

Engineering Department

Engineering Change Order (ECO)

ECO #: 001 Effective Date: May 2, 2016

Title: Pro 4 Term Block Modification

Author:	<u>JK</u>	Date:	<u>April 20, 2016</u>
Engineering Approval:	<u>aeg</u>	Date:	<u>April 30, 2016</u>
Operations Approval:	<u>JJV</u>	Date:	<u>May 2, 2016</u>

Summary:

Hole misalignment between Pro4 Main Hull Tube (mhu-001-4) and Termination Block Part Plate (TB-005) causes binding of the Termination Block Mold with Female Locking and Snap Ring (TB-001M) threads and the Accessory Port 9 Pin Bulkhead Package Unterminated (CB9-001F) threads with mhu-001-4. This hole misalignment can cause false torque readings to occur during assembly this can cause assembly to fail pressure testing. To correct this the holes in the molded TB-005 part will be post machined to eliminate the misalignment.

Parts Affected:

Part Number	Notes	Removed	Added	Modified
TB-005	Additional post machining required.	☐	☐	☒

Detail:

The hole misalignment between MHU-001-4 and TB-005 has existed since the original TB-005 parts were purchased. The cause was likely the MHU-001-4 drawing hole callout being incorrect at the time the TB-005 part was designed and made. This hole misalignment was managed successfully for many years with careful assembly until recently. The change could be due to assembly procedure or tolerance as the tolerance on both parts are large. To eliminate the risk and assembly complexity the hole misalignment is being resolved. The hole misalignment distance is approximately 0.050", tight thread clearance between TB-001M, CB9-001F, and MHU-001-4 causes the threads to bind during the tightening process. The appropriate torque can be achieved without TB-001M or CB9-001F seating properly. During or after pressure testing the TB-001M or CB9-001F will either leak, and remain "bound", or release failing torque tests. The two molded holes in TB-005 can be elongated .028" each during the post machining process already required for flattening of the sealing faces without effecting the function of the o-ring seal grooves. Elongating the holes eliminates the binding condition and all the associated leak risks.

Action Item:

Action	Department	Acknowledgement Initials
Inspect parts for conformance to current part revision.	Quality Control	NS
Remove all parts not meeting the current revision.	Inventory Control	SL
Acknowledge change.	Production	KK
Use Rev A drawings for sourcing parts.	Purchasing	NS

Modified / Referenced Documents:

Document	Current Revision
TB-005	A

-- END OF ORDER --