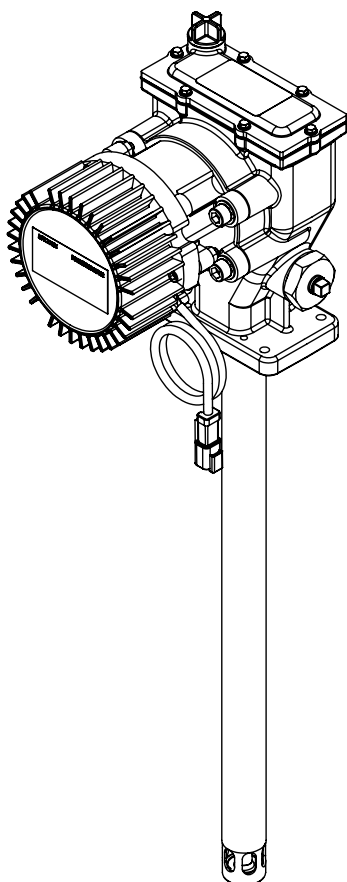


# FlowMaster II rotary driven 24 V electric pump, series “A”

Models 85736, 5 US gallons, 85737, 60 lbs, 85738, 120 lbs, 85739, 400 lbs, 85740, 40 lbs



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## Safety

Read and carefully observe installation instructions before installing, operating or troubleshooting assembly. Assembly must be installed, maintained and repaired exclusively by persons familiar with instructions.

Install assembly only after safety instructions have been read and are completely understood.

- 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 not in use.
- Equipment generates very high grease pressure. Extreme caution should be used when operating equipment as material leaks from loose or ruptured components can inject fluid through skin and into body. If fluid appears to penetrate skin, seek attention from doctor immediately.
- Do not treat injury as 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 personal injury and/or damage to equipment.

## Explanation of signal words for safety

### 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 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.

\* Indicates change.



## Overview

This manual details the procedure that must be followed while installing, operating, troubleshooting and repairing FlowMaster II rotary driven 24 V  electric pump.

All required parts, tools, and equipment needed to complete operation of FlowMaster II rotary driven 24 V  electric pump are defined and listed within manual.



Review of parts list and nomenclature is recommended before starting disassembly or operation.

## Appropriate use

All pump models are exclusively designed to pump and dispense lubricants using electric power. Specifications for pump are shown in **Table 1**. Maximum specification ratings should not be exceeded.

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

## Description

Lincoln Industrial rotary 24 V  electric pump uses a 24 V  motor and either a single or 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 eccentric crank mechanism. Reciprocating action causes pump cylinder to move up and down. Unit is a positive displacement double-acting pump as grease output occurs during both up and down stroke. Pump motor employs an integral speed control capable of reducing pump speed to 10% maximum value.

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 **Table 2**.

All five models 85736 5 U.S. gallons (18 liter), 85737 60 lb (27 liter) 85738 120 lb (181 kg), 85739 400 lb (181 kg) and 85740 40 lb (18 kg) are similar, with main difference being length of housing tube.

**Fig. 1, page 4**, is an electrical wiring schematic for pump with controller and **Fig. 2, page 4**, is an electrical wiring schematic for pump without controller.

## Inspection

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

Specialized equipment and knowledge is required for repair of pump.

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



## Damaged Pumps

Do not use any pump that appears to be damaged, badly worn or operating abnormally. Remove pump from service and contact factory authorized warranty and nearest service center for repairs.

Listing of authorized warranty and service centers is available upon request.

Table 1

### Pump specifications

Operating temperature	−40 to 150 °F (−40 to 65 °C)
Operating voltage <sup>1)</sup>	24 V  (minimum 18, maximum 32 V  )
Motor, power	1/3 HP (0,25 kW)
Current draw	→ Table 3
Output/pump cycle	0.07 in <sup>3</sup> (1,15 cm <sup>3</sup> )
Pump performance	→ Table 2
Pump outlets	1/4 NPTF internal

<sup>1)</sup> Motor controller will shut motor off when outside of voltage limits.

Table 2

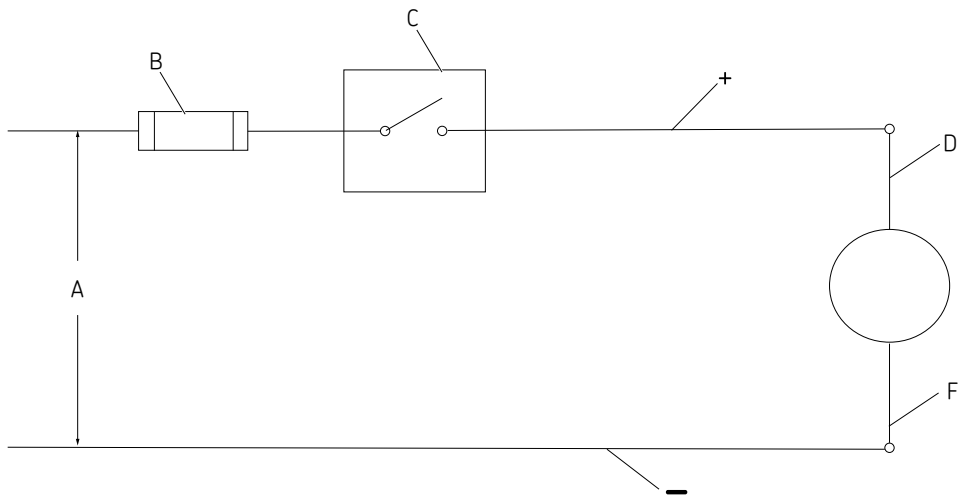
### Electric pump performance specifications


Temperature	50 r/min.	100 r/min.
80 °F (27 °C)	3.5 in <sup>3</sup> /min. (57 cm <sup>3</sup> /min.)	7 in <sup>3</sup> /min. (114 cm <sup>3</sup> /min.)
40 °F (4 °C)	3.5 in <sup>3</sup> /min. (57 cm <sup>3</sup> /min.)	7 in <sup>3</sup> /min. (114 cm <sup>3</sup> /min.)
20 °F (−7 °C)	3 in <sup>3</sup> /min. (49 cm <sup>3</sup> /min.)	6 in <sup>3</sup> /min. (98 cm <sup>3</sup> /min.)
0 °F (−18 °C)	3 in <sup>3</sup> /min. (49 cm <sup>3</sup> /min.)	6 in <sup>3</sup> /min. (98 cm <sup>3</sup> /min.)
−10 °F (−23 °C)	2.5 in <sup>3</sup> /min. (40 cm <sup>3</sup> /min.)	5 in <sup>3</sup> /min. (81 cm <sup>3</sup> /min.)

Test conducted with Alvania NLGI 2 grade grease at 1 000 psi (68 bar) backpressure.



Pump without controller

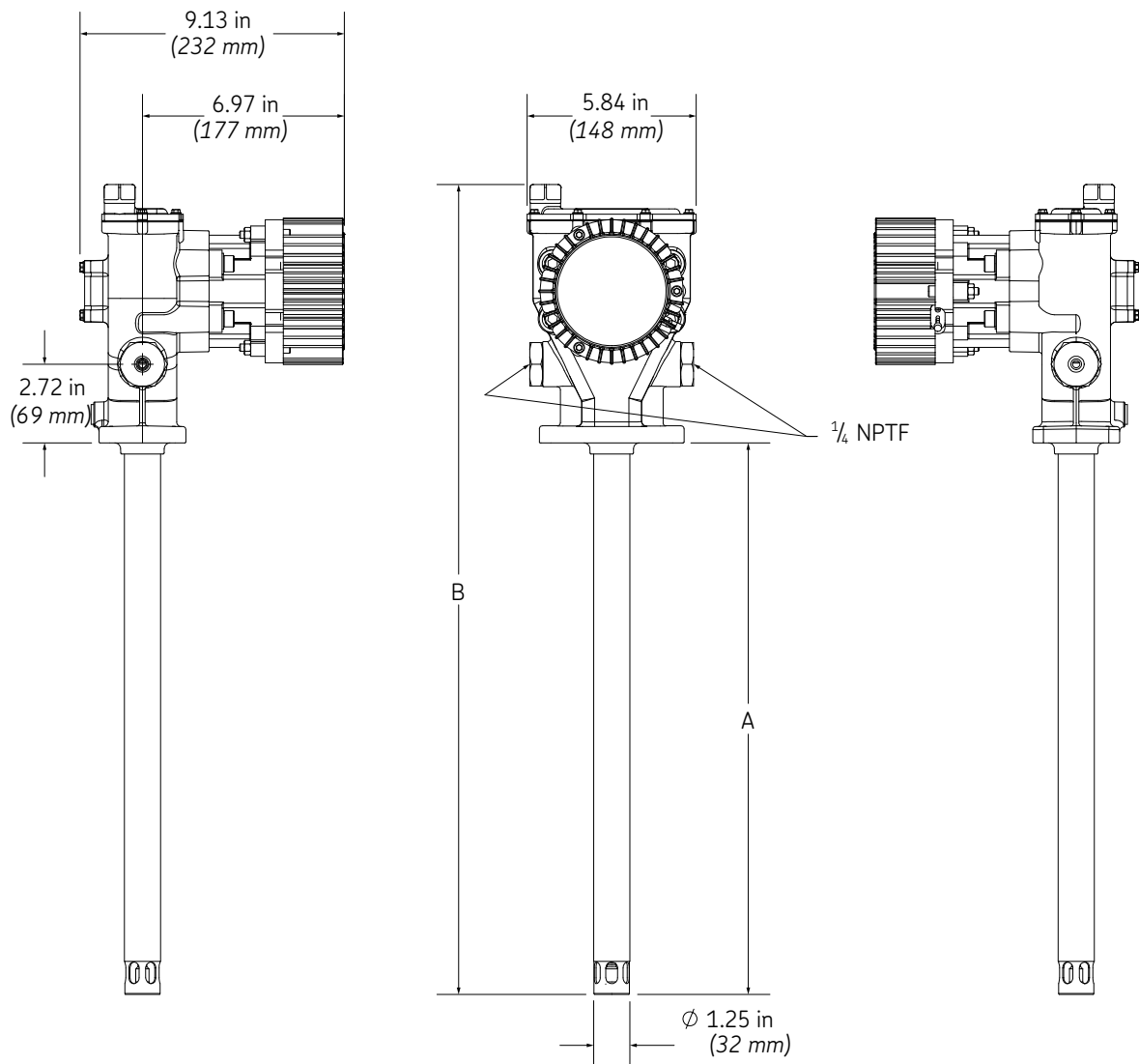


Item	Description
A	24 V 
B	Fuse
C	Manual switch
D	Red wire
E	Motor
F	Black wire

Connect red motor lead to the positive side of the circuit. Motor is polarity sensitive and will not run if improperly wired.

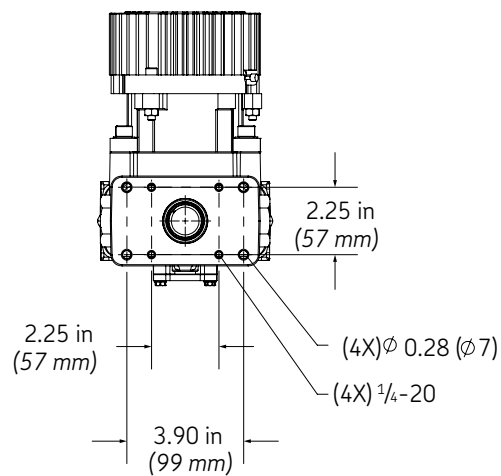


## Pump dimensions



## Dimensions

Model	Dimension "A"	Dimension "B"
85736	13.74 in (349 mm)	22.67 in (576 mm)
85737	19.05 in (484 mm)	27.98 in (711 mm)
85738	27.56 in (700 mm)	36.49 in (927 mm)
85739	34.06 in (865 mm)	42.99 in (1 092 mm)
85740	15.76 in (400 mm)	24.69 in (627 mm)






# Install pump

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

- 1 Mount pump securely on drum cover so that it cannot move or vibrate during operation. Refer to **Fig. 4**.
- 2 Connect material supply line to pump outlet (55).
- 3 Install safety unloader (77) in open outlet port.

 **DANGER**

Prior to connecting electrical wiring, perform lock out/tag out of system.  
Failure to comply will result in death or serious personal injury.

**NOTE**

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

- 4 Install high pressure shut-off valve in material supply line (required).

**NOTE**


Refer to **fig. 1, page 4**, if system has a controller. Refer to **fig. 2, page 4**, if system does not have a controller.

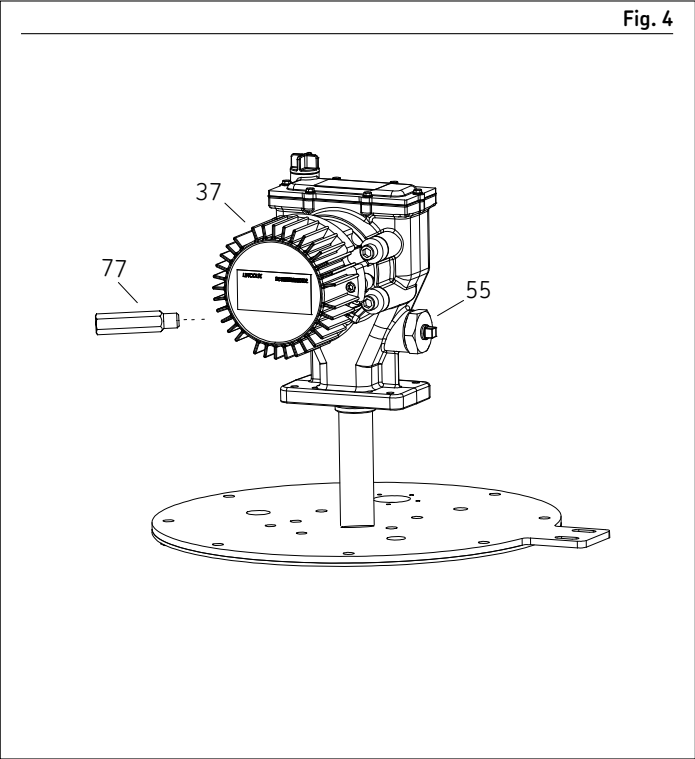
- 5 Refer to **Fig. 1** and **Fig. 2, page 4**, to wire pump motor and vent valve (if used).

**NOTE**

Connect the red motor lead to the positive side of the circuit. Motor is polarity sensitive and will not run if not properly connected.

- 6 Fuse motor as recommended in **Table 3**.
- 7 Connect power to motor leads.

Table 3	
Electric FlowMaster II pump	
24 V  19:1 gear ratio, 2 stage	Current <sup>1)</sup>
Backpressure	
0 psi (0 bar) at 105 r/min.	1.28 A
1 000 psi (68 bar) at 103 r/min.	2.03 A
2 000 psi (137 bar) at 101 r/min.	2.96 A
3 000 psi (206 bar) at 99 r/min.	3.68 A
4 000 psi (275 bar) at 98 r/min.	4.83 A
5 000 psi (344 bar) at 96 r/min.	6.47 A
<sup>1)</sup> Fuse for 10 A.	





# Operation

## ⚠ WARNING

Always install relief valve in pump outlet to ensure pump pressure remains below 5 000 psi (345 bar). Use only high pressure components.

Failure to comply may result in serious personal injury.

## Prime pump

- 1 Remove pump outlet line from 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.

- 2 With pump in 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).

## Set pump speed

- 1 Refer to Fig. 5 and remove speed adjustment hex socket head (3 mm) cover screw.
- 2 Adjust screw counter-clockwise to reduce pump speed.
- 3 Install speed adjustment hex socket head (3 mm) cover screw.

## NOTE

Motor used in 24 V  FlowMaster II pump is equipped with a built in speed control. Pump speed is factory set to maximum setting, but easily changed in field.

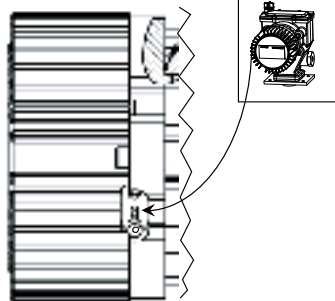
Speed adjustment screw is located under cover screw, 120° away from power cord.

## NOTE

Do not reduce pump speed below 20 r/min. Speed adjustment screw has no stop and has total of 30 turns.

Refer to Table 2, page 3, for speed recommendations.

Fig. 5



## 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).

## NOTE

Do not change pump settings until after start up procedure. All pumps are set to run at full speed.

Failure to comply may result in damage to pump.

## ⚠ 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).
- 3 Drain crankcase oil from crankcase.
- 4 Remove housing cover screws (33) (→ Fig. 6).
- 5 Remove housing cover (35) and gasket (36).
- 6 Loosen and remove three jam nuts (74) from electric motor (66) (→ Fig. 6).
- 7 Remove electric motor (66) mounting screws (64) with lock washers (65).
- 8 Remove electric motor (66).
- 9 Remove motor o-ring (73).

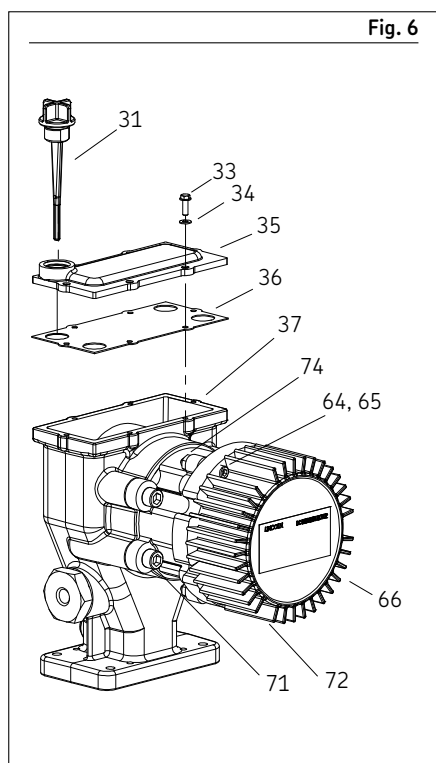


Fig. 6

- 10 Refer to Fig. 7 and remove gear box mounting screws (71), washers (72) and gear box (76).
- 11 Loosen and remove screws (67) holding first stage gear set (68), spacer (69) and final stage gear set (70) in place.
- 12 Remove first stage gear set (68), spacer (69) and final stage gear set (70) from gear box.
- 13 Remove shaft adapter (75).
- 14 Remove gear box o-ring (38).
- 15 Loosen screws (44) holding shaft cover (46) on pump housing (37) (→ Fig. 8).
- 16 Remove retaining ring (48) from pump shaft (40).
- 17 Remove pump shaft (40) by pushing pump shaft on retaining ring (48) side.

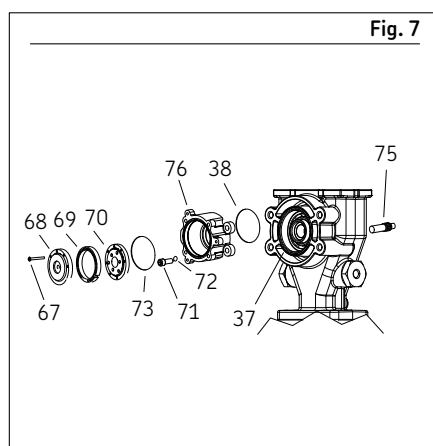


Fig. 7

- 18 Remove outlet pin nut (55) from pump housing (37).
- 19 Remove o-ring (54) from groove in outlet pin nut (55).
- 20 Remove back up washer (52) from outlet pin nut (55).
- 21 Remove o-ring (53) from outlet pin nut (55).
- 22 Repeat steps 18 - 21 for remaining outlet pin nut (55) on opposite side of pump.
- 23 Remove retaining ring (63) from housing tube (60). Refer to Fig. 9.

### NOTE

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

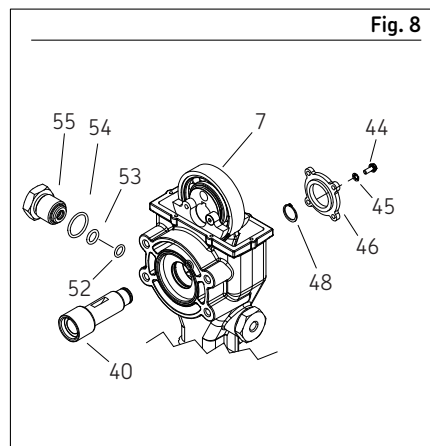


Fig. 8

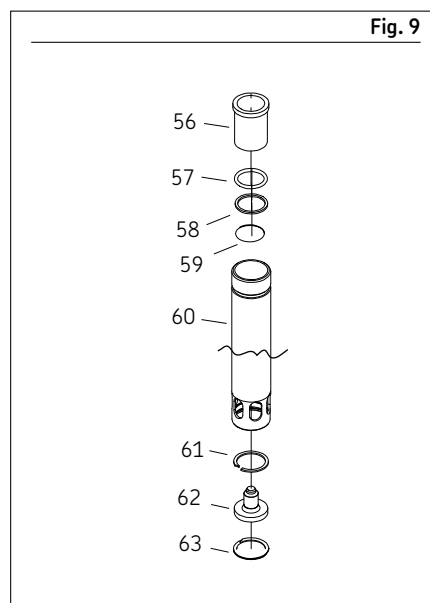


Fig. 9

- 24 Remove shovel plug (62) from housing tube (60).
- 25 Remove spiral retaining ring (61).
- 26 Loosen and remove tube housing (60) (→ Fig. 9).
- 27 Remove bronze bearing (56) from tube housing (60).
- 28 Remove o-ring (57) from tube housing (60).
- 29 Remove back up washer (58) from tube housing (60).
- 30 Remove o-ring (59) from tube housing (60).
- 31 Tap on crank rod (7) inside housing (37).
- 32 Pull eccentric (5) and crank rod (7) out of top of pump housing (37).



## Crank rod and eccentric

- 1 Remove pivot screws (11) from crank rod (7) (→ Fig. 10).

### 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).

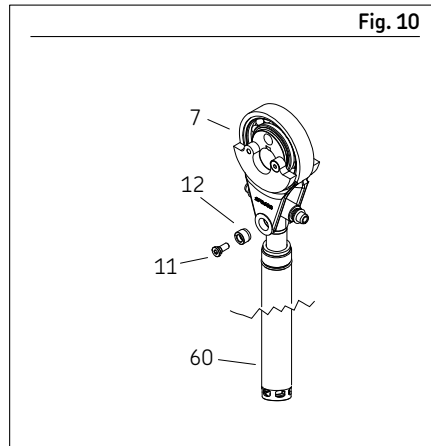


Fig. 10

- 2 Using 5/16–24 bolt, press out wrist pin bushing (12).
- 3 Remove crank rod (7).
- 4 Refer to Fig. 11 and remove wrist pin anchor (13) from reciprocating tube (25).
- 5 Pull cup seal (16) out of wrist pin anchor (13).
- 6 Remove steel backup ring (17).
- 7 Place plunger link rod (20) in vise.
- 8 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 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 vise and using special tool (T1) provided in tool kit, remove plunger link rod (20) (→ Fig. 12).
- 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) (→ Fig. 12).

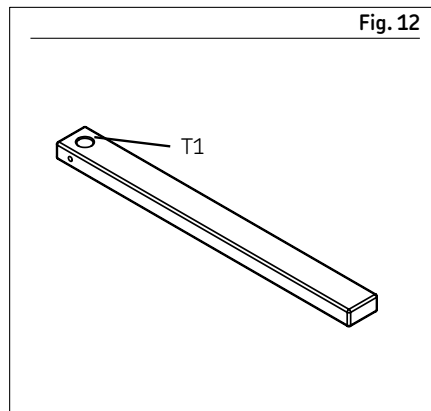


Fig. 12

- 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).

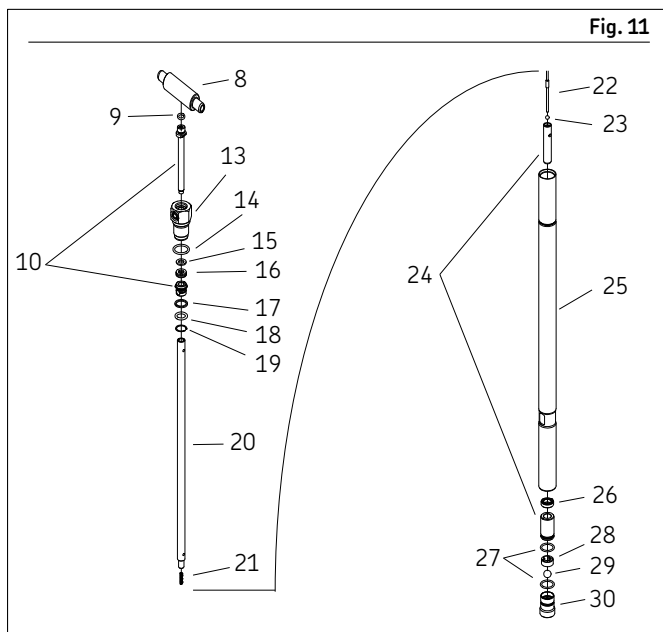


Fig. 11

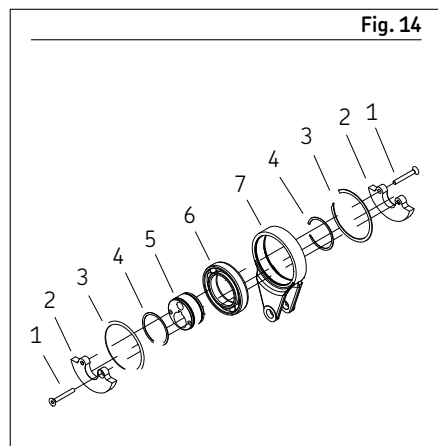
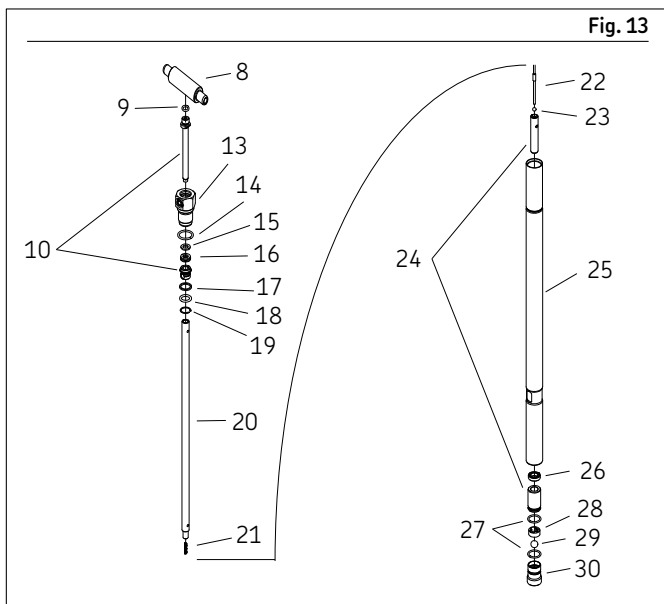


## Reciprocating tube

- 1 Loosen check seat housing (30) with  $\frac{3}{8}$  in hex head wrench (→ Fig. 13).
- 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).

## Crank rod

- 1 Loosen and remove flat head screws (1) from eccentric (5) (→ Fig. 14).
- 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  $2\frac{1}{2}$  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).

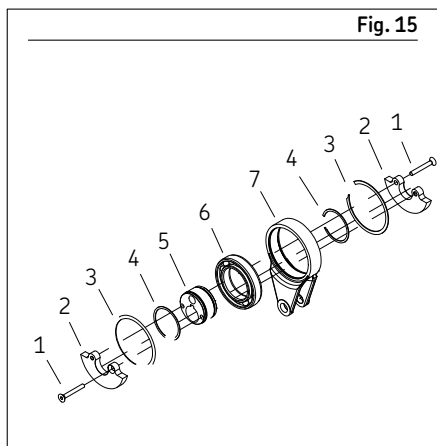




# Assembly

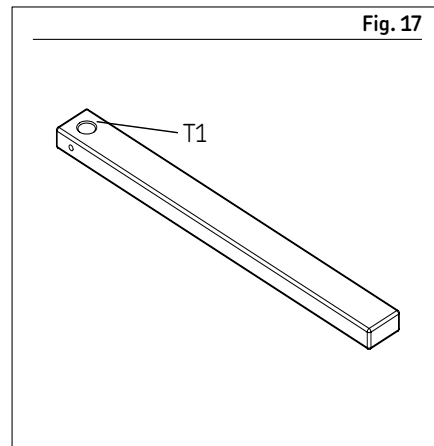
## Crank rod and eccentric assembly

- 1 Place crank rod (7) on 2 1/2 in (63,5 mm) diameter steel pipe from kit.
- 2 Refer to **Fig. 15** and install ball bearing assembly (6) into crank rod (7).
- 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).

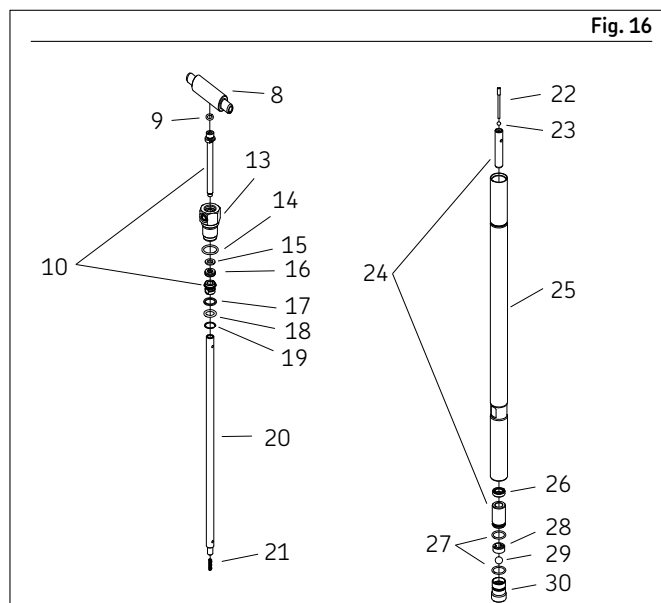


## Pump

- 1 Install ball (23) into lower bushing and plunger (24) (→ **Fig. 16**).
- 2 Insert check rod (22) into pump plunger (23).
- 3 Place spring (21) onto check rod (22).
- 4 Thread plunger link rod (20) into pump plunger (24).
- 5 Insert lower bushing pump plunger (24) into tool (T1).
- 6 Refer to **Fig. 17** and 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 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).

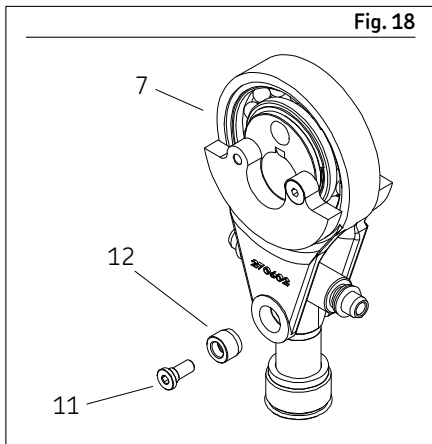


- 17 Install back-up washer (15) in wrist pin anchor (13).
- 18 Place new cup seal (16) inside wrist pin anchor (13).
- 19 Clean threads of wrist pin anchor (13).
- 20 Install o-ring (14) on the wrist pin anchor (13) (→ **Fig. 16**).
- 21 Insert upper bushing and plunger end (10) into wrist pin anchor (13) and tighten.
- 22 Place wrist pin anchor (13) in 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 crank rod/eccentric assembly (7) holes with wrist pin anchor (13) holes (→ **Fig. 18**).





- 25 Install wrist pin bushings (12) through crank rod (7) and into wrist pin anchor (13) (→ Fig. 15).
- 26 Apply Loctite 242 to threads of wrist pin bushing screws (11).
- 27 Insert and thread wrist pin bushing screws (11) into crank rod (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. 19).
- 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) (→ Fig. 19).

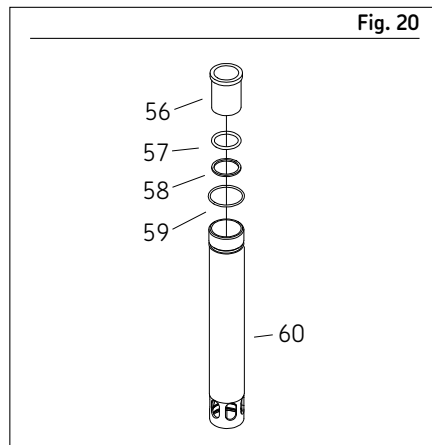
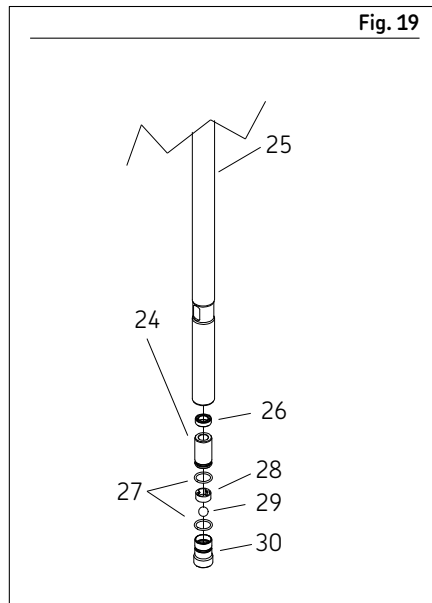


- 32 Install steel check cage (28) into reciprocating tube (25).
- 33 Install ball (29) into steel check cage (28).
- 34 Apply Loctite 242 or equivalent to threads of check seat housing (30).

#### NOTE

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

- 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 Refer to Fig. 20 and insert o-ring (59) into housing tube (60).
- 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).

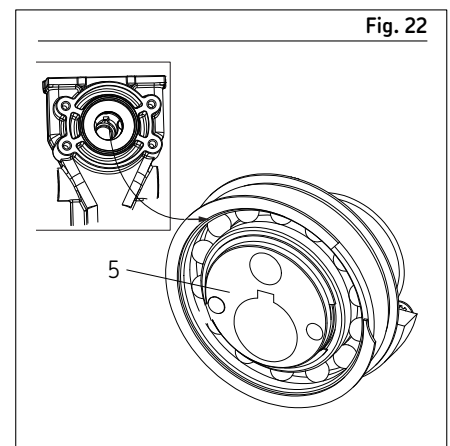
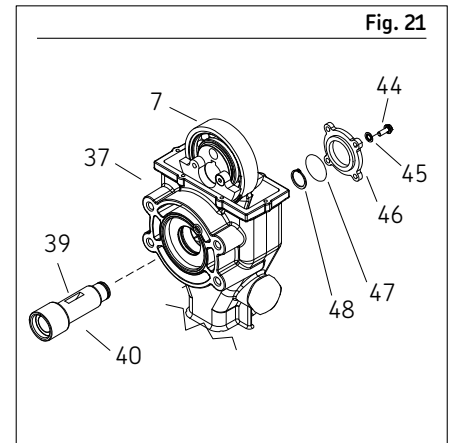


- 42 Position crank rod assembly (7) over top of pump housing (37) and lower into pump housing (37).
- 43 Align crank rod (7) with shaft (40) mounting hole (→ Fig. 21).

#### NOTE

Failure to align key on shaft and key way in eccentric will result in damage to equipment.

- 44 While aligning key (39) on shaft (40) with eccentric key way (5), slide shaft (40) into eccentric (5) (→ Fig. 22).
- 45 Install retaining ring (48) on shaft. (40).
- 46 Install shaft cover (46) on pump (37) (→ Fig. 21).
- 47 Insert and thread screws (44) with lock washers (45) into shaft cover (46) and pump housing (37).





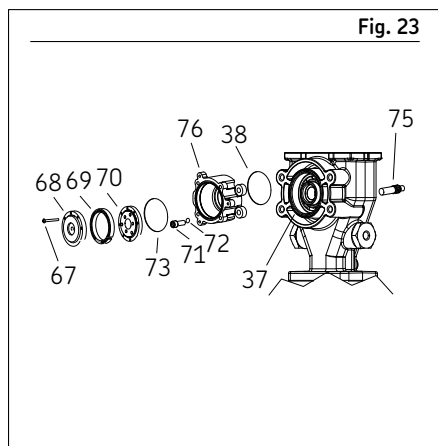
- 48 Install shaft adapter (75) inside pump housing (37).
- 49 Install gear box o-ring (38) in pump housing (37) groove (→ Fig. 23).
- 50 Position final stage gear set (70) in gear box (76).
- 51 Place spacer (69) on top of final stage gear set (70).
- 52 Insert final stage gear set (68) into gear box (76).
- 53 Install screws (67) through gear sets (68 and 70) and spacer (69) into gear box (76).

- 66 Install new cover gasket (36) on pump housing (37) (→ Fig. 24).
- 67 Install pump cover (35).
- 68 Install screws (33) with o-rings (34) into pump cover (35).
- 69 Torque screws (33) to torque of 10–15 in.lbf (1,1–1,6 Nm).
- 70 Install o-ring (54) in outlet pin mounting hole groove of pump housing (37) (→ Fig. 25).
- 71 Install back up washer (52) inside outlet pin nut (55).

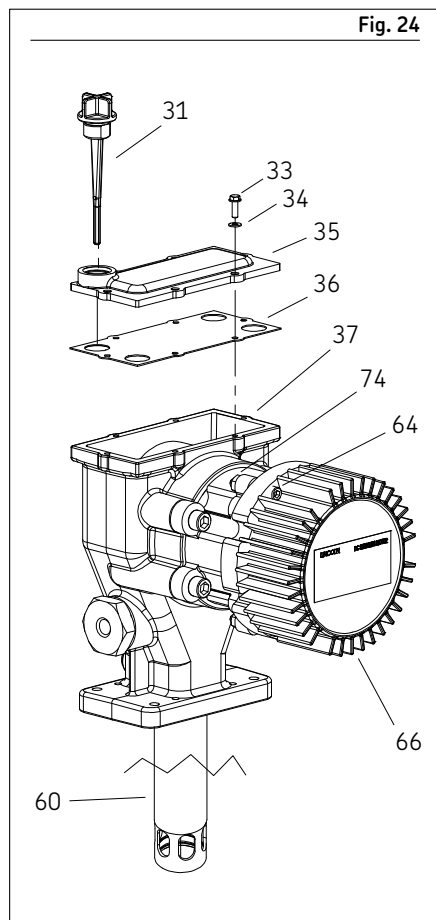
- 75 Fill the crankcase with oil up to indicator dot on dipstick.

#### NOTE

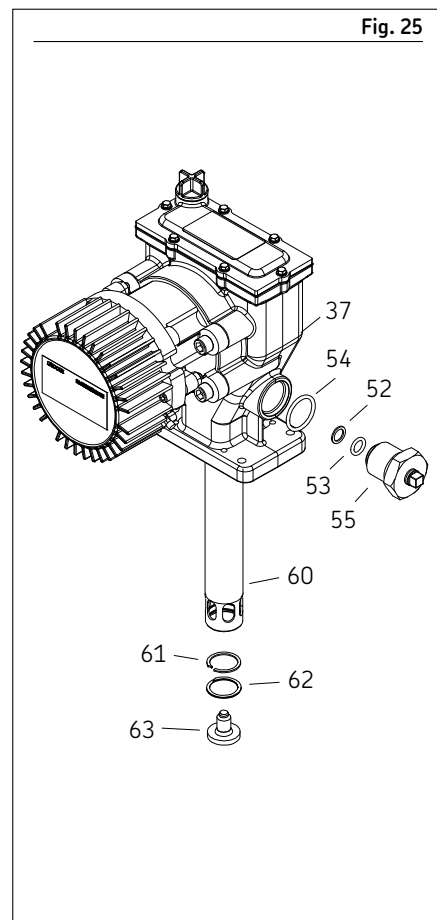
Refer to **Crankcase oil service interval, page 7** for oil recommendations.



- 54 Torque screws (67) to 20–25 in.lbf (2,3–2,8 Nm).
- 55 Place the gear box (76) on pump housing (37).
- 56 Install four gear box mounting screws (71) and washers (72) in gear box (76) and into pump housing (37).
- 57 Torque gear box mounting screws to torque of 20–25 ft.lbf (27–33 Nm).
- 58 Install electric motor o-ring (73) in groove of gear box (76).
- 59 Place electric motor (66) on pump housing (37).
- 60 Insert electric motor mounting screws (64) with lock washers (65) into electric motor (66) and gear box (76).
- 61 Thread electric motor jam nuts (74) onto mounting screws (64).
- 62 While holding mounting screws (64) with hex head wrench, torque jam nuts (74) to torque of 100–110 in.lbf (1,3–12,4 Nm) (→ Fig. 25).
- 63 Refer to Fig. 25 and insert retaining ring (61) into second groove of housing tube (60).
- 64 Install shovel plug (62) into housing tube (60).
- 65 Install spiral retaining ring (63).



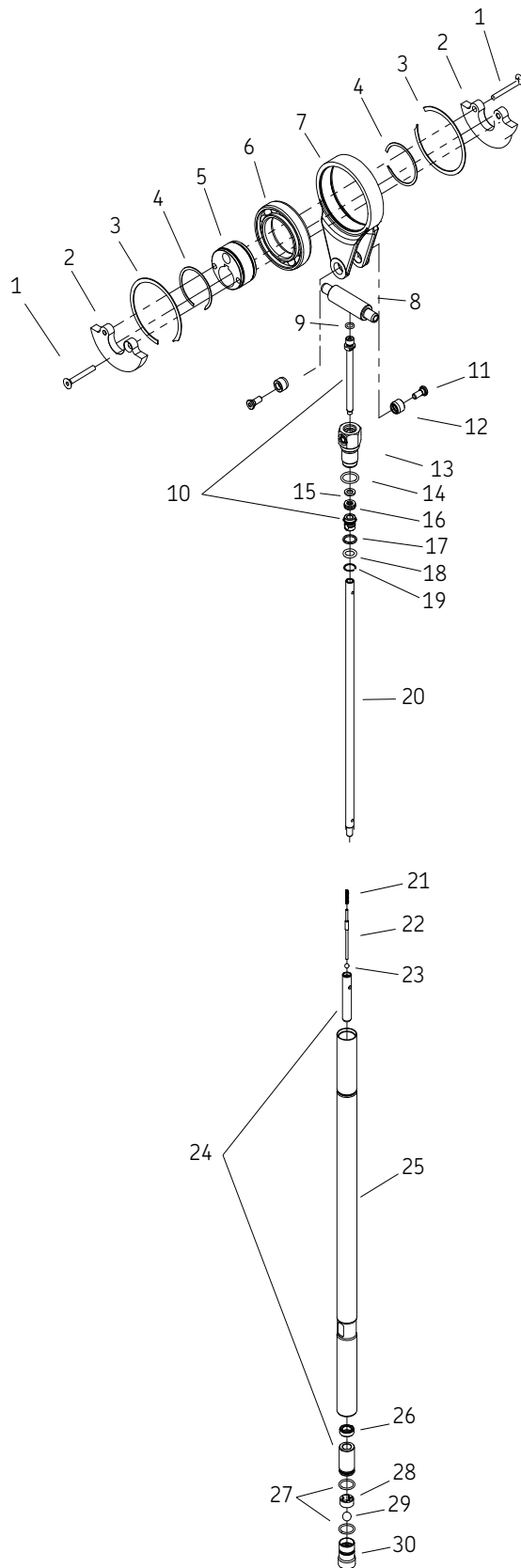
- 72 Install the o-ring (53) inside the outlet pin nut (55).
- 73 Line up the outlet pin and thread the outlet pin nuts (55) into the pump housing (37).
- 74 Torque to 30–35 ft.lbf (40,7–47,5 Nm).



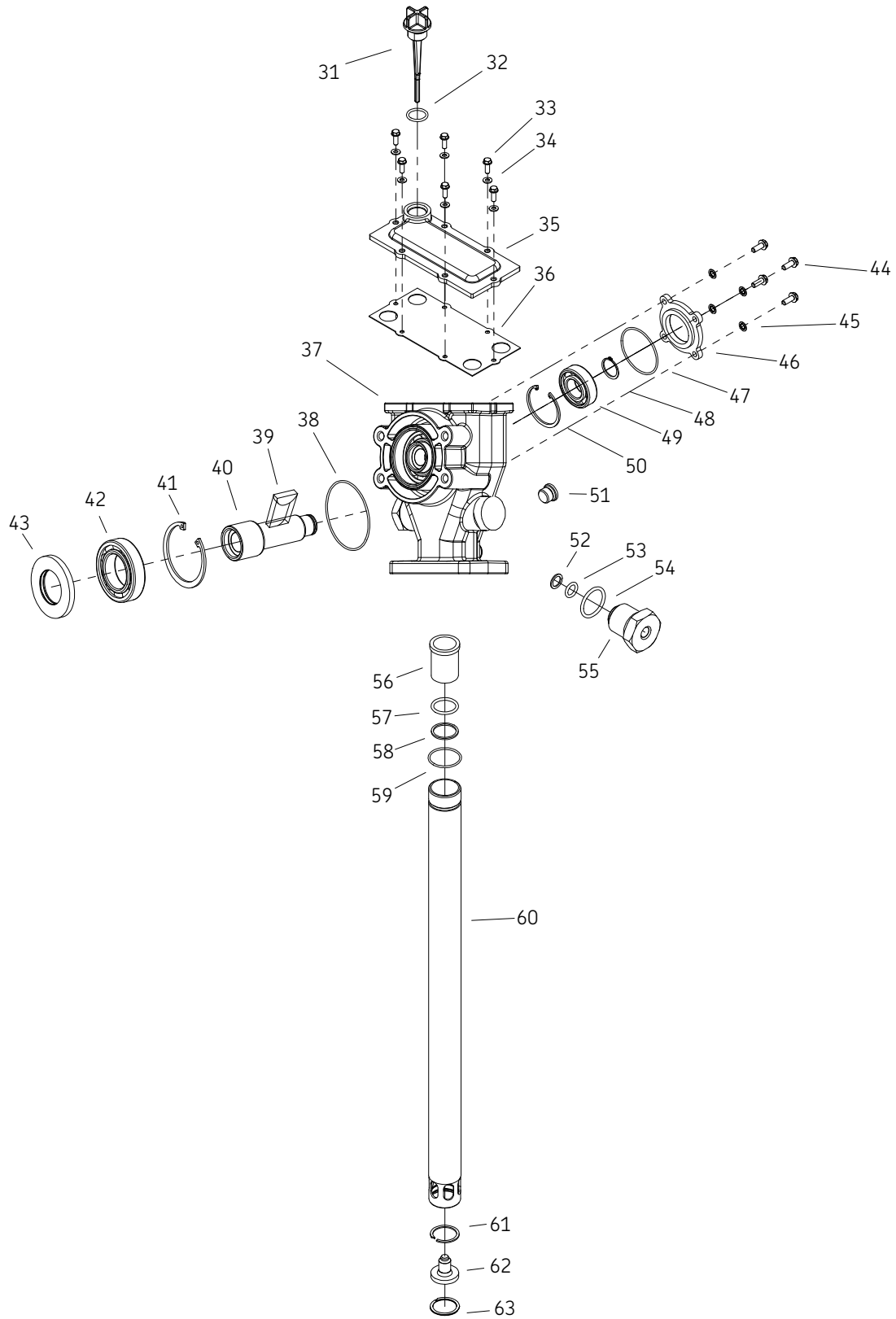
- 76 Install crank case oil dip stick and torque to 10–15 in.lbf (1,1–1,7 Nm) (→ Fig. 24).



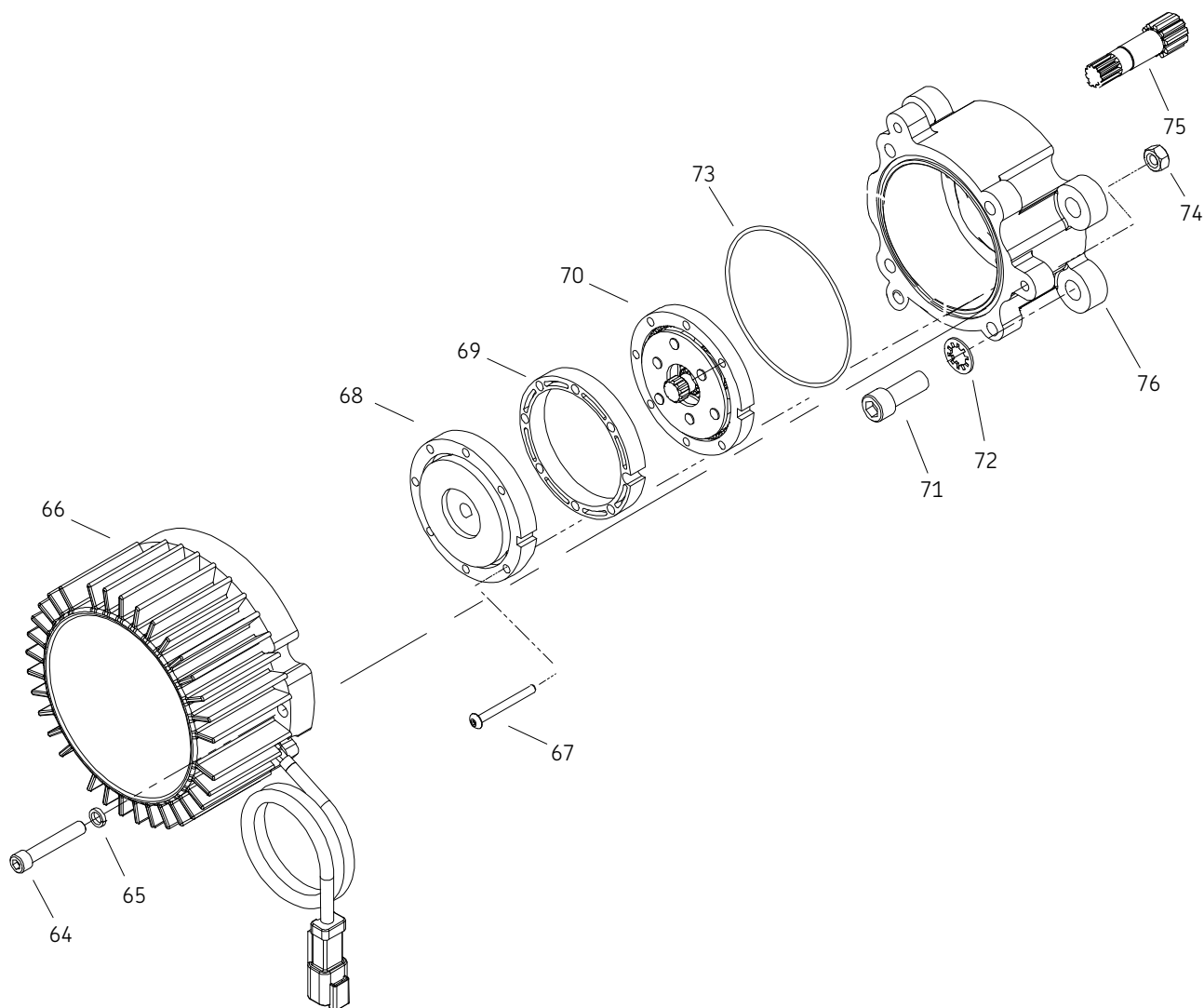
Fig. IPB 1













## Parts list

Item no.	Description	Part no.	Qty,	Item no.	Description	Part no.	Qty,
1	Flat head screw (1/4-28 x 1 3/4)	270635	2	40	Pump shaft	277397	1
2	Counter weight	272197	2	41	Retaining ring	272561	1
3	Retaining ring	270609	2	42	Ball bearing	272556	1
4	Retaining ring	270608	2	43	Shaft seal	272554 <sup>2)</sup>	1
5	Crank eccentric	270666	1	44	Screws	272557	4
6	Ball bearing	270607	1	45	Lock washer	66051	4
7	Crank rod	270665	1	46	Bearing cover	272549	1
8	Outlet pin	270670	1	47	O-ring	272559 <sup>2)</sup>	1
9	O-ring (nitrile)	34255 <sup>1) 2)</sup>	1	48	Retaining ring	272563	1
10	Upper bushing and plunger	275000 <sup>1)</sup>	1	49	Ball bearing	272555	1
11	Pivot screw	275006	2	50	Retaining ring	272562	1
12	Wrist pin bushing	275005	2	51	Drain plug	244752	1
13	Wrist pin anchor	274992	1	52	Backup washer	249837 <sup>2)</sup>	2
14	O-ring	275015 <sup>2)</sup>	1	53	O-ring	249838 <sup>2)</sup>	2
15	Backup washer	274998 <sup>1) 2)</sup>	1	54	O-ring	270719 <sup>2)</sup>	2
16	Cup seal (polyurethane)	274999 <sup>1) 2)</sup>	1	55	Outlet pin nut	270619	2
17	Steel back-up ring	274997 <sup>1) 2)</sup>	1	56	Bronze bearing	270674	1
18	O-ring	272791 <sup>1) 2)</sup>	1	57	O-ring (polyurethane)	249839 <sup>2)</sup>	1
19	Retainer clip	274996 <sup>1) 2)</sup>	1	58	Backup washer	270652 <sup>2)</sup>	1
20	Plunger link rod	See chart	1	59	O-ring	34431 <sup>2)</sup>	1
21	Spring	277168 <sup>2)</sup>	1	60	Housing tube	See chart	1
22	Check rod	277167	1	61	Retaining ring	277398	1
23	Ball (3/16 in)	66010 <sup>2)</sup>	1	62	Shovel plug	270707	1
24	Lower bushing and plunger	275002	1	63	Retaining ring	270705	1
25	Reciprocating tube	See chart	1	64	Screw	50051	3
26	Cup Seal (polyurethane)	270625 <sup>2)</sup>	1	65	Lock washer	272569	3
27	O-ring (nitrile)	275011 <sup>2)</sup>	2	66	Motor	278661	1
28	Ball cage	272179	1	67	Screw	272552	4
29	Ball (3/16 in)	66001 <sup>2)</sup>	1	68	First stage gear set	272543	1
30	Check seat	270664	1	69	Spacer	272547	1
31	Dipstick with o-ring	275369	1	70	Final stage gear set	272663	1
32	O-ring	275015 <sup>2)</sup>	1	71	Screw	272564	4
33	Self-threading screw (#8 x 1/2)	270633	6	72	Lock washer	272566	4
34	Gasket (screw)	252986 <sup>2)</sup>	6	73	O-ring seal	272544	1
35	Housing cover	275009	1	74	Nut (1/4-20)	51304	3
36	Cover gasket (nitrile)	270630 <sup>2)</sup>	1	75	Shaft, adapter	272546	1
37	Pump housing	278230	1	76	Gear box housing	272541	1
38	O-ring	272567 <sup>2)</sup>	1	77	Safety unloader	272722	1
39	Woodruff key	272560	1				

## Non-common repair parts

		Model 85736	Model 85737	Model 85738	Model 85739	Model 89740
20	Plunger link rod	277381	277382	277383	277384	277975
25	Reciprocating tube	277732	277733	277734	277735	277979
60	Housing tube	277736	277737	277738	277739	277981

<sup>1)</sup> Included in 275186 upper bushing and plunger kit.

<sup>2)</sup> Included in 277723 repair kit.



## 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. Connect red motor lead to positive battery terminal and black motor lead to negative terminal.
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.	Motor speed set to low. Faulty inlet check (29, 30), faulty discharge check (23, 24) or damaged o-ring (27).	Increase motor speed setting. Replace faulty components.
Seepage from housing cover (35). Pump is noisy.	Cup seal (16) or o-ring (14) worn out. Crankcase needs oil.  Worn wrist pin bushing (12).	Check seals and replace if necessary. Fill with oil.  Check bushings and replace if necessary Dismantle and clear check.
Pump does not build pressure.	Foreign material holding lower check open.	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.



# EC Declaration of Incorporation\*

Manufacturer: SKF  
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St Louis, MO U.S.A.  
URL: SKF.com  
Phone: 314-6794200

EU Contact:SKF  
Heinrich-Hertz-Straße 2-8  
69190 Walldorf  
Phone: 59 (0) 6227-30

Product: 24 V  Electric FlowMaster pump

Description: Metering valve

Model(s): 85736, 85737, 85738, 85739, 85740  
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:

EN ISO 12100:2010, EN ISO 4413:2010, EN809, EN ISO 13732-1:2008, EN 60204-1:2018, EN 12162, EN 349, International Standard ISO 20361, European ROHS directive 2011/65/EU

SKF declares under its sole responsibility that the 24 V  Electric FlowMaster Pump models 85736, 85737, 85738, 85739, 85740

are in 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.

Bob Hoeffler  
Manager Product Development  
Product Engineering LPD North America  
Innovation and Product Management

\* Indicates change.



## 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](http://www.lincolnindustrial.com/technicalservice) or  
[www.skf.com/lubrication](http://www.skf.com/lubrication).

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