



Figure 7-1.

The Marine Industry is continually introducing heavier outboard engines, higher horse power engines, more aggressive propellers, bigger/faster boats...

Boat operators are asking for increased comfort and lighter steering loads... These were the driving forces behind the design of SeaStar and SeaStar PRO Power Assist.

This innovative product is highly recommended on any 150HP and above outboard application to give your boat the same, easy steering you are accustomed to in your car. Power Assist is also recommended for the following;

- Twin and Triple engine applications
- Bass Boats
- Pontoon Boats (150HP+)
- Power Catamarans
- Inboard powered cruisers without engine driven power assist.

## How the System Works

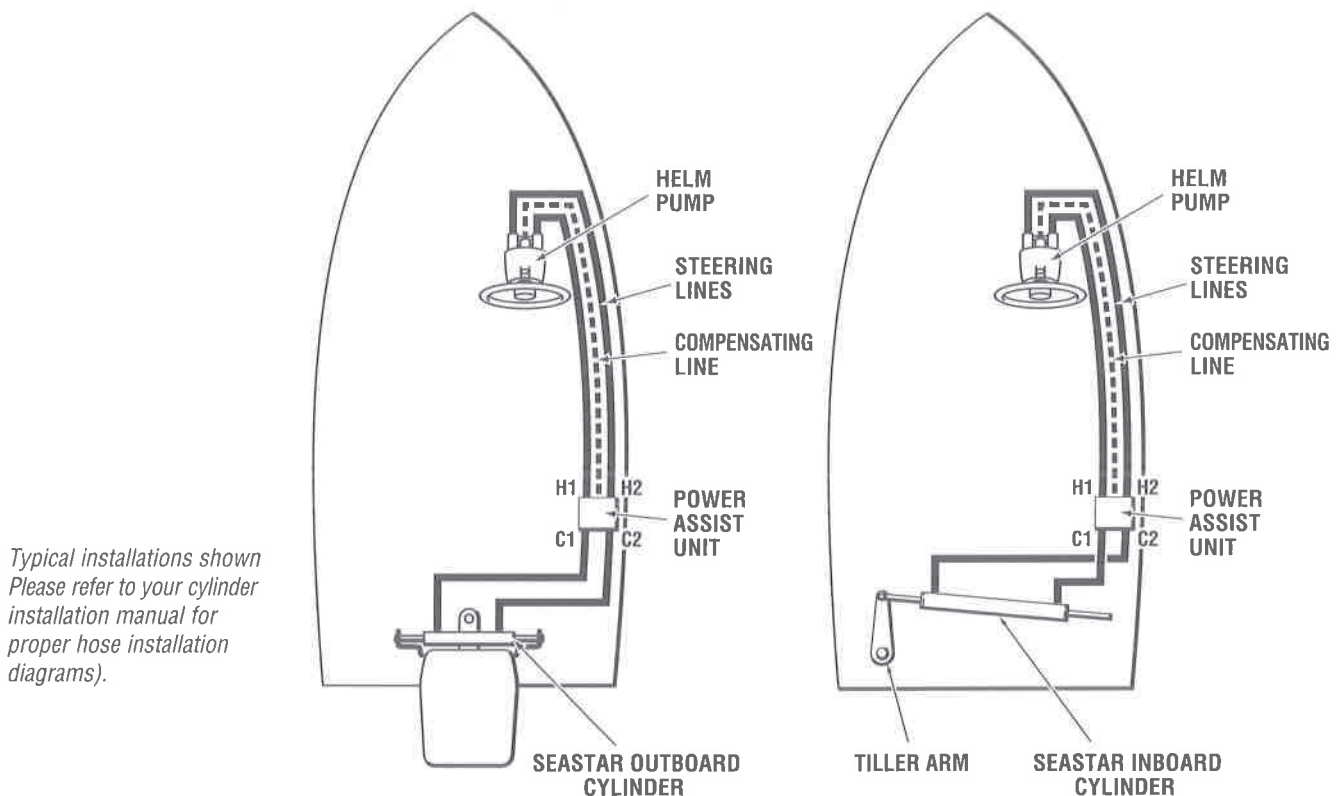
SeaStar P/A (Power Assist) steering uses an electronically controlled on-demand hydraulic pump to provide “Power” for your SeaStar Hydraulic Steering system.

The SeaStar P/A system is comprised of two circuits: a hand operated manual system, which is the control element, and a hydraulic power pump, which is the working element.

The manual system consists of a helm pump with internal relief and check valves, as well as a built in reservoir. Two steering lines and a compensating line which provide a routing for fluid to transmit through the system, and a steering cylinder which moves the steering device on the boat from side to side.

The power system, is an electronically controlled hydraulic pump that boosts the fluid being sent from the helm pump to the steering cylinder (this will result in much easier effort at the wheel—even when under heavy loads). A compensating line connects the P/A unit to the helm pump, allowing the P/A unit to share fluid with the helm reservoir.

The SeaStar P/A is compatible with multiple steering stations, and with the use of an autopilot. In the event of a P/A power loss or failure the hydraulic system will automatically revert to a manual hydraulic system.



*Typical installations shown  
Please refer to your cylinder  
installation manual for  
proper hose installation  
diagrams).*

Figure 7-2.

## SeaStar P/A Compatibility

### NOTICE

For helm displacements greater than 2.4, twin power assist pumps **MUST** be used. Contact Technical Support for details.

### NOTICE

The P/A is designed for use in recreational marine applications in conjunction with SeaStar Hydraulic Steering. Optimal performance will be obtained when used with SeaStar 1.4, 1.7, 2.0 and 2.4 cu in (1000psi) helm pumps, or, 2.0 cu in (1500 psi) SeaStar P/A PRO Hydraulic Steering.

#### Recommended convenience parts to be purchased

- Dual Ignition Control Kit, Part # HA1201
- 50 amp Harness Fuse Kit, Part # HA1206

### NOTICE

SeaStar nylon tube may **ONLY** be used for the compensating line. **DO NOT** use SeaStar Nylon tube to plumb any other portion of the steering system.

### NOTICE

Plan ahead. The Power Assist **MUST** be mounted in a **"DRY"** location. Hose lengths **MUST** be at least 6' (feet) between the power assist and helm pump and/or between the power assist and steering cylinder(s).

### NOTICE

When fitted with a SeaStar PRO helm pump and a Power Assist pump there will be variations in steering effort. At the beginning of a trip the wheel will be very easy to turn and will get progressively heavier after several wheel turns are made. This is not considered a fault.

### NOTICE

Use **ONLY** SeaStar Solutions products with the P/A unit as with **ALL** SeaStar Solutions systems. Failure to do so may void your warranty.

### NOTICE

Retrofit kit part # HA1205 will be required to mount to a PA1200-2 Power Assist Pump.

## Specifications

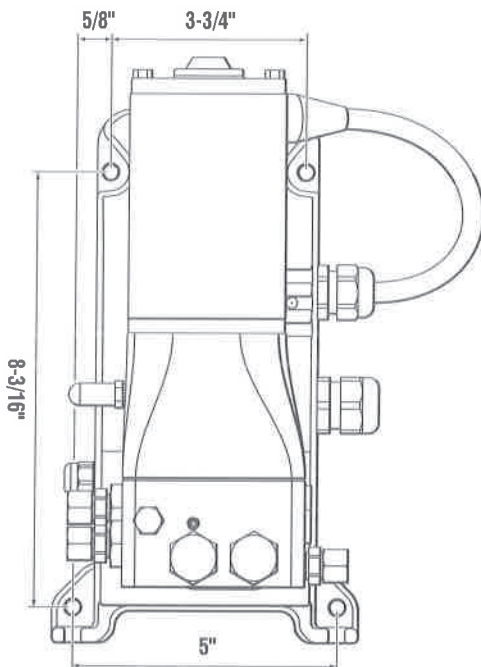


Figure 7-3.

### SEASTAR POWER ASSIST 12/24V (PA1200-2 & PA1225-2)

- 12/24 Volts (automatically recognized)
- 1000psi MAX system peak pressure (500psi working load)
- Relief pressure 2000 psi
- MAX current draw = 50 amps
- Typical current draw = ~3 amps
- Purple ignition wire MAX current draw = 1 amp

### SEASTAR PRO POWER ASSIST, 12/24V (PA1315-2)

- 12/24 Volts (automatically recognized)
- 1500psi MAX System peak pressure (500psi working load)
- Relief pressure 2000 psi
- MAX current draw = 50 amps
- Typical current draw = ~3 amps
- Purple ignition wire MAX current draw = 1 amp

Part No.	Harness Length	Voltage (auto recognized)
PA1200-2	15'	12/24 Volt
PA1200-2HP*	15'	12/24 Volt
PA1206-2	6'	12/24 Volt
PA1220-2	20'	12/24 Volt
PA1225-2	25'	12/24 Volt
PA1315-2	15'	12/24 Volt

Table 7-1. \*High pressure, recommended for all DF325/350 and high steering load applications.

### NOTICE

Use SeaStar PRO Power Assist with a SeaStar PRO helm for best performance.

# Power Assist Autopilot

Converts manual hydraulic steering for dramatic reduction in steering wheel torque and at the same time provides a pump for an autopilot installation.

The SeaStar Power Assist Autopilot pump is the standard power assist product with the addition of a Type 1 or Type 2 autopilot pump. The SeaStar Autopilot pump is a fixed flow, reversible pump set that uses an internal hydraulic gear pump, producing very little vibration or noise. It is offered in 12 and 24 volt configurations, as well as two different pump sizes (type 1 & type 2).

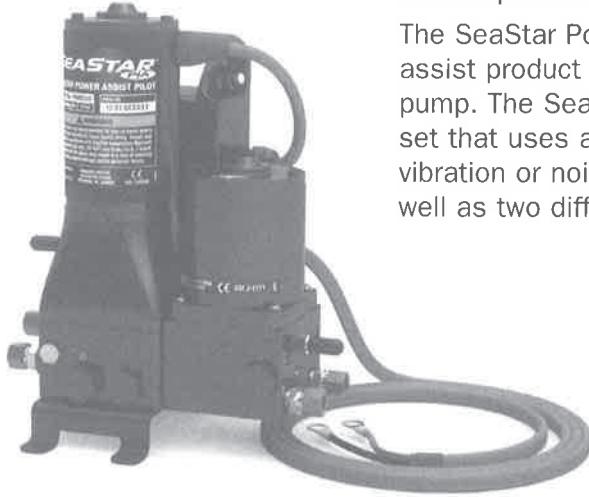


Figure 7-4.

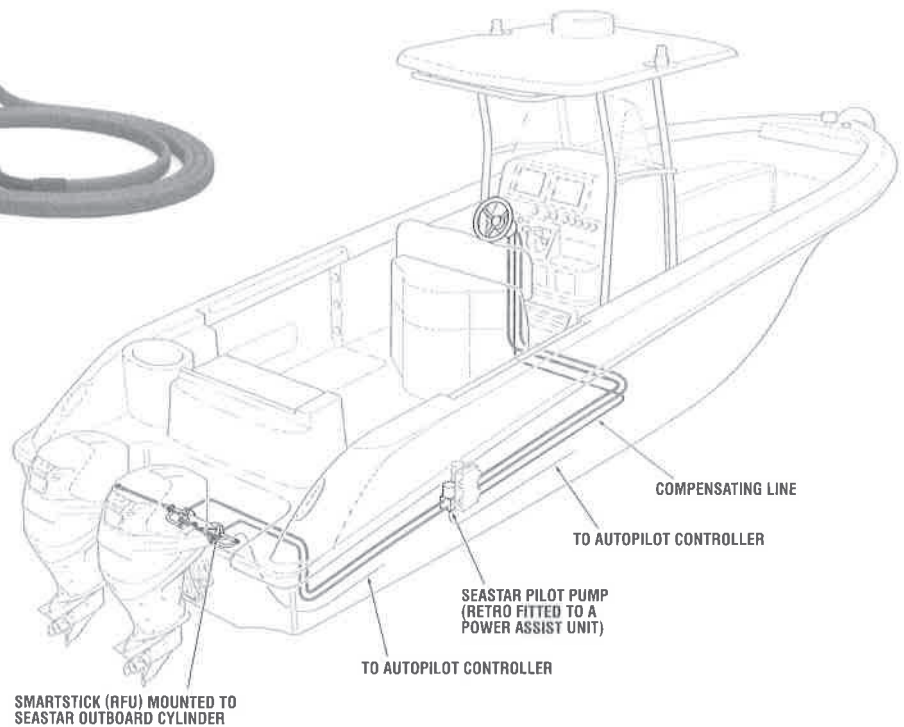


Figure 7-5.

## Features

- Autopilot ready – a single installation (i.e. no need to break into system for install of pump)
- Converts manual hydraulic steering to power steering
- Dramatic reduction in steering wheel torque
- Easy installation
- OEM or Retrofit
- Simple add on to an existing SeaStar manual system
- (from 1.4–2.4 SeaStar helm pumps)
- Compatible with power purge system
- Ignition protected (SAE J-1171)
- ABYC, CE, NMMA, ISO 10592 Approved
- Replaces other 12 & 24 volt systems

## Specifications

Voltage	12 or 24 Volts
Fittings	Compatible with Standard SeaStar Hoses (H051xx etc.)
Wire Length	24"
Wire Gauge	12 awg
Connector	None – Bare Leads
Oil Compatibility	SeaStar Steering Fluid (MIL 5606)
Weight	4.9 lbs (2.2 Kg)
Autopilot Pump Sizes	Type 1: 60 in <sup>3</sup> /min (no-load) Type 2: 100 in <sup>3</sup> /min (no-load)
Maximum Pressure	1000 psi
Typical Current Draw (Depending on Application)	12V Type 1: 4 – 8 amps 12V Type 2: 5 – 11 amps 24V Type 1: 2 – 4 amps 24V Type 2: 3 – 6 amps
Autopilot Pump Cylinder Capacity	Type 1: 4.9 in <sup>3</sup> – 12.5 in <sup>3</sup> Type 2: 2.5 in <sup>3</sup> – 21.0 in <sup>3</sup>

Table 7-2.

## Order Guide

### SeaStar P/A Unit complete with Pilot Pump

ORDER INFORMATION	PART NO.
Standard SPA Plus Type 1 12V pump	PA6010
Standard SPA Plus Type 2 12V pump	PA6020
Standard SPA Plus Type 1 24V pump	PA7010
Standard SPA Plus Type 2 24V pump	PA7020

Table 7-3.

## Technical Data

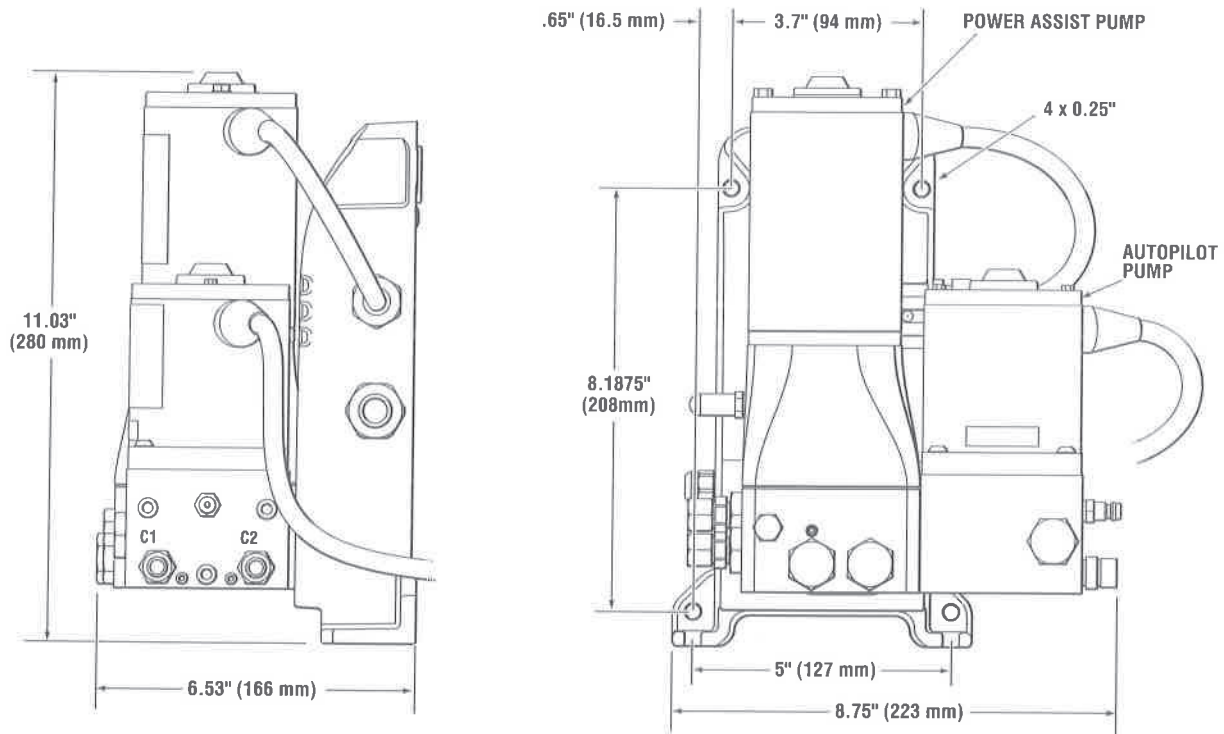


Figure 7-6.