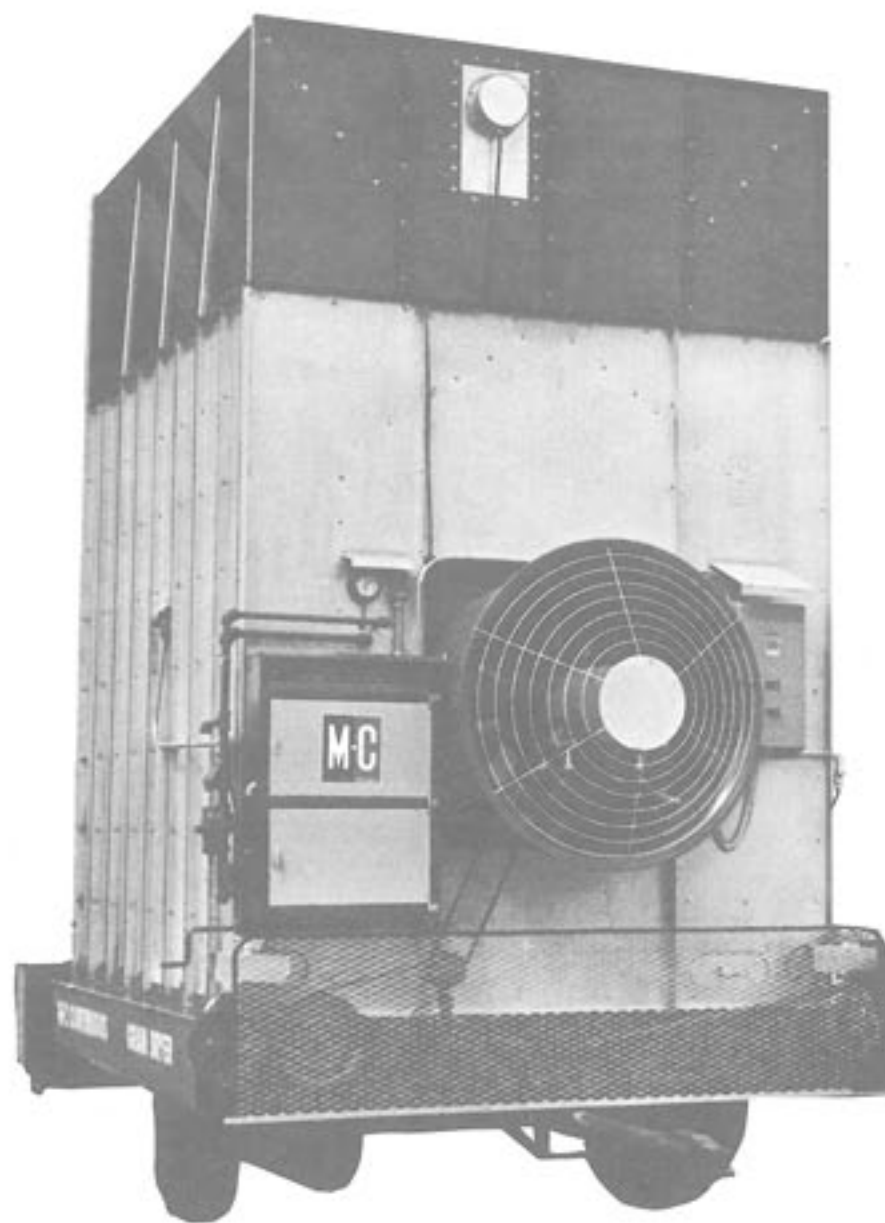




**CONTINUOUS  
GRAIN DRYER**

**ASSEMBLY-OPERATION AND  
MAINTENANCE INSTRUCTIONS**



**MODELS  
320 E  
320B-10**

**DM 74**

**MATHEWS COMPANY**

**CRYSTAL LAKE ILL., 60014-U.S.A.**

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## INSTRUCTIONS FOR ORDERING PARTS:

1. ALL PARTS MUST BE ORDERED FROM YOUR DEALER.
2. GIVE MODEL NUMBER and SERIAL NUMBER that is stamped on the NAMEPLATE of your machine.
3. Order from your PARTS LIST, found below each illustration, as this is the ONLY means we have of identifying the parts you need. Order by the QUANTITY DESIRED, the PART NUMBER and the DESCRIPTION OF THE PART.

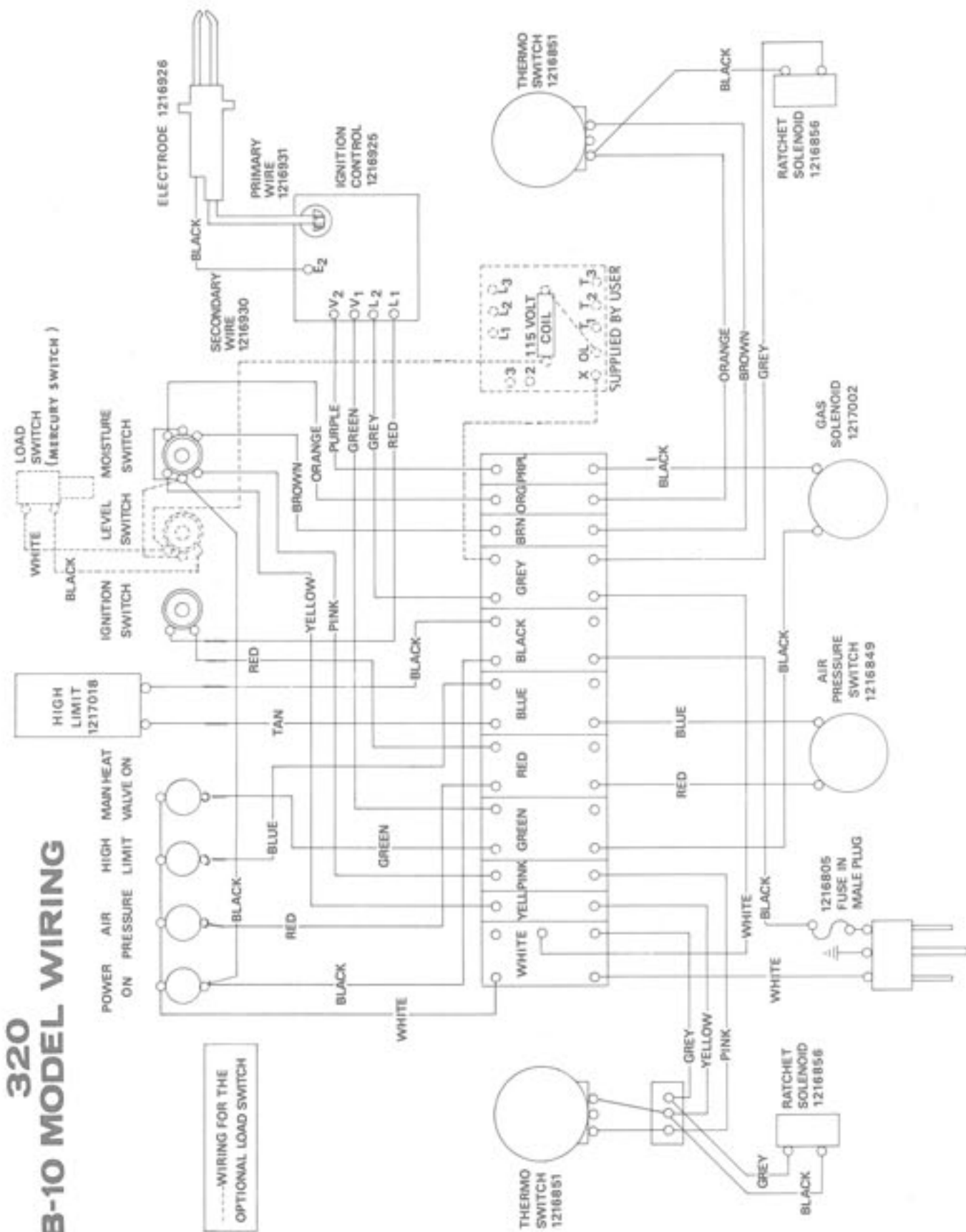
### NOTE

The Company reserves the right to incorporate any changes in design without obligation to make these changes on units previously sold.

## OWNERS NOTICE

TO INSURE WARRANTY CLAIMS, BE CERTAIN TO FILL OUT AND MAIL WARRANTY CARD WITHIN 30 DAYS.

# 320 B-10 MODEL WIRING



# SET UP INSTRUCTIONS

## NOTE

The end of the dryer with the fan is considered the front. Left and Right is determined by standing behind the dryer and looking at the rear door.

- Place dryer in a level position.
  - Permanent installation: Remove pole and wheels and place dryer on concrete slab or pier with a plank between concrete and skids. Anchor dryer down.
  - For Portable or Temporary installation: Place planks under full length of skids. Remove wheels or dig holes for wheels. Full weight of dryer must rest on the dryer skids. Dryer should be anchored down when empty.
- Install Ratchet Assemblies and Guards.
- Install Variable Drive Arm Assembly.
- Install Wet Holding Hopper.
- Install Cross Auger.
- Install all guards and shields.
- Connect GROUNDED THREE line 115 volt power to control cabinet using male (fused) and female electrical plugs shipped with dryer. When electrical connection is made, light #1 (power on) and

#3 (high limit switch) on control panel should come on.

- On "E" model dryer connect powerline for motor to the magnetic starter in the starter box.
- Connect gas supply to machine.

A. L.P. Gas - Advise your L.P. gas supplier that the dryer takes liquid from the tanks (not vapor). When the gas system is connected to the dryer, be sure an Excess Flow Valve is installed at the tank, preferably the one furnished with the machine as it will shut off quicker (in case of line breakage) than those normally furnished by the gas supplier. In any case NEVER have two Excess Flow Valves on the same line.

Use a minimum of 1/2" ID gas line between tank and dryer. On runs over 100 feet use a 3/4" ID diameter line. Connect the gas line from the tank to the short flexible hose on the dryer.

Gas pressure used should be kept as low as possible to maintain drying temperature; HOWEVER, never less than 5 pounds as indicated on pressure gauge.

B. Natural Gas - A minimum of 5 lbs. of operating pressure is required on all models. Use minimum two-inch line from Natural Gas regulator to dryer. Use reducing bushing to 1-1/4" just before connecting to pipe outside dryer control cabinet.

## DANGER!

- KEEP ALL SHIELDS IN PLACE.
- DISCONNECT POWER SOURCE TO ADJUST OR SERVICE.
- MAKE CERTAIN EVERYONE IS CLEAR OF EQUIPMENT BEFORE APPLYING POWER.
- KEEP HANDS, FEET, AND CLOTHING AWAY FROM POWER DRIVEN PARTS IN MOTION.

FAILURE TO HEED MAY RESULT  
IN PERSONAL INJURY

# OPERATING INSTRUCTIONS

1. Make sure all safety shields and guards are in place.
2. Turn off Ignition Switch.
3. Turn off all gas valves.
4. Dryer must operate at 5 lbs. gas pressure. To prevent problems caused by excessive gas pressure loosen Pressure Regulator screw to reduce gas pressure to zero. Also loosen Modulating Valve handle. (Explanation) Dryers are sometimes tampered with and the Modulating Valve handle may have been turned down resulting in a wide open condition.
5. Turn on Level Auger Switch (or load switch) to the automatic position.
6. Fill dryer with grain.
7. Slowly open gas valve at LP tank and check for leaks.
8. Start fans when dryer is full. Light #2 (Air Pressure Switch) on control cabinet will come on. (Trouble see page 6.)
9. Open Flip Valve on LP models.

## STARTING BURNER

10. INITIAL START UP OF NEW DRYER. Turn on the Ignition Switch to start burner. (Light #4 Main Heat Valve will come on.) Partially open Hand Valve and turn Pressure Regulator screw until 5 lbs. of pressure has been reached. (Only turn Pressure Regulator screw when Main Heat Valve light is on.) If Ignition does not take place in 6 or 7 seconds, turn off Ignition Switch, wait one minute and repeat cycle.

### NOTE

The start up procedure is critical because the liquid gas must be vaporized. Excess gas flow at the start will cause freeze ups. That is why you must start with a slightly open Hand Valve. Once the burner is going, the heat causes vaporization and a steady-controlled heat is established. The Hand Valve can now be fully opened. Repeat cycle if ignition fails or freeze up occurs.

## SETTING TEMPERATURE

11. The temperature is regulated by the Modulating Valve. To increase the temperature, turn the

handle in. To reduce the temperature, turn the handle out. (See reference 21, Page 3 for operating temperatures of various grains.)

## SHUT-OFFS AND RESTARTS

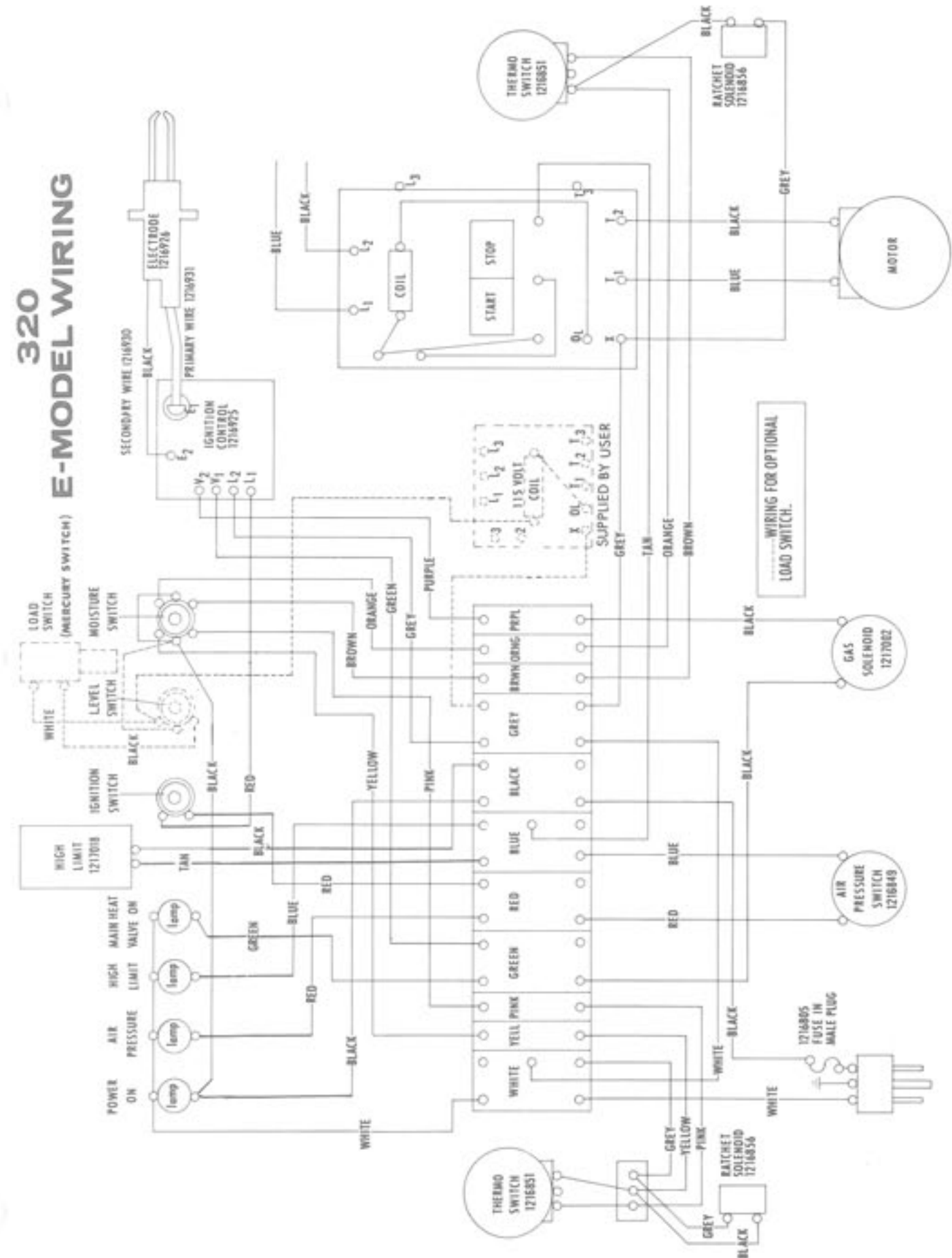
12. After initial operation over several hours of running, the Pressure Regulator and Modulating Valve will be functioning properly. When stopping the dryer, shut off the heat and let the grain cool. (Turn off Ignition Switch and run fans for 15 to 20 minutes with cool air.) Shut off Hand Valve, Flip Valve, and Tank Valve on LP models. To restart, open Tank Valve, Flip Valve, turn on Ignition Switch, and gradually open Hand Valve. Remember to open Hand Valve gradually to prevent freeze ups.
13. The cooling section of the dryer will have wet grain in it, and will not be dried on the first run. This grain will have to be recycled back into the heating section.
14. Make sure Automatic Moisture Control Switch is in "Off" position. In order to dry all the corn in the upper section, it will require approximately one hour of continuous heat to dry the first load from 30% to 12% moisture.
15. For safe bin storage, the grain is normally dried to 13% moisture. After one hour of drying on the first load, turn Moisture Control Switch to "Manual" position. This will engage Ratchet Solenoids and begin unloading the grain. When grain in cooling section has moved through and dried grain begins to auger out, test it for moisture content. If moisture content is too high, slow the unloading down. If moisture content is too low, speed unloading up.
  - A. By turning Variable Crank arm CLOCKWISE to SPEED UNLOADING and COUNTERCLOCKWISE to SLOW UNLOADING. This is normally used for fine adjustment.
16. To change the speed of unloading, a combination of two adjustments is available.
  - A. By turning Variable Crank arm CLOCKWISE to SPEED UNLOADING and COUNTERCLOCKWISE to SLOW UNLOADING. This is normally used for fine adjustment.

### CAUTION

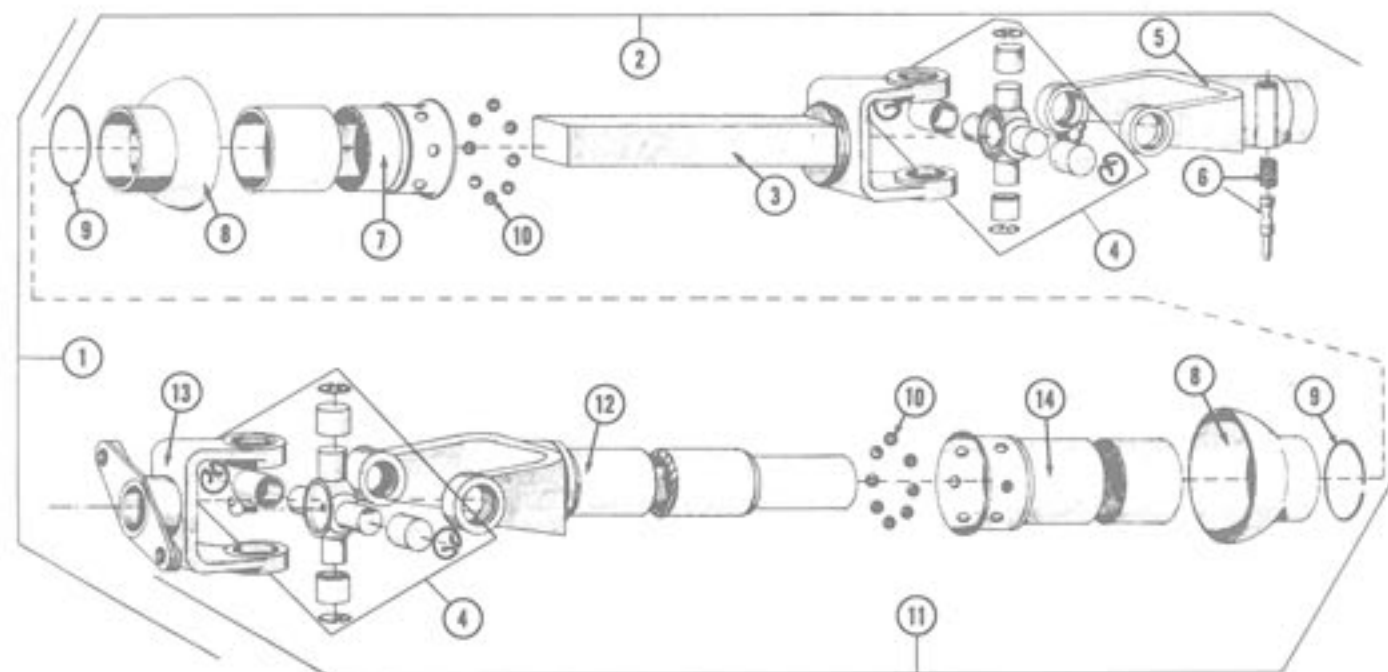
Run through the complete cycle from fast to slow at least once every day when machine is being operated. This will keep all moving parts free. Do not put extreme pressure on belts. ADJUST VARIABLE SPEED PULLEY ONLY WHEN MACHINE IS OPERATING.

- B. The Feed Rolls can be adjusted independently of the side augers by sliding the "Eccentric

## 320 E-MODEL WIRING



# TRACTOR PTO ASSEMBLY NUMBER 0016600



REF	PART NO.	DESCRIPTION	REF	PART NO.	DESCRIPTION
1	0016600	PTO Drive Shaft	9	0026625	External Snap Ring
2	0026620	Tractor Half Assembly w/O. D. Yoke	10	0026606	3/8" Diameter Ball
3	0026627	Male Shaft & Yoke Weldment	11	0026621	Complete Machine Half PTO w/Shear Flange
4	0026628	Universal Joint Repair Kit	12	0026622	Female Shaft & Yoke Weldment
5	0027651	Quick Detachable Yoke, Only	13	0027652	Flange Yoke 1-1/4 Bore
6	0026629	Safety Lock Pin & Spring Kit	14	0026623	Male Guard Tube
7	0026624	Female Guard Tube			
8	0026626	Bell Shield			

Connecting Rod' along the slotted bracket on the Eccentric Sprocket. The Eccentric Sprocket is located at the center of the base on the drive end of the dryer. Moving the Eccentric Connecting Rod TOWARDS THE CENTER of the sprocket will DECREASE the stroke and SLOW down the UNLOADING of the Feed Rolls. Moving it AWAY from the CENTER of the sprocket will INCREASE the stroke and SPEED UP the UNLOADING of the Feed Rolls.

### CAUTION

NEVER MAKE ADJUSTMENT ON SPROCKET UNTIL IT HAS COME TO A COMPLETE STOP.

Normal factory setting is for two teeth. When removing more than 10 points of moisture, it may require slowing down to one tooth. When removing less than 10 points of moisture, it may require speeding up to three or more teeth.

### NOTE

Be careful not to run more grain out of the Feed Rolls than the Side Augers can carry away!

- After your dryer is operating properly and is discharging grain at the desired moisture content for one hour, switch to "Automatic Moisture Control." Turn the "Moisture Control Switch" to Automatic position, then set the Moisture Control on each side of the dryer by turning the indicator knob to the point that will just maintain Feed Roll operation. Most likely each moisture control will have a slightly different setting. Normally they will be set within the limits shown in the following chart.

### APPROXIMATE SETTING FOR SHELLED CORN AND MOST SMALL GRAINS

Thermometer Setting	Set Control Dial At	To Get - Percent Moisture
140°	3.5	13 - 14%
180°	4.0	14 - 15%
180°	4.5	13 - 15%
180°	5.0	12 - 13%

If the moisture content of the grain coming out of the dryer starts to increase, increase the setting of the control one mark at a time until the correct moisture content is reached. Allow ample time between adjustments for machine to correct itself, suggested time to be 1 hour.

Adjust the unloading mechanism to correspond with the rate of feeding of the grain by the automatic control. These adjustments will only be slight if you have had your dryer operating correctly before switching it to "Automatic Moisture Control."

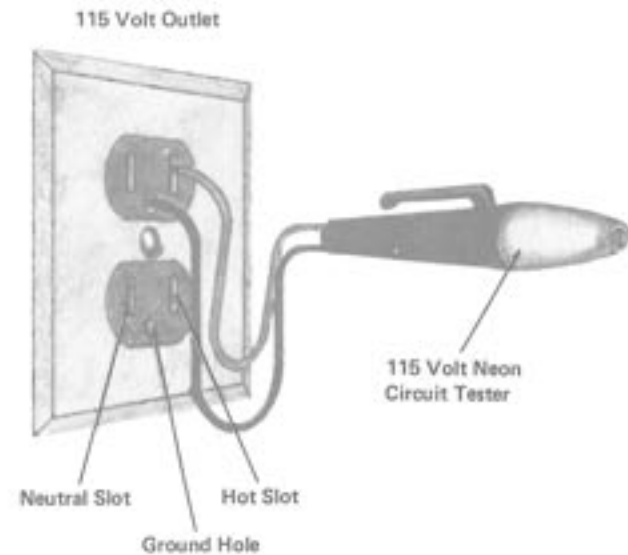
The speed of the Variable Drive should be fast enough to cause the Automatic Moisture Controls to operate intermittently but having the Feed Rolls engaged 85% to 90% of the time. If the unloading mechanism is working too slow, the Moisture Control Solenoids will operate constantly and the grain will come out drier than desired.

- Your dryer is a continuous flow dryer and it is necessary to hold the grain in the dryer for a period of time when finishing a run. Ratchet Pawls should be disengaged as described in Instruction Note 13. This will give the grain remaining in the dryer time to become dried. Then turn Moisture Control Switch to Manual position. Allow about 30 minutes of drying time for high moisture grain (30%) and proportionately less for drier grain.
- If you should accidentally get a foreign object in the grain feeding mechanism, shear pin on Sprocket No. 1216401 at lower left side (as you face drive end of dryer) will help to protect the feeding parts from breakage. Replace this pin when necessary. Do not use hardened shear pins.
- If you have followed the instructions carefully your dryer will operate continuously without watching or adjusting as long as you keep it full of grain.

### 21. DRYING CHART

Types of Grain	Drying Temp.
Corn	180°F to 200°F
Grain Sorghum	160°F to 180°F
Wheat or Oats	160°F to 170°F
Soybeans or Barley	130°F to 140°F

# DRYER ELECTRICAL SYSTEM POLARITY & GROUND TEST



- 1) The right hand slot is hot.
- 2) The ground hole is properly grounded.

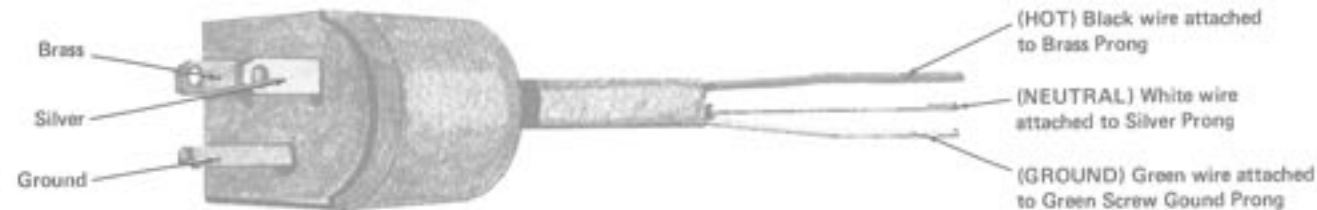
If the Tester does not light when inserted as shown, (AND THIS WAY ONLY) have an electrician look at your service as there is something wired wrong. This is the Standard Electrical Code for all wiring. The reason being that when the Three Prong Fused Plug (pictured below) is inserted into the outlet, The Dryer Electrical System will properly polarized for the Fenwal Ignition System.

### NOTE

If an extension cord is used, it MUST be a Three Wire Cord with a Three Prong Plug and a Three Hole Socket wired to the above code.

On P.T.O. Dryers that have an alternator to supply the 115 Volt power, the Dryer MUST BE PROPERLY GROUNDED.

Using a 115 Volt Neon Circuit Tester, (which can be bought for less than a \$1.00 at most any hardware store) insert as shown. It will light proving two things.



(Above) The Three Prong Fused Male Plug Pig Tail as it comes out of the Dryer Control Cabinet.

## IGNITION

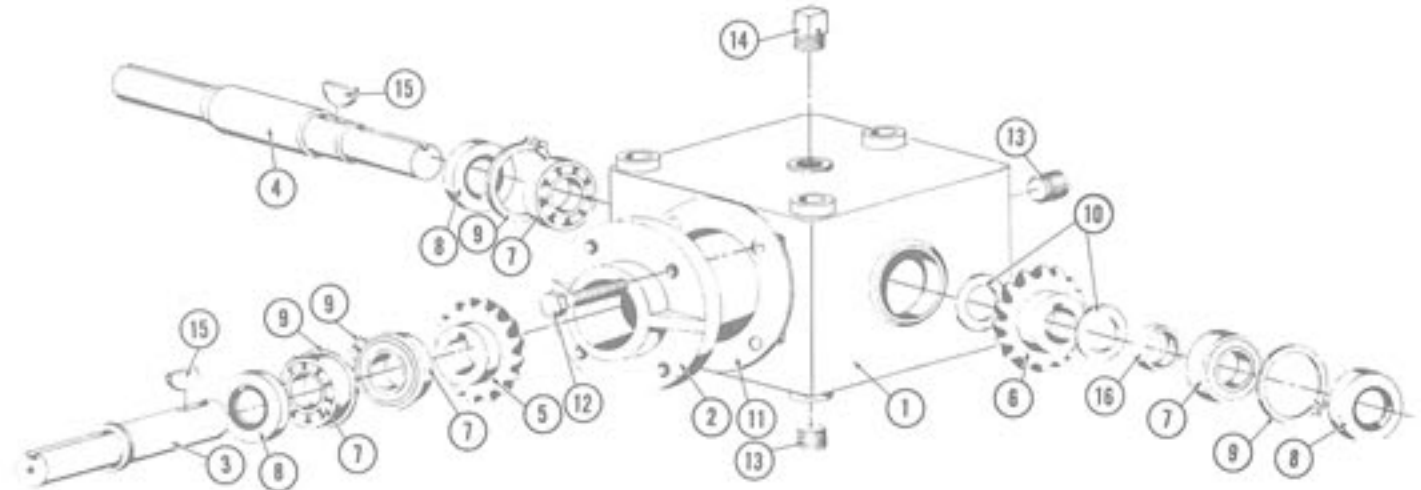
### OPERATION

Upon a call for heat, power is applied to the control board, creating the spark and powering the gas valve. Electronic timing allows the system to continue to spark and hold the gas valve open for a specified trial for ignition period. If a flame is not present at the end of the trial for ignition period, the system will

lockout. If a flame is present, the system will continue to operate; provided the electrodes are immersed in the flame.

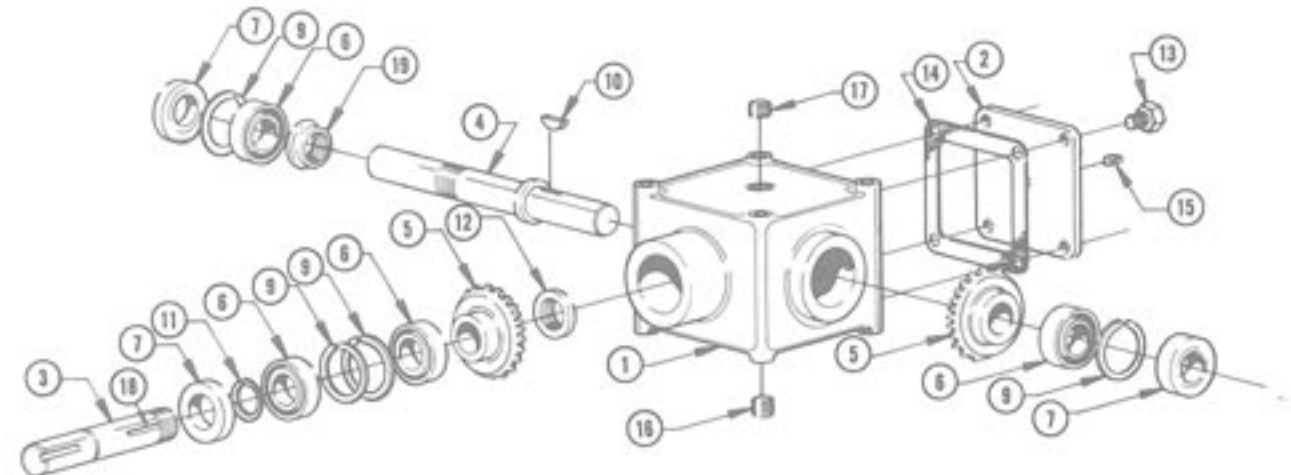
In the spark source, a capacitor is charged and discharged rapidly through the primary of high voltage transformer. The current to charge the capacitor also energizes the valve control circuit so that as long as

## 3 BOLT GEAR BOX ASSEMBLY



REF	PART NO.	DESCRIPTION	REF	PART NO.	DESCRIPTION
1	1226632	Main Housing	10	1228604	Shims
2	1226626	Pinion Housing	11	1228605	Shims
3	1226627	Pinion Shaft	12	1228100	1/4-20 NC x 3/4 Long Hex Cap Screw
4	1226628	Gear Shaft	13	1228003	Pipe Plug
5	1226501	Pinion	14	1228004	Breather Plug
6	1226502	Gear	15	1226630	Key
7	1226005	Bearing	16	1226631	Spacer
8	1226603	Seal			
9	1226629	Snap Ring			

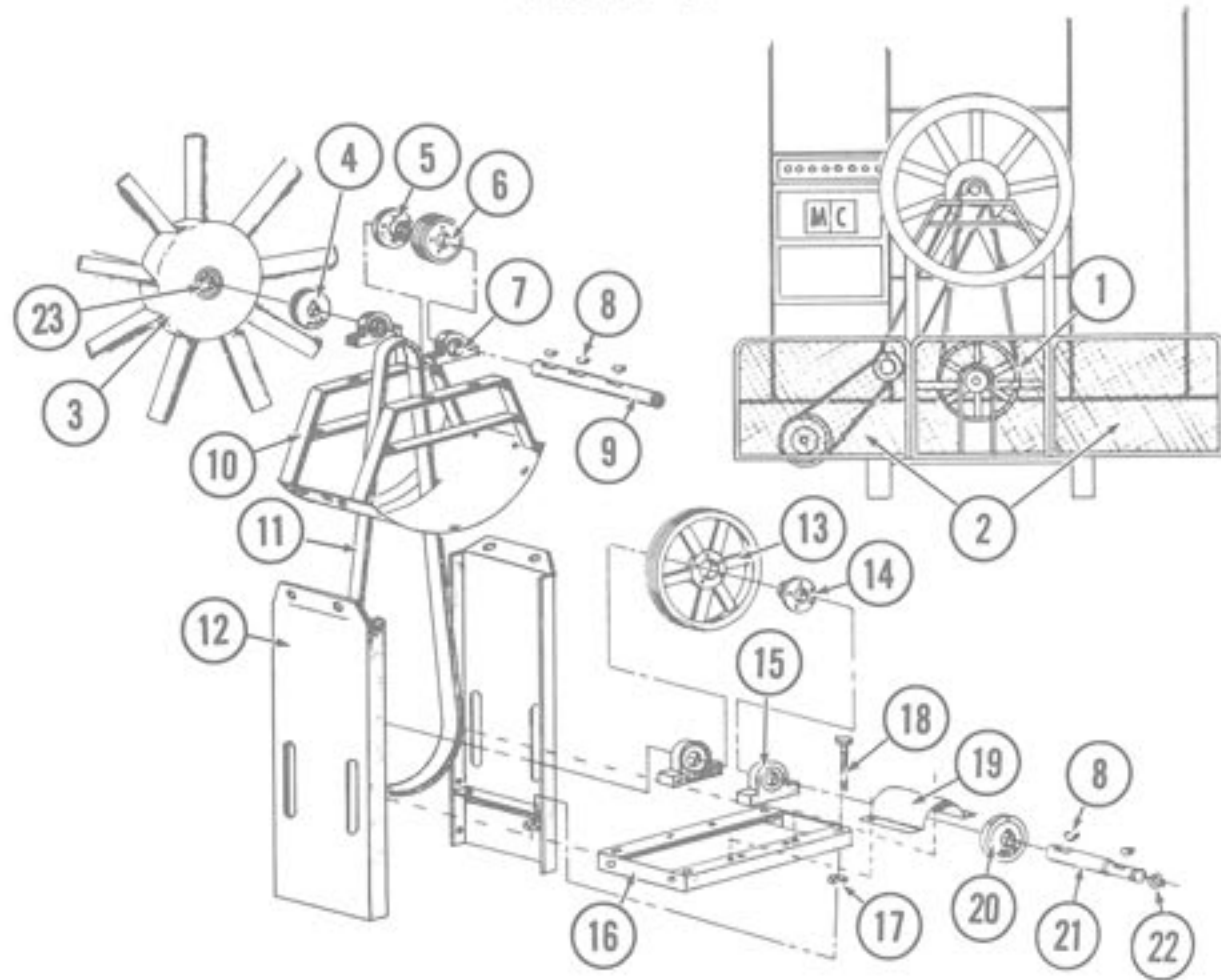
## 4 BOLT GEAR BOX ASSEMBLY



REF	PART NO.	DESCRIPTION	REF	PART NO.	DESCRIPTION
1	1226624	Gear Box Housing	11	1228250	Snap Ring
2	1226625	Gear Box Cover	12	1228256	Stake Nut-(Input)
3	1226623	Input Shaft	13		Cap Screw
4	1226622	Output Shaft	14	1228602	Gasket
5	1226500	Bevel Gear	15	1228000	Level Plug
6	1226003	Bearing Cone	16	1228001	Drain Plug
	1226004	Bearing Cup	17	1228002	Vent Plug
7	1228600	Output-Input Shaft Seal	18	1228253	J41 Key
9	1228251	Snap Ring	19	1228255	Stake Nut-(Output)
10	1228254	Woodruff Key			

# B-10 MODEL DRIVE ASSEMBLY

## Plate 10



REF	PART NO.	DESCRIPTION
1	1213242	Front Center Guard (B-10 Model Only)
2	1213241	Front Guard (B-10 Model Only)
3	1210377	9 Blade Fan
4	1206218	1B4.4 OD x 1-5/8 Bore Pulley
5	1206220	SDS Bushing 1-5/8 Bore
6	1206217	3V5.0 4-Groove Pulley
7	1216003	Fan Shaft Bearing 1-5/8 Bore
8	0018998	Woodruff Key 3/8 x 1-1/4
9	1215078	Fan Shaft
10	1210359	Bearing Pedestal Weldment
11	1216114	Power Band Belt
12	1210376	Orifice Support Weldment
13	1216235	4/3V19.0 Pulley
14	1236216	SF Bushing 1-5/8 Bore
15	1216003	Fan Shaft Bearing x 1-5/8 Bore
16	1210358	Jack Shaft Mount Weldment
17	0008170	1/2-13 Whiz Nut
18	1208160	1/2-13 x 12" Full Thread HHCS
19	1214816	PTO Shield
20	0017650	Shear Flange x 1-1/4 Bore
21	1215079	Jack Shaft
22	0018250	1-1/4 Snap Ring
23	1216229	Fan Hub Adapter

this action continues, the valve will remain open. The capacitor is discharged by a solid state switch, triggered by a neon circuit.

The flame detector monitors the spark current and the flame conductance to ground. If the spark of the flame is not present, feedback to the spark source removes power from the valve control circuit.

### LOCATION OF ELECTRODE TIP

The electrode assembly should be located so that the tips are inside the flame envelope and about 1/2 inch above the base of the flame. **IMPORTANT:** Ceramic insulator should not be within or close to the flame pattern. Study the illustration before positioning the electrodes.

### NOTE

Electrode assemblies are precision components and should not be adjusted or disassembled. Electrodes should have a gap spacing of 0.125" ±0.032". If this spacing is not correct, return the electrode assembly to the factory for replacement. Electrodes within their ceramic casing are **NOT** field adjustable. Adjust only the electrode mounting bracket. **WARNING: HIGH VOLTAGE.**

### SAFETY CHECKS

1. Manually shut off the gas supply and apply power to the control board. The system shall lockout after the trial for ignition period. Check that there is no voltage output between terminals V1 and V2 using a suitable voltmeter or neon tester.
2. Manually open the gas valve and apply power to the control unit. The system shall lockout after the trial for ignition period and there shall be no voltage between terminals V1 and V2 under the following conditions:

- (1) The low voltage electrode is shorted to the ground.
- (2) The high voltage electrode is shorted to ground.
- (3) The electrodes are shorted together.

### NOTE

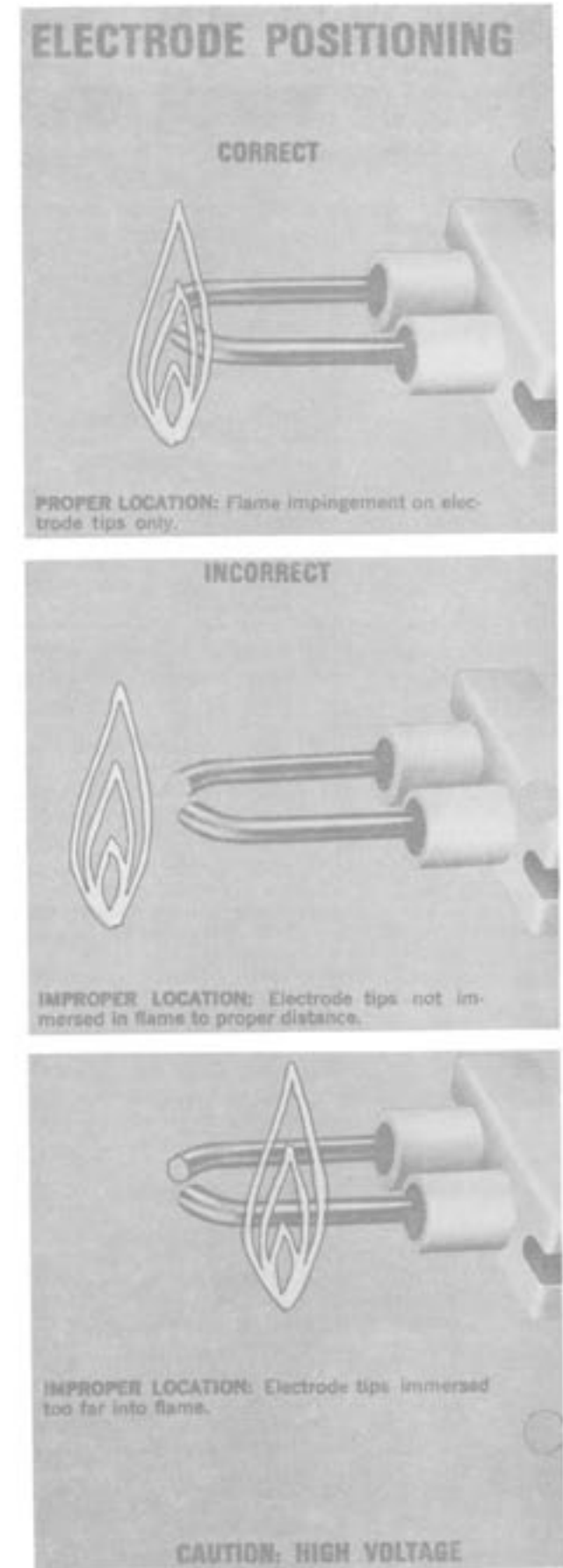
Recycle system before each test.

### CAUTION

Use well insulated screwdriver for shorting electrodes.

### REPAIRS

The Ignition System is not field repairable. Faulty units should be returned to the factory for repair or replacement.



# TROUBLE SHOOTING

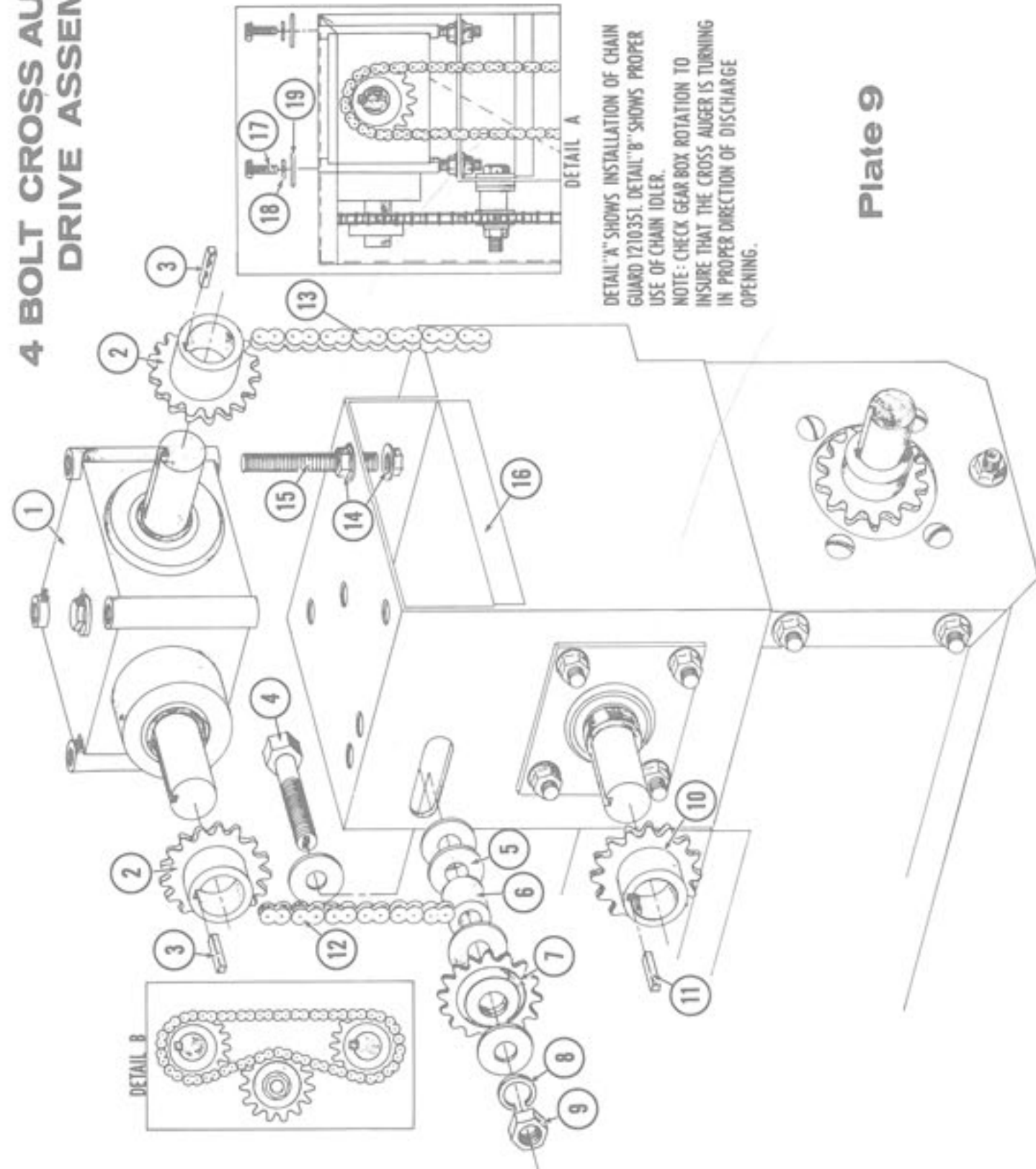
PROBLEM	POSSIBLE CAUSE AND SOLUTION	PROBLEM	POSSIBLE CAUSE AND SOLUTION
1. Lights do not work.	(a) No electricity. Light bulbs burned out. (b) Fuse blown. (c) Broken or loose wire.		(h) Air Pressure Switch not functioning. (i) Broken wire from ignition board to electrodes. (j) Ignition board faulty - replace only.
2. High Limit Light does not work.	(a) Light bulb burned out. (b) High Limit tripped out. (Reset by pushing Red Button.) (c) Switch itself burned out. (Replace)	6. Heat shuts off.	(a) Dryer has run low on grain. (b) Modulating Valve faulty. (c) High Limit Control tripped out. (d) Solenoid faulty. (e) Out of gas. (f) Faulty or broken electrodes. (g) Machine not grounded.
3. Electric circuit out of order.	(a) Check circuit with wiring diagram furnished with instructions.		
4. Air Pressure Switch not functioning.	(a) Dryer must be full of grain to operate. If dryer runs out of grain, the air will escape freely and loss of air pressure causes air pressure switch to open circuit. (b) Air tube from pressure switch into dryer may be filled with chaff. (c) Adjust setting for less pressure. To close circuits, turn adjusting screw counterclockwise. CAUTION: DO NOT adjust to point that light will stay on when fans are not running.	7. Not enough heat.	(a) Valves from gas supply are not fully open. (b) Increase pressure at pressure regulator. (On L. P. units, this is set at factory for approximately 7 to 8 pounds. However, to increase gas flow on L. P. units, turn adjusting screw in.) (c) Burner partially plugged. Remove and clean. (d) Hand valve not fully open. (e) Adjust Modulating Valve.
5. If flame does not light. (Fenwal Ignition)	(a) Electrodes not positioned in flame properly. (b) Electric Power not on. (c) 15 AMP fuse in plug, blown. (d) Machine not grounded. Connect 3 prong plug to 115V grounded service. (e) Gas not on. Modulating valve not open far enough. (f) Gas solenoid not opening. (Faulty or loose wire.) (g) High Limit Control (reset) tripped out.	8. Gas lines frosting up.	(a) When first starting burner, open the Main Hand Valve only partially until the unit becomes warm. (b) Gas valve on tank not completely open. (c) Dirty strainer - clean. (d) Check gas line for leaks.
		9. Automatic Moisture Control does not work.	(a) Solenoid is burned out or a wire is broken. Check and make replacement. In the meantime, OPERATE DRYER MANUALLY. (b) Loose or broken wire at solenoid or switch. (c) Switch shorted out.

4-BOLT CROSS AUGER DRIVE ASSEMBLY (PLATE 9)

REF	PART NO.	DESCRIPTION
1	1216605	4-Bolt Gear Box
2	1210405	RC-40 16 Tooth x 1" Bore Sprocket
3	0015116	1/4 sq. x 1 Key
4	0008151	5/8-11 x 3-1/2 HHCS
5	0008176	5/8 Flat Washer
6	0018979	Idler Spacer
7	1216403	Idler Sprocket x 5/8 Bore
8	0008181	5/8 Lock Washer
9	0008164	5/8-11 Hex Nut
10	1206400	RC-40 16 Tooth x 1-1/4" Bore Sprocket
11	0015116	1/4 sq. x 1 Key
12	1216312	74 Pitch Chain
13	1216311	48 Pitch Chain
14	0008168	3/8-16 Whiz Nut
15	1216133	3/8-16 x 2-1/2 Full Thread Stud
16	1254789	Extension Cover Short
17	0008119	3/8-16 x 3/4 HHCS
18	0008179	3/8 Lock Washer
19	0008174	3/8 Flat Washer



## 4 BOLT CROSS AUGER DRIVE ASSEMBLY



DETAIL "A" SHOWS INSTALLATION OF CHAIN GUARD 1210351. DETAIL "B" SHOWS PROPER USE OF CHAIN IDLER.

NOTE: CHECK GEAR BOX ROTATION TO INSURE THAT THE CROSS AUGER IS TURNING IN PROPER DIRECTION OF DISCHARGE OPENING.

Plate 9

## LUBRICATION

All bearings on the grain augers are pre-lubricated and require no further attention. The bearings on the fan shafts of the dryers should be lubricated with regular gun grease every 100 hours of operation.

### CAUTION

DO NOT OVER GREASE.

Excess greasing blows out seals. All other parts - ratchets, ratchet drive and chains, should be oiled

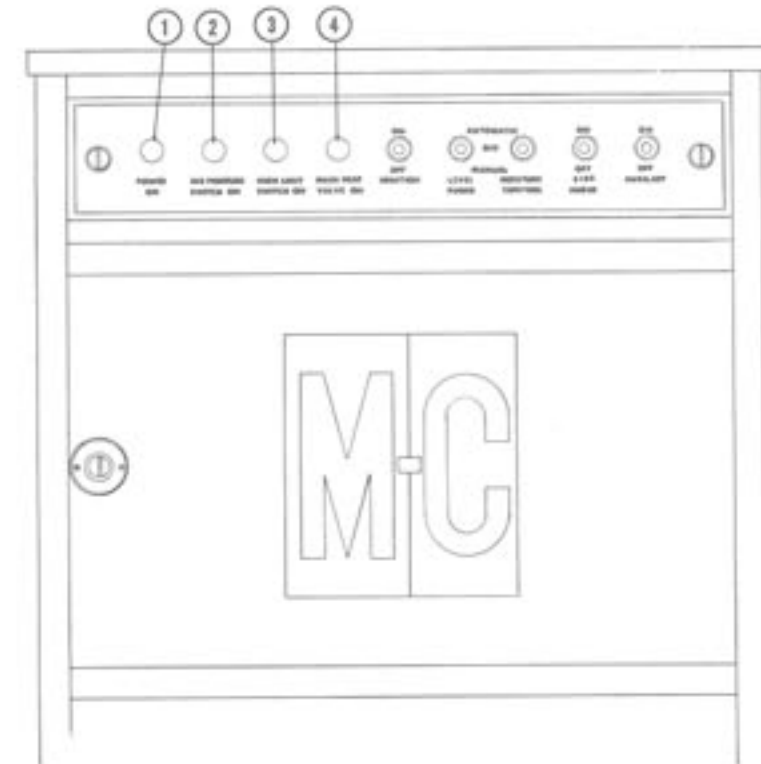
with number 10 oil. When you stop using the dryer, grease and oil all parts.

### NOTE

Be sure to put 90 weight oil in the gear box before operating dryer.

CARE SHOULD BE TAKEN TO AVOID GETTING OIL INTO THE RATCHET PAWL SOLENOIDS OR ON BELTS.

## CONTROL PANEL - ELECTRIC & GAS CONTROL



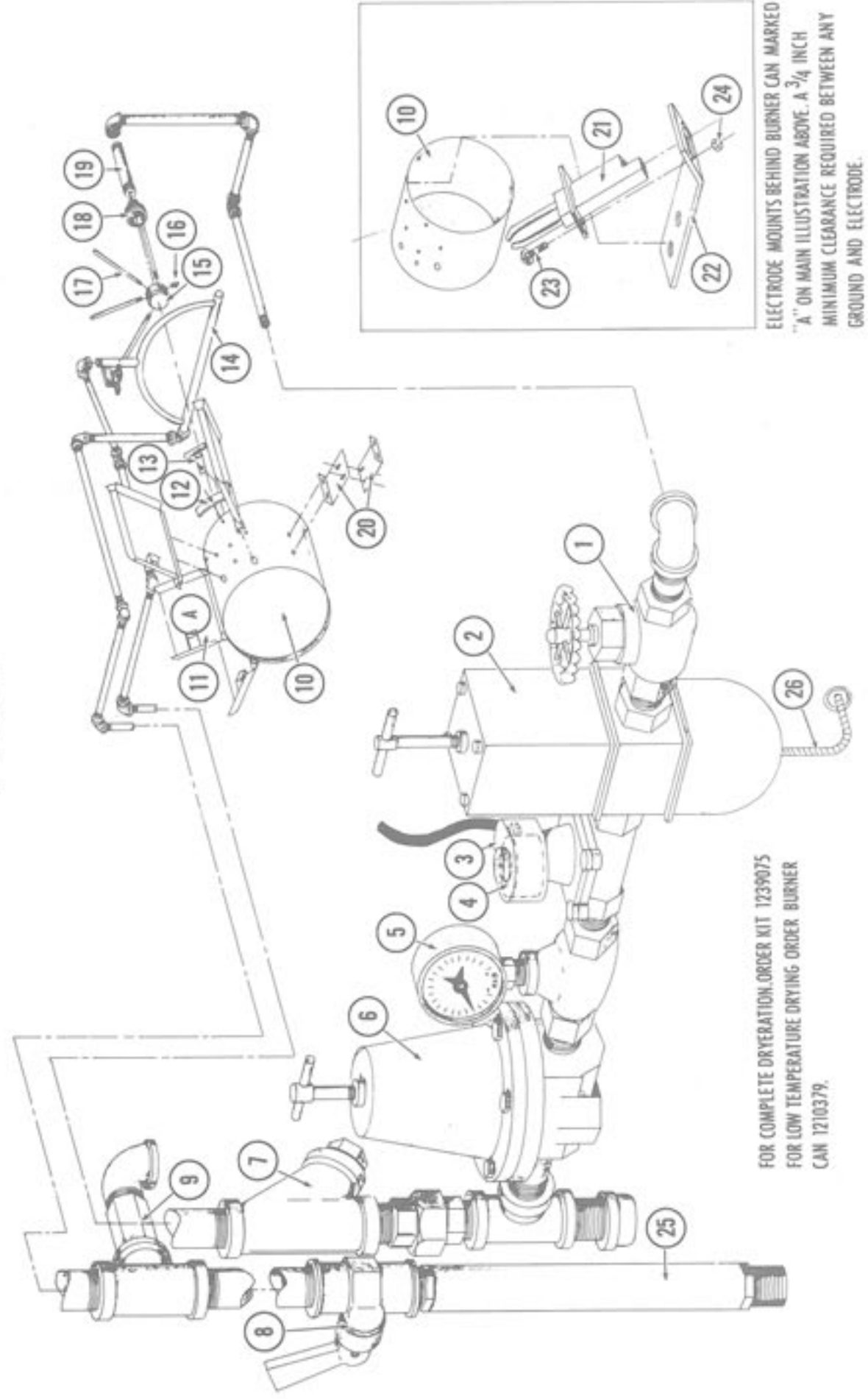
The Control Panel consists of temperature and safety controls. There are four lights wired in series with controls to indicate operation.

### Control Lights:

- No. 1 Lights when electric power is on.
- No. 2 Lights when fan is running (air pressure completes circuit to ignition switch.)
- No. 3 Lights when high limit control circuit is closed. This indicates the high limit temperature safety device is operating.
- No. 4 Lights when Fenwal Ignition Switch is turned on and the electrodes are firing.

# GAS FLOW & CONTROL - LP GAS SYSTEM

## Plate 1



FOR COMPLETE DRYERATION ORDER KIT 1239075  
 FOR LOW TEMPERATURE DRYING ORDER BURNER  
 CAN 1210379.

ELECTRODE MOUNTS BEHIND BURNER CAN MARKED  
 "A" ON MAIN ILLUSTRATION ABOVE. A 2/4 INCH  
 MINIMUM CLEARANCE REQUIRED BETWEEN ANY  
 GROUND AND ELECTRODE.

3-BOLT CROSS AUGER DRIVE ASSEMBLY (PLATE 8)

REF	PART NO.	DESCRIPTION
1	1216605	3-Bolt Gear Box
2	1216406	RC-40 16 Tooth x 5/8" Bore Sprocket
3	0015116	1/4 sq. x 1 Key
4	0008176	5/8 Flat Washer
5	0018979	Idler Spacer
6	1216403	Idler Sprocket x 5/8 Bore
7	0008181	5/8 Lock Washer
8	0008164	5/8-11 Hex Nut
9	0008151	5/8-11 x 3-1/2 HHCS
10	1206400	RC-40 16 Tooth x 1-1/4 Bore Sprocket
11	1216312	74 Pitch Chain
12	1216311	48 Pitch Chain
13	0015110	3/16 sq. x 1 Key
14	0008169	5/16-18 Whiz Nut
15	1218116	5/16-18 x 5-1/2 Full Thread Stud
16	1254789	Extension Cover Short
17	0008173	5/16 Flat Washer

# 3 BOLT CROSS AUGER DRIVE ASSEMBLY

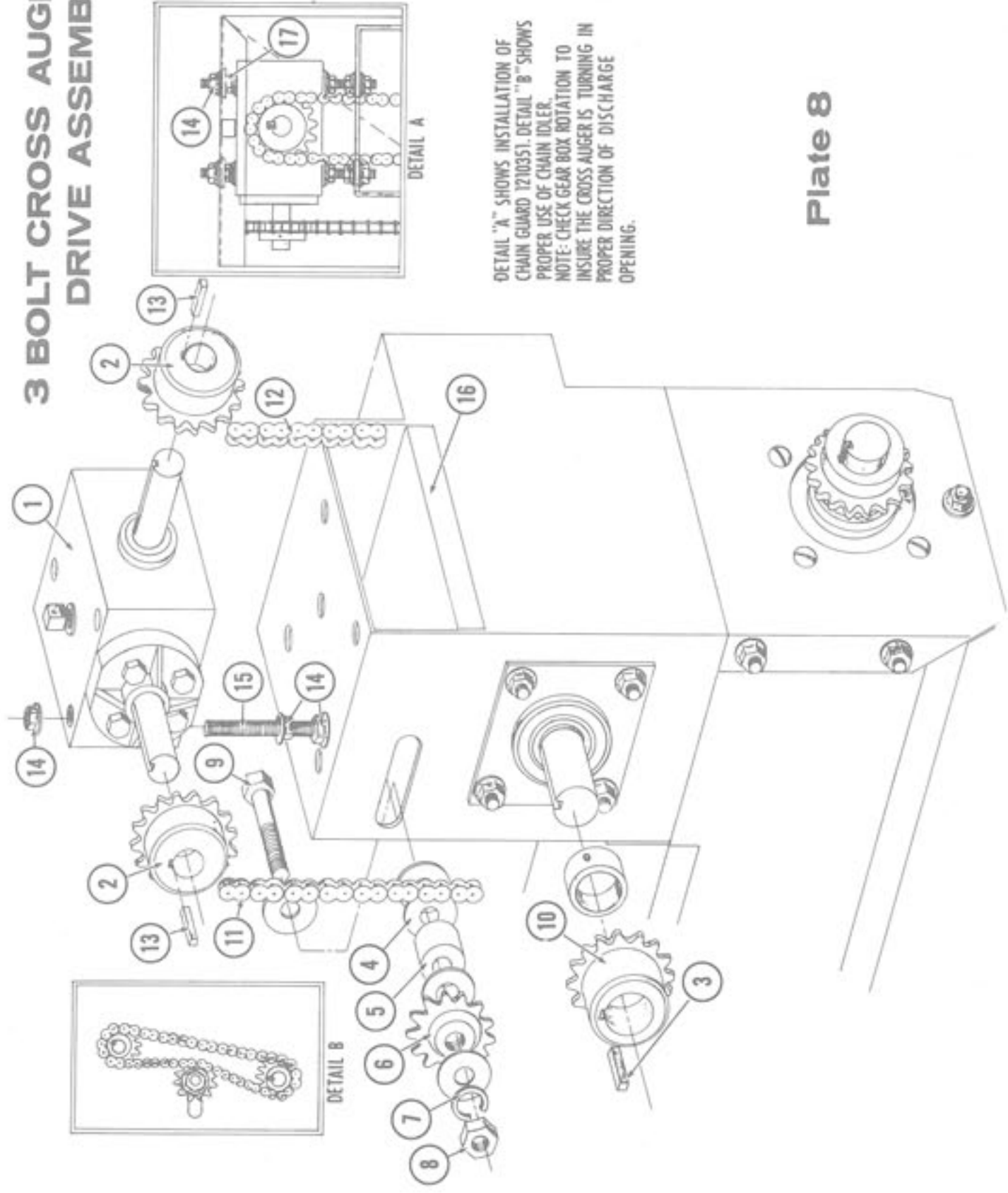
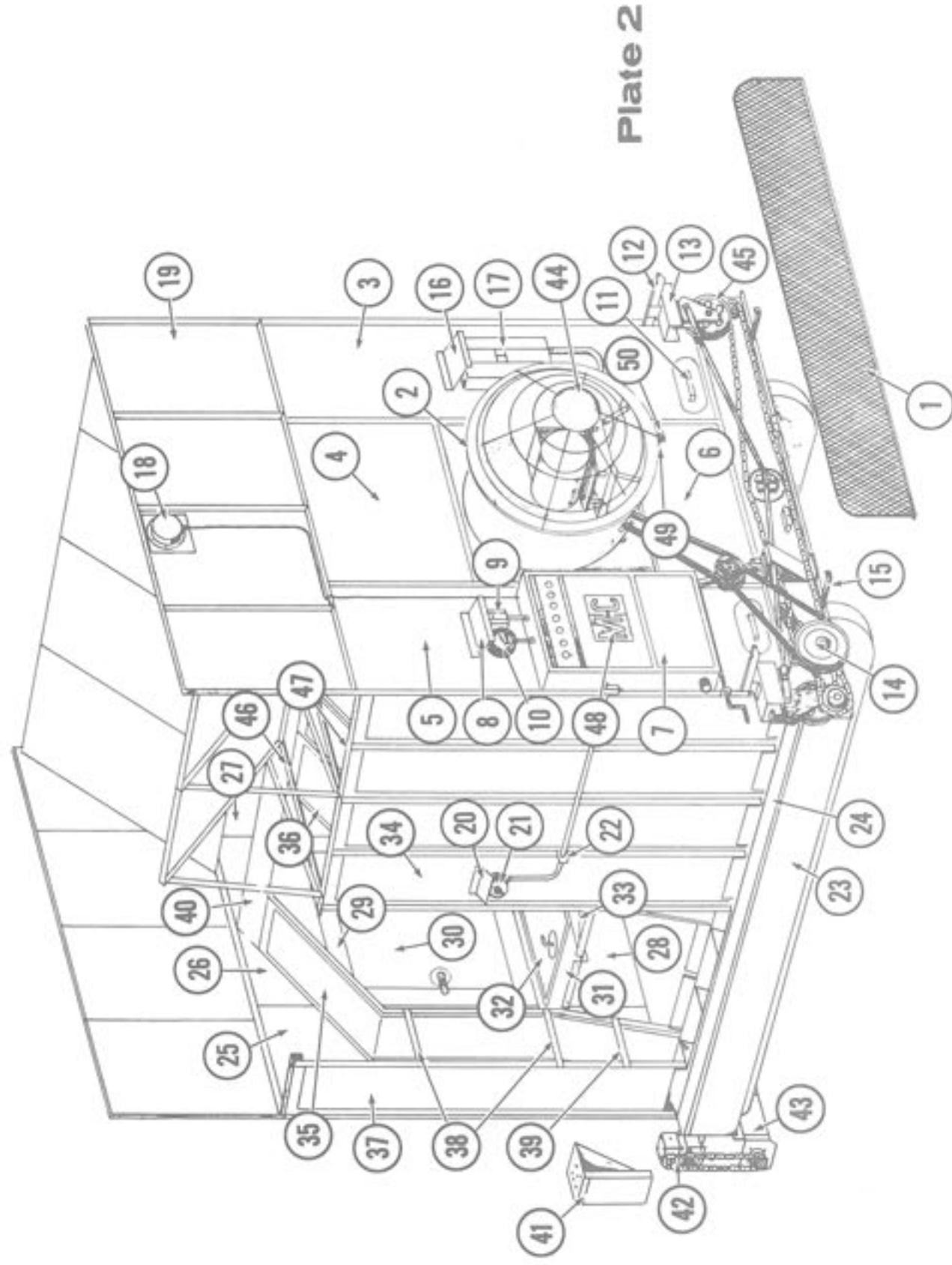


Plate 8

GAS FLOW AND CONTROL LP GAS SYSTEM (PLATE 1)

REF	PART NO.	DESCRIPTION
1	1217011	Hand Valve
2	1217012	Modulating Valve
3	1217002	Main Solenoid Valve
4	1227001	Main Solenoid Replacement Coil
5	1207002	Gas Pressure Dial Gauge
6	1217006	Pressure Regulator
7	1218060	Strainer (LP)
8	1217015	Liquid Line Hand Shut-Off Valve
9	1217013	Pressure Relief Valve
10	1210322	Burner Tube Weldment
11	1210377	Burner Can Weldment
12	1214468	Burner Locator Strip
13	1210316	Ignition Tube Weldment
14	1210349	Vaporizer Weldment
15	1215501	Burner Head
16	1218082	3/8 STD Pipe Plug
17	1215994	Welded Burner Lead
18	1215738	3" to 1-1/4 Reducing Bushing
19	1211168	Orifice Pipe Assembly
20	1214867	Air Chamber Mounting Bracket
21	1216926	Electrode
22	1252840	Electrode Mounting Bracket
23	0008187	6-32 x 3/4 Round Head Screw
24	0008185	6-32 Whiz Nut
25	1217005	Inlet Hose
26	1227002	Modulating Valve Power Element Replacement

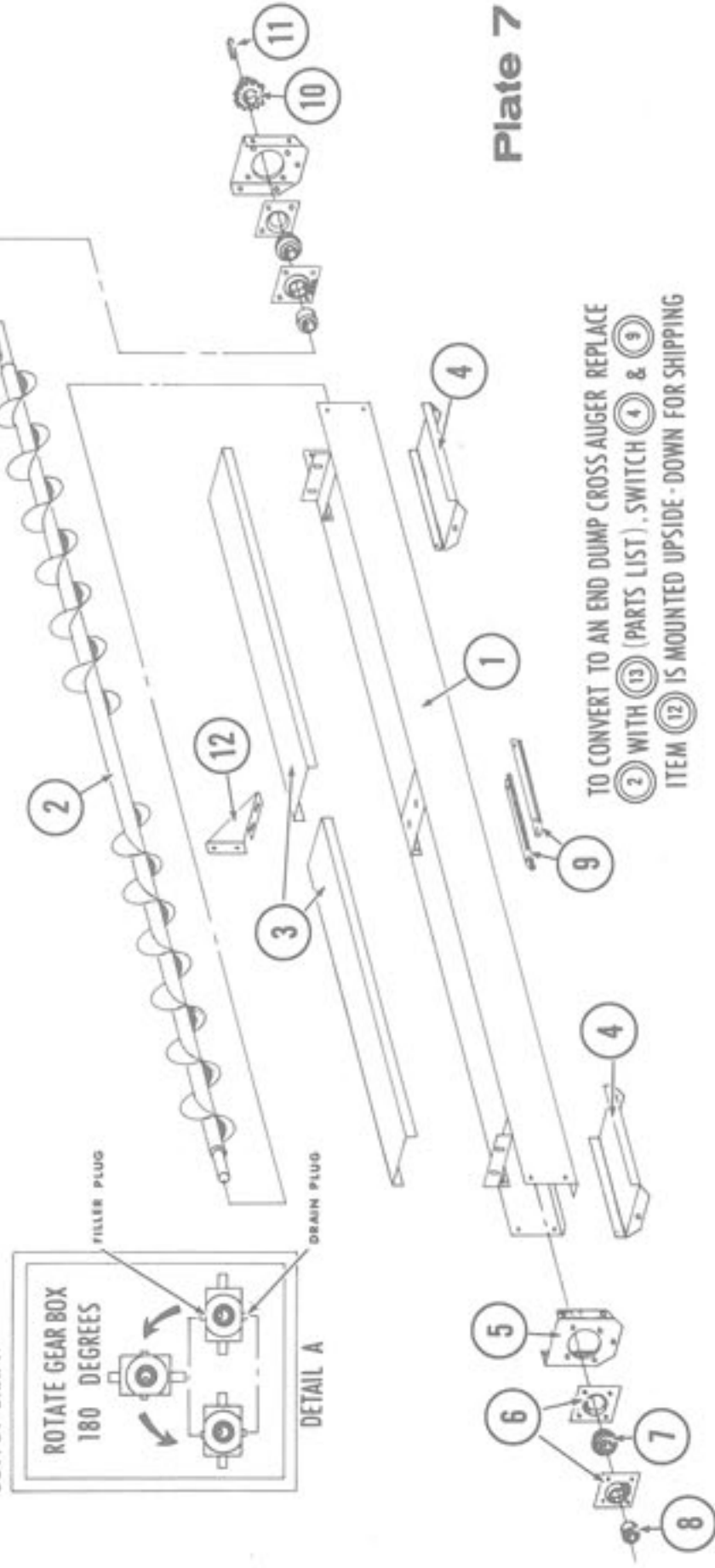
## 320 CUT AWAY ILLUSTRATION



**Plate 2**

## CROSS AUGER ASSEMBLY

FOR RIGHT END DISCHARGE ROTATE GEAR BOX AS SHOWN IN DETAIL "A" BELOW. BE SURE TO INTERCHANGE FILLER & DRAIN PLUGS AND TO CHANGE SPROCKET TO OTHER OUTPUT SHAFT.

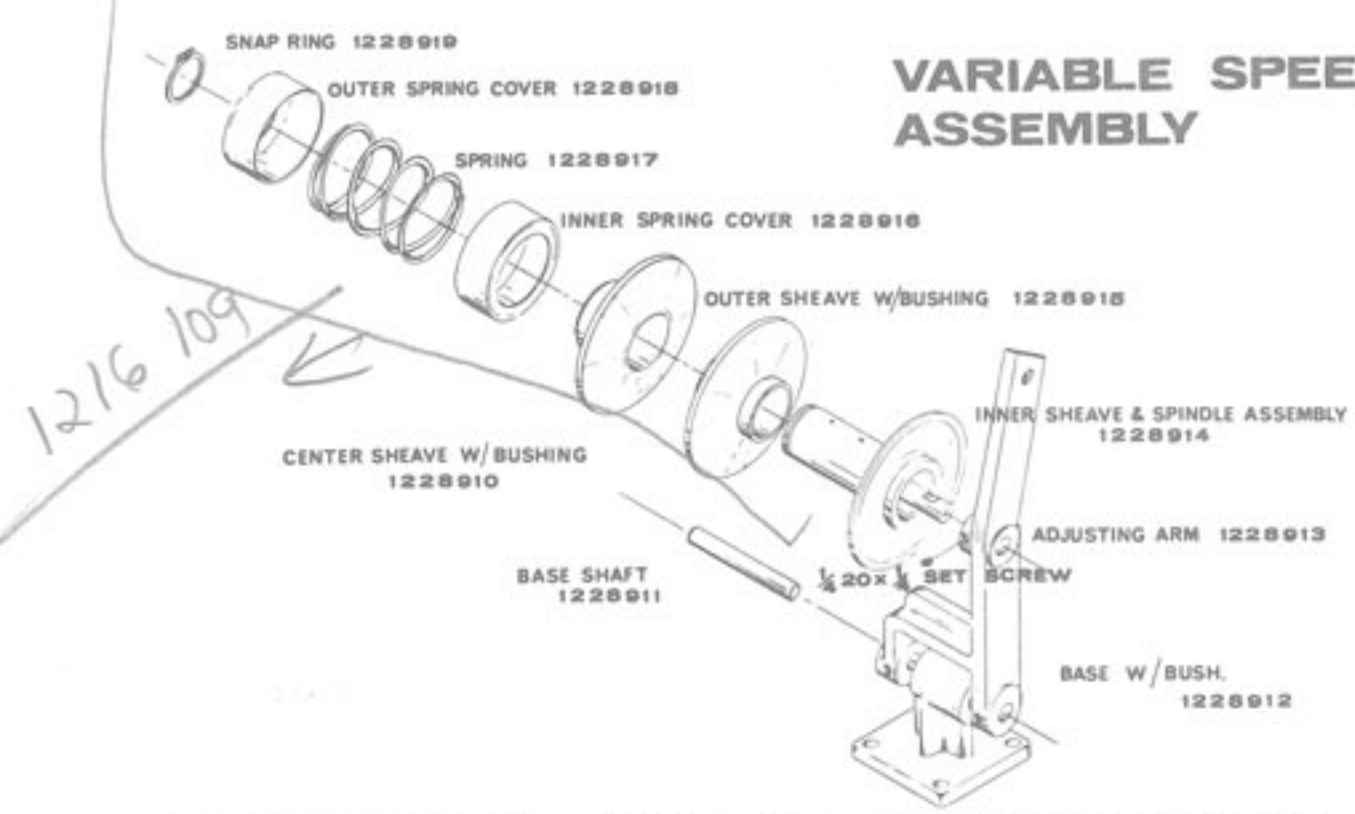


**Plate 7**

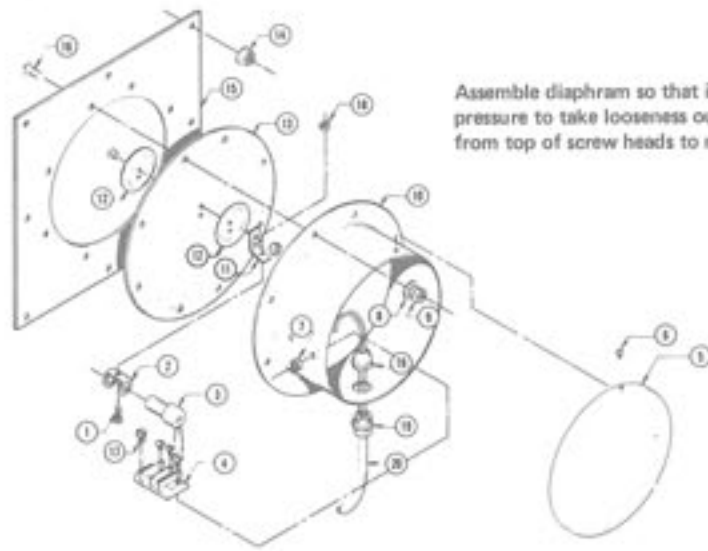
TO CONVERT TO AN END DUMP CROSS AUGER REPLACE  
 (2) WITH (13) (PARTS LIST), SWITCH (4) & (9)  
 ITEM (12) IS MOUNTED UPSIDE - DOWN FOR SHIPPING

REF	PART NO.	DESCRIPTION	REF	PART NO.	DESCRIPTION
1	1200014	Cross Auger Housing Weldment	8	0016002	1-1/4" Bore Lock Collar
2	1200009	Center Dump Cross Auger Weldment	9	1202001	Boot Flange
3	1204768	Cross Auger Top Cover	10	1206400	RC-40 16 Tooth x 1-1/4" Bore Sprocket
4	1204769	Cross Auger Discharge Cover	11	0015116	1/4" sq. x 1" Key
5	1204434	Cross Auger End Plate	12	1204436	Cross Auger Center Brace
6	1216006	4-Bolt Stamping	13	1230005	End Dump Cross Auger Weldment
7	0016003	1-1/4" Bore Bearing			

# VARIABLE SPEED ASSEMBLY



# ROUND LEVEL SWITCH ASSEMBLY 1201011



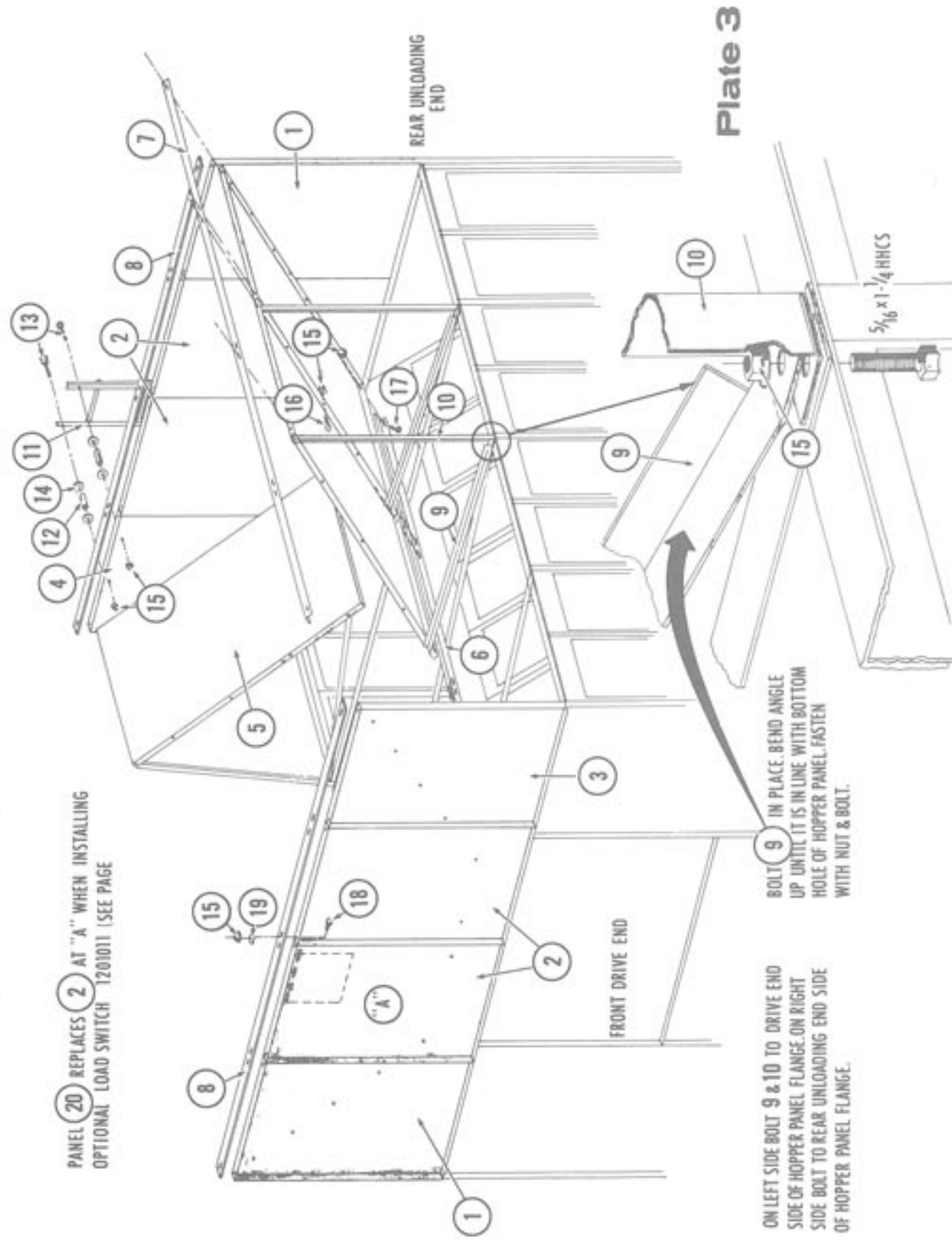
Assemble diaphragm so that it requires only enough pressure to take looseness out of it to depress it 11/16" from top of screw heads to mounting surface.

REF	PART NO.	DESCRIPTION	REF	PART NO.	DESCRIPTION
1		6-32 x 1/4 Round Head Screw	12	1205200	Mercury Switch Bracket
2	1206801	Mercury Switch Mounting Clip			Installation Washer
3	1206800	Mercury Switch (Cotton Covered Wire Only)	13	1208996	Level Control Diaphragm
4	1206802	Terminal Block	14		5/16-18 Whiz Nut
5	1207981	Level Control Switch Housing Cover	15	1202833	Level Control Switch Back Plate
6		#8 x 1/2 Sheet Metal Screw	16		1/4-20 x 1/2 Round Head Screw
7		#8-32 Hex Nut w/Lock Washer	17		8-32 x 5/8 Screw
8		1/4" Lock Washer	18		6-32 Hex Nut
9		1/4-20 Hex Nut	19	1216893	Connector
10	1205201	Level Control Switch Housing	20	1216920	Cable
11	1202946	Mercury Switch Mounting Bracket			

320 CUTAWAY ILLUSTRATION (PLATE 2)

REF	PART NO.	DESCRIPTION	REF	PART NO.	DESCRIPTION
1		Front Guard (E-Model Only)	29	1210301	Hinged Door Frame Weldment
2	1210352	Orifice Weldment	30	1211111	Rear Heat Chamber Door
3	1210362	Left Front End Panel	31	1210299	Unit Floor Door Frame Weldment
4	1252873	Panel Above Orifice	32	1211113	Heat Chamber Floor Door
5	1252876	Right Front End Panel	33	1212928	Unit Floor Panel
6	1212725	Panel Below Orifice	34	1212973	Outer Perforated Sheet & Heat Control
7	1211002	Control Cabinet	35	1212966	Inner End Perforated Sheet
8	1212879	Thermo-High Limit Shield	36	1212956	Inner Perforated Sheet
9	1217018	High Limit Switch	37	1212954	Outer Perforated Sheet
10	1218973	Thermometer	38	1212952	Perforated Sheet Stiffener Long
11	1210065	Clean Out Door	39	1212951	Perforated Sheet Stiffener Short
12	1212057	Front Guard Hanger	40	1212953	Hopper Cap
13	1210038	Solenoid Cover Weldment	41	1210351	Cross Auger Chain Guard Weldment
14		Drive Assembly	42		Cross Auger Drive Assembly
15	1213443	Lower Front Guard Hanger Bracket	43	1211172	Cross Auger Assembly
16	1252832	Starter Box Shield	44	1218956	Fan Guard
17	1216927	Starter Box 1 Phase	45	1216404	Ratchet Wheel
18	1216937	Starter Box 3 Phase	46	1212012	Top Hopper Tie Brace
19	1201011	Load Switch	47	1212381	Side Angle Brace
20	1210031	Wet Holding Hopper Assembly	48	0018302	M-C Decal
21	1216851	Thermoswitch Shield	49	1218255	J-Bolt 5/16-18 x 1-1/2
22	1212004	Thermoswitch	50	0008166	5/16 - 18 Wing Nut
23	1214835	Conduit Bracket	Not Shown		Extension Cover Short
24	1210160	Side Auger Cover			Extension Cover Long
25	1212896	Feed Roll Cover			Right Front Floor Panel
26	1212851	Right Rear End Panel			Center Front Floor Panel
27	1212897	Panel Above Door			Left Front Floor Panel
28	1212711	Panel Below Door			Burner Tube Baffle
					Reinforcing Strip (For Orifice)

# WET HOLDING HOPPER ASSEMBLY

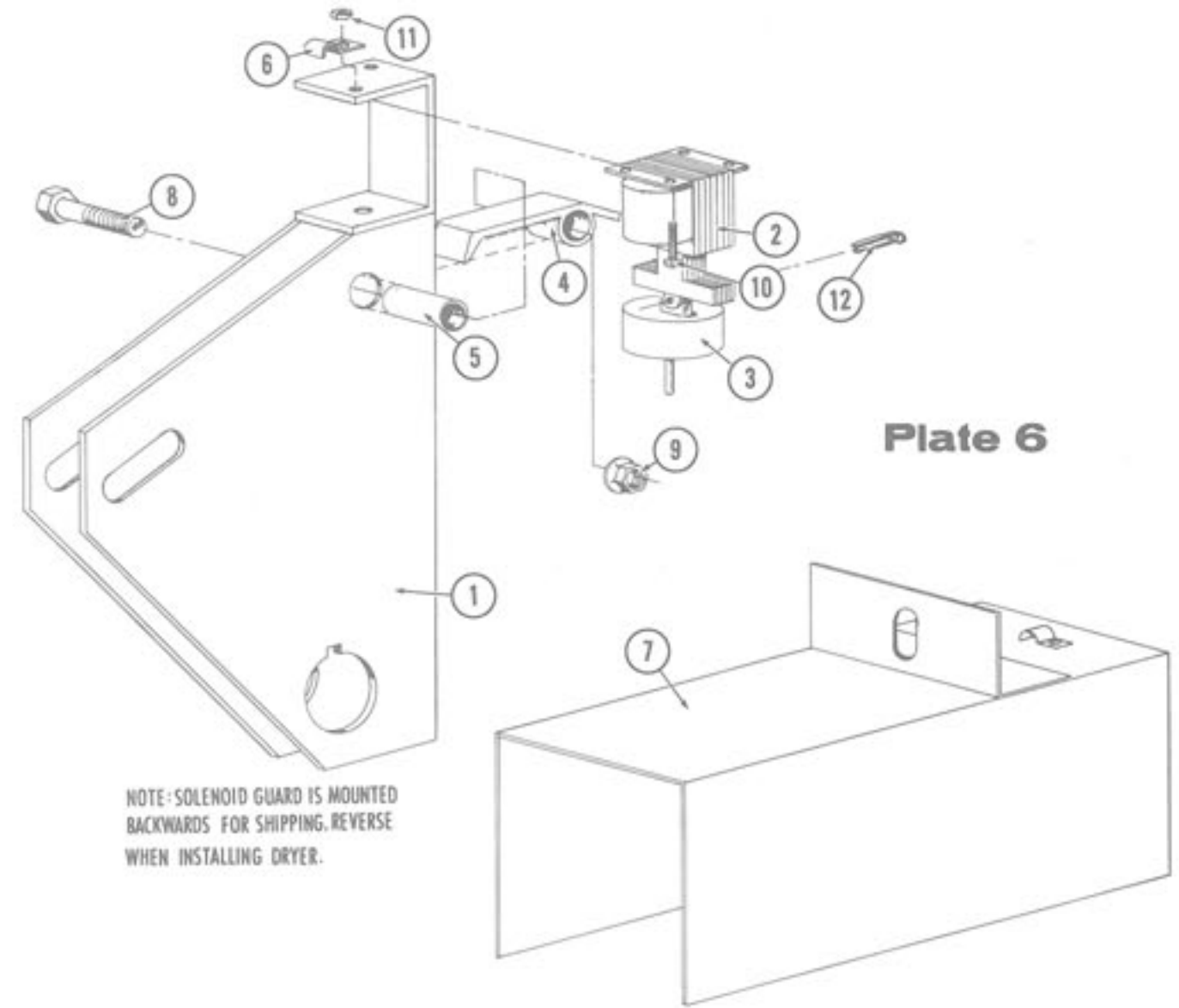


PANEL 20 REPLACES 2 AT "A" WHEN INSTALLING OPTIONAL LOAD SWITCH 1201011 (SEE PAGE

ON LEFT SIDE BOLT 9 & 10 TO DRIVE END SIDE OF HOPPER PANEL FLANGE. ON RIGHT SIDE BOLT TO REAR UNLOADING END SIDE OF HOPPER PANEL FLANGE.

BOLT 9 IN PLACE. BEND ANGLE UP UNTIL IT IS IN LINE WITH BOTTOM HOLE OF HOPPER PANEL. FASTEN WITH NUT & BOLT.

# RATCHET ASSEMBLY

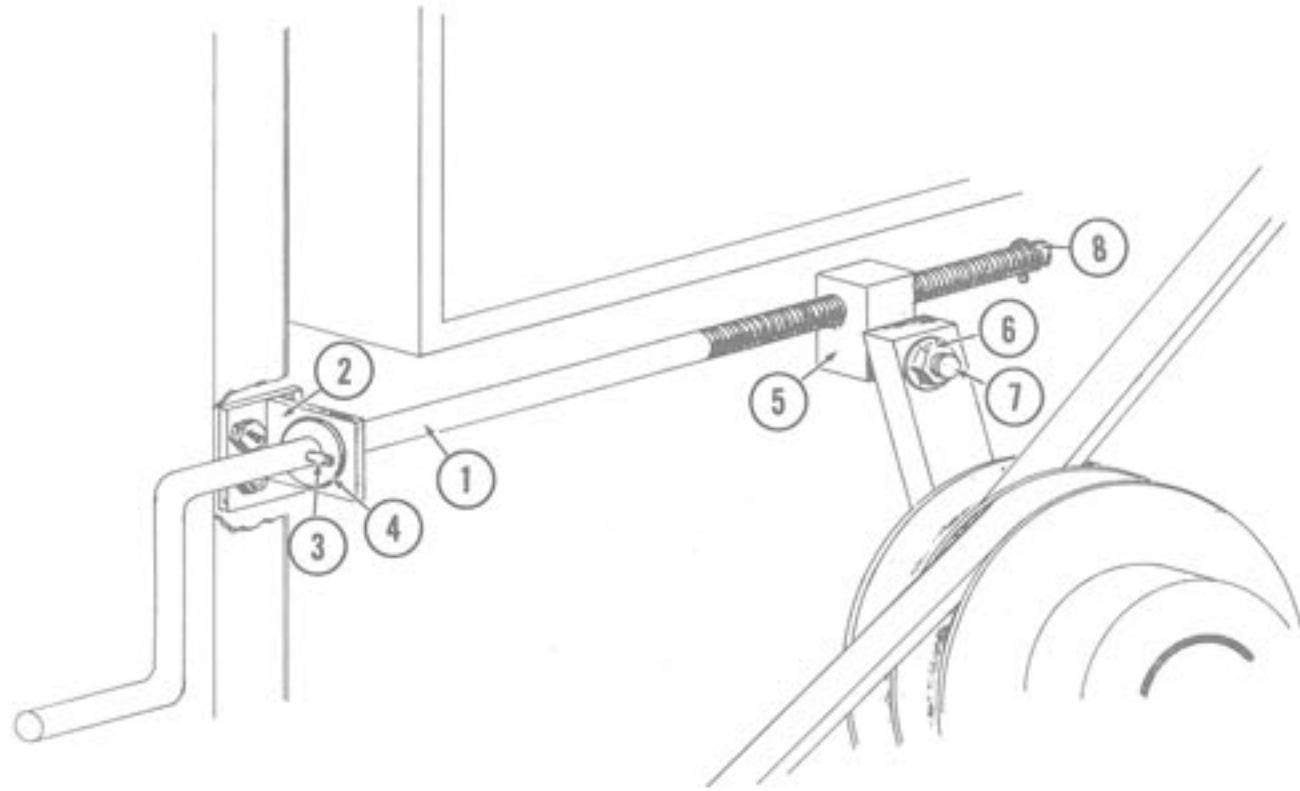


NOTE: SOLENOID GUARD IS MOUNTED BACKWARDS FOR SHIPPING. REVERSE WHEN INSTALLING DRYER.

REF	PART NO.	DESCRIPTION
1	1210385	Guide Arm Weldment
2	1216856	Ratchet Solenoid
3	1210029	Solenoid Weight
4	1215724	Ratchet Dog
5	1215571	Ratchet Dog Bushing
6	1216859	Jiffy Clip
7	1210038	Solenoid Guard Weldment
8	0008110	5/16-18 x 1-1/2 HHCS
9	0008169	5/16-18 Whiz Nut
10	0008186	6-32 x 1/2 Round Head Screw
11	0008185	6-32 Whiz Nut
12	0008199	1/8 x 1 Cotter Key

# VARIABLE DRIVE ARM ASSEMBLY

## Plate 5



REF	PART NO.	DESCRIPTION
1	1215013	Variable Crank Arm
2	1210320	Variable Arm Mount Bracket
3	1218102	Roll Pin 1/4 x 1-1/2
4	0008176	5/8 Flat Washer
5	1215190	Variable Crank Nut
6	0008170	1/2-13 Whiz Nut
7	0008140	1/2-13 x 2 HHCS
8	0008199	1/8 x 1 Cotter Key

### WET HOLDING HOPPER ASSEMBLY (PLATE 3)

REF	PART NO.	DESCRIPTION
1	1214807	Outside Front Hopper End Panel (4 Hole Left)
2	1214810	Hopper End Panel (1 Hole Left & Right)
3	1214808	Outside Front Hopper End Panel (4 Hole Right)
4	1214809	Right Rear Hopper End Ladder Panel
5	1214843	Side Hopper Panel
6	1212603	Hopper Bottom Strip
7	1202054	Hopper Stiffener (Side)
8	1202053	Hopper Stiffener (End)
9	1212609	Hopper Braces
10	1212010	Side Panel Brace
11	1208997	3 Ft. Ladder
12	1218979	7-1/2 Ft. Ladder
13	1205410	Ladder Spacer
14	0008116	5/16-18 x 3-1/2 HHCS
15	0008173	5/16 Flat Washer
16	0008169	5/16-18 Whiz Nut
17	0008105	5/16-18 x 1/2 HHCS
18	0008106	5/16-18 x 3/4 HHCS
19	0008108	5/16-18 x 1 HHCS
20	0008173	5/16 Flat Washer
	1204777	Hopper Level Switch Panel

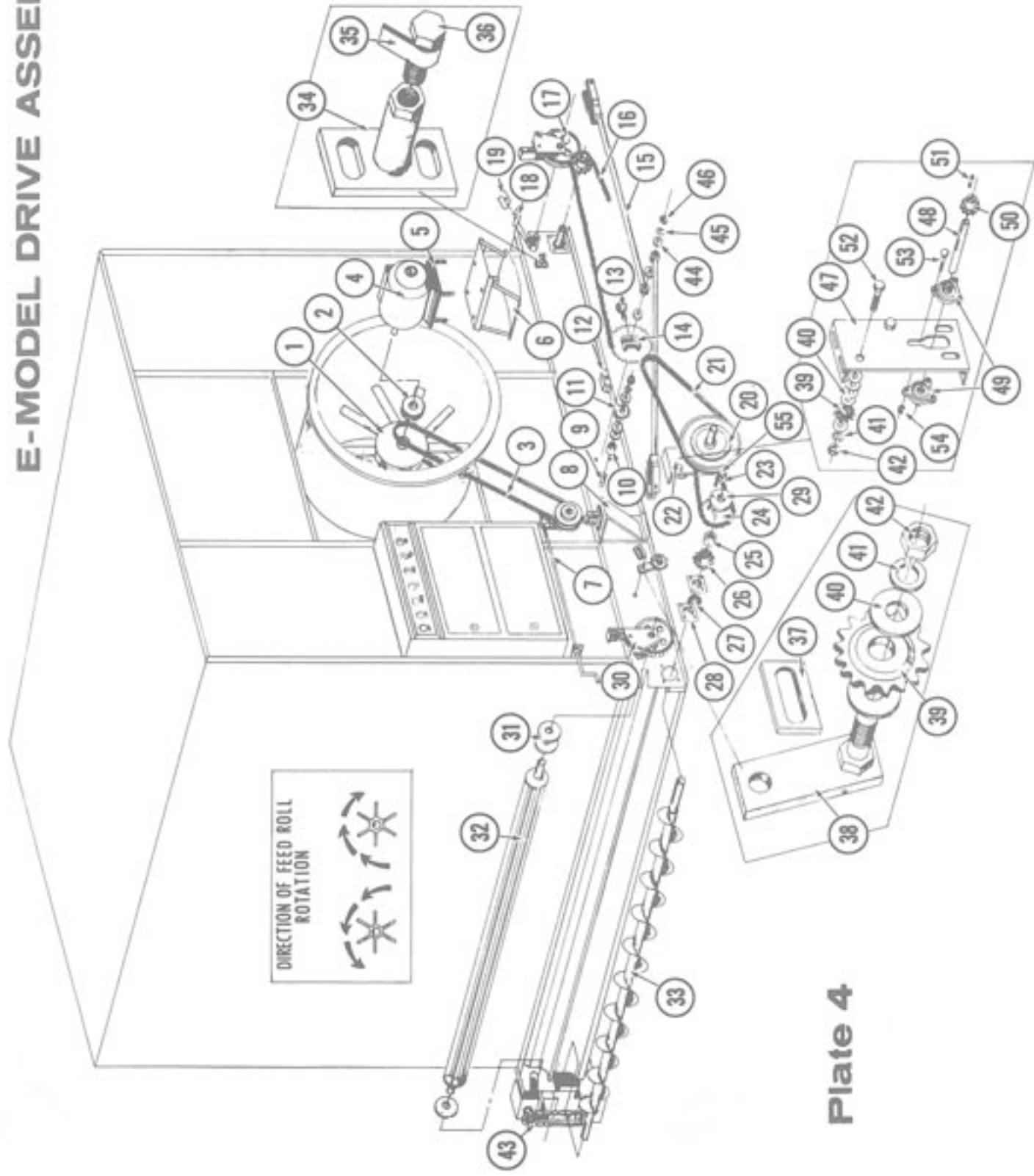


Plate 4

E-DRIVE ASSEMBLY (PLATE 4)

REF	PART NO.	DESCRIPTION	REF	PART NO.	DESCRIPTION
1	1210337	9 Blade Fan	29	1218975	1-1/4 Bore Shear Flange
2	1216233	4.0 OD x 3.6 PD x 1-3/8 Bore Pulley	30	1211191	Ratchet Assembly
3	1216121	88 V-Belt	31	1214438	Feed Roll End Washer
4	1216924	10 HP 1 Phase Motor	32	1211081	Feed Roll
5	1216948	10 HP 3 Phase Motor	33	1210164	Left Side Auger Weldment
6	1210323	Stand Off Motor Mount	34	1210374	Right Side Auger Weldment
7	1210258	Motor Mount Weldment	35	1210355	Ratchet Stop Mount Weldment
8	1211189	Variable Arm Assembly	36	1213352	Ratchet Dog Hinge
9	1210370	Variable Speed Mount Bracket			1/2 x 1 Hex Head Shoulder Bolt 3/8-16 Thread
10	0008150	5/8-11 x 2-1/2 HHCS	37	1218162	Idler Sprocket Holder
11	0018979	Idler Spacer	38	1213428	Chain Idler Weldment
12	1216403	Idler Sprocket x 5/8 Bore	39	1210384	Idler Sprocket x 5/8 Bore
13	1215703	Wood Block Chain Tightener	40	1216403	5/8 Flat Washer
14	0008142	1/2-13 x 2-1/2 Charrriage Bolt	41	0008176	5/8 Lock Washer
15	1211161	Eccentric Sprocket	42	0008181	5/8 Lock Washer
16	1211179	Connecting Arm	43	0008164	5/8-11 Hex Nut
17	1216314	388 Pitch Drive Chain W/Master Link	44	0008175	Cross Auger Drive Assembly
18	1216404	Ratchet Wheel	45	1/2 Flat Washer	1/2 Flat Washer
19	1213321	Feed Roll Retainer	46	0008180	1/2 Lock Washer
20	1212959	Grain Seal	47	0008163	1/2-13 Hex Nut
21	1216228	12" OD x 1-1/4 Bore V-Pulley	48	1213376	320 Idler Shaft Mount
22	1216110	B-65 V-Belt	49	1215041	Idler Shaft
23	1211188	Jackshaft Assembly	50	0016016	3-Bolt Flange Bearing
24	1216313	78 Pitch Chain W/Master Link	51	1206400	RC-40 16T x 1-1/4 Bore Sprocket
25	1216401	48 Tooth x 1-1/4 Bore Shear Sprocket	52	0015116	1/4 Sq x 1 Key
26	1218974	1-1/4 Bore Lock Collar	53	0008149	5/8-11 x 2 HHCS
27	1206400	RC-40 16 Tooth x 1-1/4 Bore Sprocket	54	0008113	5/16-18 x 2-1/2 Carriage Bolt
28	0016003	1-1/4 Bore Bearing	55	0008169	5/16-18 Whitiz Nut
	1216006	4-Bolt Stamping		0008200	3/16 x 1-1/2 Cotter Key