OPERATING MANUAL

PT-Series Power Base
Models: MKT, MKTX
FT and FTR - Series Pumps
PT-8010 Cart
EXPORT

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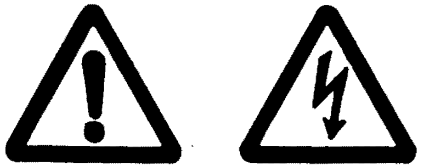
IMPORTANT SAFETY INSTRUCTIONS



PERSONAL INJURY/PRODUCT DAMAGE HAZARD!

TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK, PERSONAL INJURY OR PRODUCT DAMAGE WHEN USING THIS EQUIPMENT, FOLLOW BASIC PRECAUTIONS INCLUDING THE FOLLOWING:

1. READ ALL INSTRUCTIONS BEFORE OPERATING THIS EQUIPMENT.

2. TO PROTECT AGAINST RISK OF ELECTRICAL SHOCK, DO NOT PUT POWER BASE IN WATER OR OTHER LIQUID.

3. UNPLUG POWER BASE FROM ELECTRICAL OUTLET WHEN CLEANING.

4. KEEP HANDS AND FOREIGN OBJECTS OUT OF PUMP INLET AND OUTLET TO AVOID PERSONAL INJURY AND DAMAGE TO EQUIPMENT.

5. DO NOT OPERATE POWER BASE WITH DAMAGED POWER CORD OR PLUG, OR AFTER UNIT IS DROPPED OR DAMAGED IN ANY MANNER.

6. DO NOT USE AN EXTENSION CORD WITH THIS UNIT. SUCH USE MAY RESULT IN FIRE, ELECTRICAL SHOCK OR OTHER PERSONAL INJURY.

NOTICE:
USER ASSUMES ALL RESPONSIBILITY FOR SAFETY AND USE NOT IN ACCORDANCE WITH THESE INSTRUCTIONS.

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN FIRE, ELECTRICAL SHOCK OR OTHER PERSONAL INJURIES.

Complies with:

CONTENTS

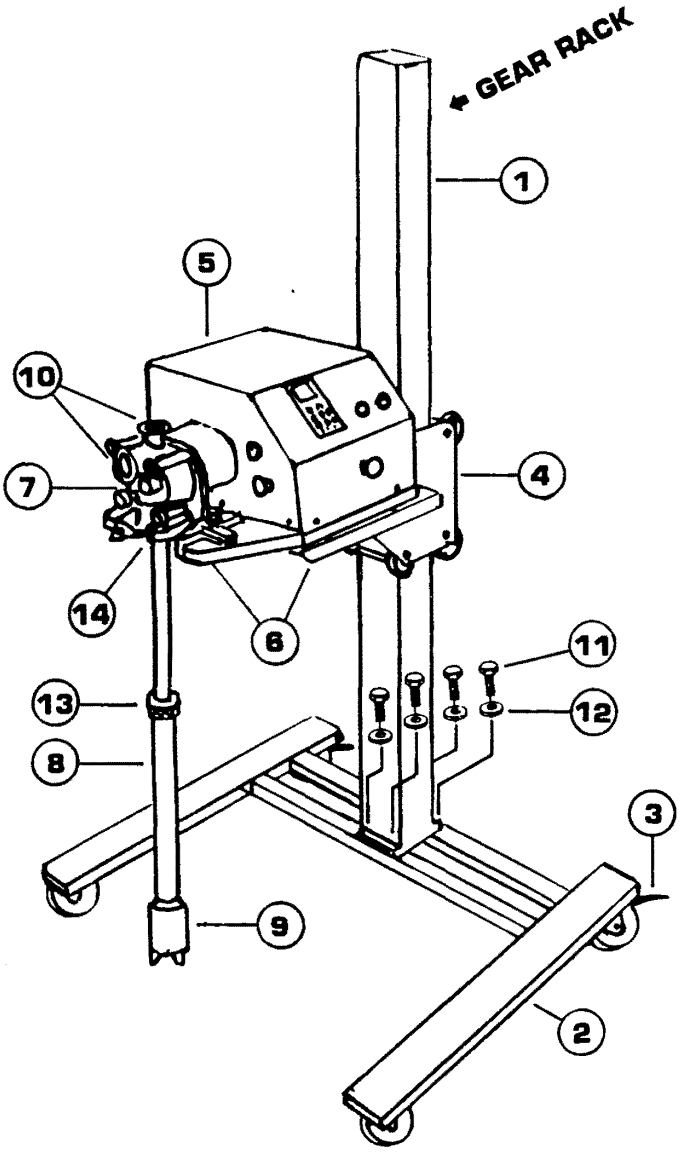


Figure 1

PT-SERIES ASSEMBLY

1 - POST

2 - CART

3 - BRAKE

4 - TABLE ASSEMBLY

5 - POWER PASE

6 - SAFETY SCREWS

7 - PUMP ASSEMBLY

8 - PICKUP TUBE ASSEMBLY

9 - CHECK VALVE ASSEMBLY

10 - PUMP OUTLETS

11 - BOLT

12 - LOCK WASHER

13 - PICKUP EXTENSION LOCK

14 - PUMP INLET

NOTE: Items 9,13 and 14 are critical O-Ring and Gasket locations. These items must be in place and hand tight to avoid air leaks.

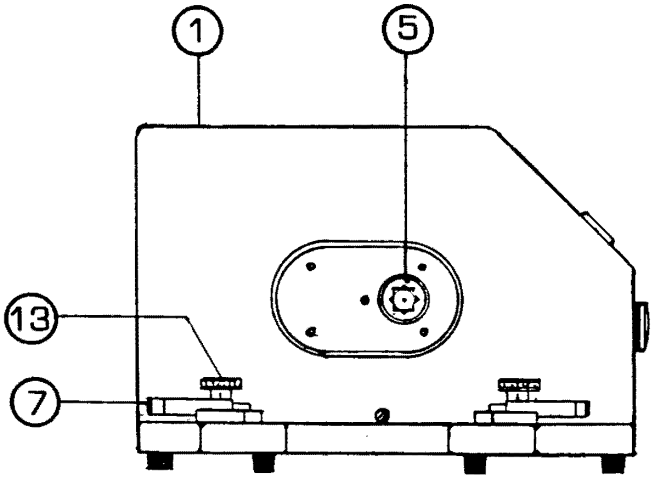


Figure 2

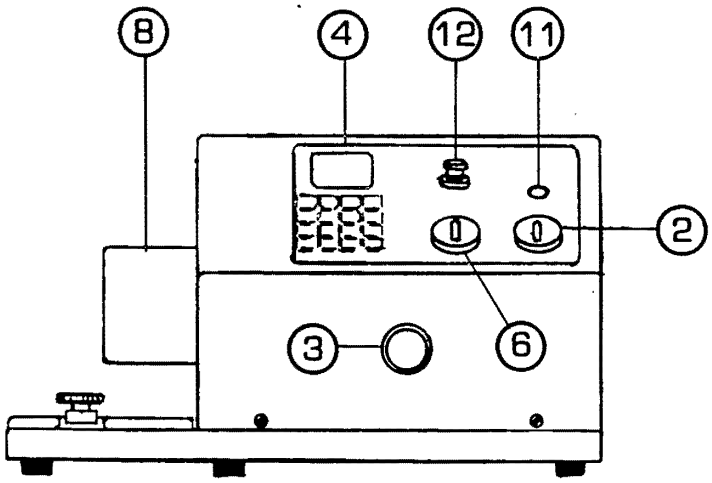


Figure 3

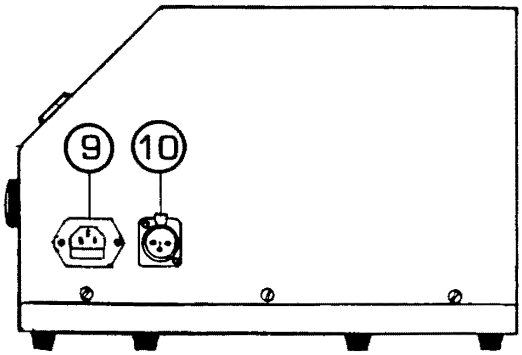


Figure 4

POWER BASE FEATURES

1 - POWER BASE - Houses motor and all electronics. [Fig. 2]

2 - POWER SWITCH - Turns power on and off. [Fig. 3]

3 - TRIGGER - Cycles the power base. [Fig. 2]

4 - KEYPAD - Controls all power base functions. [Fig. 3]

5 - PUMP DRIVER - Transmits power to pump. [Fig. 2]

6 - PUMPING DIRECTION SWITCH - Selects pumping direction - arrow up (via suction tube) or arrow down (via hopper). [Fig. 3]

7 - SAFETY CLAMPS - Secure pump to power base. [Fig. 2]

8 - GUARD - Shields drive mechanism and houses pump driver seal. [Fig. 3]

9 - POWER CORD RECEPTACLE - Receives detachable power cord. [Fig. 4]

10 - REMOTE TRIGGER RECEPTACLE - Receives foot switch or other remote triggering device. [Fig. 4]

11 - PILOT LIGHT - Indicates power on. [Fig. 3]

12 - EMERGENCY STOP - Disables power base. [Fig. 2]

13 - THUMB NUTS - Fasten pump to power base. [Fig. 2]

ASSEMBLY AND SETUP

WHEN USING PICKUP TUBE (Fig.1, Page 4)

1. Place CART (2) (Fig.1, Page 4) on the floor with wheels down.
2. Lock both rear wheel BRAKES (3) (Fig.1).
3. Place POST (1) on CART (2) with gear rack facing to the rear of cart (Fig.1).
4. Secure POST (1) to CART (2) with four BOLTS (11) and four LOCKWASHERS (12).
5. Place TABLE (4) over POST (1) (Fig.1) and carefully lower TABLE to engage drive gear with gear rack by rotating the crank handle. Crank table half way down.
6. Place POWER BASE (5) (Fig.1) on the TABLE (4). Make sure that rubber feet are seated in the table recesses.
7. Hand tighten both SAFETY SCREWS (6) into POWER BASE (5) (Fig.1).

WARNING: If power base is going to be used with FT or FTR transfer type pumps and our cart PT-8010 will not be used, the power base must be bolted to a sturdy cable to avoid toppling of the unit.
A) Drill two .28 inch (7mm) diameter holes through table 11.25 inches (285mm) apart and 7 inches (177mm) from the edge of the table.
B) Power base should be placed so that the rear four rubber feet are resting on the table. Fasten power base to table from below with two M6x1.0 bolts. Ignoring this warning could result in serious personal injury and also cause damage to the equipment.

8. Connect power cord to RECEPTACLE (9) (Fig.4, Page 5).
9. Plug power cord into a **GROUNDED** electrical outlet.
10. Switch power on using SWITCH (2) (Fig.3, Page 5).

WARNING: DO NOT put fingers in pump openings. Contact with pump impellers can cause serious hand injury.

11. Place PUMP ASSEMBLY (7) on POWER BASE (5) (Fig.1). With left hand push pump against PUMP DRIVER (5) (Fig.2). With the right hand press SEAT KEY (D) (Fig.5, Page 8) to engage the pump driver with pump drive shaft. Repeat procedure if necessary until pump is fully engaged.
12. Slide both SAFETY CLAMPS (7) (Fig.2) to engage holes in pump base and tighten knurled nuts.
13. Place O-Ring into the recess of PICKUP TUBE (8) (Fig.1) over coarsely threaded end with two tabs. Place steel ball inside CHECK VALVE (9) (Fig.1). Thread CHECK VALVE ASSEMBLY (9) onto PICKUP TUBE (8) and hand tighten.
14. Place seal on flange of PICKUP TUBE ASSEMBLY (8) and attach to PUMP INLET (14) with sanitary fitting clamp provided.
    NOTE: Make sure that all O-Rings and gaskets are in place on the pickup tube assembly and the joints are hand tight. Air leaks in the pickup assembly will prevent product from being delivered to the pump.
15. Lower table or extend pickup tube so that the CHECK VALVE (9) (Fig.1) is at the bottom of the product container. Loosen LOCKING NUT (13) (Fig.1) on the pickup tube to adjust to desired length, then retighten nut.
16. Prime the pump by filling the vertical PUMP OUTLET (10) (Fig.1) with product.
17. Attach your spout or hose to the desired pump outlet and secure it with the supplied sanitary fitting seal and clamp. The unused pump outlet must be closed with seal, outlet stop and clamp supplied.

18. PUMPING DIRECTION SWITCH (6) (Fig. 3) must be turned to ARROW UP position. Pumping direction can **only** be changed after power has been switched off and on.

> **WARNING: Pumping Direction Switch SHOULD NEVER be switched to the DOWN position while the Pickup Tube is being used. Reversing the pumping direction will hydraulically extend the Pickup Tube and may damage the equipment.**

19. Select CONTINUOUS MODE with MODE KEY (A) (Fig.5, Page 8).
20. Select SPEED with SPEED KEY (B) (Fig.5) and enter 99 (while priming) at the KEYPAD.
21. Press and hold TRIGGER (3) (Fig.2) to activate power base. Operate pump until product appears at the spout or hose opening.
22. Select desired MODE of operation with KEY (A) (Fig.5).
23. Select product delivery speed with SPEED KEY (B) (Fig.5).
24. Select reverse amount with REVERSE KEY (C) (Fig.5). (Start with 5 and adjust)
25. Select amount of product to be metered with KEYPAD (Fig.5). (See normal cycling instructions on page 9)
26. Press TRIGGER (3) (Fig.2) or activate a REMOTE TRIGGERING DEVICE to start metering your product.

WHEN USING FT AND FTR-SERIES FILLER UNITS (With hopper)

1. Place power base on a sturdy table.
2. Connect power cord to RECEPTACLE (9) (Fig.4, Page 5).
3. Plug power cord into a **GROUNDED** electrical outlet.
4. Switch power on using SWITCH (2) (Fig.3, Page 5).

> **WARNING: DO NOT put fingers in pump openings. Contact with pump impellers can cause serious hand injury.**

5. Place PUMP ASSEMBLY (7) on POWER BASE (5) (Fig.1). With left hand push pump against PUMP DRIVER (5) (Fig.2). With the right hand press SEAT KEY (D) (Fig.5, Page 8) to engage the pump driver with pump drive shaft. Repeat procedure, if necessary, until pump is fully engaged.
6. Slide both SAFETY CLAMPS (7) (Fig.2) to engage holes in pump base and tighten knurled nuts.
7. Place sanitary fitting seal on top of pump. Attach bowl to pump with sanitary fitting clamp provided.
8. Attach your spout or hose to the desired pump outlet and secure it with the supplied sanitary fitting seal and clamp. The unused pump outlet must be closed with seal, outlet stop and clamp supplied.
9. Turn PUMPING DIRECTION SWITCH (6) (Fig.3) to ARROW DOWN position.
10. Select CONTINUOUS MODE with MODE KEY (A) (Fig. 5).
11. Select SPEED with SPEED KEY (B) (Fig.5) and enter 75 at the KEYPAD.
12. Press and hold TRIGGER (3) (Fig.2) to activate power base. Operate pump until product appears at the spout or hose opening.
13. Select desired MODE of operation with KEY (A) (Fig.5).
14. Select product delivery speed with SPEED KEY (B) (Fig.5).
15. Select reverse amount with REVERSE KEY (C) (Fig.5).
16. Select amount of product to be metered with KEYPAD (Fig.5). (See normal cycling instructions on page 9)
17. Press TRIGGER (3) (Fig.2) to start metering your product.

KEYPAD CONFIGURATION AND FUNCTIONS

A - **MODE KEY** - Each time this key is pressed, the following functions will be displayed: NORMAL CYCLING, CONTINUOUS RUN, AUTOMATIC CYCLING, RUN TIME and WAITING TIME.

B - **SPEED KEY** - When pressed, dispensing speed can be adjusted.

C - **REVERSE KEY** - When pressed, the amount of reverse can be adjusted.

D - **SEAT KEY** - When pressed, will align pump driver with pump drive shaft.

E - **SPEED SYMBOL** - When indicated by arrow, speed can be adjusted.

F - **REVERSE SYMBOL** - When indicated by arrow, reverse can be adjusted.

G - **NUMBER KEYS** - Used to enter number values.

H - **MINUS KEY** - When pressed, decreases a number.

I - **PLUS KEY** - When pressed, increases a number.

J - **MODE SYMBOL** - Shows mode setting. (see Figs.6,7,8,9)

K - **DISPLAY** - Shows all values and functions.

L - **ARROWS** - When displayed, indicate which function can be adjusted.

M - **RUNNING TIME SYMBOL** - When displayed, run time can be changed.

N - **WAITING TIME SYMBOL** - When displayed, waiting time can be changed.

O - **ERROR SYMBOL** - **Er 1** indicates power base overload condition. **Er 2** indicates memory module failure. (see Fig.10)

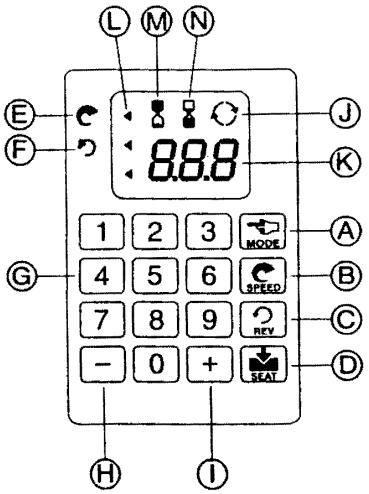


FIG.5 KEYPAD

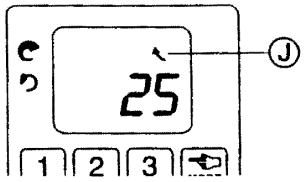


FIG.6 NORMAL MODE

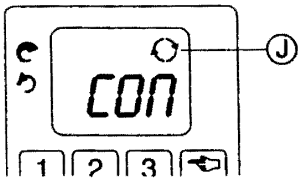


FIG.7 CONTINUOUS MODE

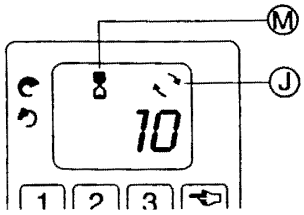


FIG.8 RUNNING TIME

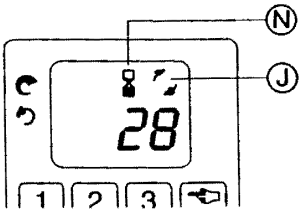


FIG.9 WAITING TIME

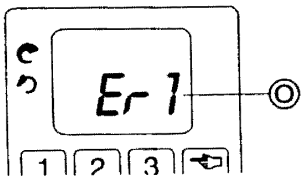


FIG.10 ERROR

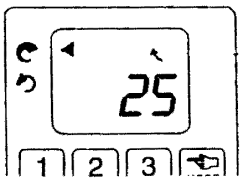


FIG.11 SPEED

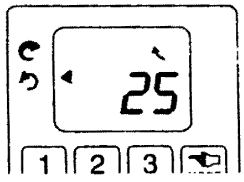


FIG.12 REVERSE

USING THE KEYPAD

NORMAL CYCLING

Press **MODE KEY** (A) Fig.5 until **MODE SYMBOL** (J) appears as in Fig.6. Enter amount from 1 to 999. Press **TRIGGER** (3) Fig.2 and unit will cycle once, reverse and stop. Experiment with amount settings until desired dispensed quantity is reached.

CONTINUOUS DISPENSING

Press **MODE KEY** (A) Fig.5 until **MODE SYMBOL** (J) appears as in Fig.7. Instead of a number, the display will show CON. Press **TRIGGER** (3) Fig.2 and hold. Unit will run continuously as long as the trigger is being pressed.

AUTOMATIC CYCLING

This function is used to relieve the operator from repeatedly cycling the unit manually. It can also be used to deposit product on a moving conveyor. This function consists of two parts - **RUNNING TIME** and **WAITING TIME**. Press **MODE KEY** (A) Fig.5 until symbols (J) and (M) appear as in Fig.8. Enter desired **RUNNING TIME**. Press **MODE KEY** (A) again and symbols (J) and (N) will appear as in Fig.9. Enter desired **WAITING TIME**. Press **TRIGGER** (3) Fig.2 to start and stop cycling. Note - cycling can be started or stopped while either symbol (M) or (N) is displayed.

SPEED

Press **SPEED KEY** (B) Fig.5 and an **ARROW** will point to the symbol Fig.11. To change speed, enter any number between 1 and 99. Speed can also be increased by pressing the **PLUS KEY** (I) Fig.5 or decreased by pressing the **MINUS KEY** (H) Fig.5. Press **SPEED KEY** (B) again and display will return to the previously selected mode. Speed can be adjusted with + and - keys while the unit is operating.

REVERSE

Press **REVERSE** KEY (C) Fig.5 and an **ARROW** will point to the symbol Fig.12. Enter the desired reverse value (use lowest value that will prevent dripping) or 0 for no reverse. Press **REVERSE KEY** (C) again and display will return to the previously selected mode.

SEAT

Place **PUMP ASSEMBLY** (7) Fig.1 on the **POWER BASE** (5) Fig.1 and push it up against the **PUMP DRIVER** (5) Fig.2. Press **SEAT KEY** (D) Fig.5 in order to engage the power base drive with the pump drive shaft. Repeat if necessary until the pump is engaged.

ERROR

ERROR SYMBOL (O) Fig.10 on the display indicates power base overload. This situation occurs when either the product is too viscous or the speed is too high. Switch off power to reset power base. Reduce speed and/or change viscosity of product.

NOTE: If power is switched off while the unit is cycling, current memory settings will be lost.

LEARNING MODE.

This mode is used to visually approximate the desired volume of dispensed product. Product can be dispensed in small increments, which are digitally accumulated and later displayed as total cycle length.

Step 1. Set mode to **"CON"** (Continuous Mode) and adjust desired dispensing **"SPEED"** (Speed Mode).

Step 2. Press **"+"** key and cycle icon will flash once.

Step 3. Press Trigger and hold until desired volume has been dispensed. If the Trigger is repeatedly pressed and released all run time will be accumulated.

Step 4. Press **"+"** key and the unit will switch to "**NORMAL**" mode and display the accumulated run time.

Error Condition:
If during the learning cycle the accumulated run time exceeds 999 and the **"+"** key is pressed, the display will show **"Er 3"**. To exit the error mode press any key and the unit will return to **"CON"** mode.

PROGRAMMABLE RESOLUTION.

Motor resolution, defined as number of motor turn degrees between two consecutive numbers on the keypad can be adjusted from 1.25 to 40 degrees. Default resolution setting is 20 degrees. To change resolution proceed as follows:

Step 1. Switch power OFF. Press and hold key **"1"** and switch power ON.

Step 2. Press **"+"** or **"-"** key to reach desired setting from 1 to 6.

Motor Resolutions.

1 = 1.25 degrees
2 = 2.50 "
3 = 5 "
4 = 10 "
5 = 20 "
6 = 40 "

Step 3. Press any number key and the unit will return to Normal Mode.

NOTE: To reset resolution to default setting: Switch power OFF. Press and hold key **"3"** and switch power ON.

CLEANING

POWER BASE

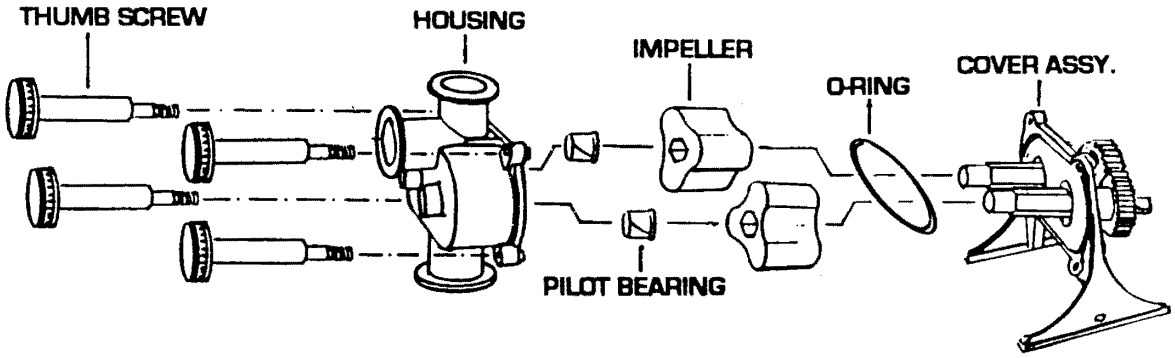
WARNING: To protect against electrical shock, unplug power base from electrical outlet. DO NOT PLACE POWER BASE IN WATER OR ANY OTHER LIQUID!

Clean exterior of power base using a **DAMP CLOTH ONLY!**

PUMPS AND FILLER UNITS

Unclamp bowl or pickup tube and remove spout or hose from pump assembly as applicable. To disassemble pump assembly, remove four thumb screws. Remove pump housing from pump cover. Slide off impeller(s) and remove all pilot bearings (3 in FT and 2 in FTR), O-Rings, seals and clamps. All stainless steel parts are dishwasher-safe and may be sterilized. All other parts should be hand washed only. Reassemble pump making sure that all bearings are seated properly with their keys in the keyways and any O-Rings seated completely in their grooves.

WARNING: All pilot bearings must be in place before pump is operated. If this warning is ignored, severe damage to the pump will result.

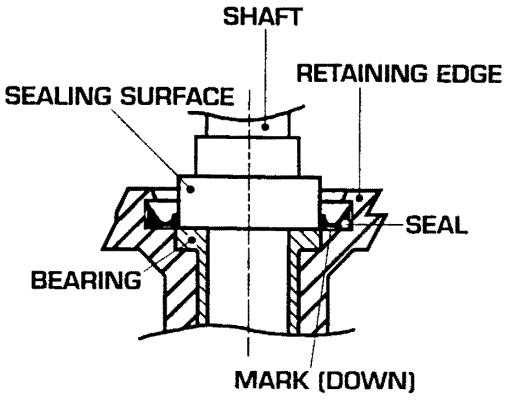


MAINTENANCE

POWER BASE

The power base is maintenance free.

PUMPS AND FILLER UNITS



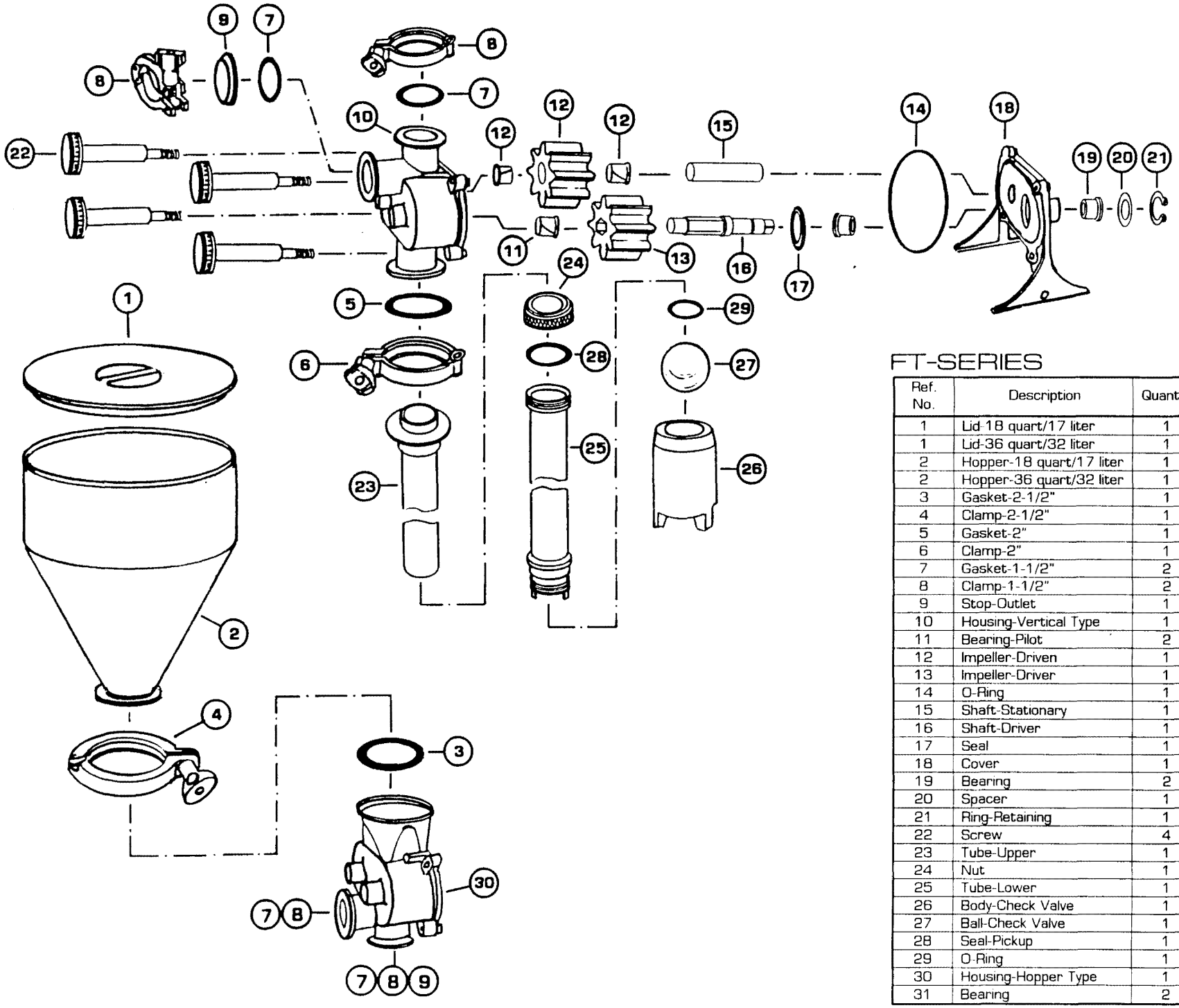
Pumps and filler units have shaft bearings, seals and pilot bearings, which must be replaced when wear or leakage is evident. To replace worn seals:

1. Using the pointed end of the seal replacement tool, pry out the worn seal. Be careful not to damage the SHAFT SEALING SURFACE. Scratches on this surface will shorten seal life.

2. Clean seal cavity so it is free of all foreign material. Apply suitable lubricant to the INSIDE DIAMETER OF SEAL ONLY.

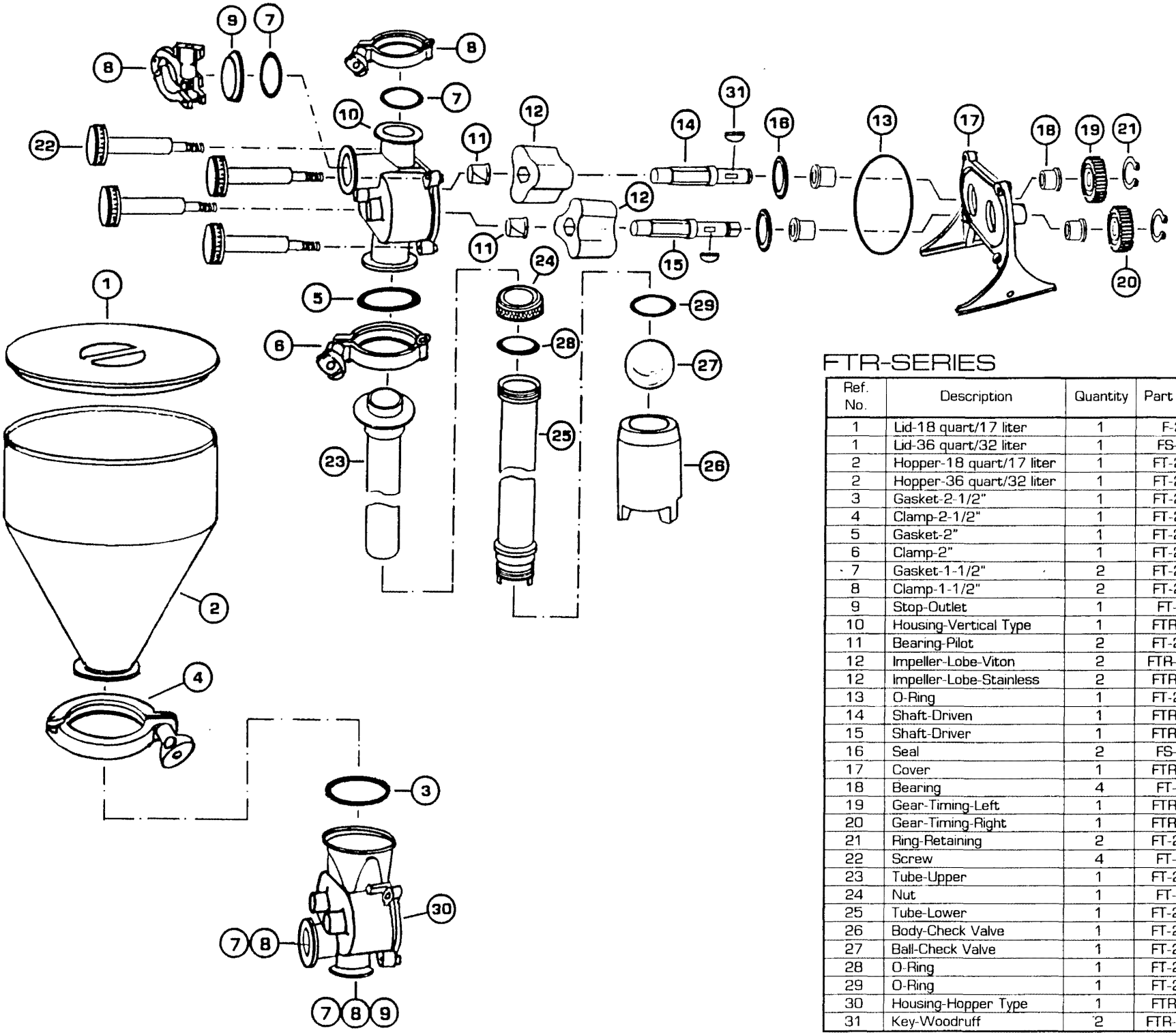
3. Slide new seal over shaft with reference mark facing DOWN. With your fingers, press the seal into the seal cavity. Using the blunt end of the tool, push the seal all the way down until it is seated below the RETAINING EDGE.

4. Remove and replace worn pilot bearings, making sure that their keys are seated in their keyways.



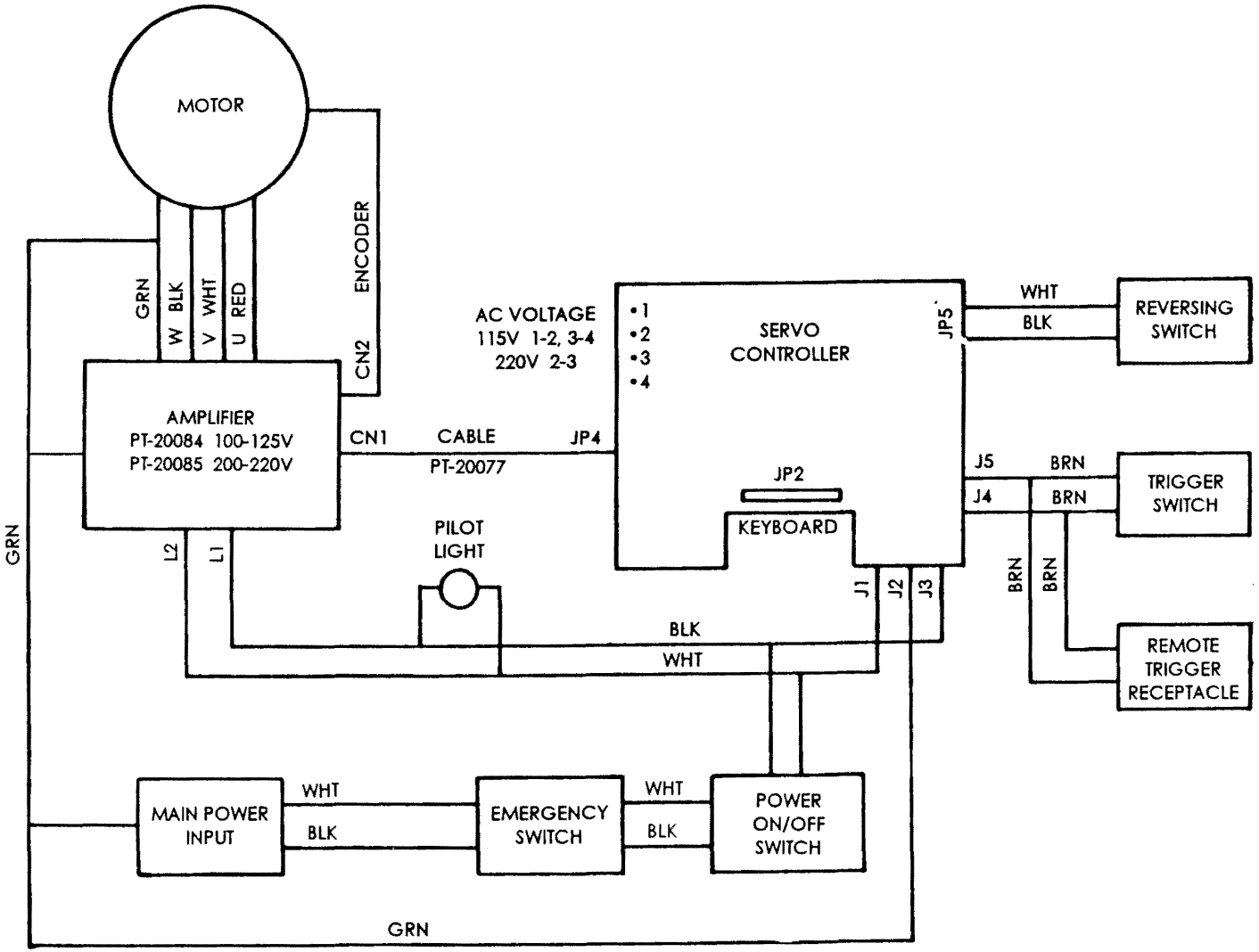
FT-SERIES

Ref. No.	Description	Quantity	Part Number
1	Lid-18 quart/17 liter	1	F-2261
1	Lid-36 quart/32 liter	1	FS-3200
2	Hopper-18 quart/17 liter	1	FT-20065
2	Hopper-36 quart/32 liter	1	FT-20131
3	Gasket-2-1/2"	1	FT-20047
4	Clamp-2-1/2"	1	FT-20048
5	Gasket-2"	1	FT-20045
6	Clamp-2"	1	FT-20046
7	Gasket-1-1/2"	2	FT-20043
8	Clamp-1-1/2"	2	FT-20044
9	Stop-Outlet	1	FT-2952
10	Housing-Vertical Type	1	FTR-3373
11	Bearing-Pilot	2	FT-20051
12	Impeller-Driven	1	FT-20171
13	Impeller-Driver	1	FT-20170
14	O-Ring	1	FT-20035
15	Shaft-Stationary	1	FT-2972
16	Shaft-Driver	1	FT-2946
17	Seal	1	FS-2302
18	Cover	1	FT-2969
19	Bearing	2	FT-2955
20	Spacer	1	FT-20140
21	Ring-Retaining	1	FT-20101
22	Screw	4	FT-2982
23	Tube-Upper	1	FT-20061
24	Nut	1	FT-3431
25	Tube-Lower	1	FT-20104
26	Body-Check Valve	1	FT-20030
27	Ball-Check Valve	1	FT-20031
28	Seal-Pickup	1	FT-20119
29	O-Ring	1	FT-20033
30	Housing-Hopper Type	1	FTR-3372
31	Bearing	2	FT-20169



FTR-SERIES

Ref. No.	Description	Quantity	Part Number
1	Lid-18 quart/17 liter	1	F-2261
1	Lid-36 quart/32 liter	1	FS-3200
2	Hopper-18 quart/17 liter	1	FT-20065
2	Hopper-36 quart/32 liter	1	FT-20131
3	Gasket-2-1/2"	1	FT-20047
4	Clamp-2-1/2"	1	FT-20048
5	Gasket-2"	1	FT-20045
6	Clamp-2"	1	FT-20046
7	Gasket-1-1/2"	2	FT-20043
8	Clamp-1-1/2"	2	FT-20044
9	Stop-Outlet	1	FT-2952
10	Housing-Vertical Type	1	FTR-3373
11	Bearing-Pilot	2	FT-20051
12	Impeller-Lobe-Viton	2	FTR-20129
12	Impeller-Lobe-Stainless	2	FTR-2938
13	O-Ring	1	FT-20035
14	Shaft-Driven	1	FTR-2971
15	Shaft-Driver	1	FTR-2970
16	Seal	2	FS-2302
17	Cover	1	FTR-2908
18	Bearing	4	FT-2955
19	Gear-Timing-Left	1	FTR-2947
20	Gear-Timing-Right	1	FTR-2948
21	Ring-Retaining	2	FT-20101
22	Screw	4	FT-2982
23	Tube-Upper	1	FT-20061
24	Nut	1	FT-3431
25	Tube-Lower	1	FT-20104
26	Body-Check Valve	1	FT-20030
27	Ball-Check Valve	1	FT-20031
28	O-Ring	1	FT-20119
29	O-Ring	1	FT-20033
30	Housing-Hopper Type	1	FTR-3372
31	Key-Woodruff	2	FTR-20120



EDHARD CORP.
Wiring Diagram
Models: MKT, MKTX
Date: 11.02.98