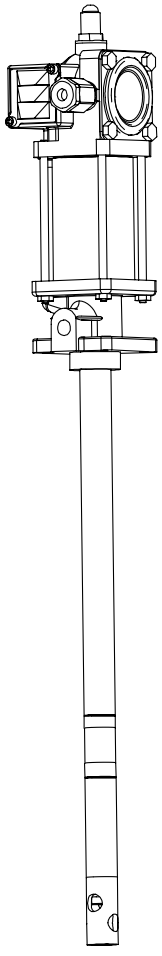
Installation instructions

2 1/2 in air motor chassis high pressure pump 50:1

Model 82050, series “J”



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* Indicates change.

EC Declaration of Incorporation

Manufacturer: SKF
5148 N. Hanley Road
St Louis, MO U.S.A.
URL: SKF.com
Phone: 314-679-4200

EU Contact:SKF
Heinrich-Hertz-Straße 2-8
69190 Walldorf
Phone: 59 (0) 6227-33259

Product: Series 20 pump

Description: Air driven grease and oil pumps

Model(s): 82050

Year of construction: see type identification plate complies with all basic requirements of the following directives at the time when first being launched in the market.

Report No.'s: NA

The equipment indicated on this declaration complies with the following directives:

Machinery Directive 2006/42/EC

And was evaluated using the following harmonized EN standards:

12100:2010, EN ISO 4413:2010 , EN 12162, EN ISO 4414, EN 809

SKF declares under its sole responsibility that the

Series 20 pump(s): 82050

are in conformity with the Machinery Directive 2006/42/EC.

In the case of modifications or alterations of the above mentioned machine not authorized by the manufacturer, validity of this ECdeclaration of conformity will cease. The person empowered to assemble the technical documentation on behalf of the manufacturer is the head of standardization; see EC-representative's address.

Brad Edler
Manager Product Development
Product Engineering LPD North America
Innovation and Product Management
September 2020

Description

Model 82050 is an air operated chassis pump designed to pump low and medium viscosity materials (grease) from drums and pails.

Safety

Read and understand all warnings, cautions and instruction before operating equipment. Extreme caution should be used when operating equipment as personal injury and/or property damage can result from equipment misuse. Adequate personal protection is recommended to prevent splashing of material on skin or in eyes. Always disconnect air coupler from pump when pump is not being used.

Explanation of safety word signals

NOTE
Emphasizes useful hints and recommendations as well as information for efficient and trouble-free operation.

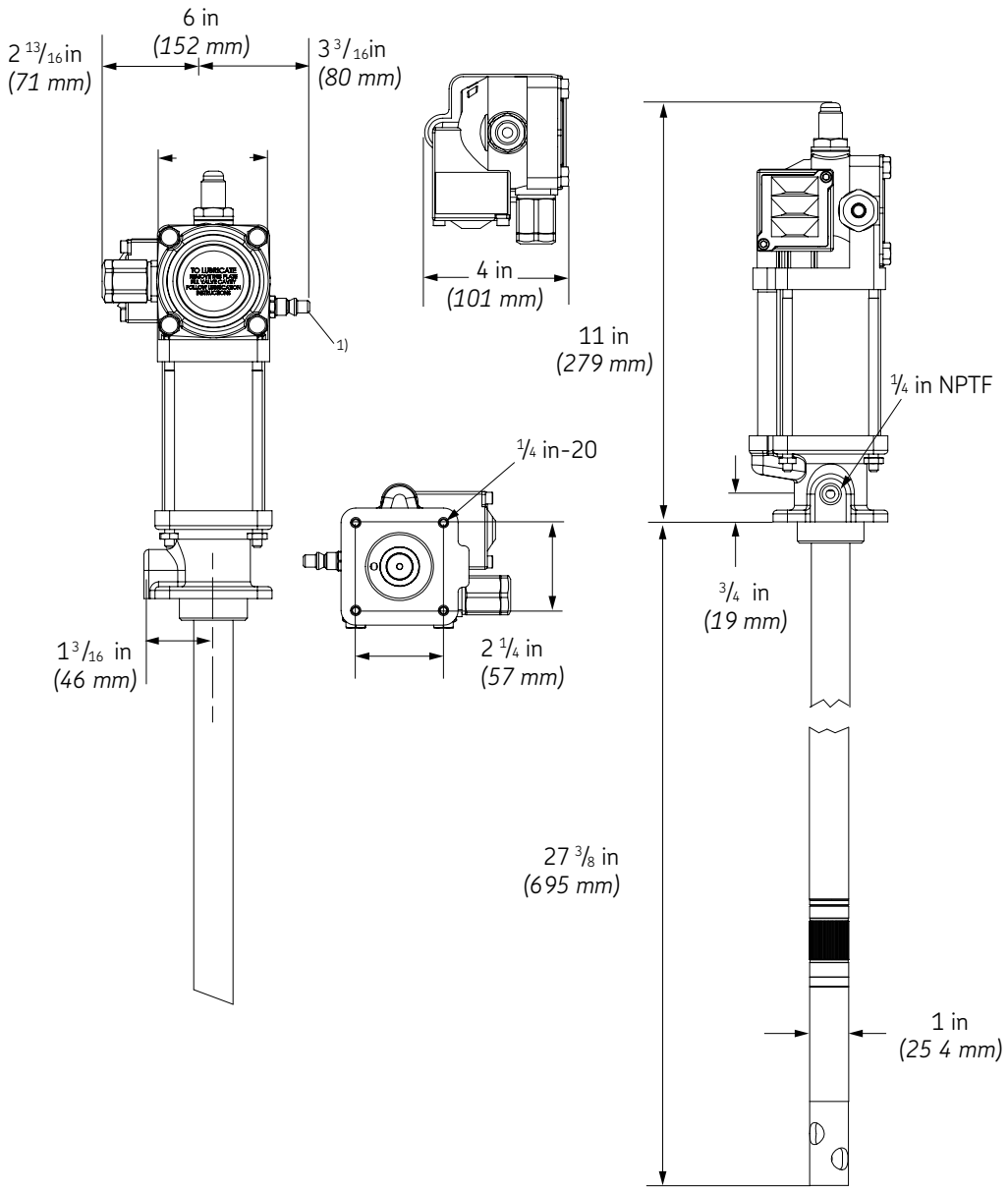
⚠ CAUTION
Indicates a dangerous situation that can lead to light personal injury or property damage if precautionary measures are ignored.

⚠ WARNING
Indicates a dangerous situation that can lead to death or serious injury if precautionary measures are ignored.

⚠ DANGER
Indicates a dangerous situation that will lead to death or severe personal injury if precautionary measures are ignored.

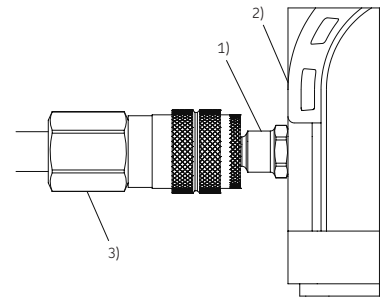
Fig. 1

Dimensions



1) Air inlet

Fig. 2*



1) Air nipple
2) Pump
3) Air coupler
* Indicates change.

Specifications

Air motor effective diameter	2.5 in *(63,5 mm)*
Air inlet	1/4 in NPTF
Material outlet	1/4 in NPTF
Ratio	50:1
Delivery output	80 in^3/min *(1 310 cm^3/min)*
Delivery per stroke	0.35 in^3 *(5,7 cm^3)*
Minimum air pressure	30 psi *(2 bar)*
Maximum air pressure	150 psi *(10 bar)*
Maximum output pressure	7 500 psi *(517 bar)*
Noise level at 120 psi *(8 bar)*	<85 dB(A)

⚠ WARNING

Failure to follow warnings including misuse, over pressurizing, modifying parts, using incompatible chemicals and fluids, or using worn or damaged parts, may result in serious personal injury and/or equipment damage, fire, explosion, or property damage.

- Do not exceed stated maximum working pressure of pump, or of lowest rated component in system.
- Do not alter or modify any part of equipment.
- Do not operate equipment with combustible gas.
- Do not attempt to repair or disassemble equipment while system is pressurized.
- Make sure all grease connections are securely tightened before using equipment.
- Always read and follow grease manufacturers recommendations regarding grease compatibility, and use of protective clothing and equipment.
- Check all equipment regularly and repair or replace worn or damaged parts immediately.
- Never point dispensing valve at any part of body or at another person.
- Never try to stop or deflect material from dispensing valve, leading connection or component with hand or body.
- Always check equipment for proper operation before each use, making sure safety devices are in place and operating properly.
- Always follow pressure relief procedure after shutting off pump, when checking or servicing any part of the system, and when installing, cleaning or changing any part of system.

Installation

Typical drum and pail hookups are described only as a guide in selecting and installing system.

Contact Lincoln factory representative for assistance in designing system for specific requirement.

⚠ WARNING

Do not exceed maximum working pressure of lowest rated component in system.

Pump can develop 7 500 psi (*517 bar*) working pressure at 150 psi (*10 bar*) maximum incoming air pressure. All system equipment and accessories must be rated to withstand maximum working pressure of pump.

Failure to comply may result in death or serious injury.

⚠ WARNING

Do not exceed 90 psi (*6 bar*) air pressure to pump when using whip hoses. Accessory item whip hoses for dispensing valve are rated at 4 500 psi (*310 bar*).

Failure to comply may result in death or serious injury.

Typical system hookup

1. Determine drum or pail system needed.
2. Obtain air line filter/regulator/lubricator to use with inlet air supply and correct sized air and grease line hoses with any required reducers, connectors and accessories.
3. Clean/flush supply lines, hoses, reducers, connectors and accessories with mineral spirits or oil-based solvent to purge any contaminants such as dirt, moisture, or metal shavings that could damage the pump or system components. Blow dry with air.
4. Clean/flush pump with mineral spirits or oil-based solvent if necessary.
5. Assemble cleaned pump and supply line together with any required accessory
6. Mount assembled pump to drum or pail.
7. Connect material output line/ hose to pump.
8. Connect air regulator to pump.
9. Make sure all connections are securely tightened.

NOTE

Pump was tested in lightweight oil and was left in to prevent corrosion.

Flush pump before connecting to system to prevent possible contamination of grease being pumped.

⚠ WARNING

Do not flush pump with solvents without pump being grounded.

Splashing or static sparking when flushing pump with solvents may cause an explosion.

Always hold metal part of dispensing valve firmly to side of grounded metal pail and operate pump at lowest possible fluid pressure.

Failure to comply may result in death or serious injury.

Accessories

- Filter/regulator/lubricator and gauge
- Eyebolt kit
- Follower plate - 120 lb, 400 lb (*54,4 kg, 181,4*)
- Drum cover - 120 lb, 400 lb (*54,4 kg, 181,4*)
- Drum cover with tie rods
- 1709 hoist
- 245530 - packing kit (for pumping synthetic lubricants)*

* Indicates change.

Pressure relief procedure

Always perform the following procedure when pump is shut off and before checking, servicing, installing, cleaning or repairing any part of system:

1. Disconnect air supply to pump.
2. Point dispensing valve away from yourself and others.
3. Open dispensing valve into an appropriate container until pressure is relieved.

If above procedure does not relieve pressure, dispensing valve or hose may be restricted. To relieve pressure, very slowly loosen hose end coupling. Then, loosen completely and clear dispensing valve and/or hose.

Operation

Inspection before pump use

Prior to operation or maintenance, a visual inspection shall be made. Check pump system for leaks and worn or missing parts.

Any pump that appears to be damaged in any way, is badly worn or operates abnormally shall be removed from use until repairs are made. Contact factory authorized service center for repairs.

If over pressurizing of equipment is believed to have occurred, contact factory authorized service center for inspection of pump.

Annual inspection by factory authorized service center is recommended.

⚠ WARNING

Do not operate pump or system with pressure applied. Perform pressure relief procedure prior to starting pump.

Failure to comply may result in death or serious injury.

1. To start pump, turn on main air supply.
2. Slowly open air regulator.
3. Regulate air pressure from 20 to 40 psi *(1,3 to 2,7 bar)* and throttle to prime pump.
4. Open dispensing valve to allow air to be purged from system.
5. Allow pump to cycle until grease, without air pockets, flows from dispensing valve, and then close dispensing valve.
6. After pump is primed, adjust air pressure to achieve smooth flow of grease from dispensing valve. If pump accelerates quickly or is running too fast, stop it immediately.

NOTE

Do not allow pump to operate when out of material. Pump will accelerate quickly and run too fast, resulting in costly damage to pump.

7. Check grease supply and refill it if necessary.
8. Prime pump to remove all air from system or flush pump and relieve pressure.

In circulating system, pump runs continuously and slows down or speeds up as supply demands, until air supply is shut off.

In direct supply system, with adequate air pressure supplied to motor, pump starts when gun or dispensing valve is opened and stalls against pressure when it is closed.

Use air regulator to control pump speed and grease pressure.

Maintenance

⚠ WARNING

Do not perform maintenance on pump or system with pressure applied.

Failure to comply may result in death or serious injury.

Lubrication

Air line filter/regulator/lubricator is recommended for use with Lincoln pump to remove harmful dirt and moisture from compressor air supply, and to provide automatic air motor lubrication.

If air line lubricator is not used, following procedure should be performed daily:

1. Disconnect air coupler from air fitting.
2. Fill air coupler with 10 SAE motor oil and reconnect to air fitting.
3. Operate pump to distribute lubricant.

Material restriction prevention

Flush system as required with compatible solvent to prevent material buildup, when pumping material that will dry or harden.

NOTE

Always use lowest pressure required to achieve desired results. Higher pressures will cause pump packing to wear prematurely.

Corrosion prevention

⚠ WARNING

Do not flush pump with solvents without pump being grounded.

Splashing or static sparking when flushing pump with solvents may cause explosion.

Always hold metal part of dispensing valve firmly to side of grounded metal pail and operate pump at lowest possible fluid pressure.

Failure to comply may result in death or serious injury.

To prevent water or air corrosion, never leave pump filled with water or air. Flush pump first with a compatible solvent and then again with mineral spirits or oil-based solvent.

⚠ WARNING

Do not disassemble or assemble pump with pressure applied to pump or system.

Relieve all pressure from system before and after use of pump.

Failure to comply may result in death or serious injury.

Disassembly*

NOTE
If complete disassembly is required, order repair kit and replace all gaskets, o-rings and packings.

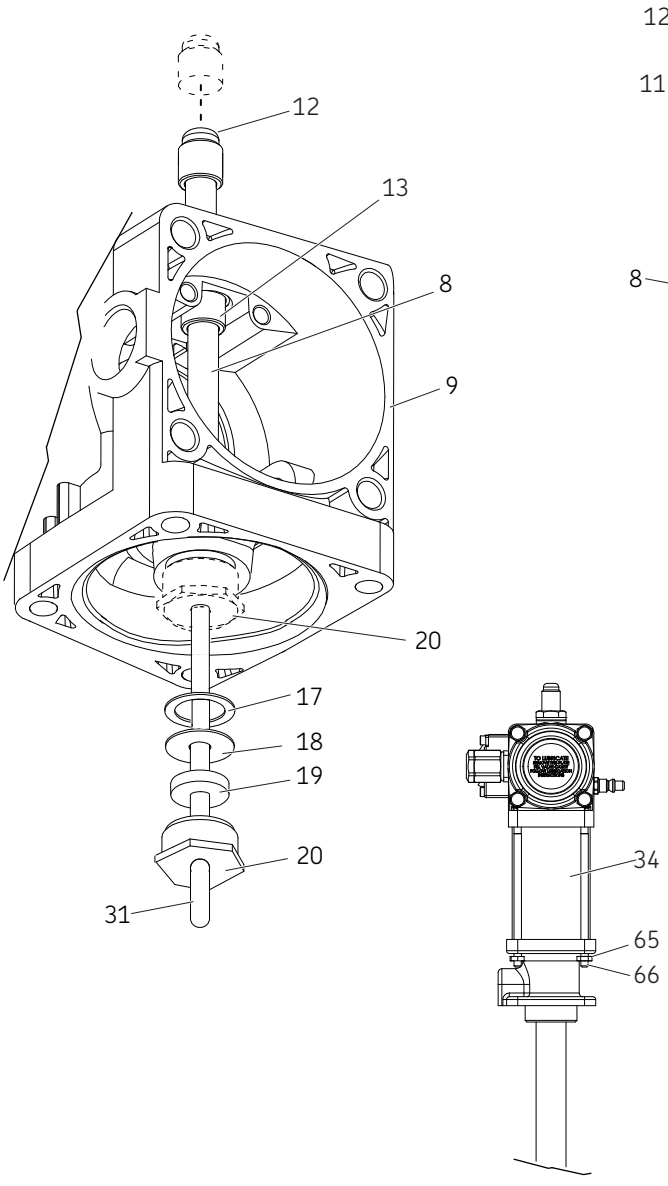
1 Remove valve cap (**12**).
2 Remove trip rod pin (**11**) from trip rod collar (**13**).
3 Unscrew nuts (**65**) from tie rods (**66**) .
4 Remove trip rod collar (**13**).

NOTE
Hold trip rod (**31**) with non-marring pliers while loosening trip sleeve (**8**) or trip sleeve (**8**) will turn trip rod (**31**).

5 Raise air valve casting (**9**) to gain access to trip sleeve (**8**).

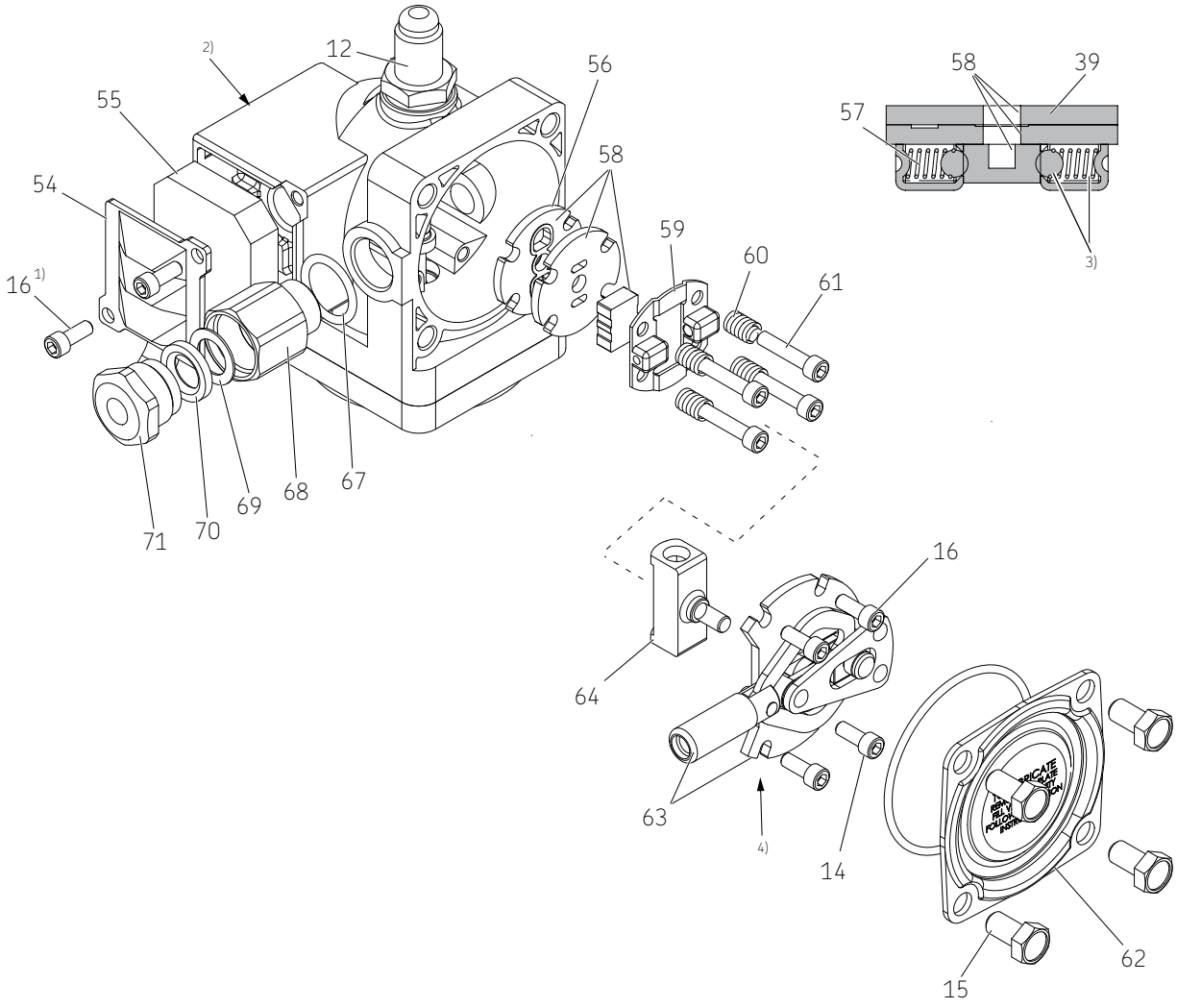
6 Unscrew trip sleeve (**8**) from trip rod (**31**) and remove air valve casting (**9**) from air cylinder (**34**).

Fig. 3*



* Indicates change.

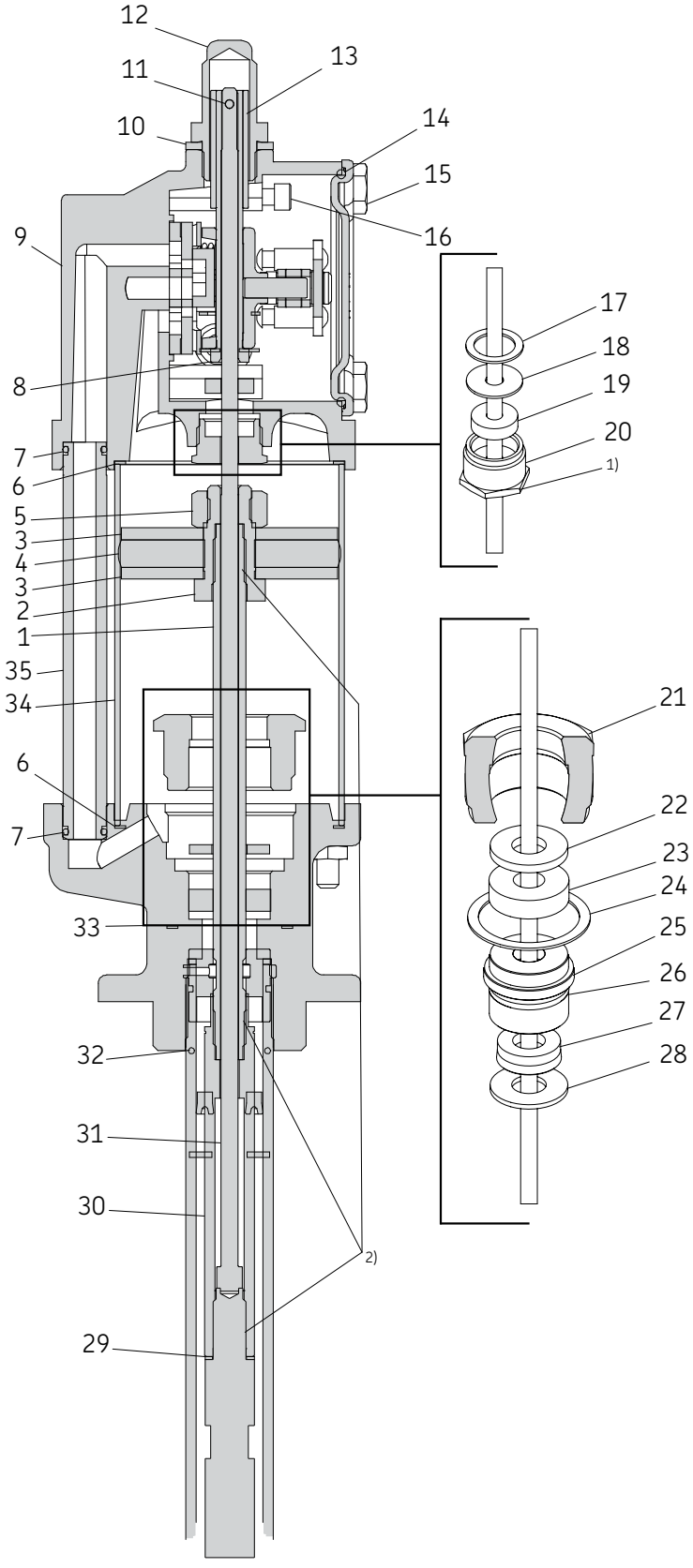
Fig. 4



1) Tighten to 30 to 40 in.lbf *(3,3 to 4,5 Nm).*
2) Air exhaust port
3) Lubricate check ball and spring before assembly.
4) Air valve mechanism

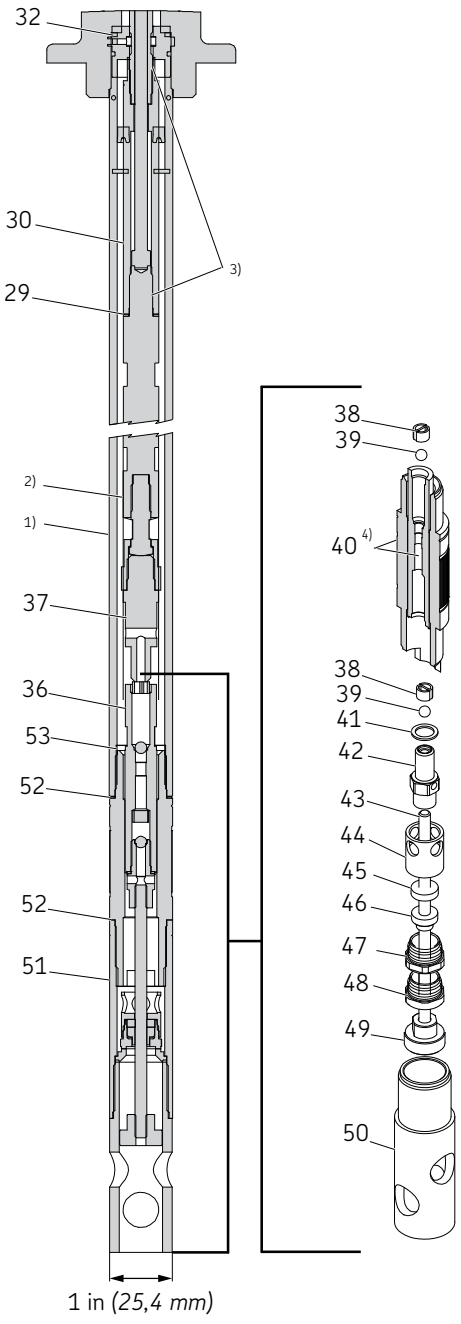
7 Remove packing nut (**68**).
8 Remove packing cap (**71**) from air valve casting (**9**).
9 Remove four valve cover screws (**15**) and cover (**62**).
10 Remove four toggle plate screws (**16**), toggle assembly (**63**) and trip shoe (**64**).
11 Remove four valve seat screws (**61**), springs (**60**), valve guide plate (**59**), valve slide seat (**58**) and gasket (**56**).
12 Unscrew trip rod packing nut (**20**) from air valve casting (**9**) and remove packing parts (**17**, **18**, **19**).
13 Unscrew pump tube from outlet body (**33**).
14 Remove air cylinder (**34**) and air passage tube (**35**) from outlet body.
15 Extend air motor piston rod (**1**) out bottom of outlet body.
16 Place wrenches on air piston bolt (**2**) and on wrench flats of piston rod and unscrew piston rod.
17 Thread piston rod through gland packing to allow removal of pump tube.
18 Unscrew gland packing nut (**21**) from outlet body and remove all gland parts.

Fig. 5*



1) Tighten to 10 to 15 ft.lbs *(13 to 20 Nm)*.
2) Apply thread locker to threads.
* Indicates change.

Fig. 6



1) Pump tube
2) Piston rod
3) Use gasket eliminator on threads.
4) Bushing and plunger assembly

19 Remove priming tube (**50**) from bushing extension (**51**).
20 Extend plunger rod (**43**) out of bushing extension and unscrew priming plunger (**49**) to allow removal of priming check parts and plunger rod (**43**).
21 Remove bushing extension (**51**).
22 Unscrew plunger and bushing assembly (**40**) from pump tube.
23 Unscrew coupling nut (**36**) from plunger adapter (**53**) to allow removal of plunger and bushing assembly intact, reducing chance of losing ball stop (**38**) and check ball (**39**).

NOTE

Lubricate air cylinder and air piston rod before assembly to prevent damage to air piston packing, pump gland packing, and help increase packing life.

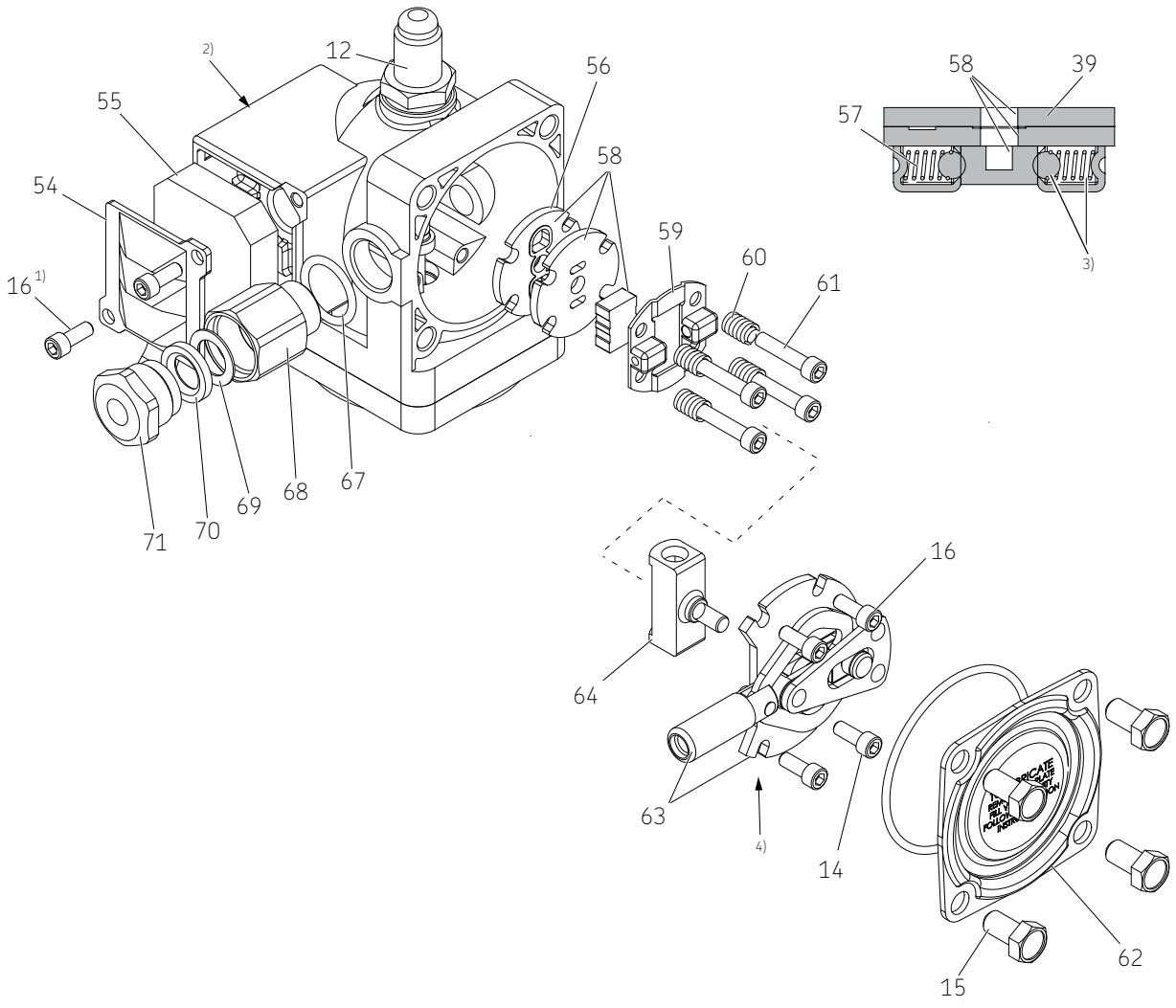
Thread piston rod through gland packing when assembling pump.

Assembly*

1 Insert plunger and bushing assembly (**40**) , with ball stop (**38**) and check ball (**39**) into plunger adapter (**53**).
2 Screw in coupling nut (**36**) to plunger adapter (**53**).
3 Screw plunger and bushing assembly (**40**) into pump tube.
4 Attach bushing extension (**51**).
5 Insert priming check parts and tighten priming plunger.
6 Insert plunger rod (**43**) into bushing extension.
7 Attach bushing extension (**51**) to priming tube (**50**).

* Indicates change.

Fig. 7



1) Tighten to 30 to 40 in.lbf *(3,3 to 4,5 Nm)*
2) Air exhaust port
3) Lubricate check balls and springs before assembly
4) Air valve mechanism

8 Insert gland parts and tighten gland packing nut (**21**) onto outlet body.
9 Tighten piston rod and air piston bolt (**2**).
10 Push air motor piston rod (**1**) into outlet body (**33**).
11 Insert air cylinder (**34**) and air passage tube (**35**) into outlet body (**33**).
12 Tighten pump tube into outlet body (**33**)
13 Place packing parts (**17**, **18**, **19**) in air valve casting (**9**) and screw on trip rod packing nut (**20**).
14 Insert gasket (**56**), valve slide seat (**58**), valve guide plate (**59**), springs (**60**) and tighten four valve set screws (**61**).

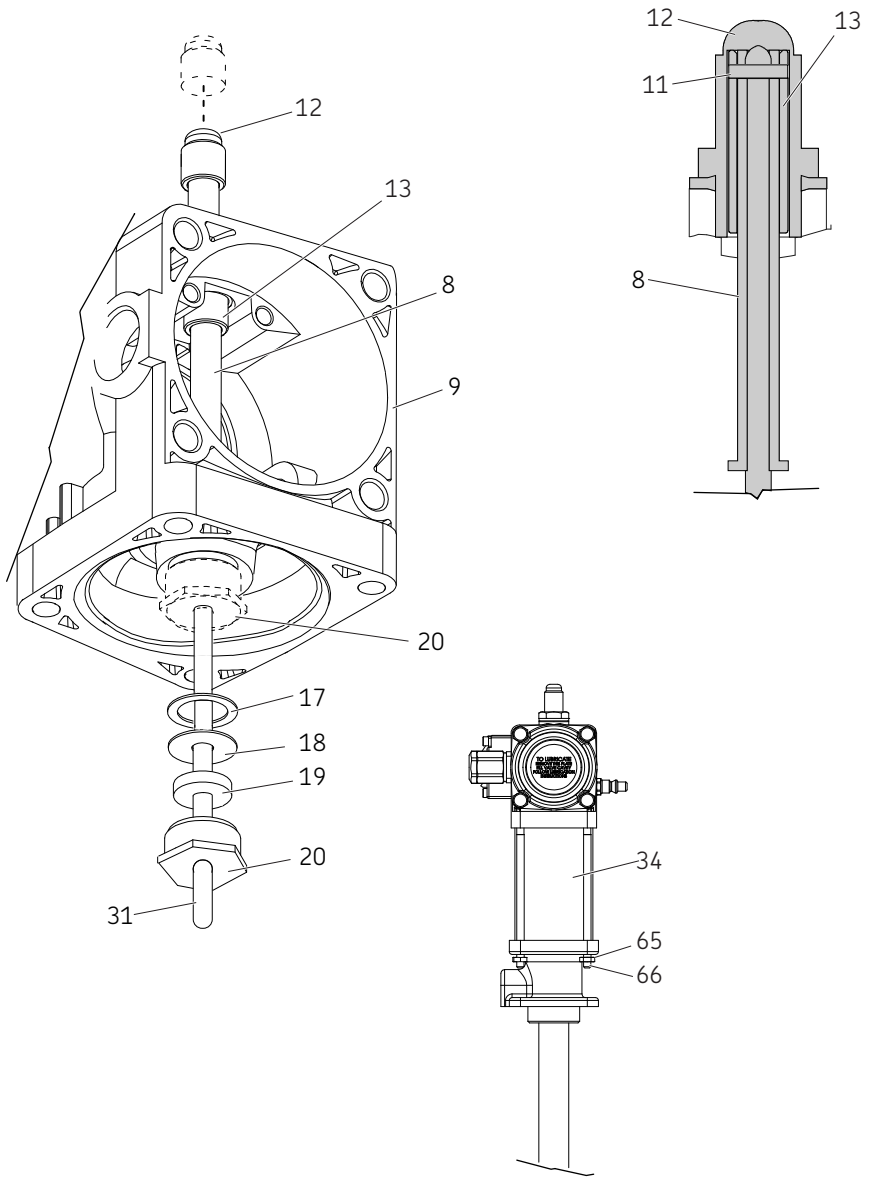
NOTE

Before tightening four valve seat screws (**61**), align valve slide and seat plate (**58**), slide valve gasket (**56**) and air valve casting (**9**) by placing rod through center hole.

Start all fasteners by hand to avoid stripping threads when reassembling.

15 Place trip shoe (**64**), toggle assembly (**63**), and tighten four toggle plate screws (**61**).
16 Place cover (**62**) and tighten four valve cover screws (**15**).
17 Attach packing cap (**71**) to air valve casting (**9**).
18 Tighten packing nuts (**68**).

Fig. 8



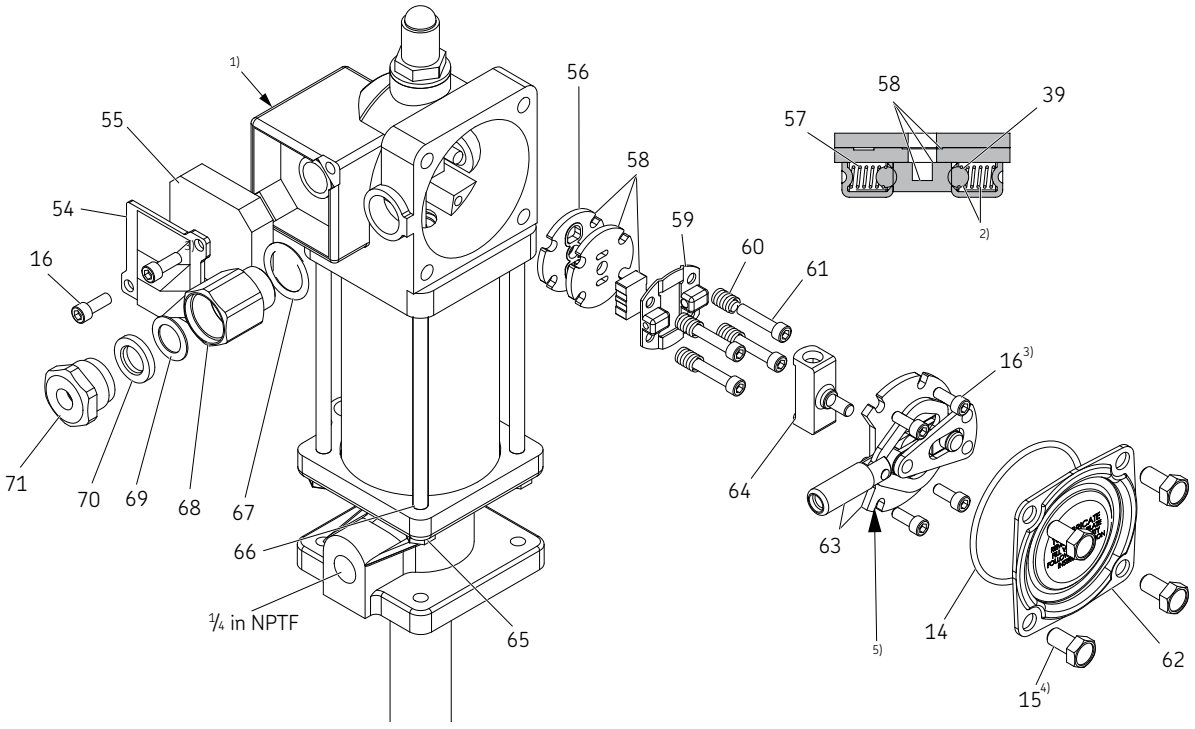
19 Place air valve casting (**9**) on air cylinder (**34**) and screw trip rod (**31**) into trip sleeve (**8**).
20 Lower air valve casting (**9**).
21 Attach trip rod collar (**13**).
22 Tighten nuts (**65**) to tie rods (**66**).
23 Insert trip rod pin (**11**) inside of trip rod collar (**13**).
24 Attach valve cap (**12**).

Repair

Repair is limited to replacement of listed service parts. Special procedures and tools are required. Contact Lincoln customer service, 5148 N. Hanley Road, St. Louis, MO 63134, (314) 679-4200, for nearest authorized service center.

When ordering replacement parts, list part number, description, model number and series letter.

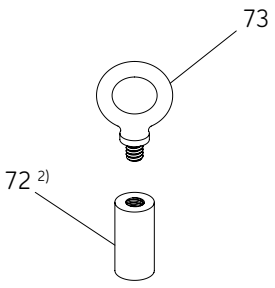
Fig. IPB 1



1) Air exhaust port
2) Lubricate balls and springs before assembly.
3) Tighten to 30 to 40 in.lbf *(3,3 to 4,5 Nm).*
4) Tighten to 90 to 100 in.lbf *(10 to 11,2 Nm).*
5) Air valve mechanism

Fig. IPB 2

Optional eyebolt kit 1)



1) For hoisting purposes. Parts must be ordered separately.
2) Thread to valvecap (**12**).

Lubricate air valve mechanism

1 Disconnect air to pump.
2 Perform pressure relief procedure.
3 Remove four cover screws (**15**), cover (**62**) and cover plate gasket (**14**).
4 Remove air valve casting (**9**) from pump and disassemble.
5 Clean or flush air valve casting to remove any chips or other foreign particles.
6 Before replacing toggle assembly (**63**), pack cavity with grease using approximately 1 1/2 ounces *(44 ml)* of NLGI 1 light grade water repellent grease.
7 Replace cover plate gasket (**14**), cover (**62**) and cover screws (**15**). Tighten to prevent air leaks.
8 Periodic inspection of parts at least once a year is advised.

NOTE
Start fasteners by hand to avoid stripping threads when reassembling.

Service parts list

Item	Description	Part number	Quantity
1	Air motor piston rod	11340 [1]	1
2	Air piston bolt	11329	1
3	Air piston washer	48212	2
4	Air piston packing	34090 [2]	1
5	Air piston nut	11337	1
6	Air cylinder gasket	33014 [1]	2
7	O-ring	34368 [1]	2
8	Trip sleeve	11947	1
9	Air valve casting	237563	1
10	Valve cap gasket	30011 [1]	1
11	Trip rod pin	11472 [1]	1
12	Valve cap	11470	1
13	Trip rod collar	11471	1
14	Cover gasket	34158 [1]	1
15	Valve cover screw	236868	4
16	Toggle plate screw	236869	6
17	Gasket	33039 [1]	1
18	Packing washer	236616 [1] [2]	1
19	Trip rod packing	236835 [1] [2]	1
20	Trip rod packing nut	245425	1
21	Gland packing nut	12333	1
22	Gland packing washer	48268	1
23	Gland packing	34180 [1]	1
24	Gland gasket	31050 [1]	
25	Gland packing spacer	14940	1
26	O-ring	34572 [1]	1
27	U-cup packing	38165 [1]	1
28	Gland packing washer	48213	1
29	Connector gasket	31048 [1]	
30	Piston rod connector	11349	1
31	Trip rod	90691 [2]	1
32	Pump tube gasket	31054 [1]	1
33	Outlet body	40537	1
34	Air cylinder	61041 [2]	1
35	Air passage tube	61502	1
36	Coupling nut	11345	1
37	Coupling stud	11346	1
38	Ball stop	57027	2
39	Ball	69102 [1] [3]	1
40	Plunger and bushing assembly	90554	1
41	Check seat gasket	31047 [1] [3]	1
42	Check seat	11726 [1] [3]	1
43	Plunger rod	11723 [1] [3]	1
44	Check stop	11722	1
45	Priming check packing	35073 [1] [3]	
46	Check washer	11702 [1] [3]	1
47	Priming check	11721 [1] [3]	1
48	Priming check seat	11725 [1] [3]	1
49	Priming plunger	11724 [1] [3]	1
50	Priming tube	239719	1
51	Bushing extension	61273	1
52	Bushing gasket	31049	2
53	Plunger adapter	11344	1
54	Muffler cover	236615	1
55	Muffler	236833	1
56	Slide valve gasket	38162 [1]	1
57	Spring	56038 [1]	2
58	Valve slide and seat	83063	1
59	Valve guide plate	45605	1
60	Spring	55138	4
61	Valve seat bolt	236870	4
62	Cover	236286	1
63	Toggle plate	91331 [2]	1
64	Trip shoe	11475	1
65	Tie rod nut	51009	4
66	Tie rod	10294	4
67	Packing nut gasket	30003 [1]	1
68	Packing nut	11904	1
69	Plunger packing washer	48237	1
70	Plunger packing	34110	1
71	Packing cap	11905	1
72	Extension adapter	236975	1
73	Eye bolt	68531	1

[1] Included in 83054 pump repair kit.
[2] Recommended service part.
[3] Included in 83001 power pump tube repair kit.

Troubleshooting

If following procedures do not correct problem, contact factory authorized service center. When submitting equipment to be repaired, be sure to state nature of problem and indicate if repair cost estimate is required.

NOTE

Some lubricant exhausts with air normally.

Troubleshooting*

Problem	Corrective action
Airmotor does not operate.	Check air supply to pump.
	Check for broken trip rod.
	Broken toggle or foreign object lodged in priming tube. Check for rust, worn or scored parts.
Air seepage from air exhaust while pump is not operating.	Check valve slide (**58**), seat and gasket. Check trip rod packing (**19**) and gasket (**17**) for cut or damaged packing.
Loss of pressure, volume or continuous operation of pump when not in normal use.	Remove and clean lower inlet checks. Check for foreign material.
	Inspect sealing surfaces between upper and lower inlet checks. Replace if rough or pitted.
	Replace shovel rod if rough or pitted. Replace shovel rod packing (**76**).
	Inspect lubricant supply line for leaks or breaks.
Lubricant leaking from weep hole in outlet casting.	Replace O-ring (**26**) and U-cup (**27**). Make sure gland nut (**21**) is tight.
Excessive amount of air in lubricant or excessive amount of lubricant coming from air exhaust.	Replace gland packing (**23**), gland gasket (**24**), O-ring (**26**) and U-cup packing (**27**).

* Indicates change.

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Warranty

The instructions do not contain any information on the warranty. This can be found in the General Conditions of Sales, available at: www.lincolnindustrial.com/technicalservice or www.skf.com/lubrication.

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