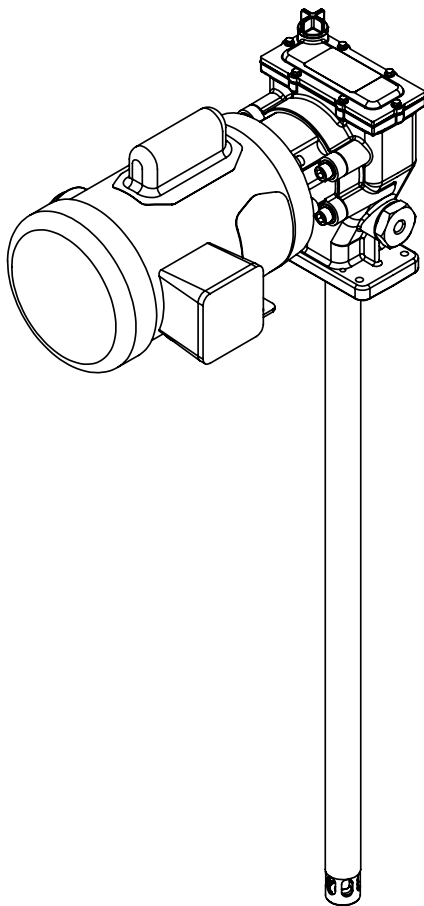


FlowMaster II rotary driven 120/230 V AC, 50/60 Hz, 1 phase electric pump

Models 85743 (120 lbs) and 85744 (400 lbs), series "A"



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* Indicates change.

Safety

- Read and carefully observe these installation instructions before installing, operating or troubleshooting FlowMaster II rotary driven AC electric pump. Assembly must be installed, maintained and repaired exclusively by persons familiar with instructions.
- Install assembly only after safety instructions and this guide have been read and are completely understood.
- All required parts, tools, and equipment are defined and listed within this manual.
- Review parts list and nomenclature prior to disassembly or operation.
- Adequate personal protection must be used to prevent splashing of material on skin or in eyes.
- Always disconnect power source (electricity, air or hydraulic) from pump when it is not being used.
- This equipment generates very high grease pressure. Extreme caution should be used when operating this equipment as material leaks from loose or ruptured components can inject fluid through skin and into body. If any fluid appears to penetrate 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 stated maximum working pressure of pump or of lowest rated component in system.
- Always read and follow fluid manufacturer's recommendations regarding fluid compatibility and use of protective clothing and equipment.
- Failure to comply may result in death or serious injury.

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 may lead to death or serious personal injury if precautionary measures are ignored.

⚠ DANGER

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

Description

FlowMaster II rotary AC electric pump uses an AC motor and two stage planetary gear drive.

Grease output is proportional to pump revolutions per minute. Pump is primarily designed for centralized lubrication systems such as single line parallel, single line progressive and two line systems.

Pump is driven by rotary motion of electric motor. Rotary motion is converted to reciprocating motion through an eccentric crank mechanism. Reciprocating action causes pump cylinder to move up and down. Unit is positive displacement double-acting pump, as grease output occurs during both up and down strokes.

During down stroke, pump cylinder is extended into grease. Through combination of shovel action and vacuum generated in pump cylinder chamber, grease is forced into pump cylinder. Simultaneously, grease is discharged through outlet of pump. Volume of grease during intake is twice amount of grease output during one cycle.

During upstroke, inlet check closes, and one half of grease taken in during previous stroke is transferred through outlet check and discharged to outlet port. Typical output of pump is shown in *Pump performance* (→ **Table 1, page 4**).

Refer to *Motor wiring diagram* (→ **Fig. 2, page 5**) for pump motor.

Appropriate use

All pump models are exclusively designed to pump and dispense lubricants using electric power. Specifications are shown in *Pump specifications* (→ **Table 2, page 4**). Do not exceed maximum specification ratings.

NOTE
Pumps are not recommended for airless spray systems. They should be converted from 19:1 to 34:1 gear ratio. Please contact technical services for component requirement.

Inspection

If over pressurizing of equipment is believed to have occurred, contact factory authorized warranty and service center for inspection. Specialized equipment and knowledge is required for repair of pump.

Annual inspection by factory authorized warranty and service center is recommended.

Damaged pumps

Do not use any pump that appears to be damaged, badly worn or operates abnormally. Remove pump from service and contact factory authorized warranty and service center for repairs. A listing of authorized warranty and service centers is available upon request.

Table 1

Pump performance		
Temperature	@ 75 rpm ¹⁾	@ 92 rpm ¹⁾
80 °F (27 °C)	5.4 in ³ /min (88 cm ³ /min)	6.7 in ³ /min (110 cm ³ /min)
40 °F (4 °C)	5.2 in ³ /min (85 cm ³ /min)	6.4 in ³ /min (105 cm ³ /min)
20 °F (-7 °C)	5.0 in ³ /min (82 cm ³ /min)	6.1 in ³ /min (100 cm ³ /min)

¹⁾ Test conducted with Alvania NLGI 2 at 1 000 psi (68 bar) back pressure.

Table 2

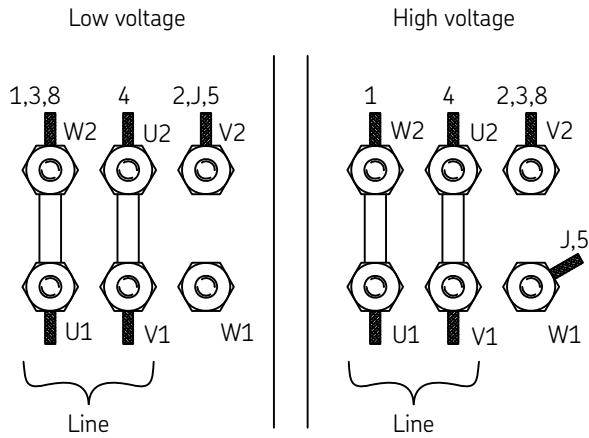
Pump specifications	
Operating temperature	-40 to 150 °F (-40 to 65 °C)
Operating voltage	120/230 VAC, 50/60 Hz, 1 phase
Motor speed	1 425 rpm @ 50 Hz, 1 725 rpm @ 60 Hz
Pump speed	75 rpm @ 50 Hz, 92 rpm @ 60 Hz
Motor power	1/2 HP (0,37 kW)
Output/pump cycle	0.07 in ³ (1,15 cm ³)
Pump outlets	1/4 NPTF internal
Maximum outlet pressure	5 000 psi (345 bar)
Current drawing	→ Table 3 and Table 4, (page 8)

NOTE

Use of motor starter and/or relay may be required when connecting motor to system controller or as required by application. Refer to system control manual for further information.

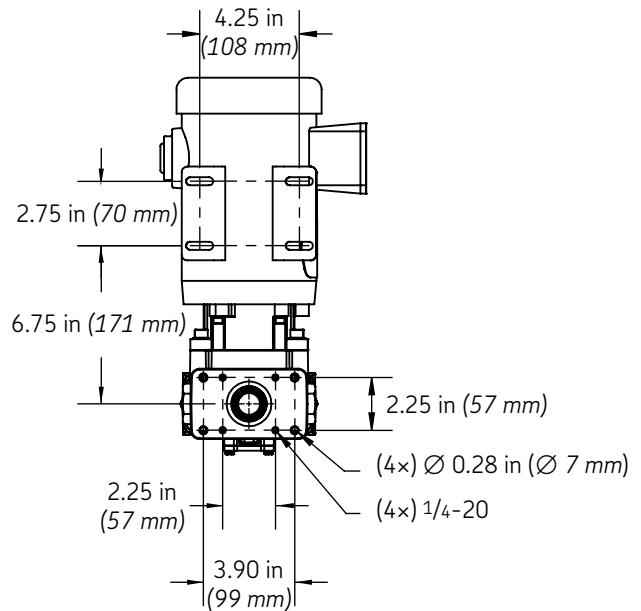
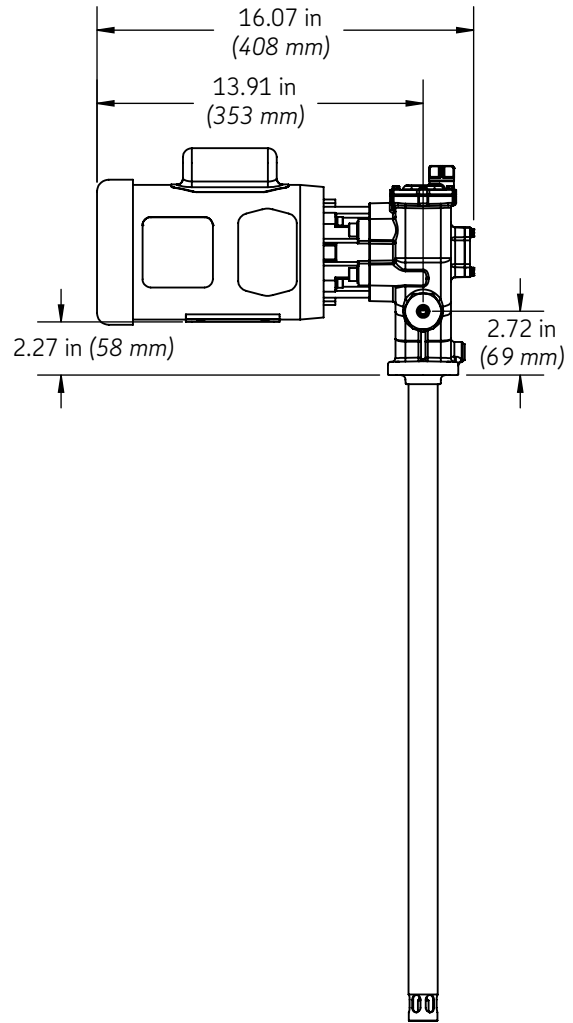
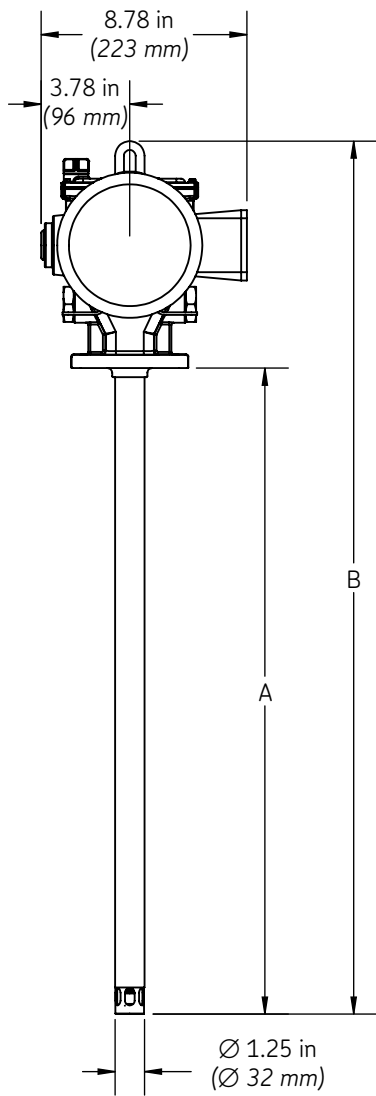
NOTE

Properly sized over current circuit protection fuses or circuit breakers are required and must meet local codes and electrical safety requirements.

Fig. 2
Motor wiring diagram
 Single phase
**NOTE**

Connections on *Motor wiring diagram* (→ **Fig. 2, page 4**) are for counter-clockwise rotation facing end opposite shaft. To reverse rotation, interchange leads 5 and 8.

Pump dimensions



Dimensions

Model	Dimension "A"	Dimension "B"
85743	27.56 in (700 mm)	37.24 in (946 mm)
85744	34.06 in (865 mm)	43.74 in (1 111 mm)

NOTE

Pump was tested in lightweight oil left in to protect pump from corrosion. Flush pump before connecting it to system to prevent contamination of grease with residual oil.

NOTE

Typical installation (→ Fig. 4) is only for selecting and installing system components. Contact Lincoln representative for assistance in designing a system to suit specific needs.

Installation

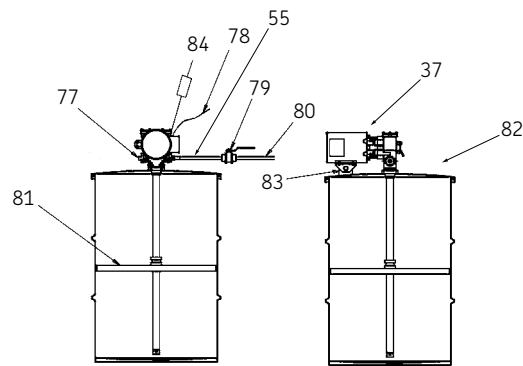
- 1 Connect material supply line (80) to pump outlet (55) (→ Fig. 4).
- 2 Install safety unloader (77) in open outlet port.
- 3 Install high pressure shut-off valve (79) in material supply line (80).

⚠ DANGER

Do not connect electrical wiring prior to lock out/tag out procedure.
Failure to comply will result in death or serious personal injury.

Fig. 4

Typical installation



Item	Description
37	Motor
55	Outlet
77	Safety unloader
78	120 V AC or 230 V AC
79	Outlet shut-off
80	Material supply line
81	Follower plate (85492 for 120 lbs (54 kg) drum only)
82	Drum cover 85757 120 lbs (54 kg) Drum cover 85758 400 lbs (181 kg)
83	Auxiliary motor mount
84	Field installed fuse

⚠ WARNING

Do not exceed maximum stated pressure. Install high pressure shut-off valve (79) to ensure pressure remains below 5 000 psi (344 bar).

Failure to comply may result in death or serious injury.

- 4 Connect VAC power supply to solenoid valve. Refer to **Table 3** and **Table 4** to fuse motor.
- 5 Connect power to motor leads.
- 6 Mount motor (37) onto drum cover (82) using auxiliary mount (83).

NOTE

If it is necessary to drill mounting holes into reservoir cover, refer to **Fig. 3, page 6** for hole pattern and dimensions.

Table 3**Electric FlowMaster II pump**

120 V AC , 50/60 Hz 19:1 gear ratio, 2 stage
Back pressure Current

psi (bar)	rpm	A ¹⁾
0 (0)	95	0.6/0.5
1 000 (68)	92	1.6/1.3
2 000 (137)	92	2.2/1.8
3 000 (206)	92	3.1/2.5
4 000 (275)	92	4.0/3.3
5 000 (344)	92	4.8/3.9

¹⁾ Fuse for 8 A

Table 4**Electric FlowMaster II pump**

230 V AC , 50/60 Hz 19:1 gear ratio, 2 stage
Back pressure Current

psi (bar)	rpm	A ¹⁾
0 (0)	95	1.2/1.0
1 000 (68)	92	3.2/2.6
2 000 (137)	92	4.5/3.7
3 000 (206)	92	6.3/5.1
4 000 (275)	92	8.0/6.5
5 000 (344)	92	9.6/7.8

¹⁾ Fuse for 15 A

Operation

⚠ WARNING

Do not exceed maximum stated pressure. Install relief valve to ensure pressure remains below 5 000 psi (345 bar). Use only high pressure components.

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

Prime pump

- 1 Remove pump outlet line from outlet port (55) (→ Fig. 4, page 7).
- 2 With pump in a full container of lubricant, energize pump.
- 3 Purge air from pump.
- 4 Verify lubricant is flowing evenly from pump.
- 5 Stop pump.
- 6 Attach pump outlet line to outlet port (55).

NOTE

Never allow pump to run dry of lubricant. Dry pump quickly speeds up, creating friction heat that can damage seals. Monitor supply lubricant level and refill when necessary.

Failure to comply may result in damage to equipment.

Crankcase oil service interval

- Check oil level after every 750 hours of machine operation, or monthly.
- Change oil after every 2 000 hours of machine operation or every year.
- Use SAE 10W30 motor oil in all units used in an ambient temperature of -40 to 150 °F (-40 to 65 °C). For ambient temperatures of -70 to 50 °F (-56 to 10 °C), use Mobil Aero HFA low temperature oil.
- Oil level should be at indicating dot on dipstick (middle of crankshaft).
- Use 10W30 motor oil 15 oz. (0,44 l).

⚠ DANGER

Do not exceed maximum rated outlet pressure. Pumps are not equipped with high pressure shut off valve.

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

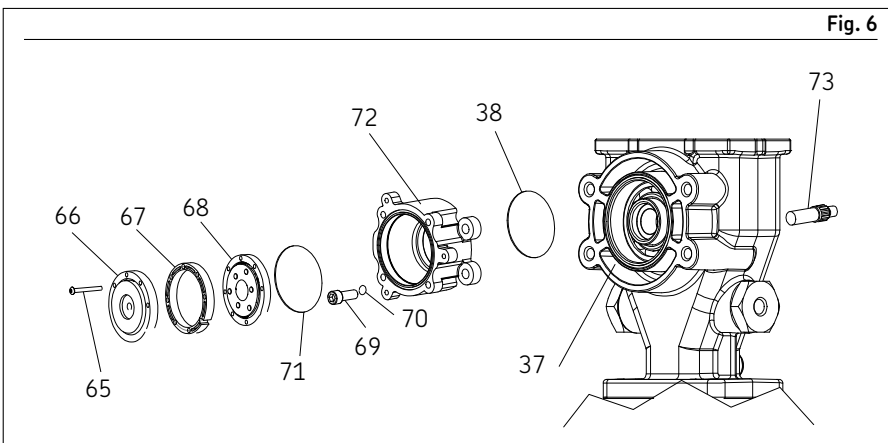
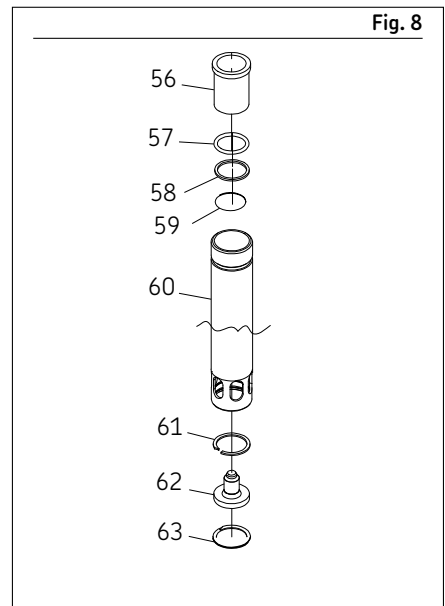
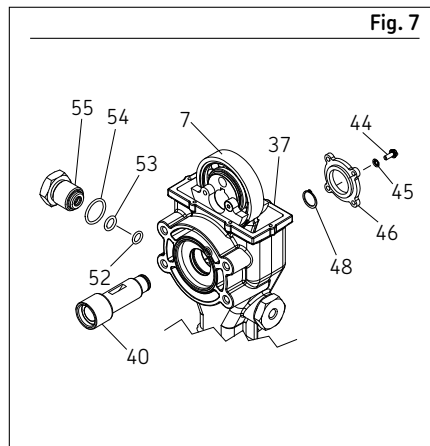
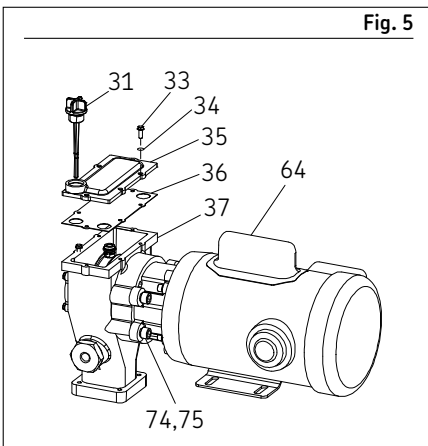
Disassembly

Pump

- 1 Place pump into vise.
- 2 Remove dipstick (31) (→ Fig. 5).
- 3 Drain crankcase oil from crankcase.
- 4 Remove housing cover screws (33).
- 5 Remove housing cover (35) and gasket (36).
- 6 Remove electric motor (64) mounting screws (75) with lock washers (74).
- 7 Remove electric motor (64).
- 8 Using pick, remove motor o-ring.
- 9 Using hex head wrench, remove gear box mounting screws (74), washers (75) and gear box (72) (→ Fig. 5 and Fig. 6).
- 10 Loosen and remove screws (65) holding first stage gear set (66), spacer (67) and final stage gear set (68) in place.
- 11 Remove first stage gear set (66), spacer (67) and final stage gear set (68) from gear box.
- 12 Remove shaft adapter (73).
- 13 Using a pick, remove gear box o-ring (38).
- 14 Loosen screws (44) holding shaft cover (46) on pump housing (37) (→ Fig. 7).
- 15 Remove retaining ring (48) from pump shaft (40).
- 16 Remove pump shaft (40) by pushing pump shaft on retaining ring (48) side.
- 17 Remove retaining ring (63) from housing tube (60) (→ Fig. 8).
- 18 Remove shovel plug (62) from housing tube (60).
- 19 Remove spiral retaining ring (61).
- 20 Loosen and remove housing tube (60).
- 21 Remove bronze bearing (56) from housing tube (60).
- 22 Using flat, blunt tool, remove o-ring (57) from housing tube (60).
- 23 Remove back up washer (58) from housing tube (60).
- 24 Using flat, blunt tool, remove o-ring (59) from housing tube (60).
- 25 Using rubber mallet and piece of brass or other suitable piece of soft metal, tap on crank rod (7) inside housing (37).
- 26 Pull eccentric (5) and crank rod (7) out of top of pump housing (37).

NOTE

Slight force may be necessary to remove eccentric (5) and crank rod (7) from housing (37).



Crankrod and eccentric

- 1 Remove pivot screws (11) from crankrod (7) (→ Fig. 9).
- 2 Using 5/16-24 bolt, press out wrist pin bushing (12).
- 3 Remove crank rod (7).

NOTE

Wrist pin bushings (12) often stick in wrist pin anchor (13). It may be necessary to use 5/16-24 bolt from kit 276275 to remove wrist pin bushings (12).

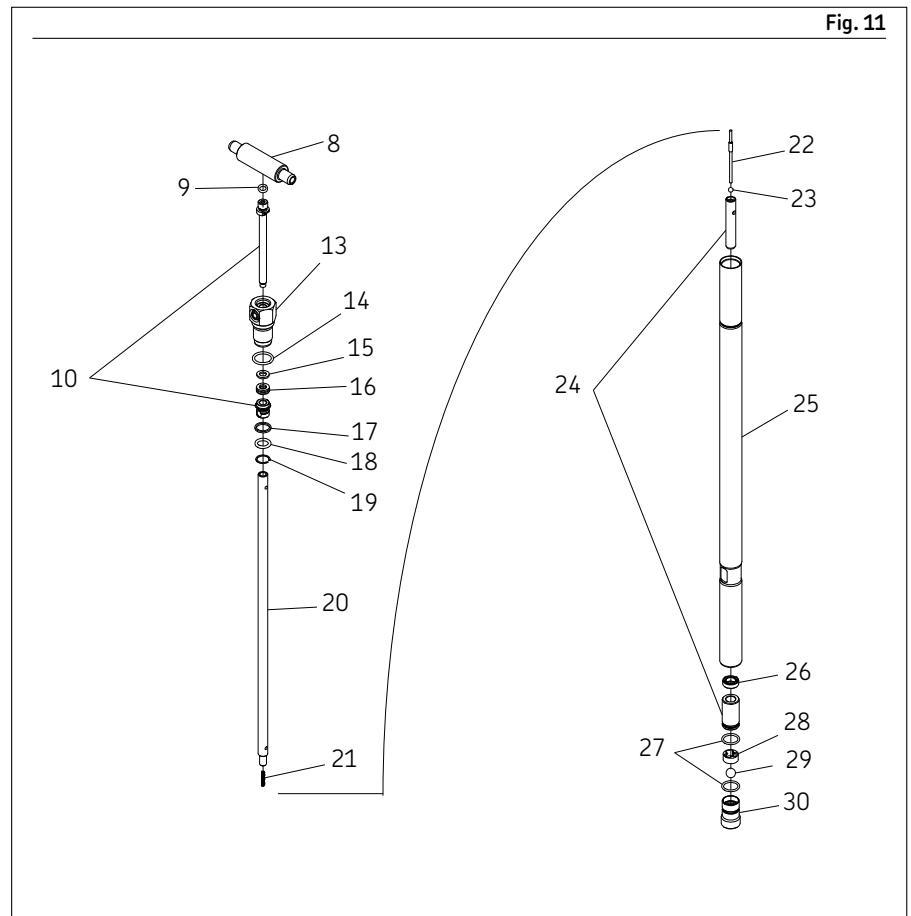
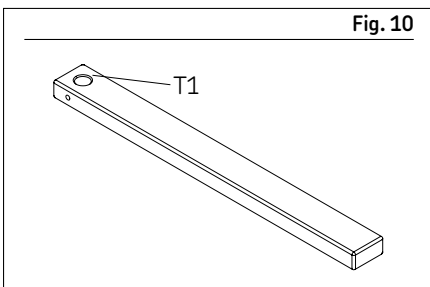
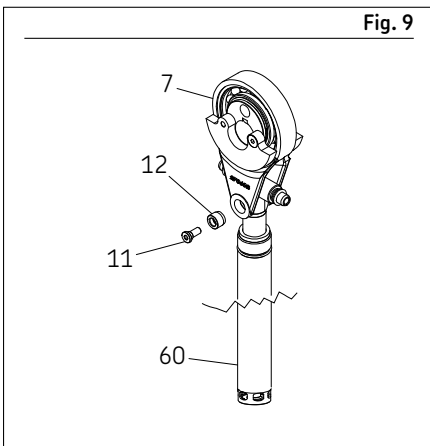
- 4 Remove wrist pin anchor (13) from reciprocating tube (25) (→ Fig. 11).
- 5 Pull cup seal (16) out of wrist pin anchor (13).

- 6 Remove steel backup ring (17).
- 7 Place plunger link rod (20) in a vise.
- 8 Using open-ended wrench, loosen plunger link rod (20) and remove from outlet pin (8).
- 9 Remove plunger link rod (20).
- 10 Remove retainer clip (19) from plunger link rod (20).
- 11 Using blunt tool, remove o-ring (18) from plunger link rod (20).
- 12 Remove back up washer (15) from plunger link rod (20).
- 13 Remove o-ring (14) from plunger tube (10).
- 14 With crank rod in a vise and using special tool (T1) (→ Fig. 10) provided in tool kit, remove plunger link rod (20) (→ Fig. 11).
- 15 Place end of plunger link rod (20) into hole of special tool (T1).
- 16 Align outlet hole of plunger link rod (20) with hole in special tool (T1).
- 17 Insert pin included in tool kit 275996 through tool and into plunger link rod (20) outlet hole.

- 18 Turn tool counter-clockwise to remove lower bushing and plunger (24) from plunger link rod (20).
- 19 Remove plunger (24).
- 20 Remove check rod from (22) lower bushing and plunger (24).
- 21 Remove ball (23) from lower bushing and plunger (24).
- 22 Remove spring (21) from link rod (20).

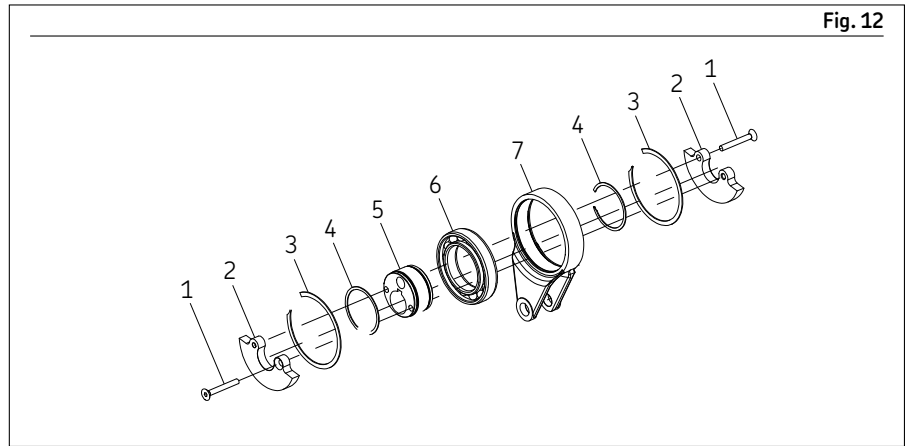
Reciprocating tube

- 1 Loosen check seat housing (30) with 3/8 in hex head wrench.
- 2 Remove check seat housing (30) from reciprocating tube (25).
- 3 Remove ball cage (28), check ball (29) and o-ring seals (27) from check seat housing (30).
- 4 Remove lower bushing (24) from reciprocating tube (25).
- 5 Remove lower cup seal (26) from reciprocating tube (25).



Crankrod

- 1 Using hex head wrench, loosen and remove flat head screws (1) from eccentric (5) (→ Fig. 12, page 12).
- 2 Remove counterbalance weights (2).
- 3 Remove outer (3) and inner (4) retaining ring from both sides of crank rod (7).
- 4 Place crank rod (7) on supplied 2 1/2 in (63,5 mm) diameter steel pipe.
- 5 Drive crank eccentric (5) out of ball bearing (6).
- 6 Drive ball bearing (6) out of crank rod (7).



Assembly

Crankrod and eccentric

- 1 Place crank rod (7) on 2 1/2 in (63,5 mm) diameter steel pipe from kit.
- 2 Install ball bearing assembly (6) into crank rod (7) (→ Fig. 12, page 12).
- 3 Place eccentric (5) in ball bearing (6).
- 4 Place one end of inner retaining ring (4) on top of eccentric (5).
- 5 Squeeze other end of retaining ring (4) toward center and slide retaining ring (4) into place.
- 6 Place one end of outer retaining ring (3) on top of inner retaining ring (4).
- 7 Squeeze other end of retaining ring (4) toward center and slide retaining ring (4) into place.
- 8 Align holes of counter-balance weights (2) with threaded holes of eccentric (5) and place on eccentric (5).
- 9 Insert flat head screws (1) into counter-balance weight (2) and torque flat head screws (1) to torque of 100–110 in-lbf (11,3–12,4 Nm).

Pump

- 1 Install ball (23) into lower bushing and plunger (24) (→ Fig. 13).
- 2 Insert check rod (22) into pump plunger (23).
- 3 Place spring (21) onto the check rod (22).
- 4 Thread plunger link rod (20) into pump plunger (24).
- 5 Insert lower bushing pump plunger (24) into tool (T1) (→ Fig. 10, page 11).
- 6 Align hole in lower bushing pump plunger (24) with hole in supplied tool (T1).
- 7 Insert pin into hole of tool (T1) and into lower bushing pump plunger (24).
- 8 Torque lower bushing pump plunger (24) to torque of 110–125 in-lbf (12,4–14,1 Nm).
- 9 Install steel back up ring (17) onto threads of upper bushing and plunger end (10).
- 10 Slide o-ring (18) onto upper bushing and plunger end (10).
- 11 Install retaining clip (19) on upper bushing and plunger end (10).
- 12 Install o-ring (9) on upper bushing and plunger end (10).
- 13 Place outlet pin (8) into a vise.

- 14 Apply Loctite® 242® to threads of upper bushing and plunger end (10).
- 15 Thread upper bushing and plunger end (10) into outlet pin (8).
- 16 Torque to 110–125 in-lbf (12,4–14,1 Nm).
- 17 Install back-up washer (15) in wrist pin anchor (13).
- 18 Place new cup seal (16) inside wrist pin anchor (13).
- 19 Clean threads of wrist pin anchor (13).
- 20 Install o-ring (14) on wrist pin anchor (13).
- 21 Insert upper bushing and plunger end (10) into wrist pin anchor (13) and tighten.
- 22 Place wrist pin anchor (13) in a vise.
- 23 Tighten wrist pin anchor (13) to torque of 20–25 ft.lbf. (27–34 Nm).
- 24 With wrist pin anchor (13) still in vise, align crankrod/eccentric assembly (7) holes with wrist pin anchor (13) holes.
- 25 Install wrist pin bushings (12) through crank rod (7) and into wrist pin anchor (13).
- 26 Apply Loctite® 242® to threads of wrist pin bushing screws (11) (→ Fig. 14, page 14).

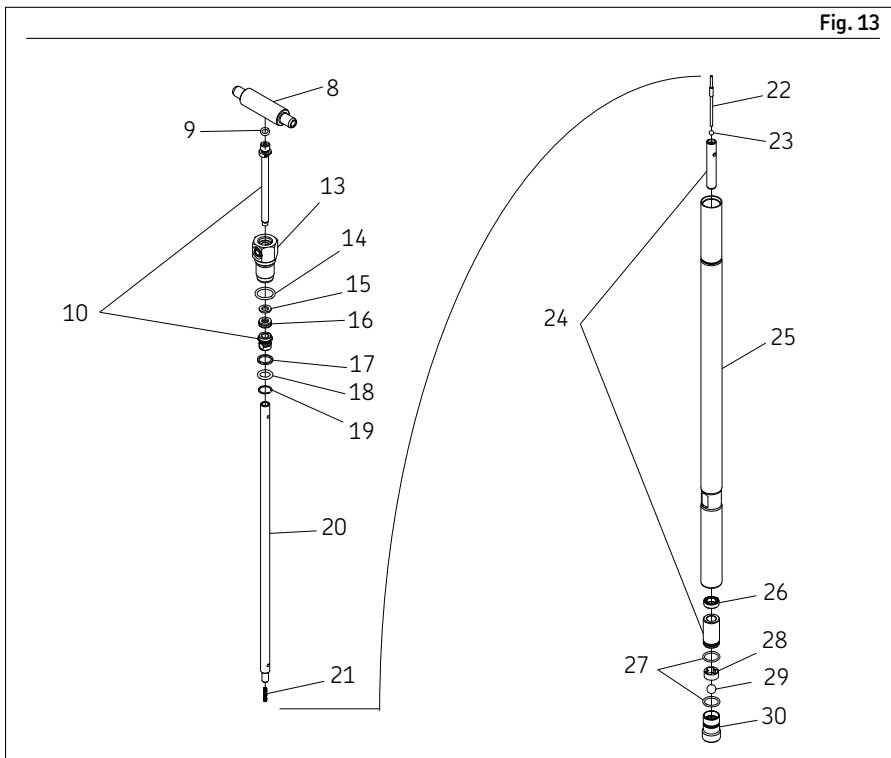


Fig. 13

NOTE

For ease of installation of lower cup, use small piece of tubing to slide lower cup into reciprocating tube (25) and over pump plunger.

- 27 Insert and thread wrist pin bushing screws (11) into crankrod (7).
- 28 Torque bushing screws (7) to torque of 110–125 in-lbf (12,4–14,1 Nm).
- 29 Install cup seal (26) with slotted side toward center of reciprocating tube (25) (→ Fig. 15).
- 30 Place new o-ring (27) on lower bushing and plunger (24).

- 31 Slide lower bushing and plunger (24) into reciprocating tube (25) with o-ring (27) near bottom of reciprocating tube (25).
- 32 Install steel check cage (28) into reciprocating tube (25).
- 33 Install ball (29) into steel check cage (28).
- 34 Apply Loctite® 242® or equivalent to threads of check seat housing (30).
- 35 Thread check seat housing (30) into reciprocating tube (25) and tighten using 3/8 in hex key.
- 36 Torque to 20–25 ft-lbf (27–33 Nm).
- 37 Remove crank rod (7) from vise.
- 38 Insert o-ring (59) into housing tube (60) (→ Fig. 16).
- 39 Place back up washer (58) into housing tube (60).
- 40 Insert o-ring (57) into housing tube (60).

- 41 Insert bronze bearing (56) into housing tube (60).
- 42 Position crankrod assembly (7) over top of pump housing (37) and lower into pump housing (37) (→ Fig. 17).
- 43 Align crank rod (7) with shaft (40) mounting hole.

NOTE

Failure to align key (39) on shaft and key way in eccentric (5) will result in damage to equipment.

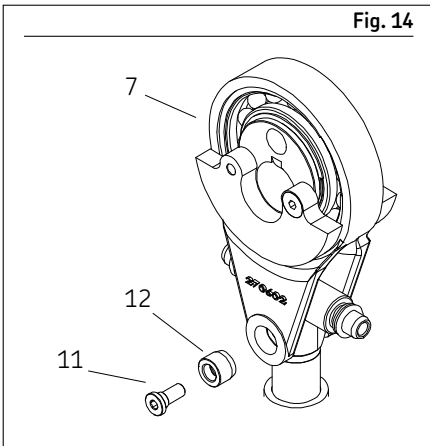


Fig. 14

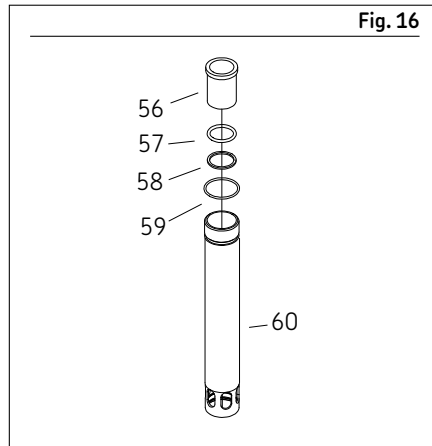


Fig. 16

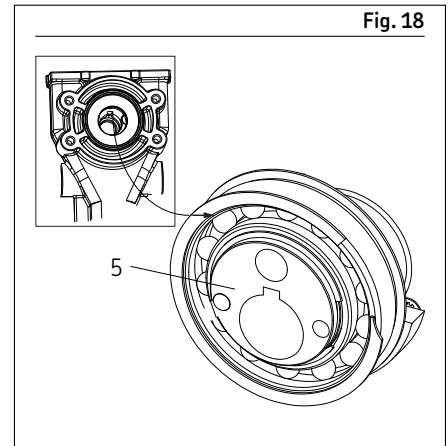


Fig. 18

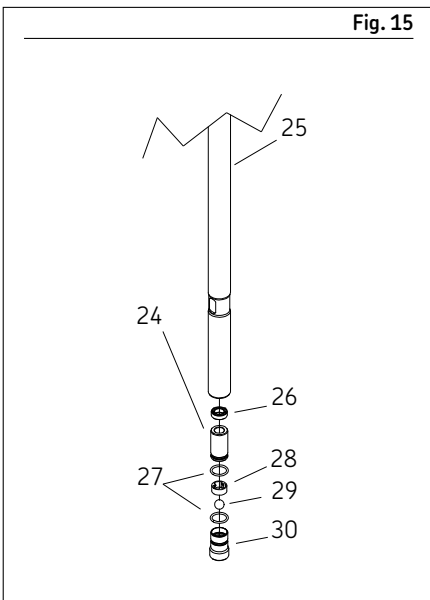


Fig. 15

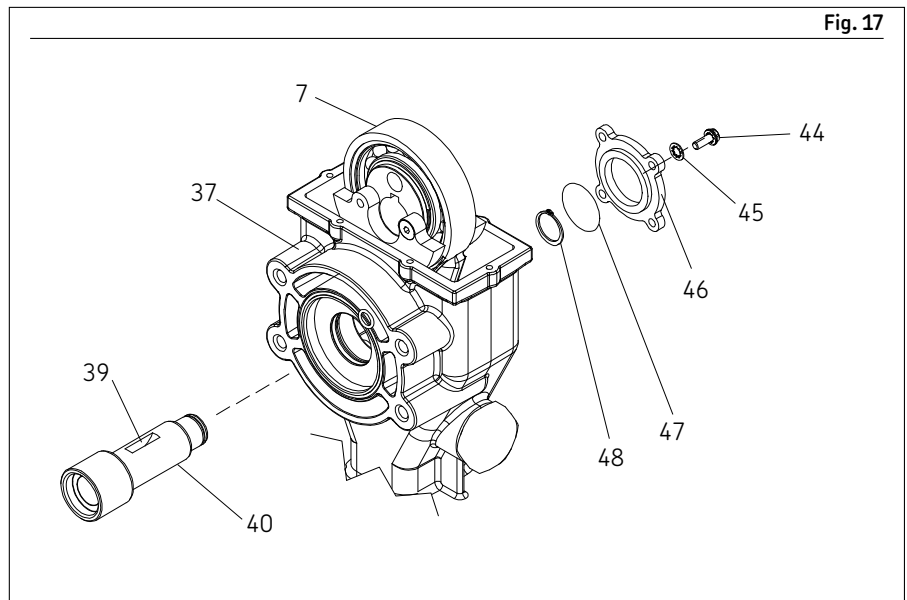


Fig. 17

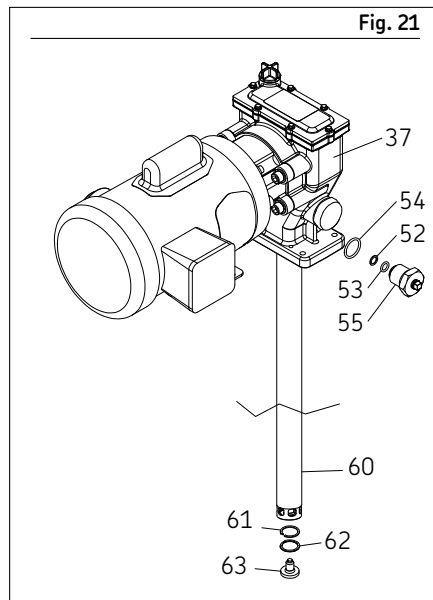
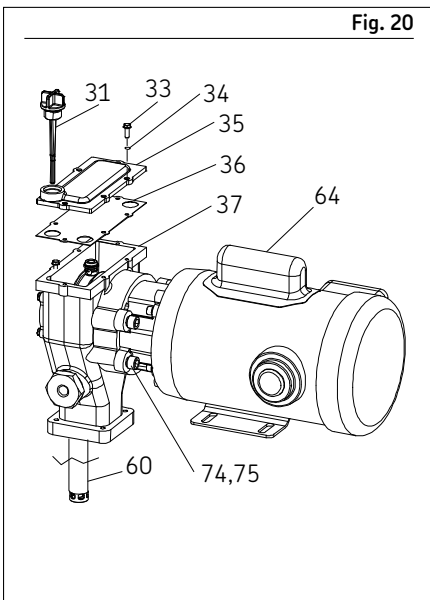
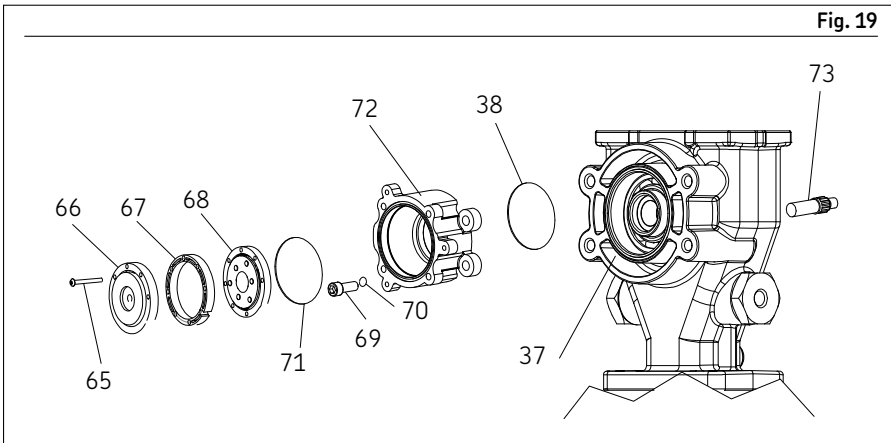
- 44 While aligning key (39) on shaft (40) with eccentric key way (5), slide shaft (40) into eccentric (5) (→ Fig. 18, page 14).
- 45 Install retaining ring (48) on shaft. (40).
- 46 Install shaft cover (46) on pump (37).
- 47 Insert and thread screws (44) with lock washers (45) into shaft cover (46) and pump housing (37).
- 48 Install shaft adapter (75) inside pump housing (37).
- 49 Install gear box o-ring (38) in pump housing (37) groove (→ Fig. 19).
- 50 Position final stage gear set (68) in gear box (72).
- 51 Place spacer (67) on top of final stage gear set (68).
- 52 Insert first stage gear set (66) into gear box (72).
- 53 Install screws (65) through gear sets (66 and 68) and spacer (67) into gear box (72).
- 54 Torque screws (65) to 20-25 in-lbf (2,3-2,8 Nm)*.

- 55 Place gear box (72) on pump housing (37).
- 56 Install four gear box mounting screws (69) and washers (70) in gear box (72) and into pump housing (37).
- 57 Torque gear box mounting screws (69) to a torque of 20-25 in-lbf (2,3-2,8 Nm)*.
- 58 Install electric motor o-ring (71) in groove of gear box (72).
- 59 Place electric motor (64) on pump housing (37).
- 60 Insert electric motor mounting screws (75) with lock washers (74) into gear box (72) and electric motor (64).
- 61 Torque mounting screws (75) to torque of 100-110 in-lbf (1,3-12,4 Nm) (→ Fig. 20).
- 62 Insert retaining ring (61) into second groove of housing tube (60).
- 63 Install shovel plug (63) into housing tube (60).
- 64 Install spiral retaining ring (62).
- 65 Install new cover gasket (36) on pump housing (37).

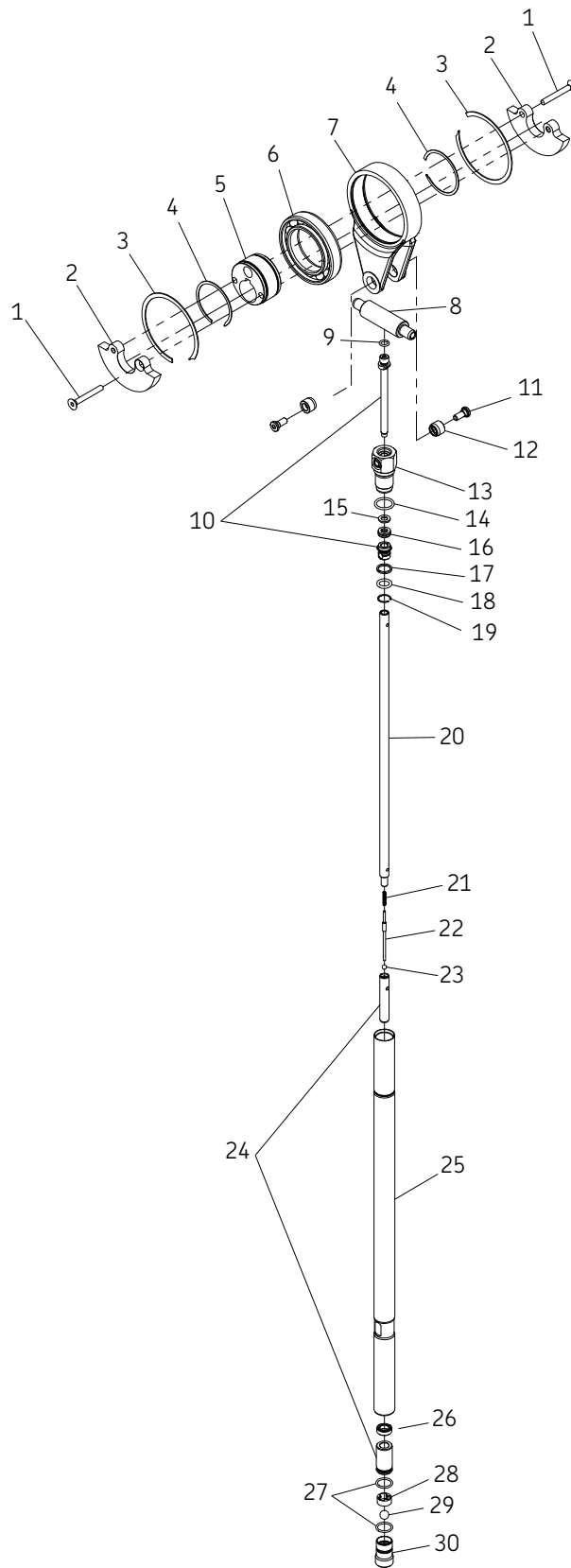
- 66 Install pump cover (35).
- 67 Install screws (33) with o-rings (34) into pump cover (35).
- 68 Torque screws (33) to torque of 10-15 in-lbf (1,1-1,6 Nm).
- 69 Install o-ring (54) in outlet pin mounting hole groove of pump housing (37).
- 70 Install back up washer (52) inside outlet pin nut (55).
- 71 Install o-ring (53) inside outlet pin nut (55).
- 72 Line up outlet pin and thread outlet pin nuts (55) into pump housing (37).
- 73 Torque to 30-35 ft-lbf (40,7-47,5 Nm).
- 74 Fill crankcase with oil up to indicator dot on dipstick.
- 75 Install crank case oil dip stick and torque to 10-15 in-lbf (1,1-1,7 Nm).

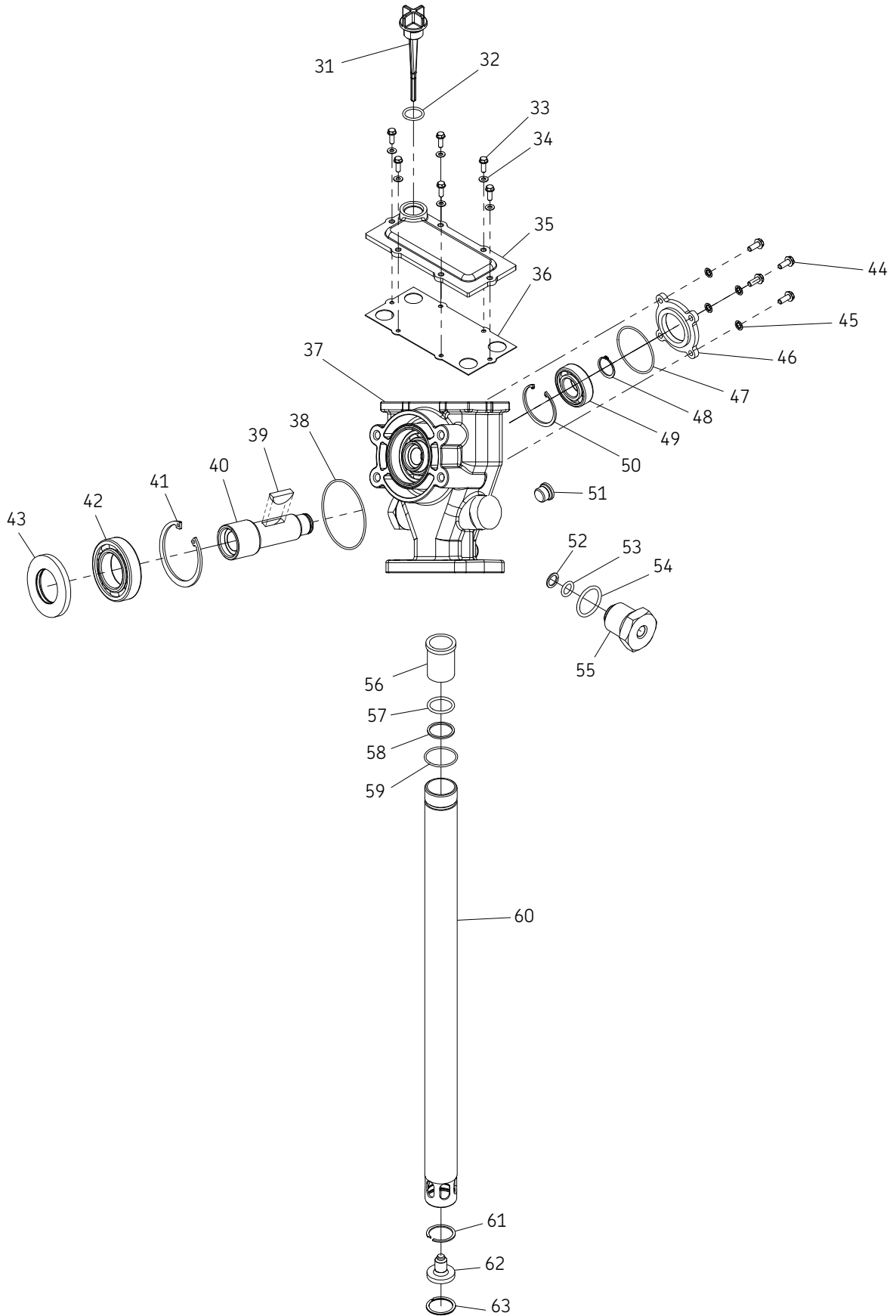
NOTE

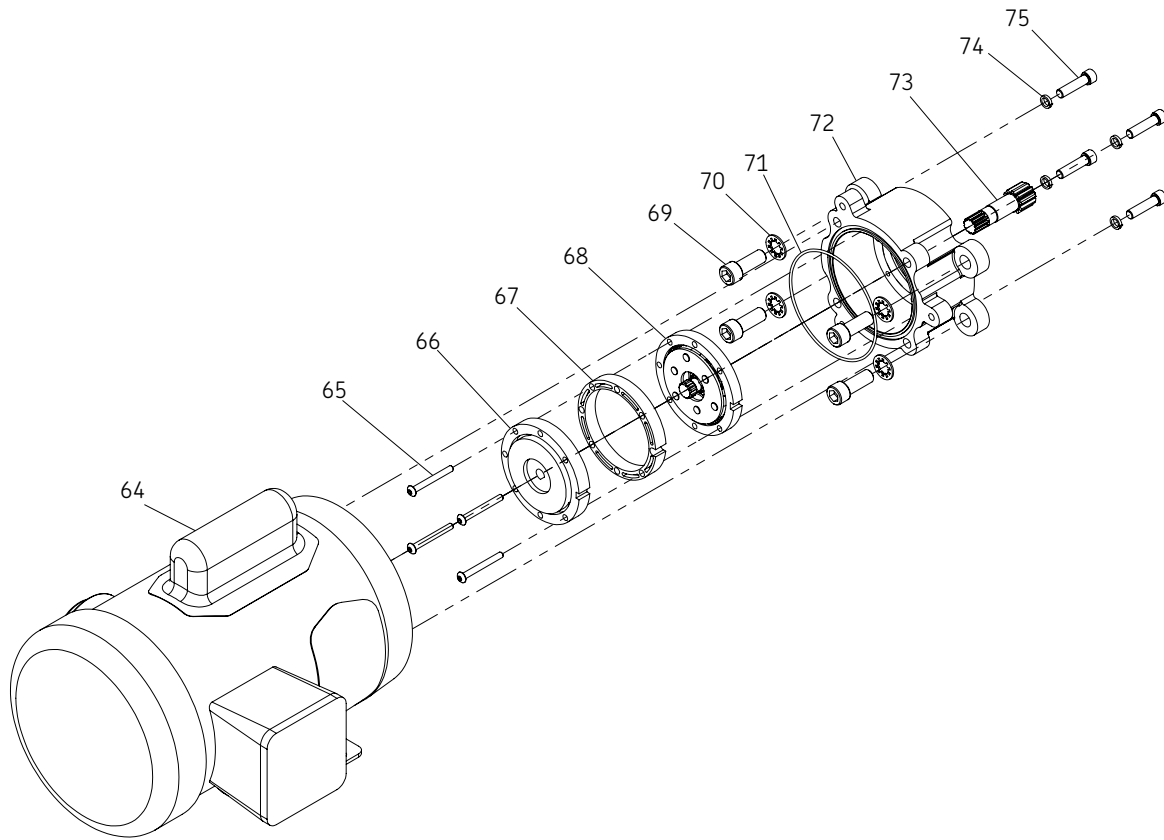
Refer to *Crankcase oil service* (page 9) for oil recommendations.



* Indicates change.







Parts list

Item	Description	Part	Quantity	Item	Description	Part	Quantity
1	Flat head screw (1/4-28 x 1 3/4)	270635	2	39	Woodruff key	272560	1
2	Counter weight	272197	2	40	Pump shaft	277397	1
3	Retaining ring	270609	2	41	Retaining ring	272561	1
4	Retaining ring	270608	2	42	Ball bearing	272556	1
5	Crank eccentric	270666	1	43	Shaft seal	272554 ²⁾	1
6	Ball bearing	270607	1	44	Screws	272557	4
7	Crank rod	270665	1	45	Lock washer	66051	4
8	Outlet pin	270670	1	46	Bearing cover	272549	1
9	O-ring (nitrile)	34255 ^{1) 2)}	1	47	O-ring	272559 ²⁾	1
10	Upper bushing and plunger	275000 ¹⁾	1	48	Retaining ring	272563	1
11	Pivot screw	275006	2	49	Ball bearing	272555	1
12	Wrist pin bushing	275005	2	50	Retaining ring	272562	1
13	Wrist pin anchor	274992	1	51	Drain plug	244752	1
14	O-ring	275015 ²⁾	1	52	Backup washer	249837 ²⁾	2
15	Backup washer	274998 ^{1) 2)}	1	53	O-ring	249838 ²⁾	2
16	Cup seal (polyurethane)	274999 ^{1) 2)}	1	54	O-ring	270719 ²⁾	2
17	Steel back-up ring	274997 ^{1) 2)}	1	55	Outlet pin nut	270619	2
18	O-ring	272791 ^{1) 2)}	1	56	Bronze bearing	270674	1
19	Retainer clip	274996 ^{1) 2)}	1	57	O-ring (polyurethane)	249839 ²⁾	1
20	Plunger link rod	See chart	1	58	Backup washer	270652 ²⁾	1
21	Spring	277168 ²⁾	1	59	O-ring (nitrile)	34431 ²⁾	1
22	Check rod	277167	1	60	Housing tube	See chart	1
23	Ball (3/16 in)	66010 ²⁾	1	61	Retaining ring	277398	1
24	Lower bushing and plunger	27500 ¹⁾	1	62	Shovel plug	270707	1
25	Reciprocating tube	See chart	1	63	Retaining ring	270705	1
26	Cup Seal (polyurethane)	270625 ²⁾	1	64	Motor	272702	1
27	O-ring (nitrile)	275011 ²⁾	2	65	Screw	272552	4
28	Ball cage	272179	1	66	First stage gear set	272543	1
29	Ball (3/16 in)	66001 ²⁾	1	67	Spacer	272547	1
30	Check seat	270664	1	68	Final stage gear set	272663	1
31	Dipstick with o-ring	275369	1	69	Screw	272564	4
32	O-ring	275015 ²⁾	1	70	Lock washer	272566	4
33	Self-threading screw (#8 x 1/2)	270633	6	71	O-ring	272544 ²⁾	4
34	Gasket (screw)	252986 ²⁾	6	72	Gear box housing	272541	1
35	Housing cover	275009	1	73	Shaft, adapter	272546	1
36	Cover gasket (nitrile)	270630 ²⁾	1	74	Lock washer (1/4)	272569	4
37	Pump housing	278230	1	75	Screw (1/4-20 x 1)	272568	4
38	O-ring	272567 ²⁾	1	76	Safety unloader	90942	1

Non-common repair parts

		Part	
		Model 85743	Model 85744
20	Plunger link rod	277383	277384
25	Reciprocating tube	277734	277735
60	Housing tube	277738	277739

1) Included in 275186 repair kit.

2) Included in 277723 repair kit.

Repair kits

Kit number 275186

Item	Description	Part	Quantity
9	O-ring (nitrile)	34255	1
10	Upper bushing and plunger	275000	1
15	Backup washer	274998	1
16	Cup seal (polyurethane)	274999	1
17	Steel back-up ring	274997	1
18	O-ring	272791	1
19	Retainer clip	274996	1
23	Ball (3/16 in)	66010	1
24	Lower bushing and plunger	27500	1

Kit number 277723

Item	Description	Part	Quantity
9	O-ring (nitrile)	34255	1
14	O-ring	275015	1
15	Backup washer	274998	1
16	Cup seal (polyurethane)	274999	1
17	Steel back-up ring	274997	1
18	O-ring	272791	1
19	Retainer clip	274996	1
21	Spring	277168	1
23	Ball (3/16 in)	66010	1
26	Cup Seal (polyurethane)	270625	1
27	O-ring (nitrile)	275011	2
29	Ball (3/16 in)	66001	1
32	O-ring	275015	1
34	Gasket (screw)	252986	6
36	Cover gasket (nitrile)	270630	1
38	O-ring	272567	1
43	Shaft seal	272554	1
47	O-ring	272559	1
52	Backup washer	249837	2
53	O-ring	249838	2
54	O-ring	270719	2
57	O-ring (polyurethane)	249839	1
58	Backup washer	270652	1
59	O-ring (nitrile)	34431	1
71	O-ring	272544	4

Tool and consumable list

7/16 in open end wrench
 1 1/2 in open end wrench
 3/4 in open end wrench

12 in adjustable wrench
 1/8 in hex head wrench
 5/32 in hex head wrench

1/4 in hex head wrench
 5/16 in hex head wrench
 3/8 in hex head wrench

1/4 in drive socket
 1/4 in socket
 5/16 in socket

Flat screwdriver 0.10 in (2,54 mm) wide 0.025 in (0,635 mm) thick
 Pick to remove seals and spiral retaining rings
 Small snap ring pliers

Special tool kit

Tool kit 276275

Phillips screwdriver
 1/2 in hex head wrench
 Hammer

Torque wrench (ft-lbf and in-lbf)
 Hex head socket adapters (required to torque hex head screws)
 Loctite® 242® medium strength thread lock or equivalent

Troubleshooting

Condition	Possible cause	Corrective action
Pump does not run.	Pump is seized or damaged. Incorrectly wired.	Disassemble pump and repair any parts that are damaged or worn. Check wiring diagram.
Pump speeds up or runs erratically.	Low level of grease or reservoir is empty. Follower plate is stuck and separated from grease. Pump piston or checks are worn.	Fill reservoir. Check follower plate and container for damage. Disassemble pump and repair.
Pump runs, but output is low.	Faulty inlet check (29, 30), faulty discharge check (23, 24) or damaged o-ring (27).	Replace faulty components.
Seepage from housing cover (35).	Cup seal (16) or o-ring (14) worn out.	Check seals and replace if necessary.
Pump is noisy.	Crankcase needs oil.	Fill with oil.
Pump does not build pressure.	Worn wrist pin bushing (12). Foreign material holding lower check open.	Check bushings and replace if necessary Dismantle and clear check. Consider adding grease filter to system.
Motor runs, but no pump output.	Gear set or adapter shaft stripped or broken.	Dismantle and replace damaged part.

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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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