DURATECH®

HD-8™

Industrial Tub Grinder
Serial Number Up to 0358

Operating Instructions and Parts Reference

DURATECH INDUSTRIES
P.O. Box 1940, Jamestown, ND 58402-1940
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Clearing the Way for a Better Tomorrow

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HD-8™

Industrial Tub Grinder
Serial Number Up to 0358

Operating Instructions and Parts Reference

DuraTech Industries International Inc. (DuraTech Industries) has made every effort to assure that this manual completely and accurately describes the operation and maintenance of the HD-8™ Industrial Tub Grinder as of the date of publication. DuraTech Industries reserves the right to make updates to the machine from time to time. Even in the event of such updates, you should still find this manual to be appropriate for the safe operation and maintenance of your unit.

This manual, as well as materials provided by component suppliers to DuraTech Industries are all considered to be part of the information package. Every operator is required to read and understand these manuals, and they should be located within easy access for periodic review.

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Contents

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Part 1:
Operating Instructions

SECTION 1: SAFETY INSTRUCTIONS

The safety of the operator is of great importance to Haybuster Manufacturing Company. We have provided decals, shields and other safety features to aid you in using your machine safely. In addition, we ask you to be a careful operator who will properly use and service your Haybuster equipment.

WARNING: BEFORE ATTEMPTING TO OPERATE THIS MACHINE, CAREFULLY READ ALL INSTRUCTIONS CONTAINED WITHIN THIS MANUAL.

BEFORE OPERATING

1. Read and follow all instructions contained in:
   a. this grinder operator's manual
   b. engine operator's manual
   c. decals placed on the Bale Buster.

NOTE: Additional copies of the above mentioned materials can be obtained from your dealer.

2. Be sure all safety shields and covers are securely in place when machine is running.
3. Allow only responsible, properly instructed individuals to operate machines. Carefully supervise inexperienced operators.
4. Make no modifications to this equipment unless specifically requested or recommended by DuraTech Industries International.
5. Tighten or replace any loose or cracked bolts, chains, hoses or connections.
6. Check overhead for electrical power lines or other obstructions and be certain there is adequate clearance.
7. Make sure the machine is in good operating condition and that all protective shields are in place and in proper working order. Replace damaged shields before operating.
8. Check periodically for breaks or unusual wear and make any necessary repairs.
9. Allow no one to ride on the grinder at any time.
10. **Remember:** Loose clothing, necklaces and similar items are more easily caught in moving parts. Avoid the use of these items if possible and keep long hair confined.

11. Watch out for and avoid any object that might interfere with the proper operations of the machine.

12 Keep hands, feet and clothing away from power driven parts.

13. **OBJECTS THROWN BY MACHINE:** Do not operate without wearing safety glasses and a hard hat. Keep unauthorized personnel out of the grinding area!

14. When pivoting discharge conveyor, follow the procedure found on page 8.

15. The discharge conveyor is equipped with support legs. Use these legs when grinding and transporting. Do not rely solely on winch to support conveyor.

DURING OPERATION

1. Enforce the following safety precautions and others contained in this manual to prevent serious personal injury or death to accidental contact with rotating parts.

   A. Everyone must be kept clear of work area except the operator at the controls.

   B. Never work on or near the grinder unless engine is shut off and all moving parts stopped.

   C. Make sure everyone is clear of machine before starting machine.

2. Enforce the following safety precautions and others contained in this manual to prevent injury due to accidental contact with flying material thrown by hammers.

   A. Keep bystanders away from work area.

   B. Keep shields in place and in good condition.

   C. Watch out for and avoid any object that might interfere with the proper operation of the machine.

   D. Replace missing or damaged hammers.

3. Keep hands, feet, and clothing away from power driven parts.

4. Never leave controls unattended while the engine is running.

5. Never allow riders on the machine at any time.

6. Be sure the grinder is on firm level ground before operating.

DURING SERVICE AND MAINTENANCE

1. Before working on or near grinder for any reason, including servicing, cleaning, unplugging or inspecting machine, use normal shut-down procedure..

   A. disengage clutch

   B. shut off engine and remove key

   C. wait for all movement to stop

2. Check periodically and tighten any loose bolts or connections.

3. When replacing any part on your grinder, be sure to use only DuraTech Industries International authorized parts.

4. Relieve all pressure in the hydraulic system before disconnecting the lines or performing other work on the system. Make sure all connections are tight and the hoses and lines are in good condition before applying pressure to the systems.

CAUTION: Hydraulic fluid escaping under pressure can be invisible and have enough force to penetrate the skin. When searching for a suspected leak, use a piece of wood or cardboard rather that your hands. If injured, seek medical attention immediately to prevent serious infection or reaction.

5. If it is necessary to operate the grinder engine indoors for more than a few seconds. be sure to provide enough ventilation to remove the engine exhaust fumes.

WHEN TRANSPORTING ON PUBLIC ROADS

1. Use good judgment and drive carefully, especially over rough and uneven roads.

2. Be sure brakes are properly adjusted.

3. Check your state laws regarding the use of lights, slow moving vehicle signs, safety chain and other possible requirements.

4. Be aware of machine width at all times; **DO NOT EXCEED 55 MPH**.

SAFETY DECALS

The safety decals located on your machine contain important and useful information that will help you operate your equipment safely.

To assure that all decals remain in place and in good condition, follow the instructions below:

1. Keep decals clean. Use soap and water - not mineral spirits, adhesive cleaners and other similar cleaners that will damage the decal.
2. Replace all damaged or missing decals. When attaching decals, surface temperature of the machine must be at least 40°F (5°C). The surface must also be clean and dry.
3. When replacing a machine component to which a decal is attached, be sure to also replace the decal.
4. Replacement decals can be purchased from your Haybuster dealer.

WARNING: FAILURE TO COMPLY WITH THE ABOVE SAFETY INSTRUCTIONS OR THOSE THAT FOLLOW WITHIN THIS MANUAL COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

THIS MACHINE IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS INTENDED AS EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING LITERATURE OR OTHER HAYBUSTER WRITTEN MATERIAL PERTAINING TO THE 256 BALE BUSTER.

SECTION 2: INTRODUCTION

All personnel must read and understand before operating unit

DuraTech Industries International Inc.(DuraTech Industries) has made every effort to assure that this manual completely and accurately describes the operation and maintenance of this Industrial Grinder as of the date of publication. DuraTech Industries reserves the right to make updates to the machine from time to time. Even in the event of such updates, you should still find this manual to be appropriate for the safe operation and maintenance of your machine.

This manual, as well as materials provided by component suppliers to DuraTech Industries are all considered to be part of the information package. Every operator is required to read and understand these manuals All manuals should be located within easy access for troubleshooting and periodic review.

Appropriate use of the unit

This Industrial Grinder is designed to grind wood waste and other materials, including grass clippings, leaves, construction and demolition debris, tree branches and tree trunks. It is **NOT** designed to grind rocks, steel, concrete, or the like.

Operator protection

As with all machinery, care needs to be taken by the operator in order to insure the safety of the operator and those in the surrounding area.

Operators and those observing the operation of the Industrial Grinder are required to wear head, eye, and ear protection. No loose clothing is allowed.

The purpose of this owner's manual is to explain maintenance requirements and routine adjustments for the most efficient operation of your INDUSTRIAL GRINDER. There is also a trouble shooting section which may help in case of any problems in the field. Any information not covered in this manual may be obtained from your dealer or the factory.

Note: References to left and right are made viewing the unit from the rear end of the machine. Always use serial number and model number when referring to parts or problems.

MODEL HD-8 SERIAL NO _____

SECTION 3: OPERATION

NORMAL SHUT-DOWN PROCEDURE

For your safety and the safety of others, you must use the following normal shut-down procedure before leaving the controls unattended for any reason, including servicing, cleaning, or inspecting. A variation of the following procedure may be used if so instructed within this manual or our engine manual or if an extreme emergency requires it.

A. Disengage clutch

B. Shut off engine and remove key

C. Wait for all movement to stop

All machines have been pre-run at the factory to assure all functions are operating properly. the hydraulic reservoir tank contains approximately 8 gallons of hydraulic oil for test running only. Before operating your machine, additional oil must be added to the reservoir tank. It will take approximately 15 more gallons of hydraulic oil. This should bring the oil level to within 3-1/2" below the top of the reservoir.

CAUTION: Lack of proper hydraulic oil level in the reservoir tank will cause system to heat under continuous running. (Recommended Mobil 423, Co-op Super HTB or similar oil.)

PRE-STARTING INSPECTION INSTRUCTIONS

To insure long life and economical operation, we highly recommend the operator of the grinder be thoroughly instructed in the maintenance and operation of the machine. There is no substitute for a sound preventative maintenance program and a well trained operator.

Prior to starting the engine, we recommend the operator make a visual inspection of the unit. This can be done as the lubrication is being carried out. Any items that are worn, broken, missing or needing adjustment must be serviced accordingly before operating the grinder.

WARNING: Before inspecting the machine, use the normal shut-down procedure on this page.

PRE-OPERATING CHECK

Before operating the Tub Grinder, follow these instructions:

- ❑ Read and have a thorough understanding of the operator's manual, especially the sections pertaining to machine operation and safety.
- ❑ Be sure anyone who will assist you in the operation of this machine knows how the machine operates.
- ❑ Know the machine's safety features and understand the safety precautions.
- ❑ Be sure all lubrication points have been lubricated. See lubrication chart.
- ❑ Give the machine a "once-over" for any loose bolts.
- ❑ Check engine oil level and coolant level.
- ❑ Check hydraulic oil level.
- ❑ Check hydraulic components for leaks or damage.

WARNING: Hydraulic fluid escaping under pressure can be almost invisible and can have sufficient force to penetrate the skin. When searching for suspected leaks, use a piece of wood or cardboard rather that your hand. If injured, seek medical attention immediately to prevent serious infection or reaction.

- ❑ Visually examine cylinder to see if any parts show excessive wear. These parts include shaft, plates, rods, hammers and movable plate.
- ❑ Check screens, screen hold downs, for wear and tightness.
- ❑ Visually examine cylinder bearings and mounting bolts.
- ❑ Check all bearings for wear.
- ❑ Always grind with the machine stationary.
- ❑ Watch for unusual or excessive vibration. If any occur, immediately shut off the power. Check to see what is wrong and correct it before starting the grinder again.
- ❑ Start the machine and check the tub direction, speed control starting the grinder again.
- ❑ In cold weather, allow five minutes for the machine to warm up before grinding.
- ❑ Make sure all shields and guards are in place.
- ❑ Check lug nuts for tightness.
- ❑ Condition of tire rims.
- ❑ Tires for proper air pressure.
- ❑ Installation and condition of hammers.
- ❑ Chains and belts for proper tension and condition.
- ❑ Condition of decals.

SCREEN SELECTION

The coarseness of the material to be ground is determined by the hole size in the screens. Hole sizes can vary from 5/8” diameter through 5” diameter. The larger the hole diameter the coarser the grind.

Round perforated screens available are 5/8”, 3/4. 1”, 2”, 3”, 4”, 5”. Slotted screens, and open screens are available.

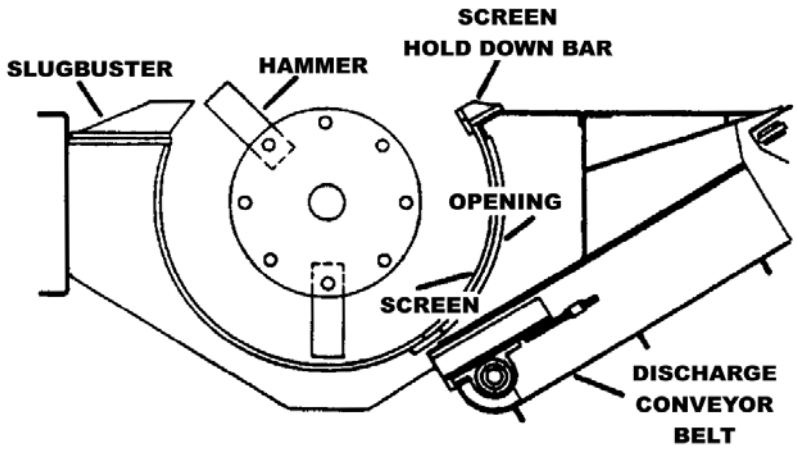
CAUTION: KEEP ALL FOREIGN OBJECTS OUT OF THE TUB AND AWAY FROM THE MILL. FOREIGN OBJECTS MAY RESULT IN PERSONAL INJURY OR DAMAGE TO THE MACHINE.

INSTALLING A SCREEN

CAUTION: Disengage PTO and shut off engine before entering tub.

1. Loosen and remove bolts on the screen hold down bar
2. With a large hook or bar, pull the screen from its chamber.
3. Make sure material is clear form screen holders.
4. Insert the new screen.
5. Replace the hold down bar, and bolts. Tighten all bolts securely.

Figure 3.1
rear view of cylinder showing placement of screens and screen hold down bar in relation to cylinder, discharge conveyor and slugbuster.



CYLINDER REAR VIEW

STOPPING THE MACHINE

CAUTION: Never attempt to dislodge material inside the mill when the machine is in operation by physically pushing materials down. **WHEN THE MACHINE IS IN OPERATION, STAY OUT OF THE TUB.**

CAUTION: The stored up energy in the cylinder causes it to rotate long after the engine PTO has been disengaged. Before performing any maintenance in the machine or getting into the tub, be sure cylinder and all moving parts have come to a complete stop.

TRANSPORTING

CAUTION: DO NOT MOVE TUB GRINDER without first securing the conveyor in transport position.

TO PREPARE

1. Be sure all loose parts (shield, screens, extra hammers) are securely fastened down.
2. Make sure all bystanders are clear, moving parts can cause injuries.
3. The discharge conveyor is equipped with support legs. Use these legs when grinding or transporting. Do not rely solely on winch to support conveyor.
4. When pivoting conveyor, rise discharge conveyor stand is off the ground. Release conveyor latch (on right hand fender).
5. Pivot conveyor (180°) and position conveyor across back of grinder. Raise or lower conveyor using winch to align conveyor stand with transport latch.
6. Secure conveyor transport pin in its proper location.
7. Hitch the grinder to towing vehicle with adequate load carrying and braking capacity. Be sure to attach safety chains between towing vehicle and grinder.
8. Hook up the electrical connectors.
9. Raise jack and lock the handle in its storage.
10. Check lights and brakes for proper function.
11. Check the turning clearance between grinder and the towing vehicle.
12. Check local ordinances regarding restrictions for machine travel on local roads.
13. Be aware of machine width at all times; do not exceed 55 mph.

14. Check your state laws regarding the use of lights, slow moving vehicle signs, safety chain and other possible requirements.
15. Be sure brakes are properly adjusted.
16. Use good judgment and drive carefully, especially over rough and uneven roads.

NOTE: A fire extinguisher should be handy at all times due to the possibility of sparks from engine or hammers hitting a foreign object.

CLUTCH ADJUSTMENT

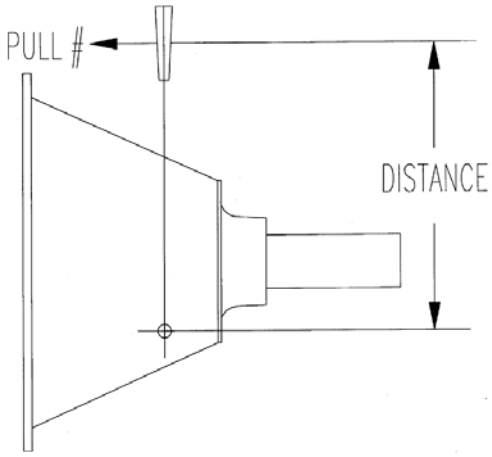
IMPORTANT: Read and have a thorough understanding of the clutch's operators manual and specification plate found on clutch housing.

IMPORTANT: DO NOT engage clutch at high engine rpm.

To engage the clutch, preform the following steps:

1. Before starting engine, the rotor box should be cleared of all material.
2. Start the engine and set the engine speed to 1200-1500 RPM.
3. In order to perevent excessive clutch slippage, pull firmly and briefly on the clutch engagement lever to "bump" the rotor. Fully engage the clutch only when the rotor speed is adequate to prevent overloading the engine.
4. Check periodically for proper adjustment according to the specifications plate on clutch's housing.

Figure 3.2
pull and distance in clutch adjustment



CLUTCH	PULL	DISTANCE
Rockford 11-S	95-75 lb	16 in.
Twin Disc SP111	80-62 lb	21 in.
Twin Disc SP211	152-114 lb	14 in.

DAMAGE DUE TO EXCESSIVE SLIPPING WILL NOT BE COVERED BY THE WARRANTY.

A new clutch generally requires several adjustments until friction surfaces are worn in. Do not let a clutch slip as this will glase the friction plates and may ruin them. A new power take off should have its clutch adjustment checked after the first ten (10) hours of service.

If the clutch slips, overheats, or the clutch ooperating lever jumps our, the clutch must be adjusted.

To adjust the clutch, perform the following steps:

1. Use the normal shutdown procedure to shut down the engine before performing any clutch adjustments.

CAUTION: If the clutch has been allowed to slip, the clutch components can be very hot. Allow parts to cool before performing any adjustments.

2. Remove the hand hole plate from the housing, and rotate the clutch until the adjusting lock pin can be reached.
3. Disengage the adjusting lock pin and turn the adjusting ring until the operating lever shaft requires the amount of pull listed in table. The amount of pull should be the higher value listed for your clutch model's pull range. See figure 3.2 for information about your clutch model.
4. Perform this adjustment again when the pull value drops below the smaller value listed in the same table.

OPERATION OF TUB GRINDER

1. Valve to control tub rotation, with forward, neutral, reverse positions, and tub rotation speed knob to increase or decrease speed. Mounted on left side of tub deck drive.

2. Valve to control conveyor orbit motors, with forward, neutral, and reverse positions. Mounted on right side of tub deck drive.

3. Engine gauges, see engine operation manual.

4. When first starting machine, run at less than full throttle to allow hydraulic system to warm up before operating.

5. **IMPORTANT: DO NOT engage clutch at high engine rpm. Before starting engine, cylinder box should be cleared of all material. Set engine at approximately 1000 rpm. Pull firmly on lever when engaging clutch to prevent excessive slippage. Check periodically for proper adjustment according to spec. plate on clutch housing.**

Duratech Industries International test runs every grinder before it leaves the factory. The control box was calibrated at this time and should not need any further adjustment. Before attempting to adjust the control box, read the trouble shooting section, pages 13 thorough 19.

GRINDING

Materials to be ground should be placed directly into the tub. The best method for filling the tub is:

1. When first starting machine, run at less than full throttle to allow hydraulic system to warm up before operating.

2. Fill the tub about half full of unground materials before starting tub rotation.

3. Start tub. (Page 16 under electronic govenor operation.)

4. Place additional materials in the tub.

WET MATERIAL

This is the toughest material for any grinder to handle. When filling the tub with wet material, deposit small quantities on a more frequent basis rather than filling the tub with one load.

IMPORTANT: Never drop a large object into the tub from a high level. Ease the material over the edge and down into the tub carefully.

IF LODGING OCCURS

Occasionally materials may lodge against the side of the tub and not feed down to the mill. If this occurs, reverse the tub direction for about two rotations and then start the tub in a clockwise direction again. This practice normally dislodges any materials

SECTION 4: ELECTRONIC GOVERNOR OPERATION

INTRODUCTION

The Model RCB93 Electronic Governor automatically controls the feed rate to keep the engine its optimum power zone. (“engine mode”) When the load on the grinding rotor begins to lug the engine, the governor automatically reduces tub rotation speed in proportion to the load. The result is nearly a constant load on the engine, which will maximize grinding efficiency.

The RCB93 Electronic governor will also perform as a simple tub speed control. (“tub” mode) In this mode the tub speed is constant and it will not change to match varying load conditions.

When the electronic governor is switched to the engine mode, it is monitoring the rotation speed of the engine. The hydraulic flow to the tub drive mechanism is regulated proportionally to the engine speed. When the engine begins to lug down, the hydraulic oil flow is reduced which in turn slows down the tub rotation. With proper calibration, the engine will only lug down to its optimum horsepower RPM and the tub rotation will be varied proportionally to keep the engine at this RPM.

CALIBRATION

1. With the engine and hydraulic systems at operating temperature, the clutch or PTO engaged, and the handle of the manual hydraulic valve in the forward position. Throttle the engine up to the desired engine RPM, (check engine operation manual for proper RPM).

2. Switch the “Range Switch” to the H or high position. Rotate the “Engine Load Knob” to the number 10 setting. Rotate the “Tub Limit Knob” to the number 7 setting. Switch the “Mode Switch” to the ENG. position.

   The “Fuse” light and the “Sensor” light should be on. The tub should not be rotating at this time. If the tub is rotating, read the trouble shooting section of the operation manual.

3. Slowly rotate the “Engine Load Knob” counter clockwise until the tub just begins to move. The tub should begin to rotate before you reach the “o” setting. If it does not begin to rotate, switch the range switch to M-Medium or L-Low and repeat as necessary.

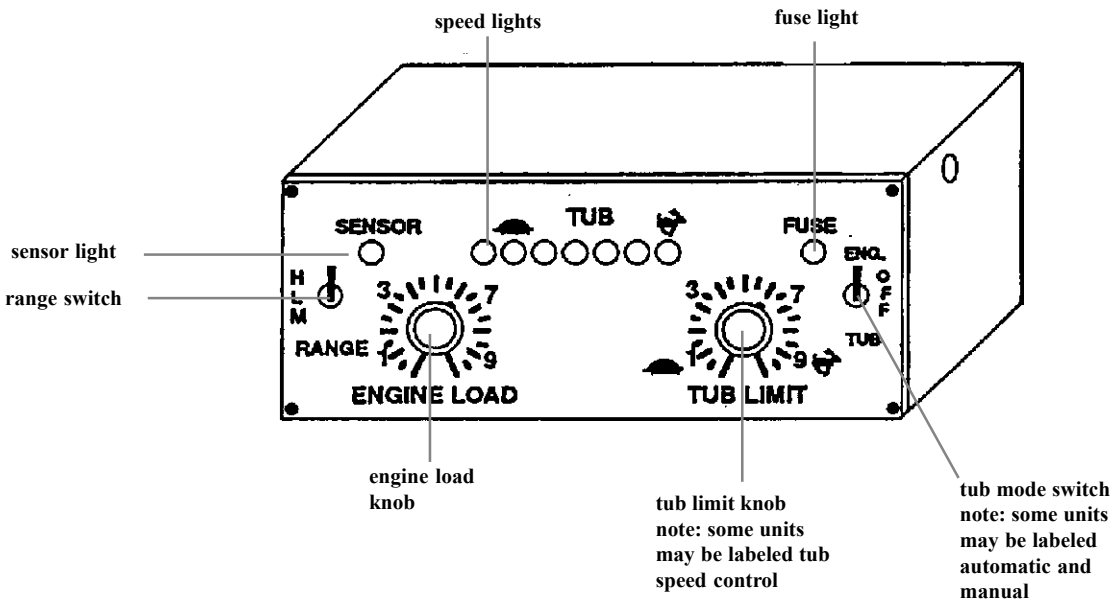
This is the proper calibration for an engine operating at the RPM set in step 1.

TEST: Throttle engine down and the tub should stop rotating, return the engine to the above engine RPM and the tub should start to rotate.

If the tub will not rotate read the trouble shooting section of the operation manual.

TYPICAL ELECTRONIC GOVERNOR SYSTEM

figure 4.1
electronic governor controls



EXPLANATION OF FRONT PANEL

"FUSE" LIGHT - This light is on whenever the electronic governor is receiving power.

"SENSOR" LIGHT - This light is on whenever the electronic governor is receiving enough input signal from the sensor. For the sensor light to work you must have the clutch engaged and the engine running at grinding RPM. The "Mode Switch" must be switched to engine.

" SPEED" LIGHT - These lights indicate how fast your tub should be turning based on the output signal that the electronic governor is sending to the electro-hydraulic valve.

"MODE SWITCH"

"TUB" In this position the tub will rotate at a constant speed based on the settings of "Tub Limit Knob".

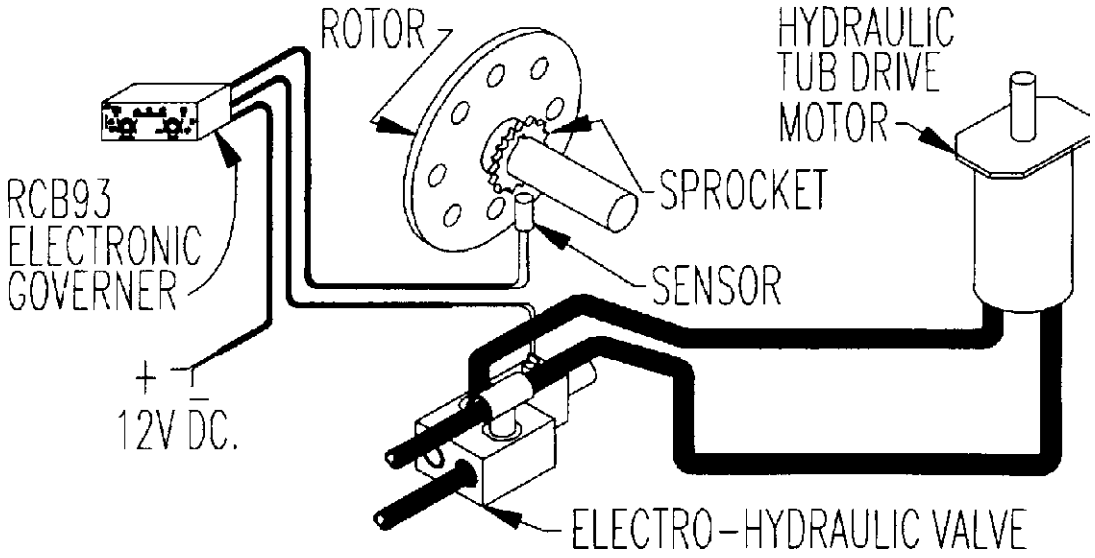
"ENGINE" - This position uses all the functions of the Electronic Governor. Maximum tub speed will be limited by the "Tub Limit Knob". Engine load will be controlled by the "Engine Load Knob".

"TUB LIMIT" - This knob sets the maximum speed the tub will rotate in both the "Tub Mode" and "Engine Mode". In "Engine Mode" Tub speed will vary depending on Engine Load.

"ENGINE LOAD" - This knob is used only in "Engine Mode". It controls the load placed on the engine. Turning the knob clockwise decreases engine load. Turning the knob counterclockwise increases engine load.

"RANGE" SWITCH (HI, MEDIUM, & LOW) - This switch is a coarse adjustment for the "Engine Load Knob".

Figure 4.2
electronic governor system



Troubleshooting the electronic governor system

1. When power is reaching the electronic governor the fuse light should be on. If this light fails to go on, check the fuse, the battery connections, the wiring harness, and the indicator lamp. If the fuse light is on, the wiring harness, battery connections, fuse and bulb are functioning correctly.

2. Checking the TUB MODE operation of the electronic governor. With the engine and hydraulic systems at operating temperature, and the tub drive control valve in the forward position, throttle the engine up to desired engine RPM.

With the mode switch in the tub position, the tub should be rotating. The speed of the tub can be varied by rotating the tub limit knob. The number of tub speed lights which are lit will vary with the setting of the tub limit knob. If the number of tub speed lights lit varies as you rotate the tub limit knob, the manual portion of the controls are functioning correctly. Proceed to step 3. If the manual portion is not working properly, proceed to trouble shooting table 4.1.

Table 4.1 Troubleshooting the electronic governor in tub mode.

PROBLEM	CAUSE	REMEDY
1. The tub does not rotate but the electronic governor and the manual hydraulic valve are working properly. There is pressure to the orbit motor.	1. The tub is binding. 2. There is too much material in tub. 3. The tub is overloaded due to wet or tough grinding material. 4. The pressure relief valve in the control valve set too low or is faulty.	1. Remove the material causing problem. 2. Reduce the amount of material in the tub. 3. Readjust to 1800 Psi max. 4. Replace the relief valve.
2. The tub does not rotate, but the valve is receiving 18 to 24 volts of DC power. There is no pressure to the orbit motor.Note: The valve refers to the valve where you disconnect the wiring harness. For more information see "Electronic governor hardware test" later in this section.	1. The manual hydraulic valve is not engaged. 2. The valve assembly is dirty or faulty. 3. The solenoid is faulty.	1. Engage the manual hydraulic valve. 2. Clean or replace the valve assembly. 3. Test the solenoid and replace as necessary.
3. The tub does not rotate, and there is no voltage to the valve.	1. There is no power to the electronic governor. 2. The electronic governor is switched off. 3. The fuse is blown. 4. The tub limit knob is set to "O". 5. A wire in the wiring harness is broken. 6. The electronic governor is faulty.	1. Read step 1 above. 2. Switch the electronic governor mode switch to tub. 3. Replace the fuse. 4. Set the tub limit knob to a setting other than "0". 5. Replace or repair the wiring harness. 6. Replace the electronic governor.
4. The tub runs with the electronic governor switch off. Disconnect the wiring harness at the valve. A. If the tub stops B. If the tub keeps turning	1A. The electronic governor is out of adjustment. 2.A The electronic governor is faulty. 1B. The valve override screw is adjusted in too far. 2.B The valve is faulty.	1.A Readjust the electronic governor. 2.A Replace electronic governor. 1.B Adjust the override screw. 2.B Replace the valve.
5. The tub speed can not be varied with the tub limit knob.	1. Valve override is adjusted in too far. 2. The valve is stuck. 3. The solenoid is stuck. 4. The electronic governor is faulty.	1. Adjust the override screw. 2. Clean or replace the valve assembly. 3. Test the solenoid and replace as necessary. 4. Replace the electronic governor.

3. Checking the ENGINE MODE operation of the electronic governor. If the tub mode controls function correctly after following the tub mode trouble shooting check list, then follow the calibration instructions on page 13 of this manual. If the tub will not rotate, proceed to trouble shooting table 4.2.

ELECTRONIC GOVERNOR HARDWARE TEST

1. Power source 12 volts DC

   Red wire + positive pin A wiring harness

   Black wire - Negative Pin B wiring harness

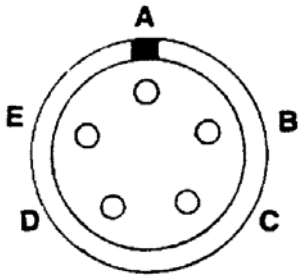
2. Test output voltage to valve DC

   Red wire + positive pin D wiring harness.

   Black wire - negative pin E. wiring harness.

Test with power supplied to governor control box and mode switch set to “tub”. Grinder does not need to be running. Disconnect the wiring harness at the valve, with a voltmeter set for 12 volts DC, connect the red lead of the voltmeter to the red lead of the wiring harness and black lead to the black wire. Turn the “Tub Limit Knob” until the left “Speed” light (turtle) is on. The voltmeter should read approximately 3 volts. Turn the “Tub Limit Knob” clockwise, as more speed lights, light up the voltage should increase. Turn the knob until the right speed light (Rabbit) is lit. The volt meter should read minimum 9 volts.

Figure 4.3
view of wiring harness connector looking directly at connector



A - 12 volts DC ignition
B - Ground
C - Digital sensor signal*
D - (+) to valve
E - (-) to valve

3. Output voltage of sensor AC

   red wire - Pin C wiring harness

   Black wire - Pin B wiring harness.

Set sensor gap to 3/32” (the thickness of a nickel).

Remove wiring harness from the control box.

With the engine at operating temperature and the clutch engaged, throttle the engine up to the desired engine RPM.

With volt meter set to AC volts connect leads to pins B and C. The volt meter should read 2 to 3 volts AC .

ELECTRO-HYDRAULIC VALVE COIL TEST

This test requires an accurate ohm meter. Disconnect the wiring harness leads at the valve coil. Set the meter to read ohms (W). Place one test lead from the meter on each of the two electrical connections of the valve coil. The reading should be from 8-14 ohms. If the reading is not in this range, replace the coil.

MANUAL OVERRIDE

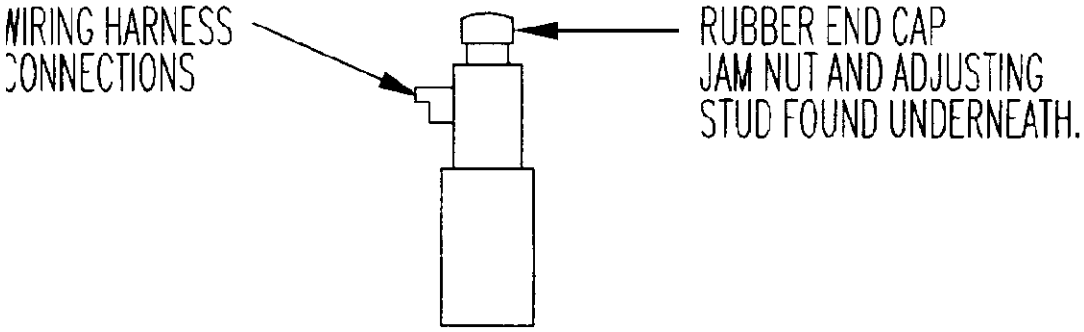
NOTE: If there is an electrical failure withyour machine you may still be able to grind. Switch the Electronic governor to "OFF". Remove the rubber end cap and loosen the jam nut on the electro-hydraulic valve. Start the machine and engage the tub drive.

IMPORTANT! - DO NOT ENGAGE CLUTCH AT THIS TIME!

Turn the adjusting stud clockwise until the tub rotates at the desired speed. Lock the jam nut on the adjusting stud and replace the rubber end cap on the valve coil The valve will function only as a manual flow control when it is adjusted in this manner. The grinder will now operate as it would if the Electronic Governor were switched to the "Tub mode". There will be No automatic tub control.

Contact your dealer for future repairs or replacement parts as soon as practical. When the problems are corrected, readjust Electro-Hydraulic valve.

Figure 4.4
electro-hydraulic valve



ELECTRO-HYDRAULIC VALVE CALIBRATION

Remove the rubber end cap from the end of the valve coil to find a jam nut and an adjusting stud with a screwdriver slot. Disconnect the wiring harness from the coil Loosen the jam nut. Start the engine and engage the tub drive in the forward direction by pushing the hydraulic tub control lever towards the machine. Throttle the engine up to desired engine RPM. **Do Not engage the clutch!**

IMPORTANT! - stay clear of all moving parts while adjusting the "ELECTRO-HYDRAULIC VALVE" The tub will be rotating during this adjustment.

If the tub is not rotating, turn the adjusting stud clockwise until the tub begins to rotate. When the tub begins to rotate, turn the adjusting stud counter-clockwise until the tub stops. (If the adjusting stud comes all the way out and the tub is still rotating, then the valve is faulty.)

Lock the adjusting stud with the jam nut and replace the rubber cap. Shut down the entire machine. Reconnect the wiring harness to the valve coil.

SECTION 5: LUBRICATION

CAUTION: Always shut off machine before adjusting or lubricating.
Hydraulic oil reservoir capacity: (23 GALLONS).

Change hydraulic oil and filter at least once a year.

When grinder is operated during cold weather, all lubrication should be performed after bearings are at operating temperatures.

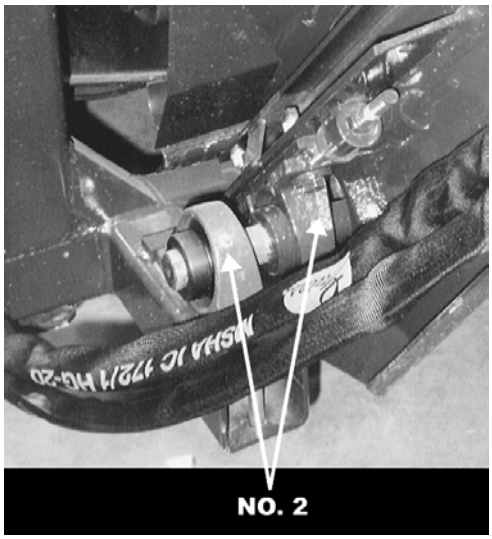
BEARING LUBRICATION

Bearing operating in the presence of dust and water should contain as much grease as speed will permit, since a full bearing with a slight leakage is the best protection against entrance of foreign material. In the higher speed ranges, too much grease will cause overheating. High speed operation, abnormal bearing temperatures may indicate faulty lubrication. Normal temperature may range from "cool to warm to the touch" up to a point. Unusually high temperatures "too hot to touch for more than a few seconds" accompanied by excessive leakage of grease indicates too much grease. High temperatures with no grease showing at the seals, particularly if the bearing seems noisy, usually indicates too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

The following chart is a general guide for relubrication. Certain conditions may require a change of lubrication periods as dictated by experience.

REF. NO.	LOCATION	NO. OF ZERKS	FREQUENCY
1	Belly conveyor	4	40 hrs.
2	Discharge Conveyor	6	40 hrs.
3	Cylinder	2	10 hrs. *
4	PTO	3	40 hrs.
5	Tub Drive Shaft	2	40 hrs.
6	Tub Roller	8	40 hrs;
7	Tub Pressure Roller		Annually
8	Wheel Bearing		Annually
9	Roller Chain		Oil Daily in Dusty Conditions

Refer to bearing lubrication for the following *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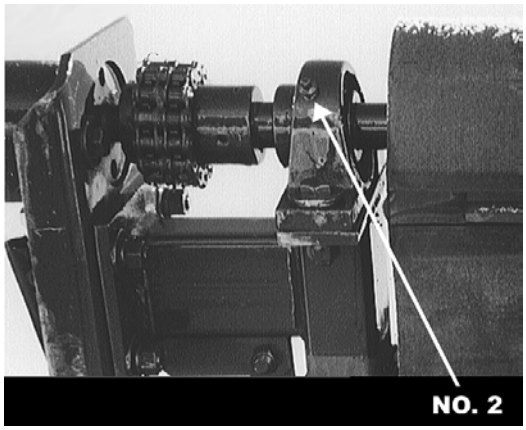
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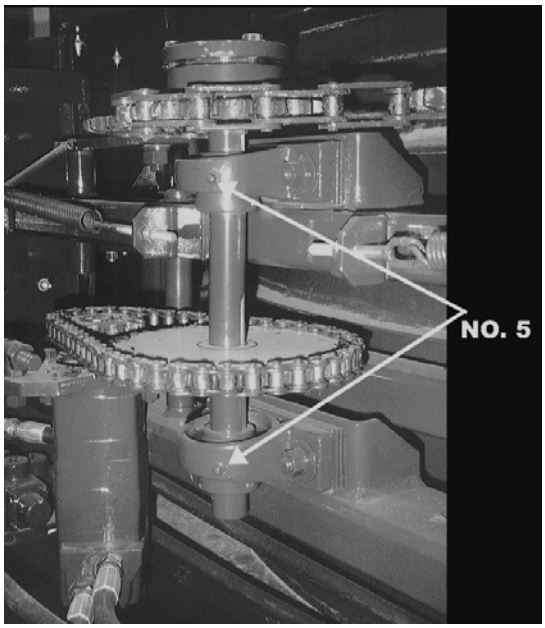
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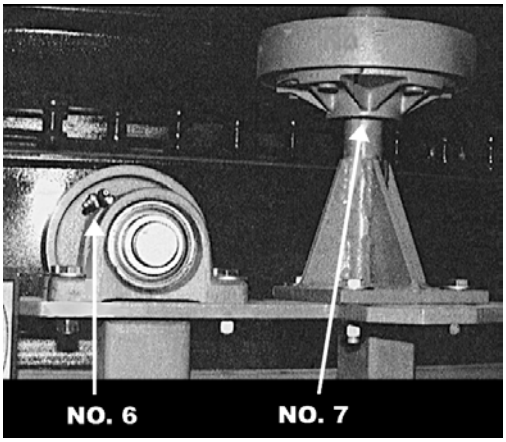
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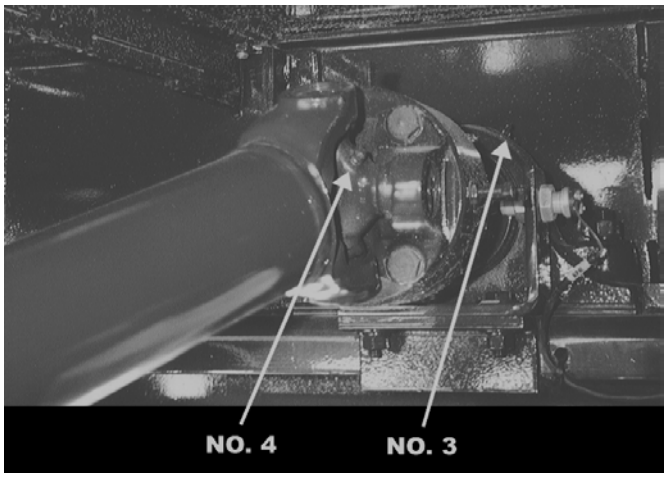
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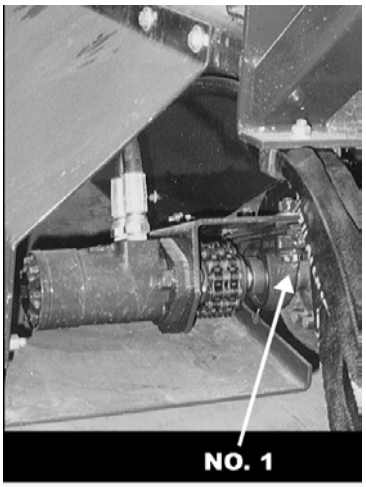

NO. 1

BEARING LUBRICATION & MAINTENANCE INSTALLATION INSTRUCTIONS

WARNING: To ensure that drive is not unexpectedly started, turn off and lock out or tag power source before proceeding. Failure to observe these precautions could result in bodily injury.

1. Clean shaft bore of bearing. Lubricate with light oil or antiseize compound.
2. Slip bearing in position.
3. Bolt bearing to support, using shims where necessary to align bearing. The effort required to turn the shaft should be the same before and after bolting bearing to the support.
4. Tighten set screws to the torque values shown on Table 1.

TABLE 1 - Set Screw Torque Table

Shaft Size	Set Screw Size	Tightening Torque
2-11/16”-3”	1/2-13	620 in. - lbs.

LUBRICATION INSTRUCTIONS

Storage or Special Shutdown: If exposed to wet or dusty conditions or to corrosive vapors, extra protection is necessary. Add grease until it shows at the seals: rotate the bearing to distribute grease; cover the bearing. After storage or idle period, add a little grease before running.

High Speed Operation: In the higher speed ranges too much grease will cause overheating. The amount of grease that the bearing will take for a particular high speed application can only be determined by experience - see “Operating Temperature” below. If excess grease in the bearing caused overheating, it will be necessary to remove grease fitting (also drain plug when finished) to permit excess grease to escape. The bearing has been greased at the factory and is ready to run. When established a relubrication schedule, note that a small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals.

Operation in Presence of Dust, Water or Corrosive Vapors. - Under these conditions the bearing should contain as much grease as speed will permit, since a full bearing with consequent slight leakage is the best protection against entrance of foreign material. In the higher speed ranges too much grease will cause overheating - see “High Speed Operation”. In the lower speed ranges it is advisable to add extra grease to a new bearing before putting into operation. Bearings should be greased as often as necessary (daily if required) to maintain a light leakage at the seals.

Average Operation - This bearing has been greased at the factory and is ready to run. The following table is a general guide for relubrication. However, certain conditions may require a change of lubricating periods as dictated by experience. See: “High Speed Operation”; and “Operating in Presence of Dust, Water, or Corrosive Vapors.”.

Operating Temperature - Abnormal bearing temperature may indicate faulty lubrication. Normal temperature may range from "cool to warm to the touch" up to a point "too hot to touch for more than a few seconds," depending on bearing size and speed, and surrounding conditions. Unusually high temperature accompanied by excessive leakage of grease indicates too much grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

Kind of Grease - Many ordinary cup greases will disintegrate at speeds far below those at which bearings will operate successfully if proper grease is used. Bearings have been lubricated at the factory with No. 2 consistency lithium-base grease which is suitable for normal operating conditions. Relubricate with lithium-base grease or a grease which is compatible with original lubricant and suitable for roller bearing service. In unusual or doubtful cases the recommendation of a reputable grease manufacturer should be secured.

LUBRICATION GUIDE

Read Preceding Paragraphs Before Established Lubrication Schedule

Suggested Lubrication Period in Weeks

SECTION 6: MAINTENANCE

HAMMERMILL MAINTENANCE

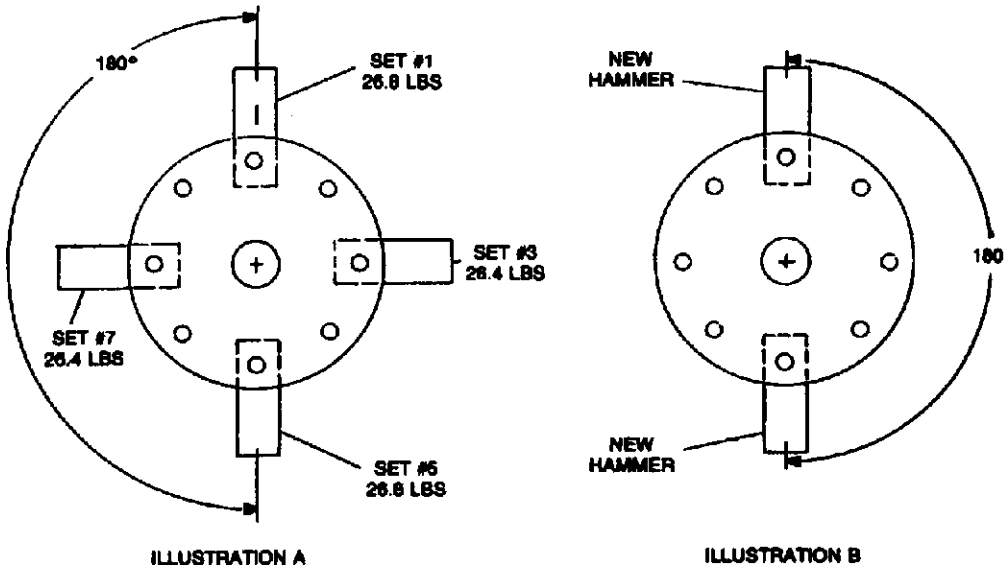
IMPORTANT SAFETY INSTRUCTIONS READ ALL INSTRUCTIONS

Visually examine mill to see if any internal parts show excessive wear. Repair or replace needed parts. These parts should include body, liners, rotor discs and holes in the discs that support the rods. Enlarged holes can cause rods to break. Also check rods, rod locking or retaining devices, hammers, screens, screen channels or hold downs, main shaft, lid locking devices, hinges or anything else that could wear and perhaps fail if not properly maintained, and cause damage to the hammermill and/or personnel. Bearings and motor alignment should also be checked along with mounting bolts to insure a firm foundation and reduced vibration. Foreign material in a mill can cause severe damage to hammers, screens, rods, and other parts and may cause part and subsequent hammermill failure.

Keep all foreign objects out of the tub and away from the mill. Foreign objects may result in personal injury or cause severe damage to hammers, screens, rods, and other parts which will cause hammermill failure.

When installing or changing hammers, be sure to follow directions on the installation spacers diagram carefully. Misplacement could cause excessive vibration. We recommend that hammers be balanced in sets according to the rod on which they are to be installed. Sets of equal weight should be installed 180° apart (See Illustration A). When starting the hammermill after installing a new set of hammers or turning corners, watch for unusual or excessive vibration. If any occurs, immediately shut off the mill. Check to see what is wrong and correct it before starting the mill again.

Figure 6.1
hammer replacement illustrations A + B



JACOBS HAMMERS are designed to grind the normal ingredients used in the manufacture of feed and related products and other products such as paper or wood residue, chips, sawdust, shavings, or hogged materials that may be reduced in size in a hammermill. They are not designed to grind or crush, on a primary basis, hard materials such as coal or minerals. Metal, rock, or other similar materials, which could cause parts to fail, should never be allowed to enter a hammermill.

JACOBS HAMMERS have been designed and manufactured to provide the best compromise between hardness for good wearing qualities and strength for dependability and resistance to breakage. Any alteration of the hammer by heating, grinding, resurfacing or any other process can change the mechanical properties of the hammer and make it unsuitable or dangerous to use

WARNING: Before servicing machine, read the Service and Maintenance section of the Safety Instructions.

CAUTION: If for any reason arc welding is to be done, always ground cylinder to frame of machine to prevent arcing in bearings.

HAMMERS: Because of the high capacity of the machine, the hammers will wear and must be considered expendable. Each hammer has four cutting corners. For maximum life, it is suggested that hammers be rotated periodically to even out the wear over the entire hammer.

HAMMER AND SCREEN CONDITION

Cylinder hammers and screens are the heart of the grinder. If cutting edges of the hammers become rounded, hammers should be replaced or turned to expose a new cutting edge. Each hammer has two cutting edges. If end of hammer is allowed to wear too long, one cutting edge is lost.

Screens have two cutting edges. When home cutting edges become rounded, screens can be turned end for end exposing new cutting edges.

The results of badly worn hammers and screens is loss of capacity, and added horse power requirements.

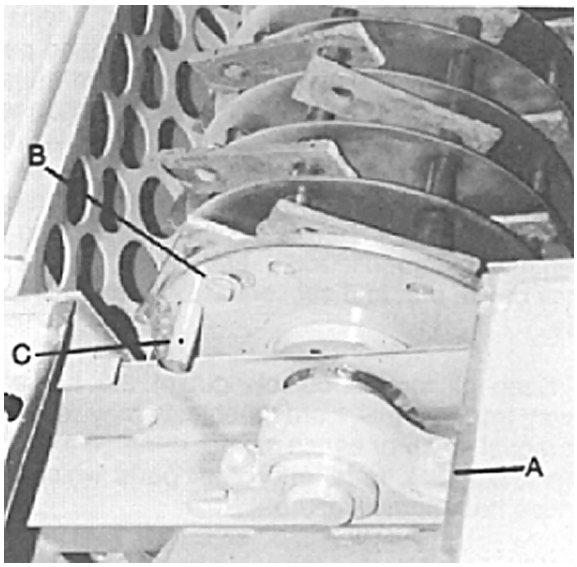
NOTE: Hammer and hammer rod life can be extended by keeping cylinder rotating at 2000 rpm. Too much engine horse power and/or over feeding the cylinder will cause the hammers to lay back resulting in excessive wear in both hammers and rods!

HAMMER RODS: Rods can be turned end for end exposing a new surface area for wear. This will extend service life although hammer rods must be considered expendable.

CAUTION: Keep all foreign objects out of the tub and away from the mill. Foreign objects may result in personal injury or damage to the machine.

Figure 6.2
front cylinder cover, rod retainer plate and rod retainer plate bolt

HAMMER REPLACEMENT



CAUTION: Disengage PTO and shut off engine before entering tub.

To install new hammers or change the cutting edge on existing hammers, tub floor should be free of all material for easy access to cylinder and front cylinder bearing cover.

1. Remove front cylinder cover. Item A illustration.
2. Loosen two bolts at front of cylinder which holds the hammer rod retainer plate in place. Item B in illustration.
3. Rotate retainer plate counter clockwise to align holes allowing hammer rods to be removed through front of cylinder. Item C in illustration.
4. Remove one row of hammers and replace, taking note as to where spacers are located. (Separate sheet shows proper spacer location.)

5 After all hammers have been replaced, reassemble retainer plate and front cylinder bearing cover.

IMPORTANT: Care should be exercised when replacing only a few hammers and not the whole set. If one or more new hammers are inserted on a rod, the same number of new hammers should be inserted on rod directly across the cylinder. This will maintain a balanced cylinder for vibration free operation.

MAINTENANCE

WARNING: Before servicing machine, read the Service and Maintenance section of the Safety Instructions.

CAUTION: If for any reason arc welding is to be done, always ground cylinder to frame of machine to prevent arcing in bearings.

CONVEYOR BELT ADJUSTMENTS

I. SAFETY CONSIDERATIONS.

A. Allow only responsible, properly instructed individuals to operate, service, adjust or maintain this machine. Carefully supervise inexperienced personnel.

B. Do not work on or around equipment with loose clothing, necklaces or neckties, etc. Keep long hair confined.

C. Keep hands, feet and clothing away from power driven parts.

D. Before working on or near grinder for any reason, including adjusting, servicing, inspecting or unclogging machine:

1. Disengage rotor clutch.

2. Shut off grinder engine and remove key.

3. Be certain that parking brakes are set. Shut down tow vehicle and remove key.

4. Do not begin any service procedures until all machine movement has ceased.

II. Tension Adjustment

Both rollers on the belly conveyor and the discharge conveyor are adjustable to allow for belt stretch and tracking. If the conveyor belt slows down or stops during operation, slippage may be the cause. Tighten adjusting bolts equally to increase conveyor belt tension and to keep the belt centered on the rollers.

IMPORTANT: Do not overtighten conveyor belts. Use only enough tension to eliminate belt slippage.

III. Tracking Adjustment

A. When a new belt is installed: (Maintain OEM Specifications on New Belt for thickness, width and length)

Begin by adjusting the **drive** roller so the mounting bearings are the same distance from the end of the conveyor frame (roller centerline is square with conveyor frame). Adjust the **idler** roller tension spring bolts so they are equal on both sides of conveyor.

B. If the belt is running to the right side:

1. Adjust the **idler** roller tension spring bolt on the right side of the conveyor. Increase tension by approximately 2 full turns of the adjusting nut.
2. Make certain that all personnel are clear of machine and start engine. Engage hydraulic conveyor drive lever.
3. Observe conveyor belt tracking from a safe location.
4. If further adjustment is required, disengage hydraulic conveyor drive lever and shut down engine.
5. Some adjustment of the **drive** roller may be required if no improvement is noted by increasing the **idler** roller tension.
6. Repeat steps 1-5 until proper tracking is obtained.

C. If the belt is running to the left side:

1. Adjust the **idler** roller tension spring bolt on the left side of the conveyor. Increase tension by approximately 2 full turns of the adjusting nut.
2. Make certain that all personnel are clear of machine and start engine. Engage hydraulic conveyor drive lever.
3. Observe conveyor belt tracking from a safe location.
4. If further adjustment is required, disengage hydraulic conveyor drive lever and shut down engine.
5. Some adjustment of the **drive** roller may be required if no improvement is noted by increasing the **idler** roller tension.
6. Repeat steps 1-5 until proper tracking is obtained.

Be sure to realign orbit motor, and tighten bolts after correction is made.

TUB CHAIN DRIVE

Tub drive chain is equipped with spring tensioned idlers. Due to normal wear the tub drive chain may tend to climb on driving teeth of tub. If this should occur, the chain should be sized to fit the tub, and the tub teeth adjusted for proper spacing in the chain.

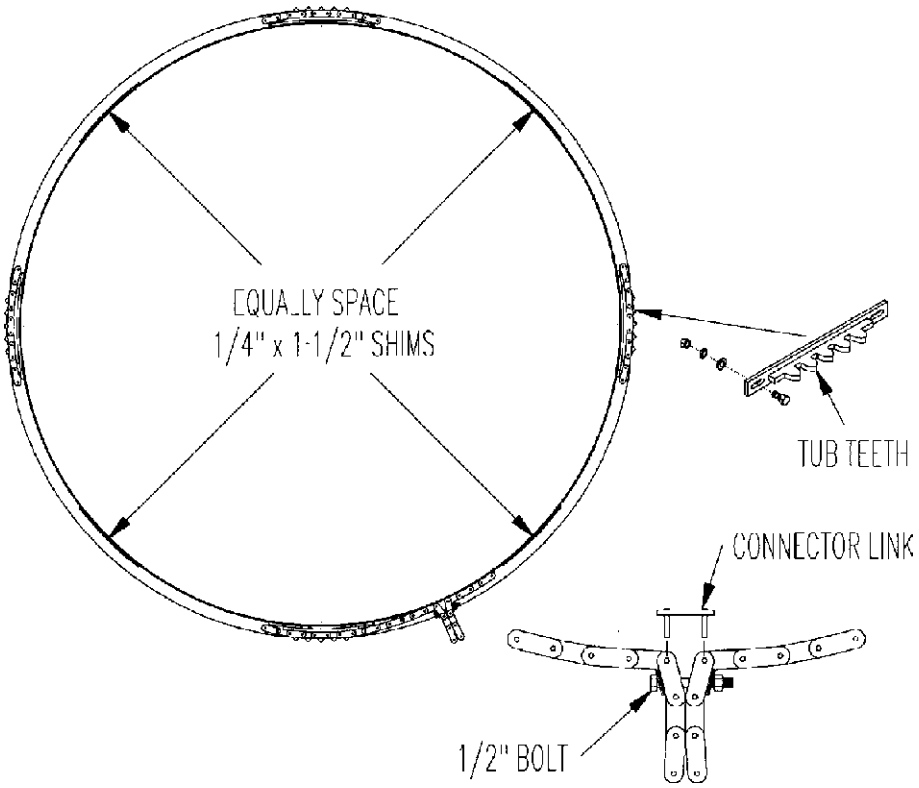
Step 1. (sizing the chain)

Loosen tub knobs and wrap the chain around tub. (Do not run the chain around tightener rollers or drive gear.) Using 1/2" bolt, pull chain together so center to center on link pins matches pins in connector link. If the distance is less or greater than the connector link, shims must be added. Equally space shims of equal thickness and length under chain until proper distance is obtained. Do not add under tub teeth. (See illustration.)

Step 2.

Adjust tub teeth so all four sets of teeth contact chain link on the same side of the teeth. Tighten bolts holding teeth in place and return chain to working position.

Figure 6.3
sizing the tub drive chain



ADJUSTING TUB CHAIN TENSION

1. Make sure the Tub Chain is sized to the Tub (see TUB CHAIN DRIVE).
2. Loosen one tightener so it does not touch the chain.
3. Tighten the other tightener to eliminate any sag in the chain. If it can not be tightened sufficiently, shims must be inserted between bearing and frame. Add shims until spring tightener can be adjusted properly.
4. Tighten the first tightener to match the other tightener. This will keep uniform tension on the tub chain when it is running either direction.
5. Check orbit motor chains, they may need tightening, especially if shims were used.

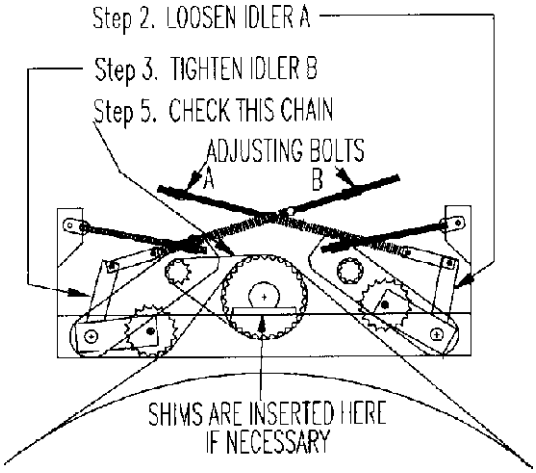


Figure 6.4
adjusting the tub chain tension

PRESSURE ROLLER

The grinder has a pressure roller with tapered roller bearing. The bearings should be checked for lubrication and adjustment annually, preferably at the end of the season.

If a generous amount of grease is on the bearing and in the housing, and if the grease is soft, the grease will not need changing.

If the lubricant is caked and the bearing seems dry, the bearing should be washed to remove old grease. Repack the bearings.

ELECTRIC WINCH

Read the owners manual supplied with the electric winch. If you have any questions or need additional copies of the above mentioned manual, please contact DUTTON-LAINSON COMPANY. TELEPHONE # 402-462-4141.

WHEEL BEARINGS: The wheels have tapered roller bearings. The bearings should be checked for lubrication and adjustment annually, preferably at the end of the season.

If a generous amount of grease is on the bearing and in the housing, and if the grease is soft, the grease will not need changing.

If the lubricant is caked and the bearing seems dry, the bearing should be washed to remove old grease. Repack the bearings.

ELECTRIC BRAKES

The electric brakes should be inspected periodically.

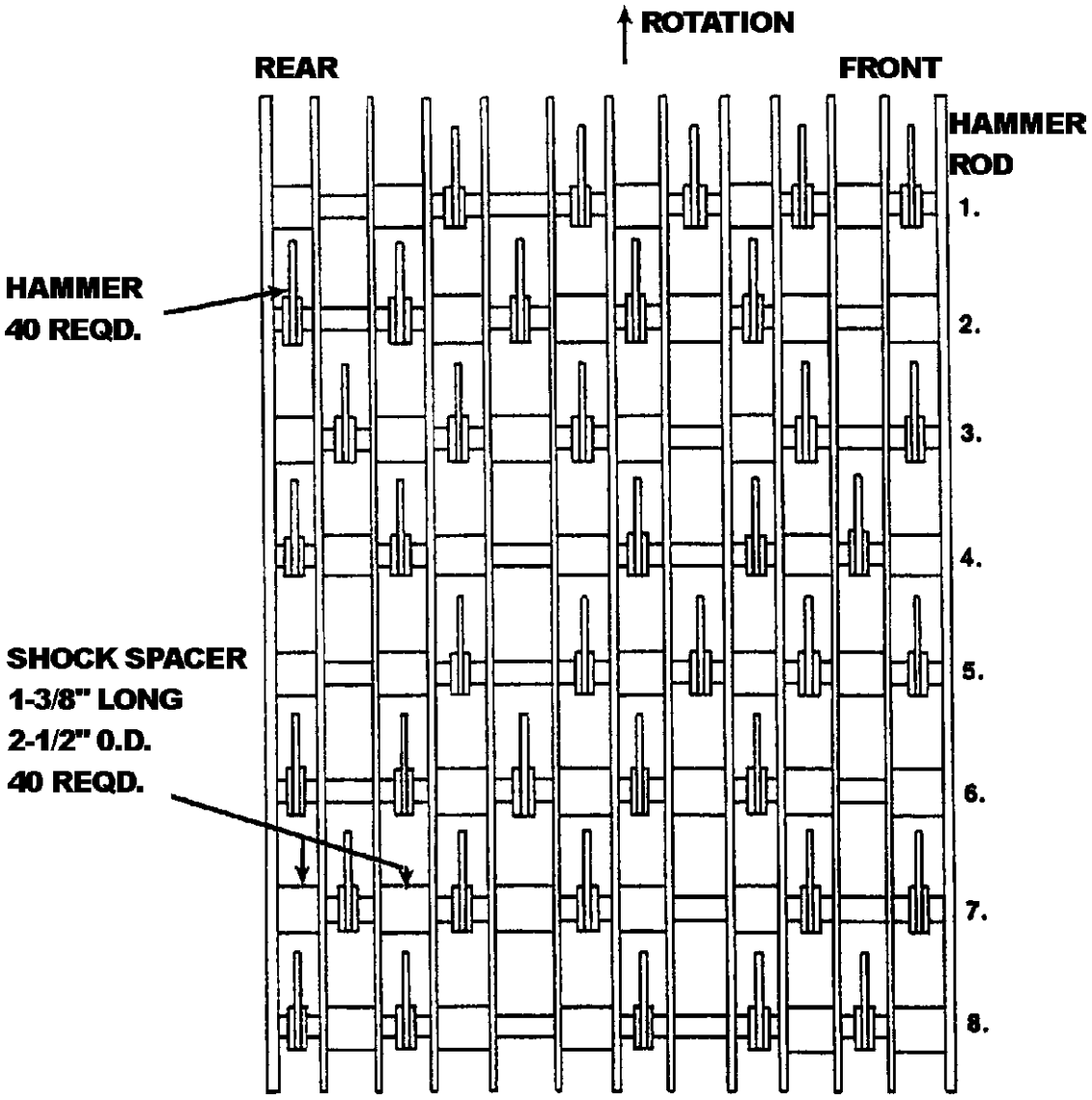
TIRE PRESSURE

The proper tire pressure is 125 PSI.

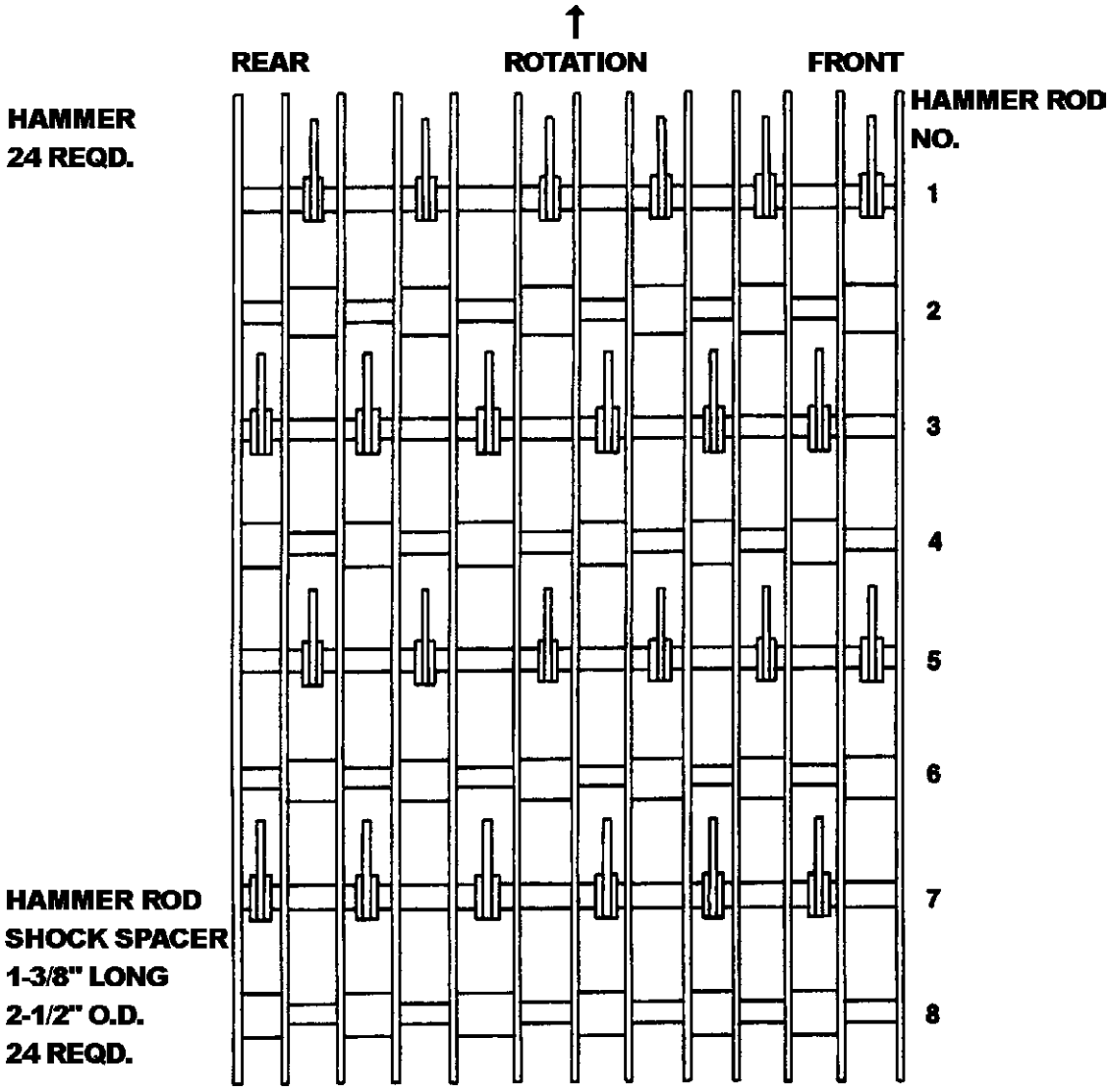
GENERAL ITEMS

1. Check for loose chains or belts, sprockets or pulleys loose on shaft, badly worn chains or belts.
2. Keep sprockets and pulleys aligned.
3. If machine is going to set for extended period of time, tub floor should be cleaned to prevent rust and sticking problems at start up time.
4 Inspect the machine for foreign objects wrapped around rotating parts.

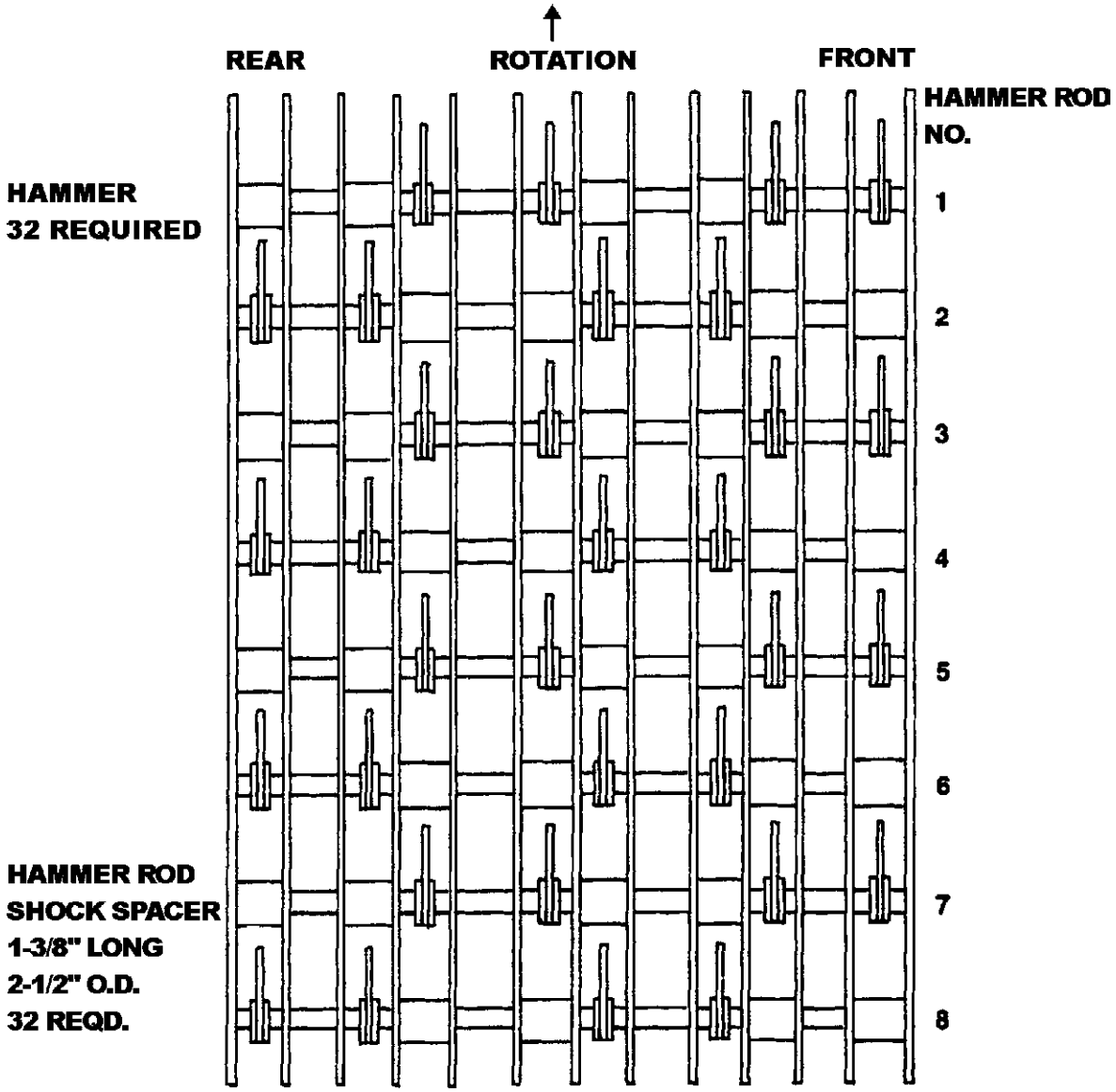
HAMMER SPACING - 40 HAMMERS



HAMMER SPACING - 24 HAMMERS



HAMMER SPACING - PAPER GRATE



Appendix A: Warranty

DuraTech Industries International Inc. warrants to the original purchaser for 6 months from purchase date that this product will be free from defects in material and workmanship when used as intended and under normal maintenance and operating conditions. This warranty is limited to the replacement of any defective part or parts returned to our factory in Jamestown, North Dakota, USA, within thirty (30) days of failure.

This warranty shall become void if in the judgment of DuraTech Industries International, Inc. the machine has been subject to misuse, negligence, alterations, damaged by accident or lack of required normal maintenance, or if the product has been used for a purpose for which it was not designed.

All claims for warranty must be made through the dealer which originally sold the product and all warranty adjustments must be made through same.

This warranty does not apply to tires or bearings or any other trade accessories not manufactured by DuraTech Industries International Inc. Buyer must rely solely on the existing warranty, if any, of these respective manufacturers.

DuraTech Industries International Inc., shall **not** be held liable for damages of any kind, direct, contingent, or consequential to property under this warranty. DuraTech Industries International Inc., cannot be held liable for any damages resulting from causes beyond its control. DuraTech Industries International Inc., shall **not** be held liable under this warranty for rental costs or any expense or loss for labor or supplies.

DuraTech Industries International Inc., reserves the right to make changes in material and/or designs of this product at any time without notice.

This warranty is void if DuraTech Industries International Inc. does not receive a valid warranty registration card at its office in Jamestown, North Dakota, USA, within 10 days from date of original purchase.

All other warranties made with respect to this product, either expressed or implied, are hereby disclaimed by DuraTech Industries International Inc.

Appendix B: SPECIFICATIONS

HD-8 GENERAL SPECIFICATIONS

Tub Width	7’,8”
Length	20’,10”
Height	8’,7”
Inside Tub Diameter	5’,11”
Screen Area	567 Sq. In.
HammerMill	27-1/2” (1/2” Cylinder Plates)
Hammers	40 - 3/4”
Feed	10’
Pivoting Conveyor	18” Wide
Axle	8,000 Lbs, Single, Equipped with Electric Brakes
Tire Size	215 75R x 17.5
Lights	Clearance and Directional Tail Lights
Governor	Electro-Hydraulic Sensing Governor
Cylinder Shaft Diameter	3” Stress Proof Steel
Height to Top of Tub with Flair	6’,10”
Hydraulic Oil	23 Gallons
Diesel Fuel	35 Gallons

DURATECH®

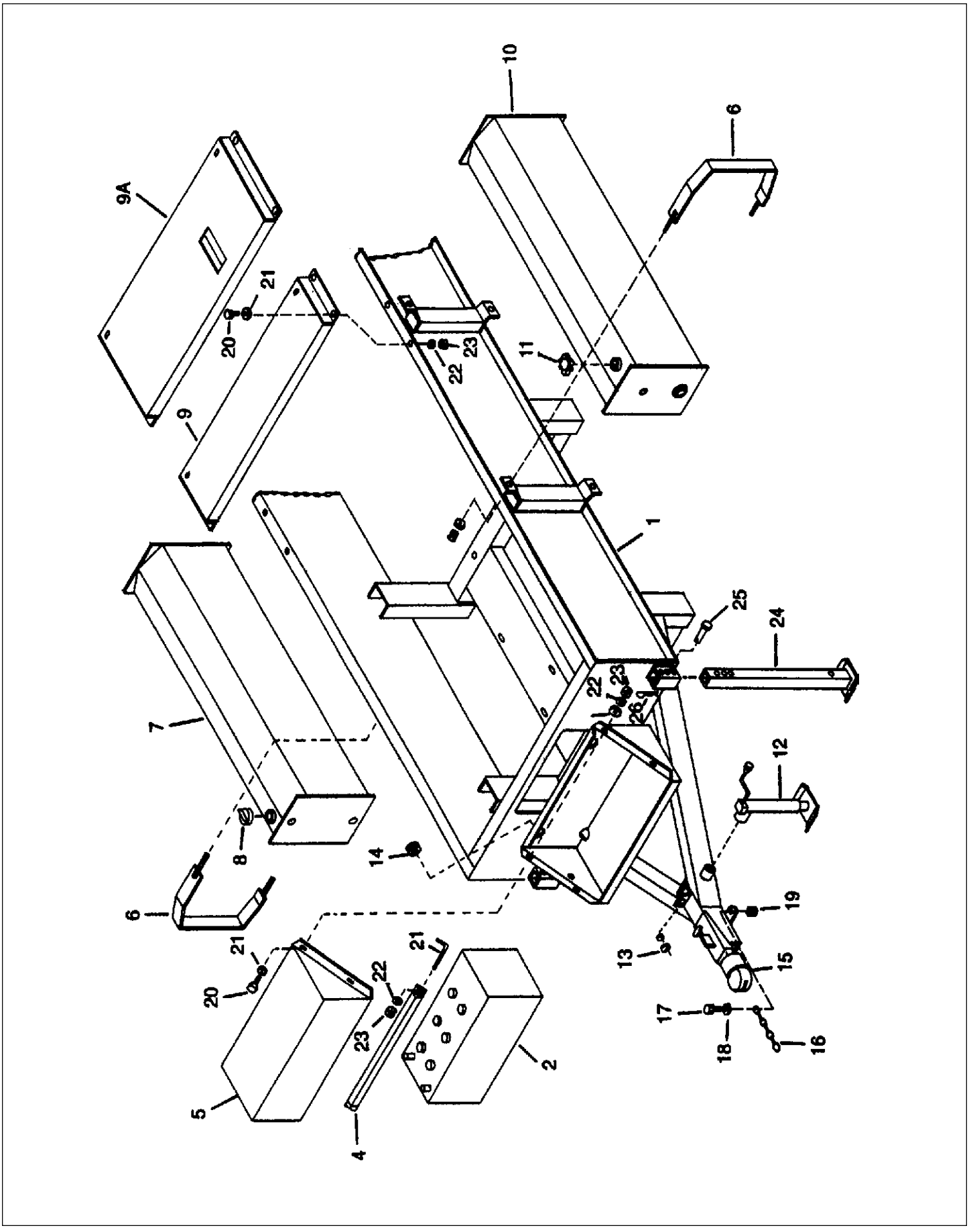
Clearing the Way for a Better Tomorrow

DURATECH®

HD-8™

Industrial Tub Grinder
Serial Number Up to 0358

Part 2:
Parts Reference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ITEM	PART NO.	QTY.	DESCRIPTION
1	4700213	1	Main Frame, Ser. No. 0001 thru 0166
1A	4700813	1	Main Frame, Ser. No. 0173 thru
2	5700002	1	Battery 8D1150
3	4700214	2	Battery Hold Down Bolt
4	4700215	1	Battery Hold Down
5	4700216	1	Battery Cover
6	4700217	4	Tank Mounting Strap
7	4700218	1	Fuel Tank
8	7500226	1	Fuel Cap
9	4700219	1	Walkway, Ser. No. 0001 thru 0166
9A	4700856	1	Walkway, Ser. No. 0167 thru
10	4700220	1	Oil Tank
11	7500275	1	Oil Cap Vented
12	5800602	1	Jack
13	7500276	1	Wire Anchor
14	7500199	2	Grommet
15	7500299	1	Hitch - 2-5/16” Ball
16	4700512	2	5/16” High Test Safety Chain 28 Links
17	4800178	2	1/2” X 1-3/4” Bolt
18	5000004	10	1/2” Flat Washer
19	4900014	10	1/2” Lock Nut
20	4800003	8	3/8” X 1” Bolt
21	5000001	12	3/8” Flat Washer
22	5000019	10	3/8” Lock Washer
23	4900002	10	3/8” Nut
24	4700830	2	Frame Stand
25	4800284	2	5/8” X 3” Clevis Pin
26	4800056	2	3/16” Hair Pin
	4701004	1	Scrn\Sec\L.H.\HD8\Not Shown
	4701005	1	Scrn\Sec\R.H.\HD-8\Not Shown

Not Shown

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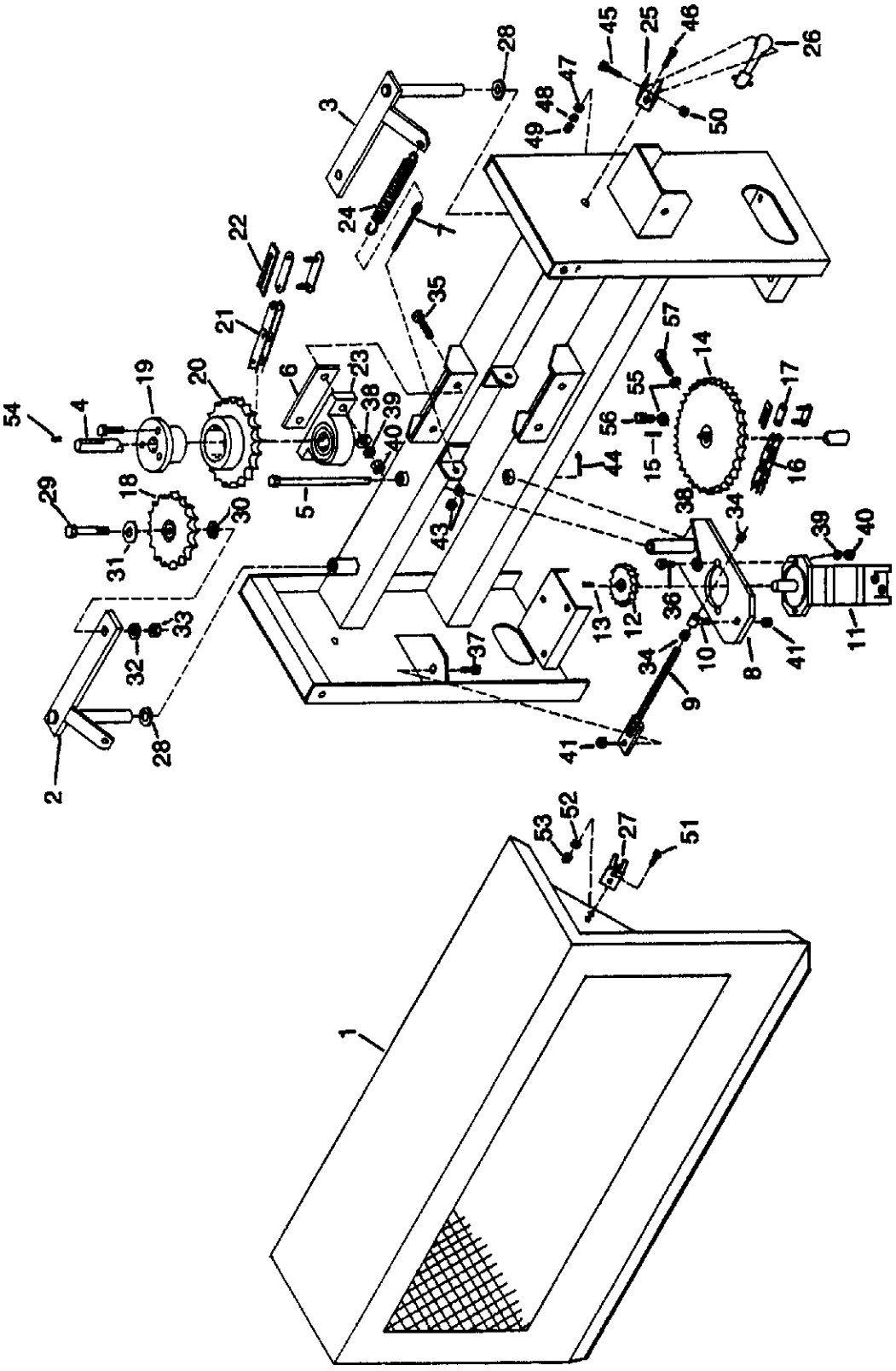
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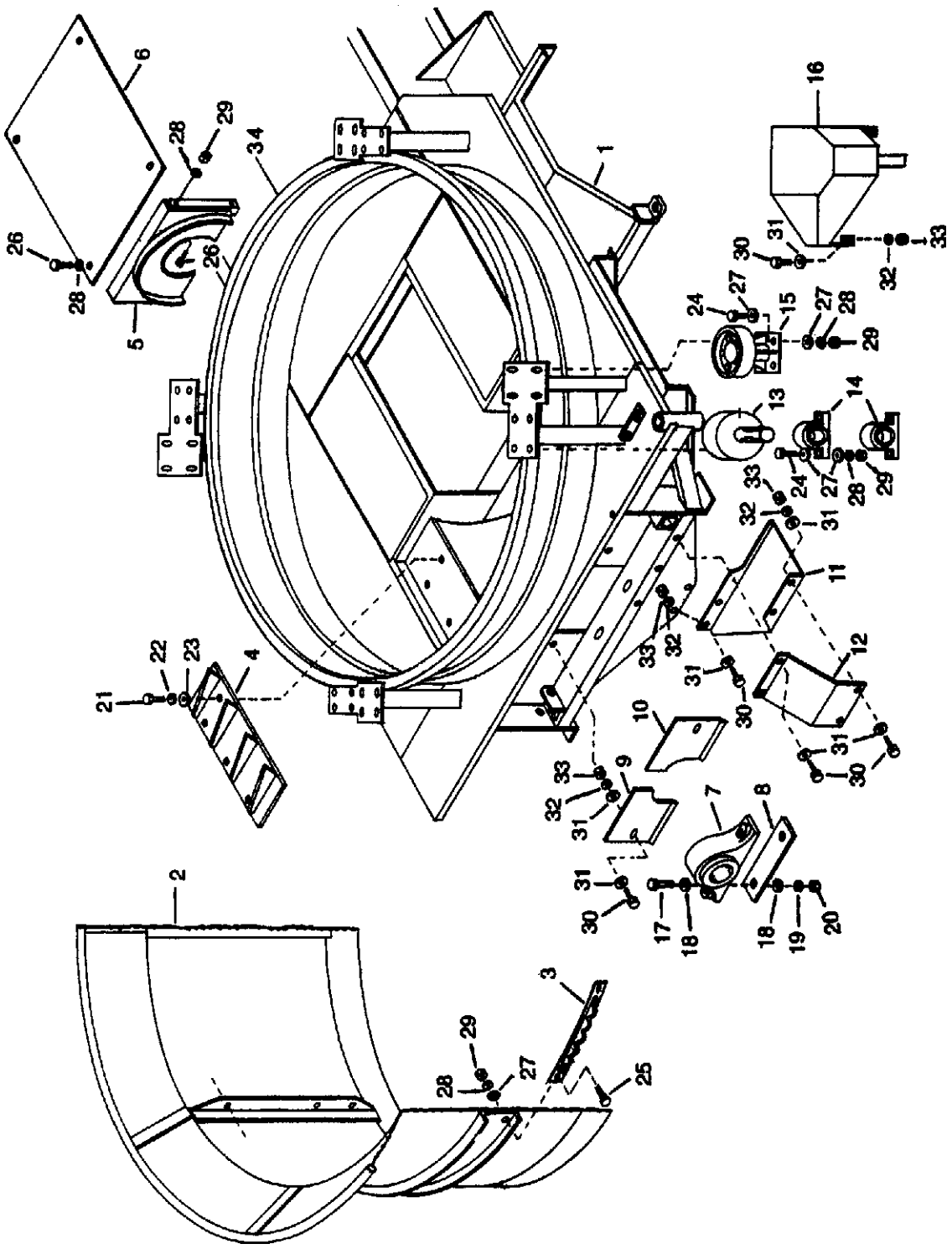
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700644	1	Tub Drive Shield
2	4700222	1	Swing Idler Arm, RH
3	4700223	1	Swing Idler Arm, LH
4	4700645	1	Tub Drive Shaft, 1-1/4”x16-1/4”
5	4700646	1	5/8”X13” Pin
6	4700224	6	Bearing Shim
7	4700226	2	Spring Tension Bolt 3/8”x8”
8	4700329	1	Orbit Motor Mount
9	4700330	1	Orbit Motor Tightening Rod
10	4700331	1	Orbit Motor Tightening Bolt
11	3900010	1	Orbit Motor
12	1000134	1	60-12-1-1/4 “Sprocket
13	6200004	1	5/16” x 1-1/2” Square Key
14	1000009	1	60-36 Sprocket 1-1/4
15	6200005	1	1/4”x 1-1/2” Square Key
16	1100088	1	60 Chain 43 Links
17	1100062	1	60 Connector Link
18	1000123	2	80-18 Idler Sprocket
19	1400515	1	Hub Q1-1-1/4
20	1000053	1	80-21 Sprocket
21	1100154	1	2080 Chain 119 Links
22	1100070	1	2080 Connector Link
23	2000502	2	Bearing 1-1/4” Pillow Block
24	6100009	2	Spring
25	7500347	2	Rubber Latch Mount
26	7500166	2	Rubber Latch
27	7500190	2	Rubber Catch
28	5000040	6	1” NR Machine Bushing
29	4800115	2	3/4”X 3-1/2” Bolt
30	5000037	2	Cone Washer
31	5000005	2	3/4” Flat Washer
32	5000012	2	3/4” Lock Washer
33	4900004	2	3/4” Nut
34	4900005	2	5/8” Nut
35	4800070	4	1/2”X2-1/2” Bolt
36	4800114	2	1/2” X 2” Bolt
37	4800082	1	1/2” X 1-1/2” Bolt
38	5000004	6	1/2” Flat Washer
39	5000006	6	1/2” Lock Washer
40	4900001	2	1/2” Nut
41	4900014	2	1/2” Lock Nut
42	1100063	1	60 Offset Link
43	4900002	4	3/8” Nut
44	4800050	1	3/16” X 1-1/2” Cotter Pin
45	4800281	2	5/16” X 2” NF Bolt
46	4800013	2	5/16”X 1” Bolt
47	5000023	2	5/16” Flat Washer
48	5000022	2	5/16” Lock Washer
49	4900003	2	5/16” Nut
50	4900071	2	5/16” Nylon Lock Nut NF
51	4800282	4	10/24 X 3/4” Screw
52	5000071	4	10/24 Star Washer
53	4900072	4	10/24 Nut
54	6200019	1	1/4” Sq X 2-1/2” Key
55	4900033	2	5/16” Jam Nut
56	4800149	1	5/16” X 1” Sq. Hd Set Screw
57	4800327	1	5/16” X 1-1/4” Sq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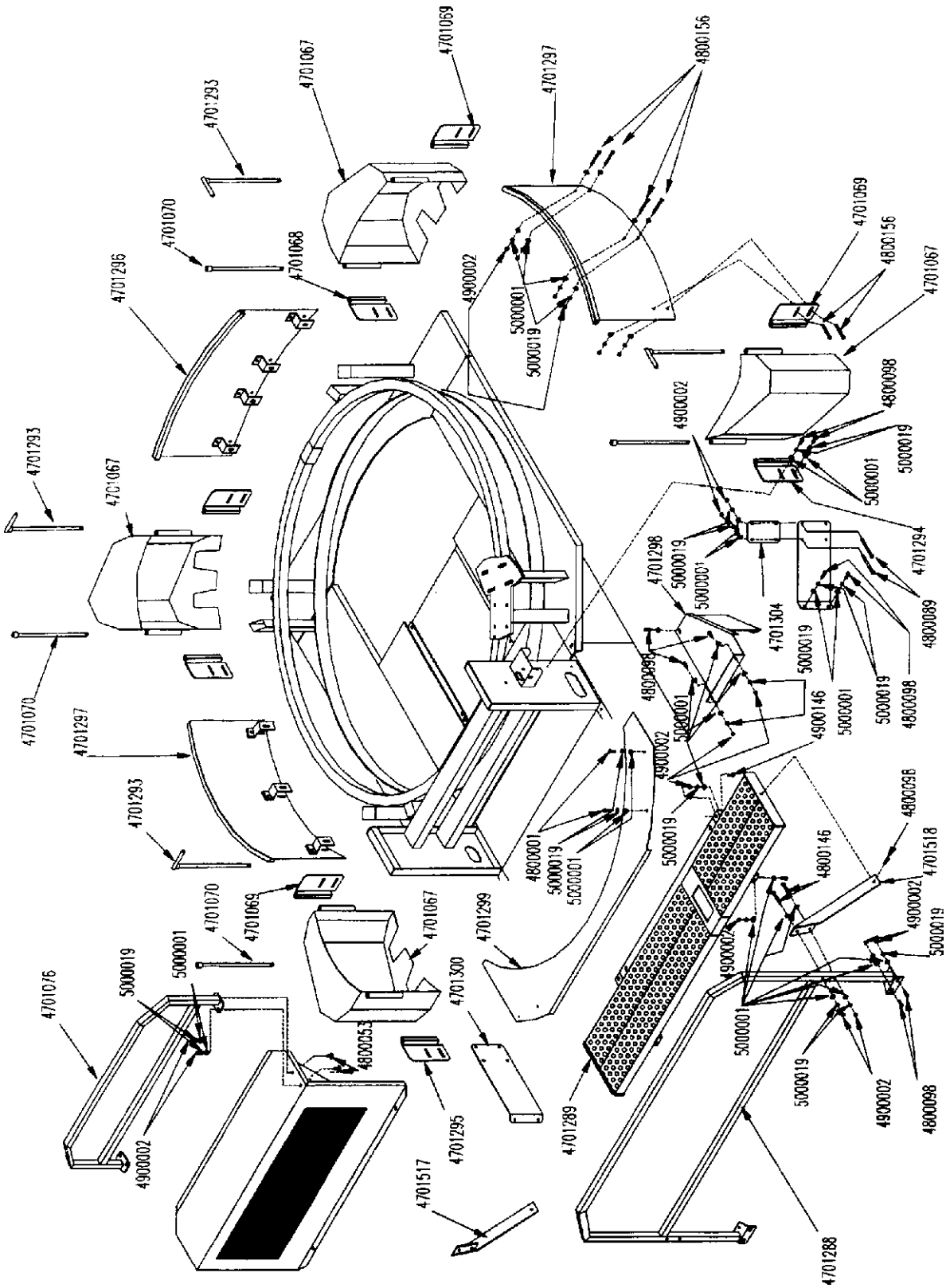
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700213	1	Main Frame, Ser.No.0001 thru 0166
1A	4700813	1	Main Frame, Ser. No. 0173 thru
2	4700227	1	Tub
2A	4701760	6	Tub\Petal\Hd8\Series 1-4
3	4702321	3	Teeth\Drive\Tub\HD8
4	4700606	1	Slugbuster
5	4700642	1	Front Cylinder Bearing Plate
6	4700643	1	Cylinder Cover
7	2000509	2	P.B. Bearing 2-3/4”
8	4700230	4	Bearing Shim 7 Ga. 2-3/4”
9	4700231	1	Rear Cylinder Bearing Plate L.H.
10	4700232	1	Rear Cylinder Bearing Plate R.H.
11	4700233	1	Orbit Motor Shield (lower) Ser. No. 0001 thru 0166
11A	4700857	1	Orbit Motor Shield (lower) Ser. No. 0173 thru
12	4700234	1	Orbit Motor Shield (upper)
13	1200012	4	Tub Roller 1-1/4: Shaft
14	2000502	8	1-1/4” P.B. Bearing
15	4700235	4	Pressure Roller (Refer to page 62)
16	4700236	4	Roller Shield HD-8
17	4800063	4	3/4” X 4” Bolt
17A	4900013	4	3/4” Nut\Toplock
18	5000005	8	3/4” Flat Washer
19	5000012	4	3/4” Lock Washer
20	4900004	4	3/4” Hex Nut
21	4800010	5	5/8” X 2” Bolt
22	5000003	5	5/8” Lock Washer
23	5000002	5	5/8” Flat Washer
24	4800114	32	1/2” X 2” Bolt
25	4800061	6	1/2” X 1-1/2” Carriage Bolt, GR5
26	4800018	8	1/2” X 1-1/4” Bolt
27	5000004	70	1/2” Flat Washer
28	5000006	56	1/2” Lock Washer
29	4900001	42	1/2” Nut
30	4800098	18	3/8” X 1-1/4” Bolt
31	5000001	28	3/8” Flat Washer
32	5000019	14	3/8” Lock Washer
33	4900002	18	3/8” Nut
34	4700957	1	Platform Ring
35	4700896	1	Screen Track
36	4701179	8	Tub Pedal Bar
	4701161		Option\Tub Ext.\RMOBL\HD8\(Not Shown)
	4701334		Bracket\Latch\Transport\Conveyor (Not Shown)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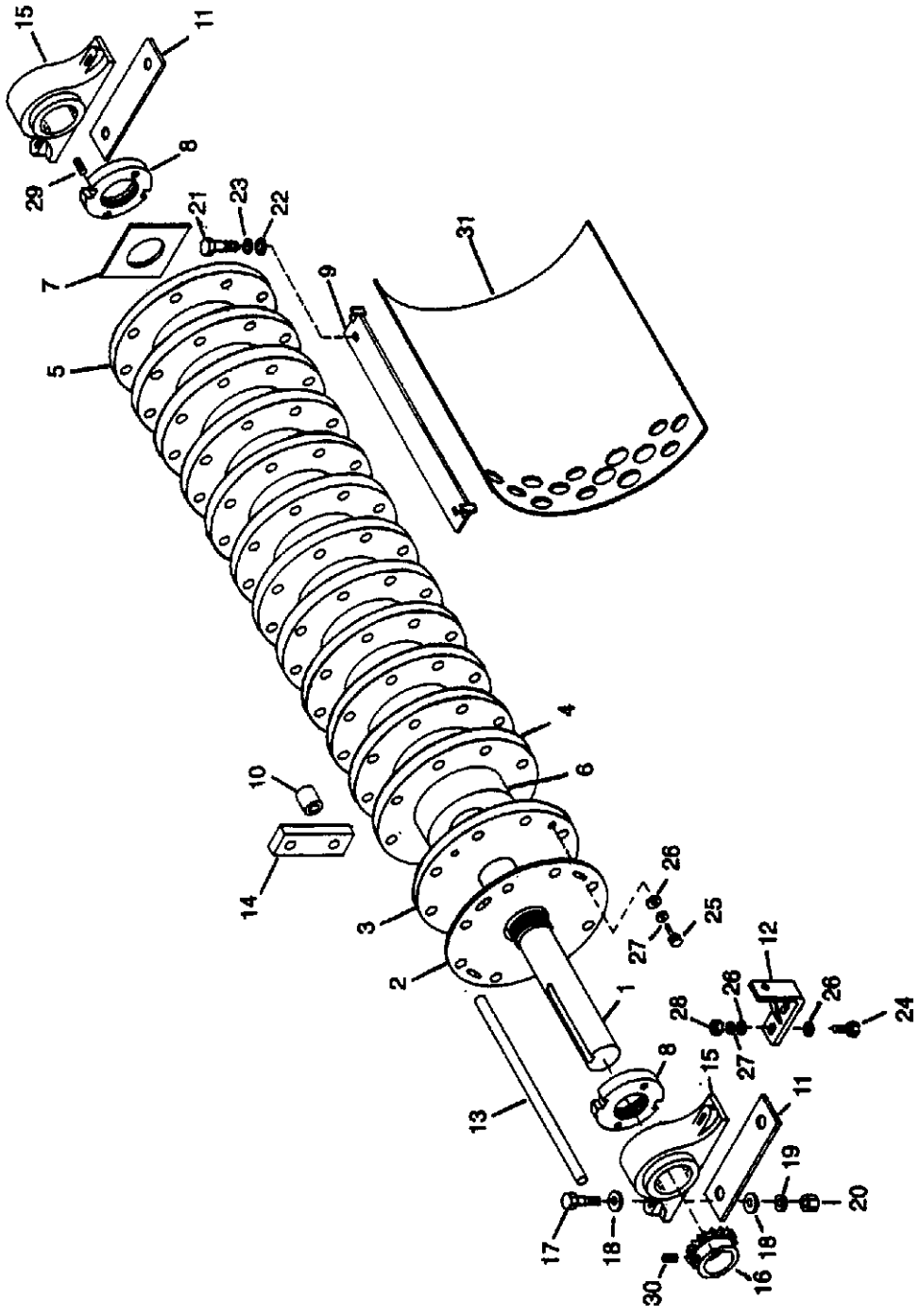
PART NO	QTY.	DESCRIPTION
4701067	4	Tub Roller Guards
4701068	3	Tub Roller Guard Brackets\RH
4701069	3	Tub Roller Guard Brackets\LH
4701070	4	Tub Roller Guard Pin
4701076	1	Tub Drive Handrail
4701288	1	Walkway Handrail
4701289	1	Walkway
4701293	4	Tub Roller Guard Pin (with handle)
4701294	1	Tub Roller Guard Bracket\ LH
4701295	1	Tub Roller Guard Bracket\RH
4701296	1	Tub Chain Guard, Rear
4701297	2	Tub Chain Guard, Side
4701298	1	Filter Guard
4701299	1	Tub Chain Guard
4701300	2	Lower Tub Guard
4701304	2	Lower Tub Gaurd Brackets
4701517	1	Walkway Handrail Bracket\LH
4701518	1	Walkway Handrail Bracket\RH
4800003	4	3/8” x 1” Hex Bolt
4800053	4	3/8” x 1” Carriage Bolt
4800089	8	3/8” x 4” Hex Bolt
4800098	28	3/8” x 1-1/4” Hex Bolt
4800146	6	3/8” X 2” Hex Bolt
4800156	10	3/8” x 3” Hex Bolt
4900002	60	3/8” Hex Nut
5000001	91	3/8” Flat Washer
5000019	60	3/8” Lock Washer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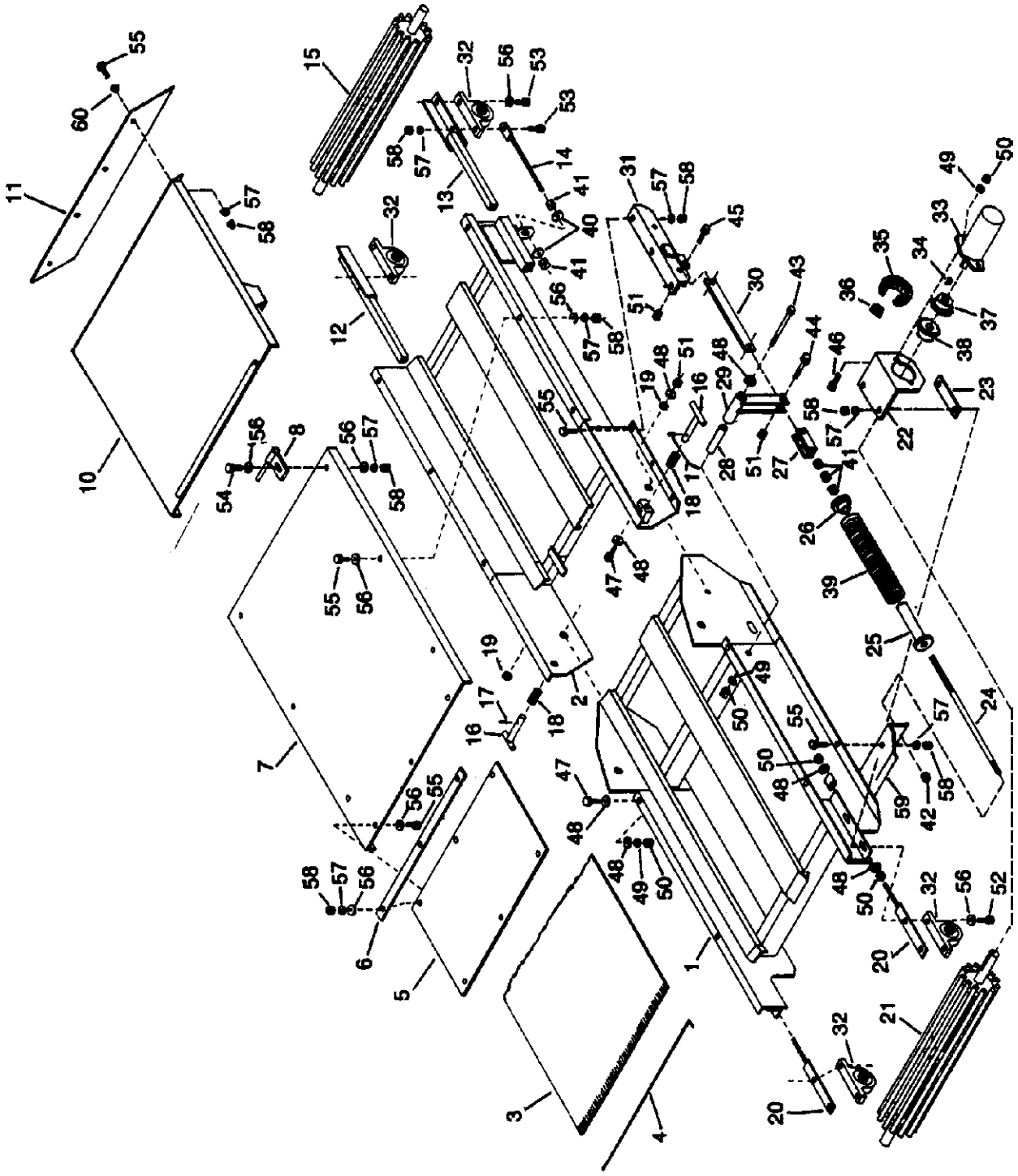
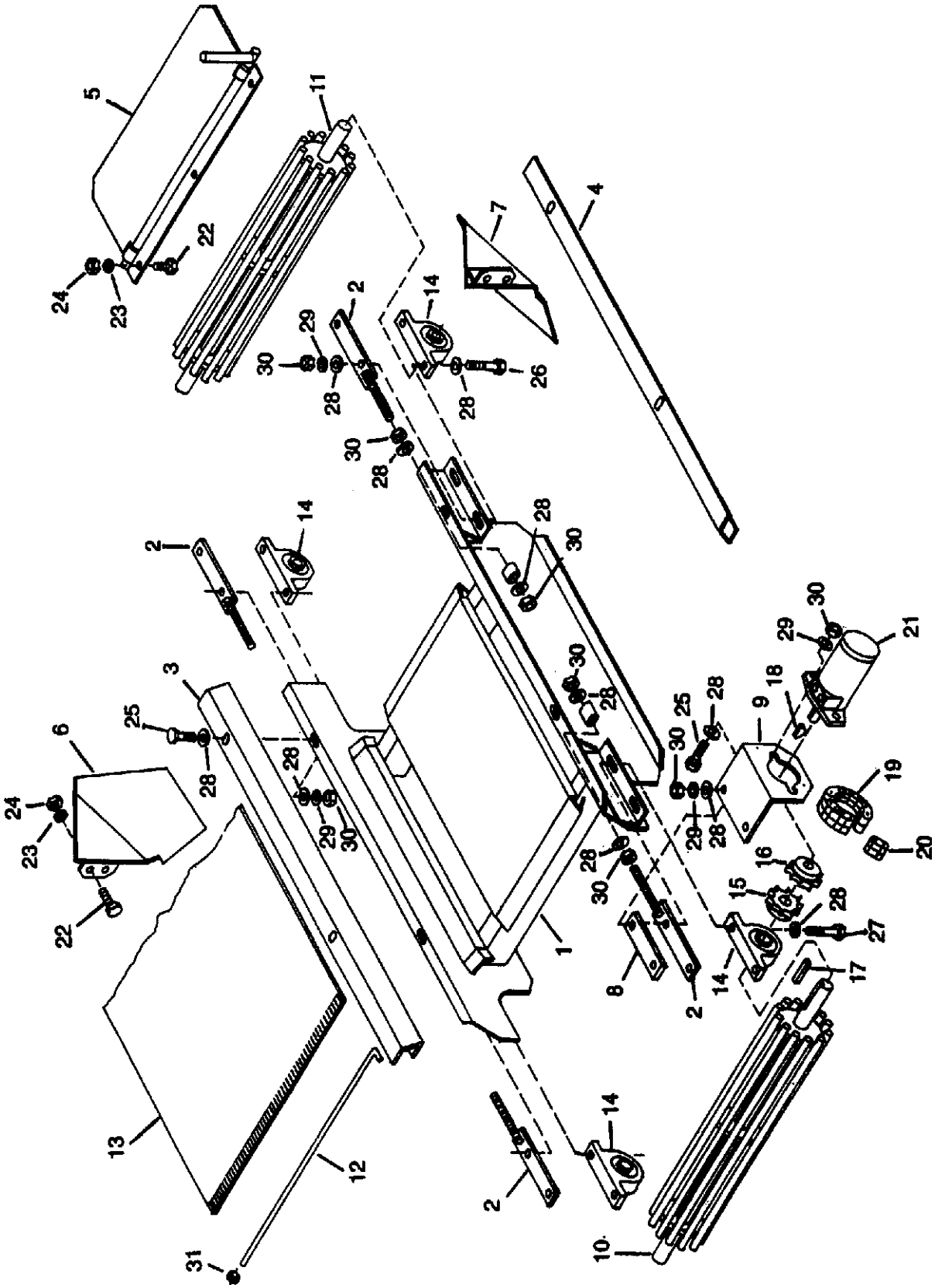
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700258	1	Cylinder Shaft\ 3X47.25
2	4700041	1	Moveable Plate
3	4700958	1	1/2” Cylinder End Plate w/Tapped Holes
4	4700959	11	1/2” Cylinder Plate
5	4700960	1	1/2” Cylinder End Plate w/Slug Welds
6	4700648	12	1.547 Solid Cylinder Spacer
7	4700961	1	Thrust Washer
8	4700267	2	Cylinder Nut
9	4700507	1	Screen Hold Down
10	4700169	40	Hammer Rod Shock Spacer
11	4700230	4	Bearing Shim\ 7 GA 2.75
12	4700858	1	Sensor Mount
13	5300101	8	Hammer Rod
14	5200104	40	3/4” Hammer
15	2000509	2	Pillow Block Bearing 2-3/4”
16	1000139	1	Sprocket 16 Tooth 2-3/4” Bore
17	4800063	1	3/4” X 4” Bolt
18	5000005	8	3/4” Flat Washer
19	5000012	4	3/4” Lock Washer
20	4900004	4	3/4” Nut
21	4800010	2	5/8” X 2” Bolt
22	5000002	2	5/8” Flat Washer
23	5000003	2	5/8” Lock Washer
24	4800178	2	1/2” X 1-3/4” Bolt
25	4800085	4	1/2” X 1” Bolt
26	5000004	8	1/2” Flat Washer
27	5000006	6	1/2” Lock Washer
28	4900001	2	1/2” Nut
29	4800323	4	1/2” - 13 X 1” Socket Hd. Set Screw
30	4800211	1	1/4” - 20 X 5/16” Socket Hd. Set Screw
31	4700628		5/8” Screen
	4700629		3/4” Screen
	4700630		1” Screen
	4701508		2” Screen
	4700632		3” Screen
	4701510		4” Screen
	4700752		5” Screen
	4700625		5” X 7” Screen
	4700634		17” X 23” Screen (Open)
	4700789		Rtr\Core\25x15/16RD\HD8
	4700684		Rotor New
	4700674		Rotor Rebuilt

Note: 1/2” x 5/8” x 24-7/8” key

C O N V E Y O R SERIAL NO. 0001 THRU 0172



ITEM	PART NO.	QTY.	DESCRIPTION
1	4700237	1	Conveyor Lower Frame
2	4700238	1	Conveyor Upper Frame
3	1700043	1	Belt 24” X 197
4	1700044	1	Lacing Pin 24”
5	4700239	1	Conveyor Belt 14-1/2” X 24”
6	4700240	2	Conveyor Belt Mounting Strap
7	4700241	1	Conveyor Cover
8	4700649	1	Deflector Hinge R.H.
9	4700650	1	Deflector Hinge L.H.(not shown)
10	4700635	1	Deflector
11	4700651	1	Conveyor Belt 6” X 28”
12	4700242	1	Bearing Bracket L.H.
13	4700243	1	Bearing Bracket R.H.
14	4700244	2	Tightening Bolt
15	4700245	1	Idler Roller 1-1/8”X24”
16	4700246	2	Fold Latch Pin
17	4800256	2	Rolled Pin 3/16” X 1-1/2”
18	6100031	2	Spring
19	4700247	2	Hinge Bushing
20	4700248	2	Bearing Adjusting Strap
21	4700249	1	Drive Roller 1-1/8”x24”
22	4700250	1	Orbit Motor Mounting Bracket
23	4700251	1	Orbit Motor Shim
24	4700638	1	Spring Rod 5/8” X 19”
25	4700652	1	Spring Guide Long
26	4700653	1	Spring Guide, Short
27	4700639	1	Spring Rod Clevis
28	4700654	1	Spring Arm Bushing
29	4700655	1	Spring Arm
30	4700656	1	Link
31	4700657	1	Link Mount, R.H.
32	2000507	4	Bearing 1-1/8” Pillow Block
33	3900008	1	Orbit Motor 208
34	6200011	1	1/4” x 1” Woodruff Key
35	1100026	1	Chain\50DBL-13
36	1100099	1	Connector Link
37	1000029	1	Coupler Sprocket 1” Bore
38	1000125	1	Coupler Sprocket 1-1/8” Bore
39	6100032	1	Spring
40	5000002	4	5/8” Flat Washer
41	4900005	7	5/8” Nut
42	4900012	1	5/8” Lock Nut
43	4800041	1	1/2” X 5-1/2” Bolt
44	4800051	1	1/2” X 2-1/2” Bolt
45	4800178	1	1/2” X 1-3/4” Bolt
46	4800082	2	1/2” X 1-1/2” Bolt
47	4800018	6	1/2” X 1-1/4” Bolt
48	5000004	17	1/2” Flat Washer
49	5000006	7	1/2” Lock Washer
50	4900001	11	1/2” Nut
51	4900014	4	1/2” Lock Nut
52	4800146	4	3/8” X 2” Bolt
53	4800034	4	3/8” X 1-1/2” Bolt
54	4800098	2	3/8” X 1-1/4” Bolt
55	4800003	19	3/8” X 1” Bolt
56	5000001	30	3/8” Flat Washer
57	5000019	30	3/8” Lock Washer
58	4900002	25	3/8” Nut
59	4700658	1	Spring Mount
60	5000017	4	3/8” Fender Washer
	4702677		Conveyor\Assembly\Complete\HD-8 W/Motor & BeltSN\0001-0172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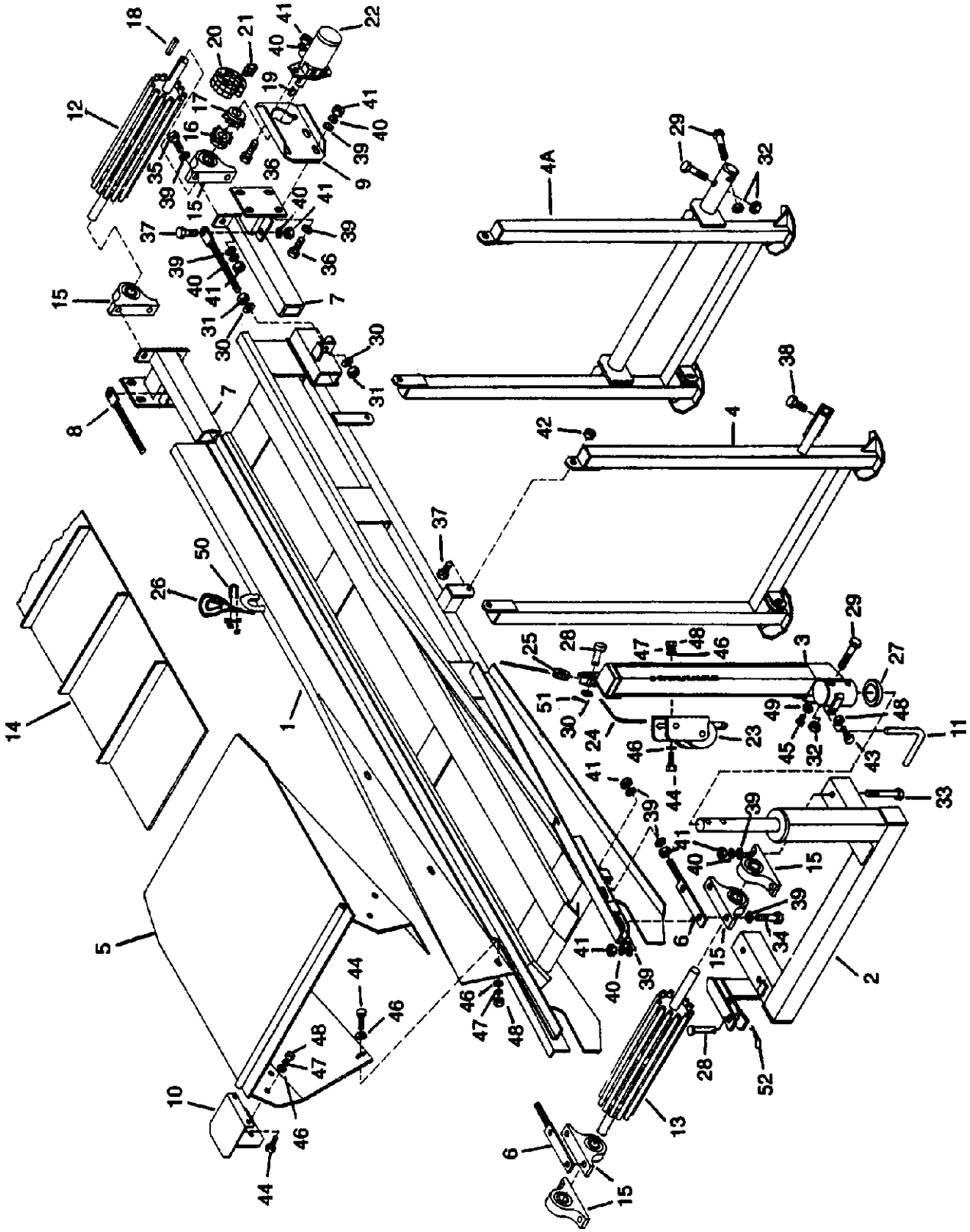
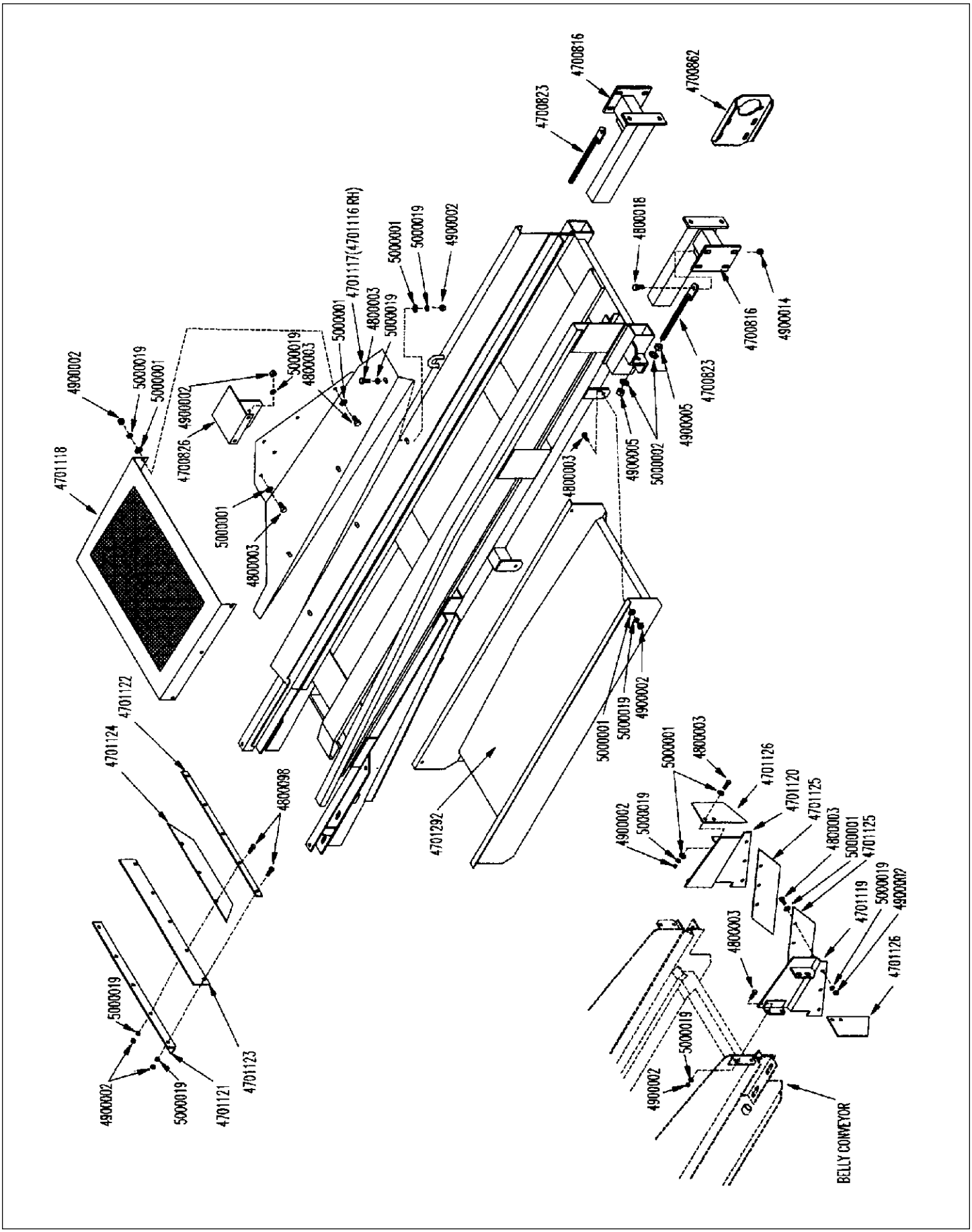
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700815	1	Belly Conveyor Frame
2	4700825	4	Bearing Adjusting Strap
3	4700859	1	Belly Conveyor Seal L.H.
4	4700860	1	Belly Conveyor Seal R.H.
5	4700820	1	Belly Conveyor Door
6	4700819	1	Belly Conveyor Deflector L.H.
7	4700818	1	Belly Conveyor Deflector R.H.
8	4700251	1	Orbit Motor Shim
9	4700250	1	Orbit Motor Mounting Bracket
10	4700249	1	Drive Roller 1-1/8” X 24”
11	4700245	1	Idler Roller 1-1/8” X 24”
12	1700078	1	1/8” X 24” Lacing Cable
13	1700080	1	Conveyor Belt 24” X 82” w/Cleats
13A	1700073	1	Conveyor Belt
14	2000507	1	1-1/8” Pillow Block Bearing
15	1000125	1	50B14H 1-1/8” Sprocket
16	1000029	1	50B14H 1” Sprocket
17	6200014	1	1/4” Sq. X 1-1/4” Key
18	6200011	1	1/4“ X 1” Woodruff Key
19	1100026	1	50-2-13 Links Dbl. Chain
20	1100099	1	50-2 Connector Link
21	3900015	1	Orbit Motor
22	4800003	7	3/8” X 1” Bolt
23	5000019	7	3/8” Lock Washer
24	4900002	7	3/8” Nut
25	4800082	6	1/2” X 1-1/2” Bolt
26	4800114	6	1/2” X 2” Bolt
27	4800051	2	1/2” X 2-1/2” Bolt
28	5000004	26	1/2” Flat Washer
29	5000006	14	1/2” Lock Washer
30	4900001	22	1/2” Nut
31	4900072	2	#10 Hex Nut



ITEM	PART NO	QTY.	DESCRIPTION
1	4700753	1	Discharge Conveyor Frame
2	4700828	1	Discharge Conveyor Mount
3	4700829	1	Disch\ Cnvyr\ Winch Mount
4	4700861	1	Disch\ Cnvyr\ Stand,#0173 thru 0190
4A	4700827	1	Disch\ Cnvyr\ Stand.# 0191 thru
5	4700821	1	Disch\ Cnvyr\ Cover
6	4700824	2	Bearing Adjusting Strap
7	4700816	2	Bearing Mount
8	4700823	2	Adjusting Rod
9	4700862	1	Orbit Motor Mount
10	4700826	1	Tail Light Bracket
11	4700863	1	Cnvyr\ Door Adjusting Rod
12	4700810	1	Drive Roller 1-1/4" X 18"
13	4700811	1	Idler Roller 1-1/4" X 18"
14	1700071	1	Cnvyr\Belt 18" X 19'9"
15	2000502	6	1-1/4" Pillow Block Bearing
16	1000169	1	50B14H\1-1/4" Sprocket
17	1000029	1	50B14H\1" Sprocket
18	6200014	1	1/4" Sq. X 1-1/4" Key
19	6200011	1	1/4" X 1" Woodruff Key
20	1100026	1	50-2-13 Links Dbl. Chain
21	1100099	1	50-2 Connector Link
22	3900015	1	Orbit Motor
23	5800008	1	Winch 1500 D-L
24	5800322	1	1/4" X 15" Cable
25	1400082	1	Cable Sheave
26	7500632	1	5/16" Cable Thimble
27	2000032	1	2" Thrust Bearing
28	4800362	1	5/8" X 4" Clevis Pin
29	4800100	4	5/8" X 4" Bolt
30	5000002	5	5/8" Flat Washer
31	4900005	6	5/8" Nut
32	4900012	2	5/8" Lock Nut
33	4800141	4	1/2" X 4-1/2" Bolt
34	4800251	4	1/2" X 2-1/4" Bolt
35	4800114	4	1/2" X 2" Bolt
36	4800178	6	1/2" X 1-3/4" Bolt
37	4800082	4	1/2" X 1-1/2" Bolt
38	4800018	1	1/2" X 1-1/4" Bolt
39	5000004	32	1/2" Flat Washer
40	5000006	20	1/2" Lock Washer
41	4900001	20	1/2" Nut
42	4900014	2	1/2" Lock Nut
43	4800098	1	3/8" X 1-1/4" Bolt
44	4800003	11	3/8" X 1" Bolt
45	4800307	1	3/8" X 1" Sq. Hd. Set Screw
46	5000001	20	3/8" Flat Washer
47	5000019	11	3/8" Lock Washer
48	4900002	12	3/8" Nut
49	4900026	1	3/8" Jam Nut
50	4800027	2	1/4" Cable Clamp
51	4800123	1	1/8" X 1-1/2" Cotter Key
52	4800107	1	1/8" Hair Pin
53	4900072	2	#10 Hex Nut
54	1700052	1	1/8" X 18" Lacing Cable
	4701335		Bracket\Latch\ Transport\Conveyr (Not Shown)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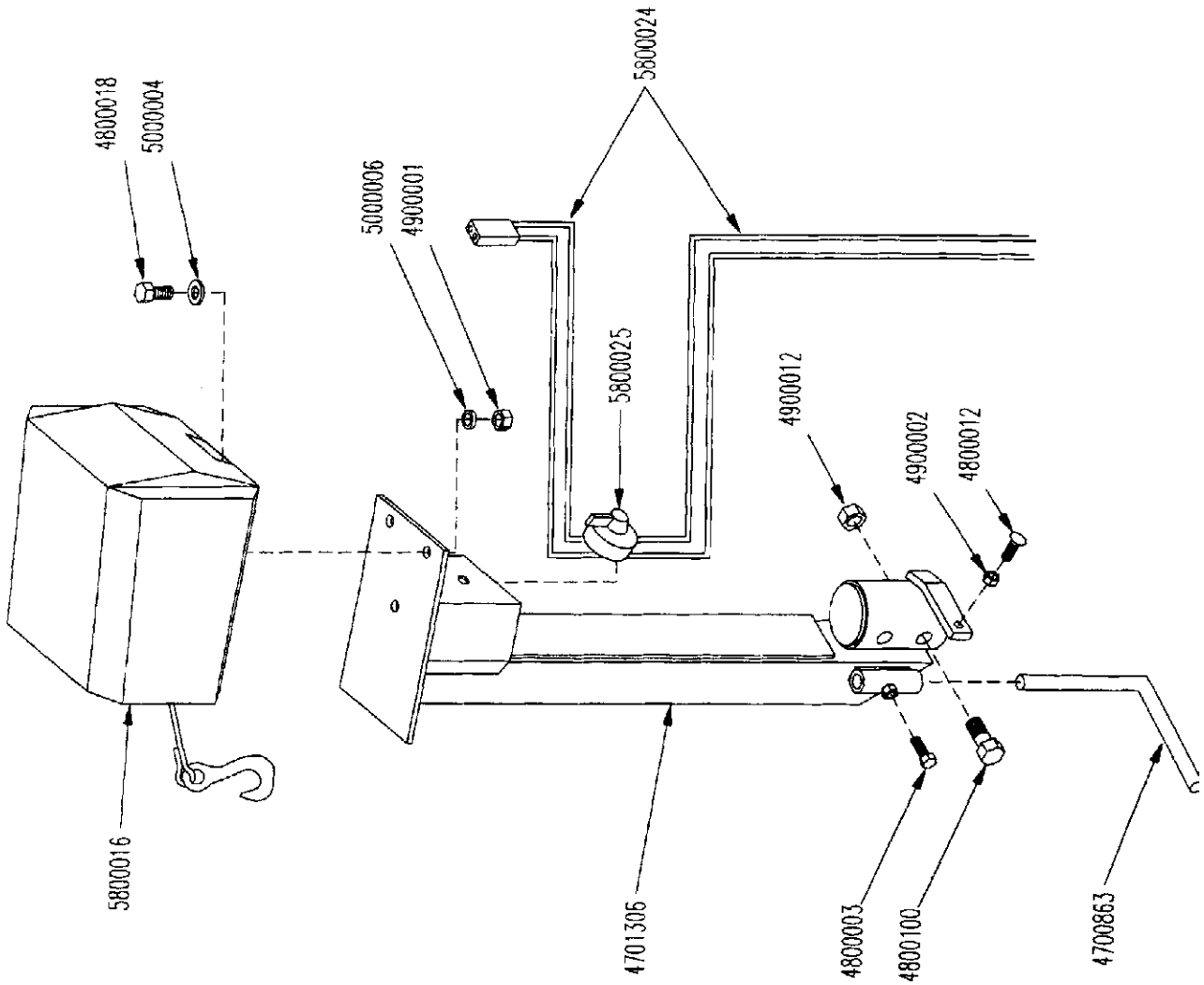
BELLY CONVEYOR

PART NO.	QTY.	DESCRIPTION
4701157		KIT\HOPPER\HD8
4701116	1	SHT\RH\HPPR\HD-8
4701117	1	SHT\LH\HPPR\HD-8
4701118	1	SHT\TOP\HPPR\HD-8
4701119	1	BRKT\RH\CNVYR\HD-8
4701120	1	BRKT\LH\CNVYR\HD-8
4701121	1	BRKT\SHT\7GAX2-3/8X26\HD-8
4701122	1	FLAT\SH\3/16X1X26\HD-8
4701123	1	SEAL\CNVYR\1/8X2-3/4X26HD-8
4701124	1	SEAL\CNVYR\1/8X2-3/4X20-9/16\HD-8
4701125	2	SEAL\CNVYR\1/8X4X15-1/2\HD-8
4701126	2	SEAL\CNVYR\1/8X4X7-1/2\HD-8
4800003	26	BOLT\HEX\3/8X1
4800098	5	BOLT\HEX\3/8X1-1/4
4900002	31	NUT\HEX\3/8
5000001	32	WASH\FLAT\3/8
5000019	31	WASH\LOCK\3/8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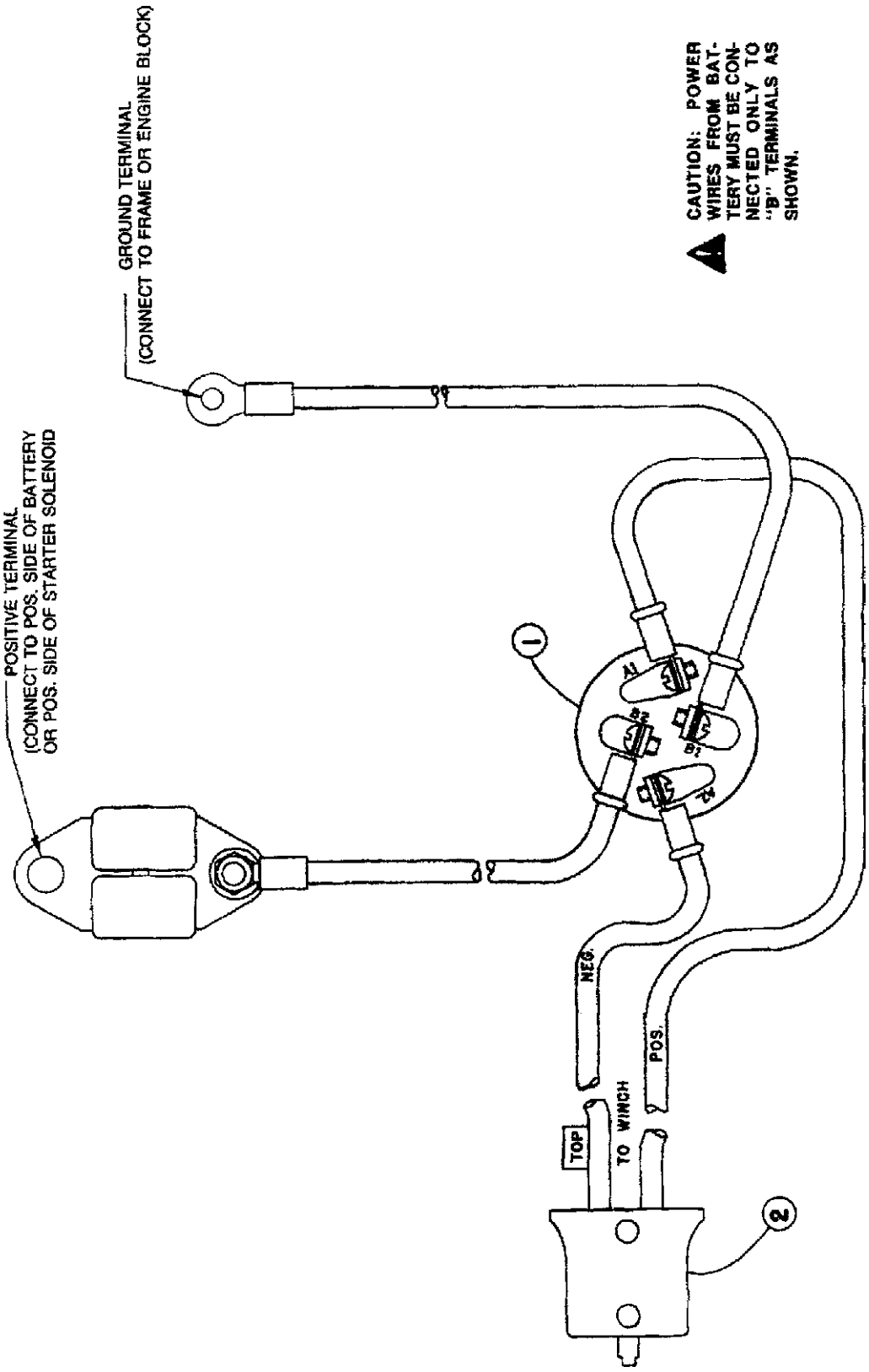
5800016
4701306
4800003
4800100
4700863

PART NO.	QTY.	DESCRIPTION
4700863	1	Rod\Adj\Door\Cnvyr
4701306	1	Brkt\Winch\Elec\Cnvyr
4800003	1	Bolt\Hex\3/8x1
4800012	1	Bolt\Crg\3/8x1-1/4\NC
4800018	1	Bolt\Hex\1/2x1-1/4
4800100	1	Bolt\Hex\5/8x4
4900001	1	Nut\Hex\1/2\NC
4900002	1	Nut\Hex\3/8\NC
4900012	1	Nut\Toplock\5/8\NC
5000004	1	Wash\Flat\1/2
5000006	1	Wash\Lock\1/2
5800016	1	Winch\12 Volt\SA9005
5800025	1	Switch\Winch\SA9005
5800024	2	Plug\Assy\SA9005

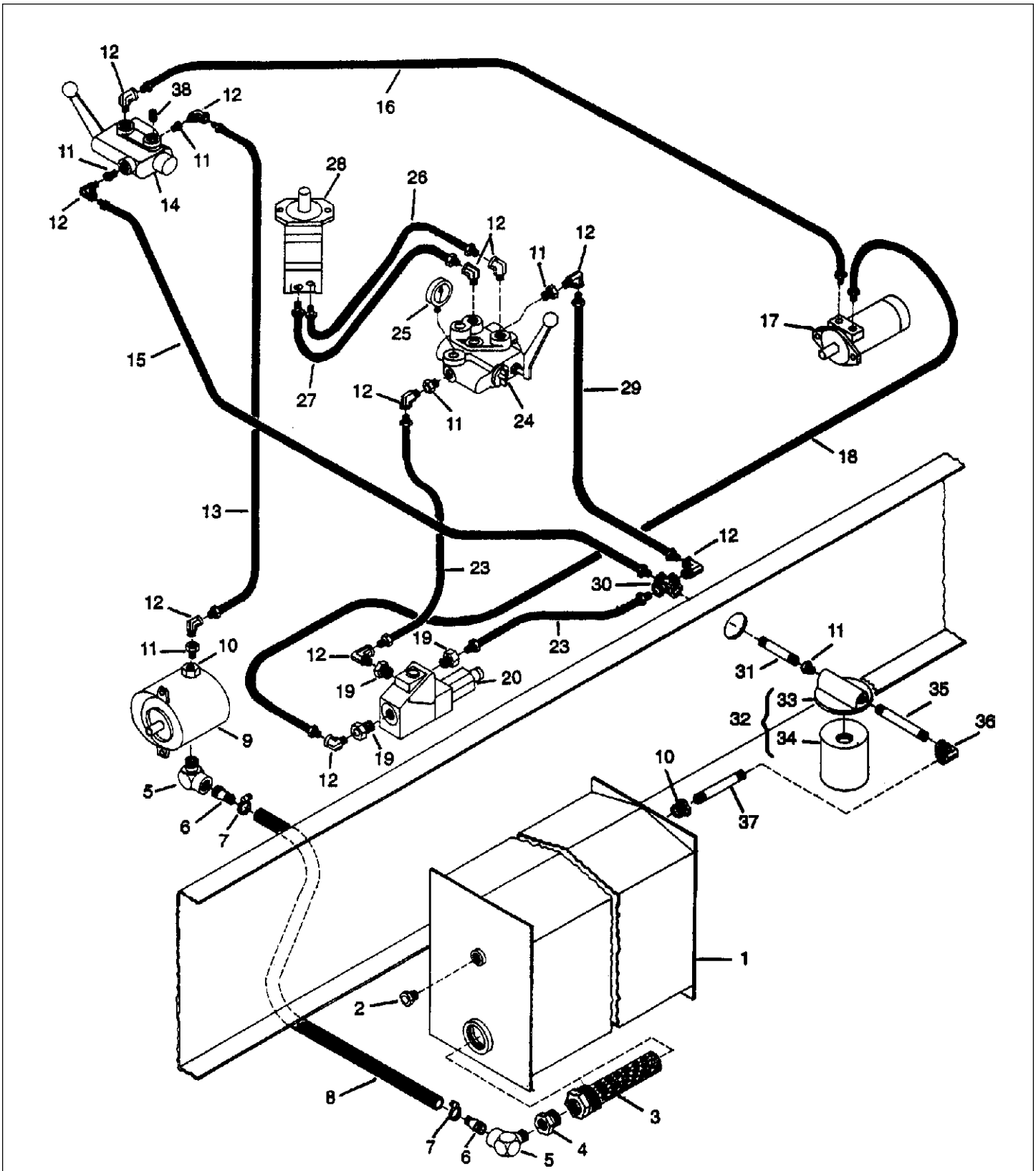
WIRING DIAGRAM

3-Position Remote Switch



WIRING DIAGRAM FOR ELECTRONIC WINCH WITH REMOTE SWITCH

ITEM	PART NO	QTY.	DESCRIPTION
1	5800025	1	SWITCH\SA9005
1	5800024	1	PLUG\ASSY\SA9005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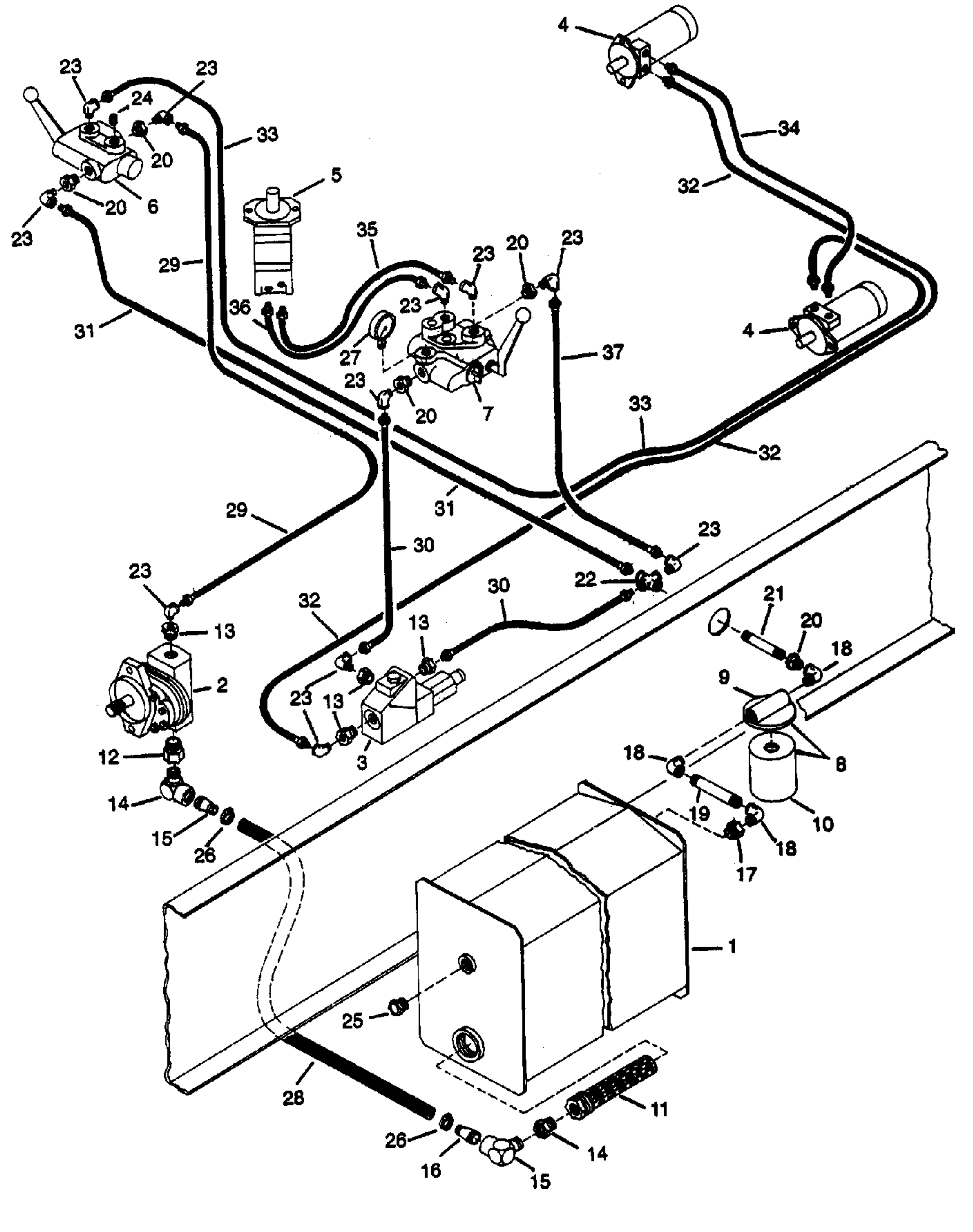
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700220	1	Oil Tank
2	3800137	1	3/4” Site Glass
3	4400007	1	Strainer S25
4	3800022	1	1-1/4” to 1” Bushing
5	3800021	2	1” 90° Street Elbow
6	3800056	2	King Nipple 1”
7	3800143	2	1-1/2” Hose Clamp (T-Bolt)
8	3700310	1	1” X 3/4” Suction Hose
9	4200009	1	Hyd Pump2pl090-Cssb Dowty
9	4200021		Pump\Eaton\25501-Rsa\B Mt see next page for fittings
10	3800131	2	1” X 3/4” Bushing
11	3800010	6	3/4” x 1/2” Bushing
12	3800008	11	1/2” 90° Street Elbow
13	3700105	1	1/2” X 92” Hose SW,SW
14	4000035	1	Control Valve
15	3700298	1	1/2” X 42” Hose SW,SW
16	3700323	1	1/2” X 152” Hose SW,SW
17	3900003	1	Orbit Motor
18	3700324	1	1/2” X 140” Hose\SW-SW
19	3800119	3	1-1/16” Straight to 1/2” Pipe Bushing O-Ring Boss
20	4300030	1	Control Block
21	7501018	1	Control Block (Seal Kit)
22	4300010	1	Control Block (Solenoid)
23	3700030	2	1/2” X 21” Hose SW,SO
24	4000016	1	Control Valve
25	3800154	1	Pressure Gauge\3000 PSI
26	3700229	1	1/2” X 36” Hose SW,O-Ring
27	3700230	1	1/2” X 32” Hose SW,O-Ring
28	3900010	1	Orbit Motor
29	3700110	1	1/2” X 20” Hose SW,SO
30	3800096	1	1/2” Cross
31	3800032	1	1/2” X 3” Nipple
32	4400006	1	Filter Complete F4E
33	4400004	1	Filter Base F4E
34	4400005	1	Filter Element F4E
35	3800157	1	3/4” X 4” Nipple
36	3800035	1	3/4” 90° Elbow
37	3800158	1	3/4” X 5” Nipple
38	3800139	1	1/2” Pipe Plug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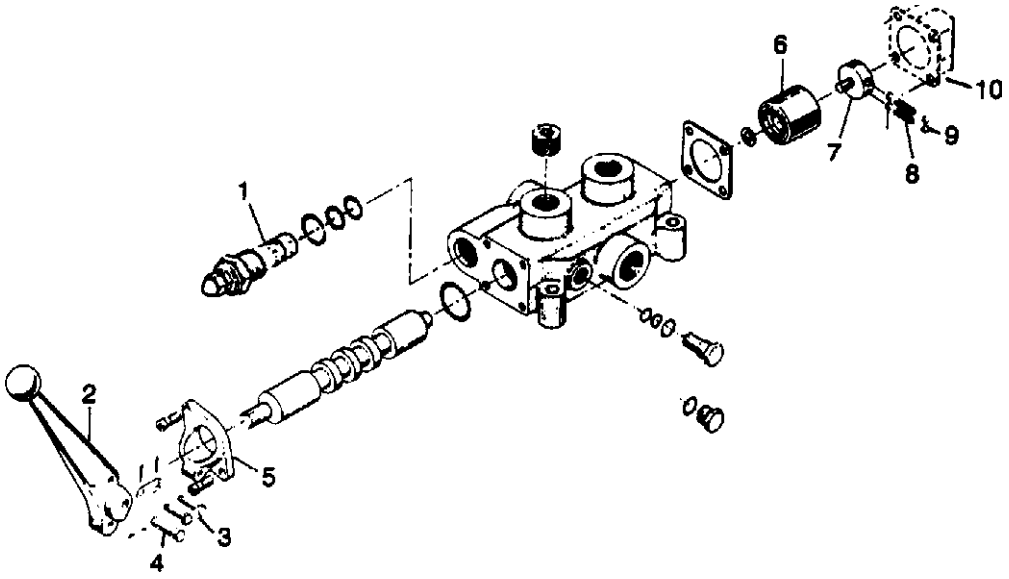
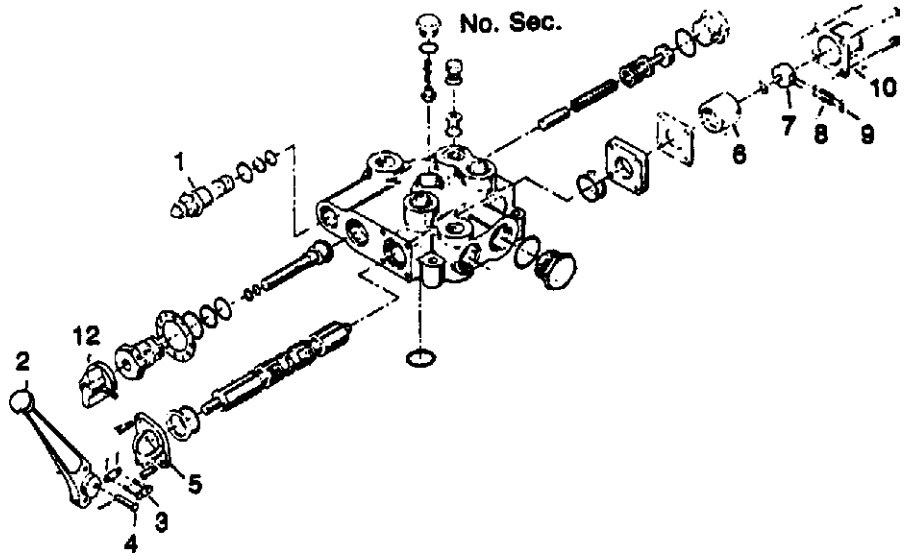
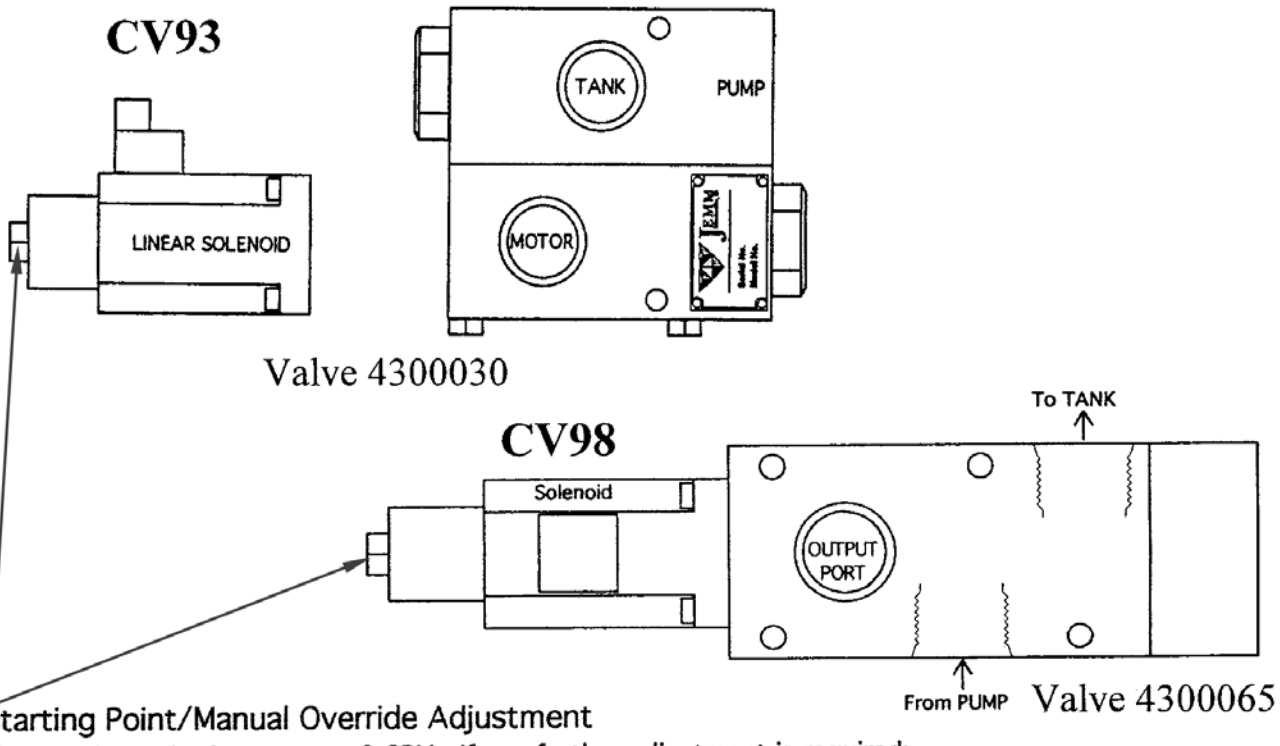
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700220	1	Oil Tank
2	4200021	1	Pump\Eaton\25501-Rsa\B Mt
2A	4200048	1	Pump\Hyd\1.55cid\Eaton
3	4300030	1	Hyd. Electric Solenoid Valve
4	3900015	1	Orbit Motor 14.1 C.I.
5	3900010	1	Orbit Motor
6	4000035	1	1 Spool Valve w/Detent
7	4000016	1	1 Spool Valve w/Flow Control
8	4400006	1	Filter Complete F4E
9	4400004	1	Filter Base F4E
10	4400005	1	Filter Element F4E
11	4400007	1	Strainer S25
12	3800223	1	1-5/8” Str. to 1” Pipe w/O-Ring
13	3800119	4	1-1/16” Str. to 1/2” Pipe w/o-Ring
14	3800022	1	1-1/4” X 1” Bushing
15	3800021	2	1” 90° St. Elbow
16	3800056	2	1” King Nipple
17	3800131	1	1” X 3/4” Bushing
18	3800129	3	3/4” 90° St. Elbow
19	3800158	1	3/4” X 5” Nipple
20	3800010	5	3/4” X 1/2” Bushing
21	3800032	1	1/2” X 3” Nipple
22	3800096	1	1/2” Cross
23	3800008	11	1/2” 90° St. Elbow
24	3800139	1	1/2” Pipe Plug
25	3800137	1	Site Glass
26	3800143	2	1-1/2” Hose Clamp (T-Bolt)
27	3800154	1	Pressure Gauge\3000 PSI
28	3700310	1	1” X 34” Suction Hose
29	3700105	1	1/2” X 92” Hose SW,SW
30	3700030	2	1/2” X 21” Hose SW,SO
31	3700298	1	1/2” X 42” Hose SW,SW
32	3700322	1	1/2” X 290” Hose SW,SW
33	3700323	1	1/2” X 152” Hose SW,SW
34	3700249	1	1/2” X 160” Hose SW,SW
35	3700229	1	1/2” X 36” Hose SW O-Ring
36	3700230	1	1/2” X 32” Hose SW, O-Ring
37	3700110	1	1/2” X 20” SW,SO
38	7501025	1	Hyd. Electric Solenoid Valve (Seal Kit)



ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	4000006	1	Adj. Relief Valve	7	4000026	1	Detent Retainer (Screw)
2	4000001	1	Valve Handle	8	4000027	2	Detent Spring
3	4000002	1	Connector Links Handle	9	4000028	4	Ball (1/4” Steel)
4	4000003		Comes with # 4000002	10	4000029	1	End Cap
5	4000004	1	Handle Bracket	11	7501013	1	Seal Kit(Not Shown)
6	4000025	1	Detent Sleeve	12	4000035	1	Valve Complete



ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	4000006	1	Adj. Relief Valve	7	4000026	1	Detent Retainer (Screw)
2	4000001	1	Valve Handle	8	4000027	2	Detent Spring
3	4000002	1	Connector Links Handle	9	4000028	4	Ball (1/4” Steel)
4	4000003		Comes with # 4000002	10	4000029	1	End Cap
5	4000004	1	Handle Bracket	11	7501009	1	Seal Kit (Not Shown)
6	4000025	1	Detent Sleeve	12	4000030	1	Knob
				13	4000016	1	Valve Complete



Starting Point/Manual Override Adjustment

The starting point is preset to 0 GPM. If any further adjustment is required; 1- Loosen jam nut. 2- Turn the adjusting screw clockwise to increase the flow or counter clockwise to decrease flow. 3- Gently tighten the jam nut.

WARNING- If the adjusting screw is turned to far counter clockwise, the valve will behave erratically or stop working all together. Turn the adjusting screw no more than 1/16 to 1/8 of a turn counter clockwise after flow has stopped.

For manual operation when electrical control fails, turn the adjusting screw clockwise until the desired constant flow is obtain.

NOTE: The difference between the 12Volt and 24Volt solenoid is listed on the serial number plates. The solenoids are Elwood 160261-xx6 or 160261-xx9. The 6 is a 12 volt solenoid, the 9 is a 24 volt solenoid. Also, 12 or 24 are stamped on the newest serial number plates. 12 volt solenoid resistance is 8 to 12 ohms, 24 volts resistance is 38 to 44 ohms.

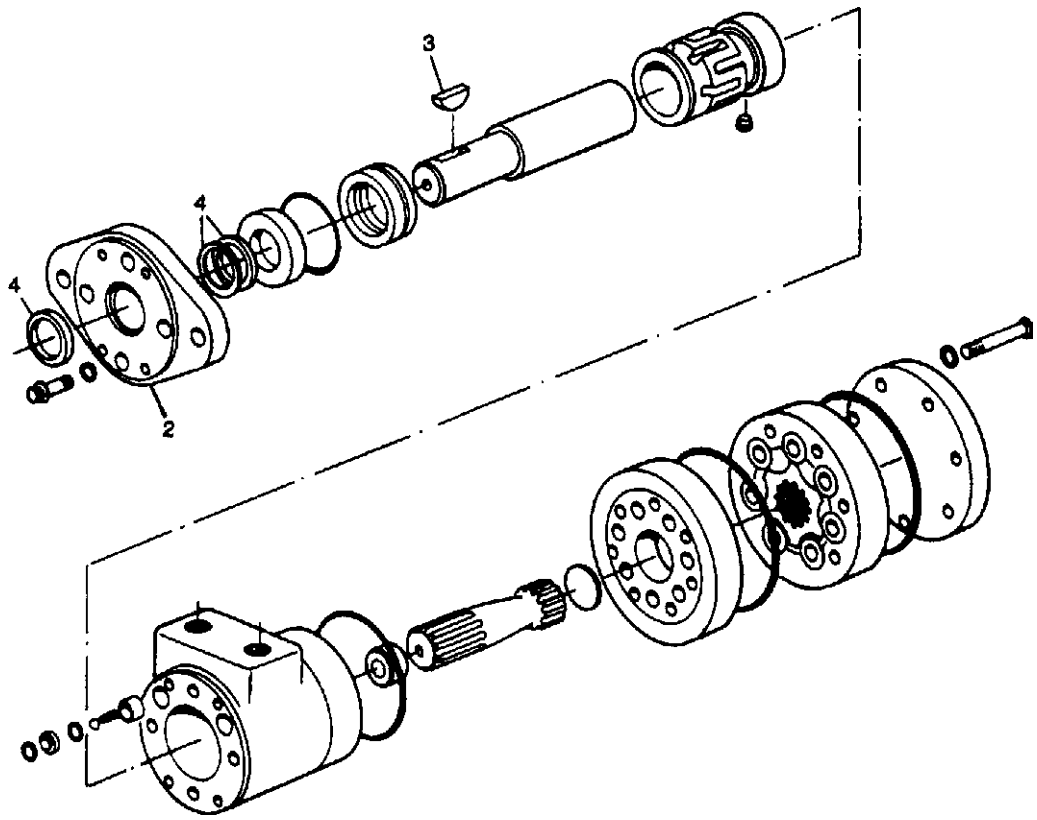
NOTE: 15 GPM is standard flow rate. Any valves that are not 15GPM are to be stamped in metal of the valve casing next to the serial number indicating the flow rate, e.g. 25 indicates 25 gpm.

CV93

PART	QTY	DESCRIPTION
4300030	1	Hyd. Electric Solenoid Valve Complete 12V 20GPM

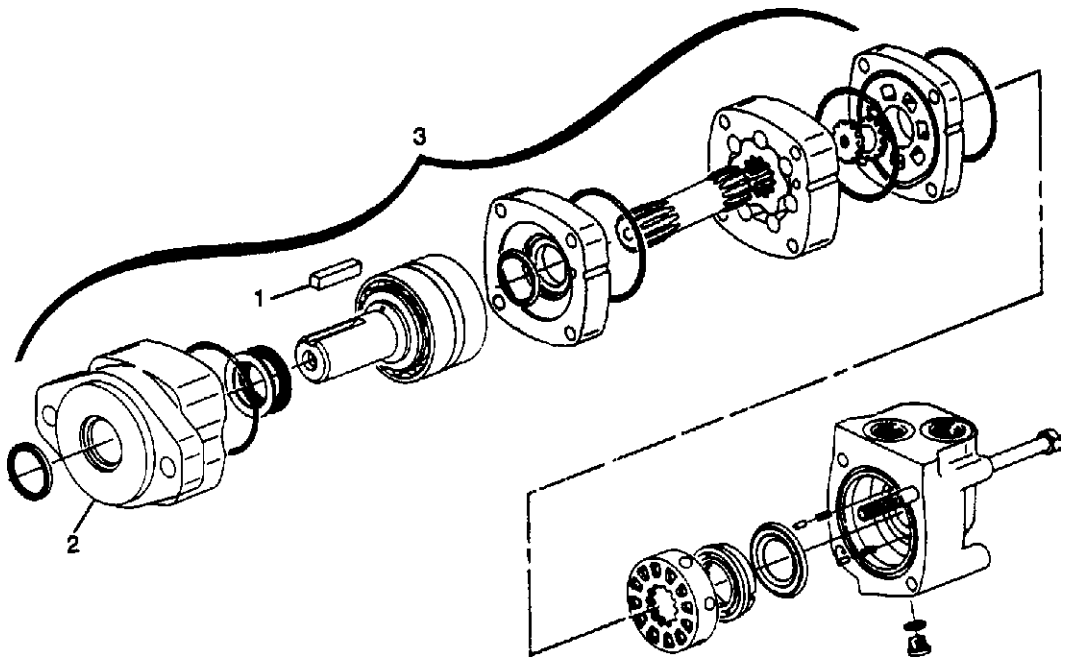
CV98

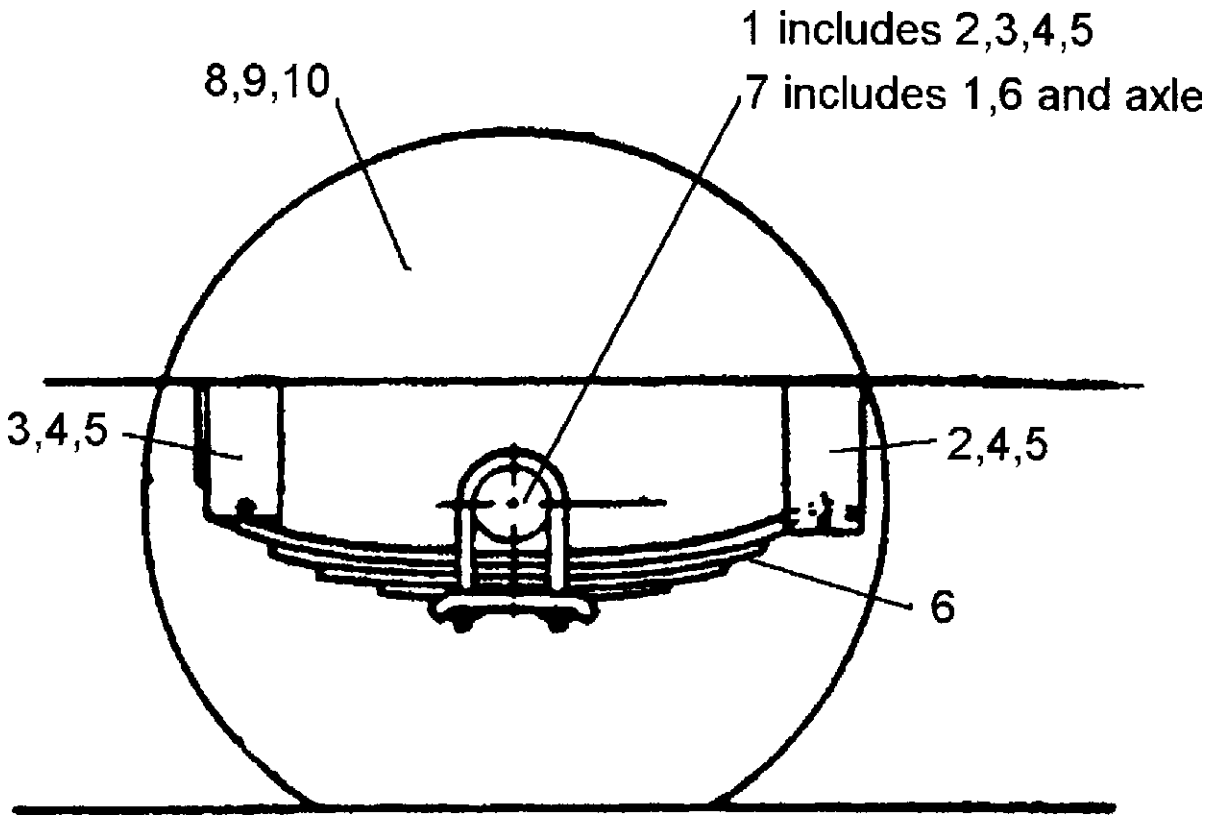
PART	QTY	DESCRIPTION
4300065		Valve\Servo\15gpm\12vdc H1000;H1100;HD8;HD9
4300010		Solenoid\Hyd Valve\12V, see notes above



ITEM	PART NO.	QTY.	DESCRIPTION
2	3900002	1	Mounting Flange
3	6200011	1	Key, Woodruff
4	7501038	1	Seal Kit, Orbit
5	3900015	1	Orbit Motor Complete

ITEM	PART NO.	QTY.	DESCRIPTION
1	6200004	1	5/16” x 1-1/2” Key
2	7501005	1	Seal Kit
3	3900010	1	Complete H2000 Orbit Motor
	3900011		Mounting Flange (2000 SER)




1 includes 2,3,4,5
8,9,10
7 includes 1,6 and axle
3,4,5
2,4,5
6

7K AXLE Serial No 0001 thru 0166

ITEM	PART NO.	QTY.	DESCRIPTION
1	2500908	1	Hanger Kit
2	7500293	2	Front Hanger 3-3/4” Tall
3	7500294	2	Rear Hanger 5-7/16” Tall
4	4900063	4	Shackle Nut
5	4800258	4	Shackle Bolt
6	2500713	2	Spring Kit
7	2500712	1	7K Axle Complete
8	2600629	2	16.5 X 6.75 Wheel
9	2600024	2	9.5 X 16.5 Bias 10 Ply
10	2600808	2	Tire & Wheel Complete

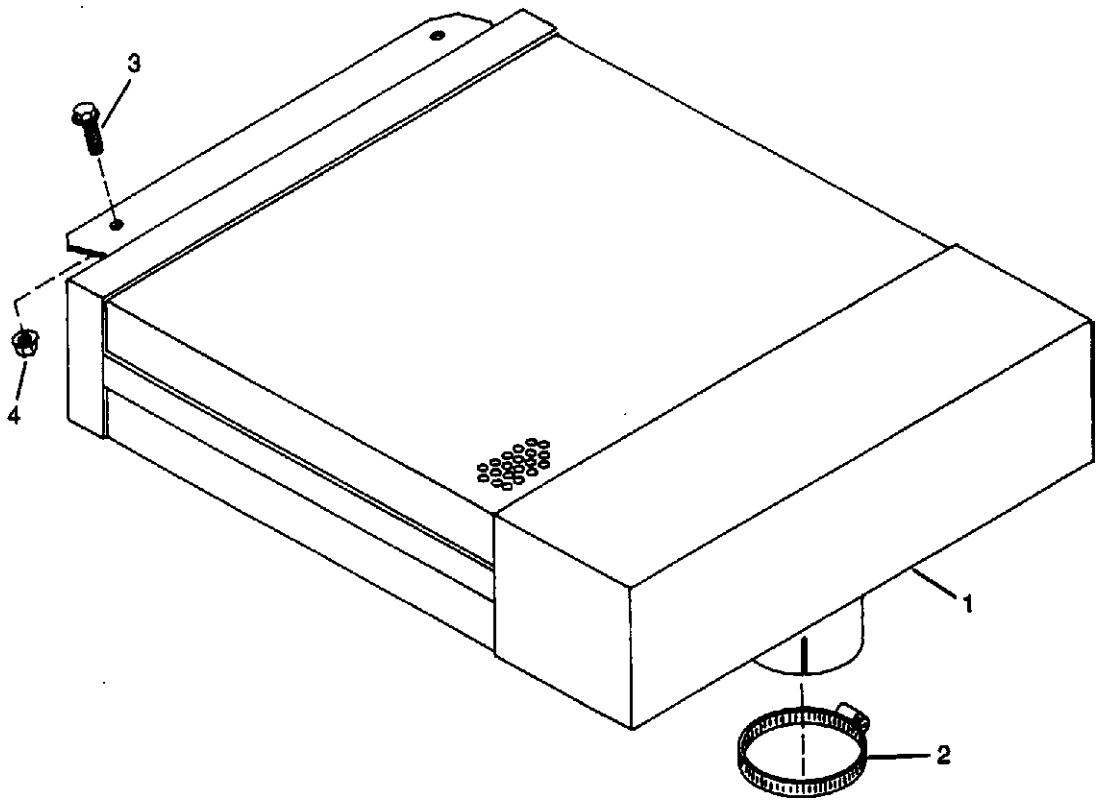
8K AXLE Serial No. 0167 thru0342

ITEM	PART NO.	QTY.	DESCRIPTION
1	2500908	1	Hanger Kit
2	7500293	2	Front Hanger
3	7500294	2	Rear Hanger
4	4900063	4	Shackle Nut
5	4800258	4	Shackle Bolt
6	2500201	2	Leaf Spring
7	2500202	1	8K Axle Complete
8	2600637	2	17.5 X 6-3/4” X 8 Bolt Wheel
9	2600031	2	215-75R-17.5 16 Ply Load Range H Tire
10	2600820	2	Wheel\Assy\215x75rx17.5\Single\8-Bolt

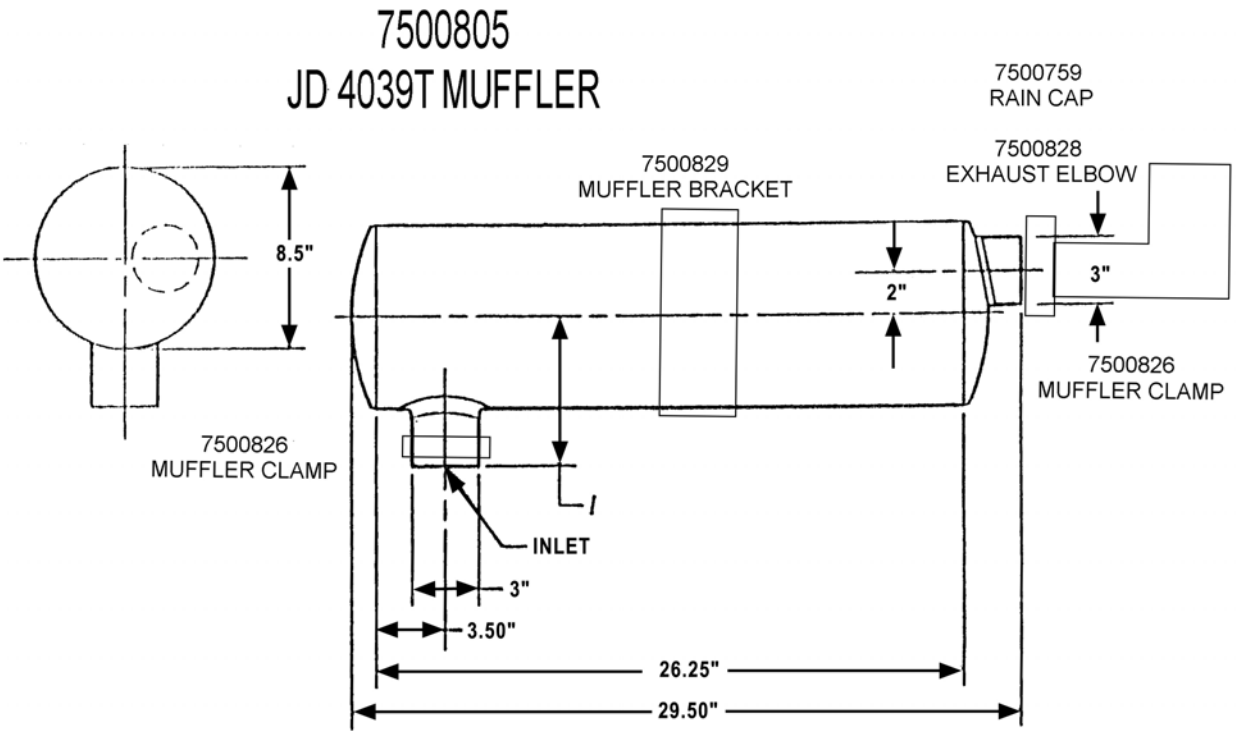
10K AXLE Serial No. 0343 thru

ITEM	PART NO.	QTY.	DESCRIPTION
1	2500459	1	Hanger Kit
6	2500460	2	Leaf Spring
7	2500457	1	10K Axle Complete
8	2600637	2	17.5 X 6-3/4” X 8 Bolt Wheel
9	2600031	2	215-75R-17.5 16 Ply Load Range H Tire
10	2600820	2	Wheel\Assy\215x75rx17.5\Single\8-Bolt

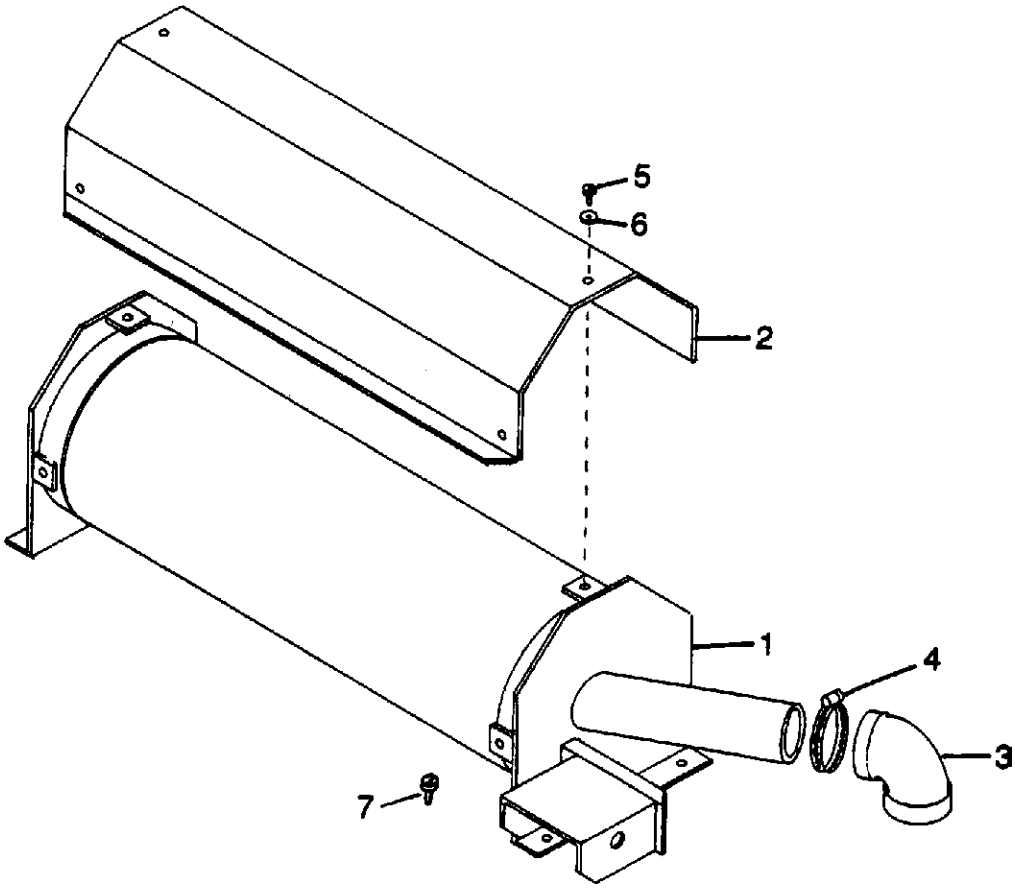
AIR INTAKE SCREEN JD 4039T ENGINE



ITEM	PART NO.	QTY.	DESCRIPTION
1	4700864	1	Air Intake Screen
2	7500544	1	3” Hose Clamp
3	4800194	2	1/4” X 3/4” Flange Bolt
4	4900040	2	1/4” Flange Nut



PART NO.	QTY.	DESCRIPTION
7500759	1	Cap\Rain\3\Zinc\Pl
7500805	1	Muffler\JD
7500826	2	Clamp\Exh\3
7500828	1	Pipe\Exh\3x90Deg\Expnd&Slot
8500829	1	Brkt\Mfflr\8-1/2” Rd
Not Shown		
7500874		Brkt\Exhst\4039T
7500806		Pipe\Exhaust\3\JD
7500828		Clamp\Exh\4
7500849		Pipe\Exh\Reducer\4IDx3”OD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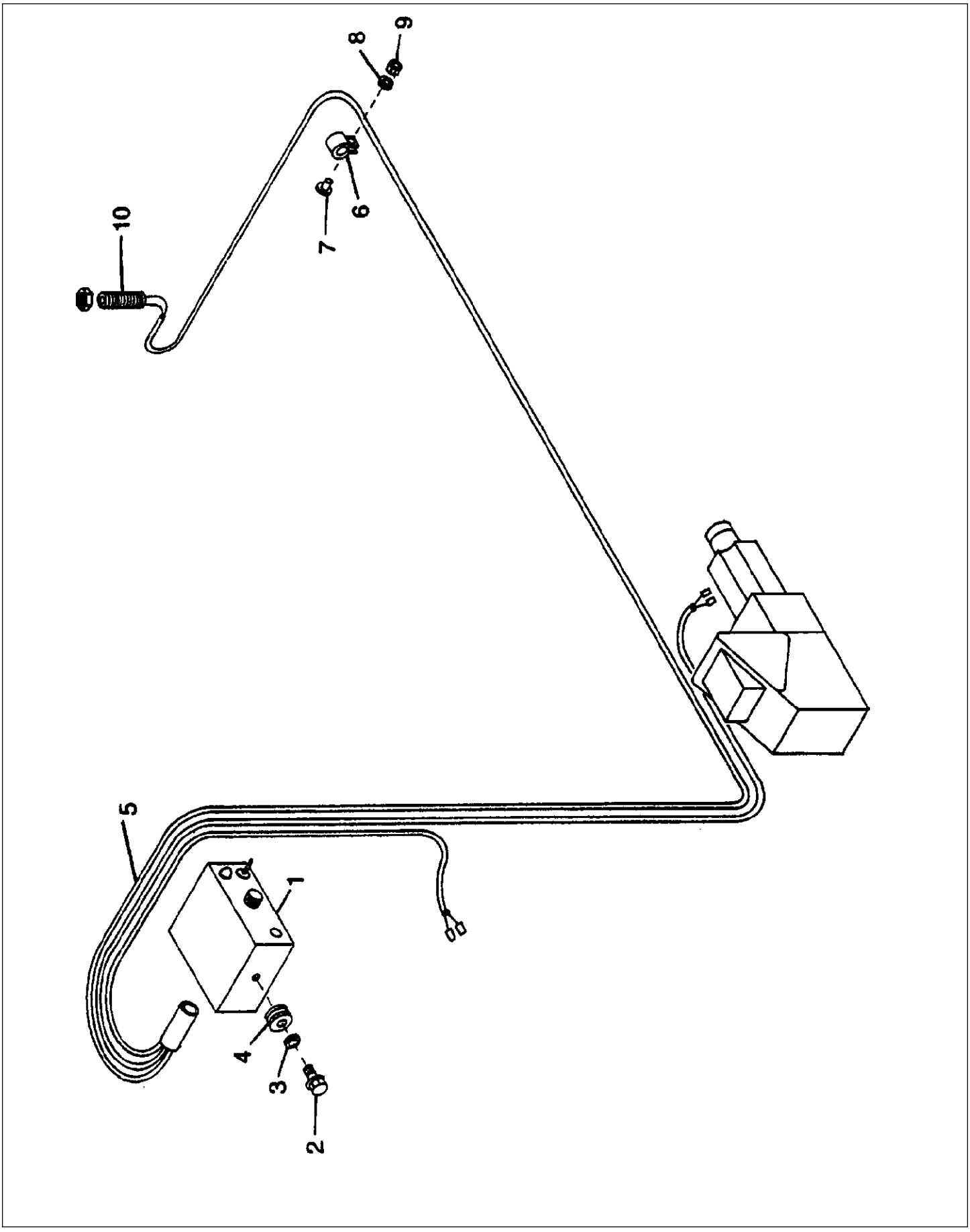
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700255	1	Prefilter (Cummings)
2	4700256	1	Prefilter Cover (Cummings)
3	7500296	1	Elbow 3”
4	7500297	2	Hose Clamp 4”
5	4800154	6	1/4” x 1/2” Screw
6	5000024	6	1/4” Lock Washer
7	4800466	4	Screw\Pan\Slot\1/4”X 1/2”\ST
Not Shown			
	7500759		**Cap\Rain\3\Zinc\Pl**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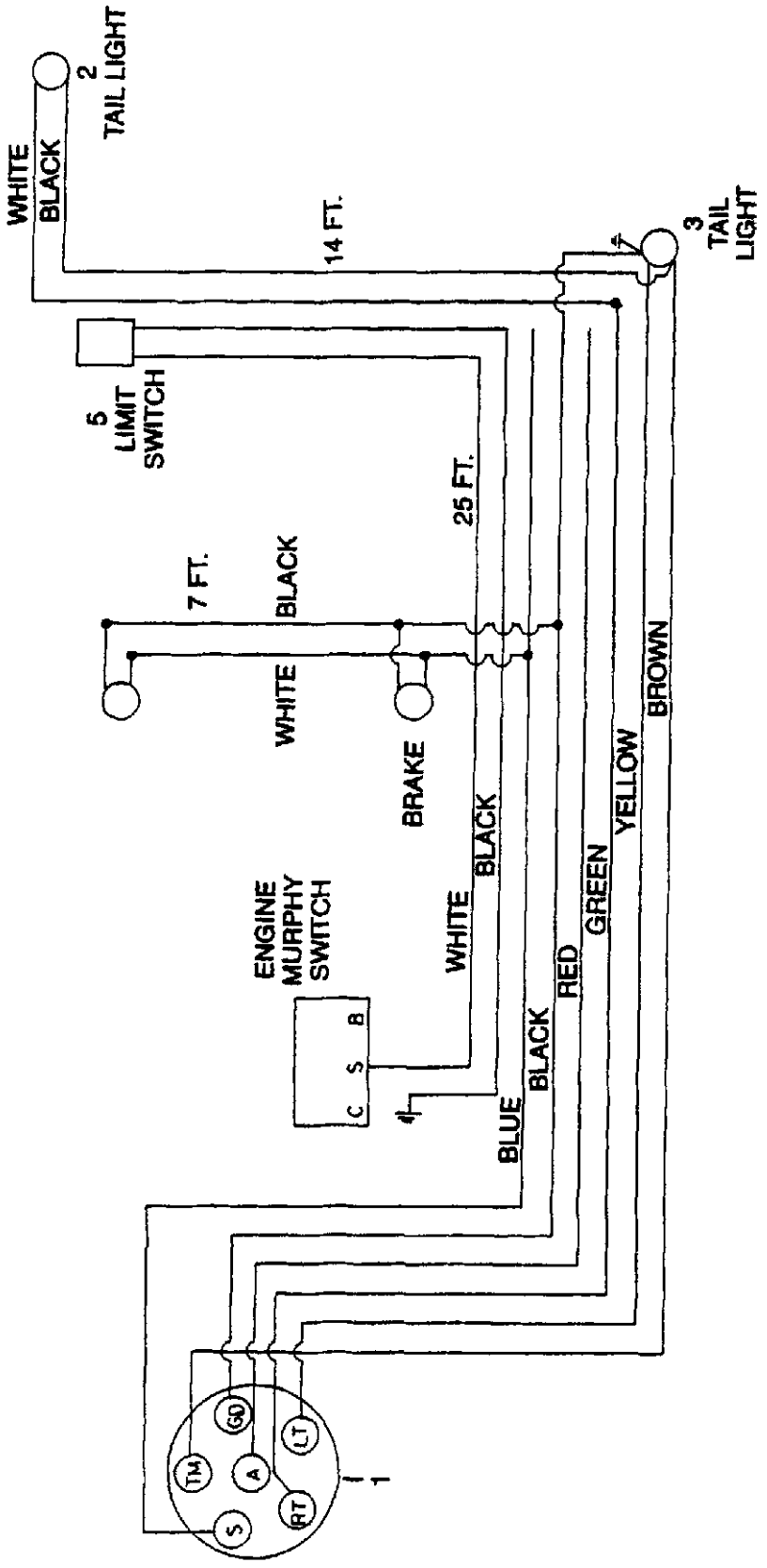
ITEM.	PART NO	QTY.	DESCRIPTION
1	4300034	1	Control Box
2	4800194	2	1/4” X 3/4” Flange Bolt
3	5000035	2	1/4” Flat Washer
4	7500124	2	Grommet
5	4300018	1	Wiring Harness HD-8
6	5700058	2	Wire Clamps
7	4800154	2	1/4” X 1/2” Screw
8	5000024	2	1/4” Lock Washer
9	4900009	2	1/4” Nut
10	4300009	1	Sensor with Hardware
11	4300038	1	Rebuilt Control Box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TAIL LIGHT
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LIMIT
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BRAKE
BROWN
YELLOW
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RED
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BLUE
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ENGINE
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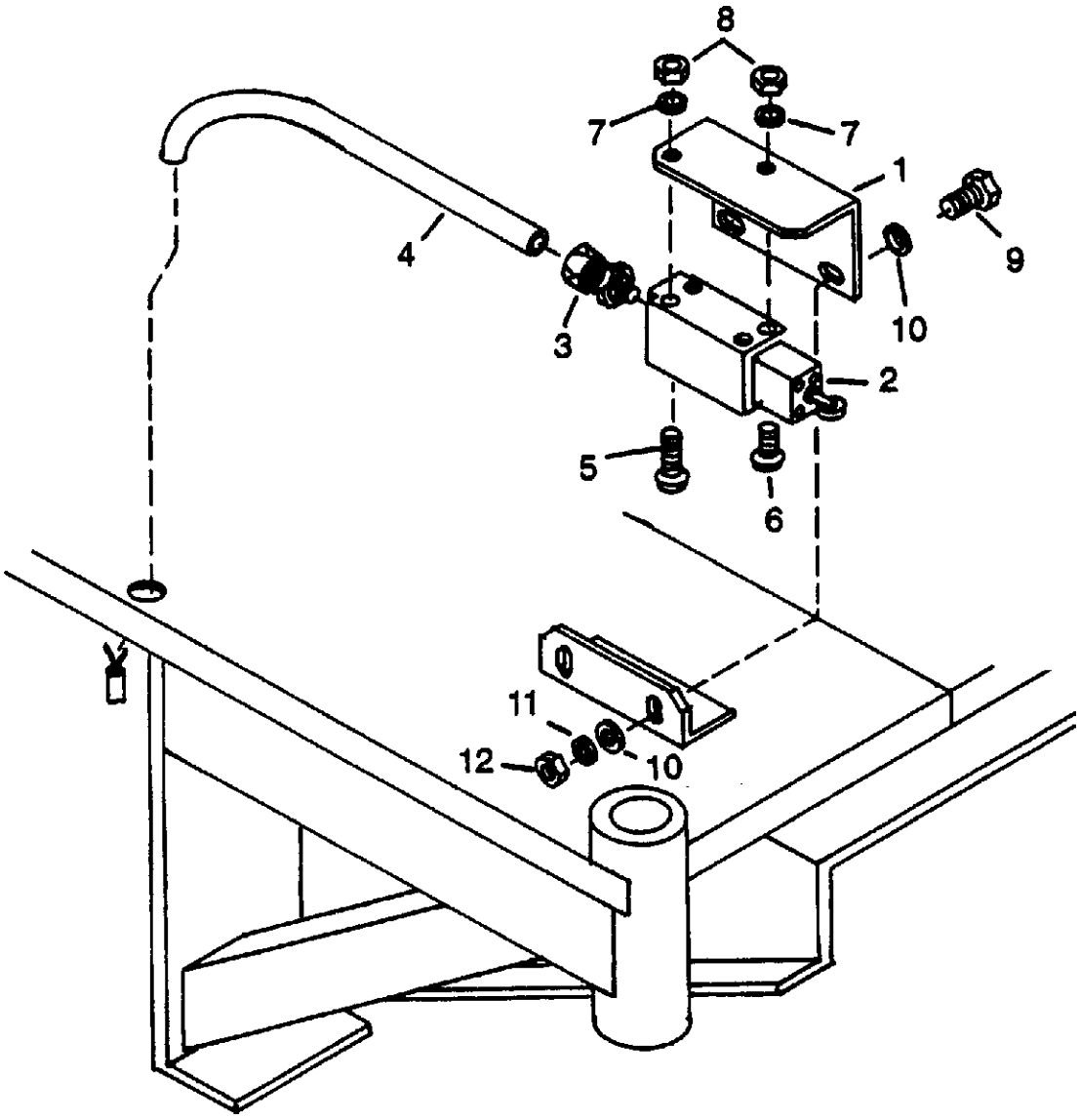
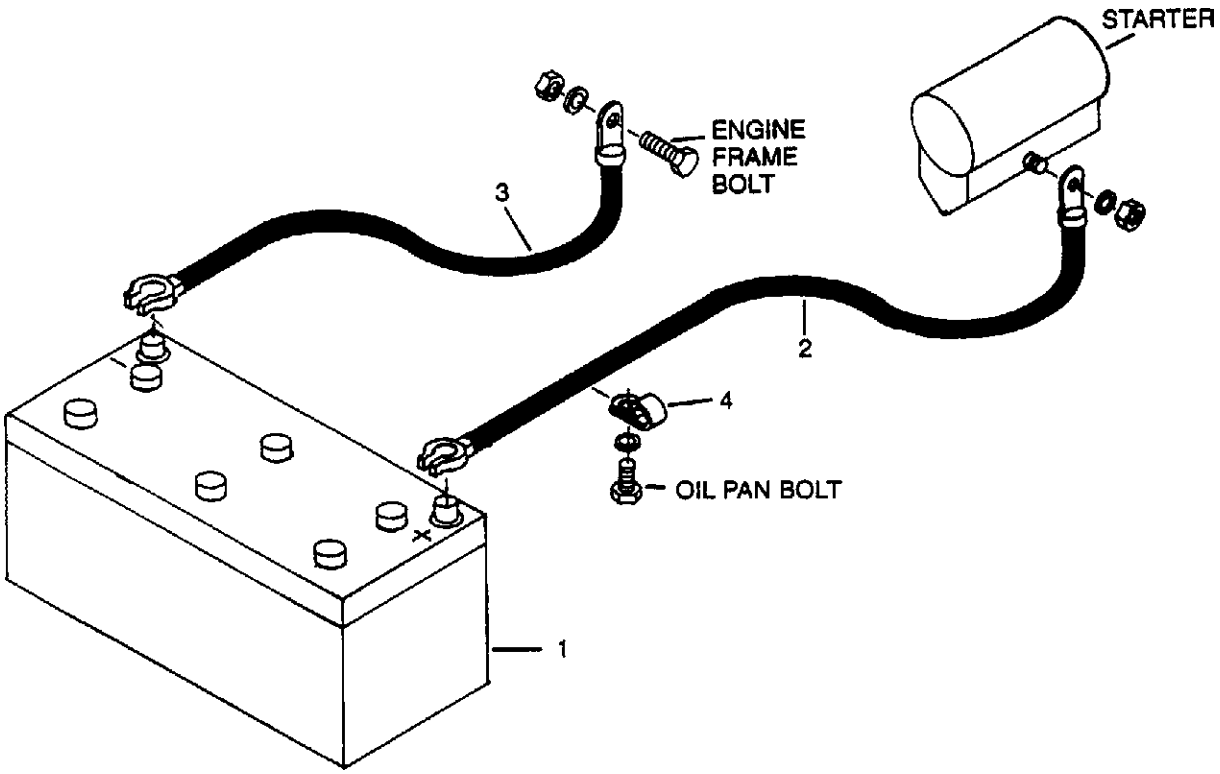
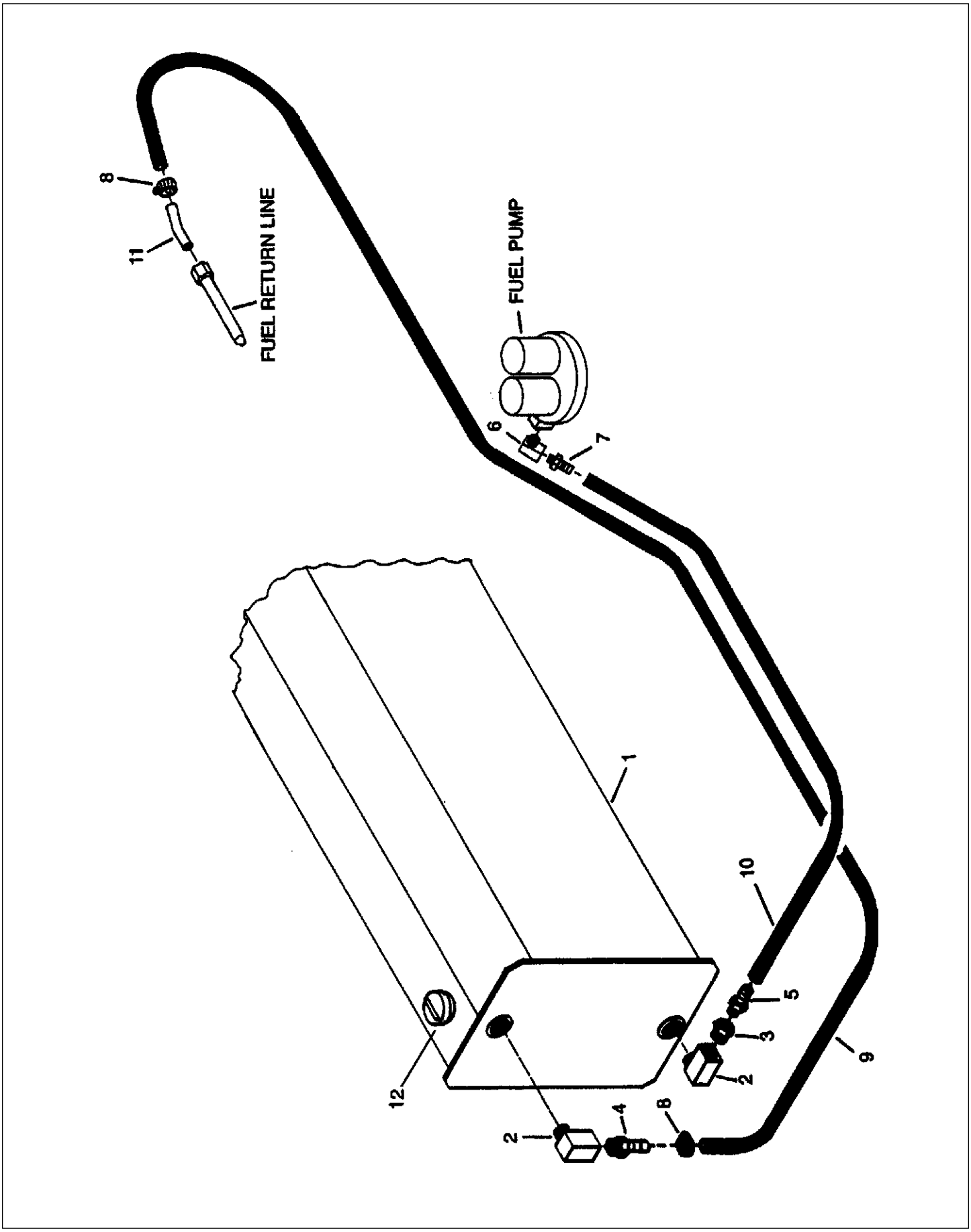
ITEM	PART NO.	QTY.	DESCRIPTION
1	5700033	1	Trailer Plug
2	5700036	1	Tail Light
3	5700039	1	Tail Light w/License Plate Light
4	5700040	1	License Plate Bracket
5	5700074	1	Limit Switch 802T
6	5700008	1	6 X 14 Ga. Cable 46Ft.
7	5700048	1	2 X 14 Ga. Cable 46Ft.
8	5700052	1	No. 6 Cushion Clamp
9	5700058	1	No. 8 Cushion Clamp
	5700223		Gauge\Tach\JD (J.D. Engine)



ITEM	PART NO.	QTY.	DESCRIPTION
1	4700865	1	Limit Switch Mount
2	5700074	1	Limit Switch
3	5700079	1	1/2” Liquid Tight Connector
4	5700080	1	1/2” X 12” Liquid Tight Conduit
5	4800376	1	No.8-32 X 1-1/2” Round Head Machine Screw
6	4800377	1	No.8-32 X 3/4” Round Head Machine Screw
7	5000092	2	No.8 Lock Washer
8	4900096	2	No. 8-32 Nut
9	4800003	2	3/8” X 1” Bolt
10	5000001	4	3/8” Flat Washer
11	5000019	2	3/8” Lock Washer
12	4900002	2	3/8” Nut

ITEM	PART NO.	QTY.	DESCRIPTION
1	5700002	1	Battery
2	5700077	1	Battery Cable 2/0 x 85”, Pos. & 3/8 Eye
3	5700078	1	Battery Cable 2/0 X 41”, Neg. & 1/2 Eye
4	5700058	1	No. 8 Cushion Clamp




FUEL RETURN LINE
FUEL PUMP
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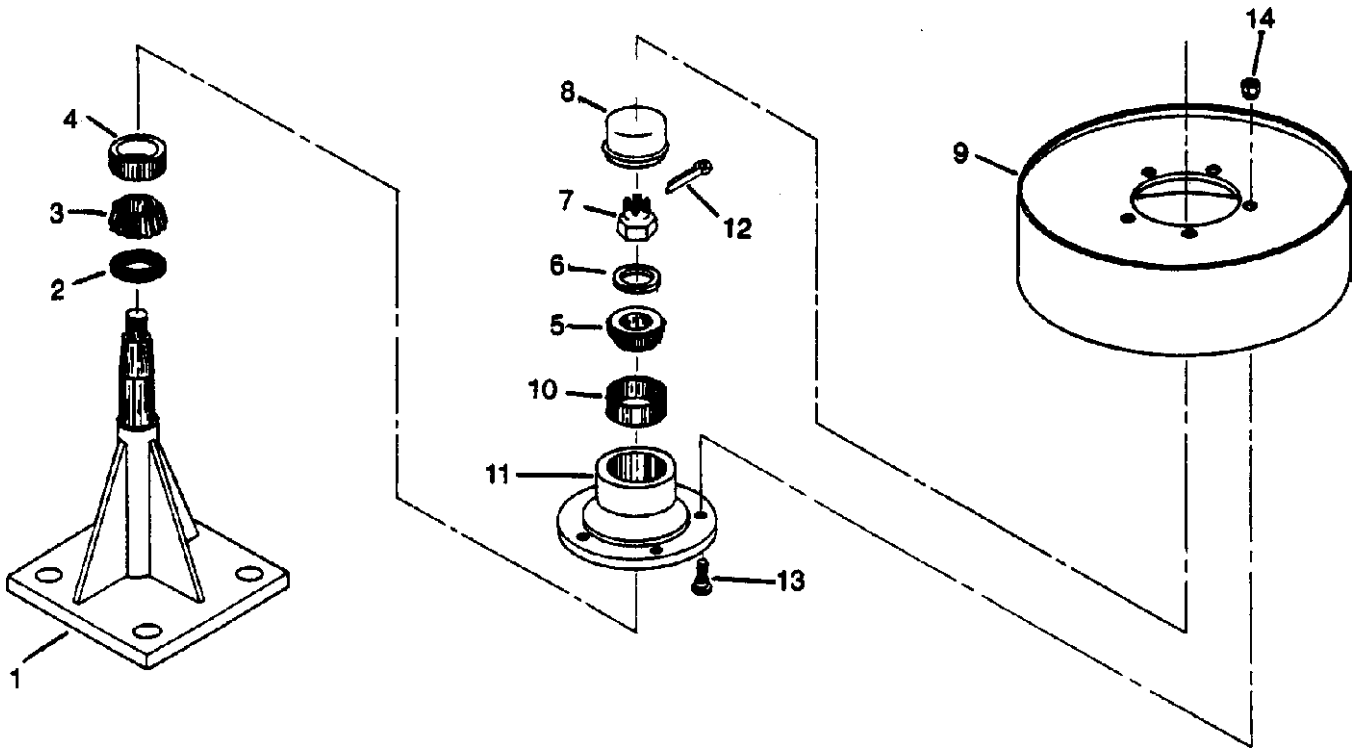
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700218	1	Fuel Tank
2	3800176	2	3/8” 90° St. Elbow (Brass)
3	3800175	1	3/8” X 1/4” Bushing (Brass)
4	3800231	1	1/4” Barbed X 3/8” Pipe (Brass)
5	3800185	1	1/4” Push Lock X 3./8” Pipe (Brass)
6	3800186	1	1/8” 90° St. Elbow (Brass)
7	3800187	1	1/4” Push Lock X 1/8” Pipe (Brass)
8	3800232	1	#4 Hose Clamp
9	3700263	1	1/4” Fuel Line Hose 82”
10	3700264	1	1/4” Push Lock Hose 50”
11	3800233	1	1/4” Hose Adapter
12	7500811	2	Cap\Fuel\5343-15\600sers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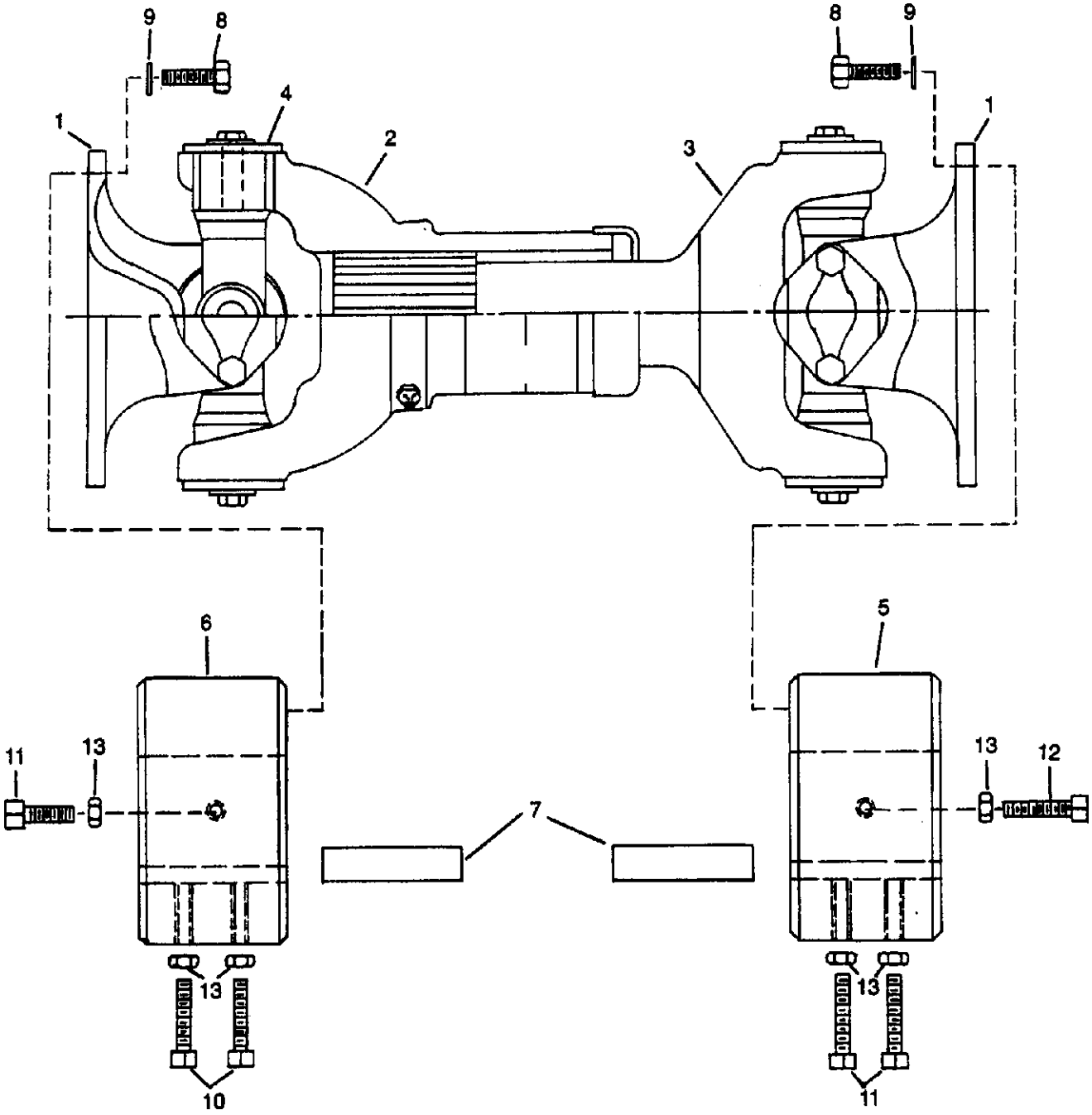
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700235	1	Pressure Roller Stand (11” Spindle)
2	2900055	1	Seal
3	2900018	1	Inner Cone
4	2900004	1	Inner Cup
5	2900061	1	Outer Cone
6	5000057	1	Washer
7	4900056	1	Nut
8	2900064	1	Dust Cap
9	4700115	1	Pressure Drum
10	2900056	1	Outer Cup
11	NA	1	Order 2900057
12	4800172	1	1/8” X 2” Cotter Pin
13	2900136	5	1/2” N.F. x 1-1/4” Wheel Stud
14	4900094	5	1/2” N.F. Wheel Bolt 13/16´O.D.
15	3000028	1	Pressure Roller Spindle 11”
16	4700886	1	Pressure Roller Complete 11”
	2900057	1	Hub Complete Includes,2,3,4,5,8,10,11,13,14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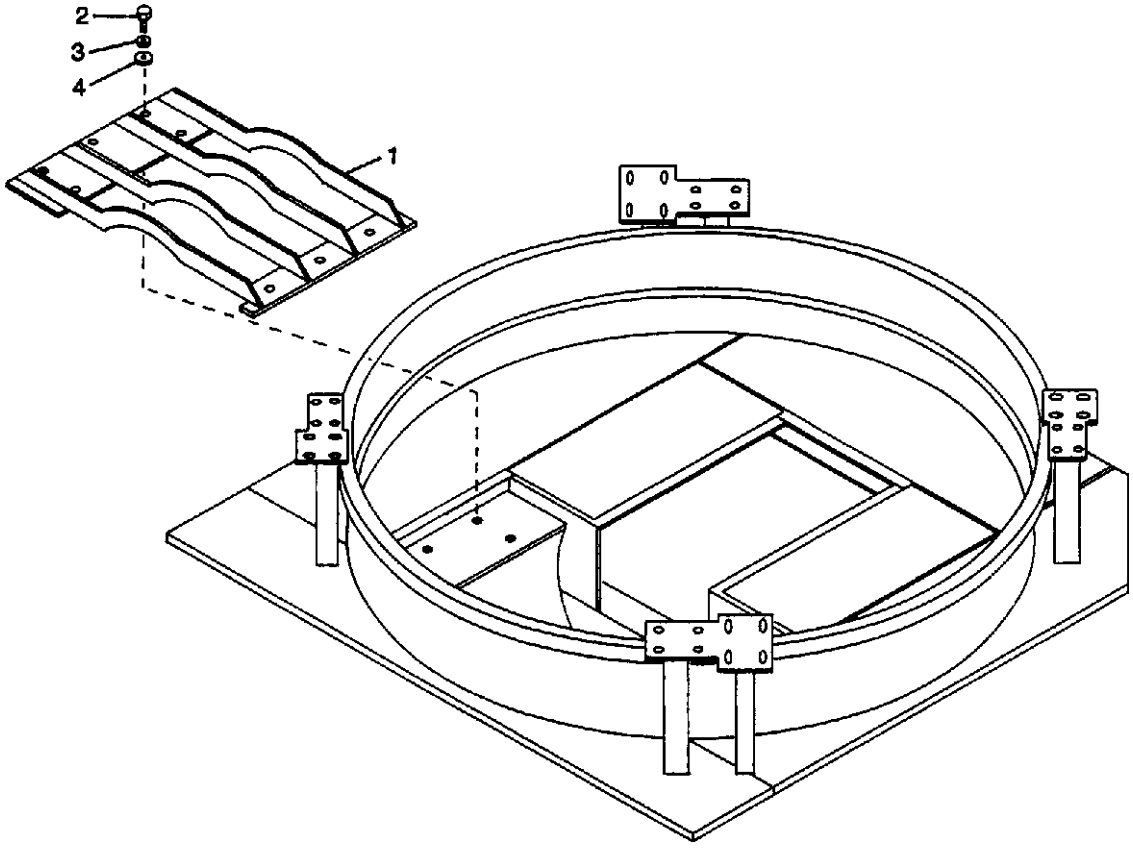
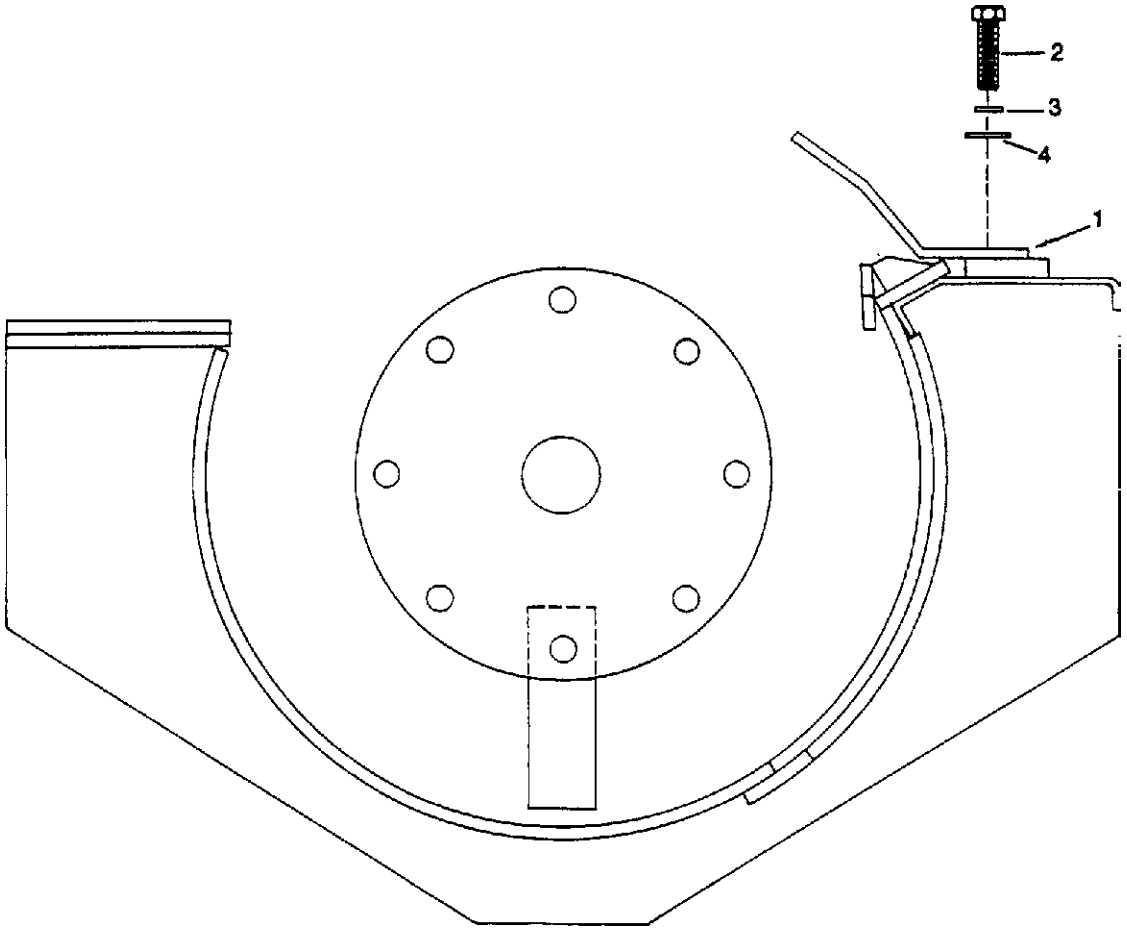
ITEM	PART NO.	QTY.	DESCRIPTION
1	3600164	2	Flange Yoke 1550
2	3600165	1	Slip Yoke 1550
3	3600166	1	Yoke Shaft 1550
4	3600167	2	Journal and Bearing Kit 1550
5	3600168	1	Engine Hub 2-1/4" (John Deere)
5A	3600169	1	Engine Hub 2-1/2" (Cummins)
6	3600170	1	Cylinder Hub 2-3/4"
7	6200028	2	5/8" Sq. X 3" Key
8	4800378	8	1/2" x 1-3/8" Bolt N.F. Grade 8
9	5000006	8	1/2" Lock Washer
10	4800359	2	3/8" x 1-3/4" Sq. Hd. Set Screw
11	4800094	3	3/8" x 2" Sq. Hd. Set Screw
12	4800341	1	3/8" X 2-1/4" Sq.. Hd. Set Screw
13	4900026	6	3/8" Jam Nut
14	3600171	1	Power Shaft (Complete) 1550
14	3600317	1	Power Shaft (Complete) 1550, NAE Ser No. 323 and up
	7500792		Clutch Pkg.- Misc. Rockford (for JD 130HP)

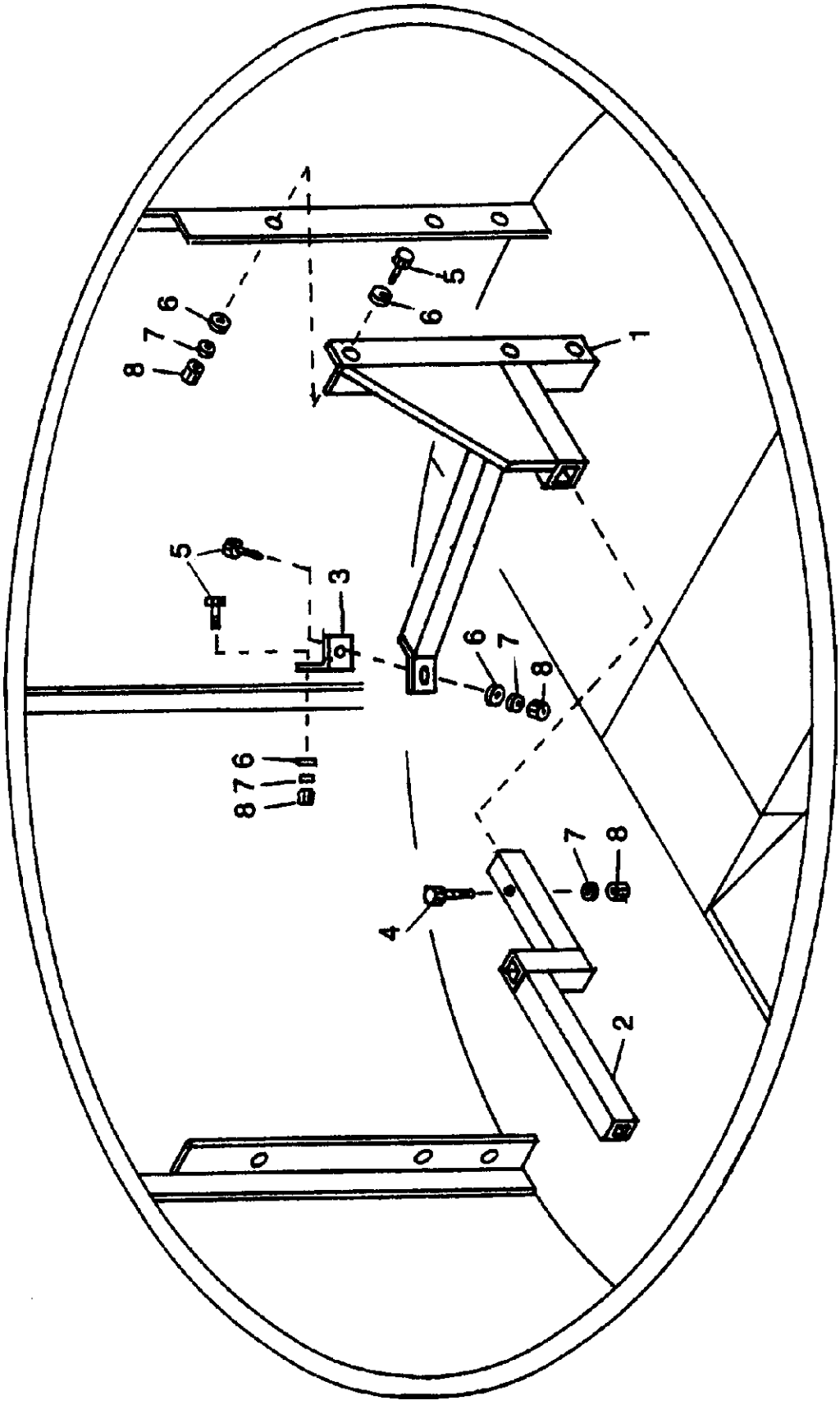


ITEM	PART NO.	QTY.	DESCRIPTION
1	4700257	1	Paper Grate HD-8
2	4800010	8	5/8” x 2” Bolt
3	5000003	8	5/8” Lock Washer
4	5000002	8	5/8” Flat Washer

OPTION - GEYSER PLATE

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700640	1	Geyser Plate
2	4800079	3	5/8” x 2-1/2” Bolt
3	5000003	3	5/8” Lock Washer
4	5000002	3	5/8” Flat Washer

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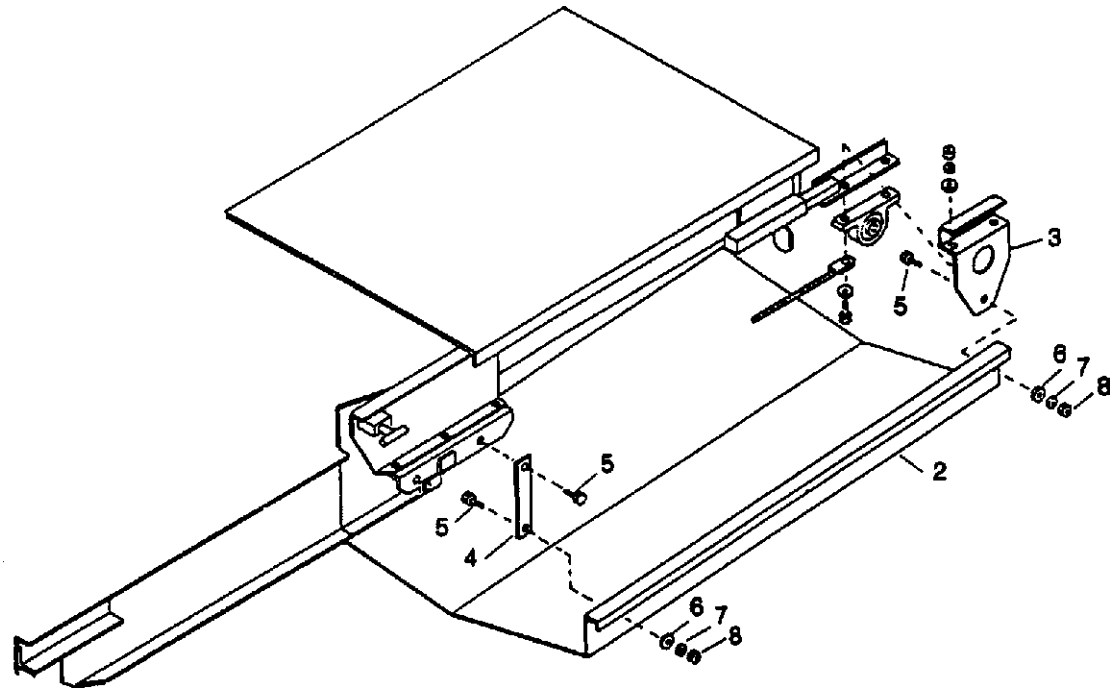
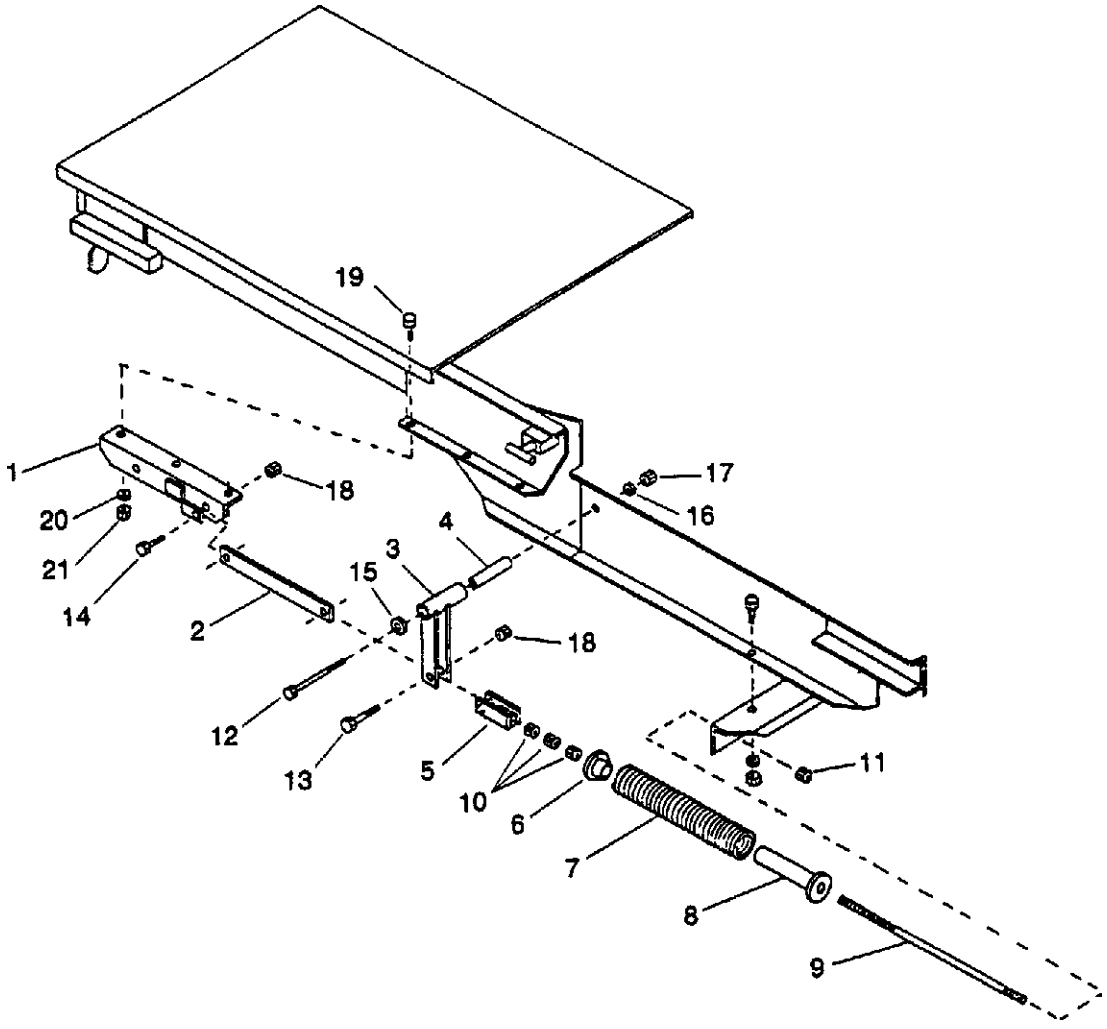
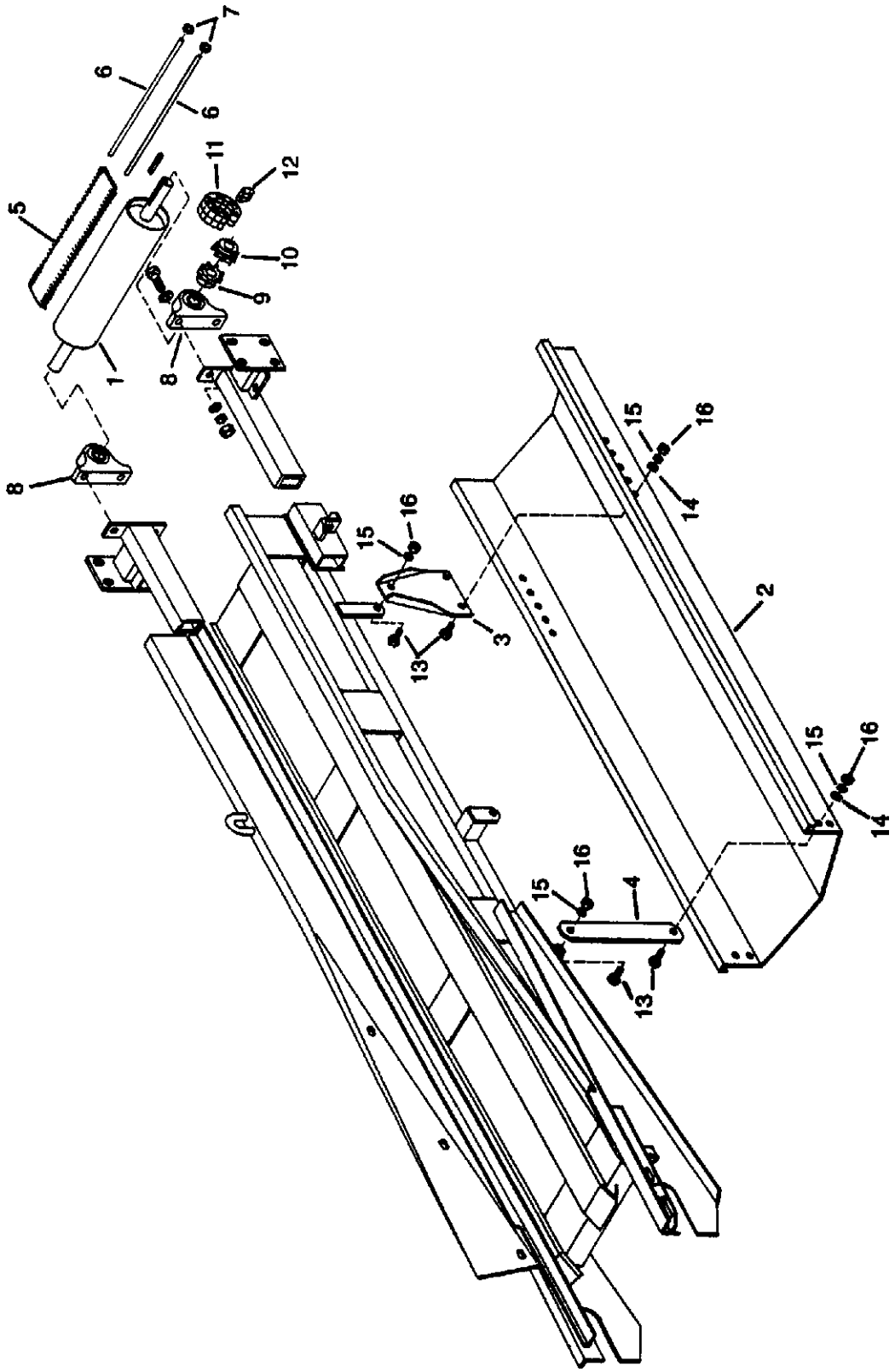
ITEM	PART NO.	QTY.	DESCRIPTION
1	4700263	1	Tub Agitator Mount
2	4700264	1	Tub Agitator Arm
3	4700265	1	Tub Agitator Bracket
4	4800188	1	1/2” x 4” Bolt
5	4800082	5	1/2” x 1-1/2” Bolt
6	5000004	8	1/2” Flat Washer
7	5000006	6	1/2” Lock Washer
8	4900001	6	1/2” Hex Nut
	4700762		Tub\Agitator\Kit\HD-8



ITEM	PART NO.	QTY.	DESCRIPTION
1	3600210	1	Magnetc Roller (Not Shown)
2	4700661	1	Chute
3	4700662	2	Chute Mount
4	4700663	2	Chute Mount Strap
5	4800003	6	3/8” x 1” Bolt
6	5000001	6	3/8” Flat Washer
7	5000019	6	3/8” Lock Washer
8	4900002	6	3/8” Nut
9	4700697	1	Magnetic Roller - Chute Complete

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700659	1	Link Mount L.H.
2	4700656	1	Link
3	4700655	1	Spring Arm
4	4700654	1	Spring Arm Bushing
5	4700639	1	Spring Rod Clevis
6	4700653	1	Spring Guide Short
7	6100032	1	Spring
8	4700652	1	Spring Guide Long
9	4700638	1	Spring Rod 5/8” x 19”
10	4900005	3	5/8” Nut
11	4900012	1	5/8” Lock Nut
12	4800041	1	1/2” x 5” Bolt
13	4800070	1	1/2” x 2-1/2” Bolt
14	4800178	1	1/2” x 1-3/4” Bolt
15	5000004	1	1/2” Flat Washer
16	5000006	1	1/2” Lock Washer
17	4900001	1	1/2” Nut
18	4900014	2	1/2” Lock Nut
19	4800003	3	3/8” x 1” Bolt
20	5000019	3	3/8” Lock Washer
21	4900002	3	3/8” Nut

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ITEM	PART NO.	QTY.	DESCRIPTION
1	3600210	1	Magnetic Roller
2	4700139	1	Chute
3	4700137	2	Chute Mount - Rear
4	4700138	2	Chute Mount- Front
5	1700046	1	3” x 18” Duchman Belt
6	1700052	2	1/8” x 18” Lacing Cable
7	4900072	4	#10 Hex Nut
8	2000501	2	1-1/2” Pillow Block Bearing
9	1000159	1	50B18H 1-1/2” Bore Sprocket
10	1000175	1	50B18H 1” Bore Sprocket
11	1100184	1	50-2-17 Link Dbl. Chain
12	1100099	1	50-2 Connector Link
13	4800003	10	3/8” x 1” Bolt
14	5000001	6	3/8” Flat Washer
15	5000019	10	3/8” Lock Washer
16	4900002	10	3/8” Nut
17	4700871	1	Magnetic Roller - Chute Complete
	4701290		Shft\Rllr\Magnetic\18” Rllr

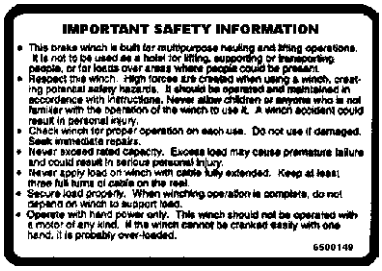
6500042

6500115

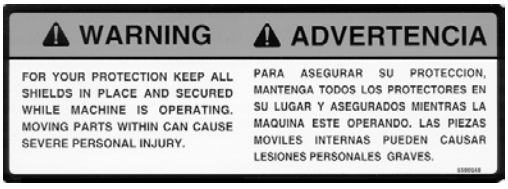
6500043

6500118

6500082

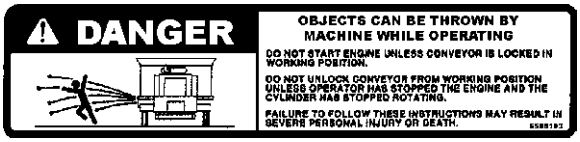


6500149

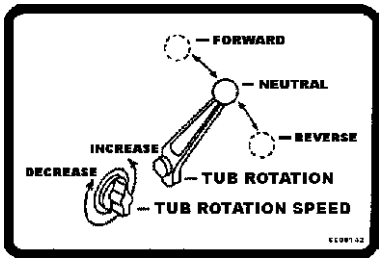


6500040

6500121



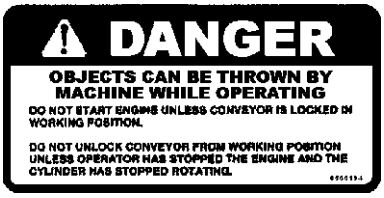
6500193



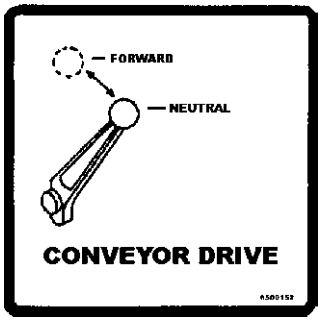
6500142

DIESEL
FUEL

6500123



6500194



6500152

HYDRAULIC
OIL

6500124

ENGINE SERVICE REPORT

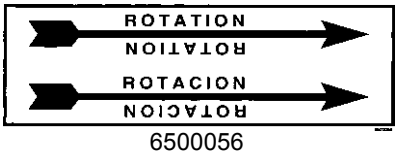
____ Check engine oil level.
____ Check engine coolant.
____ Check batteries.
____ Check air cleaner for obstructions.
____ Check exhaust for obstructions.

6500132

6500052

H D - 8

6500165



6500056

INDUSTRIAL
GRINDER

6500166

6500156

DURATECH

6500200

RECYCLE

6500157

6500155

DECALS

ITEM	PART NO.	QTY.	DESCRIPTION
1	6500115	2	Keep Off
2	6500157	2	Recycle
3	6500200	2	Duratech\2-1/2"\Silver
4	6500082	4	Rotating Parts
5	6500042	2	Wheel Bolts
6	6500040	4	Keep Shields In Place
7	6500041	2	For Youir Protection
8	6500043	2	No Riders
9	6500056	2	Rotation
10	6500118	2	Danger- Objects Thrown by Machine
11	6500123	1	Diesel Fuel
12	6500124	1	Hydraulic Oil
13	6500121	1	Important (DO NOT ENGAGE)
14	6500165	2	HD 8
15	6500149	1	Winch Safety
16	6500132	1	Engine Service Report
17	6500142	1	Tub Rotation & Speed
18	6500152	1	Conveyor Drive
19	6500052	1	Oil Level
20	6500193	1	Danger Objects Can Be Thrown - Failure
21	6500194	1	Danger Objects Can Be Thrown
22	6500166	2	Industrial Grinder
23	6500155	1	4" Stripe 122"
24	6500156	1	2" Stripe 223"
25	6500192	1	Decal Kit HD-8

Clearing the Way for a Better Tomorrow