



Serial Numbers TM80-001 through 800208

December 17, 2012

Product Bulletin # Wrench 016

## TM80 High Pressure Hose Retrofit

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Canrig is using a new series of high pressure hose lines ½" and larger on all TM80 models beginning with serial number 800209. In conjunction with the hose change, all hose fittings and adapter fittings with JIC connections for these high pressure lines will be replaced with fittings that have o-ring face seal (ORFS) connections.

The new hose and fitting connection type increases the rated burst pressure of the high pressure hose sections from 16,000 to 24,000 psi, and is expected to provide greater durability and reduced possibility of leakage.

The new hose sections and fittings are available as a retrofit kit for field replacement for serial numbers TM80-800208 and earlier.

### Recommendation

Replace all ½" and larger hose sections and fittings on the high pressure circuit of the TM80 with the hose sections and fittings contained in the retrofit kit.



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An upgrade kit is required to perform this procedure. Refer to the drawings and the upgrade kit bill of materials located at the end of this document. Contact RigLine 24/7™ Support to order the upgrade kit.

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The retrofit kit part number for the TM80-110 is AY50979-110, and AY50979-125 for the TM80-125. (See section titled "Retrofit BOMs" on page 5.) The only difference between the two kits is the hose length of certain hose sections. The kits contain all pre-assembled and pressure-tested hose sections and fittings necessary to complete the retrofit.

Follow the steps below to complete the retrofit installation.

## Retrofit Installation Procedure

### Required tools:

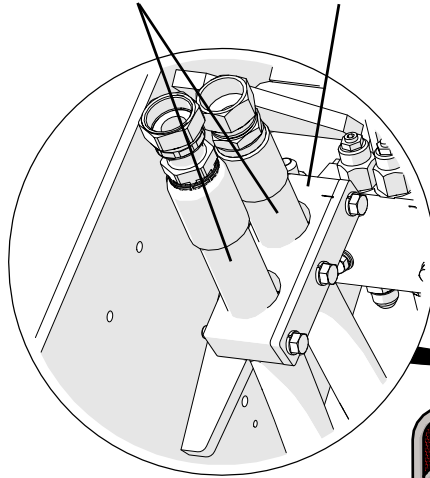
- Grinder
  - Open-end wrench
  - Bucket(s)
  - Oil-absorbent pads
1. Extend the wrench forward just enough to allow full access to all hose connections located behind the torque assembly and the lower torque assembly until it rests squarely on the rig floor.
  2. Follow lock out and tag out procedures; disconnect electrical power to the wrench and the HPU.
  3. Actuate the tong valve handles manually (in and out) to relieve any residual pressure.
  4. Place a bucket and/or oil-absorbent pads under the work area to capture leaking hydraulic oil.
  5. Disassemble and remove existing hoses and fittings indicated with an ID number according to the plumbing diagram drawing #AY50979, which is located at the end of this document.



Prior to removing any hose section, use a wrench to slightly crack open one of the hose fittings to verify hydraulic pressure has been bled off. If there is any indication the line is still pressurized, retighten the hose fitting, actuate the valve handles for that portion of the circuit several times, and then reattempt.

6. Remove the tie bar from the back end of the wrench to expose the main boom's internal plumbing.
7. Remove the steel tubing and tubing clamps from the main boom.
8. Replace steel tubing with hose sections (per drawing AY50979), and install hose clamps in place of the tube clamps (see Figure 1).

**Step 8: Steel tubing and hose clamps**



**Step 9: Top main boom bulkhead hole**

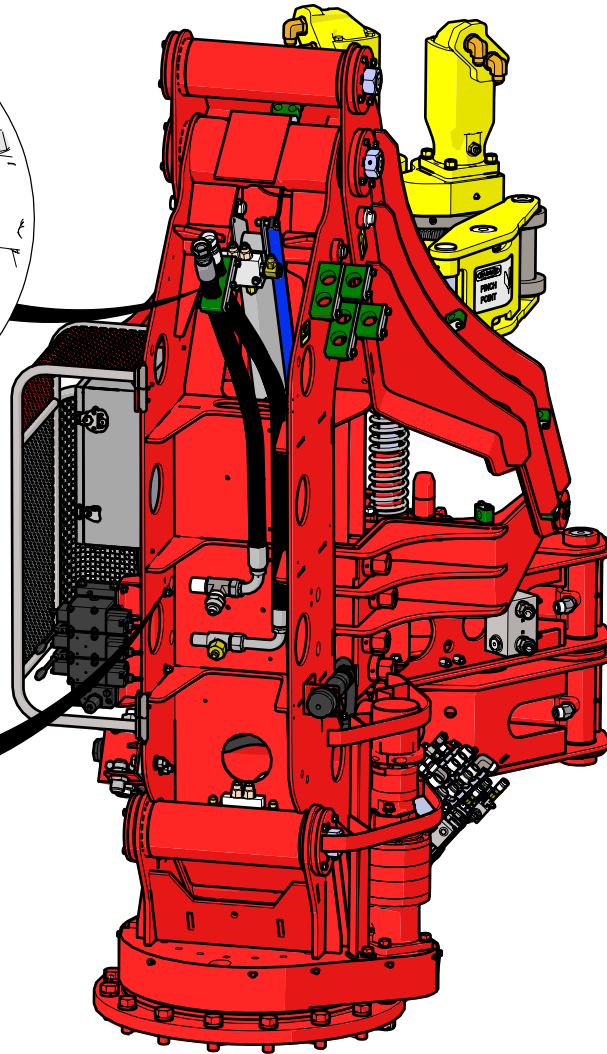
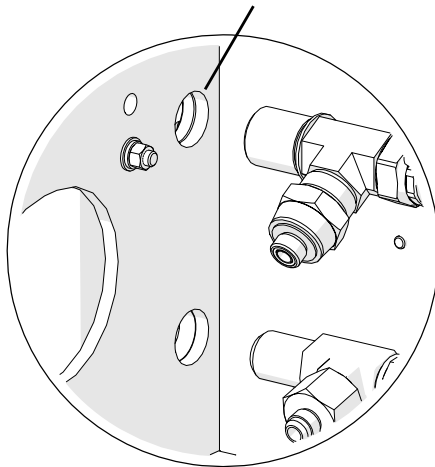


Figure 1: Bulkhead Modification Close-up

9. Grind out the top main boom bulkhead hole for the main high pressure line to increase the diameter by approximately 1/8" to accommodate the larger ORFS fitting; the specified dimension for the new hole diameter is 1.457". (See Figure 1 above.)
10. Grind out both of the lower bulkhead holes on the upper and lower tongs for the PO check valve connections to increase the diameter by approximately 1/8" to accommodate the larger ORFS fitting; the specified dimension for the new hole diameters is 1.196". (See Figure 2 below.)

**Step 10:** Lower bulkhead hole, lower tong

**Step 10:** Lower bulkhead hole, upper tong

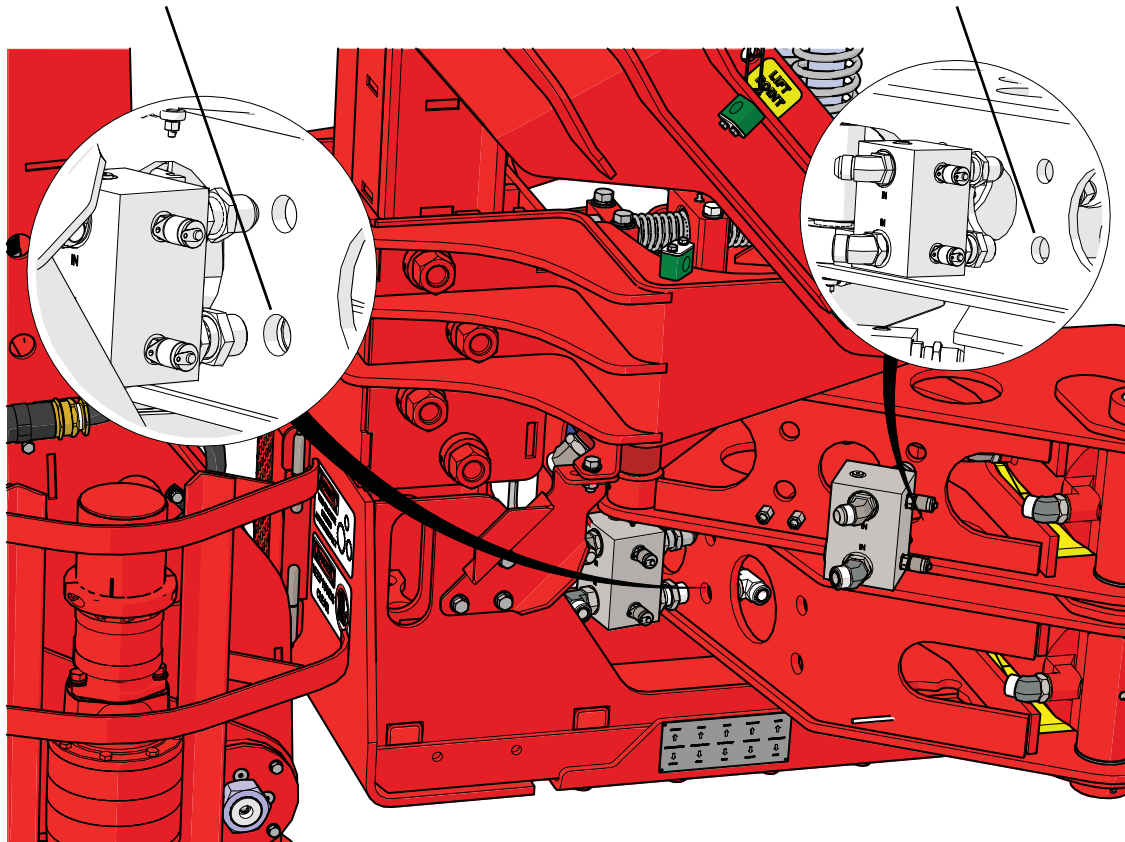


Figure 2: Lower Bulkhead Holes

11. Replace remaining wrench hose sections and fittings per drawing AY50979 and BOM.
12. Replace the hose section between the HPU and the wrench.



Additional QD fittings and adapters may be required for the wrench-to-HPU connections. Refer to the bottom left corner of the AY50979 plumbing diagram (located at the end of this document) for installation diagram specific to your Canrig HPU model.

13. After all hoses have been replaced, reconnect power to the wrench and HPU, and then manually test each function to ensure proper installation.
14. Inspect hoses for leaks; perform repairs as necessary.
15. Re-install spiral wraps around hose groupings for protection against rubbing and scraping.
16. Observe movement of hose sections during operation to ensure that hoses are not binding or getting pinched.

## Retrofit BOMs

**Table 1: AY50979-110, Kit, Hose, 6000 psi, Retrofit, TM80-110**

Item	Qty	Part ID	Description
01J	1	F797TCJ7J7080808-43.25-X-4	HOSE ASSY, 1/2, 45° ELL, 45° ELL, 43.25
01M	1	F797TCJ9JS161616-18-X-13	HOSE ASSY, 1, 90° SHT, SWV STR, 18
03A	1	F797TCJSJS121212-37.12-X-3	HOSE ASSY, 3/4, SWV STR, SWV STR, 37.12
03C	1	F797TCJSJ9121212-40.75-X-3	HOSE ASSY, 3/4, SWV STR, 90° SHT, 40.75
03D	1	F797TCJSJ9121212-55.75-X-5	HOSE ASSY, 3/4, SWV STR, 90° SHT, 55.75
03E	1	F797TCJSJ9121212-22.75-X-1	HOSE ASSY, 3/4, SWV STR, 90° SHT, 22.75
04A	1	F797TCJ0J9161616-151.56-X-	HOSE ASSY, 1, ORFS MALE, 90° SHT, 151.56
04C	1	F797TCJSJ9161616-39.5-X-34	HOSE ASSY, 1, SWV STR, 90° SHT, 39.5
04D	1	F451TC0641161616-44.81-X-4	HOSE ASSY, 1, SWV STR, 90° LONG, 44.81
07A	1	F797TCJ0J7161616-16.75-X-1	HOSE ASSY, 1, ORFS MALE, 45° ELL, 16.75
07B	1	F451TCJ037161616-16.75-X-1	HOSE ASSY, 1, ORFS MALE, 45° ELL, 16.75
08E	1	F797TCJ7JS121212-17.06-X-1	HOSE ASSY, 3/4, SWV STR, 45° ELL, 17.06
08F	1	F797TCJSJ9121212-25.63-X-2	HOSE ASSY, 3/4, SWV STR, 90° SHT, 25.63
08G	1	F797TCJSJS121212-15.06-X-1	HOSE ASSY, 3/4, SWV STR, SWV STR, 15.06
09A	1	F797TCJSJS121212-22.06-X-1	HOSE ASSY, 3/4, SWV STR, SWV STR, 22.06
09B	1	F797TCJSJS121212-20.06-X-1	HOSE ASSY, 3/4, SWV STR, SWV STR, 20.06

**Table 1: AY50979-110, Kit, Hose, 6000 psi, Retrofit, TM80-110**

Item	Qty	Part ID	Description
11A	2	F797TCJ0J0161616-900-X-89	HOSE ASSY, 1, ORFS MALE, SWV STR, 900
	1	AY50997	KIT,FITTINGS,6000 PSI,RETROFIT,TM80

**Table 2: AY50979-125, Kit, Hose, 6000 psi, Retrofit, TM80-125**

Item	Qty	Part ID	Description
01J	1	F797TCJ7J7080808-43.25-X-4	HOSE ASSY, 1/2, 45° ELL, 45° ELL, 43.25
01M	1	F797TCJ9JS161616-22-X-17	HOSE ASSY, 1, 90° SHT, SWV STR, 22
03A	1	F797TCJSJS121212-37.12-X-3	HOSE ASSY, 3/4, SWV STR, SWV STR, 37.12
03C	1	F797TCJSJ9121212-40.75-X-3	HOSE ASSY, 3/4, SWV STR, 90° SHT, 40.75
03D	1	F797TCJSJ9121212-55.75-X-5	HOSE ASSY, 3/4, SWV STR, 90° SHT, 55.75
03E	1	F797TCJSJ9121212-22.75-X-1	HOSE ASSY, 3/4, SWV STR, 90° SHT, 22.75
04A	1	F797TCJ0J9161616-151.56-X-	HOSE ASSY, 1, ORFS MALE, 90° SHT, 151.56
04C	1	F797TCJSJ9161616-43.5-X-38	HOSE ASSY, 1, SWV STR, 90° SHT, 39.5
04D	1	F451TC0641161616-49.31-X-4	HOSE ASSY, 1, SWV STR, 90° LONG, 44.81
07A	1	F797TCJ0J7161616-16.75-X-1	HOSE ASSY, 1, ORFS MALE, 45° ELL, 16.75
07B	1	F451TCJ037161616-16.75-X-1	HOSE ASSY, 1, ORFS MALE, 45° ELL, 16.75
08E	1	F797TCJ7JS121212-17.06-X-1	HOSE ASSY, 3/4, SWV STR, 45° ELL, 17.06
08F	1	F797TCJSJ9121212-25.63-X-2	HOSE ASSY, 3/4, SWV STR, 90° SHT, 25.63
08G	1	F797TCJSJS121212-15.06-X-1	HOSE ASSY, 3/4, SWV STR, SWV STR, 15.06
09A	1	F797TCJSJS121212-22.06-X-1	HOSE ASSY, 3/4, SWV STR, SWV STR, 22.06
09B	1	F797TCJSJS121212-20.06-X-1	HOSE ASSY, 3/4, SWV STR, SWV STR, 20.06
11A	2	F797TCJ0J0161616-900-X-89	HOSE ASSY, 1, ORFS MALE, SWV STR, 900
	1	AY50997	KIT,FITTINGS,6000 PSI,RETROFIT,TM80

**Table 3: AY50997 Kit, Fittings, 6000 psi, Retrofit, TM80**

Item	Qty	Part ID	Description
12	5	H15-520320-12	ELL 45°, MALE 3/4 ORFS, MALE 3/4 ORB
13	1	H15-520401-12	TEE, UNION, MALE 3/4 ORFS
14	1	H15-520433-12	TEE, FEM SWV BRANCH, MALE 3/4 ORFS
15	2	H11733-12-12	BULKHD, STR, MALE 3/4 ORFS, MALE 3/4 ORB
16	1	H15-520220-12-12	ELL 90°, MALE 3/4 ORFS, MALE 3/4 ORB
17	2	H15-520320-12-16	ELL 45°, MALE 3/4 ORFS, MALE 1 ORB
18	4	H11745-12-12-S	ADPT, MALE 3/4 ORFS, MALE 3/4 BSPP, STL
19	1	H11745-16-12-S	ADPT, MALE 1 ORFS, MALE 3/4 BSPP, STEEL
20	2	DT50962	TUBE, HYD, 1/4 IN X 049 WALL, TONG VLV
21	1	H11856	VLV, HYD, SHUTL, CARTRIDGE, 1/4 FNPT, STL
22	1	H11745-08-12-S	ADPT, MALE 1/2 ORFS, MALE 3/4 BSPP, STL
23	1	H15-2007-16-16	TEE, BULKHEAD RUN, MALE 1, ORFS
24	1	H15-520123A-16-08	REDUCER, FEM SWV 1 ORFS, MALE 1/2 ORFS
25	2	H15-520120-16-20	ADAPTER, MALE 1 ORFS, MALE 1 1/4 ORB
26	2	H11887	COUPLER, QUICK CONN, 1, QD(F) X ORFS(M)
27	2	H11458	PLUG, COUPLER, QUICK CONN 1
28	3	H11888	NIPPLE, QUICK CONN, 1, QD(M) X ORFS(M)
29	3	H11613	CAP, NIPPLE, QUICK CONN, 1
30	2	H15-2010-16-16	ADAPTER, MALE 1 ORFS, FEM SWV 1 JIC
31	1	H11612	NIPPLE, QUICK CONN, 1 1/4, QD(M) X FNPT
32	1	H11614	CAP, NIPPLE, QUICK CONN, 1 1/4
33	1	H15-2008-20-16	REDUCER, FEM SWV 1 1/4 ORS, MALE 1 ORFS
34	1	H12319	NIPPLE, QUICK CONNECT, 1 IN ORB(F), STL
35	1	H10604	CAP, DUST, QUICK CONNECT, 1 IN, HP SER

**Table 3: AY50997 Kit, Fittings, 6000 psi, Retrofit, TM80**

Item	Qty	Part ID	Description
36	1	H15-520120-16-16	ADAPTER, MALE 1 ORFS, MALE 1 ORB
37	1	H10466	QUICK COUPLING, 1-1/4 FEM NPT, 1-1/4
38	1	H10586	PLUG, DUST, QUICK CONN 1 1/4 IN, BRASS
39	1	H15-140140-20-16	BUSH, HEX, MALE 1 1/4 NPT, FEM 1 NPT
40	1	H15-2001-16-16	ADAPTER, MALE 1 ORFS, MALE 1 NPT
R01	1	M10985	HOSE CLAMP, TWIN, 1-1/2 IN
R02	1	M11101	TOP COVER, HOSE CLAMP, TWIN, 5 SER
R03	3	HH-0375NC-0300-GR8	CAPSCR, HEX HD, 3/8-16UNC x 3.00, GR8
R04	3	LW-0375-ET	LOCKWASHER, 3/8 EXTERNAL TOOTH



