

LINCOLN

Industrial Division—USA
ISO 9001 Registered

Model Nos. 2321, 2327, 2329, 2354, 2369, 84922 PILEDRIVER III PUMP ASSEMBLY Series "C"

PILEDRIVER III PUMP ASSEMBLY

84803, 84804, 94804, 94806, 94808
84806, 84808 AIR MOTORS with AIRBRAKE®
AIR MOTORS Refer to Section A50 Page 84 Series.
Refer to Section A50 Page 78 Series.



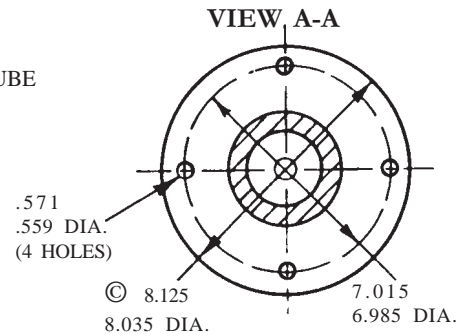
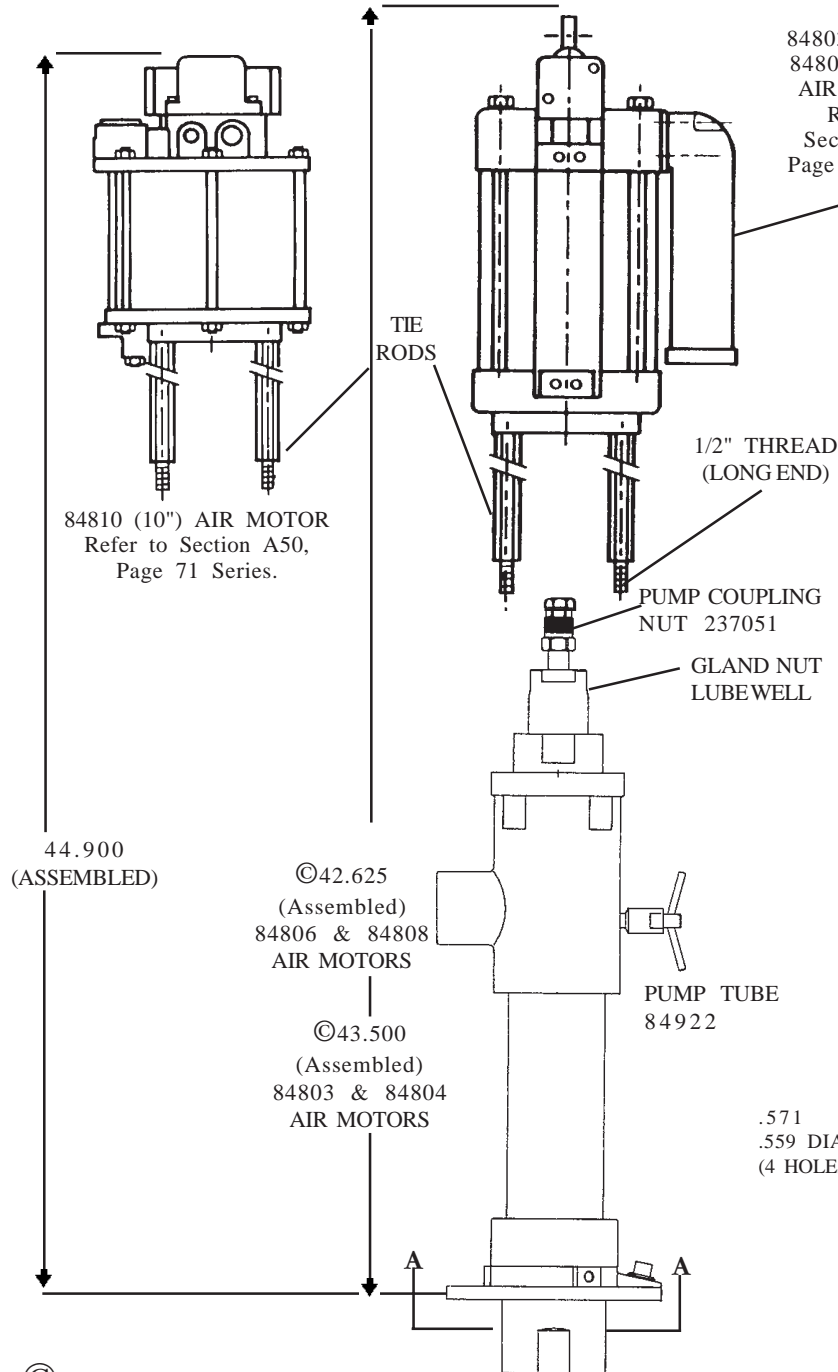
WARNING

KEEP HANDS AWAY FROM PUMP OUTLET WHILE AIRLINE IS CONNECTED. DO NOT OPERATE PUMP UNLESS IT IS FIRMLY MOUNTED ONTO PRESSURE PRIMER OR STANDPIPE AND AREA AROUND PUMP INLET IS CLEAR OF OBSTRUCTIONS.



WARNING

DO NOT OPERATE WITH COMBUSTIBLE GAS



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SPECIFICATIONS

| Model | Ratio | Airmotor Size in. [mm] | Airmotor Model | Maximum Discharge Pressure PSIG [Bar] | Output Per Cycle cu. in [cc] | Stroke Length in. [mm] | Minimum Air Supply Hose in. [mm] | Maximum Operating Air Pressure PSIG [Bar] | Operating Temperature F° [C°] |
|-------|-------|--------------------------|----------------|---------------------------------------|--------------------------------|--------------------------|------------------------------------|---|---------------------------------|
| 2321 | 20:1 | 10 [254] | 84810 | 2,000 [138] | | | 3/4 [20] | | 30° to 200° [-34° to +93°] |
| 2327 | 13:1 | 8 [203] | 84808 | 1,300 [90] | | | | 100 [7] | |
| 2354 | 7:1 | 6 [152] | 84806 | 700 [48] | 46 [754] | 6 [152] | | | |
| 2369 | 3:1 | 4-1/4 [108] | 84804 | 600 [41] | | | 1/2 [12] | | |
| 2329 | 1.5:1 | 3 [76] | 84803 | 300 [21] | | | | 200 [14] | |

Note: Pump should be installed upright for operation. Use Model 83727 stand pipe for bulk material dispensing. Locate pump as close to tank as possible and use a minimum 3 inch (76mm) I.D. inlet hose or pipe.

ATTACHING AIRMOTOR TO PUMPTUBE

1. Tightly attach tie rods to the airmotor (use short threaded end of the tie rods).
2. Mount airmotor on top of the pump-tube outlet and tightly connect Coupling Nut (237051) to airmotor piston rod.
3. Hand tighten tie rods to the pumptube with four nuts supplied with airmotor.
4. Slowly cycle the pump several times, using just enough air pressure to operate the pump without stalling.
5. Stop the pump on an "up" stroke and tighten the four nuts to securely fasten the airmotor to the pumptube.

- Check continuity (a good static wire connection) with an ohmmeter. Place one probe on one hose fitting and the other probe on other hose fitting, continuity or proper grounding through hose is good when a reading is obtained on the ohmmeter.
- PREVENT FIRES. When pumping, flushing or recirculating volatile solvents, the area must be adequately ventilated.
- Keep solvents away from heat, sparks and open flames. Keep containers closed when not in use.

Secondly a special Protection Sleeve (239947) with concentric grooves creates a labyrinth path and reduces internal operational pressure and at the same time pressure fluctuation during a stroke changeover, limiting gland seal exposure to pumped material.

A combination of the metal scraper and protection sleeve prolongs gland seal life and prevents leakage.

PUMP PRIMING

To begin operation, the pump has to be primed with the pumped material. The Pile Driver III pump is a doubleacting (pumps material on "up" & "down" stroke) positive displacement reciprocating pump and as such intakes material only on the "up" stroke.

To prime pump, open output line (material valve) and slowly open air supply valve until pump starts. Allow pump to cycle very slowly until all air is pushed out of lines and material fills up pump and lines. Close output line (material shut-off valve) - pump should stall against pressure.

If pump fails to prime properly, open Bleeder Valve (84012) slightly to expel trapped air and at the sign of material coming out of the valve close it tightly.

Note: Pumps are factory tested with light oil and some of it is left in to protect pump parts during storage and transportation. To prevent contamination of material to be pumped, flush pump before using.

OUTLET POSITION

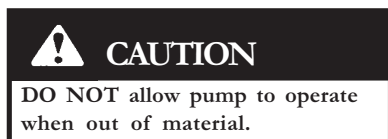
ADJUSTMENT

The position of the pump outlet may be adjusted by loosening the three set screws (246836) and rotating the pumptube outlet into the position desired. Retighten the set screws to 12 ft/lbs.

U.S. Patent No. 4,976,192

OPERATING PRECAUTIONS

- Use Lincoln replacement parts to assure compatible pressure rating.
- HEED ALL WARNINGS.
- Be sure material hoses and other components are able to withstand fluid pressures developed by this pump.
- Do not operate pump continuously at speeds in excess of 75 cycles per minute.
- Disconnect air line from pump airmotor when system sits idle for long periods of time.
- SERVICING. Before servicing or cleaning pump, or removing fluid hose or gun from a unit that has been used, be sure to disconnect air lines and carefully bleed pressure off of the system.



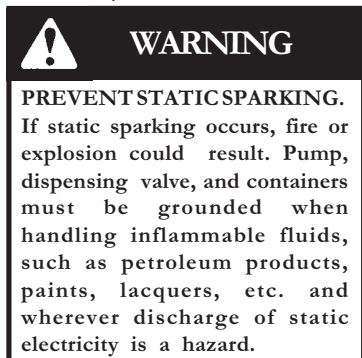
GLAND PACKING DESIGN*

Many industrial type materials (sealants, adhesives, inks, etc.) display a tendency to dry-out and to build-up on the pump rod (plunger). These hard dried out materials cause the gland packing to wear out rapidly, resulting in leakage and ultimate pump failure. The second problem is the gland seal exposure to high pressure and in particular, to pressure fluctuation during pump operation (stroke changeover).

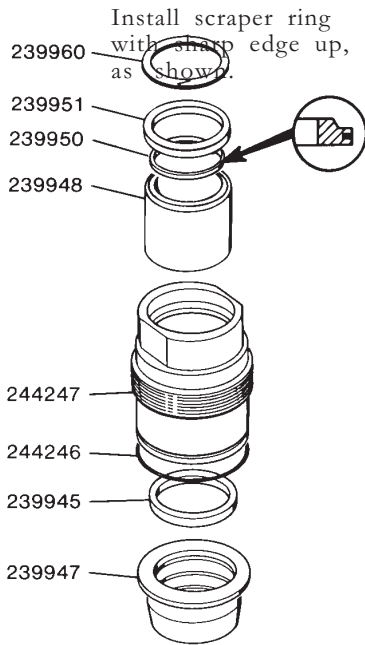
The new gland packing design, of Pile Driver III pumps addresses both problems:

A special spring type Metal Wiper (239950) scrapes built up and dried out material from the pump rod (plunger). In order to help the metal wiper to work longer and more efficiently, the lube well of the pump should be filled with a fluid compatible with pumped material.

Do not fill tube well to full capacity, as the reciprocating movement of the pump may draw fluid into the airmotor.



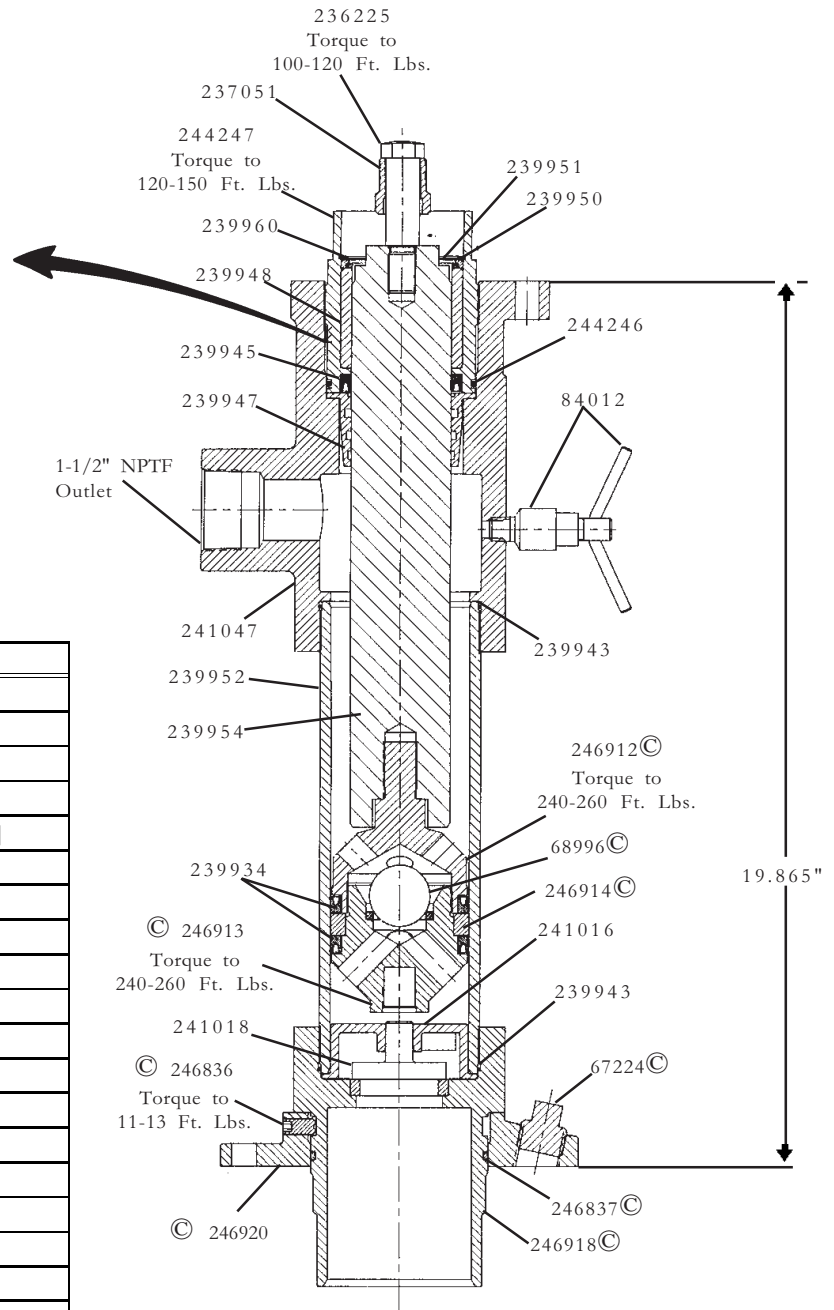
PILE DRIVER III PUMP ASSEMBLY 84922



SERVICE PARTS

| PART | QTY | DESCRIPTION |
|--------------|-----|------------------------------|
| 67224 | 1 | Pipe plug [5/8" square] |
| 68996 | 1 | Check Ball |
| 84012 | 1 | Bleeder Valve [3/4" flats] |
| 236225 | 1 | Bolt Connector [7/8" hex] |
| 237051 | 1 | Coupling Nut [1-1/8" hex] |
| * ^ 239934 | 2 | U-cup (polyurethane) |
| * ^ 239943 | 2 | O-ring (polyurethane) |
| # * ^ 239945 | 1 | U-cup (polyurethane) |
| 239947 | 1 | Sleeve |
| 239948 | 1 | Bushing |
| ^ 239950 | 1 | Wiper |
| 239951 | 1 | Spacer |
| 239952 | 1 | Pump Tube |
| 239954 | 1 | Plunger [1-3/4" flats] |
| ^ 239960 | 1 | Retaining Ring |
| 240147 | 1 | Outlet Body |
| 241016 | 1 | Check Guide |
| 241018 | 1 | Check |
| # * ^ 244246 | 1 | O-ring (polyurethane) |
| 244247 | 1 | Gland Nut [3-1/8" flats] |
| 246836 | 3 | Set Screw [3/16" hex socket] |
| * ^ 246837 | 1 | O-ring (nitrile) |
| 246912 | 1 | Piston Nut [2-3/4" flats] |
| 246913 | 1 | Piston Body [1-1/8" flats] |
| 246914 | 1 | Piston Collar |
| 246918 | 1 | Inlet Bushing [3-3/4" flats] |
| 246920 | 1 | Mounting Flange |

^ Included in 241681 Repair Kit
 * Included in 84930 Seal Kit
 # Included in 85315 Gland Seal Kit



PUMPTUBE SERVICE KITS

| | Polyurethane | Teflon | UHMWPE |
|-------------------|--------------|--------|--------|
| Repair Kit* | 241681 | | |
| Seal Kit** | 84930 | 84931 | 84932 |
| Gland Seal Kit*** | 85315 | 85325 | 85331 |

© Indicates Change

- * Pump Repair Kits contain all parts needed for complete pump rebuild.
- ** Polyurethane Seal Kits contain all soft seals. Teflon and UHMWPE Seal Kits contain gland and piston u-cups only.
- *** Gland Seal kits contain gland u-cup and o-ring only.

TROUBLESHOOTING

| Problem | Possible Cause | Solution |
|--|---|--|
| Pump does not operate. | Restricted or inadequate air supply. | Check air supply pressure and air hose (see specifications for minimum air supply diameter). |
| | Obstructed material output. | Check output line for restrictions. |
| Erratic or accelerated operation. | Pump is not primed. | Prime pump (see "pump priming instructions"). |
| | Insufficient material supply. | Refill material supply. |
| | Material is too heavy for priming. | Lower output with material valve. Increase pressure to pressure primer (if in use) to overcome inlet restrictions. |
| Pump operates on "down" stroke only (missing "up" stroke). | Worn or damaged piston packing (241018) or piston check (68996 & 246913). | Check and replace if needed. |
| Pump operates on "up" stroke only (missing "down" stroke). | Worn or damaged inlet check (241018). | Check and replace if needed. |
| | Insufficient material supply, pump is not taking enough material to dispense on both strokes. | Check inlet for restrictions. lower output with material valve. |
| Pump is operating but not dispensing material. | Inlet check (241018) is not seating properly or damaged. | Check and replace if needed. |

DISASSEMBLY PROCEDURE

| Tools Required (Used on Part #) | Tools Required (Used on Part #) |
|---------------------------------|-----------------------------------|
| 3/16" hex key (246836) | 2-3/4" wrench (246912) |
| 5/8" wrench (67224) | 3-1/8" wrench (244247) |
| 3/4" wrench (84012) | 3-3/4" wrench (246918) |
| 7/8" wrench (236225) | 3-5/8" dia. strap wrench (239952) |
| 1-1/8" wrench (237051 & 246913) | Screwdriver (239960) |
| 1-3/4" wrench (239954) | |

Procedure

1. Remove Set Screws (246836) from Mounting Flange (246920).
2. Remove Mounting Flange (246920) from Inlet Bushing (246918).
 - a. Remove Pipe Plug (67224) from Mounting Flange (246920).
3. Remove Inlet Bushing (246918) from Pump Tube (239952).
 - a. Remove O-ring (246837) from Inlet Bushing (246918).
 - b. Remove O-ring (239943) from Inlet Bushing (246918).
 - c. Remove Check Guide (241016) and Check (241018) from Inlet Bushing (246918).
4. Remove Bolt Connector (236225) from Plunger (239954).
 - a. Slide Coupling Nut (237051) off Bolt Connector (236225).
5. Remove piston and plunger assembly from bottom of Pump Tube (239952).
 - a. Remove piston assembly from Plunger (239954).
 - b. Remove Piston Nut (246912) and Check Ball (68996) from Piston Body (246913).
 - c. Remove U-cup (239934) from Piston Nut (246912).
 - d. Remove Piston Collar (246914) and U-cup (239934) from Piston Body (246913).
6. Remove Pump Tube (239952) from Outlet Body (241047).
7. Remove O-ring (239943) from Outlet Body (241047).
8. Remove Bleeder Valve (84012) from Outlet Body (241047).
9. Remove gland nut assembly from Outlet Body (241047).
- a. Remove O-ring (244246) and U-cup (239945) from Gland Nut (244247).
- b. Remove Retaining Ring (239960) from Gland Nut (244247).
- c. Remove Spacer (239951), Wiper (239950) and Bushing (239948) from Gland Nut (244247).
10. Remove Sleeve (239947) from Outlet Body (241047).
11. To re-assemble pump, reverse disassembly procedure. (Refer to illustration for torque specifications.)

RETAIN THIS INFORMATION FOR FUTURE REFERENCE

When ordering replacement parts, list: Part Number, Description, Model Number and Series Letter.
LINCOLN provides a Distributor Network that stocks equipment and replacement parts.