

SeaStar/BayStar/Hynautic Helm Specifications:

HELM DESCRIPTION	PART NUMBER	DISPLACEMENT CU. IN. (cc) PER REVOLUTION	RELIEF VALVE SETTING PSI (BAR)	MAXIMUM WHEEL DIA. Inches (mm)	TUBE/HOSE CONNECTION PORT SIZE
BAYSTAR - FRONT MOUNT	HH4016	1.6 (23.0)	1000 (70)	22 (558)	1/4 NPT
BAYSTAR - SPORT TILT	HH4015	1.6 (23.0)	1000 (70)	20 (508)	1/4 NPT
BAYSTAR PLUS - FRONT MOUNT	HH4514	1.7 (27.8)	1000 (70)	26 (660)	1/4 NPT
BAYSTAR PLUS - SPORT TILT	HH4513	1.7 (27.8)	1000 (70)	20 (508)	1/4 NPT
CAPILANO 1250V	HH5250	1.7-3.4 (27.8-55.7)	1000 (70)	36 (914)	3/8 NPT
CAPILANO 1275V	HH5275	2.7-5.4 (44.2-88.4)	1000 (70)	36 (914)	3/8 NPT
HYNAUTIC H-20 (3/4" SHAFT)	H-26	2.0 (33)	500 (35) or 950 (66)	32 (812)	3/8 & 1/4 NPT
HYNAUTIC H-20 (3/4" SHAFT)	H-25	2.75 (45)	500 (35) or 950 (66)	34 (863)	3/8 & 1/4 NPT
HYNAUTIC H-20 (1" SHAFT)	H-21	2.75 (45)	500 (35) or 950 (66)	34 (863)	3/8 & 1/4 NPT
HYNAUTIC H-40 (3/4" SHAFT)	H-42-02	4.0 (65.5)	500 (35) or 950 (66)	36 (914)	1/2 & 3/8 NPT
HYNAUTIC H-40 (1" SHAFT)	H-42	4.0 (65.5)	500 (35) or 950 (66)	36 (914)	1/2 & 3/8 NPT
HYNAUTIC H-40 (3/4" SHAFT)	H-41-02	5.5 (90.1)	500 (35) or 950 (66)	48 (1219)	1/2 & 3/8 NPT
HYNAUTIC H-40 (1" SHAFT)	H-41	5.5 (90.1)	500 (35) or 950 (66)	48 (1219)	1/2 & 3/8 NPT
SEASTAR 1.4 - FRONT MOUNT	HH5269	1.4 (23.0)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.4 - REAR MOUNT	HH5260	1.4 (23.0)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.4 - R. MT FULL FEEDBACK	HH5231	1.4 (23.0)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.4 - R. MT. 1" STRT. SHAFT	HH5279	1.4 (23.0)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.4 - R. MT. 1" TAPER. SHAFT	HH5280	1.4 (23.0)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.4 - TILT	HH5744	1.4 (23.0)	1000 (70)	20 (508)	1/4 NPT
SEASTAR 1.7 - FRONT MOUNT	HH5271	1.7 (27.8)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.7 - FRONT MT. COMMERCIAL	HH5217	1.7 (27.8)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.7 - FT. MT. FULL FEEDBACK	HH5761	1.7 (27.8)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.7 - REAR MOUNT	HH5261	1.7 (27.8)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.7 - R. MT. 1" TAPER. SHAFT	HH5281	1.7 (27.8)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 1.7 - SPORT TILT	HH5291	1.7 (27.8)	1000 (70)	20 (508)	1/4 NPT
SEASTAR 1.7 - TRADITIONAL TILT	HH5741	1.7 (27.8)	1000 (70)	20 (508)	1/4 NPT
SEASTAR 2.0 - FRONT MOUNT	HH5273	2.0 (33.0)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 2.0 - FT. MT. FULL FEEDBACK	HH5760	2.0 (33.0)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 2.0 - SPORT TILT	HH5745	2.0 (33.0)	1000 (70)	20 (508)	1/4 NPT
SEASTAR 2.0 - TRADITIONAL TILT	HH5743	2.0 (33.0)	1000 (70)	20 (508)	1/4 NPT
SEASTAR 2.4 - FRONT MOUNT	HH5272	2.4 (39.3)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 2.4 - FRONT MT. COMMERCIAL	HH5224	2.4 (39.3)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 2.4 - FT. MT. FULL FEEDBACK	HH5762	2.4 (39.3)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 2.4 - REAR MOUNT	HH5262	2.4 (39.3)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 2.4 - R. MT. 1" TAPER. SHAFT	HH5282	2.4 (39.3)	1000 (70)	26 (660)	1/4 NPT
SEASTAR 2.4 - SPORT TILT	HH5292	2.4 (39.3)	1000 (70)	20 (508)	1/4 NPT
SEASTAR 2.4 - TRADITIONAL TILT	HH5742	2.4 (39.3)	1000 (70)	20 (508)	1/4 NPT
SEASTAR PRO 1.4 - TRADITIONAL TILT*	HH5775	1.4 (23.0)	1500 (103)	20 (508)	1/4 NPT
SEASTAR PRO 1.7 - FRONT MOUNT*	HH5779	1.7 (27.8)	1500 (103)	26 (660)	1/4 NPT
SEASTAR PRO 1.7 - FT. MT. COMMERCIAL*	HH5218	1.7 (27.8)	1500 (103)	26 (660)	1/4 NPT
SEASTAR PRO 1.7 - REAR MOUNT*	HH5778	1.7 (27.8)	1500 (103)	26 (660)	1/4 NPT
SEASTAR PRO 1.7 - SPORT TILT*	HH5289	1.7 (27.8)	1500 (103)	20 (508)	1/4 NPT
SEASTAR PRO 1.7 - TRADITIONAL TILT*	HH5773	1.7 (27.8)	1500 (103)	20 (508)	1/4 NPT
SEASTAR PRO 2.0 - FRONT MOUNT*	HH5770	2.0 (33.0)	1500 (103)	26 (660)	1/4 NPT
SEASTAR PRO 2.0 - REAR MOUNT*	HH5771	2.0 (33.0)	1500 (103)	26 (660)	1/4 NPT
SEASTAR PRO 2.0 - SPORT TILT*	HH5290	2.0 (33.0)	1500 (103)	20 (508)	1/4 NPT
SEASTAR PRO 2.0 - TRADITIONAL TILT*	HH5774	2.0 (33.0)	1500 (103)	20 (508)	1/4 NPT
SEASTAR PRO 2.4 - FRONT MOUNT	HH5772	2.4 (39.3)	1500 (103)	26 (660)	1/4 NPT

* SeaStar PRO helms cannot be used with an unbalanced cylinder. SeaStar PRO Kevlar® reinforced outboard hose MUST be used with ALL SeaStar PRO helms.

Tech Reference: Hydraulic Steering

SeaStar/BayStar/Hynautic Cylinder Specifications:

CYLINDER MODEL	PART NUMBER	BORE DIA. Inches (mm)	NOM. SHAFT DIA. Inches (mm)	STROKE Inches (mm)	AREA SQUARE Sq.In.(cm)	VOLUME CUBIC IN. (cc)	TORQUE* (SEE NOTE) In.-Lb. (Kg-M)
BAYSTAR UNITS:							
COMPACT FRONT MOUNT	HC4645/47/48/58	1.25 (31.7)	.625 (15.9)	8 (203)	0.92 (5.9)	7.4 (120.7)	N/A
CAPILANO INBOARD UNITS:							
BA150-7 (TMB/TMC)	HC5349/HC5355	1.50 (38.1)	.625 (15.9)	7 (178)	1.46 (9.4)	10.2 (167.5)	7117 (82.0)
BA175-7 (TMB/TMC)	HC5350/HC5356	1.75 (44.4)	.625 (15.9)	7 (178)	2.10 (13.5)	14.7 (240.7)	9569 (110.2)
BA-175-9TMB	HC5373	1.75 (44.5)	.75 (19.1)	9 (229)	1.96 (12.7)	17.7 (289.6)	12600 (145.5)
BA200-7 (TMB/TMC)	HC5351/HC5357	2.00 (50.8)	.75 (19.1)	7 (178)	2.70 (17.4)	18.9 (309.7)	13200 (151.0)
BA200-11 (TMB/TMC)	HC5378/HC5379	2.00 (50.8)	1.00 (25.4)	11 (279)	2.36 (15.2)	25.9 (424.7)	23140 (267.2)
HYNAUTIC INBOARD UNITS (USED IN SEASTAR, CAPILANO & HYNAUTIC SYSTEMS):							
Hynautic Ball Joint Mount	K-18	1.25 (31.7)	.625 (15.9)	7 (178)	0.92 (5.9)	6.4 (105.6)	5972 (68.8)
Hynautic Ball Joint Mount	K-19	1.25 (31.7)	.625 (15.9)	9 (229)	0.92 (5.9)	8.3 (135.7)	7685 (88.5)
Hynautic Fixed Mount	K-22****	1.50 (38.1)	.75 (19.0)	10 (254)	1.33 (8.6)	13.3 (217.2)	8990 (103.5)
Hynautic Fixed Mount	K-27****	1.50 (38.1)	.75 (19.0)	10 (254)	1.33 (8.6)	13.3 (217.2)	8990 (103.5)
Hynautic Univ. Mt. (rod side)	K-5****	1.50 (38.1)	.875 (22.2)	9 (229)	1.17 (7.5)	10.5 (171.9)	10790 (124.3)
Hynautic (piston-only side)***	K-5****				1.77 (11.4)	15.9 (260.6)	10790 (124.3)
Hynautic Pivot Mount	K-31****	2.00 (50.8)	.875 (22.2)	10 (254)	2.54 (16.4)	25.4 (416.3)	17230 (200)
Hynautic Universal Mount	K-8****	2.50 (63.5)	1.00 (25.4)	9.5 (241)	4.12 (26.6)	39.2 (641.9)	26575 (306.0)
Hynautic Universal Mount	K-9****	2.50 (63.5)	1.00 (25.4)	14.5 (368)	4.12 (26.6)	59.8 (979.8)	39850 (460.2)
SEASTAR INBOARD UNITS:							
BA125-6.25ATM	HC5311	1.25 (31.8)	.625 (15.9)	6.25 (159)	0.92 (5.9)	5.8 (94.3)	N/A
BA125-7ATM	HC5312	1.25 (31.7)	.50 (12.7)	7 (178)	1.03 (6.7)	7.2 (118.2)	5025 (57.9)
BA135-7ATM	HC5313	1.375 (34.9)	.625 (15.9)	7 (178)	1.18 (7.6)	8.2 (135.1)	5741 (66.1)
BA150-7ATM	HC5314**	1.50 (38.1)	.625 (15.9)	7 (178)	1.46 (9.4)	10.2 (167.5)	7117 (82.0)
BA150-7TM	HC5318	1.50 (38.1)	.625 (15.9)	7 (178)	1.46 (9.4)	10.2 (167.5)	7117 (82.0)
BA150-9TM	HC5369	1.50 (38.1)	.625 (15.9)	9 (229)	1.46 (9.4)	13.1 (214.7)	9375 (107.7)
BA175-7TM	HC5319	1.75 (44.4)	.75 (19.0)	7 (178)	1.96 (12.7)	13.7 (225.4)	9569 (110.2)
SEASTAR & HYNAUTIC STERN DRIVE UNITS:							
BA150-7EM	HC5326	1.50 (38.1)	.625 (15.9)	7 (178)	1.46 (9.4)	10.2 (167.5)	8853 (102.0)
BA135-8EM	HC5327	1.35 (34.3)	.625 (15.9)	8 (203)	1.12 (7.3)	9.0 (147.4)	6557 (75.5)
125-8EM/-8VEM (rod side)***	HC5328/HC5329	1.25 (31.7)	.50 (12.7)	8 (203)	1.03 (6.7)	8.2 (135.1)	7142 (82.3)
125-8EM/-8VEM (piston-only side)	HC5328/HC5329	1.25 (31.7)	.50 (12.7)	8 (203)	1.23 (7.9)	9.8 (160.8)	8505 (98.0)
BA-125-EMV	HC5330	1.25 (31.7)	.50 (12.7)	8 (203)	1.03 (6.7)	8.2 (135.1)	7142 (82.3)
92-VPS (rod side)***	HC5331	1.25 (31.7)	.50 (12.7)	8 (203)	1.03 (6.7)	8.2 (135.1)	N/A
92-VPS (piston-only side)	HC5331				1.23 (7.9)	9.8 (160.9)	N/A
BA-135-7EM	HC5332	1.375 (34.9)	.625 (15.9)	7 (178)	1.18 (7.6)	8.2 (135.1)	5741 (66.1)
Hynautic Univ. Mt. (rod side)***	K-5****	1.50 (38.1)	.875 (22.2)	9 (229)	1.17 (7.5)	11.9 (194.9)	10790 (124.3)
Hynautic (piston-only side)	K-5****				1.77 (11.5)	15.9 (260.5)	10790 (124.3)
SEASTAR OUTBOARD UNITS:							
PIVOT FRONT MOUNT	HC5345/47/48/58	1.375 (35)	.75 (19.0)	8 (203)	1.04 (6.7)	8.3 (136.7)	N/A
PIVOT FRONT MOUNT (PRO)	HC6345/47/48/58	1.375 (35)	.75 (19.0)	8 (203)	1.04 (6.7)	8.3 (136.7)	N/A
CATAMARAN O/B (FIXED MOUNT)	HC5343	1.262 (32.6)	.75 (19.0)	10 (254)	0.82 (5.3)	8.1 (132.6)	N/A
CATAMARAN O/B (FIXED MOUNT)	HC5374	1.5 (38.1)	.75 (19.0)	10 (254)	1.33 (8.6)	13.3 (217.2)	N/A
SIDE MOUNT (rod side)***	HC5370	1.25 (31.7)	.50 (12.7)	8 (203)	1.03 (6.7)	8.2 (135.2)	N/A
SIDE MOUNT (piston-only side)	HC5370				1.23 (7.9)	9.8 (160.8)	N/A
SPLASHWELL MT. (rod side)***	HC5380***	1.25 (31.7)	.50 (12.7)	9 (228)	1.03 (6.7)	9.3 (152.1)	N/A
SPLASHWELL MT. (piston-only side)	HC5380				1.23 (7.9)	11.0 (180.9)	N/A
FRONT MT.-STD. (OBS.)	HC5340/42	1.262 (32.6)	.75 (19.0)	10 (254)	0.81 (5.2)	8.1 (132.6)	N/A
FRONT MT.-COMPACT (OBS.)	HC5365	1.338 (34.0)	.75 (19.0)	7 (178)	0.97 (6.2)	6.7 (110.6)	N/A
SEASTAR JET DRIVE UNITS:							
BA125-3ATM	HC5303	1.25 (31.8)	.625 (15.9)	3 (76)	0.92 (5.9)	2.8 (45.2)	N/A

Theoretical torque about pivot point at 35 degrees articulation with 1,000 PSI (70 BAR) system pressure, except as noted (****).

** Also used in some stern drive applications.

*** These area and volume calculations are for unbalanced cylinders. The piston surface areas/displacements are different on each side of the cylinder, since one end has a rod and piston (less surface area) and the other end has only a piston (more surface area). The lower sets of numbers are for the cylinder side with piston and rod (shaft). The higher sets of numbers are for the piston-only side of the cylinder.

**** Theoretical torque about pivot point at 35 degrees articulation with 950 PSI (66 BAR) system pressure.

Power Steering Cylinder Specifications:

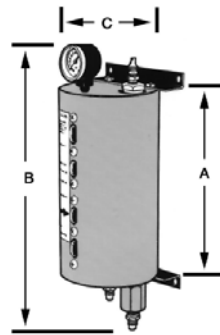
CYLINDER MODEL	PART NUMBER	BORE	NOMINAL SHAFT	STROKE	VOLUME	OUTPUT	TORQUE
		DIAMETER	DIAMETER		CUBIC IN.	FORCE	(SEE NOTE)
		Inches (mm)	Inches (mm)	Inches (mm)	(cc)	Ft.-Lbs. (N)	In.-Lb. (Nm)
SINGLE 9" STROKE x1	HC5801-2	2.00 (51)	1.00 (25.4)	9 (229)	21.25 (348)	2,946 (13090)	18,900 (2,130)
SINGLE 11" STROKE x1	HC5803-2	2.00 (51)	1.00 (25.4)	11 (280)	25.9 (425)	2,946 (13090)	23,140 (2,610)
SINGLE 9" STROKE x1	HC5805-2	2.50 (64)	1.00 (25.4)	9 (229)	37.11 (608)	5,154 (22926)	33,065 (3,736)
TWIN 9" STROKE x2	HC5802	2.00 (51)	1.00 (25.4)	9 (229)	42.50 (697)	5,892 (26,190)	37,800 (4,260)
TWIN 11" STROKE x2	HC5804	2.00 (51)	1.00 (25.4)	11 (280)	51.80 (850)	5,892 (26,190)	46,280 (5,220)
TWIN 9" STROKE x2	HC5806	2.50 (64)	1.00 (25.4)	9 (229)	74.33 (1216)	10,308 (45,852)	66,130 (7,472)

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

Hynautic Reservoir & Relief Valve Specifications:

Reservoirs

Made of T-6061 aluminum, reservoirs are pressure tested for a minimum of 100 hours, and shipped complete with front-reading pressure gauge, fluid level indicator, and return line filter.



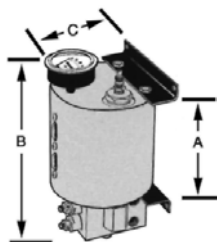
(R-06 shown)

RESERVOIR DIMENSIONS & SPECIFICATIONS:

Model No.	DIMENSIONS			SPECIFICATIONS		
	A	B	C	Capacity (Qt)	Optl. Hand Pump	Special Notes
R-06	9-1/2"	13-5/8"	4-7/8"	2	No	Standard Model
R-07	9-1/2"	14-5/8"	4-7/8"	2	Yes	-
R-11	6"	10-5/8"	4-7/8"	1	Yes	-
R-12	9-1/2"	13-5/8"	4-7/8"	2	No	-

Reservales

The reservale combines the function of a reservoir and relief valve into a single component.



(RV-55 shown)

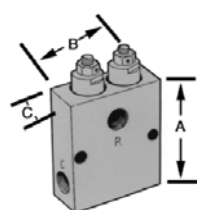
RESERVALE DIMENSIONS & SPECIFICATIONS:

Model No.	DIMENSIONS			SPECIFICATIONS				
	A	B	C	Capacity (Qt)	Relief Setting (psi)	Optional Gauge Style	Hand Pump	Special Notes
RV-55	6"	9-1/4"	4-7/8"	1	500	Top Read	No	3/8" O.D. Tubing
RV-55P	6"	10-1/4"	4-7/8"	1	500	Top Read	Yes	3/8" O.D. Tubing
RV-57	6"	10-3/8"	4-7/8"	1	500	Top Read	Yes	5/16" O.D. Tubing
RV-60	6"	9-1/4"	4-7/8"	1	950	Top Read	No	5/16", 3/8" I.D. Hose
RV-67	6"	10-1/4"	4-7/8"	1	950	Front Read	Yes	5/16", 3/8" I.D. Hose

The relief portion of the reservale is factory set at either 500 psi or 950 psi. Made of T-6061 aluminum, the reservale is complete with front or top-reading gauge, fluid level indicator, and return filter. Relief valve is flow-thru style from either direction to accommodate either portside or starboard mounting.

Relief Valves

These special relief valves are factory set for either 500 psi or 950 psi. They are intended to protect the system's components and assist in purging air.



(MSV-21 shown)

RELIEF VALVE DIMENSIONS & SPECIFICATIONS:

Model No.	DIMENSIONS			SPECIFICATIONS		
	A	B	C	Setting (psi)	Relief Port Size	Special Notes
MSV-19	3-7/8"	2-1/2"	1"	500	1/4-20 NPT	-
MSV-21	3-7/8"	2-1/2"	1"	950	1/4-20 NPT	Standard model