



AT A GLANCE

FEATURES

- Independent engine tilt for twin engine installations.
- Easy steering.
- 5 turns lock to lock steering response.

SEASTAR OUTBOARD (FRONT MOUNT)

Part# HC5345, HC5347, HC5348

APPLICATIONS

- General purpose system.
- Single and multiple engine capability.
- Total power to 700 HP *counter-rotating.
- Typical applications include center console fishboats and cruisers.

HOW TO SELECT A FRONT MOUNT OUTBOARD STEERING SYSTEM

1. From the order guide below select the system configuration based on:
 - a) the number of engines, and
 - b) the total engine power to be installed.
2. From the application guide below confirm that the Front Mount Cylinder will fit your specific make, model, and year of engine. Select the adapter kit for single engines or the tie bar kit for dual engines.
3. From the order guide select the appropriate helms and accessory hardware for each steering station.
4. From the order guide select the fitting and hose kits required for the installation. Note: for hoses add the distance required, in feet to the last two digits of the part number.
5. Confirm that there is sufficient space available in the splashwell and dash areas for the steering components.
See WARNING.

NOTE

Not recommended for use in installations where:

- a) chopper, cleaver or surface piercing propellers are used,
- b) the engine is highly elevated on the transom,
- c) engine trim tabs have been removed,
- d) the boat speed exceeds 75 mph (120 km/h), or
- e) the power exceeds maximum Coast Guard or M.O.T. recommendations for the boat.



300HP+ OUTBOARD INSTALLATION RECOMMENDATIONS

With the introduction of heavier, higher horsepower engines producing more torque, Teleflex Marine has updated its recommendations across various applications (single and multiple engines, different hull types, etc.) Please read carefully to ensure that your current steering system provides the best comfort versus performance available.

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ENGINE	SEASTAR FRONT MOUNT (Normal Use)	SEASTAR FRONT MOUNT (Aggressive Use – See Note 1)	HYNAUTIC K-6 (Normal Use Only)
Single Engine	SINGLE CYLINDER 350HP Max 75 MPH Max HC53xx Cylinder (See Note 2)	SINGLE CYLINDER 350HP Max HC53xx Cylinder (See Note 2 & 3)	SINGLE CYLINDER 300HP Max 55 MPH Max
Dual Engine Non-Counter Rotating	SINGLE CYLINDER 450HP Max, 55 MPH Max HC53xx Cylinder, HO60xx Tiebar	SINGLE CYLINDER Not Recommended	SINGLE CYLINDER 400HP Max 55 MPH Max
	DUAL CYLINDER 600HP Max, 55 MPH Max HC53xx Cylinders, HO60xx Tiebar	DUAL CYLINDER 700HP Max HC67xx Cylinders (See Note 2 & 4) HO67xx Tiebar	DUAL CYLINDER 500HP Max 55 MPH Max
Dual Engine Counter Rotating	SINGLE CYLINDER 600HP Max, 55 MPH Max HC53xx Cylinder, HO60xx Tiebar	SINGLE CYLINDER Not Recommended	SINGLE CYLINDER 400HP Max 55 MPH Max
	DUAL CYLINDER 600HP Max, 55 MPH Max HC53xx Cylinders, HO60xx Tiebar	DUAL CYLINDER 700HP Max HC67xx Cylinders (See Note 2 & 4) HO67xx Tiebar	DUAL CYLINDER 500HP Max 55 MPH Max
Triple Engine One With Counter Rotating	DUAL CYLINDER 900HP Max, 55 MPH Max HC53xx Cylinders, HO60xx Tiebar	DUAL CYLINDER 1050HP Max HC67xx Cylinders (See Note 2 & 4) HO67xx Tiebars HA67xx Center Engine (See Note 2) Bracket Kit	NOT RECOMMENDED
	TRIPLE CYLINDER 900HP Max, 55 MPH Max HC53xx Cylinders, HO60xx Tiebar	TRIPLE CYLINDER 1050HP Max HC67xx Cylinders (See Note 2 & 4) HO67xx Tiebars	NOT RECOMMENDED


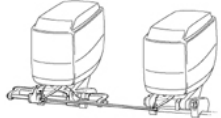
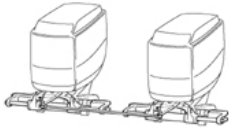
NOTES

1. Teleflex has specific steering equipment for boats that are driven aggressively, used in severe conditions or with more than 300 HP per engine.
2. ALL ENGINES over 300 HP and all boats that are driven aggressively must use a high strength tiller bolt, kit part # HAS822. All front mount cylinders built after June 15, 2007 will have this high strength bolt included in the box. High strength tiller bolts can be identified by the marking 'TFX – ARP' on the head of the bolt (refer to NOTICE below).
3. HC63xx PRO Cylinders are designed for all those critical high speed, single outboard engine boats, such as Bass, Flats combo Race/Ski and other performance orientated boats capable of speeds in excess of 65 mph. For optimal performance, the use of SeaStar PRO Kevlar Steering Hoses is recommended.
4. HC67xx Tournament cylinders are designed for use with high powered fishing/sport boats. If your application calls for dual or triple outboard engines, is capable of speeds exceeding 55 mp/h and runs ion open water, tournament Cylinders should be used.



ORDER GUIDE

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ENGINE/CYLINDER CONFIGURATION	DESCRIPTION	QTY. REQ.	MODEL	PART #	
SINGLE ENGINE (Single Cylinder) Applications up to 350HP Max. Number of Turns = 5 	Cylinder	1	Front Mount	HC5345	
	Helm	1	SeaStar I-Standard *	HH5271	
	Hose Kit	1	Outboard Hose	HO51__	
	Oil	3	SeaStar Oil	HA5430	
	For Extra Steering Station Add:				
	Helm	1	SeaStar I-Standard *	HH5271	
	Fitting Kit	1	Add a Station	HF5501	
	Hose Kit	1	Outboard Hose	HO51__	
	Oil	1	SeaStar Oil	HA5430	
	DUAL ENGINE (Single Cylinder) Non-Counter Rotating Applications up to 450HP Max. Counter Rotating Applications up to 700HP Max. Number of Turns = 5  CAUTION Tournament cylinders required for aggressive use.	Cylinder	1	Front Mount	HC5345
		Tie-Bar Kit	1		HO60__
		Helm	1	SeaStar I-Standard *	HH5271
Hose Kit		1	Outboard Hose	HO51__	
Oil		3	SeaStar Oil	HA5430	
For Extra Steering Station Add:					
Helm		1	SeaStar I-Standard *	HH5271	
Fitting Kit		1	Add a Station	HF5501	
Fitting Kit		1	Outboard Hose	HO51__	
Oil		1	SeaStar Oil	HA5430	
DUAL ENGINE (Dual Cylinder) Non-Counter Rotating Applications up to 700HP Max. All Counter Rotating Applications Number of Turns = 7  CAUTION Tournament cylinders required for aggressive use.		Cylinder	2	Front Mount	HC5345
		Tie-Bar Kit	1		HO60__
	Helm	1	SeaStar II-Standard **	HH5272	
	Hose Kit	1	Outboard Hose	HO51__	
	Hose Kit	1	Outboard Hose	HO51__	
	Hose Kit	1	Outboard Hose	HO51__	
	Fitting Kit	1	Tee Fittings	HF5530	
	Oil	3	SeaStar Oil	HA5430	
	For Extra Steering Station Add:				
	Helm	1	SeaStar II-Standard **	HH5272	
	Fitting Kit	1	Add a	HF5501	
	Hose Kit	1	Outboard Hose	HO51__	
Oil	1	SeaStar Oil	HA5430		
OPTIONAL EQUIPMENT	Back Plate Kit (for use with Standard Helms)			HA5478	
	20 Degree Wedge (for use with Standard Helms)			HA5419	
	Autopilot Fitting Kit (for use with all Helms)			HF5501	
	* Tilt Helm-SeaStar I			HH5741	
	* Sport Tilt Helm-SeaStar I			HH5291	
	* Rear Mount Helm-SeaStar I			HH5261	
	** Tilt Helm-SeaStar II			HH5742	
	** Sport Tilt Helm-SeaStar II			HH5292	
** Rear Mount Helm-SeaStar II			HH5262		



APPLICATION GUIDE - SINGLE ENGINE APPLICATIONS

If your engine's Horsepower rating is 300+, please refer to our 300HP + Outboard Installation Recommendations prior to selecting a cylinder from this application guide to ensure that you are selecting the correct cylinder for your engine/boat.

ENGINE MANUF.	YEAR	MODEL	CYLINDER	NOTES
FORCE	1985 TO DATE	90-150HP	HC5345	
HONDA	1996 TO DATE	75-90HP	HC5345	
	1998 TO 2009	115-130HP	HC5347	
	1998 TO DATE	30-50HP	HC5345	See Note 1
	2001 TO DATE	135-225HP 4-STROKE	HC5345	
	2003 TO DATE	BF135HP	HC5345	
	2010 TO DATE	115HP	HC5345	
JOHNSON / EVINRUDE	1977 TO 1990	65-300HP	HC5348	
	1988 TO 1997	250-300HP V8	HC5342	
	1991 TO DATE	40-250HP	HC5345	Inc. ETech Engines
	1996 TO DATE	75-250HP FICHT	HC5345	
	1998 TO DATE	40-140HP 4-STROKE	HC5358	See Note 1
	2000 TO DATE	115HP FICT	HC5358	See Note 1
	2002 TO DATE	200-225HP 4-STROKE	HC5345	
	2005 TO DATE	E250 DPX VINDICATOR	HC5348	
MERCURY	1984 TO 1994	2.4/2.5HP EFI	HC5345	See Note 2
	1989 TO DATE	75-300HP	HC5345	
	1996 TO DATE	75-225HP 4-STROKE	HC5345	
	1998 TO DATE	30-60HP	HC5345	See Note 1
	2003 TO DATE	250-300HP XS	HC5345	See Note 3
NISSAN	1990 TO DATE	90-140HP	HC5345	
SUZUKI	1986 TO DATE	100HP	HC5345	
	1986 TO 2002	115-140HP	HC5345	NOT 1996
	1986 TO DATE	150-300HP 2 & 4 STROKE	HC5345	
	1996 ONLY	115-140HP	HC5348	
	1998 TO DATE	40-140HP 4-STROKE	HC5358	See Note 1
	2003 TO DATE	90HP 4-STROKE	HC5358	See Note 1
US MARINE	1996 TO DATE	90-120HP	HC5345	
YAMAHA	1990 TO 2003	40-90HP	HC5345	
	1986 TO DATE	100-250HP 2-STROKE	HC5345	See Note 5
	1997 TO DATE	80-225HP 4-STROKE	HC5345	See Note 5
	2000 TO DATE	150-250 HPDI	HC5345	
	2002 TO DATE	300 HPDI	HC5358	
	2003 TO DATE	25-60HP 4-STROKE	HC5348	See Note 1
	2007 TO DATE	F300-F350	HC5345	See Note 4
	2010 TO DATE	70HP 4-STROKE	HC5348	
YANMAR	1994 TO DATE	90-120HP	HC5345	

NOTICE

High Strength Tiller bolt, part# HA5822.
 ALL cylinders shipped after June 1st, 2007
 will have this bolt included in the cylinder package.



NOTES

- Requires kit HOS090.
- May require extensive cowling modifications.
- MUST use High Strength Tiller bolt, part # HA5822. Refer to the NOTICE below identifying the high strength bolt.
- Optional cylinder part # HC5358. Slight interference may occur when using the HC5358, with the engine in the full tilt position.
- Cylinder part # HC5358 may also be used in these single engine applications.

OTHER APPLICATIONS

The SeaStar Front Mount Steering System is also available for many other marine applications, including:

- Triple Engine Configurations
- Tournament Series Tiebar Cylinders.
- Tandem Catamaran Configurations



APPLICATION GUIDE - TWIN ENGINE APPLICATIONS

If your engine's Horsepower rating is 300+, please refer to our 300HP + Outboard Installation Recommendations prior to selecting a cylinder from this application guide to ensure that you are selecting the correct cylinder for your engine/boat.

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NOTES

1. HC5345 is optional for SINGLE Engine ONLY applications. DO NOT use HC5345 for Twin engine applications as operational interference may occur.
2. Requires kit HO5090.
3. Minimum engine center = 27".
4. May require extensive cowling modifications.
5. HO5030 and HO5064 comes without tie-bar.
5. One cylinder per engine. Must use Mercury supplied tiller bolt for installation.
5. Interference will occur when using a single HC5345 cylinder and HO6003 tiebar when installed in the aft hole on the steering arm. Options include, a) install tiebar into most forward hole (this will limit steering articulation), b) purchase K-6 Cylinder, and tiebar kit part # HO5009. There will no be no interference when using twin HC5345 cylinders.

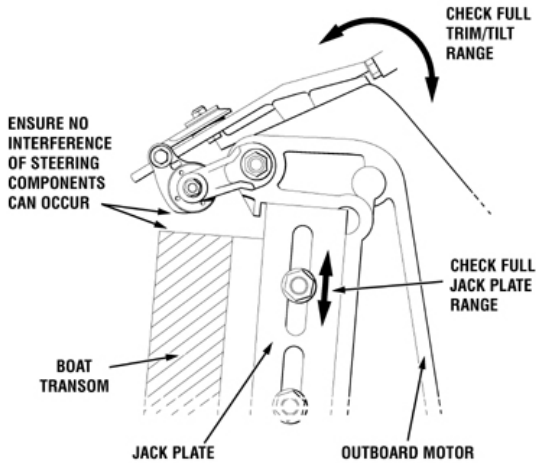
ENGINE MANUF.	YEAR	MODEL	CYLINDER	TIE BAR KITS		NOTES
				Twin Engine Single Cyl.	Twin Engine Dual Cyl.	
FORCE	1985 TO DATE	90-150HP	HC5345	HO5008A	HO5008A	
HONDA	1996 TO DATE	75-90HP	HC5345	HO6001	HO6002	See Note 3
	1998 TO 2009	115-130HP	HC5347	HO5063	HO5064	See Note 5
	1998 TO DATE	30-50HP	HC5345	HO6001	HO6002	See Note 2
	2001 TO DATE	150HP 4-STROKE	HC5345	N/A	HO6002	See Note 7
	2001 TO DATE	225HP 4-STROKE	HC5345	HO6001	HO6002	
	2003 TO DATE	BF135HP	HC5345	HO6003	HO6002	
JOHNSON / EVINRUDE	2010 TO DATE	115HP	HC5345	HO6003	HO6002	See Note 7
	1977 TO 1990	65-300HP	HC5348	HO6003	HO6002	
	1988 TO 1997	250-300HP V8	HC5342	HO5001A	HO5030	See Note 5
	1991 TO DATE	40-250HP	HC5345	HO6003	HO6002	Inc. ETech
	1996 TO DATE	75-250HP FICHT	HC5345	HO6003	HO6002	
	1998 TO DATE	40-140HP 4-STROKE	HC5358	HO6003	HO6002	See Note 2
	2000 TO DATE	115HP FICT	HC5358	HO6003	HO6002	See Note 2
	2002 TO DATE	200-225HP 4-STROKE	HC5345	HO6003	HO6002	
MERCURY	2005 TO DATE	E250 DPX VINDICATOR	HC5348	HO6003	HO6002	
	1984 TO 1994	2.4/2.5HP EFI	HC5345	HO6001	HO6002	See Note 4
	1989 TO DATE	75-300HP	HC5345	HO6001	HO6002	See Note 4
	1996 TO DATE	75-200HP 2 & 4-STROKE	HC5345	HO6001	HO6002	
	1998 TO DATE	30-60HP	HC5345	HO6001	HO6002	See Note 2
	2002 TO DATE	225HP 4-STROKE	HC5358	HO6001	HO6002	See Note 1
NISSAN	2003 TO DATE	250-300HP XS	HC5345	N/A	HO6002	See Note 6
	1990 TO DATE	90-140HP	HC5345	HO6001	HO6002	
SUZUKI	1986 TO DATE	100HP	HC5345	HO6003	HO6002	
	1986 TO 2002	115-140HP	HC5345	HO6001	HO6002	NOT 1996
	1986 TO DATE	150-300HP 2 & 4 STROKE	HC5345	HO6003	HO6002	
	1996 ONLY	115-140HP	HC5348	HO6001	HO6002	
	1998 TO DATE	40-140HP 4-STROKE	HC5358	HO6003	HO6002	See Note 2
	2003 TO DATE	90HP 4-STROKE	HC5358	HO6003	HO6002	See Note 2
US MARINE	1996 TO DATE	90-120HP	HC5345	HO6001	HO6002	
YAMAHA	1990 TO DATE	40-90HP	HC5345	HO6003	HO6002	
	1986 TO DATE	100-250HP 2-STROKE	HC5345	HO6001	HO6002	
	1997 TO DATE	80-225HP 4-STROKE	HC5358	HO6001	HO6002	See Note 1
	2000 TO DATE	150-250 HPDI	HC5358	HO6001	HO6002	See Note 1
	2002 TO DATE	300 HPDI	HC5358	HO6001	HO6002	
	2003 TO DATE	25-60HP 4-STROKE	HC5348	HO6003	HO6002	See Note 2
	2010 TO DATE	70HP 4-STROKE	HC5348	HO6003	HO6002	
2006 TO DATE	F300-F350	MUST use Tormament Cylinders				
YANMAR	1994 TO DATE	90-120HP	HC5345	HO6001	HO6002	



CYLINDER INSTALLATION

WARNING.

Operational interference of the steering cylinder/cylinder fittings and jackplates/transom/splashwell can occur under certain conditions. Check installation thoroughly throughout the full range of Motor Tilt, Jack Height and Trim before making final installation.



If interference does occur, contact:

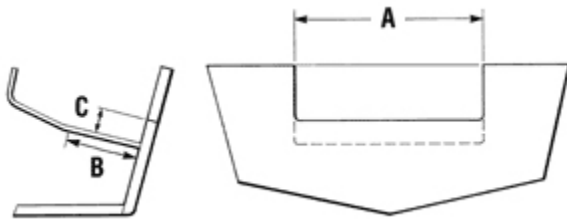
Teleflex Canada for additional information/options.

Telephone: **(604) 270-6899** or **(941) 488-6744**

If interference is not eliminated total steering loss can occur, causing property damage and/or personal injury.

MOTOR WELL DIMENSIONS REQUIRED

NO. OF ENGINES	A	B	C	MINIMUM ENGINE CENTER DISTANCE
1	22" (559mm)	6" (152mm)	5" (127mm)	N/A
2	44" (1118mm)	6" (152mm)	5" (127mm)	26" (660mm)



a) Dimensional restrictions also apply to external motor mount brackets.

b) Maximum engine center distance for twin engine applications is 36" (914mm) using the standard tieBar. Dimension 'A' would have to be increased proportional to the tiebar length.

c) Minimum engine center distance is 26" unless engine manufacturer recommendation is greater.

LIQUID TIE BAR KIT

Part # HA5471-2

The Cylinder Alignment Valve will allow for the periodic required realignment of two outboard motors or rudders that are linked together with a Hydraulic Tie Bar as opposed to a solid link or Mechanical Tie Bar.

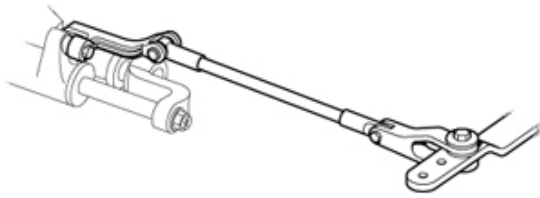
Generally found on Pontoon Boats and Catamarans

Teleflex recommends the use of a mechanical tie bar when possible. There is no true substitute for a mechanical connection. The 'Liquid Tie Bar Valve' will require re-alignment. The frequency of re-alignment is too difficult to predict here as several application specific variables need to be taken into consideration.

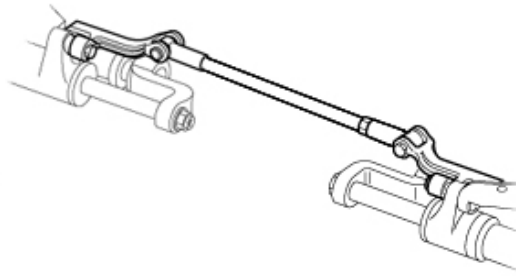


TYPICAL TIE BAR KITS

Twin Engine Single Cylinder Part # HO6001



Twin Engine Twin Cylinder Part # HO6002



For specific installation details and part numbers required for individual applications, please refer to our Supplement Instructions.

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