Electro-Luber
Model 1835 Series "F"
Model 1849 Series "R"
Model 201849 Series "Q"

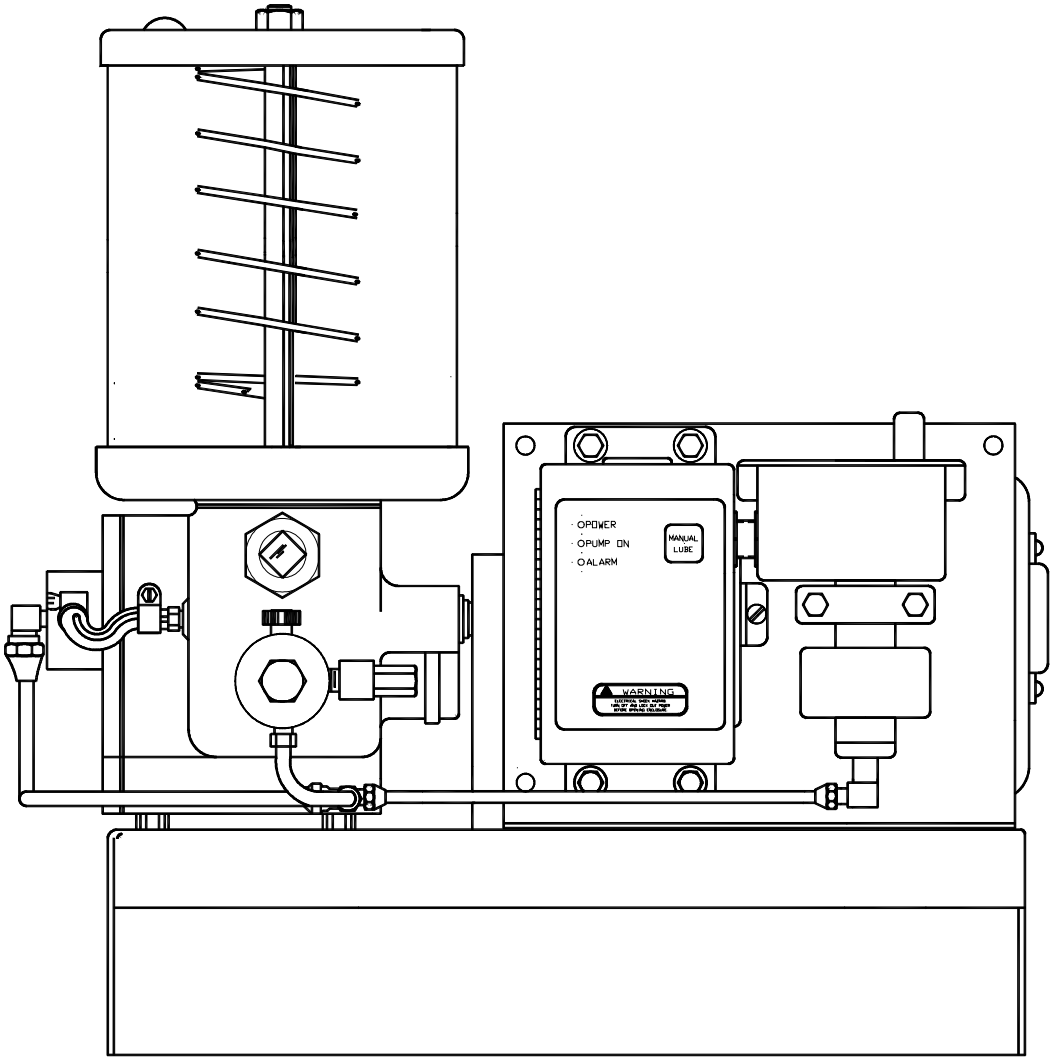


Table of Contents

SAFETY

Read and carefully observe these operating instructions before unpacking and operating the controller! The controller must be operated, maintained and repaired exclusively by persons familiar with the operating instructions. Local safety regulations regarding installation, operation and maintenance must be followed.

Operate this pump only after safety instructions and this service manual are fully understood.

⚠ WARNING

This symbol identifies the potential for a **hazardous** situation. If this warning is not followed, a serious injury could occur.

DESCRIPTION

The Electro-Luber is used as a pumping unit for a centralized lubrication system having a single line circuit of injectors. The motor driven pump is capable of discharging lubricant at a rate of 10 ounces per minute (18 cubic inches per minute). The controller is used to program the cycle frequency of the lubrication pump. The cycle times are selected to meet system requirements.

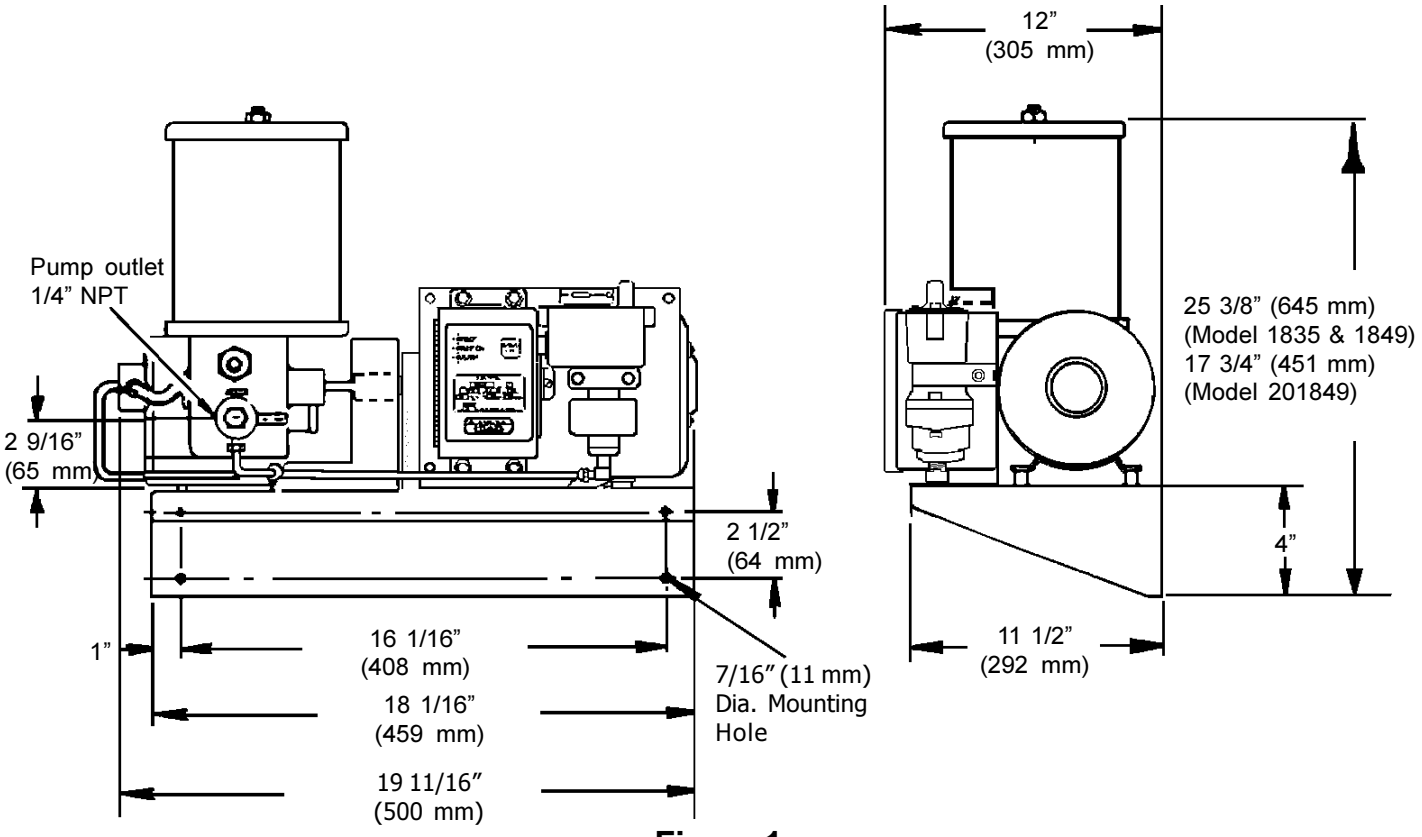


Figure 1

SPECIFICATIONS

Pump Motor	Model 1835	Model 1849	Model 201849
Horsepower	1/3	1/4	1/4
Voltage	120/230 VAC	208-220/440	208-220/440
Full Load Amps	6/3.2 Amps	1.1/.55 Amps	1.1/.55 Amps
RMP	1800 rpm	1440/1725 rpm	1440/1725 rpm
Frequency	60 Hz	50/60 Hz	50/60 Hz
Phase	1	3	3
Frame	56 (rigid)	F48 (Rigid)	F48 (Rigid)
Reservoir	**12 lbs. (5.4 Kg)**	**12 lbs. (5.4 Kg)**	**7 lbs. (3.1 Kg)**

Pump Mechanism	(Same for All Models)
Gear Reduction	3 to 1 reduction of motor speed
Pump Speed	575 strokes per minute
Pump Output	Lubricant output 10 ounces per minute. Based on lubricants that are free of entrapped air. Lubricants that are aerated will reduce output.

Controller	(Same for All Models)
Voltage	120 VAC
Freqency	50/60 Hz
Enclosure	NEMA 12
Off Time	30 seconds minimum 30 hours maximum
On Time	30 Seconds or 5 Minutes

Pressure Switch	(Same for all Models)
Setting	2500 psi

INSTALLATION AND OPERATION

Installation

The lubricant supply line from the electro-luber to the injectors should be of minimum length. The position selected for the electro-luber must be accessible for “Filling the Reservoir” and “Inspection”.

Electric Wiring (refer to Fig. 3 & 4)

A motor starter is required with this unit (to be supplied by customer).

⚠ WARNING

A motor starter must be used or damage will result to the Controller.

Please refer to the 85520 Operation Manual, Section C8, Page 270 Series for setting the controller.

Lubricant:

Grease lubricant NLGI #0 or NLGI #1

Principle of Operation (see Figure 1)

The pump operation timing is controlled by the electric timer which controls the switching of the motor starter. With the motor driving the pump, a centrifugal vent is automatically closed and the lubricant pressure is built up in the supply line. After the injectors have discharged lubricant, the pump continues to develop pressure in the supply line until the pressure switch operates (adjustable, 1200-3500 P.S.I.) and shuts off the motor to stop the pump. When the pump stops, the centrifugal vent automatically opens and permits the lubricant pressure throughout the system to vent into the reservoir (Refer to Fig. 2) The injectors automatically reload as soon as the system is vented. Injectors are then ready for the next lubrication cycle.

Sequence of Operation

1. With the pump and controller systems in a rest state, a preset time interval occurs as determined by the bearing lubrication requirements.
2. When the controller timers out, a 120 VAC signal will energize the motor starter.
3. The lubricant pump (driven by the motor) dispenses lubricant through the system, cycling all the injectors.

4. When the pressure switch closes, it will reset the controller, shutting off the motor. Lubricant pressure vents.

5. The system is at rest, ready for another lube cycle and the sequence repeats itself.

6. The "On Time" set at either 30 seconds or 5 minutes, will time out if the pump operates for more than a normal period of time. The controller will not initiate another lube cycle, the alarm contact will close and the alarm LED on the door will turn on.

Reservoir - Filling Instructions

Use a manual filler pump 81834 to fill reservoir through the filler nipple in the pump body. Attach socket on delivery hose to filler nipple. Stroke filler pump handle until lubricant weepage is noted at air vent hole in the reservoir (lower portion of follower must rise beyond air vent hole to expel entrapped air from reservoir.

NOTE: When filling the reservoir, caution should be used, as extreme pressure can cause damage to reservoir and follower assembly. A strainer is located beneath the filler nipple. Strainer should be removed and cleaned periodically.

Pumping Mechanism

Use SAE 80 oil in crankcase. Inspection of oil level is made by removing the plug from the end plate. Keep oil level with bottom of tapped hole.

To Put System into Operation

1. Fill supply line.
   a) Remove pipe plug from injector manifold at ends of supply line. Set Controller "On Time" to 5 minute maximum setting.
   b) Depress push button on outside of enclosure door tostart pump. Open power to stop pump when lubricant begins to flow from open end of supply line.
   c) Replace plugs in injector manifolds.
2. Prime feed lines.
   Operate Electro-Luber following procedure outlined in Item (1b) above to check operation of each injector.

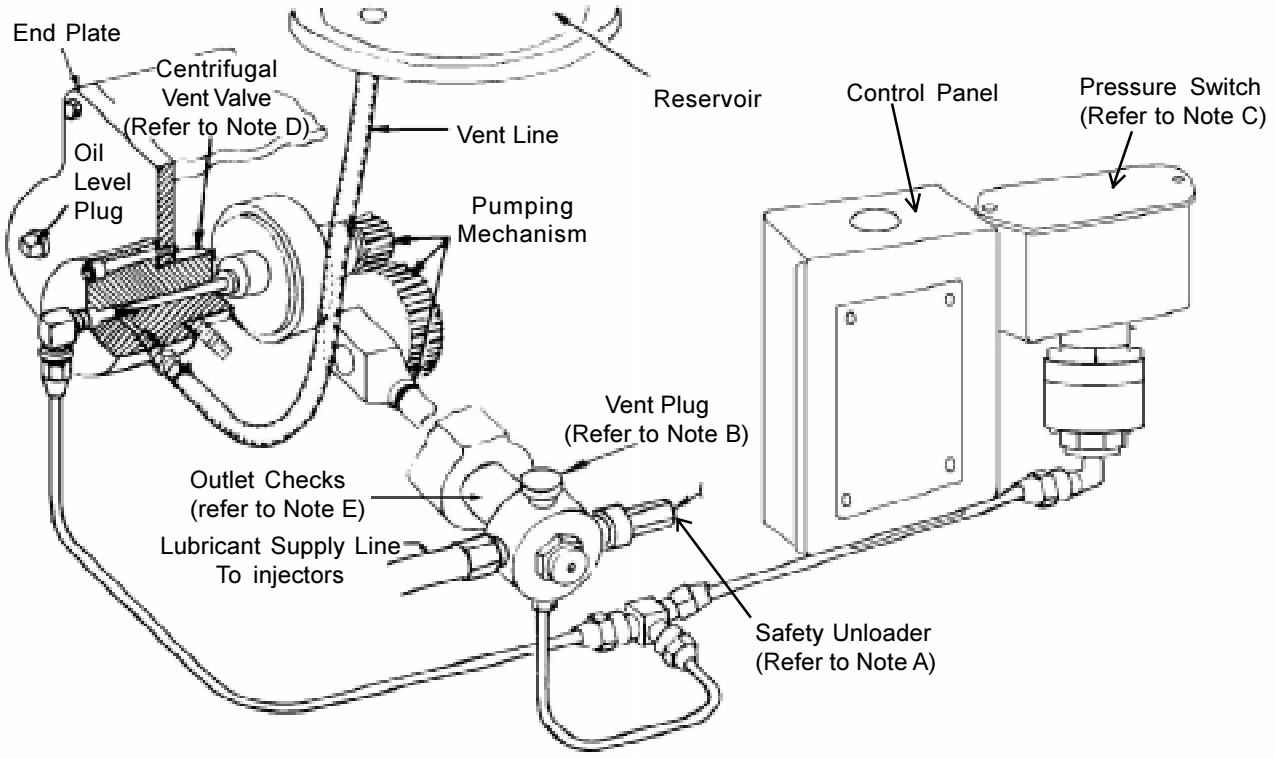


FIGURE 2

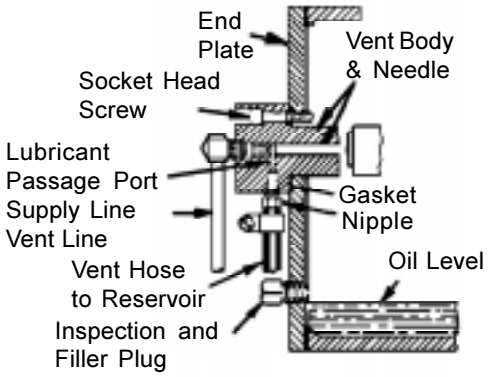
Note A - The safety unloader, not adjustable, is preset to open at 4250 P.S.I. Max., 3750 P.S.I. Min. The safety unloader will open to relieve the excess supply line pressure if the pressure switch fails to reset the controller.

Note B - The vent plug is used for expelling air pockets trapped between the pump and the supply line connection. 1) Turn vent plug counter clockwise one complete turn; 2) Manually start electro-luber by depressing push button on enclosure door; 3) Allow pump to operate until lubricant flows freely from opening in vent plug; 4) Tighten vent plug.

Note C - Pressure Switch is set at 2500 P.S.I. and is adequate for any normal installation. If lower pressure (as low as 1200 P.S.I. Min.) is sufficient to satisfactorily operate the system, adjust the pressure switch. If higher pressure (3500 P.S.I. Max.) is necessary to operate the system, adjust the pressure switch.

Note D - The centrifugal vent valve closes as the pump starts (needle seats in port), permitting lubricant pressure to build up in the entire system. When all injectors have cycled, the pressure switch shuts off the motor and stops the pump. Lubricant pressure in the system opens the centrifugal vent valve and permits the lubricant pressure to vent back into the reservoir.

Note E - The purpose of the double "Outlet Checks" is to hold the lubricant pressure (developed by the plunger strokes in the supply line while the plunger retracts for the next stroke.



CENTRIFUGAL VENT VALVE

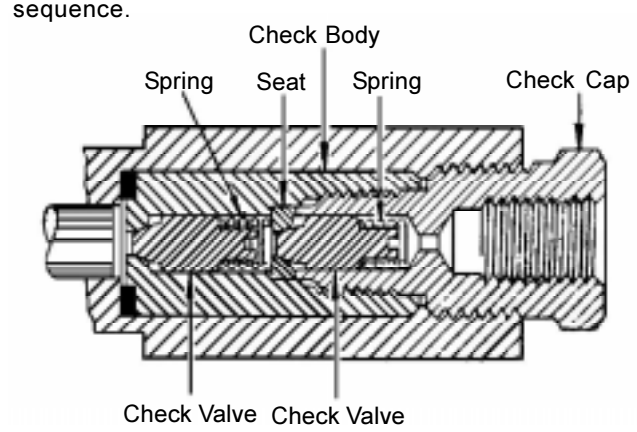
1. CHECK FOR LEAKAGE
   Remove Vent hose from Nipple in Vent Body. If lubricant is discharged from the Nipple when the Electro-Luber is operating, it is an indication that the Needle is not sealing the lubricant passage port.

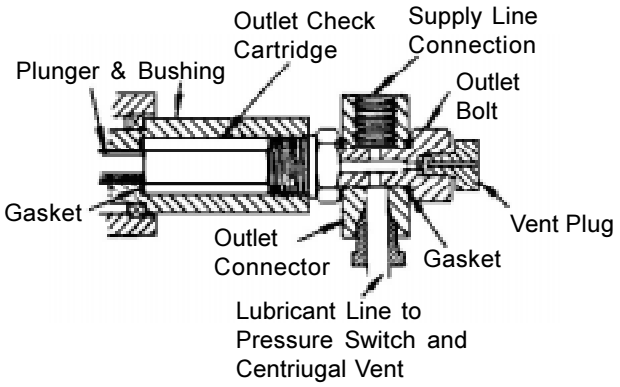
   Remove and clean as outlined in Item No. 2.

2. To remove Vent Body and Needle for cleaning or replacement, disconnect Vent Hose and the supply line Vent Line from the Vent Body. Remove the three Socket Head Screws holding the Vent Body to the End Plate.

   Hold Vent Line to one side and pull Vent Body and Needle from the End Plate.

   Remove Needle from Vent Body and clean parts thoroughly. Reassemble all parts in the proper sequence.





OUTLET CHECK

1. The Outlet Check Cartridge is housed in the end of the Bushing.

2. Remove the Supply Line Connection from the Outlet Connector. The Vent Plug and the Outlet Bolt is removed as a unit, which will permit the Outlet Connector to be moved clear of the Bushing.

3. The outlet Check Cartridge can them be removed from the Bushing.

4. Unscrew Check Cap from Check Body.

5. Seat, Check Valves and Springs can now be removed from Body. Clean parts thoroughly and inspect for wear or damage. Replace parts if necessary.

6. Both Check Valves are identical.

7. Reassembly parts in the sequence shown.

1835 Typical Installation
120 VAC 60 Hz

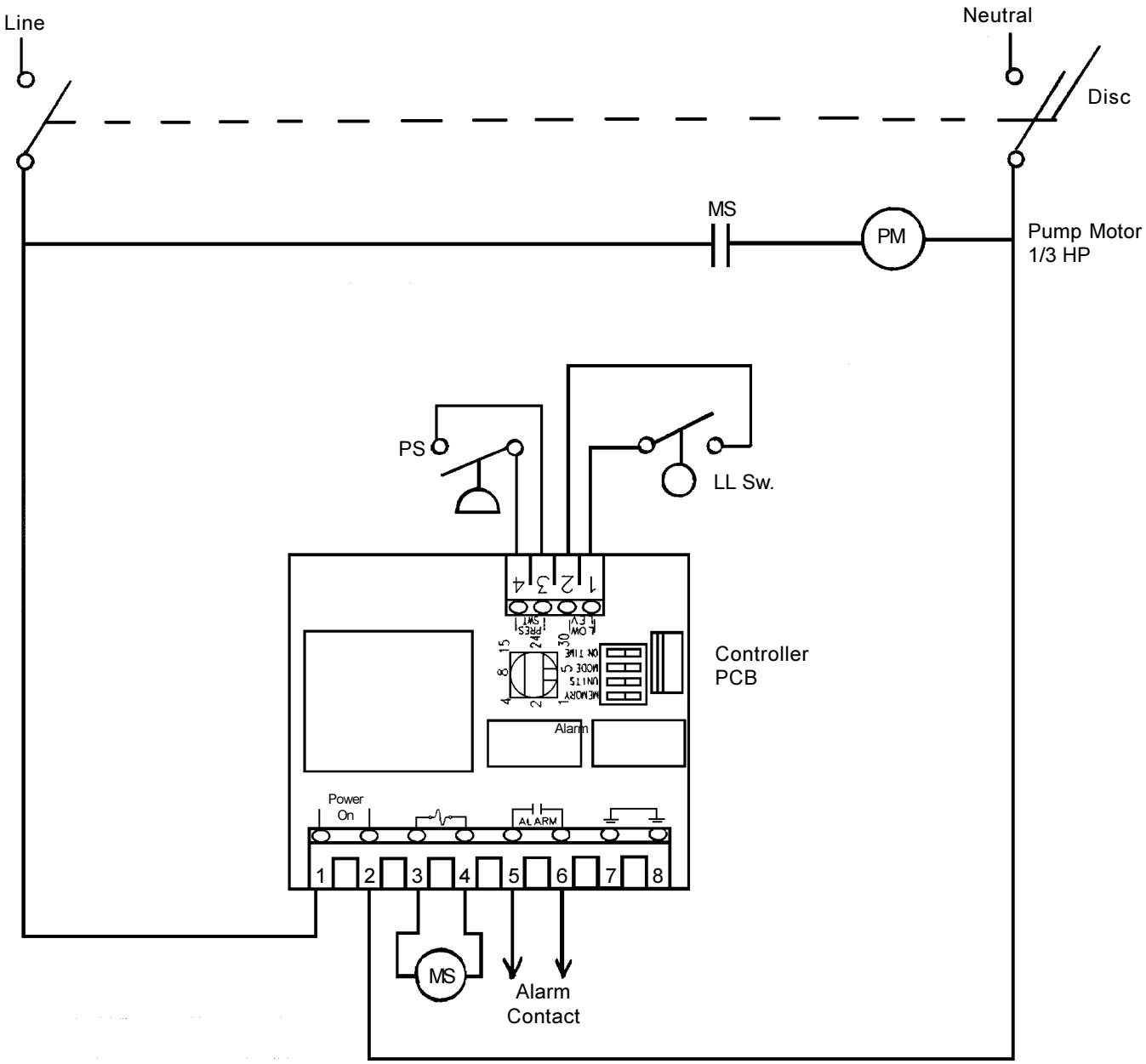
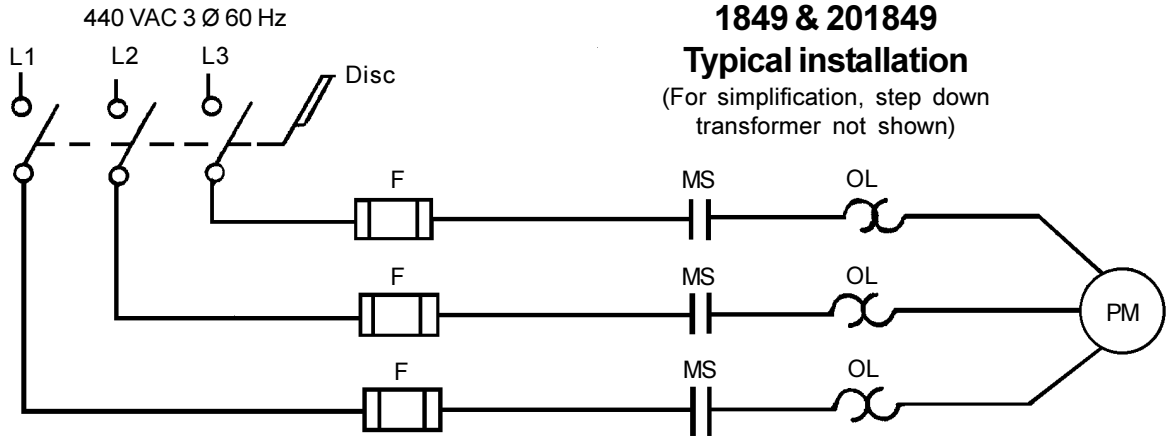


Figure 3

Code	Description	Item No.
Disc	Disconnect	Supplied by Customer
MS	Motor Starter	Supplied by Customer
PS	Presure Switch	31
LL Sw.	Low Level Switch (Optional)	103
PM	Pump Motor	101



1849 & 201849
Typical installation
(For simplification, step down transformer not shown)

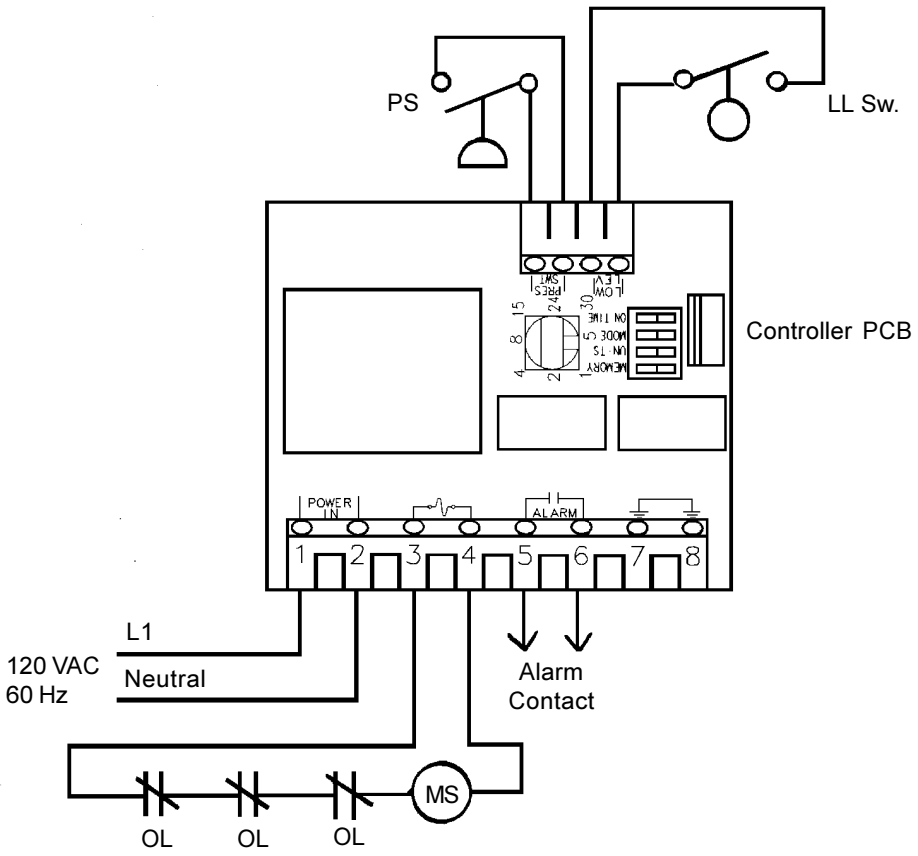
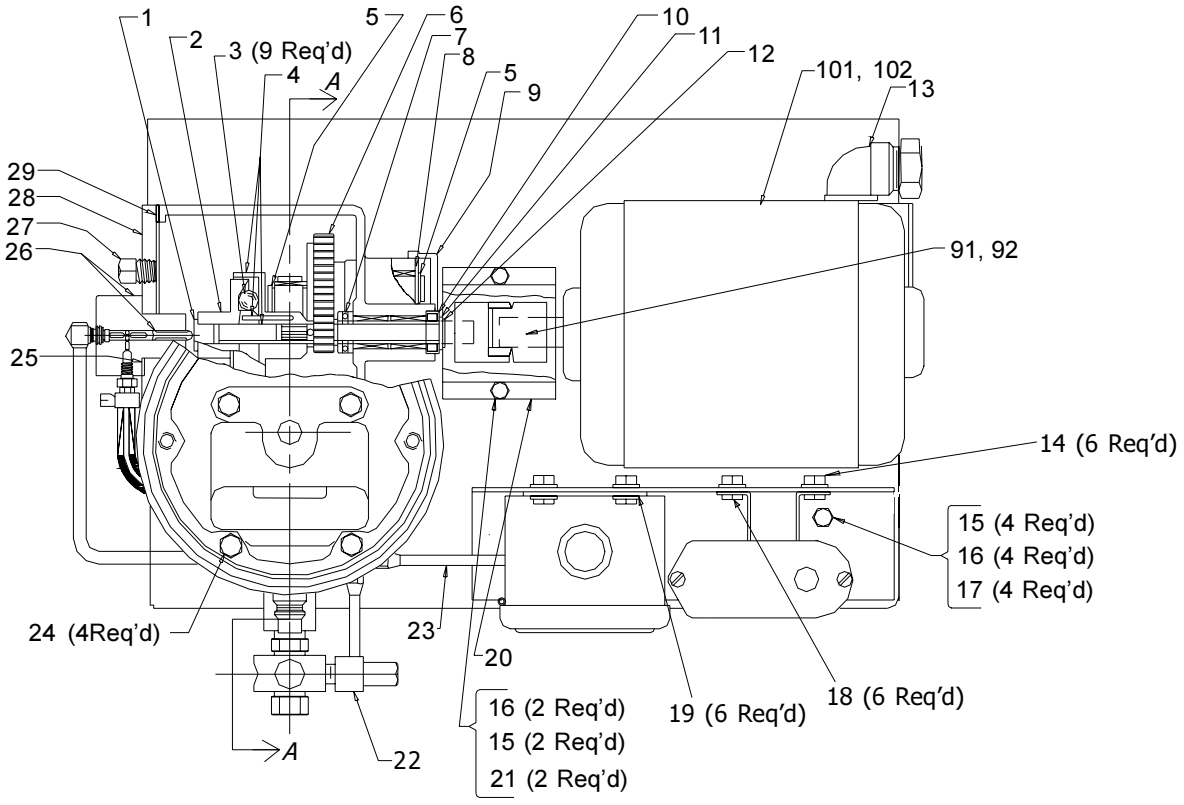
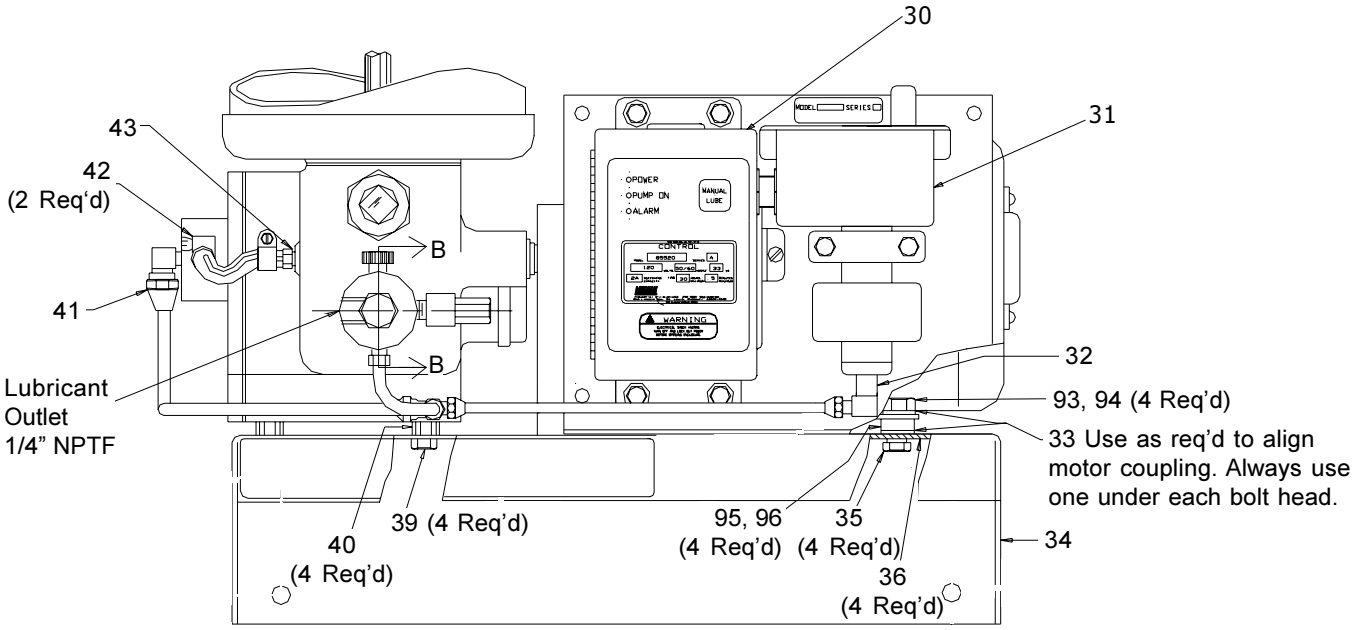
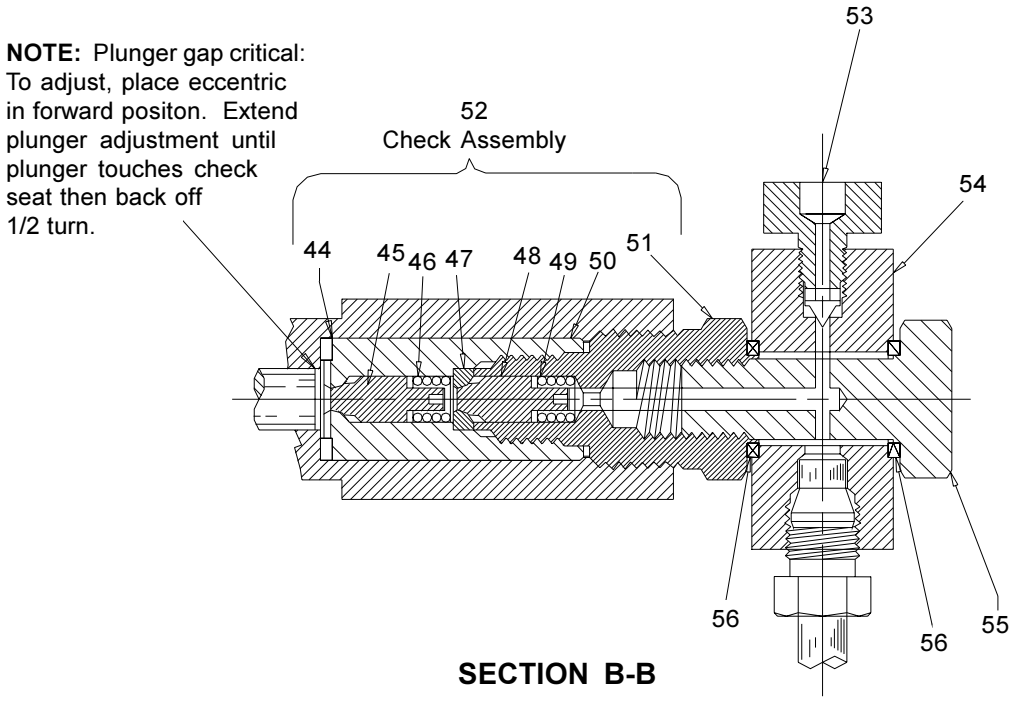


Figure 4

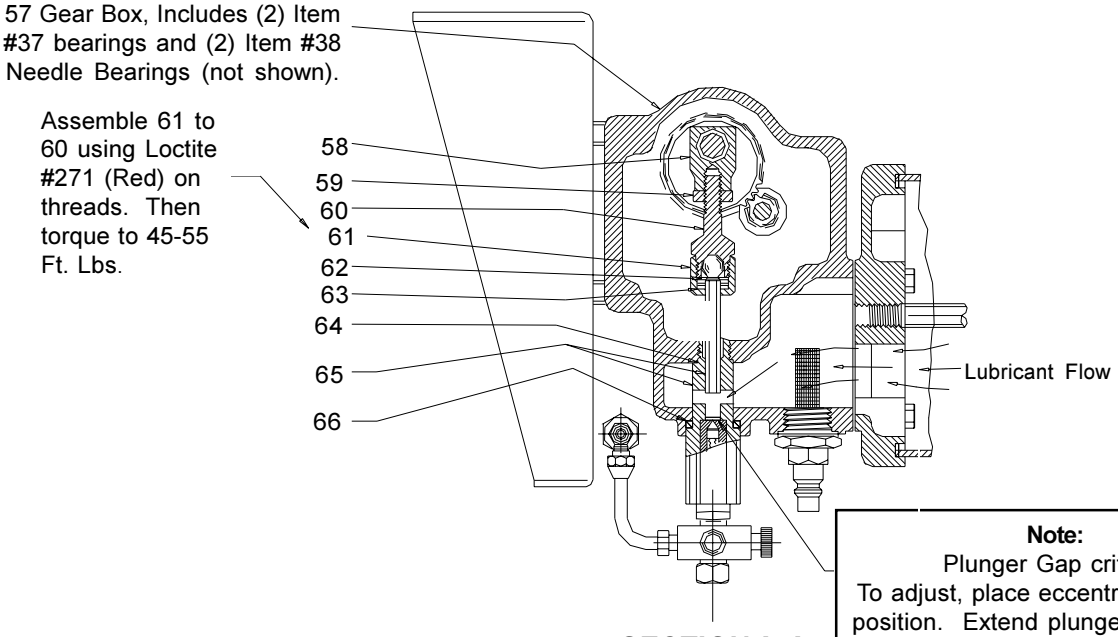
Code	Description	Item No.
Disc	Disconect	Supplied by Customer
F	Fuse	Supplied by Customer
MS	Motor Starter	Supplied by Customer
OL	Overload (part of MS)	Supplied by Customer
PM	Pump Motor	102
PS	Pressure Switch	31
LL Sw.	Low Level Switch (Optional)	103 (1849 only)


1
2
3 (9 Req'd)
4
A
5
6
7
8
5
9
10
11
12
101, 102
13
29
28
27
26
25
91, 92
14 (6 Req'd)
15 (4 Req'd)
16 (4 Req'd)
17 (4 Req'd)
24 (4Req'd)
23
20
16 (2 Req'd)
15 (2 Req'd)
21 (2 Req'd)
19 (6 Req'd)
18 (6 Req'd)
A
22


30
31
43
42
(2 Req'd)
B
41
B
Lubricant
Outlet
1/4" NPTF
32
93, 94 (4 Req'd)
33 Use as req'd to align motor coupling. Always use one under each bolt head.
95, 96
(4 Req'd)
35
(4 Req'd)
34
39 (4 Req'd)
40
(4 Req'd)
36
(4 Req'd)

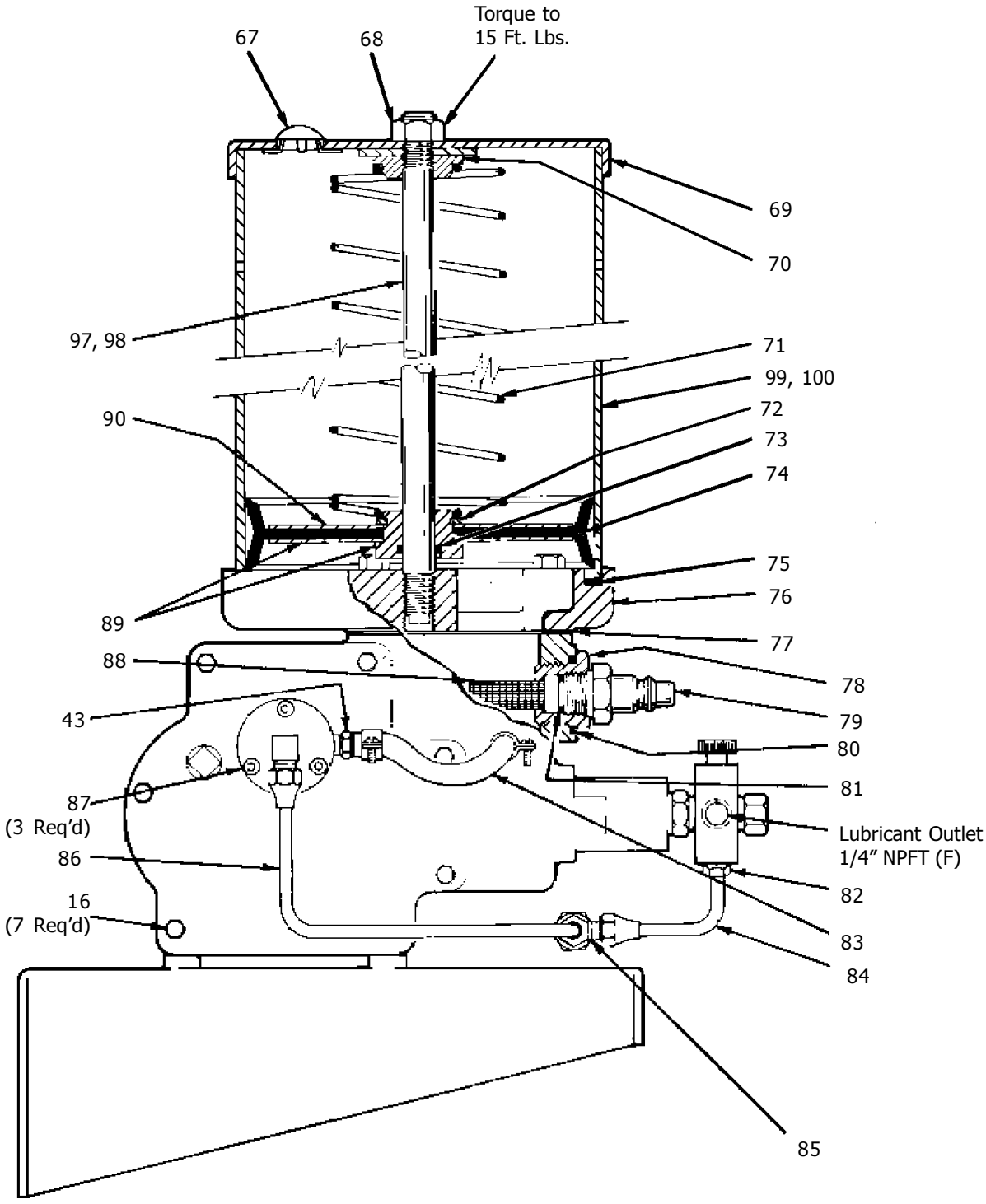


SECTION B-B



SECTION A-A

Note:
Plunger Gap critical:
To adjust, place eccentric in forward position. Extend plunger adjustment until plunger touches check seat then back off 1/2 turn


Torque to
15 Ft. Lbs.
67
68
69
70
97, 98
71
99, 100
72
90
73
74
75
76
89
77
88
78
43
79
80
81
87
(3 Req'd)
Lubricant Outlet
1/4" NPFT (F)
86
82
16
(7 Req'd)
83
84
85

Repair Parts List

Item No.	Part No.	Qty.	Description
1	*13496	1	Thrust Bearing
2	*13503	1	Centrifugal Cam
3	66531	9	Ball Washer
4	91668	1	Cover & Gasket
5	68556	2	Retaining Ring
6	13365	1	Gear
7	*68561	1	Thrust Bearing
8	48244	1	Washer
9	*34332	1	Shaft seal (Nitrile)
10	*68560	1	Shaft Seal
11	48237	1	Washer
12	68559	1	Retaining Ring
13	700232-19	1	90° Conduit Adapter
14	51304	6	Hex Lock Nut
15	51300	6	Nut
16	50088	13	Screw
17	56051	4	Lock Nut
18	50006	6	Hex Head Cap Screw
19	48447	6	Washer
20	360231	1	Guard
21	66051	9	Lockwasher
22	90942	1	Unloader
23	249017	1	Tubing
24	50057	4	Screw
25	*33080	1	Gasket
26	*92088	1	Needle & Vent Body
27	67044	1	Plug
28	91675	1	Cover
29	33083	1	Gasket
30	85520	1	Controller
31	69630	1	Pressure Switch
32	66210	1	Male Elbow
33	48431	12	Washer
34	249013	1	Base
35	51026	4	Nut
36	68436	4	Lockwasher
37	66641	2	Bearing
38	66782	2	Needle Bearing
39	50016	4	Screw
40	13275	4	Spacer
41	66201	1	90° Tube Connector
42	68570	2	Hose Clamp
43	13467	2	Fitting
44	*31131	1	Gasket
45	*14164	1	Check Valve
46	*55276	1	Spring
47	*14064	1	Seat
48	*14164	1	Check Valve
49	*55276	1	Spring
50	14062	1	Body
51	14063	1	Cap
52	83530	1	Check Assembly
53	13466	1	Air Vent Screw

Item No.	Part No.	Qty.	Description
54	16524	1	Outlet Connector
55	16525	1	Outlet Bolt
56	31132	2	Gasket
57	92042	1	Gear Box
58	91663	1	Crank Head
59	51060	1	Locknut
60	14058	1	Connecting Rod
61	13461	1	Nut
62	*55249	1	Spring
63	48400	1	Washer
64	33134	1	Gasket
65	91665	1	Plunger & Bushing
66	*34306	1	Packing (Nitrile)
67	68797	1	Plug Button
68	51039	1	Nut
69	91817	1	Reservoir Cap
70	14491	1	Retainer Washer
71	55346	1	Spring
72	69034	1	Snap Ring
73	34166	1	O-ring (Nitrile)
74	*34438	1	Follower (Nitrile)
75	*34308	1	Gasket (Nitrile)
76	40526	1	Reservoir casting
77	33094	1	Gasket
78	14065	1	Adapter
79	92441	1	Filler Fitting
80	31056	1	Gasket
81	*34122	1	Packing (Nitrile)
82	68572	1	Tube Fitting
83	237168	1	Hose
84	62321	1	Tubing
85	66650	1	Union Tee
86	62418	1	Tubing
87	50760	3	Screw
88	68528	1	Strainer
89	92242	1	Bushing & Washer
90	48417	1	Washer
91	68657	1	Coupling (Model 1835)
92	69227	1	Coupling (Models 1849 & 201849)
93	50030	4	Screw (Model 1835)
94	50161	4	Screw (Models 1849 &201849)
95	13764	4	Spacer (Model 1835)
96	13482	4	Spacer (Models 1849 &201849)
97	14449	1	Tie Rod (Mdeol 1835 & 1849)
98	14826	1	Tie Rod (Model 201849)
99	247244	1	Reservoir 12 lb (Models 1835 &1849)
100	247245	1	Reservoir 7 lb (Model 201849)
101	68658	1	Motor 115 VAC 60 Hz (Model 1835)
102	68564	1	Motor 208-220/440 VAC 50/60 Hz (Models 1849 &201849)
103	83671	1	Low Level Switch (Optional) (Models 1835 & 1849)

* Recommended Service Parts Inventory

Troubleshooting Guide

Condition	Possible Cause	Correction
Electro-Luber will not operate. (Alarm does not function)	Power failure.	Correct condition.
	Controller failure.	See service page for controller.
Electro-Luber fails to build up lubricant pressure. (Alarm will function)	Supply line connections or injectors may be leaking.	Correct condition.
	Loss of prime, air pockets in lubricant.	Operate pump, open vent plug until lubricant flow freely from vent hole. Tighten plug.
	Follower may be cocked and hung up in reservoir.	Correct condition.
	Outlet Checks may be fouled.	Remove and clean (refer to Note E).
	Centrifugal Vent Valve may be fouled	Remove and clean (refer to Note D).
	Bushing and Plunger may be scored.	Remove and inspect. Replace if necessary.
	Failure in the Motor Circuit.	Check Power Supply and Overload Relay.
	Needle and Body scored.	Remove and inspect. Replace if necessary.
Electro-Luber fails to prime.	Air pockets in Lubricant.	Operate pump, open vent plug until lubricant flows freely from Vent Hole. Tighten Vent Plug.
	Follower may be cocked and hung up in Reservoir.	Correct condition.
	Outlet Checks may be fouled.	Remove and clean (refer to Note E).
Electro-Luber builds up lubricant pressure, but will not complete its cycle.	Pressure switch failure.	Correct condition.
	Controller failure.	See service page for Controller.

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Printed in USA
Web site:
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