

Hynautic stern drive steering

This system is designed for stern drive, outboard and inboard boats requiring external cylinders of substantial size and strength. The K-5 cylinders are nickel plated for aesthetics and protection against the elements.

System components are sold separately. The required wing plates and hardware are not available from Teleflex.

Systems can be selected using either the easy-to-install Capilano 2-line systems (with variable-displacement helm) or the traditional Hynautic 3-line configurations.

Capilano Components:

- Capilano 1275V Helm HH5275
- External Stern Drive Cylinder K-5 (2 required)
- Copper Tubing 1/2" or 5/8" OD
- Fitting Kit (for 1/2" Copper Tubing) HF5590 or
- Fitting Kit (for 5/8" Copper Tubing) HF5592
- These fitting kits are for one steering station (purchase add-a-station kit for 2nd station).*
- Capilano Steering Fluid Dexron II® ATF

Options:

- Add-A-Station Fitting Kit (1/2" tubing) HF5591
- Add-A-Station Fitting Kit (5/8" tubing) HF5593
- Helm Remote Fill Kit (through-dash) HA5450

Service Items:

- Steering Fluid Dexron II® ATF
- Steering Wheel Locknut 747521

Tubing Diameters:

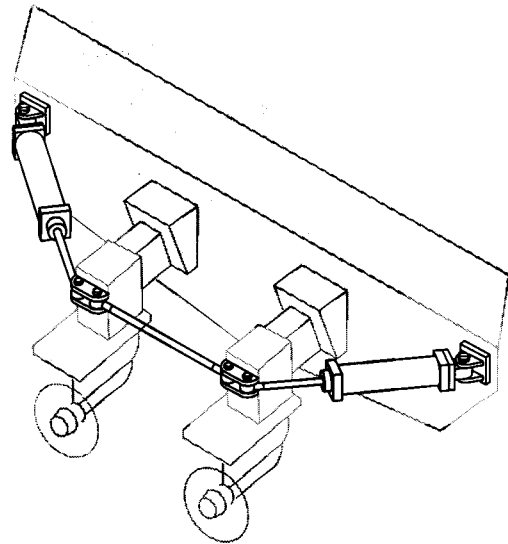
HELM TYPE	DISTANCE – CYLINDER TO FURTHEST HELM	
	40 Feet or Less	More Than 40 Feet
ALL	1/2" O.D. Copper Tubing	5/8" O.D. Copper Tubing

SeaStar

capilano

Hynautic

CAPILANO®/HYNAUTIC®
HEAVY DUTY STERN DRIVE SYSTEM



(turns vary by system)

Hynautic stern drive steering

Hynautic Components:

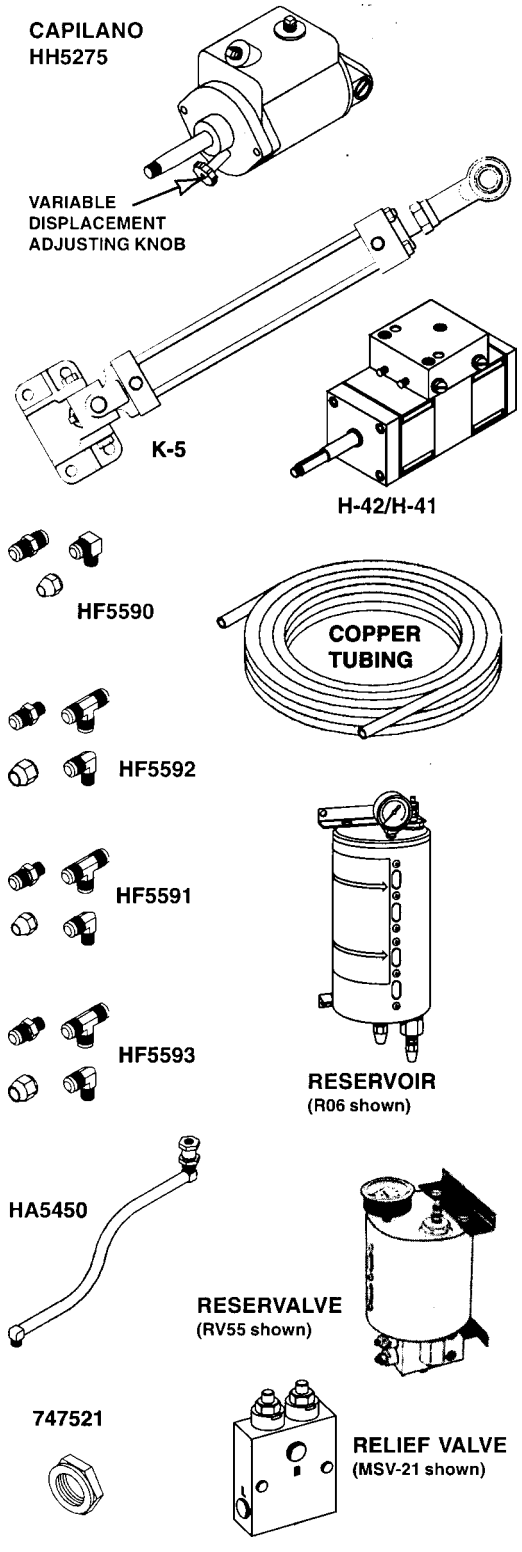
- Hynautic 4.0 cu. in. helm
(1" straight shaft) H-42 or
- Hynautic 4.0 cu. in. helm
(3/4" tapered shaft) H-42-02 or
- Hynautic 5.5 cu. in. helm
(1" straight shaft) H-41 or
- Hynautic 5.5 cu. in. helm
(3/4" tapered shaft) H-41-02 or
- (See application guide.)
- H-40 Fittings Kit for Main Station HF-21
- H-40 Fittings Kit for Second Station HF-22
- External Stern Drive Cylinder K-5 (2 required)
- (See application guide. Fittings available separately.)
- Reservoir - Standard (2 quart) R06
- Relief Valve (950 PSI) MSV-21
- Relief Fittings MSVF-07
- Relief Fittings MSVF-13
- Copper Tubing 1/2" or 5/8" OD
- Fitting Kit (for 1/2" Copper Tubing) HF5590 or
- Fitting Kit (for 5/8" Copper Tubing) HF5592
- These fitting kits are for one steering station (purchase add-a-station kit for 2nd station).*
- SeaStar Oil (1 Quart Mil Spec H5606) HA5430

Options:

- Reservoir (2 quart, with hand pump) R07
- Reservoir (1 quart, with hand pump) R11
- Reservoir (2 quart) R12
- Relief Valve (500 PSI) MSV-19
- Reservevalve (500 PSI, top read, 3/8) RV-55
- Reservevalve (500 PSI, top read, 3/8, w/pump) .. RV-55P
- Reservevalve (500 PSI, top read, 5/16, w/pump) RV-57
- Reservevalve (950 PSI, top read, 5/16) RV-60
- Reservevalve (950 PSI, frt.read, 5/16, w/pump) RV-67
- Add-A-Station Fitting Kit (1/2" tubing) HF5591
- Add-A-Station Fitting Kit (5/8" tubing) HF5593

Helm Options:

HELM PART #	HELM DISPLACEMENT RANGE	NUMBER OF WHEEL TURNS LOCK-TO-LOCK	RELIEF VALVE SETTING
USING CAPILANO (VARIABLE DISPLACEMENT) HELM:			
HH5275	2.7-5.4 cu.in.	10.3-5.2	1000 PSI
USING HYNAUTIC (FIXED DISPLACEMENT) HELMS:			
H-42	4.0 cu. in.	7.0	950 PSI
H-41	5.5 cu. in.	5.1	950 PSI



SeaStar stern drive steering

SeaStar Stern Drive Steering is the best choice for non-power assisted stern drives and any stern drive boat with an autopilot. The system is based upon the SeaStar helm family, which allows for dual station and autopilot use. Cylinders are specific to drive brands and models.

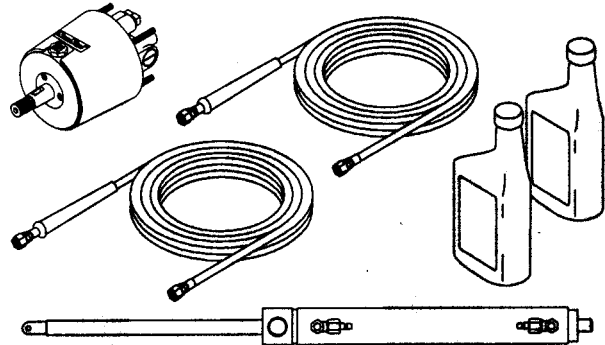
SeaStar®

SEASTAR®
STERN DRIVE SYSTEM



Features:

- Best and Most Economical autopilot interface for stern drives! Easy installation.
- Simple multiple steering station connection.
- Optional SeaStar 2.0 & 2.4 helms 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.



Applications:

Ideal for most stern drives, especially non-power-assisted units, SeaStar is suitable for single and multiple drives and dual stations.

(turns vary by system)



How to Spec a System:

1. From the application guide, confirm that a cylinder is available for your specific make, model and year of drive unit. Select the cylinder that is appropriate for the drive.
2. From the ordering guide, select the appropriate helm and accessory hardware. Note that three SeaStar helm displacements are available for power steered stern drives (1.7, 2.0 & 2.4 cu. in.) **The displacement of the helm affects the number of turns lock-to-lock. Lower helm displacement = more turns = less effort/slower response.** Select helm size on the basis of the desired steering response. *The 2.4 cu. in. version is not recommended for non-power-steered applications.*
3. Select the appropriate tube or hose and fitting kits required for the installation.
4. Confirm that there is sufficient space available in the dash and engine compartment(s) for the steering components.

SeaStar stern drive steering

Components:

- SeaStar 1.7 Helm HH5271
(See Ordering Guide to select helm.)
- Stern Drive Cylinder HC53___
(See Application Guide to select cylinder.)
- Hose Kit (2 hoses) HO51___
- SeaStar Oil (1 Quart) HA5430

Options:

- SeaStar 2.0 Helm HH5273
- SeaStar 2.4 Helm HH5272

- SeaStar 1.7 Sport Tilt Helm/Mech. HH5291
- SeaStar 1.7 Traditional Tilt Helm/Mech. . HH5741
- SeaStar 2.4 Sport Tilt Helm/Mech. HH5292
- SeaStar 2.4 Traditional Tilt Helm/Mech. . HH5742

- SeaStar 1.7 Rear Mount Helm HH5261
- SeaStar 2.4 Rear Mount Helm HH5262

- SeaStar 1.7 Commercial Duty Helm HH5217
- SeaStar 2.4 Commercial Duty Helm HH5224
(Designed for small Lobster and Crabbing vessels, these helms have a stainless steel shaft with heavy duty seal and wiper, which help protect the helm from the abrasive effects of sediment brought on board with traps or pots.)

- SeaStar Round Bezel Kit HA5417
(Reduces helm protrusion by 3.75")

- SeaStar Backplate Kit HA5418
(Reduces helm protrusion by dash thickness and allows clean retrofit of SeaStar helm where following helms were installed: pre-1991 SeaStar, SyTen, and mechanical rotary steering.)

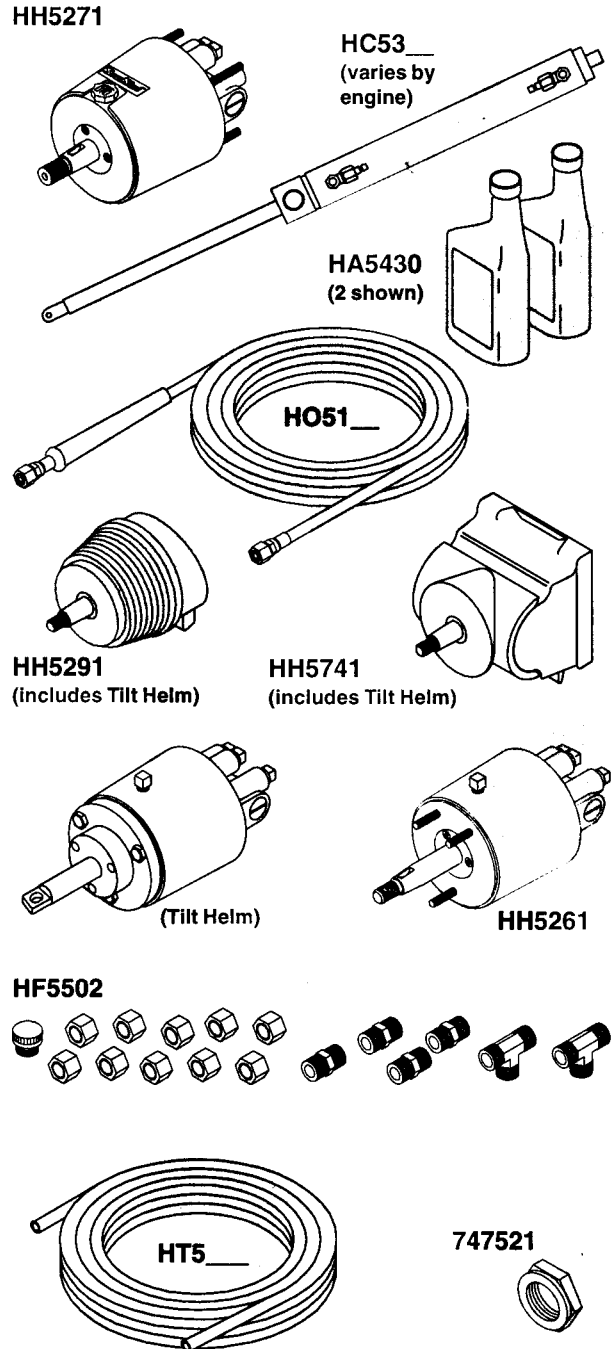
- SeaStar 20° Dash Wedge Kit HA5419

- SeaStar Bulkhead Hose Kit (2 hoses) HO81___
(Allows installation through a bulkhead without additional fittings.)

- Add-A-Station Kit (all helms) HF5502
- Autopilot Fittings Kit (all helms) HF5502
- 3/8" Tubing *(see ordering guide)* HT5___
(Nylon tube intended for use on Sterndrives and inboard steering systems using the SeaStar 1.7 helm ONLY.)

Service Items:

- SeaStar Oil (1 Gallon) HA5440
- Steering Wheel Locknut 747521



SeaStar stern drive steering

Application Guide: Stern Drive Steering

ENGINE MAKER/ BRAND	STEERING CONFIG.	ENGINE/ DRIVE MODEL	YEAR	(CYLINDER USED)		(NUMBER OF WHEEL TURNS)		NOTES
				MODEL	PART #	SEASTAR (1.7 cu.in.)	SEASTAR (2.4 cu.in.)	
BMW	Non Power	ALL	TO DATE	BA125-8EMV	HC5330	4.9	N/A	1
	Power Assist	ALL	TO DATE	125-8EM	HC5328	4.9/5.8	3.4/4.1	2
MERCUISER	Non Power	MerCruiser I	TO 1983	BA125-8EMV	HC5330	4.9	N/A	1,7
	Non Power	Alpha I	1984 TO DATE	BA135-7EM	HC5332	5.0	3.5	1,5,6,7
	Non Power	Bravo I, II, III	1984 TO DATE	BA135-7EM	HC5332	5.0	3.5	1,5,6,7
	Power Assist	MerCruiser I	TO 1983	125-8EM	HC5328	4.9/5.8	3.4/4.1	2
	Power Assist	Alpha I	1984 TO DATE	125-8EM	HC5328	4.9/5.8	3.4/4.1	2
	Power Assist	Bravo I, II	1984 TO DATE	125-8EM	HC5328	4.9/5.8	3.4/4.1	2
	Power Assist	Bravo III	1984 TO DATE	125-8EM	HC5328	4.9/5.8	3.4/4.1	2,8
OMC	Non Power	400/800 Series	TO 1985	N/A	N/A	N/A	N/A	
	Non Power	Cobra	1986 TO DATE	BA150-7EM	HC5326	6.0	N/A	1,4
	Non Power	King Cobra	1986 TO DATE	BA150-7EM	HC5326	6.0	N/A	1,4
	Power Assist	400/800 Series	TO 1985	N/A	N/A	N/A	N/A	
	Power Assist	Cobra	1986 TO DATE	125-8EM	HC5328	4.9/5.8	3.4/4.1	2
	Power Assist	King Cobra	1986 TO DATE	125-8EM	HC5328	4.9/5.8	3.4/4.1	2
VOLVO	Non Power	275	TO DATE	BA150-7ATM	HC5314	6.0	N/A	1,7
	Non Power	280, 290	TO DATE	BA135-7EM	HC5332	5.0	3.5	1,5,6,7
	Non Power	Diesel	TO DATE	BA135-7EM	HC5332	5.0	3.5	1,5,6,7
	Power Assist	275	TO DATE	N/A	N/A	N/A	N/A	
	Power Assist	280, 290	TO DATE	125-8EM	HC5328	4.8/5.8	3.4/4.1	2
	Power Assist	Diesel	TO DATE	125-8VEM	HC5329	4.9/5.8	3.4/4.1	2
	Power Assist	32, Diesel	1997 TO DATE	92-VPS	HC5331	4.8/5.5	3.4/4.1	2
	Power Assist	41-42, Diesel	1992 TO DATE	92-VPS	HC5331	4.8/5.8	3.4/4.1	2
	Power Assist	DPS & SX	1996 TO DATE	92-VPS	HC5331	4.9/5.5	3.4/4.1	2
YAMAHA	Non Power	ALL	1989 TO DATE	N/A	N/A	N/A	N/A	
	Power Assist	ALL	1989 TO 1992	125-8EM	HC5328	4.9/5.8	3.4/4.1	2

NOTES:


N/A = Not Available.

- Balanced system - number of steering wheel turns lock-to-lock is equal port to starboard or vice-versa.
- Unbalanced system - number of steering wheel turns lock-to-lock is unequal port to starboard or vice-versa.
- Requires additional clevis supplied by engine manufacturer. Reference Quicksilver Part No. B98735A1.
- Requires cylinder rod end adapter HA5424 from Teleflex Canada Limited Partnership.
- HC5332 replaces HC5326 as of January 2000. If installing HC5326 additional clevis supplied by engine manufacturer required (part number B98735A1).
- The installation of the HC5332 sterndrive cylinder requires the use of SeaStar Outboard hose only. Do not use 3/8" copper or nylon tube.
- If engine outdrive is NOT equipped with a torque tab on the underside of the lower leg one must be installed to reduce prop torque.
- Yanmar Engines using the Bravo III drives require the use of cylinder HC5326.

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SeaStar stern drive steering

Ordering Guide: Stern Drive Steering

ENGINE/CYLINDER CONFIGURATION	COMPONENT DESCRIPTION	QTY. REQ'D	MODEL	PART NO.
SINGLE & DUAL STERN DRIVES (Number of Turns varies by Helm & Cylinder. See Application Guide.) For dual sterndrive applications use engine manufacturers supplied tie bar.	CYLINDER	1	SEE APPLICATION GUIDE	HC53__
	HELM	1	SEASTAR 1.7 (SEE NOTE 1)	HH5271
	HELM (OPTIONAL)		SEASTAR 2.4 (SEE NOTE 2)	HH5272
	TUBING/HOSE		(SEE NOTE 3)	
	OIL	3	SEASTAR OIL (QT.)	HA5430
	FOR EXTRA STEERING STATION ADD:			
	HELM	1	SEASTAR 1.7 (SEE NOTE 1) SEASTAR 2.4 (SEE NOTE 2)	HH5271 HH5272
	FITTING KIT	1	ADD A STATION • FOR SEASTAR 1.7 HELM • FOR SEASTAR 2.4 HELM	HF5502 HF5501
	OIL	1	SEASTAR OIL	
	EXTRA TUBE/HOSE		(SEE NOTE 3)	
OPTIONAL EQUIPMENT	BACK PLATE KIT		(FRONT MOUNT HELMS)	HA5418
	20 DEGREE WEDGE		(FRONT MOUNT HELMS)	HA5419
	AUTOPILOT FITTING KIT		(FOR ALL HELMS)	HF5502
	TILT HELM - SEASTAR 1.7			HH5741
	REAR MOUNT HELM - SEASTAR 1.7			HH5261
	TILT HELM - SEASTAR 2.4			HH5742
	REAR MOUNT HELM - SEASTAR 2.4			HH5262

NOTE: These recommendations apply to factory stock sterndrives only. Modified installations may require a higher capacity steering system. If in doubt, contact our technical service for assistance.

- SeaStar 1.7 helms are the standard recommendation for both non-power and power steered applications.
- SeaStar 2.4 helms can be specified for power steered applications where faster steering response is desired. Review the Application Guide on the previous page for recommendations.
- For SeaStar 1.7 systems, use 3/8" diameter nylon tubing (Part No. HT5___).
For SeaStar 2.4 systems, use the following option A or B:
A. Outboard Hose: hoses must be ordered in standard lengths. They cannot be cut to length.
B. Copper tube: 3/8" diameter copper tube and hose kit (Part No. HF5508).
- For dual stern drives: use the tie bar supplied by the engine manufacturer.

SeaStar Autopilot Interface

SeaStar is the best steering choice to interface with most autopilots. If you are installing an autopilot on a mechanically steered boat, we recommend you upgrade to SeaStar for performance reasons.

If you're upgrading to SeaStar, plan ahead: future installation of an autopilot or extra steering station can be simplified by installing two pairs of shorter hose kits. Connect them with union coupling fittings, part no. HF5530. Tee fittings can be installed with ease at a later date. Bulkhead union fitting kits are available to facilitate hose runs through transoms and splashwells:

- HF5512 up to 3/4" (19mm) splashwell, 1 cylinder
- HF5513 up to 3" (76mm) transom, 1 cylinder
- HF5514 up to 3/4" (19mm) splashwell, 2 cylinders
- HF5515 up to 3" (76mm) transom, 2 cylinders

For an autopilot installation, a third (compensating) line must be installed and identified. (SeaStar helm Ports marked "R" are for connection of additional helm and/or autopilot compensating lines.) Use HF5501 (outboards) or HF5502 (stern drives and inboards) fitting kits when adding an autopilot to your SeaStar system.

