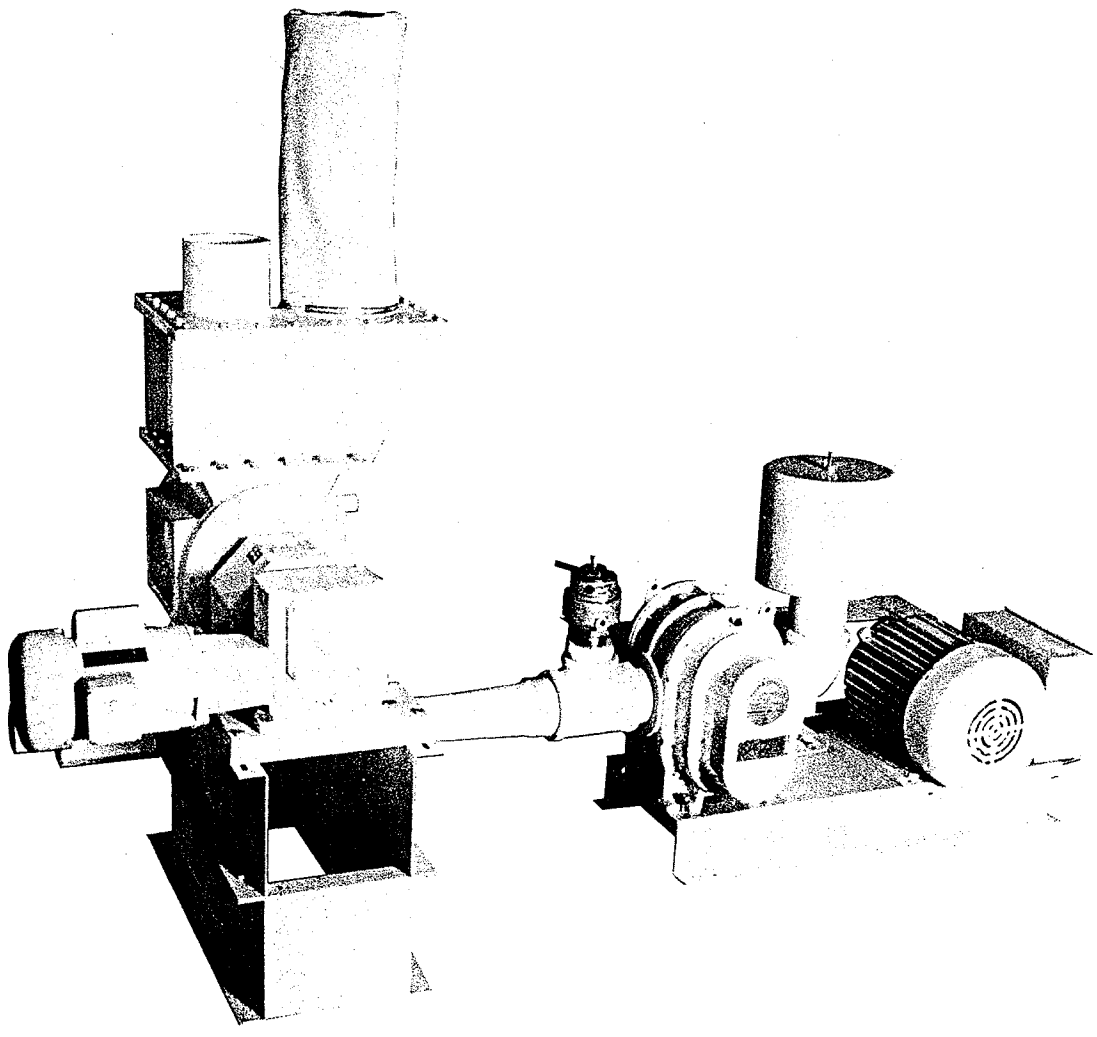
BLOUNT/ mix-mill

INSTRUCTION MANUAL

3 1/2 FEED PUMP



WARRANTY CERTIFICATE

Mix-Mill Mfg. Co. warrants each new product of its manufacture when purchased from an authorized representative for a period of one year from the date of delivery to the Purchaser-User or 1500 hours of operation, whichever occurs first. This warranty shall apply to all parts and workmanship (except products or components not manufactured by Mix-Mill®) which shall appear to Mix-Mill® to have been defective in manufacture. Mix-Mill'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) of the part or parts returned for inspection and parts intended to replace those acknowledged by Mix-Mill® to be defective. This warranty shall not apply and shall be void under the following conditions:

(1) *If the product is transported from original installation site.*

(2) *If the product is installed or assembled by other than factory-trained, authorized, distributor service personnel.*

(3) *If any part of the product has been altered, modified, or changed, except at Mix-Mill's factory or is authorized by Mix-Mill®* in writing.

(4) *If attachments or devices unsuitable to the product have been used on or in conjunction with the product.*

(5) *If the product has not been installed, used, operated, handled, or serviced in accordance with the appropriate instruction manual.*

Mix-Mill® reserves the right to make changes in design or improvements in its products without any obligation whatsoever to prior Purchaser-User of such products.

Mix-Mill® 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 Mix-Mill® , and may not be altered, modified, or changed in any way except by a writing signed by an officer of Mix-Mill® .

Mix-Mill® shall not be liable for any loss or damage directly or indirectly arising from the use of its products or otherwise, or for any special or consequential damages of any nature.

Automatic feed processing systems
MIX-MILL® MFG. CO.
Bluffton, IN 46714
Phone (219) 824-3400

Dear Mix-Mill® Owner/Operator:

Thank you for purchasing a Mix-Mill® 3½" Feed Pump. More than twenty-years experience in the manufacture of feed-milling equipment has made Mix-Mill® the leader in the field of electrically-powered, on-the-farm feed-making systems and grain storage.

This owner's manual will aid in assembling a 3½" Feed Pump in a manner consistant with sound, safe construction procedures.

Other quality products from Mix-Mill® , along with this 3½" Feed Pump, will produce a complete system to store and move grain and make, move, and store finished feed.

For further information on products and usage, please contact your Mix-Mill® dealer. Your dealer can help you obtain information on this and other Mix-Mill® equipment and parts and can aid you in planning further growth.

Sincerely,

MIX-MILL MFG. CO.

BE A SAFE OPERATOR

AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home, or on the highway are caused by the failure of some individual to follow simple and fundamental safety rules or precautions. For this reason most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

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 operation.

A careful operator is the best insurance against an accident.

The complete observance of one simple rule would prevent many thousands of serious injuries each year. That rule is:

Never attempt to clean, oil, or adjust a machine while it is in motion!

—NATIONAL SAFETY COUNCIL

Mix-Mill Mfg. Co. has made every effort to provide safe equipment. However, the following precautions should be carefully observed!

1. **Disconnect main service switch before removing any housing covers or electrical boxes or switches.**
2. **Ground the mill frame to a ground rod driven six (6) feet into moist soil.**
3. **Ground any augers to feeders where livestock might contact either augers or feeders.**
4. **Keep all shields and covers in place.**

CONTENTS

Section I. Specifications and Installation Instructions

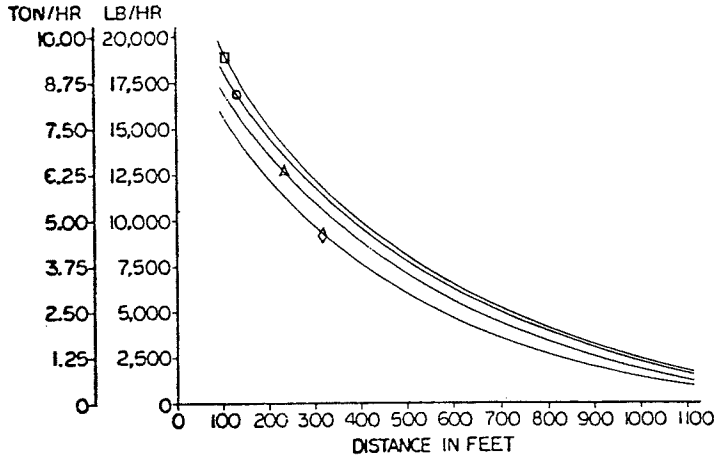
Section II. Operating Procedure and Control Descriptions

Section III. Routine Maintenance and Troubleshooting

Section IV. Parts List and Schematic Diagrams

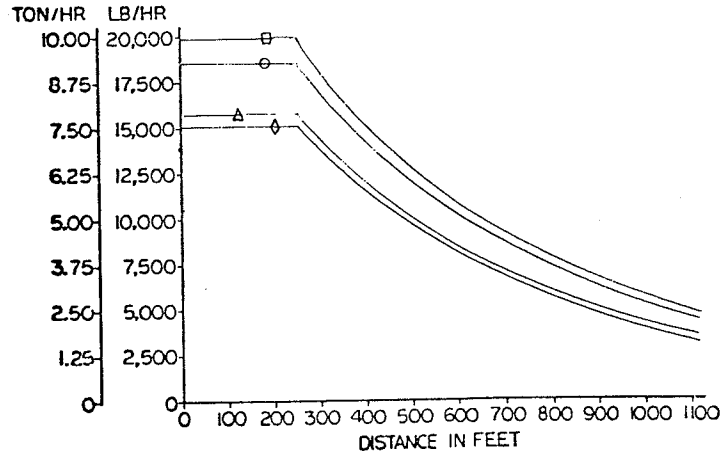
3-1/2" FEED PUMP CAPACITY CHARTS

10 H.P.
5 P.S.I.



◇ - GROUND FEED
○ - CORN
△ - OATS
□ - SOYBEANS

15 H.P.
6.5 P.S.I.



MAX. CAPACITY - APPROXIMATELY 300 BUSHELS PER HOUR

CONVEYING LINE ORIENTATION		EFFECTIVE FEET
1 FOOT HORIZONTAL 1 FOOT VERTICAL	=	1 FOOT
1 90° ELBOW	=	10 FEET
1 45° ELBOW	=	7.5 FEET

Specifications

Power Requirements to Control Panel:

Part Number	Power Required
92000603	10 hp, 1 Ø, 230 VAC, 55 amp
92000604	10 hp, 3 Ø, 230 VAC, 33 amp
92000605	15 hp, 3 Ø, 230 VAC, 47 amp

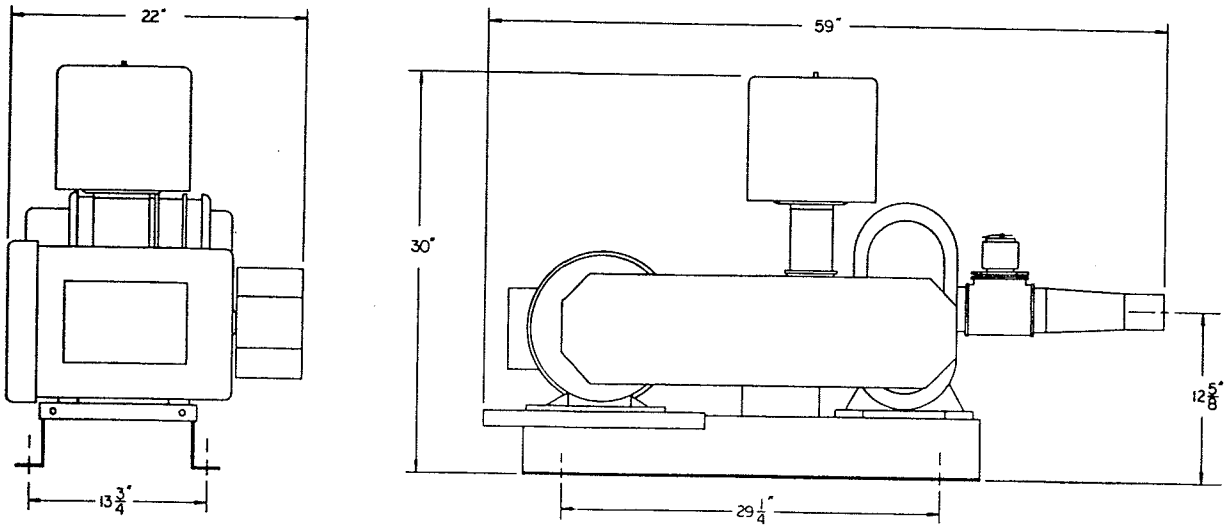
Major Dimensions:

	L	W	H
Blower	59"	22"	30"
Feeder	31"	32"	54"

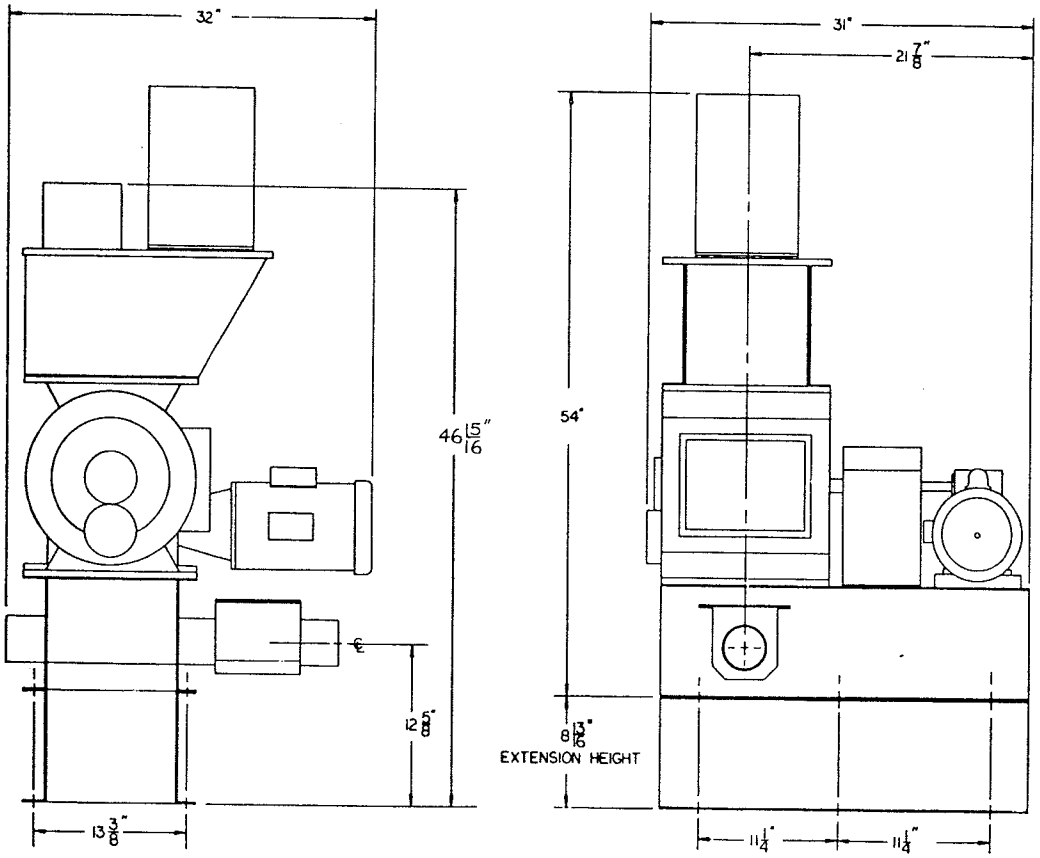
Weight:

	Blower	Feeder
10 hp	460 lb.	365 lb.
15 hp	595 lb.	365 lb.

BLOWER-MAJOR DIMENSIONS



FEEDER-MAJOR DIMENSIONS



Assembly

A. Locate the feeder so as to provide the minimum number of elbows in your distribution system—the fewer elbows, the greater capacity. Accesibility for service should also be provided.

B. After the feeder is in place, the blower should be positioned so that no elbows are between the blower and the feeder.

C. The Mix-Mill 3½" Feed Pump should be permanently anchored, using appropriate fasteners, to a concrete floor.

D. The blower has been mounted separately for shipping convenience and easier installation. Therefore, we recommend installing the blower half of your Feed Pump system outside. This reduces the noise inside, provides clean air for intake, and gives you more valuable space where you need it most.

E. A simple doghouse-type cover with open ends can be constructed to prevent moisture and snow from getting into the system.

F. For optimum performance when the installation requires the feeder to be physically located near the blower, Part #92000515, an extension base which aligns the conveying lines, is available. Shims may be required when this extension is used.

G. A six-inch inlet spout is provided on the feeder for material input. Use light-gauge downspout or flex for this connection.

H. The blower outlet assembly will be packed unassembled in the crate. Install with pipe-joint compound and locate relief opening on valve, directed straight down to prevent dirt and foreign objects from interfering with the valve operation.

I. When the blower unit is not installed outside, the intake filter must be plumbed to the outside with 4" pipe fittings.

J. When installing the distribution lines, all tubes should be kept as straight and level as possible. Do not use unnecessary bends or elbows. Make sure that all tubes are secured tightly and that all joints are straight. In some installations, additional gaskets might be required to obtain a seal.

K. Mix-Mill tube connections can be made with flanges, Morris couplings, or buttwelded in the field. When cutting and fitting, the cuts must be square and should be deburred.

L. Install the dustbag with the clamp provided.

M. Collectors must be installed vertically. They are easily connected with Morris couplings.

N. The flexible hose has been made specially for long life and flexibility and is used with band clamp #8002-5003.

MIX-MILL®
CENTRAL FEED SYSTEMS

TECHNICAL BULLETIN

BULLETIN #82-013
June 29, 1982

Subject: 3 1/2" PNEUMATIC MANUAL CORRECTION OF PAGE 24.

The wiring diagram on page 24 of the newly printed 3 1/2" Feed Pump Manual shows incorrect terminal numbering on the auxillary contact block.

This will not affect installation since the control panel is pre-wired at the factory. However, using the incorrect diagram when trouble shooting could cause confusion.

The attached diagram is correct showing the single pole auxillary contact block that is used in production of the pneumatic panel.

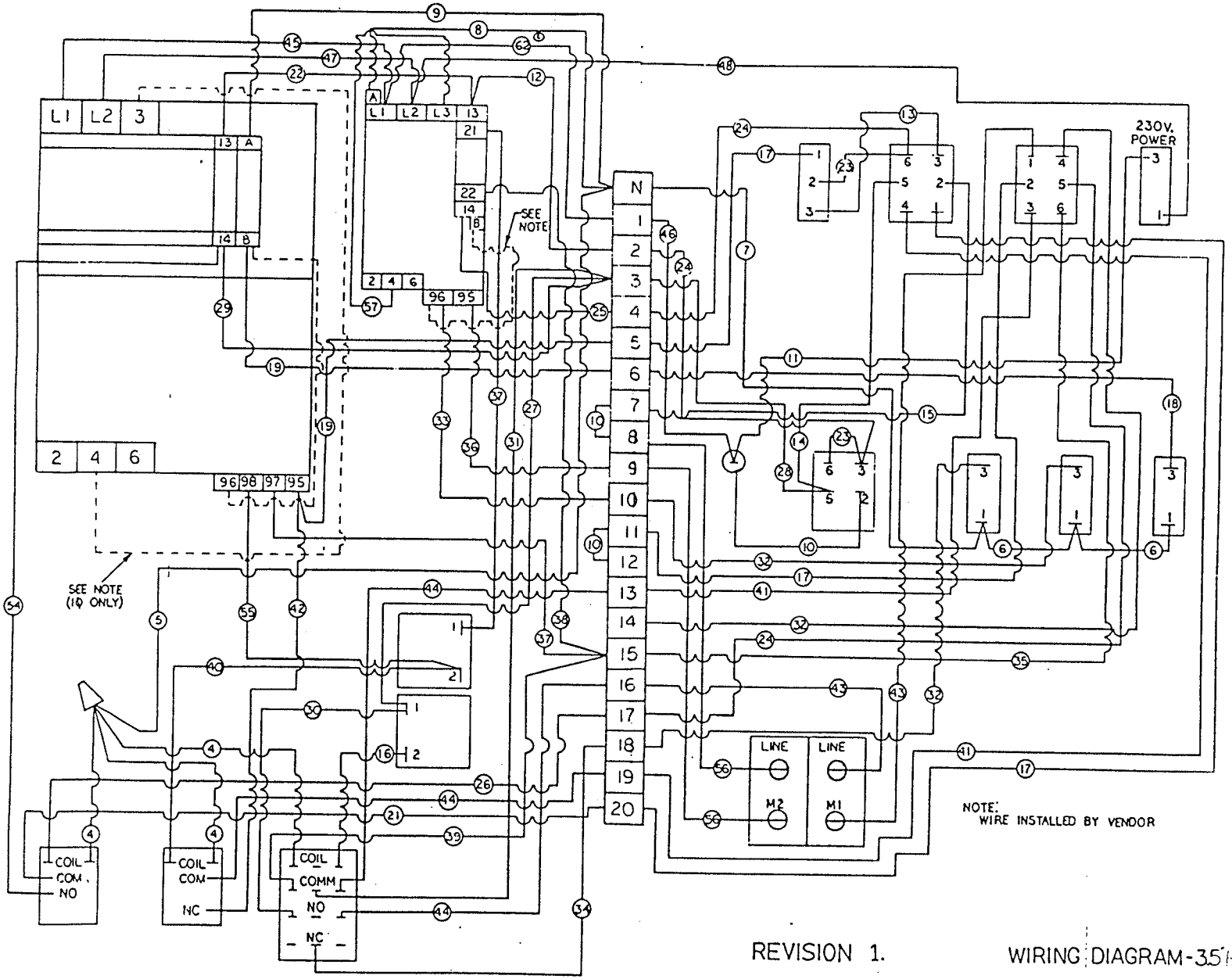
Additional diagrams are available and may be ordered from the Bluffton office from Carol Ely.

Dewey Randall
Marketing Department

DDR/ce

Enclosure

cc: K. Anspach
J. Buckingham
D. Powell
J. Vaughn
N. Broman
D. Randall
✓C. Ely-book
Regional Managers

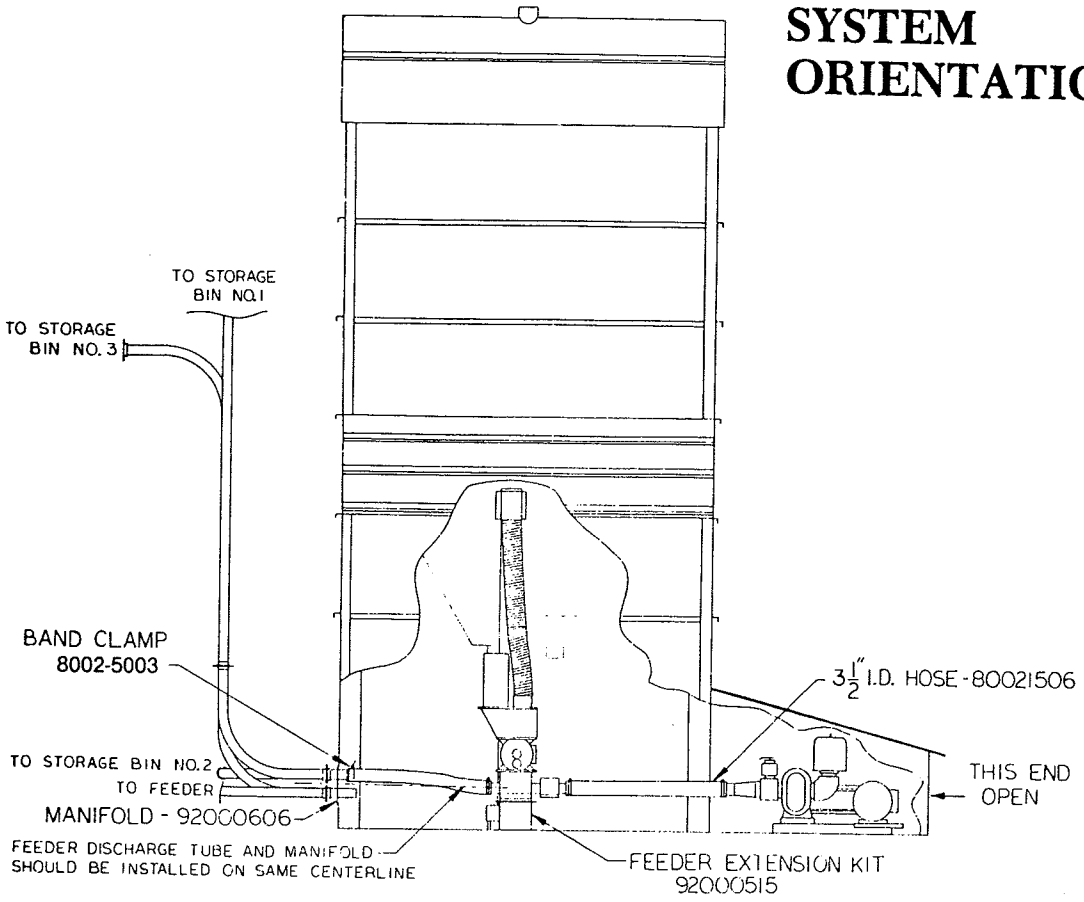


REVISION 1.

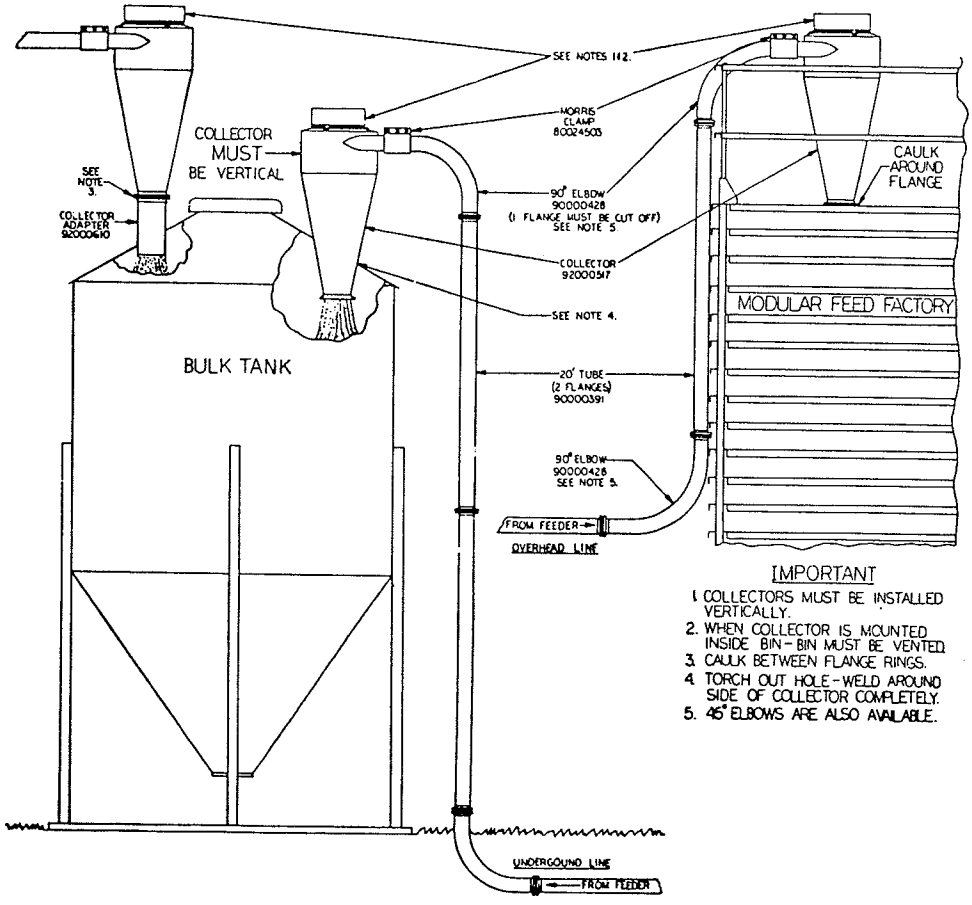
WIRING DIAGRAM-3.5 H.P.

99950030

SYSTEM ORIENTATION



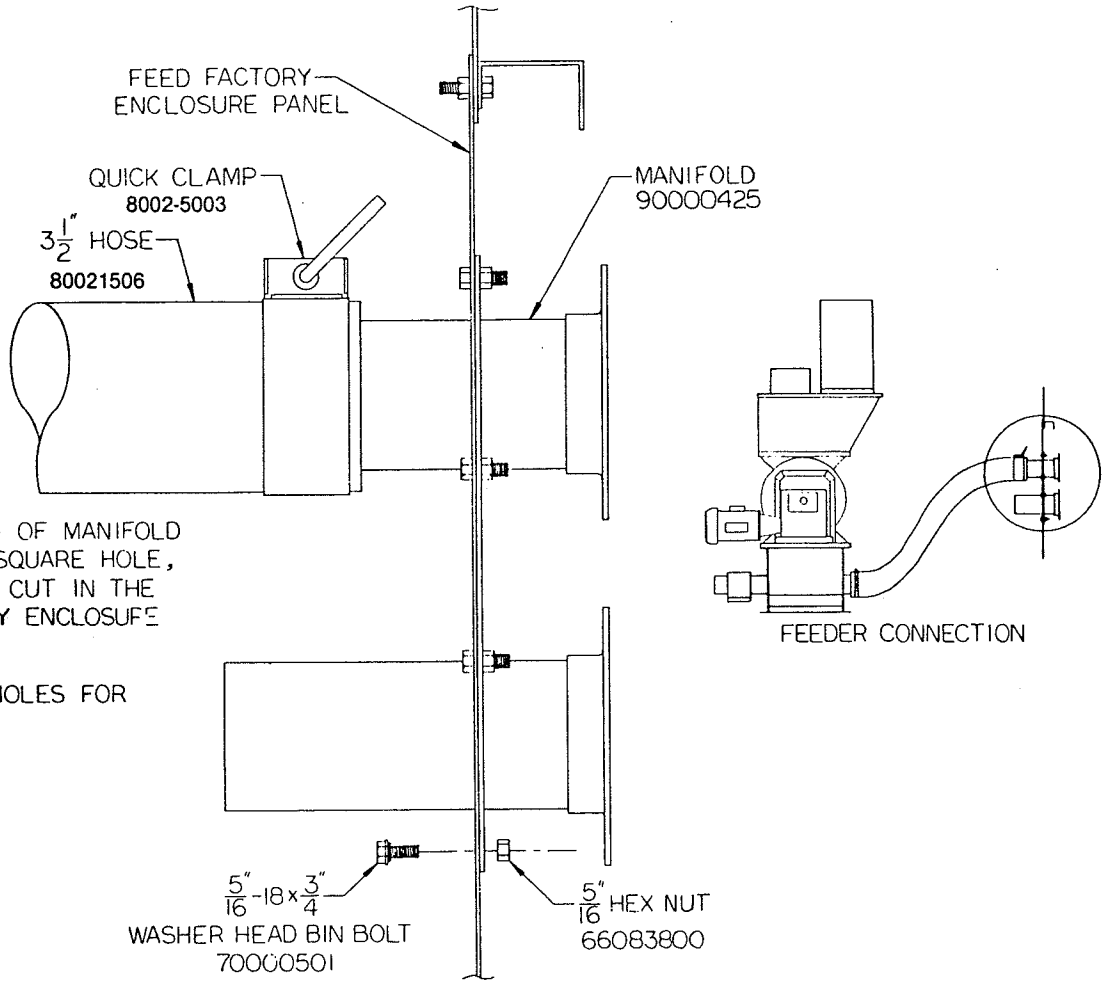
COLLECTOR INSTALLATION



IMPORTANT

1. COLLECTORS MUST BE INSTALLED VERTICALLY.
2. WHEN COLLECTOR IS MOUNTED INSIDE BIN - BIN MUST BE VENTED.
3. CAULK BETWEEN FLANGE RINGS.
4. TORCH OUT HOLE - WELD AROUND SIDE OF COLLECTOR COMPLETELY.
5. 45° ELBOWS ARE ALSO AVAILABLE.

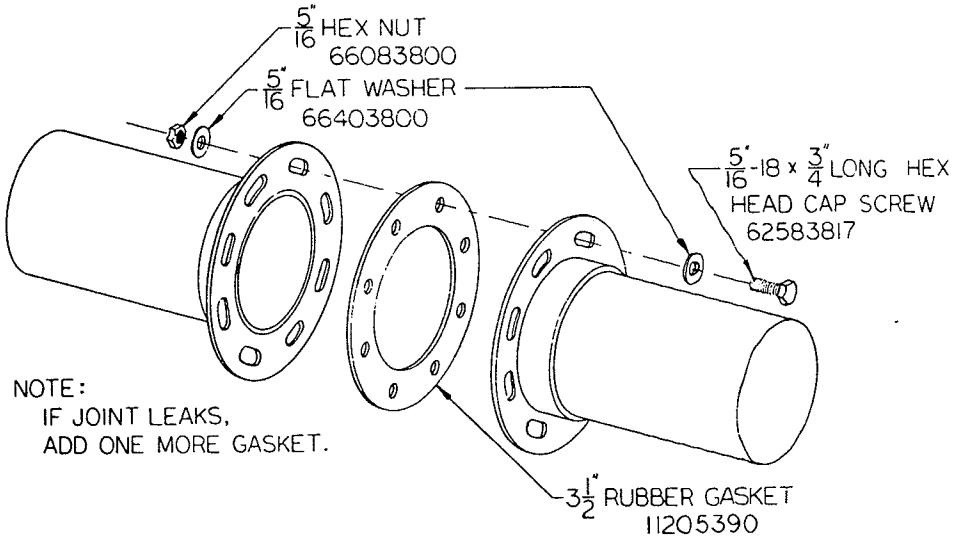
MANIFOLD AND HOSE INSTALLATION



INSTALLATION OF MANIFOLD REQUIRES A SQUARE HOLE, 12"x12", TO BE CUT IN THE FEED FACTORY ENCLOSUFE PANEL.

DRILL 3/8" DIA HOLES FOR BIN BOLTS.

FIELD ASSEMBLY DISTRIBTION LINES



NOTE:
IF JOINT LEAKS,
ADD ONE MORE GASKET.

Electrical

A. **Wiring:**

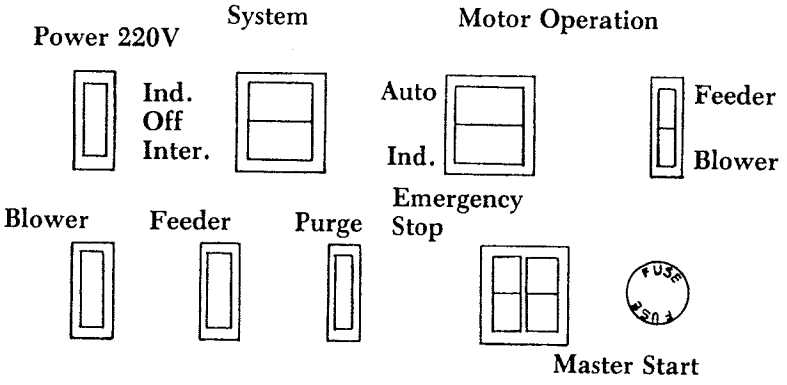
NOTE: For detailed wiring instructions, refer to the appropriate internal and external wiring diagrams in the Wiring Section (page 24). Be sure the electrical service is adequate for providing full voltage to motors at full load. No motor will operate properly at low voltage. All electrical equipment 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. Refer to the wiring diagrams and your local electrical code.

If a driven ground is used, it should be driven into permanently-moist, undisturbed earth. A ground rod driven into fill might not be effective.

B. **Control Panel:**

1. Locate the panel on the wall and mark four holes.
2. Bolt or screw panel securely to the wall.
3. Install the appropriate wires (according to local code) from the control panel to the blower motor and the feeder motor. See Wiring Diagram #99950031. (See page 27).
4. Connect a ¼" plastic tube to the tee-pipe assembly on the blower and run it through the wiring conduit, where convenient, up to the pressure switch in the control panel. Be sure the tube is not crimped and is not exposed to sharp edges. A small coil should be left to avoid bending the tube when the door is opened and closed.
5. Remove the shipping plug from the top of the pressure gauge. Replace it with the vent plug or, slip "O" ring down to expose vent on top of gauge.
6. When a feed pump is used in conjunction with a mill, refer to Wiring Diagrams #99950020 or 99950019 for proper connection. (See page 28).

Operation



Routine:

After the Feed Pump system is installed and wired, the following steps will aid you in the start-up procedure.

Controls Check and Description:

1. Turn on power. The red light should be on, indicating 230 VAC power.
2. Set the top center switch to "Independent" and the top right switch to "Blower."

3. Push the "Start" switch. The blower should start and run continuously. The blower and purge lights will come on and the purge light will go out after 20 seconds. Check the rotation of the blower motor for proper operation. If incorrect, change rotation. Push red "Stop" switch to turn off.

4. Set top right switch to feeder.

5. Push the "Start" switch. The feeder should start and run continuously. The feeder and purge lights will come on; and the purge light will go out after 20 seconds. Check the rotation of the feeder motor for proper operation. If incorrect, change rotation. Push red "Stop" switch to turn off.

6. The "Independent" position of the top center switch should be used only when the feeder or blower is operated independently or for troubleshooting or maintenance reasons.

7. The "Automatic" position of the top center switch is the normal operating position. In this position the feeder will automatically start after a specific purge time has elapsed for the blower.

8. The "System" switch on the top left allows operation in conjunction with a mill ("Interlock") and without a mill ("Independent"). The "Off" position of this switch is used in normal operation and immediately shuts off the feeder with a delay on the blower. When the red "Stop" switch is used, the feeder and the blower will stop immediately.

9. When the Feed Pump is used with a mill, the mill cannot be started until the blower has been started and the "Purge" light goes out. When the mill is started, the feeder will start simultaneously. The operator has 20 seconds to start the mill after the purge light goes out.

10. Should any of the safety devices in the mill system, the overloads on the feeder motor, or bin-level switches activate, the feeder will shut off immediately. The blower will shut down after the final purge time.

Start and Stop Procedure

A. Without a Mill:

1. Make sure the feeder unit is connected to the proper distribution line.

2. Set the "System" switch (upper left) to "Independent."

3. Set the left "Motor Operation" switch (top center) to "Automatic." When this switch is in the "Automatic" position, the "Blower-Feeder" switch (top right) is not in the circuit.

4. Push the "Start" switch to start the system. The feeder will automatically start after the purge time.

5. Adjust the input flow to the feeder until operating pressure is obtained. This is easily done with a slide valve.

6. To stop the system, turn the "System" switch (upper left) to the center "Off" position. The feeder will stop immediately and the blower will stop after the delay.

7. Use the red emergency "Stop" switch for emergencies only. This will stop both the feeder and blower immediately.

B. **With a "D" Mill:**

1. Set knobs for desired ration on mill.
2. Set counts for amount of feed to be processed.
3. Make sure the feeder unit is connected to the proper distribution line.
4. Set the "System" switch (upper left) to "Interlock."
5. Set the left "Motor Operation" switch (top center) to "Automatic." When this switch is in the "Automatic" position, the "Blower-Feeder" switch (top right) is not in the circuit.
6. Push the "Start" switch to start the blower system.
7. Start the mill after the "Purge" light goes off. You have 20 seconds to start the mill before the blower will turn off automatically.
8. The load knob of the mill should be adjusted until the input flow has caused the feed pump to reach the proper operating pressure.
   CAUTION: *Do not overload the D-Mill.*
9. To stop the system, turn the "System" switch (upper left) to the center "Off" position. The feeder will stop immediately and the blower will stop after the delay.
10. When the mill counter reaches "0", the mill and feeder will shut down immediately. The blower will stop after the purge delay.
11. Use the red emergency "Stop" switch for emergencies only. This will stop the feeder, blower, and the mill immediately.

C. **With a "CX" Mill**

1. Set knobs for desired ration on mill.
2. Set timer for desired operation time or in "Hold" position.
3. Make sure the feeder unit is connected to the proper distribution line.
4. Set the "System" switch (upper left) to "Interlock."
5. Set the left "Motor Operation" switch (top center) to "Automatic." When this switch is in the "Automatic" position, the "Blower-Feeder" switch (top right) is not in the circuit.
6. Push the "Start" switch to start the blower system.
7. Start the mill after the "Purge" light goes off. You have 20 seconds to start the mill before the blower will turn off automatically. Mill will start automatically if mill switch is in automatic position and timer is set.
8. The load knob of the mill should be adjusted until the input flow has caused the feed pump to reach the proper operating pressure.
   CAUTION: *Do not overload the CX-Mill.*
9. To stop the system, turn the "System" switch (upper left) to the center "Off" position. The feeder will stop immediately and the blower will stop after the delay.

10. When the mill has "timed out," the mill and feeder will shut down immediately. The blower will stop after the purge delay.

11. Use the red emergency "Stop" switch for emergencies only. This will stop the feeder, blower, and the mill immediately.

Plugged Lines

A. Set the left "Motors Operation" switch (top center) to the "Independent" position.

B. Set the right "Motors Operation" switch (top right) to the "Blower" position.

C. Start the blower and allow time for the lines to clear.

D. If the line does not unplug within two or three starts, separate the lines and blow out short sections. Repeatedly starting and overloading will result in overheating of the starter and motor, thereby shortening their life.

ROUTINE MAINTENANCE

Sutorbuilt Rotary Blower

Lubrication:

The timing gear teeth at the gear end of the blower are lubricated by being partially submerged. The gear teeth serve as oil slingers for gear-end bearings. The drive-end bearings are grease lubricated.

FILLING PROCEDURE:

Remove square-head, vented, oil-fill plug on the gear end. Remove oil-level plug located in the headplate. Fill gear case until oil drips out of the oil-level hole.

Add fresh oil as required to maintain proper level. The oil should be drained, flushed, and replaced every 1500 hours, or more frequently if inspection so indicates.

Bearings on the drive end of the blower require grease lubrication every 500 hours of operation. Bearings that require grease lubrication will have a grease fitting at each bearing. When regreasing, the old grease will be forced out of the vents during operation. These vents must be kept open at all times to prevent damage to seals.

LUBRICATION INSTRUCTIONS FOR OIL-LUBRICATED GEARS AND BEARINGS:

Add fresh oil as required to maintain proper level. During normal service, drain and refill every 1500 hours of operation; more frequently when required.

Blower Discharge Temperature	Oil Grade	Oil Viscosity Centistokes @ 40° C.
-40° to 32° F. (-40° to 0° C.)	SAE 10W	45
32° to 100° F. (0° to 38° C.)	SAE 20	100
100° to 275° F. (38° to 135° C.)	SAE 40	200

FOR GREASE-LUBRICATED BEARINGS:

Service every 500 hours of operation.

Blower Discharge Temperature	
-40° to 275° F. (-40° to 120° C.)	No. 2 Bearing grease

Use a good quality, straight mineral oil. Anti-foam and rust-inhibiting additives are optional.

TROUBLESHOOTING

No matter how well designed and manufactured equipment is, there may be times when servicing will be required due to normal wear, the need for readjustment, or various external causes.

Whenever equipment needs attention, the operator or repairman should be able to locate the cause and correct the trouble quickly. The following *Troubleshooting Chart* will assist the mechanic in those respects.

Problem	Possible Causes	Solution
Knocking	Unit out of time	Retime. See Sutorbuilt Manual.
	Distortion due to improper mounting or pipe strains.	Check mounting alignment and relieve pipe strains.
	Excessive pressure differential	Reduce to manufacturer's recommended pressure. Examine relief valve; reset if necessary.
	Worn gears.	Replace timing gears. See Sutorbuilt Manual.
	Worn bearings	New bearings. See Sutorbuilt Manual.
	Worn bearing fit	Check bearing fit in headplate.
Excessive blower temperature	Too much oil in gear case or drive cover	Reduce oil level.
	Too low operating speed	Increase blower speed.
	Clogged filter or muffler	Remove cause of obstruction.
	Excessive pressure differential	Reduce pressure differential across the blower.
	Worn impeller clearances	Restore clearances.
Impeller end or tip drag	Insufficient assembled clearances	Correct clearances.
	Case or frame distortion	Check mounting and pipe strain.
	Excessive operating pressure	Remove cause.
	Excessive operating temperatures	Remove cause.
Lack of volume	Slipping belts	Tighten belts.
	Worn clearances	Re-establish proper clearances.
Excessive bearing or gear wear	Improper lubrication	Correct oil level. Replace dirty oil. See Lube Section.
Loss of oil	Headplate, gear case, or drive cover vents plugged	Clean vents.
	Worn seal	Replace seals. See Sutorbuilt Manual.

AIRLOCK FEEDER

Rotation

Roto-Flo Feeders without seal strips and bevelled edges can be run in either rotation. If seal strips or bevelled edges are provided, the rotation must be as indicated by arrow. See sketch on seal strips for determining rotation.

Rotor Misalignment

Although all feeders are test run prior to shipment, it is possible for a Rotor to bind as a result of damage through rough handling during transport. If there is a noticeable bind during initial startup, centering the impeller radially and horizontally may be required. This is done by shifting the end plates so that the clearances are proportional throughout. The tapered pins, which hold the end plates in position, must be reinstalled to insure continuous alignment.

Lubrication

The bearings used in all Roto-Flo Air Locks are of the extended inner ring type with set screw locking. All bearings are prelubricated and permanently sealed with a fitting for relubrication. Depending on operation, relubrication should be done every 6 to 12 months. When operating at higher temperatures, more frequent lubrication is necessary.

Recommended Lubricants

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

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

Changing Seal Strips

To set seals correctly, turn large chain sprocket in direction of operating rotation (usually counter-clockwise when facing sprocket drive end). You will note that seal strips are on the trailing edge of the rotor blade and curve back from the direction of rotation. When one seal is completely clear, unbolt the seal strip and remove the old seal.

After using your hand to brush off all loose material on tip of rotor and behind old seal, fit in the new seal, which is punched to give you proper height. New seal strip should be placed as high as possible and should be slightly above the feeder inlet. Put on seal-strip holder and turn down cap screws; finger tighten. Then tighten all four screws with wrench.

Advance the rotor to the next position either by turning the large feeder sprocket by hand, or placing a pipe wrench on the sprocket hub, not the shaft.

You will note that the feeder will become progressively harder to turn with the installation of each new seal. This tightness is a must if the feeder is to have an airtight seal. A few drops of oil on each seal will reduce the friction and allow the rotor to be turned easier.

Reassemble in reverse order.

Startup Checklist

This startup procedure should be followed during initial installation and after any shutdown period or after the feeder has been worked on or moved to a new location.

1. Check the unit and all piping for foreign material, and clean if required.

2. Check the level and alignment of the drive. Misaligned chaindrives can cause the rotor to rub against the headplates and cause a reduction in the volumetric efficiency of the unit. Misaligned couplings can ruin bearings or bind unit.

3. Check the unit for proper lubricant.

4. "Jog" the unit with the motor a few times to check rotation and to be certain it turns freely and smoothly.

5. Start the unit and operate 15 minutes at no load. During this time, check for hot spots and other indications of interference. If minor hot spots occur, introduce a small amount of lubricating oil into the feeder inlet while it is operating. Repeat until hot spots disappear. Once the hot spots have been removed, it is unnecessary to lubricate the rotor chamber for proper performance. If the use of oil is objectionable, the rotor must be centered.

6. Apply the load and observe the operation of the unit for one hour. Check frequently during the first day of operation.

7. If malfunctions occur, do not continue to operate. Minor problems can cause serious damage if the unit is operated without correction.

Gear Reducer

Precision construction and the use of ball or roller bearings in the gear reducer demand the use of a high-grade petroleum oil. In addition to being noncorrosive, anti-foaming, highly oxidation-resistant and stable, the oil should withstand high temperatures without losing its lubricating qualities.

The reducers are filled at the factory with the proper oil to the correct level. After two weeks of operation, the unit should be drained and flushed. The old oil should be replaced or filtered. Oil should be changed every six to eight months, or more often if conditions are severe. Changes at regular intervals prevent the accumulation of sludge.

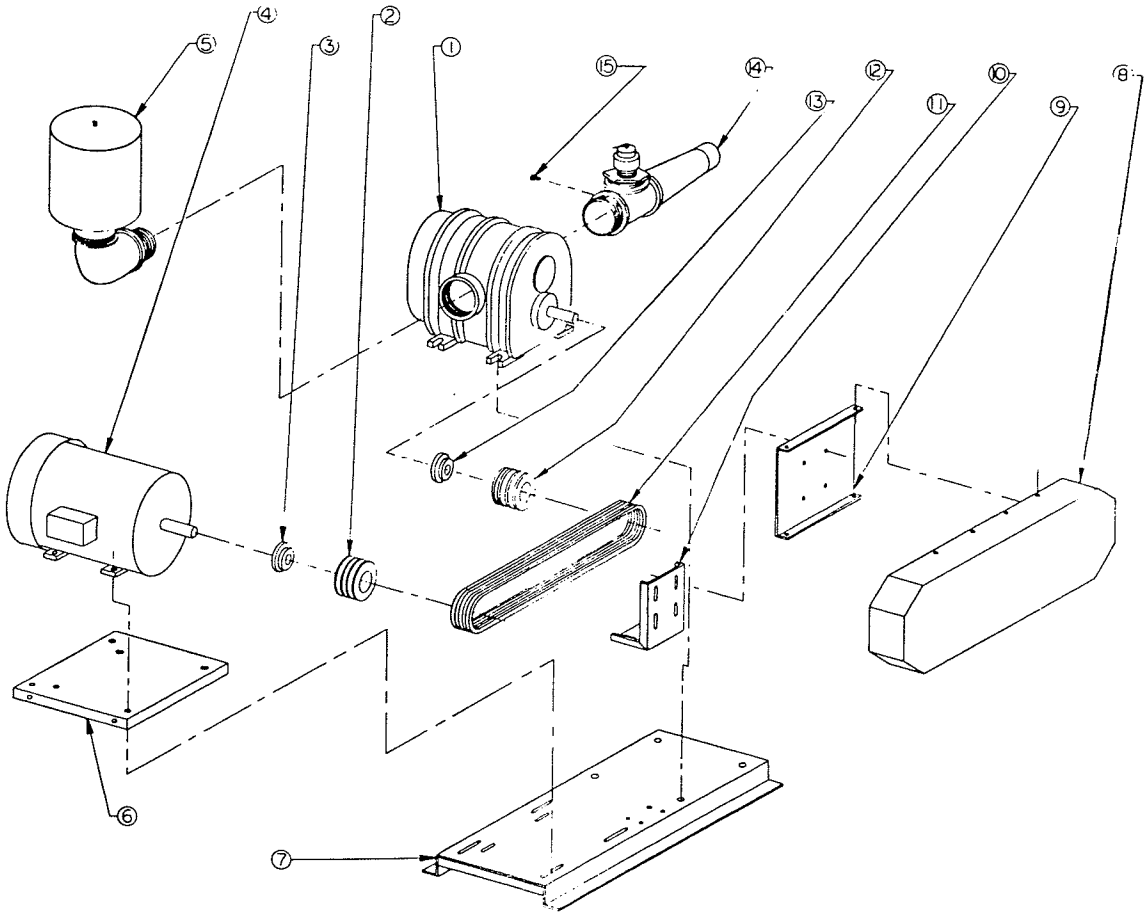
The proper quantity of oil is very important to the performance of a gear reducer. Each reducer has an oil-level plug, which maintains the oil at a proper level. When oil level is too high, the reducer may overheat or leak. When oil level is too low, the reducer gearing and bearings may fail prematurely.

In addition to lubrication, the unit should have regular inspection to determine the tightness of bolts and screws, misalignment of connected shafts, oil leakage, excessive heating, or any unusual noise or vibration.

Your gear reducer contains Mobil SHC634 oil with an effective temperature range of -40° F. to 120° F.

Chain Coupling

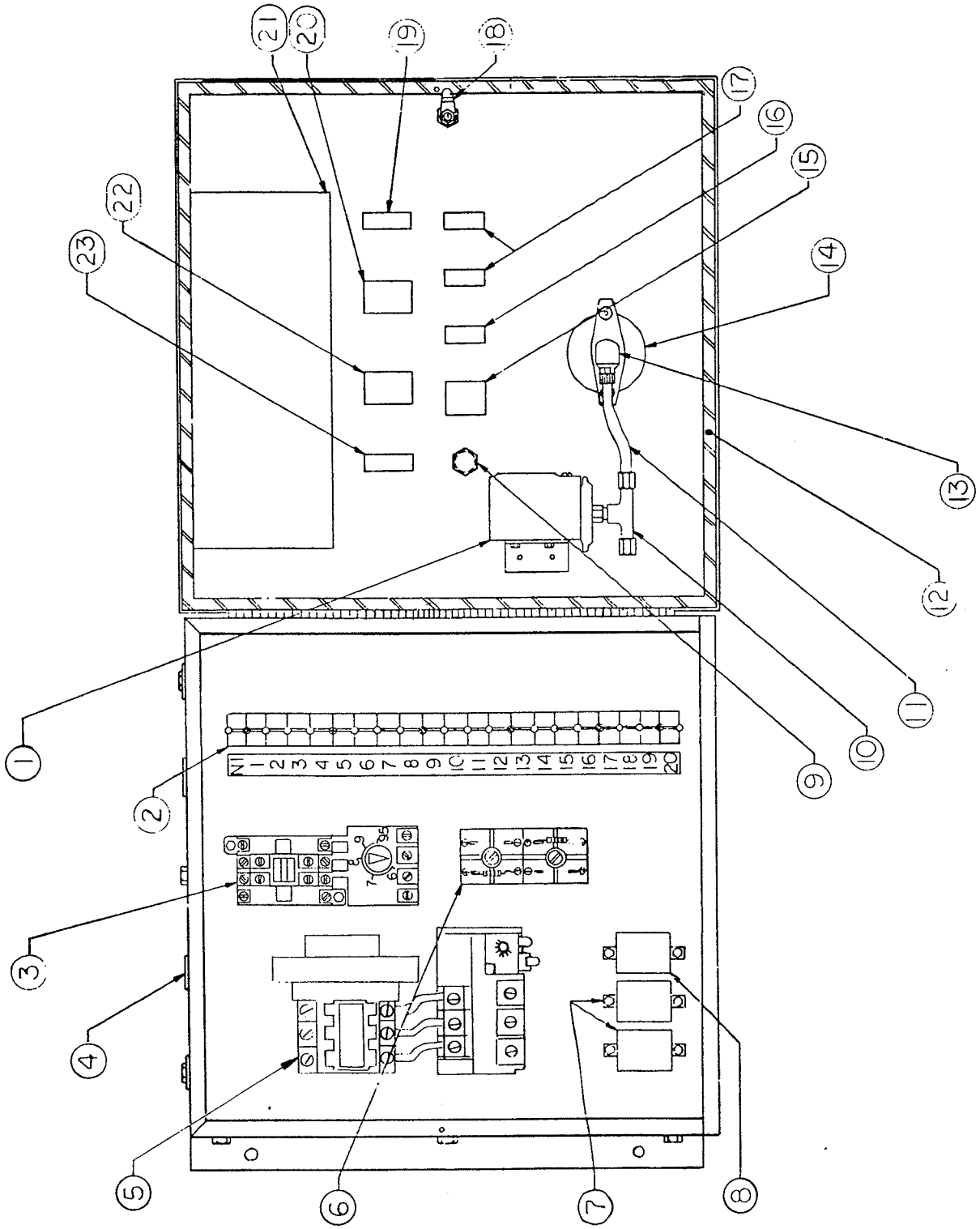
The coupling is disassembled by removing the cotter pin and knocking out the connecting link pin. Lubricate often with standard machinery oil to assure optimum flexibility in the coupling.

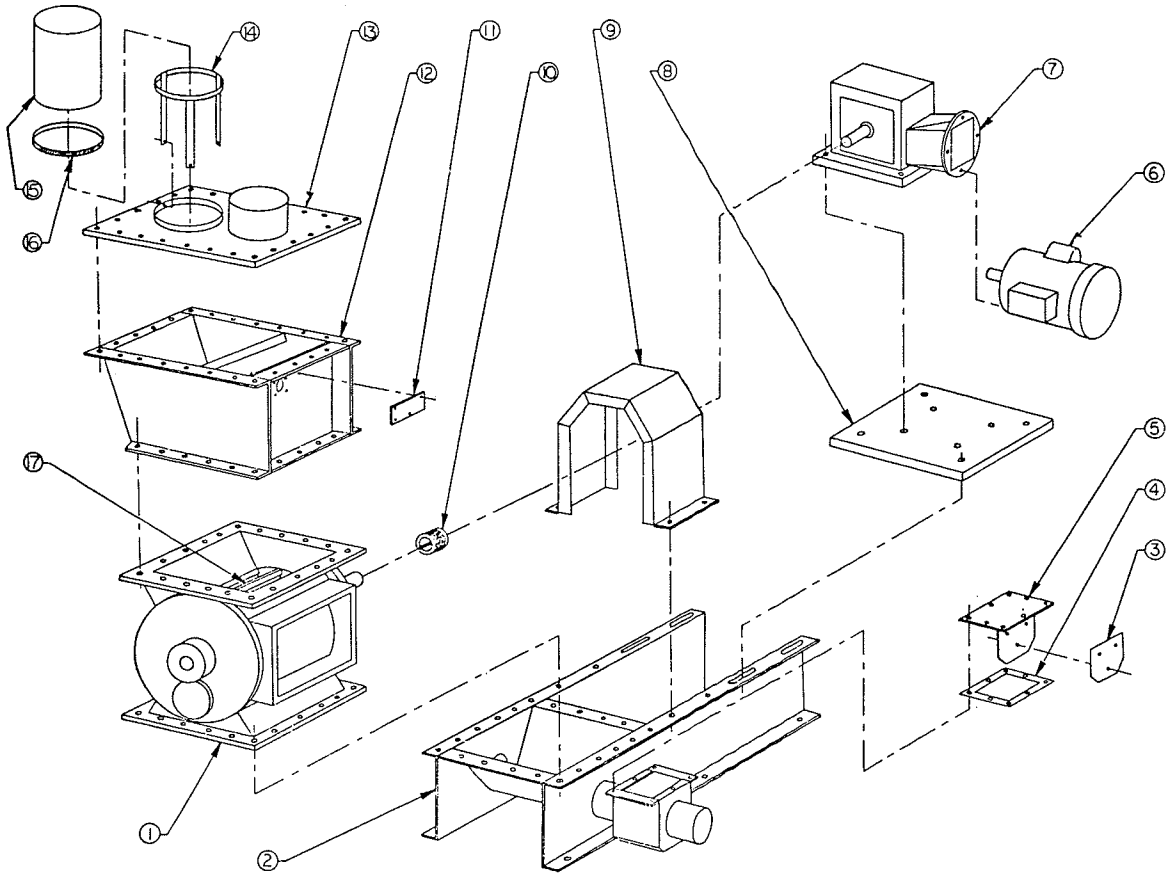


BLOWER PARTS LIST

Item	Part Number	Description	Qty.
1.	80017511	Rotary blower	1
2.	43133100	Sheave, 3 grv., 3V, 5″ OD	1
3.	44010516	Q.D. Bushing, SDS, 1-3/8″ bore (for 10 hp)	1
	44010520	Q.D. bushing, SDS, 1-5/8″ bore (for 15 hp)	
4.	33000203	Motor, AC, 10 hp, 1 Ø	1
	33000804	Motor, AC, 10 hp, 3 Ø	
	33000806	Motor, AC, 15 hp, 3 Ø	
5.	92000609	Air filter assembly (element-80017514)	1
6.	90000422	Motor adjustment plate	1
7.	90000417	Blower base	1
8.	90000415	Drive cover	1
9.	11204330	Back plate, drive cover	1
10.	11204340	Mounting bracket, drive cover	1
11.	40000503	Matched set of V-belts, 3V-56″ OC	1
12.	43133082	Sheave, 3 grv., 3V, 4.12″ OD	1
13.	44010312	Q.D. bushing, SH, 1-1/8″ bore	1
14.	92000608	Relief valve and transition assembly	1
15.	53033004	Straight connector	1

CONTROL PANEL - 3-1/2" FEED PUMP





FEEDER PARTS LIST

Item	Part Number	Description	Qty.
1.	80025505	Airlock feeder, 10 x 10	1
2.	90000411	Feeder base	1
3.	11205640	Gasket, flapper	1
4.	11205670	Gasket, check valve cover	1
5.	90000414	Flapper assembly	1
6.	3300-1102	Motor, AC, ¾ hp, 56C frame	1
7.	40002590	Gear reducer, 80:1 ratio	1
8.	11205710	Mounting bracket	1
9.	11205720	Drive cover, feeder	1
10.	40005501	Roller chain flexible coupling	1
11.	11205970	Cover plate	1
12.	90000412	Inlet hopper	1
13.	90000394	Top panel	1
14.	92000602	Airbag support	1
15.	80025504	Airbag	1
16.	70001007	Clamp ring, 8"	1
17.	80025506	Replacement urethane seal strips (One set of six)	1

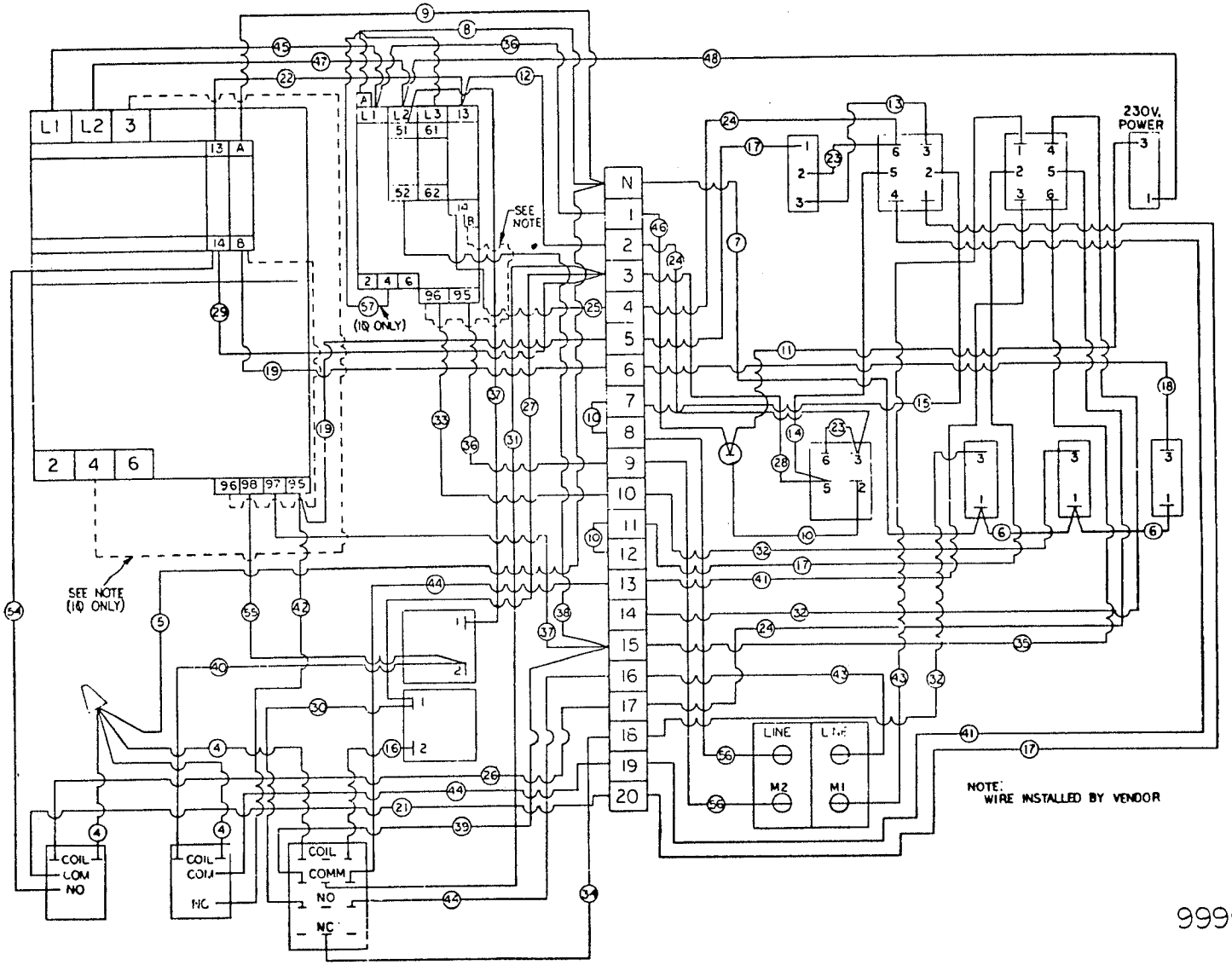
Feed Pump Lubrication Chart

Component	Oil	Grease	Interval
1. Blower	Mobil #1	#2 bearing grease	6 months
2. Gear reducer	Mobil SHC634	---	6 months
3. Motor	---	#2 bearing grease	6 months
4. Chain coupling	Shop oil	---	3 months
5. Feeder	---	Sealed bearings	---

CONTROL PANEL PARTS LIST

Item	Part Number	Description	Qty.
1.	31008008	Pressure switch	1
2.	31009005	Terminal block	21
3.	31016101	Contactor - 16 amp	1
	31016105	Auxiliary contact block 1P.-N.C.	1
	31016108	Overload relay 3.8-6.O A	1
4.	80010501	Snap-in blank	6
5.		10 hp, 1 Ø	
	31016104	63 amp contactor	1
	31016113	Overload relay 25-43 amp	1
		10 hp, 3 Ø	
	31016102	25 amp contactor	1
	31016112	Overload relay 20-30 amp	1
		15 hp, 3 Ø	
	31016103	40 amp contactor	1
	31016113	Overload relay 25-43 amp	1
6.	31010507	Time delay, 20 seconds	2
7.	32350172	Control relay (DPDT, 110v)	2
8.	32550172	Control relay (3PDT, 110v)	1
9.	31001033	Fuse holder	1
	31001032	Slow-blow fuse, 1 amp	1
10.	53039027	Female branch "T"	1
11.	11204182	Tubing, ¼" OD	1
12.	80014001	Polyurethane tape	64"
13.	53035004	Elbow (tube to female)	1
14.	56100101	Pressure gauge	1
15.	31008021	Start & stop switch	1
16.	31005505	Indicator light (yellow)	1
17.	31005504	Indicator light (green)	2
18.	70004501	Door latch	1
19.	31005507	Indicator light (red) 220v	1
20.	31008022	Selector switch, DPDT	1
21.	80003528	Decal, schematic	1
22.	31008003	Selector switch, DPDT (center off)	1
23.	31008026	Switch, SPDT (on-none-on)	1

WIRING DIAGRAM - 3.5" FEED PUMP
CONTROL PANEL



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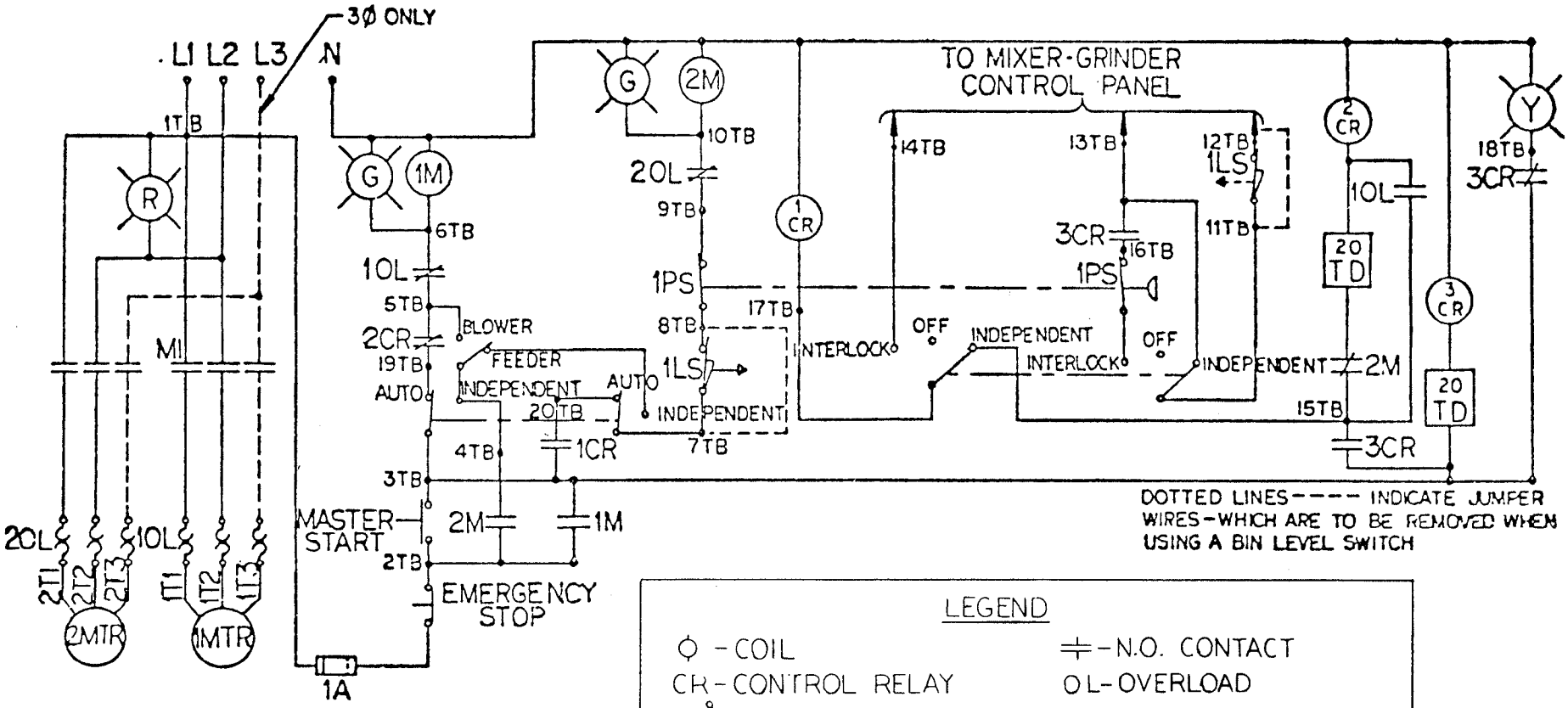
CONTROL PANEL WIRE LEAD PARTS LIST

Item	Part Number	Description	Qty.
4.	36001804	#16 white 1 T x 4"	3
5.	36002612	#16 white 1 T x 12"	1
6.	36012604	#16 white 2 T x 4"	2
7.	36012625	#16 white 2 T x 26"	1
8.	36002606	#16 white 1 T x 6"	1
9.	36002612	#16 white 1 T x 12"	1
10.	36112604	#16 black 2 T x 4"	3
11.	36112612	#16 black 2 T x 12"	1
12.	36502607	#16 yellow 1 T x 7"	1
13.	36212604	#16 red 2 T x 4"	1
14.	36212606	#16 red 2 T x 6"	1
15.	36212621	#16 red 2 T x 22"	1
16.	36221206	#16 red 2 T x 6"	1
17.	36412622	#16 blue 2 T x 22"	3
18.	36412624	#16 blue 2 T x 24"	1
19.	36402610	#16 blue 1 T x 10"	2
21.	36421212	#16 blue 2 T x 12"	1
22.	36500008	#16 yellow 0 T x 8"	1
23.	36512604	#16 yellow 2 T x 4"	2
24.	36512622	#16 yellow 2 T x 22"	3
25.	36502606	#16 yellow 1 T x 6"	1
26.	36521211	#16 yellow 2 T x 11"	1
27.	36612616	#16 orange 2 T x 16"	1
28.	36612626	#16 orange 2 T x 22"	1
29.	36602612	#16 orange 1 T x 12"	1
30.	36621208	#16 orange 2 T x 8"	1
31.	36621212	#16 orange 2 T x 12"	1
32.	36712622	#16 purple 2 T x 22"	3
33.	36702604	#16 purple 1 T x 4"	1
34.	36721207	#16 purple 2 T x 7"	1
35.	36812622	#16 pink 2 T x 22"	1
36.	37102607	#14 black 1 T x 7"	1
37.	36802610	#16 pink 1 T x 10"	2
38.	36802616	#16 pink 1 T x 16"	1
39.	36821207	#16 pink 2 T x 7"	1
40.	36821208	#16 pink 2 T x 8"	1
41.	36912622	#16 brown 2 T x 22"	2
42.	36901805	#16 brown 1 T x 5"	1
43.	36920223	#16 brown 2 T x 23"	2
44.	36921209	#16 brown 2 T x 9"	3
45.	37100008	#14 black 0 T x 8"	1
46.	37112624	#14 black 2 T x 24"	1
47.	37200010	#14 red 0 T x 10"	1
48.	37202627	#14 red 1 T x 30"	1
54.	36501811	#16 yellow 2 T x 11"	1
55.	36802607	#16 pink 1 T x 7"	1
56.	36220221	#16 red 2 T x 22"	2
57.	37100010	#14 black 0 T x 10"	1

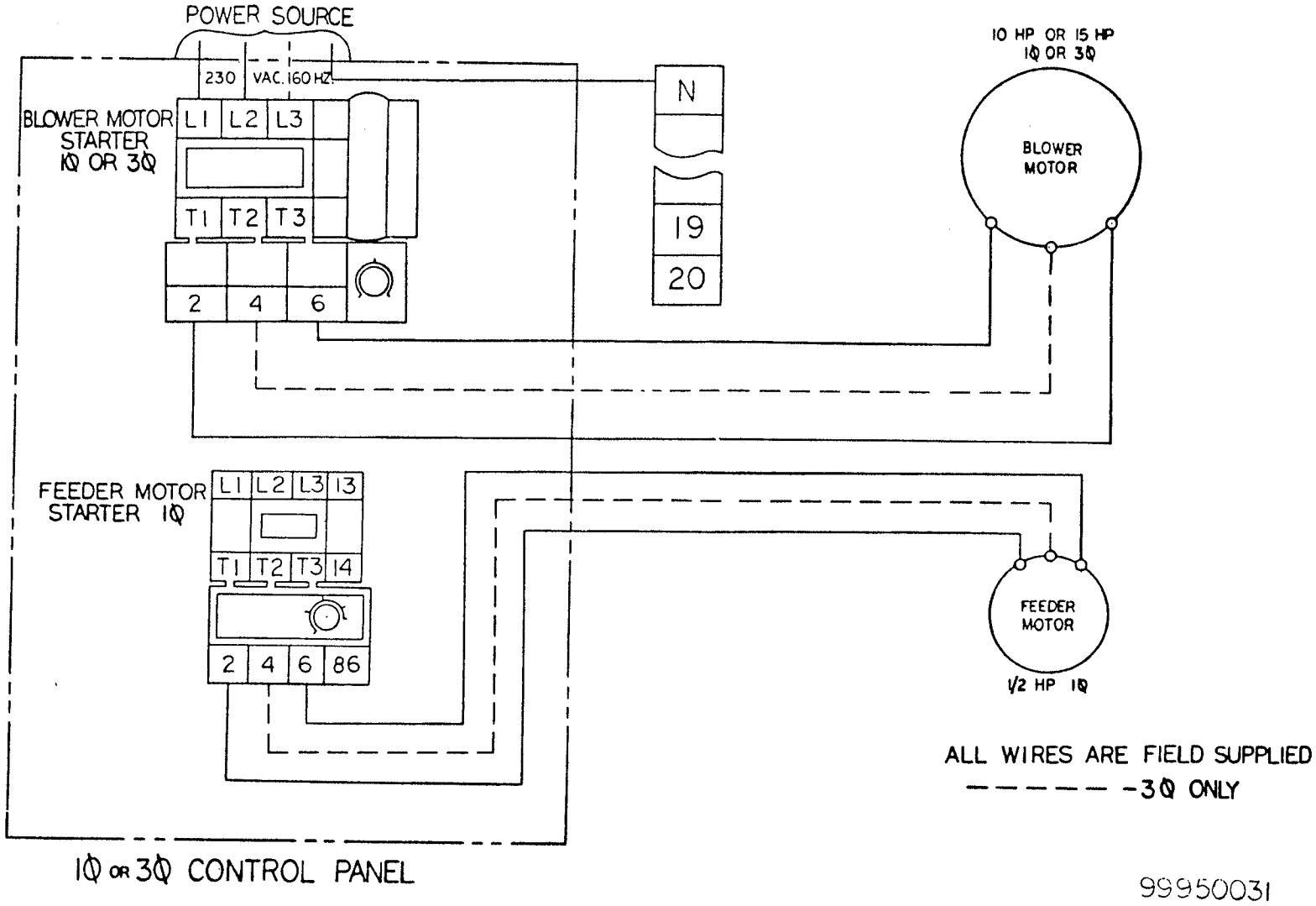
SCHEMATIC DIAGRAM
CONTROL PANEL



LEGEND

○ - COIL	⊣⊢ - N.O. CONTACT
CR - CONTROL RELAY	OL - OVERLOAD
- D. P. D.T.	- PUSH BUTTON N.C.
- D.P.S.T. PRESSURE SW.	- PUSH BUTTON N.O.
- FUSE	- S.P.S.T. BIN LEVEL
- LIGHT	TB - TERMINAL BLOCK
- MOTOR	- THERMAL OVERLOAD
- N.C. CONTACT	TD - TIME DELAY

WIRING DIAGRAM - 3.5"
PANEL TO 1Ø OR 3Ø FEED PUMP



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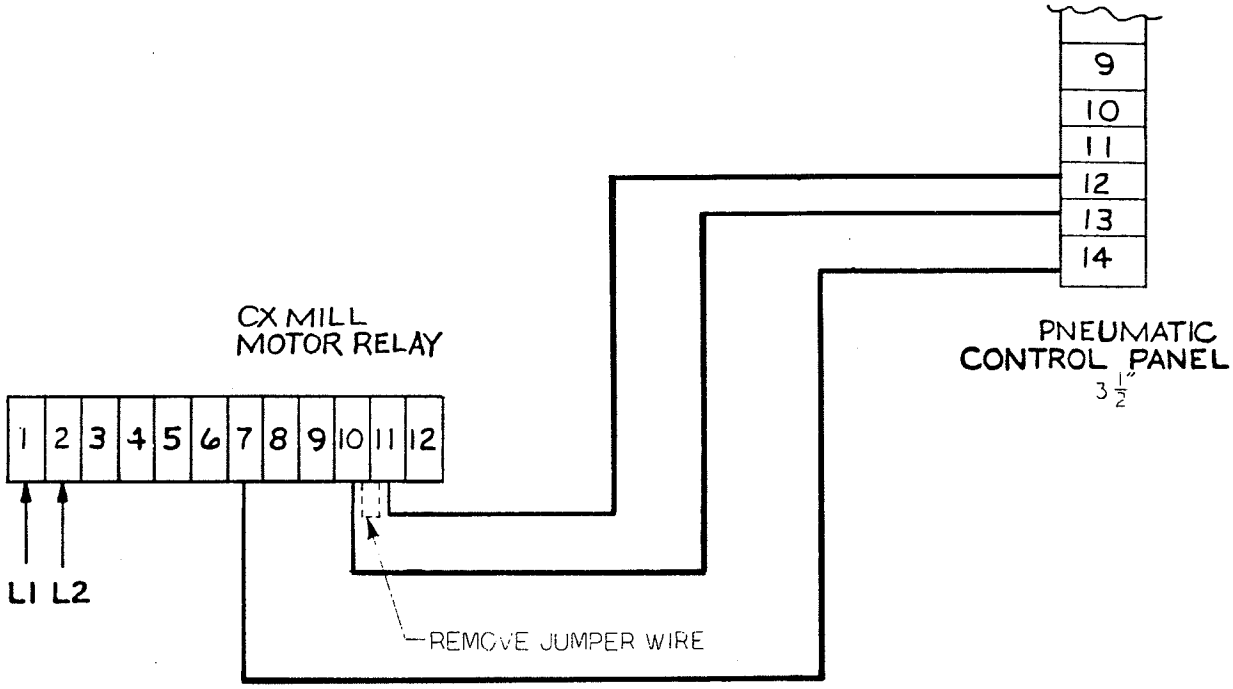
WIRING DIAGRAM - 3½"
PNEUMATIC PANEL - 'CX' MILL PANEL 1Ø & 3Ø



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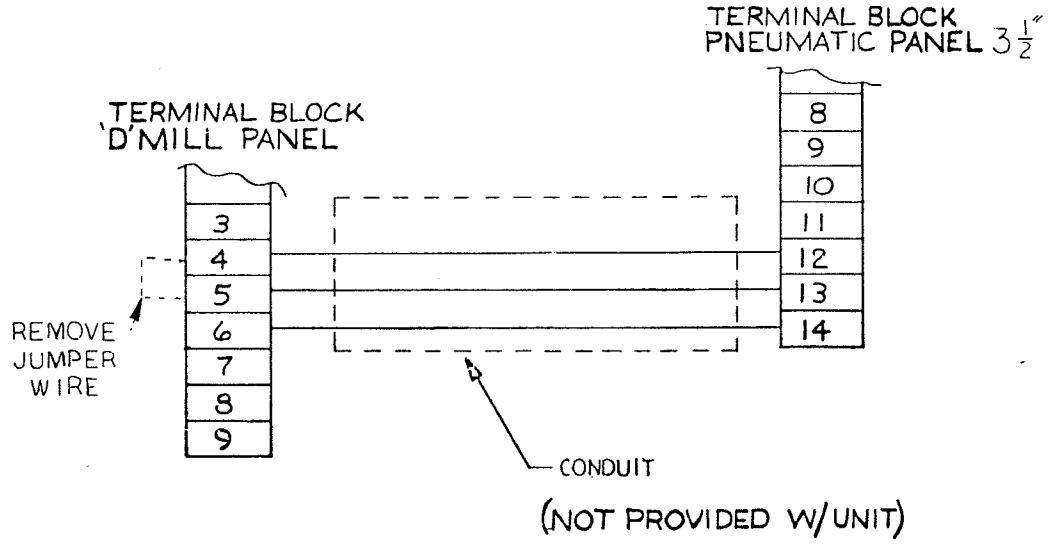
WIRING DIAGRAM - 3½"
PNEUMATIC PANEL - 'D' MILL PANEL 1Ø & 3Ø



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