive as it feeds in and out of the self-tailer while you adjust the sail under fingertip control.

Available in Hardkote-anodized aluminum and mirror-polished chrome.

A Harken® locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation

Activated remotely by twin in/out buttons, the Radial Rewind lets you safely ease and trim highly-loaded sails in both directions without ever taking the line out of the self tailer

A simple flip of the red knob on the winch base turns on the rewind feature

Part No.	Line entry height (LE) in	Line entry height (LE) mm	E in	E mm	F in	F mm	G in	G mm
46RWA	3 9/16	90	1 3/4	43	6 1/8	155	11	280
46RWC	3 9/16	90	1 3/4	43	6 1/8	155	11	280

Part No.	Ø Drum in	Ø Drum mm	Ø Base in	Ø Base mm	Height (H) in	Height (H) mm	Weight lb	Weight kg	Line Ø (Min - Max) in	Line Ø (Min - Max) mm	Fastener circle in	Fastener circle mm	Fasteners (SH or HH) in	Fasteners (SH or HH) mm	Gear ratio 1	Gear ratio 2	Power ratio 1	Power ratio 2
46RWA	3 7/8	100	7 1/4	184	8	203	35.3	16	3/8 - 9/16	10 - 14	5 7/8	150	5 x 5/16	5 x 8	2.3	9.17	11.7	46.5
46RWC	3 7/8	100	7 1/4	184	8	203	41.0	18.6	3/8 - 9/16	10 - 14	5 7/8	150	5 x 5/16	5 x 8	2.3	9.17	11.7	46.5

Kit: see page 185 (available in USA only)

Radial® Electric & Hydraulic Motors

Specify power type, material, voltage, and motor configuration when ordering. See page 177 for part number explanation.

Dimensions

Part No.	E in	E mm	F in	F mm	G in	G mm	L in	L mm	N in	N mm	Weight A lb	Weight A kg	Weight C lb	Weight C kg
Electric														
40.2STEH	1 3/4	43	6 1/8	155	8 7/8	227	—	—	—	—	29.7	13.5	33.2	15.1
46.2STEH	1 3/4	43	6 1/8	155	8 7/8	227	—	—	—	—	32.8	14.9	38.5	17.5
46.2STEV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	36.9	16.7	42.6	19.3
50.2STEH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	37.1	16.8	44.2	20.0
50.2STEV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	38.6	17.5	45.7	20.7
60.2STEH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	46.4	21.0	54.5	24.7
60.2STEV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	47.9	21.7	56.1	25.4
60.3STEH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	49.7	22.5	57.8	26.2
60.3STEV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	51.2	23.2	59.4	26.9
70.2STEH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	48.8	22.1	57.2	25.9
70.2STEV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	50.3	22.8	58.7	26.6
70.3STEH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	52.1	23.6	60.5	27.4
70.3STEV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	53.6	24.3	62.0	28.1
80.2STEH	3 3/16	81	8 11/16	221	10 11/16	272	—	—	—	—	70.6	32.0	87.2	39.5
80.2STEV	—	—	—	—	—	—	16 13/16	427	6 3/4	172	72.2	32.7	88.7	40.2
80.3STEH	3 3/16	81	8 11/16	221	10 11/16	272	—	—	—	—	74.0	33.5	90.5	41.0
80.3STEV	—	—	—	—	—	—	16 13/16	427	6 3/4	172	75.5	34.2	92.1	41.7
Hydraulic														
46.2STH	—	—	—	—	—	—	9 1/4	234	5 1/8	130	28.0	12.7	33.8	15.3
50.2STH	—	—	—	—	—	—	9 1/4	234	5 1/8	130	29.8	13.5	36.9	16.7
60.2STH	—	—	—	—	—	—	9 1/4	234	5 1/8	130	39.1	17.7	47.2	21.4
60.3STH	—	—	—	—	—	—	9 1/4	234	5 1/8	130	42.4	19.2	50.6	22.9
70.2STH	—	—	—	—	—	—	9 1/4	234	5 1/8	130	41.5	18.8	49.9	22.6
70.3STH	—	—	—	—	—	—	9 1/4	234	5 1/8	130	44.8	20.3	53.2	24.1
80.2STH	—	—	—	—	—	—	9 7/8	250	5 1/8	130	66.4	30.1	83.0	37.6
80.3STH	—	—	—	—	—	—	9 7/8	250	5 1/8	130	69.8	31.6	86.3	39.1

	Electric motor configuration		Current voltage		Power in Watts	
Winch size	**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

Electric Wire Gauges

		Total distance between winch and battery							
Winch size	**Current voltage**	**Under 16.4 ft AWG**	**Under 5 m mm²**	**16.4 - 32.8 ft AWG**	**5 m - 10 m mm²**	**32.8 - 49.2 ft AWG**	**10 m - 15 m mm²**	**49.2 - 65.6 ft AWG**	**15 m - 20 m mm²**
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

Performa™ Winches

ENGINEERED FOR HIGH-TECH LINE

Harken Performa™ winches are for racers and racer/cruisers using high-tech line who don't want to invest in a carbon winch, or who need winches in smaller sizes. The Performa design combines the efficiency of Harken Radial® winches with the sand-blasted grip of its Carbon Fiber racing winch for a powerful hybrid. Performa winches transfer high loads to the winch with fewer wraps, allowing crew to trim and ease sails quickly and repeatedly as wind strength and directions change.

Performa winches are available in sizes 40 to 60 to complement Harken's Carbon Fiber product line.

1. Power-Grip Jaws
Self-tailing winches have narrow composite jaws for superior holding power on small-diameter line.

The spring-loaded upper jaw automatically adjusts under line pressure to accept a variety of line sizes. Teeth grip evenly with or without load.

2. Optimized Drum Grip
Performa winches feature sandblasted drums optimized for halyard and sheeting applications using high-tech line.

DETAILS MAKE THE DIFFERENCE

MULTIPLE STYLES
Winches come in self-tailing, plain-top, or Quattro styles; manual, electric, or hydraulic drive.

Electric versions in 12- or 24-volt, with vertical or horizontal motors, and left-mount options. Load controller and racing disconnect rod included.

OPTIMIZED DRUM AND JAWS
Performa's sandblasted drum with diagonal ribs and narrow self-tailing jaws provide maximum hold and smooth release of small-diameter, high-tech line.

INTEGRATED STRIPPER ARM
The one-piece stripper arm covers the winch top for a stable platform. The arm adjusts to multiple positions and smoothly feeds line into and out of the self-tailing jaws.

HIGH-STRENGTH MATERIALS
The aluminum drum features an integrated skirt.

Composite roller and ball thrust bearings reduce friction under load, have excellent corrosion resistance, and don't need lubrication.

Snap-fit design keeps bearings captive in a high-strength Delrin® cage when the drum is removed for maintenance.

Load-carrying gears, pins, and pawls are 17-4PH stainless steel for durability.

EASY TO SERVICE AND UPGRADE TO POWER
Winches can be disassembled and serviced on deck. Snap-fit socket, washer and screw top lift out as a unit, making reassembly mistake-free.

Manual winches easily convert to power. The same drilling template is used to mount manual and electric winches of the same size.

Installation manuals and parts lists are available online at www.harken.com.

DO NOT use Harken equipment for human suspension.

NEW

Performa™

All Performa™ winches feature sandblasted drums optimized for halyard and sheeting applications using small-diameter, high-tech line.

Self-Tailing

Self-tailing winches have narrow composite jaws to ensure superior holding power on small-diameter line. The self-tailing mechanism on the winch means that one crew member can quickly and easily trim or raise sails.

Quattro®

The patented Quattro® model is an all-in-one aluminum winch used on boats that require extremely fast winches to handle large asymmetrical spinnakers, but also need power to trim the genoa upwind. The 2-speed Quattro features two drum diameters and four line speeds.

Plain-Top

Use plain-top winches on sportboats where sails require frequent trimming. Plain-top winches are best handled by two crew—one to trim and one to tail the line.

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
Performa winches feature sand-blasted drums optimized for halyard and sheeting applications using high-tech line.

PLAIN-TOP SELF-TAILING QUATTRO®

Part No.	Ø Drum (D) in	Ø Drum (D) mm	Ø Base (B) in	Ø Base (B) mm	Height (H) in	Height (H) mm	Weight lb	Weight kg	Line Ø (Min - Max) in	Line Ø (Min - Max) mm	Line entry height (LE) in	Line entry height (LE) mm	Fastener circle in	Fastener circle mm	Fasteners (SH or HH) in	Fasteners (SH or HH) mm	Gear ratio 1	Gear ratio 2	Gear ratio 3	Power ratio 1	Power ratio 2	Power ratio 3
Plain-Top																						
40.2PTP	3 1/8	80	6 3/16	157	6	153	7.7	3.5	—	—	3 1/4	82	4 7/8	123	5 x 1/4*	5 x M6	2.13	6.28	—	13.50	39.90	—
46.2PTP	3 7/8	100	7 1/4	184	7	179	11.3	5.1	—	—	3 9/16	90	5 7/8	150	5 x 5/16	5 x M8	2.30	9.17	—	11.70	46.50	—
50.2PTP	4 5/16	110	7 11/16	195	7 1/2	190	13.0	5.9	—	—	3 7/8	97	5 7/8	150	5 x 5/16	5 x M8	2.40	10.90	—	10.90	50.40	—
Self-Tailing																						
40.2STP	3 1/8	80	6 3/16	157	6 7/8	175	8.4	3.8	5/16 - 1/2	8 - 12	3 1/4	82	4 7/8	123	5 x 1/4*	5 x M6	2.13	6.28	—	13.50	39.90	—
46.2STP	3 15/16	100	7 1/4	184	7 15/16	202	11.5	5.2	5/16 - 9/16	8 - 14	3 9/16	90	5 7/8	150	5 x 5/16	5 x M8	2.30	9.17	—	11.70	46.50	—
50.2STP	4 5/16	110	7 11/16	195	8 5/16	212	13.2	6.0	5/16 - 9/16	8 - 14	3 13/16	97	5 7/8	150	5 x 5/16	5 x M8	2.40	10.90	—	10.90	50.40	—
60.2STP	4 3/4	120	9 5/16	236	9 11/16	246	22.5	10.2	5/16 - 5/8	8 - 16	4 9/16	116	8	204	6 x 5/16	6 x M8	4.80	14.40	—	20.30	61.00	—
60.3STP	4 3/4	120	9 5/16	236	10	253	25.8	11.7	5/16 - 5/8	8 - 16	4 9/16	116	8	204	6 x 5/16	6 x M8	2.20	4.80	14.40	9.20	20.30	61.00
Quattro																						
40STQP	3 1/8**	80**	7 1/8	180	6 7/8	175	10.2	4.6	5/16 - 1/2	8 - 12	3 1/4**	82**	4 7/8	123	5 x 1/4	5 x M6	2.13	6.28	—	13.50	39.90	—
46STQP	3 15/16‡	100‡	8 1/2	218	7 15/16	202	13.7	6.2	5/16 - 9/16	8 - 14	3 9/16‡	90‡	5 7/8	150	5 x 5/16	5 x M8	2.30	9.17	—	11.70	46.50	—

*SH only **Refers to upper drum. Lower drum Ø = 6 1/16" (154 mm); line entry height = 15/16" (24 mm)

‡Refers to upper drum. Lower drum Ø = 7 13/32" (188 mm); line entry height = 15/16" (24 mm)

NEW

Electric and Hydraulic Performa™

Electric and Hydraulic Performa™ winches let you trim any size sail with the push of a button.

Manual Performa winches easily convert to electric or hydraulic 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 5/32 inch (8.0 cm) drive-shaft hole into the boat.

Electric motors are available for vertical or horizontal installation, and left-mount options. Hydraulic motors mount vertically, and both operate using waterproof switches located near the winch. A locking handle inserted into an unloaded winch automatically disconnects the motor gear for manual operation.

Specify power type, voltage, and motor configuration when ordering. See part number explanation.

Harken electric and hydraulic 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 reduced battery drain and a more efficient motor on the electric version. The energy-efficient hydraulic version is also smaller, reducing weight and cost.

Part Numbers

Specify power type, voltage, and motor configuration when ordering

46.2STEP12HLM

Winch size

Number of speeds

Self-tailing

Power type
E = Electric
H = Hydraulic

Performa™
P = Performa winch line

Voltage
12 = 12V
24 = 24V

Motor configuration (Specify for electric; hydraulic available in vertical only)
H = Horizontal
V = Vertical

Left-mount option (Available in electric only. Additional letter code for left-mount option only; standard mounting part number ends with motor configuration)
LM = Left-mount

Dimensions

Part No.	E in	E mm	F in	F mm	G in	G mm	L in	L mm	N in	N mm	Weight with motor lb	Weight with motor kg
Electric												
40.2STEPH	1 3/4	43	6 1/8	155	8 7/8	227	—	—	—	—	29.7	13.5
46.2STEPH	1 3/4	43	6 1/8	155	8 7/8	227	—	—	—	—	32.8	14.9
46.2STEPV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	36.9	16.7
50.2STEPH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	37.1	16.8
50.2STEPV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	38.6	17.5
60.2STEPH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	46.4	21.0
60.2STEPV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	47.9	21.7
60.3STEPH	2 3/4	69	7 1/8	181	9 5/8	244	—	—	—	—	49.7	22.5
60.3STEPV	—	—	—	—	—	—	15 3/8	391	6 1/8	157	51.2	23.2
Hydraulic												
46.2STHP	—	—	—	—	—	—	9 1/4	234	5 1/8	130	28.0	12.7
50.2STHP	—	—	—	—	—	—	9 1/4	234	5 1/8	130	29.8	13.5
60.2STHP	—	—	—	—	—	—	9 1/4	234	5 1/8	130	39.1	17.7
60.3STHP	—	—	—	—	—	—	9 1/4	234	5 1/8	130	42.4	19.2

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.

Jeanneau 53, Philippe Briand Yacht Design, Garroni Premorel, Jeanneau Yahcts

Electric Systems

Order components separately based on winch size and voltage.

Winch size	Switches (1)	Switches (2)	Control box 12 V	Control box 24 V	Circuit breaker 12 V	Circuit breaker 24 V	Load controller‡ 12 V	Load controller‡ 24 V
Radial®								
40.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	—	HCP1717	—	WLC200R.40.12**	—
46.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1717	HCP1717	WLC200R.46.12** WLC200RV.46-50.12***	WLC200R.46.24** WLC200RV.46-50.24***
50.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.50.12** WLC200RV.46-50.12***	WLC200R.50.24*** WLC200RV.46-50.24***
60.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.60-70.12** WLC200RV.60-70.12***	WLC200R.60-70.24*** WLC200RV.60-70.24***
60.3STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—
70.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.60-70.12** WLC200RV.60-70.12***	WLC200R.60-70.24*** WLC200RV.60-70.24***
70.3STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—
80.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—
80.3STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	—	—
Classic‡‡								
B40.2STE	RCDBK	RCSBK1 or BRS102*	BEB500.12.1	—	HCP1717	—	WLC200.12.1**	—
B44.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.2**	WLC200.24.1**
B46.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.2**	WLC200.24.1**
B48.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.3**	WLC200.24.2**
B53.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1716	WLC200.12.3**	WLC200.24.2**
B60.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1718	HCP1717	—	—
B70.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—
B74.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—
B980.2STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—
B980.3STE	RCDBK	RCSBK1 or BRS102*	BEB1000.12.1	BEB1000.24.1	HCP1719	HCP1717	—	—

*Specify P for black or S for stainless steel **Recommended ***Required ‡Order WLC200RV versions for winches with vertical motors
‡‡Contact Harken to request quote and lead time. Classic winches not stocked.

Radial® Electric Winch Kits

Kits are offered for the most common winches. Kits include the winch and a motor, a control box, a circuit breaker, and two BRS104/P switches. Please include the materials code, vertical or horizontal motor, and voltage, when ordering a kit.

Kit

Control Box

Circuit Breaker

2 Switches

Jeanneau Sun Odyssey 45 DS

Radial® Winch Kits

Kits available in USA only. If ordering electric winch and components separately, use the part numbers listed under components to determine the correct accessories based on winch size and voltage.

Part No.	Winch size	Components included in kit: Switches (2)	Control box 12 V	Control box 24 V	Circuit breaker 12 V	Circuit breaker 24 V	Components not included: order separately, Load controller‡ 12 V	Load controller‡ 24 V
K40.2STE	40.2STE	BRS104/P	BEB1000.12.1	—	HCP1717	—	WLC200R.40.12*	—
K46.2STE	46.2STE	BRS104/P	BEB1000.12.1	BEB1000.24.1	HCP1717	HCP1717	WLC200R.46.12* WLC200RV.46-50.12**	WLC200R.46.24* WLC200RV.46-50.24**
K46RWA	46 Rewind™	BRS104/P	BEB1000.12.1	—	HCP1717	—	WLC200R.46.12*	—
K50.2STE	50.2STE	BRS104/P	BEB1000.12.1	BEB1000.24.1	HCP1720	HCP1717	WLC200R.50.12* WLC200RV.46-50.12**	WLC200R.50.24** WLC200RV.46-50.24**

*Recommended **Required ‡Order WLC200RV versions for winches with vertical motors

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.

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-volt 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.

CIRCUIT BREAKERS

ELECTRIC CONTROL BOXES

LOAD CONTROLLERS

Circuit Breakers

Part No.	Max amps	Power watts	Use with winch
24 Volt			
HCP1717	80	2000	Radial®: 46.2STE to 70.2STE Classic: B44.2STE to B980.2STE
12 Volt			
HCP1717	80	500	Radial®: 40.2STE & 46.2STE Classic: B40.2STE
HCP1718	100	1500	Classic: B44.2STE to B60.2STE
HCP1719	150	1500	Classic: B70.2STE to B980.2STE
HCP1720	135	1500	Radial®: 50.2STE to 70.2STE

Electric Control Boxes

Part No.	Voltage	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g	Use with winch
BEB500.12.1	12	5 1/2	140	3 5/32	80	4 11/32	110	35.3	1000	Classic: B40.2STEH
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	28	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	Included with winch	Limitation	Voltage	Motor power watts	2nd speed blocking current	Length in	Length mm	Width in	Width mm	Height in	Height mm	Weight oz	Weight g
Radial® Horizontal														
WLC200R.40.12	40	—	Recommended	12	700	161	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200R.46.12	46	—	Recommended	12	700	136	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200R.46.24	46	—	Recommended	24	900	117	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200R.50.12	50	—	Recommended	12	1500	200	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200R.50.24	50	✔	Required	24	2000	139	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200R.60-70.12	60/70	—	Recommended	12	1500	200	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200R.60-70.24	60/70	✔	Required	24	2000	138	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
Radial® Vertical														
WLC200RV.46-50.12	46/50	✔	Required	12	1500	200	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200RV.46-50.24	46/50	✔	Required	24	2000	115	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200RV.60-70.12	60/70	✔	Required	12	1500	200	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200RV.60-70.24	60/70	✔	Required	24	2000	114	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
Classic														
WLC200.12.1	B40	—	Recommended	12	500	200	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200.12.2	B44/B46	—	Recommended	12	1500	200	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200.24.2	B44/B46	—	Recommended	24	2000	105	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200.12.3	B48/B53	—	Recommended	12	1500	200	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210
WLC200.24.3	B48/B53	—	Recommended	24	2000	105	3 11/32	85	2 7/32	56	1 3/8	35	7.4	210

Electric Switches

Harken offers waterproof switches for electric and hydraulic systems to operate winches, furlers, and windlasses.

BRS102 Switches

These simple waterproof switches operate by finger or foot. A safety cover prevents accidental activation. Available in black composite or stainless steel.

Revolving Control Switches

These unique switches feature covers that rotate, hiding or exposing control buttons for fail-safe protection against accidental activation. The design does not have a top lid that opens for operation, allowing switches to be installed vertically or close to cockpit corners. Integrated lighting provides visibility at night to identify control location and mode. Switches use an adhesive mounting system for fast installation. Switches come in two models.

Single Function: The single-function switch adjusts so a finger-sized button is accessible, or so the entire switch is exposed for foot or palm activation. In off mode, the switch holds a sailor's full weight without activating.

Dual-Function: The dual-function switch occupies only half the deck space of similar single controls, with two buttons housed in a single space-saving system—a compact solution for furlers, 2-speed winches, and up/down anchor controls.

BRS102/P

BRS102/S

BRS102

RCSBK1

RCDBK1, RCDBK2, RCDBK3, RCDBK4

REVOLVING CONTROL

Button symbol

1 = Finger/foot symbol on single-function switches

1 = 1/2 on dual-function switches

2 = Fast/slow

3 = Up/down

4 = Left/right

Part No.	Description	Ø in	Ø mm	Height in	Height mm	Weight oz	Weight g
BRS Switches							
BRS102/P	Remote switch w/guard	$2^{11}/_{16}$	68	$^{13}/_{16}$	21	4.66	132
BRS102/S	Remote switch w/guard	$2^{11}/_{16}$	68	$^{13}/_{16}$	21	11.08	314
Revolving Control Switches							
RCSBK1	Revolving control switch/black	$3^{5}/_{32}$	80	$^{13}/_{16}$	20	3.44	97.5
RCDBK1	Revolving control switch/black/1-2	$3^{5}/_{32}$	80	$^{13}/_{16}$	20	3.44	97.5
RCDBK2	Revolving control switch/black/fast-slow	$3^{5}/_{32}$	80	$^{13}/_{16}$	20	3.44	97.5
RCDBK3	Revolving control switch/black/up-down	$3^{5}/_{32}$	80	$^{13}/_{16}$	20	3.44	97.5
RCDBK4	Revolving control switch/black/left-right	$3^{5}/_{32}$	80	$^{13}/_{16}$	20	3.44	97.5

REVOLVING CONTROL SWITCHES SINGLE FUNCTION

Switch activates by rotating the control cover to select either finger or foot operation.

In foot mode, press the entire surface with the foot or palm to engage.

Off mode safely conceals the control functions and protects against accidental activation

REVOLVING CONTROL SWITCHES DUAL-FUNCTION

Rotate the control cover to expose the active buttons: fast/slow for winches, up/down for anchors, in/out for furling.

Off mode safely conceals the control functions and protects against accidental activation.

Aluminum & Aluminum/Stainless Steel Manual & Powered

Aluminum and aluminum/stainless steel winches complement the look of our Radial® line in larger sizes. 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.

Power ratios range from 40:1 to 100:1 in final gear. The wide-body drums provide extra surface to hold high loads and increase retrieval speed when sheeting. The 3-speed 1140st and 1150st feature an additional backwind option to ease the loads on the winch before the sheet is released.

B6A
B8A

ALUMINUM: PLAIN-TOP

Classic winches are traditionally styled with a one-piece stripper arm that attaches to the top of the winch, encompassing the self-tailing jaws.

B980.2STA
B980.3STA

B1000.2STA
B1000.3STA

ALUMINUM: CLASSIC SELF-TAILING

Modern-style winches integrate the stripper support arm into the self-tailing jaw assembly for a clean, smooth look.

B990.2STA
B990.3STA

B1130STASA

B1145.3STA

ALUMINUM: MODERN SELF-TAILING

B1120STASA

B1140STASA

B1150STASA

ALUMINUM WITH STAINLESS STEEL DRUM: CLASSIC SELF-TAILING

Contact Harken to request quote and lead time. Classic winches not stocked.

Stainless Steel & All-Chrome Manual & Powered

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 to 100:1 in final gear. The wide-body drums provide extra surface to hold high loads and increase retrieval speed when sheeting.

B6CCA
B8CCA

B16.2CCC

B32.2CCC

B40.2CCC

PLAIN-TOP CHROME

B16ST

B32.2ST

B40.2ST

B44.2ST

B48.2ST

B60.2ST
B60.3ST

B74.2ST
B74.3ST

B980.2ST
B980.3ST

CLASSIC SELF-TAILING CHROME OR STAINLESS STEEL

B1110ST

B1130ST
B1135ST

B1140ST

MODERN SELF-TAILING STAINLESS STEEL

CLASSIC SELF-TAILING STAINLESS STEEL

Contact Harken to request quote and lead time. Classic winches not stocked.

Bronze
Manual & Powered

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. Bronze 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.

Winch tops can be engraved with your yacht's name.

B16ST | B32.2ST | B40.2ST | B44.2ST | B48.2ST

Cotton Blossom II, *Q-Boat, Johan Anker, Jensen Shipyard — Bob Grieser photo*

B60.2ST
B60.3ST

B74.2ST
B74.3ST

B980.2ST
B980.3ST

SELF-TAILING

B6BBA
B8BBA

B16.2BBB

B32.2BBB

B40.2BBB

B980.2PTBBB
B980.3PTBBB

B1111.3PTBBB

PLAIN-TOP

Contact Harken to request quote and lead time. Classic winches not stocked.

Aluminum, Stainless Steel, All-Chrome, & Bronze

Ordering Information:
Specify material by adding letter code to part number. See chart for availability.

A*	GGG*	ASA*	CCA*	CCC*	CCS*	SSS*	BBA*	BBB*

Letter code	1st Letter: Base	2nd Letter: Drum	3rd Letter: Top
A	Aluminum	Aluminum	Aluminum
GGG	Grey-anodized aluminum	Grey-anodized aluminum	Grey-anodized aluminum
ASA	Aluminum	Stainless steel	Aluminum
CCA	Chromed bronze	Chromed bronze	Aluminum
CCC	Chromed bronze	Chromed bronze	Chromed bronze
CCS	Chromed bronze	Chromed bronze	Stainless steel
SSS	Stainless steel	Stainless steel	Stainless steel
BBA	Polished bronze	Polished bronze	Aluminum
BBB	Polished bronze	Polished bronze	Polished bronze

Part No.	Materials A/GGG	ASA	CCA	CCC	CCS	SSS	BBA	BBB	Ø Drum (D) in	Drum (D) mm	Base (B) in	Base (B) mm	Height (H) in	Height (H) mm	A/GGG lb	A/GGG kg	Weight CCA/BBA/CCS/CCC/BBB lb	CCA/BBA/CCS/CCC/BBB kg	SSS/ASA lb	SSS/ASA kg	Line Ø (Min - Max) in	Line Ø (Min - Max) mm	Line entry height (LE) in	Line entry height (LE) mm	Fastener circle in	Fastener circle mm	Fasteners in	Fasteners mm	Gear ratio 1	Gear ratio 2	Gear ratio 3	Power ratio 1	Power ratio 2	Power ratio 3
Classic Plain-Top																																		
B6	✔‡	—	✔	—	—	—	✔	—	2 3/8	60	3 9/16	90	3 1/4	82	1.5	.7	2.9	1.3	—	—	—	—	1 5/16	33	2 9/16	65	6 x 1/4 FH	6 x 6 FH	1	—	—	8.4	—	—
B8	✔‡	—	✔	—	—	—	✔	—	2 11/16	68	4 1/2	115	3 9/16	90	2.4	1.1	4.6	2.1	—	—	—	—	1 1/2	38	3 9/16	90	4 x 5/16 FH	4 x 8 FH	1	—	—	7.5	—	—
B16.2	—	—	—	✔	—	—	—	✔	2 3/4	70	4 3/4	120	4 7/16	112	—	—	8.2	3.7	—	—	—	—	2	50	3 9/16	90	5 x 1/4 FH	5 x 6 FH	1	2.3	—	7.2	16.5	—
B32.2	—	—	—	✔	—	—	—	✔	2 15/16	74	5 13/32	137	5 1/4	134	—	—	10.4	4.7	—	—	—	—	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 11/16	145	5 13/16	148	—	—	13.2	6	—	—	—	—	2 3/4	70	4 7/16	112	5 x 1/4 FH	5 x 6 FH	1	6.1	—	6.7	40.7	—
B980.2	—	—	—	—	—	—	—	✔	6 7/8	175	10 7/16	265	11 3/4	298	—	—	94.8	43.0	—	—	—	—	5 13/16	148	8 7/8	225	6 x 3/8 FH	6 x 10 FH	7.3	27.8	—	21.2	80.7	—
B980.3	—	—	—	—	—	—	—	✔	6 7/8	175	10 7/16	265	11 3/4	298	—	—	94.8	43.0	—	—	—	—	5 13/16	148	8 7/8	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 9/32	236	—	—	—	—	—	—	—	—	3 5/32	80	10 15/16	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 9/16	142	—	—	9	4.1	—	—	1/4 - 1/2	6 - 12	2	50	3 9/16	90	5 x 1/4 FH	5 x 6 FH	2.3	—	—	16.6	—	—
B32.2ST	—	—	—	—	✔	—	—	✔	2 15/16	74	5 7/16	139	6 7/16	164	—	—	12.1	5.5	—	—	5/16 - 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 15/16	176	—	—	15	6.8	14.8	6.7	5/16 - 1/2	8 - 12	2 3/4	70	4 7/16	112	5 x 1/4 FH	5 x 6 FH	2	6	—	13.4	40.1	—
B44.2ST	—	—	—	—	✔	✔	—	✔	3 5/8	92	6 3/4	172	7 3/4	196	—	—	20.9	9.5	20.5	9.3	5/16 - 9/16	8 - 14	3 3/8	85	5 1/16	128	5 x 5/16 FH	5 x 8 FH	2.5	8	—	13.8	44.2	—
B46.2ST	—	—	—	—	✔	—	—	✔	4	102	6 15/16	176	8 9/16	210	—	—	25.5	11.55	—	—	5/16 - 9/16	8 - 14	3 9/16	90	5 1/2	140	5 x 5/16 FH	5 x 8 FH	2.5	9.1	—	12.4	45.3	—
B48.2ST	—	—	—	—	✔	✔	—	✔	4	102	7 7/16	189	8 3/4	222	—	—	30	13.6	29.8	13.5	5/16 - 9/16	8 - 14	3 15/16	100	6 1/8	155	6 x 5/16 FH	6 x 8 FH	2.5	9.7	—	12.4	48.3	—
B53.2ST	—	—	—	—	✔	—	—	✔	4 7/16	112	8 11/16	221	9 11/16	245	—	—	39	17.7	—	—	5/16 - 9/16	8 - 14	4 3/16	105	7 1/16	180	6 x 5/16 FH	6 x 8 FH	3.1	12	—	14	53	—
B60.2ST	—	—	—	—	✔	✔	—	✔	4 3/4	120	8 7/8	225	10 5/8	270	—	—	—	—	53.6	24.3	5/16 - 5/8	8 - 16	4 15/16	125	7 11/16	195	6 x 5/16 FH	6 x 8 FH	4.8	14.4	—	20.3	61	—
B60.3ST	—	—	—	—	✔	✔	—	✔	4 3/4	120	8 7/8	225	10 5/8	270	—	—	40.8	18.5	—	—	5/16 - 5/8	8 - 16	4 15/16	125	7 11/16	195	6 x 5/16 FH	6 x 8 FH	2.2	4.8	14.4	9.3	20.3	61
B70.2ST	—	—	—	—	✔	—	—	✔	5 1/8	130	9 5/8	245	12 1/8	308	—	—	—	—	—	—	3/8 - 3/4	10 - 18	5 7/8	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	—	—	58.4	26.5	—	—	3/8 - 3/4	10 - 18	5 7/8	150	8 1/4	210	5 x 3/8 FH	5 x 10 FH	2.7	5.7	18	10.6	22.3	70
B74.2ST	—	—	—	—	✔	✔	—	✔	5 7/8	150	10 7/16	265	11 13/16	300	—	—	—	—	—	—	3/8 - 13/16	10 - 20	5 7/8	150	8 7/8	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 13/16	300	—	—	72.1	32.7	—	—	3/8 - 13/16	10 - 20	5 7/8	150	8 7/8	225	6 x 3/8 FH	6 x 10 FH	2.7	7.3	21.7	9.5	24.7	73.5
B980.2ST	✔	✔	—	—	✔	✔	—	✔	6 7/8	175	10 7/16	265	11 13/16	300	—	—	92.6	42.0	88.4	40	3/8 - 13/16	10 - 20	5 13/16	148	8 7/8	225	6 x 3/8 FH	6 x 10 FH	7.3	27.8	—	21.2	80.7	—
B980.3ST	✔	✔	—	—	✔	✔	—	✔	6 7/8	175	10 7/16	265	11 13/16	300	—	—	92.6	42.0	—	—	3/8 - 13/16	10 - 20	5 13/16	148	8 7/8	225	6 x 3/8 FH	6 x 10 FH	2.75	7.3	27.8	8	21.2	80.7
B1000.2ST	✔	✔	—	✔	—	✔	—	✔	6 7/8	175	11 5/16	287	13 3/16	335	46.8	21.2	—	—	—	—	3/8 - 3/4	10 - 18	6 7/16	164	9 3/16	233	8 x 3/8 SH/HH	8 x 10 SH/HH	9.40	28.10	—	32.10	93.00	—
B1000.3ST	✔	✔	—	✔	—	✔	—	✔	6 7/8	175	11 5/16	287	13 3/16	335	50.1	22.7	—	—	—	—	3/8 - 3/4	10 - 18	6 7/16	164	9 3/16	233	8 x 3/8 SH/HH	8 x 10 SH/HH	2.23	9.40	28.10	6.50	32.10	93.00
B1120ST	✔	✔	—	—	—	✔	—	✔	11 13/16	300	16 15/32	418	14 9/16	370	—	—	—	—	127.8**	58**	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	36.3	3.4	19.3	61.5
B1140ST	✔	✔	—	—	—	✔	—	—	14 3/16	360	22 1/8	562	18 3/16	462	—	—	—	—	299.9**	136**	3/4 - 1 1/4	19 - 32	8 11/32	212	18 1/8	460	8 x 1/2 SH	8 x 12 SH	2.9	11.6	42.6	4	16.4	60.1
B1150ST	—	✔	—	—	—	✔	—	—	16 5/32	410	25 3/16	640	19 3/4	502	—	—	—	—	485**	220**	9/16 - 1	14 - 25	8 27/32	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																																		
B990.3STR	✔	—	—	—	—	—	—	—	8	203	10 13/16	274	9 1/2	241	44.8	20.3	—	—	—	—	7/16 - 3/4	11 - 19	3 27/32	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
B1110ST	—	✔	—	—	—	✔	—	—	10 31/32	279	13 11/32	339	9 3/4	246.5	—	—	—	—	74.2	33.6	5/8 - 7/8	16 - 22	3 1/2	89	10 23/32	272	8 x 3/8 SH	8 x 10 SH	1	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**	39**	5/8 - 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	86.6
B1135.3ST***	—	✔	—	—	—	✔	—	—	12 3/4	324	16 3/32	409	12 1/8	308	—	—	—	—	220.5**	100**	5/8 - 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	86.6
B1145.3STR	✔	—	—	—	—	—	—	—	14 1/4	362	21 3/16	538	16 1/2	419	192.9	87.5	—	—	—	—	5/8 - 11/16	16 - 22	8 3/16	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

*Contact Harken to request quote and lead time. Classic sizes 16 and larger not stocked. ‡Not available in GGG **Weight based on ASA version ***4-Speed option available. Contact Harken

Aluminum, Stainless Steel, All-Chrome, & Bronze Electric & Hydraulic Motors

Specify power type, material, voltage, and motor configuration when ordering. See page 177 for part number explanation and page 191 for material options.

Harken electric and hydraulic 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 reduced battery drain and a more efficient motor on the electric version. The energy-efficient hydraulic version is also smaller, reducing weight and cost.

ELECTRIC HORIZONTAL

ELECTRIC VERTICAL

HYDRAULIC

Dimensions

Part No.	Racing disconnect rod*	E in	E mm	F in	F mm	G in	G mm	L in	L mm	N in	N mm	Line entry height (LE) in	Line entry height (LE) mm
Electric													
B40STE	—	1 9/16	40	5 25/32	147	9 27/32	250	—	—	—	—	3 1/2	89
B44STE	**B4644**	2 11/16	68	7 3/32	180	9 5/8	244	14 13/32	366	6 9/32	160	3 3/4	96
B46STE	**B4646**	2 11/16	68	7 3/32	180	9 5/8	244	14 13/32	366	6 9/32	160	3 31/32	101
B48STE	**B4648**	2 7/16	62	6 7/8	174	9 5/8	244	14 13/32	366	6 9/32	160	4 27/32	123
B53STE	**B4653**	2 7/16	62	6 7/8	174	9 5/8	244	14 13/32	366	6 9/32	160	4 5/8	118
B60STE	**B4656**	2 1/4	57	6 21/32	169	9 5/8	244	14 13/32	366	6 9/32	160	5 1/2	137
B70STE	**B4664**	2 9/32	58	7 13/16	198	10 23/32	272	15 13/16	402	6 9/32	160	6 1/2	165
B74STE	**B4666**	2 9/32	58	7 13/16	198	10 23/32	272	15 13/16	402	6 9/32	160	6 1/2	165
B980STE	**B4666**	2 9/32	58	7 13/16	198	10 23/32	272	15 13/16	402	6 9/32	160	6 7/16	163
B990STE	—	3 9/16	90	9 1/16	230	10 23/32	272	15 13/16	402	6 9/32	160	6	152
B1110STE	—	2 3/4	70	10 1/32	255	17 1/8	435	—	—	—	—	3 1/2	89
B1111STE	—	2 3/4	70	10 1/32	255	17 1/8	435	—	—	—	—	3 5/32	80
B1120STE	—	4 13/16	122	10 7/8	276	17 23/32	450	—	—	—	—	6 7/16	163
B1130STE	—	2 3/4	70	8 7/8	225	16 3/16	411	—	—	—	—	4 11/32	110
B1135STE	—	2 3/4	70	8 7/8	225	16 3/16	411	—	—	—	—	4 11/32	110
B1140STE	—	1 3/16	30	14 5/8	372	20 15/32	520	—	—	—	—	8 11/32	212
Hydraulic													
B44.2STH	**B4644**	—	—	—	—	—	—	8 27/32	225	4 15/16	125	3 3/4	96
B46.2STH	**B4646**	—	—	—	—	—	—	8 27/32	225	4 15/16	125	3 31/32	101
B48.2STH	**B4648**	—	—	—	—	—	—	8 27/32	225	4 15/16	125	4 27/32	123
B53.2STH	**B4653**	—	—	—	—	—	—	8 27/32	225	4 15/16	125	4 5/8	118
B60STH	**B4656**	—	—	—	—	—	—	8 27/32	225	4 15/16	125	5 13/32	137
B70STH	**B4664**	—	—	—	—	—	—	9 1/4	235	4 15/16	125	6 1/2	165
B74STH	**B4666**	—	—	—	—	—	—	9 1/4	235	4 15/16	125	6 1/2	165
B980STH	**B4666**	—	—	—	—	—	—	9 1/4	235	4 15/16	125	6 7/16	163
B990STH	—	—	—	—	—	—	—	10	255	5 1/8	130	5 31/32	152
B1110STH	—	—	—	—	—	—	—	11 7/16	290	4 15/16	125	3 1/2	89
B1111STH	—	—	—	—	—	—	—	11 5/32	283	5 1/8	130	3 5/32	80
B1120STH	—	—	—	—	—	—	—	8 3/4	222	4 15/16	125	6 13/32	163
B1130STH	—	—	—	—	—	—	—	11 3/8	289	5 15/16	150	4 11/32	110
B1140STH	—	—	—	—	—	—	—	8 5/8	220	6 7/8	175	8 11/32	212
B1145TCH	—	—	—	—	—	—	—	6 5/8	168	15	380	8 1/4	208
B1150STH	—	—	—	—	—	—	—	7 15/16	201	5 1/8	130	8 27/32	225

Contact Harken to request quote and lead time. Classic winches not stocked. *When racing, we advise using a disconnect rod to keep the winch in manual mode.

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

Veolia Environnement, *Marc Lombard, JMV Industries*

B650.3TCR

B650.3STR

B65.3TCR

B65.3STAC

B65.2STAC

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

Base riser required to mount B50, B55, and B65 winches above deck. Specify above deck or flush deck version when ordering.

Use base sheaves for cross-sheeting and lazy sheets. Availability varies by winch size.

Part	Ø Drum (D)		Ø Base (B)		Height (H)		Weight		Line Ø Min		Line Ø Max		Line entry height (LE)		Fastener circle		Fasteners		Gear ratio				Power ratio			
No.	in	mm	in	mm	in	mm	lb	kg	in	mm	in	mm	in	mm	in	mm	in	mm	1	2	3	4	1	2	3	4
B480TCR	4 3/4	120	7 13/32	188	8 3/16	208	17.4	7.9	—	—	—	—	3 5/8	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 9/16	65	6 15/32	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 15/32	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 9/16	65	6 15/32	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 7/8	175	13.7	6.2	5/16	8	9/16	14	2 5/32	55	6 15/32	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	—
B530TCR	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 13/16	199	20.9	9.5	5/16	8	5/8	16	3 1/4	83	8 29/32	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 13/16	199	—	—	5/16	8	5/8	16	3 11/32	85	8 29/32	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 29/32	226	26	11.8	5/16	8	5/8	16	3 1/4	83	8 29/32	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 29/32	226	25.4	11.5	—	—	—	—	3 1/4	83	8 29/32	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 13/16	199	20.9	9.5	5/16	8	5/8	16	3 1/4	83	8 29/32	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 13/16	199	—	—	5/16	8	5/8	16	3 11/32	85	8 29/32	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 29/32	226	26	11.8	5/16	8	5/8	16	3 1/4	83	8 29/32	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 29/32	226	25.4	11.5	—	—	—	—	3 1/4	83	8 29/32	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	—
B650.3STR	5 7/8	149	9	228	7 7/32	183	21.1	9.6	5/16	8	5/8	16	3 1/4	83	9 27/32	250	5 x 5/16 FH	5 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	9	228	7 7/32	183	20.0	9.1	—	—	—	—	3 1/4	83	9 27/32	250	5 x 5/16 FH	5 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 13/16	274	9 1/2	241	44.8	20.3	7/16	11	3/4	19	3 27/32	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 3/8	314	9 7/16	240	—	—	7/16	11	3/4	19	3 27/32	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 13/16	274	9 7/16	240	41.5	18.8	—	—	—	—	3 27/32	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 17/32	344	8 11/32	212	40.4	18.3	3/8	10	3/4	19	2 3/4	70	10 23/32	272	8 x 5/16 FH	8 x 8 FH	2.5:1	9.9:1	40.1:1	—	5:1	19.7:1	79.5:1	—
B880.3VTOP	10	254	13 17/32	344	8 11/32	212	38.6	17.5	—	—	—	—	2 3/4	70	10 23/32	272	8 x 5/16 FH	8 x 8 FH	2.5:1	9.9:1	40.1:1	—	5:1	19.7:1	79.5:1	—
B1111.3STR*	11 1/32	280	14 3/16	360	9 5/16	236	50.3	22.8	7/16	11	3/4	19	3 11/16	94	10 21/32	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 3/16	360	8 5/32	207	41.0	18.6	—	—	—	—	3 11/16	94	10 11/16	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 3/16	360	8 19/32	218	—	—	—	—	—	—	3 11/16	94	10 21/32	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 3/16	360	9 9/32	236	—	—	7/16	11	3/4	19	3 11/16	94	10 21/32	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
B1125	11 13/16	300	—	—	9 13/16	249	—	—	7/16	11	3/4	19	4 1/8	105	11 15/16	303	9 x 15/32 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 3/4	324	16 3/32	409	12 1/8	308	86.0	39.0	5/8	16	1	25	4 17/32	115	12 3/4	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 3/4	324	16 3/32	409	11 17/32	293	86.0	39.0	—	—	—	—	4 17/32	115	12 3/4	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 3/4	324	16 3/32	409	12 1/8	308	92.6	42.0	5/8	16	1	25	4 17/32	115	12 3/4	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 3/4	324	16 3/32	409	11 17/32	293	77.0	35.0	—	—	—	—	4 17/32	115	12 3/4	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 3/16	462	249.2	113.0	5/8	16	1	25	8 11/32	212	18 1/8	460	8 x 1/2 SH	8 x 12 SH	2.9:1	11.6:1	42.6:1	—	4:1	16.4:1	60.1:1	—
B1145.3STR	14 1/4	362	21 3/16	538	16 1/2	419	192.9	87.5	5/8	16	11/16	22	8 3/16	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	21 3/16	538	16 1/2	419	187.1	84.9	3/4	19	1 1/4	32	8 3/16	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	—

Contact Harken to request quote and lead time. *4-Speed option available. Contact Harken ‡Available in electric **Available in electric or hydraulic

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

B606 with overdrive

B701

Foot button disconnect

Universal Joint

Drive shafts

Vincitore, *Southern Cross 52, Reichel/Pugh, Davie Norris Boatbuilders — Ingrid Abery photo*

Captive Reel Winches

Harken Captive Reel Winches are smaller in size than similarly configured winches and include models with pulling loads of 1.5 to 16 tons. Winches 6T and up are offered with variable-speed motors for continuous line adjustment. Standard-sized drums come in various lengths, with all components located on one side of the winch for easy access. Tensioners are available for underdeck, deck, or through-deck mounting. In-line tensioners and runner tricing line winches are also offered.

Lightweight, Low-Maintenance Materials

The winch frame and drum are 6061 Hardkote-anodized aluminum with carbon fiber gear cover to reduce weight.

The feeder screw nut is made of aluminum and self-lubricating composite.

Hydraulic Motor

Captives are driven by industrial-sealed hydraulic motors. Winches 6T and up are offered with variable-speed motors; 1.5T and 3T with fixed displacement motors; custom solutions for higher loads are available.

Synchronized Transmission

The synchronized transmission uses two gear sets (four gears) to drive the twin feeder screws. To change line size, the two gear sets can be easily replaced from the motor end of the winch.

Twin Feeder Screws

The feeder transmission's twin feeder screws balance the load on the feeder, allowing line to lie smoothly on the drum—even when slack. The double-screw design positions the screws close to the drum, reducing winch size over similarly configured winches.

Double-Feeder Sensors

Two inner magnetic switches are set at the feeder's active stroke limits to prevent over-travel. Two outer fail-safe limit switches automatically engage the brake.

Easy Maintenance

All parts connected to hydraulic or electric circuitry, screw bearings, and gear transmission are easily accessible from the motor side of the winch. Bearings are sealed and lubricated with grease. The main gearbox is sealed and lubricated with oil.

Precise gearing provides even line take-up and release

Automatic disc brake between motor and gearbox is always locked unless system is activated

Redundant proximity switches prevent over-travel

Lead screw and sheave allow line to lie smoothly on the drum—even when slack

Open-ended design reduces weight

Captive Reel Winches

Line Tensioner Manifold

Line tensioners prevent slack line and overrides on the winch drum while sheeting in, and help clear line from the drum when sheeting out. Compact hydraulic motors mount inside sandblasted sheaves with multiple attachment methods for underdeck, belowdeck, and through-deck mounting. In-line and through-deck tensioners use driven rubber belts to help power line without damage. Tensioner manifolds include a solenoid directional valve to synchronize the tensioner and winch timing.

Manifold Controls

The manifold contains counterbalance valves that control the load while easing. A shuttle valve feeds the brake circuit which includes a fail-safe brake valve (normally closed) that is hard-wired to two redundant over-travel switches. Loss of system power or depressing the over-travel switch cuts power to the brake valve, blocking oil and engaging the brake. The brake valve comes with a manual override knob.

A manual needle valve blocks oil pressure to release the brake—a safety feature when servicing the winch.

Flush-deck mounting

Belowdeck mounting

Line tensioner removes slack when loading and unloading line on the spool

Power/Sheet Size Guide

Part No.	Maximum dynamic pull lb	Maximum dynamic pull kg	Maximum holding load lb	Maximum holding load kg	Line Ø Min in	Line Ø Min mm	Line Ø Max in	Line Ø Max mm	Max pressure PSI	Max pressure Bar	Flow rate gal/min	Flow rate L/min	Max line speed ft/min	Max line speed m/min
1.5T	3300	1500	5500	2500	1/2	12	3/4	18	1739	120	13	50	115.9	35.0
3T	6600	3000	11000	5000	1/2	12	3/4	18	2753	190	13	50	99.3	30.0
6T	13200	6000	19800	9000	9/16	14	7/8	22	3478	240	18	70	344.5	105.0
9T	19800	9000	26400	12000	5/8	16	1	26	3623	250	21	80	259.2	79.0
12T	26400	12000	33000	15000	3/4	20	1 1/8	28	3623	250	26	100	285.4	87.0
16T	35200	16000	41800	19000	1	24	1 1/4	32	3623	250	31	120	255.9	78.0

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

Captive Length Size mm	Line Ø 12 mm ft	Line Ø 12 mm m	Line Ø 14 mm ft	Line Ø 14 mm m	Line Ø 16 mm ft	Line Ø 16 mm m	Line Ø 18 mm ft	Line Ø 18 mm m	Line Ø 20 mm ft	Line Ø 20 mm m	Line Ø 22 mm ft	Line Ø 22 mm m	Line Ø 24 mm ft	Line Ø 24 mm m	Line Ø 26 mm ft	Line Ø 26 mm m	Line Ø 28 mm ft	Line Ø 28 mm m	Line Ø 30 mm ft	Line Ø 30 mm m	Line Ø 32 mm ft	Line Ø 32 mm m
1.5T																						
420	49.3	14.9	41.4	12.5	39.1	11.8	33.8	10.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
520	66.5	20.1	55.9	16.9	53.0	16	45.7	13.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3T																						
420	49.3	14.9	41.4	12.5	39.1	11.8	33.8	10.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
520	66.5	20.1	55.9	16.9	53.0	16	45.7	13.8	—	—	—	—	—	—	—	—	—	—	—	—	—	—
720	101.3	30.6	85.1	25.7	80.1	24.2	69.5	21.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6T																						
810	—	—	70.2	21.2	61.6	18.6	56.6	17.1	49.3	14.9	46.0	13.9	—	—	—	—	—	—	—	—	—	—
1010	—	—	110.9	33.5	97.3	29.4	89.4	27.0	78.1	23.6	72.8	22.0	—	—	—	—	—	—	—	—	—	—
1210	—	—	151.6	45.8	133.1	40.2	122.1	36.9	106.9	32.3	99.6	30.1	—	—	—	—	—	—	—	—	—	—
1410	—	—	192.3	58.1	168.8	51.0	154.9	46.8	135.7	41.0	126.4	38.2	—	—	—	—	—	—	—	—	—	—
9T																						
930	—	—	—	—	108.2	32.7	96.7	29.2	88.0	26.6	79.1	23.9	76.5	23.1	70.5	21.3	—	—	—	—	—	—
1130	—	—	—	—	155.6	47	139.0	42	127.1	38.4	114.5	34.6	110.6	33.4	101.6	30.7	—	—	—	—	—	—
1330	—	—	—	—	204.2	61.7	182.4	55.1	166.2	50.2	149.6	45.2	144.6	43.7	133.1	40.2	—	—	—	—	—	—
1530	—	—	—	—	252.2	76.2	225.4	68.1	205.2	62	185.0	55.9	178.7	54	164.5	49.7	—	—	—	—	—	—
1730	—	—	—	—	300.2	90.7	268.1	81	244.3	73.8	220.1	66.5	212.8	64.3	195.6	59.1	—	—	—	—	—	—
12T																						
1130	—	—	—	—	—	—	129.6	39.2	117.4	35.5	105.8	32.0	102.3	30.9	94.3	28.5	90.4	27.3	—	—	—	—
1330	—	—	—	—	—	—	171.1	51.7	156.0	47.1	140.5	42.4	135.7	41.0	125.4	37.9	120.2	36.3	—	—	—	—
1530	—	—	—	—	—	—	213.5	64.5	194.5	58.7	175.2	52.9	169.1	51.1	156.6	47.3	149.6	45.2	—	—	—	—
1730	—	—	—	—	—	—	255.9	77.3	233.0	70.4	209.9	63.4	202.9	61.3	187.3	56.6	179.4	54.2	—	—	—	—
16T																						
1030	—	—	—	—	—	—	—	—	—	—	—	—	92.7	28.0	83.1	25.1	80.4	24.3	74.1	22.4	71.2	21.5
1330	—	—	—	—	—	—	—	—	—	—	—	—	150.9	45.6	135.4	40.9	130.7	39.5	120.5	36.4	115.9	35.0
1530	—	—	—	—	—	—	—	—	—	—	—	—	189.7	57.3	169.8	51.3	164.2	49.6	151.6	45.8	145.6	44.0
1730	—	—	—	—	—	—	—	—	—	—	—	—	228.1	68.9	204.6	61.8	197.6	59.7	182.4	55.1	175.4	53.0

Line storage lengths are guides only. Winches are customized to application. Contact Harken for price and lead time.

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 transmits 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

B8ASGLP | B8ASG B10ASG | B8CSG B10CSG | B8AP B10AP | B8AL B10AL | B8BL B10BL | B8CL B10CL | B10ADL

SPEEDGRIP | STANDARD

Part No.	Description	Length (L) in	Length (L) mm	Height (H) in	Height (H) mm	Rise (R) in	Rise (R) mm	Weight oz	Weight g
SpeedGrip									
B8ASGLP	Lock-in/low-profile/aluminum	8	203	4 13/16	122	1 1/4	32	14.1	400
B8ASG	Lock-in/aluminum	8	203	7 3/16	182	1 1/4	32	17.6	500
B8CSG	Lock-in/chrome	8	203	7 3/16	182	1 1/4	32	35.3	1000
B10ASG	Lock-in/aluminum	10	254	7 7/16	188	1 1/2	38	21.2	600
B10CSG	Lock-in/chrome	10	254	7 7/16	188	1 1/2	38	47.6	1350
Standard									
B8AP	No-lock/aluminum	8	203	6 5/8	168	1 1/4	32	14.1	400
B8AL	Lock-in/aluminum	8	203	6 5/8	168	1 1/4	32	14.1	400
B8BL	Lock-in/bronze	8	203	6 5/8	168	1 1/4	32	31.7	900
B8CL	Lock-in/chrome	8	203	6 5/8	168	1 1/4	32	31.7	900
B10AP	No-lock/aluminum	10	254	7	178	1 1/2	38	17.6	500
B10AL	Lock-in/aluminum	10	254	7	178	1 1/2	38	17.6	500
B10BL	Lock-in/bronze	10	254	7	178	1 1/2	38	45.9	1300
B10CL	Lock-in/chrome	10	254	7	178	1 1/2	38	45.9	1300
B10ADL	Lock-in/double-grip/aluminum	10	254	11 1/4	286	1 13/16	46	21.2	600

Accessories: Service Kits

You should service your winches at least once during the preseason. However, twice a season is best if your boat lives in salt water. If you race your boat hard, you may want to maintain your winches before every regatta. Keep your winches clean and operating smoothly by flushing frequently with fresh water. Check pawls and springs, bearings, gears, and spindles for signs of wear and corrosion.

For more details, consult the maintenance manual.

Installation manuals and parts lists are available online at www.harken.com.

Radial Winch

Classic Winch

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		

HYDRAULICS

Quantum Racing, *TP52, Botin Carkeek Yacht Design, Longitud 0 — ©Ian Roman photo*

Hydraulic Cylinders

TRIED AND TESTED

Harken's full range of cylinders are perfect for mast, sail, and keel controls. They stand up to years of high-stress use in harsh marine environments and have proven themselves on yachts of all types—from racers to bluewater cruisers and megayachts. Their efficiency, longevity, and reliability are evident in the selection of high-quality components, all supported by workmanship of the highest standards.

DETAILS MAKE THE DIFFERENCE

HIGH-STRENGTH, CORROSION-RESISTANT MATERIALS

Cylinders are available in stainless steel or Hardkote-anodized, Teflon®-impregnated 6061-T6 aluminum for strength and corrosion resistance. Clear anodizing is also offered, but provides less protection than black Hardkote.

Rods and pins are made of high-strength Nitronic 50 stainless steel for superior corrosion resistance.

VARIETY OF DESIGNS

Cylinders include a standard clevis jaw on both ends, but can also be fitted with blocks and different eye types. See alternate end fittings on pages 207 and 210.

Single-acting cylinders have air-spring returns, but can be ordered in push, push/pull, and pull/pull custom versions. Custom lengths are also available.

1. **Low Friction, Durable Seals**
   Graphite-filled Teflon® rod seals and bronze-filled Teflon® piston seals are extremely low friction and more durable than polyurethane.
2. **Long-Lasting O-Rings and Slant Springs**
   Performance O-rings and slant springs in nonabsorbent Teflon® seals maintain a consistent fit over time.
3. **Antisnag Clevis Pins**
   Smooth antisnag clevis pins protect rigging and crew.

DO NOT use Harken equipment for human suspension.

Hydraulic Cylinders

These strong, lightweight cylinders are perfect for mast, sail, and keel controls. 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. 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. Custom cylinder lengths are also available.

**Clear-anodized aluminum is available but offers less protection than Hardkote-anodized.*

Available, *H65, 65' Café Racer, Bill Tripp, Hodgdon Yachts — Billy Black photo*

Hydraulic Cylinders

Part No.	- Size	Stroke in	Stroke mm	Pin center length (closed)* in	Pin center length (closed)* mm	Weight** 6061-T6 Aluminum lb	Weight** 6061-T6 Aluminum kg	Weight** 316 Stainless lb	Weight** 316 Stainless kg	Volume in³	Volume L	Diameter Gap/pin in	Diameter Gap/pin mm	Diameter Bore in	Diameter Bore mm	Diameter Rod in	Diameter Rod mm	Max OD in	Max OD mm	Pull force*** @ 1000psi 69 bar lb	Pull force*** @ 1000psi 69 bar kg	Pull force*** @ 2000 psi 140 bar lb	Pull force*** @ 2000 psi 140 bar kg	Pull force*** @ 3000 psi 210 bar lb	Pull force*** @ 3000 psi 210 bar kg	Pull force*** @ 4000 psi 275 bar lb	Pull force*** @ 4000 psi 275 bar kg	Pull force*** @ 5000 psi 345 bar lb	Pull force*** @ 5000 psi 345 bar kg	Breaking load lb	Breaking load kg
HYCS025110265	-6	10.4	265	18.7	474	2.1	0.97	4.5	2.03	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
HYCS025110360	-6	14.2	360	22.4	569	2.5	1.13	5.2	2.36	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
HYCS025110530	-6	20.9	530	29.1	739	3.1	1.42	6.5	2.96	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
HYCS035130230	-10	9.1	230	19.4	494	3.4	1.54	7.6	3.44	12	0.19	1/2	12.7	1 3/8	35	1/2	13	1.81	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYCS035130350	-10	13.8	350	24.0	609	4.1	1.88	9.3	4.20	18	0.29	1/2	12.7	1 3/8	35	1/2	13	1.81	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYCS035130510	-10	20.1	510	31.1	789	5.2	2.37	11.8	5.36	26	0.42	1/2	12.7	1 3/8	35	1/2	13	1.81	46	1289	584	2577	1169	3866	1753	5154	2338	6443	2922	12900	5851
HYCS040160260	-12	10.2	260	20.0	508	4.6	2.08	9.7	4.41	15	0.24	5/8	15.9	1 1/2	40	5/8	16	1.98	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYCS040160375	-12	14.8	375	24.8	629	5.6	2.53	11.9	5.39	22	0.35	5/8	15.9	1 1/2	40	5/8	16	1.98	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYCS040160625	-12	24.6	625	35.6	905	7.8	3.54	16.8	7.62	36	0.59	5/8	15.9	1 1/2	40	5/8	16	1.98	50	1460	662	2921	1325	4381	1987	5841	2650	7302	3312	14600	6622
HYCS045160260	-17	10.2	260	20.0	507	5.4	2.47	12.0	5.46	21	0.35	5/8	15.9	1 3/4	45	5/8	16	2.27	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYCS045160375	-17	14.8	375	25.0	634	6.6	3.01	14.8	6.69	31	0.51	5/8	15.9	1 3/4	45	5/8	16	2.27	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYCS045160800	-17	31.5	800	43.1	1095	10.9	4.96	24.7	11.19	66	1.08	5/8	15.9	1 3/4	45	5/8	16	2.27	58	2098	952	4197	1904	6295	2856	8394	3807	10492	4759	21000	9525
HYCS055190275	-22	10.8	275	22.4	568	9.3	4.23	21.2	9.63	36	0.59	3/4	19.1	2 3/16	55	3/4	19	2.86	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYCS055190400	-22	15.7	400	27.3	693	11.2	5.09	25.6	11.62	52	0.86	3/4	19.1	2 3/16	55	3/4	19	2.86	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYCS055190900	-22	35.4	900	49.7	1263	19.5	8.84	45.2	20.50	118	1.93	3/4	19.1	2 3/16	55	3/4	19	2.86	73	3316	1504	6633	3009	9949	4513	13266	6017	16582	7522	33200	15059
HYCS065220300	-30	11.8	300	25.1	637	12.9	5.83	28.9	13.12	51	0.83	7/8	22.2	2 1/2	65	7/8	22	3.17	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYCS065220450	-30	17.7	450	31.0	787	15.6	7.06	35.0	15.87	76	1.25	7/8	22.2	2 1/2	65	7/8	22	3.17	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYCS065221025	-30	40.4	1025	55.4	1407	26.5	12.03	59.8	27.12	174	2.85	7/8	22.2	2 1/2	65	7/8	22	3.17	81	4307	1954	8615	3908	12922	5861	17230	7815	21537	9769	43100	19550
HYCS075250300	-40	11.8	300	27.6	700	20.5	9.29	46.8	21.23	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
HYCS075250475	-40	18.7	475	34.4	874	24.9	11.28	56.8	25.74	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
HYCS075251150	-40	45.3	1150	63.2	1606	42.8	19.40	98.1	44.51	284	4.66	1	25.4	3	75	1	25	3.8	97	6283	2850	12566	5700	18850	8550	25133	11400	31416	14250	62800	28486
HYCS080250300	-48	11.8	300	28.3	719	23.7	10.73	56.3	25.55	81	1.33	1 1/8	28.6	3 1/8	80	1	25	4.07	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYCS080250475	-48	18.7	475	35.1	892	28.8	13.05	68.4	31.04	129	2.11	1 1/8	28.6	3 1/8	80	1	25	4.07	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYCS080251150	-48	45.3	1150	64.0	1626	49.7	22.56	118.8	53.87	312	5.11	1 1/8	28.6	3 1/8	80	1	25	4.07	103	6885	3123	13769	6246	20654	9368	27538	12491	34423	15614	68800	31207
HYCS090320375	-60/-76	14.8	375	31.3	796	34.5	15.64	80.7	36.60	124	2.03	1 1/4	31.8	3 1/2	90	1 1/4	32	4.57	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYCS090320550	-60/-76	21.7	550	39.3	999	42.1	19.11	98.6	44.72	182	2.98	1 1/4	31.8	3 1/2	90	1 1/4	32	4.57	116	8394	3807	16788	7615	25182	11422	33576	15230	41970	19037	83900	38056
HYCS100320425	-90	16.7	425	35.0	889	51.0	23.15	119.9	54.5	190	3.11	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
HYCS100320625	-90	24.6	625	43.3	1099	62.0	28.14	146.1	66.4	268	4.39	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
HYCS115350475	-110	18.7	475	39.9	1014	70.2	31.82	163.5	74.3	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
HYCS115350700	-110	27.6	700	49.4	1255	85.7	38.86	200.7	91.2	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
HYCS130380475	-150	18.7	475	42.9	1090	103.9	47.11	239.7	109.0	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
HYCS130380700	-150	27.6	700	51.8	1315	121.9	55.30	284.3	129.2	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
HYCS145480500	-195	19.7	500	39.9	1014	141.6	64.25	317.9	144.5	457	7.49	2 1/8	54	5 3/4	145	1 7/8	48	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279
HYCS145480750	-195	29.5	750	54.5	1384	168.5	76.43	381.7	173.5	685	11.23	2 1/8	54	5 3/4	145	1 7/8	48	7.4	188	23206	10526	46412	21052	69618	31578	92824	42104	116030	52630	232100	105279

*For pin center length open add stroke length to pin center length closed **Rod ends (forks) included in weights *** Max relief setting is 5,000 psi / 345 bar

Locking Cylinders

Harken locking cylinders feature an adjustable mechanical lock threaded onto the rod that physically blocks rod movement and securely fixes its position independent of the boat's pressure system. They are commonly used by large cruisers on extended passages to safely lock the rod during pressure release and to act as a safety backup for the hydraulic system. In addition, a long-stroke cylinder is often used during the mast stepping process to lean the mast forward and hook up the furlers. After commissioning, the cylinder's mechanical lock is engaged, limiting the stroke for sailing.

Adjustable lock prevents rod movement during pressure release

THALIMA, *Southern Wind 110, Farr® Yacht Design, Southern Wind Shipyard — Guido Grugnoca photo*

Part No.*	- Size	Stroke in	Stroke mm	Pin center length (closed)** in	Pin center length (closed)** mm	Weight*** 6061-T6 Aluminum (B/C) lb	Weight*** 6061-T6 Aluminum (B/C) kg	Weight*** 316 Stainless (S) lb	Weight*** 316 Stainless (S) kg	Volume in^3	Volume L	Diameter Gap/pin in	Diameter Gap/pin mm	Diameter Bore in	Diameter Bore mm	Diameter Rod in	Diameter Rod mm	Diameter Max OD in	Diameter Max OD mm
HYCL045160375	-17	14.8	375	43 7/8	1116	11.9	5.42	25.7	11.65	31	0.51	5/8	15.9	1 3/4	45	5/8	16	2.3	58
HYCL055190400	-22	15.7	400	47 5/8	1210	19.2	8.71	41.4	18.76	52	0.86	3/4	19.1	2 3/16	55	3/4	19	2.9	73
HYCL065220450	-30	17.7	450	53 5/8	1362	27.2	12.36	57.9	26.25	76	1.25	7/8	22.2	2 1/2	65	7/8	22	3.2	81
HYCL075250475	-40	18.7	475	58 1/2	1487	41.6	18.86	86.6	39.31	118	1.93	1	25.4	3	75	1	25	3.8	97
HYCL080250475	-48	18.7	475	59 1/4	1505	49.6	22.52	109.2	49.54	129	2.11	1 1/8	28.6	3 1/8	80	1	25	4.1	103
HYCL090320550	-60	21.7	550	67	1701	70.1	31.82	145.5	66.00	182	2.98	1 1/4	31.8	3 1/2	90	1 1/4	32	4.6	116
HYCL100320625	-90	24.6	625	74 3/8	1889	98.9	44.85	218.8	99.29	279	4.57	1 3/8	34.9	4	100	1 1/4	32	5.2	132

For pull forces, see cylinder with corresponding bore and rod diameter on page 205

*Specify material choice and rod and clevis end fittings by adding appropriate 3-letter code to end of part number. See page 207

**For pin center length open add stroke length to pin center length closed ***Rod ends (clevis) included in weights

Ordering Single-Acting & Locking Cylinders

To order use the chart below. Standard cylinders are black Hardkote-anodized with clevises on both ends. Clevises, marine eyes, barrel pin eyes, and blank end fittings are offered in black Hardkote-anodized aluminum, clear-anodized aluminum, or mirror-polished stainless steel finishes. Lashing eyes and low-profile lashing cylinder end fittings are available in black Hardkote-anodized aluminum. For optional materials and fittings, replace the last three letters of the part number with your selections.

Standard Cylinder Part Number

(Standard cylinder is black Hardkote-anodized aluminum with rod clevis and cylinder-end clevis)

H Y C S 0 3 5 1 3 0 3 5 0 B C C

Hydraulic

Cylinder

Action Type

S = Single-acting pull

L = Locking

Bore Diameter (mm)

Rod Diameter (mm)

Stroke Length (mm)

Materials

B = Black Hardkote-anodized aluminum

C = Clear-anodized aluminum

S = 316 Stainless steel

Rod End Fittings

C = Clevis: Cylinders come standard with the clevis on rod ends.

L = Lashing eye: This soft attachment lashing has soft radii and can accept a small amount of off-axis loading.

M = Marine eye: These rigging fittings are designed to fit a standard toggle or clevis with the same size pin.

N = No fitting

Cylinder End Fittings

C = Clevis: Cylinders come standard with the clevis on cylinder ends.

B = Barrel-pin eye: The barrel pin eye is used when a few degrees of side-to-side articulation is needed, allowing slight self-alignment when the cylinder is tensioned or unloaded.

L = Lashing eye: This low-profile lashing end attaches to the frame of the boat (or mast butt). Eliminating the toggle, clevis, bracket, pins not only saves weight but space, allowing more stroke on the cylinder.

M = Marine eye: These rigging fittings are designed to fit a standard toggle or clevis with the same size pin.

X = Blank: Cylinders that attach at only one end are fitted with a blank on the unused end of the cylinder.

Materials

Rod End Fittings

Cylinder End Fittings

Double-Pull Cylinders

Double-pull cylinders have rods on both ends and are used with mainsheet travelers or jib sheet car systems to easily adjust loaded sails. As oil is pumped into the cylinder, the rod pulls the traveler while the other rod eases. Reverse the process and the eased rod pulls the other way. Delrin® isolaters separate the cylinders from the metal elements of the hull to prevent corrosion.

What makes Harken® double-pull cylinders unique is the way they are installed on the boat. To take the cylinder off the mounting brackets for service, the user simply removes four screws, leaving both brackets in place.

Double-pull cylinders do not come with end fittings on the rod because of the variety of cylinder functions. On page 207, you'll find a selection of end fittings to choose from. Fittings are sold separately.

Disassembled endcap with Delrin® isolator

Double-Pull Cylinder Part Number

Cylinders are made to order. Specify desired stroke length in millimeters and optional end fittings when ordering.

HYCP03513xxxxBNN

Hydraulic

Cylinder

Action Type
P = Double-acting pull/pull

Bore Diameter (mm)

Rod Diameter (mm)

Stroke Length (mm)

Materials
B = Black Hardkote-anodized aluminum

Optional Rod End Fittings (specify each end separately)
C, L, or N (see page 207 for options); rod end blocks (see page 210)

Part No.	- Size	Zero stroke length (A)* in	Zero stroke length (A)* mm	Zero stroke bracket spacing (B)** in	Zero stroke bracket spacing (B)** mm	Mounting retainer Ø (C) in	Mounting retainer Ø (C) mm	Outside Ø (D) in	Outside Ø (D) mm	Rod thread size UNF 2A	Rod thread length in	Rod thread length mm	Weight lb @ zero stroke length + lb/in stroke	Weight kg @ zero stroke length + kg/mm stroke
HYCP02511xxxxBNN	-6	11.84	300.8	8.55	217.0	1.6	41	2.0	51	7/16-20	0.9	23	1.94 + .14	0.87 + .003
HYCP03513xxxxBNN	-10	13.78	349.9	9.33	236.9	1.9	47	2.2	57	1/2-20	1.5	38	3.06 + .23	1.39 + .004
HYCP04016xxxxBNN	-12	13.56	344.5	9.04	229.5	1.9	47	2.2	57	5/8-18	1.5	33	3.53 + .30	1.60 + .005
HYCP04516xxxxBNN	-17	13.85	351.9	9.31	236.4	1.9	47	2.3	58	5/8-18	1.5	33	4.08 + .33	1.85 + .006
HYCP05519xxxxBNN	-22	15.81	401.6	10.23	259.7	2.2	55	2.9	73	3/4-16	2.0	51	6.87 + .51	3.11 + .009
HYCP06522xxxxBNN	-30	17.36	441.0	11.77	298.8	2.2	55	3.2	81	7/8-14	1.97	50	9.15 + .63	4.15 + .011
HYCP07525xxxxBNN	-40	22.31	566.7	14.15	359.5	3.0	76	3.8	97	1-12	3.2	82	16.06 + .86	7.28 + .015

*Overall cylinder length equals zero stroke length plus two times the desired stroke **Overall bracket spacing equals zero stroke bracket spacing plus the desired stroke

HYDRAULIC INTEGRAL CYLINDER

Cylinder Blocks & Toggles

Rod End Blocks

These reverse-purchase blocks allow you to move loaded line while keeping cylinder length as short as possible, saving weight and space. They can be used anywhere a reverse purchase is needed: cunninghams, stay deflectors, travelers, and athwartship jib systems. Blocks are rigid when mounted to the rod. They are available in single, single with becket, and double versions for reverse purchases from 1:2 to 1:4.

Eye/Jaw Toggles

An eye/jaw toggle provides a cylinder with two axis points of articulation to reduce wire, rod, and end fitting fatigue. Toggles are machined from a solid bar of highly polished 316 stainless steel and are available in 7/16 in (11 mm) to 1 3/4 in (44 mm) to match cylinder pin sizes. Eye/jaw toggles are commonly sold with Harken integral backstay cylinders as well as standard cylinders used for standing rigging.

HYDRAULICS Q&A

WHY AREN'T THE SHEAVES ON YOUR CYLINDER ROD END DOUBLE BLOCKS STACKED?

Although slightly longer than blocks with stacked sheaves, our reverse purchase rod end blocks allow the sheaves to align the load directly with the cylinder, preventing premature wear and seal failure.

HYCBS11
HYCBS13
HYCBS16
HYCBS19
HYCBS22

HYCBB16
HYCBB19
HYCBB22

HYCBD11
HYCBD13
HYCBD16
HYCBD19
HYCBD22

ROD END BLOCKS

EYE/JAW TOGGLES

Eye/Jaw Toggles

Part No.	Jaw/Pin Ø in	Jaw/Pin Ø mm	Length in	Length mm	Fits bore/rod Ø mm
HYHTEJS11	7/16	11.1	2.0	50.8	25/11
HYHTEJS13	1/2	12.7	2.2	55.9	35/13
HYHTEJS16	5/8	15.9	2.5	63.5	40/16 & 45/16
HYHTEJS19	3/4	19.1	2.9	73.7	55/19
HYHTEJS22	7/8	22.2	3.3	83.8	65/22
HYHTEJS25	1	25.4	3.7	94	75/25
HYHTEJS29	1 1/8	28.6	4.1	104.1	80/25
HYHTEJS32	1 1/4	31.8	4.5	114.3	90/32
HYHTEJS35	1 3/8	34.9	5.6	142.2	100/32
HYHTEJS38	1 1/2	38.1	5.7	144.5	115/35
HYHTEJS44	1 3/4	44.5	7.2	182.6	130/38

Rod End Blocks

Part No.	Description	Fits rod Ø mm	Rod thread size UNF A	Sheave Ø in	Sheave Ø mm	Length in	Length mm	Reverse purchase
HYCBS11	Single	11	7/16-20	2.0	52	4.0	101	1:2
HYCBD11	Double*	11	7/16-20	2.0/1.3	52/33	5.5	139	1:3, 1:4
HYCBS13	Single	13	1/2-20	2.0	52	4.0	101	1:2
HYCBD13	Double*	13	1/2-20	2.0/1.3	52/33	5.5	139	1:3, 1:4
HYCBS16	Single	16	5/8-18	3.2	82	5.2	132	1:2
HYCBB16	Single/becket	16	5/8-18	3.2	82	7.4	188	1:3
HYCBD16	Double	16	5/8-18	3.2/2.0	82/52	7.5	189	1:4
HYCBS19	Single	19	3/4-16	3.2	82	5.7	144	1:2
HYCBB19	Single/becket	19	3/4-16	3.2	82	7.9	200	1:3
HYCBD19	Double	19	3/4-16	3.2/2.0	82/52	7.9	201	1:4
HYCBS22	Single	22	7/8-14	4.3	108	7.4	189	1:2
HYCBB22	Single/becket	22	7/8-14	4.3	108	10.8	275	1:3
HYCBD22	Double	22	7/8-14	4.3/3.2	108/82	10.9	278	1:4

Maximum working load is equal to maximum pull force for appropriately sized cylinder
*Can be used as becket block

Boom Vangs

Hydraulic vangs change the height of the boom to help control sail shape. They also function as a topping lift to hold the boom up when reefing and to keep it level when the sail is flaked. Harken offers a full range of vang cylinders: single-acting air return for smaller boats and lighter weight booms, and powerful push/pull double-acting cylinders for larger boats with heavier in-boom furling systems or Park Avenue booms.

Double-acting vang cylinder

Boom Vang Cylinder Part Number

Cylinders are made to order. Specify desired PCLC (pin center length closed) in millimeters. Standard cylinder is black Hardkote-anodized aluminum with rod clevis and cylinder-end clevis

HYCV040220255BCC

Hydraulic

Cylinder

Action Type
V = Single-acting vang
Z = Double-acting vang

Bore Diameter (mm)

Rod Diameter (mm)

Stroke Length (mm)

Materials
B = Black Hardkote-anodized aluminum

Rod End Fittings
C = Clevis

Cylinder End Fittings
C = Clevis

Highland Fling, *Reichel/Pugh 82, Goetz Custom Technologies — Billy Black photo*

Boom Vangs

The compression limit chart indicates the maximum allowable return force for a given PCLC (pin center lenth closed). This maximum allowable load decreases as PCLC increases. Use the loading chart to select your vang based on maximum return force and PCLC.

Loading Information

Part No.	-Size	Pull force @ 1000psi / 69 bar lb	kg	@ 2000 psi / 138 bar lb	kg	@ 3000 psi / 207 bar lb	kg	@ 4000 psi / 276 bar lb	kg	@ 5000 psi / 345 bar lb	kg	Return force @ 600 psi / 41 bar lb	kg	Breaking load lb	kg
Single-Acting															
HYCV040220255	-12	106	48	1271	577	2437	1105	3603	1634	4769	2163	1060	481	11658	5288
HYCV045250280	-17	177	80	1797	815	3416	1550	5036	2284	6656	3019	1443	655	16199	7348
HYCV055250280	-22	718	326	3691	1674	6664	3023	9636	4371	12609	5719	2255	1023	29729	13485
HYCV065320330	-30	736	334	4418	2004	8099	3674	11781	5344	15463	7014	2945	1336	36816	16699
HYCV075320330	-40	1600	726	7442	3375	13283	6025	19124	8675	24966	11324	4241	1924	58414	26496
HYCV090380420	-60	2081	944	9935	4507	17789	8069	25643	11632	33497	15194	5773	2618	78540	35625
HYCV100480450	-90	2265	1028	12071	5475	21876	9923	31681	14370	41486	18818	7540	3420	98052	44476
HYCV115540515	-110	2815	1277	15173	6882	27531	12488	39888	18093	52246	23698	9543	4328	123577	56054
Double-Acting															
HYCZ055250280	-22	2973	1348	5946	2697	8919	4045	11891	5394	14864	6742	*	*	29729	13485
HYCZ065320330	-30	3682	1670	7363	3340	11045	5010	14726	6680	18408	8350	*	*	36816	16699
HYCZ075320330	-40	5841	2650	11683	5299	17524	7949	23366	10598	29207	13248	*	*	58414	26496
HYCZ090380420	-60	7854	3563	15708	7125	23562	10688	31416	14250	39270	17813	*	*	78540	35625
HYCZ100480450	-90	9805	4448	19610	8895	29416	13343	39221	17790	49026	22238	*	*	98052	44476
HYCZ115540515	-110	12358	5605	24715	11211	37073	16816	49431	22422	61789	28027	*	*	123577	56054

*Return force varies based on oil pressure

Part No.	-Size	Stroke in	mm	Pin center length closed (PCLC) Min in	mm	Max in	mm	Weight Base weight lb + (PCLC x lb/in)	Base weight kg + (PCLC x kg/mm)	Volume Retracted in³	L	Extended in³	L	Gap/pin in	mm	Bore in	mm	Diameter Rod in	mm	Housing OD in	mm	Extension tube OD in	mm
Single-Acting																							
HYCV040220255	-12	10.0	254	55	1397	89	2261	2.940 + 0.126	1.33 + 0.00225	12	0.19	—	—	5/8	15.9	1 1/2	40	7/8	22	1.98	50	1.98	50
HYCV045250280	-17	11.0	279	55	1397	100	2540	4.965 + 0.131	2.25 + 0.00234	18	0.29	—	—	5/8	15.9	1 3/4	45	1	25	2.27	58	2.19	56
HYCV055250280	-22	11.0	279	55	1397	104	2642	4.026 + 0.244	1.83 + 0.00436	33	0.54	—	—	5/8	15.9	2 3/16	55	1	25	2.86	73	2.50	64
HYCV065320330	-30	13.0	330	55	1397	107	2718	9.139 + 0.263	4.15 + 0.0047	48	0.78	—	—	3/4	19.1	2 1/2	65	1 1/4	32	3.17	81	2.86	73
HYCV075320330	-40	13.0	330	55	1397	147	3734	13.076 + 0.300	5.93 + 0.00535	76	1.24	—	—	7/8	22.2	3	75	1 1/4	32	3.80	97	3.17	81
HYCV090380420	-60	16.5	419	55	1397	152	3861	22.092 + 0.449	10.02 + 0.00802	130	2.12	—	—	1	25.4	3 1/2	90	1 1/2	38	4.57	116	3.86	98
HYCV100480450	-90	17.8	451	65	1651	185	4699	36.369 + 0.666	16.50 + 0.01189	174	2.85	—	—	1 1/4	31.8	4	100	1 7/8	48	5.34	136	4.57	116
HYCV115540515	-110	20.3	514	70	1778	190	4826	48.320 + 0.963	21.92 + 0.0172	250	4.10	—	—	1 3/8	34.9	4 1/2	115	2 1/8	54	6.00	152	5.34	136
Double-Acting																							
HYCZ055250280	-22	11.0	279	55	1397	104	2642	4.346 + 0.244	1.97 + 0.00436	33	0.54	41	0.68	5/8	15.9	2 3/16	55	1	25	2.86	73	2.50	64
HYCZ065320330	-30	13.0	330	55	1397	107	2718	9.819 + 0.263	4.45 + 0.0047	48	0.78	64	1.05	3/4	19.1	2 1/2	65	1 1/4	32	3.17	81	2.86	73
HYCZ075320330	-40	13.0	330	55	1397	147	3734	13.996 + 0.300	6.35 + 0.00535	76	1.24	92	1.51	7/8	22.2	3	75	1 1/4	32	3.80	97	3.17	81
HYCZ090380420	-60	16.5	419	55	1397	154	3912	23.573 + 0.449	10.69 + 0.00802	130	2.12	159	2.60	1	25.4	3 1/2	90	1 1/2	38	4.57	116	3.86	98
HYCZ100480450	-90	17.8	451	65	1651	185	4699	38.419 + 0.666	17.43 + 0.01189	174	2.85	223	3.66	1 1/4	31.8	4	100	1 7/8	48	5.34	136	4.57	116
HYCZ115540515	-110	20.3	514	70	1778	190	4826	49.360 + 0.964	22.39 + 0.01722	250	4.10	322	5.28	1 3/8	34.9	4 1/2	115	2 1/8	54	6.00	152	5.34	136

Grand Prix Cylinders

Used for mast, sail, and keel controls, Harken Grand Prix cylinders were specifically designed to withstand the stresses of high-intensity racing. Their longevity and reliability are evident in the selection of high-quality materials and components.

Cylinders are available in titanium or Hardkote-anodized 7075-T6 aluminum for strength. Titanium, 17-4PH stainless steel, or Nitronic 50 rods and pins provide superior strength and corrosion resistance. 10,000 psi cylinders are available upon request.

Cylinders are offered with clevis jaws and a variety of fittings. Available in push, pull, and pull/pull styles.

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.

Custom headstay cylinder with spherical mount

Ordering Grand Prix Cylinders

All Grand Prix cylinders are made to order. To order, specify stroke length in millimeters, cylinder housing material, and rod and cylinder end fitting options. Contact Harken for weights and volumes.

Grand Prix Cylinder Part Number

HYCS03513xxxx7CC

Hydraulic

Cylinder

Action Type

S = Single-acting pull (see page 207 for additional options)

Bore Diameter (mm)

Rod Diameter (mm)

Stroke Length (mm)

Materials

7 = 7075-T6 aluminum

T = Titanium

Rod End Fittings

C, L, M, or N (see page 207 for options)

Cylinder End Fittings

C, B, L, M, or X (see page 207 for options)

Part No.*	Pin Ø in	Pin Ø mm	Bore Ø in	Bore Ø mm	Rod Ø in	Rod Ø mm	Pull force @ 7500 psi / 517 bar lb	Pull force @ 7500 psi / 517 bar kg
HYCS01906xxxx	5/16	7.9	3/4	19	1/4	6	2945	1366
HYCS02510xxxx	3/8	9.5	1	25	3/8	10	5062	2296
HYCS03211xxxx	7/16	11.1	1 1/4	32	7/16	11	8076	3663
HYCS03511xxxx	1/2	12.7	1 3/8	35	7/16	11	10009	4540
HYCS04013xxxx	1/2	12.7	1 1/2	40	1/2	13	11781	5344
HYCS04514xxxx	5/8	15.9	1 3/4	45	9/16	14	16176	7337
HYCS05016xxxx	5/8	15.9	2	50	5/8	16	21261	9644
HYCS05518xxxx	3/4	19.1	2 1/8	55	11/16	18	23815	10802
HYCS06521xxxx	7/8	22.2	2 1/2	65	13/16	21	32927	14935
HYCS07525xxxx	1	25.4	3	75	1	25	47124	21375

Contact Harken to request quote and lead time *Specify material choice and rod and clevis end fittings by adding appropriate 3-letter code to end of part number. See page 207

Hydraulic Control Valves

STRONG, LIGHTWEIGHT, AND VERSATILE

Low-profile control valves are part of Harken's complete range of hydraulic systems. Our valves are half the weight of most styles, with Grand Prix versions sculpted to further eliminate unnecessary material. Each valve can independently limit power to accommodate the maximum working loads of hardware operating mast and sail controls. Single-acting, double-acting, and remote-release valves can be used with any hydraulically controlled system.

DETAILS MAKE THE DIFFERENCE

PRESSURE RELIEF AND FLOW CONTROLS IN EACH VALVE

Pressure relief is built into each valve to individually limit power to the maximum working loads of mast and sail controls. An integrated, adjustable control mechanism in each valve fine-tunes the speed of release. Pressure relief and release are combined into one part, a patented feature that saves weight.

DESIGNED TO HANDLE HIGH LOADS

Grand Prix valves and manifolds handle up to 10,000 psi. Standard valves are designed for up to 5,000 psi.

HIGH-STRENGTH, CORROSION-RESISTANT MATERIALS

Valves are made of Hardkote-anodized 6061-T6 aluminum and use stainless steel fittings.

Lightweight composite handles have a textured, contoured grip.

1. Handles Fit in 4 Directions
Handles mount in any direction for the same open/closed positions.

2. Tapered Handle Sockets
Valve stems have a tapered shaft to fit in the handle socket for a secure, tight fit.

3. Service and Repair
Service and repairs should be made by a certified hydraulic technician. Valve seal and repair kits are available worldwide.

DO NOT use Harken equipment for human suspension.

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.

Valves are offered with short and long shafts. The short shaft fits 3 mm deck/panel thickness. The long shaft fits 4 mm to 25 mm deck/floor thickness.

HYDRAULICS Q&A

MY BOAT'S VANG, BACKSTAY, AND OUTHAUL WORK AT DIFFERENT PRESSURES. CAN I ADJUST THE PRESSURE OF DIFFERENT VALVES SIMULTANEOUSLY?

Yes. Each valve controls a single operation and can be adjusted separately at the same time. Flow control and pressure relief can also be set individually.

GRAND PRIX VALVES & MANIFOLDS

STANDARD VALVES & MANIFOLDS

Artemis, *TP52, Judel Vrolijk, Cookson Boats — ©Ian Roman photo*

VALVES PANELS

Valves & Manifolds

SINGLE-ACTING VALVES

DOUBLE-ACTING VALVES

DUMP VALVE

MANIFOLDS

RELIEF VALVE

Part No.	Description	Max pressure psi	Max pressure bar	Height in	Height mm	Width in	Width mm	Depth in	Depth mm	Weight lb	Weight kg
Valves											
HYV1PP	Single-acting panel mount valve	5000	345	3.9	100	1.9	47	2.6	66	0.7	0.31
HYV1PT	Single-acting thru deck mount valve	5000	345	3.9	100	1.9	47	3.7	95	0.7	0.34
HYV2PP	Double-acting panel mount valve	5000	345	3.9	100	2.5	63	3.7	95	1.6	0.75
HYV2PT	Double-acting thru-deck mount valve	5000	345	3.9	100	2.5	63	4.9	124	1.7	0.78
HYV1GP	Single-acting Grand Prix panel mount valve	10000	689	3.9	100	1.9	47	2.6	66	0.5	0.23
HYV1GT	Single-acting Grand Prix thru-deck mount valve	10000	689	3.9	100	1.9	47	3.7	95	0.6	0.26
HYV2GP	Double-acting Grand Prix panel mount valve	10000	689	3.9	100	2.5	63	3.7	95	1.0	0.45
HYV2GT	Double-acting Grand Prix thru-deck mount valve	10000	689	3.9	100	2.5	63	4.9	124	1.1	0.48
HYVDSPF	Remote dump valve/string pull/flow control	10000	689	2.4	60	1.7	42	0.7	19	0.2	0.08
HYVDPBF	Push-button dump valve/flow control	10000	689	3.8	97	2.2	56	2.75	70	0.3	0.15
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	0.10
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	0.37
HYMSP64	Single-sided manifold 4 place	5000	345	0.7	19	11.9	302	1.5	38	1.1	0.51
HYMSP65	Single-sided manifold 5 place	5000	345	0.7	19	15.2	385	1.5	38	1.4	0.65
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.

Ordering Valve Assemblies

Use this guide to configure your valve assembly order. Standard valve assemblies come with the "J" Port Fitting option, and Grand Prix assemblies come with "X" Port Fitting. For other fitting options, replace the last letter of the part number with your selection.

Valve Assembly Part Number

HYA2000RGXXXJ

Hydraulic Valve Assembly

Valves on manifold:

2_ _ _ = Number of single-acting valves on top

_0 _ _ = Number of double-acting valves on top

_ _0 _ = Number of single-acting valves on bottom

_ _ _0 = Number of double-acting valves on bottom

Relief:

X = No relief

R = Manifold relief

I = In-line relief

Valve/Manifold type:

G = Grand Prix/sculpted

P = Standard

Number of Gauges:

X = No gauges

G = One gauge for each valve

Panel type:

X = No panel, short shaft

T = No panel, long shaft

B = Black Hardkote-anodized aluminum panel

C = Clear-anodized aluminum panel

F = Carbon Fiber panel

S = 316 Stainless steel panel

Pump:

X = No pump

2 = 2-speed pump

3 = 3-speed pump

Port fittings:

A = Stainless steel 1/4" A-lock pressure port and -6 JIC anodized aluminum supply/return port

J = Stainless steel -4 JIC pressure port and -6 brass hose barb supply/return port

X = Plugs on all ports*

HYA2000RPGBXJ

Black Hardkote-anodized aluminum panel

*Other fittings available. Contact Harken.

MVP-1 Single Control & MVP-4 Multi Control Panels

Harken single and multifunction valve panels are used by larger cruisers to control systems like backstays, boom vangs, and outhauls. Available as kits, single-function panels are offered with 2-liter reservoirs, multi-function panels with 4-liter reservoirs. Both panels come with pumps, handles, gauge, pressure relief, and release functions. Panels come standard with a 2-speed pump. A 3-speed pump is available on request.

The single-function valve is a simple on/off system that can operate the cylinder remotely, allowing the user to tension the backstay cylinder from the cockpit. Multifunction panels can operate up to four cylinders remotely, with a selector handle choosing 1 of 4 functions. Valve panels feature an easy-to-read gauge and a finger-controlled knob for pressure release.

O-ring gasketed panels allow waterproof mounting without additional sealant. Bolt holes also feature waterproof O-rings, preventing water from entering the hull.

Single and multifunction panels come standard in Black Hardkote-anodized 6061-T6 aluminum. Panels also offered in clear-anodized aluminum, stainless steel, or carbon fiber.

MVP-1 SINGLE CONTROL PANEL

MVP-4 MULTI CONTROL PANEL

Waterproof O-ring

Back of valve panel

Hardkote-anodized aluminum

Clear-anodized aluminum

Carbon fiber

Stainless steel

Part No.	Description	Length in	Length mm	Width in	Width mm	Depth in	Depth mm	Weight lb	Weight kg
MVP-4 Multi Control									
HYAMXPGB2J	4-Function panel/Hardkote-anodized aluminum	9 1/4	235	11 1/2	292	5 3/4	146	8.5	3.85
HYAMXPGC2J	4-Function panel/clear-anodized aluminum	9 1/4	235	11 1/2	292	5 3/4	146	8.5	3.85
HYAMXPGS2J	4-Function panel/stainless steel	9 1/4	235	11 1/2	292	5 3/4	146	11.9	5.40
HYAMXPGF2J	4-Function panel/carbon fiber	9 1/4	235	11 1/2	292	5 3/4	146	7.8	3.53
MVP-1 Single Control									
HYASXPGB2J	Single-function panel/Hardkote-anodized aluminum	9 1/4	235	11 1/2	292	5 3/4	146	6.9	3.13
HYASXPGC2J	Single-function panel/clear-anodized aluminum	9 1/4	235	11 1/2	292	5 3/4	146	6.9	3.13
HYASXPGS2J	Single-function panel/stainless steel	9 1/4	235	11 1/2	292	5 3/4	146	10.3	4.68
HYASXPGF2J	Single-function panel/carbon fiber	9 1/4	235	11 1/2	292	5 3/4	146	6.2	2.81

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. Our 2-speed pump is built for smaller hydraulic systems, but features the same high-quality components as the 3-speed pump. Pressure relief has been factory set to a safe maximum of 5000 psi. Upgrades are easy because the mounting patterns for 2- and 3-speed pumps are identical.

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. A splined shaft on the pump ensures a tight fit. Standard shaft length is 30.5 mm (1.2 in) with 3.5-degree angle. Custom shafts are available upon special order.

Optional isolation plates made of extremely resilient G10 improve load distribution by transferring torque directly to the mounting surface

Handles

Handles mount 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 versions are available in carbon fiber. An optional square-tipped style allows the handle to be rocked 5 degrees laterally from the pumping direction to store against the cockpit wall.

2-SPEED PUMP

CARBON HANDLE

ALUMINUM HANDLE

3-SPEED PUMP

Handles

Part No.	Description	Ø in	Ø mm	Length in	Length mm	Weight lb	Weight kg
HYPMH6600	Pump Handle 600 mm/aluminum	1 1/4	32	23 5/8	600	1.2	0.56
HYPMH6800	Pump Handle 800 mm/aluminum	1 1/4	32	31 1/2	800	1.5	0.70
HYPMHC800	Pump Handle 800 mm/carbon	1 1/4	32	31 1/2	800	1.0	0.45
HYPMHC800S	Pump Handle 800 mm/carbon/square tip	1 1/4	32	31 1/2	800	1.0	0.45
HYPMHC1000	Pump Handle 1000 mm/carbon	1 1/4	32	39 3/8	1000	1.2	0.53
HYPMHC1000S	Pump Handle 1000 mm/carbon/square tip	1 1/4	32	39 3/8	1000	1.2	0.53

Pumps

Part No.	Description	Output/stroke (push and pull) 1st: Low pressure in³	1st: Low pressure cc	2nd: Medium pressure in³	2nd: Medium pressure cc	3rd: High pressure in³	3rd: High pressure cc	Max pressure psi	Max pressure bar	Ports/fittings Suction	Ports/fittings Pressure	Weight lb	Weight kg
HYPM2	2-Speed pump/auto shift*	0.99	16.3	0.25	4.1	—	—	5000	345	3/8" hose barb	1/4" 37° JIC	4.3	1.95
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	4.4	2.00
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	4.4	2.00
HYPM3MP	Pump anti-torque mounting plate	—	—	—	—	—	—	—	—	—	—	0.1	0.07

*M8 fasteners

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 (1.74 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.

Numbers, *Judel/Vrolijk 66, Goetz Custom Technologies — Onne van der Wal photo*

VENTED RESERVOIRS

PRESSURIZED RESERVOIRS

Part No.	Description	Maximum capacity gal	Maximum capacity L	Oil capacity gal	Oil capacity L	Maximum dimensions Height in	Height mm	Width in	Width mm	Depth in	Depth mm	Weight lb	Weight kg
HYRPC04	Pressurized composite reservoir	1.1	4	.63	2.4	17.9	455	6.3	160	5.8	148	2.9	1.30
HYRPC08	Pressurized composite reservoir	2.1	8	1.2	4.7	30.9	784	6.3	160	5.8	148	4.3	1.96
HYRPC10	Pressurized composite reservoir	2.6	10	1.6	5.9	36.9	937	6.3	160	5.8	148	5.2	2.34
HYRPC14	Pressurized composite reservoir	3.7	14	2.1	8	25.6	650	7.9	200	7.9	200	3.4	1.55
HYRPC20	Pressurized composite reservoir	5.3	20	3.2	12	31.5	800	7.9	200	7.9	200	3.8	1.74
HYRVP02	Vented blow-molded reservoir	0.5	2	0.5	2	6.7	170	8.7	220	4.1	105	0.8	0.36
HYRVP04	Vented blow-molded reservoir	1.1	4	1.1	4	11.4	290	8.7	220	4.1	105	1.2	0.55

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

Choosing Hydraulic Systems

1. Cylinders

Load and Pin Sizes: Cylinder size is determined by cylinder load and pin size. Stroke length is based on cylinder function. See page 205 to select cylinder. Double-pull, locking, and boom vang cylinders are also available. See charts for loads, pin sizes, and stroke lengths.

Alternate End Fittings: Choosing the correct end fittings for your cylinders is critical. See page 207 for end-fitting options.

2. Control Valves

Select valves based on sailing style and valve style, type, and functions. Choose between multifunction panel and individual valves, Standard or Grand Prix styles. Single or double-acting valves are based on cylinder type.

Individual Valve Assemblies: Individual valve assemblies are dependent on how the boat is sailed. Multiple control locations? Single control locations? Choose valve, manifold configurations, and panel types. See page 217.

Multifunction Valve Panels and Single-function Panels: Choose plate materials. Single and multifunction panels come with a 2-speed pump, pump handle, and reservoir. See page 218.

Remote Dump Valves: Are remote dump valves required? Example: vang cylinders.

3. Pumps & Handles

Individual valves require a separate pump. How many? 2-speed or 3-speed? Choice depends on oil volume, how fast oil must move, and pressure required. Select adequate handle. See page 219.

4. Reservoirs

Reservoir Type: Reservoir type is determined by the amount of oil needed and pump height relative to the reservoir. Use a pressurized reservoir if it is mounted more than 5 ft (1.5 m) vertically below the pump. Vented reservoirs are adequate under 5 ft (1.5 m).

Reservoir Size: As a general rule, select reservoir size by adding up cylinder volumes and multiplying by 2.

5. Accessories

Filters: Harken highly recommends a high-pressure filter between the pump and valves to keep valves working at peak performance. Also recommended: a suction filter for the pump to prevent debris from entering the system.

Gauges: Remote analog gauges and digital transducers available.

Fittings: Plumbing fittings, additional spares, blanking plates, and spare parts available. See page 221.

Standard System

Grand Prix System

Hydraulic Power Systems

COMPLETE POWER SOLUTIONS

Harken hydraulic power units are the complete package and can power functions ranging from winches and backstay cylinders to keels and windlasses. They can include optional prewired labeled control boxes or act as stand-alones, central, or supplemental units. Harken power units come with 4000 watt 24V DC motors. 12V DC motors and valves are available by special order. Contact Harken for lead time and pricing.

DETAILS MAKE THE DIFFERENCE

HIGH-STRENGTH, CORROSION-RESISTANT MATERIALS

Coated aluminum tanks have Hardkote-anodized 6061-T6 aluminum top plates. Manifolds are made with clear-anodized aluminum.

Prewired and waterproofed control boxes are molded from extremely tough polycarbonate.

HIGH-EFFICIENCY, LOW-MAINTENANCE DESIGNS

Run up to 13 functions and 3 simultaneous functions at full power.

Use the built-in, double-flow function to supply more oil to power-intensive equipment.

Tank-mounted electrical motor contactors meet the IP67 waterproof specification.

Fan-cooled, series-wound motors are energy-efficient at all speeds.

Manifolds and pumps are preplumbed, saving space, installation time, and additional hardware.

Drop-in return line filters with status gauges provide a no-mess alternative to typical spin-on styles.

HYDRO HP POWER UNIT

The Hydro HP includes a motor with pump that has high pressure output to 5000 psi at 2.5 L/min. It can link to either a manual or electric system for push-button cylinder operation. The Hydro HP includes a motor contactor but no switches. The same control boxes can be used.

CUSTOM OPTIONS

Need remote manifolds? Want to integrate an engine-driven pump or use generator power? We will customize a unit to your specifications.

1. 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.

2. Filters and Gauges
Drop-in filters and filter status gauges make maintenance fast and easy.

3. Pressure Booster Manifold
The pressure booster manifold is an optional addition for large powered systems with multiple cylinders that carry low system pressure. The manifold features an integrated pressure intensifier that multiplies low inlet pressure to an efficient 5000 psi. By increasing pressure, smaller cylinders can carry a higher load, saving weight and reducing cost.

Features include: 5000 psi factory-set pressure relief, built-in filter, analog pressure gauge, electric on-off switch, and a manual override. Anodized-aluminum box comes in 2.5 L/min and 5 L/min sizes.

DO NOT use Harken equipment for human suspension.

Hydraulic Power Systems

HYDRO 1/2/3

HYDRO HP

Power Unit Part Number

HYDRO3CA22R2XXX

Hydraulic Power Unit

Number of Motors

Control Box
C = With control box
N = No control box

Manifold Options
A = Attached manifold
R = Remote manifold

Valves on Attached Manifold 1
X = No valves (use this option for remote manifolds)
0 - 4 = Number of valves on attached manifold 1

Valves on Attached Manifold 2
X = No valves (use this option for remote manifolds and Hydro 1)
0 - 4 = Number of valves on attached manifold 2

Optional Additional Remote Manifold*
R = With remote manifold
(all digits following refer to remote manifold options)

Valves on Additional Remote Manifolds 1 - 4**
X = No manifold
1 - 4 = Number of valves on each additional manifold
(add a number for each additional manifold)

*One remote manifold is included with Hydro 3
**Hydro 1 only available with one additional remote manifold. Use X for last three digits

Hydraulic Power Unit Control Boxes & Pressure Booster Manifold

	Height		Width		Depth	
Power unit	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
Pressure Booster Manifold						
HYDROBOOST2.5L	8.1	205	8.3	210	8.4	214
HYDROBOOST5.0L	10.4	265	8.3	210	8.4	214

Power Unit Dimensions

	A		B		C		D		E	
Power unit	in	mm	in	mm	in	mm	in	mm	in	mm
HYDRO 1	22.5	568	19.4	493	14.8	376	12.9	328	7.0	178
HYDRO 2 / HYDRO 3	25.5	648	24.4	619	20.0	509	16.6	423	11.1	283
HYDRO HP	7.0	178	14.1	359	6.8	171	3.0	76	5.0	127

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 continuous output pressure @ flow rate		Weight: Without manifolds		Weight: With attached manifolds		Fasteners
					gal	L	psi @ gpm	bar @ L/min	lb	kg	lb	kg	
HYDRO 1	4	1	1 x 4 kW	210	7.9	30	2000 @ 4	140 @ 15	89	40.5	102	46.1	M10
HYDRO 2	9*	2**	2 x 4 kW	2 x 210	18.5	70	2000 @ 8	140 @ 30	182	82.6	194	88.2	M10
HYDRO 3	13*	3**	3 x 4 kW	3 x 210	18.5	70	2000 @ 12	140 @ 45	233	105.9	246	111.4	M10
HYDRO HP	—	—	1 x 4 kW	210	—	—	5000 @ .66	345 @ 2.5	53	24.1	—	—	M8
Pressure Booster Manifold													
HYDROBOOST2.5L	—	—	—	2	—	—	5000 @ .66	345 @ 2.5	18	8.2	—	—	M8
HYDROBOOST5.0L	—	—	—	2	—	—	5000 @ 1.32	345 @ 5.0	25	11.1	—	—	M8

*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

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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

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Ball Bearing Conditioner

Use on ball bearing traveler cars and battcars

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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* ft	Max vertical lift* m	Minimum working load lb	Minimum working load kg	Working load limit lb	Working load limit 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

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