

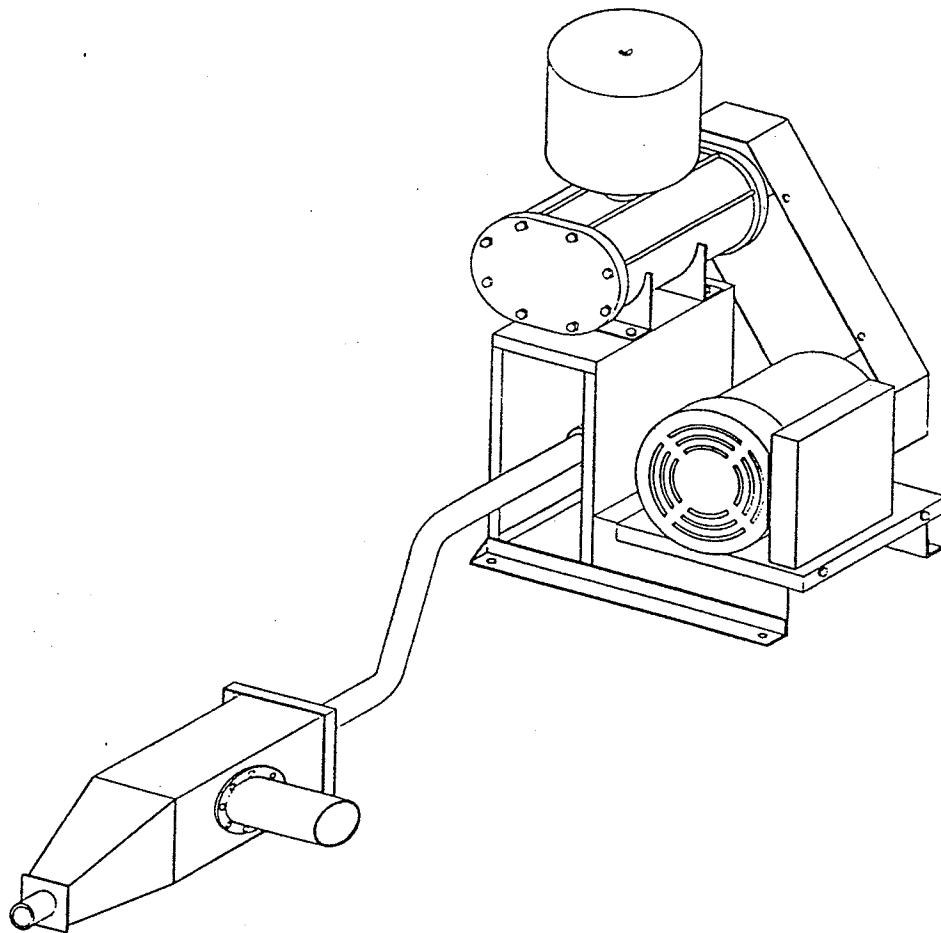
*Screw  
Feeder  
NO AIR LOCK*



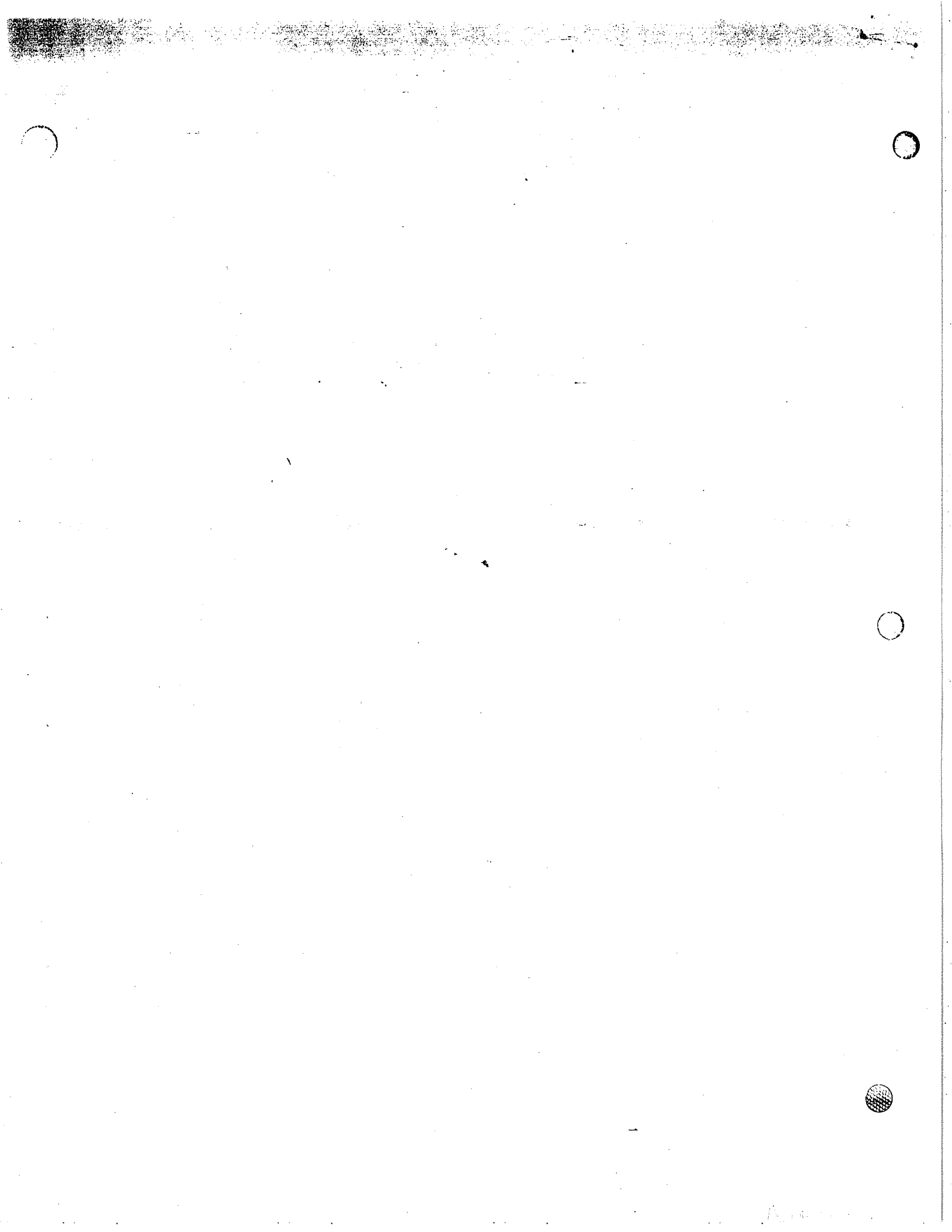
**MIX-MILL<sup>®</sup>**

**INSTRUCTION MANUAL  
2" FEED PUMP**

**MODELS FPB51A, FPC51A, FPB53A, FPC53A**



99960125



## WARRANTY CERTIFICATE

Bluffton Agri/Industrial Corp. warrants each new product of it's manufacture when purchased from an authorized representative for a period of one year from the date of shipment. This warranty shall apply to all parts and workmanship (except products or components not manufactured by Bluffton Agri/Industrial Corp.) defective in manufacture. Bluffton Agri/Industrial Corporation's sole and entire obligation under such warranty shall be satisfied by shipment to the Purchaser-User, without charge, (except for transportation costs, which shall be paid by the Purchaser-User) the part or parts returned (upon request) for inspection and part intended to replace those acknowledged by Bluffton Agri/Industrial Corp. to be defective. This warranty shall not apply and shall be void under the following conditions:

1. If the product is transported from it's original installation site.
2. If any part of the product has be altered, modified or changed, except at Bluffton Agri/Industrial Corporation's factory or is authorized by Bluffton Agri/Industrial Corp. in writing.
3. If attachments or devices unsuitable to the product have been used on or in conjunction with the product.
4. If the product has not been installed, used, operated, handled or serviced in accordance with the appropriate instruction manual.

Bluffton Agri/Industrial Corp. reserves the right to make changes in design or improvements in it's products without any obligation whatsoever to prior Purchaser-User of such products.

Bluffton Agri/Industrial Corp. will pass on to a Purchaser-User only such warranty as it shall receive on products or components not of it's manufacture from the manufacturer or supplier thereof.

This warranty is expressly in lieu of any other express or implied warranties, including any implied warranty of merchantability of fitness and of any other obligation on the part of Bluffton Agri/Industrial Corp., and may not be altered, modified or changed in any way except in writing.

Bluffton Agri/Industrial Corp. will not be liable for any consequential damages, loss or expenses arising in connection with the use or the inability to use the product for any purpose whatever. Your maximum liability shall not in any case exceed the cost of replacing defective parts if returned to us within one year from date of shipment.

The Warranty Registration Card must be filled in completely and signed by the Purchaser-User and returned to us to validate any warranty claim.

## WARRANTY CERTIFICATE

### WARRANTY CLAIMS

Contact our Sales Department for a RMO (Return Material Order) before returning warranty items. The RMO must accompany all items returned for warranty. The machine serial number, item part number and a brief description of the type of failure is required to complete the warranty claim.

All returned items are to be shipped freight prepaid. Credit will be issued after inspection and acknowledgment of the warranty defect by the manufacturer.

Direct all correspondence/claims to:

Bluffton Agri/Industrial Corp.  
Sales Department  
Box 256  
805 South Decker Drive  
Bluffton, IN 46714

(219) 824-3400

This safety alert symbol identifies important safety messages in this manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows. Regardless of the care used in the design and construction of any type of equipment, there are many conditions that cannot be completely safeguarded against without interfering with reasonable accessibility and efficient machine operation. A careful operator is the best insurance against an accident.



**CAUTION** - Carefully read and understand this manual before operating the machine. Do not attempt to install, connect power to, operate or service the machine without proper instruction and until you have been thoroughly trained in its use.



**WARNING** - Keep children, visitors and untrained personnel away from the machine while in operation.



**WARNING** - Make certain all electric motors and controls are properly grounded.



**DANGER** - Do not attempt to work on, clean or service this equipment or open or remove any protective cover, guard or grate until power has been turned off and mechanically locked out and the machine has come to a complete stop.



**DANGER** - Keep hands, feet and clothing clear from rotating belts, pulleys, rolls and gears when machine is operating. Failure to do so will cause severe injury or death.



**DANGER** - Never operate machine without protective covers, guards, or grates properly installed.



**WARNING** - Do not obscure or remove safety decals from the equipment. Replacement decals are available from the manufacturer.

**WARNING** - This equipment was manufactured in compliance with existing OSHA regulations. It is the responsibility of the Purchaser-User to maintain OSHA compliance when operating the equipment.

# TYPICAL SAFETY DECALS

 **DANGER**

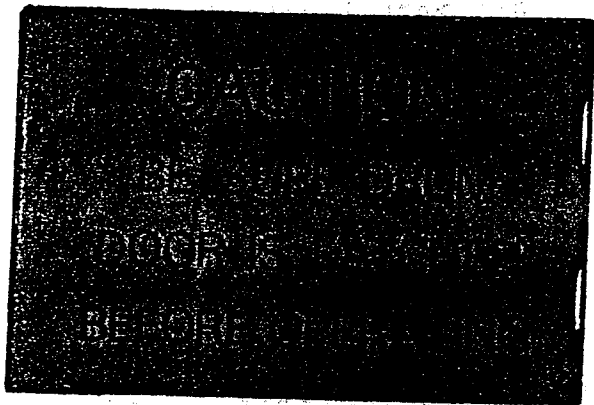
**KEEP COVER SECURED  
AT ALL TIMES**

**LE COUVERCLE DOIT ETRE  
ASSUJETTI EN TOUT TEMPS**


**DISCONNECT POWER BEFORE  
WORKING ON EQUIPMENT**


**COUPER LE COURANT AVANT  
DE TRAVAILLER SUR L'APPAREIL**

80003568



**TO PREVENT SERIOUS BODILY INJURY**



 **READ CAREFULLY!**

1. Do not attempt to install, connect power to, operate or service machine without proper instruction and until you have been thoroughly trained in its use by your employer.
2. Do not attempt to work on, clean or service this equipment or open or remove any protective cover, guard, grate or maintenance panel until the POWER has been TURNED OFF and LOCKED OUT, and the machine has come to a COMPLETE STOP.

**DO NOT REMOVE OR OBSCURE  
THIS WARNING SIGN**

F80003538

**WARNING**

**OPEN MAIN SWITCH BEFORE  
WORKING ON EQUIPMENT**

**DANGER!**

**KEEP HANDS CLEAR**

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Section I SPECIFICATIONS

A. Electrical and Mechanical Specifications

- Blower Motor.....5HP, 230VAC, 1 PH or 3 PH, 60 Hz.,  
3500RPM, 184T frame
- Blower.....2030 RPM,76.5CFM inlet @ 8PSI outlet  
Roots type, 10PSI max. press. rise
- Blower Protection.....Pressure relief valve, pressure  
safety switch, material blowback  
valve
- Pressure Relief Valve.....134CFM @ 10PSI, 10PSI pressure set  
point, 1-1/2" NPR mount
- Air Filter.....195CFM, paper element, foam pre-  
filter, 2-1/2" NPT mount
- Conveying Lines.....2" O.D. x 16 ga. galvanized tube,  
18" radius elbows
- Feeder Motor Required.....1-1/2HP (for auger <10' long)  
230VAC, 1 PH
  
- Control Panel Power Supply.....230VAC, 60 HZ., 1 PH or 3 PH
- Control Circuit Power.....115VAC, 1 amp max.
- Blower Motor Contactor (MC1).....1 PH - 7-1/2HP max.,  
3 PH - 5HP max.
- Feeder Motor Contactor (MC2).....1 PH - 2HP max.
- Blower Motor Overload Relay (OL1)....1 PH - 18-25 amps,  
3 PH - 10-12.9 amps
- Feeder Motor Overload Relay (OL2)....7-9.9 amps
- Control Relays (CR1, 2 & 3).....5 amp max. @ 125VAC
- Time Delay Relays (TD1 & TD2).....Delay on make, 1 amp max. load,  
1-1023 second delay .
- Pressure Switch.....3-30PSI set point, 125VA pilot  
duty AC voltage, SPDT contacts
- Reset and Switch Operators.....Oil-tite, 7/8" dia. mount
- Switch Contact Blocks.....10 amps continuous max.



Electrical and Mechanical Specifications (con't)

Indicator Lamps (NE1, 2 & 3).....Neon, T3-1/4 miniature bayonet  
base, 22K ohm series resistor  
required

Lampholders (NE1, 2 & 3).....Oil tight, series resistor built  
in base

Hour Meter.....99,999.9 hours max., 60 Hz. only

Pressure Gauge.....0-15PSI, 1/4" NPT center back  
connection

Automatic Shutdown if:.....Pressure too high, blower motor  
overloaded, feeder motor overloade

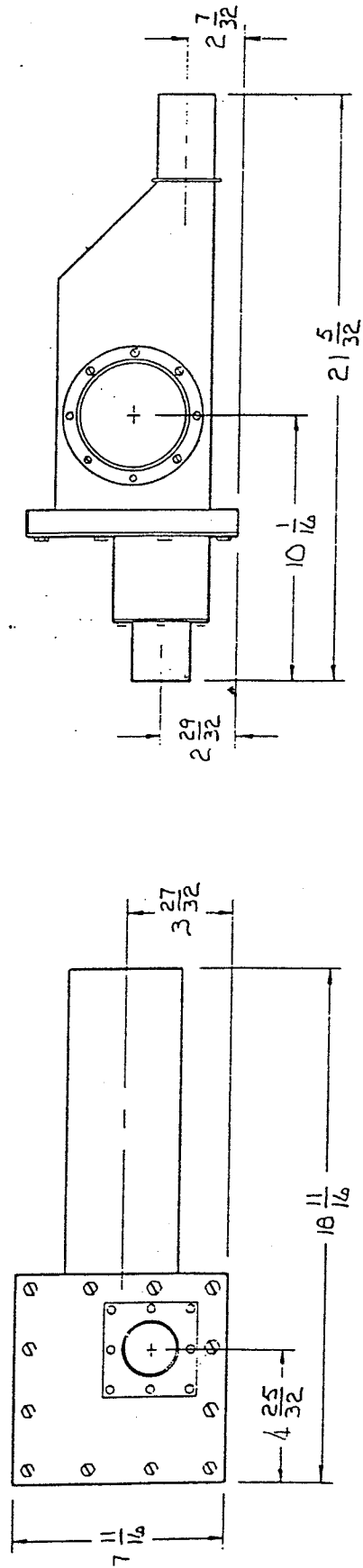


fig. 1 FEEDER MAJOR DIMENSIONS

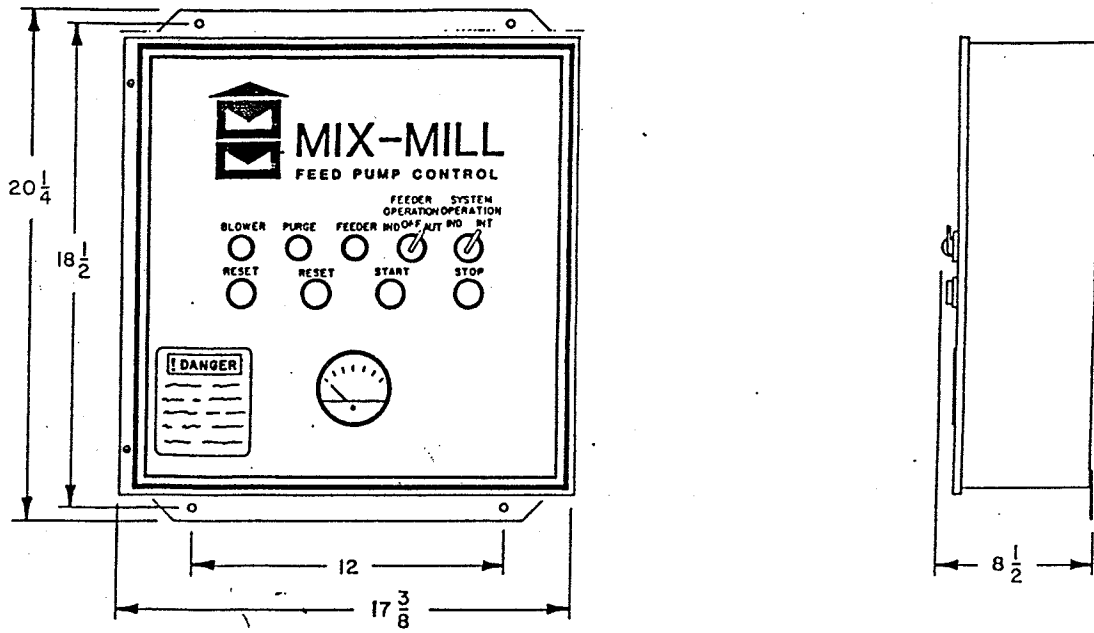


fig. 2 CONTROL PANEL MAJOR DIMENSIONS

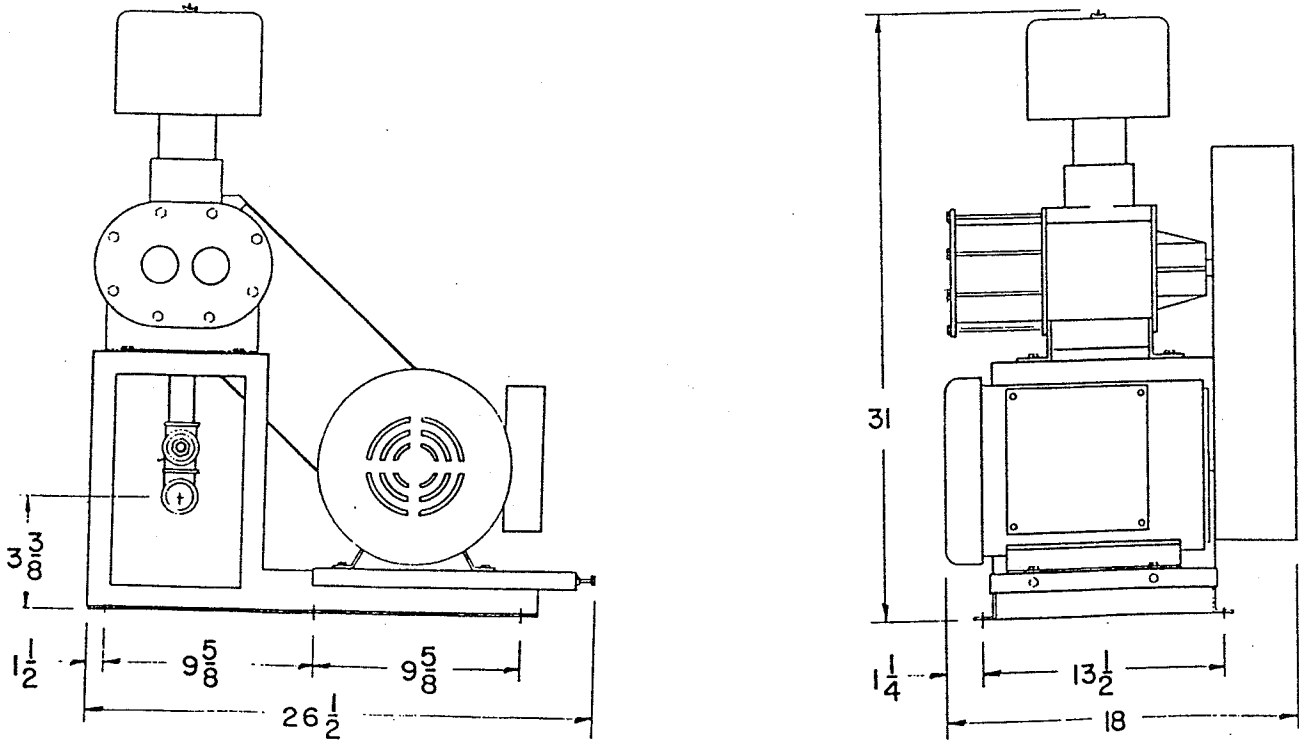


fig. 3 BLOWER MAJOR DIMENSIONS

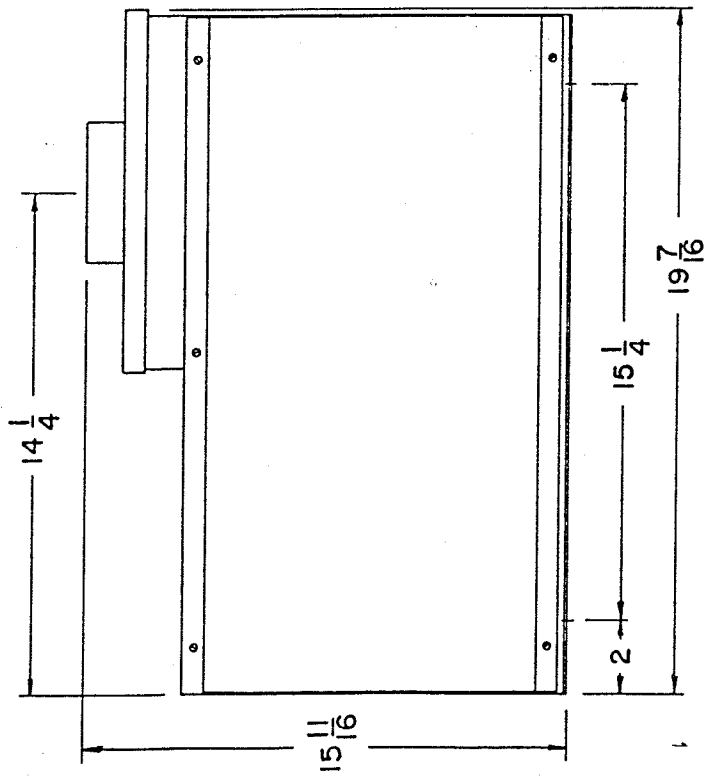
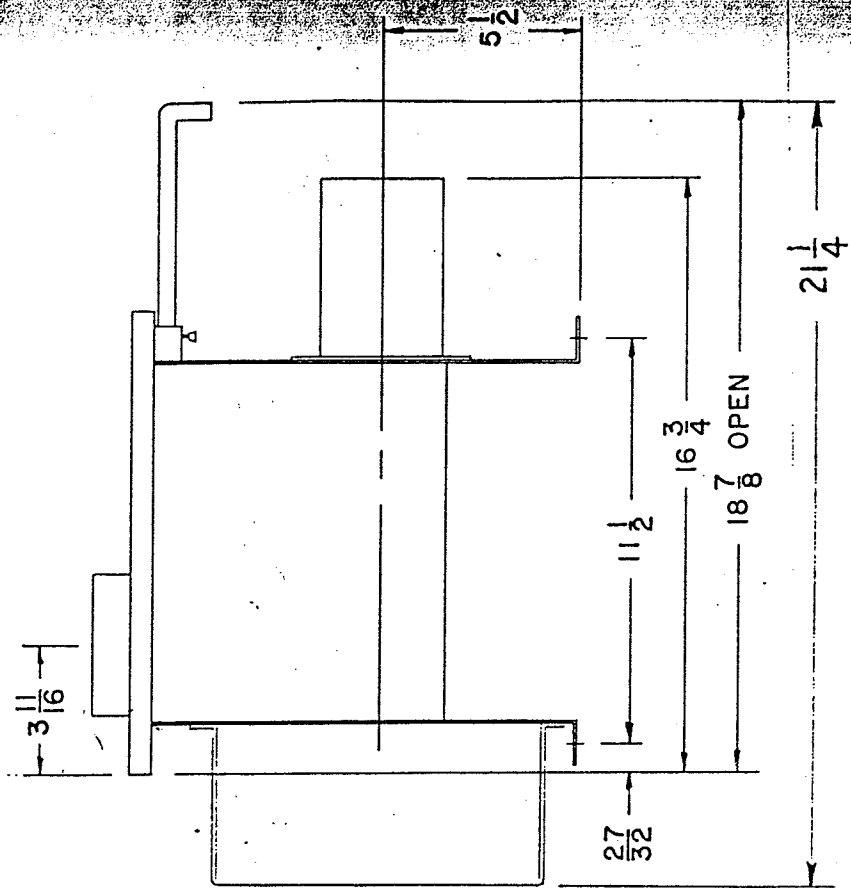


fig. 4 INLET HOPPER MAJOR DIMENSIONS

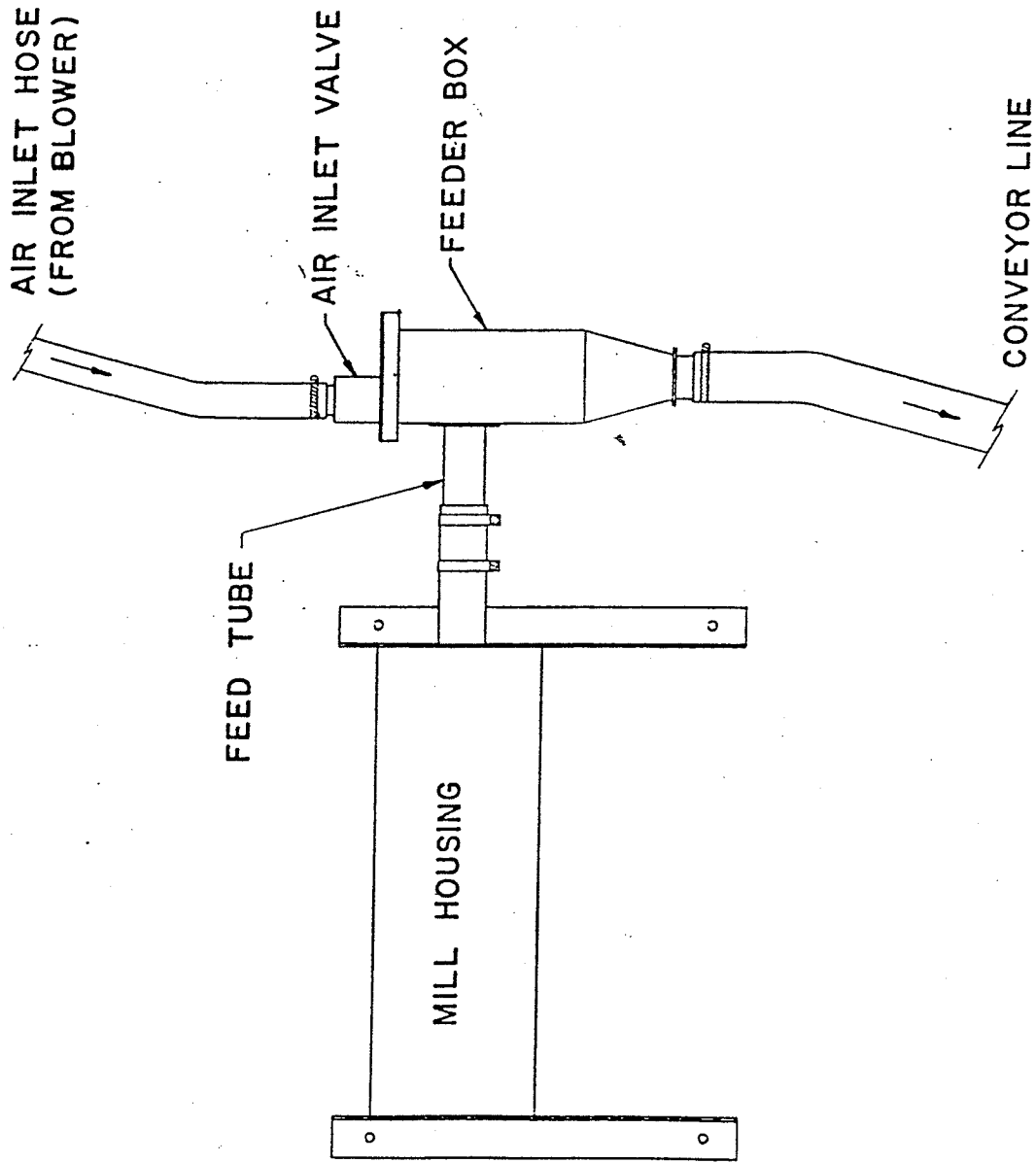


fig. 5 TYPICAL SCREW FEEDER INSTALLATION

## Section II INSTALLATION

### A. System Components

#### 1. Blower

Locate the blower assembly in a weather tite structure. Sufficient air circulation will be required inside the structure to keep the blower motor from overheating. Anchor the blower assembly to the floor of the structure.

#### 2. Air Filter

If the blower assembly is located inside buildings or in a dusty atmosphere, the air filter should be relocated. Cleaner air will lengthen the life of the filter element. Relocating the filter outdoors will reduce noise levels indoors.

Locate the filter assembly under a weather cover. Reconnect the filter to the blower with pipe or suction hose at least 2" inside diameter.

#### 3. Feeder

The feeder can be mounted directly on a mixer-grinder or an optional Mix-Mill inlet hopper. The feeder is fastened to both the mixer-grinder and the hopper with a tube & plate assembly (supplied with either the mill or the feeder auger). See fig. 5 for a typical installation. The optional inlet hopper has been designed with weather-resistant covers and can be located outdoors if the inlet is suitably sealed.

The feeder is a modular design to allow flexibility of mounting. The feeder can mount on either side of a mixer-grinder and discharge to the front or back. The feeder as assembled and shipped is set up for right front or left rear discharge (as viewed from door side of machine). To set up the feeder for right rear or left front discharge four parts must be removed and reassembled differently. Refer to fig. 9 and use the following procedure to change the direction of discharge:

- Interchange the Feed Tube Assembly (item 3) and the Window (item 11). Keep the bearing bracket on the Feed Tube Assembly vertical in relation to the rest of the feeder.
- Remove the Air Inlet Subassembly (item 6), turn it 1/4 turn clockwise, and reassemble. The box on the assembly should now be on the same side of the feeder as the Feed Tube Assembly.

### 3. Feeder (con't)

- Remove the Check Valve Assembly (itme 10) and re-assemble with the flapper hanging down.

Assemble the auger and tube and plate to the mill before the feeder is assembled. Slide the auger into the bearing as far as it will go, but do not tighten down the flangette screws yet. As the feeder is assembled to the tube and plate guide the auger stub shaft into the bronze bearing. Locate the feeder so the auger stub shaft is even with the end of the bronze bearing. Level the feeder and tighten the clamp rings on the tube and plate. Tighten the bearing flangette screws and the lock collar.

A 1-1/2 HP motor and 500 RPM drive will be required to drive the feeder on augers less than 10 feet long.

### 4. Control Panel

Locate the control panel in a weather tite structure. Electrical connection to the control panel is explained later in this section and section VI (Schematic & Wiring Diagrams). After the panel is installed move the o-ring on the back of the pressure gauge to the lower groove.

### 5. Conveying Lines

The design of the Mix-Mill Feed Pump is based on the use of 1-7/8" inside diameter conveying lines and large radius (18") elbows. Tubing, elbows, and connectors are all available from your Mix-Mill dealer.

Locate the conveying lines as close as possible to the blower assembly. Long lengths of rubber hose used to connect the blower to conveying lines will reduce the system capacity.

Any conveying lines buried underground should be located below the frost line.

All conveying lines should be installed as nearly vertical or horizontal as possible. Conveying lines inclined up will increase the possibility of plugged lines and decrease capacity.

Avoid installing two 90° elbows directly together. Capacity of the system would be drastically reduce.

## 6. Cyclone

A cyclone collector should be used at the end of all conveying lines to slow down the conveyed material and/or reduce feed separation. Always install the collector vertically. The collector can be connected to the conveying lines with the same couplings used to connect the tubes.

## B. Air Connections

### 1. Blower to Control

Connect 1/4" nylon tubing (available from your Mix-Mill dealer) to the tubing connector under the blower. Connect the other end of the tubing to the tubing connector tee inside the front cover of the control panel. Use the strain relief connector, provided with the control panel, to fasten the tube to the panel and also to provide a dust tight entrance.

### 2. Blower to Feeder

Connect the blower to the feeder with 1-7/8" inside diameter hose (part no. 80021504) and 2-1/2" hose clamps (part no. 70001005).

### 3. Feeder to Conveying Lines

Use 2" inside diameter (part no. 80021503) to connect the feeder to conveying lines. Use a 3" hose clamp (part no. 70001008) to fasten the hose to the feeder. Use a hose clamp or quick couplers to fasten the hose to the conveying lines.

## C. Electrical Supply and Wiring

Consult national and local electrical codes for proper selection of service wiring and overload protection.

The Mix-Mill Feed Pump can be operated on a 50 Hz. power supply, but the blower motor may have to be rewound for 50 Hz. operation. The hour meter in the control panel is designed for 60 Hz. operation, so it will run slow on 50 Hz. power. Consult your Mix-Mill dealer for 50 Hz. motors.

Refer to section VI of this manual for schematic and wiring diagrams.



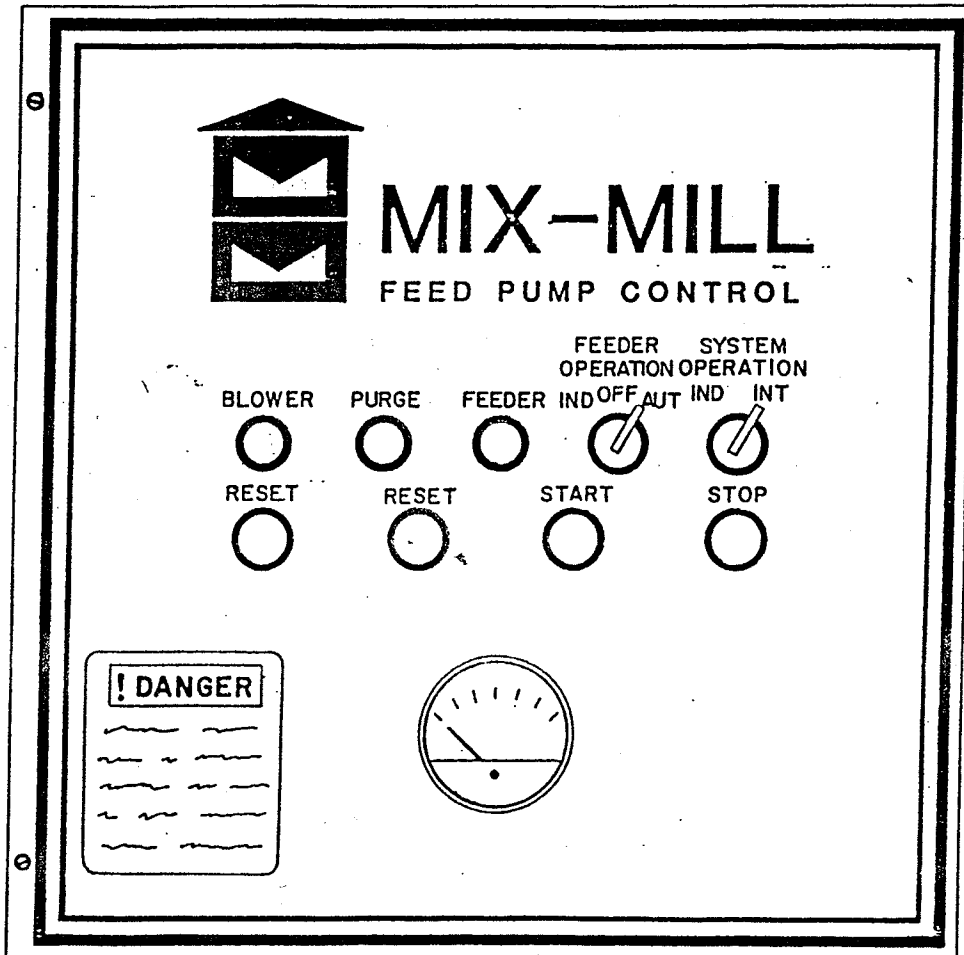


fig. 6 FEED PUMP CONTROLS

## Section III OPERATION

### A. General

#### 1. Safe Pressure

The maximum load on the blower motor is 9 PSIG. The safe load on the entire system, however, will probably be lower. Under average conditions the feed pump will operate at 7-8 PSIG without plugging the conveying lines. The system pressure is adjusted by the amount of material put into the system.

#### 2. Independent Operation

Do not operate the feeder when material is in the auger without turning on the blower. The exception to this rule would be when starting the feed plug (see part B of section III). Material would be packed into the feeder and would plug the feeder or conveying line.

#### 3. Inlet Hopper Slide Gate

The optional inlet hopper is designed to be weather resistant. For this reason an o-ring is placed on the slide gate handle to prevent water from creeping into the hopper along the handle. Once the slide gate is set properly and locked in place, roll the o-ring up against the hopper.

### B. Initial Set-Up

#### 1. Setting the Pressure Switch

The pressure switch is used to shut off the blower before the maximum pressure of 10 PSI is reached. The pressure switch can also be set even lower to shut off the blower before a line plug forms. Some air line configurations may tend to plug as low as 6-7 PSI.

Use the following procedure to set the pressure switch:

- Set the Operation switch to "Independent" and the Feeder switch to "Off". Press the Start button.
- Restrict the air flow out of the blower by removing the hose from the feeder and kinking the end of the hose. PROTECT YOUR EYES! Do not increase the pressure over 10 PSI.
- Adjust the pressure switch set point with a screwdriver so the blower shuts down at 9-9½ PSI max.

## 2. Starting the Feed Plug in the Feeder

The feed plug is a tightly packed mass of grain or feed at the end of the feeder auger. For the initial installation there will be an 8 inch long space from the end of the feeder auger to the end of the auger tube. Friction against the sidewalls of the tube forces the grain or feed to pack tightly into the 8 inch long space. The feed plug forms the "seal" between the high pressure in the air mixing chamber of the feeder and the low air pressure in the auger.

Use the following procedure to start the feed plug:

- Set the Feeder Operation and System Operation switches to "Independent".

Start the mixer-grinder and grind enough feed to cover the discharge auger. Press Start on the pneumatic panel and hold in until feed spilling out of the auger reaches the other side of the feeder.

CAUTION: Do not allow the feed to pack into the feeder. It will either plug the feeder or conveying line.

- Set the Operation switches on the pneumatic control panel back to "Interlock" and "Automatic". The feeder is ready for operation.

note: For installations with a feeder on a feeder hopper it may be necessary to turn the auger by hand to start the feed plug.

## 3. Adjusting the Feed Plug

If the feed plug in the feeder blows out - which leads to the material in the mixer-grinder proportioner hoppers blowing out - repeat the procedure for starting the feed plug. If the feed plug still blows out, the plug must be lengthened. Use the following procedure to lengthen the feed plug:

- Loosen the clamps on the tube and plate and pull the feeder out of the tube and plate - and off the auger.
- It may also be necessary to remove the auger from the mixer-grinder housing or feeder hopper. Remove the bolt which fastens the stub shaft into the auger.
- Pull the stub shaft out 2 inches and turn it 1/4 turn. Another hole in the stub shaft should now be lined up with the hole in the auger.
- Reassemble the auger and feeder and repeat the procedure for starting the feed plug.

C. Operation of Feed Pump with Feeder on Inlet Hopper (Refer to fig. 6)

1. Automatic Feeder Start

Set the Feeder Operation switch to "Automatic" and System Operation switch to "Interlock". Close the hopper slide gate. Press the Start button.

The blower will come on right away. The feeder will come on after a time delay (TD1) period - factory preset at 15 seconds. The feeder start is delayed so the blower motor can start under the minimum load. Open the slide gate after the feeder motor starts.

The time delay period can be adjusted from 1 to 1023 seconds. Sliding a switch on the time delay to 'on' or 'open' will add time to delay period. Time values of each switch are given below:

Switch	1	2	3	4	5	6	7	8	9	10
Time (sec.)	1	2	4	8	16	32	64	256	256	512

2. Emergency Stop

Press the Stop button. Both the feeder and the blower will be turned off.

3. Normal Shutdown with Purged Lines

Close the slide gate on the feeder and turn the Feeder switch to "Off". After a time delay (TD2) the blower will shut down.

4. Independent Operation of Blower or Manual Time Delay of Feeder Start

Set System Operation switch to "Independent" and Feeder Operation switch to "Off". Press Start button. The blower will start. The feeder will turn on right away if the Feeder switch is turned to "On"..

5. Normal Shutdown of Independent Operation

If the feeder is on shut the slide gate off and turn the Feeder switch to "Off". Allow a suitable time delay to purge the conveying lines and then press the Stop button.

D. Operation of Feed Pump with Feeder on Mixer-Grinder (Refer to fig. 6)

1. Interlock Start

Set the Feeder Operation switch to "Automatic" and System Operation switch to "Interlock". Press the Start button.

The blower will come on right away. The purge light will also come on. The purge light will turn off after a time delay (TD1) period - factory preset at 15 seconds. At that time the mill can be started. If the mill is not started within a certain time delay (TD2) period the blower will shut down.

Both time delays are factory preset at 15 seconds, but can be adjusted from 1 to 1023 seconds. Sliding a switch on the time delay (TD1 or TD2) to 'open' or 'on' will add time to the delay period. Time values of each switch are given below:

Switch	1	2	3	4	5	6	7	8	9	10
Time (sec.)	1	2	4	8	16	32	64	128	256	512

2. Emergency Stop - Interlock Operation

Press the Stop button and both the mill and blower will be turned off immediately.

3. Normal Shutdown - Interlock Operation

Turn the mill off (feeder stays on) or turn the Feeder switch to "Off" (mill shuts off). After a time delay (TD2), to purge the lines, the blower will shut off.

4. Independent Start

Turn the System Operation switch to "Independent". The mixer-grinder can then be started, for testing, without having to turn on the Feed Pump. NOTE: The mill discharge auger will not be emptying the mixer-grinder housing unless the feed pump is turned on.

The mixer-grinder can be started for calibration without switching to independent operation.

Turn the Feeder Operation switch to "Off". The blower can now be operated by itself - for testing. The feed pump can also be used to convey feed, but the mixer-grinder will not shut down if the blower turns off.

Turn the Feeder Operation switch to "Independent". The feeder can now be operated by itself. Press "Start". The feeder will stay on as long as the "Start" button is held in.

D. Operation of Feed Pump with Feeder on Mixer-Grinder (con't)

5. Emergency and Normal Stop - Independent Operation

Press the Stop button to stop the blower. The mixer-grinder will have to be stopped at its own control panel.

## Section IV MAINTENANCE

### A. General

#### 1. V-belts and Sheaves

Check all v-belts for proper tension after the first month of operation. After the first month inspect all v-belts and sheaves every 500 hours of operation for proper tension and physical condition.

#### 2. Air Filter

The time allowed between air filter inspections will depend on the quality of air around the filter. Inspect the filter if the feed pump capacity has dropped.

If the foam prefilter is dirty, clean it with warm soapy water. If the filter cartridge is dirty, replace it.

#### 3. Motors

Keep all motors free of dust accumulation. Dirty motors will overheat easier, and overheating will shorten the life of the motor.

Section IV Maint. Cont'd  
 B. BLOWER

LUBRICATION

Before starting blower, be sure oil has been put in gearhouse, as ALL OIL WAS DRAINED FOLLOWING SHOP TESTS. For recommended lubricating oil see Table 2. Use a good grade industrial type rust, oxidation, and foam inhibited, non-detergent oil.

Table 2 — Recommended Oil Grades

Ambient Temperature °F (°C)	Viscosity Range SSU at 100°F. (38°C)	Approximate SAE No.
Above 90° (32°)	1000 - 1200	50
32° to 90° (0° to 32°)	700 - 1000	40
0° to 32° (-18° to 0°)	500 - 700	30
Below 0° (-18°)	300 - 500	20

To fill the gearbox, remove the breather plug and the oil overflow plug (fig. 2). Fill the reservoir up to the overflow hole. Place the breather and the overflow plug back into their respective holes.

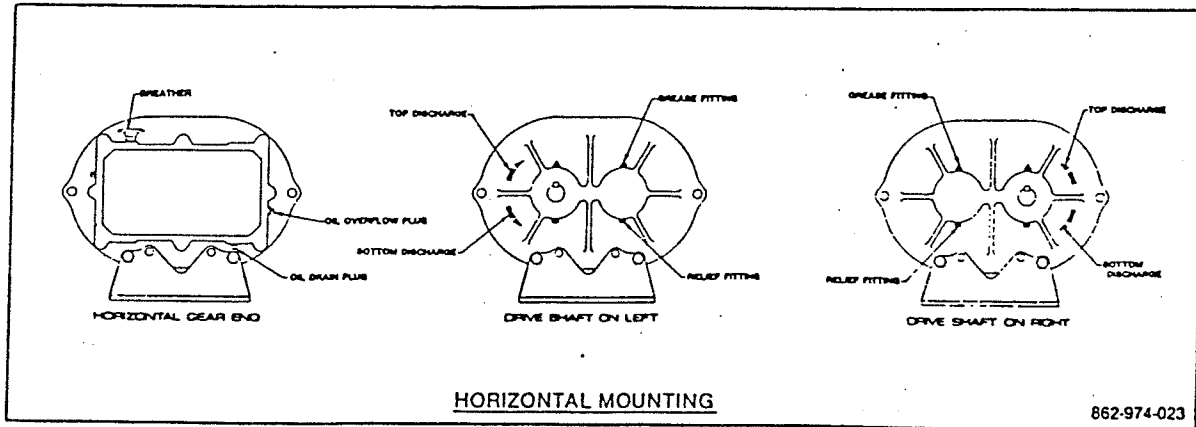


Figure 2 — Blower Orientation and Lubrication Points



Unless operating conditions are quite severe, a weekly check of gearhouse oil level and necessary addition of lubricant should be sufficient. A complete oil change normally is made after 1000 operating hours, or less, depending on the type of oil operating temperature.

When servicing drive end bearings, use a premium grade, petroleum base grease with high temperature and moisture resistance and good mechanical stability. Using a pressure gun, force new lubricant into each drive end bearing housing until traces of clean grease comes out of the relief fitting.

Table 3 — Oil Sump Capacities

Frame Size	Capacity, Fl. Oz. (Liters)	
	Vertical	Horizontal
22	3.4 (.1)	6.1 (.18)
24	3.4 (.1)	6.1 (.18)
33	8.5 (.25)	16.0 (.47)
36	8.5 (.25)	16.0 (.47)
42	12.7 (.37)	22.8 (.67)
45	12.7 (.37)	22.8 (.67)
47	12.7 (.37)	22.8 (.67)
53	16.0 (.47)	27.6 (.82)
56	16.0 (.47)	27.6 (.82)
59	16.0 (.47)	27.6 (.82)
68	28.3 (.84)	52.1 (1.54)

Table 4 — Suggested Bearing Lubrication Intervals

Speed in RPM	Operating Hours Per Day		
	8	16	24
	Greasing Intervals in Weeks		
750 - 1000	7	4	2
1000 - 1500	5	2	1
1500 - 2000	4	2	1
2000 - 2500	3	1	1
2500 - 3000	2	1	1
3000 and up	1	1	1

Section V REPLACEMENT PARTS

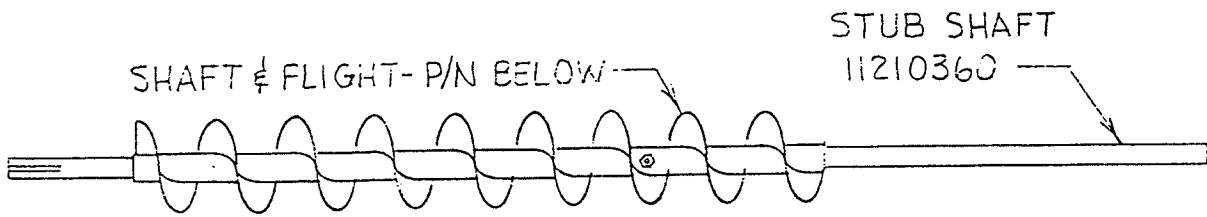


fig. 8 FEEDER AUGERS

Feeder Augers - Shaft and Flight

<u>Part No.</u>	<u>For use with:</u>	<u>Mill housing or hopper width</u>
90002159	CX Mill or Single Roller Mill	20"
90002160	Dual Roller Mill	36"
90002161	D-Mill	25"
90002162	Feeder Hopper <i>3.125 Flight</i>	10"

Split Tube and Plate

<u>Part No.</u>	<u>For use with:</u>
90000561	Dual Roller Mill
90000575	CX Mill, Single Roller Mill or Feeder Hopper
90000576	D-Mill

## Screw Feeder Replacement Parts

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	90000563	Feeder Box Assembly	1
2	11205910	3-1/2" Rubber Gasket	2
3	90000566	Feed Tube Assembly	1
3A	80000501	Bronze Bearing .631" I.D. x 3/4" O.D. x 3/4"	1
4	65483812	Self Tapping Screw 5/16"-18 x 1/2"	28
5	11210400	Inlet Gasket - Feeder Box	1
6	90000564	Air Inlet Subassembly	1
7	11210500	Air Inlet Gasket	1
8	66402200	#8 Flat Washer	11
9	65482212	Self Tapping Screw #8-32 x 1/2"	8
10	92000776	Check Valve Assembly	1
11	80022006	Window - Feeder Box	1
12	90000565	Air Inlet Weldment	1
13	65482205	Self Tapping Screw #8-32 x 1/4"	3
14	90000567	Air Inlet Gate Weldment	1
15	11210510	Air Inlet Gate Seal	1
16	70011503	Washer - Rulon	1

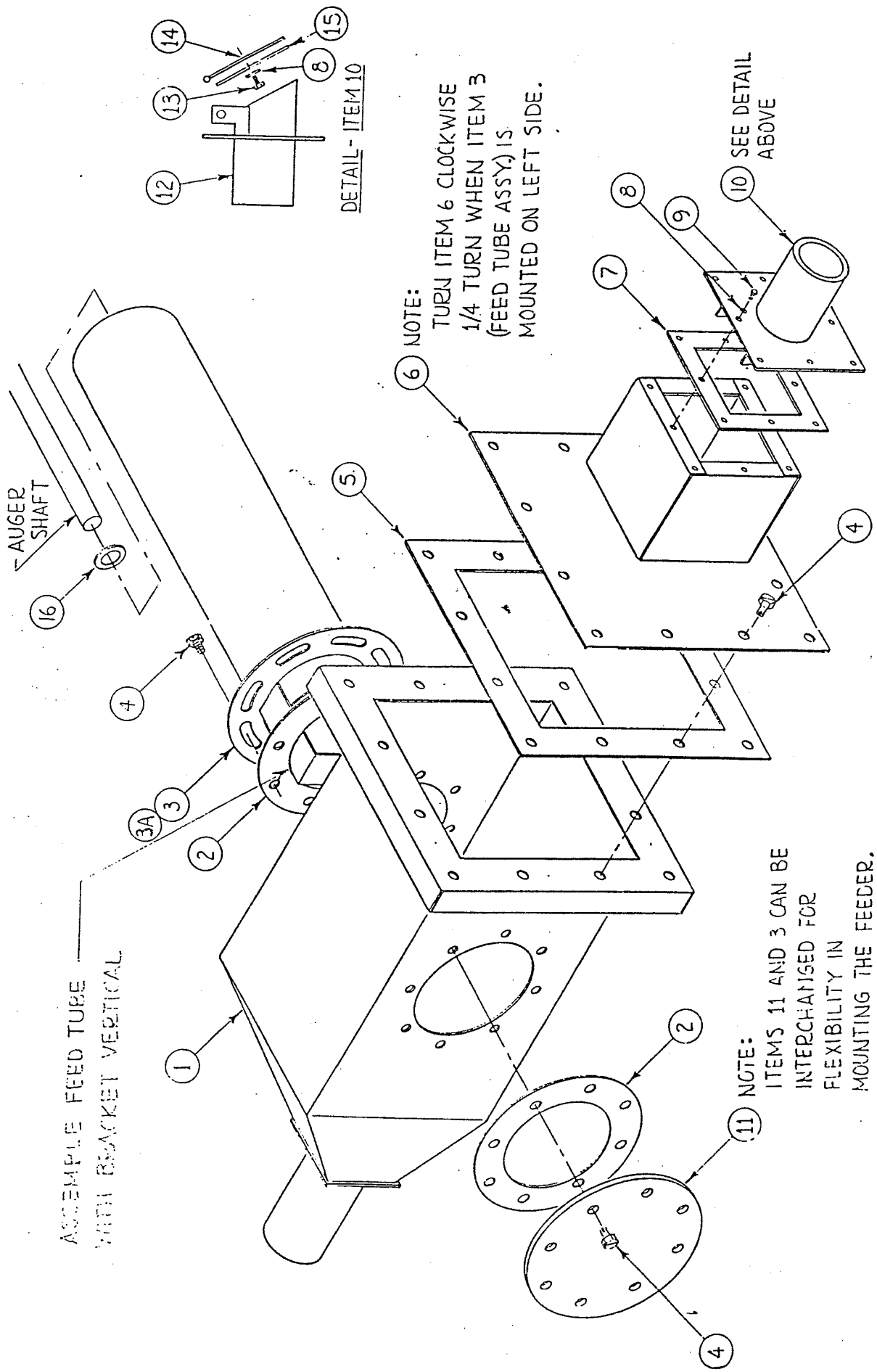


fig. 9 SCREW FEEDER REPLACEMENT PARTS

## Blower Ass'y Replacement Parts

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	90000518	Mount - Motor/Blower Ass'y	1
2	80017530	2" Blower - Universal RAI	1
3	33000601	1 $\phi$ Motor - 3500 RPM	1
	or 33000701	3 $\phi$ Motor - 3500 RPM	1
4	90000530	Drive Cover	1
5	90000531	Motor Adj. Plate	1
6	80017521	Air Filter Ass'y	1
7	54056009	2 1/2" Female Adaptor	1
8	11208970	Back Plate - Drive Cover	1
9	43120111	Sheave - QD, 5.55 OD, A Sect.	1
10	40000508	Matched Pair of V-Belts 40" O.S.	1
11	41311312	Sheave - 3" OD, 2 GRV-A, 1-1/8 F.B.	1
12	44010506	Bushing - SH, 3/4" Bore (SDS)	1
13	80003502	Decal - Mix-Mill	1
14	80006509	Label - Danger	1
15	80006517	Decal - Motor Warranty	1
16	80003568	Decal - Danger	1
17	66903846	5/16"-18 x 3-1/2" Cap Screw	2
18	80017531	1-1/2" Relief Valve (8-1/2" Long)	1
19	52002035	Hex Red. Bushing 2" x 1-1/2 NPT	1
20	50053908	1-1/2" NPT x 4" Nipple	1
21	51007013	1-1/2" NPT Pipe Cross	1
22	52002022	Hex Red. Bushing 1-1/2" x 1/4"	1
23	53033004	Straight Connector 1/4" x 1/4"	1
24	11208900	1-1/2" NPT x 2" Nipple	1
25	50053901	1-1/2" NPT x Close Nipple	1
26	51000013	1-1/2" NPT x 90 <sup>o</sup> Elbow	1
27	54053008	2" Male Adaptor	1
28	54057058	Reducing Bushing	1

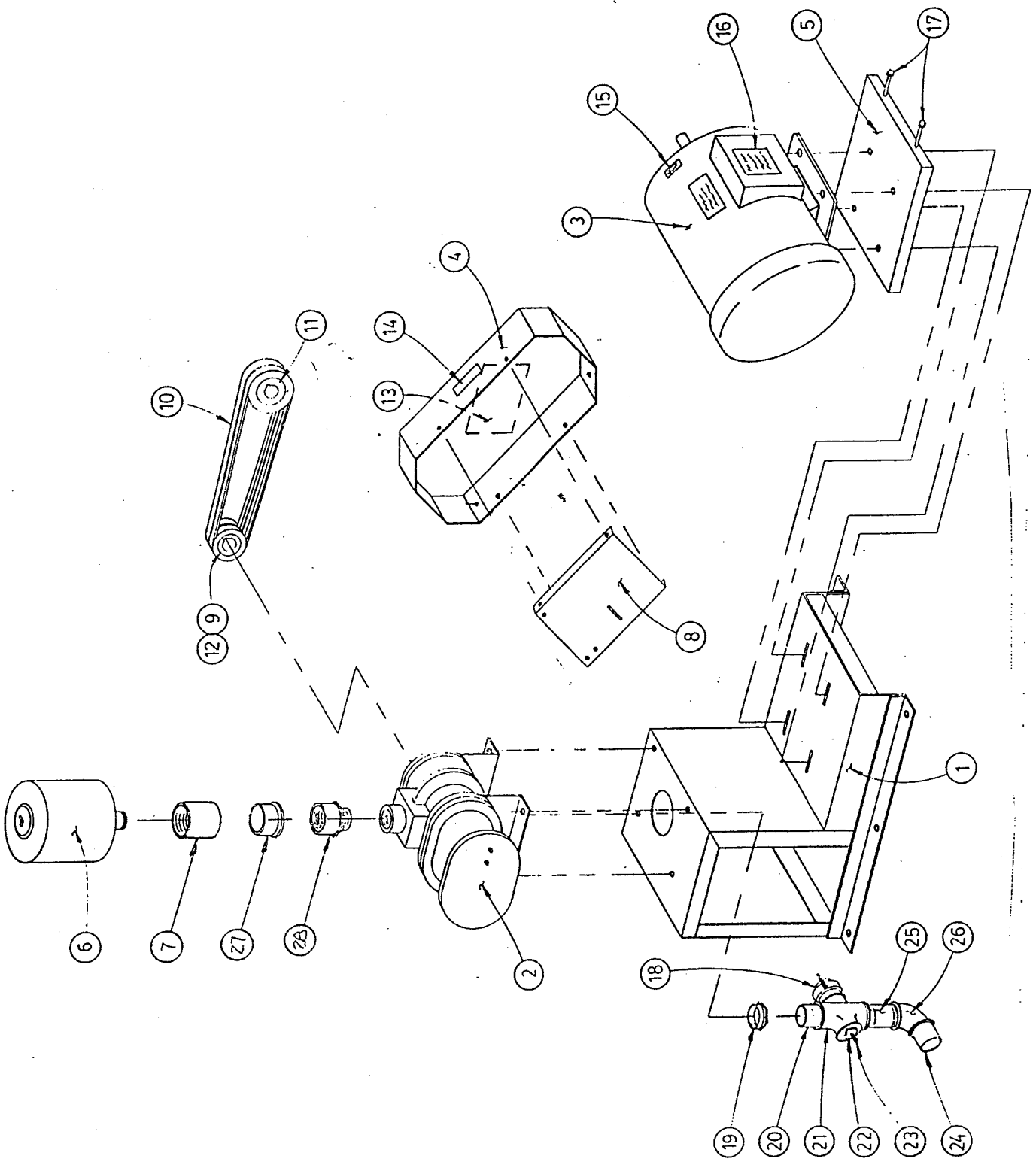


fig. 10 BLOWER ASS'Y. REPLACEMENT PARTS

CONTROL PANEL REPLACEMENT PARTS LIST

ITEM	PART NO.	DESCRIPTION	QTY
* 1	31016131	1ø Contactor 80 Amp LC1-D503	1
or	31016133	3ø Contactor 32 Amp LC1-D163	1
2	31016134	Contactor 24 Amp LC1-D123	1
3	32350172	Control Relay	3
4	31003501	Hour Meter	1
5	80003574	Wiring Decal	1
6	31008043	3 Pos. Switch	1
7	31008060	N.O. Contact Block W/Base	1
8	31008061	N.C. Contact Block W/Base	3
9	31005508	Indicator Lampholder	2
10	31005511	Indicator Lampholder - Red	1
11	31005509	Neon Lamp - Amber	3
12	80003575	Decal - Schematic	1
13	31016135	Reset Operator 1.18-2.25	1
14	31008050	Pushbutton - Blk Flush Hd	1
15	31008051	Pushbutton - Red Flush Hd.	1
16	70010513	Captive Panel Screw	2
17	66083300	1/4-20 Hex Nut	2
18	80014007	Sponge Rubber 3/16 x 1/2	66"
19	90000547	Panel Door Weldment	1
20	56100101	Pressure Gauge (0-15)	1
21	53035004	Elbow (Tube to Female)	1
22	11204183	Tubing 1/4" O.D.	1
23	53036028	Tee Connector	1
24	11204170	Support Bracket, Pressure Switch	1
25	31008031	3-20 PSI Pressure Switch	1
26	80006537	Label - Terminal Block N-11	1
27	31001032	1 Amp Fuse (Slow Blow)	1
28	31001041	Fuse Holder	1
29	31009008	6 Terminal Block	2
30	31010510	Adj. Time Delay	2
31	31016125	Overload Relay	1
32	31016118	Adj. Support	1
33	31016120	3ø Overload Relay 10-12.9A	1
* or	31016121	1ø Overload Relay 18-25A	1
* 34	31016140	Mounting Adaptor (1ø Only)	1
35	31009006	Ground Lug	2
36	90000545	Control Panel Weldment	1
37	11210540	Control Panel Insert	1
38	31016141	Contact - Block 1 NO & 1 NC	1
39	31008068	N.O. Contact Block	3
40	31008044	2 Pos. Switch	1
41	31016136	Reset Operator	1

\*After 3/90, Part Nos. 31016121 & 31016140 do not snap together to mount on 31016131. Part No. 31016132 replaces 31016131 in this panel, and 31016121 mounts directly on 31016132.

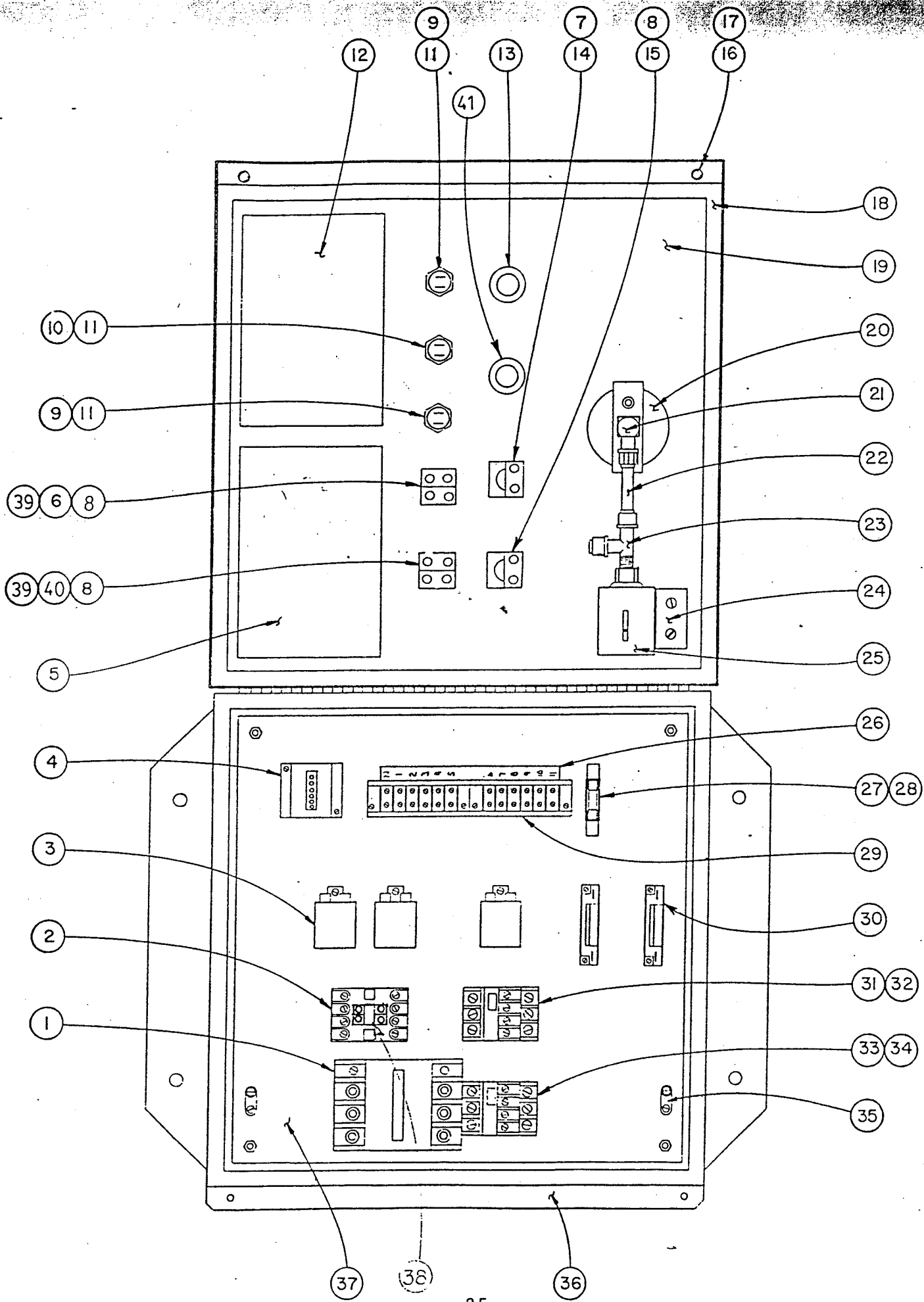


fig. 11 CONTROL PANEL REPLACEMENT PARTS



Feeder Hopper Replacement Parts

<u>Item</u>	<u>Part No.</u>	<u>Description</u>	<u>Qty.</u>
1	90000572	Feed Hopper Weldment	1
2	42108104	Sheave 10" OD x 5/8" Bore - A Sect.	1
3	45001041	V-Belt A. Sect. 41" O.S.	1
4	11210650	Drive Cover - Feed Hopper	1
5	41301304	Sheave 3" OD x 5/8" Bore - A Sect.	1
6	90000570	Slide Gate Weldment	1
7	33001104	Motor 1-1/2 HP, 56C, 1750 RPM (OPTIONAL)	1
8	90000571	Cover Ass'y - Feed Hopper	1
9	11210470	Gate Adj. Rod	1
10	80008501	Roto-Seal	1
11	90002162	Shaft & Flight (ORDERED SEPARATE)	1
12	10322902	Clamp Ring	2
13	90000575	Tube Clamp Ass'y	1
14	40000018	Lock Collar	1
15	40000016	Stamping	2
16	40000017	5/8" Bearing	1
17	80011506	Felt Seal	1
18	80011507	Seal Retaining Cup	1
19	80014052	Thrust Washer	1
20	11210360	Stub Shaft 5/8" Dia. x 20"	1
21	93022900	5/8" Bore Dust-Proof Brg. Complete	1





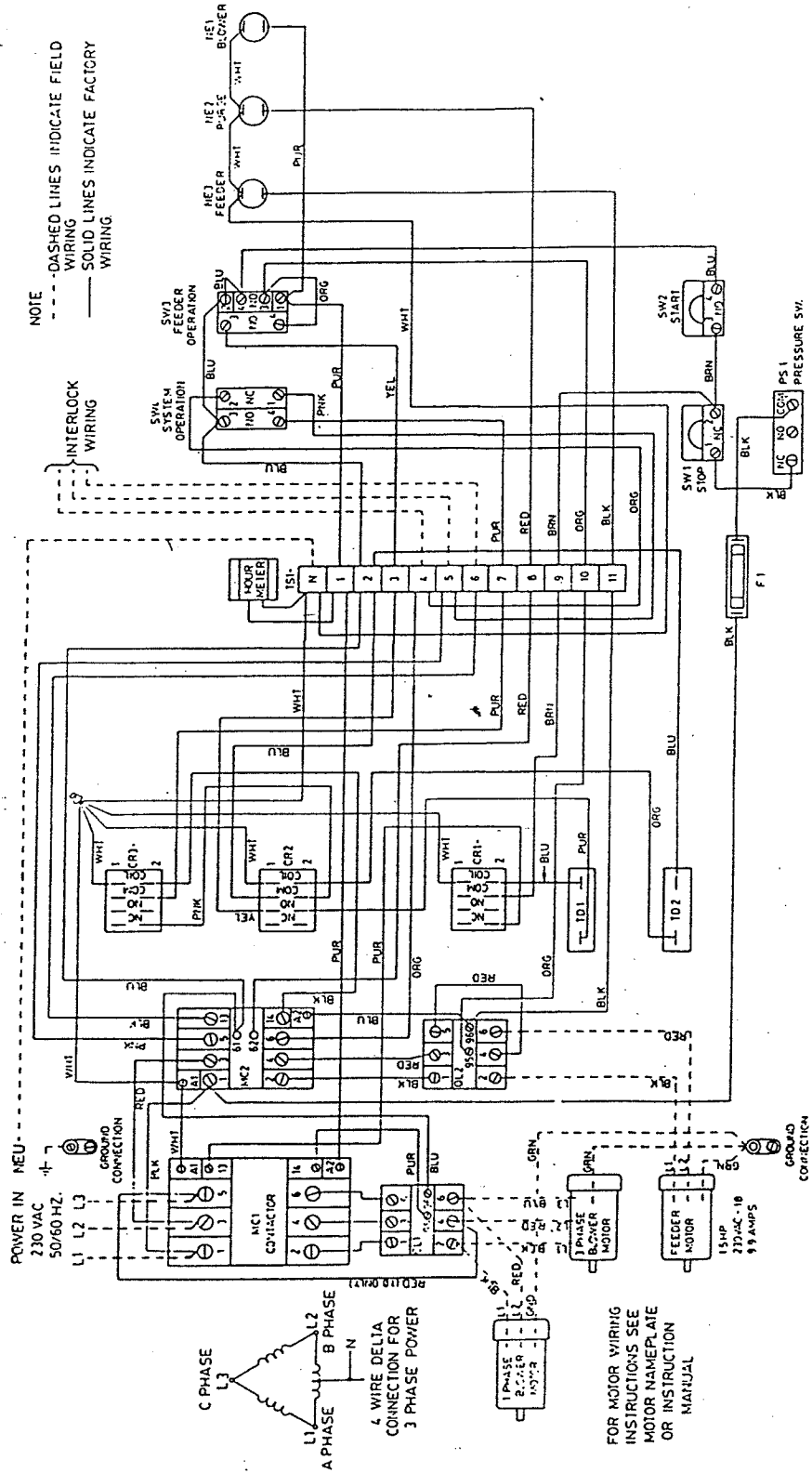


fig. 14 SYSTEM WIRING DIAGRAM

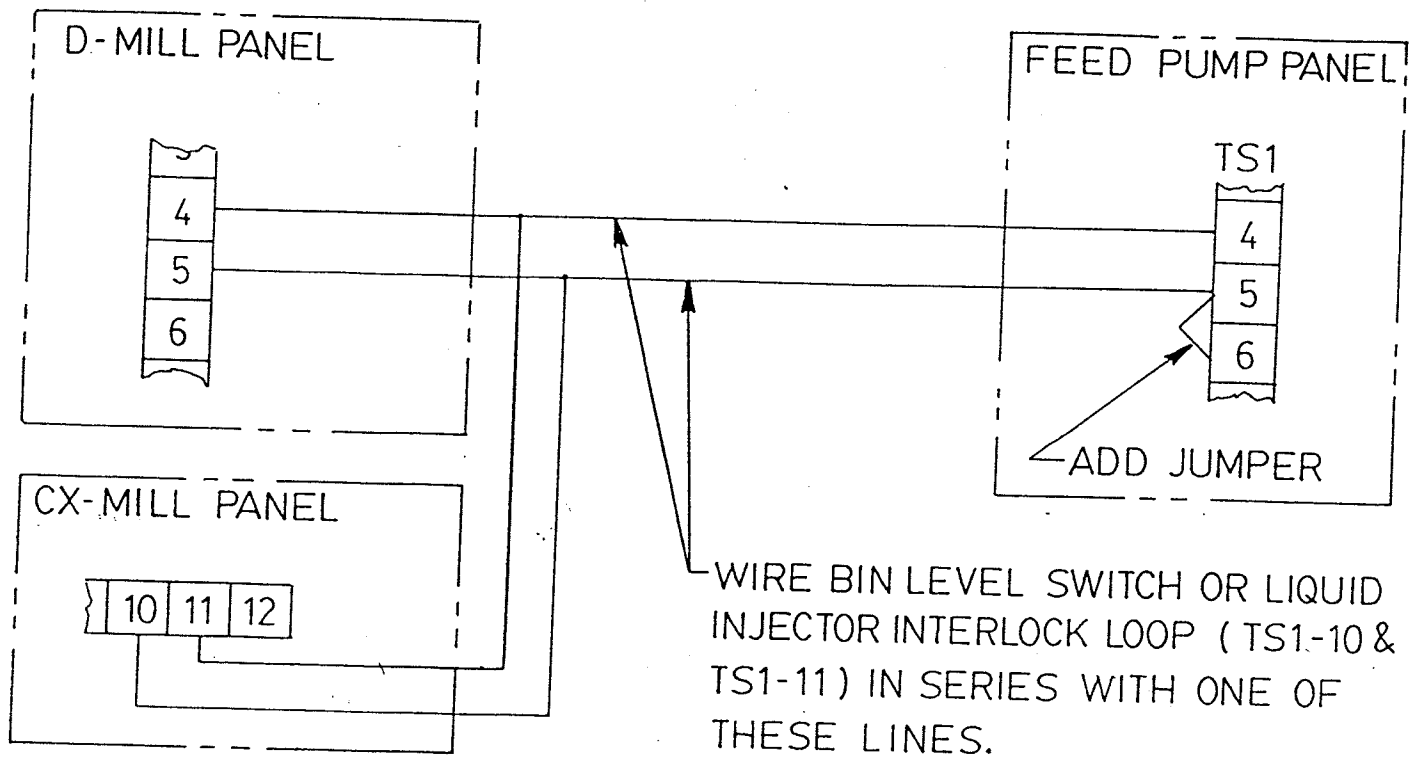


fig.15 EXTERNAL WIRING - FEED PUMP TO 'D' OR 'CX' MILL PANEL WITH START SWITCH

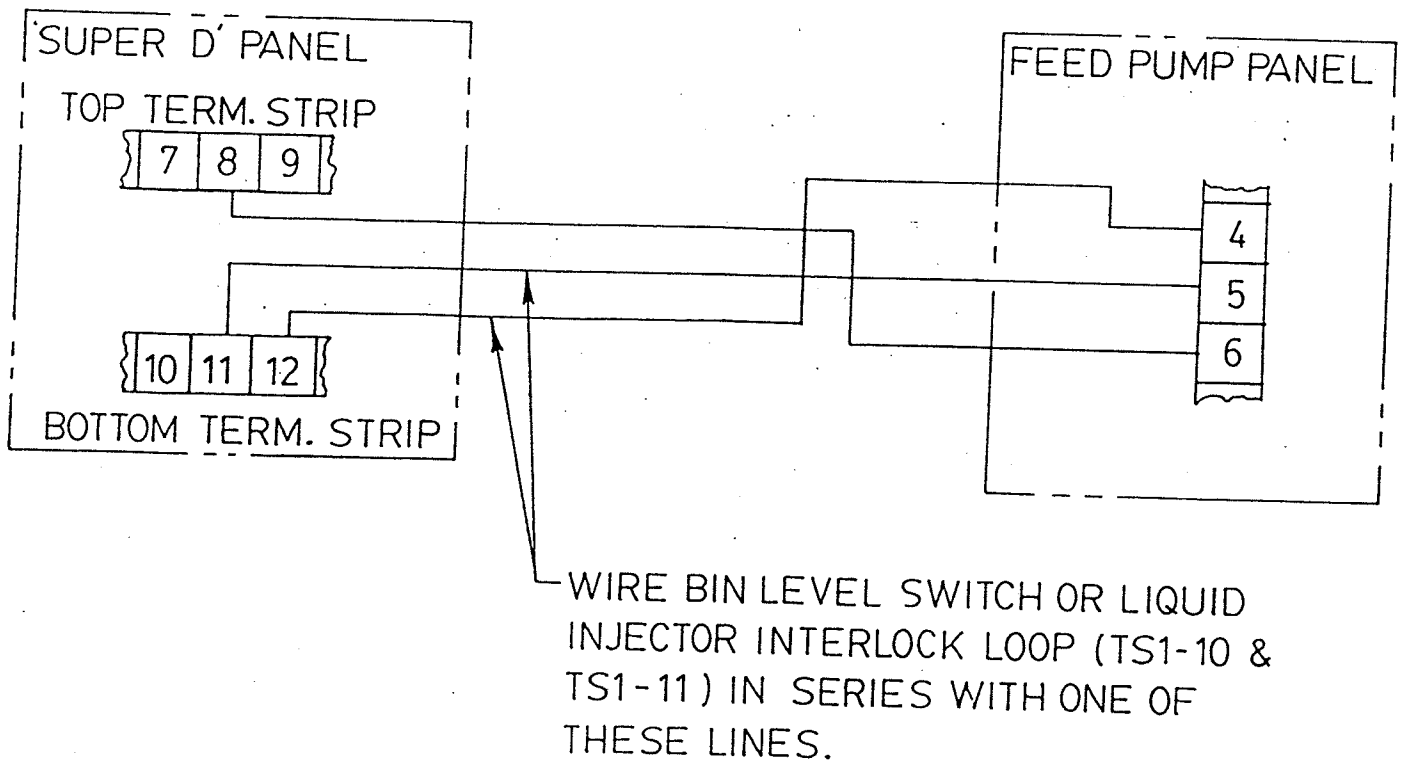


fig.16 EXTERNAL WIRING - FEED PUMP TO 'SUPER D' MILL

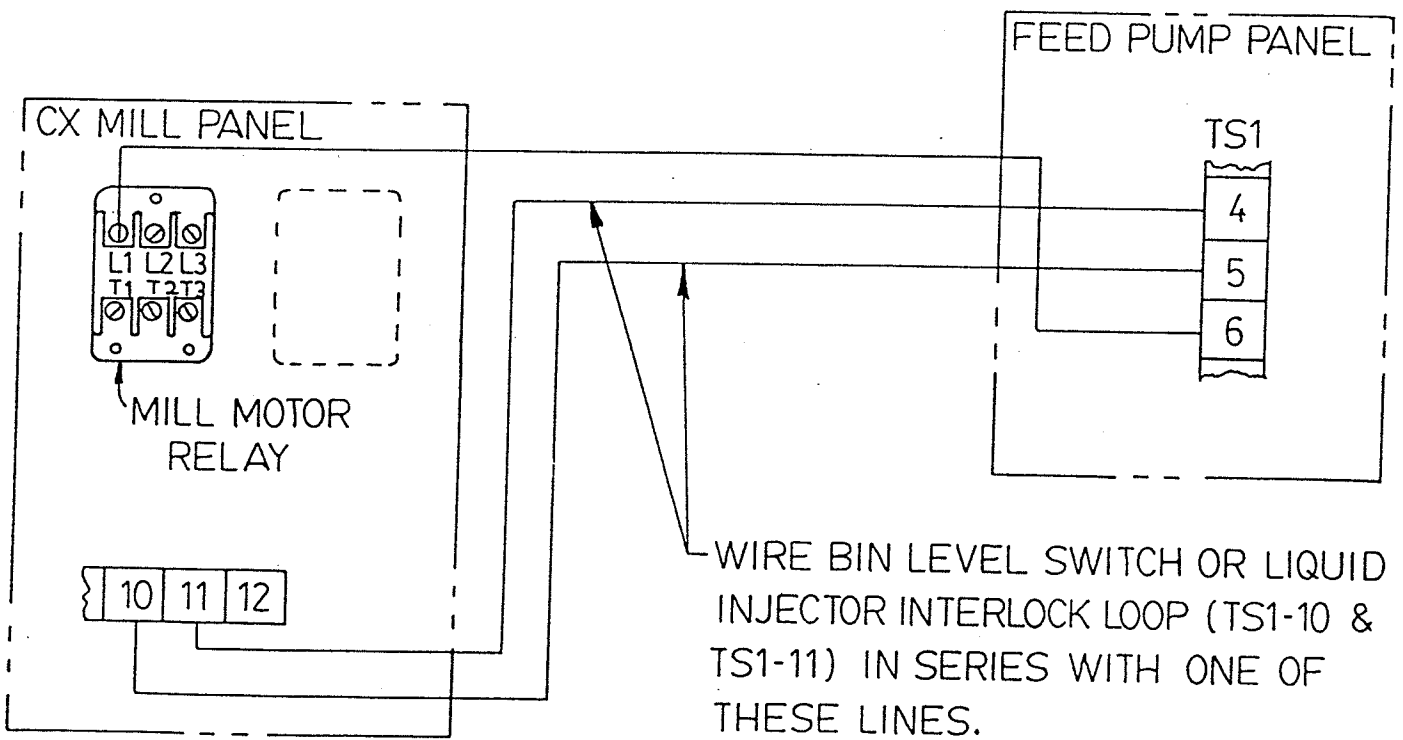


fig.17 EXTERNAL WIRING - FEED PUMP TO 'CX' MILL  
W/O START SWITCH