Technical specifications

### NAC-1
- **Operating temperature**: -25 °C to +55 °C (13 °F to 131 °F)
- **Protection**: Splashproof, IPx5
- **Weight**: 0.6 kg (1.3 lbs)
- **Power supply/Load**: 9-16 V DC/140 mA + drive unit load
- **Performance**: Drive: 8 A cont., 16 A for 1 s

### Pump-1
- **Operating temperature**: -15 °C to +75 °C (5 °F to 167 °F)
- **Protection**: Splashproof, IPx5
- **Weight**: 2.2 kg (4.9 lbs)
- **Hydraulic thread size**: 1/4 NPT
- **Load**: 5 A at 8 bar (116 psi), 7 A at 24 bar (350 psi)
- **Performance**: 0.8 l/min at 24 bar (350 psi)

### Point-1AP
- **Operating temperature**: -25 °C to +60 °C (13 °F to 140 °F)
- **Protection**: Watertight, IPx7
- **Weight**: 0.14 kg (0.31 lbs) (including cable)
- **Power supply/Load**: 9-16 V DC/<100 mA @ 12 V DC
- **Performance**: Heading: +/- 3°, Horiz. accuracy: 3 m (9.8 ft)
- **Compass safe distance**: 1 m (3.3 ft)

### Precision-9
- **Operating temperature**: 25 to + 65 °C (-13 to + 149 °F)
- **Protection**: IPx7
- **Weight**: 165 g (5.8 oz) + 130 g (4.6 oz) (Bracket)
- **Power supply/Load**: 8-16 V/1.4 W
- **Accuracy**: ± 2 degrees after calibration
- **Compass safe distance**: 0.5 m (1.7 ft)

PLANNING: NAC-1
- **Mounting location**
- **NAC-1 Autopilot computer**
- **Point-1AP or Precision-9 Compass**
- **Auto/Stby Button**
- **NMEA 2000 Network kit**
- **Pump-1**
- **Pump fitting kit**

PLANNING: Pump-1, Mounting location
- **Mounting location**
- **Without bracket**
- **With bracket**

PLANNING: Point-1AP
- **Mounting location**
- **Point-1AP and Precision-9 Compass, Mounting location**

PLANNING: Tools needed
- **Screwdriver**
- **Drill**
- **Wrench**
- **Cup or can**
- **Tape**
- **Tools to connect power cables to the battery**
- **Gloves (disposable type)**

Check the contents
- NAC-1 Autopilot computer
- Point-1AP or Precision-9 Compass
- Auto/Stby Button
- NMEA 2000 Network kit
- Pump-1
- Pump fitting kit

PLANNING: Cable lengths
- Refer to “WIRING: Wiring diagram” (point 9) to find the various cable lengths.

PLANNING: Dimensions
- **Dimensions**
- **Technical specifications**
- **Tools needed**
- **Check the contents**
- **Compatibility information**

Point-1AP and Precision-9 Compass
- The compasses contain a magnetic heading sensor and should not be mounted close to any potential magnetic source, and as close to the vessel’s centre of roll and pitch as possible. Refer to technical specifications.

Potential sources for magnetic/electromagnetic interference include:
- Electrical Motors/Magnets/Moving Metal items
- Outboard Engines
- High current electrical sources such as main power cables, batteries, distribution panels etc.

The Point-1AP compass also comes with a GPS antenna and should be mounted as far as possible away from disturbing magnetic/electromagnetic interferences.

Compatibility information
- The hydraulic kit comes with both 1/4 NPT 9/16 UNF fittings and ORB fittings which make them ideally suited for the following steering systems:
  - Teleflex SeaStar HC5345, HC5347, HC5348, HC3558
  - Teleflex BayStar HC4600, HC4645, HC4647, HC4648, HC4658.
  - Hynautic K6 Steering Rams
  - Steering rams from Vetus, Uflex, and Lecomble & Schmitt can also be used.

- **Note**: Newer SeaStar/BayStar helm pumps require the use of ORB fittings (supplied in the kit).

For more details about mounting Precision-9, refer to the Precision-9 Mounting Template and Installation Guide. Available for download on:
- www.simrad-yachting.com
- www.lowrance.com
- www.bandg.com
Switch the autopilot to Power Steer mode. Press and hold the arrow keys on the Autopilot controller in steps less than 3 seconds at a time, until the cylinder reaches max travel in both directions. The screenshots above are examples from HDS and NSS evo2.

Continue to run the pump in both directions until no air bubbles are left in the transparent tube.

IMPORTANT: Check fluid level

MOUNTING: Bleeding hand steering

Turn the wheel until the cylinder reaches max travel in both directions, and refill oil.

Keep turning and refilling oil until the oil level is stable and the outboard engine responds firmly.

If air bubbles still remain in the system, follow the bleeding procedure described for the outboard cylinder.

Note: It is recommended to use a threaded filler tube if available.

MOUNTING: Identify Type of Fitting Required

The drawing shows a SeaStar helm pump which identifies fittings using text engraved on the back.

Note: Helm and fittings required may vary by manufacturer.

Note: ORB and NPT fitting kits are supplied in separate bags. Discard the fittings not used.

Note: Pay attention to the ports on the helm pump to ensure you are using the correct fittings.

MOUNTING: Connect hoses to helm pump

Check all fittings for leaks.

Configuration

Refer to your Autopilot controller's documentation for setup instructions.

Compliance Statements

The Outboard and the DrivePilot:

- Comply with CE under EMC directive 2004/108/EC
- Comply with the requirements of level 2 devices of the Radiocommunications (Electromagnetic Compatibility) standard

The relevant Declaration of Conformity is available on the following websites under model documentation section:

www.simrad-yachting.com
www.lowrance.com