



SMARTCYLINDER CONNECTION TO PCM

SeaStar Solutions has recently been made aware of a few isolated cases where the steering can experience a sensor fault which may cause steering disruption (loss of steering response).

These isolated incidents have been traced to water ingress of the SmartCylinder connection to the PCM (Pump Control Module) in moderately damp locations and can occur if the RFU (Rudder Feedback Unit) harness is strain relieved in a manner that disrupts the connector's seal. In the event this occurs, the Optimus EPS system will automatically detect this and notify the user via the CANtrak display and audible buzzer.

How to determine if your system is affected

1. With the ignition keyswitch off, remove the Port RFU connection to the PCM (see figure D). Inspect both connector halves for corrosion as indicated by green or grey colored oxidation around the terminals. (See figures A, B, C.)
2. For multi engine applications, repeat process for Starboard side.
3. If no evidence of corrosion is found on any of the connectors (see figure A), proceed to step #5.
4. If corrosion is found, identify the amount of corrosion in the connector
 - a. Minor corrosion (see figure B) can be cleaned with electrical contact cleaner and a bristled brush, then proceed to Containment Practices.
 - b. Significant corrosion (see figure C). If the male pins on the PCM's RFU connector are badly pitted or severely oxidized to a greenish color, have your dealer contact SeaStar Solutions for further evaluation.
5. In the event that there are any SmartCylinder extension harnesses present, SeaStar Solutions also recommends inspecting the mating junction for signs of corrosion.
 - a. If no evidence of corrosion, proceed to Containment Practices.
 - b. If corrosion is found, repeat step #4 above.

WARNING

Significant corrosion within any of the SmartCylinder connections may lead to loss of steering control causing property damage and/or personal injury or death.

NO CORROSION

- No evidence of contamination



Figure A. No Corrosion

MINOR CORROSION

- Thin layer of contamination on male pins
- Minor evidence of green or grey oxidization on female pins



Figure B. Minor Corrosion

SIGNIFICANT CORROSION

- Broken pin(s)
- Green or grey oxidization around male pins
- Visible corrosion inside female pins



Figure C. Significant Corrosion

Containment Practices

There are two practices to help ensure the RFU connector is adequately protected from water ingress:

- 1.** Application of dielectric grease to PCM/RFU connector and,
- 2.** Proper strain relief on RFU harness.

Even on installations where no corrosion is observed on the RFU connections at the PCM or RFU extension cables, SeaStar Solutions requires that the two practices listed above are followed.

Application of dielectric grease layer to PCM/RFU connector

SeaStar Solutions recommends the use of NyoGel® 760g dielectric grease (SeaStar part# 051700) in the RFU connectors on the PCM and any RFU extension cables. The grease can be obtained by contacting SeaStar Solutions as listed below. A thin layer approximately 0.1" in thickness should be applied on the top of the pins within the connector as shown in figure D.

In single engine applications, only the port SmartCylinder connection requires the application of grease.

NOTICE

Dielectric grease should ONLY be applied to the PCM/RFU connectors (no other connectors).

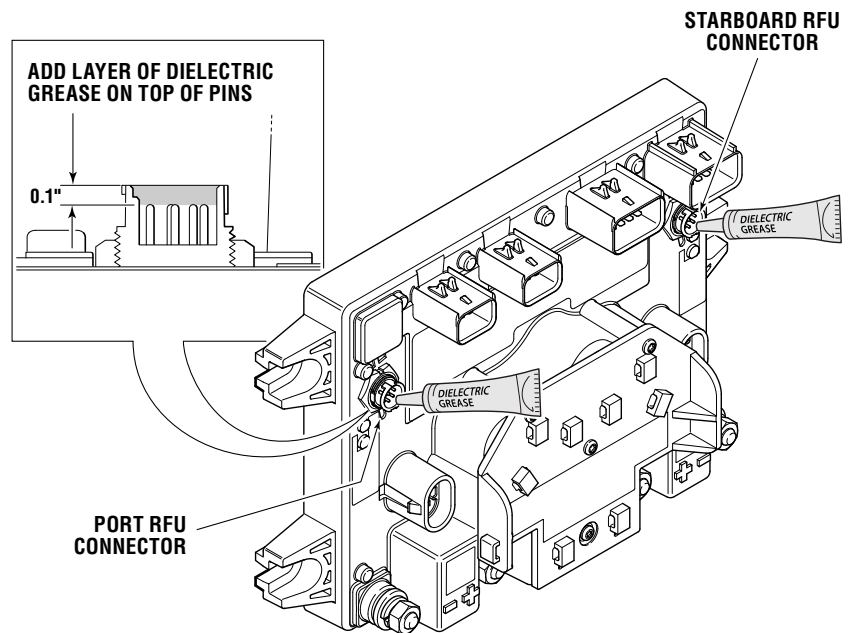


Figure D. PCM showing RFU connector locations

NOTICE

After applying dielectric grease, ensure that the SmartCylinder sensor harness is properly locked into the PCM by aligning the alignment marks on the SmartCylinder harness end and the PCM, as shown in figure E.

⚠ CAUTION

DO NOT force past the marks shown in figure E.

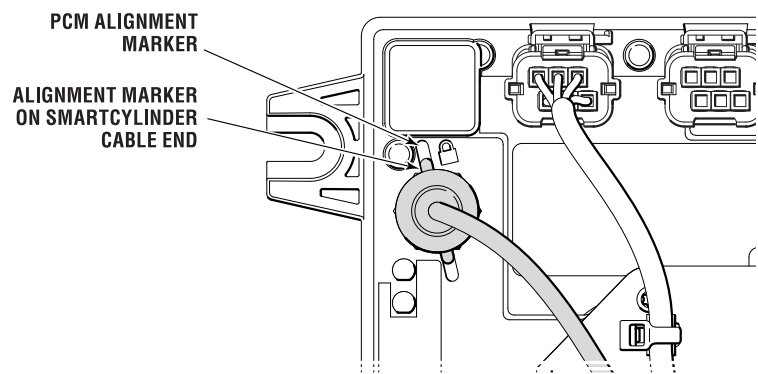


Figure E.

Proper Strain Relief of RFU Harness

The RFU harness should be strain relieved in a manner that does not compromise the seal of the connector. The harness should extend vertically by approximately 2.5" from the base of the connector to the tallest point on the cable. Furthermore, the harness should be secured to the strain relief plate such that the primary zap strap is located between the warning and barcode labels on the harness. This configuration is shown in figure F.

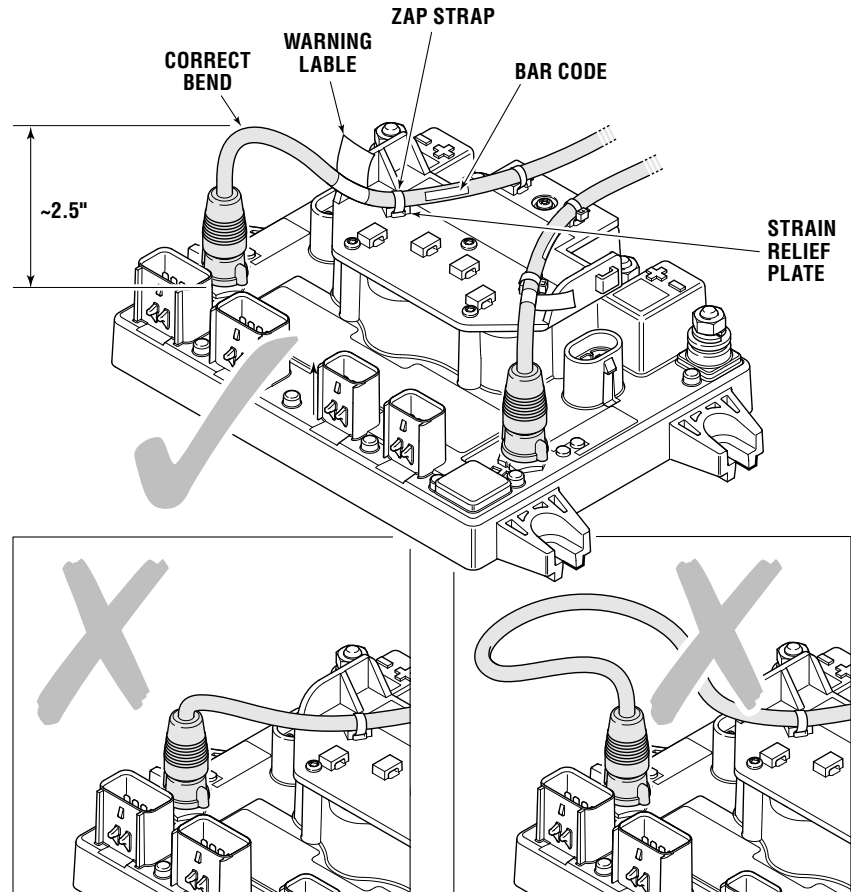


Figure F.

RFU Extension harnesses should also be strain relieved on either side of each connection.

System Verification Check

Once the outlined containment practices have been applied to all RFU connections and before operating the vessel, refer to the Optimus EPS Operations Instructions and User's Manual (Book 51). Specifically, complete the Perform System Inspection and Initial Sea Trial.

Contact Information

If you have any questions or require a NyoGel® 760g dielectric grease package (part# 051700), please contact SeaStar Solutions Technical Support in one of the following ways:

Email: optimusadvisory@seastarsolutions.com

Phone: 604-248-3858