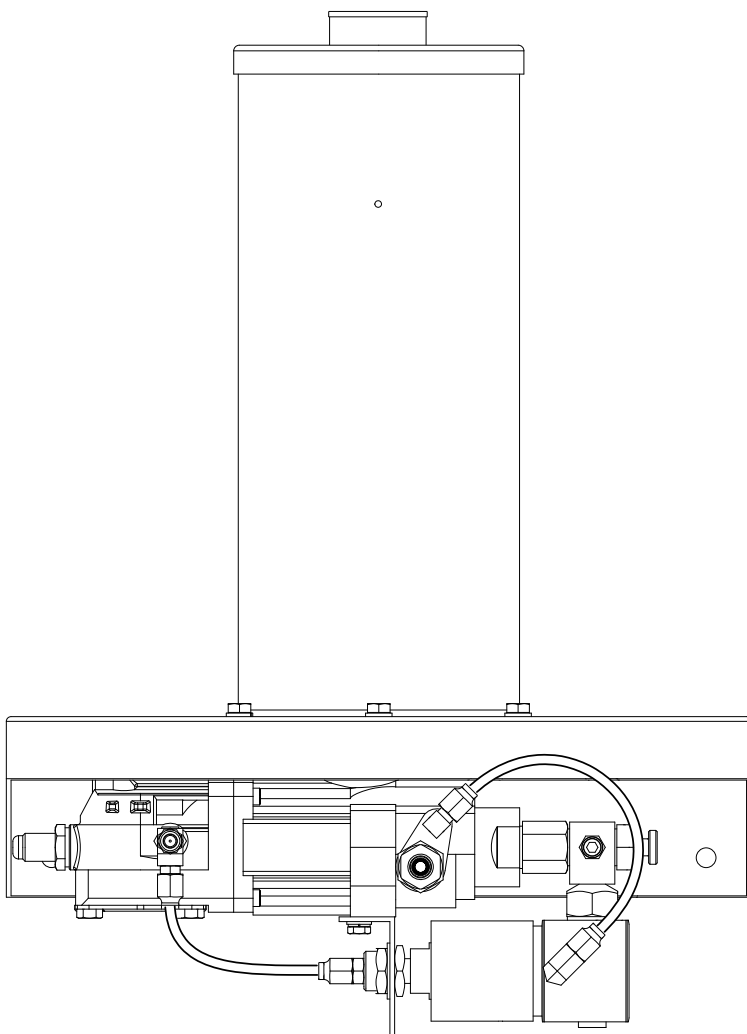


Air operated oil pump

Model 283167, series "H"



Date of issue	October 2022
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Version	3

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* Indicates change.



Declaration of Incorporation*

DOCUMENT NUMBER
403641.Dol

**Manufacturer name/address:
Lincoln Industrial Corporation**

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Dol

This Declaration of Incorporation is issued under sole responsibility of the manufacturer. Lincoln Industrial Corporation hereby declares that the partly completed machinery stated below:

Name: Oil pump
Model number(s): 283167 (series H)
Description: Air-operated oil pump
Year of CE: 2021

in its intended use, is in conformity with the relevant union harmonization legislation:

Machinery Directive 2006/42/EC
(Article 13 Partly Completed Machinery)

and conforms to the following harmonized standards:

EN ISO 4413: 2010
Hydraulic fluid power - General rules and safety requirements for systems and their components

EN ISO 12100: 2010
Safety of machinery. General principles for design. Risk assessment and risk reduction

EN ISO 4414:2010
Pneumatic fluid power. General rules and safety requirements for systems and their components

EN ISO 809:1998+A1:2009
Pumps and pump units for liquids - Common safety requirements

EN 1216:2001+A1:2009
Liquid pumps. Safety requirements. Procedure for hydrostatic testing

The following EHSR (Essential Health and Safety Requirements) have been applied:

1.1.2a – 1.1.2b – 1.1.2c – 1.1.3 – 1.1.5 – 1.2.5 – 1.3.2 – 1.3.3 – 1.3.4 – 1.3.6 – 1.3.7 – 1.3.8 – 1.5.3 – 1.5.4 – 1.5.13 – 1.7 – 1.7.1 – 1.7.1.1 – 1.7.3 – 1.7.4

The manufacturer maintains a technical file summary sheet containing test reports and product documentation:



Technical file summary sheet number:
RA403404

The partly completed machinery shown above should not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the directive, where appropriate.

I, the undersigned of Lincoln Industrial Corporation, do hereby declare that the equipment specified above, in its intended use, conforms to the requirements of the above EC Directive(s).

Robert Collins
Technical Compliance Manager
St. Louis, MO, U.S.A.
2022/01/20

* Indicates change.

	U.K. Declaration of Incorporation*	DOCUMENT NUMBER UK403641CA
<p style="text-align: center;">Manufacturer name/address: Lincoln Industrial Corporation 5148 N. Hanley Road St. Louis, MO 63134 U.S.A. TEL: +1 (314) 679-4200 FAX: +1 (314) 679-4367</p> <p style="text-align: center;">Authorized to compile the technical file: SKF (U.K.) Limited 2 Canada Close Banbury, Oxfordshire, OX16 2RT, GBR</p> <p style="text-align: center;">EMAIL: robert.collins@skf.com WEBSITE: www.skf.com</p>		

This U.K. Declaration of Incorporation is issued under sole responsibility of the manufacturer. Lincoln Industrial Corporation hereby declares that the partly completed machinery stated below:

Name: Oil pump
Model number(s): 283167 (series H)
Description: Air-operated oil pump
Year of CE: 2021

in its intended use, is in conformity with the relevant union harmonization legislation:

Supply of Machinery (Safety) Regulations 2008 (S.I. 2008:159)

along with the following Directive(s) that were also applied with the above legislation:

EN ISO 4413: 2010
Hydraulic fluid power - General rules and safety requirements for systems and their components

EN ISO 12100: 2010
Safety of machinery. General principles for design. Risk assessment and risk reduction

EN ISO 4414:2010
Pneumatic fluid power. General rules and safety requirements for systems and their components

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The partly completed machinery shown above should not be put into service until the final machinery into which it is to be incorporated has been declared in conformity with the provisions of the directive, where appropriate.

I, the undersigned of Lincoln Industrial Corporation, hereby declare that the equipment specified above, in its intended use, conforms with the Essential Health and Safety Requirements of U.K. legislation Supply of Machinery (Safety) Regulations 2008 No. 1597 Annex I, Declaration of Incorporation by the time of placing it on the market.



Robert Collins
Technical Compliance Manager
St. Louis, MO, U.S.A.
2022/01/20

* Indicates change,

Safety*

The assembly must be installed, maintained and repaired exclusively by persons familiar with the instructions.

Always disconnect power source (electricity, air or hydraulic) from the equipment when it is not being used.

This equipment generates high pressure. Extreme caution should be used when operating this equipment as material leaks from loose or ruptured components can inject fluid through the skin and into the body. If any fluid appears to penetrate the skin, seek attention from a doctor immediately. Do not treat injury as a simple cut. Tell attending doctor exactly what type of fluid was injected.

Any other use not in accordance with instructions will result in loss of claim for warranty or liability.

- Do not misuse, over-pressurize, modify parts, use incompatible chemicals, fluids, or use worn and/or damaged parts.
- Do not exceed the stated maximum working pressure of the equipment or of the lowest rated component in your system.
- Always read and follow the manufacturer's recommendations regarding fluid compatibility, and the use of protective clothing and equipment.
- Failure to comply may result in personal injury and/or damage to equipment.

Explanation of signal words for safety

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.

WARNING

Do not operate equipment without reading and fully understanding safety warnings and instructions.



Failure to follow warnings and instructions may result in serious injury.

CAUTION

Do not operate equipment without wearing personal protective gear.

Wear eye protection. Protective equipment such as dust mask, non-skid safety shoes, hard hat, or hearing protection used for appropriate conditions will reduce personal injuries.

Failure to comply may result in light personal injury.



WARNING



Do not allow any body part to be trapped by equipment.

Body parts can be crushed by subassemblies during

operation.

Failure to comply may result in death or serious physical injury.

WARNING



Do not allow fluid to leak onto floor when operating equipment. If spill occurs,

clean any fluid on floor before continuing operation.

Failure to comply may result in death or serious personal injury.

WARNING

Do not use this equipment to supply, transport, or store hazardous substances and mixtures in accordance with annex I part 2-5 of the CLP regulation (EG 1272/2008) or HCS 29 CFR 1910.1200 marked with GHS01, GHS06 and GHS08 hazard pictograms shown:



* Indicates change.

Description

Model 283167 oil pump is used as the pumping unit for a centralized lubrication system having a single line circuit of SL-41, SL-42, SL-43 or SL-44 injectors.

It is an air operated reciprocating pump that discharges an established amount of lubricant ($0.11 \text{ in}^3 (1,08 \text{ cm}^3)$)¹⁾ into the circuit for each pump cycle.

This pump can be used with an air control system, a time control and a pressure switch supplied by the owner/operator.

⚠ WARNING

Do not operate unit with combustible gas.

Failure to comply may result in serious personal injury and/or damage to the equipment.

Specifications

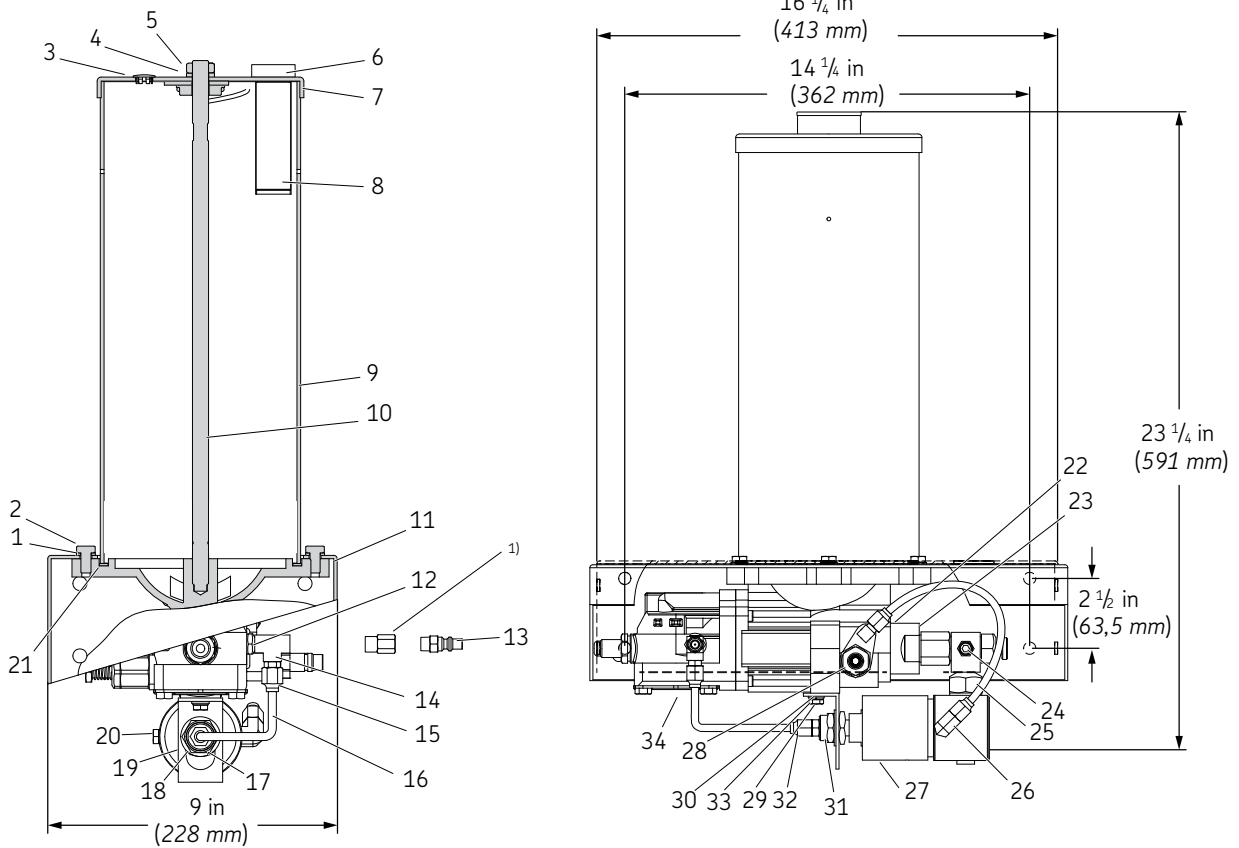
Ratio	Lubricant output ($\text{in}^3 (\text{cm}^3)$)		Reservoir capacity	Air inlet	Lubricant outlet	Lubricant operating pressure			
	Per cycle	Per min at 100 psi (6,9 bar)				Type of system	Minimum	Maximum	Recommended
40:1	0.11 ¹⁾	12 (196,6)	15 pints (7 l)	1/8 in NPTF	3/4 in NPTF	SL-41 SL-42 SL-43 SL-44	750 psi (51,7 bar)	1 000 psi (68,9 bar)	850 psi (58,6 bar)

¹⁾ Based on lubricants that are free of entrapped air. Lubricants that are aerated will reduce output of pump.

NOTE

Pressure is set and controlled through pressure switch.

Fig. 1



¹⁾ Restrictor 13345 may be added between tee (14) and plug (13) to reduce pump noise. Pump speed and output per minute will be reduced accordingly.

To fill reservoir

Lubricant reservoir is filled through filler cap (6) at top of reservoir. Strainer (8) is located in filler cap. Strainer should be removed from filler cap and cleaned periodically.

To lubricate air valve mechanism

Refer to **Fig. IPB 1, page 6**.

- 1 Disconnect air to pump.
- 2 Remove four cover screws (51), cover plate (81) and cover plate gasket (50).
- 3 Remove and disassemble air valve casting (42) from pump.
- 4 Clean or flush air valve casting to remove any chips, or other foreign particles prior to reassembly.
- 5 Pack cavity with grease before replacing toggle assembly (82). Use approximately 1 1/2 ounces (44 ml) NLGI 1 light grade water repellent grease.
- 6 Replace cover gasket, cover and screws. Tighten to avoid air leaks.
- 7 Inspect parts at least once each year.

To prime system

Supply lines

Allow lubricant to bleed around vent plug to expel air pockets trapped between pump and supply line connection. Continue operating pump until lubricant flows around any plug.

Feeder lines

Fill each feed line with lubricant before connecting lines to outlets of injectors and bearings to prevent having to cycle each injector.

Injectors

Check injectors for proper operation by observing movement of indicator stems.

Operation

Lube cycle initiates when pump times out. Air solenoid is energized to deliver air to pump and vent valve. Pump dispenses lubricant through injectors to bearings. Once all bearings receive lubricant, pressure rises in system to actuate pressure switch. When pressure switch actuates, control is reset to de-energize solenoid valve, cutting off air to pump and vent valve. Pump stops, pressure vents and pressure switch de-actuates. Control begins timing toward next lube event.

Vent valve

Vent valve (27) operates with compressed air from same source that operates pump. When pump is in operation, air pressure keeps vent valve closed and lubricant is directed through outlet to injectors. When air to pump is shut off, vent valve opens and supply line pressure vents back into reservoir.

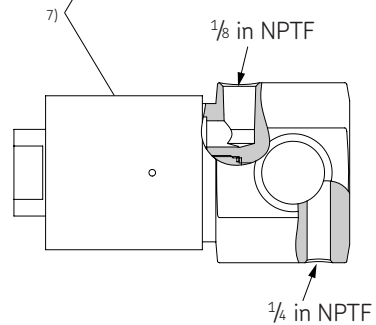
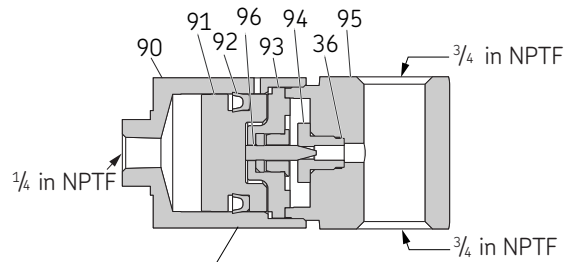
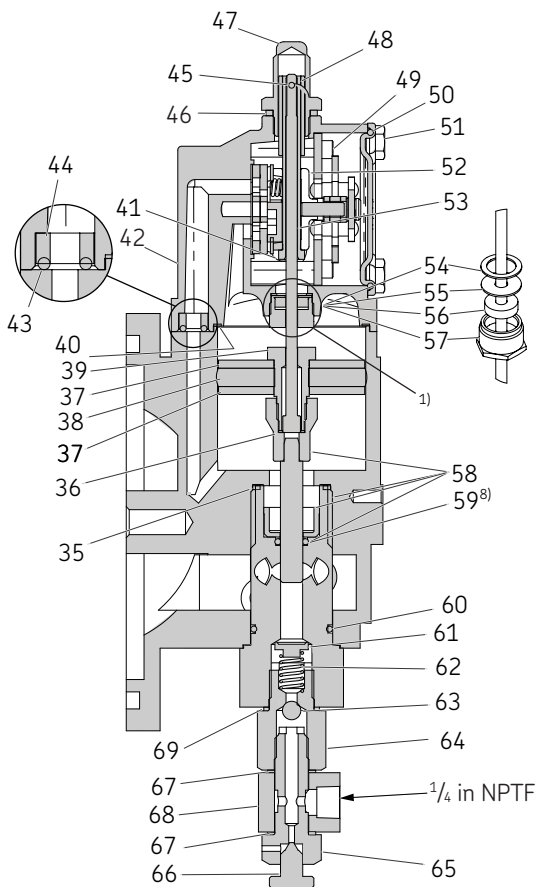
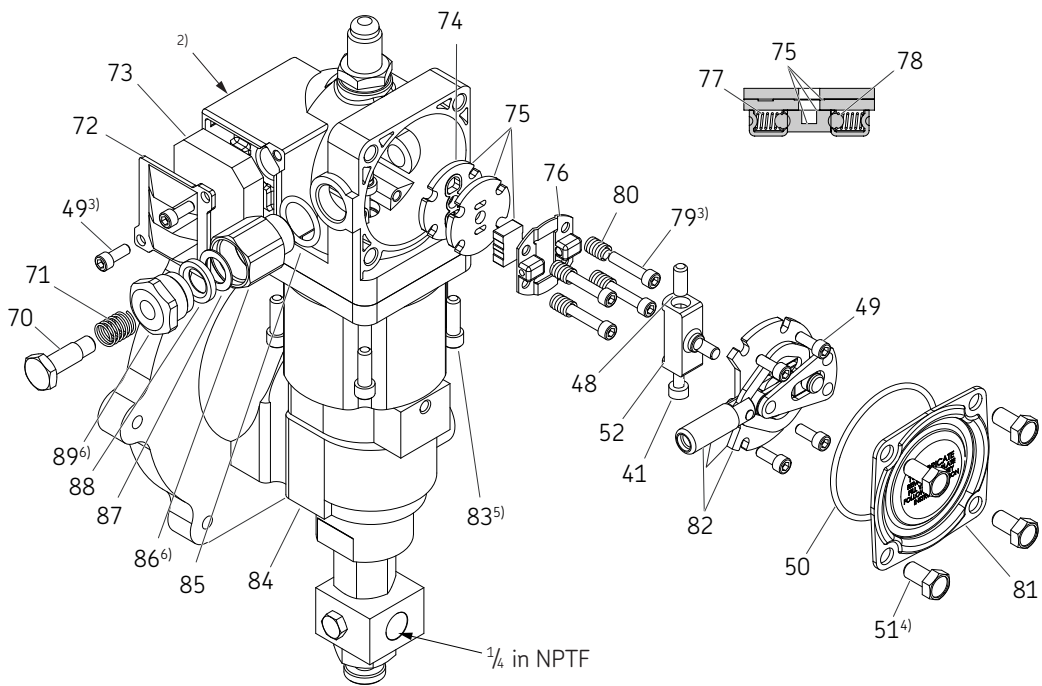
Safety unloader

Safety unloader (24) is provided at pump outlet to prevent build-up of dangerously high lubricant pressure in system. It is factory set to open at approximately 1 100 psi to 1 300 psi (75 to 89 bar).

⚠ WARNING

Safety unloader requires no adjustment and should not be tampered with.

Failure to comply may result in death or serious injury.



- 1) Torque 10 to 15 ft.lbf. (1,1 to 1,6 Nm).
- 2) Air exhaust port
- 3) Torque 30 to 40 in.lbf. (3,3 to 4,5 Nm).
- 4) Torque 90 to 100 in.lbf. (10 to 12 Nm).
- 5) Assemble with Loctite #242 Blue
- 6) Tighten to 20 to 25 ft.lbf. (27 to 33 Nm).
- 7) Vent valve (27)
- 8) Included in 84508.

Service parts

Item	Description	Part number	Quantity	Item	Description	Part number	Quantity
1	Lock washer	66246	6	49	Screw	236869	6
2	Hex head screw	50000	6	50	Gasket (neoprene)	34158 ¹⁾	1
3	Plug button	68797	1	51	Screw	236868	4
4	Lock washer	69181	1	52	Trip shoe	114751 ²⁾	1
5	Nut	51039	1	53	Trip rod	907701 ²⁾	1
6	Cover	68850	1	54	Gasket	330391 ²⁾	1
7	Reservoir cap assembly	91979	1	55	Gasket	2366161 ²⁾	1
8	Strainer	68849	1	56	Packing (nitrile)	2368351 ²⁾	1
9	Reservoir (acrylic)	247243	1	57	Trip rod packing nut	2454251 ²⁾	1
10	Tie rod	14449	1	58	Bushing and plunger assembly	84508	1
11	Base	360383	2	59	O-ring (nitrile)	279461	1
12	Adapter	10772	1	60	O-ring (nitrile)	343141 ²⁾	1
13	1/8 external nipple	244882	1	61	Pump check disc	100611 ²⁾	1
14	Tee	67011	1	62	Spring	56003	1
15	Straight tube connector	66200	1	63	Steel ball	66002	1
16	Nylon tubing	247763S	1	64	Check housing	12093	1
17	Washer	48216	1	65	Outlet body	12095	1
18	Nut	51099	1	66	Vent plug	10127	1
19	Bracket	361066	1	67	Gasket	310071 ²⁾	2
20	Pipe plug	12511	2	68	Outlet block	12096	1
21	Gasket (nitrile)	34308	1	69	Gasket	31054	1
22	90° tube connector	66201	1	70	Spring retainer	12834	1
23	Nylon tubing	272724	1	71	Spring	55231	1
24	Safety unloader assembly	91192 ¹⁾		72	Muffler cover	236615	1
25	Valve body	14727	1	73	Muffler	236833	2
26	90° tube connector	66210	1	74	Valve gasket (nitrile)	381621 ²⁾	1
27	Vent valve	83948	1	75	Valve slide, seat and gasket assembly	830631 ²⁾	1
28	Closure plug	67044	1	76	Valve guide plate	456051 ²⁾	1
29	Cap screw	50086	1	77	Spring	56038	2
30	Washer	48140	1	78	Steel ball	66010 ¹⁾	2
31	Support adapter	16471	1	79	Valve seat bolt	236870	4
32	Straight tube connector	66211	1	80	Spring	55138	4
33	Lock washer	66186	1	81	Cover	236286	1
34	Pump assembly	84509	1	82	Toggle plate assembly	913311 ²⁾	1
35	Tube gasket	31056	1	83	Screw	50521	4
36	Gasket	31047	2	84	Base casting	40821	1
37	Washer	48212	2	85	Gasket	30003 ¹⁾	1
38	Packing (nitrile)	34090	1	86	Packing nut	11904	1
39	Air piston bolt	12094	1	87	Washer	48237	1
40	Gasket (nitrile coated fiber)	33014	1	88	Packing (nitrile)	34110 ¹⁾	1
41	Trip sleeve	119471 ²⁾	1	89	Packing cap	11905	1
42	Air valve casting	237562	1	90	Air cylinder	14720	1
43	O-ring (nitrile)	2443591 ²⁾	1	91	Piston	14721	1
44	Seat	2443131 ²⁾	1	92	Packing (nitrile)	342291 ¹⁾	1
45	Trip rod pin	114721 ²⁾	1	93	Viton packing assembly	239330	1
46	Valve cap gasket	246816	1	94	Valve seat	14723 ¹⁾	1
47	Cap	11470	1	95	Valve body	239336	1
48	Trip rod collar	114711 ²⁾	1	96	Needle	14722 ¹⁾	1

¹⁾ Recommended service parts inventory.

²⁾ Included in 246415 repair kit.

Troubleshooting

Problem	Cause	Solution
Pump operates continuously.	Pump has lost prime.	Examine lubricant supply. Refill reservoir if necessary.
	Air pocket trapped in lubricant.	Loosen vent plug one turn. Allow pump to operate until trapped air is pumped out. Close vent plug.
Pump continues to operate without discharging lubricant.	Pump check (61) and steel ball (63) fouled.	Remove and clean checks and check seats.
	Vent valve (27) fouled.	Replace vent valve.
	Foreign material prevents needle (96) from seating properly.	Clean or replace parts.
Pump fails to operate.	Air system is leaking.	Verify air supply is connected.
		Verify air system is not leaking.
Injectors fail to cycle.	Leak in supply line.	Examine lines and connections.

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.

skf.com | lincolnindustrial.com

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