

Capilano inboard steering

Uncompromising Design. Capilano steering stands for ruggedness and reliability worldwide. Helms include a variable displacement feature enabling the helmsman to adjust the number of steering wheel turns to suit maneuvering and weather conditions. Capilano systems install easily and give years of dependable service.

SeaStar®
capilano

CAPILANO 1250V/1275V SYSTEM

Features:

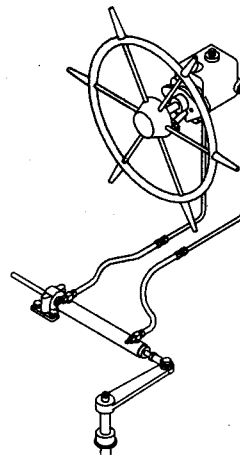
- Variable displacement helms for adjustable number of steering wheel turns.
- Heavy duty brass cylinders with bleed fittings; chrome-plated stainless steel rods.
- Stainless steel and bronze mounting hardware.
- Easy installation on single and dual rudder vessels.
- Systems are not air-pressurized; no air leaks or pressure drops; separate reservoir not needed.
- Built-in pressure relief in helm protects system from effects of thermal expansion.
- Standard 3/4" tapered steering shaft.
- Meets ABS/Lloyd/Det Norske Veritas specifications.

Applications:

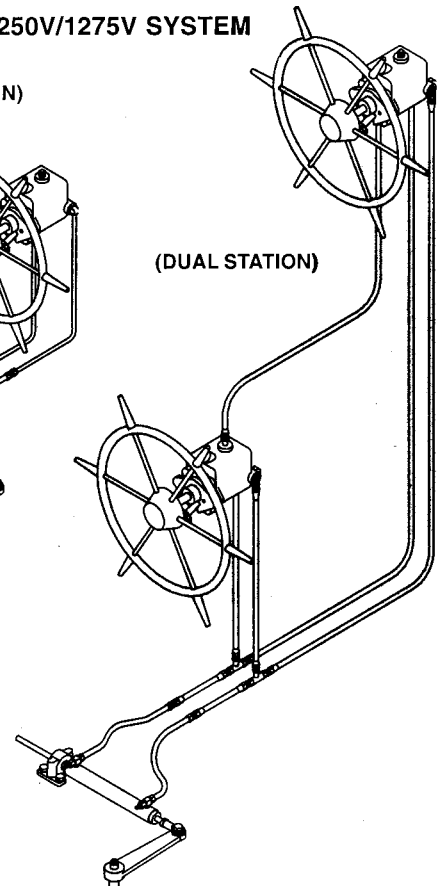
Most inboard powered boats with single or dual engines including planing/displacement hull craft from 30-55 feet in length. Suitable for dual station use with the purchase of extra helm, tubing/hose & fittings. Capilano systems use Dexron II® type ATF fluid.

(turns vary by system)

(SINGLE STATION)



(DUAL STATION)



How to Spec a System:

1. From the application guide select components appropriate for the vessel based on:
 - a) hull type — displacement or planing;
 - b) length of vessel; and
 - d) number of steering wheel turns desired.
2. Select the fitting and hose kits required, based on type of plumbing (1/2" or 5/8" tubing or hose) and based on number of steering stations.
3. Confirm that there is sufficient space available in the dash and engine compartment(s) for the steering components.

Capilano inboard steering

Components:

Capilano 1250V Helm HH5250 or
Capilano 1275V Helm HH5275
(See application guide.)

Inboard Cylinder HC53__
(See application guide.)

Copper Tubing 1/2" or 5/8" OD
(See application guide.)

Fitting Kit (for 1/2" Copper Tubing) ... HF5590 or
Fitting Kit (for 5/8" Copper Tubing) HF5592
(See application guide.)

These fitting kits are for one steering station (purchase add-a-station kit for 2nd station).

Hose Kit for Copper Tubing (2 hoses) .. HA5731
This hose kit contains two 18" (.45m) hoses for single-cylinder installations.

Options:

Dual Cylinder Hose 2' (.6m) HA5732
Dual Cylinder Hose 3' (.9m) HA5733
Dual Cylinder Hose 4' (1.2m) HA5734
Dual Cylinder Hose 5' (1.5m) HA5735
Dual Cylinder Hose 6' (1.8m) HA5736

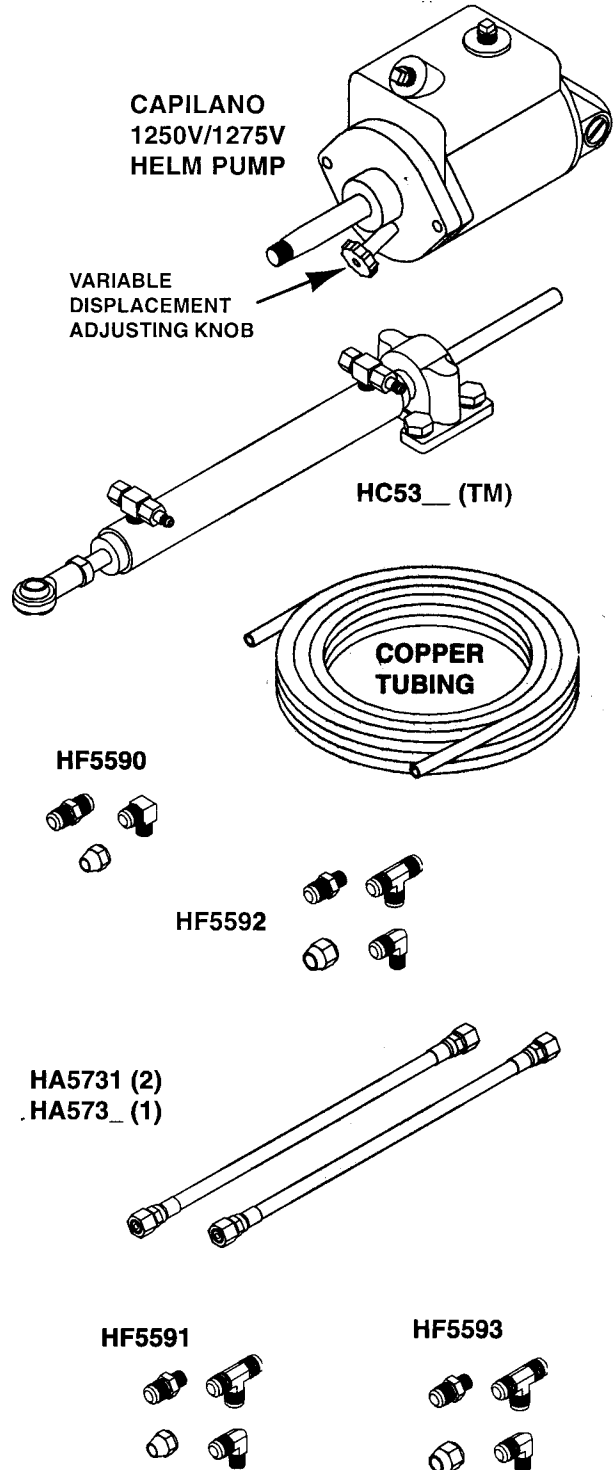
These hoses are sold individually (four are required for dual cylinder installations).

Fixed Mount Cylinder (13.3 cu. in.)
(one ball joint end) K-22
Fixed Mount Cylinder (13.3 cu. in.)
(two ball joint ends) K-27
Pivot Mount Cylinder (25.5 cu. in.) K-31
Universal Mount Cylinder (39.2 cu. in.) K-8
Universal Mount Cylinder (55 cu. in.) K-9

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



Capilano inboard steering

Application Guide: Capilano 2-Line Inboard Steering

This application guide should be used with discretion. The chart below is only a guide to selecting a steering system.

A steering system manufacturer cannot anticipate all the variables in boat-rudder design that affect steering loads. It is the final responsibility of the boat designer/builder to specify maximum expected steering loads.



If the required information is not available, contact us with rudder dimensions, vessel size and anticipated maximum vessel speed for a recommendation.

Definitions of terms used in the charts on these pages:

Planing Hull: maximum hull speed normally exceeds 18 knots.

Displacement Hull: maximum hull speed does not normally exceed 18 knots.

Diameters: Copper tubing diameter shown is O.D. Hose diameter shown is I.D.

FOR VESSEL SIZES UP TO:	HELM PUMP MODEL	STEERING WHEEL TURNS ADJUST. RANGE Min.-Max.	REQUIRES CYLINDER MODEL (2x = 2 cylinders)	TUBING/HOSE DIAMETERS when distance from Cylinder to farthest Helm is:		MAXIMUM OUTPUT TORQUE FROM CYLINDER(S)	
				40 Feet or Less	40 Feet or More	In.-Lb.	Kg m
PLANING HULLS: 							
35' (11m)	1250V	3 - 6	BA150-7TM_	1/2"	N/A	6,548	75
40' (12m)	1250V	4 - 8	BA175-7TM_	1/2"	N/A	8,795	100
50' (15m)	1250V	5.5 - 11	BA200-7TM_	1/2"	5/8"	12,134	140
50' (15m)	1275V	3.5 - 7	BA200-7TM_	1/2"	5/8"	12,134	140
50' (15m)	1275V	4 - 8	2x BA150-7TM_	1/2"	5/8"	14,766	170
55' (17m)	1275V	5.5 - 11	BA200-11 TM_	1/2"	5/8"	19,900	230
55' (17m)	1275V	5.5 - 11	2x BA175-7TM_	1/2"	5/8"	19,902	230
60' (18m)	1275V	7.5 - 15	2x BA200-7TM_	1/2"	5/8"	26,322	300
DISPLACEMENT HULLS: 							
30' (9m)	1250V	3 - 6	BA150-7TM_	1/2"	N/A	6,548	75
38' (11.5m)	1250V	4 - 8	BA175-7TM_	1/2"	N/A	8,795	100
45' (14m)	1250V	5.5 - 11	BA200-7TM_	1/2"	5/8"	12,134	140
45' (14m)	1275V	3.5 - 7	BA200-7TM_	1/2"	5/8"	12,134	140
45' (14m)	1275V	4 - 8	2x BA150-7TM_	1/2"	5/8"	14,766	170
50' (15m)	1275V	5.5 - 11	BA200-11 TM_	1/2"	5/8"	19,900	230
50' (15m)	1275V	5.5 - 11	2x BA175-7TM_	1/2"	5/8"	19,902	230
50' (15m)	1275V	7.5 - 15	2x BA200-7TM_	1/2"	5/8"	26,322	300

NOTE: Theoretical torque about pivot point at 35 degree articulation with 1,000 PSI (70 BAR) system pressure.

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e-mail: sales@sealandpower.com

Capilano inboard steering

Helm Options

A unique variable displacement feature on the helm allows the number of steering wheel turns to be adjusted by the helmsman to his preference within a pre-determined range.

Tubing/Hose Options

We recommend use of soft refrigeration type copper tubing for optimum performance. If hose must be used, select a hydraulic hose rated for 1000 PSI (70 bar) working pressure, and with a very low volumetric expansion rating. A hydraulic hose that expands too much at 500 PSI (35 bar) will make the steering spongy.

Cylinder Options

Cylinders are made from brass & stainless steel. Available with stainless rod & ball joint (TMB models) or stainless rod & bronze clevis (TMC models.) Cylinders with ball joints have 2-axis articulation.

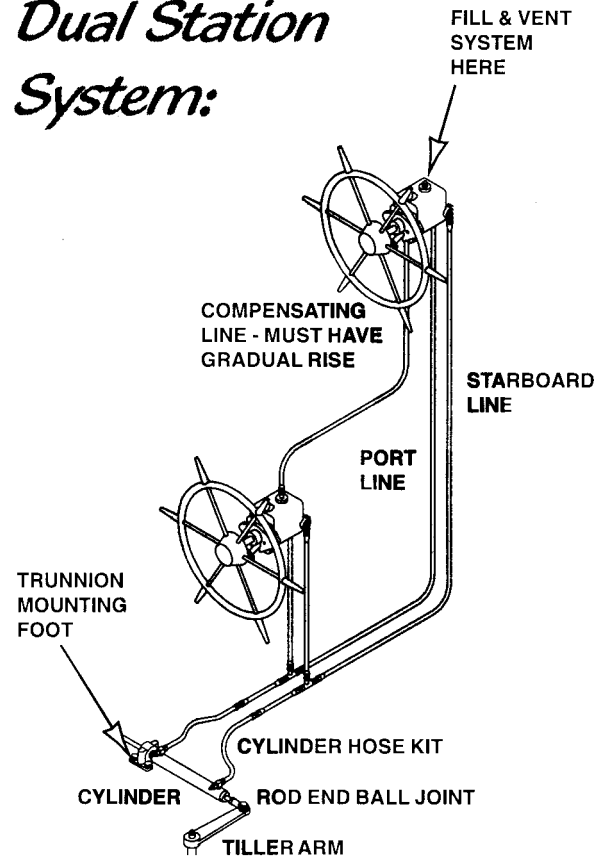
PART NO.	DESCRIPTION/MODEL/ROD END CONFIG.
7" STROKE MODELS:	
HC5349	Cylinder BA150-7TMB (rod end ball joint)
HC5350	Cylinder BA175-7TMB (rod end ball joint)
HC5351	Cylinder BA200-7TMB (rod end ball joint)
HC5355	Cylinder BA150-7TMC (rod end clevis)
HC5356	Cylinder BA175-7TMC (rod end clevis)
HC5357	Cylinder BA200-7TMC (rod end clevis)
11" STROKE MODELS:	
HC5378	Cylinder BA200-11TMB (rod end ball joint)
HC5379	Cylinder BA200-11TMC (rod end clevis)

Also available are fixed mount cylinders K-22/ K-27 (13.3 cu. in. displacement); pivot mount cylinder K-31 (25.5 cu. in.); and universal mount cylinders K-8 (39.2 cu. in.) and K-9 (55 cu. in.). Number of wheel turns is based on total cylinder displacement divided by helm displacement.

HELM PART #	MODEL	DISPLACEMENT ADJUSTMENT RANGE	RELIEF VALVE SETTING
HH5250	1250V	1.7-3.4 cu.in. (27.8-55.7 cc)	1000 PSI (70 BAR)
HH5275	1275V	2.7-5.4 cu.in. (44.2-88.4 cc)	1000 PSI (70 BAR)

HELM TYPE	DISTANCE — CYLINDER TO FURTHEST HELM	
	40 Feet or Less	More Than 40 Feet
1250V	1/2" O.D. Copper Tubing	5/8" O.D. Copper Tubing
	1/2" I.D. Hydraulic Hose	5/8" I.D. Hydraulic Hose
1275V	5/8" O.D. Copper Tubing	5/8" O.D. Copper Tubing
	5/8" I.D. Hydraulic Hose	5/8" I.D. Hydraulic Hose

Typical Capilano Dual Station System:



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Hynautic inboard steering

SeaStar offers rugged 3-line Hynautic Heavy Duty steering systems for most work and pleasure vessels up to 70 feet.

Heavy Duty helms combine one or two bi-directional axial piston pumps with pilot check and make-up check valving. The result is a unit which prevents rudder feedback, is very efficient (even at low RPM), and is immediately adaptable to multi-station use.

A wide choice of helm displacements and cylinder configurations make it easy to spec a system which can handle a variety of large boat performance requirements and accommodate most user preferences.

Features:

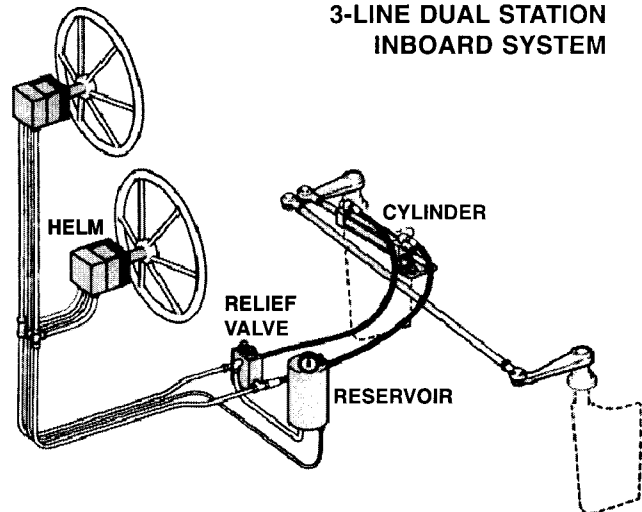
- Low friction heavy duty hydraulic steering.
- Helm/cylinder combinations for most inboards. Marine grade materials.
- Heavy duty helms available in three displacements, to accommodate most applications and user preferences.
- Helms available with 1" straight shaft or 3/4" tapered. Mount facing any direction.
- Quick air purge relief valve.
- Fluid fill at remote reservoir.
- Heavy duty brass cylinders. Two-axis articulation. Easy installation for single or dual rudder vessels.
- Meets or exceeds applicable standards.
- Accepts most steering wheels.

(turns vary by system)

SeaStar®

Hynautic®

**HYNAUTIC®
3-LINE DUAL STATION
INBOARD SYSTEM**



How to Spec a System:

1. From the application guide select components appropriate for the vessel based on:
 - a) hull type — displacement or planing;
 - b) length of vessel; and
 - d) number of steering wheel turns desired.
2. Select the fitting and hose kits required, based on type of plumbing (1/2" or 5/8" tubing or hose) and based on number of steering stations.
3. Confirm that there is sufficient space available in the dash and engine compartment(s) for the steering components.

Hynautic inboard steering

Components:

Hynautic 2.75 cu. in. helm (1" straight shaft)	H-21 or
Hynautic 2.75 cu. in. helm (3/4" tapered shaft)	H-25 or
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
<i>(See application guide on next page.)</i>	
H-20 Fittings Kit for Main Station	HF-10
H-40 Fittings Kit for Main Station	HF-21

Inboard Cylinder HC53__ or K__
(See application guide on next page. 1 or 2 required.)

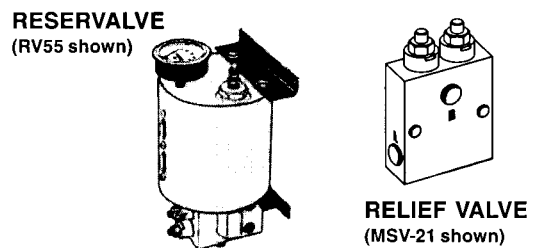
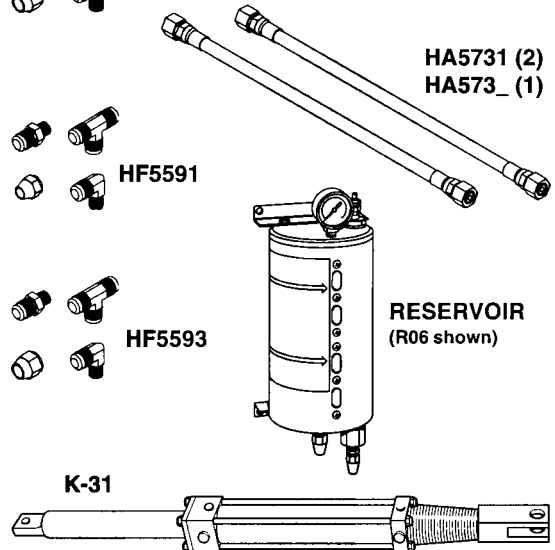
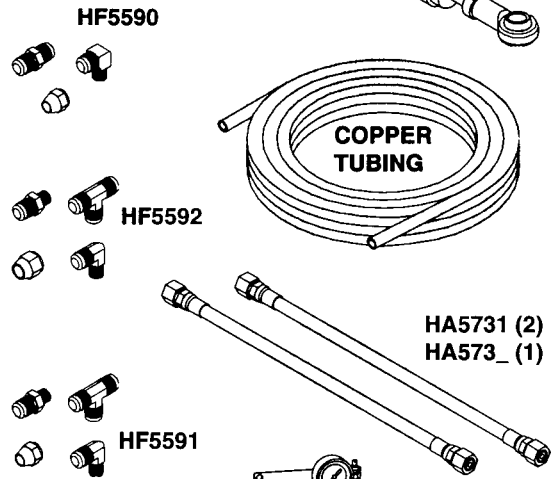
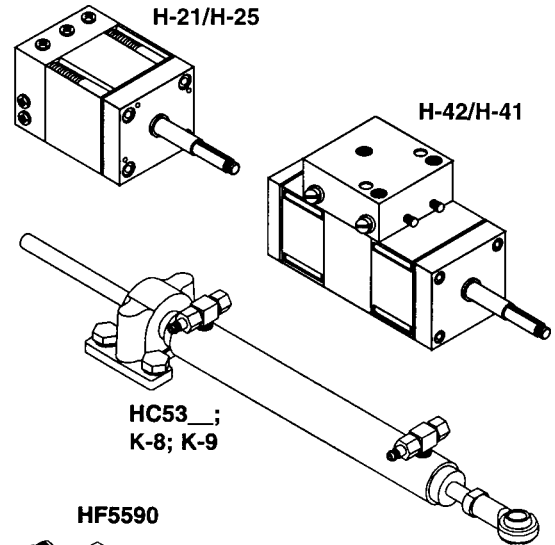
Reservoir - Standard (2 quart) R06
Relief Valve (950 PSI) MSV-21
Relief Fittings (1150 & 1175-21-1)..... MSVF-07
Relief Fittings (1175-42-1 & up) MSVF-13
Copper Tubing 1/2" or 5/8" OD
(See application guide on next page.)

Fitting Kit (for 1/2" Copper Tubing) HF5590 or K-__
Fitting Kit (for 5/8" Copper Tubing) HF5592
(See application guide on next page. These fitting kits are for one steering station; purchase add-a-station kit for 2nd station.)

Hose Kit for Copper Tubing (2 hoses) HA5731
Contains two 18" (.45m) hoses for single-cylinder installations.
SeaStar Oil (1 Gallon) HA5440

Options:

Pivot Mount Inboard Cylinder	K-31
<i>(Systems 8a & 8b; see "Cylinder Options" on p. 117.)</i>	
Dual Cylinder Hose 2' (.6m)	HA5732
Dual Cylinder Hose 3' (.9m)	HA5733
Dual Cylinder Hose 4' (1.2m)	HA5734
Dual Cylinder Hose 5' (1.5m)	HA5735
Dual Cylinder Hose 6' (1.8m)	HA5736
<i>These hoses are sold individually (four are required for dual cylinder installations).</i>	
Reservoir (2 quart, with hand pump)	R07
Reservoir (1 quart, with hand pump)	R11
Reservoir (2 quart)	R12
Relief Valve (500 PSI)	MSV-19
Reservale (500 PSI, top read, 3/8)	RV-55
Reservale (500 PSI, top read, 3/8, w/pump) ..	RV-55P
Reservale (500 PSI, top read, 5/16, w/pump)	RV-57
Reservale (950 PSI, top read, 5/16)	RV-60
Reservale (950 PSI, frt.read, 5/16, w/pump)	RV-67
H-20 Fittings Kit for Second Station	HF-11
H-40 Fittings Kit for Second Station	HF-22



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Application Guide: 3-Line Inboard Steering

FOR VESSEL SIZES UP TO:	HELM PUMP MODEL	STEERING WHEEL TURNS	REQUIRES CYLINDER MODEL (2x = 2 cylinders)	TUBING DIAMETERS		MAX. SUGG. H.P.	MAX. SUGG. AREA FEET (meters)
				when distance from Cylinder to farthest Helm is: 40 Feet or Less	40 Feet or More		
PLANING HULLS:							
35-50' (11-15m)	H-21 or H-25	5.0	HC5350 or HC5356	1/2"	5/8"	450	—
40-50' (10-18m)	H-21 or H-25	6.8	HC5351 or HC5357	1/2"	5/8"	750	—
40-50' (10-18m)	H-42	4.7	HC5351 or HC5357	1/2"	5/8"	750	—
45-60' (14-18m)	H-42	7.4	HC5378 or HC5379	1/2"	5/8"	950	—
45-60' (14-18m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	950	—
55-65' (17-20m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	1200	—
to 70' (to 21m)	H-41	10.8	2x HC5378 or HC5379	1/2"	5/8"	1500	—
to 70' (to 21m)	H-41	14.2	2x K-8	1/2"	5/8"	1500	—
DISPLACEMENT HULLS — TUG BOATS, NET HAULERS:							
to 30' (6-9m)	H-21 or H-25	5.0	HC5350 or HC5356	1/2"	5/8"	200	—
30-35' (6-11m)	H-21 or H-25	6.8	HC5351 or HC5357	1/2"	5/8"	250	—
30-35' (6-11m)	H-42	4.7	HC5351 or HC5357	1/2"	5/8"	250	—
26-40' (8-12m)	H-42	7.4	HC5378 or HC5379	1/2"	5/8"	400	—
26-40' (8-12m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	400	—
30-45' (9-14m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	450	—
to 50' (to 15m)	H-41	10.8	2x HC5378 or HC5379	1/2"	5/8"	500	—
to 50' (to 15m)	H-41	14.2	2x K-8	1/2"	5/8"	500	—
to 50' (to 15m)	H-41	20.0	2x K-9	1/2"	5/8"	500	—
DISPLACEMENT HULLS — WORK & PLEASURE BOATS:							
to 40' (9-12m)	H-21 or H-25	5.0	HC5350 or HC5356	1/2"	5/8"	300	—
40-45' (12-14m)	H-21 or H-25	6.8	HC5351 or HC5357	1/2"	5/8"	350	—
40-45' (12-14m)	H-42	4.7	HC5351 or HC5357	1/2"	5/8"	350	—
40-55' (12-17m)	H-42	7.4	HC5378 or HC5379	1/2"	5/8"	500	—
40-55' (12-17m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	500	—
45-65' (14-20m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	650	—
to 75' (to 23m)	H-41	10.8	2x HC5378 or HC5379	1/2"	5/8"	750	—
to 75' (to 23m)	H-41	14.2	2x K-8	1/2"	5/8"	750	—
SAILBOATS — SKEG RUDDER:							
to 40' (9-12m)	H-21 or H-25	5.0	HC5350 or HC5356	1/2"	5/8"	—	9 (.9)
40-45' (12-14m)	H-21 or H-25	6.8	HC5351 or HC5357	1/2"	5/8"	—	10 (1)
40-45' (12-14m)	H-42	4.7	HC5351 or HC5357	1/2"	5/8"	—	10 (1)
40-52' (12-16m)	H-42	7.4	HC5378 or HC5379	1/2"	5/8"	—	17 (1.6)
40-52' (12-16m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	—	17 (1.6)
50-60' (15-18m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	—	18 (1.7)
to 65' (to 20m)	H-41	10.8	2x HC5378 or HC5379	1/2"	5/8"	—	20 (1.9)
to 65' (to 20m)	H-41	14.2	2x K-8	1/2"	5/8"	—	20 (1.9)
SAILBOATS — SPADE RUDDER:							
to 40' (9-12m)	H-21 or H-25	5.0	HC5350 or HC5356	1/2"	5/8"	—	7 (.6)
40-45' (12-14m)	H-21 or H-25	6.8	HC5351 or HC5357	1/2"	5/8"	—	8 (.7)
40-45' (12-14m)	H-42	4.7	HC5351 or HC5357	1/2"	5/8"	—	8 (.7)
35-46' (11-16m)	H-42	7.4	HC5378 or HC5379	1/2"	5/8"	—	15 (1.4)
35-46' (11-16m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	—	15 (1.4)
40-50' (12-15m)	H-41	5.4	HC5378 or HC5379	1/2"	5/8"	—	15.5 (1.4)
to 60' (to 18m)	H-41	10.8	2x HC5378 or HC5379	1/2"	5/8"	—	16.5 (1.5)
to 60' (to 18m)	H-41	14.2	2x K-8	1/2"	5/8"	—	16.5 (1.5)

Hynautic inboard steering

Helm Options

Four helms are offered in 3 displacements, as noted in the chart at right. The H-21 helm has a 1" straight wheel shaft; H-25 has a 3/4" tapered shaft. The H-42 and H-41 helms both have a 1" straight wheel shaft.

HELM PART #	DISPLACEMENT RANGE	RELIEF VALVE SETTING
H-21	2.75 cu. in.	950 PSI
H-25	2.75 cu. in.	(66 BAR)
H-42	4.0 cu. in.	950 PSI
H-41	5.5 cu. in.	(66 BAR)

Tubing/Hose Options

Use soft refrigeration type copper tubing for optimum performance. For tube-to-cylinder flex hoses, select a hydraulic hose rated for 1000 PSI (70 bar) working pressure, and with a very low volumetric expansion rating.

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

Cylinder Options

Cylinders are made from brass & stainless steel. Available with stainless rod & ball joint (TMB models) or stainless rod & bronze clevis (TMC models.) Cylinders with ball joints have 2-axis articulation.

The K-31 is an optional pivot mount cylinder which can be used in the systems numbered "8a" and "8b" on the opposite page. With this cylinder, the number of wheel turns becomes 6.4 (using the H-42 helm) or 4.6 (H-41 helm).

PART NO.	DESCRIPTION/MODEL/ROD END CONFIG.
7" STROKE MODELS:	
HC5350	Cylinder BA175-7TMB (rod end ball joint)
HC5356	Cylinder BA175-7TMC (rod end clevis)
HC5351	Cylinder BA200-7TMB (rod end ball joint)
HC5357	Cylinder BA200-7TMC (rod end clevis)
9.5" STROKE MODEL:	
K-8	Hynautic Cylinder, 2.5" bore (rod end ball joint)
11" STROKE MODELS:	
HC5378	Cylinder BA200-11TMB (rod end ball joint)
HC5379	Cylinder BA200-11TMC (rod end clevis)

The application guide should be used with discretion. The chart is only a guide to selecting a steering system. A steering system manufacturer cannot anticipate all the variables in boat-rudder design that affect steering loads. It is the final responsibility of the boat designer/builder to specify maximum expected steering loads. If the required information is not available, contact our customer service department with rudder dimensions, vessel size and anticipated maximum vessel speed.

Definitions of terms used in the charts on these pages:

Planing Hull: maximum hull speed normally exceeds 18 knots.

Displacement Hull: maximum hull speed does not normally exceed 18 knots.

Diameters: Copper tubing diameter shown is O.D. Hose diameter shown is I.D.

SeaStar inboard steering

The most popular inboard hydraulic steering system offers unmatched comfort and control for today's inboards up to 50 feet. A wide range of helm and cylinder displacements covers most applications.

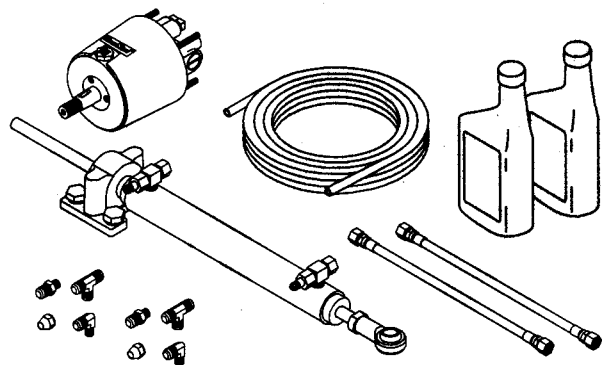
SeaStar®

Hynautic®

Features:

- Low friction hydraulic steering system.
- Configurations for most inboards.
- Compact helm has only a 4-7/16" footprint — needs only 3" dash hole (Tilt requires larger hole).
- Standard 3/4" tapered steering shaft.
- Easy installation on single or dual rudders.
- Cylinders supplied with bleeder fittings.
- Regular duty aluminum or heavy duty brass cylinders. Two-axis articulation.
- Meets A.B.Y.C. standards.
- Meets N.M.M.A. certification requirements.
- Accepts steering wheels to 28" (20" for Tilt)

SEASTAR®
2-LINE
INBOARD SYSTEM



Applications:

Most inboard powered boats with single or dual engines: single engine planing/displacement hull craft from 26-44 feet; dual engine planing hull craft from 26-50 feet; dual engine displacement hull & sail craft from 26-44 feet. Suitable for dual station use with purchase of extra hardware.

(turns vary by system)



How to Spec a System:

1. From the application guide select the System Number appropriate for the vessel based on:
 - a) hull type — displacement or planing;
 - b) length of vessel;
 - c) number of rudders; and
 - d) usage of vessel.
2. From the ordering guide select the appropriate helm and accessory hardware for each steering station.
3. Select fitting/hose kits required from the ordering guide.
4. Confirm that there is sufficient space available in the dash and engine compartment(s) for the steering components. Review helm and cylinder dimensions

SeaStar inboard steering

Components:

- SeaStar 1.7 Helm HH5271 or
SeaStar 2.4 Helm HH5272
(See ordering guide.)
Inboard Cylinder HC53__ or K-?
(See ordering guide.)
3/8" Tubing HT5__ or copper
(See ordering guide.)
Fitting Kit (for Copper Tubing/1.7 helm) HF5507
Hose Kit for Copper Tubing (2 hoses) .. HF5508
SeaStar Oil (1 Quart Mil Spec H5606) . HA5430

Options:

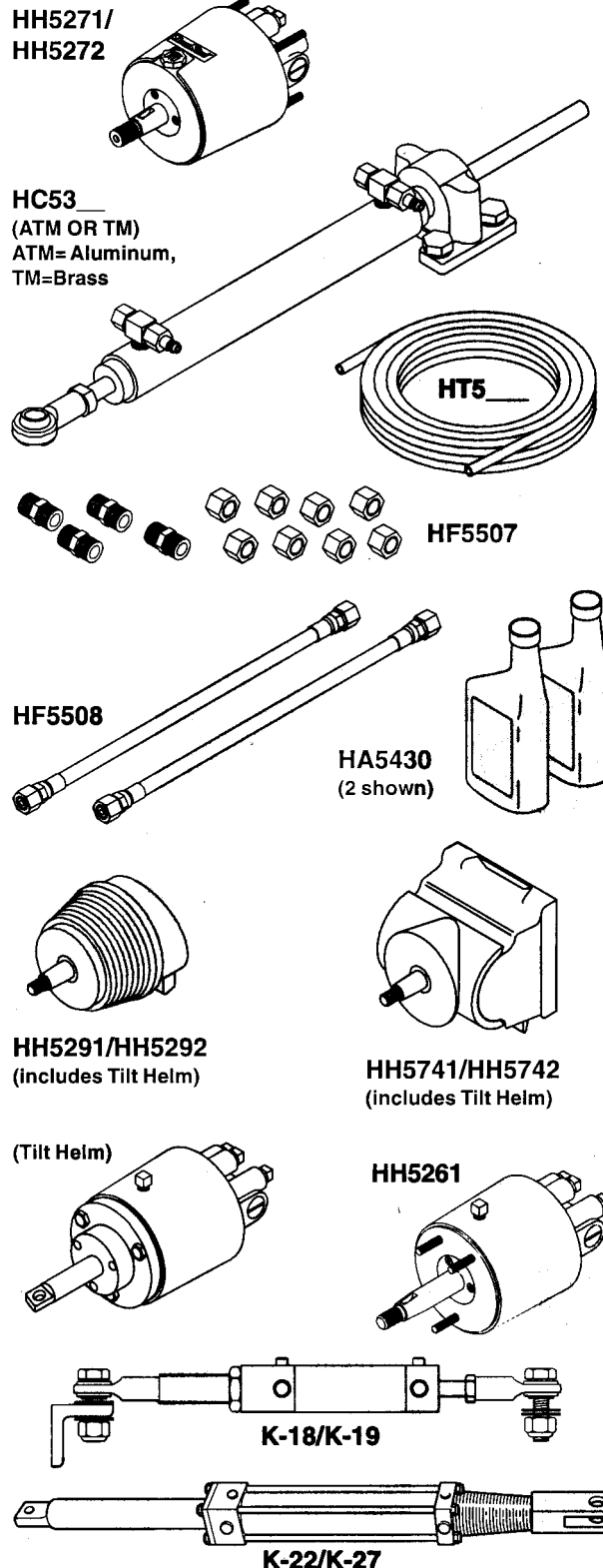
- SeaStar 1.7 Sport Tilt Helm/Mech. HH5291
SeaStar 1.7 Traditional Tilt Helm/Mech. . HH5741
SeaStar 2.4 Sport Tilt Helm/Mech. HH5292
SeaStar 2.4 Traditional Tilt Helm/Mech. . HH5742
SeaStar 1.7 Rear Mount Helm HH5261

- SeaStar 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
Ball Joint Mount Cylinder (7 cu. in.) K-18
Ball Joint Mount Cylinder (9 cu. in.) K-19
Fixed Mount Cylinder (13.3 cu. in.)
(one ball joint end) K-22
Fixed Mount Cylinder (13.3 cu. in.)
(two ball joint ends) K-27
Add-A-Station/Autopilot Fittings Kit HF5502
SeaStar Hose Kit (2 hoses) HO51__

Service Items:

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



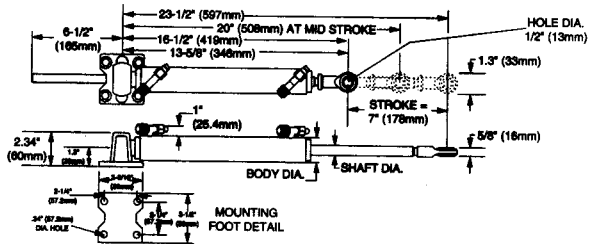
Application Guide (inboard steering)

Use "System Numbers" in chart below to select the components from ordering guide on next page.

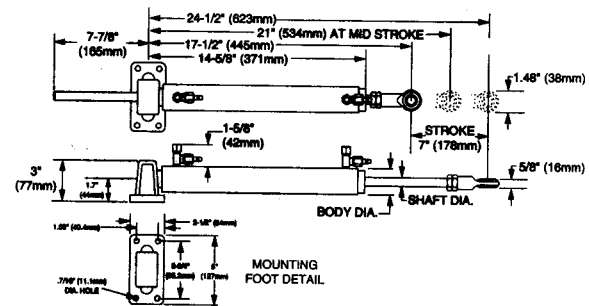
BOAT TYPE/ LENGTH	System Numbers 1 ENGINE		System Numbers 2 ENGINES	
	Pleasure	Work	Pleasure	Work
PLANING HULLS				
To 26 Ft. (8m)	1	4	1	4
To 32 Ft. (10m)	2	4	1	4
To 38 Ft. (11.5m)	3	5	2	5
To 44 Ft. (13.5m)	5	—	3	5
To 50 Ft. (15m)	—	—	5	—
DISPLACEMENT HULLS				
To 26 Ft. (8m)	2	4	2	4
To 32 Ft. (10m)	3	4	3	4
To 38 Ft. (11.5m)	5	5	3	5
To 44 Ft. (13.5m)	—	—	5	—
To 50 Ft. (15m)	—	—	—	—
SAIL				
To 26 Ft. (8m)	4	4	—	—
To 32 Ft. (10m)	4	4	—	—
To 38 Ft. (11.5m)	4	5	—	—
To 44 Ft. (13.5m)	5	—	—	—
To 50 Ft. (15m)	—	—	—	—

Inboard Cylinder Dimensions

ATM (ALUMINUM BODY) INBOARD CYLINDERS
P/N HC5312/HC5313/HC5314 (MODEL BA1__7ATM):



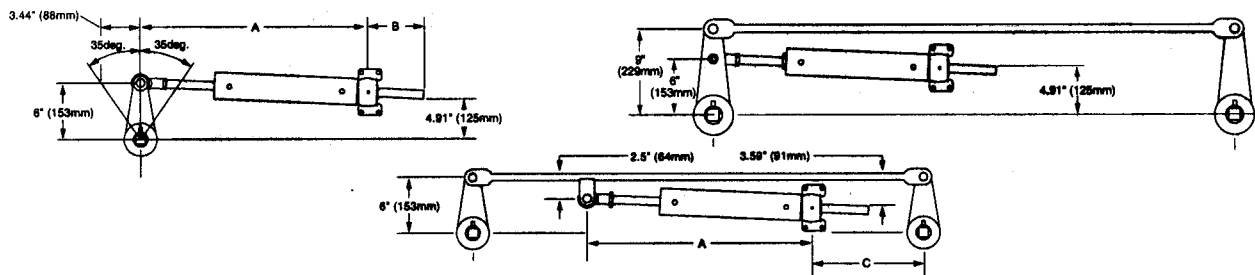
TM (BRASS BODY) INBOARD CYLINDERS
P/N HC5318/HC5319 (MODEL BA1__7TM):



Planing Hull: maximum hull speed normally exceeds 18 knots.
Displacement Hull: maximum hull speed does not normally exceed 18 knots.

CYLINDER DIMENSIONS & MOUNTING CONFIGURATIONS SPECIFIC TO MODEL

CYLINDER MODEL	PART NO.	BODY DIAMETER	SHAFT DIAMETER	DIM.		DIM. C
				A	B	
BA125-7ATM	HC5312	1.38" (35mm)	.50" (12.7mm)	20" (508mm)	6.5" (165mm)	8.5" (216mm)
BA135-7ATM	HC5313	1.50" (38mm)	.63" (15.9mm)	20" (508mm)	6.5" (165mm)	8.5" (216mm)
BA150-7ATM	HC5314	1.75" (45mm)	.63" (15.9mm)	20" (508mm)	6.5" (165mm)	8.5" (216mm)
BA150-7TM	HC5318	1.75" (45mm)	.63" (15.9mm)	21" (534mm)	8.0" (204mm)	10.0" (254mm)
BA150-9TM	HC5369	1.75" (45mm)	.63" (15.9mm)	21" (534mm)	8.0" (204mm)	10.0" (254mm)
BA175-7TM	HC5319	2.00" (45mm)	.75" (19.1mm)	21" (534mm)	8.0" (204mm)	10.0" (254mm)



Ordering Guide: 2-Line Inboard Steering

ENGINE/CYLINDER CONFIGURATION	COMPONENT DESCRIPTION	QTY. REQ'D	MODEL	PART NO.	
SYSTEM #1 <u>NUMBER OF TURNS: 4.0</u>	CYLINDER	1	BA125-7ATM	HC5312	
	HELM	1	SEASTAR 1.7	HH5271	
	TUBING (SEE NOTES 1 & 3)		3/8" DIA. NYLON	HT5____	
	OIL	3	SEASTAR OIL (QT.)	HA5430	
	FOR EXTRA STEERING STATION, ADD:	HELM	1	SEASTAR 1.7	HH5271
	FITTING KIT	1	ADD A STATION	HF5502	
	EXTRA TUBING (SEE NOTES 1 & 3)		3/8" DIA. NYLON	HT5____	
OIL	1	SEASTAR OIL (QT.)	HA5430		
SYSTEM #2 <u>NUMBER OF TURNS: 5.0</u>	CYLINDER	1	BA135-7ATM	HC5313	
	HELM	1	SEASTAR 1.7	HH5271	
	TUBING (SEE NOTES 1 & 3)		3/8" DIA. NYLON	HT5____	
	OIL	3	SEASTAR OIL (QT.)	HA5430	
	FOR EXTRA STEERING STATION, ADD:	HELM	1	SEASTAR 1.7	HH5271
	FITTING KIT	1	ADD A STATION	HF5502	
	EXTRA TUBING (SEE NOTES 1 & 3)		3/8" DIA. NYLON	HT5____	
OIL	1	SEASTAR OIL (QT.)	HA5430		
SYSTEM #3 <u>NUMBER OF TURNS: 6.0</u>	CYLINDER	1	BA150-7ATM	HC5314	
	HELM	1	SEASTAR 1.7	HH5271	
	TUBING (SEE NOTES 1 & 3)		3/8" DIA. NYLON	HT5____	
	OIL	3	SEASTAR OIL (QT.)	HA5430	
	FOR EXTRA STEERING STATION, ADD:	HELM	1	SEASTAR 1.7	HH5271
	FITTING KIT	1	ADD A STATION	HF5502	
	EXTRA TUBING (SEE NOTES 1 & 3)		3/8" DIA. NYLON	HT5____	
OIL	1	SEASTAR OIL (QT.)	HA5430		
SYSTEM #4 <u>NUMBER OF TURNS: 4.25</u>	CYLINDER	1	BA150-7TM	HC5318	
	HELM	1	SEASTAR 2.4	HH5272	
	TUBING (SEE NOTES 1 & 3)		3/8" DIA. COPPER		
	HOSE KIT	1	SEASTAR HOSE KIT	HF5508	
	OIL	3	SEASTAR OIL (QT.)	HA5430	
	FOR EXTRA STEERING STATION, ADD:	HELM	1	SEASTAR 2.4	HH5272
	FITTING KIT	1	ADD A STATION	HF5502	
EXTRA TUBING (SEE NOTES 1 & 3)		3/8" DIA. COPPER			
OIL	1	SEASTAR OIL (QT.)	HA5430		
SYSTEM #5 <u>NUMBER OF TURNS: 5.5</u>	CYLINDER	1	BA175-7TM	HC5319	
	HELM	1	SEASTAR 2.4	HH5272	
	TUBING (SEE NOTES 1 & 3)		3/8" DIA. COPPER		
	HOSE KIT	1	SEASTAR HOSE KIT	HF5508	
	OIL	3	SEASTAR OIL (QT.)	HA5430	
	FOR EXTRA STEERING STATION, ADD:	HELM	1	SEASTAR 2.4	HH5272
	FITTING KIT	1	ADD A STATION	HF5502	
EXTRA TUBING (SEE NOTES 1 & 3)		3/8" DIA. COPPER			
OIL	1	SEASTAR OIL (QT.)	HA5430		
OPTIONAL EQUIPMENT	BACK PLATE KIT		(FOR STANDARD HELMS)	HA5418	
	20 DEGREE WEDGE		(FOR STANDARD HELMS)	HA5419	
	AUTOPILOT FITTING KIT		(FOR ALL HELMS)	HF5501	
	TILT HELM - SEASTAR 1.7		(TRADITIONAL: HH5741; SPORT:	HH5291)	
	REAR MOUNT HELM - SEASTAR 1.7			HH5261	
	TILT HELM - SEASTAR 2.4		(TRADITIONAL: HH5742; SPORT:	HH5292)	
	REAR MOUNT HELM - SEASTAR 2.4			HH5262	

For systems 1, 2, & 3, nylon tubing (3/8" diameter) is the standard requirement for plumbing the system. Copper tubing (3/8" diameter) can be substituted by Fitting Kit HF5507 is required. For systems 4 & 5, copper tubing (3/8" diameter) is the standard requirement for plumbing the system. Fitting Kit HF5508 is required. For systems 1, 2, 3, 4, & 5, SeaStar outboard hose can be substituted for nylon or copper tube. These hoses must be ordered in standard lengths. They cannot be cut to length.

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