

HARKEN®

Integral Backstay Adjuster

Installation and User Manual



Please read these instructions carefully before using or servicing the equipment.
This manual may be modified without notice. See: www.harken.com/manuals for updated versions.
PLEASE SAVE THESE INSTRUCTIONS

Introduction

This user manual contains important information for the correct use of the Harken integral hydraulic backstay adjuster cylinder. Read all instructions carefully before use. If you do not understand these instructions, contact Harken. Do not use the integral backstay adjuster cylinder unless you have a sufficient level of sailing training and experience.



CAUTION! Strictly follow all instructions to avoid an accident, damage to your vessel, personal injury or death. See harken.com/manuals for additional safety information.

Description

The Harken integral hydraulic backstay adjuster is designed for use on sailboats and is sized according to boat and rigging. When ordering, always have your choice confirmed by a Harken representative or other sailing professional. The limited warranty does not cover use of product outside of normal sailboat applications.

Parts ordered separately

Standard eye/jaw toggle

Tools Required

Hex driver, 3 mm

Loctite[®], Blue 242



WARNING! Hydraulic adjuster cylinders are capable of exerting very high loads and can break associated components. Inspect all standing backstay and forestay rigging components to ensure they are in good condition. Failure to inspect components may result in sudden breakage at high loads.

Installation

Installation

Review all instructions carefully prior to installation of your new integral backstay adjuster.

1. Carefully unpack the adjuster and check for visible defects. If any signs of damage are present, contact your dealer at point of purchase or Harken.
2. Extend adjuster to prepare for installation. Turn release knob counterclockwise completely. Attach the bottom (end) clevis to the deck, and attach the upper (rod) clevis to the main halyard. Pull rod clevis as necessary to fully extend the adjuster. **Note:** the unit does not have a built in return force. You will need to apply force to open unit. When adjuster is extended, detach from deck and main halyard.
3. Check installation site for clearance. Attach a standard eye/jaw toggle to the adjuster's bottom clevis before securing to the chainplate.
 - Eye/Jaw toggle pins have different orientation to accommodate both fore/aft and athwartships stay movement so clevis doesn't fatigue during use.
 - Standard toggles fit all Harken adjusters.

Clevis



Use Eye/Jaw toggle to prevent fatigue to clevis.



Installation

IMPORTANT! Be sure to include toggle length in adjuster length for deduction from stay.

4. Mount adjuster rod end up.

When mounting, orient pump handle to your preference.

5. Attach adjuster to backstay.

- Use 3 mm hex driver to remove screw from clevis pins.
- Attach lower clevis to eye/jaw toggle. Attach toggle to chainplate. Open the release valve and extend the adjuster.
- Attach upper clevis to backstay.

6. Use Blue 242 Loctite® when installing screws to prevent loosening.

Toggle length



Rod end



Bleed Pump

All Harken integral backstay adjusters are cycled and tested at factory prior to shipment. However, oil can become displaced inside adjuster during shipment or storage. Bleed pump prior to use.

1. With adjuster in vertical position, rod end up, fully extend the adjuster.
2. Open release valve and pump for one (1) minute. When complete, the pump and adjuster are bled.

Operation

The Harken integral backstay adjuster is easy to use and offers unique, double-acting pump action to move oil twice as fast as a single-acting pump. Follow these simple steps for adjuster operation.

Increase tension

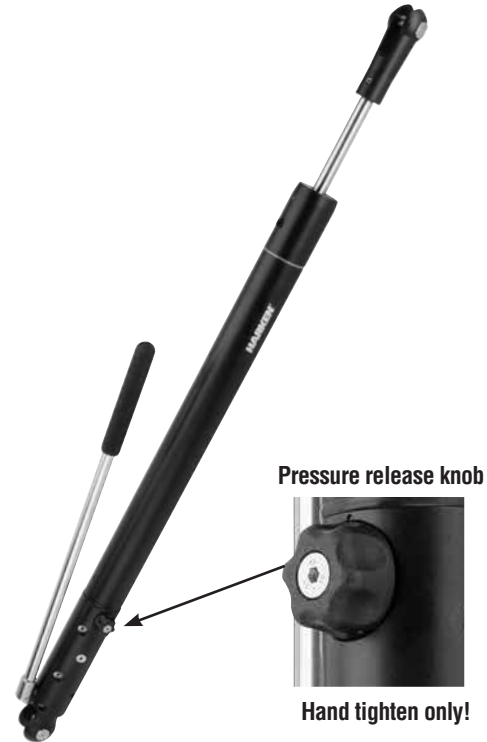
1. Turn pressure release knob clockwise to close. Close to hand tight only. It is impossible to damage the valve by hand. **IMPORTANT! Using vise grips or pliers to apply excessive force can cause damage.** The resting position for the pressure release knob is closed.
2. Move pump handle in and out until desired tension is achieved.

Decrease tension

1. Turn release knob counterclockwise to open. Release speed depends on how far the knob is turned.



WARNING! Backstay adjusters can overload jib halyard and jib luff components including furlers. Be sure to check and/or ease jib halyard before tensioning backstay.



Operation

Relief Valve Settings

The adjuster relief valve is preset at our factory to limit the tension to the maximum load of the recommended cable of the rigging for which it is used. Each adjuster cylinder is set to provide a specific maximum pull force.

FACTORY-SET MAXIMUM PULL FORCE BY ADJUSTER

Type	Adjuster Part No.	Maximum Pull Force	
		lb	kg
-6	HCI025110345BCC.NG	3500	1590
-10	HCI035130345BCC.NG	5000	2270
-12	HCI040160385BCC.NG	6500	2950
-17	HCI045160385BCC.NG	8700	3950

IMPORTANT: If relief valve setting is re-adjusted higher than factory setting, overloading issues may occur and warranty may be voided.

Part No.	- Size	Max wire Ø		Stroke		Pin center length (closed)*		Weight**		Gap/pin Ø	
		in	mm	in	mm	in	mm	lb	kg	in	mm
HCI025110345BCC.NG	-6	7/32	5.5	13.6	345	29.8	758	7.3	3.32	7/16	11.1
HCI035130345BCC.NG	-10	9/32	7	13.6	345	29.8	758	7.3	3.32	1/2	12.7
HCI040160385BCC.NG	-12	5/16	8	15.2	385	32.8	834	10.8	4.92	5/8	15.9
HCI045160385BCC.NG	-17	3/8	9.5	15.2	385	32.8	834	10.8	4.92	5/8	15.9

*For pin center length open add stroke length to pin center length closed.

**Rod ends (forks) included in weights.

Inspection

Perform a visual inspection of the integral backstay adjuster prior to each use to ensure clean, unobstructed working conditions.

Care and Maintenance

The Harken adjuster should give years of reliable service. If adjuster is properly bled, and clean environment is maintained, no regular maintenance is required. Seals should be changed every ten years (dependent on use) unless adjuster eases without pressure relief valve releasing the pressure first. If you experience any problems with your Harken integral backstay adjuster, contact your Harken service representative.

Warranty

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.

For complete warranty or for information relating to a specific warranty concern, please refer to the following:

Harken Catalog, Website: www.harken.com/manuals
Call or Email the Nearest Harken Distributor or
Harken Corporate Headquarters



Corporate Headquarters

N15W24983 Bluemound Rd., Pewaukee, WI 53072-4974 USA, Tel: (262) 691-3320, Fax: (262) 701-5780,

Web: harken.com, **Email:** harken@harken.com

Harken Adriatik d.o.o.: Obala 107, 6320, Portoroz, Slovenia, Tel/Fax: (386) 5-6774122

Web: www.harken.si, **Email:** info@harken.si

Harken Australia Pty, Ltd: 1B Green Street, Brookvale, N.S.W. 2100, Australia, Tel: (61) 2-8978-8666, Fax: (61) 2-8978-8667,

Web: www.harken.com.au, **Email:** info@harken.com.au

Harken France: ZA Port des Minimes, BP 3064, 17032, La Rochelle Cedex 1, France, Tel: (33) 05.46.44.51.20 • Fax: (33) 05.46.44.25.70,

Web: www.harken.fr, **Email:** info@harken.fr

Harken Italy S.p.A.: Via Marco Biagi, 14, 22070, Limido Comasco (CO) Italy, Tel: (39) 031.3523511, Fax: (39) 031.3520031

Web: www.harken.it, **Email:** info@harken.it

Harken New Zealand, Ltd: 30-36 Fanshawe Street, P.O. Box 1951, Auckland 1001, New Zealand, Tel: (64) 9-303-3744, Fax: (64) 9-307-7987,

Web: www.harken.co.nz, **Email:** harken@harken.co.nz

Harken Polska SP ZOO: ul. Rydygiera 8, budynek 3A, lokal 101, I piętro, 01-793, Warszawa, Poland, Tel: +48 22 561 93 93, Fax: +48 22 839 22 75,

Web: www.harken.pl, **Email:** polska@harken.com

Harken Sweden AB: Main Office and Harken Brandstore: Västmannagatan 81B, SE-113 26 Stockholm Sweden, Tel: +46 303 618 75, Fax: +46 303 618 76,

Mailing address: Harken Sweden AB, Box 64, SE -440 30 Marstrand, **Email:** harken@harken.se

Harken UK, Ltd: Bearing House, Ampress Lane, Lymington, Hampshire SO41 8LW, England, Tel: (44) 01590-689122, Fax: (44) 01590-610274,

Web: www.harken.co.uk., **Email:** enquiries@harken.co.uk

**Please visit: <http://www.harken.com/dealers/dealers.php>
for an up-to-date list of Harken dealers and distributors**