



The SeaStar helm pump is the heart of the hydraulic steering system. SeaStar helm pumps are the product of many years of research and experience by the world's foremost builder of manual hydraulic steering systems. Our efforts have resulted in a design which represents the ultimate in efficiency, safety and reliability, yet is easy to install and maintain. Superior design, teamed with the finest materials, precision manufacturing and rigid quality control all add up to an outstanding product which is certain to set industry standards for years to come.

Front Mount Helm Features

- Compact, stylish design.
- Available in 1.4, 1.7, 2.0, 2.4 and 3.0 cubic inch displacements.
- Convenient front of dash fill.
- Small 3.0" hole cutout on dash.
- Can be retrofitted into old SeaStar 4.5" hole cutout.
- Complete with elbow fittings.

Front Mount



Rear Mount Helm Features

- Behind dash mounting configuration.
- Available 1.4, 1.7, 2.0, 2.4 and 3.0 cubic inch displacements.
- Remote fill point.
- Complete with elbow fittings.
- 1-1/16" hole required.

Rear Mount



Sport/Sport Plus Tilt Helm Features

- 5 wheel positions allow adjustment to most comfortable steering position.
- 48° tilt range (12° down – 36° up).
- Available in 1.4, 1.7, 2.0 and 2.4 cubic inch displacements.
- Remote fill point.
- Complete with elbow fittings.
- Comes with newly designed tilt mechanism.
- 3" dash cutout.

Sport Tilt

Sport Plus Tilt



Classic Tilt Helm Features

- 5 wheel positions allow adjustment to most comfortable steering position.
- 48° tilt range (18° down – 30° up).
- Available in 1.4, 1.7, 2.0 and 2.4 cubic inch displacements.
- Convenient front of dash fill.
- Complete with elbow fittings.
- 4.5" hole cutout

Classic Tilt



Features of SeaStar Helm Pumps



Features

1. Helm rotor supported by three roller bearings.
2. Ball bearing piston race.
3. Field replaceable shaft seal.
4. -5 ORB ports.
5. Built-in lock valve for positive rudder lock.
6. Patented bleed tubes.
7. Patented internal air pocket eliminates steering fluid expansion overflow.
8. Integral relief valve.

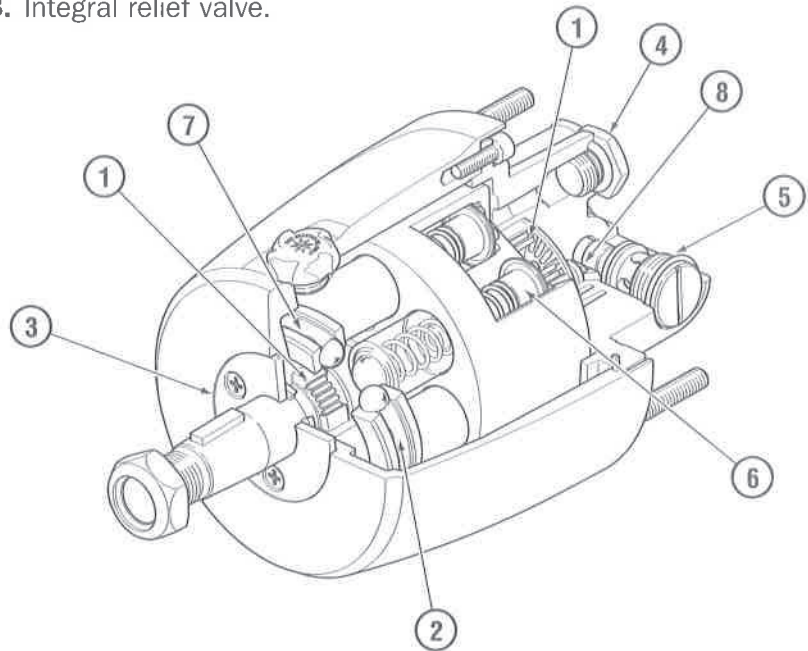


Figure 6-1.

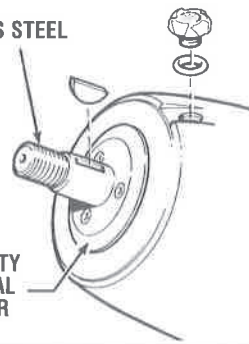
Illustration is not intended to assist in the repair of a helm pump. Any repair to a hydraulic steering system must be completed by an authorized repair center. Refer to page 13-1 for authorized repair centers.

Commercial Helms

Part# HH5217-3, HH5218-3,
HH5224-3 and HH5225-3

**STAINLESS STEEL
SHAFT**

**HEAVY DUTY
SHAFT SEAL
AND WIPER**



Specifically designed to be used on smaller fishing vessels involved in the Lobster and Crabbing Industries. The Commercial Helm Pumps are designed with a stainless steel shaft and heavy duty shaft seal and wiper. This new shaft and seal help protect the Helm Pump from the abrasive effects of sediment that is brought on board by the operator handling Traps or Pots.

Figure 6-2.

NOTICE

For Commercial Use.

Accessories

Backplate Kit (Part # HA5418)

- a) Used to retrofit a new SeaStar standard helm in the old 4.5" (115 mm) diameter hole, or
- b) reduce the helm protrusion from the dash by the thickness of the dash, or
- c) retrofit new SeaStar standard helm into hole cutouts for mechanical and hydraulic steering as per chart.

STEERING MANUFACTURER	HELM MODEL TYPE	SYSTEM	BACKPLATE KIT REQ.
SeaStar Solutions	Safe-T	Mechanical	Yes
	Big-T	Mechanical	Yes
	Rotary	Mechanical	No
	Rack And Pinion	Mechanical	No
	Syten	Hydraulic	Yes
Morse	Rotary	Mechanical	No
	Rack and Pinion	Mechanical	No
Hynautic	H-50 Series	Hydraulic	Yes
	H-60 Series	Hydraulic	Yes
	H-80 Series	Hydraulic	Yes
	H-300 Series	Hydraulic	Yes

Table 6-1.

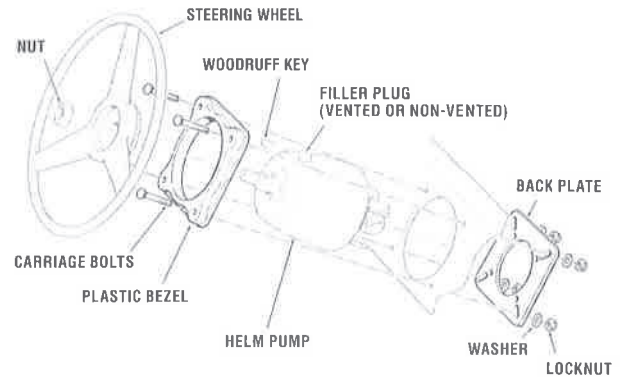


Figure 6-3.

Round Bezel

(Part # HA5478 SeaStar & Part # HA5476 BayStar)

Reduces the distance the helm protrudes from the front of the dash to 3.75" (93mm).

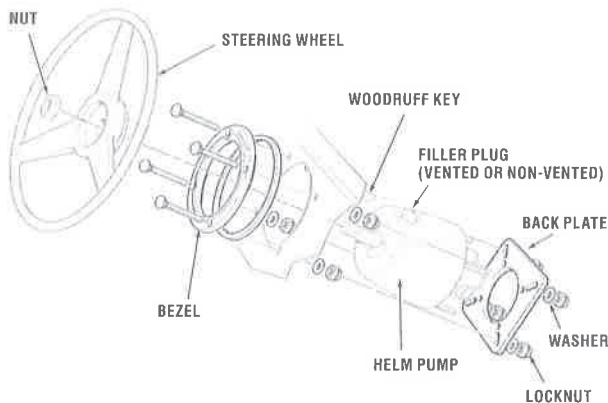


Figure 6-4.

Vent Plug

(Part # HP6126, 5 per kit)

Supplied with SeaStar Helm Pump. Must be used with Helm Pump on all single steering station systems.

Must be used on uppermost Helm Pump on multi steering station systems.



Figure 6-5.

Non-Vent Plug

(Part # HP6000, 5 per kit)

Must be used on all Helm Pumps other than uppermost Helm Pump on multi steering station systems.

A Non-Vent cap is supplied with both "Add A Station Fitting Kits" Part No. HF6007 & HF6010.



Figure 6-6.

20° Wedge (Part # HA5419)

NOTICE

Not for use with BayStar helm pumps.

This kit is designed to mount the helm at a 20° angle to the mounting surface. 4 possible mounting configurations are available.

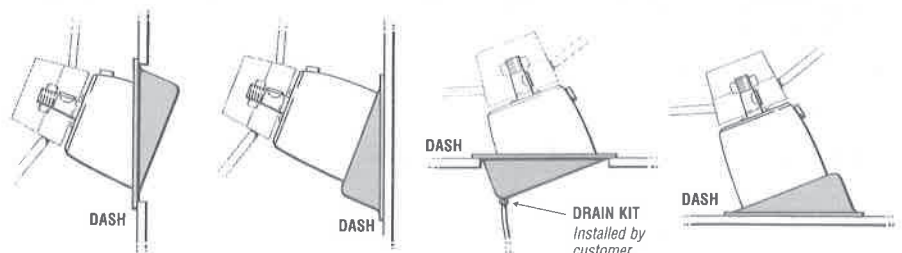



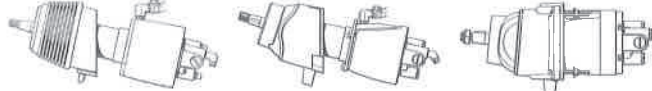
Figure 6-7.

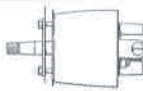
SeaStar Helm–Order Guide

⚠ CAUTION

-3 helm pumps are fitted with Positionable O-ring style hose fitting ports (commonly referred to as ORB). Do NOT attempt to install an NPT pipe fitting into a -3 helm hose fitting ports. Doing so will lead to irreparable damage to the helm. ONLY use SeaStar Solutions O-ring style hose fittings (ORB).

SeaStar Front Mount					
PART NUMBER	HELM DESCRIPTION	DISPLACEMENT CU. IN./REV (CC/REV)		RELIEF VALVE SETTING PSI (BAR)	NOTES
HH5269-3	Front Mount	1.4	(23.0)	1000 (70)	
HH5271-3	Front Mount	1.7	(27.8)	1000 (70)	
HH5217-3	Front Mount (Commercial)	1.7	(27.8)	1000 (70)	2
HH5273-3	Front Mount	2.0	(33.0)	1000 (70)	
HH5272-3	Front Mount	2.4	(39.3)	1000 (70)	
HH5224-3	Front Mount (Commercial)	2.4	(39.3)	1000 (70)	2
HH5285-3	Front Mount	3.0	(49.1)	1000 (70)	New product

SeaStar Tilt					
<i>NOTE: All sport tilt helms are shipped with the remote filler tube.</i>					
PART NUMBER	HELM DESCRIPTION	DISPLACEMENT CU. IN./REV (CC/REV)		RELIEF VALVE SETTING PSI (BAR)	NOTES
HH6193-3	Sport Tilt	1.4	(23.0)	1000 (70)	New Product
HH6544-3	Classic Tilt	1.4	(23.0)	1000 (70)	Replaces HH5744
HH6541-3	Classic Tilt	1.7	(27.8)	1000 (70)	Replaces HH5741
HH6191-3	Sport Tilt	1.7	(27.8)	1000 (70)	Replaces HH5291
HH6491-3	Sport Plus	1.7	(27.8)	1000 (70)	New product
HH6543-3	Classic Tilt	2.0	(33.0)	1000 (70)	Replaces HH5743
HH6145-3	Sport Tilt	2.0	(33.0)	1000 (70)	Replaces HH5745
HH6445-3	Sport Plus	2.0	(33.0)	1000 (70)	New product
HH6345-3	Sport Plus (Spline Shaft)	2.0	(33.0)	1000 (70)	New product
HH6542-3	Classic Tilt	2.4	(39.3)	1000 (70)	Replaces HH5742
HH6192-3	Sport Tilt	2.4	(39.3)	1000 (70)	Replaces HH5292
HH6492-3	Sport Plus	2.4	(39.3)	1000 (70)	New product

SeaStar Rear Mount					
<i>NOTE: All rear mount helms are shipped with the remote filler tube.</i>					
PART NUMBER	HELM DESCRIPTION	DISPLACEMENT CU. IN./REV (CC/REV)		RELIEF VALVE SETTING PSI (BAR)	NOTES
HH5260-3	Rear Mount	1.4	(23.0)	1000 (70)	
HH5279-3	Rear Mount (1" Straight Shaft)	1.4	(23.0)	1000 (70)	
HH5261-3	Rear Mount	1.7	(27.8)	1000 (70)	
HH5281-3	Rear Mount (1" Tapered Shaft)	1.7	(27.8)	1000 (70)	
HH5263-3	Rear Mount	2.0	(33.0)	1000 (70)	
HH5262-3	Rear Mount	2.4	(39.3)	1000 (70)	
HH5265-3	Rear Mount	3.0	(49.1)	1000 (70)	New product

NOTES	
1.	SeaStar PRO helms cannot be used with an unbalanced cylinder. SeaStar reinforced Kevlar Outboard style hoses should be used with ALL SeaStar PRO helms.
2.	Commercial helms use a stainless steel shaft and a better sealing top plate for use in extreme conditions and or commercial type applications.

Table 6-2.


SeaStar PRO Helm—Order Guide


⚠ CAUTION

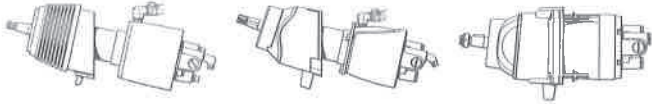
-3 helm pumps are fitted with Positionable O-ring style hose fitting ports (commonly referred to as ORB). Do NOT attempt to install an NPT pipe fitting into a -3 helm hose fitting ports. Doing so will lead to irreparable damage to the helm. ONLY use SeaStar Solutions O-ring style hose fittings (ORB).

⚠ WARNING

DO NOT use with an unbalanced cylinder. Steering lock up WILL occur.

SeaStar PRO Front Mount					
PART NUMBER	HELM DESCRIPTION	DISPLACEMENT CU. IN./REV (CC/REV)	RELIEF VALVE SETTING PSI (BAR)	NOTES	
HH5779-3	Front Mount	1.7 (27.8)	1500 (103)	1	
HH5218-3	Front Mount (Commercial)	1.7 (27.8)	1500 (103)	1, 2	
HH5770-3	Front Mount (Long studs)	2.0 (33.0)	1500 (103)	1	
HH5772-3	Front Mount	2.4 (39.3)	1500 (103)	1	

SeaStar PRO Rear Mount					
PART NUMBER	HELM DESCRIPTION	DISPLACEMENT CU. IN./REV (CC/REV)	RELIEF VALVE SETTING PSI (BAR)	NOTES	
HH5778-3	Rear Mount	1.7 (27.8)	1500 (103)	1	
HH5771-3	Rear Mount	2.0 (33.0)	1500 (103)	1	

SeaStar PRO Classic and Sport Tilt					
PART NUMBER	HELM DESCRIPTION	DISPLACEMENT CU. IN./REV (CC/REV)	RELIEF VALVE SETTING PSI (BAR)	NOTES	
HH6573-3	Classic Tilt	1.7 (27.8)	1500 (103)	Replaces HH5773	
HH6489-3	Sport Plus	1.7 (27.8)	1500 (103)	New Product	
HH6574-3	Classic Tilt	2.0 (33.0)	1500 (103)	Replaces HH5774	
HH6490-3	Sport Plus	2.0 (33.0)	1500 (103)	New product	
HH6189-3	Sport Tilt	1.7 (27.8)	1500 (103)	1	
HH6190-3	Sport Tilt	2.0 (33.0)	1500 (103)	1	

NOTES
<p>1. SeaStar PRO helms cannot be used with an unbalanced cylinder. SeaStar reinforced Kevlar Outboard style hoses should be used with ALL SeaStar PRO helms.</p> <p>2. Commercial helms use a stainless steel shaft and a better sealing top plate for use in extreme conditions and or commercial type applications.</p>

Table 6-3.

Now fitted with Positionable O-ring fittings

CAUTION

Front/Rear Mount Helm Dimensions

-3 helm pumps are fitted with Positionable O-ring style hose fitting ports (commonly referred to as ORB). Do NOT attempt to install an NPT pipe fitting into a -3 helm hose fitting ports. Doing so will lead to irreparable damage to the helm. ONLY use SeaStar Solutions O-ring style hose fittings (ORB).

NOTICE

ALL SeaStar helm pumps can be mounted horizontally to vertically and anywhere in between. In ALL cases the filler port must be in the uppermost position.

Front Mount Helm Pumps

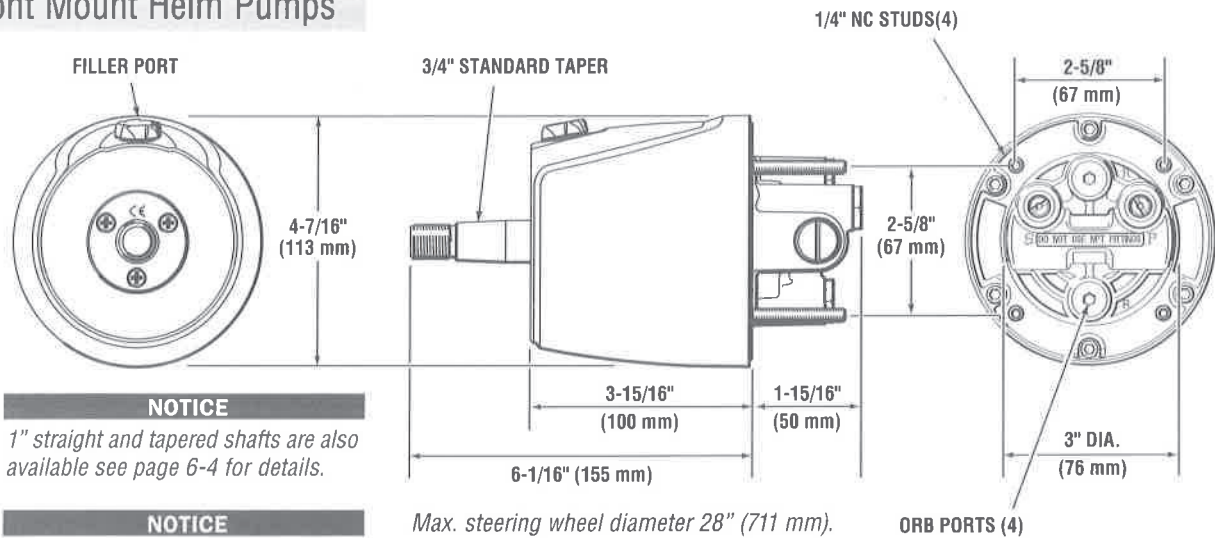


Figure 6-8.

Rear Mount Helm Pumps

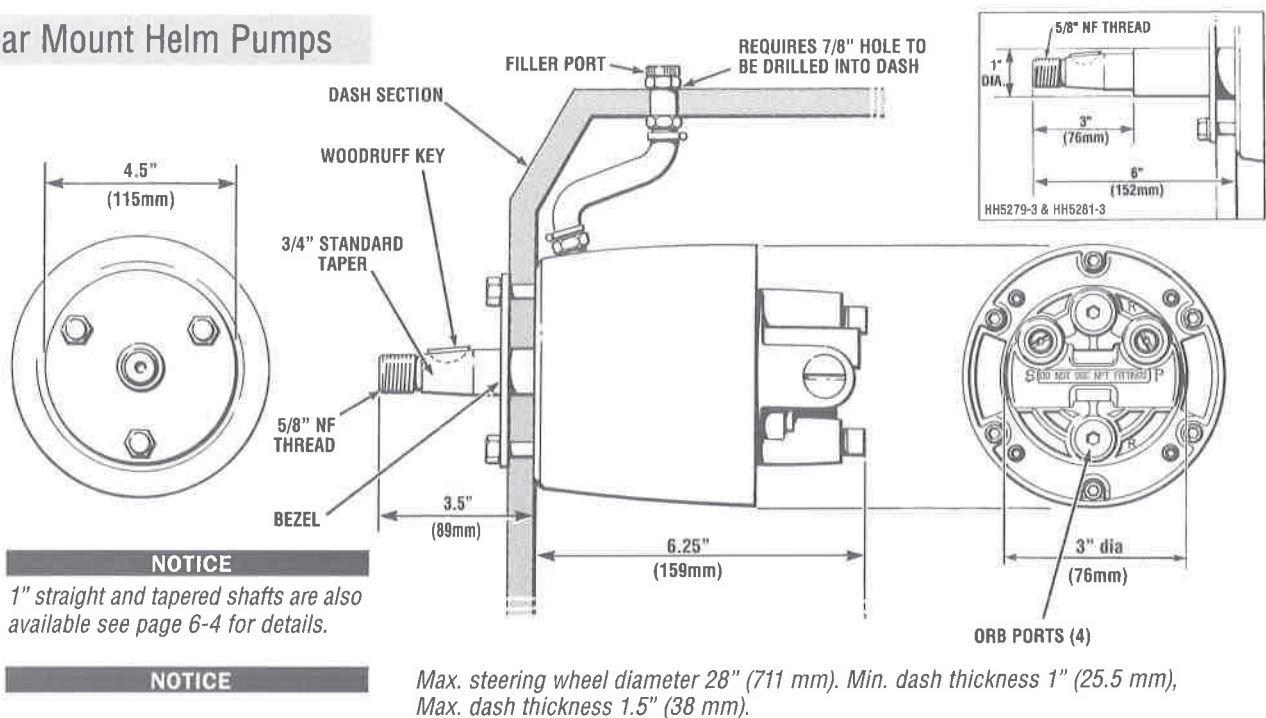


Figure 6-9.

Now fitted
with Positionable
O-ring fittings

CAUTION

Tilt/Sport Tilt Helm Dimensions

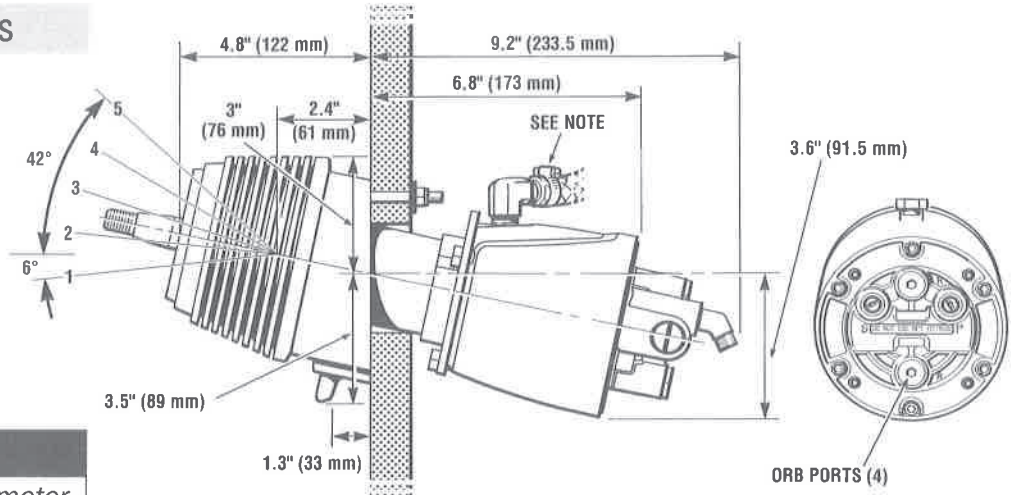
-3 helm pumps are fitted with Positionable O-ring style hose fitting ports (commonly referred to as ORB). Do NOT attempt to install an NPT pipe fitting into a -3 helm hose fitting ports. Doing so will lead to irreparable damage to the helm. ONLY use SeaStar Solutions O-ring style hose fittings (ORB).

Sport Tilt Helm Pumps



NOTICE

Max. steering wheel diameter
20" (508 mm).



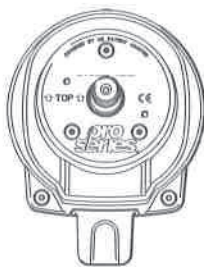
NOTE: Remote fill requires 7/8" hole on dash.

Figure 6-10.

NOTICE

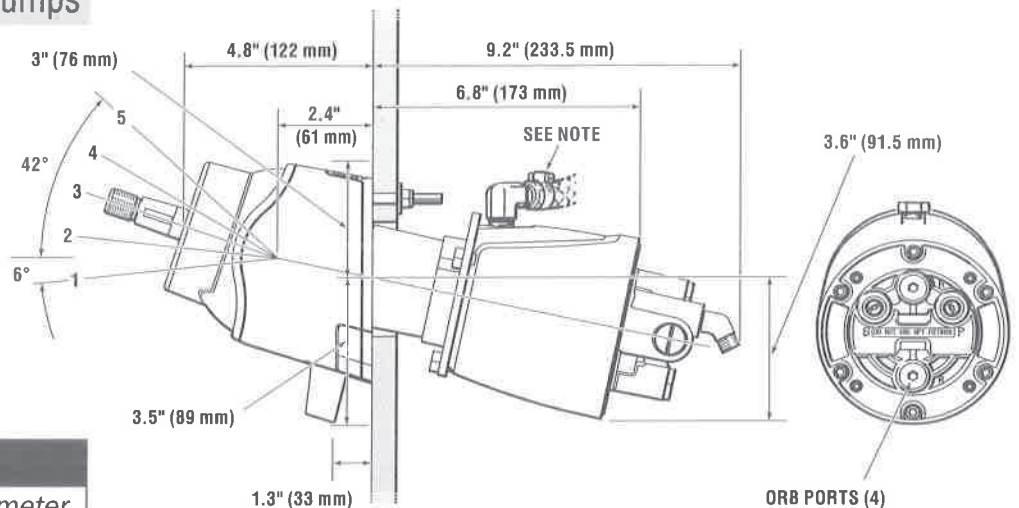
Remote fill and vent kit (included with helm pump) requires a 7/8" hole to be drilled into the dash board and above the helm pump. Please refer to page 12-3, HA6450 for details.

Sport Plus Tilt Helm Pumps



NOTICE

Max. steering wheel diameter
20" (508 mm).



NOTE: Remote fill requires 7/8" hole on dash.

Figure 6-11.

NOTICE

Remote fill and vent kit (included with helm pump) requires a 7/8" hole to be drilled into the dash board and above the helm pump. Please refer to page 12-3, HA6450 for details.

Now fitted
with Positionable
O-ring fittings

CAUTION

Classic Tilt Helm Dimensions

-3 helm pumps are fitted with Positionable O-ring style hose fitting ports (commonly referred to as ORB). Do NOT attempt to install an NPT pipe fitting into a -3 helm hose fitting ports. Doing so will lead to irreparable damage to the helm. ONLY use SeaStar Solutions O-ring style hose fittings (ORB).

Classic Tilt Helm Pumps

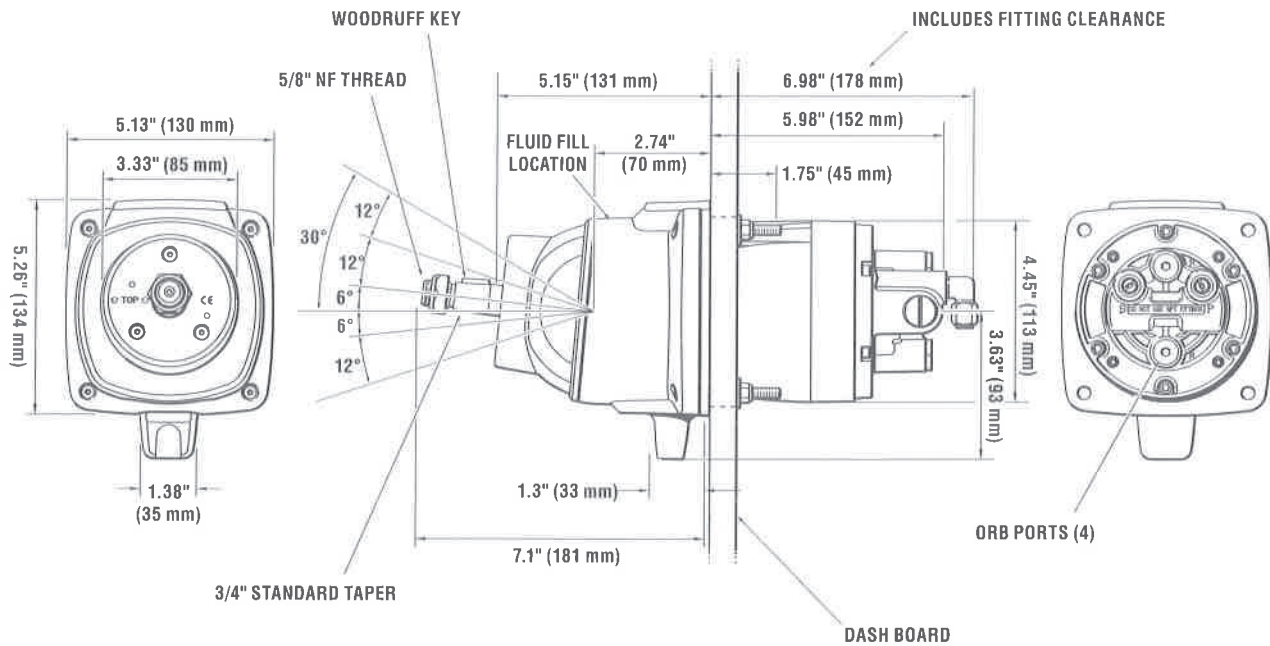


Figure 6-12.

NOTICE

Max. steering wheel diameter 20" (508 mm).

Hynautic Helm Pumps

Heavy Duty Helm Pump H-20 Series

HELM	DISPL	SHAFT STYLE DIA. & TYPE	KEYWAY	INTEGRAL VALVING	
20 Series	H-21	2.75 cu in	1" Straight	1/4" Square	Yes
	H-22	2.00 cu in	1" Straight	1/4" Square	Yes
	H-25	2.75 cu in	3/4", 1"/ft Tapered	#9 Woodruff	Yes
	H-26	2.00 cu in	3/4", 1"/ft Tapered	#9 Woodruff	Yes

H-21

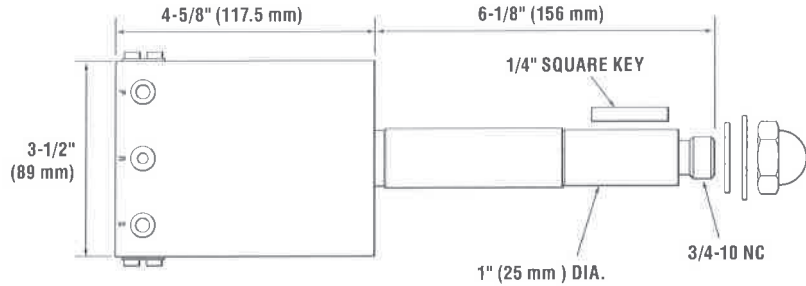
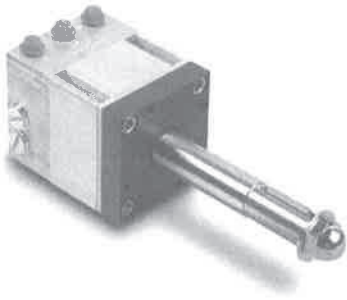


Figure 6-13.

NOTICE

Max steering wheel diameter 36" (914 mm). HF-07 trim plate sold separately.

Heavy Duty Helm Pump H-40 Series

HELM	DISPL	SHAFT STYLE DIA. & TYPE	KEYWAY	INTEGRAL VALVING	
40 Series	H-41	5.50 cu in	1 Straight	1/4" Square	Yes
	H-41-2	5.50 cu in	3/4", 1"/ft Tapered	#9 Woodruff	Yes
	H-42	4.00 cu in	1 Straight	1/4" Square	Yes
	H-42-02	4.00 cu in	3/4", 1"/ft Tapered	#9 Woodruff	Yes

H-41

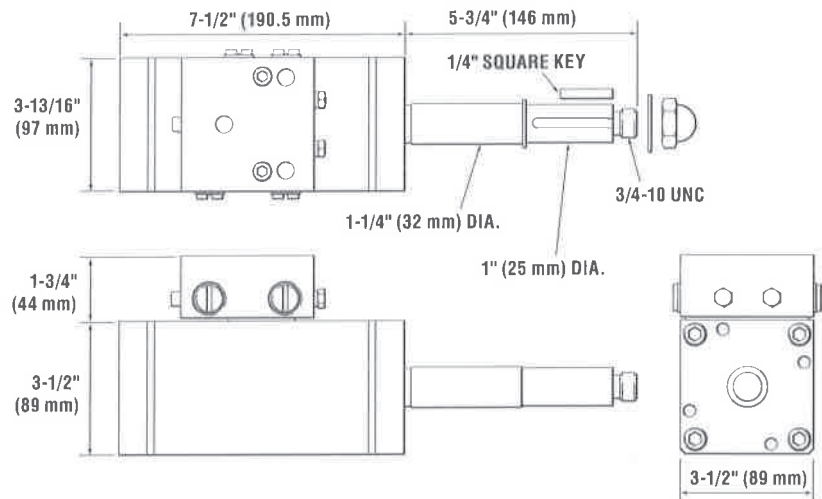
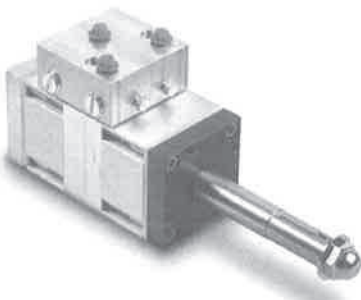


Figure 6-14.

NOTICE

Max steering wheel diameter 47" (1193 mm). HF-07 trim plate sold separately.

NOTICE

Hynautic H-20/40 Series helms require the use of an external Pressure relief valve (Part # MSV-21) and an external fluid reservoir (part #HP5810).

Capilano Helm Pumps

1250V & 1275V Models

Model	Part #
1250V	HH5250
1275V	HH5275

A unique variable displacement feature on these helms allows the number of steering wheel turns to be adjusted by the helms-person to their preference within a predetermined range.

Recommended wheel size (1250V) is between 20" and 36".

Recommended wheel size (1275V) is between 26" and 36".

1250V & 1275V

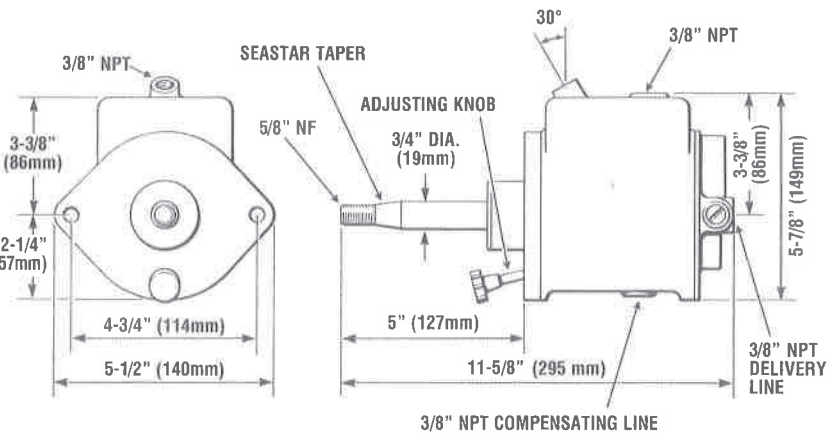
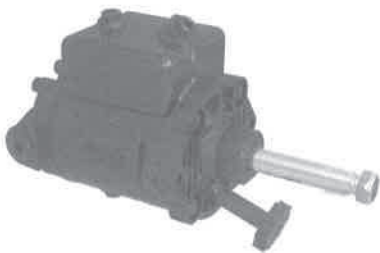


Figure 6-15.

1350 Models

Model	Part #
1350	HH0426

This steering system is designed for pleasure and commercial boats where the steering torque is between 28,000 in/lbs and 62,900 in/lbs.

Recommended wheel size (1350) is between 30" and 48".

1350

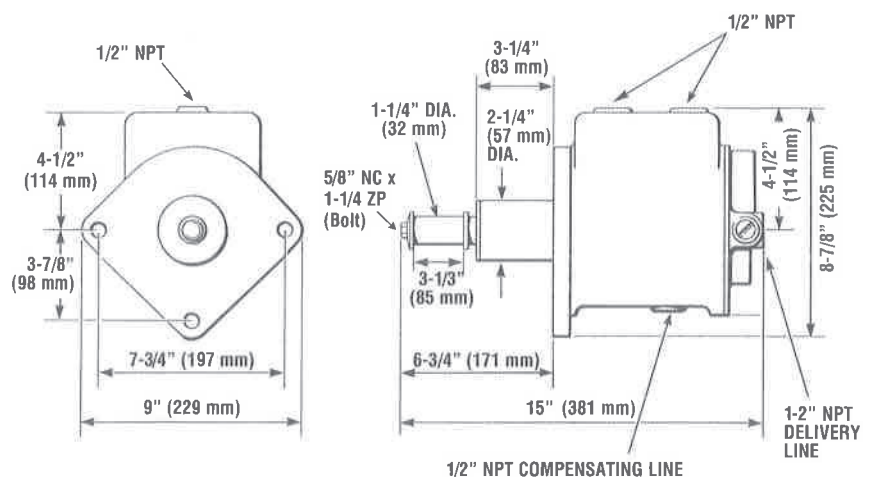


Figure 6-16.

⚠ WARNING

Use self-locking type fasteners only; substituting non-self locking fasteners can result in loosening or separation of equipment and loss of steering control.

DO NOT exceed 110 in-lbs. (12 Nm) torque on helm nuts & bolts.