



MANUFACTURERS OF FARM AND INDUSTRIAL EQUIPMENT

MODELS 545XL / 645XL

OPERATORS MANUAL & PARTS CATALOG

INTRODUCTION

Your GT Grain Dryer is one of the finest grain dryers ever built; designed to give you excellent service for many years. The information and suggestions found in this owners manual will help you achieve this.

Your GT Grain Dryer dealer is well trained and equipped to give you complete service when and if the need should arise.

We would also like to take this opportunity to thank you for choosing GT and to assure you of our continuing interest in your complete satisfaction.

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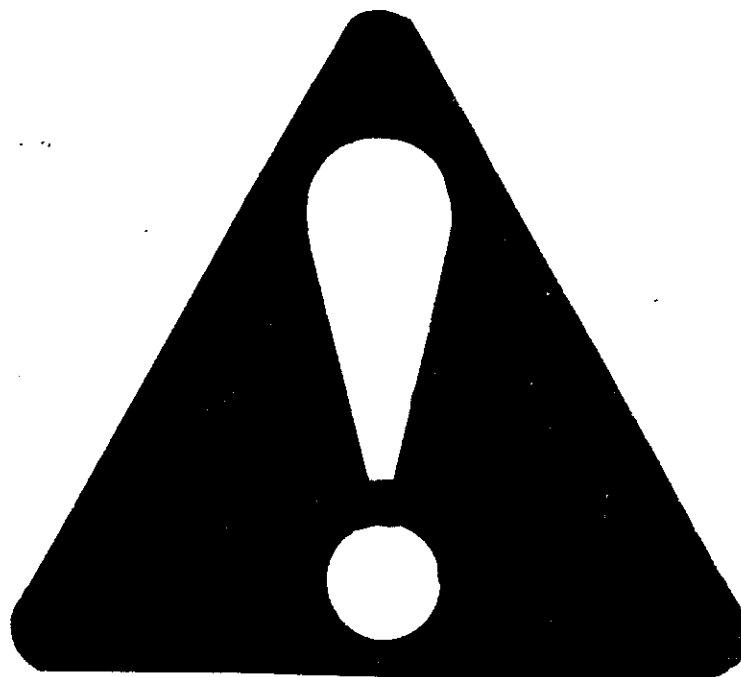
## SAFETY



DO NOT OPERATE OR ALLOW ANYONE TO OPERATE THIS EQUIPMENT WHO HAS NOT BEEN PROPERLY TRAINED IN ITS SAFE OPERATION.

Throughout your operator's manual and at various locations on your machine you will see the Safety-Alert symbol shown below. This emblem has been adopted by the agricultural equipment industry to provide a universal symbol which means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

This symbol is our way of telling you to pay special attention to the instructions or warnings which follow because your safety is involved.



### SAFETY-ALERT SYMBOL FOR AGRICULTURAL EQUIPMENT

The following labels found on your machine provide important safety messages and instruction for safe operation.



As these labels become worn, damaged, or illegible replace them immediately. These labels are available at your authorized dealer.

# BE A SAFE OPERATOR

BY THINKING – BEFORE ACTING

AND

BY READING YOUR OPERATORS MANUAL

## 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 THOUSAND SERIOUS INJURIES EACH YEAR. THAT RULE IS:**

**STOP MACHINE TO ADJUST, LUBRICATE, SERVICE, CLEAN OR MOVE.**



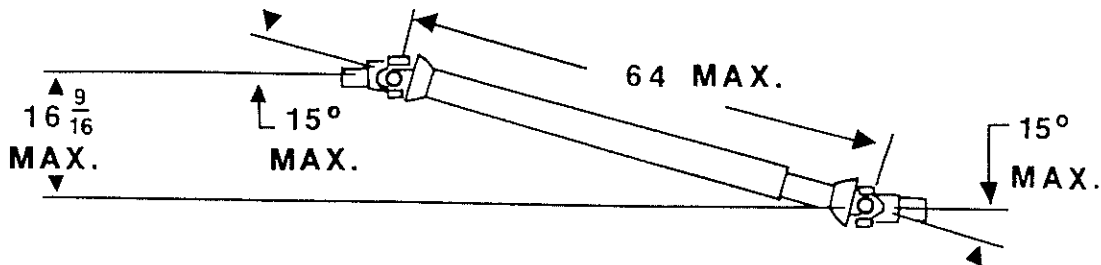
## **CAUTION**

1. Read and understand the Operator's Manual before operating the unit.
2. Keep children, visitors and all untrained personnel away from machine while in operation.
3. Keep all shields and safety devices in place.
4. Stop machine to adjust, lubricate, service, clean or move.
5. Keep hands, feet and clothing away from moving parts.
6. Disconnect electrical power before servicing.
7. Keep unit level when operating.
8. Maintain proper tire pressure when transporting machine. (Refer to Manufacturers Recommendations.)



# DANGER

For maximum safety and smoothest operation keep p.t.o. shaft in closed position while under load. Keep u-joint angles equal. Do not remove safety shields. Do not exceed 540 r.p.m.



**FAILURE TO HEED WILL CAUSE PTO SHAFT FAILURE OR SEPARATION & RESULT IN SERIOUS INJURY OR DEATH.**



# DANGER



**ROTATING DRIVELINE  
CONTACT CAN CAUSE DEATH  
KEEP AWAY!**

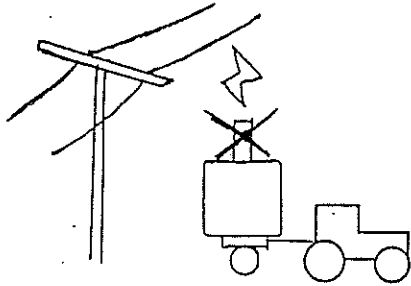
**DO NOT OPERATE WITHOUT —**

- ALL DRIVELINE, TRACTOR AND EQUIPMENT SHIELDS IN PLACE
- DRIVELINES SECURELY ATTACHED AT BOTH ENDS
- DRIVELINE SHIELDS THAT TURN FREELY ON DRIVELINE

L1

279561

# DANGER



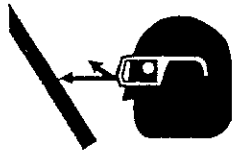
## ELECTROCUTION HAZARD

To prevent serious injury or death from electrocution:

- Remove unloading head when transporting.
- Stay away from overhead power lines when transporting.
- This machine is not grounded.
- Electrocution can occur without direct contact.



# DANGER



CONNECT TO LIQUID PROPANE ONLY.  
Wear Rubber Gloves and Eye Protection.  
Avoid Contact with Propane.



Check for Leaks with Soap and Water. NEVER USE FLAME.

# CAUTION

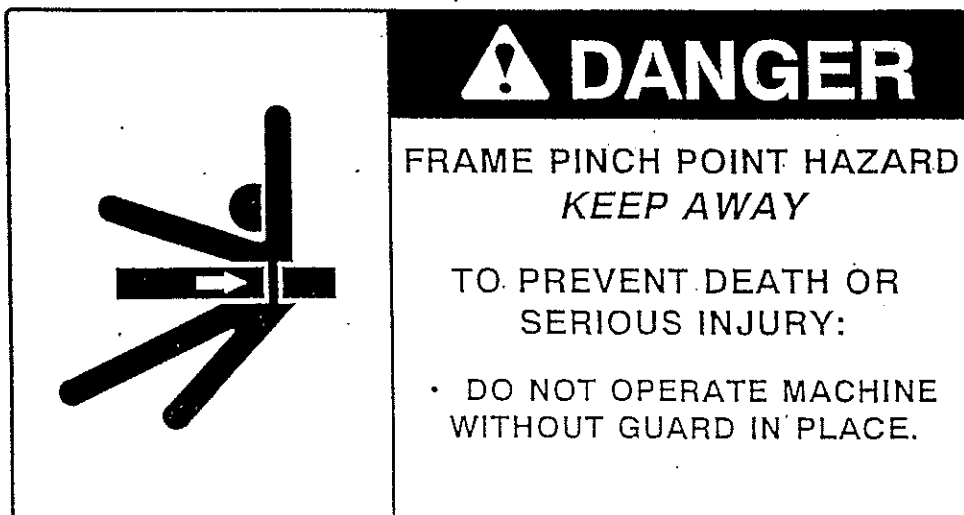
ENGAGE FAN CLUTCH  
VERY SLOWLY WHEN  
PTO IS OPERATING



**MAX. PTO SPEED 540 R.P.M.**

TORQUE WHEEL BOLTS TO 70 LB.-FT.  
(94.85 N-M). CHECK TORQUE  
BEFORE TOWING AND PERIODICALLY  
UNTIL TORQUE IS HELD.

74535





1. Keep all guards and shield in place.



2. Inspect your drive before adding power and know how to shut down in an emergency.



3. Stop all moving parts before allowing anyone to approach the equipment for cleaning, unplugging, adjusting, performing maintenance or any other duty.



4. Replace all safety shields/guards before restarting.



5. Replace all safety shields/guards as they become worn, damaged, unusable, missing or lost.

## GENERAL INFORMATION

Mechanical drying of grain is a relatively new process; therefore, emphasis must be placed on proper operation of grain drying equipment. Your GT Dryer was designed and engineered to retain grain quality, and to dry grain as rapidly as possible at the lowest cost consistent with retention of quality grain. Study and follow this manual so you too may enjoy the additional profits derived from drying.

### THEORY OF DRYING

The theory of drying has two basic stages: (1) diffusing of internal moisture to the surface of the kernel, and (2) removal of external moisture by air flowing around the kernel. Vapor pressure is increased inside the kernel which causes moisture to diffuse through the micropores of the seed coat. The grain temperature largely establishes this rate of diffusion and hence must be controlled to not exceed a maximum rate which would result in a ruptured kernel.

Removal of the exterior moisture for a given air flow is dependent upon the air temperature. These two stages must be balanced to produce quality dried grain.

This balance is accomplished quite simply in the GT Grain Dryer with its uniform circulation, regulated heat, and controlled air flow.

### RATE OF DRYING

In addition to the kind and variety of grain, the drying rate is controlled by atmospheric conditions. Hard and fast rules cannot be set forth because of these variables. It will be necessary to dry several batches to determine the exact dryer settings in a specific area. A chart for recording necessary information for later use is included in the back of this manual.

### WHEN GRAIN IS MATURE

Grain is mature at 30% to 35% moisture. While some grain may be harvested easily at 30%, others do not harvest well above 20%. Therefore, grain should be harvested as soon as possible after maturity, as long as grain damage is at a minimum and gleaning is thorough.

### STORAGE MOISTURE LEVELS

To properly store grain, the grain moisture content must be compatible with the length of time the grain will be in storage, and with the grain's intended use. This moisture content will vary due to locale.

| GRAIN                           | 1 YEAR STORAGE<br>(% Moisture) |
|---------------------------------|--------------------------------|
| Corn                            | 13%                            |
| Wheat                           | 13-14%                         |
| Barley                          | 13%                            |
| Rice                            | 12%                            |
| Oats                            | 13%                            |
| Rape Seed                       | 10.5%                          |
| Grain Sorghum                   | 12%                            |
| Flax                            | 9%                             |
| Soybeans                        | 11%                            |
| Edible Beans                    | 14-16%                         |
| Sunflower Seed (Oil Type)       | 10%                            |
| Sunflower Seed (Bird Seed Type) | 12%                            |

Corn may be stored at 15% moisture if moved before warm spring weather. For long time storage — up to 5 years, or for grain stored as seed stock, moisture level should be 2% lower than shown above.

## MOISTURE TESTING

Since grain must go into storage at not more than specified moisture content, it is necessary to use a reliable tester to determine moisture content. When marketing grain from the dryer, it should be only dry enough to eliminate moisture discounts. The moisture tester may also be profitably used to determine when to harvest.

## COOLING OF GRAIN

It is very important to cool grain. Grain being put in storage should be cooled after drying to within 20 degrees F of atmospheric temperature or, 10 degrees F of grain already in the storage bin. Moisture migration from the air to grain will occur if the grain is not cooled to these limits.

## PREPARING DRYER FOR OPERATION

### 1. INSTALLATION OF EQUIPMENT

The equipment shall be installed in accordance with the installation code for gas burning appliances and equipment, Canadian Standard's Association B 149, or applicable state or Provincial Regulations for the class. Instructions should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.

### 2. PLACING MACHINE FOR OPERATION

Select a site as level as possible, 50 ft. (15 meters) from inflammable buildings. Set machine, if possible, with fan into prevailing winds. Lower the supporting legs (6 on Model 545) and insert pins. If machine is being set on a level concrete slab, no additional blocking will be necessary. However, if being set on dirt, at least 2" x 8" x 12" board or equivalent should be placed under each leg for additional flotation. Add any additional blocking material necessary to bring machine level. Use a level on main frame to determine this.

### 3. INSTALLING TOP SECTION OF AUGER AND ADJUST FOR UNLOADING

When installing the top section of auger, it may be necessary to jack the lower flight up to allow the bolt holes in the connecting shaft to align. The weight of the complete auger should be supported by the top auger bearing when in proper adjustment.

If the dryer is equipped with the standard swivel head, removing bolts through mounting flanges which hold the upper and lower auger tubes together will allow the upper tube to be rotated to provide unloading at several points. It should be also noted that on the standard swivel head when the unloading spout is set for unloading one direction, it will also unload in the opposite direction. One-fourth turn, of unloading spout, relocates the auger head to recirculating position. When unloading or recirculating, the

unloading spout must rest in holders provided at top of bin. These holders may be relocated by drilling bin wall and rebolting holders. Should use of both unloading positions be desired, an additional holder may be obtained through your dealers parts department. Be sure that the openings in the upper auger tube and the auger head are properly aligned to insure good circulation.

If the dryer is equipped with the hydraulic drive horizontal top unloading head, the discharge should be set directly off the right or left hand sides of the dryer. It is recommended that the hydraulic lines to the drive motor be connected to a source with a capacity of 7 gallons per minute at 1000 psi.

After connecting hydraulic source to lines at dryer, make certain that the unloading flight has the proper rotation to remove grain from the head. When looking into the discharge end of the auger it should be rotating counter clockwise.

When using the horizontal unloading head, it is not advisable to leave grain set in the dryer for any length of time (such as over night) without the vertical auger operating. If grain must be left in the dryer, it should be lowered to a level below the top of the unload auger head to prevent grain from running back down the vertical auger.

#### 4. LOCATING PROPANE GAS SUPPLY TANK

Location of the Propane Gas Supply Tank must be in accordance with local, state or provincial regulation. It should also be approved by the insurance company. A minimum distance of twenty-five (25) ft. (7.5 meters) is recommended for safety and will allow room for maneuvering grain hauling equipment.

GT Propane Gas fired dryers are equipped with Vaporizers and must be connected to the supply tank for LIQUID withdrawal. It is recommended that rubber hose specifically made for Propane gas be used as a supply line connecting tank to dryer. Specifications for the line are: (1) minimum working pressure 350 psi, (2) minimum bursting strength 1,750 psi, and (3) ½" minimum inside diameter for Model 545. Tank pressure is used at the dryer; therefore, it is not necessary to install a pressure regulator at the tank.



#### DANGER

All lines and fittings should be checked periodically for leaks before and during operation. Check for leaks with liquid detergent suds or comparable substance, but NEVER with flame.



#### CAUTION

Do not use storage tanks that have been used to store Anhydrous Ammonia. This causes corrosion to the gas line controls.

Always protect gas supply line against vehicle or animal damage.

#### 5. NATURAL GAS

Specifications for Natural Gas connections are available from the gas supplier and must be adhered to. The Model 545 dryer will require up to 20 psi, depending on locality. Pressure shown is at the dryer. Maximum Natural Gas volume required is up to 50 ft<sup>3</sup> per minute on the Model 545.

#### 6. ELECTRICAL CONNECTIONS

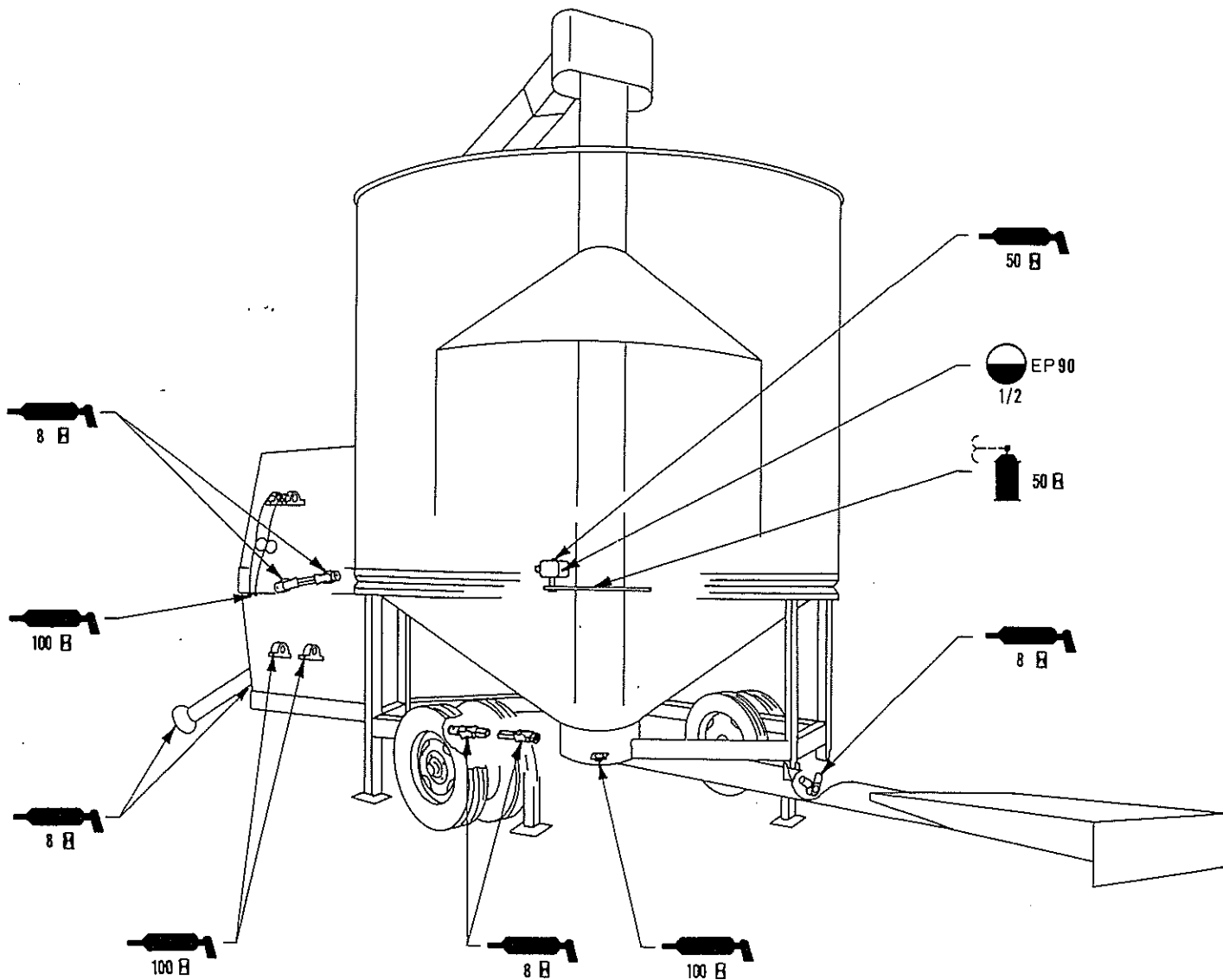
Power take off machines have as standard equipment a 12 VDC negative ground control circuit. The lead in wires must be properly connected to the tractor battery. Red clip to hot (+) side of battery and black clip to ground (-) side of battery. See proper battery connections on page 19.

**IMPORTANT:** Battery connections other than that described above will be harmful to the ignition system.

## 7. LUBRICATION

Use a high-low temperature grease or equivalent made especially for ball and roller bearings in extreme temperatures.

Refer to the following chart for location of lubrication points and frequency of lubrication. A small amount of grease at the specified intervals is recommended over a large amount at less frequent intervals.



Symbol descriptions:



Grease Point

x H

Lubrication Frequency (Hours of Operation)



Gearbox Oil Level & Type



Dry Film Spray Lubricant

When performing the 100 hour lubrication, check to see that set screws in bearing and tumblers are tight.

**IMPORTANT:** In extremely cold weather, it may be necessary to operate the dryer at a low RPM for a short period of time to allow the grease in the bearings to warm up.

## 8. SERVICING AND CARE OF AGITATOR

It is important that the agitator be inspected before and after the first load. Then after each 100 hours of operation.

- A. The tapered agitator rollers must support the plate sprocket so there is no horizontal movement of sprocket.

The Model 545XL & 645XL have four rollers mounted on the agitator sprocket so each roller supports an equal load. These rollers are tapered so all horizontal and vertical slack may be taken up.

### B. Adjusting Rollers

1. Secure the cam nut and loosen the bolt.
2. Rotate the cam nut counter-clockwise (when looking down into the cam nut) while holding the bolt stationary.
3. Secure the cam nut and tighten the bolt.
4. All cam nuts must be rotated an equal amount so the agitator sprocket remains true.
5. Rotate agitator arms by hand and check clearance.

NOTE: Agitator drive chain is provided with a spring loaded idler, however, it is necessary to periodically check the chain slack.



### CAUTION

Do not open inspection door or enter machine while in operation.

## 9. BELT TENSION

With machine running at normal speed, belts should be tight enough to keep out the slack. Keep belts tight to prolong life.

## 10. VAPORIZER(Propane Only)

The vaporizer is designed for year round operation. However, the temperature of the vapor controls (pressure regulator, solenoid valves, ball valve, etc.) can be adjusted by moving the vaporizer ring up or down relative to the burner ring. The controls will run warmest with the vaporizer ring directly in line with the burner controls. The temperature of the vapor controls can also be adjusted by moving the vaporizer ring closer or farther from the burner by changing the position of the vaporizer on the burner in the clamp. The vapor plumbing under normal conditions should be operating at a temperature of approximately 120F to 140F. The temperature may be checked by placing your bare hand on the plumbing and will range from warm to hot.

If the vaporizer has been overheated causing possible rupture you will be unable to control the plenum temperature. Check propane tank for liquid withdrawal. Vapor withdrawal will cause over-heating of the vaporizer and possible damage to the gas controls.

## 11. CHECK OUT – BEFORE LOADING

All piping and burners have been checked and test fired at the factory. It is possible, however, that some of the connections may have been loosened or damaged during shipment. After connecting supply tank to dryer all connections should be tested under pressure with gas pressure on. DANGER: Check with liquid soap solution, never with flame. Tractor can be started and dryer test run before loading with grain.

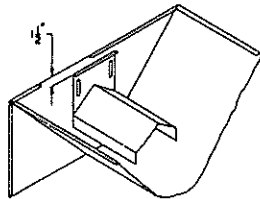
## 12. LOADING THE BIN

NOTE: The fan clutch can be disengaged during loading and unloading of dryer to lower the energy requirement. It also reduces the amount of dirt and dust which is blown out of the dryer during the load and unload cycle.

When the loading attachment is not used, overhead bins or a conventional farm type elevator or auger may be used. In using any method of filling from the top, make delivery of grain into dryer as near to center as possible. Start machine, without burner, at the same time loading begins. This helps keep bin loaded evenly. Bin will fill to rim and pyramid evenly to auger outlet.

When the loading hopper attachment is used for filling the dryer, follow these steps to prevent the grain from being fed into the dryer faster than the vertical auger can recirculate it. When this happens the grain can build up in the bottom of the dryer until it gets into the agitator assembly and causes damage to the agitator.

- A. Make sure that the vertical auger drive belt is kept tight and is not slipping.
- B. Make sure the discharge holes at the top of the vertical auger housing are completely open with the swivel head in the recirculating position.
- C. Make sure that the bottom auger well is kept clean of trash or fine material build up which restricts the flow of grain into the intake of the vertical auger.
- D. The vertical auger flighting cannot be worn down at the intake end.
- E. Slow down the PTO speed to approximately 450 RPM when filling the dryer with lightweight grains such as sunflower seeds, oats, etc.
- F. Set the grain flow regulator in the loading hopper down  $1\frac{1}{2}$ " as shown in the drawing.



### DO NOT LEAVE GRAIN IN DRYER OVERNIGHT

## 13. STARTING THE BURNER (PROPANE)

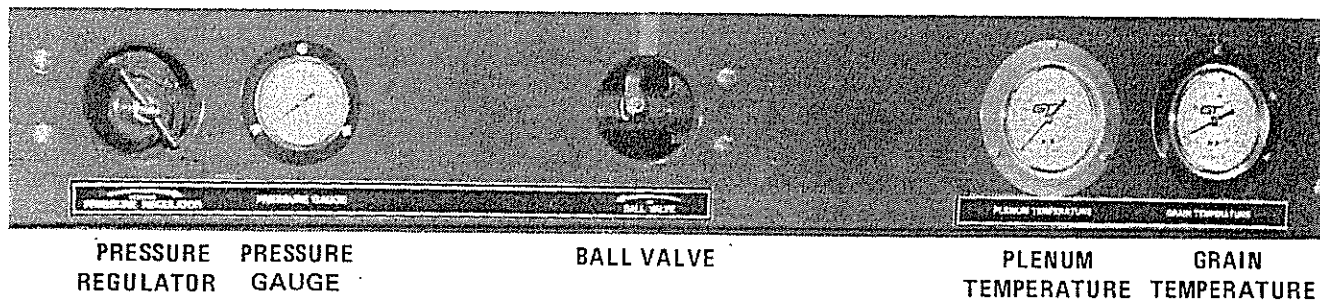
- A. Fan should be at operating speed, approximately 2200 RPM for Model 545 (2100 RPM for 645). This speed can be obtained by approximately 525 RPM PTO speed, however, a lower fan and PTO speed is recommended in some conditions.
- B. Check the Plenum and grain temperature controls in the control box for proper setting. (Refer to instructions No. 16 and 17 in this manual.) Re-set the controls if necessary.
- C. NOTE: For other than initial starting, skip to step H and continue. For initial starting, the ball valve and quick acting valves should be open, and the high pressure regulator handle should be turned out (counter-clockwise) until the screw turns freely, then turn back in (clockwise) one full turn.
- D. Move power switch to the "on" position. Depress and hold burner start switch, and at the same time turn the regulator screw clockwise until burner lights. Hold start switch depressed until flame detector is activated, usually 20 to 30 seconds.

- E. If frost should appear on the gas lines wait 2 to 3 minutes to allow the vaporizer to heat before increasing the gas pressure.
- F. Gradually increase the plenum temperature by screwing the pressure regulator handle in (clockwise). If frost appears on the line at any time, wait a few minutes before increasing pressure further. Continue to increase the gas pressure until the pressure is between 20-25 psi. When the set plenum temperature is reached the burner will alternate between high and low burn
- H. For restarting the burner it is not necessary to change the setting of the pressure regulator unless a different plenum operating temperature is desired. Simply turn the ball valve handle so that it is only partially (one quarter) open. Open the quick acting valve.
- I. Move power switch to the "on" position. Depress and hold burner start switch, and at the same time turn the regulator screw clockwise until burner lights. Hold start switch depressed until flame detector is activated, usually 20 to 30 seconds.
- J. After flame is established gradually open the ball valve until completely open. NOTE: Opening the ball valve too rapidly may cause frost to form in the gas lines.

14. ADJUSTMENT OF FUEL – AIR MIXTURE

Your burner is factory set for correct air input for various pressures. Burner will not operate properly unless fan is at the approximate recommended operating speed.

15. ASSEMBLY OF CONTROLS



## 16. PLENUM TEMPERATURE RANGES FOR DRYING

| GRAIN                       | PLENUM TEMP (°F) IF GRAIN TO BE USED FOR SEED | PLENUM TEMP (°F) IF GRAIN TO BE SOLD COMMERCIALY OR USED FOR ANIMAL FEED |
|-----------------------------|---|--|
| Shelled Corn                | 140° – 180°                                   | 200° – 230°  |
| Wheat                       | 100° – 150°                                   | 150° – 180°  |
| Grain Sorghum               | 140° – 180°                                   | 230° – 250°  |
| Barley                      | 120° – 170°                                   | 180° – 200°  |
| Oats                        | 140° – 180°                                   | 200° – 230°  |
| Soybeans                    | 120° – 170°                                   | 180° – 200°  |
| Rough Rice                  | 90° – 120°                                    | 140° – 160°  |
| Flax                        | 90° – 120°                                    | 140° – 160°  |
| Rape Seed                   | 90° – 120°                                    | 140° – 160°  |
| Edible Beans                | 10° – 15°<br>above outside air temp.          | 140° – 160°  |
| Sunflower Seeds (Oil Type)  |   | 110° – 150°  |
| Sunflower Seeds (Bird Seed) |   | 110° – 150°  |

### ADJUSTING PLENUM CONTROL

The plenum temperature control is located inside the control box and is used to set the desired drying temperature inside the plenum chamber. Use the above chart as a guide to set the control. The actual plenum temperature will go approximately 5°-10° above or below the specified setting on the control.

### 17. ADJUSTING GRAIN TEMPERATURE CONTROL (See No. 9, page 18)

The grain temperature control is located inside control panel and serves to prevent over-heating of grain. When the grain temperature gets above the dial setting the control will shut the burner off and the red grain temperature light will come on. Check periodically. Refer to chart under maximum temperature of grain. (See page 15.)

To initially set the grain temperature control turn the dial setting to about 10° or 20°F above the "commercial use" grain temperature in the following table. (NOTE: When drying grain for seed purposes refer to instructions in next paragraph.) Example: Shelled corn for commercial sale; set dial at 140° or 150°F. As the batch is drying, periodically take grain samples from the sampler tube and check the moisture content on an accurate moisture tester. When the moisture gets within 1 – 1½ percentage points of the desired final moisture content slowly turn the dial on the grain temperature control down until the gas is shut off thus extinguishing the burner. Let the grain cool to the desired temperature. The grain will continue to dry during the cooling process so should be near the desired dryness after cooling. If the grain is still a little too wet raise the temperature control setting one or two degrees on the next batch. If the grain was a little too dry lower the temperature control setting one or two degrees on the next batch.

When drying grain for seed purposes set the grain temperature control at or slightly below the temperature specified in the malt or seed column of the grain temperature chart. The plenum temperature should be set according to the seed column of the plenum temperature chart. When the grain in the dryer reaches the control setting the burner will be extinguished. Check the moisture content of the grain in the dryer. If this batch of grain is too wet, lower the plenum temperature slightly for the next batch. Lowering the plenum temperature will increase the drying time and therefore decrease the grain moisture. Conversely, if the batch of grain is too dry, raising the plenum temperature slightly for the next batch will decrease the drying time and therefore increase the grain moisture. Do not exceed maximum plenum or grain temperature shown in charts.

The grain temperature control serves as an indicator to degree of dryness, but settings must be ascertained at user level. For recording temperatures used, a sheet is provided in back of this manual. Each batch should be tested to be sure the proper moisture level is reached. Different varieties of the same grain

## GRAIN DRYING INFORMATION

MAXIMUM TEMPERATURE FOR GRAIN WHEN CROP IS USED AS CHART INDICATES

| GRAIN                       | MALT OR SEED | COMMERCIAL USE | ANIMAL FEED |
|-----------------------------|--------------|----------------|-------------|
| Shelled Corn                | 110° F       | 130° F         | 140° F      |
| Wheat                       | 105° F       | 120° F         | 140° F      |
| Grain Sorghum               | 110° F       | 140° F         | 140° F      |
| Barley                      | 105° F       | 120° F         | 140° F      |
| Oats                        | 105° F       | 140° F         | 140° F      |
| Rye                         | 105° F       | 140° F         | 140° F      |
| Soybeans                    | 105° F       | 120° F         | 140° F      |
| Rough Rice                  | 110° F       | 110° F         | 110° F      |
| Flax                        | 110° F       | 120° F         |             |
| Rape Seed                   | 110° F       | 120° F         |             |
| Edible Beans                |              | Does not apply |             |
| Sunflower Seed (oil type)   |              | 100° F         |             |
| Sunflower Seed (bird seed ) |              | 90° F          |             |

### 18. WHEN TO TURN OFF BURNER

The burner can be extinguished either manually by the Off-On switch or automatically by the grain temperature control when the grain reaches the desired dryness. This can be determined by use of a moisture tester. Allow the fan to run until the grain cools to about 20° above the outside temperature or 10° above grain in storage. Grain will dry as much as 1% during the cooling period, depending on the relative humidity.

### 19. UNLOADING

After grain has cooled, swing the unloading spout to the unloading position if dryer is equipped with the standard swivel head or engage hydraulics to motor if equipped with horizontal unloading head.

### 20. DRYER NOT IN USE

When dryer is not in use, the hand valve under the control panel and the circuit breaker switch in the control panel must be in "OFF" position. The supply line should be shut off at the tank also. If location is such as to permit traffic or livestock between dryer and supply tank, protection of supply line is a must.

NOTE: When shutting the burner off for an extended period of time (even overnight) it is a good safety practice to shut the gas off at the supply tank and let all of the gas in the lines burn out.

### 21. GENERAL OPERATING MAINTENANCE

- (1) Keep area clean of shucks, chaff and other combustible foreign material.
- (2) Keep Fan Screen cleaned.
- (3) Drain propylene out of oil trap pipe in upper plumbing weekly.
- (4) All controls should be cycled and checked periodically.
- (5) Screen in supply line strainer checked and cleaned periodically.
- (6) Check all belts for tension.
- (7) Lubricate bearings as outlined.
- (8) Depending on operating and fuel conditions the burner ports may need to be cleaned periodically. Working from inside the plenum chamber and using a 5/64" diameter drill bit or torch tip cleaner open up the burner ports.
- (9) Keep all safety decals and operating instructions clean and legible. If any decals become non-legible, they should be replaced.

REMEMBER!!! An ounce of prevention is worth a pound of cure.

## PREPARING DRYER FOR STORAGE

- (a) Open clean out door on bottom well, clean out all grain.
- (b) With masking tape or equivalent, seal holes in air switch tube, and openings in fuel system.
- (c) Relax belts.
- (d) Brush protective coating of oil on agitator roller & chain.
- (e) Lubricate all bearings.
- (f) Inspect for worn or damaged parts which should be replaced before being used again.
- (g) Set jacks to support dryer weight.

## PREPARING DRYER FOR USE – OUT OF STORAGE

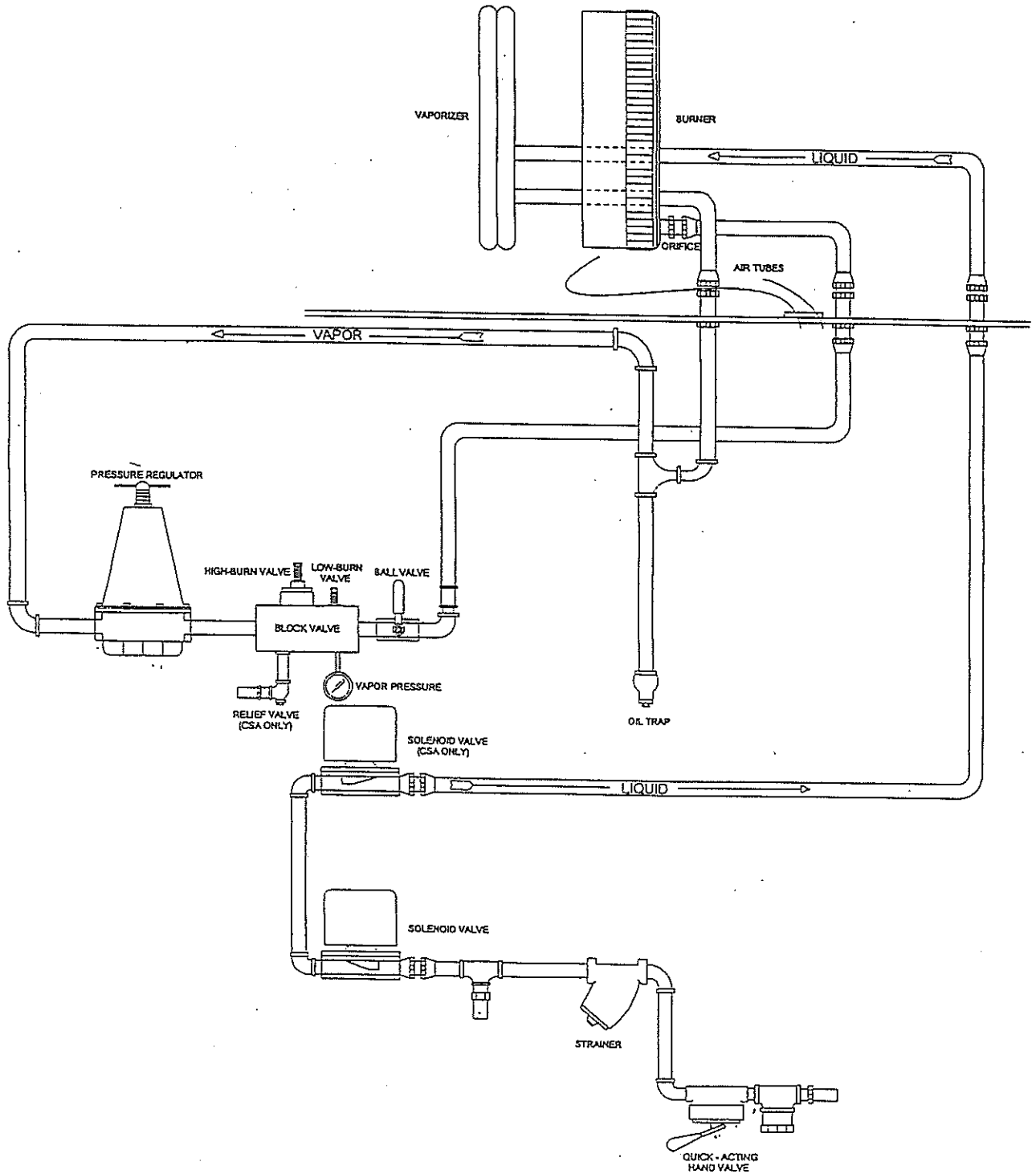
- (a) Remove masking tape covering openings.
- (b) Tighten Belts.
- (c) Lubricate all bearings.
- (d) Make certain bottom well is clean and close clean out door just prior to using.
- (e) Close plenum access door.
- (f) Check burner ports and clean if necessary. See item (8) of general operating maintenance.
- (g) Test fire the burner and check out all the controls to make sure they are working properly.
- (h) Level dryer and make certain the weight is equally distributed on the jacks.
- (i) Check safety and operating decals. If any are not legible they should be replaced.

## 22. TRANSPORTING THE DRYER

- a) Make certain the hitch pin is securely attached and an alternate hitch safety chain is secured to the dryer and towing vehicle.
- b) Do not transport the dryer at speeds in excess of 20 MPH (32 KPH) and comply with any local regulations governing marking, towing and maximum width.
- c) Do not transport the dryer after dark or during periods of poor visibility.
- d) Be alert to overhead obstructions and wires. Failure to do so will result in injury or electrocution. Removal of the top auger section is recommended before towing.
- e) Maintain proper tire pressure. (Refer to tire manufacturer's recommendations on the side-wall).

# MAINTENANCE SERVICE AND TROUBLE SHOOTING FOR GT GRAIN DRYERS

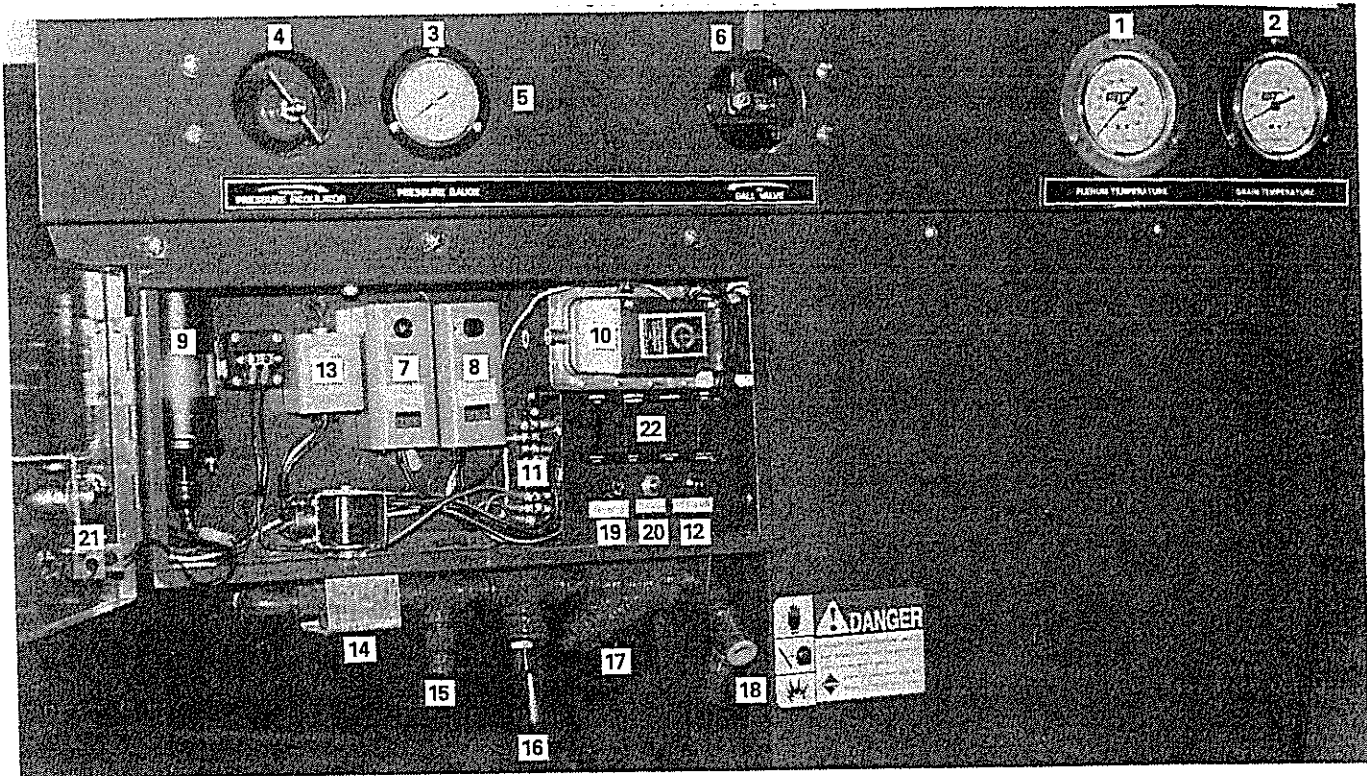
## PROPANE GAS FLOW CHART



THIS PICTURE SHOWS ALL COMPONENTS OF THE CONTROL SYSTEM OF THE GT DRYER. ALL PARTS ARE NUMBERED AND IDENTIFIED BY DESCRIPTION. THE FOLLOWING PAGES OF THIS MAINTENANCE AND SERVICE BULLETIN REFER TO THE INFORMATION CONTAINED HEREIN.

STUDY THIS INFORMATION. IT WILL GREATLY ASSIST YOU IN THE OPERATION OF YOUR DRYER.

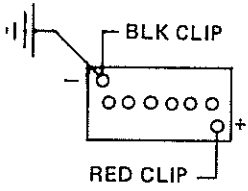
### NON MICRO-PRO



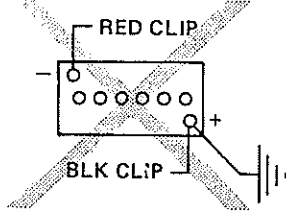
- |     |   |     |                              |
|-----|---|-----|------------------------------|
| 1.  | Plenum Thermometer  | 12. | On-Off Switch (Power Switch) |
| 2.  | Grain Thermometer   | 13. | Flame Detector               |
| 3.  | Pressure Gauge  | 14. | Solenoid Valve - Liquid      |
| 4.  | Pressure Regulator  | 15. | Pressure Relief Valve        |
| 5.  | Solenoid Valve — Vapor<br>(located directly behind panel) | 16. | Manual Valve - Propane       |
| 6.  | Ball Valve  | 17. | Strainer                     |
| 7.  | Plenum Control  | 18. | Propane Inlet                |
| 8.  | Grain Control, Temperature                                | 19. | Fuse                         |
| 9.  | Ignition Coil   | 20. | Start Switch                 |
| 10. | Air Switch  | 21. | Panel Light                  |
| 11. | Terminal Block  | 22. | Indicator Lights             |

# BATTERY CONNECTIONS

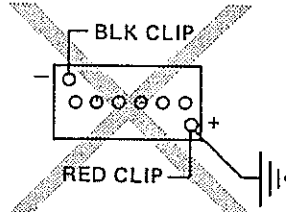
## 12 VOLT SYSTEM (ONE 12 VOLT BATTERY)



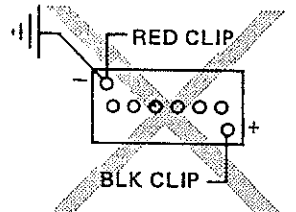
CORRECT



INCORRECT

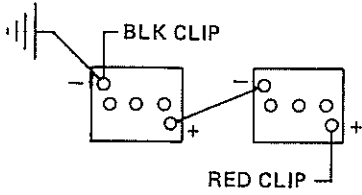


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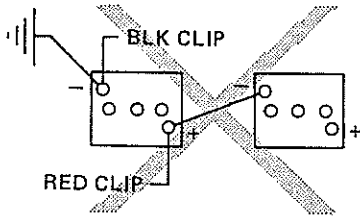


INCORRECT

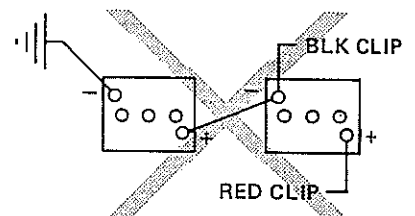
## 12 VOLT SYSTEM (TWO 6 VOLT BATTERIES)



CORRECT

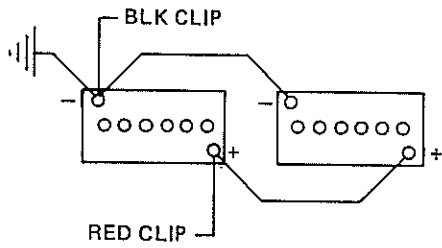


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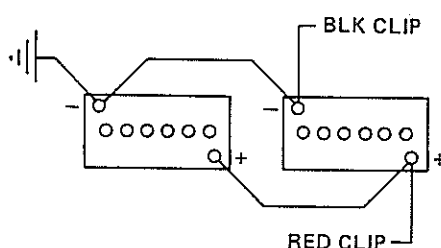


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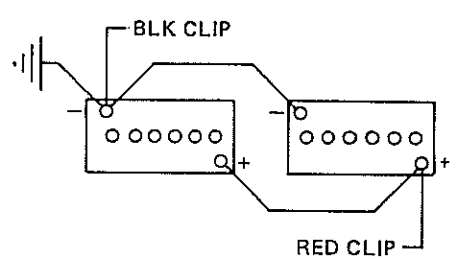
## 12 VOLT SYSTEM (TWO 12 VOLT BATTERIES)



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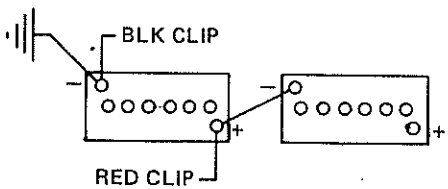


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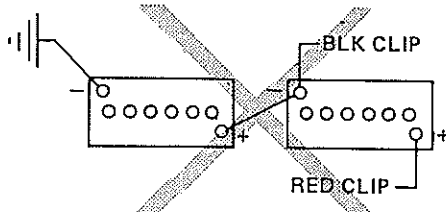


CORRECT

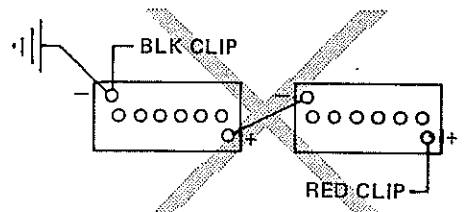
## 24 VOLT SYSTEM (TWO 12 VOLT BATTERIES)



CORRECT



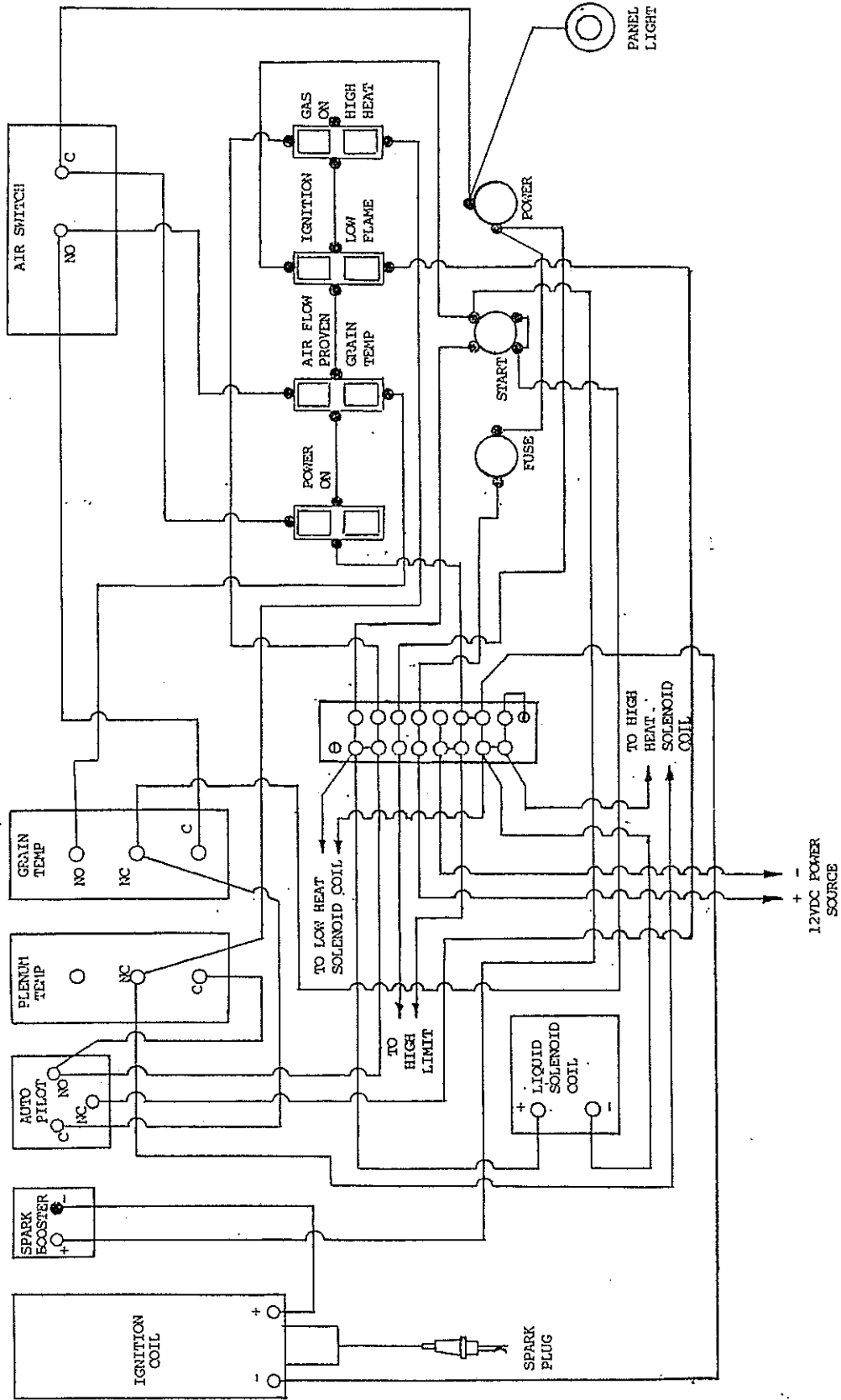
INCORRECT



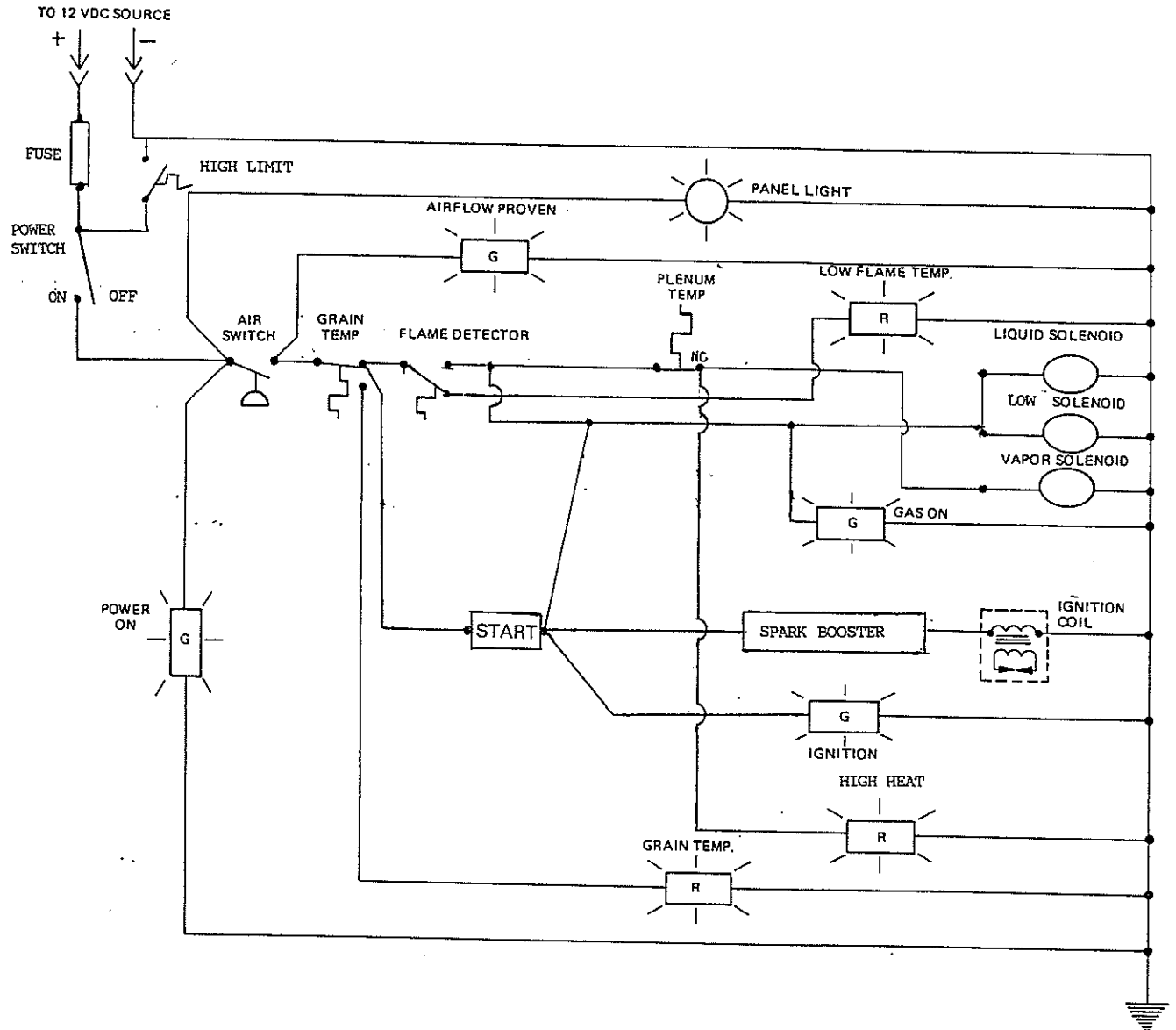
INCORRECT



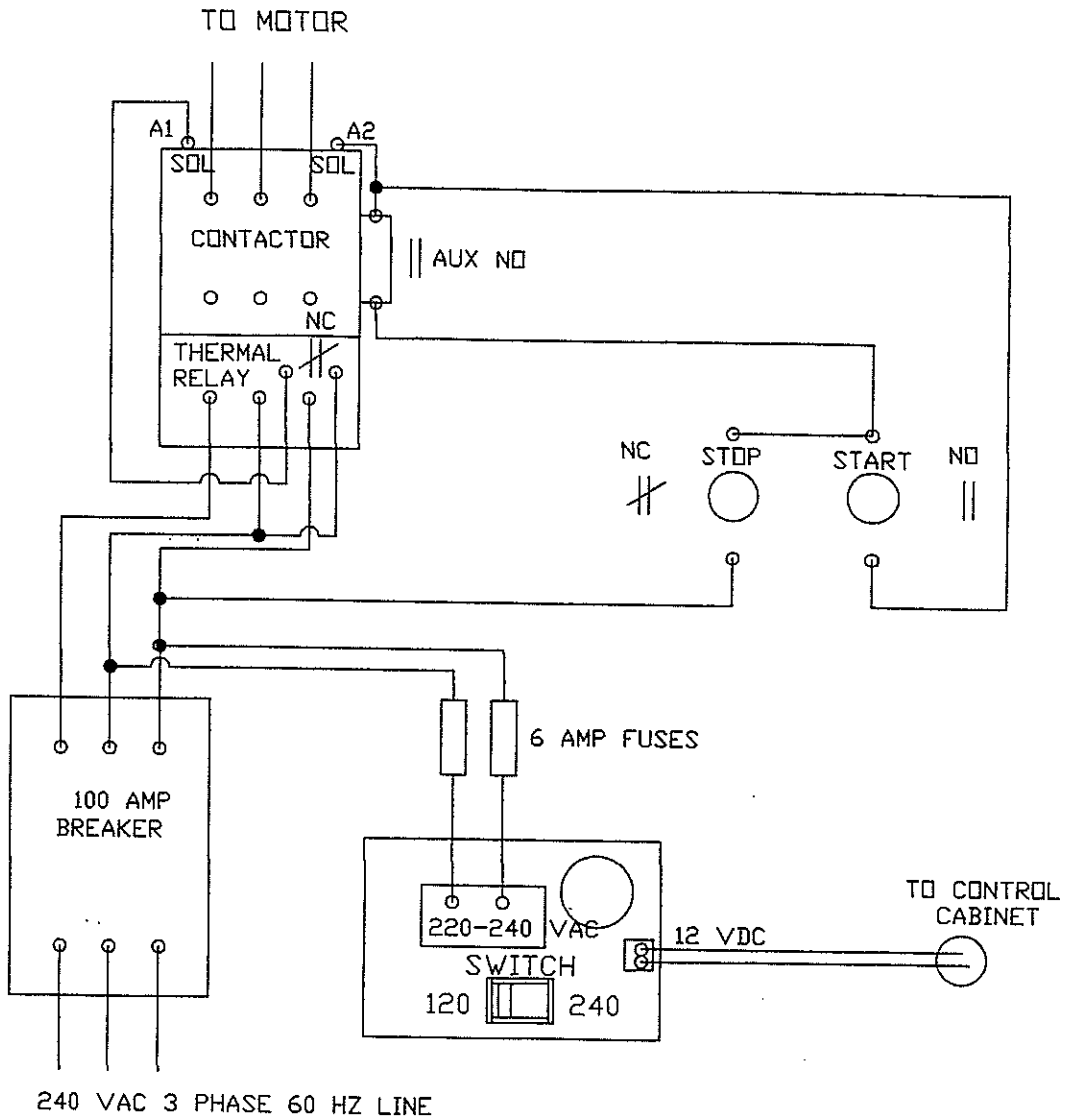
# WIRING DIAGRAM



# ELECTRIC SCHEMATIC - NON MICRO



## SIDE MOUNT DRIVE



## SIDE MOUNT DRIVE SEQUENCE OF OPERATION

With the circuit breaker connected to the proper source and in the on position, the circuit is completed to the contactor thru the thermal overload relay and to the transformer on the AC to DC converter which supplies DC voltage to the burner control panel. The converter switch can be set to have AC input of 120 or 240 volts.

Pushing the motor start button completes the circuit to the coils on the contactor and causes the motor to start.

The start button can now be released as the interlock will hold until the stop button is pushed.

## TROUBLE SHOOTING



**CAUTION:** Caution should be exercised when checking control panel. Use volt meter or test light.

### Problem A. BURNER WILL NOT LIGHT.

#### Probable Cause

1. Are both tank and dryer fuel valves open?
2. Is power supply properly connected? (Green "power on" light should be on with the power switch in the on position.) Must have the red battery clip connected to the hot (+) side of the battery and the black clip connected to the ground (-) side of the battery. Refer to page 19 for proper battery connections.
3. Check that circuit breaker switch didn't trip.
4. Is grain temperature above control setting? (Red grain temperature light will be on if control setting is exceeded.)
5. Check to see that both solenoid gas valves are opening. With fan at operating speed, or with air switch jumpered, flip the "power" switch to "on" and watch pressure gauge. If valves open there should be a pressure reading.
6. Air switch not closing (Airflow light not on). Remove and clean or replace air switch tube.
7. Check for plugged orifice.
8. Possible loose wire connection.
9. Gas pressure too low. May require up to 5 psi. for ignition with propane burner.
10. Gas pressure too high. 30 psi. is near maximum for ignition with the propane burner. If gas pressures above 30 psi. are encountered, check the 5/64" diameter burner parts for signs of plugging and clean them out if necessary.
11. System improperly grounded. Check lead wire connections at terminal block.
12. Check plug for spark. If no spark check the following after disconnecting power to the system.
  - a. Check spark gap. Gap should be  $3/32'' \pm 1/32''$ . If plug is carboned at the points, clean and replace after checking gap.
  - b. Check high voltage lead wire for cracks or breaks, and replace if necessary.
  - c. Check that the high voltage lead wire is not too close to a metal surface to insure that arcing will not occur at any point other than across the high voltage electrode at the ignitor.
13. Check fuel strainer.

Problem B. BURNER LIGHTS BUT PRESSURE WILL NOT EXCEED 5 TO 6 POUNDS AND/OR HAS EXCESSIVE FLUTTERING.

Probable Cause

1. Vapor solenoid valve malfunctioning.  
Solution:  
Disassemble solenoid valve body and remove diaphragm. If diaphragm is oily or dirty, wipe clean and replace. If diaphragm is ruptured replace with new diaphragm.
2. Pressure regulator malfunctioning.

Problem C. BURNER IGNITES BUT GOES OUT DURING OPERATION.

Probable Cause

1. Plenum control set below plenum temperature. (Red plenum temperature light will be on.)
2. Grain temperature exceeds control setting. (Red grain temperature light will be on.)
3. Electrical connections may be loose.
4. Worn insulation or wet wires may be grounding out.
5. Excess flow valve at fuel tank may be closing.
6. Check for stoppage in air switch tube. (Green airflow light not on.) (Remove tube from switch and blow out dirt.)
7. The flame detector bulb is not sensing flame at the burner. (Red low flame light on) The flame detector must sense enough heat from the flame to close its contacts before the delay timer times out or the gas valves will close. If the flame detector is not closing it will be necessary to adjust the sensor bulb mounted to the burner so that it picks up more heat from the flame. To do this adjust bulb so that it protrudes into the burner 3/8 to 1/2". Do not over-tighten the locking nut on the flame detector bulb.

Problem D. UNCONTROLLABLE HEAT.

Probable Cause

1. Cracked Vaporizer.
2. Ruptured gas line.

Problem E. TRASH OR GRAIN FIRE.

Probable Cause

1. Excessive plenum temperature.
2. Trash build-up in plenum.
3. Poor circulation due to agitator being out of operation or adjustment.
4. Ruptured gas line or vaporizer.
5. Improper burner and baffle adjustment.

Solution:

- a. Shut off gas supply.
- b. Disengage fan clutch and continue to circulate grain in machine or empty machine if necessary.

Problem F. GAS WILL NOT SHUT OFF IMMEDIATELY WHEN POWER IS SHUT OFF.

Probable Cause

1. Perforated diaphragm in vapor solenoid valve.
2. Plunger upside down in vapor solenoid valve.
3. Lack of diaphragm in vapor solenoid valve.

Problem G. AGITATOR DRIVE CHAIN OFF



DANGER Do Not open inspection door or enter machine when in operation.

Probable Cause

1. Roller stuck — seized bearing — may be flat on one side.
2. Too much horizontal play between agitator race and rollers.
3. Agitator drive sprocket out of line.
4. Too slack a chain.
5. Excess feeding of loading auger causing grain level to rise above agitator. (Close grain flow regulator slightly to reduce feed rate.)

Problem H. AUGER STOPPAGE

Probable Cause

1. Slack belt.
2. Block of wood or rock lodged between auger flight and housing.
3. Extremely wet grain standing over night.
4. Bottom auger bearing frozen

Problem I. EXCESSIVE DRYING TIME

Probable Cause

1. Too low plenum temperature for conditions.
2. Inaccurate plenum temperature gauge
3. Poor circulation of grain.
4. Dirty or trashy grain.
5. Hard to dry grain variety (Thick seed coat)
6. Incorrect Fan Speed.
7. Adverse weather conditions.
8. Re-circulation of exhaust air from dryer back into plenum.

## Problem J. POOR GRAIN CIRCULATION

### Probable Cause

1. Fan speed above that recommended.
2. Build up of foreign material, especially in bottom section of dryer.
3. Agitator not operating.

### INDICATOR LIGHT CHECK OUT PROCEDURE

The indicator lights on the dryer's switch panel have been put there to aid in the operation of the dryer. These lights should be checked periodically to assure that they are operating.

With the fan operating at the recommended RPM, the electrical power source properly connected, the gas supply turned on, and all the gas valves open complete the following test.

Turn the power switch on and see that the green "power on" and "air flow proven" lights come on. Also see that the red "low flame temperature" light comes on.

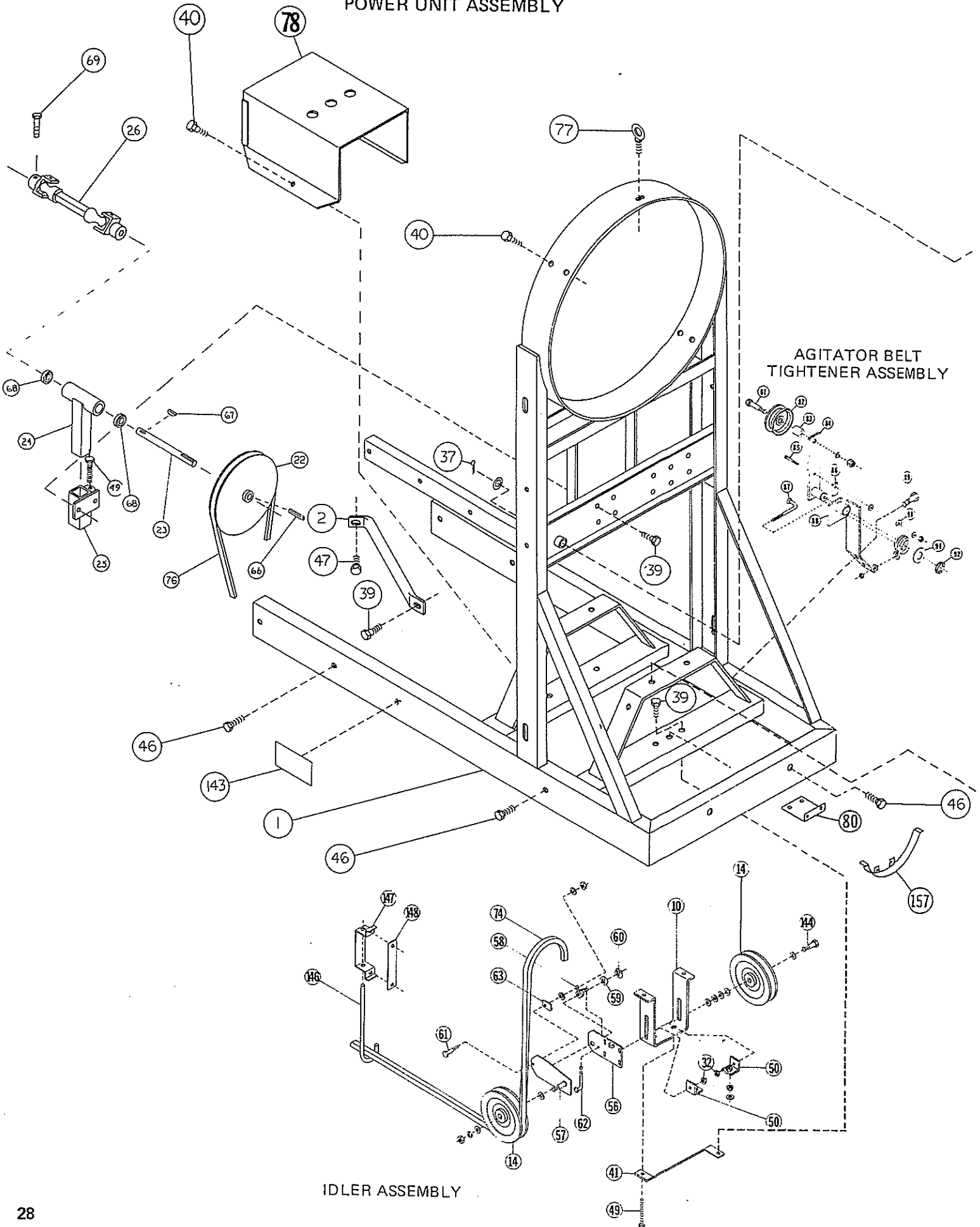
Push the start button, the ignition light and the gas on light will come on. Hold start button until the red low flame light goes off and then release.

Panel should now register the normal operating condition, i.e. green "power, airflow and gas on" lights on. There will be no red lights on unless the High Heat thermostat is above the plenum temperature, then the High Heat Red light will be on.

Turn grain temperature thermostat below indicated grain temperature. The red grain temperature light will come on and the gas on light should go off. After approximately 20 sec. the low flame light will go off.

**ASSEMBLY DRAWINGS  
AND  
PARTS LISTS**

# POWER UNIT ASSEMBLY



## AGITATOR BELT TIGHTENER ASSEMBLY

## IDLER ASSEMBLY



## POWER UNIT ASSEMBLY

| REF. NO. | PART NO. | NO. REQ'D. | DESCRIPTION                                     |
|----------|----------|------------|---|
| 1        | D52016   | 1          | Frame Power                                     |
| 2        | D52021   | 2          | Brace   |
| 3        | 76006    | 1          | Sheave, Fan Driven (2B 5.6) 545XL               |
| 3        | 76047    | 1          | Sheave, Fan Driven (2B 6.0) 645XL               |
|          | 76007    | 1          | Hub, Fan Driven Sheave                          |
| 7        | D52075A  | 1          | Fan, 545XL                                      |
| 7        | D52076A  | 1          | Fan, 645XL                                      |
|          | 76067    | 1          | Hub, 1 1/2"                                     |
| 8        | D52081   | 1          | Shaft, Fan                                      |
| 10       | D32010   | 1          | Support, Idler                                  |
| 14       | D22142   | 2          | Sheave, Idler                                   |
| 14       | D22145   | 2          | Sheave, Cast (UK)                               |
| 15       | D22090   | 2          | Bearing, 1 1/2" Pillow Block w/Shim & Adapter   |
| 16       | D22097   | 2          | Bearing, 1 1/2" Pillow Block                    |
| 17       | D22161S  | 1          | Shaft, Power                                    |
| 18       | D22170   | 1          | Sheave, Fan Drive (2B 24)                       |
| 19       | D22180   | 1          | Sheave, Auger Drive (1C9)                       |
| 20       | D52194   | 1          | Tumbler, PTO Drive (See page 33 for parts)      |
| 21       | D22780   | 1          | Sheave, Agitator Drive (1B4)                    |
| 22       | D22790   | 1          | Sheave, Agitator Driven (1B16)                  |
| 23       | D22850   | 1          | Jackshaft, Agitator                             |
| 24       | D22861   | 1          | Housing, Agitator Bearing w/o Bearings          |
| 24       | D22866   | 1          | Agitator Bearing Housing w/Bearings             |
| 25       | D22871   | 1          | Mount, Agitator Bearing Housing                 |
| 26       | D58250   | 1          | Tumbler, Agitator Drive (See page 32 for parts) |
| 27       | 71106    | 6          | Capscrew, 1/2" x 2"                             |
| 28       | 71107    | 2          | Capscrew, 1/2" x 2 1/4"                         |
| 29       | 71823    | 28         | Machine Screw - 1/4" - 20 x 1/2" Slotted Head   |
| 31       | 72591    | 4          | Machine Bushing, 7/8"                           |
| 32       | 72255    | 2          | Nut, 5/8" Jam                                   |
| 34       | 73411    | 2          | Key, 3/8" sq. x 1 1/2" lg.                      |
| 37       | 73534    | 2          | Pin, Cotter 1/8" x 1 1/4"                       |
| 38       | 71129    | 3          | Capscrew, 5/8" x 1 1/2"                         |
| 39       | 71102    | 11         | Capscrew, 1/2" x 1"                             |
| 40       | 71053    | 12         | Capscrew, 3/8" x 1 1/4"                         |
| 41       | D52632   | 1          | Brace, Idler Support                            |
| 42       | D52691   | 1          | Brace, Fan Shaft Support                        |
| 43       | 73332    | 2          | Zerk, 1/8" NPT Female Grease                    |
| 44       | D52930   | 2          | Grease Line, Fan Bearing                        |
| 45       | 73109    | 4          | Compression Fitting, 3/16" Tube to 1/8 N.P.T.   |
| 46       | 71111    | 8          | Capscrew, 1/2" x 3 1/2"                         |
| 47       | 71113    | 1          | Capscrew, 1/2" x 4 1/2"                         |
| 48       | D52461   | 1          | Hitch   |
| 49       | 71957    | 3          | Capscrew, 1/2" x 5" Full Thread                 |
| 50       | D22260   | 2          | Tightener                                       |
| 53       | 73415    | 1          | Key 3/8" sq. x 4 1/4"                           |
| 54       | D22099   | As Req'd.  | Spacer  |
| 56       | D22801   | 1          | Fixed Member, Spring Loaded Idler               |
| 57       | D22812   | 1          | Pivot Member, Spring Loaded Idler               |
| 58       | 73308    | 1          | Spring  |
| 59       | D22820   | 1          | Washer  |
| 60       | 73231    | 1          | Ring, Retaining                                 |
| 61       | 71028    | 1          | Capscrew, 5/16" x 1 1/4"                        |
| 62       | D22840   | 1          | L-Bolt  |
| 63       | D22830   | 1          | Stop, Pivot                                     |
| 64       | 73411    | 1          | Key, 3/8" x 3/8" x 1 1/2"                       |
| 65       | 71110    | 3          | Capscrew, 1/2" x 3"                             |
| 66       | 73400    | 1          | Key, 1/4" sq. x 1 1/4"                          |
| 67       | 42-18282 | 1          | Key, 808 Woodruff                               |
| 68       | 42-16334 | 2          | Bearing, Agitator Jackshaft                     |
| 69       | 73508    | 1          | Capscrew, 3/8" x 2 1/2" H.T.                    |
| 70       | 73420    | 1          | Key, 3/8" sq. x 6-3/8"                          |
| 71       | D52161   | 1          | Arm, Fan Clutch Idler                           |
| 72       | 42-16336 | 1          | Pulley, Idler                                   |
| 73       | D32220   | 1          | Spacer  |
| 74       | D52620   | 1          | Belt, Auger Drive (C255)                        |
| 75       | D52271   | 2          | Belt, Fan Drive (B148)                          |

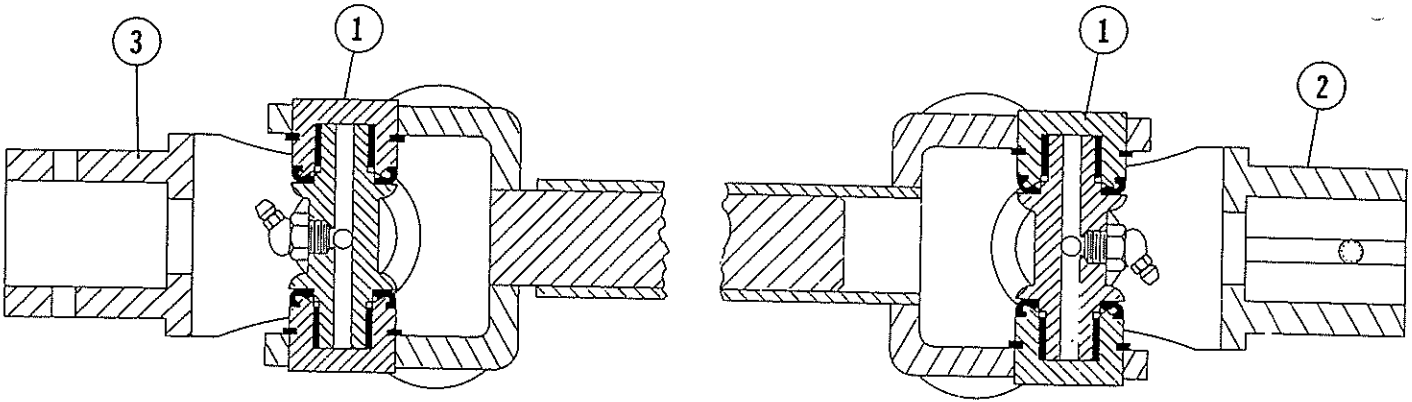
POWER UNIT ASSEMBLY

| REF. NO. | PART NO. | NO. REQ'D. | DESCRIPTION   |
|----------|----------|------------|---|
| 76       | 42-16125 | 1          | Belt, Agitator Drive (B85)  |
| 77       | 71941    | 1          | Eyebolt, ½" x 1½"   |
| 78       | D22652   | 1          | Guard, Power Shaft  |
|          | D52921   |            | Agitator Idler Assembly<br>(includes items 81-92 inclusive)       |
| 79       | 71051    | 1          | Capscrew, 3/8" x ¾"   |
| 80       | D57135   | 1          | Belt Retainer, Lower Fan  |
| 81       | 71109    | 1          | Capscrew, ½" x 2¾"  |
| 82       | 42-16335 | 1          | Pulley, Idler   |
| 83       | D22927   | 1          | Spacer, Idler   |
| 84       | D22926   | 1          | Arm, Idler  |
| 85       | 71029    | 1          | Capscrew, 5/16" x 1½"   |
| 86       | D22830   | 1          | Stop, Pivot   |
| 87       | D22840   | 1          | L-Bolt  |
| 88       | D52926   | 1          | Mount, Idler  |
| 89       | 71053    | 2          | Capscrew, 3/8" x 1¼"  |
| 90       | 73308    | 1          | Spring  |
| 91       | D22820   | 1          | Washer  |
| 92       | 73231    | 1          | Ring, Retainer  |
| 93       | D52171   | 1          | Pivot Clutch Idler  |
| 94       | D32270   | 1          | Pin, Fan Clutch Swivel  |
| 96       | D52235   | 1          | Arm, Link   |
| 98       | D32040   | 1          | Tube, Belt Retaining  |
| 100      | D32260   | 1          | Guide, Fan Clutch Belt  |
| 110      | D52152   | 1          | Handle, Fan Clutch  |
| 114      | 73536    | 1          | Pin, Cotter 1/8" x 1¾"  |
| 115      | D32250   | 1          | Brake, Fan Sheave   |
| 116      | 71061    | 2          | Capscrew, 3/8" x 3½"  |
| 117      | 72364    | 1          | Nut, 3/8" Spot Weld   |
| 118      | 73048    |            | Adapter, Grease Line, ¼" x 28 Male to 1/8" N.P.T.<br>Female x 90° |
| 119      | D52663   | 1          | Panel, Right Fan Guard  |
| 120      | D52671   | 1          | Panel, Left Fan Guard   |
| 121      | D52042   | 1          | Panel, Top Fan Guard  |
| 122      | D52885   | 1          | Panel, Right Belt Guard   |
| 123      | D52880   | 1          | Panel, Left Belt Guard  |
| 124      | D52062   | 1          | Guard, Front Belt   |
| 125      | D52893   | 1          | Wrapper, Right Power Frame - (LP Gas)                             |
| 125      | D52898   | 1          | Wrapper, Right Power Frame - (NP)                                 |
| 126      | D52130   | 1          | Wrapper, Left Power Frame   |
| 127      | D52900   | 1          | Wrapper, Front Power Frame  |
| 128      | D52052   | 1          | Grill   |
| 129      | D32120   | 2          | Grill Hinge Strap   |
| 130      | 73278    | 1          | Grommet   |
| 131      | 73957    | 1          | Decal, Valve  |
| 132      | 73958    | 1          | Decal, Plenum & Grain Temperature                                 |
| 133      | 73682    | 1          | Decal, Caution Be a Safe Operator                                 |
| 134      | 73661    | 1          | Decal, Danger LP Gas Supply                                       |
| 135      | 73668    | 1          | Decal, Caution Fan Clutch   |
| 136      | 73607    | 1          | Decal, Max. PTO Speed 540 RPM                                     |
| 137      | 73619    | 1          | Decal, Max. Fan Speed 2250 RPM                                    |
| 138      | 73949    | 1          | Decal, GT Logo  |
| 139      | 74712    | 1          | Decal, 545XL  |
| 140      | 71823    | 42         | ¼" x 20 x ½" Slotted HD Machine Screw                             |
| 141      | 71825    | 6          | ¼" x 20 x ¾" Slotted HD Machine Screw                             |
| 143      | 73833    | 1          | Decal, Danger: Keep Hands & Feet Away                             |
| 144      | 71135    | 1          | Capscrew, 5/8" x 3"   |
| 145      | 73981    | 1          | Decal, DANGER - Electrocutation                                   |
| 146      | D21420   | 1          | Rod, Auger Belt Guide   |
| 147      | D21430   | 1          | Bracket, Auger Belt Guide Rod                                     |
| 148      | D21440   | 1          | Clamp, Auger Guide Bracket  |
| 157      | D57325   | 1          | Guide, Fan Belt   |

Note: For nuts, washers and lockwashers, see page 63.

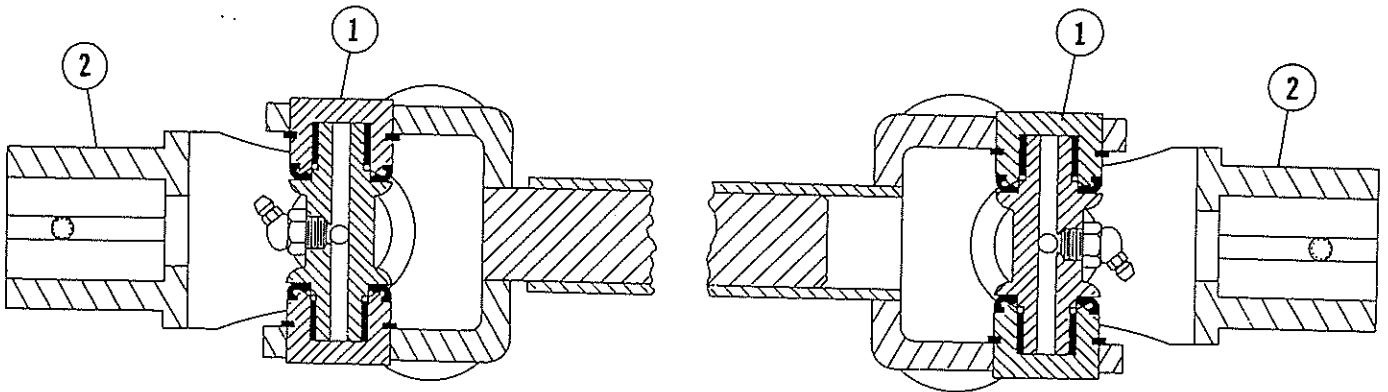
**AGITATOR DRIVE TUMBLER  
D58250**

| REF. NO. | PART NO. | NO.REQ'D | DESCRIPTION     |
|----------|----------|----------|-----------------|
| 1        | 75519    | 2        | U-Joint Kit     |
| 2        | 42-16182 | 1        | Yoke w/Keyway   |
| 3        | 73596    | 1        | Yoke w/Pin Hole |



**LOADING AUGER TUMBLER  
D59343**

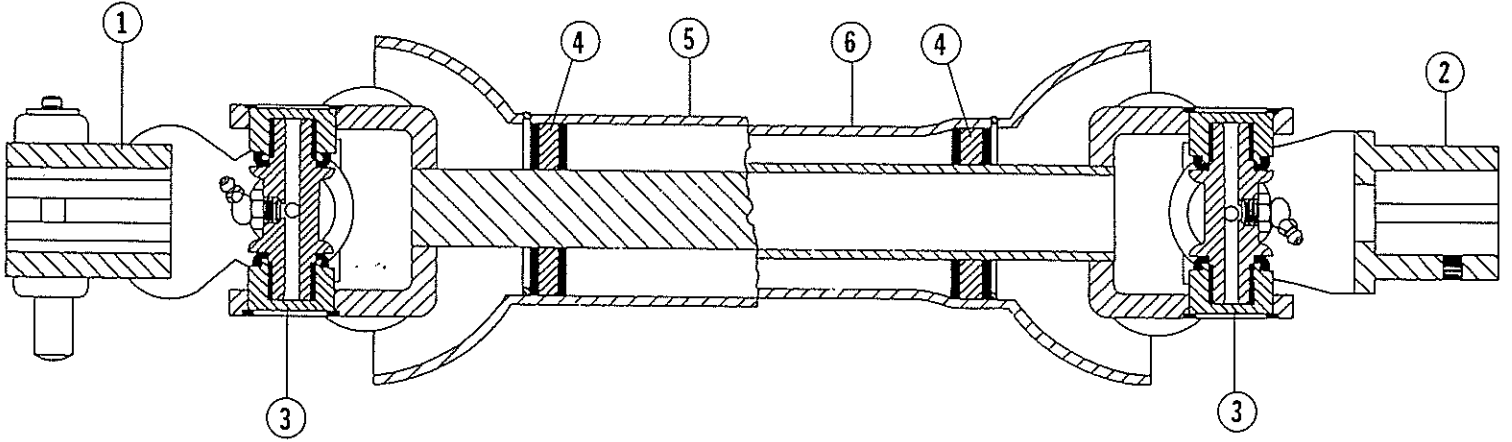
| REF. NO. | PART NO. | NO.REQ'D | DESCRIPTION   |
|----------|----------|----------|---------------|
| 1        | 75519    | 2        | U-Joint Kit   |
| 2        | 42-16182 | 2        | Yoke w/Keyway |



Note: For nuts, washers and lockwashers, see page 63.

PTO TUMBLER SHAFT  
D52194  
TUMBLER

| REF. NO. | PART NO. | NO. REQ'D. | DESCRIPTION          |
|----------|----------|------------|----------------------|
| 1        | 73299    | 2          | Yoke w/Spline        |
| 2        | 73299    | 1          | 1-3/8 Sp Yoke wchd   |
| 3        | 73298    | 2          | U-Joint Kit          |
| 4        | 75514    | 2          | Nylon Bearing Kit    |
| 5        | 75516    | 1          | Safety Shield, Outer |
| 6        | 75515    | 1          | Safety Shield, Inner |





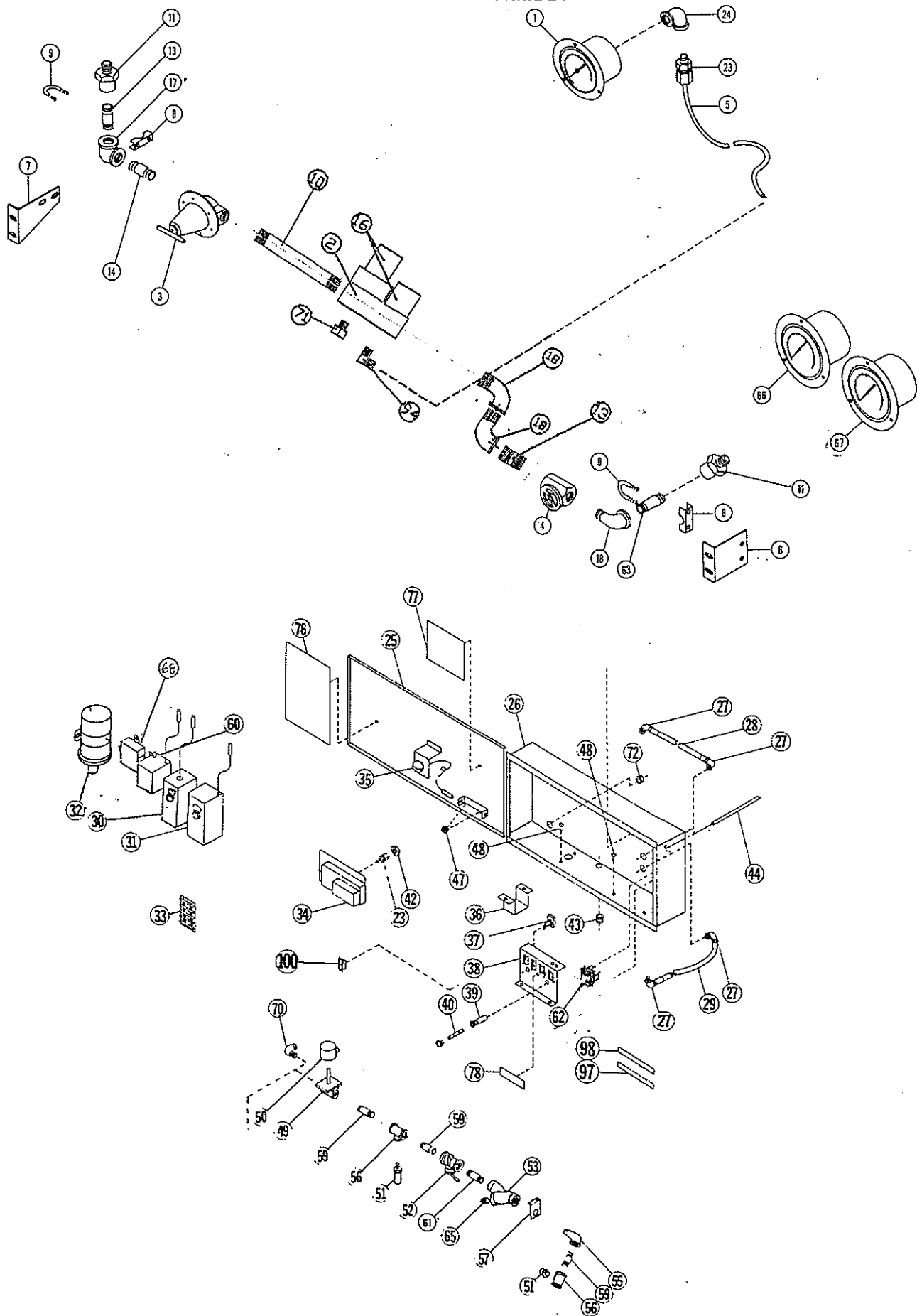
BURNER ASSEMBLY

| REF. NO. | PART NO.  | NO.REQ'D. | DESCRIPTION                         |
|----------|-----------|-----------|-------------------------------------|
| 1        | D52295    | 1         | Tube, Burner (Propane)              |
| 1        | D52960    | 1         | Tube, Burner (Natural Gas)          |
| 2        | D52303    | 1         | Burner, Ring (Propane)              |
| 2        | D52305    | 1         | Burner, Ring (Natural Gas)          |
| 3        | D52520*   | 1         | Ring, Flame Deflector               |
| 4        | D22320    | 1         | Spark Plug                          |
| 5        | 57001279* | 1         | Vaporizer, Ring                     |
| 6        | 57001242* | 2         | Bracket, Vaporizer                  |
| 7        | 57001240  | 3         | Mount, Burner                       |
| 8        | D22462    | 1         | Window, Plexiglass                  |
| 9        | D52110    | 1         | Tube, Outside Liquid to Vapor       |
| 9        | D32331*   | 1         | Tube, Outside Liquid to Vapor (CSA) |
| 10       | D32312*   | 1         | Tube, Outside Vapor to Plumb.       |
| 11       | 57001268* | 1         | Tube, Inside Vapor                  |
| 12       | 57001267* | 1         | Tube, Inside Liquid                 |
| 13       | D52374*   | 1         | Tube, Inside Vapor to Burner        |
| 15       | D52404    | 1         | Orifice - LP                        |
| 16       | D32301    | 1         | Holder, Orifice                     |
| 18       | 73086*    | 8         | Adapter, ½" P. to ½" T. Union       |
| 19       | 71028*    | 4         | Capscrew, 5/16" x 1¼" Hex           |
| 21       | D37330    | 3         | Coupler, Union Brkt.                |
| 22       | 71942*    | 4         | Screw, No. 14 x ¾" Metal            |
| 23       | 73270     | 2         | Grommet, 3/8" I.D. Rubber           |
| 24       | 71825     | 8         | Machine Screw, ¼" - 20 x ¾" SL HD   |
| 25       | 72035     | 2         | Screw, No. 8 x ¾" Metal             |
| 27       | 77100*    | 1         | Nut, Conduit                        |
| 28       | D52121*   | 1         | Tube, Outside, Vapor to Burner      |
| 29       | 72790*    | 1         | Nipple, ½" Close                    |
| 30       | 72947*    | 1         | Tee, ½" x ½" x ½" N.P.T.            |
| 31       | 72928*    | 1         | Nipple, ½" x 13"                    |
| 32       | 72910*    | 1         | Reducer, ½" x ¼"                    |
| 33       | 72633*    | 1         | Plug, ¼" N.P.T. Pipe                |
| 34       | 57001241  | 1         | Mount, Spark Plug                   |
| 34       | D55520    | 1         | Mount, Spark Plug (NG)              |
| 35       | D32130    | 1         | Bracket, Flame Detector Bulb Mount  |
| 36       | 72797*    | 1         | Nipple, ½" x 4½" XH                 |
| 37       | 72793*    | 1         | Nipple, ½" x 2½" XH                 |
| 38       | 72946*    | 1         | Elbow, ½" x 90° St.                 |
| 39       | 72945*    | 1         | Elbow, ½" x 90°                     |
| 51       | D32370    | 1         | Shield, Burner (Propane)            |
| 51       | D55510    | 1         | Shield, Burner (NG)                 |

NOTE: \*Propane Burners Only

Note: For nuts, washers and lockwashers, see page 63.

# PROPANE CONTROL CABINET ASSEMBLY



PROPANE CONTROL CABINET ASSEMBLY

| REF. NO. | PART NO. | NO. REQ'D | DESCRIPTION                   |
|----------|----------|-----------|-------------------------------|
| 1        | D25102   | 1         | Gauge, Pressure               |
| 2        | 77587    | 1         | Valve, ½" Solenoid Block      |
| 3        | D25191   | 1         | Regulator, ½" Pressure        |
| 4        | 74123    | 1         | Valve, Ball                   |
| 5        | D55310   | 1         | Line, Pressure Gauge          |
| 6        | D25620   | 1         | Bracket, Front Plumbing       |
| 7        | D25631   | 1         | Bracket, Rear Plumbing        |
| 8        | D25610   | 2         | Clamp, ½" Saddle              |
| 9        | 71987    | 2         | U-Bolt                        |
| 10       | 72799    | 1         | Nipple, ½" x 6SCD80           |
| 11       | 73071    | 2         | Connector, ½" T to ½" Pipe    |
|          | D22416   | 1         | Orifice, .125 SS              |
| 13       | 72792    | 2         | Nipple, ½" x 2"               |
| 14       | 72791    | 1         | Nipple, ½" x 1.5"             |
| 16       | 77575    | 2         | Coil, Solenoid Block          |
| 17       | 72945    | 1         | Elbow, ½"                     |
| 18       | 72858    | 3         | Elbow, ½" Street              |
| 19       | 72673    | 1         | Plug, ½" Pipe                 |
| 20       | 72978    | 1         | Union, ½"                     |
| 23       | 73110    | 1         | Connctor, ¼" T to ¼" Pipe     |
| 24       | 72841    | 1         | Elbow, ¼" x 90 Degree         |
| 25       | D25511   | 1         | Door, Cabinet                 |
| 26       | D25503   | 1         | Cabinet                       |
| 27       | 73159    | 2         | Connector, 3/8 Conduit x 90°  |
| 28       | D25261   | 1         | Conduit 16" Lg                |
| 29       | D25263   | 1         | Conduit, 12" Lg               |
| 30       | D25770   | 1         | Switch, Plenum                |
| 31       | K25231   | 1         | Thermostat, Grain Temperature |
| 32       | 77228    | 1         | Coil, Ignition, 12 Volt       |
| 33       | 77230    | 1         | Block, Terminal               |
| 34       | K25030   | 1         | Switch, Air                   |
| 35       | 73223    | 1         | Light, Utility 12 Volt Only   |
| 36       | D25251   | 1         | Bracket, Solenoid             |
| 37       | D25130   | 1         | Switch, On-Off                |
| 38       | D25212   | 1         | Bracket, Switch               |
| 39       | D25170   | 1         | Holder, Fuse                  |
| 40       | 77143    | 1         | Fuse, 10 Amp                  |
| 41       | 72093    | 2         | Screw, No. 8 x 1" Metal       |
| 42       | 72279    | 1         | Nut, 1" N.F. Hex Ham          |
| 43       | 73278    | 1         | Grommet, 5/8 I.D. Rubber      |
| 44       | D52321   | 1         | Tube, Air Switch              |
|          | D22200   | 1         | Wire, Tractor Lead-In         |
|          | 73600    | 2         | Battery Clips                 |

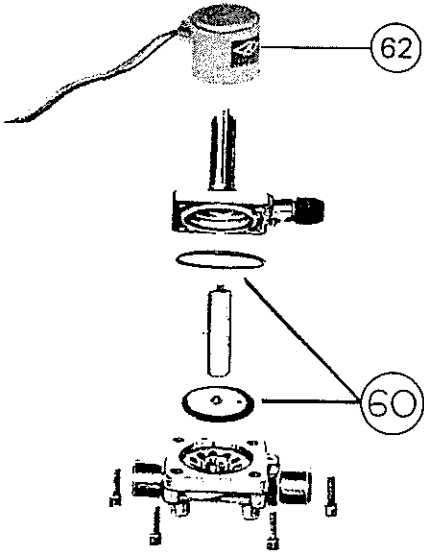
PROPANE CONTROL CABINET ASSEMBLY

| REF. NO. | PART NO. | NO. REQ'D. | DESCRIPTION                                  |
|----------|----------|------------|--|
| 47       | 73271    | 2          | Grommet, ¼" I.D. Rubber                      |
| 48       | 71683    | 5          | Screw, 10 - 24 x ½" Slotted Head Machine     |
| 49       | 77192    | 1          | Body, 3/8" N.P.T. Solenoid Valve (2) FOR CSA |
| 50       | D25522   | 1          | Coil, Solenoid Valve 12 Volt                 |
| 51       | D25240   | 2          | Valve, ¼" N.P.T. Relief                      |
| 52       | D25120   | 1          | Valve, 3/8" N.P.T. Quick Acting              |
| 53       | D25280   | 1          | Strainer, 3/8" N.P.T.                        |
| 54       | 73085    | 1          | Connector, ½" Tube to 3/8" M.N.P.T. (CSA)    |
| 55       | 72944    | 1          | Elbow, 3/8" N.P.T. Street (3) FOR CSA        |
| 56       | 72956    | 2          | Tee, 3/8" N.P.T.                             |
|          | 72980    | 2          | Bushing, 3/8" x ¼" Red                       |
| 57       | D25271   | 1          | Bracket, Plumbing                            |
| 58       | 72784    | 1          | Nipple, 3/8" N.P.T. x 3" X.H. CSA            |
| 59       | 72781    | 3          | Nipple, 3/8" N.P.T. x 1½" X.H.               |
| 60       | D25161   | 1          | Flame Detector                               |
| 61       | 72782    | 1          | Nipple, 3/8" x 2"                            |
| 62       | D25140   | 1          | Switch, Push to Start                        |
| 63       | 72793    | 1          | Nipple, ½" X 2.5"                            |
| 65       | 72653    | 1          | Plug, 3/8" N.P.T. Pipe                       |
| 66       | D24033   | 1          | Thermometer, Plenum                          |
| 67       | D24123   | 1          | Thermometer, Grain                           |
| 68       | 77384    | 1          | Booster, Spark                               |
| 69       | 72035    | 3          | Screw, No. 8 x ¼" Metal                      |
| 70       | 73100    | 1          | Elbow, ½" T - 3/8" NPT x 90° Male            |
| 71       | 73146    | 1          | Plug, ¼" N.P.T. Pipe                         |
| 72       | 73270    | 2          | Grommet, 3/8" I.D. Rubber                    |
| 76       | 74714    | 1          | Decal, Operating Instruction - Propane       |
| 77       | 74715    | 1          | Decal, Wiring Diagram                        |
| 78       | 73962    | 1          | Decal, Push to Start                         |
| 92       | 72620    | 2          | Nipple, ¼" Close                             |
| 93       | 72885    | 1          | Tee, ½" x ½" x ¼"                            |
| 94       | 73047    | 2          | Elbow, 90° Brass, ¼" T. to ¼" M.N.P.T.       |
| 97       | 74531    | 1          | Decal, Red Indicator                         |
| 98       | 74530    | 1          | Decal, Green Indicator                       |
| 100      | 77162    | 4          | Light, Indicator                             |
|          | 77576    | 1          | Kit, Block Valve Diaphragm                   |
|          | 77578    | 1          | Kit, Block Valve Seat Low Burn               |
|          | D22403   | 1          | Orifice Low Burn 3/32                        |
|          | D22416   | 1          | Orifice, .125 SS                             |

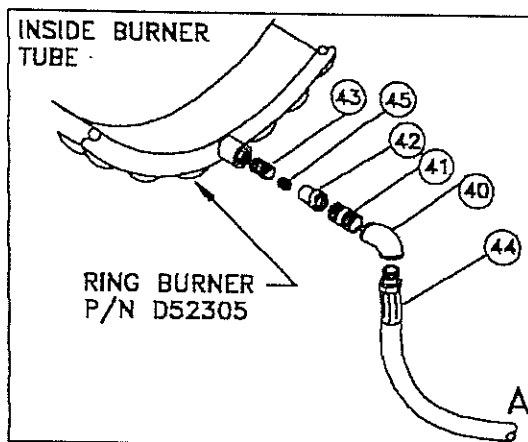
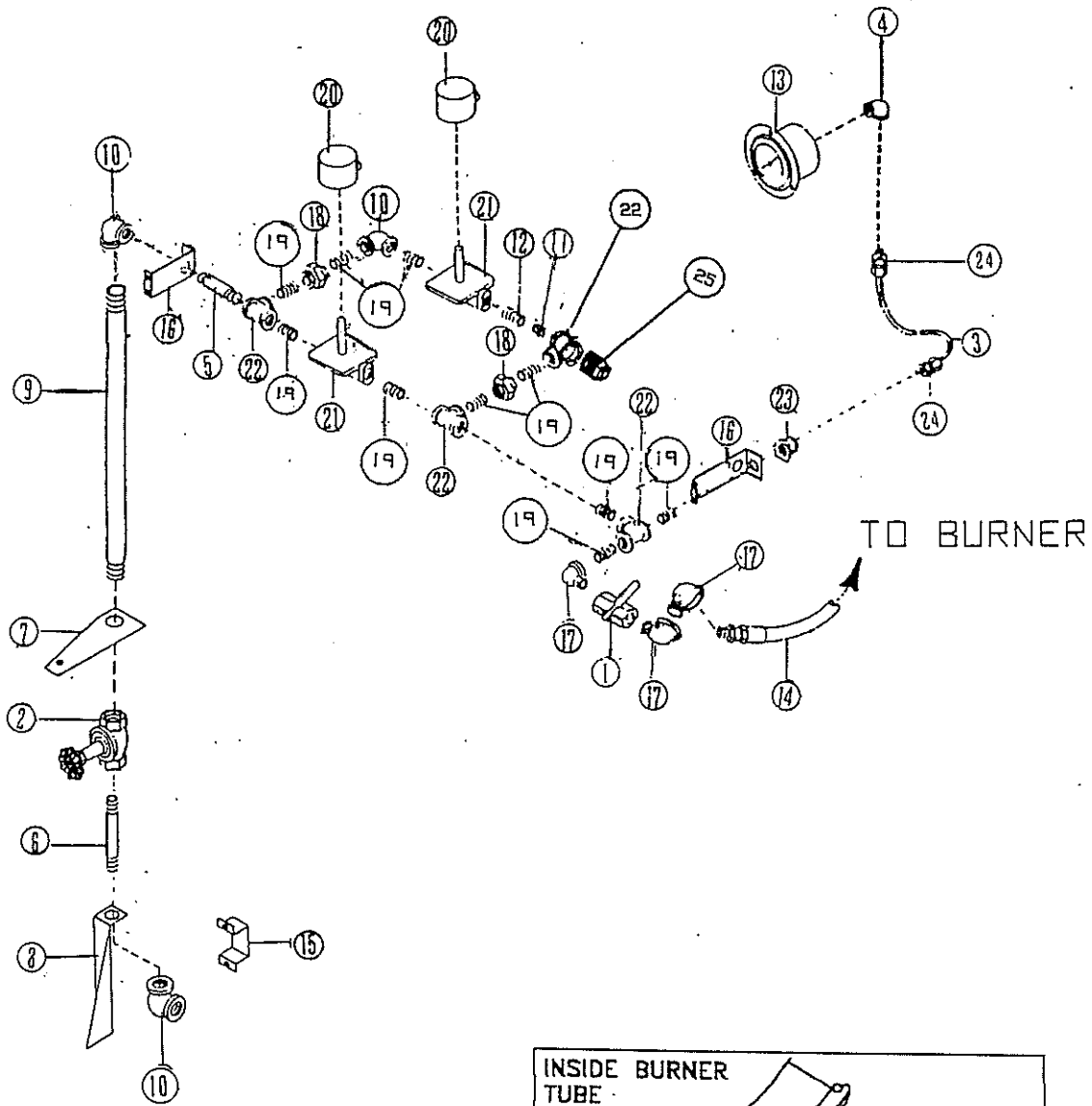
Note: For nuts, washers and lockwashers, see page 63.

## SOLENOID VALVE ASSEMBLY

| REF. NO. | PART NO. | DESCRIPTION  |
|----------|----------|--|
| 60       | 77507    | Kit, 3/8" Solenoid Valve Diaphragm Repair                |
| 60       | 77508    | Kit, 1/2" Solenoid Valve Diaphragm Repair                |
| 60       | 77506    | Kit, 1" Solenoid Valve Diaphragm repair<br>(Natural Gas) |
| 62       | D25542   | Coil, 12 Volt Solenoid Valve, 27" Leads<br>w/Forks       |



NATURAL GAS CONTROL CABINET ASSEMBLY



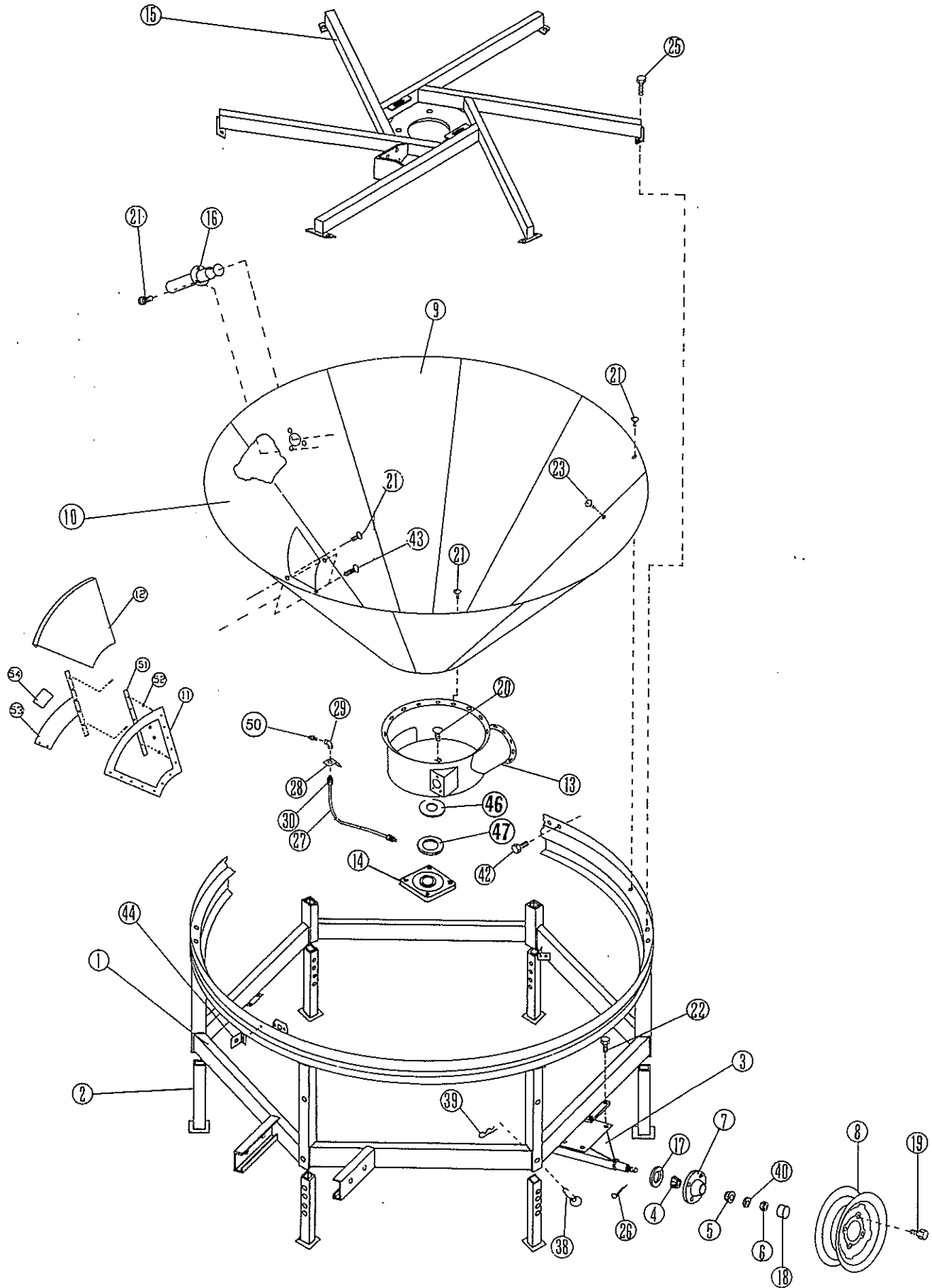
- |    |        |                       |
|----|--------|-----------------------|
| 40 | 72845  | 1 x 90 EL             |
| 41 | 72700  | 1 CLOSE NIPPLE        |
| 42 | 72904  | 3/4 X 1 BELL REDUCER  |
| 43 | D25895 | NIPP[E, ORIFICE       |
| 44 | D52441 | 1 X 32 HOSE           |
| 45 | D52413 | ORIFICE 3/8 NG .5 NPT |

## 545 NATURAL GAS PLUMBING

| REF. NO. | PART NO. | NO. REQ'D | DESCRIPTION                       |
|----------|----------|-----------|-----------------------------------|
| 1        | D55650   | 1         | Valve, 1" Ball                    |
| 2        | 73185    | 1         | Valve, 1" Gate                    |
| 3        | D25305   | 1         | Line, Pressure Gauge              |
| 4        | 72841    | 1         | Elbow, ¼" NPT x 90°               |
| 5        | 72705    | 1         | Nipple, 1" x 3½"                  |
| 6        | 72712    | 1         | Nipple, 1" x 7"                   |
| 7        | D52950   | 1         | Bracket, Lwr Plumbing             |
| 8        | D32940   | 1         | Bracket, Long Lwr Plumbing        |
| 9        | 72932    | 1         | Nipple, 1" x 15"                  |
| 10       | 72845    | 3         | Elbow, 1" x 90°                   |
| 11       | D52412   | 1         | Orifice, NG Low Burn              |
| 12       | D55895   | 1         | Holder, Orifice                   |
| 13       | D25102   | 1         | Gauge, Pressure                   |
| 14       | D52441   | 1         | Hose, 1" x 32" NG                 |
| 15       | D52955   | 1         | Clamp, Lwr NG Plumbing Brkt.      |
| 16       | D52941   | 2         | Bracket, NG Plumbing              |
| 17       | 72860    | 3         | Elbow, 1" x 90° Street            |
| 18       | 72716    | 2         | Union, 1" Pipe                    |
| 19       | 72700    | 10        | Nipple, 1" Close                  |
| 20       | D25542   | 2         | Coil, Solenoid Valve 12 VDC (27") |
| 21       | 77191    | 2         | Valve, 1" Solenoid                |
| 22       | 72916    | 4         | Tee, 1" x 1" x 1"                 |
| 23       | 72911    | 1         | Reducer, 1" to ¼" Bell            |
| 24       | 73110    | 2         | Fitting, ¼" NPT to ¼ comp.        |
| 25       | 72713    | 1         | 1" Pipe Plug                      |

NOTE: For nuts, washers and lockwashers - see page 63.

# FRAME ASSEMBLY



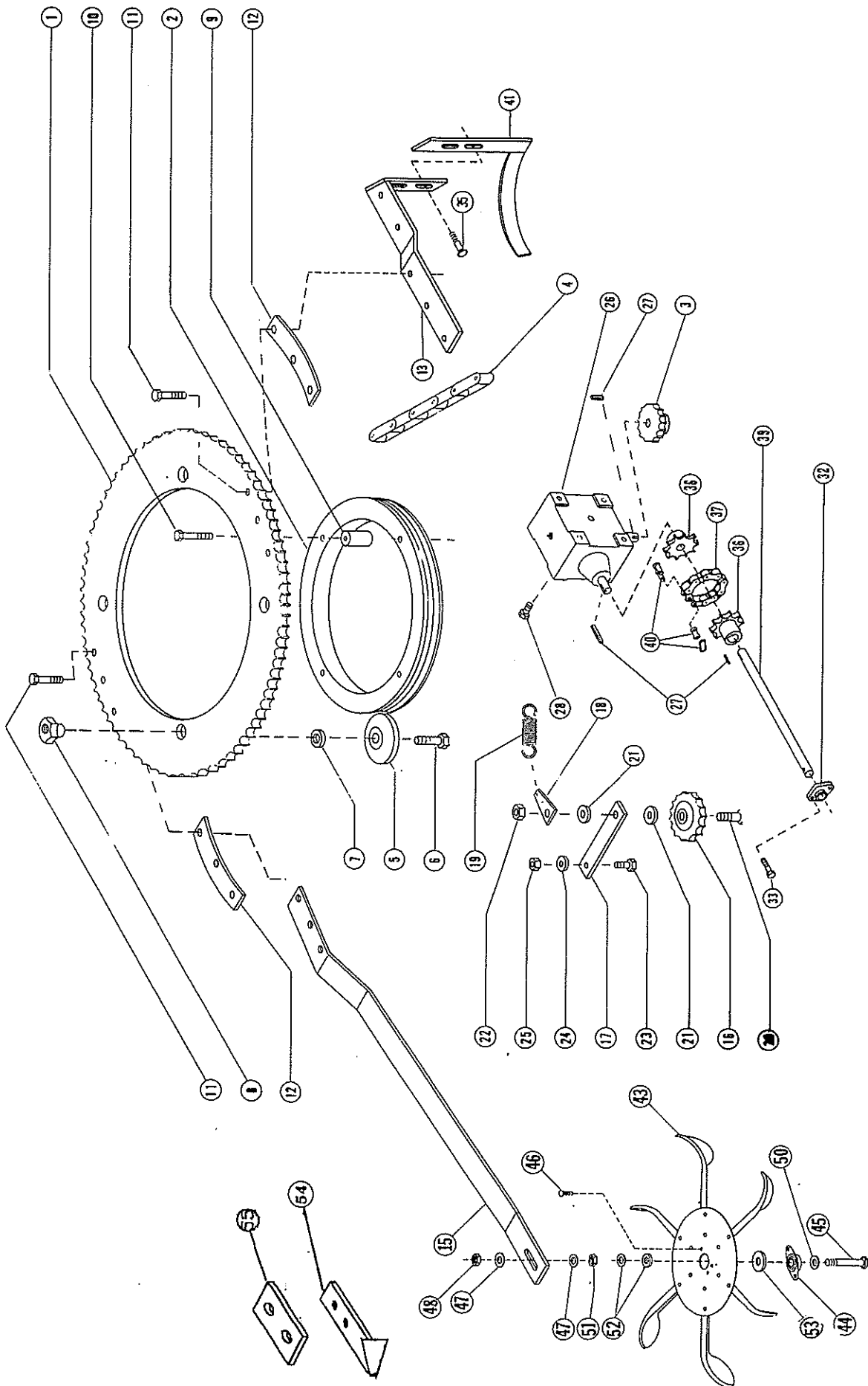
FRAME ASSEMBLY

| REF. NO. | PART NO.  | NO. REQ'D. | DESCRIPTION                                   |
|----------|-----------|------------|---|
| 1        | D51015    | 1          | Main Welded Frame Less Hitch                  |
| 2        | D21021    | 6          | Jack  |
|          | D21022    | 6          | Adjustable Jack (Optional)                    |
| 3        | D51032    | 2          | Axle Assembly                                 |
| 4        | 42-110149 | 4          | Inner Bearing                                 |
| 5        | D21050    | 4          | Outer Bearing                                 |
| 6        | D21060    | 4          | Nut   |
| 7        | D21075    | 4          | Hub with Bearing Cups                         |
| 8        | D21080    | 4          | Wheel Rim 15"                                 |
|          | D21085    | 4          | Tire, Tube & Rim (Mounted)                    |
| 9        | D51450    | 8          | Bin Bottom Sheet (Perf. Coated)               |
| 9        | D53311    | 8          | Bin Bottom Sheet (Perf.)                      |
| 10       | D51460    | 1          | Bin Bottom Sheet w/Access Hole (Perf. Coated) |
| 10       | D53322    | 1          | Bin Bottom Sheet w/Access Hole (Perf.)        |
| 11       | D21124    | 1          | Access Door Frame                             |
| 12       | D21133    | 1          | Access Door                                   |
| 13       | D51144    | 1          | Bin Bottom Well w/Boot                        |
| 14       | D21161    | 1          | Bottom Auger Bearing                          |
| 15       | D51173    | 1          | Spider - 545XL                                |
| 15       | D71170    | 1          | Spider - 645XL                                |
| 16       | D21182    | 1          | Grain Sampler                                 |
| 17       | D21190    | 4          | Seal  |
| 18       | D21200    | 4          | Cap   |
| 19       | 42-16053  | 16         | Lug Bolt                                      |
| 20       | 71329     | 4          | Carriage Bolt ½" x 1½"                        |
| 21       | 71823     | 129        | ¼" - 20 x ½" Slotted HD Machine Screw         |
| 22       | 71103     | 8          | ½" x 1½" Capscrew                             |
| 23       | 71822     | 150        | ¾" - 20 x 3/8" Slotted HD Machine Screw       |
| 25       | 71053     | 20         | 3/8" x 1½" Capscrew                           |
| 26       | 73527     | 4          | 5/32" x 1¼" Cotter Pin                        |
| 27       | D51190    | 1          | Line, Grease                                  |
| 28       | D21220    | 1          | Bracket, Line                                 |
| 29       | 72840     | 1          | Elbow, 1/8"                                   |
| 30       | 73109     | 2          | 1/8" Compression Fittings                     |
| 38       | 73586     | 6          | Pin   |
| 39       | 73587     | 6          | Clip  |
| 40       | 72474     | 4          | ¾" Washer                                     |
| 42       | 71054     | 2          | 3/8" x 1½" Capscrew                           |
| 43       | 71825     | 2          | ¼" - 20 x ¾" Slotted Head Machine Screw       |
| 44       | D22491    | 1          | Bracket, Conduit                              |
| 46       | 73289     | 1          | Seal, 2" I.D. Neoprene Shaft                  |
| 47       | 73290     | 1          | Seal, 2.72" I.D. Neoprene Bearing             |
| 48       | D51400    | 1          | Bin Bottom Sheet (Solid)                      |
| 50       | 42-16127  | 1          | Zerk, 1/8" Grease                             |
| 51       | D21500    | 1          | Track   |
| 52       | 72488     | 6          | Washer, Hi-Lock                               |
| 53       | D21136    | 1          | Bar, Safety                                   |
| 54       | 74716     | 1          | Decal   |
|          | 73287     | 1 ft.      | Moulding, 20 Ga. Rubber                       |

NOTE: For nuts, washers and lockwashers - see page 63.

# AGITATOR ASSEMBLY

TOP VIEW

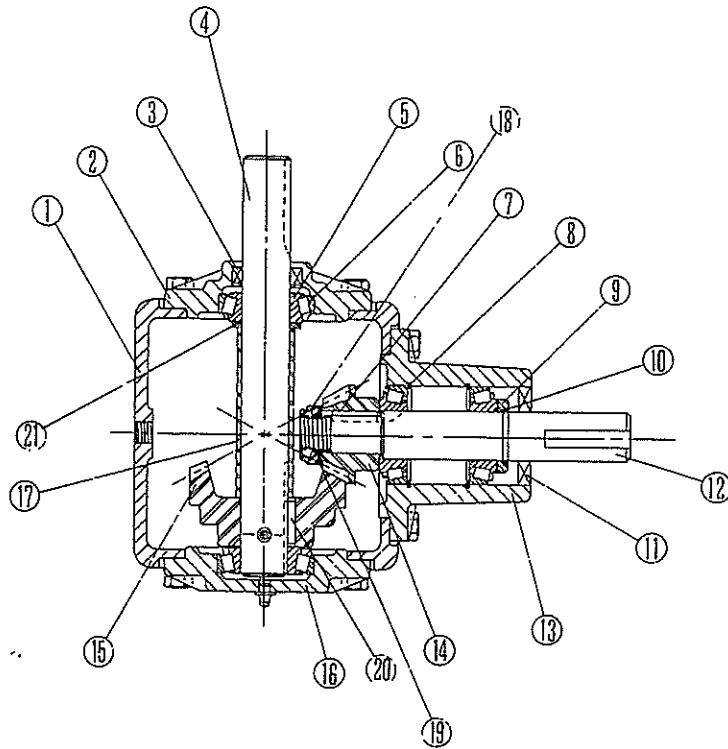


AGITATOR ASSEMBLY

| REF. NO. | PART NO. | NO. REQ'D | DESCRIPTION                                    |
|----------|----------|-----------|--|
| 1        | D28033   | 1         | Sprocket, No. 60, 112 Teeth                    |
| 2        | D28260   | 1         | Race, Agitator                                 |
| 3        | D28090   | 1         | Sprocket, No. 60, 13 Teeth                     |
| 4        | D28141   | 1         | Chain, No. 60 Roller 128 Pitches               |
| 5        | D28161   | 4         | Roller, Agitator w/Bearings                    |
|          | A28000   | 4         | Roller Brg. Kit                                |
| 6        | 73521    | 4         | Capscrew, 3/4" x 2 3/4" HT                     |
| 7        | 72522    | 4         | Washer   |
| 8        | D28204   | 4         | Nut, Cam                                       |
| 9        | D28270   | 4         | Spacer   |
| 10       | 73519    | 4         | Capscrew, 7/16" x 5" HT                        |
| 11       | 73504    | 6         | Capscrew, 7/16" x 2 1/2" HT                    |
| 12       | D28082   | 4         | Spacer, Agitator Arm                           |
| 13       | D58212   | 1         | Arm, Horiz. Sect. Vertical Agitator (Standard) |
| 15       | D58064   | 1         | Arm, Horizontal Agitator                       |
| 16       | D28172   | 1         | Sprocket, No. 60 Idler 15 Teeth                |
| 17       | D28181   | 1         | Arm, Idler                                     |
| 18       | D28280   | 1         | Tab, Spring                                    |
| 19       | D28190   | 1         | Spring   |
| 20       | 71132    | 1         | Capscrew, 5/8" x 2 1/4"                        |
| 21       | 72413    | 2         | Washer, 5/8"                                   |
| 22       | 72376    | 1         | Nut, 5/8" Lock                                 |
| 23       | 71103    | 1         | Capscrew, 1/2" x 1 1/4"                        |
| 24       | 72412    | 1         | Washer, 1/2"                                   |
| 25       | 72379    | 1         | Nut, 1/2" Lock                                 |
| 26       | D28241   | 1         | Gearbox  |
| 27       | 73400    | 3         | Key, 1/4" Square x 1 1/4" Lg.                  |
| 28       | 71052    | 4         | Capscrew, 3/8" x 1 1/2"                        |
| 32       | D28290   | 1         | Bearing w/Collar                               |
| 33       | 71029    | 2         | Capscrew, 5/16" x 1 1/2"                       |
| 35       | 71331    | 2         | Bolt, 1/2" x 2" Carriage                       |
| 36       | D28330   | 2         | Coupler Half, 60B.10 x 1"                      |
| 37       | D28331   | 1         | Chain, No. 60 Roller 9 Pitch                   |
| 39       | D58126   | 1         | Shaft, Agitator                                |
| 40       | 73368    | 1         | Link, No. 60 Roller Chain Connecting           |
| 41       | D58230   | 1         | Paddle, STD Vertical Agitator Arm (Inner)      |
| 43       | D58080   | 1         | Wheel, Rotary Agitator (Ass'y) (Optional)      |
|          | D58160   | 1         | Disc (For above)                               |
|          | D58170   | 6         | Paddle (For above)                             |
| 44       | D58293   | 1         | Bearing, Paddle Wheel                          |
| 45       | 75342    | 1         | Capscrew, 3/4" x 4"                            |
| 46       | 71277    | 2         | Bolt, 3/8" x 1"                                |
| 47       | 72591    | 2         | Washer, 3/4" Wide Rim                          |
| 48       | 72375    | 1         | Nut, 3/4" Hex Lock                             |
| 50       | 72595    | 1         | Bushing, 3/4" NR Machine                       |
| 51       | 72256    | 1         | Nut, Jam                                       |
| 52       | D28370   | 1         | Bushing, 3/4" Machine (Thick)                  |
| 54       | D58091   | 1         | Shovel, Horz Agit (Std.)                       |
| 55       | D58095   | 1         | Plate, Mounting                                |

Note: For nuts, washers and lockwashers, see page 63.

**GEARBOX ASSEMBLY  
GT D28241**



Identification No. D28241 is located on a metal tag under cap bolt.

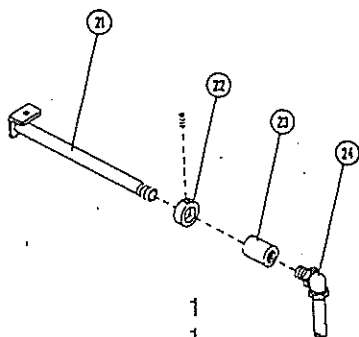
| REF. NO. | PART NO. | NO.REQ'D | DESCRIPTION       |
|----------|----------|----------|-------------------|
| 1        | 77400    |          | Housing           |
| 2        | 42-16144 |          | Cap               |
|          | 42-16152 |          | Sems Cap Screws   |
| 3        | 42-16146 |          | Seal              |
| 4        | 77401    |          | Shaft             |
| 5        | 42-16147 |          | Bearing Cone      |
| 6        | 42-16148 |          | Bearing Cup       |
|          | 42-16155 |          | Gasket (.015)     |
|          | 42-16156 |          | Gasket (.005)     |
| 7        | 77402    |          | Key               |
| 8        | 77403    |          | Retaining Ring    |
| 9        | 77404    |          | Collar            |
| 10       | 77405    |          | Retaining Ring    |
| 11       | 77406    |          | Seal              |
| 12       | 77414    |          | Shaft             |
| 13       | 77408    |          | Cap               |
| 14       | 77079    |          | Gear              |
| 15       | 77080    |          | Gear              |
| 16       | 77412    |          | Cap               |
| 17       | 42-90058 |          | Spacer            |
| 18       | 77410    |          | Locknut           |
| 19       | 77409    |          | Washer            |
| 20       | 77411    |          | Key               |
| 21       | 42-90057 |          | Washer            |
|          | 42-16151 |          | Roll Pin          |
|          | 77413    |          | Pipe Plug (Solid) |
|          | 72924    |          | Relief Valve      |
|          | 72921    |          | Reducer           |





## PLENUM ASSEMBLY

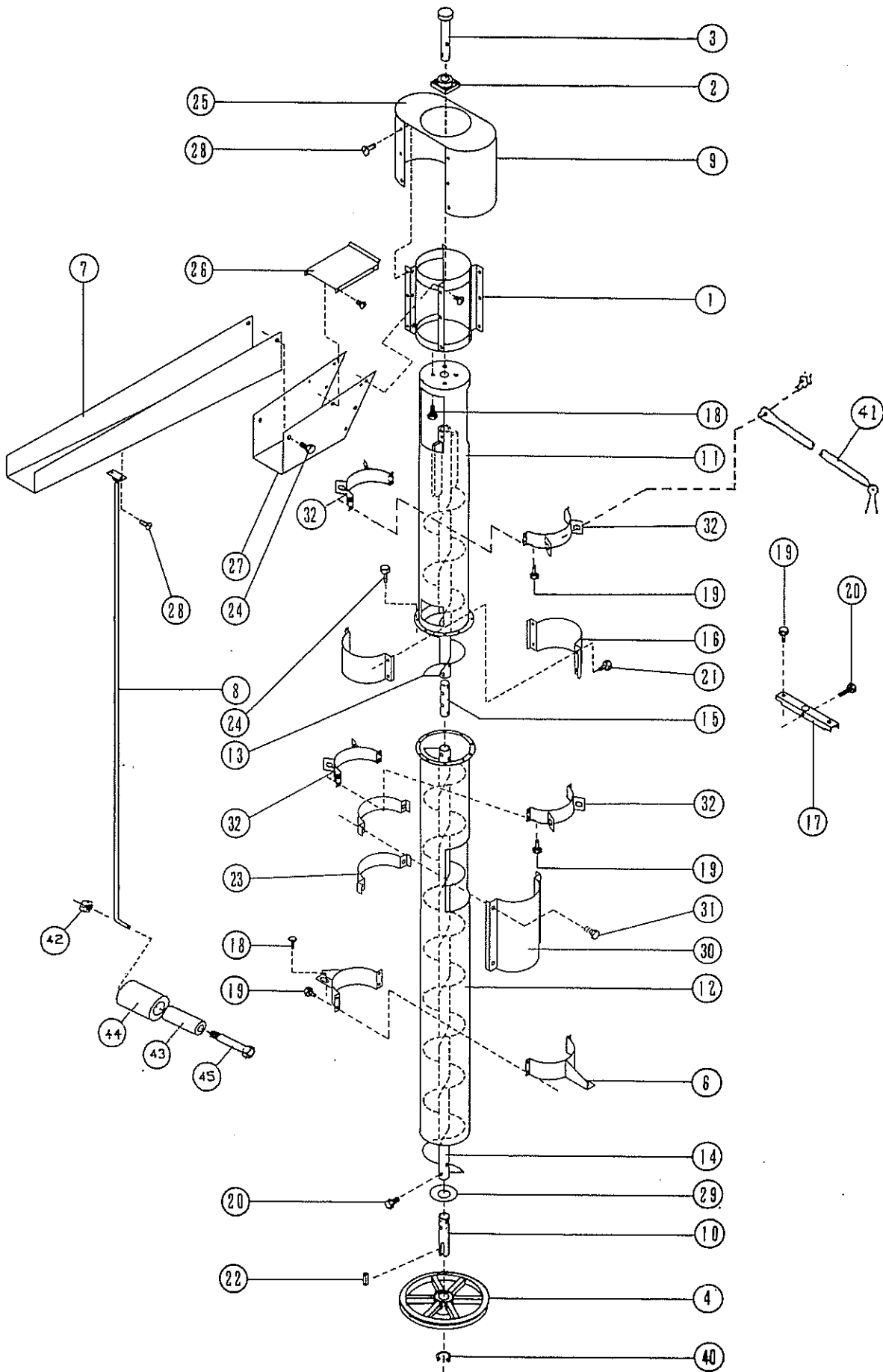
| REF. NO. | PART NO. | NO.REQ'D. | DESCRIPTION                                  |
|----------|----------|-----------|--|
| 1        | D33010   | 31        | Plenum Frame Angle, Straight                 |
| 1        | D33011   | 31        | Plenum Frame Angle, 645XL                    |
| 2        | D53020   | 1         | Connecting Tube                              |
| 3        | D53342   | 7         | Lid Sheet                                    |
| 4        | D53040   | 4         | Side Sheet without Connecting Tube Hole      |
| 4        | D53041   | 4         | Side Sheet Plenum, 645XL                     |
| 5        | D23051   | 1         | Cone Cap                                     |
| 6        | D53061   | 1         | Saddle                                       |
| 7        | D53070   | 1         | Front Enclosure                              |
| 8        | D53080   | 1         | Lower Frame Band                             |
| 9        | D53091   | 1         | Center Band, 1/8" Thick - (2) for 645XL      |
| 10       | D53100   | 1         | Transition Band                              |
| 11       | D53110   | 1         | Top Ring                                     |
| 12       | D53120   | 35        | Lid Frame Angles                             |
|          | D63120   | 35        | Lid Frame Angles, RB600                      |
| 13       | D53130   | 1         | Connecting Tube Trim Ring                    |
| 14       | D53140   | 1         | Sheet with Connecting Tube Hole              |
| 14       | D53141   | 1         | Plenum Sheet with Connecting Tube Hole 645XL |
|          | D53150   | 1         | Side Sheet (Narrow Strip)                    |
|          | D53151   | 1         | Plenum Side Sheet-Narrow, 645XL              |
| 15       | D23161   | 2         | Thermometer Support Bracket                  |
| 16       | D53172   | 5         | Skirt  |
| 17       | D53182   | 1         | Skirt with Slot                              |
| 18       | D53192   | 6         | Splices, Plenum Skirt                        |
| 19       | D53160   | 1         | Extension, Saddle                            |
| 19       | D53161   | 1         | Extension Saddle 645XL                       |
| 20       | 71942    | 11        | No. 14 x 3/4" Self Tapping Screw             |
| 21       | D53210   | 1         | Side Sheet with Cleaner Hole                 |
| 21       | D53211   | 1         | Side Sheet with Cleaner Hole 645XL           |
| 22       | D24210   | 1         | Plate, Cover                                 |
| 25       | D23210   | 2         | Push on Clip                                 |
| 27       | 71823    | 85        | 1/4" - 20 x 1/2" Slotted Hd Machine Screw    |
| 28       | 71825    | 108       | 1/4" - 20 x 3/4" Slotted Hd Machine Screw    |
| 29       | 71822    | 104       | 1/4" - 20 x 3/8" Slotted Hd Machine Screw    |
| 30       | 71942    | 14        | #14 x 1/2 Self Tapping Screw                 |
| 31       | 71001    | 35        | 1/4" x 3/4" Capscrew                         |
| 32       | 72155    | 6         | 5/16" x 3/4" Self Tapping Hex Hd Screw       |
| 33       | D54320   | 1         | Stiffener, Front Sheet, Right                |
| 34       | D54330   | 1         | Stiffener, Front Sheet, Left                 |
| 35       | 77271    | 1         | Sensor, Temperature Plenum, Micro            |
| 36       | 77567    | 1         | Hi Limit, Sensor                             |
|          | D23230   | 1         | Bracket, Sensor                              |
|          | 72958    | 1         | Nut, Brass Sensor                            |
|          | 72522    | 1         | Spacer, Sensor Washer                        |
|          | 72490    | 35        | Spacer, Lid Angle RB600                      |



|    |        |   |                                  |
|----|--------|---|----------------------------------|
| 21 | D24260 | 1 | Pipe, Agitator Sensor Grain Wall |
| 22 | D22130 | 1 | Collar Set                       |
| 23 | 72836  | 1 | Coupler, 1/2"                    |
| 24 | 73159  | 1 | Elbow, 3/8" Conduit              |

Note: For nuts, washers and lockwashers, see page 63.

# AUGER ASSEMBLY

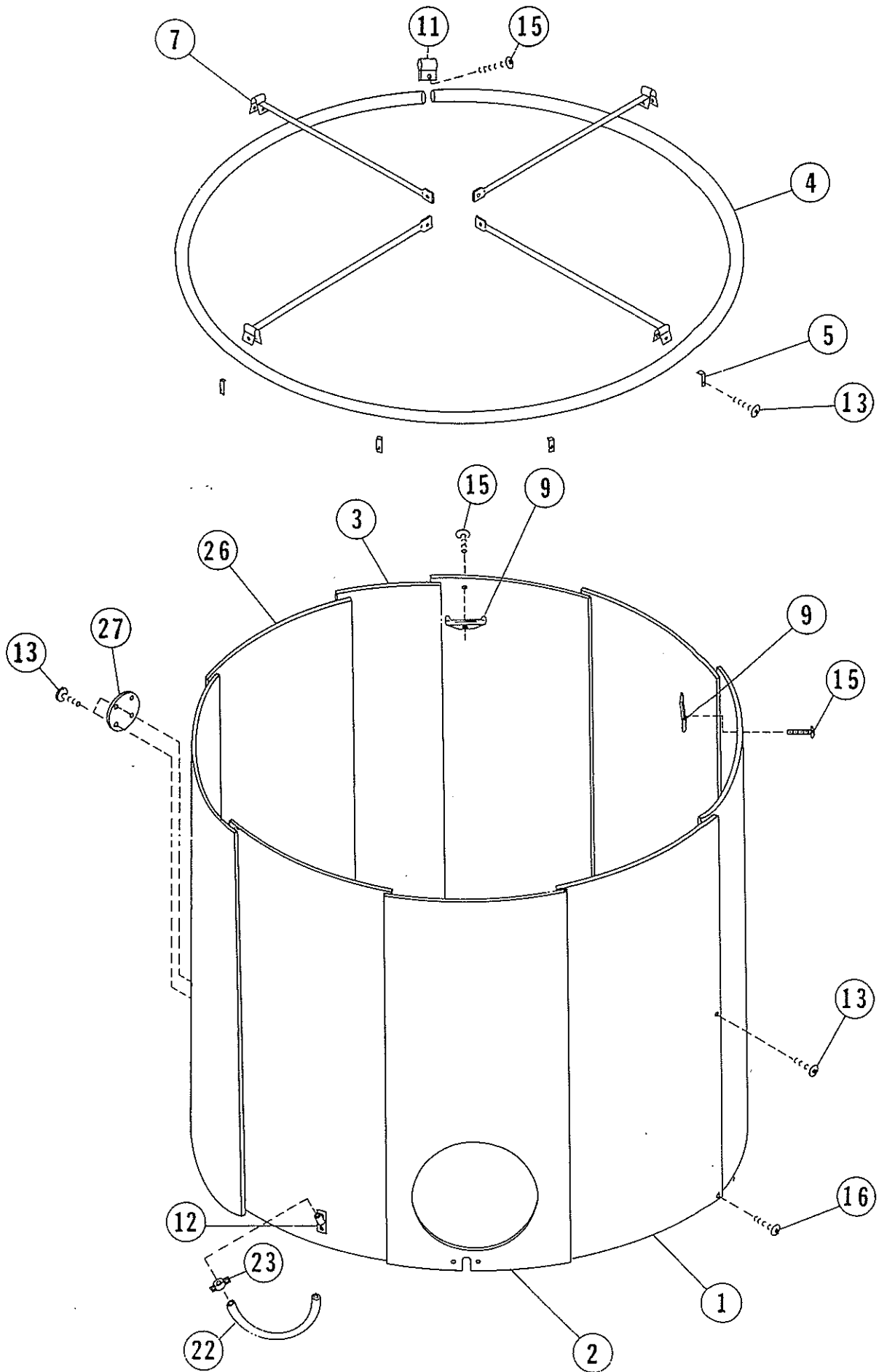


## AUGER ASSEMBLY

| REF. NO. | PART NO. | NO.REQ'D. | DESCRIPTION                                     |
|----------|----------|-----------|---|
| 1        | D26013   | 1         | Swivel Head                                     |
| 2        | D21161   | 1         | 2" Flange Bearing                               |
| 3        | D26020   | 1         | Upper Stub Shaft                                |
| 4        | D26030   | 1         | Sheave 1C 18" x 2"                              |
| 6        | D26065   | 2         | Clamp, Support (at Spider)                      |
| 7        | D36071   | 1         | Spout   |
| 7        | D76070   | 1         | Spout 645XL                                     |
| 8        | D36081   | 1         | Spout Control Handle                            |
| 8        | D76081   | 1         | Spout Control Handle 645XL                      |
| 9        | D26091   | 1         | Head Baffle, Side                               |
| 10       | D26101   | 1         | Lower Stub Shaft                                |
| 11       | D36111   | 1         | Auger Tube (Top Section)                        |
| 11       | D76112   | 1         | Auger Tube (Top Section) 645XL                  |
| 12       | D56120   | 1         | Auger Tube (Bottom Section)                     |
| 12       | D56121   | 1         | Auger Tube (Bottom Section) 645XL               |
| 13       | D36131   | 1         | Flighting (Top Section)                         |
| 13       | D76132   | 1         | Flighting (Top Section) 645XL                   |
| 14       | D36141   | 1         | Flighting (Bottom Section)                      |
| 14       | D36142   | 1         | Flighting (Bottom Section) 645XL                |
| 15       | D26150   | 1         | Stub Connecting Shaft                           |
| 16       | D26162   | 2         | Inspection Hole Cover                           |
| 17       | D26170   | 1         | Split Auger Support                             |
| 17       | D66170   | 1         | Split Auger Support 645XL                       |
| 18       | 71329    | 6         | ½" x 1½" Carriage Bolt                          |
| 19       | 71056    | 8         | 3/8" x 2" Capscrew                              |
| 20       | 73520    | 8         | 5/8" x 3½" Capscrew                             |
| 21       | 71001    | 4         | ¼" x ¾" Capscrew                                |
| 22       | 73417    | 1         | ½" x ½" x 1½" Key                               |
| 23       | D41030   | 2         | Cleaning Attachment Band                        |
| 24       | 71052    | 12        | 3/8" x 1" Capscrew                              |
| 25       | D26180   | 1         | Head Baffle, Top                                |
| 26       | D26190   | 1         | Head Baffle, Spout Cover                        |
| 27       | D26200   | 1         | Head Baffle, Spout                              |
| 28       | 71825    | 26        | ¼" - 20 x ¾" Slotted HD Machine Screw           |
| 29       | 72424    | 1         | 2" Washer                                       |
| 30       | D26220   | 1         | Grain Cleaner Hole Cover                        |
| 31       | 71054    | 4         | 3/8" x 1½" Capscrew                             |
|          | DA26000  | 1         | Includes Item Number 1, 9, 25, 26, 27 Assembled |
|          | 73180    | 1         | Flighting Repair Section                        |
| 32       | D26057   | 2         | Clamp, Brace (4 on 645XL)                       |
| 40       | 69503    | 1         | Snap Ring                                       |
| 41       | D74076   | 4         | Brace, Upper Auger 645XL                        |
| 42       | 72379    | 1         | Nut, ½" Lock                                    |
| 43       | D57155   | 1         | Tube, 1 x .5 x 3.75                             |
| 44       | 03518    | 1         | Grip, 1" I.D. Rubber                            |
| 45       | 71113    | 1         | Capscrew, ½" x 4½"                              |

Note: For nuts, washers and lockwashers, see page 63.

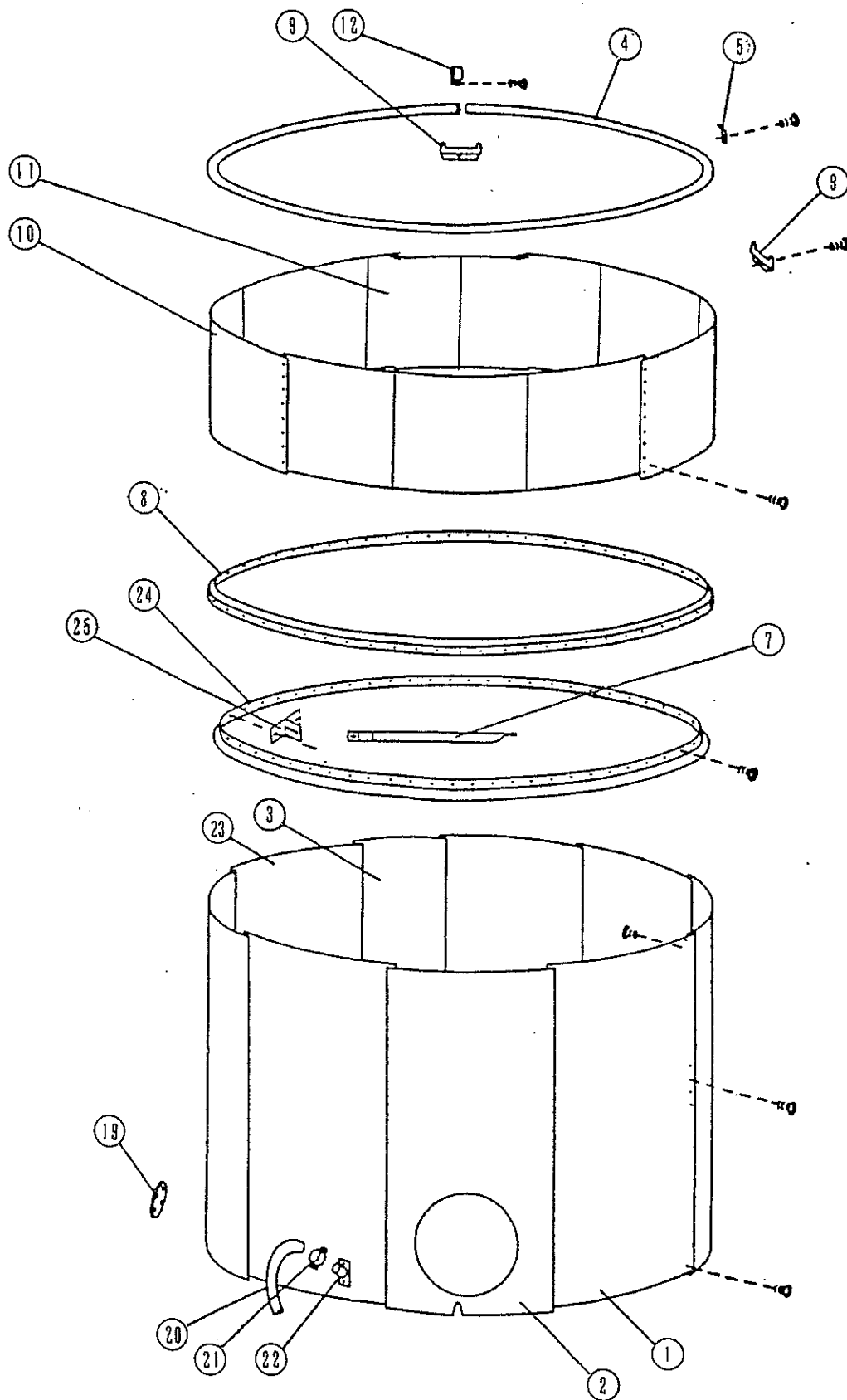
# OUTSIDE SKIN ASSEMBLY



545XL OUTSIDE SKIN ASSEMBLY

| REF. NO. | PART NO. | NO. REQ'D. | DESCRIPTION   |
|----------|----------|------------|---|
| 1        | D54260   | 6          | Outside Sheet Fine Perforated (Coated)                        |
| 1        | D53380   | 6          | Outside Sheet Fine Perforated                                 |
| 1        | D54300   | 6          | Outside Sheet Std. Perforated (Coated)                        |
| 1        | D54010   | 6          | Outside Sheet Std. Perforated                                 |
| 2        | D54240   | 1          | Outside Sheet with Hole Fine Perforated (Coated)              |
| 2        | D53391   | 1          | Outside Sheet with Hole Fine Perforated                       |
| 2        | D54280   | 1          | Outside Sheet with Hole Std. Perforated (Coated)              |
| 2        | D54021   | 1          | Outside Sheet with Hole Std. Perforated                       |
| 3        | D54270   | 1          | Outside Sheet 34" Wide Fine Perforated (Coated)               |
| 3        | D53400   | 1          | Outside Sheet 34" Wide Fine Perforated                        |
| 3        | D54310   | 1          | Outside Sheet 34" Wide Std. Perforated (Coated)               |
| 3        | D54090   | 1          | Outside Sheet 34" Wide Std. Perforated                        |
| 4        | D54040   | 1          | Cap Ring  |
| 5        | D24050   | 8          | Ring Holder   |
| 7        | D54072   | 4          | Auger Brace   |
| 8        | D24080   | 1          | Spout Control Catch   |
| 9        | D24091   | 2          | Spout Support   |
| 11       | D24110   | 1          | Rim Connector   |
| 12       | D24131   | 1          | Grain Temperature Capillary Support Bracket                   |
| 13       | 71822    | 220        | 1/4" - 20 x 3/8" Slotted Hd. Machine Screw                    |
| 15       | 71825    | 12         | 1/4" - 20 x 3/4" Slotted Hd. Machine Screw                    |
| 16       | 71823    | 105        | 1/4" - 20 x 1/2" Slotted Hd. Machine Screw                    |
| 22       | D54191   | 1          | Liquitite Conduite  |
| 23       | 73263    | 1          | 3/4" Two Screw Connector                                      |
| 26       | D54250   | 1          | Outside Sheet with Hole for Grain Cleaner-Fine Perf. (Coated) |
| 26       | D54221   | 1          | Outside Sheet with Hole for Grain Cleaner-Fine Perf.          |
| 26       | D54290   | 1          | Outside Sheet with Hole for Grain Cleaner-Std. Perf. (Coated) |
| 26       | D54201   | 1          | Outside Sheet with Hole for Grain Cleaner-Std. Perf.          |
| 27       | D24210   | 1          | Cover Plate   |
|          | 73966    | 1          | (GT Logo)   |
|          | A54000   | 1          | Ladder Kit (500 Bu. , not shown)                              |

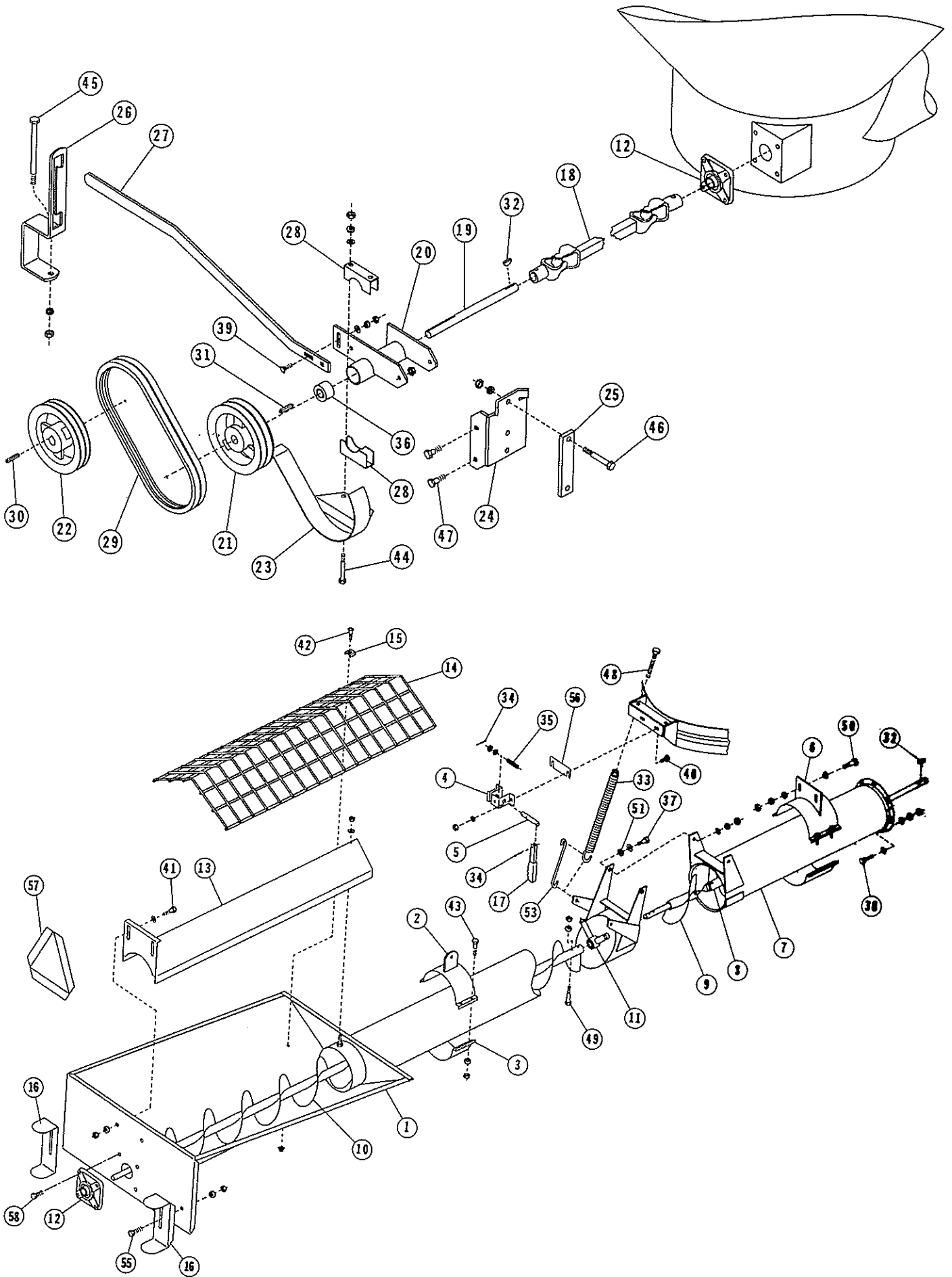
645XL OUTSIDE SKIN AND EXTENSION ASSEMBLY



**645XL OUTSIDE SKIN AND EXTENSION ASSEMBLY**

| <b>REF. NO.</b> | <b>PART NO.</b> | <b>NO. REQ'D.</b> | <b>DESCRIPTION</b>                                    |
|-----------------|-----------------|-------------------|---|
| 1               | D74260          | 6                 | Outside Sheet Fine Perf. Coated                       |
| 1               | D74500          | 6                 | Outside Sheet Std. Perf. Coated                       |
| 1               | 57001339        | 6                 | Outside Sheet Fine Perf.                              |
| 1               | 57001305        | 6                 | Outside Sheet Std. Perf.                              |
| 2               | D74240          | 1                 | Outside Sheet w/hole, Fine Perf. Coated               |
| 2               | D74480          | 1                 | Outside Sheet w/hole, Std. Perf. Coated               |
| 2               | D73390          | 1                 | Outside Sheet w/Burner H. Fine Perf.                  |
| 2               | D74020          | 1                 | Outside Sheet w/Burner H. Std. Perf.                  |
| 3               | D74270          | 1                 | Outside Sheet 34" Wide, Fine Perf. Coated             |
| 3               | D74510          | 1                 | Outside Sheet 34" Wide, Std. Perf. Coated             |
| 3               | 57001340        | 1                 | Outside Sheet 34" Wide, Fine Perf.                    |
| 3               | 57001320        | 1                 | Outside Sheet, 34" Wide Std. Perf.                    |
| 4               | D54040          | 1                 | Cap Ring  |
| 5               | D24050          | 8                 | Ring Holder   |
| 7               | D54076          | 4                 | Brace, Middle Auger                                   |
| 8               | 57001328        | 1                 | Band, Dryer Top                                       |
| 9               | D24091          | 2                 | Spout Support, Extended                               |
| 10              | D74522          | 8                 | Sheet, Extension Std. Coated                          |
| 10              | D74232          | 8                 | Sheet, Extension Fine Perf. Coated                    |
| 10              | D74462          | 8                 | Sheet, Extension Std. Perf.                           |
| 10              | D74132          | 8                 | Sheet, Extension Fine Perf.                           |
| 11              | D74560          | 1                 | Sheet, Extension Std. Perf. Coated                    |
| 11              | D74570          | 1                 | Sheet, 34" Extension Fine Perf. Coated                |
| 11              | D74540          | 1                 | Sheet, 34" Wide Extension Std. Perf.                  |
| 11              | D74550          | 1                 | Sheet, 34" Wide Extension Fine Perf.                  |
| 12              | D24110          | 1                 | Rim Connector   |
| 19              | D24210          | 1                 | Cover Plate   |
| 20              | D25262          | 1                 | Liquid Tight Conduit                                  |
| 21              | 73263           | 1                 | 3/4" Two Screw Connector                              |
| 22              | D24131          | 1                 | Grain Temp. Cap. Support Bracket                      |
| 23              | D74250          | 1                 | Outside Sheet w/Grain Cleaner Hole Fine Perf. Coated  |
| 23              | D74490          | 1                 | Outside Sheet w/Grain Cleaner Hole, Std. Perf. Coated |
| 23              | D74220          | 1                 | Outside Sheet w/Grain Cleaner Hole Fine Perf.         |
| 23              | D74200          | 1                 | Outside Sheet w/Grain Cleaner Hole Std. Perf.         |
| 24              | 57001328        | 1                 | Band, Top Angle                                       |
| 25              | D54065          | 4                 | Base, Brace, Large Plenum                             |
|                 | A74000          |                   | Ladder Kit, 645XL                                     |

# LOADING HOPPER & DRIVE ASSEMBLY

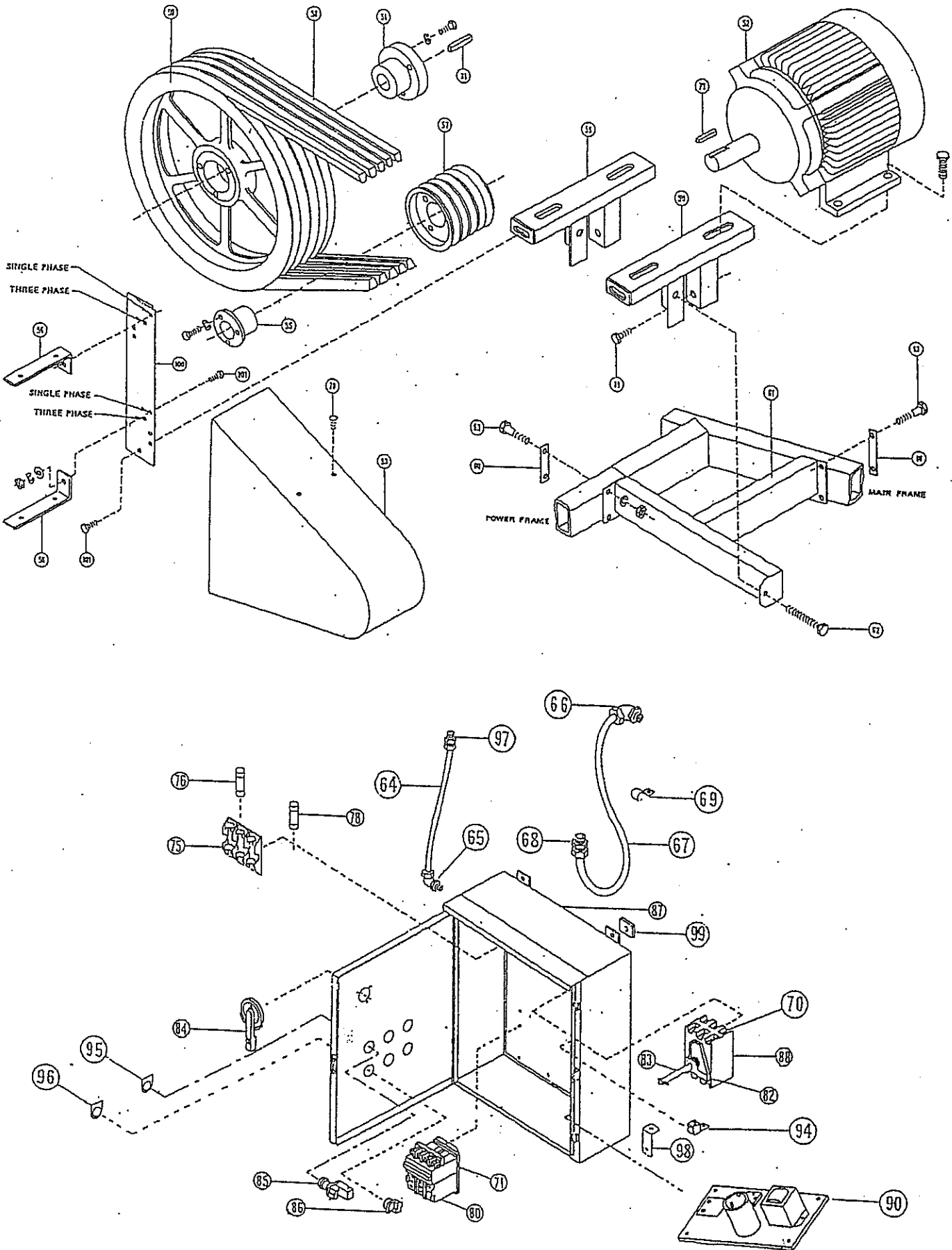


## LOADING HOPPER &amp; DRIVE ASSEMBLY

| REF. NO. | PART NO. | NO.REQ'D. | DESCRIPTION                     |
|----------|----------|-----------|---------------------------------|
| 1        | D29013   | 1         | Hopper, Extended                |
| 2        | D59540   | 1         | Catch, Hopper                   |
| 3        | 41-10143 | 1         | Band, Half                      |
| 4        | D29521   | 1         | Latch, Hopper                   |
| 5        | D29540   | 1         | Pin, Latch                      |
| 6        | D59141   | 1         | Mount, Tube                     |
| 7        | D59031   | 1         | Tube, Front Auger               |
| 8        | D59053   | 1         | Flight, Front Auger             |
| 9        | D59391   | 1         | Flight, Short Sec. Rear Auger   |
| 10       | D29042   | 1         | Flight, Long Sec. Rear Auger    |
| 11       | 42-98080 | 1         | Bearing & Casting               |
|          | 71127    | 1         | Capscrew, 5/8" x 1"             |
|          | D29510   | 1         | Bolt w/Zerk                     |
|          | 42-18183 | 1         | Bronze Bearing                  |
| 12       | 42-66022 | 2         | Bearing                         |
| 13       | D59150   | 1         | Regulator, Grain Flow           |
| 14       | D29470   | 1         | Grill, Hopper                   |
| 15       | D29560   | 4         | Clip, Grill                     |
| 16       | D29161   | 2         | Stand, Hopper                   |
| 17       | D29531   | 1         | Latch Handle                    |
| 18       | D59343   | 1         | Tumbler (See page 32 for parts) |
| 19       | D22850   | 1         | Jackshaft                       |
| 20       | D29490   | 1         | Housing, L.H. Jackshaft         |
| 21       | D59311   | 1         | Pulley, 6.6 PD x 1" ID          |
| 22       | D59301   | 1         | Pulley, 6.6 PD x 1½" ID         |
| 23       | D29372   | 1         | Guard, Belt                     |
| 24       | D29352   | 1         | Bracket, Jackshaft              |
| 25       | D52720   | 1         | Strap                           |
| 26       | D59382   | 1         | Lock, Clutch                    |
| 27       | D59362   | 1         | Handle, Clutch                  |
|          | 03519    |           | Grip, Bar                       |
| 28       | 42-16453 | 2         | Clamp, Mount                    |
| 29       | D59322   | 1         | Belt, B58 (Set of 2)            |
| 30       | 73411    | 1         | Key, 3/8" x 3/8" x 1½"          |
| 31       | 42-66057 | 1         | Key, ¼" x ¼" x 1½"              |
| 32       | 42-18282 | 2         | Key, No. 808 Woodruff           |
| 33       | 73317    | 2         | Spring, Lift                    |
|          | D29480   | 2         | Spring, Lift w/plug nut         |
| 34       | 73534    | 2         | Pin, Cotter, 1/8" x 1¼"         |
| 35       | 73316    | 1         | Spring, Pin                     |
| 36       | 42-16334 | 2         | Bearing, 1"                     |
| 37       | 71079    | 2         | Capscrew, 7/16" x 1½"           |
| 38       | 71027    | 8         | Capscrew, 5/16" x 1"            |
| 39       | 71277    | 1         | Bolt, Carriage 3/8" x 1"        |
| 40       | 71251    | 8         | Bolt, Carriage 5/16" x ¾"       |
| 41       | 71026    | 2         | Capscrew, 5/16" x ¾"            |
| 42       | 71825    | 4         | Screw, 5/16" x ¾" SL HD Machine |
| 43       | 71054    | 8         | Capscrew, 3/8" x 1½"            |
| 44       | 71038    | 2         | Capscrew, 5/16" x 4½"           |
| 45       | 71066    | 1         | Capscrew, 3/8" x 6"             |
| 46       | 71112    | 2         | Capscrew, ½" x 4"               |
| 47       | 71103    | 2         | Capscrew, ½" x 1¼"              |
| 48       | 71988    | 2         | Capscrew, ½" x 6" Full Thd      |
| 49       | 71083    | 2         | Capscrew, 7/16" x 2½"           |
| 50       | 71329    | 2         | Bolt, Carriage ½" x 1½"         |
| 51       | D29020   | 2         | Spacer, ½" ID x 1" OD x 5/16"   |
| 52       | 71303    | 1         | Bolt, Carriage, 7/16" x 1¼"     |
| 53       | D59172   | 2         | Rod, Spring Connecting          |
| 55       | 71051    | 2         | Capscrew, 3/8" x ¾"             |
| 56       | D29550   | As Req'd. | Spacer, Hopper Latch            |
| 57       | 73899    | 1         | Decal, Slow Moving Vehicle      |
| 58       | 71053    | 8         | Capscrew, 3/8" x 1¼"            |

Note: For nuts, washers and lockwashers, see page 63..

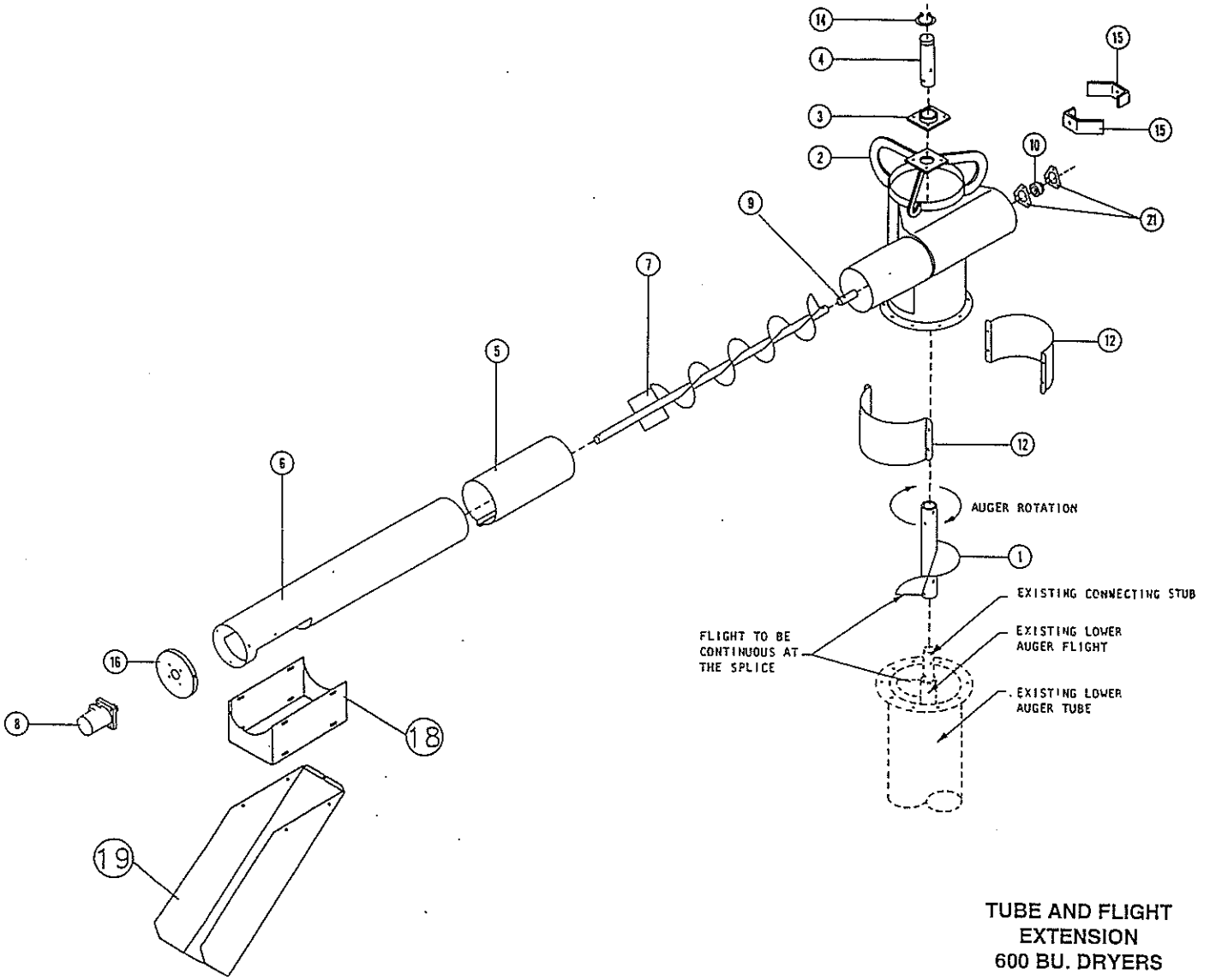
# SIDE MOUNT ELECTRIC POWER UNIT ASSEMBLY



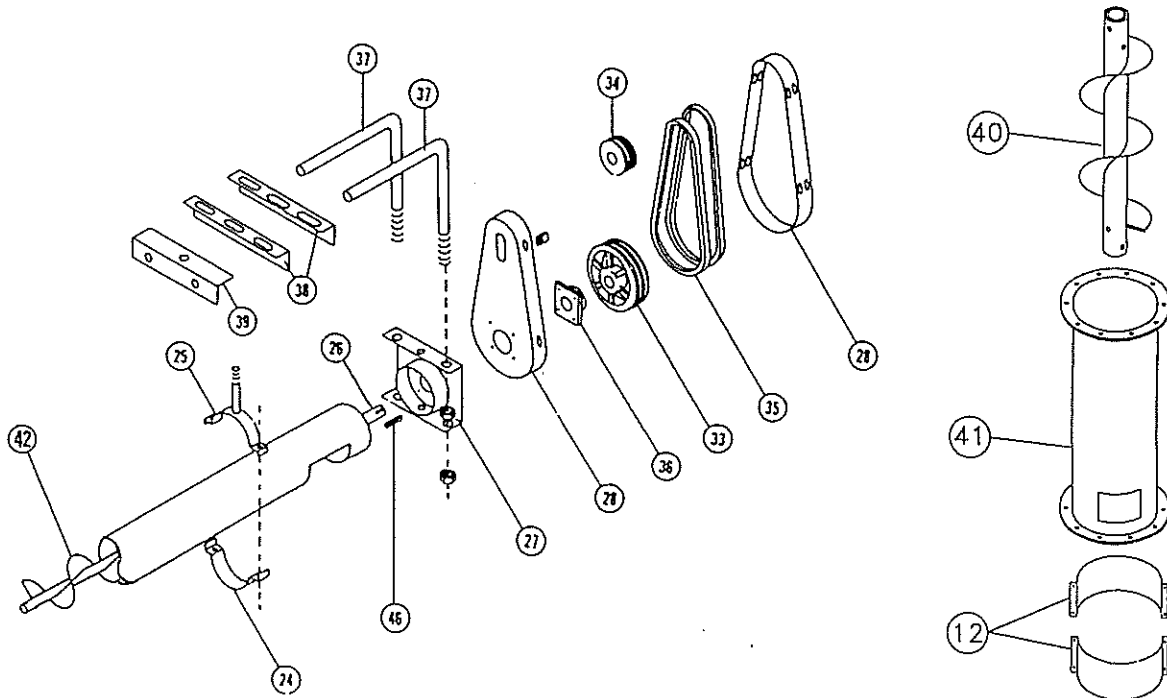
## SIDE MOUNT ELECTRIC POWER UNIT ASSEMBLY

| REF. NO. | PART NO. | NO. REQ'D. | DESCRIPTION                                 |
|----------|----------|------------|---|
| 50       | 76013    | 1          | Sheave, 5B x 18.4                           |
| 51       | 76015    | 1          | Hub, 1½" SF                                 |
| 52       | D52391   | 1          | Motor, Electric 25 HP - 500 Bu.             |
|          | 52-10074 | 1          | Motor, Electric 30 HP - 600 Bu.             |
| 53       | D59430   | 1          | Guard, Belt                                 |
| 55       | 76009    | 1          | Hub, 1-7/8" SD                              |
|          | 76066    | 1          | Hub, 48mm SK 50 Hz                          |
| 56       | D32670   | 2          | Bracket, Belt Guard                         |
| 57       | 76010    | 1          | Sheave, 5.2 PD 5B                           |
|          | 76033    | 1          | Sheave, 6.2 PD 5B 50 Hz                     |
| 58       | D52990   | 1          | Belt, B88 (Set of 5)                        |
| 59       | D52916   | 2          | Channel, Motor Mount                        |
| 60       | D52720   | 2          | Strap, Mount                                |
| 61       | 57001272 | 1          | Frame, Motor Mount                          |
| 62       | 71988    | 1          | Capscrew, ½" x 6" Full Thread               |
| 63       | 71112    | 4          | Capscrew, ½" x 4"                           |
| 64       | D54191   | 1          | Conduit, 3/8" Liquatite x 34"               |
| 65       | 73159    | 2          | Elbow, 3/8" Liquatite x 90°                 |
| 66       | 73737    | 1          | Elbow, 1" Liquatite x 90°                   |
| 67       | 73734    | 4½'        | Conduit, 1" Liquatite                       |
| 68       | 73738    | 1          | Connector, 1" Liquatite Straight            |
| 69       | 73742    | 6          | Strap, Conduit                              |
| 70       | 73703    | 3          | Terminal, Line                              |
| 71       | 77556    | 1          | Starter, Magnetic LCID5011M7 - 500 Bu.      |
|          |          |            | Starter, Magnetic LCID80M7                  |
| 75       | 77558    | 1          | Fuse Block                                  |
| 76       | 73732    | 2          | Fuse, FRN6                                  |
| 79       | 73418    | 1          | Key, 5/16" x ½" x 1¾"                       |
| 80       | 77553    | 1          | Overload Relay, LR203557 - 500 Bu.          |
|          | 77624    | 1          | Overload Relay, LR203563 - 600 Bu.          |
| 81       | 73411    | 1          | Key 3/8" Sq. 1½"                            |
| 84       | 77327    | 1          | Operating Mechanism                         |
| 85       | 77052    | 1          | Button, Push Green Start                    |
| 86       | 77051    | 1          | Button, Push Red Stop                       |
| 87       | 77027    | 1          | Cabinet                                     |
| 88       | 77326    | 1          | Breaker, Circuit 100 Amp - 240 Volt         |
| 90       | DA25010  | 1          | Converter, 110 VAC to 12 VDC                |
| 94       | 77109    | 1          | Lug, Ground                                 |
| 95       | 73725    | 1          | Plate, Start                                |
| 96       | 73726    | 1          | Plate, Stop                                 |
| 97       | 73157    | 1          | Connector, 3/8" Liquatite Conduit           |
| 98       | D32050   | 2          | Bracket, Angle Mounting                     |
| 99       | 500671   | 2          | Spacer, Neoprene                            |
| 100      | D32660   | 1          | Mount, Belt Guard                           |
| 101      | 71052    | 4          | Capscrew, 3/8" x 1"                         |
|          | D22097   | 1          | Bearing - Optional (Not Shown)              |
|          | D52032   | 1          | Mount, Power Shaft - Optional (Not Shown)   |
|          | D57116S  | 1          | Extended Power Shaft - Optional (Not Shown) |

# HYDRAULIC UNLOAD HEAD



# ELECTRIC UNLOAD HEAD



## HYDRAULIC & ELECTRIC UNLOAD HEAD PARTS LIST




| REF. NO. | PART NO. | NO. REQ'D. | DESCRIPTION                                |
|----------|----------|------------|--|
| 1        | D26311   | 1          | Auger, Horiz. Unload, Vertical             |
| 2        | D26282   | 1          | Head, Top Auger                            |
| 3        | D21161   | 1          | Bearing, 2" Flanged                        |
| 4        | D26021   | 1          | Stub, Top Auger                            |
| 5        | 42-58080 | 1          | Band, 8" x 14½" Connecting                 |
| 6        | D56300   | 1          | Housing, Horiz. Unload Auger Extended      |
| 7        | D56295   | 1          | Flight, Horiz. Unload Auger Hyd Extended   |
| 8        | D26270   | 1          | Motor, M202 Hydraulic                      |
| 9        | 42-56211 | 1          | Stub, Flight Shaft                         |
| 10       | 85000    | 1          | Bearing, 1"                                |
| 12       | D26162   | 2          | Band, Inspection Hole (4 Req'd on 600 Bu.) |
| 14       | 69503    | 1          | Snap Ring                                  |
| 15       | D26441   | 2          | Spreader, Grain                            |
| 16       | D26255   | 1          | End Cap                                    |
| 18       | D26265   | 1          | Adapter, Spout                             |
| 19       | D26326   | 1          | Spout, Top Unl. Head                       |
| 21       | 42-54054 | 1 Pair     | Retainer, Bearing                          |
| 23       | 71051    | 7          | Capscrew, 3/8" x ¾"                        |
| 24       | 41-10042 | 3          | Half Band 8"                               |
| 25       | 42-58082 | 1          | Band, Rear Motor Support                   |
| 26       | 42-58037 | 1          | Stub, Head                                 |
| 27       | 42-58049 | 1          | Plate, Head                                |
| 28       | 42-58081 | 1          | Guard, Belt                                |
| 33       | 76052    | 1          | 9.4 Sheave                                 |
|          | 76069    | 1          | Hub  |
| 34       | 75044    | 1          | Pulley, 2B x 3" x 22 mm - 50 Hz Motor      |
| 34       | 75045    | 1          | Pulley, 2B 3" x 7/8" - 60 Hz Motor         |
| 35       | D29321   | 2          | Belt, B40                                  |
| 36       | 42-58052 | 1          | Bearing                                    |
| 37       | 42-58046 | 2          | Rod, Motor Mounting                        |
| 38       | 42-58048 | 1          | Strap, Motor Mount w/Nuts                  |
| 38       | 42-58091 | 1          | Strap, Motor Mount                         |
| 39       | 42-58083 | 1          | Angle, Rear Motor Support                  |
| 40       | D26313   | 1          | Flight, Vert 600 Bu.                       |
| 41       | D26581   | 1          | Housing, Vert 600 Bu.                      |
| 42       | D56291   | 1          | Flight, Horiz. Elec Unl Extended           |
| 46       | 42-58050 | 1          | Key, ¼" x ¼" x 2"                          |



## NUTS, WASHERS AND LOCKWASHERS

| PART NO. | DESCRIPTION      | PART NO. | DESCRIPTION    |
|----------|------------------|----------|----------------|
| 72208    | ¼" Nut           | 72438    | ¼" L-Washer    |
| 72209    | 5/16" Nut        | 72439    | 5/16" L-Washer |
| 72210    | 3/8" Nut         | 72440    | 3/8" L-Washer  |
| 72211    | 7/16" Nut        | 72441    | 7/16" L-Washer |
| 72212    | ½" Nut           | 72442    | ½" L-Washer    |
| 72213    | 5/8" Nut         | 72443    | 5/8" L-Washer  |
| 72380    | ¼" L-Nut         | 72408    | ¼" Washer      |
| 72379    | ½" L-Nut         | 72409    | 5/16" Washer   |
| 72375    | ¾" L-Nut         | 72410    | 3/8" Washer    |
| 72382    | ¼" Whiz Lock-Nut | 72411    | 7/16" Washer   |
| 72334    | ¼" Tinnerman Nut | 72412    | ½" Washer      |
| 72376    | 5/8" Lock Nut    | 72413    | 5/8" Washer    |

### TORQUE ALL BOLTS PER TORQUE SPECIFICATION CHART

| COARSE<br>THREAD<br>FASTENER   | GRADE<br>DESIGNATION | SCREW, STUD, OR BOLT SHANK SIZE OR DIAMETER |       |      |       |      |       |      |      |
|--|----------------------|---|-------|------|-------|------|-------|------|------|
|  |                      | 1/4"  | 5/16" | 3/8" | 7/16" | 1/2" | 9/16" | 5/8" | 3/4" |
| <br>CAP SCREW  | S.A.E. 2<br>STEEL    | 5   | 11    | 20   | 30    | 50   | 70    | 100  | 170  |
| <br>CAP SCREW | S.A.E. 5<br>STEEL    | 8   | 17    | 30   | 50    | 75   | 110   | 150  | 270  |
| <br>CAP SCREW | S.A.E. 8<br>STEEL    | 12  | 24    | 45   | 70    | 105  | 155   | 210  | 375  |

Torques are in ft - lbs.

Torques shown are for National Coarse Thread Plain or Zinc plated fasteners carrying residual oil of Manufacture.

| GRAIN | USED FOR | PLENUM TEMP. | GRAIN TEMP. | DRYING TIME | COOLING TIME |
|-------|----------|--------------|-------------|-------------|--------------|
|       |          |              |             |             |              |