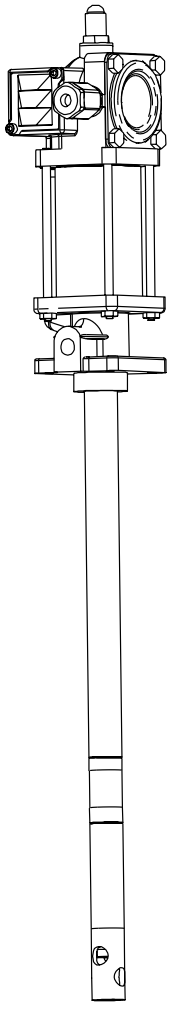
Installation instructions

Air-operated chassis pump

Model 83513, series “J”



Date of issue	**June 2020**
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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): 83513,

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): 83513

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

Safety

Read and understand all warnings, cautions and instructions before operating equipment.

- Extreme caution should be used when operating equipment as personal injury and/or property damage can result from equipment misuse.
- Maintain legibility of all warning and instruction labels on pump.
- Retain manual for future reference to warnings, operating and maintenance instructions.
- 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 signals

NOTE

Emphasizes useful hints and recommendations as well as information to prevent property damage and ensure efficient trouble-free operation.

⚠ CAUTION

Indicates a dangerous situation that can lead to light personal injury if precautionary measures are ignored.

⚠ WARNING

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

⚠ DANGER

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

Description

Model 83513 is an air operated chassis pump designed to pump low and medium viscosity materials (grease) from drums and pails.

Table 1

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/minute *(1 311 cm^3/minute)*
Delivery	0.35 in^3/cycle *(5.7 cm^3/cycle)*
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 dBA

⚠ WARNING

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

NOTE

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

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

⚠ WARNING

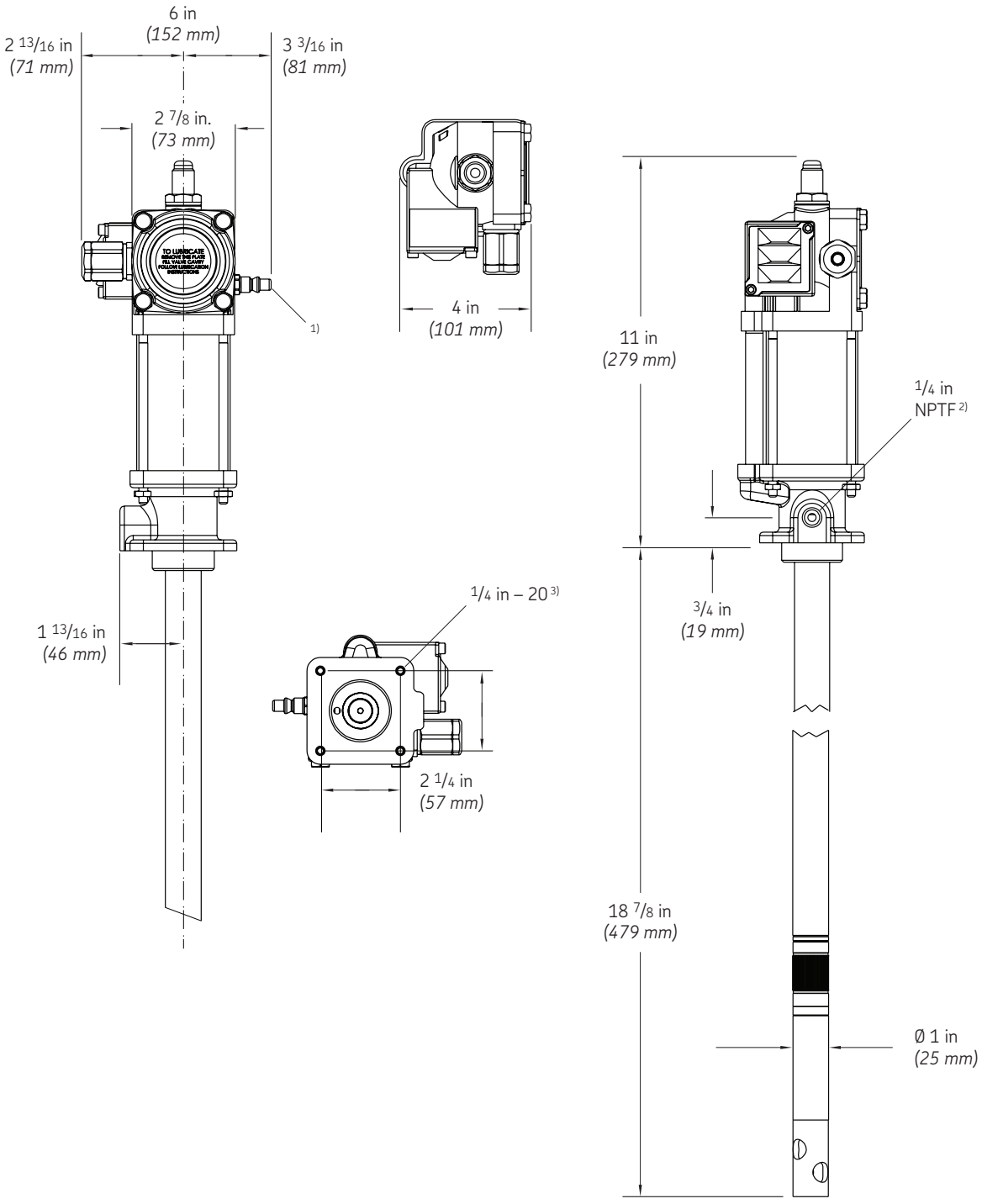
Do not exceed maximum working pressure of lowest rated component in system.

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 serious injury or damage to equipment.

Fig. 1

Dimensions



1) Air inlet.
2) Lubricant outlet.
3) Threaded mounting holes (four places).

Installation

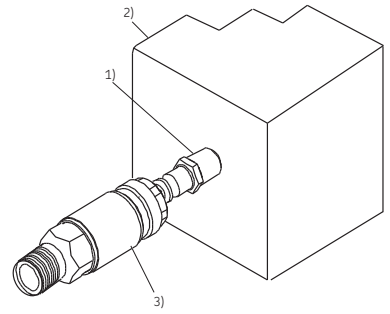
Typical drum and pail hookups are described as follows only as a guide in selecting and installing a system.

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

Typical system hookup

1. Determine drum or pail system for requirement.
2. Obtain air line filter/regulator/lubricator to use with inlet air supply.
3. Clean supply lines, hoses, reducers, connectors and accessories of matter that could damage pump or system components.
4. Clean/flush pump with mineral spirits or solvents 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. Tighten all connections.

Fig. 2



1) Air nipple.
2) Pump.
3) Air coupler.

⚠ WARNING

Always hold a metal part of dispensing valve firmly to side of a grounded metal pail when flushing pump with solvents to reduce risk of injury from splashing or static sparking. Operate pump at lowest possible fluid pressure.

Failure to comply may result in serious injury or damage to equipment.

Accessories

- Filter/regulator/lubricator and gauge
- Eyebolt kit
- Follower plate 120 lb. *(54 kg)*, 400 lb. *(181 kg)*
- Drum cover 120 lb. *(54 kg)*, 400 lb. *(181 kg)*
- Drum cover with tie rods
- Model 1709 hoist

Pressure relief procedure

⚠ WARNING

Do not operate pump or system with pressure applied. Perform pressure relief procedure before and after operating pump.

Failure to comply may result in death or serious injury.

1 Disconnect air supply to pump.
2 Point dispensing valve away from yourself and others.
3 Open dispensing valve into 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.

Pump use

1 To start pump, turn on main air supply.
2 Slowly open air regulator. Regulate air pressure from 20–40 psi *(1.4–2.8 bar)* and throttle to prime pump.
3 Open dispensing valve to allow air to be purged from system.
4 Allow pump to cycle until grease, without air pockets, flows from dispensing valve. Close dispensing valve.
5 After pump is primed, adjust air pressure to achieve smooth flow of grease from dispensing valve.
6 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 Stop pump immediately if accelerates quickly or is running too fast. Check grease supply and refill if necessary.
7.1 Circulating systems: Pump runs continuously and slows down or speeds up as supply demands, until air supply is shut off.
7.2 Direct supply systems: Pump starts when gun or dispensing valve is opened and stalls against pressure when it is closed (with adequate air pressure supplied to motor).
8 Use air regulator to control pump speed and grease pressure. Always use lowest pressure required to achieve desired results.

Operation

Inspect before use

Do not use a pump that appears to be damaged in any way. Contact factory authorized service center for repairs.

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

Annual inspection by a factory authorized service center is recommended.

⚠ WARNING

Failure to heed the following 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 fluids.
- Do not repair or disassemble equipment while system is pressurized.
- Make sure all grease connections are securely tightened before using this equipment.
- Always read and follow grease manufacturer's 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 the dispensing valve at any part of the body or at another person.
- Never try to stop or deflect material from dispensing valve, leading connection or component with your hand or body.
- Always check equipment for proper operation before each use, making sure safety devices are in place and operating properly.
- Always follow the pressure relief procedure after shutting off the pump, when checking or servicing any part of the system, and when installing, cleaning or changing any part of the system.

Lubrication

Air line filter/regulator is recommended for use with Lincoln pump to remove harmful dirt and moisture from compressor air supply. Grease mechanism once a year.

Lubricate air valve mechanism

1. Disconnect air to pump.
2. Remove four cover screws, cover plate and cover plate gasket.
3. Remove and disassemble air valve casting from pump.
4. Air valve casting should be cleaned or flushed to remove any chips or other foreign particles prior to assembly.
5. Before replacing toggle assembly, pack cavity with grease. Use approximately 1.5 oz. *(44.4 ml)* of NLGI 1 (light grade) water repellent grease.
6. Replace cover gasket, plate and screws.
7. Tighten to avoid air leaks.
8. Periodic inspection of parts at least once each year is advisable.

Material restriction prevention

Flush system as required with a compatible solvent to prevent material buildup when pumping material that dries or hardens.

Corrosion prevention

To prevent water or air corrosion, never leave pump filled with water or air.

⚠ 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.

NOTE

Order repair kit and replace **all** gaskets, o-rings and packings if complete disassembly is required.

Disassembly

1 Remove valve cap (**12**) and trip rod pin (**11**).
2 Unscrew four nuts (**64**) from tie rods (**65**) and remove trip rod collar (**13**).
3 Unscrew trip sleeve (**8**) from trip rod (**31**) and lift air valve casting (**9**) off of air cylinder (**34**).
4 Remove packing nut (**67**) and packing cap (**70**) from air valve casting.
5 Remove four valve cover screws (**15**) and cover (**61**).
6 Remove four toggle plate screws (**16**), toggle plate (**62**) and trip shoe (**63**).
7 Remove four valve seat bolts (**60**), springs (**59**), valve guide plate (**73**) and valve slide seat and gasket (**58**).
8 Unscrew trip rod packing nut (**20**) from air valve casting and remove all packing parts.
9 Unscrew pump tube from outlet body (**33**).
10 Remove air cylinder (**34**) and air passage tube (**35**) from outlet body.
11 Extend air motor piston rod (**1**) out bottom of outlet body.
12 Place wrenches on air piston bolt (**2**) and on wrench flats of piston rod and unscrew piston rod.
13 Thread piston rod through gland packing to allow removal of pump tube.
14 Unscrew gland packing nut (**21**) from outlet body and remove all gland parts.
15 Remove priming tube (**50**) from bushing extension (**51**).
16 Extend plunger rod (**43**) out bushing extension and unscrew priming plunger (**49**) to allow removal of priming check parts and plunger rod (**43**).
17 Remove bushing extension (**51**) and unscrew plunger and bushing assembly (**40**) from pump tube.
18 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 and pump gland packing. Thread piston rod through gland packing when assembling pump.

Assembly

To assemble, perform disassembly procedures in reverse. Tighten fasteners per stated torque specifications.

- Before tightening four valve seat bolts (**60**), align valve slide seat and gasket (**58**), slide valve gasket (**56**) and air valve casting (**9**) by placing a rod through center hole.
- Start all fasteners by hand to avoid stripping threads when reassembling.

Troubleshooting

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

NOTE

Some lubricant exhausts with air normally.

Repair

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

When ordering replacement parts, list:

- part number
- description
- model number
- series letter

Troubleshooting

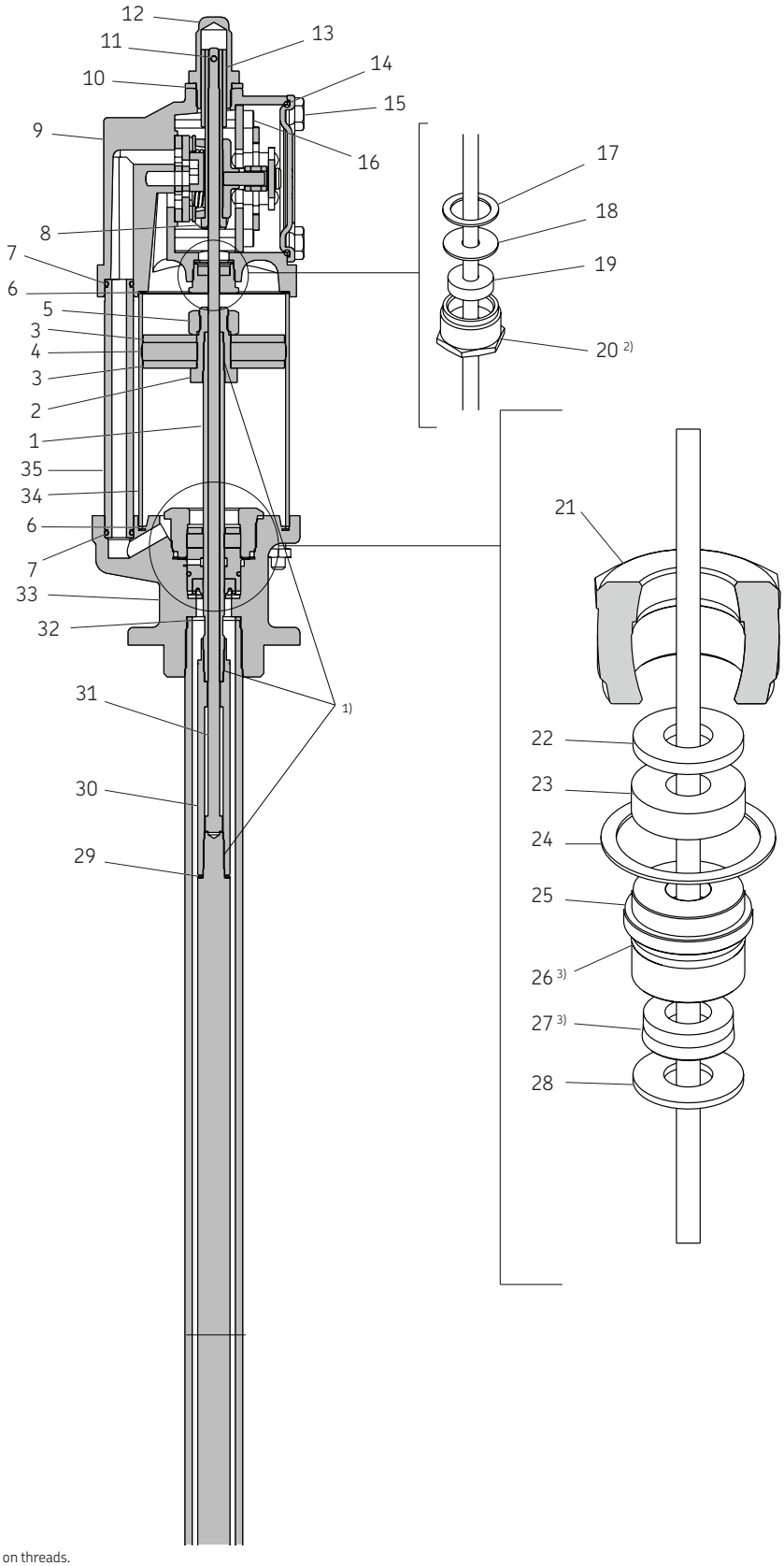
Problem	Corrective action
Air motor does not operate.	Check air supply to pump. Check for broken trip rod. Broken toggle or foreign object lodged in priming tube. Check for rust, worn or scored parts.
Air seepage from air exhaust while pump is not operating.	Check valve slide seat and gasket (**58**). 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 worn or pitted. Replace shovel rod if rough or pitted. Replace shovel rod packing (**45**). 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**).

Service parts

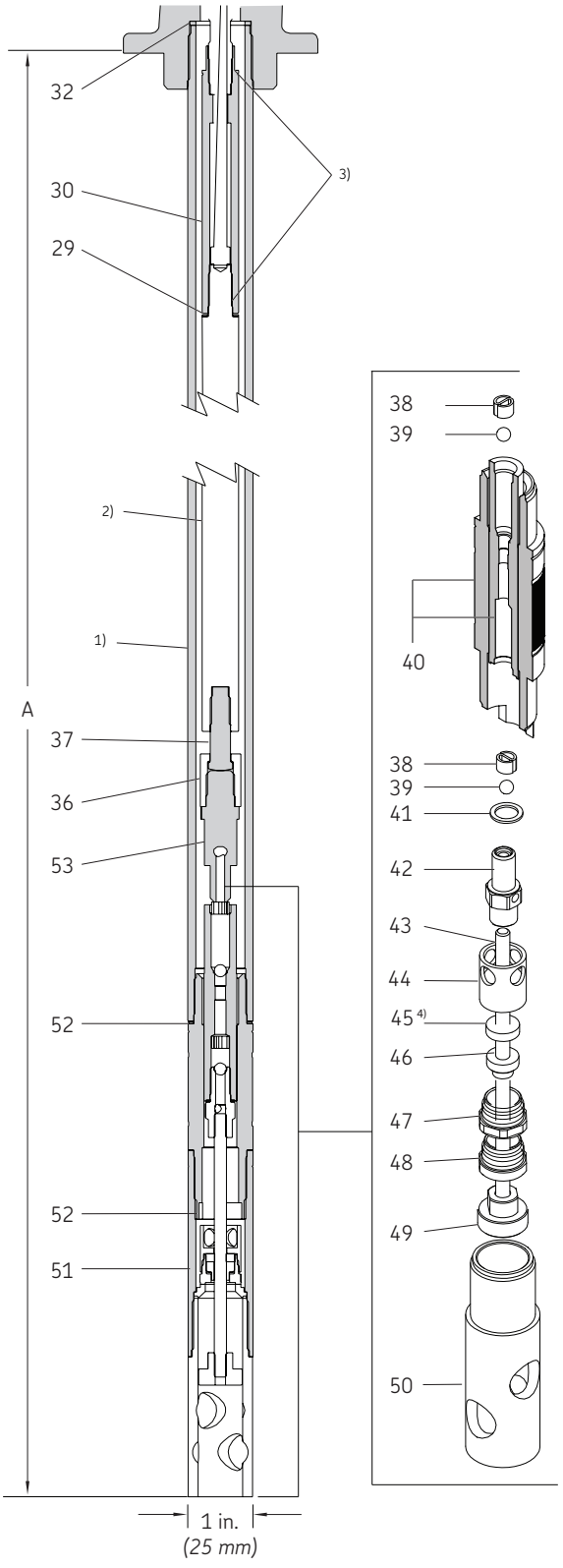
Item number	Description	Quantity	Part number
1	Air motor piston rod	1	11340 [1]
2	Air piston bolt	1	11329
3	Air piston washer	2	48212
4	Air piston packing	1	34090 [1]
5	Air piston nut	1	11337
6	Air cylinder gasket	1	33014 [1]
7	O-ring	1	34368 [1]
8	Trip sleeve	1	11947
9	Air valve casting	1	237563
10	Valve cap gasket	1	30011 [1]
11	Trip rod pin	1	11472 [1]
12	Valve cap	1	11470
13	Trip rod collar	1	11471
14	Cover gasket	1	34158 [1]
15	Valve cover screw	6	236868
16	Toggle plate screw	4	236869
17	Gasket	1	33039 [1]
18	Packing washer	1	236616 [1] [2]
19	Trip rod packing	4	236835 [1] [2]
20	Trip rod packing nut	1	245425
21	Gland packing nut	1	12333
22	Gland packing washer	1	48268
23	Gland packing	2	34180 [1]
24	Gland gasket	1	31050 [1]
25	Gland packing spacer	1	14940
26	O-ring	1	34572 [1]
27	U-cup packing	1	38165 [1]
28	Gland packing washer	1	48213
29	Connector gasket	2	31048 [1]
30	Piston rod connector	1	11349
31	Trip rod	1	90691 [2]
32	Pump tube gasket	2	31054 [1]
33	Outlet body	1	40537
34	Air cylinder	1	61041 [2]
35	Air passage tube	1	61502
36	Coupling nut	1	11345
37	Coupling stud	1	11346
38	Ball stop	2	57027
39	Check Ball	4	69102 [1] [3]
40	Plunger and bushing assembly	1	90554
41	Check seat gasket	1	31047 [1] [2]
42	Check seat	1	11726 [1] [3]
43	Plunger rod	1	11723 [1] [3]
44	Check stop	1	11722
45	Priming check packing	1	35073 [1] [3]
46	Check washer	1	11702 [1] [3]
47	Priming check	1	11721 [1] [3]
48	Priming check seat	1	11725 [1] [3]
49	Priming plunger	1	11724 [1] [3]
50	Priming tube	1	239719
51	Bushing extension	1	61273
52	Bushing gasket	1	31049
53	Plunger adapter	1	11344
54	Muffler cover	1	236615
55	Muffler	1	236833
56	Slide valve gasket	1	38162 [1]
57	Spring	1	56038 [1]
58	Valve slide seat and gasket	1	83063
59	Spring	1	55138
60	Valve seat bolt		236870
61	Cover	1	236286
62	Toggle plate	1	91331 [2]
63	Trip shoe	1	11475 [2]
64	Tie rod nut	4	51009
65	Tie rod	4	10294
66	Packing nut gasket	1	30003 [1]
67	Packing nut	1	11904
68	Plunger packing washer	1	48237
69	Plunger packing	1	34110 [2]
70	Packing cap	1	11905
71	Eye bolt	1	68531
72	Extension adapter	1	236975
Not shown	Valve guide plate	1	45605

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

Fig. IPB 1



1) Use Locktite 510 gasket eliminator on threads.
2) Tighten to 10–15 lbf-ft. *(13–20 Nm)*.
3) To make compatible with synthetic greases, refer to Synthetic grease kit 245530.*
* Indicates change.



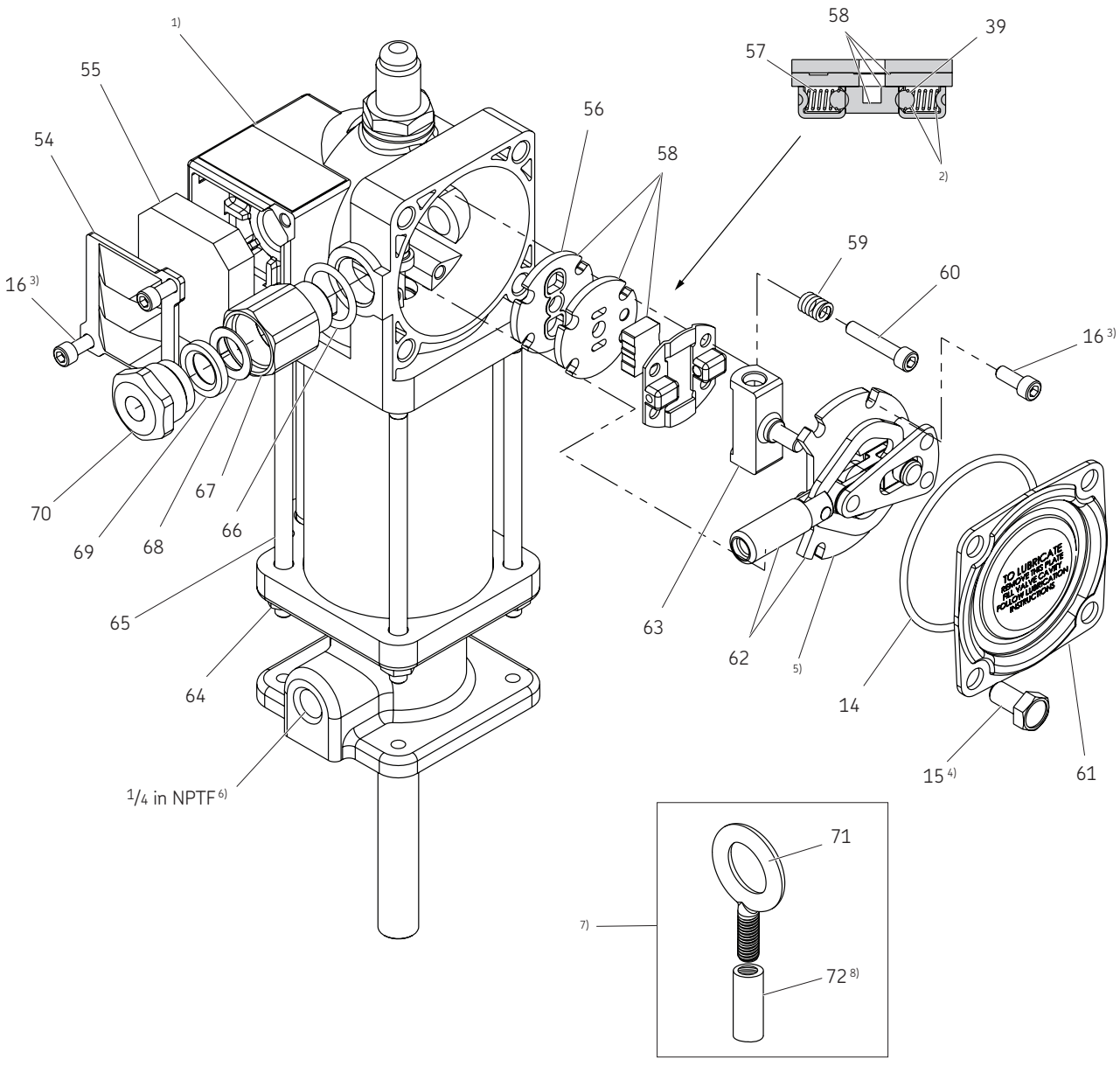
Description	Part number	Weight		Length	
		lbs.	*kg*	in.	*mm*
Bare pump	83513	–	–	–	
Piston rod	11799	–	–	3 3/4	*95*
Pump tube	61293	–	–	11 29/32	*302*
Drum size	–	50	*23*	–	–
Dimension A	–	–	–	18 7/8	*479*

Synthetic grease kit 245530*
Converts pump to be compatible with synthetic greases and lubricants. Kit must be ordered separately.

Item number	Description	Quantity	Part number
26	O-ring, FPM	1	245534
27	U-cup, TFE/FPM	1	245533
45	Solid packing, FPM	1	245532

1) Pump tube.
2) Piston rod.
3) Use Loctite 510 gasket eliminator on threads.
4) To make compatible with synthetic greases, refer to Synthetic grease kit 245530.*
* Indicates change.

Fig. IPB 3



1) Air exhaust port.
2) Lubricate balls and springs before assembly.
3) Tighten to 30–40 lbf-in. *(3.3–4.5 Nm)*.
4) Tighten to 90–100 lbf-in. *(10 to 11 Nm)*.
5) Air valve mechanism.
6) Lubricant outlet. Do not exceed 15 lbf-ft. *(20 Nm)*.
7) Optional eyebolt kit for hoisting purposes. Parts must be ordered separately.
8) Threads to valve cap (**12**).

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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