

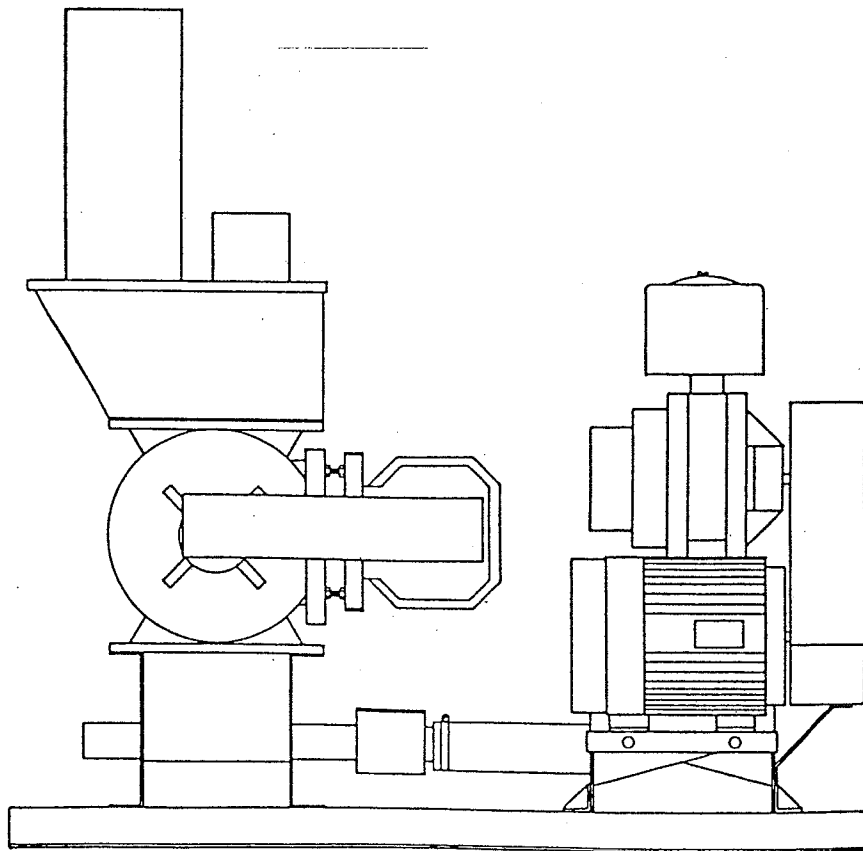
BLOUNT / **mix-mill**

Drop
Thru

INSTRUCTION MANUAL

2" FEED PUMP

#1



99960114

WARRANTY CERTIFICATE

A.T. Ferrell Company warrants each new product of its 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 of components not manufactured by A. T. Ferrell Company), which shall appear to A. T. Ferrell Company to have been defective in manufacture. A. T. Ferrell Company'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 Purchaser-User) the part or parts returned (upon request) for inspection and parts intended to replace those acknowledged by A. T. Ferrell Company to be defective. This warranty shall not apply and shall be void under the following conditions:

1. If the product is transported from its original installation site.
2. If any part of the product has been altered, modified or changed, except at A. T. Ferrell Company's factory or is authorized by A. T. Ferrell Company 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.

A.T. Ferrell Company reserves the right to make changes in design or improvements in its products without any obligation whatsoever to prior Purchaser-User of such products.

A.T. Ferrell Company will pass on to a Purchaser-User only such warranty as it shall receive on products or components not of its 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 A. T. Ferrell Company, and may not be altered, modified or changed in any way except in writing.

A.T. Ferrell Company 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 whatsoever. Our 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 Purchaser-User and returned to us to validate any warranty claim.

A.T. Ferrell Company, Inc.
Ossian Operations
713 W. Lafever St.
Ossian, IN 46777

(260) 622-7831
(260) 622-4798 FAX
(800) 537-6260

BE A SAFE OPERATOR

AVOID ACCIDENTS



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 safe-guarded against without interfering with reasonable accessibility and efficient machine operation. A careful operator is the best insurance against an accident.



Carefully read and understand the operators manual before operating the machine. 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.



Keep children, visitors and all untrained personnel away from machine while in operation.



Make certain all electric motors and control panels 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.



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



This equipment was manufactured in compliance with existing OSHA regulations. It is the responsibility of the owner/user to maintain OSHA compliance when operating the equipment.

TYPICAL SAFETY DECALS

 **DANGER**

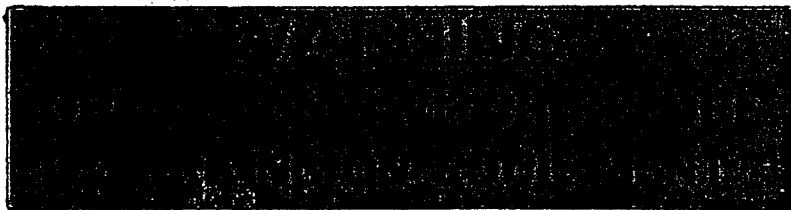
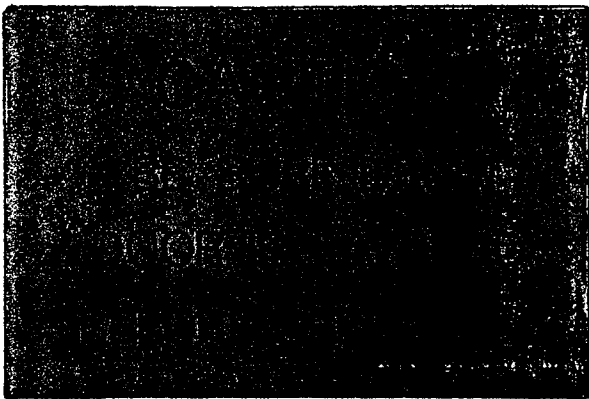
**KEEP COVER SECURED
AT ALL TIMES**

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

**DISCONNECT POWER BEFORE
WORKING ON EQUIPMENT**

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

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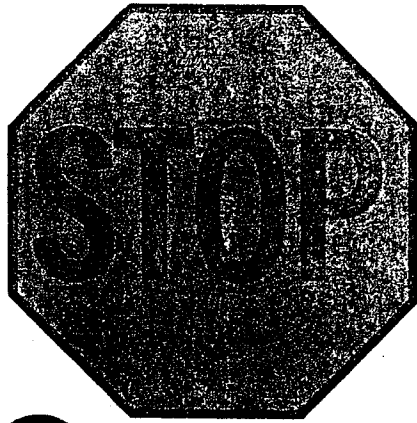



DANGER!

KEEP HANDS CLEAR

**OPERATOR
WARNING**

TO PREVENT SERIOUS BODILY INJURY



 **READ CAREFULLY!**

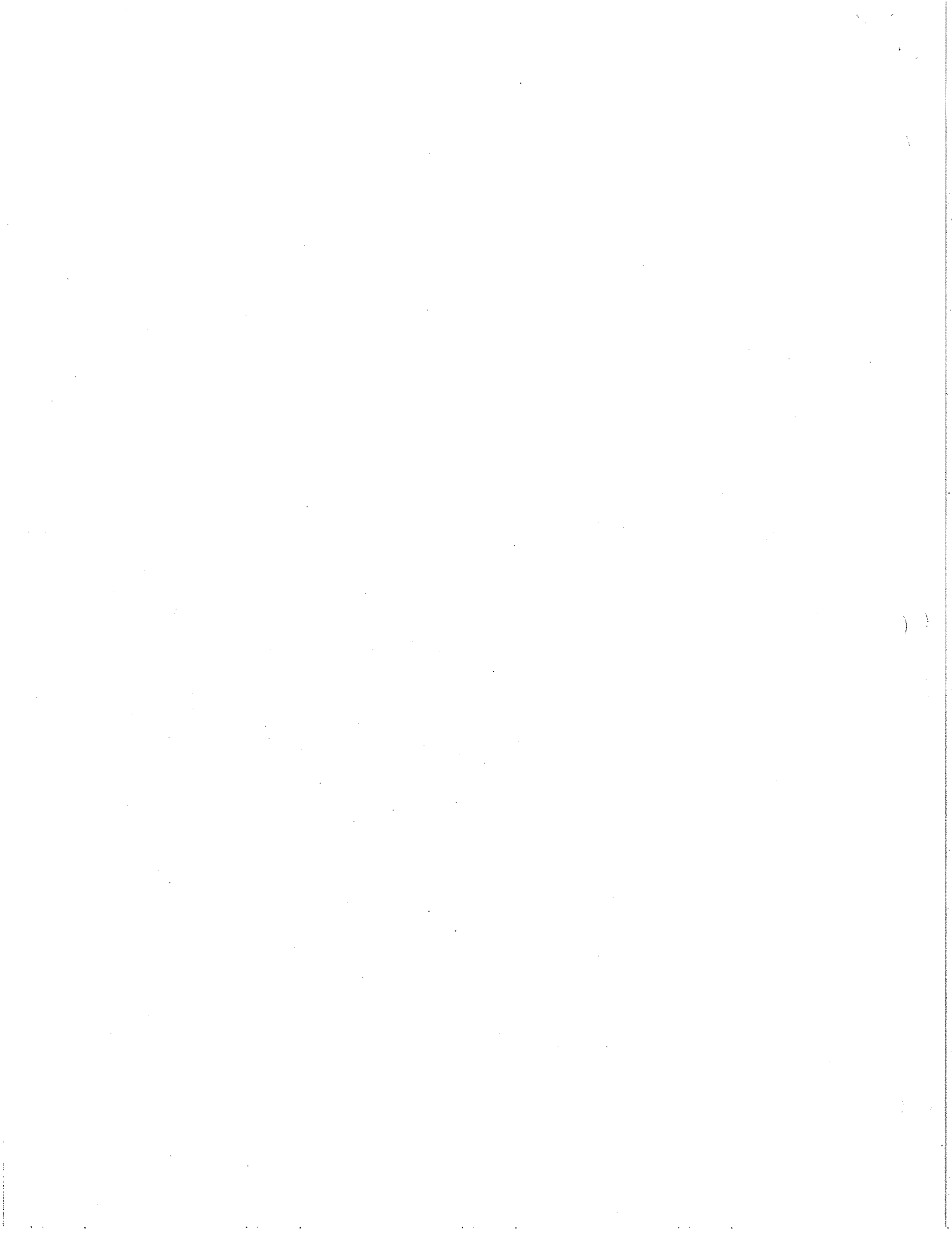
1. Do not attempt to install, connect power to, operate or service machine without proper instruction and until you have been thoroughly trained in its use by your employer.
2. Do not attempt to work on, clean or service this equipment or open or remove any protective cover, guard, grate or maintenance 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**

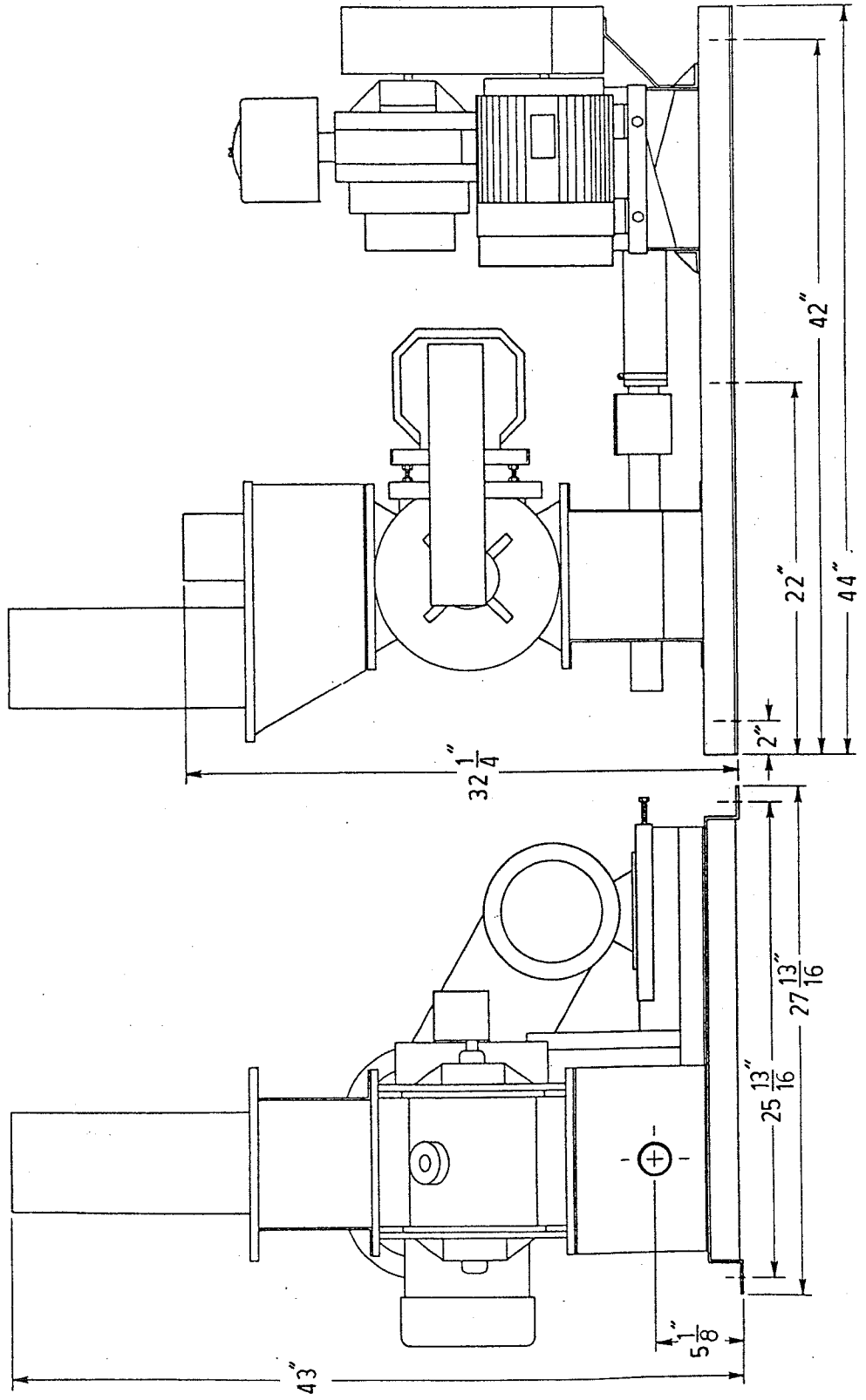
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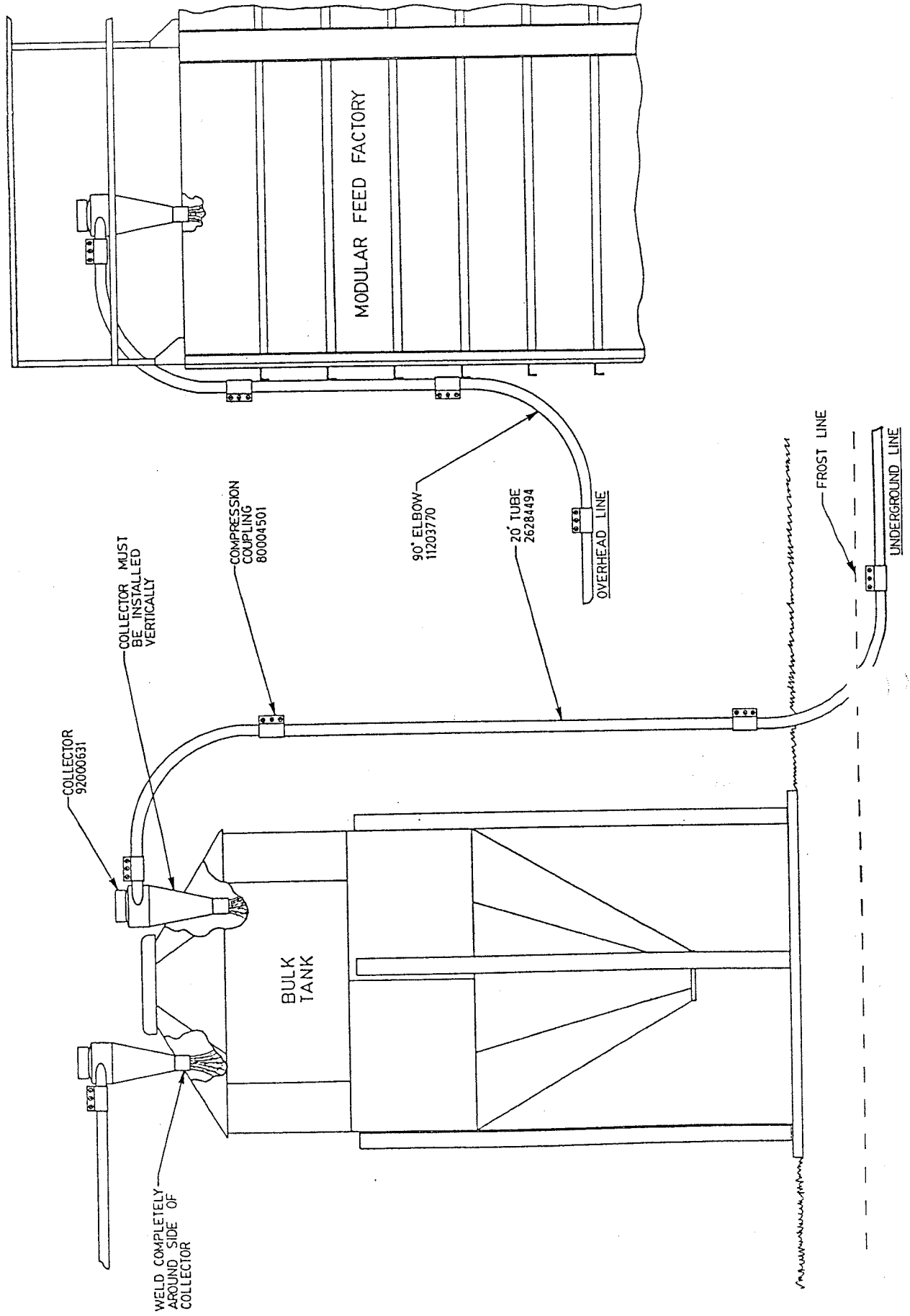
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MAJOR DIMENSIONS



COLLECTOR INSTALLATION



2" FEED PUMP MANUAL

Specifications:

Power Requirements - The 2" Feed Pump units are equipped with a 1/2 HP, "C" flange, mounted, 1725 RPM, 230 volt, reversible, 1 Ø motor and a 5 HP, 3450 RPM, 230 volt, reversible electric motor. The 2" Feed Pump is available in either single or three phase.

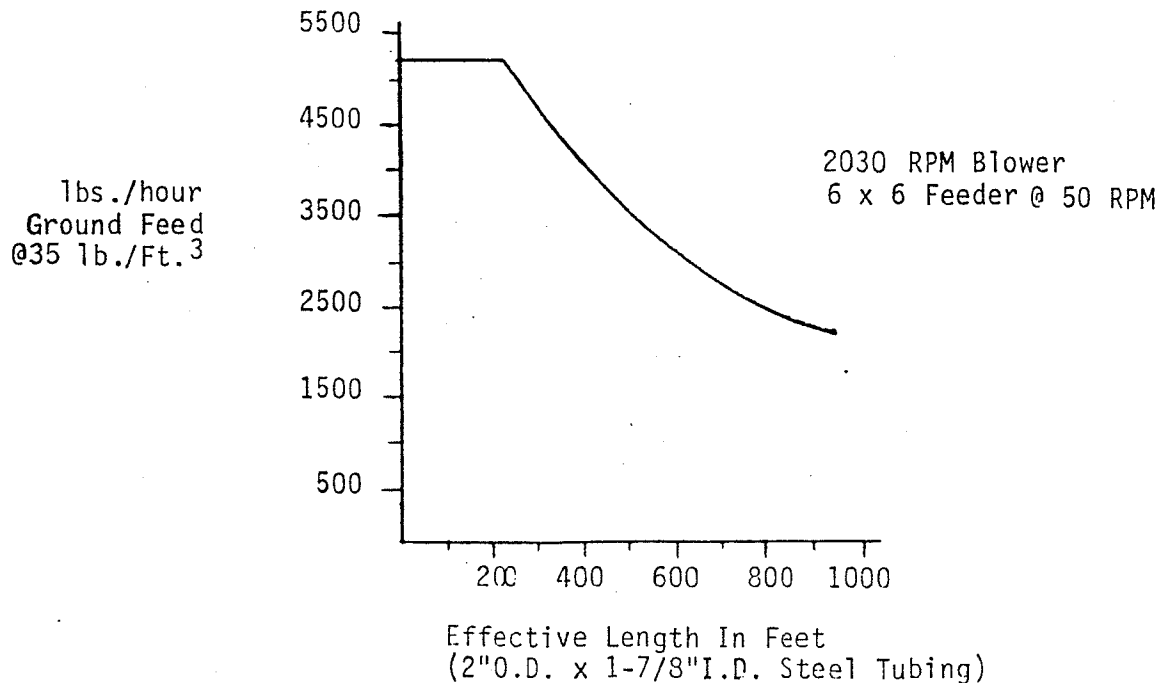
Major Dimensions - See Page V.

Weight -

Single-Phase Basic Unit	440 lbs.
Three-Phase Basic Unit	440 lbs.
Electric Control Panel	50 lbs.

Capacity - Maximum effective length is determined by adding the total number of horizontal feet of tubing, plus twice the number of vertical feet, plus 2.5 times the tube size times the number of elbows. (45° & 90°)
Effective length = Horz. Ft. + (2 x Vert. Ft.) + (2.5 x Tube I.D. x No. Elbows).

The maximum operating pressure is 7 PSI. The system will shutdown when the pressure switch is tripped as the unit reaches 10 PSI.



Several factors must be considered when actual capacity of a given system is determined. The above chart, based on actual test results, can be used only as a guide for capacity that might be expected at similar installations.

Installation:

Concrete - The Mix-Mill 2" Feed Pump should be permanently anchored to the floor. When installing the Feed Pump in a Mix-Mill Farm Feed Factory, the unit should be anchored by drilling six holes in the concrete floor, fastening the mill by placing anchormens in the holes, and using bolts to secure the Feed Pump. These holes should be located 25-13/16" for the width of the mill and three holes located 20" apart for the length of the unit. (Refer to page V for further details.)

When installing a 2" Feed Pump in an existing building, your authorized Mix-Mill distributor can assist you in selecting a secure and convenient location.

Electrical -

A. Wiring

Note: For detailed wiring instructions, refer to the appropriate internal and external wiring diagram in the Wiring Section. Be sure electrical service is adequate to provide full voltage to motors at full load. No motor will operate properly at low voltage.

All electrical equipment must be grounded not only to the neutral of the power supply but also to a substantial ground right at the Feed Pump's installation or in the livestock house. Refer to the wiring diagrams and local electrical codes upon installation.

A ground rod is a must. Drive a ground rod into permanently-moist, undisturbed earth. Connect a wire, that is equivalent to the incoming wire size, from the rod to the panel and secure the wire to the ground connection in the upper left inside of the panel.

B. Control Panels--

Locate the control panel on a wall at a height convenient for operation. As there is an interlock between the mill panel and the Feed Pump panel and both must be operated, it would be advantageous to have them mounted in the same general area.

1. Locate the panel on the wall and mark four holes.
2. Bolt or screw panel securely to the wall.
3. Thread the plastic tube through the grommet and clamp.
Connect the tube to the connector in the tee-pipe assembly below the blower. Be sure the tube is not crimped.
4. Connect leads from the panel to the feed pump, which is shown in the External Wiring Diagrams on Pages 20 & 21.
5. Connect the plastic tube to the pressure switch. A small coil should be left to avoid bending the tube when the door is opened and closed. Move the O ring that is located on the top of the pressure gauge to the bottom groove. This will allow the gauge to be vented for field use instead of air-tight for shipping.

6. Run a set of control wires from the Feed Pump panel to the mill panel. (Refer to wiring diagram on Page 19.)
7. Bring in power leads from the power source and connect them to the line terminals on the magnetic starter. (Refer to the External Wiring Diagrams on Pages 20 and 21 .

Structural--The 2" Feed Pump must be located in a weatherproof structure. A Mix-Mill Farm Feed Factory building has been designed for this purpose and is available in sizes ranging from 12 tons through 400 tons of overhead storage capacities. See your Mix-Mill dealer for information regarding one of these all-galvanized-steel, heavy-duty structures. Your dealer has been factory trained to help you determine the best installation of Mix-Mill equipment to handle your present requirements and provide for future growth.

In existing installations, some farm structures are suitable for Feed Pump installation. See your authorized Mix-Mill distributor and let him work with you to develop the most efficient, most economical system for your needs.

Assembly--

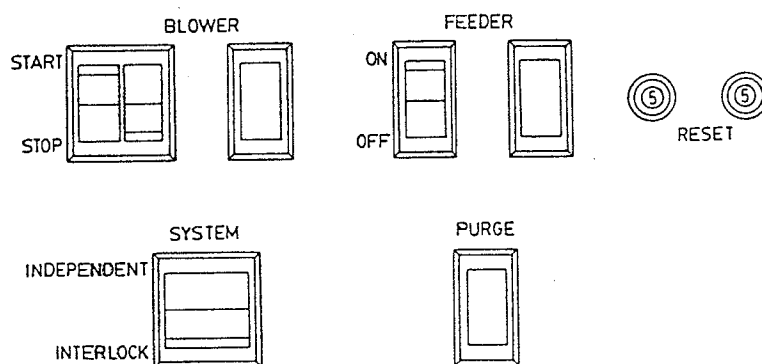
1. Locate the blower unit so as to provide the closest connection to the branch tubes and the mill discharge auger. Accessibility for service should also be provided.
2. Connect the mill discharge to 3-7/8" inlet spout on the feeder for material input. Use Light-gauge or flex downspout for this connection.

3. Air Cleaner - To cut down on the amount of sound emitted from the Feed Pump, it is recommended that the air cleaner be removed and piped to the outside of the building. This will provide cleaner inlet air to the filter and provide for quieter operation. For installations over 10 feet, the diameter of the pipe should increase.
4. Piping Connections - Cut all of the branch tubes square and deburr the ends of the tubing. Install a male quick coupling (8002-5002) to each branch tube. Connect one end of the flexible hose to the discharge pipe of the feeder unit. Always clamp the hose securely with a hose clamp. Cut the flexible hose to a length required to reach all of the branch tubes. Do not make sharp turns with the flexible hose and allow for the contraction of the hose during the winter months. For the final assembly procedure, attach a female quick coupling (8002-5001) to the flexible hose and attach securely with a hose clamp.
5. Transport System - When laying out the transport tubing, all of the tubes (horizontal, vertical, and elbows) have different valves in determining the "effective length" of run. (See Page 1) Make sure that all tubes are secured tightly and that all joints are airtight.
6. Collectors must be installed vertically. They are easily connected with compression couplings.

OPERATION

Routine:

After the mill and air system are installed and wired, they should be checked for proper adjustment and operation. The following steps will aid you in the startup procedures.



Controls Check:

1. Turn on power.
2. Set the "System" switch to "Independent" and the "Feeder" switch to the "Off" position.
3. Push the "Start" switch. The blower should start and run continuously. Check rotation of the motor and blower for proper operation. If incorrect, change rotation as indicated on blower housing.
4. Check the pressure-switch setting by slowly closing the end of the flexible hose. The pressure switch should shut down the unit at 10 PSI.

5. Shut down the unit with the "Stop" switch. Reset the "System" switch to the "Interlock" position.
6. Restart the unit. The "Purge" light should remain lit for twenty (20) seconds.
7. Restart the unit. The mill should not start until the "Purge" light is off.
8. Turn off the mill. The air system should run for approximately 60 seconds and then shut down.
9. If the air system and mill do not operate properly, recheck the wiring and repeat Steps 5 through 7.

Start Procedure:

1. Set the mill for the desired operating sequence.
2. Make sure that the air unit is connected to the proper branch (tube circuit) and that the proper Bin Level Switch is activated, if these are used.
3. Set the "System" switch to the "Interlock" position and the "Feeder" switch to the "On" position.
4. Push the "Start" switch to start the Feed Pump.
5. After the amber "Purge" light goes off, start the mill.
6. Adjust the mill-load dial until the air system gauge indicates 6.0 to 7.0 PSI for optimum operating efficiency.

Normal Shutdown Procedure (Manual):

1. For normal shutdown procedure, depress red "Stop" button on the mill panel. The Feed Pump unit will run for an additional 60 seconds to clean the lines.
2. To instantly stop both units, depress the red "Stop" button on the Feed Pump control panel.

Automatic Shutdown (Created by a break in the safety circuit):

1. If any automatic device within the mill circuit drops out the Mixer-Grinder will shut down. The Feed Pump unit will operate for the required 60 seconds and then shut down.

Note: Within that 60-second period, the mill may be restarted, provided its circuitry is cleared.

Independent Operation:

1. Place the selector switch in the "Independent" position.
2. The mill and the Feed Pump can now operate independently of each other.

Note: The safety circuits of each component piece of machinery are still intact.

Plugged Lines:

1. Place the selector switch in "Independent" position.
2. Place the "Feeder" switch in the "Off" position.
3. Start the blower.
4. If the line does not unplug, within two or three starts, disconnect the 2" rubber hose from the plugged line and then reconnect it to plugged line while running (repeat this process 5 to 6 times). If the line still does not unplug, it will be necessary to separate the lines and blow out short sections.

Routine Maintenance

Rotary Airlock Feeders:

Lubrication - The bearings used in all Roto-Flo Airlock Feeders are of the extended-inner-ring type with locking setscrews. All bearings are pre-lubricated and permanently sealed with a fitting for relubrication.

Depending on the type of operation, relubrication should be made every six to twelve months. When operating at higher temperatures, more frequent lubrication is necessary.

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	Viscosity Range SSU at 100°F.	Approximate SAE No.
(°C)	(38°C)	
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.

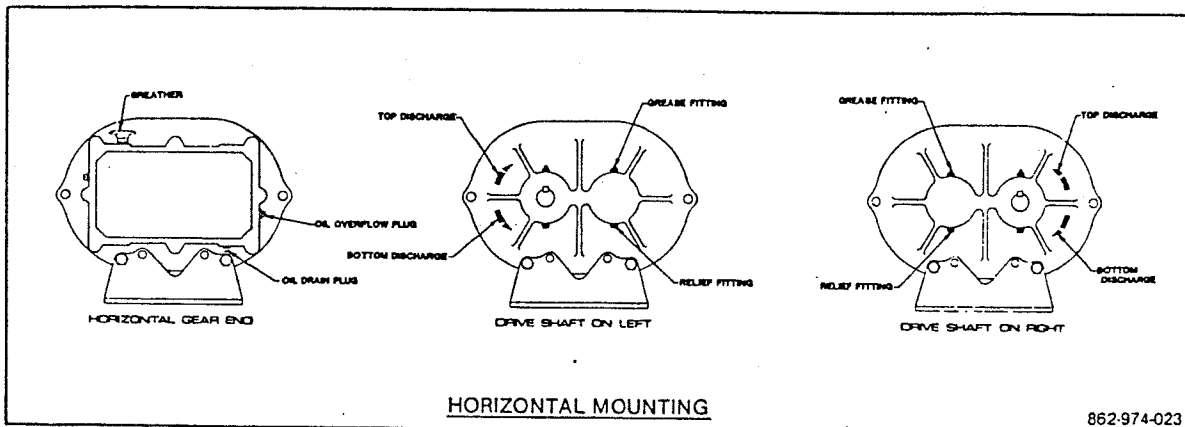


Figure 2 — Blower Orientation and Lubrication Points

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

Remove the bearing cover. Add grease slowly with the shaft revolving until a slight bead forms between the seals. When the bearing is full, there will be a slightly higher operating temperature.

Recommended Lubricants--

Keystone	84 H
Sinclair	Litholene
Socony	Armvac 781
Standard Oil	Stanolith 57
Shell Oil	Alvania #2
Dow Corning	D.C. 44

Grove Gear Reducer:

Lubrication--The construction of the reducer merits caution in selecting the proper lubricant. The reducers are filled to the proper level at the factory with AGMA No. 7 compounded oil. After the breather plug is installed, the unit is ready for use.

Since contamination and oxidation of the lubricant oil does occur, we recommend changing oil every four months under normal service. If service is more severe, oil changes should be made more frequently. To assist in the selection of the proper lubricant, we have listed them by manufacturer.

Manufacturer	50 to 125 F -- Ambient Temperature AGMA-Compounded No. 7
American Oil Co.	American Worm Gear Oil -- No. 5 EP
Cities Service Oil Co.	Citco Compounds L-3-X
Gulf Oil Corp.	Gulf Senate 145 D -- Gulf EP Lube 145 or S150
Mobil Oil Co.	Mobil 633 or 634 or SHC 634
Phillips Oil Co.	Hector S-150 -- Philube 1 lb. Gear Oil No. 140
Standard Oil of California	Chevron Gear Compound No. 140
Sun Oil Co.	Sun Gear Lube GL-4+ -- Sunep EP-130
Union Oil of California	Union Gear Compound No. 130

(If the lubrication requirements are followed, very little other maintenance should be required.)

Motors-- 5 hp, 1Ø and 3Ø; 1/2 hp, 1Ø

Some motors are equipped with double-shield ball bearings having sufficient grease to last indefinitely under normal service. When the motor is used constantly in dirty, wet, or corrosive atmospheres, it is advisable to add one-quarter ounce of grease per bearing every three months. Use a good quality rust inhibitor polyurea-based grease.

For motors with grease plugs in end brackets, relubricate while motor is warm and at a standstill. Remove and clean all grease plugs. Insert grease fitting into upper hole, adding a small amount of clean grease with low-pressure grease gun. Run the motor five minutes before replacing plugs.

Caution: An excessive amount of grease will overheat the bearings.

Troubleshooting:

Periodically inspect your motors for excessive dirt, friction, or vibration. Dust may be blown from inaccessible locations, using compressed air. Keep the ventilation openings clear to allow free passage of air. Be sure that the drain holes in the motors are kept open and the shaft slinger is positioned against the end bracket.

Overheating of the bearing resulting from excessive friction is usually caused by one of the following factors:

1. Bent shaft.
2. Excessive belt tension.
3. Excessive end or side thrust from the gearing, flexible coupling, etc.
4. Poor alignment.

Damaging vibrations can be caused by loose motor mountings, misalignment resulting from the settling or distortion of the foundation, or it may be transmitted from the driven machine. Vibration may also be caused by excessive belt tension.

2" FEED PUMP PARTS LIST

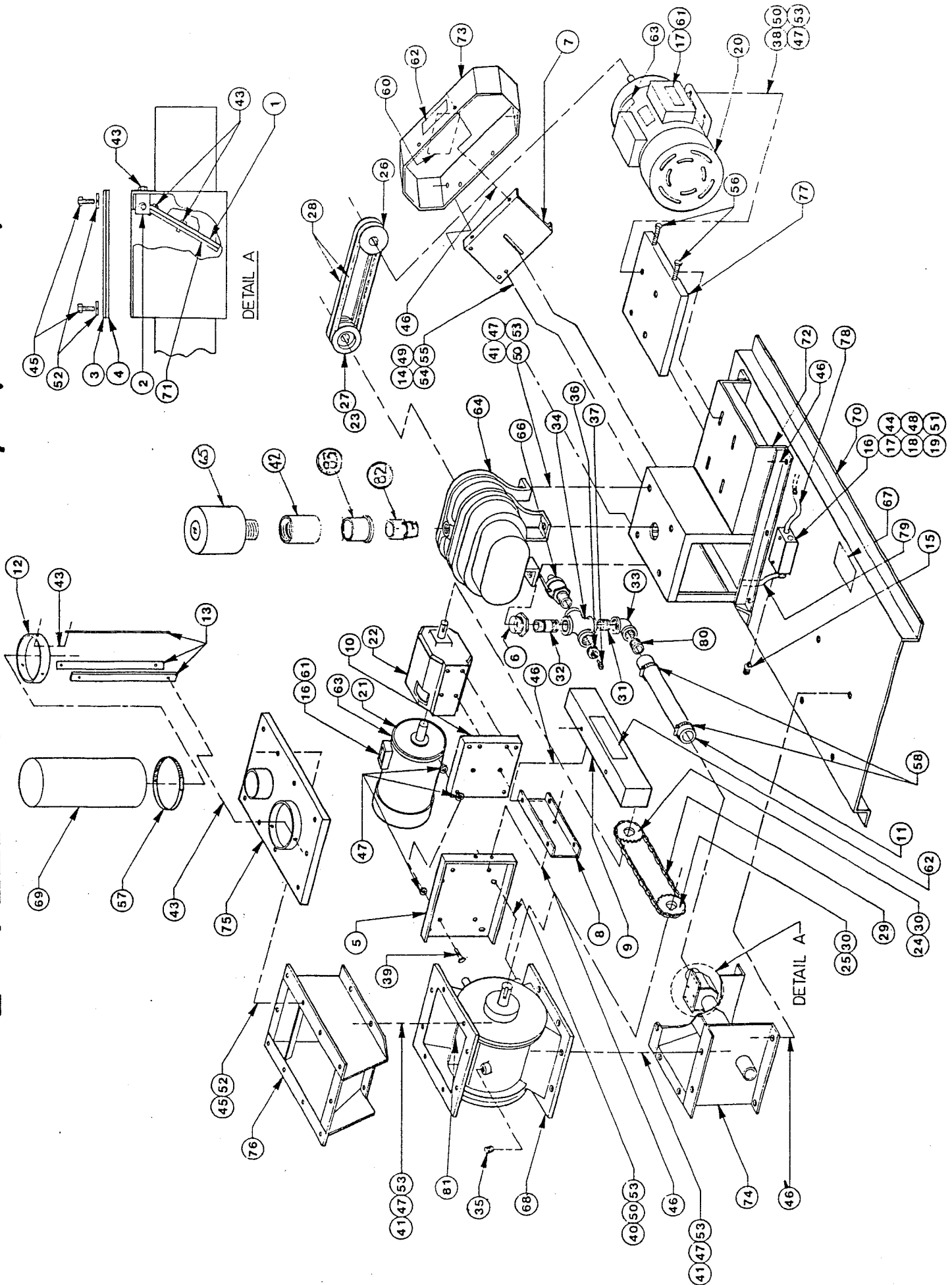
ITEM	PART NO.	QTY.	DESCRIPTION
1	11203870	1	Gasket, Flapper
2	11203880	2	Bracket, Flapper
3	11203890	1	Cover, Valve
4	11203900	1	Gasket, Valve Cover
5	11209150	1	Mounting Plate, Gear Motor
6	52002035	1	Reducer Bushing, 2.0" - 1.5" NPT
7	11208970	1	Back Plate, Drive Cover
8	11209330	1	Channel, Chain Guard
9	11204100	1	Cover, Chain Guard
10	11209160	1	Base Mount - Grove Reducer
11	11204211	1	Air Hose, 1-7/8" ID - 13"
12	11206870	1	Air Bag Ring
13	11206880	3	Bag Support Bar
14	62583817	2	Hex Head Cap Screw 5/16 - 18 x 3/4
15	31002652	1	Strain Relief Connector
16	31011503	5-1Ø, 11-3Ø	Wire Nut
17	31011504	5-1Ø, 0-3Ø	Wire Nut
18	31014009	1	Junction Box
19	31014010	1	Cover, Bell Box
20	33000601	1	Motor 5 H.P. 1Ø, 3450 RPM
	33000701	1	Motor 5 H.P. 3Ø, 3450 RPM
21	33000900	1	Motor ½ H.P. 1Ø, 1725 RPM "C" Flange Mounts
22	40002547	1	Grove Gear Reducer
23	44010506	1	Bushing Q.D. SDS. Hub Bore 3/4"
24	40004009	1	Sprocket, #40, 20 Tooth, 1" Bore, w/Keyway
25	40004006	1	Sprocket, #40, 12 Tooth, 1" Bore, w/Keyway
26	41311312	1	Sheave, 3" O.D., 2 GRV-A. 1-1/8 F.B.
27	43120111	2	Q.D. Sheave 2 Grv. 'AB' - 5.55 O.D.
28	40000508	1 Set	Belt Std., 40" OS., 'A' Section (2 belts)
29	48005060	1	#40 Endless Roller Chain, 60 Links
30	49000616	2	Key, 1/4" x 1"
31	50053901	1	1-1/2" NPT Close Nipple (Black)
32	50053911	1	1-1/2" NPT x 5.5" Long Nipple (Black)
33	51000013	1	1-1/2" NPT x 90° Elbow (Black)
34	51007013	1	1-1/2" NPT Straight Cross (Black)
35	51213007	1	3/4" Pipe Plug
36	52002022	1	1-1/2" NPT Hex Bushing Reduced to 1/4" NPT
37	53033004	1	Straight Connector (Tube to Male)
38	60284422	4	3/8"-16x1" Round Head Carriage Bolt
39	61304433	4	Hex Flat Head Cap Screw 3/8" x 2"
40	62584417	4	Hex Head Cap Screw 3/8" x 3/4"
41	62584422	20	Hex Head Cap Screw 3/8" - 16 x 1"
42	54056009	1	2 1/2" Female Adaptor
43	65482205	13	Machine Screw #8 - 20 x 1/4"
44	65482212	3	Machine Screw #8 - 20 x 1/2"
45	65483312	18	Machine Screw 1/4" - 20 x 1/2"
46	65683812	20	Machine Screw 5/16" - 18 x 1/2"
47	66084400	36	Hex Nut, 3/8" - 16
48	66402200	2	#8 Flat Washer
49	66403800	6	Flat Washer, 5/16"
50	66404400	8	Flat Washer, 3/8"
51	66442200	2	Lock Washer, #8
52	66443300	18	Lock Washer, 1/4"

2" FEED PUMP PARTS LIST

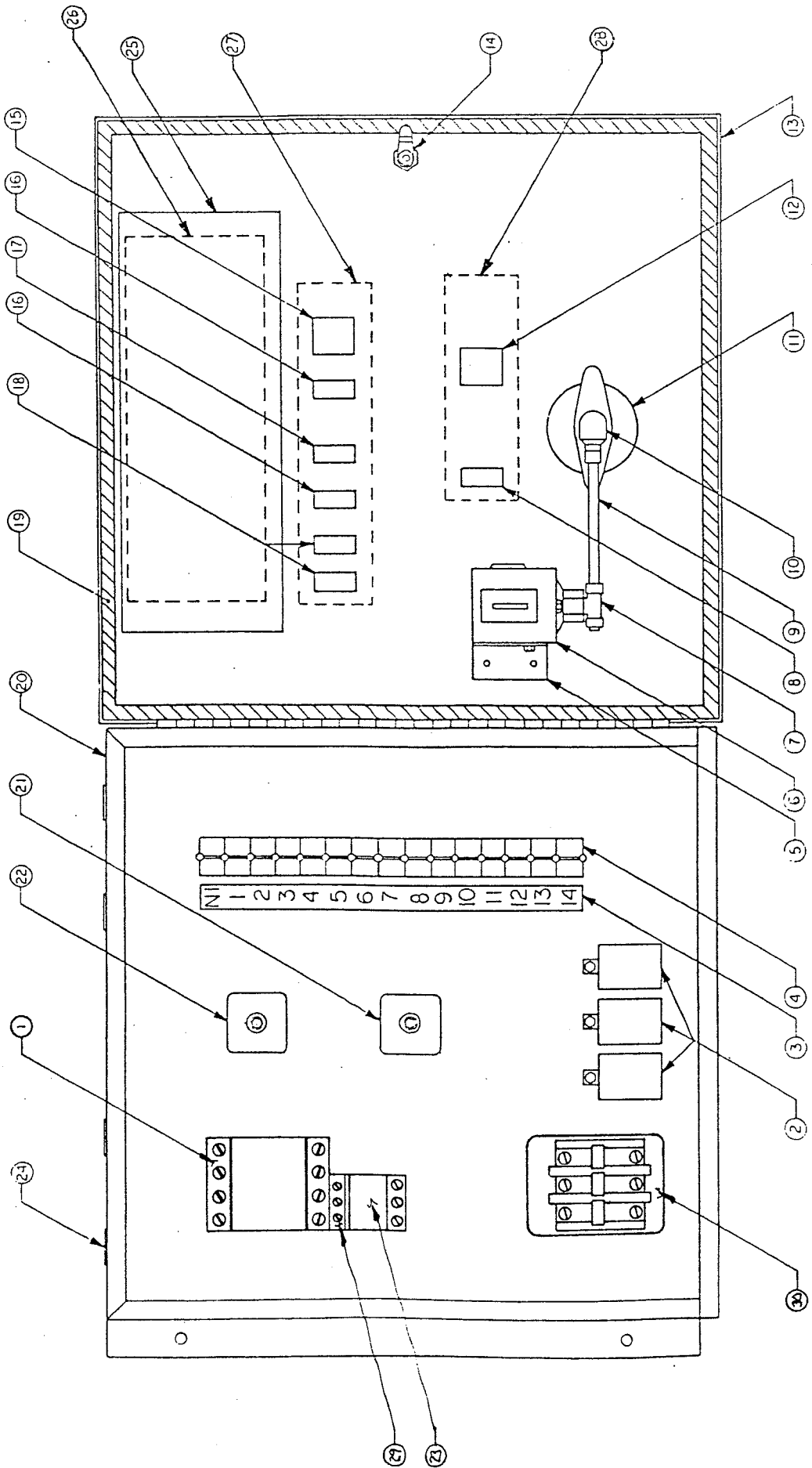
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ITEM	PART NO.	QTY.	DESCRIPTION
53	66444400	28	Lock Washer, 3/8"
54	66083800	2	Hex Nut, 5/16" - 18
55	66443800	2	Lock Washer, 5/16"
56	66903846	2	Cap Screw Fully Threaded 5/16" - 18 x 3 1/2"
57	70001003	1	6" Hose Clamp
58	70001005	2	2 1/2" Hose Clamp
59	80003008	1	Base, Premixer
60	80003502	1	Decal, "Feed Processing System"
61	80006506	2	Label, Warning
62	80006509	2	Label, Danger
63	80006517	2	Label, "Motor Warranty/Service"
64	80017530	1	Rotary Blower (Universal RAI)
65	80017521	1	Air Filter, Inlet
66	80017531	1	Relief Valve - 1.5" NPT (8-1/2" Long)
67	80020001	1	Name Plate "Universal"
68	80025512	1	6 x 6 Feeder, Drop Through
69	80025508	1	Air Bag
70	90000532	1	Base, Weld Assembly
71	90000320	1	Flapper, Weld Assembly
72	90000518	1	Mount, Motor/Blower, Weld Assembly
73	90000530	1	Cover, Drive, Weld Assembly
74	90000519	1	Feeder Base, Weld Assembly
75	90000445	1	Top Panel Assembly
76	90000517	1	Inlet Hopper Assembly
77	90000531	1	Motor Adj. Plate
78	91000140	1	Wire Harness 5 H.P. 1Ø
	91000142	1	Wire Harness 5 H.P. 3Ø
79	91000141	1	Wire Harness 1/2 H.P. 1Ø
80	11208900	1	1-1/2" Half Nipple, 2" Lg.
81	80025511	1	6" Seal Strips - Package of 6
82	54053008	1	2" Male Adaptor
83	54057058	1	Reducing Bushing

2" FEED PUMP - 5 HP, 1Ø & 3Ø



2" PNEUMATIC - CONTROL PANEL REPLACEMENT PARTS

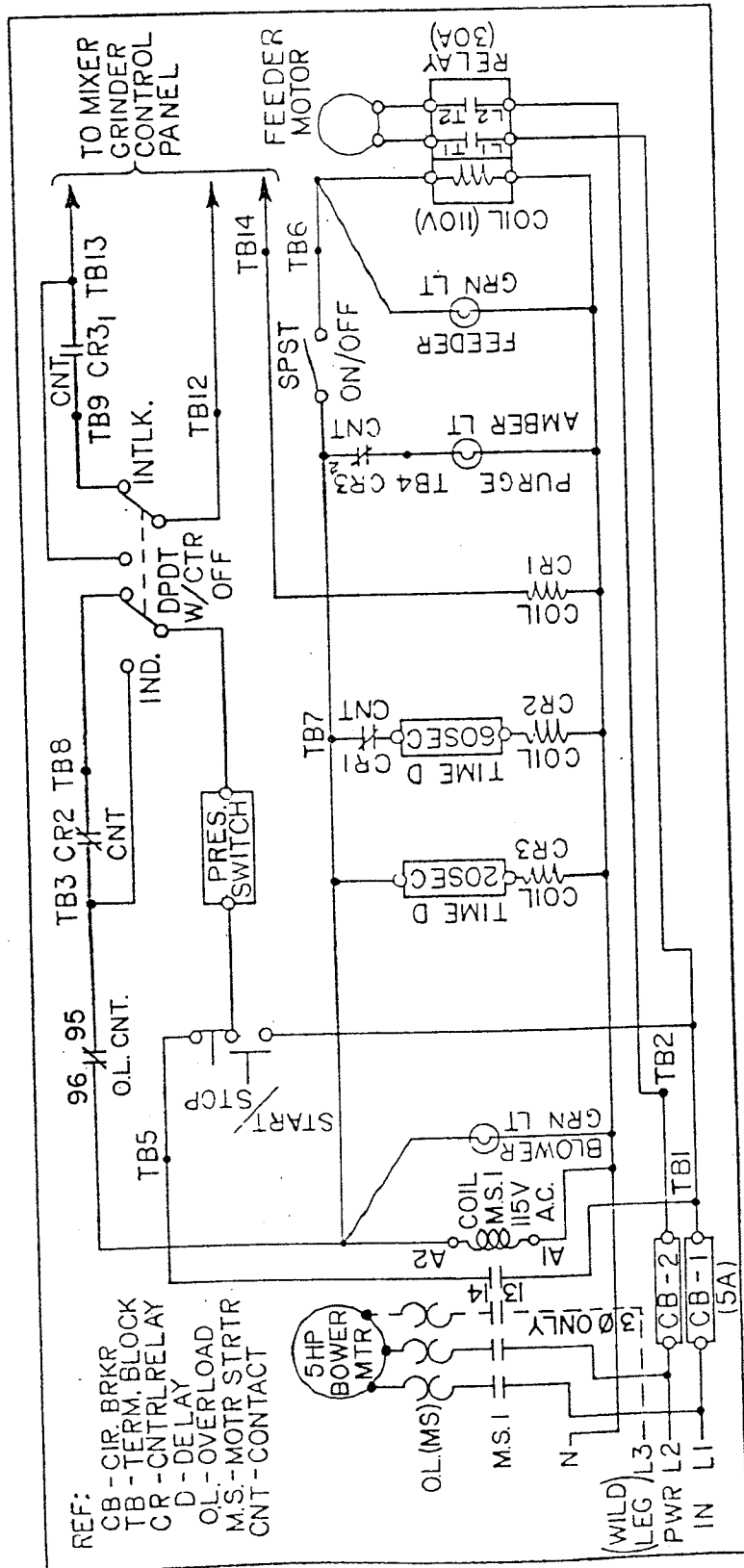


2" PNEUMATIC CONTROL PANEL REPLACEMENT PARTS

1 1Ø	31016131	1	Magnetic Contactor 3P 50 Amp
or 3Ø	31016133	1	Magnetic Contactor 3P 16 Amp
2	32350172	3	Control Relay (DPDT - 110 V. Coil)
3	80006508	1	Label, Terminal Block
4	31009005	15	Terminal Block
5	11204170	1	Support Bracket, Pressure Switch
6	31008031	1	3-20 PSI Pressure Switch
7	53037004	1	Male Branch "T"
8	31005505	1	Indicator Light (amber)
9	11204180	1	Tubing, 1/4" OD
10	53035004	1	Elbow (Tube to Female)
11	56100101	1	Pressure Gauge (0-15)
12	31008003	1	Selector Switch
13	90000325	1	Panel, Front
14	70004501	1	Door Latch
15	31008021	1	Start/Stop Switch
16	31005504	2	Indicator Light (green)
17	31008018	1	On/Off Switch w/o Center Off.
18	31001003	2	5 Amp Circuit Breaker
19	80014001	64"	Polyurethane Tape
20	90000326	1	Wrapper, Control Box
21	31010507	1	Time Delay, 20 second
22	31010508	1	Time Delay, 60 Second
23 1Ø	31016121	1	Overload Relay (18-25 Amp)
or 3Ø	31016120	1	Overload Relay (10-12.9 Amp)
24	80010501	6	Snap-In Blank
25	80003522	1	Decal - Schematic
26	80003521	1	Decal - Pneumatic Unit
27	80003523	1	Decal - Remote Control Panel
28	80003524	1	Decal - Remote Control Panel
*29 1Ø	31016140	1	Mounting Adaptor for Overload Relay
30	31431140	1	Relay (30 Amp)

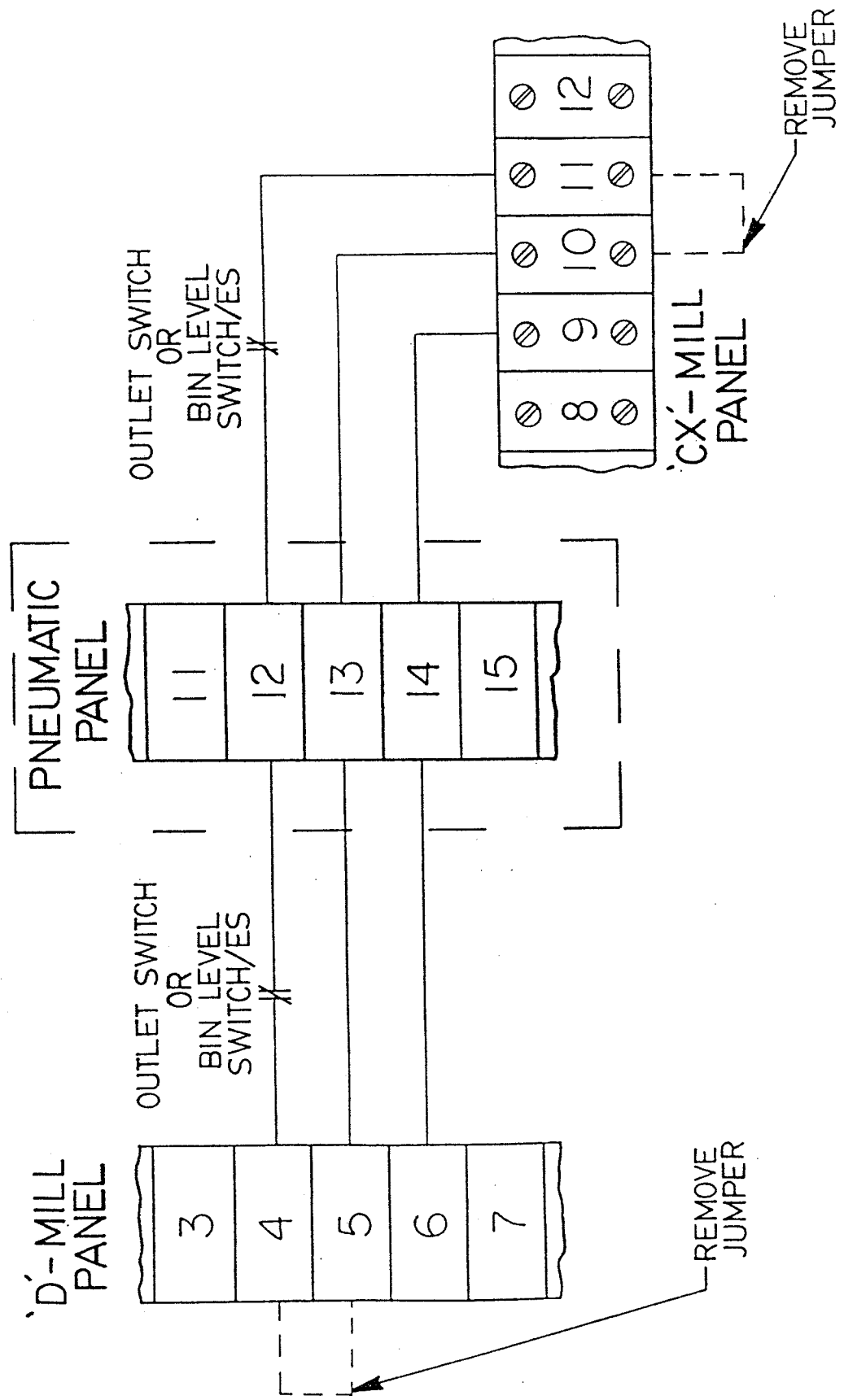
*Single Phase Application Only

SCHEMATIC DIAGRAM 2" PNEUMATIC

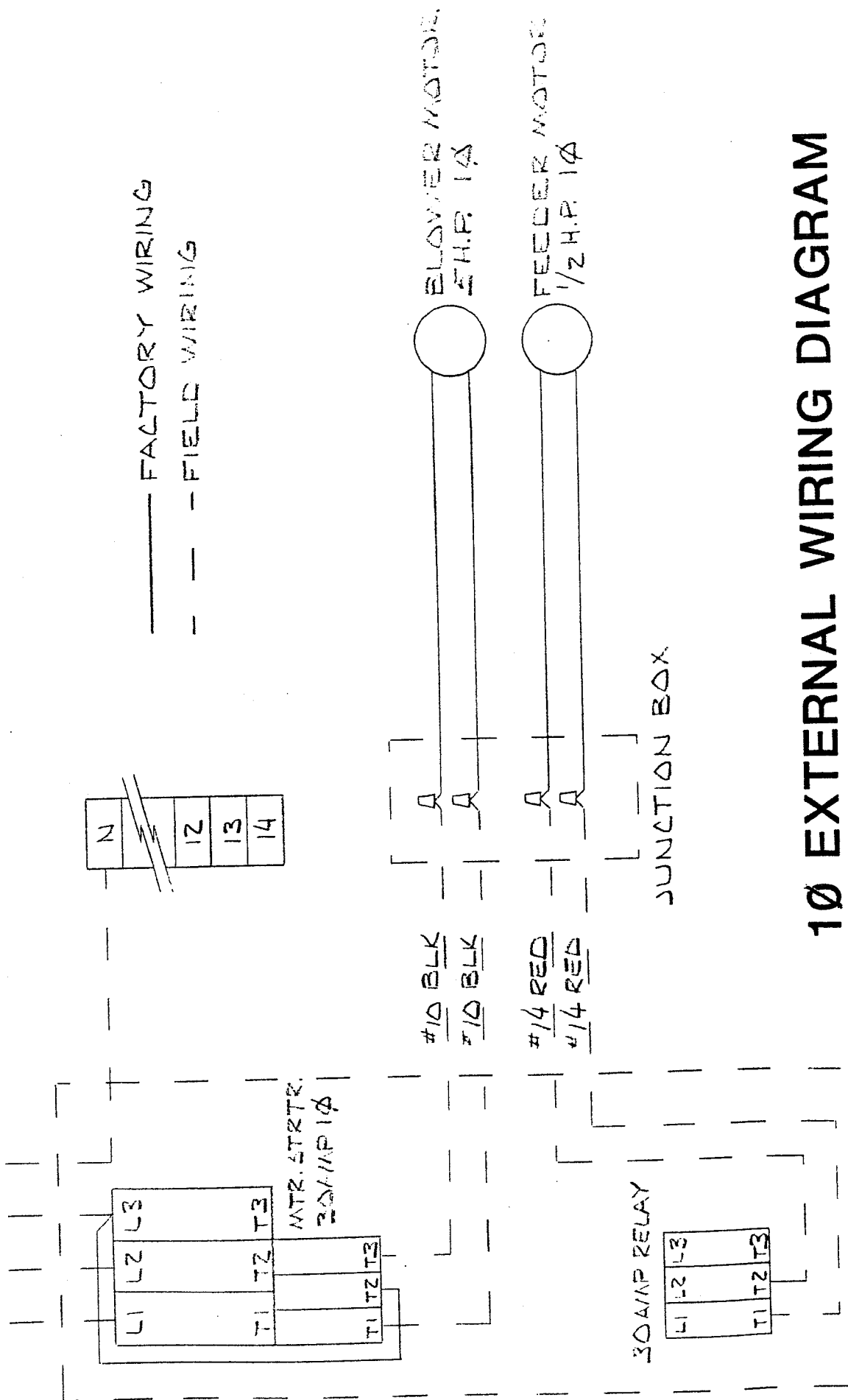


WIRING DIAGRAM 2

PNEUMATIC PANEL TO 'D' & 'CX' MILL PANEL



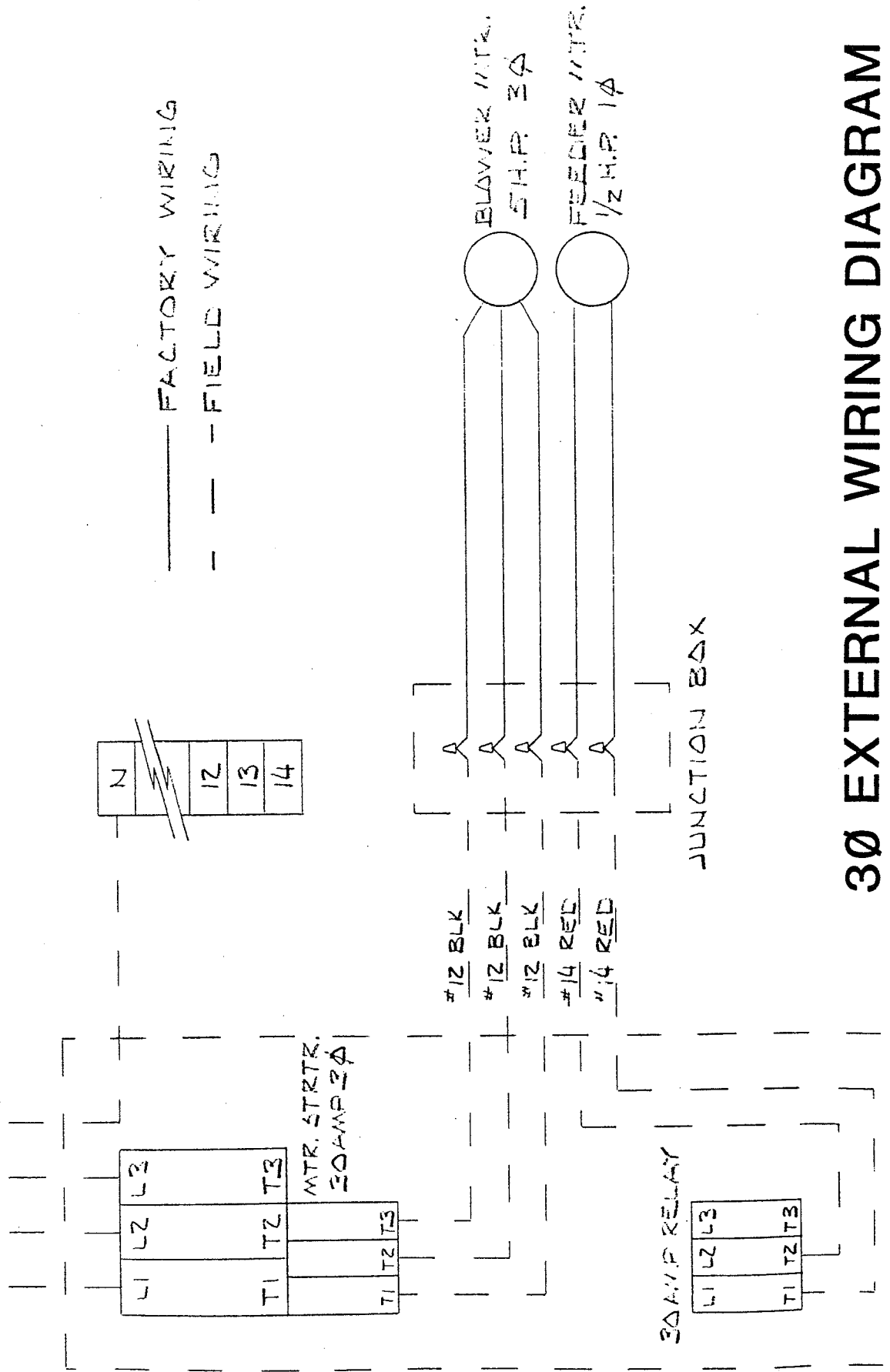
POWER IN
230 VAC



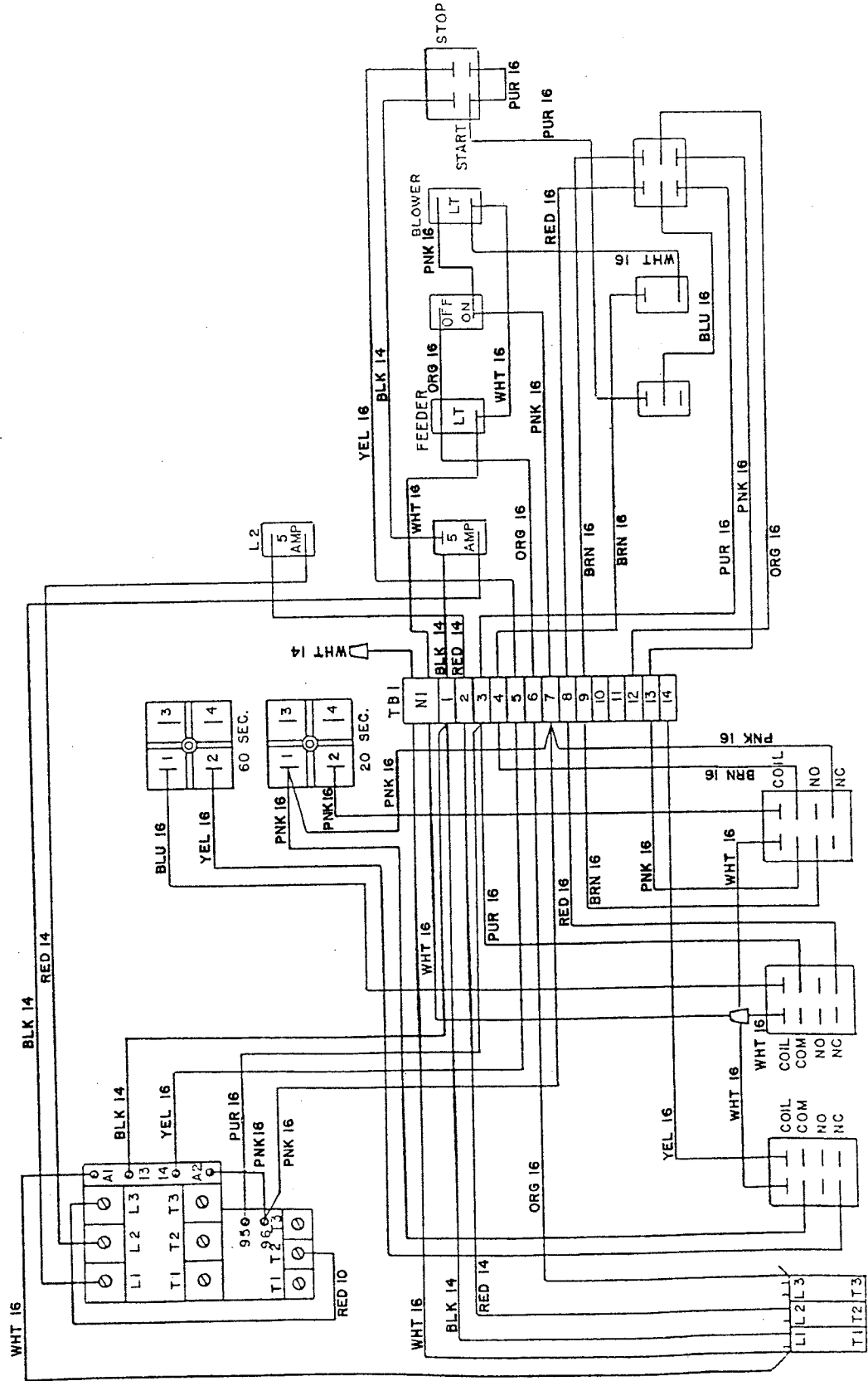
1Ø EXTERNAL WIRING DIAGRAM

1Ø CONTROL PANEL

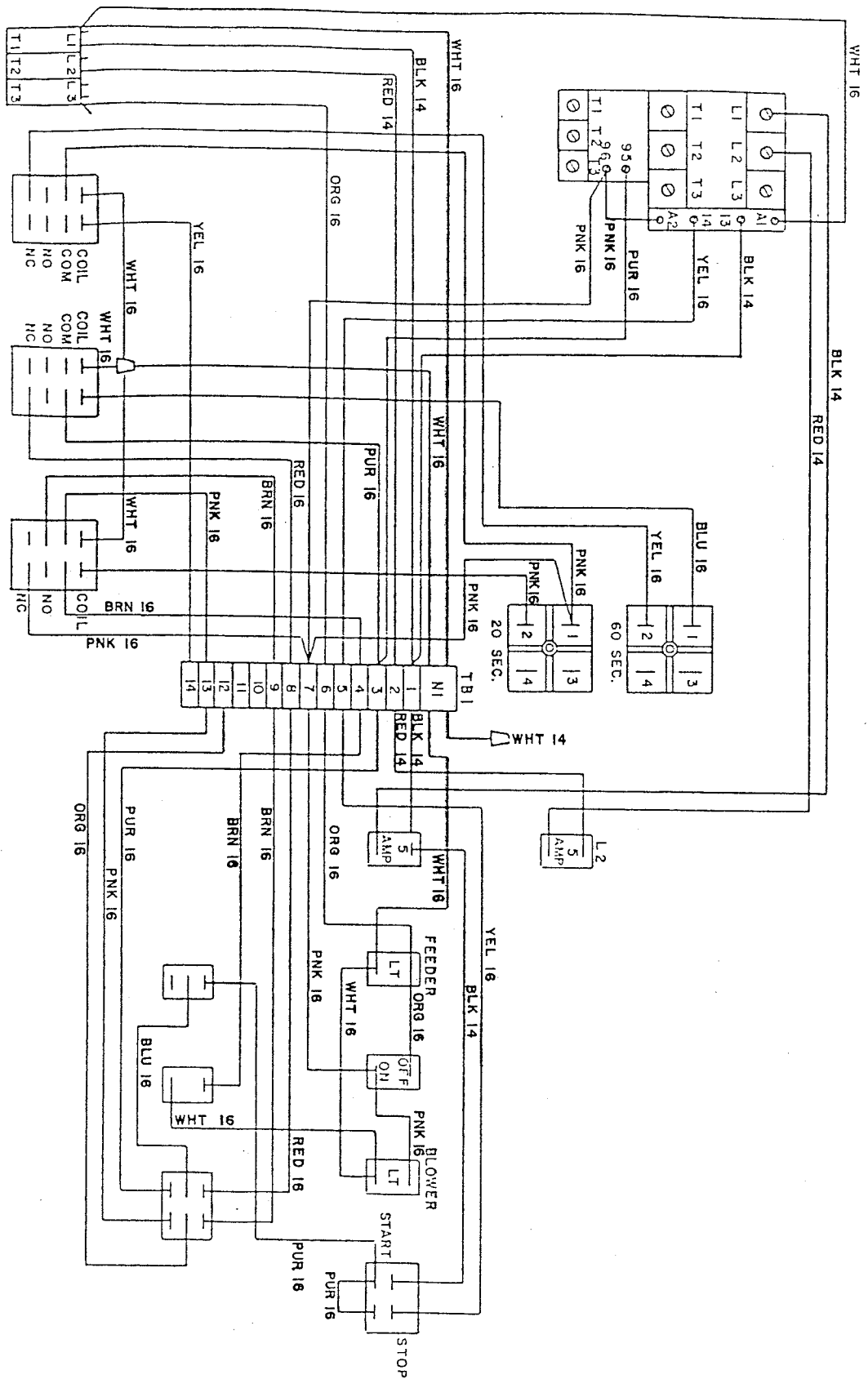
POWER IN
230VAC



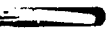
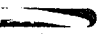
3Ø EXTERNAL WIRING DIAGRAM



1Ø INTERNAL WIRING DIAGRAM



3Ø INTERNAL WIRING DIAGRAM



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