HARSCO RAIL
Enabling TECHNOLOGY IN MOTION

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SERVICE BULLETIN

MAINTENANCE OF WAY EQUIPMENT

DATE: 09 - 2025 **BULLETIN NO:** SBUS000133-25

TITLE: Replacement instructions for new five-section grinding pump kit for RGH10C1 and RGH10C2 Rail Grinders.

RATING:

- ☐ **DIRECTIVE** (Action Is Required)
- ☐ **ALERT** (Potential Problem)
- ☐ **INFORMATION** (Action Is Optional)
- ☒ **PRODUCT IMPROVEMENT** (Enhance Product)

PRODUCT SERIES / MODEL: RGH10C1 and RGH10C2 Rail Grinders

SERIAL NO: N/A

SUMMARY: In response to prior five-section grinding pump drive shaft failures, Harsco Rail now offers a grinding pump replacement kit designed to enhance the strength and reliability of internal pump components.

OPERATIONAL IMPACT:

The five-section grinding pumps included in this replacement kit offer increased robustness compared to those originally supplied with the machine. Earlier pumps and their replacements were susceptible to drive shaft failures caused by elevated hydraulic pressures, particularly when multiple grinding heads lowered simultaneously. Installation of this upgrade kit significantly reduces the likelihood of such failures, improving overall system reliability.

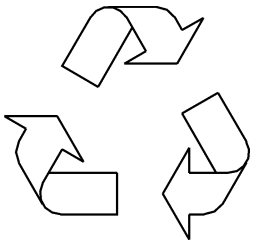
ACTION: Disconnect and remove the existing left and right five-section grinding pumps from the pump drive assembly located behind the engine. Install the components provided in the grinding pump conversion kit. The kit includes all necessary parts for the complete replacement of both five-section grinding pumps.

CONTACT: Harsco Rail Parts Department
1-800-800-6410
Email: railparts@harsco.com

SAFETY INFORMATION

- **Follow applicable railroad lockout - tagout procedures to disable energy sources when performing maintenance, making adjustments or repairs to the vehicle or equipment. Failure to heed this warning could result in severe bodily injury.**
- **Refer to energy control procedure to remove all energy sources from machine before performing maintenance or making adjustments or repairs to machine. Failure to comply could result in severe bodily injury.**

Waste Disposal



Dispose of waste properly. Improper disposal of waste can threaten the environment. The operation and maintenance of Harsco Rail equipment may involve the use and disposal of such items as hydraulic fluid, engine oil, coolant, filters, batteries, grinding debris, etc.

Use leak proof containers when draining fluids. Do not pour waste onto the ground, down a drain, or into any water source. Inquire on the proper way to recycle or dispose of waste according to applicable Federal, State and/or Local regulations.

Before Performing Maintenance

1. Make sure the machine is in a safe location for the maintenance being performed.
2. Make sure the maintenance personnel are qualified to perform the maintenance procedures.
3. Apply hand brakes. Chock machine wheels, if required. Make sure unintended movement of the machine cannot occur.
4. Make sure grinding heads and grinding carriages are raised and locked in the stowed position.
5. Stop the engine and turn the master disconnect switch off.
6. Depressurize the air and hydraulic systems.

Grinding Pumps - Disassembly Procedure

1. Close the Ball Valve (A) on each vented relief valve manifold. Ball Valves (qty two) are located on the left and right sides of the engine at floor level. - See Figure 1
2. Close the four Butterfly Valves (B) for the hydraulic reservoir suction strainers to isolate the suction manifold. Butterfly Valves (qty four) are found beneath the hydraulic reservoir. Closing them will isolate the Suction Manifold. - See Figure 2

FIGURE 1
VENTED RELIEF VALVE MANIFOLDS - BALL VALVES
(Shown in OPEN Position)

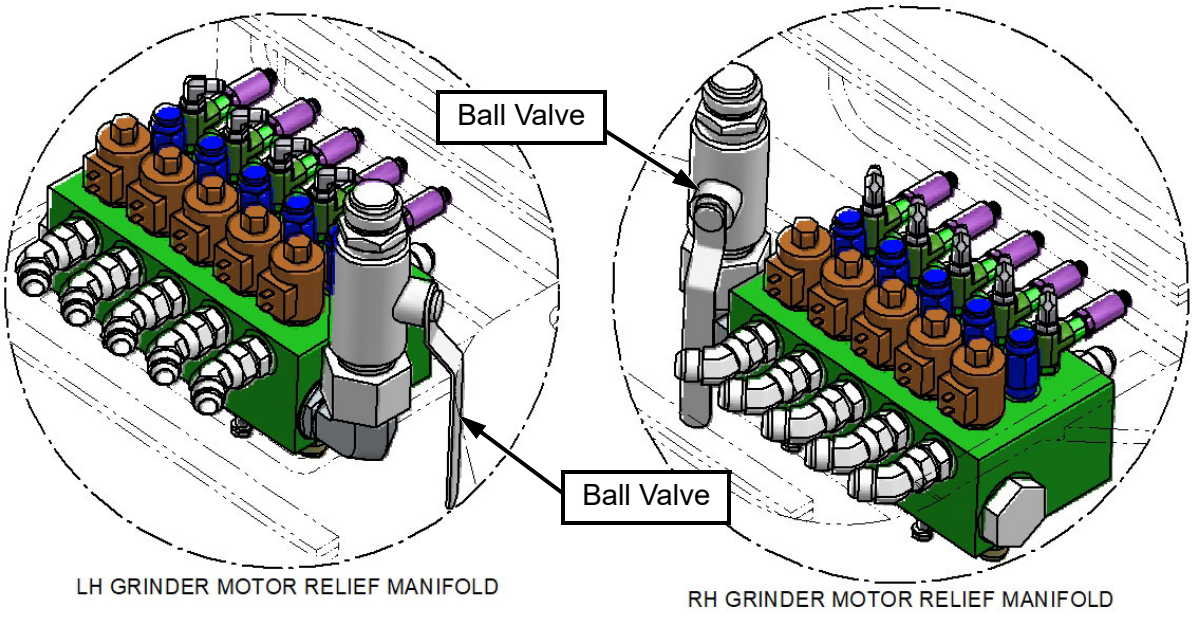
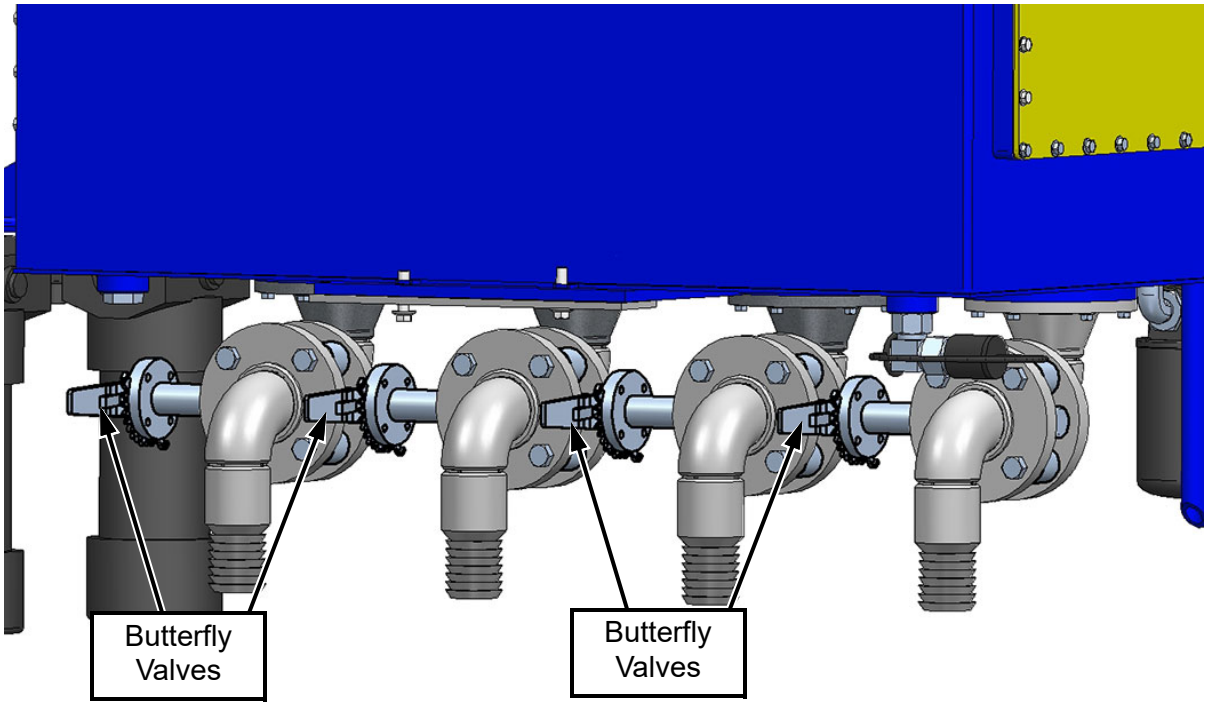


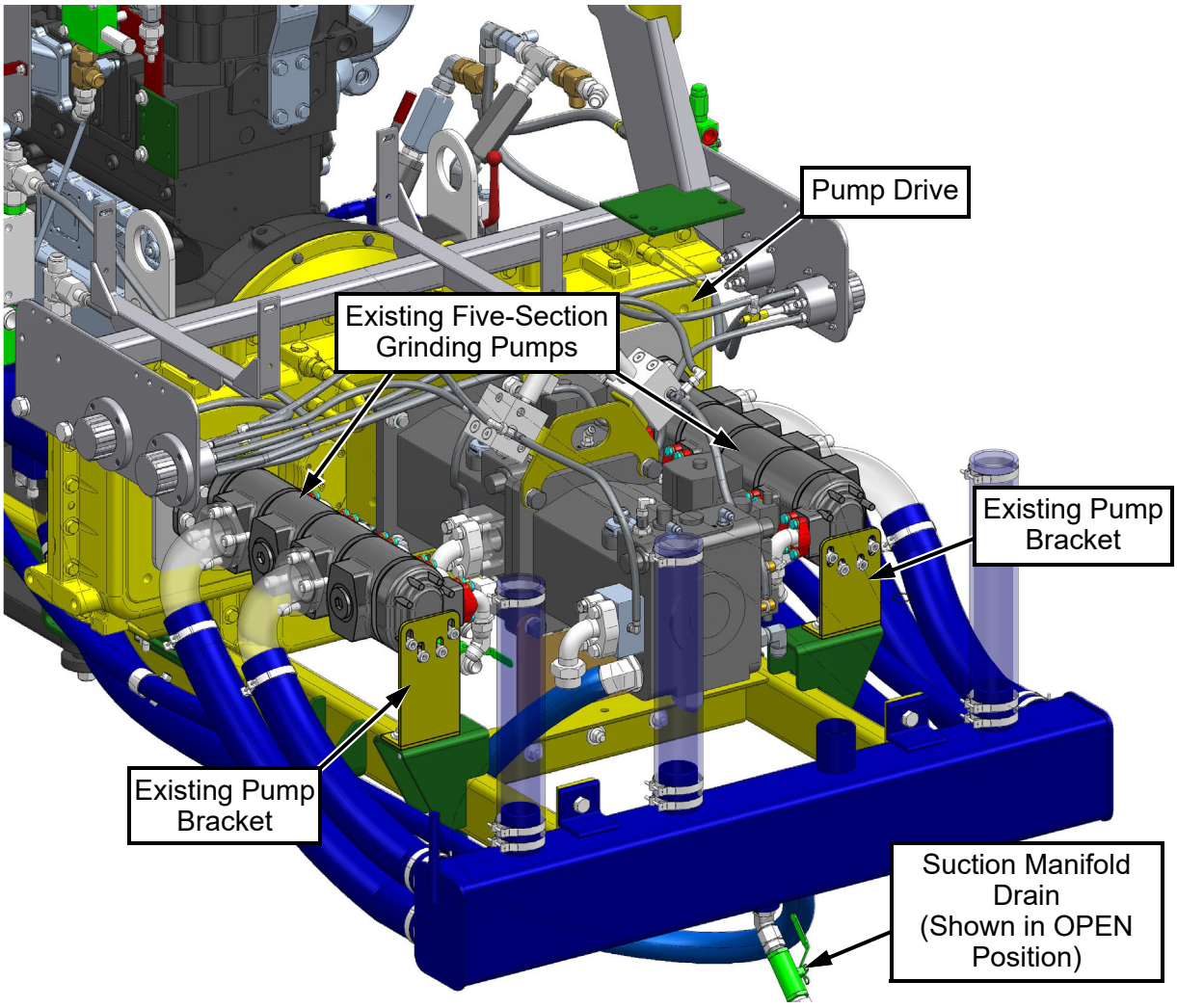
FIGURE 2
HYDRAULIC RESERVOIR - SUCTION STRAINERS - BUTTERFLY VALVES
(Shown in OPEN Position)



3. Drain hydraulic fluid from Suction Manifold Drain into a clean, properly-sized leak-proof container by turning the ball valve handle parallel to the valve body. - See Figure 3

4. Shut the ball valve—ensuring the handle is perpendicular to the valve body—once the fluid has adequately drained from the Suction Manifold. - See Figure 3

FIGURE 3
GRINDING PUMPS - DISASSEMBLY



5. Disconnect all fittings attached to the five-section grinding pump. Remove the o-ring on each F040265 Hose Fitting 90 Degree as well. - See Figures 3 and 4

6. Support the five-section grinding pump prior to removing mounting hardware.

7. Remove the fasteners securing the existing pump brackets to the frame.

8. Remove the fasteners mounting the pump to the pump drive. - See Figure 5

9. Slowly lift and move the five-section grinding pump and pump bracket away from the pump drive.

FIGURE 4
REMOVE HYDRAULIC FITTINGS AT PUMP

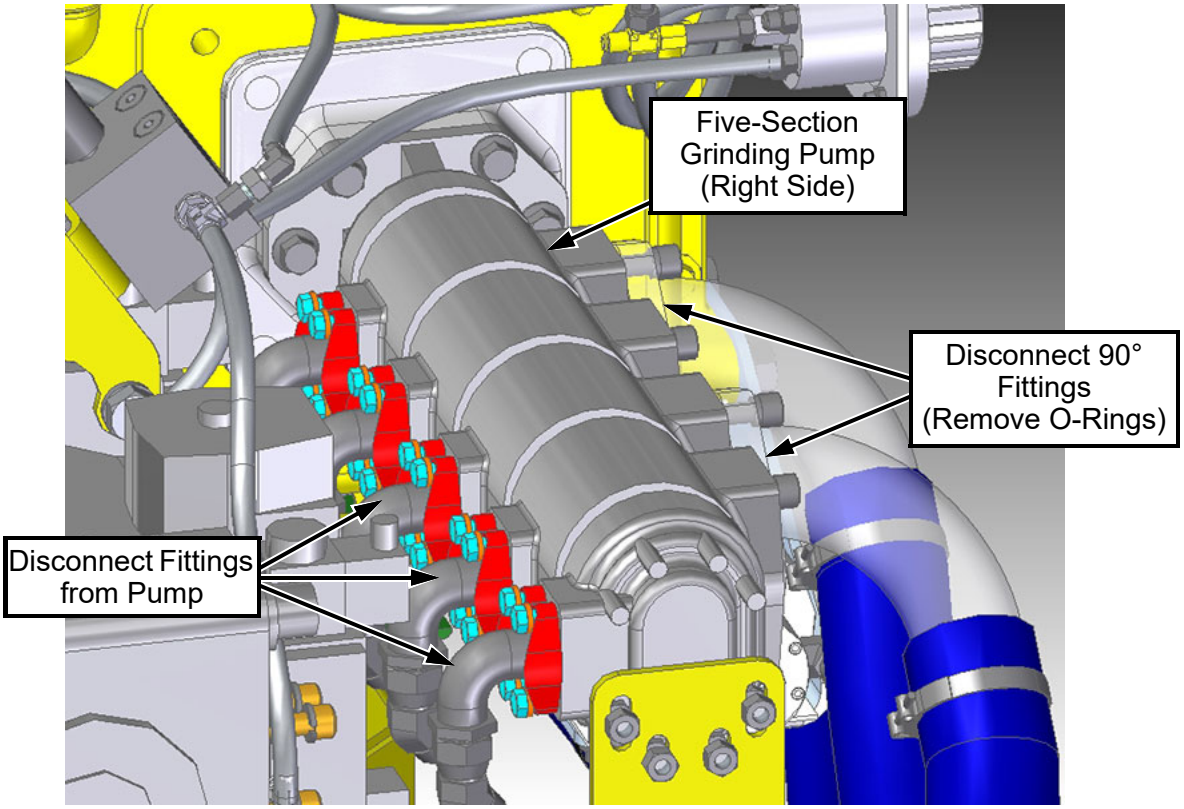
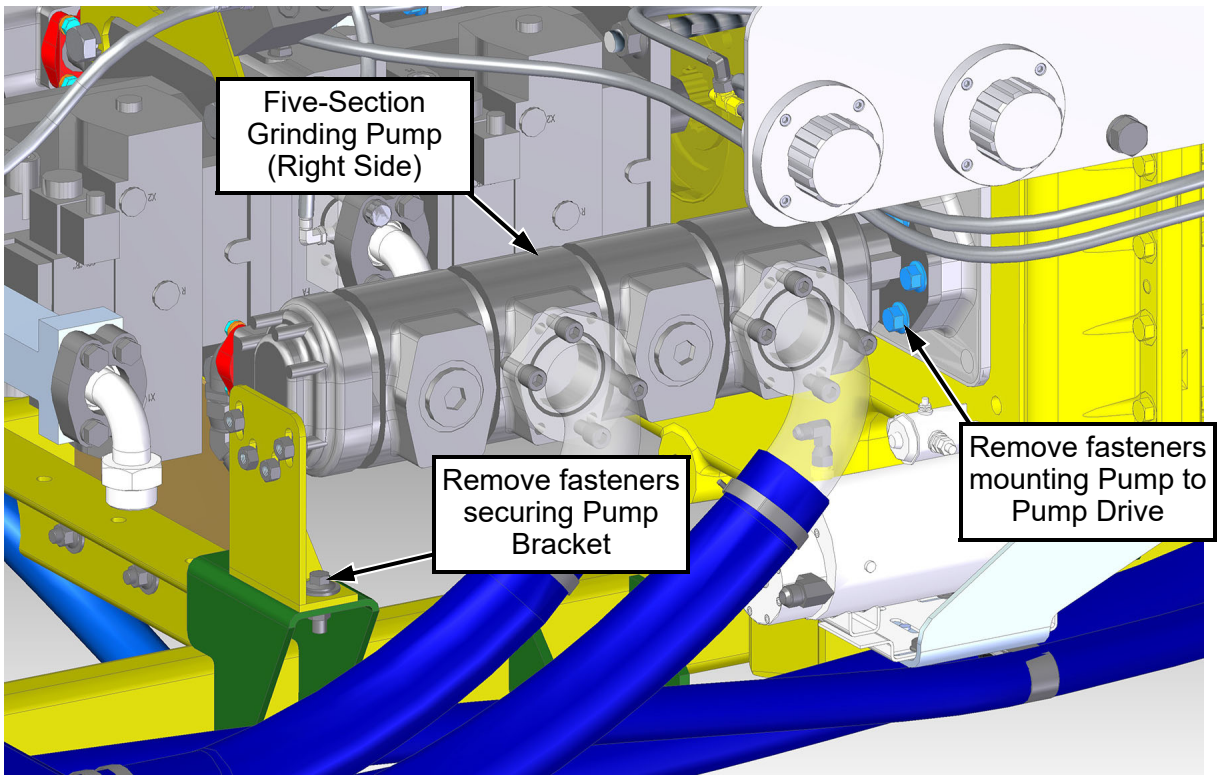


FIGURE 5
REMOVE FASTENERS



Grinding Pumps - Assembly Procedure - See Figures 6 and 7

Note: Refer to the figures and Engineering Print 5151116 for the Permco Grind Pump Conversion Kit. Mount each Grind Pump (3) on the pump drive with the 2.50-inch suction ports facing outward. Use Pump Support Weldment (1) for the left-side pump, and the other Pump Support Weldment (10) for the right-side pump.

1. Apply G-N Metal Assembly Paste (15) to the splines of Grinding Pump (3).
2. Apply O-Ring Lubricant (13) to O-Ring (2) prior to installing into the groove on the end of Grinding Pump (3).
3. Apply Silicone Gasket Maker (16) to Grinding Pump (3) and pump drive mating faces.
4. Support Grinding Pump (3) for installation and slide the splined end into matching splines on Pump Drive.
5. Apply Loctite 242-Blue (14) to threads of four Hex Flange Head Cap Screws 1/2-13X1-1/4 GR5 (11).
6. Secure the pump to the Pump Drive with the four Hex Flange Head Cap Screws (11). Torque as specified in Operator's Manual - Appendix A.
7. Mount new Pump Support Weldment (1) to left bank of Five-Section Grinding Pump (3) using Washer, Flat, M16, DIN125, YZP (6) and Lock Nut Nylon, M16 x 2.0 (7).
   a. Slide two Washers (6) onto the long pump studs to act as spacers.
   b. Mount the Pump Support Weldment (1) onto the Grinding Pump (3).
   c. Add one more Washer (6) to each stud.
   d. Secure everything with nylon lock nuts (7), but do not tighten.
8. Line up the holes in the Pump Support Weldment (1) with the matching holes in the Engine Skid Weldment. Secure using the following fasteners:
   a. Hex Flange Bolts M12×1.75×40 (9).
   b. 1/2" Hardened Flat Washers (8).
   c. Hex Flange Nuts M12×1.75 (5)
9. Tighten Pump Support Weldment fasteners to the torque specified in Appendix A of the Operator's Manual.
10. Apply O-Ring Lubricant (13) to new O-Rings (12) and place them into the grooves in the 90° Suction Fittings.
11. Position the flange mounting holes of the two large 90° Suction Fittings with the matching holes on the Five-Section Grinding Pump (3). Secure fittings using the original fasteners. Torque as specified in Operator's Manual - Appendix A.

    Note: The suction and pressure ports for the new pumps are in slightly different locations, so some hose adjustments may be necessary to properly secure the fittings to the new pump.

12. Apply O-Ring Lubricant (13) to new O-Rings (4) and place them into the grooves in Grinding Pump (3).

13. On the other side of the Grinding Pump (3), line up the holes of the five Split Flange kits (for the 90° JIC fittings) with the matching holes at the pressure ports of the Grinding Pump (3). Attach the fittings using the original fasteners. Torque as specified in Operator's Manual - Appendix A.

14. Repeat steps for installing the Five-Section Grinding Pump (3) for the right side. Remember that the pump is rotated 180° from the left side.

FIGURE 6
GRINDING PUMPS - ASSEMBLY

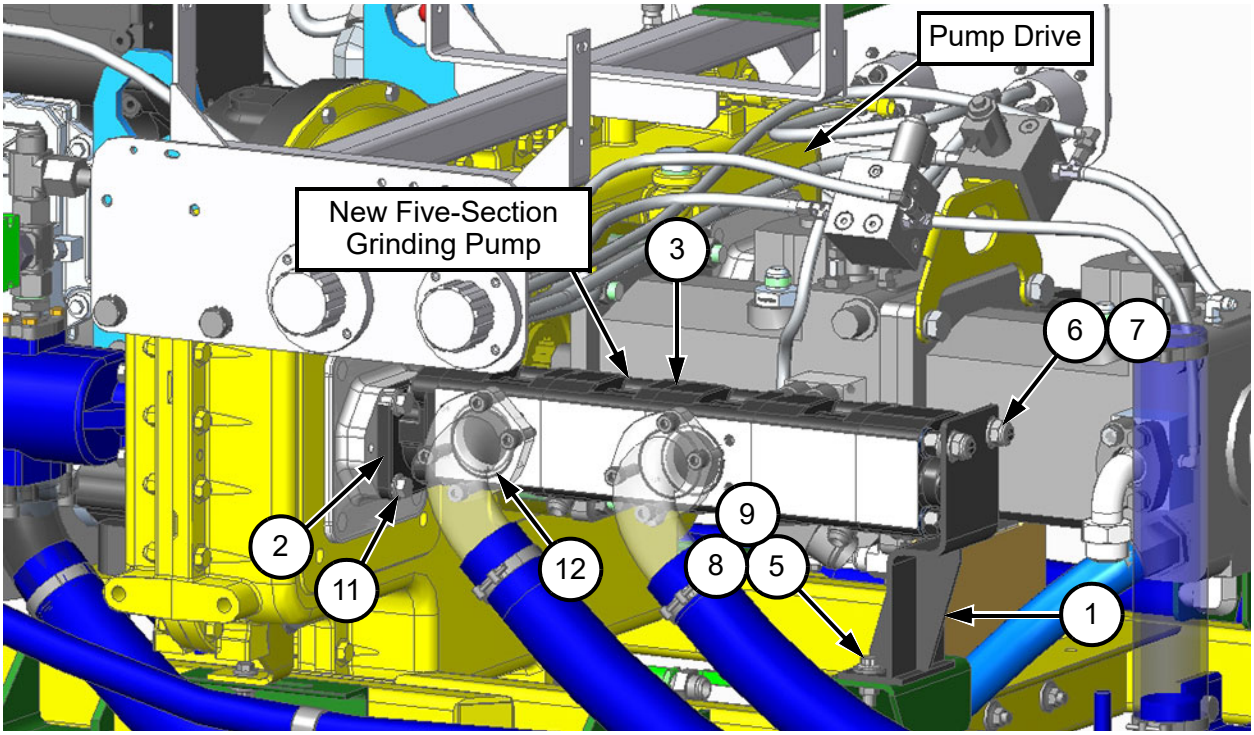
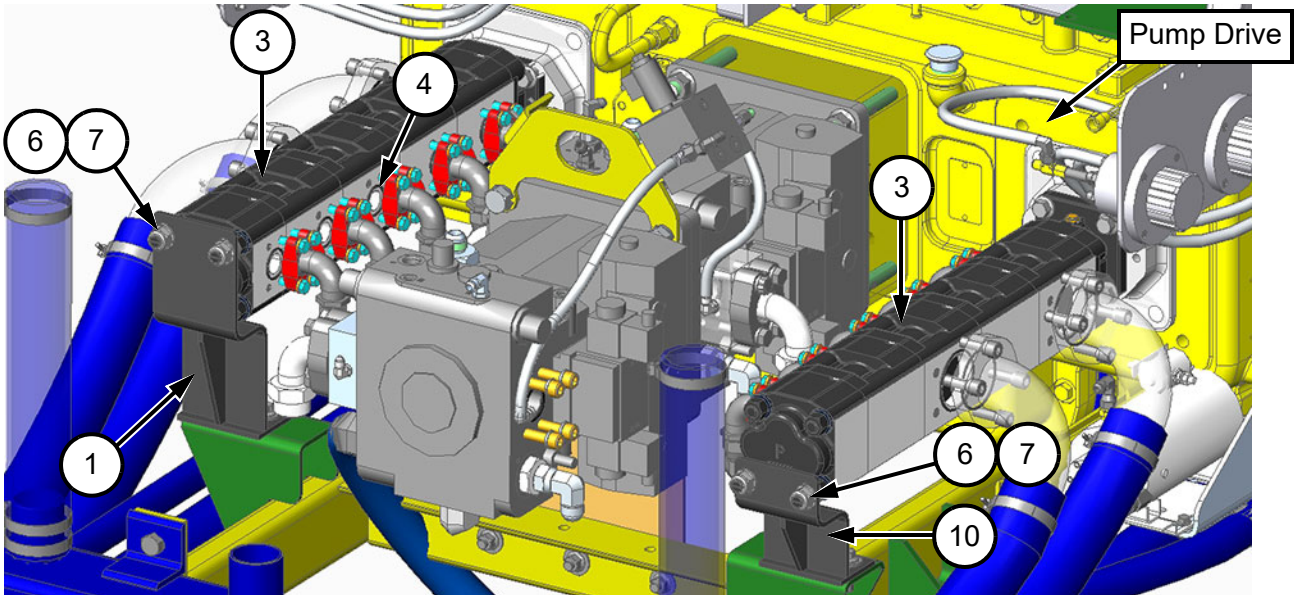


FIGURE 7
GRINDING PUMPS - ASSEMBLY



After Installation Procedure

1. After installation is complete, re-open any valves closed during the hydraulic reservoir isolation procedure.
2. Check for hydraulic fluid leaks and repair as necessary.
3. Check the Hydraulic Reservoir fluid level and re-fill it as needed. Refer to Operator's Manual - Section 4 - Maintenance for reservoir level checking and reservoir filling procedures.
4. Start up the machine to pressurize hydraulic system, check for hydraulic leaks and address as needed.
5. After grinding operations have resumed, periodically check hydraulic reservoir fluid level and check for leaks and address as needed.

Permco Grind Pump Conversion Kit - (see 5151116 print for Illustration)

ITEM	PART NO	DESCRIPTION	QTY
	5151116	PERMCO GRIND PUMP CONVERSION KIT	
1	5151120	PUMP SUPPORT WLDMT	1
2	F040724	O-RING, 4 X 3/32, NBR 70 DURO	2
3	5150279	PUMP, GEAR, 5-SECTION, 29CC	2
4	F014738	O-RING	10
5	F041200	DC-HEX FLG NUT M12X1.75 ZP	4
6	A0069048	WASHER, FLAT, M16, DIN125, YZP	12
7	252050-11	LOCK NUT, NYLON, M16 X 2.0	4
8	F023222	WASHER, FLAT, 1/2", HARDENED	4
9	408784	DC- HEX FLG CS M12X1.75X40 CL8	4
10	5151167	PUMP SUPPORT WLDMT	1
11	F022036	DC-HHD CAP SCR1/2-13X1-1/4GR5	8
12	F014609	O RING 2 3/4 X 3 X 1/8	4
13	F013756	DC-O RING LUBRICANT	1
14	F015774	LOCTITE-242 BLUE	1
15	5151216	G-N METAL ASSEMBLY PASTE, 2.8 FL. OZ. TUBE	1
16	L425072	SILICONE GASKET MAKER	1

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Fairmont, MN
56031-1837
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Fax: (507) 235-7372

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Tel: (803) 822-7420
Parts: (800) 800-6410
Fax: (803) 822-7403

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Tel: (231) 843-3431
Parts: (800) 800-6410
Fax: (231) 843-1644

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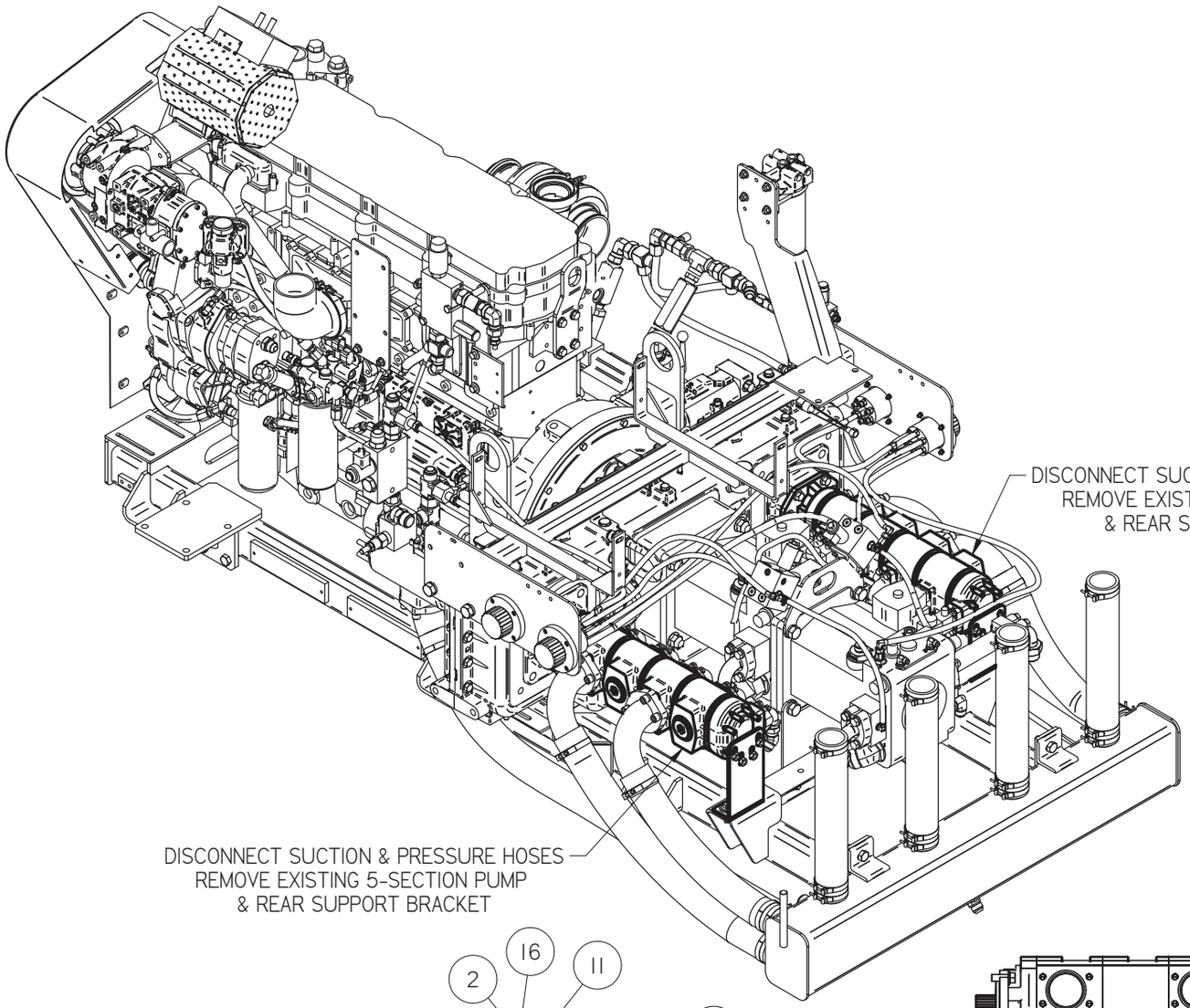

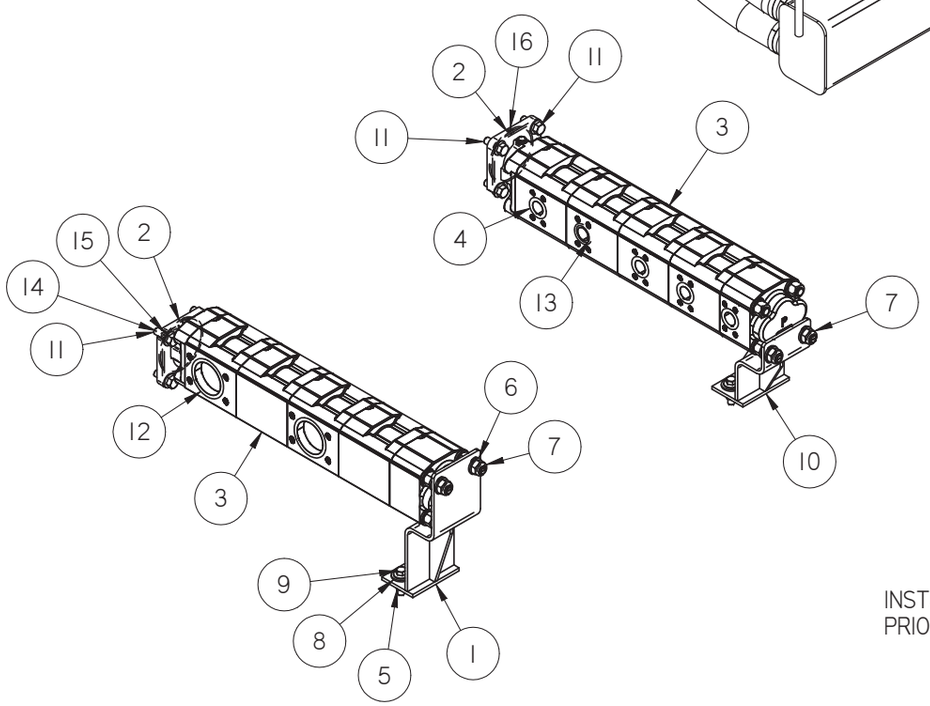

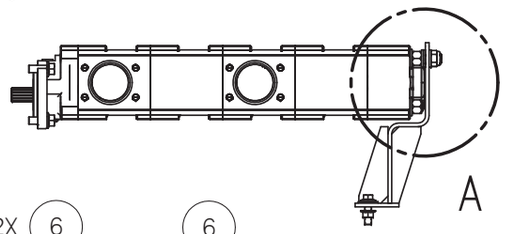

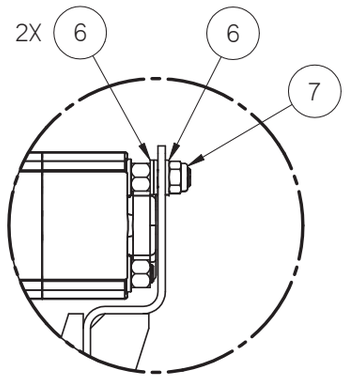

INSTALL 2 WASHERS ON BOTH LONG PUMP STUDS
PRIOR TO ATTACHING REAR PUMP SUPPORT BRACKET.

DETAIL A

ITEM	PART NO	QTY	DESCRIPTION
1	5151120	1	PUMP SUPPORT WLDMT
2	F040724	2	O-RING, 4 X 4-3/16 X 3/32
3	5150279	2	PUMP, GEAR, 5-SECTION, 29CC
4	F014738	10	O-RING
5	F041200	4	DC-HEX FLG NUT M12X1.75 ZP
6	A0069048	12	WASHER, FLAT, M16, DIN125, YZP
7	252050-11	4	LOCK NUT, NYLON, M16 X 2.0
8	F023222	4	WASHER, FLAT, 1/2", HARDENED
9	408784	4	DC- HEX FLG CS M12X1.75X40 CL8
10	5151167	1	PUMP SUPPORT WLDMT
11	F022036	8	DC-HHD CAP SCR1/2-13X1-1/4GR5
12	F014609	4	O RING 2 3/4 X 3 X 1/8
13	F013756	1	DC-O RING LUBRICANT
14	F015774	1	LOCTITE-242 BLUE
15	5151216	1	G-N METAL ASSEMBLY PASTE, 2.8 FL. OZ. TUBE
16	L425072	1	SILICONE GASKET MAKER

NOTES:

REFER TO OPERATION & MAINTENACE MANUAL FOR GENERAL SAFETY AND ENERGY CONTROL PROCEDURES.

TO PREVENT EXCESSIVE FLUID LOSS DURING DIASSEMBLY, REFER TO THE OPERATION & MAINTENANCE MANUAL FOR HYDRAULIC RESERVOIR ISOLATION PROCEDURE.

USE MOLYKOTE METAL ASSEMBLY PASTE (IT. 15) TO COAT NEW PUMP SPLINES PRIOR TO MOUNTING TO PUMP DRIVE.

USE SILICONE GASKET MAKER (IT. 16) ON PUMP MOUNTING FACES PRIOR TO MOUNTING TO PUMP DRIVE.

THE SUCTION AND PRESSURE PORTS FOR THE NEW PUMPS ARE IN SLIGHTLY DIFFERENT LOCATIONS, THEREFORE SOME HOSE ADJUSTMENTS MAY BE NECESSARY.

REPLACE ANY DAMAGED O-RINGS, USE O-RING LUBE (IT. 13) TO LUBRICATE ALL O-RINGS DURING RE-ASSEMBLY.

LOCTITE ALL PUMP MOUNTING BOLTS WITH LOCTITE 242 BLUE (IT. 14).

TORQUE ALL FASTENERS PER MAINTENANCE MANUAL STANDARDS.

AFTER INSTALLATION IS COMPLETE, RE-OPEN ANY VALVES CLOSED DURING HYDRAULIC RESERVOIR ISOLATION PROCEDURE.

CHECK FOR HYDRAULIC LEAKS AND ADRRESS AS NEEDED.

CHECK HYDRAULIC RESERVOIR FLUID LEVEL AND ADD AS NEEDED. REFER TO OPERATION & MAINTENANCE MANUAL FOR HYDRAULIC RESERVOIR FILLING PROCEDURE.

START UP MACHINE TO PRESSURIZE HYDRAULIC SYSTEM , CHECK FOR HYDRAULIC LEAKS AND ADDRESS AS NEEDED.

AFTER GRINDING OPERATIONS HAVE RESUMED, PERIODICALLY CHECK FOR ANY HYDRAULIC LEAKS AND ADDRESS AS NEEDED.

Inch
[mm]

FEATURES ENCLOSED IN ⬭ ARE KEY CHARACTERISTICS

NOMINAL SIZE RANGE		INCH PLUS OR MINUS		NOMINAL SIZE RANGE		METRIC PLUS OR MINUS	
OVER	TO	2 PLACE DECIMAL	3 PLACE DECIMAL	OVER	TO	1 PLACE DECIMAL	2 PLACE DECIMAL
0	6	.03	.005	0	150	.8	.13
6	24	.04	.008	150	600	1.0	.20
24	-	.06	.010	600	-	1.5	.25

UNLESS OTHERWISE SPECIFIED:
1. REMOVE BURRS AND BREAK SHARP EDGES
2. ALL MACHINED SURFACES WILL HAVE: A SURFACE FINISH OF 125 MICROINCHES ANGULAR TOLERANCE OF ± .50° CONCENTRICITY WITHIN .010
3. ALL WELDS SHOULD ADHERE TO THE MOST CURRENT A.W.S WELDING STANDARDS
4. TORQUE ALL FASTENERS PER STD-1603D
5. TORQUE ALL FITTINGS PER STD 5369

THIRD ANGLE PROJECTION

DRAFTED PER HARSCO RAIL STANDARD STD-1601D

CHANGE	R/L	REVISION	DR	DATE
EC621473	A	NEW RELEASE	RTM	5/28/25

Description: PERMCO GRIND PUMP CONVERSION KIT

HARSCO RAIL

Material

Machine Type: RGH10C1

Size: C

Weight

Drawn: RMEYER

Date Drawn: 5/23/2025

Part Number: 5151116

Sheet: 1 of 1

SOLID EDGE DRAWING

DO NOT SCALE