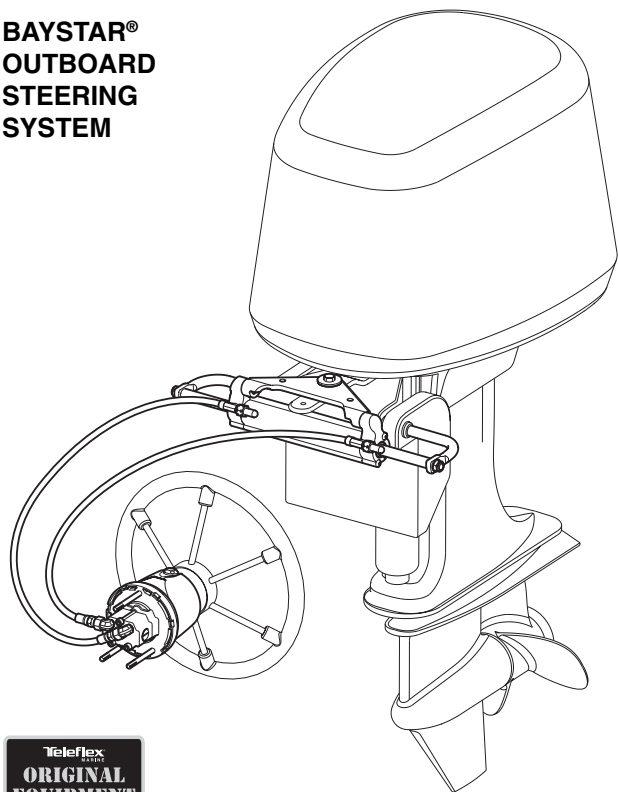


BayStar outboard steering

BayStar™

**BAYSTAR®
OUTBOARD
STEERING
SYSTEM**



(4.5 turns lock-to-lock)

DIMENSIONS: pages 91, 160-162
HOW TO MEASURE: page 84
SERVICE PARTS: pages 148-152
SUPPORT: www.teleflexmarine.com
or call 604-270-6899

NOTE: When properly installed, this steering system will connect to outboard engines with ABYC standard tilt tubes, using the engine's tiller arm. Use only BayStar outboard steering tubing (HT44 type) with BayStar outboard steering systems. All warranties will be void if any or all of these components are misapplied. BayStar hydraulic steering is rated for 150 HP (total).

With mechanical steering you sacrifice a degree of comfort, and traditional hydraulic systems may be more than is needed on lower horsepower outboard engines.

Built in the tradition of SeaStar, BayStar brings the same efficiency and durability you would expect from Teleflex Hydraulic steering to smaller outboards up to 150 HP. Compact form and affordable price make it an ideal upgrade for mechanically steered boats up to 150 total HP.

Applications:

BayStar is for single-outboard powered boats rated up to 150 HP, including runabouts and inflatables — and outboard engines with ABYC standard engine tilt tubes up to 150 HP (total). For single station, single engine use only.

BayStar is not intended for high speed, high performance type boats, such as Bass Boats.



Features:

- Designed just for smaller outboards.
- Low friction hydraulic steering system.
- 4.5 turns from lock-to-lock.
- Balanced cylinder, featuring a compact design that fits most splashwells and provides full engine movement.
- Optional five position tilt helm available.
- Compact helm has only a 5" footprint; needs only 3" dash hole (standard or Tilt).
- Packaged complete with helm, cylinder, fittings, tubing, oil, fill kit and detailed instructions.
- Optional BayStar PLUS helm available for quicker steering response.
- Standard 3/4" tapered steering shaft.
- Fast, easy installation.
- Meets A.B.Y.C. standards.
- Meets N.M.M.A. certification requirements.

Note: BayStar is NOT suitable for smaller HP outboard engines that use wing nut type transom mount clamping screws.

hydraulic outboard steering, compact cylinder

Complete Systems:

BayStar kits come complete with everything needed for an install: helm, cylinder, tubing, fittings and fluid. For your convenience, enough cut-to-fit tubing for either a 20' or 30' run is supplied with the kit.

These kits include Compact Cylinder P/N HC4645H. If a Cylinder other than HC4645H or HC4658H is required, purchase of a "field replaceable pivot plates" will be necessary. See following pages.

BayStar Steering Kit (20' tubing run) ...HK4200A
 BayStar Steering Kit (30' tubing run) ...HK4230A
 20' run = 40' tubing; 30' run = 60' tubing (two pieces of tubing must reach from helm to engine without kinks or areas of strain)

Components:

BayStar Front Mount Helm HH4016

BayStar Compact Cylinder HC4645H
 BayStar Compact Cylinder HC4647H
 BayStar Compact Cylinder HC4648H
 BayStar Compact Cylinder HC4658H
 (See Application Guide on following page to select correct cylinder for your application)

HC4600 and HC4600H are no longer being made by Teleflex Canada. All seal kits and spare parts will be made available. If purchase of a new HC4600 or HC4600H is required, please purchase Baystar Compact Cylinder Part No. HC4645H/47H/48H/58H. If the cylinder you are purchasing does not include the letter H after the part number you will need to purchase fitting kit no. HF4201 (includes 2 old-style bleed fittings).

Cylinders with H suffix must use tubing part number with H suffix.

HK4200 Tubing (2 x 20' lengths)HT4420H
 HK4230 Tubing (2 x 30' lengths)HT4430H

SeaStar Oil (1 Quart).....HA5430 (x2)

BayStar Filler Kit..... HA5438
 Use only genuine BayStar tubing kits and oil.

Options:

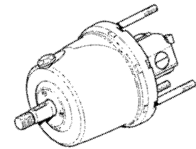
BayStar Sport Tilt Helm/Mech. HH4015
 BayStar Plus Helm HH4514
 BayStar Plus Sport Tilt Helm HH4513

Service Items:

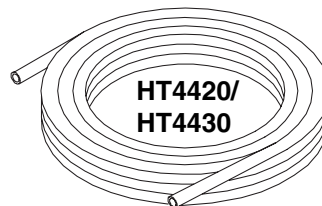
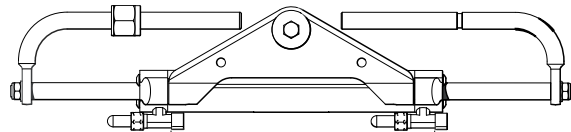
SeaStar Oil (1 Gallon) HA5440
 Steering Wheel Locknut 747521



HH4016

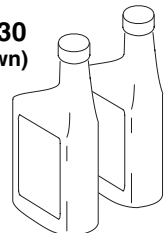


HC4645H/47H/48H/58H

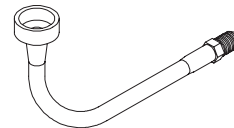


HT4420/
HT4430

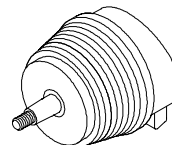
HA5430
(2 shown)



HA5438



HH4015
(includes
Tilt Helm)



747521



NOTE: Please view the application guide on the next page to determine which of the BayStar Steering Cylinders (HC4645H, HC4647H, HC4658H and HC4648H) is to be used for your engine. ONLY HC4645H is included in the BayStar Steering kit. If your engine requires the use of a cylinder other than the HC4645H and/or the HC4658H you will need to purchase the field replaceable pivot plate (shown below the Application Guide on next page) separately. HC4645H can be converted into HC4658H by using the detailed instructions that come with the steering cylinder.

NOTE: BayStar tubing previously marked "140 HP" is acceptable for use with BayStar Hydraulic systems on boats rated to 150 HP (Total).

BayStar outboard steering

BayStar Single Engine Application Guide: Cylinders (HC4645H/47H/48H/58H)

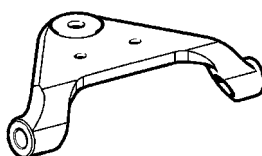
ENGINE MAKER/ BRAND	YEAR	MODEL	CYLINDER PART NUMBER	NOTES
FORCE	1985 TO DATE	90-150 HP	HC4645H	
HONDA	1992 TO DATE 1998 TO DATE 2001 TO DATE 2003 TO DATE	30-90 HP 115-130 HP 150 HP BF135 HP	HC4645H HC4647H HC4645H HC4645H	
JOHNSON/EVINRUDE	1977 TO 1989 1991 TO DATE <i>Note: Johnson 115 HP 2-stroke engines require that the cylinder's pivot be flipped. See note #4 below.</i> 1997 TO DATE 1997 TO DATE 1998 TO DATE	65-150 HP 40-150 HP 115 HP Ficht 75-150 HP Ficht 40-140 HP 4-stroke	HC4648H HC4645H HC4658H HC4645H HC4658H	See Note 4. See Notes 1,4.
MERCURY/MARINER	1984 TO DATE	75-150 HP	HC4645H	
NISSAN	1990 TO DATE	120-140 HP	HC4645H	
SUZUKI	1986 TO DATE 1996 ONLY 1987 TO 2002 1990 TO 2000 1998 TO DATE 2001 TO DATE	150 HP 115-140 HP 115-140 HP 90-100 HP 40-70 HP 4-stroke 115-140 HP 4-stroke	HC4645H N/A HC4645H HC4645H HC4645H HC4658H	See Note 1. See Note 1. See Notes 1,4.
TOHATSU	1990 TO DATE	50-150 HP	HC4645H	
YAMAHA	1998 TO DATE 1998 TO DATE 1986 TO DATE 1997 TO DATE 2000 TO DATE	40-50 HP 60 HP 70-90 HP 80-150 HP 4-stroke 25 & 60 HP 4-stroke	HC4645H HC4645H HC4645H HC4645H HC4648H	See Note 2. See Note 3. See Note 1. See Note 1.
YANMAR	1990 TO DATE	27-36 HP	HC4645H	

NOTES:

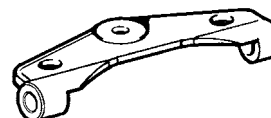
- Requires Spacer Kit Part No. HO5090.
- Engine clamp brackets must be cut or ground, and the engine through bolted onto the transom, or interference will occur, restricting engine trim and tilt.
- Steering hook Yamaha Part No. 63D-48511-00-4D must be installed.
- Cylinder HC4645H may be used in these applications. The pivot plate will need to be flipped before installation. Instructions provided with Owner's Manual.

BayStar Cylinder Pivot Plates:

HC4645H compact cylinder is included in the BayStar steering kits. This cylinder can be converted to HC4658H by following instructions included with the product. If your engine requires use of a cylinder other than HC4645H or HC4658H, please refer to the figure below for the appropriate replacement pivot plate, which must be purchased separately. NOTE: read and understand all related product instructions before performing any work on a hydraulic steering system.



HA4641
(Install onto HC4645H to make HC4647H)



HA4642
(Install onto HC4645H to make HC4648H)

hydraulic outboard steering, compact cylinder

Splashwell Size Requirements:

CYL MODEL NO.	NO. OF ENG.	SPLASHWELL DIAG. DIM.			MINIMUM ENGINE CENTER DISTANCE
		A	B	C	
HC4645H	1	21" (534 mm)	6" (153 mm)	5" (127 mm)	N/A (N/A)
HC4647H	1	21" (534 mm)	6" (153 mm)	5" (127 mm)	N/A (N/A)
HC4648H	1	21" (534 mm)	6" (153 mm)	5" (127 mm)	N/A (N/A)
HC4658H	1	21" (534 mm)	6" (153 mm)	5" (127 mm)	N/A (N/A)

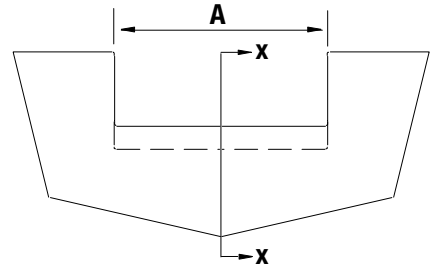
(Twin engine applications not available at this time.)

NOTES:

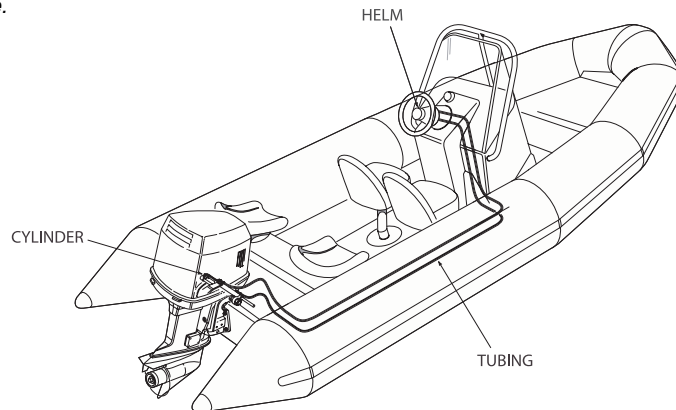
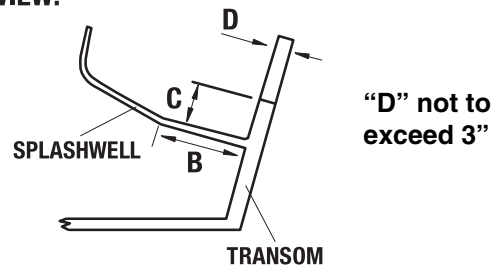
1. Ensure there is no interference between the BayStar cylinder rod and the splashwell boot or engine controls & cables.
2. Dimensional restrictions also apply to external motor mount brackets.
3. Ensure dimension "A" can be maintained at 32" (813mm) throughout the full trim/tilt range.
4. Maximum allowable transom thickness for BayStar cylinders is 3" (76mm).
5. Engines less than 70 HP **may** require up to 1" (25mm) of additional splashwell clearance.

REQUIRED SPLASHWELL DIMENSIONS/ MINIMUM ENGINE CENTER DISTANCES: (refer to chart at left)

REAR VIEW:



SIDE VIEW:



BayStar Cylinder Dimensions:

HC4645H/
HC4647H/
HC4648H/
HC4658H

