



Model FEP 800 Series
Electric Grease Pumps
(110/220-Volt AC)

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PLEASE READ THIS MANUAL FULLY BEFORE CONNECTING OR USING YOUR PUMP!

For your own reference: Pump Serial No. _____

Your new pump represents a step in the right direction toward proper maintenance of all types of equipment. The patented design is simple to understand and operate, and with little service, should give a long, useful life.

The following pages will describe the theory of operation, troubleshooting, and available parts and accessories. The accompanying diagrams should be consulted to clarify the concepts, and to help identify parts.

While unpacking your new pump, please be sure to double-check all packaging, before discarding, for any loose parts. Every effort is made to ensure that your pump is complete and well protected. However, we are aware that accidents happen, and will be happy to assist if you find something missing or broken...please call the factory. And don't forget to mail your warranty registration card!

Before placing your new pump in service, all electrical connections, from the source to the pump, should be double-checked for tightness, correct voltage, and proper polarity.

THEORY OF OPERATION...The pump end (bottom) consists of a hardened steel bushing, through which the piston runs. As the piston strokes down, grease is pushed past the check valve ball and out through the extruded discharge holes in the pump stem. As the piston strokes up, the check valve prevents drawback, and a vacuum is created inside the bushing. When the piston uncovers the suction holes in the bushing, another charge of grease is drawn in through the suction ports on the bottom of the stem and into the bushing. The cycle then repeats.

The reciprocating motion of the piston is generated by the power pack, and is transmitted through the driveshafts, with the return (up) motion caused by the return spring. The heart of the power pack is a gearmotor with a cam, which pushes the cam follower down, operating the upper driveshaft. The lower driveshaft, including the piston, is forced down against the return spring, and against the discharge pressure. At the bottom of the piston's stroke, the cam goes over-center, allowing the return spring to push everything back up. At the top of the stroke, the cycle repeats.

The electrical circuit includes a fuse, a control relay, and a pressure switch, which will stop the pump when the setpoint is reached. The adjusting cap on the pressure switch assembly can be turned clockwise (tightened) to increase the shut-off setpoint, or counter-clockwise (loosened) to decrease the setpoint. System pressure operates a spring-loaded piston, which actuates the micro-switch on the front of the assembly. When the system (hose) pressure drops about 400psi, the switch closes to allow the pump to run. The factory setpoint is about 2500-3000psi (for standard pumps), which should be adequate for most requirements. Unnecessarily high pressure operation will put undue stress on all pump components, and shorten its life.

TROUBLESHOOTING...Normal pump operation will produce a humming sound as the gearmotor spins at 133 rpm. The pump speed should not decrease as pressure builds, but the sound of each stroke may change slightly.

If the pump runs, but does not build pressure, it is either air-bound or the check valve is not

seating properly. To prevent air entering the pump, the included follower plate should always be placed on top of the grease. The pump will eventually pump small amounts of air out the discharge...removing the hose and running the pump will quickly release the bubble(s). If foreign particles become trapped under the check valve ball, the piston will draw back the grease just pushed out. In this case, the ball must be removed, and the seat and ball must be cleaned.

If the pump does not run at all, check all electrical connections, and the condition of the source. If good power is available to the pump, check to make sure the control circuit components are OK. The pressure in the hose should be released, the power ON, and a test light or voltmeter should be used to trace the circuit...

Step 1. POWER TEST: Across post (4) and GROUND...if not HOT, check source & power leads.

Step 2. FUSE TEST: Across post (5) and GROUND...if not HOT, replace fuse. Check for shorts in power circuit as cause.

Step 3. PRESSURE SWITCH TEST: Across post (9) and GROUND...if not HOT, replace micro-switch.

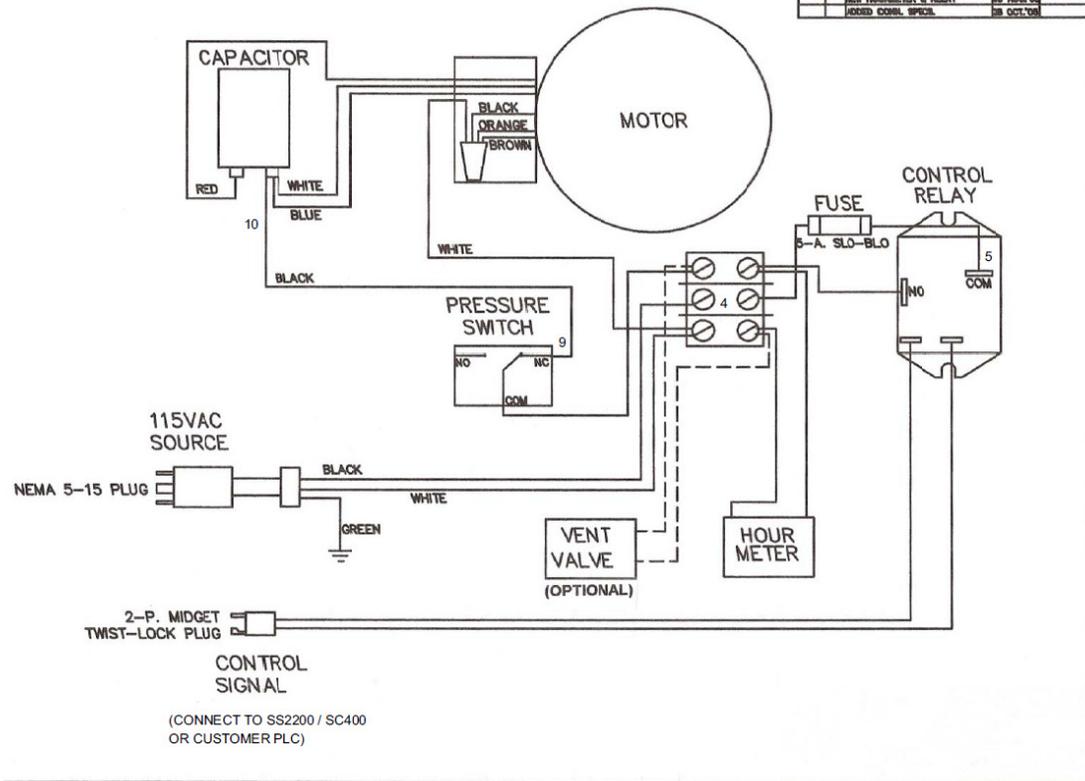
Step 4. GEAR MOTOR TEST: Across post (10) and GROUND...if HOT (and motor not running), replace gearmotor.

NORMAL ADJUSTMENTS: FEP800 Series grease pumps will not require any routine adjustments.

SPECIAL ADJUSTMENTS:

The only adjustment on the pump (other than the pressure switch set-point) is the total stroke length, set by turning the adjusting screw on the bottom of the upper driveshaft. **This adjustment should not be required unless the pump has been disassembled.** Remove the hex plug on the bottom of the pump stem, and remove the check valve spring. Hold the check valve ball firmly against its seat with a finger or suitably-sized wooden dowel, and turn on the toggle switch momentarily (long enough for at least one full stroke). The piston should just touch the ball without displacing it more than 1/64". If the piston does not touch the ball, the adjusting screw should be turned out to lengthen the stroke...do not move the adjusting screw more than one full turn at a time, or damage to the ball could result. If the piston actually pushes the ball off its seat, the adjusting screw should be turned in to shorten the stroke. The optimum setting is where the piston just touches the ball. To make the adjustments, the power pack assembly must be removed. **Disconnect the pump from the power source,** remove the top cover of the power pack, and disconnect the two wires on the pressure switch. Remove the 4 nuts (under the lid) securing the power pack to the lid. Carefully lift the power pack assembly straight up to clear the guide bushing & mounting bolts. Inverting the power pack assembly will allow access to the bottom of the upper driveshaft. Loosen the adjusting screw locknut & make the appropriate adjustment, then securely tighten the locknut. Reinstall the power pack assembly, & reconnect the pressure switch wires. Repeat the above procedure as required. Finally, reassemble the check ball, spring, and hex plug in the bottom of the pump stem, and the pump should be ready.

DATE	REV	DESCRIPTION	DATE	APPROVED
	01	ORIGINAL	08 SEP '01	
	02	ADDED MOTOR WIRING	08 APR '02	
	03	HOURLY METER WIRING IMPROVEMENT	18 JUN '02	
	04	NEW HOURMETER & RELAY	08 JUL '02	
	05	ADDED CONTROL SIGNAL	08 OCT '02	

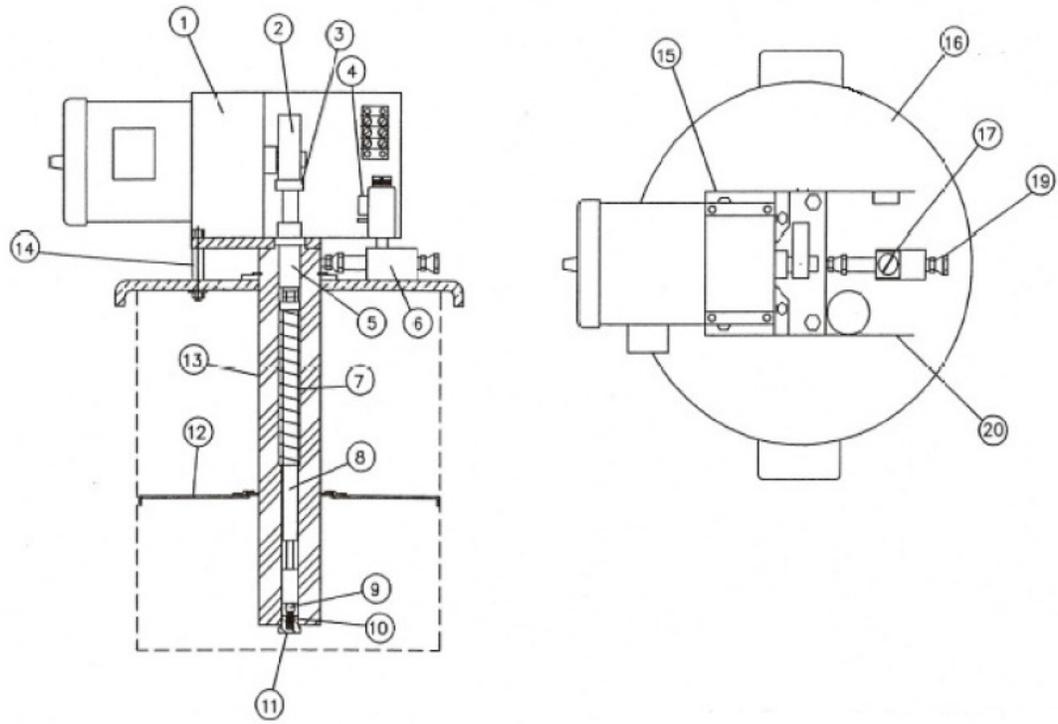


REF.NO.	PART NO.	DESCRIPTION	REQ'D.
1	FEP6250	Gearmotor, 1/4hp, 159rpm	1
2	FEP 2255	Cam ass'y.	1
3	FEP 3280	Driveshaft ass'y.	1
4	FEP 6201	Switch, Micro, press. sw.	1
5	FEP 3282	Guide bushing	1
6	FEP 3204	Manifold, discharge	1
7	FEP 4227	Spring, pump return	1
8		Plunger assembly, 3/8 for 812 models (supplied w/item 13)	1
**		Plunger assembly, 3/8 for 822 models (supplied w/item 13)	1
9	FEP 4267	Ball, check valve, 5/8" (also supplied w/item 13)	1
10	FEP 4405	Spring, check valve (also supplied w/item 13)	1
11	FEP 3283	Plug, stem, 1/2 NPS	1
11a	FEP 4295	O-ring, stem plug	1
12	FEP 3226	Follower plate, 822 models	1
**	FEP 4249	Follower plate, 812 models	
13	FEP 2212	Pump stem assembly, 3/8 (812 models)	1
**	FEP 2222	Pump stem assembly, 3/8 (822 models)	1
14	FEP 3401	Spacer, power pack	4
15	FEP 3281	Base plate	1
16	FEP 3276	Cover plate, 812	1
**	FEP 3284	Cover plate, 822	
17	FEP 2215	Pressure switch assembly	1
19	FEP 4007	Swivel, 1/4 (M) NPT x 1/4 (F) NPT	1
20	FEP 4286	Enclosure	1

Parts not labeled on diagram:

FEP 6224	Cord, SJO 16-3, 6'	1
FEP 6041	Hourmeter, AC	1
FEP 6227	LT conduit 5"	
FEP 4291	Cam bearing	1
FEP 6015	Fuse, 5-amp slo-blo	1
FEP 4287	Top cover	1
FEP 3286	Seal plate, stem-lid	1

NOTES: ** items are options, depending on model.



800- ASSEMBLY