HARSCO RAIL
Enabling TECHNOLOGY IN MOTION

www.harscorail.com

# SERVICE BULLETIN

## MAINTENANCE OF WAY EQUIPMENT

**DATE:** 12 - 2025 **BULLETIN NO:** SBUS000136-25

**TITLE:** Replacement instructions for new five-section grinding pump kit for RGH10C4 Rail Grinders.

**RATING:**

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

**PRODUCT SERIES / MODEL:** RGH10C4 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.

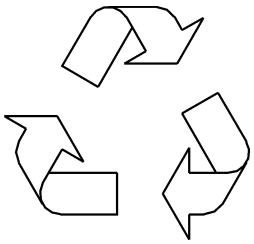
**ACTION:** Disconnect and remove the existing left and right five-section grinding pumps from the pump drive assembly located behind the engine. Install the components provided in the grinding pump conversion kit. The kit includes all necessary parts for the complete replacement of both five-section 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 two Butterfly Valves (B) at the bottom of the hydraulic reservoir. Closing them will isolate the Suction Manifold / Engine Skid. - See Figure 2

FIGURE 1
RH VENTED RELIEF VALVE MANIFOLD - BALL VALVE
(LH Side Similar - Ball Valve Shown in OPEN Position)

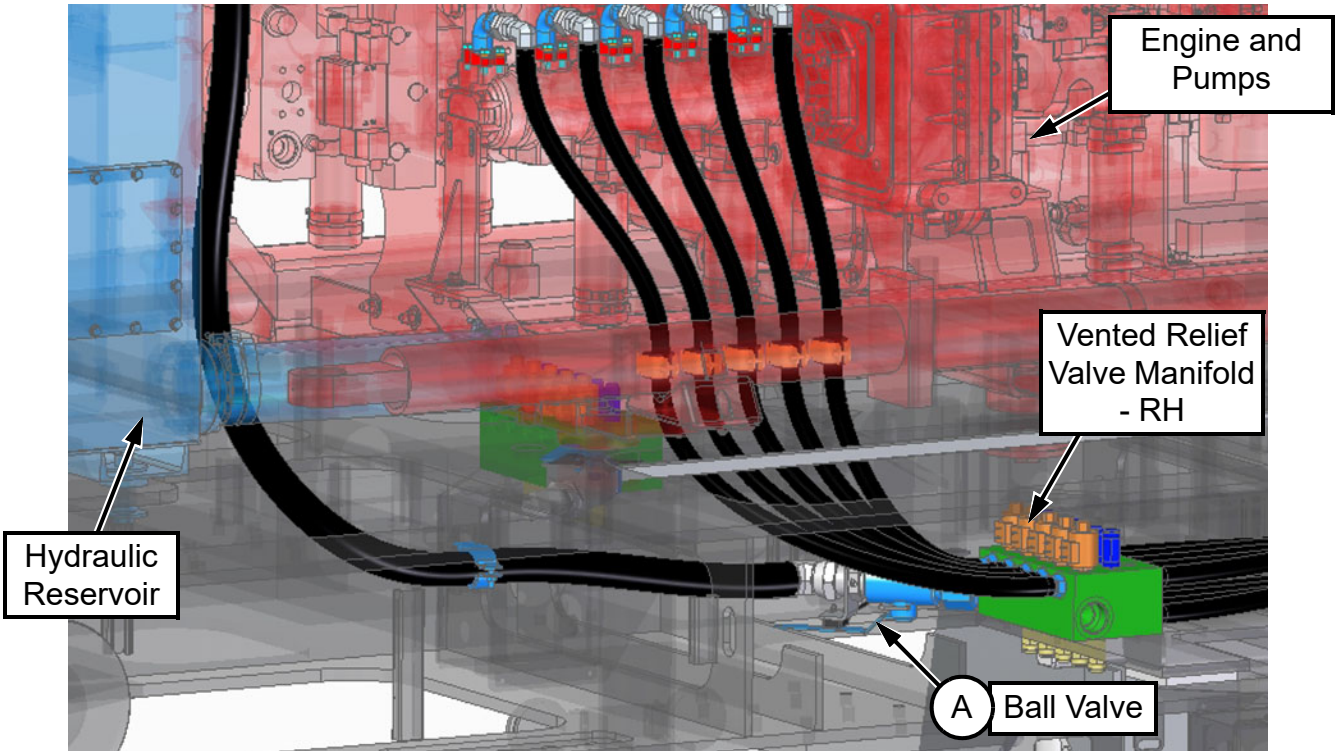
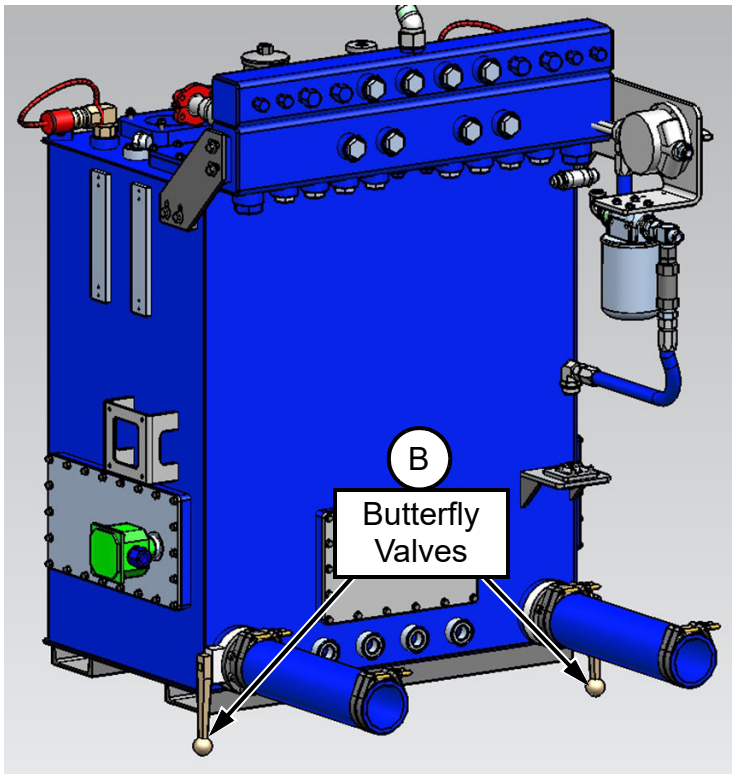


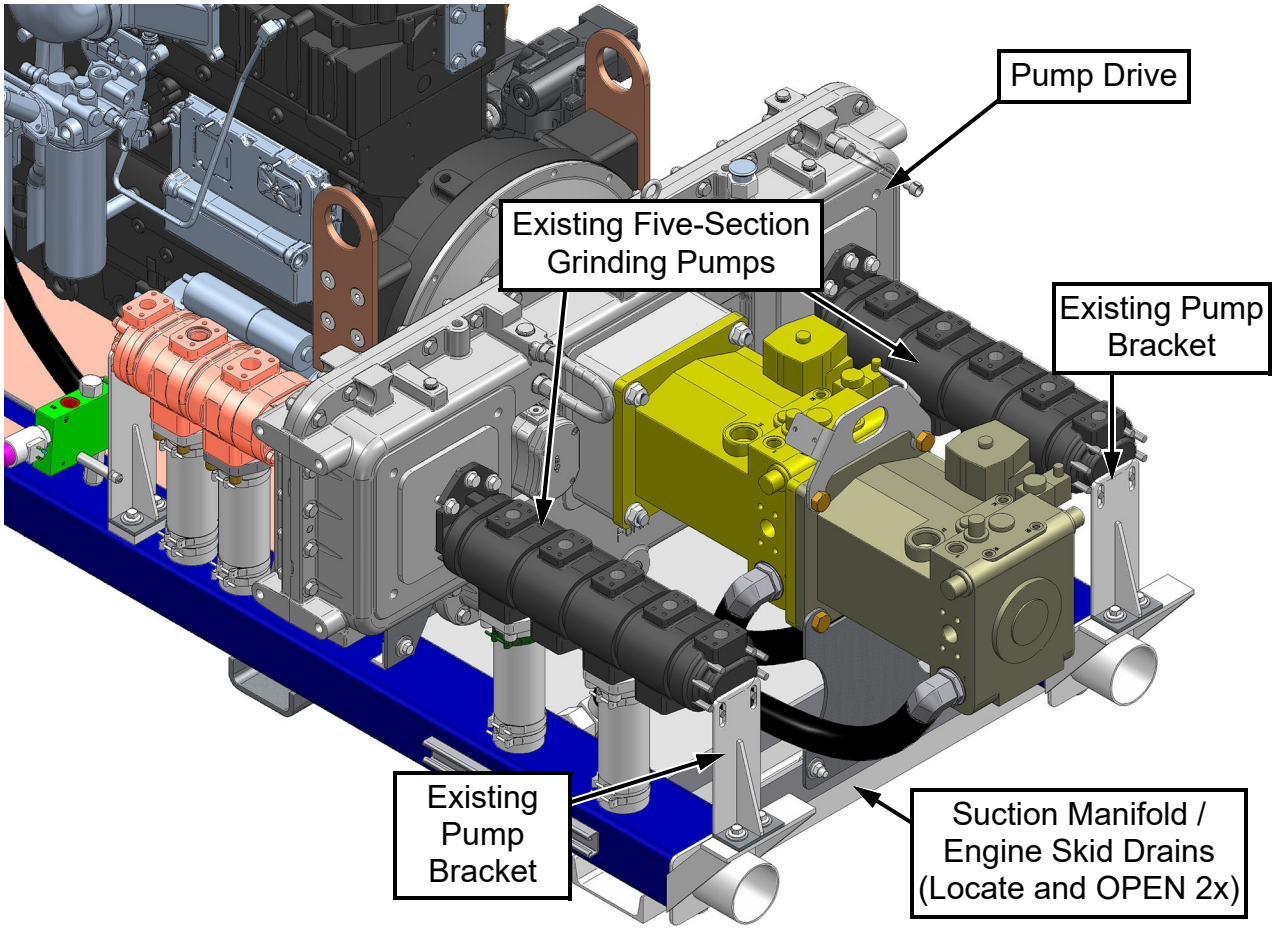

FIGURE 2
HYDRAULIC RESERVOIR - BUTTERFLY VALVES
(Shown in CLOSED Position)



3. Locate and open the two Suction Manifold /Engine Skid Drains. Drain hydraulic fluid into a clean, properly-sized leak-proof container by turning the ball valve handles parallel to the valve body. - See Figure 3

4. Shut the two ball valves—ensuring the handles are perpendicular to the valve body—once the fluid has adequately drained from the Suction Manifold / Engine Skid Drains. - See Figure 3

FIGURE 3
GRINDING PUMPS - DISASSEMBLY




5. Disconnect all fittings attached to the existing five-section grinding pump. Place split flange fittings and hardware in a safe place for re-use later. - See Figures 3 and 4

6. Support the five-section grinding pump prior to removing mounting hardware. - See Figure 5

7. Remove the fasteners securing the existing pump brackets to the engine skid, and the fasteners mounting the five-section grinding pump to the pump drive. - See Figure 5

8. Fully loosen all suction hose clamps where they attach to the Suction Manifold / Engine Skid.

9. Slowly lift and move the five-section grinding pump, pump bracket and suction hoses away from the pump drive and suction manifold / engine skid.

10. Repeat the steps above for the other grinding pump removal.

FIGURE 4
REMOVE HYDRAULIC FITTINGS AT PUMP

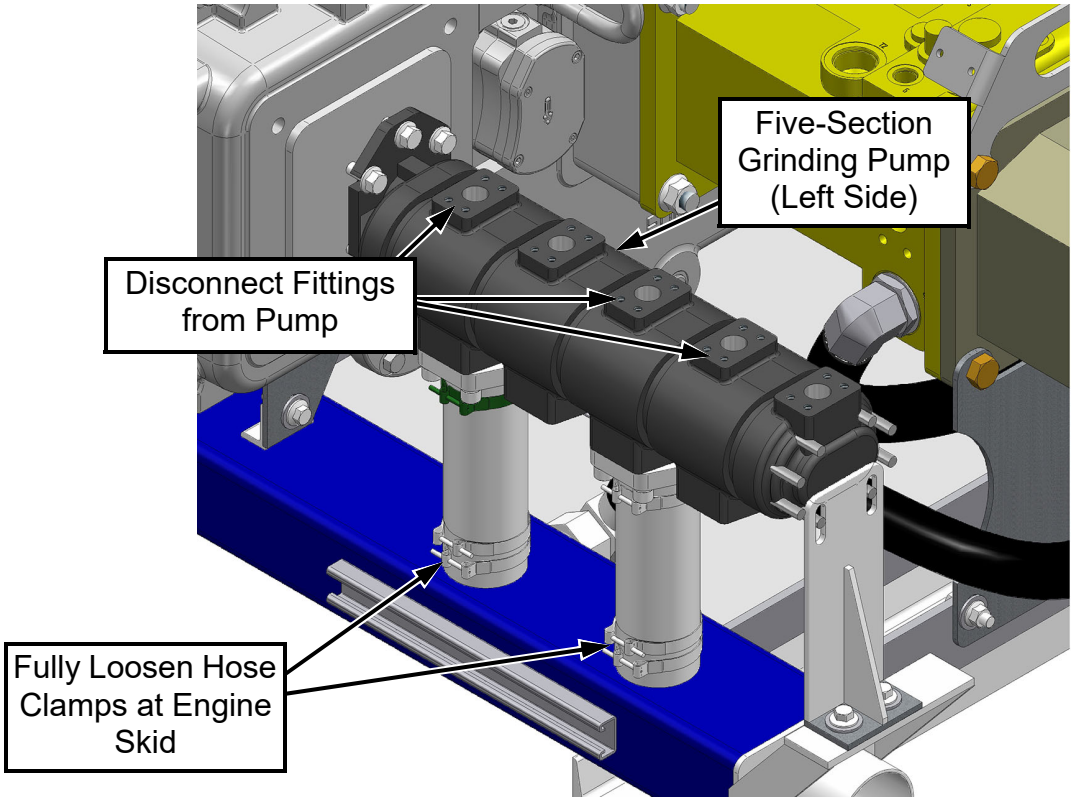
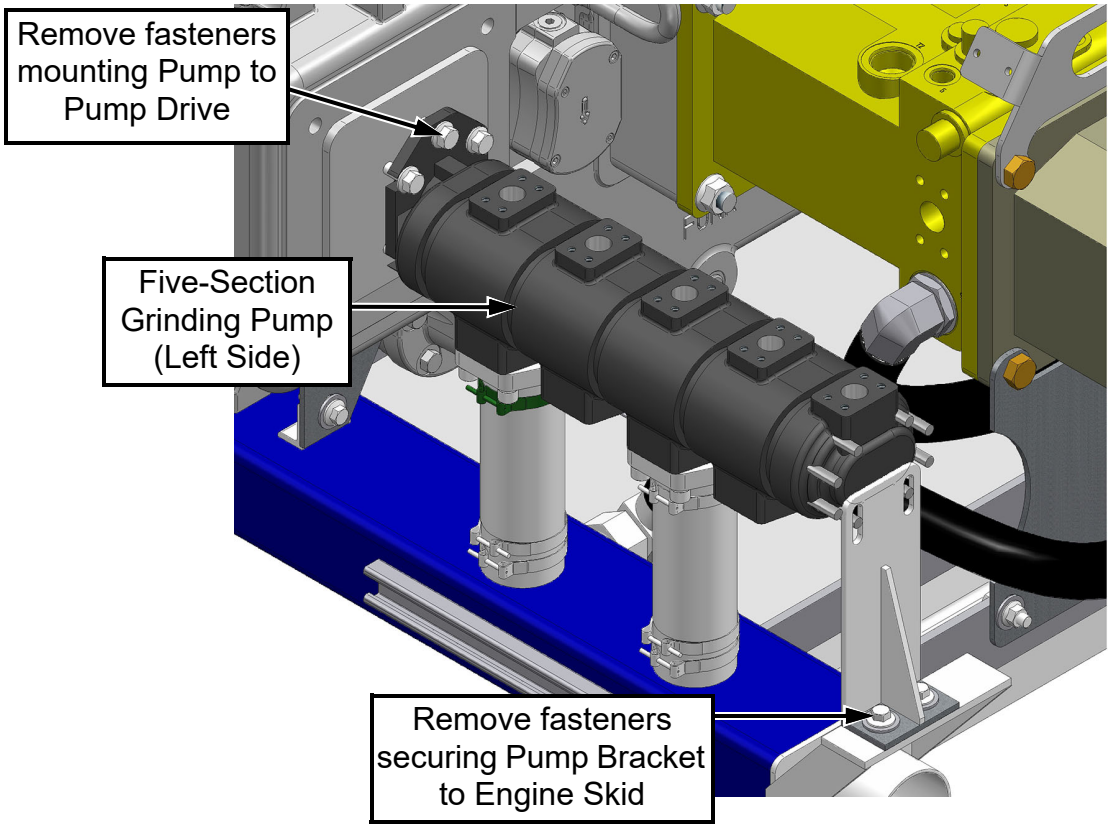



FIGURE 5
REMOVE FASTENERS



**Grinding Pumps - Assembly Procedure** - See Figures 6 and 7

*Note: Refer to the figures and Engineering Print 5151588 for the Permco Grind Pump Conversion Kit.*

1. Apply O-Ring Lubricant (13) to two new O-Rings (12) and place them into the two grooves on the bottom side of Grinding Pump (3).

2. Apply Loctite 242-Blue (14) to threads of Skt Hd CS 1/2-13X1 1/2 (18).

3. Mount two Offset Manifolds (10) onto the bottom ports of new Grinding Pump (3) as shown. Secure with Washer, Lock, 1/2", High Collar (17) and Skt Hd CS 1/2-13X1 1/2 (18). Torque as specified in Operator's Manual - Appendix A.

   *Note: Ensure that the Offset Manifold will be properly aligned with the engine skid tube nipple when installed. See Engineering Print 5151588.*

4. Install two new Hose, Suction (20) onto the Offset Manifold (10) and secure with two new Clamps (19). Slide two more Clamps (19) onto the each Hose (20) and tighten just enough so they don't fall off - they'll be tightened fully later when mounting onto the engine skid.

5. Apply G-N Metal Assembly Paste (15) to the splines of Grinding Pump (3).

6. Apply O-Ring Lubricant (13) to O-Ring (2) prior to installing into the groove on the end of Grinding Pump (3).

7. Apply Silicone Gasket Maker (16) to Grinding Pump (3) and pump drive mating faces.

8. Support Grinding Pump (3) for installation and slide the splined end into matching splines on Pump Drive.

9. Apply Loctite 242-Blue (14) to threads of four Hex Flange Head Cap Screws 1/2-13X1-1/4 GR5 (11).

10. 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.

11. Mount new Pump Support Weldment (1) to 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 both 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 yet.

12. Line up the holes in the Pump Support Bracket (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)

13. Tighten all Pump Support Bracket (1) fasteners to the torque specified in Appendix A of the Operator's Manual.

14. Apply O-Ring Lubricant (13) to five new O-Rings (4) and place them into the five grooves in the top side of Grinding Pump (3).

15. Connect the five Split Flange kits (for the 90° fittings) with the matching ports on the top side of the Grinding Pump (3). Attach the flange kits using the original fasteners. Torque as specified in Operator's Manual - Appendix A.

16. Repeat steps for installing the Five-Section Grinding Pump (3) for the opposite side.

FIGURE 6
GRINDING PUMPS - ASSEMBLY

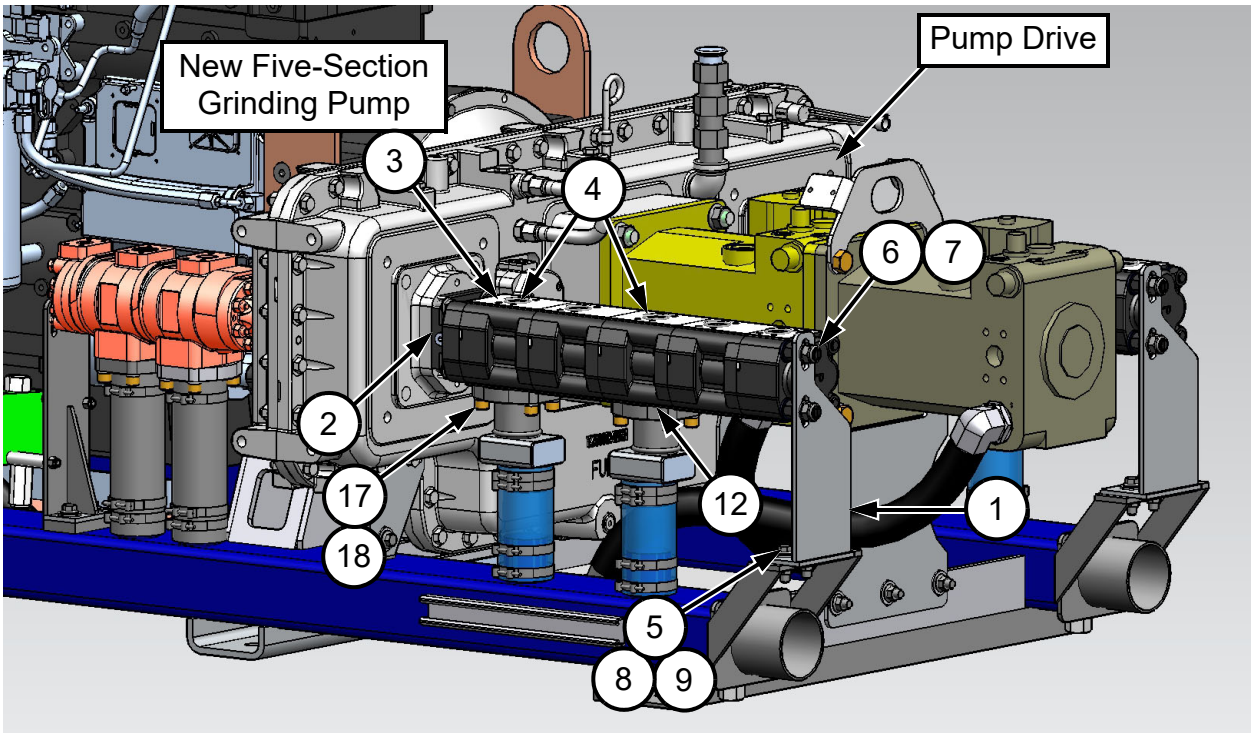
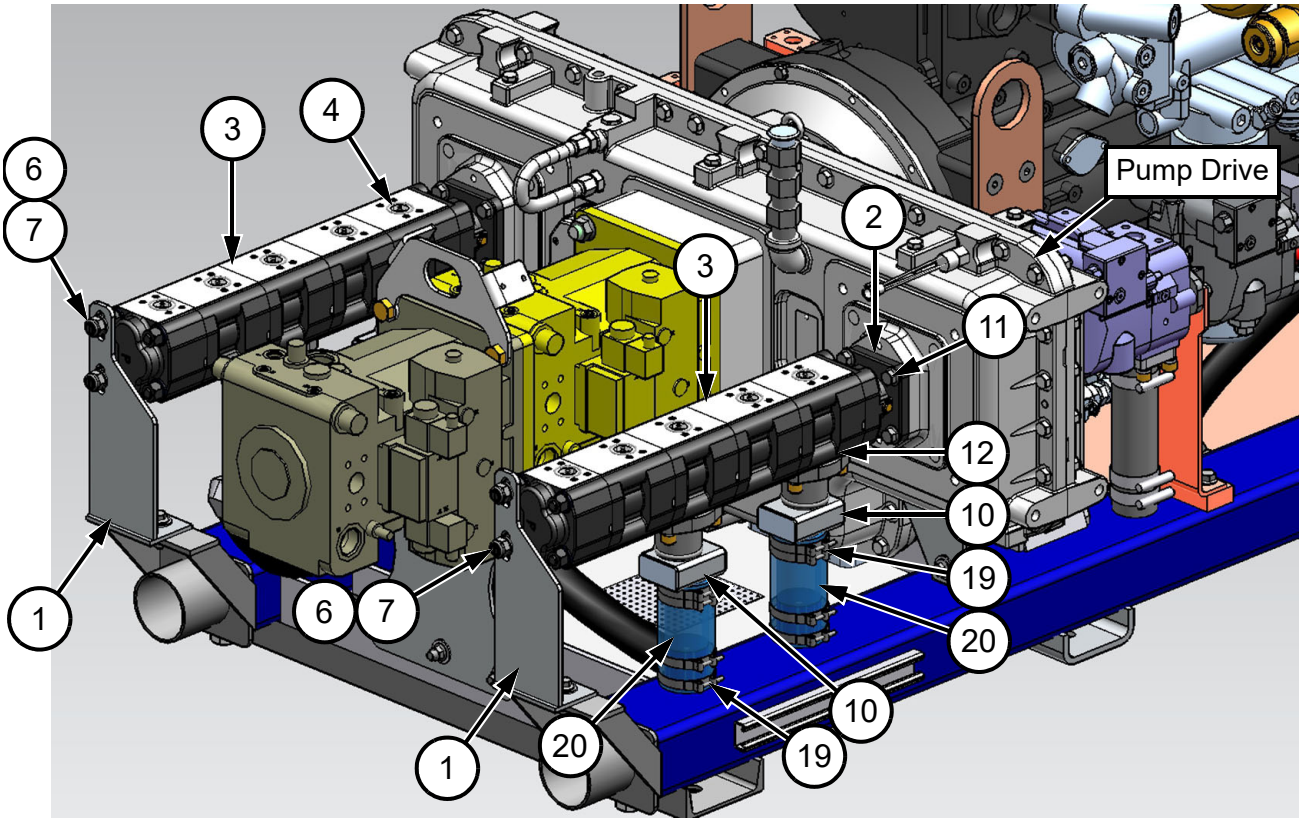


FIGURE 7
GRINDING PUMPS - ASSEMBLY




**After Installation Procedure**

1. After installation is complete, re-open any valves closed during the hydraulic reservoir isolation procedure.
2. Make sure the two ball valve drains on the Suction Manifold / Engine Skid are closed.
3. Check for hydraulic fluid leaks and repair as necessary.
4. 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.
5. Start up the machine to pressurize hydraulic system, check for hydraulic leaks and address as needed.
6. 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 5151588 print for Illustration)

| ITEM | PART NO | DESCRIPTION | QTY |
|---|---|---|---|
| | 5151588 | PERMCO GRIND PUMP CONVERSION KIT, C4 | |
| 1 | 5152996 | PUMP SUPPORT BRACKET | 2 |
| 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 | 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 | HEX FLG CS M12X1.75X40 CL8 | 4 |
| 10 | 5153000 | OFFSET MANIFOLD | 4 |
| 11 | F022036 | HHD CAP SCR1/2-13X1-1/4GR5 | 8 |
| 12 | F014609 | O RING 2 3/4 X 3 X 1/8 | 4 |
| 13 | F013756 | 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 |
| 17 | 150988-13 | WASHER, LOCK, 1/2", HIGH COLLAR | 16 |
| 18 | F011713 | SKT HD CS 1/2-13X1 1/2 | 16 |
| 19 | F041580 | CLAMP | 16 |
| 20 | 5152078 | HOSE, SUCTION (-40) | 4 |

## FACILITY LOCATIONS

**HARSCO RAIL, LLC**
306 West Fourth Street
Fairmont, MN
56031-1837
Tel: +1 (507) 235-7376
Parts: +1 (800) 800-6410
Fax: +1 (507) 235-7372

**HARSCO RAIL, LLC**
2401 Edmund Road, Box 20
Cayce-West Columbia, SC
29171-0020
Tel: +1 (803) 822-7420
Parts: +1 (800) 800-6410
Fax: +1 (803) 822-7403

**HARSCO RAIL, LLC**
200 South Jackson Road
Ludington, MI
49431
Tel: +1 (231) 843-3431
Parts: +1 (800) 800-6410
Fax: +1 (231) 843-1644

**HARSCO RAIL**
**GLOBAL HEADQUARTERS**
3440 Toringdon Way
Suite 107, Building 3
Charlotte, NC 28277
56031-1837
Tel: +1 (980) 960-2624

**HARSCO RAIL, LTDA**
Av. Marechal Câmara
160 / 1615, Centro
Rio de Janeiro RJ 20020-080
Brazil
Tel: +55 21 2510-5164 / -5151

**HARSCO RAIL EUROPE, GmbH**
Luetticher Str. 130
40547 Duesseldorf, Germany
Tel: +49 (0) 211 60116 0

**HARSCO RAIL CHINA**
Room C1201 Tower 2,
No.36 BeiSanHuan Dong Lu,
DongCheng District,
Beijing 100013, P.R. China
Phone: +87 10-6590-6399

**HARSCO TRACK MACHINES AND SERVICES PRIVATE**
Limited India
2nd Floor, Building Alpha,
Bengal Intelligent Park Block EP & GP,
Sector V, Salt Lake, Kolkata
700091 West Bengal, India
Phone: +91 33 2357 5651

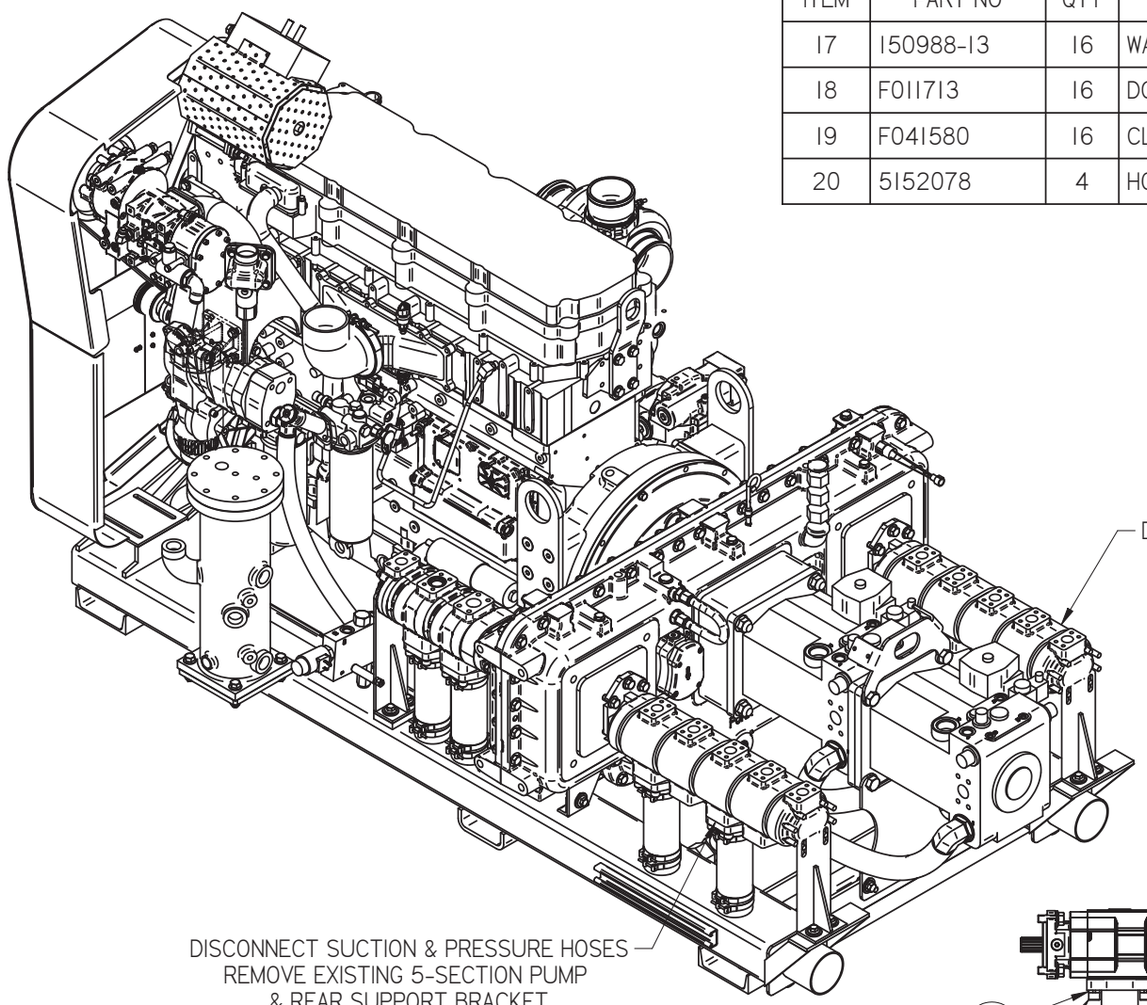
**HARSCO RAIL MALAYSIA**
3-5, Block A, Jaya One
72A Jalan Profesor Diraja Ungku Aziz,
46200 Petaling Jaya,
Selangor, Malaysia

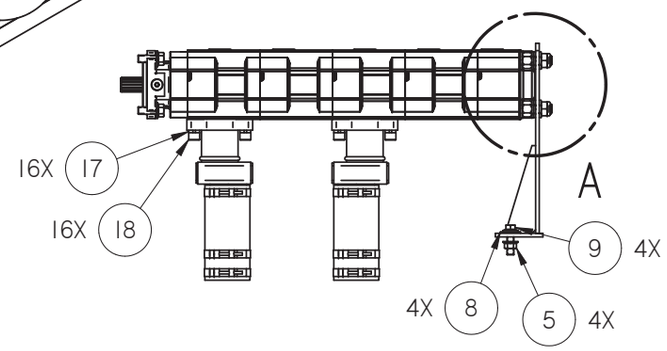
**HARSCO RAIL LTD**
Unit 1 Chewton Street
Eastwood, Nottingham, NG16 3HB
United Kingdom
Tel: +44 (0) 1773 539480

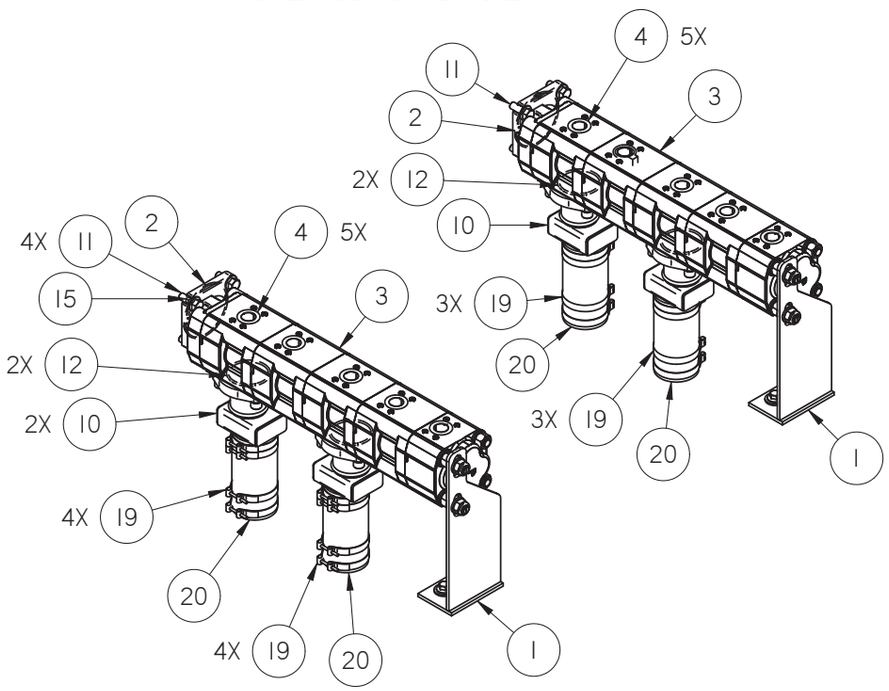
**HARSCO RAIL PTY LTD**
157 Granite St
Geebung, Queensland 4034
Australia
Tel: 61 7 3205 6500
Fax: 61 7 3205 7369

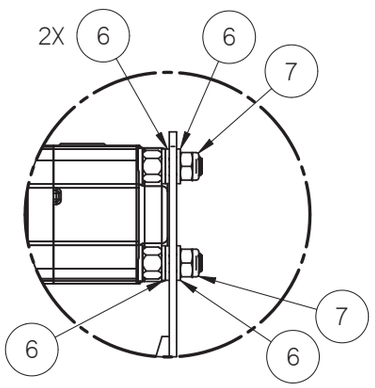
| ITEM | PART NO | QTY | DESCRIPTION |
|---|---|---|---|
| 17 | 150988-13 | 16 | WASHER, LOCK, 1/2", HIGH COLLAR |
| 18 | F011713 | 16 | DC-SKT HD CS 1/2-13X1 1/2 |
| 19 | F041580 | 16 | CLAMP |
| 20 | 5152078 | 4 | HOSE, SUCTION (-40) |

| ITEM | PART NO | QTY | DESCRIPTION |
|---|---|---|---|
| 1 | 5152996 | 2 | PUMP SUPPORT BRACKET |
| 2 | F040724 | 2 | O-RING, 4 X 3/32, NBR 70 DURO |
| 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 | 5153000 | 4 | OFFSET MANIFOLD |
| 11 | F022036 | 8 | DC-HHD CAP SCRI/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 |




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

# DETAIL A

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 MICRORINCHES 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 |
|---|---|---|---|---|
| EC621923 | A | NEW RELEASE | RTM | 11/21/25 |

Description: PERMCO GRIND PUMP CONVERSION KIT, C4

HARSCO RAIL

Material

Machine Type: RGH10C4

Size: C

Weight

Drawn: RMEYER

Date Drawn: 11/21/2025

Part Number: 5151588

Sheet: 1 of 1

SOLID EDGE DRAWING

DO NOT SCALE