



**DURATECH<sup>®</sup>**

**HD-10  
INDUSTRIAL  
GRINDER  
  
OPERATOR'S  
MANUAL  
& PARTS BOOK**

**Serial Numbers up to 411**

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DuraTech Industries International Inc., PO Box 1940, Jamestown, ND 58402-1940

0500039

Sept. 98

## WARRANTY

Duratech Industries International, 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, N.D., within thirty (30) days of failure.

This warranty shall become void if in Duratech Industries International's judgment 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. Buyer must rely solely on the existing warranty, if any, of these respective manufacturers.

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

Duratech Industries International reserves the right to make changes in materials and/or designs of this product at any time without notice.

This warranty is void if Duratech Industries International does not receive a valid warranty registration card at its office in Jamestown, N.D., 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.

# INDUSTRIAL GRINDER DELIVERY AND SERVICE REPORT

- \_\_\_\_\_ Dealer assisted the customer in filling out the warranty registration form.
- \_\_\_\_\_ The customer was provided with the appropriate engine operators manual and the grinder operators manual.
- \_\_\_\_\_ The dealer read the operator manuals and explained in detail the operation, adjustment procedures, maintenance and safety instructions to customers.

After performing the necessary assembly, check the following items carefully and make corrections when necessary!

## CHECKED AND FOUND TO BE ACCEPTABLE:

- \_\_\_\_\_ Check the machine for shipping damage or shortage.
- \_\_\_\_\_ Check the machine for loose bolts.
- \_\_\_\_\_ Lubricate entire machine according to the lubrication chart found on pages 9-11.
- \_\_\_\_\_ Check engine oil level
- \_\_\_\_\_ Check engine coolant.
- \_\_\_\_\_ Check batteries.
- \_\_\_\_\_ Check air cleaner for obstructions.
- \_\_\_\_\_ Check exhaust for obstructions.
- \_\_\_\_\_ Read Engine Pre-Start-up check list in engine operation manual.
- \_\_\_\_\_ Check hydraulic oil level, page 4.
- \_\_\_\_\_ Check hydraulic connections for tightness.
- \_\_\_\_\_ Check for correct hammer arrangement, page 14-16.
- \_\_\_\_\_ Check for proper function of tub rotation control valve, page 23.
- \_\_\_\_\_ Check for proper function of electronic governor, page 23.
- \_\_\_\_\_ Check all chains for proper alignment, page 12.
- \_\_\_\_\_ Check all chains for proper tension, page 12.
- \_\_\_\_\_ Check elevator belt tracking.
- \_\_\_\_\_ Check elevator belt tension, page 12.
- \_\_\_\_\_ Check condition of tire rims.
- \_\_\_\_\_ Check wheel lug bolts for tightness.

- \_\_\_\_\_ Check tires for proper air pressure, page 12.
- \_\_\_\_\_ Check lights for proper function.
- \_\_\_\_\_ Check brakes for proper function.
- \_\_\_\_\_ Check the hydraulic components for leaks.
- \_\_\_\_\_ Verify that all shields are installed and in good condition.
- \_\_\_\_\_ Pointed out all safety shields and explained the importance of keeping all safety shields and covers securely in place. \_\_\_\_\_
- \_\_\_\_\_ Check condition of all safety, operation, and maintenance decals.

I HAVE CHECKED ALL THE ITEMS AND TEST RUN THE MACHINE.  
THIS MACHINE IS READY FOR CUSTOMER USE.

Dealer's Signature \_\_\_\_\_

Model No. \_\_\_\_\_ Serial No. \_\_\_\_\_ Date of Purchase \_\_\_\_\_

*Please return this report with the Warranty Card.*

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## 2 SAFETY INSTRUCTIONS

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

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**WARNING: BEFORE ATTEMPTING TO OPERATE YOUR GRINDER, CAREFULLY READ AND FOLLOW INSTRUCTIONS GIVEN BELOW AND CONTAINED ELSEWHERE IN THIS MANUAL.**

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

**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 Haybuster Manufacturing Co.
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 operation 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 folding or unfolding discharge conveyor follow the procedure found on page 10.
15. The standard (manual winch) conveyor is equipped with telescoping, safety bars. Use these bars when grinding or transporting. Do not rely solely on winch to support conveyor.
16. While operating the conveyor with hydraulic lift and fold, be sure all spectators are clear of the area.
17. The tilting platform comes equipped with both semi-automatic and manual safety bars. Never work around or under the platform when the platform is lifted unless the safety stops are installed on both lift cylinders. Follow semi-automatic safety bar operation procedure found on page 7.

### DURING OPERATION

1. Enforce the following safety precautions and others contained in this manual to prevent serious personal injury or death due 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 engine.

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 shield 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 & 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 Haybuster 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 system.
5. 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 than your hands. If injured, seek

medical attention immediately to prevent serious infection or reaction.

6. 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.

**WARNING: FAILURE TO COMPLY WITH ANY OF THE PRECEDING SAFETY INSTRUCTIONS OR THOSE THAT FOLLOW WITHIN THIS MANUAL MAY RESULT IN SEVERE INJURY OR DEATH.**

**THIS GRINDER IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THAT FOR WHICH IT IS INTENDED AS EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING MATERIALS AND OTHER PERTINENT WRITTEN MATERIAL PREPARED BY HAYBUSTER MANUFACTURING.**

## SAFETY DECALS

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 remain in good condition, follow the instructions given below:

1. Keep decals clean. Use soap and water — not mineral spirits, adhesive cleaners, and other similar cleaners that will damage the decal.
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## 4 SAFETY INSTRUCTIONS

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2. Replace any damaged or missing decals. When attaching decals, surface temperature of the metal must be at least 40° Fahrenheit. The metal 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.

### **IMPORTANT SAFETY INFORMATION FOR STANDARD (MANUAL WINCH) CONVEYOR**

1. This brake winch is built for multipurpose hauling and lifting operations. It is not to be used as a hoist for lifting, supporting or transporting people, or for loads over areas where people could be present.
  2. Respect this winch. High forces are created when using a winch, creating potential safety hazards. It should be operated and maintained in accordance with instructions. Never allow children or anyone who is not familiar with the operation of the winch to use it. A winch accident could result in personal injury.
  3. Check winch for proper operation on each use. Do not use if damaged. Seek immediate repairs.
  4. Never exceed rated capacity. Excess load may cause premature failure and could result in serious personal injury.
  5. Never apply load on winch with cable fully extended. Keep at least three full turns of cable on the reel.
  6. Secure load properly. When winching operation is complete, do not depend on winch to support load.
  7. Operate with hand power only. This winch should not be operated with a motor of any kind. If the winch cannot be cranked easily with one hand, it is probably over-loaded.
-



**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 your 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 75 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 75 more gallons of hydraulic oil. This should bring the oil level to within 3½" 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. (Recommend Mobil 423, Co-op Super HTB or similar oil.)**

**CAUTION: In extremely cold weather, it may be necessary to add a gallon of kerosene to the reservoir tank to thin down the 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 CHECKS**

Before operating the Tub Grinder, follow these instructions:

1. Read and have a thorough understanding of the operator's manual, especially the sections pertaining to machine operation and safety.
  2. Be sure anyone who will assist you in the operation of this machine knows how the machine operates.
  3. Know the machine's safety features and understand the safety precautions.
  4. Be sure all lubrication points have been lubricated. **See lubrication chart.**
  5. Give the machine a "once-over" for any loose bolts.
  6. Make sure machine is properly adjusted. See Adjustments, pages 8 through 31.
  7. Check engines oil level and coolant level.
  8. Check hydraulic oil level.
  9. 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 than your hands. If injured, seek medical attention immediately to prevent serious infection or reaction.**
10. Visually examine cylinder to see if any parts show excessive wear. These parts include shaft, plates, rods, hammers and moveable plate.
  11. Check screens, screen hold downs, for wear and tightness.
  12. Visually examine cylinder bearings and mounting bolts.
  13. Check all bearings for wear.
-

## 6 BEFORE OPERATING

14. Always grind with the machine stationary.
15. 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.
16. Start the machine and check the tub direction, speed control governor for proper operation.
17. In cold weather, allow five minutes for the machine to warm up before grinding.
18. Make sure all shields and guards are in place.
19. Lug nuts for tightness.
20. Condition of tire rims.
21. Tires for proper air pressure.
22. Installation and condition of hammers.
23. Chains and belts for proper tension and condition.
24. Condition of decals.

### SCREEN SELECTION

All Haybuster grinders have two screens. They come equipped from the factory with a 2" diameter hole screen and a 3" diameter hole screen. Any combination of hole sizes may be used.

If a combination is used, the smallest hole diameter should be placed on the side of the cylinder box where the material enters the cylinder.

The coarseness of the material to be ground is determined by the hole size in the screens. Hole sizes can vary from  $\frac{3}{4}$ " diameter through 4" diameter. The larger the hole diameter the coarser the grind.

### SCREEN SELECTION

Round perforated screens available are:  $\frac{3}{4}$ ", 1", 2", 3", 4".

Slotted screens, and dummy 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.**

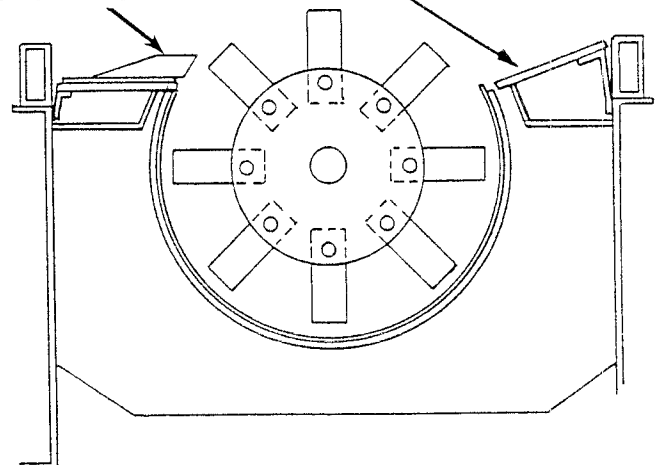
### INSTALLING A SCREEN

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

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

SCREEN HOLDDOWN BAR

SLUGBUSTER



The tilting platform comes equipped with both semi-automatic and manual safety bars. Never work around or under the platform when the platform is lifted unless the safety stops are installed on both cylinders, follow the semi-automatic safety bar operation procedure.

**WARNING:**

**TO RAISE PLATFORM:**

1. Check to see that safety bar handle is tripped into up position.
2. Slowly raise platform until cylinders are fully extended.
3. Slowly lower platform until safety latch engages.

**TO LOWER PLATFORM:**

1. Check to see that safety bar is engaged and frame is free of all foreign material.
  2. Manually trip safety bar handle into the down position.
  3. With all bystanders clear of area, slowly raise platform until safety bar disengages.
  4. Slowly lower platform until it returns into working position.
-

## 8 OPERATION

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

### INTRODUCTION

The Electronic Governor controls the feed rate to keep the engine at its peak power point. The operator is able to select the operating range so that when the feed of material lugs down the engine. The Electronic Governor will stop the feed at a high enough PTO speed to allow the engine to recover automatically.

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

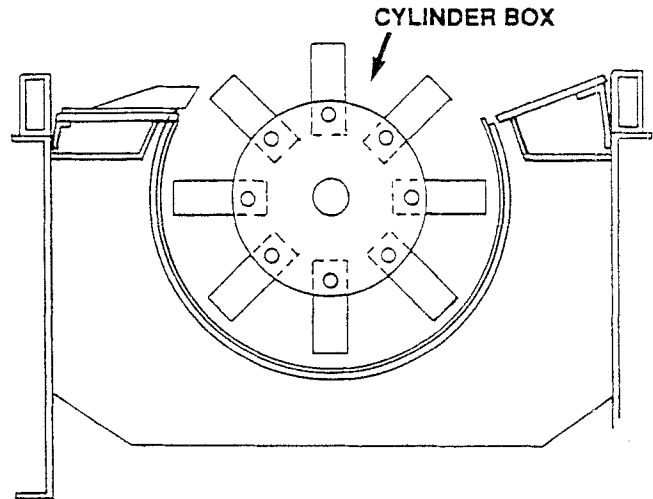
**IMPORTANT:** Do NOT engage clutch at high engine rpm. Before starting engine, cylinder box should be cleared of all material. Set engine at approximately 1000 rpm. Pull firmly on lever when engaging clutch to prevent excessive slippage. Check periodically for proper adjustment according to spec. plate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

### ADJUSTMENT

**CLUTCH** - if the clutch slips, overheats, or the clutch operating lever jumps out, the clutch must be adjusted. To adjust the clutch remove the hand hole plate in the housing and rotate the clutch until the adjusting lock screw can be reached. Remove or disengage the adjustment ring lock.

**HE CLUTCH** - turn the adjusting ring counter clockwise to obtain recommended operating lever pressure.

**HD CLUTCH** - Turn the adjusting ring clockwise to obtain recommended operating lever pressure.



A new clutch generally requires several adjustments until the friction surfaces are worn in. Do not let a clutch slip as this will glaze the friction plates and may ruin them.

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

### OPERATION

The basic operation functions are as follows:

1. The Electronic Governor monitors the speed of the engine. The hydraulic flow to the feed mechanism is regulated proportionally to the engine PTO speed. The flow is cut back, slowing the feed, as the PTO speed slows, and flow is increased, increasing the feed, as the PTO speeds up. The regulation range is moved by adjusting the "control" knob on the front of the governor. Turning the "control" knob counter clockwise will increase the load on engine by keeping the feed (tub rotation) engaged at a lower engine rpm.

Turning the "control" knob clockwise will decrease load on engine by disengaging the feed (tub rotation) at a higher engine rpm. **Note: With control box switched to manual, the tub will continue to rotate regardless of engine rpm. The Electronic Governor is mounted on the engine.**

2. Valve to control tub rotation, with forward, neutral, reverse positions, and tub rotation speed knob to increase or decrease speed. Mounted on engine.
3. Valve to control platform cylinders, with raise, neutral, lower positions, and to control conveyor orbit motors, with forward, neutral, and reverse positions. Mounted on right side of main frame by step.
4. (OPTIONAL) Valve to control conveyor cylinders, with raise, lower positions, and fold, unfold positions. Mounted on right rear corner of main frame.
5. Engine gauges, see engine operation manual.
6. (OPTIONAL) Emergency shut down switch.
7. When first starting machine, run at less than full throttle to allow hydraulic system to warm up before operating.
8. **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.**
9. With engine running at full throttle, turn control knob clockwise to max position and set toggle switch in auto position. Engage tub control level. Check indicator light on your control box before doing any adjusting! At this point, the auto light should be lit. If it is not, read the trouble shooting section, pages 27 through 31.
10. If tub is not turning, turn the "control" knob counter clockwise until tub begins to rotate. If you are unable to engage tub, read trouble shooting section, pages 27 through 31.
11. If tub is turning, you are ready to proceed to the grinding section of this book. Remember the "control" knob adjusts the load placed on the engine and under normal conditions will be the only adjustment you will have to make!

Haybuster Manufacturing 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 27 through 31.

## GRINDING

Materials to be ground should be placed directly into the tub. The best methods 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. With engine running at full throttle, turn control knob clockwise to max position and set toggle switch in auto position. Engage tub control level. Check indicator light on your control box before doing any adjusting! At this point, the auto light should be lit. If it is not, read the trouble shooting section, pages 27 through 31.
3. Fill the tub about half full of unground materials before starting tub rotation.
4. Start tub. (See steps 10, 11 found under operation.)
5. 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.

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# 10 OPERATION

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**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.**

## STOPPING THE MACHINE

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

**CAUTION:** If the grinder becomes plugged or if the cylinder requires maintenance, do not raise the platform with the tub full of material. This may damage the frame and platform, this type of damage is not covered under warranty!

## TRANSPORTING

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

## TO PREPARE FOR ROAD TRANSPORT

1. Be sure all loose parts (shields, screens, extra hammers) are securely fastened down.
  2. Make sure all bystanders are clear, moving parts can cause injuries.
  3. Read manual winch safety information found on page 3.
  4. The standard (manual winch) conveyor is equipped with telescoping safety bars. Use these bars when grinding or transporting. Do not rely solely on winch to support conveyor.
  5. When folding the conveyor, lower discharge conveyor down until it's level with the ground. Release tension adjusting handle on idler roller. Push down on folding part of conveyor while releasing latch handle. **NOTE: Discharge end will raise slightly when latch is released.**
  6. Standing beside conveyor, raise discharge end and follow it over to its folded position. Reverse procedure to unfold. Make sure no one positions themselves inside or under conveyor while folding or unfolding.
  7. Lock conveyor in folded position. Raise conveyor and lock in transport position. While operating the conveyor with hydraulic lift and fold. Be sure all spectators are clear of the area.
  8. Secure all conveyor transport bars (4) into their proper locations.
  9. Hitch the grinder to a towing vehicle with adequate load carrying and breaking capacity. Be sure to attach safety chains between towing vehicle and grinder.
  10. Hook up the electrical and air connectors.
  11. Raise the dollies and lock the handle in its storage position.
  12. Check lights and brakes for proper function.
  13. Check the turning clearance between grinder and the towing vehicle.
  14. Check local ordinances regarding restrictions for machine travel on local roads.
  15. Be aware of machine width at all times; do not exceed 55 mph.
  16. Check your state laws regarding the use of lights, slow moving vehicle signs, safety chain and other possible requirements.
  17. Be sure brakes are properly adjusted.
  18. Use good judgment and drive carefully, especially over rough and uneven roads.
-

**CAUTION: Always shut off machine before adjusting or lubricating.**

**Hydraulic oil reservoir capacity:** (150 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

Bearings 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 temperature 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.

**LUBRICATION CHART**

Ref. No.	Location	No. of Zerks	Frequency	
1	Tub Drive Shaft	2	40 hrs.	
2	Tub Rollers	6	40 hrs.	*
3	Tub Chain Idler Cast	2	5 hrs.	
4	Discharge Conveyor	4	40 hrs.	*
5	Belly Conveyor	4	40 hrs.	*
6	Cylinder	2	10 hrs	*
7	Tub Pressure Roller	4	Annually	
8	Wheel Bearings		Annually	
9	P.T.O.		40 hrs.	*
10	Roller Chains		Oil Daily in Dusty Conditions	

# 12 LUBRICATION

## 3½" BEARING LUBRICATION AND MAINTENANCE

### INSPECTION

Inspect shaft. Ensure that the shaft is smooth, straight, clean and within commercial tolerances.

Inspect bearing. Do not allow bearing to be exposed to any dirt or moisture. Do not remove slushing compound as it acts as both a protectant and lubricant and is also compatible with standard greases.

### INSTALLATION

**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.

**NOTE:** Housing caps and bases are not interchangeable, they must be matched with mating half. Install non-expansion bearing first.

1. Apply a light coating of oil or other rust inhibitor to the adapter area of the shaft.
2. **Measure the internal clearance of the bearing before mounting.** Place the bearing in an upright position as shown in **Figure 1**. Seat the inner ring and roller elements by pressing down firmly on the inner ring bore while rotating the inner ring a few times. Position the roller assemblies so that a roller is at the top most position on both sides. Press these top rollers inward ensuring contact with center guide flange (above 6½" only). Using a feeler gauge measure the clearance for both sides by inserting as far as possible and sliding over top of roller (Figure 1). Write down the measured clearance for use in step 3e. **NOTE:** Do not rotate bearing when moving feeler between roller and outer ring.

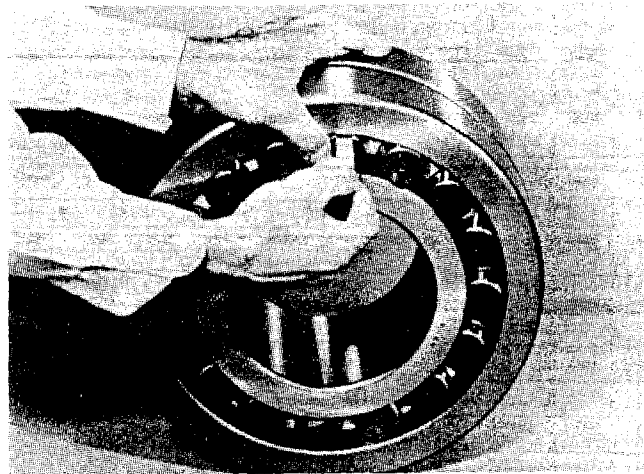


Figure 1 - Internal Clearance

3. Install the bearing parts in the following sequence (refer to Figure 3). **NOTE:** bearing can only be correctly installed one way, refer to **Figure 2** on page 14.
  - a. **V-ring Seal:** slide one of the V-ring seals onto the shaft, **making sure lip is toward the bearing.** Set aside until step 11. **NOTE: Do not install V-ring seal on seal ring until housing cap has been set in place and tightened.**
  - b. **Seal Ring:** install a seal ring on shaft with the largest O.D. toward bearing.
  - c. **Adapter:** slide adapter onto the shaft, threaded end outboard to the approximate location of the bearing. Apply light coating of oil to sleeve O.D. **Do not use grease.**
  - d. **Bearing:** make sure that the internal clearance has been written down. Install bearing on adapter sleeve, large end of tapered bore first. Locate bearing in proper position on shaft. Before tightening refer to **Figure 2** and Table 4 on page 14.
  - e. **Lockwasher and Locknut:** install the lockwasher (8" and smaller sizes only) on the adapter with inner prong located in the slot and toward the bearing. Install lock nut, chamfered face toward bearing.  
4" shaft and smaller: tighten locknut using a spanner wrench and hammer until clearance noted in step 2 is **reduced** by amount shown in Table 1. During this step shaft should be supported so all weight is off of the bearing.



3½" BEARING LUBRICATION AND MAINTENANCE

4-13/16" to 10½" shaft: tighten locknut by hand followed by light tapping on a bar inserted in notches on O.D. of locknut until snug against bearing. Tighten all MICROMOUNT® screws evenly in sequence, and in small increments (10° to 15° turns) until clearance is **reduced**. Loosen all screws until they are snug at large end of nut. Screws have been staked at factory to prevent removal, however, restake if necessary. Tighten locknut until it is tight against bearing. (Use drift pin and hammer. Do not overtighten.)

Find a lockwasher tab that aligns with a locknut slot and bend tab into slot. If slot is past tab then tighten, not loosen, lock-nut to meet a washer tab. Sizes larger than 8" require a lockplate bolted to the locknut with the inner prong of the plate located in the slot of the adapter sleeve. If necessary, tighten, not loosen, locknut to allow prong to fit in adapter slot. Lock plates for only the 9" must be hand fitted on the job.

Table 1—Internal Clearance Reduction

Shaft Diameter	Reduction in Internal Clearance
3½"	.0018/.0025

f. **Seal Ring:** install a second seal ring with large O.D. toward locknut.

g. **V-Ring Seal:** Slide second V-ring seal on to the shaft, again making certain lip is toward bearing. **NOTE: Do not install V-ring seal on seal ring until housing cap has been set in place and tightened.** See Step 11.

4. Remove any paint, dirt or burrs from the mating surfaces of the housing halves. Thoroughly clean seal grooves on both sides. Set lower half of housing on base with all four cap bolts in place and apply oil to the bearing seats. Apply grease to the seal grooves in the lower housing. **Be sure the housing is positioned as shown in Figure 2 view relative to adapter nut.**

5. Apply grease to the bearings and seal rings. The lubricant should be smeared between the rolling elements. (See Grease Lubrication section).
6. Place shaft with bearing into lower half while carefully guiding the seal rings into the housing grooves as shown in **Figure 4**.
7. Bolt lower half of the non-expansion bearing housing to the base. Move shaft endwise so that stabilizing ring can be inserted between the bearing outer ring and the lower half shoulder on same side as the locknut. Make all other bearings on same shaft expansion by centering in the middle of their housing seat. Bolt expansion housings to base. **NOTE: Only one bearing per shaft is non-expansion, other bearings should be expansion.**

Table 2—Recommended Torque Values

Shaft Size	Housing Cap Bolt Size	Recommended Torque Value (ft.-lbs.)
3½"	5/8—11	80—100

8. When closed end is required, the end plug supplied should be fit into the center seal ring groove of the housing. (See **Figure 4**)
9. Grease the bearing seal grooves in the housing cap and place over the bearing after wiping the mating surfaces. The two dowel pins will align the cap with the lower housing half. **NOTE:** Each cap must be matched with its mating lower half, as these parts are not interchangeable.
10. Tighten cap bolts and nuts to the recommended torque in Table 2.
11. Assure that there is seal running clearance then install V-ring seals onto the seal rings as shown in **Figure 4** and coat V-ring seals with grease.
12. Misalignment of pillow blocks must not exceed values shown on Table 3 on page 14.

# 14 LUBRICATION

## 3½" BEARING LUBRICATION AND MAINTENANCE

Table 3—Static or Dynamic Allowable Misalignment Degrees Spherical Roller Bearings

Shaft Size	Block Size	Triple-Tect Seals	LER	Aux. Seal
3½	520	1°03'	0°46'	0°30'

Table 4—Bearing to Housign Offset—"S" Dimension Expansion brg. located at center of expansion.

Size	Non-Exp.	Exp.	Size	Non-Exp.	Exp.
3½	9/16	3/8	7-15/16-8	29/32	23/32

One Spacer On Each Side Of Bearing

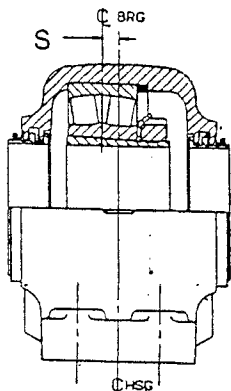


Figure 2

### MAINTENANCE

**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.

Remove housing cap in order to inspect bearing and grease. Before reassembly it is important that the V-ring seals be removed. This will ensure that seal lip will not be damaged while setting cap in place. Reassembly per installation steps 9 thru 11 above.

**Seal Replacement:** When removing bearing it is recommended that V-ring seals and seal rings be replaced.

**Auxiliary Seals:** Install per instruction sheet #499665.

### GREASE LUBRICATION

SAF-XT bearings are specifically designed for dirty, dusty or wet environments. In order to properly protect bearings during installation pack the bearing insert 100% full immediately after having properly mounted bearing on the shaft. If the RPM of the application falls between 20% and 80% of maximum RPM (Table 7), pack the lower half of the housing one-third to one half full. If the RPM of the application is less than 20% of maximum RPM, pack bearing housing cavity 100% full. If the RPM exceeds 80% of maximum RPM, do not add grease in the lower half of the housing nor in the cap.

At each regreasing cycle, for applications up to 80% of maximum RPM, slowly add grease until fresh grease is seen at the seals.

Regreasing should be done while running. Remote regreasing lines should be added to avoid endangering personnel.

**WARNING:** Regreasing requires rotating parts to be exposed. Exercise extreme care during such operations. Failure to observe these precautions could result in bodily injury.

If the RPM is greater than 80% of maximum RPM add 4 strokes of a handgun at each regreasing cycle for bores up to 2". For bores greater than 2" up to 5" add 8 stokes of a handgun at each regreasing cycle. For bores greater than 5" up to 1½" add 16 strokes of a handgun at each regreasing cycle. For units running above 80% of maximum RPM running temperature should be monitored. If a drastic change in running temperature is noted, it is recommended to remove the used grease completely and recharge with fresh grease per the above instructions.

Select a grease with a viscosity at operating temperature which will provide full film lubrication (see Table 5). Assume 50°-100°F increase in bearing temperature above the ambient, depending on r.p.m. and load.

3½" BEARING LUBRICATION AND MAINTENANCE

Table 5—Viscosity of Oil in the Grease

DN	Viscosity for Loads Up To 18% of Dyn. Cap.* (SUS @ operating temp.)	DN	Viscosity for Loads Up To 18% of Dyn. Cap.* (SUS @ operating temp.)
100	3500	1400	625
200	3150	1800	450
300	2750	2000	400
400	2375	3000	300
500	2000	4000	200
600	1750	5000	150
700	1500	6000	130
800	1300	7000	110
900	1075	8000	100
1000	900		

DN = Bore Dia. (INS) x RPM

\*For loads above 18% of dynamic capacity an EP grease with the above viscosity oil is recommended.

Use Table 6 as a general guide for regreasing the bearings. A small amount of grease at frequent intervals is preferable to a large amount of grease at infrequent intervals.

For special applications involving high speeds, high temperatures or oil lubrication consult the factory.

Table 6—Regreasing Intervals (Months) (Based on 12 hour per day 150°F max.)

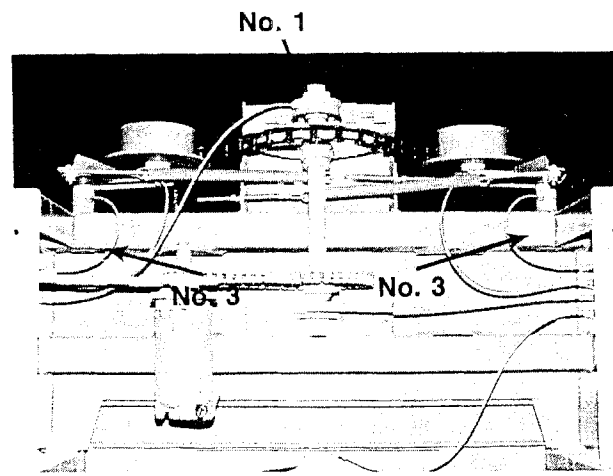
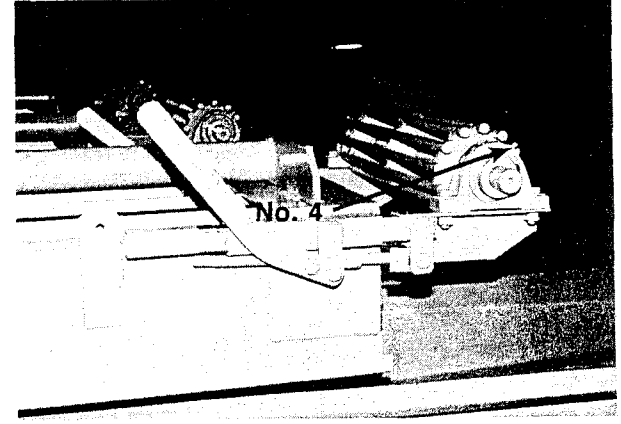
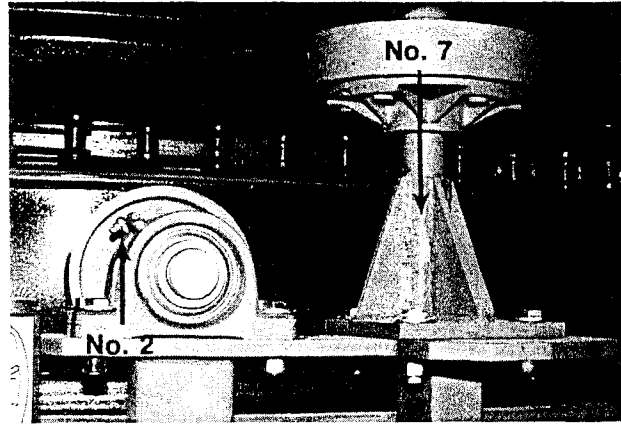
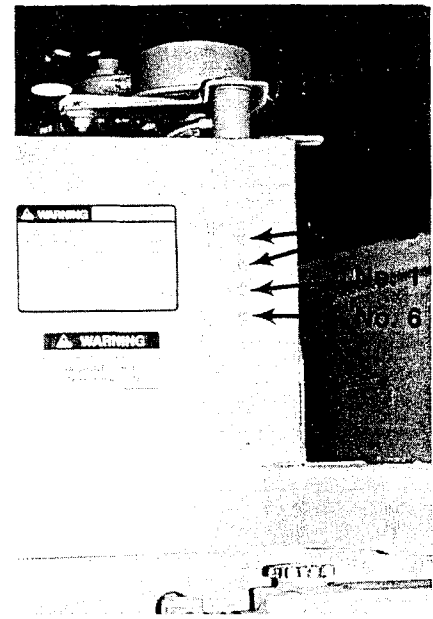
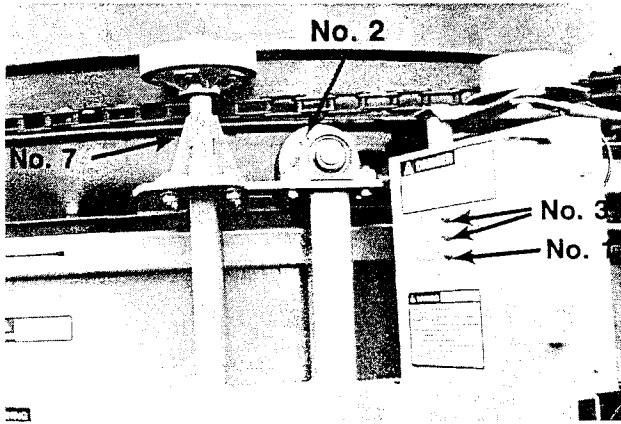
Size	RPM									
	250	500	750	1000	1250	1500	2000	2500	3000	3500
3-3/16 — 3½	5	3	2	1	.5	.5	.25			

Table 7—Maximum RPM (Grease Lubrication)

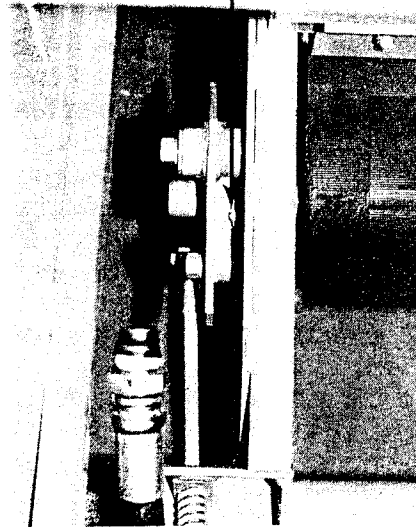
Shaft Size	Basic Bearing Description	Max. RPM
3½	22220K	2200

# 16 LUBRICATION

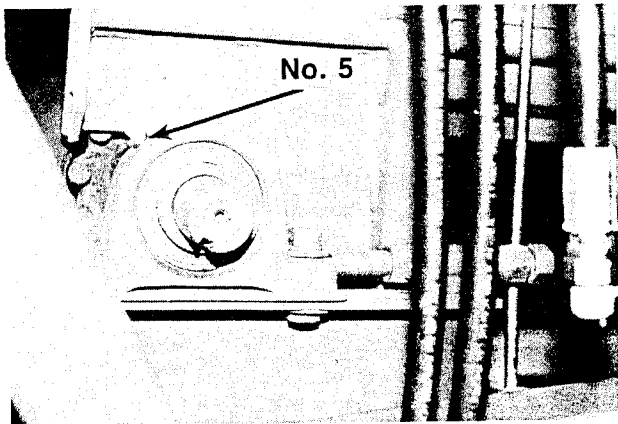
NOTE: Reference numbers on the following pictures correspond with the lubrication chart. See page 15.



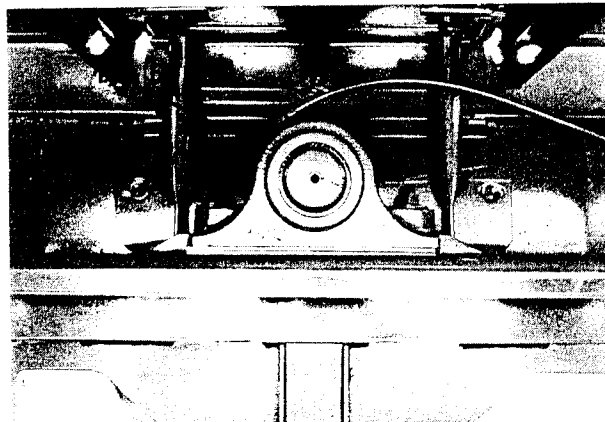
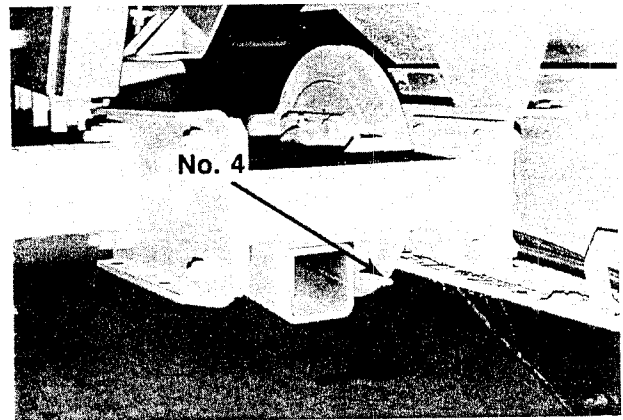
No. 5



No. 5



No. 4



# 18 MAINTENANCE

## 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.

**ADJUSTING CONVEYOR BELT STRETCH:** Both discharge and belly conveyor idler rollers are adjustable to allow for belt stretch. If conveyor belt slows down or stops during operation, tighten both adjusting bolts equally to keep belt centered on idler roller. Due to the conveyors length, the belt will sag on the lower side. This is normal and belt tightness should be judged on slippage.

**CAUTION:** Do not overtighten conveyor belts.

**ADJUSTING CONVEYOR BELT TRACKING:** Both discharge and belly conveyor rollers are adjustable. If belt does not run centered on drive roller, loosen the orbit motor mounts.

**IF BELT IS RUNNING TO THE RIGHT SIDE:** Loosen the right bearing and tighten the belt on the right side to center belt on roller.

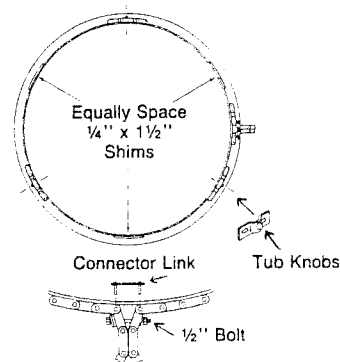
**IF BELT IS RUNNING TO THE LEFT SIDE:** Loosen the right bearing and loosen the belt on the right side to center belt on roller.

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

Adjust idler roller respectively!

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. Inspect the machine for foreign objects wrapped around rotating parts.
4. If machine is going to set for an extended period of time, tub floor should be cleaned to prevent rust and sticking problems at start up time.

5. Tub drive chain is equipped with a spring tensioned idler.
6. Due to normal wear, drive chain may tend to climb on driving knobs of tub. If this should occur, the chain should be sized to fit the tub, and the tub knobs adjusted for proper spacing in the chain. Step 1 (sizing the chain). Loosen tub knobs and rap the chain around tub. (Do not run the chain around tightener rollers or drive gear.) Using  $\frac{1}{2}$ " bolt, pull chain together so center to center on link pins matches pins on 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 shims under tub knobs. (See illustration.) Step 2. Adjust tub knobs so all three knobs contact chain link on the same side of the knobs. Tighten bolts holding knobs in place and return chain to working position.



**Tire Pressure:** The proper tire pressure is 125 psi.

**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.

**Wheel Bearings:** The wheels have tapered roller bearing in an oil bath. The hub is equipped with a transparent oil cap with oil level indicator mark to allow visual checking for adequate lubricant.

Check level periodically. Refill with SAE 80W-90 HYPOID GEAR OIL. This lubrication method assures long bearing life with proper maintenance of oil level.

**Electric Brakes:** The electric brakes should be inspected periodically.

**TORQUE LIMITING CLUTCH**

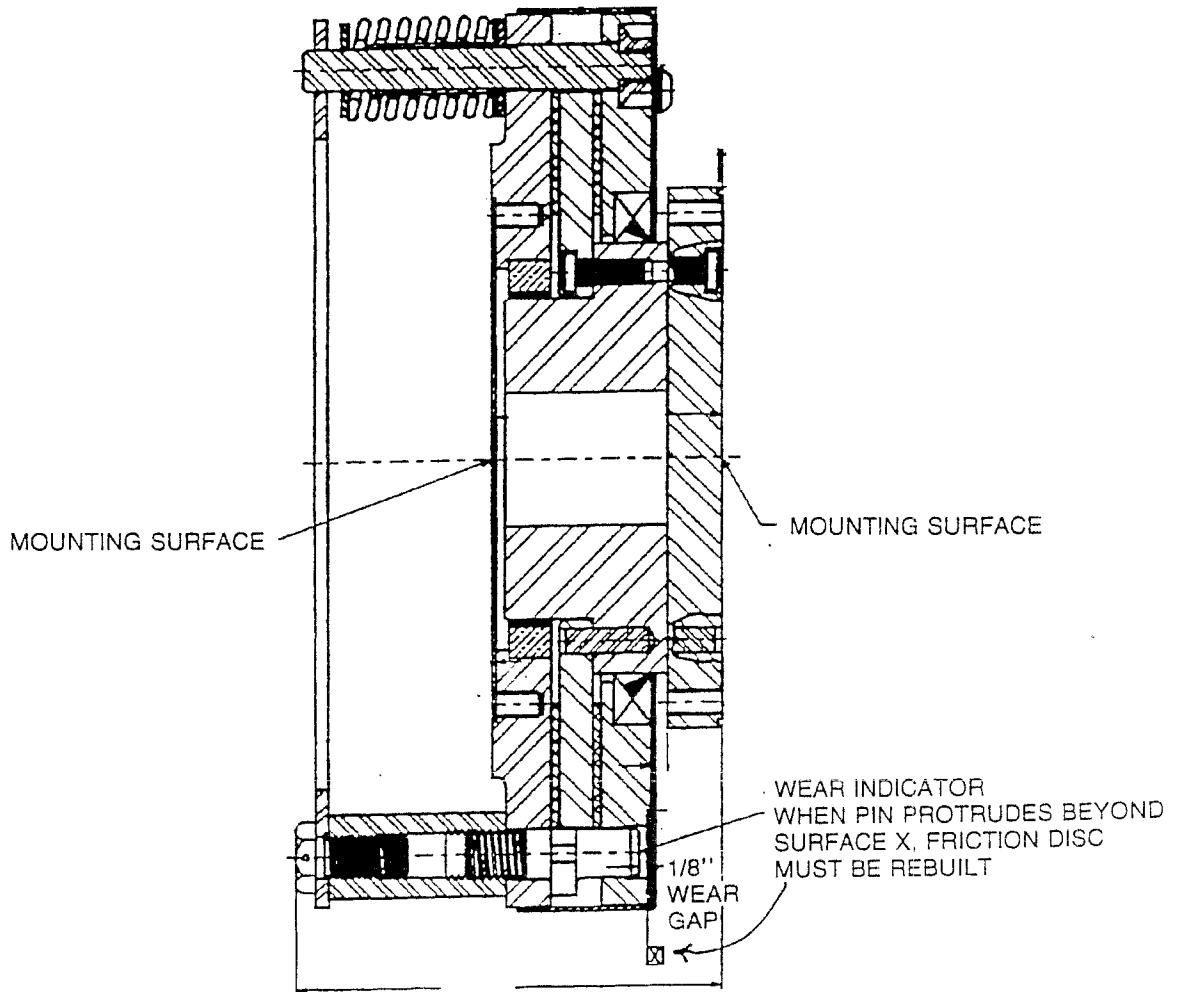
The torque limiting clutch is a unique,

maintenance free, friction type, overload clutch offering precise torque control.

This clutch requires no routine maintenance. It can be allowed to wear until the wear indicator becomes flush with the face surface "X" of the pressure plate.

The wear indicator should be checked as required by the application. The output hub should be replaced when the clutch is deemed to be worn out. If the clutch continues to wear and the wear indicator protrudes, then the clutch torque may drop rapidly.

**WARNING:** Spring bolts contain heavy springs precompressed to high forces. They should not be tampered with. DO NOT attempt to disassemble. If one is damaged, dispose of it in a safe manner.



## 20 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.

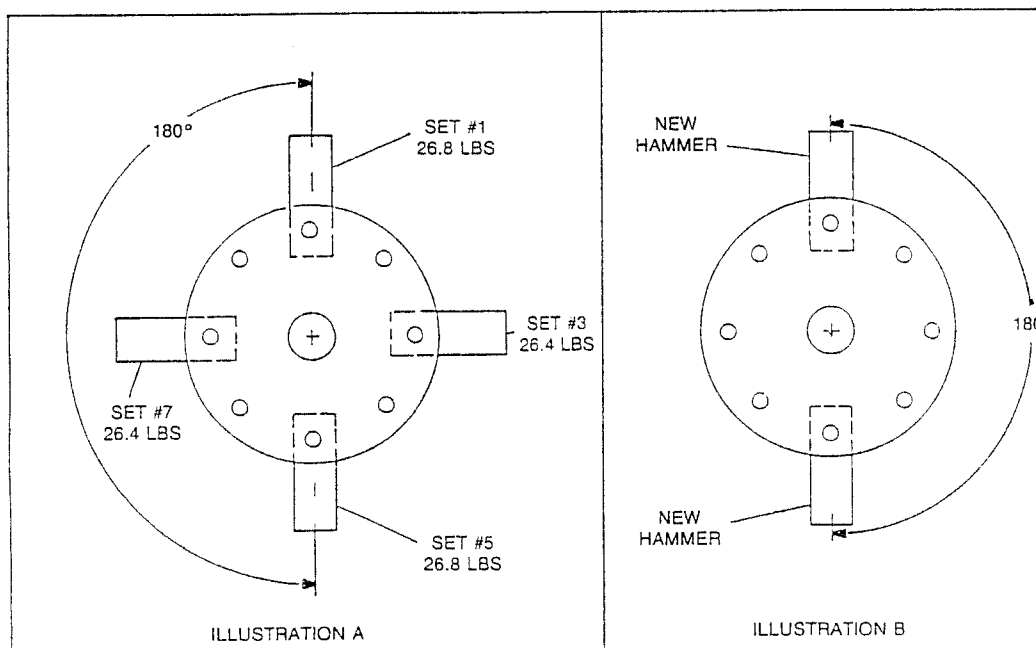
Keep all foreign objects out of the tub and away from the mill. Foreign objects may result in personal injury or cause severe damage to hammers, screens, rods, and other parts which will cause hammermill failure.

When installing or changing hammers, be sure to follow directions on the installation spacers diagram carefully. Misplacement could cause ex-

cessive 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 replacing a worn or broken hammer with a new hammer always install a second new hammer 180° away from the first (See Illustration B). When starting the hammermill after installing a new set of hammer 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.

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. Metals, 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.

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

### 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 cutting edges become rounded, screen 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 on 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.

### HAMMER REPLACEMENT

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

The tilting platform comes equipped with both semi-automatic and manual safety bars. Never work around or under the platform when the platform is lifted unless the safety stops are installed on both cylinders. Follow semi-automatic safety bar operation procedure.

#### **WARNING:**

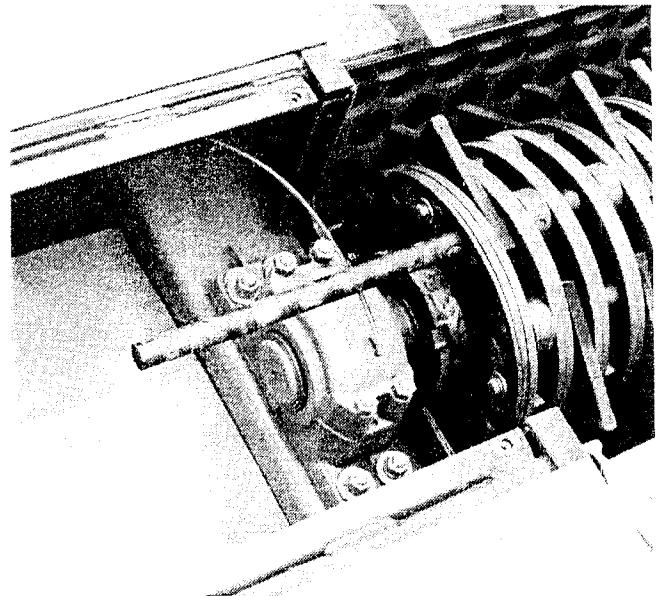
##### **TO RAISE PLATFORM:**

1. Check to see that safety bar handle is tripped into up position.
2. Slowly raise platform until cylinders are fully extended.
3. Slowly lower platform until safety latch engages.

##### **TO LOWER PLATFORM:**

1. Check to see that safety bar is engaged and frame is free of all foreign material.
2. Manually trip safety bar handle into the down position.
3. With all bystanders clear of area, slowly raise platform until safety bar disengages.
4. Slowly lower platform until it returns into working position.

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.



1. Raise platform and secure with safety bars.

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## 22 MAINTENANCE

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2. Loosen four bolts at rear 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 rear 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 lower platform. Follow safety bar operation procedure found on page 7.

### 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 the rod directly across the cylinder. This will maintain a balanced cylinder for vibration free operation.

### BRAKE COMPONENT LUBRICATION

A schedule for the periodic lubrication of brake components should be established by the operator on the basis of past experience and severity of operation.

### LUBRICATION GUIDELINES

**For camshaft roller journals:** Lubricate with high temperature anti-seize grease.

**For anchor pins:** Lubricate with high temperature anti-seize grease.

**For manual slack adjusters:** Lubricate with NLGI Grade 2.

**For automatic slack adjusters:** Lubricate with ASA manufacturers recommended lubricant.

### FREQUENCY OF SERVICE

Camshaft roller journals, anchor pins, slack adjusters every 25,000 to 30,000 miles or every six

months depending on severity of service. (For off-highway use: service every 4 months depending on severity of service.)

**CAUTION: Care must be exercised when lubricating the camshaft bushings and anchor pins. Over lubrication could cause lubrication saturation of brake linings and a possible safety problem.**

**NOTE: Reline shoes or replace with new shoe and lining assemblies when the linings are grease saturated.**

### SUGGESTED PREVENTATIVE MAINTENANCE

**Every 1,000 miles:** Check oil level in wheel hub and inspect wheel for leaks.

**Every 15,000 miles:** Check brake adjustment. Repack wheel bearings (grease application).

**Every 25,000 to 30,000 miles:** Check lining wear and estimate reline time. Inspect camshaft, camshaft spider bushing and camshaft support bracket bushing for any signs of wear. Lubricate brake actuating components.

**Every 100,000 miles, once a year, or at brake reline:** Replace wheel bearing lubricating oil (if applicable). Check brake air chambers and slack adjusters. Inspect brake rollers, roller shafts, anchor pins and bushings and replace if necessary.

### RECOMMENDED BRAKE ASSEMBLY/ DISASSEMBLY PROCEDURE 16½" X 7" BRAKES

#### DISASSEMBLY

1. Release brake and back off slack adjuster.
  2. Remove slack adjuster lock ring and slack adjuster.
  3. Remove brake drum (if outboard mount). Remove hub and drum assembly (if inboard mount).
  4. Disengage the roller retainers from the rollers.
  5. Press down on the bottom brake shoe and remove the lower cam roller. Lift the top shoe and take out the top cam roller.
-

6. Lift out the shoe retractor spring, which is now free of tension.
7. Swing the lower shoe back approximately 180° to relieve the tension on the shoe keeper springs. Remove the springs and slip the shoes off the anchor pins.
8. Remove camshaft lock ring, spacer washer(s) and camshaft.
9. After removing the shoes, completely inspect all brake components, servicing as necessary.
2. Install cam roller, retainer clip and retractor spring retainers onto the brake shoes.
3. Install 1/8" thick camshaft washer onto the camshaft.
4. Install the camshaft into the spider. Install spacer washer and lock ring retainer on camshaft before sliding the camshaft through the camshaft support bracket. Install the slack adjuster, washer and lock ring retainer.
5. Install the brake keeper springs onto the shoes. Install shoes onto the spider by placing shoes in place on the anchor pins, then "wrap" the two shoes into place about the spider.

### REASSEMBLY

1. Install new anchor pin bushings, camshaft bushing and camshaft seals into the spider.

**CAUTION: When installing camshaft seals, the seal on the slack adjuster side is installed with seal facing into spider. This allows grease to purge outside the brake assembly when greasing the camshaft bushing. It also aids to avoid damage of the seal lip when camshaft is installed.**

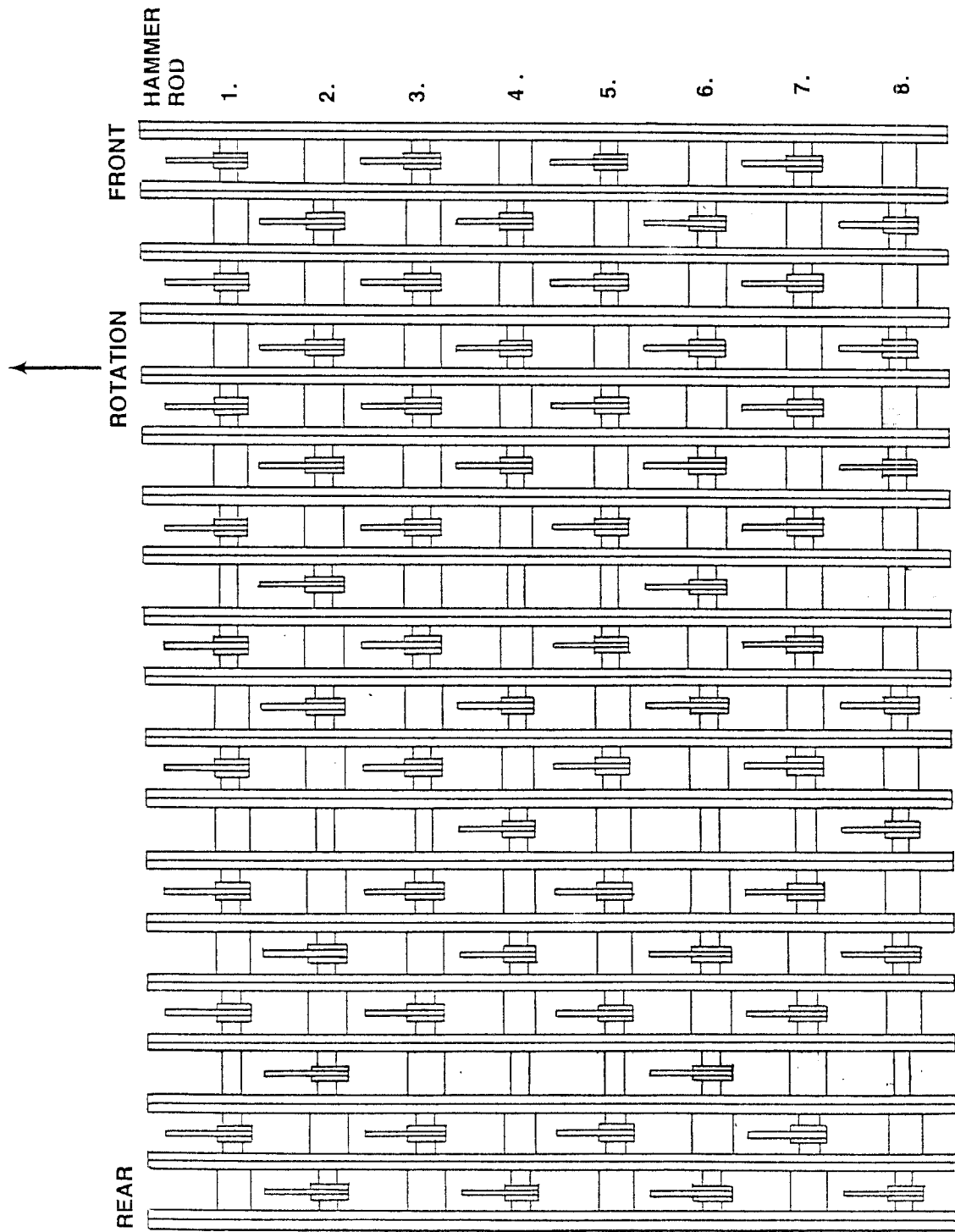
6. Install the shoe retractor spring onto the shoes.
7. Connect slack adjuster to brake chamber pushrod.
8. Adjust brakes as outlined in brake adjustment procedures.

### FASTENER SPECIFICATIONS

Part Name	Model	Size & Thread	Grade	Torque
Spindle Nut Inner (Larger)	D2000	2 5/8 - 16	5	Refer to Bearing Adjustment Section
Outer (Smaller)	D2500	2 5/8 - 16	5	250-300 Lb.-Ft.
Grease Zerk	Cam Bushing	1/4 - 28 UNF	2	5-15 Lb.-In.
	Spider	1/8 - 27 NPT	2	5-8 Lb.-Ft.
Cam Brackets	All Models	1/4 - 20	2	3-4 Lb.-Ft.
Air Chamber Mounting Nuts	All Models	5/8 - 11	5	Hex Nut 85-95 Lb.-Ft. Locknut 120-140 Lb.-Ft.
Anchor Pin Clamp Bolt	12 1/4" Dia. Air Brakes	7/16 - 20	5	60-70 Lb.-Ft.
Dust Shield Mounting	16 1/2" Dia. Air Brakes with Tapped Spiders	5/16 - 18	5	10-15 Lb.-Ft.
Hub Cap	All Models	5/16 - 18	5	10-15 Lb.-Ft.
Drum Mounting Screw	12 1/4" Dia.	5/8 - 18	5	160-180 Lb.-Ft.
Backnut	16 1/2" Dia.	3/4 - 16	5	175-200 Lb.-Ft.
Wheel Nut Inner	10 on 11 1/4	3/4 - 10	5 or 8 (Steel Wheels)	450-500 Lb.-Ft.
Outer	10 on 8 3/4	1 1/8 - 1	8 (Aluminum Wheels) 5	450-500 Lb.-Ft.
Rim Mounting	Demountable Rim Type	3/4 - 10	5	190-210 Lb.-Ft.

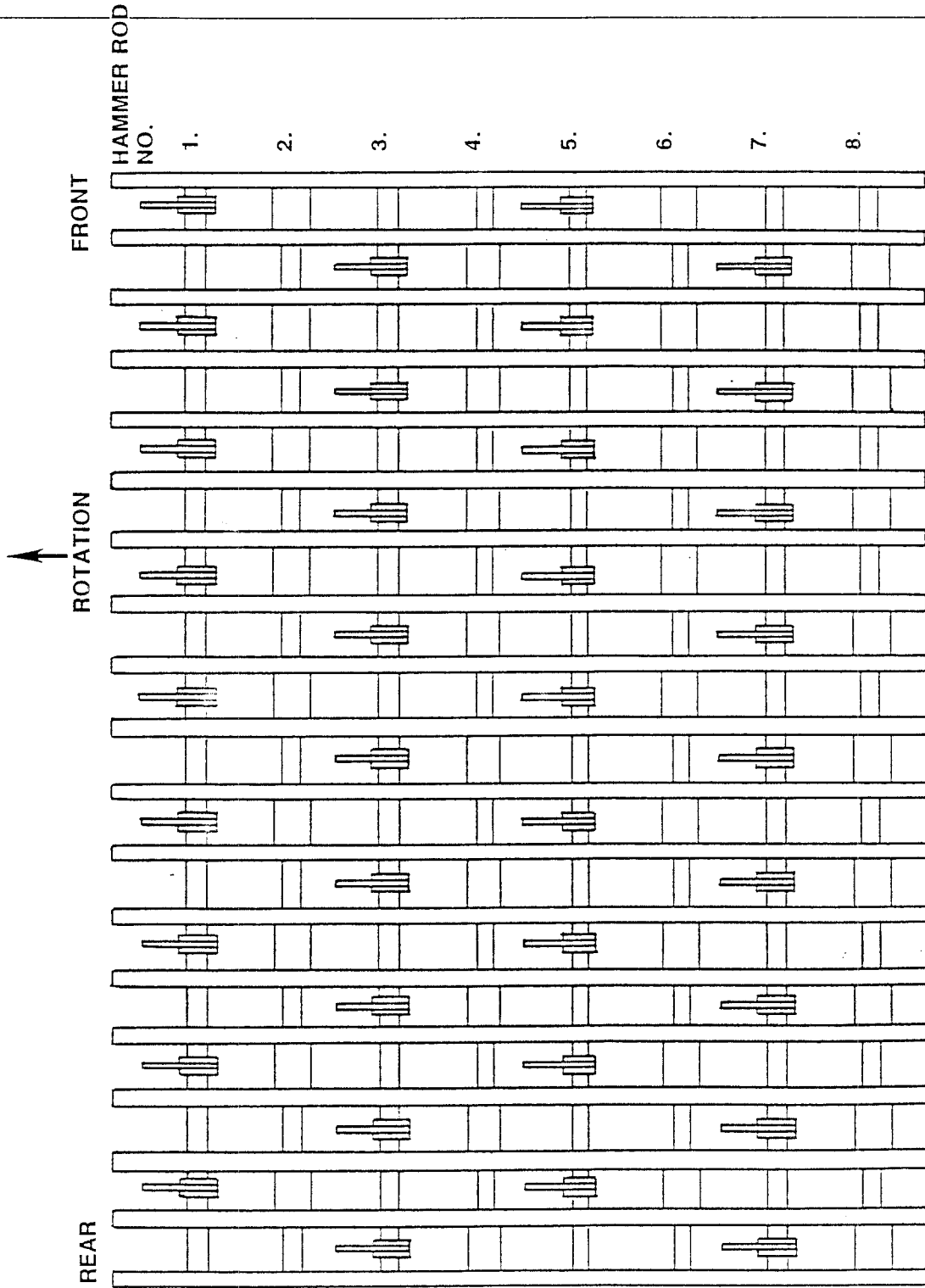
**NOTE: ALL FASTENER PARTS MUST BE CLEAN AND DRY!**

# 24 HAMMER SPACING



HAMMER  
66 REQD

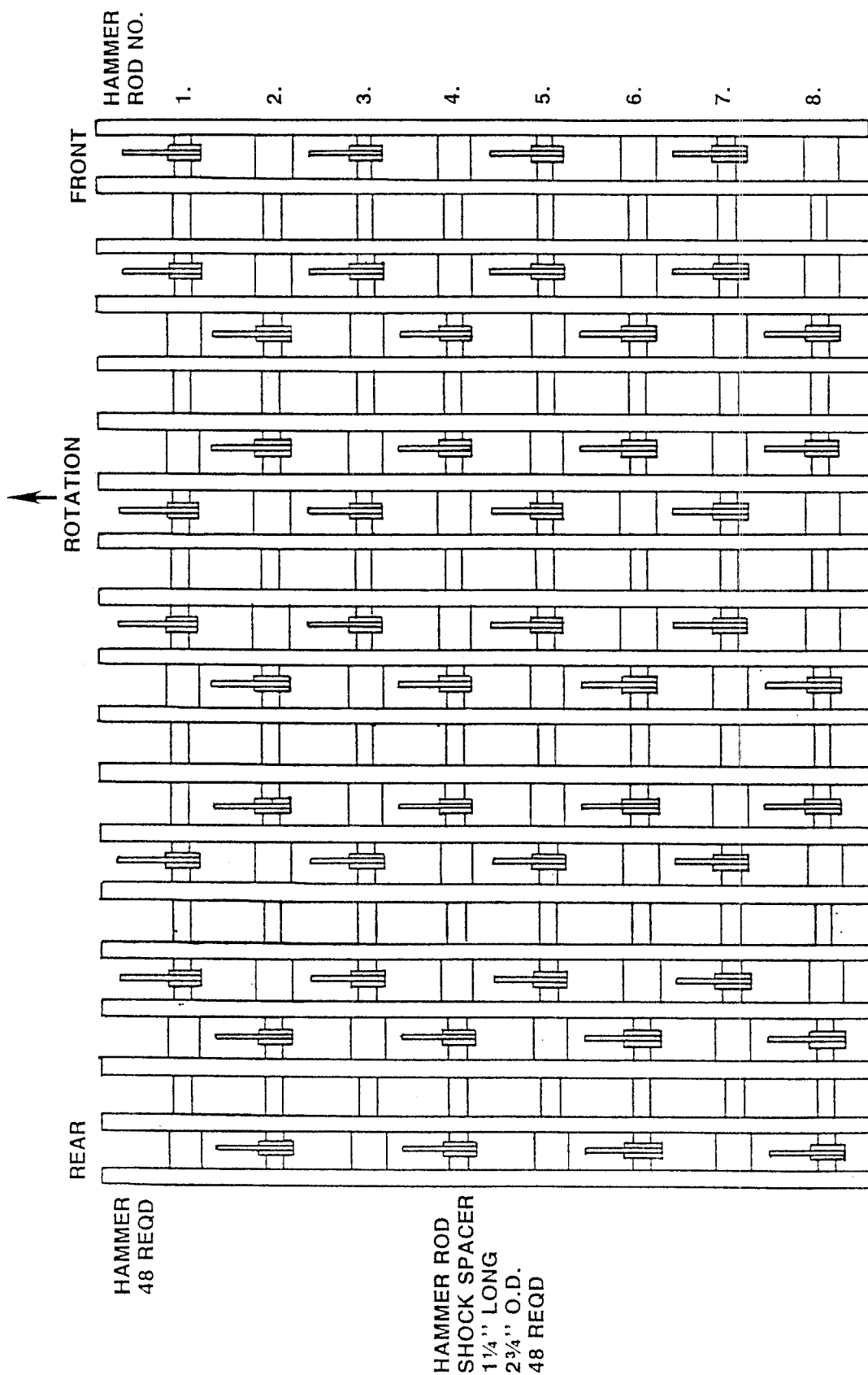
HAMMER ROD  
SHOCK SPACER  
1 1/4" LONG  
2 3/4" O.D.  
66 REQD



HAMMER  
36 REQD

HAMMER ROD  
SHOCK SPACER  
1 1/4" LONG  
2 3/4" O.D.  
36 REQD

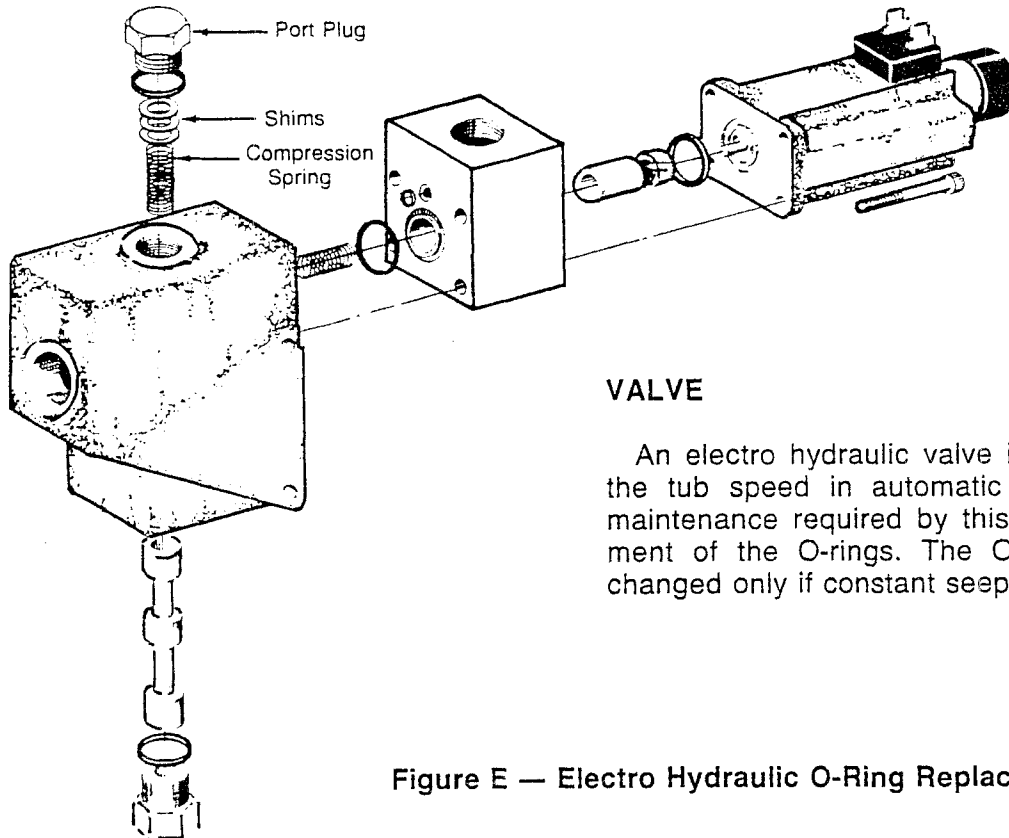
# 26 HAMMER SPACING PAPER GRATE



## MAINTENANCE INSTRUCTIONS

### VALVE

Figure E below shows the O-ring replacement sequence. There may be some shims between the compression spring and the Port Plug (Ref. 1.) Do not add or subtract shims from this assembly.



### VALVE

An electro hydraulic valve is used to control the tub speed in automatic mode. The only maintenance required by this valve is replacement of the O-rings. The O-rings should be changed only if constant seepage occurs.

**Figure E — Electro Hydraulic O-Ring Replacement Sequence**

### HYDRAULIC SYSTEM

Follow Operator's Manual instructions for changing hydraulic oil and filter. Contamina-

tion can cause the electro hydraulic valve to stick. Carefully clean all connections before replacing hoses or working on system.

### ELECTRICAL CONNECTIONS

Periodically check electrical hookups for loose connections and tighten when needed. Check wiring for frayed spots or signs of being rubbed by moving parts.

### FUSE

The Automatic Governor system is protected by a 3-amp AGC fuse located on rear of control box. If no lights come on when basic unit ignition

switch is turned to ON, first try replacing fuse, then proceed to trouble shooting section.

### WARNING LIGHTS

The lights on the control box have replaceable bulbs inside red and amber lenses. To replace the bulb, proceed as follows:

1. Unscrew light from control box.
2. Pull old bulb out of lens.
3. Install new bulb into lens.
4. Screw light back into place.

## 28 TROUBLE SHOOTING

Problem	Cause	Remedy
1. No grinding capacity	<ol style="list-style-type: none"> <li>1. Screen plugged</li> <li>2. Badly worn screens and/or hammers</li> <li>3. Material too light or fluffy</li> </ol>	<ol style="list-style-type: none"> <li>1. Clean holes in screen</li> <li>2. Replace or turn worn parts</li> <li>3. Mix with heavier material</li> </ol>
2. Tub slows down or turns slowly	<ol style="list-style-type: none"> <li>1. Hydraulic speed control valve closed</li> <li>2. Low hydraulic pressure</li> <li>3. Governor not adjusted properly</li> </ol>	<ol style="list-style-type: none"> <li>1. Open valve</li> <li>2. Tighten hydraulic pump drive belt</li> <li>3. See (Governor adjustment)</li> </ol>
3. Excessive vibration	<ol style="list-style-type: none"> <li>1. Broken hammer</li> <li>2. Defective cylinder bearing</li> <li>3. Misaligned or worn PTO</li> <li>4. Wire or foreign material wrapped in cylinder</li> </ol>	<ol style="list-style-type: none"> <li>1. See (Hammer replacement)</li> <li>2. Replace bearing</li> <li>3. Replace worn part or complete PTO</li> <li>4. Remove material</li> </ol>
4. Engine loses excessive RPM's before tub stops	<ol style="list-style-type: none"> <li>1. Governor not adjusted properly</li> </ol>	<ol style="list-style-type: none"> <li>1. See (Governor adjustment)</li> </ol>
5. Cylinder slugs	<ol style="list-style-type: none"> <li>1. Slugbuster removed</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace slugbuster</li> </ol>
6. If tub runs with control box switch off. Disconnect wires at valve.		
a. If tub stops	<ol style="list-style-type: none"> <li>1. Control box is out of adjustment</li> <li>2. Control box is faulty</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust Control Box</li> <li>2. Replace control box</li> </ol>
b. If tub keeps turning	<ol style="list-style-type: none"> <li>1. Valve override screw is adjusted in too far</li> <li>2. Valve is faulty</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust override screw</li> <li>2. Replace valve</li> </ol>
7. If tub stalls	<ol style="list-style-type: none"> <li>1. Pressure relief valve in control valve set to low</li> <li>2. Tub overloaded due to wet, tough grinding material</li> <li>3. Too much material in tub</li> <li>4. Tub binding</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust to 2,000 PSI max.</li> <li>2. Reduce amount of material in tub</li> <li>3. Reduce amount of material in tub</li> <li>4. Remove material causing problem</li> </ol>
8. If oil overheats	<ol style="list-style-type: none"> <li>1. Pressure relief valve in control valve set to low</li> <li>2. Tub overloaded</li> <li>3. Worn pump, control valve, hvd. motors</li> </ol>	<ol style="list-style-type: none"> <li>1. Readjust to 2,000 PSI max.</li> <li>2. Reduce amount of material in tub</li> <li>3. Service hyd. components as necessary</li> </ol>

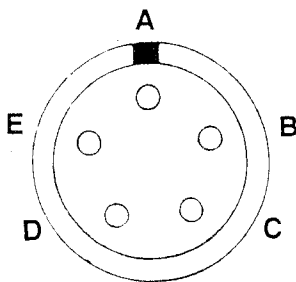


## TROUBLE SHOOTING INSTRUCTIONS

This guide is intended to help you eliminate trouble with your Electronic Governor System. If the problem remains after following these trouble shooting steps, follow the directions under "Manual Override", and see your local dealer as soon as possible.

## WIRING CONNECTIONS

Certain instructions will refer to one or more wiring harness pins for voltage or resistance checks. To find the pins, remove the harness connector from the back of the control box. The drawing below identifies the pin letters called out, the color of wire to each pin and each wire's connection and purpose.



- A — 13 volts DC, ignition
- B — Ground
- C — Digital sensor signal\*
- D — (+) to valve
- E — (-) to valve

1. **To Check Sensor:** Disconnect wiring harness at control box. Locate pin B and C. With voltmeter set on A.C. place one lead on pin B and the other on pin C. Run grinder at full RPM (2000 RPM at cylinder shaft). Voltmeter reading should be at least 2 volts A.C. A lower reading indicates an incorrect gap setting, it should be about 3/32" or (the thickness of a nickel). No reading indicates a damaged sensor, or wiring.

Check wiring and or replace sensor. Sensor has to be functional before the control box will work.

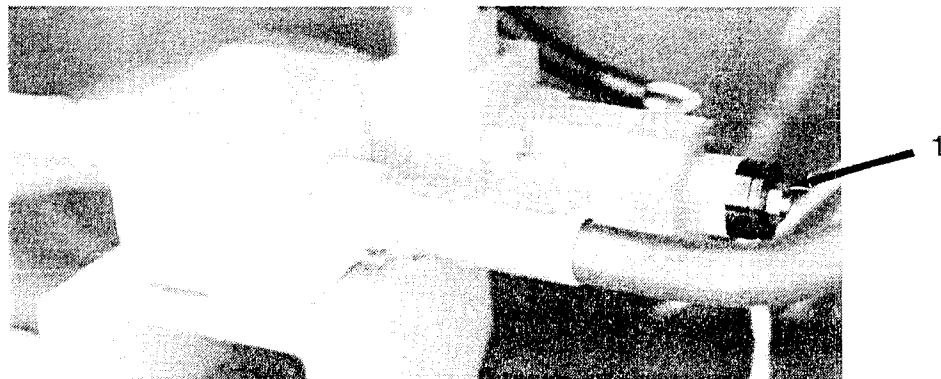
2. **To Check Control Box:** If sensor reading is correct, reconnect the wiring harness to the control box. Disconnect wires at the electronic valve with voltmeter set on D.C. Connect one lead on each wire leading from control box to the valve. Set control box on automatic and feed knob halfway (12 o'clock). At this setting with PTO engaged, engine idling, the voltage should be zero, as PTO speed is increased voltage should increase to about 10 volts at full throttle. If not the calibration may need adjusting. Check wiring, check fuse, or box is faulty.
3. **To Check Coil On Solenoid Valve:** Disconnect wire at valve. Set voltmeter on ohms, put test leads on each wire of coil. Reading should be from 8 to 12 ohms. If the reading is not in that range, replace coil.

## ELECTRONIC VALVE OVERRIDE

**NOTE:** If there is an electrical failure with your machine you may still grind, remove the rubber end cap from the valve and follow the instructions below.

WITH THE VALVE OVERRIDE, THE VALVE FUNCTIONS AS AN ADJUSTABLE FLOW CONTROL. With control box turned off, remove rubber end cap from the valve. Loosen lock nut and turn bolt in (clockwise) until desired tub rotation speed is found. Tighten lock nut and operate basic unit as if governor was not installed.

Contact your local dealer for further repairs or replacement. When problem is corrected, loosen lock nut and turn bolt out (counter clockwise) until tub stops. Retighten lock nut. If bolt comes all the way out and tub is still rotating, valve is faulty.

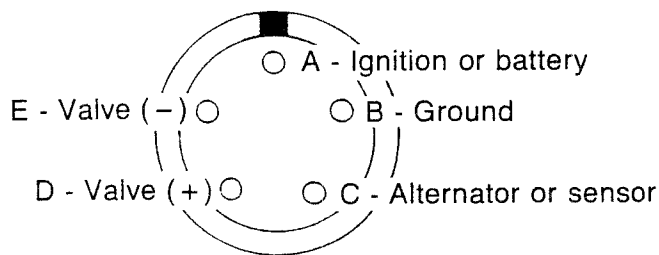


# 30 TROUBLE SHOOTING

## ELECTRONIC GOVERNOR VOLT-OHM READINGS

WIRE HARNESS CONNECTOR	ENGINE	IGNITION SWITCH	READING	INCORRECT READING INDICATES	CHECK IF INCORRECT READING
Valve terminals, system in Manual (Wires attached)	Not running	ON	13 volts DC	Defective wiring, control box.	Wires to valve.
Valve terminals, system in Auto (Wires attached)	Running 1500 to 2550 rpm	ON	1-10 volts DC varies with rpm ★	Defective wiring, control box.	Wires to valve.
Valve terminals, (Wires removed)	Not running	OFF	9.6 ohms	Defective valve.	
Pin A to Pin B	Not running	ON	13 volts DC	13 volts not at control box, no ground	Wires to tractor.
Pin A to Ground	Not running	ON	13 volts DC	13 volts power not reaching box	Wires to tractor.
Pin B to Ground	Not running	OFF	Less than 5 ohms	Black wire not grounded	Ground wire.
Pin D to Pin E	Not running	OFF	9.6 ohms	Valve wiring or valve defective	Wires to valve, valve.
Pin D to Ground	Not running	OFF	Infinite ohms	Valve wiring or valve defective	White wire to valve, valve.
Pin E to Ground	Not running	OFF	Infinite ohms	Valve wiring or valve defective	Blue or black wire to valve.

★ Typically 4.0 to 4.5 VDC at full engine rpm with the knob turned fully clockwise.





MODEL C

### ELECTRONIC GOVERNOR

**READ THIS FIRST:** Haybuster Manufacturing 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 17 through 22.

### CONTROL BOX ADJUSTMENT

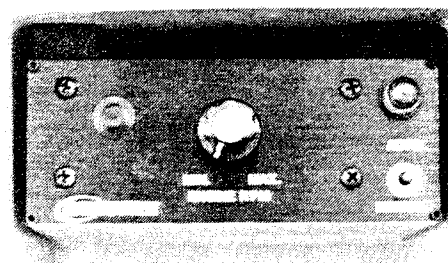
With engine running at PTO speed (2000 rpm), set control knob in the 3 o'clock position and set toggle switch in auto position.

**Step 1.** Check indicator light on your control box before doing any adjusting! At this point, the auto light should be lit. If it is not, read the trouble shooting section, pages 17 through 22.

Call your dealer before attempting to recalibrate your control box. Before proceeding to Steps 2 and 3, read this message!

**WARNING:** The model B control box calibration screw should be adjusted with a small screw driver and a light touch. Due to its small size, this screw can be damaged if extreme caution is not used. Any damage to this screw IS NOT COVERED UNDER WARRANTY.

**Step 2.** IF TUB IS TURNING, slowly turn calibration screw, counter clockwise until tub creeps slowly.



MODEL B

The model B screw will turn both directions and is ratcheted at each end. There are 20 turns from one end to the other and it is possible for you to adjust the screw so that no tub movement is possible. Replace the plug when adjustment is complete.

**Step 3.** IF TUB IS NOT TURNING, slowly turn calibration screw, clockwise until tub creeps slowly.

The calibration screw will turn both directions. It is possible for you to adjust the screw so that no tub movement is possible. If you have been turning clockwise, reverse your direction and slowly attempt to find the range for your machine and rpm.

If the tub does not move in the automatic mode after you have attempted to calibrate the control box, refer to the trouble shooting section for further action.

### OPERATION

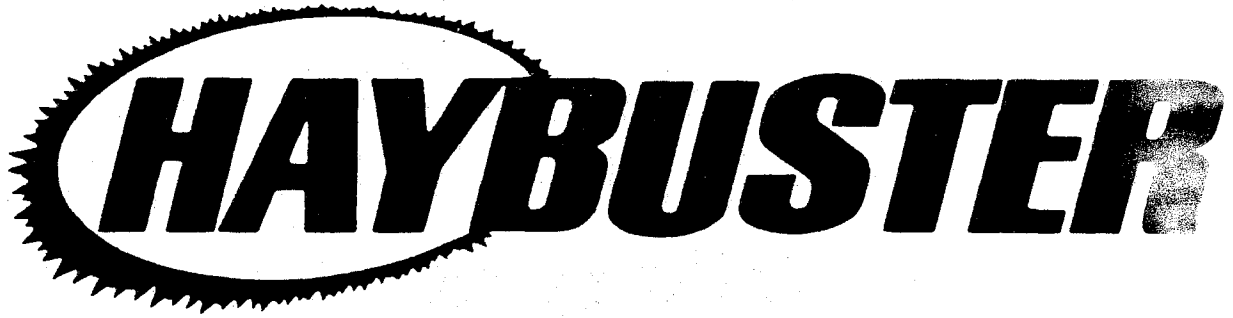
Turning control knob counter clockwise will increase load on engine by keeping tub rotation engaged at lower engine rpm.

Turning control knob clockwise will decrease load on engine by disengaging tub rotation at a higher rpm.

With Control Box switched to manual, tub will continue to rotate regardless of engine rpm.

### 12 VOLT SYSTEM NEGATIVE GROUND





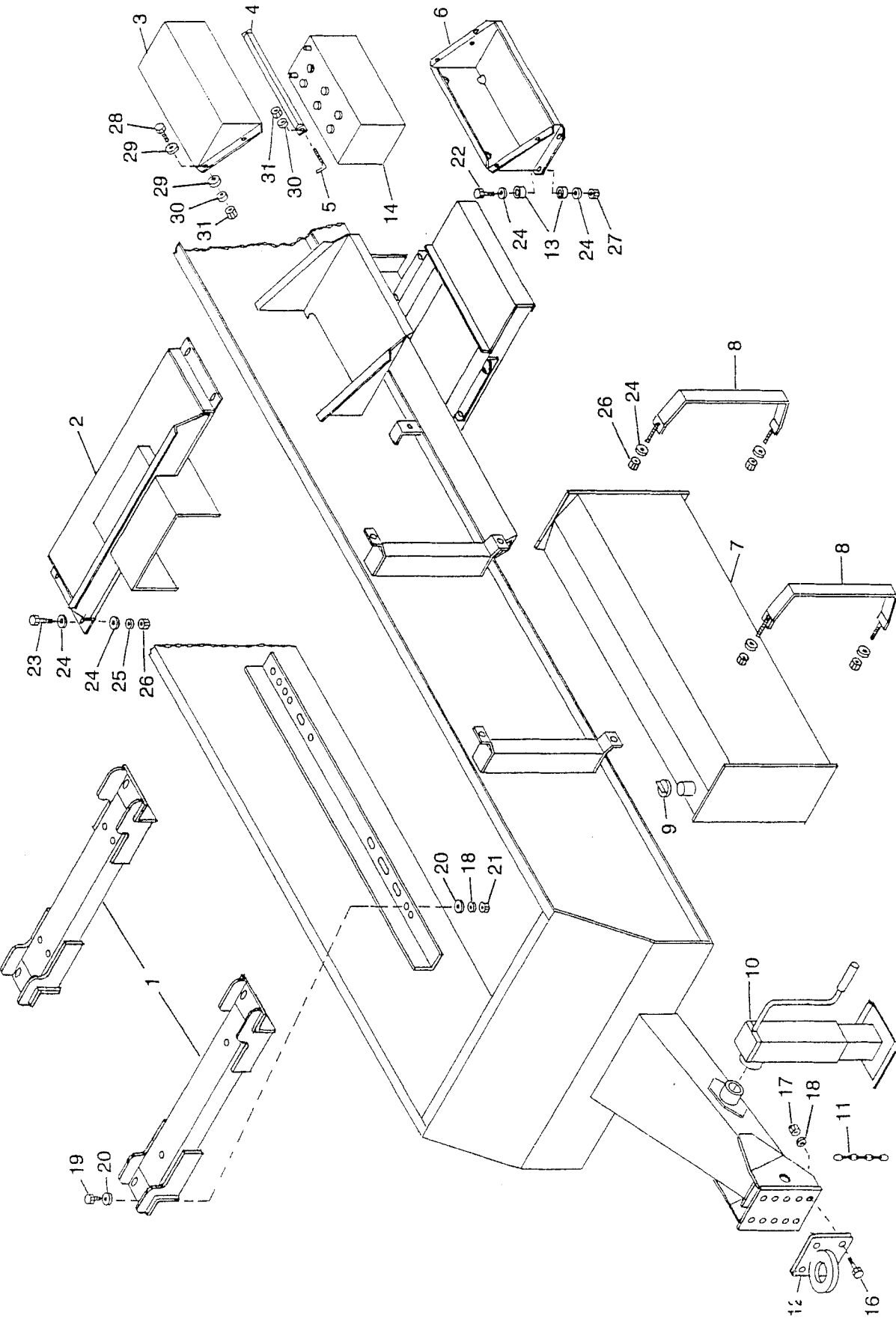
# ***INDUSTRIAL GRINDER***

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# 34 MAIN FRAME (Forward Half)

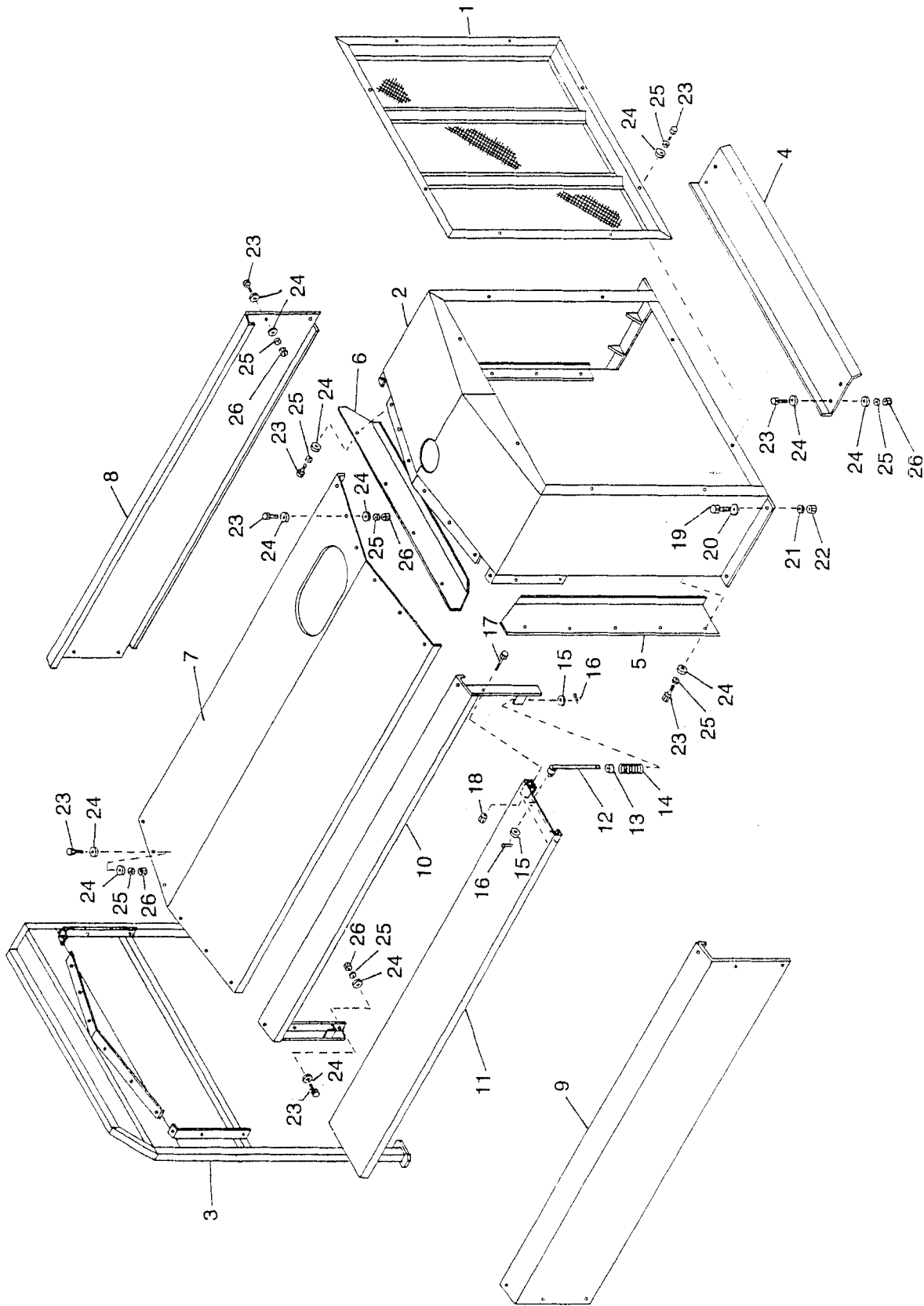




## MAIN FRAME (Forward Half) 35

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700146	1	Motor Mount - 274 H.P. Caterpillar 3306B DI Front
	4700147	1	Motor Mount - 300 H.P. Caterpillar 3306B DI Rear
	4700148	2	Motor Mount - 177 H.P. Cummins 6BTA5.9-P
	4700149	2	Motor Mount - 270 & 300 H.P. John Deere 6076H & 6619A-F-00
	4700150	2	Motor Mount - 234 H.P. Cummins 6CTA8.3P
2	4700510	1	Walkway
3	4700216	2	Battery Box Cover
4	4700215	2	Battery Hold Down
5	4700214	2	Battery Hold Down Bolt
6	4700511	2	Battery Box Base
7	4700363	2	Saddle Tank
8	4700364	4	Saddle Tank Strap
9	7500226	2	Fuel Cap
10	6400005	1	Jack
11	4700512	1	Safety Chain
12	7500309	1	Pintle Hitch
13	7500310	16	Grommet
14	5700002	2	Battery
15	7500224	8	3M Safety-Walk 4" X 18"
16	4800271	4	5/8" x 2 1/2" Grade 8 Bolt
17	4900070	4	5/8" Grade 8 Nut
18	5000003	12	5/8" Lock Washer
19	4800010	8	5/8" x 2" Bolt
20	5000002	16	5/8" Flat Washer
21	4900005	8	5/8" Nut
22	4800114	8	1/2" x 2" Bolt
23	4800082	4	1/2" x 1 1/2" Bolt
24	5000004	32	1/2" Flat Washer
25	5000006	12	1/2" Lock Washer
26	4900001	12	1/2" Nut
27	4900014	8	1/2" Lock Nut
28	4800003	8	3/8" x 1" Bolt
29	5000001	16	3/8" Flat Washer
30	5000019	12	3/8" Lock Washer
31	4900002	12	3/8" Nut
	4701167		Fender R.H. Single Axle
			New HD10 5th Wheel
	7500622		Locking Fuel Cap
	7500620		Locking Oil Cap

# 36 ENGINE AND RADIATOR COVER



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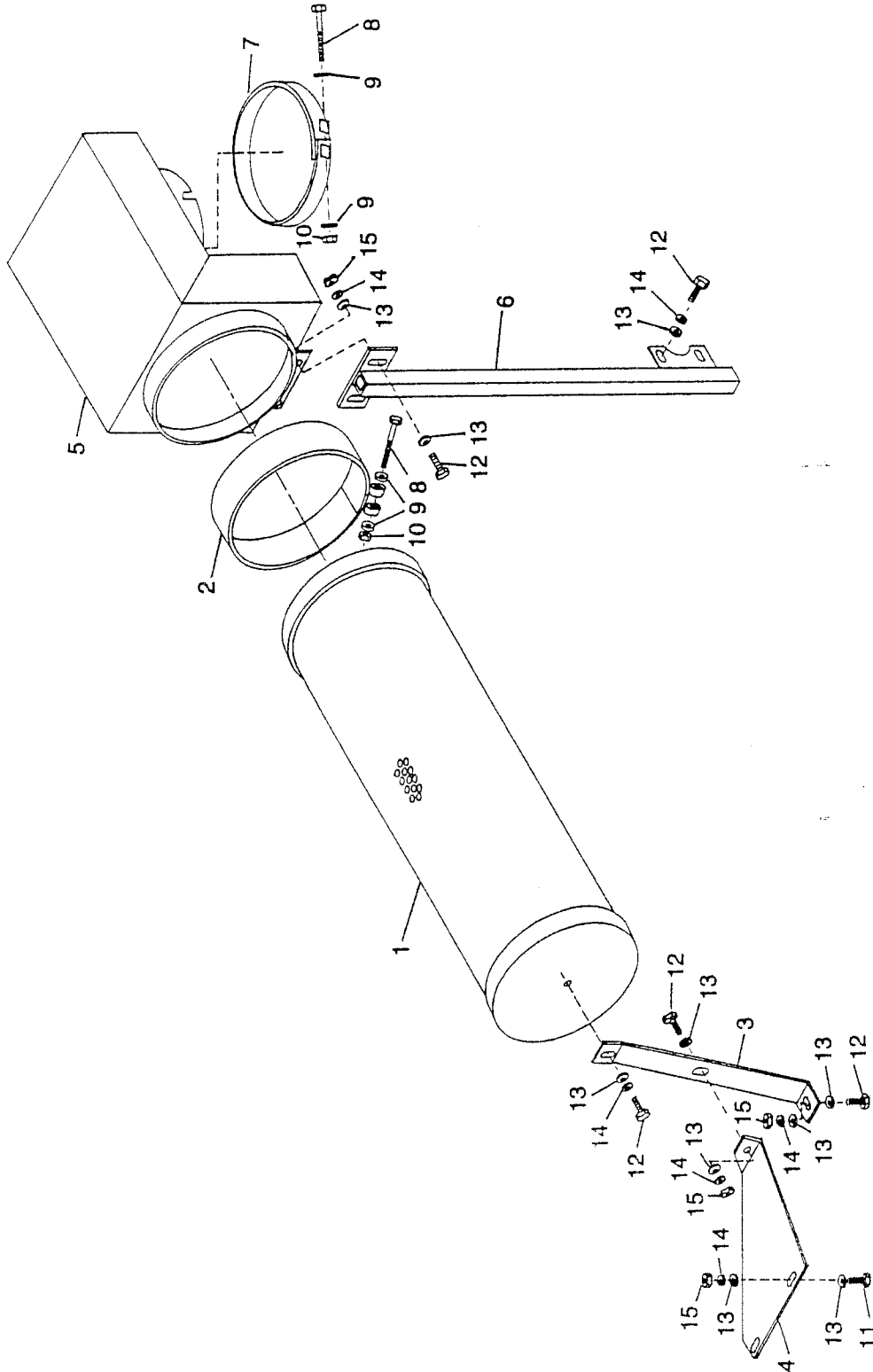
## ENGINE AND RADIATOR COVER 37

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ITEM	PART NO.	QTY.	DESCRIPTION
1	4700285	1	Grill
2	4700593	1	Cowling
3	4700594	1	Hand Rail
4	4700595	1	Front Frame Cover
5	4700289	2	Cowling Side Fin Cat 260 HP
	4700290	1	Cowling Side Fin LH JD 270 HP
	4700291	1	Cowling Side Fin RH JD 270 HP
	4700292	1	Cowling Side Fin LH JD 300 HP
	4700293	1	Cowling Side Fin RH JD 300 HP
6	4700294	1	Cowling Top Fin Cat 260 HP
	4700295	1	Cowling Top Fin JD 270 HP
	4700296	1	Cowling Top Fin JD 300 HP
7	4700297	1	Hood Cat 260 HP
	4700298	1	Hood JD 270 HP
	4700299	1	Hood JD 300 HP
8	4700300	1	Hood Sides LH Cat 260 HP
	4700391	1	Hood Sides LH JD 270 & 300 HP
9	4700302	1	Hood Sides RH Cat 260 HP
10	4700303	1	Hood Sides Mount RH JD 270 & 300 HP
11	4700304	1	Hood Sides RH JD 270 & 300 HP
12	4700305	2	Hood Spring Rod JD 270 & 300 HP
13	2200010	2	7/16" Collar
14	6100012	2	Spring
15	5000016	4	7/16" Flat Washer
16	4800127	4	1/8" Cotter Pin
17	4800156	2	3/8" x 3" Bolt
18	4900023	2	3/8" Lock Nut
19	4800018	4	1/2" x 1 1/4" Bolt
20	5000004	4	1/2" Flat Washer
21	5000006	4	1/2" Lock Washer
22	4900001	4	1/2" Nut
23	4800003	50	3/8" x 1" Bolt
24	5000001	78	3/8" Flat Washer
25	5000019	28	3/8" Lock Washer
26	4900002	28	3/8" Nut
	4701185		Rotary Screen
	7500637		Throttle Cable 3408 Cut 10 Ft. Long
	0900067		Muffler Assy. 3306

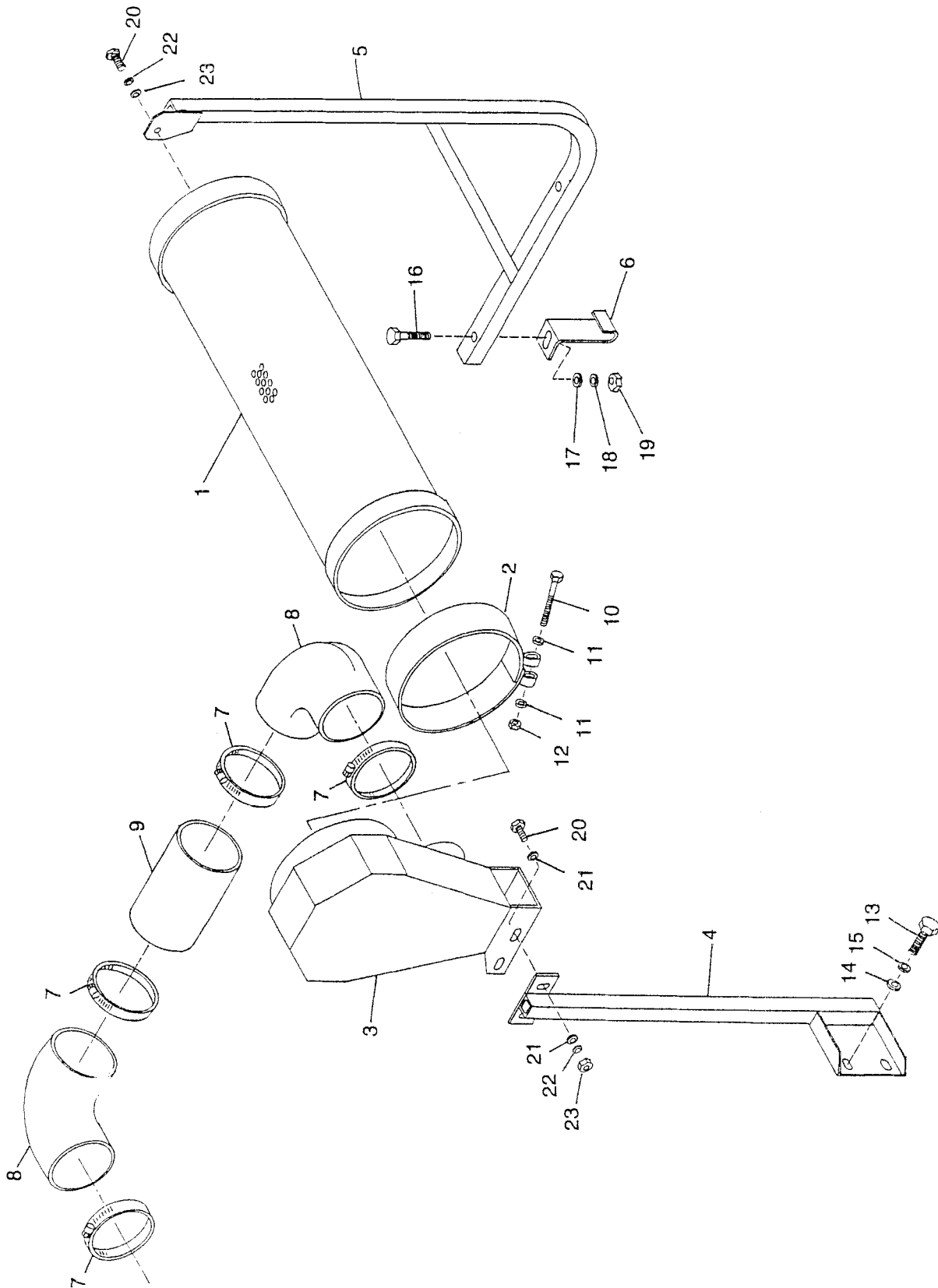
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# 38 AIR INTAKE SCREEN, CATERPILLAR 260 HP



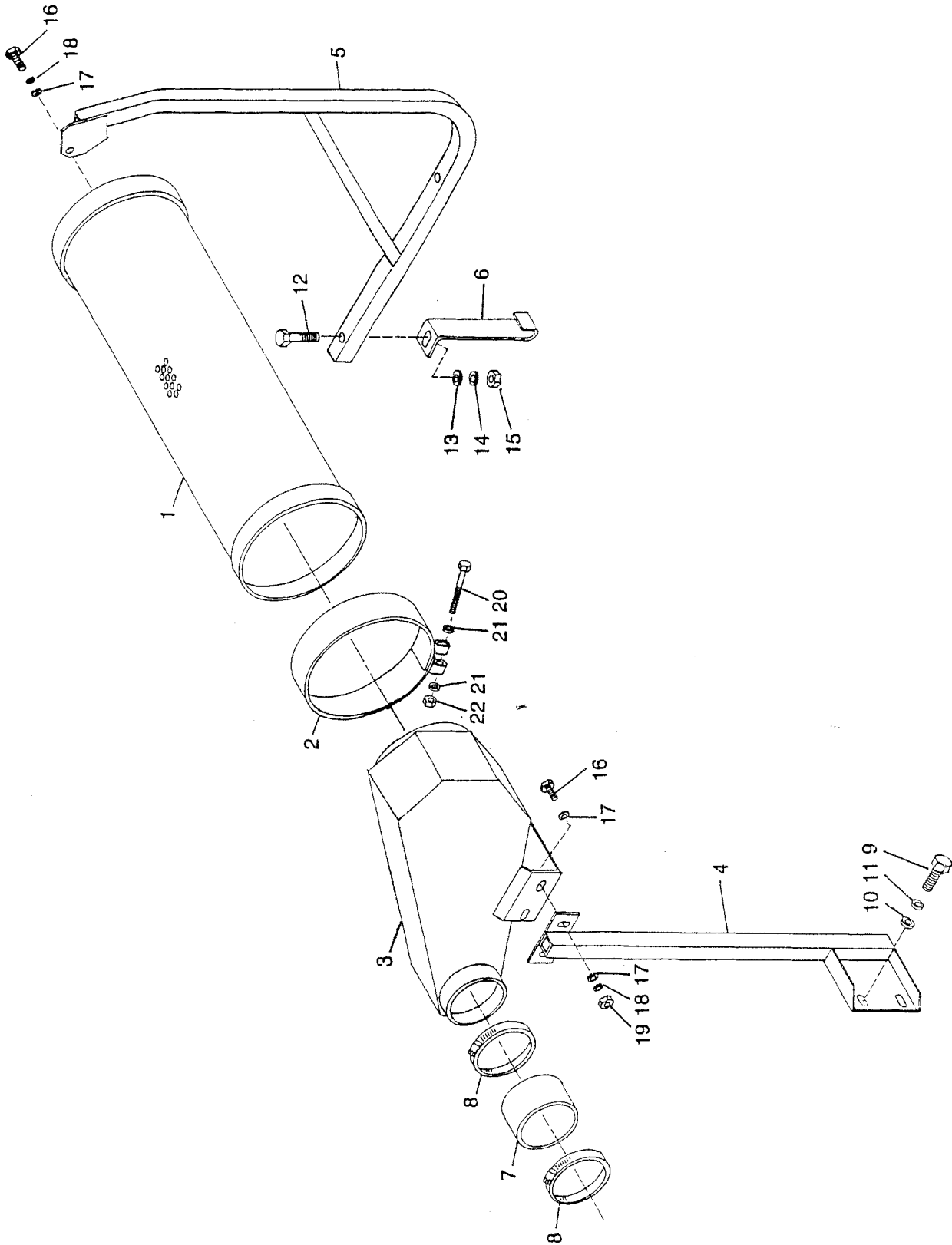


# 40 AIR INTAKE SCREEN, JD 270 HP





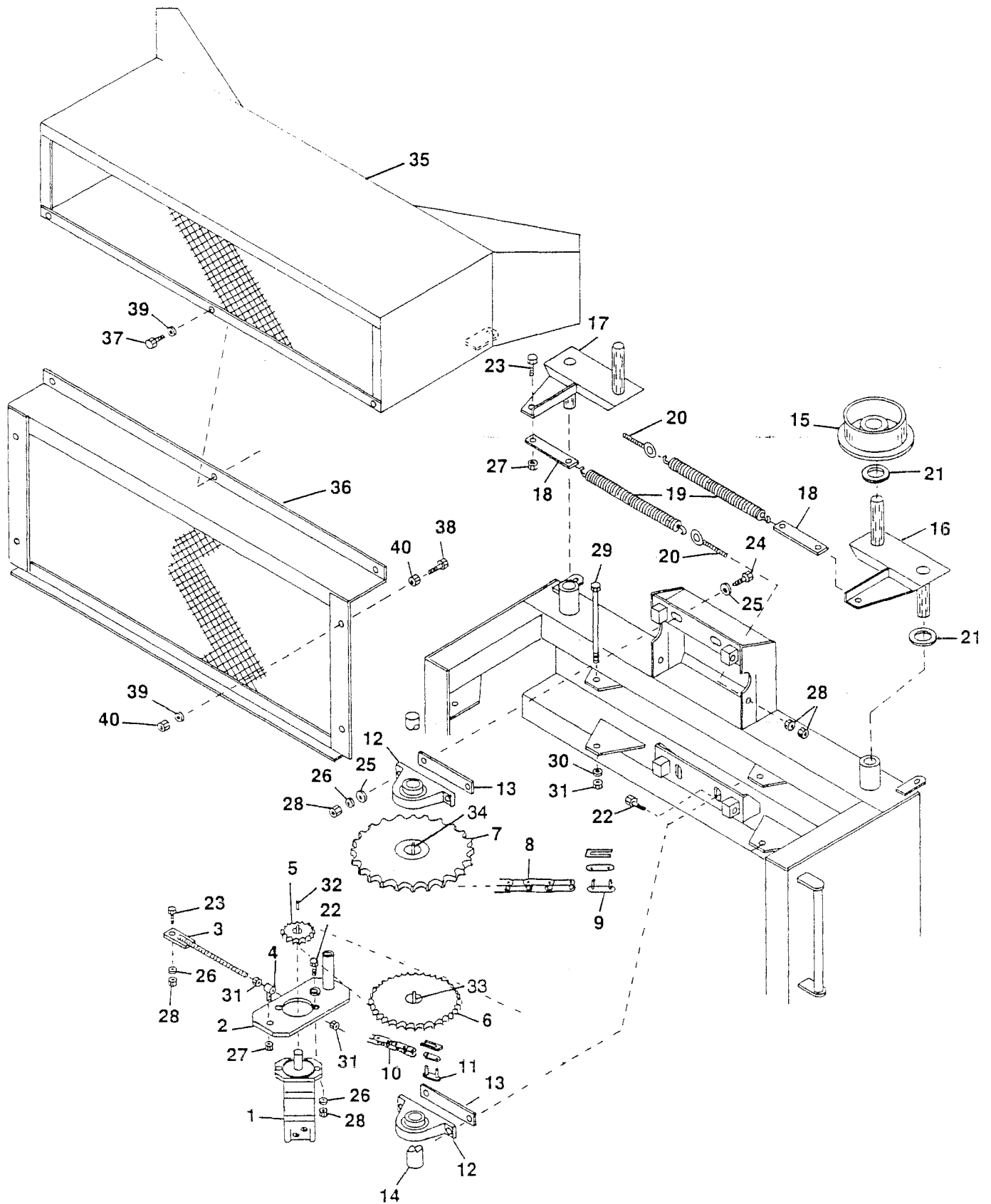
# 42 AIR INTAKE SCREEN, JD 300





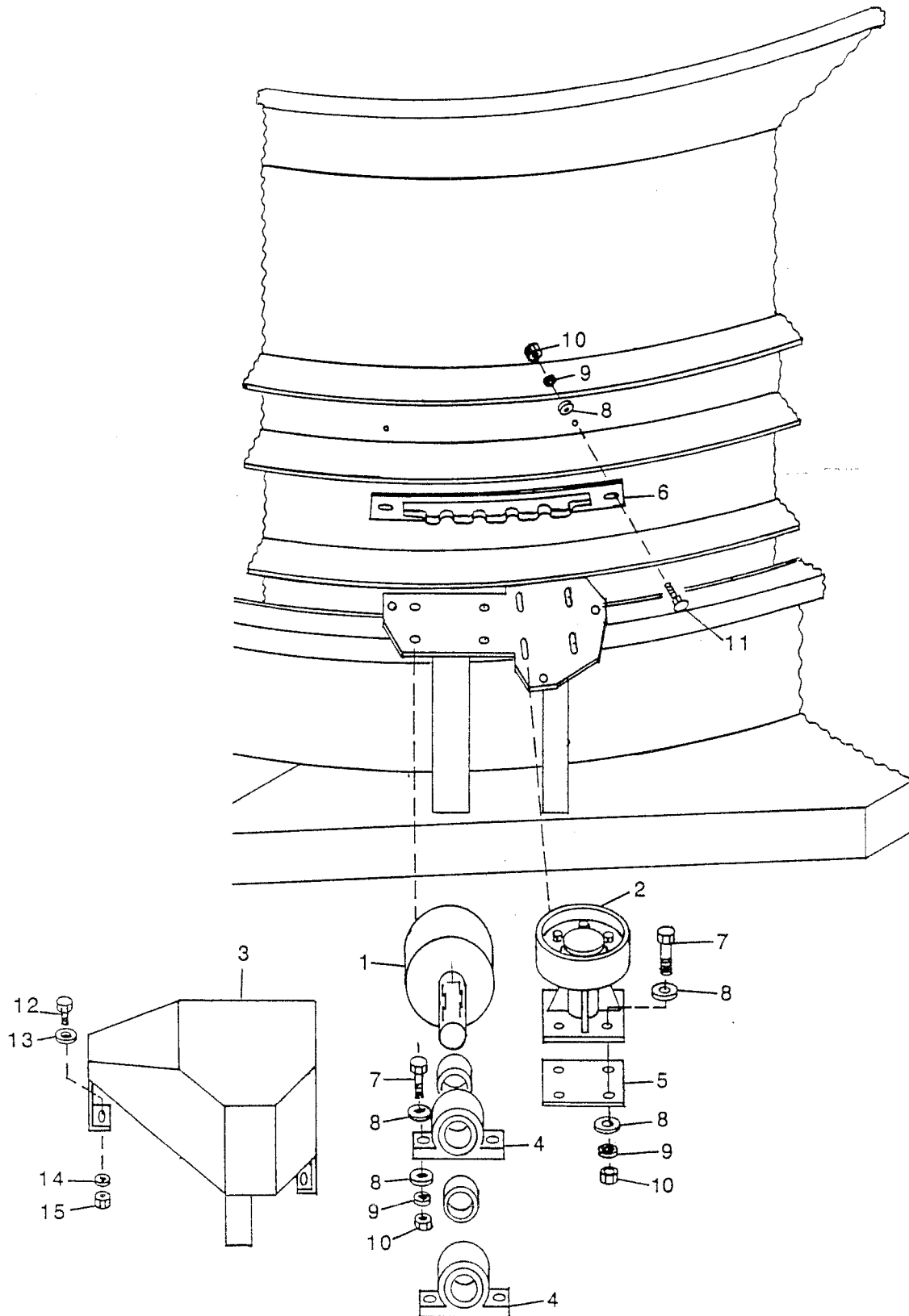


# 44 TUB DECK DRIVE



ITEM	PART NO.	QTY.	DESCRIPTION
1	3900010	1	Orbit Motor
2	4700329	1	Orbit Motor Bracket
3	4700330	1	Orbit Motor Tightening Rod
4	4700331	1	Orbit Motor Tightening Rod Mount
5	1000137	1	80B 10H 1¼" Bore Sprocket
6	1000122	1	80B 30H 1½" Bore Sprocket
7	1000138	1	80B30 1½" Bore Sprocket w/2" Hub
8	1100094	1	2080 Chain - 157 Links
9	1100070	1	2080 Connector Link
10	1100161	1	80H Chain - 41 Links
11	1100162	1	80H Connector Link
12	1800001	2	Bearing 1½" Pillow Block
13	4700332	6	Shim
14	4700471	1	Tub Drive Shaft 1½" x 20¾"
15	1200007	2	No. 6 Roller
16	4700324	1	Swing Idler Arm Left Hand
17	4700323	1	Swing Idler Arm Right Hand
18	4700326	2	Spring Link
19	6100001	2	Spring
20	4700325	2	Spring Tension Bolt
21	5000008	16	1½" Narrow Rim Bushing
22	4800114	4	½" x 2" Bolt
23	4800082	3	½" x 1½" Bolt
24	4800251	4	½" x 2½" Bolt
25	5000004	12	½" Flat Washer
26	5000006	7	½" Lock Washer
27	4900014	3	½" Lock Nut
28	4900001	11	½" Nut
29	4800261	1	5/8" x 8½" Bolt
30	5000003	1	5/8" Lock Washer
31	4900005	3	5/8" Nut
32	6200022	1	5/16" x 1½" Sq. Key Hardened
33	6200021	1	3/8" x 1½" Sq. Key Hardened
34	6200020	1	3/8" x 2¼" Sq. Key Hardened
35	4700596	1	Upper Tub Drive Shield
36	4700597	1	Lower Tub Drive Shield
37	4800098	3	3/8" x 1¼" Bolt
38	4800034	6	3/8" x 1½" Bolt
39	5000019	9	3/8" Lock Washer
40	4900002	10	3/8" Nut

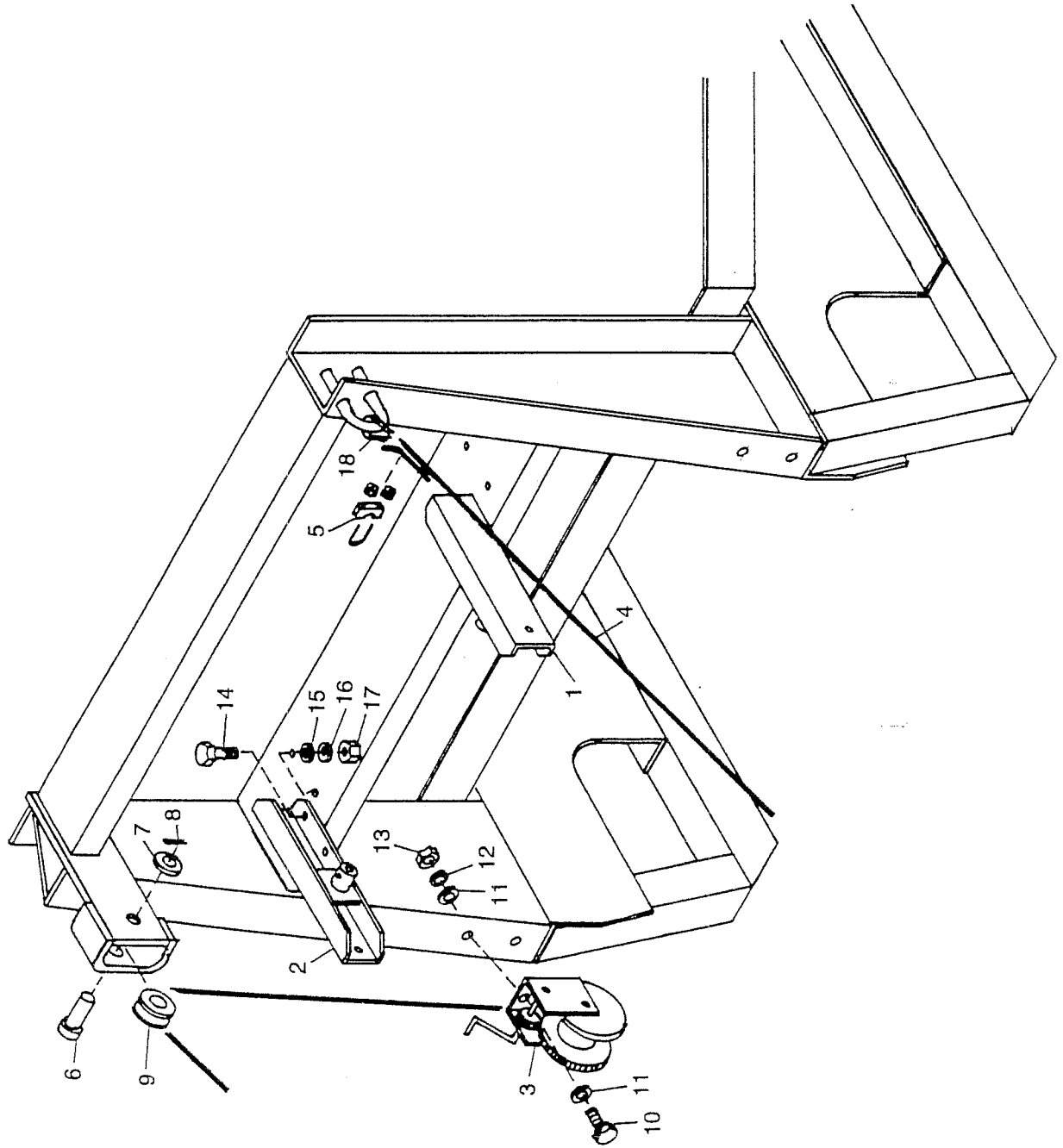
# 46 TUB ROLLERS





# 48 CONVEYOR WINCH AND HANGER

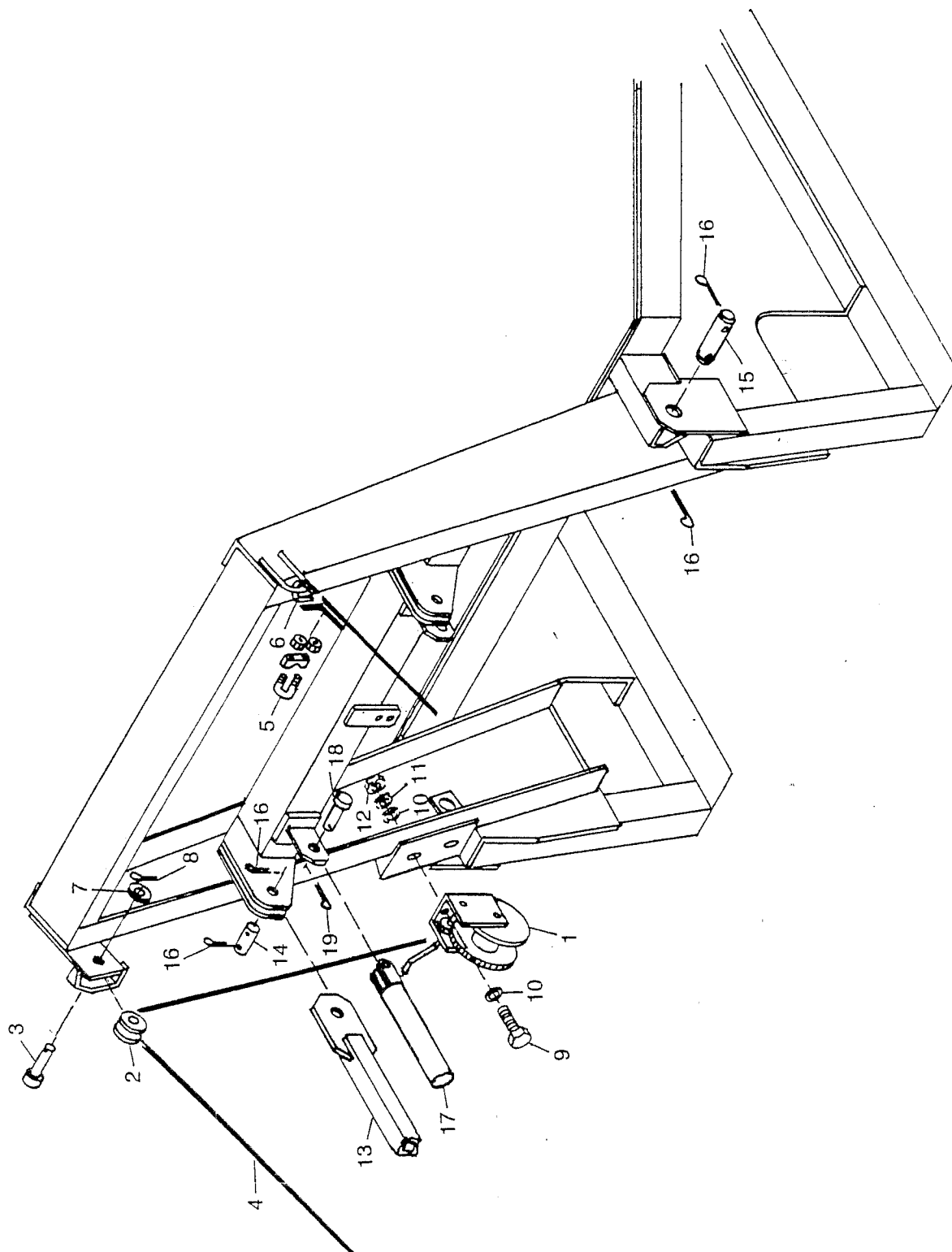
Serial No. 0133 thru 0183





# 50 CONVEYOR WINCH AND HANGER

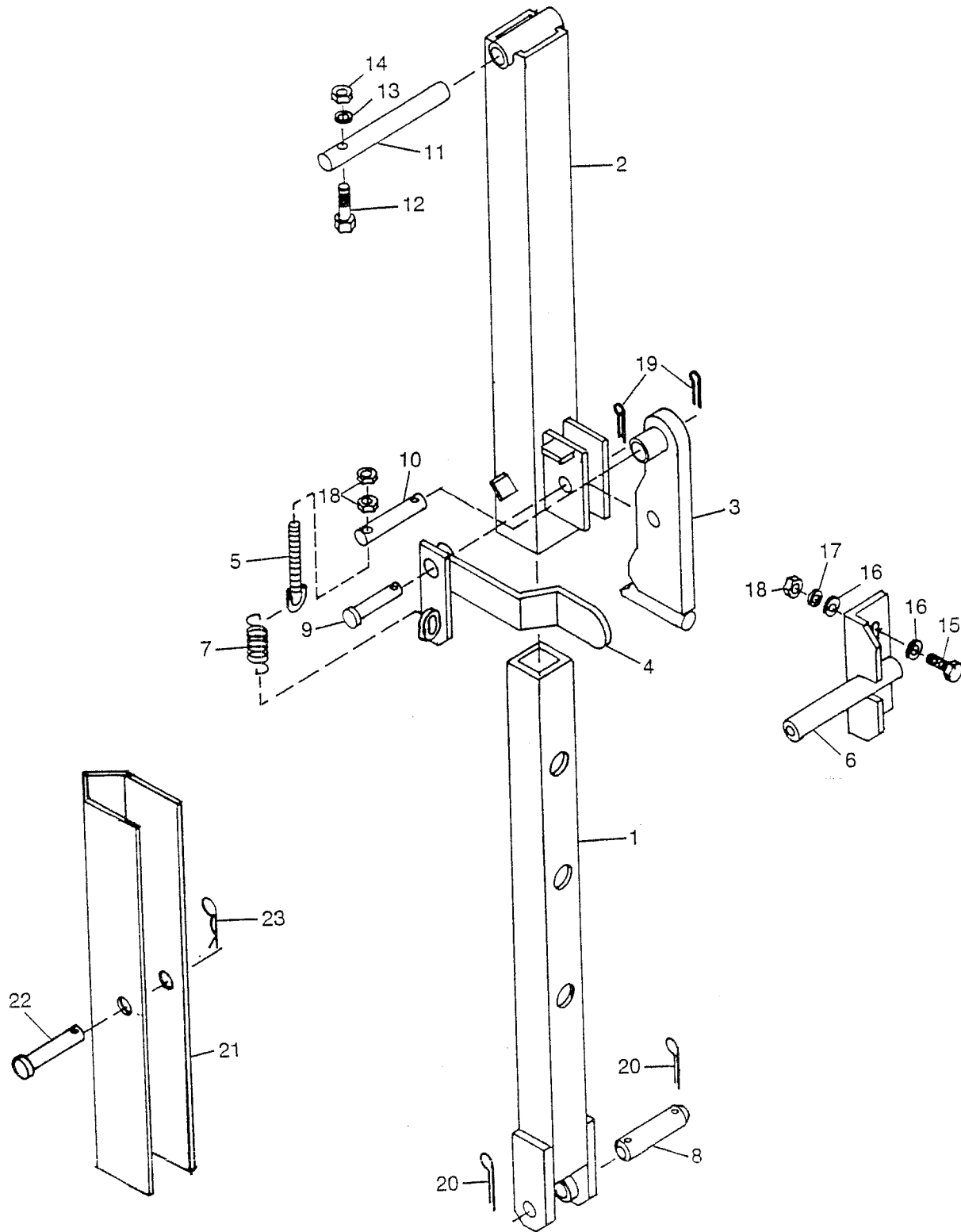
Serial No. 0884







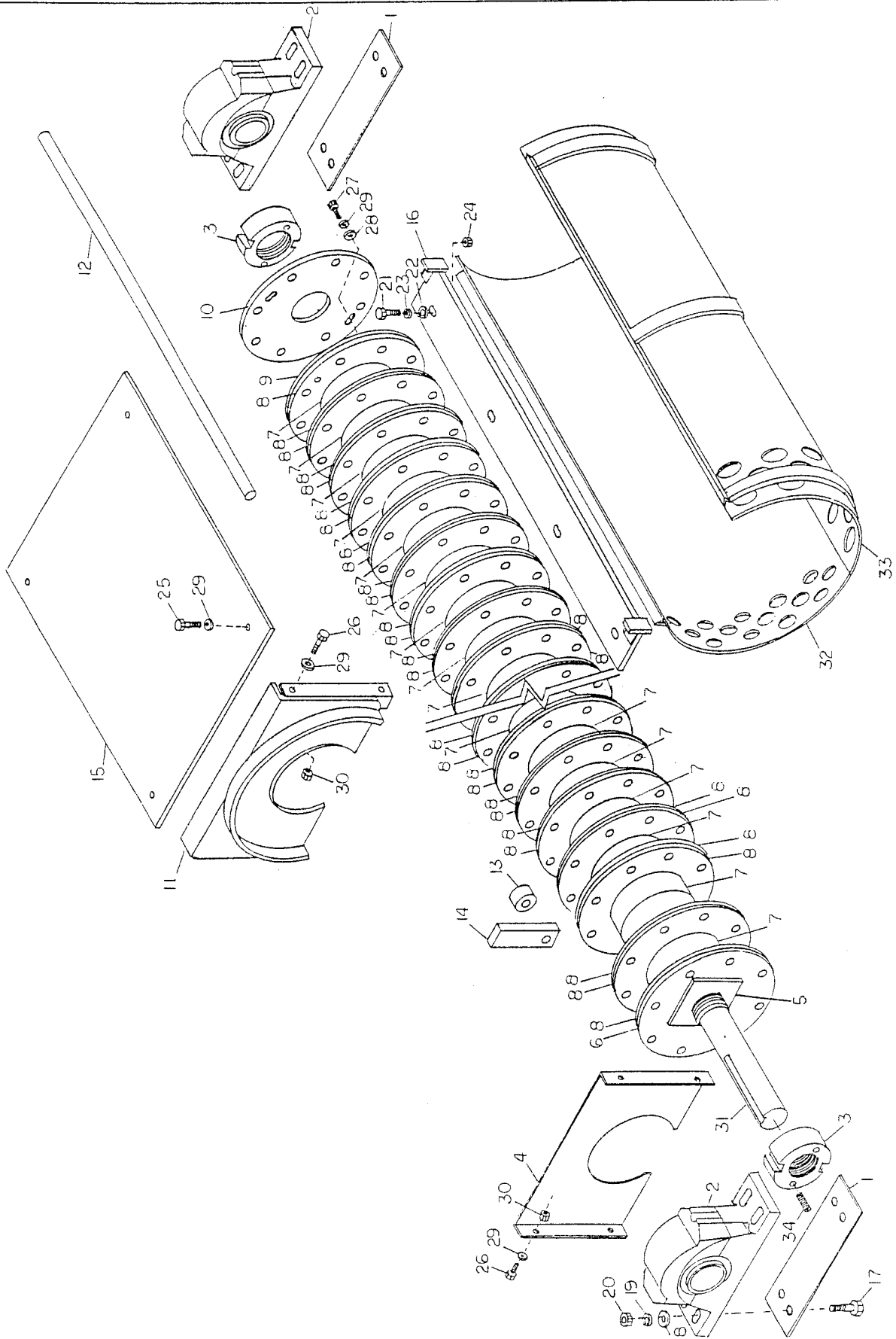
# 52 PLATFORM SAFETY BAR





# 54 CYLINDER

Serial No. 0133 thru 0183



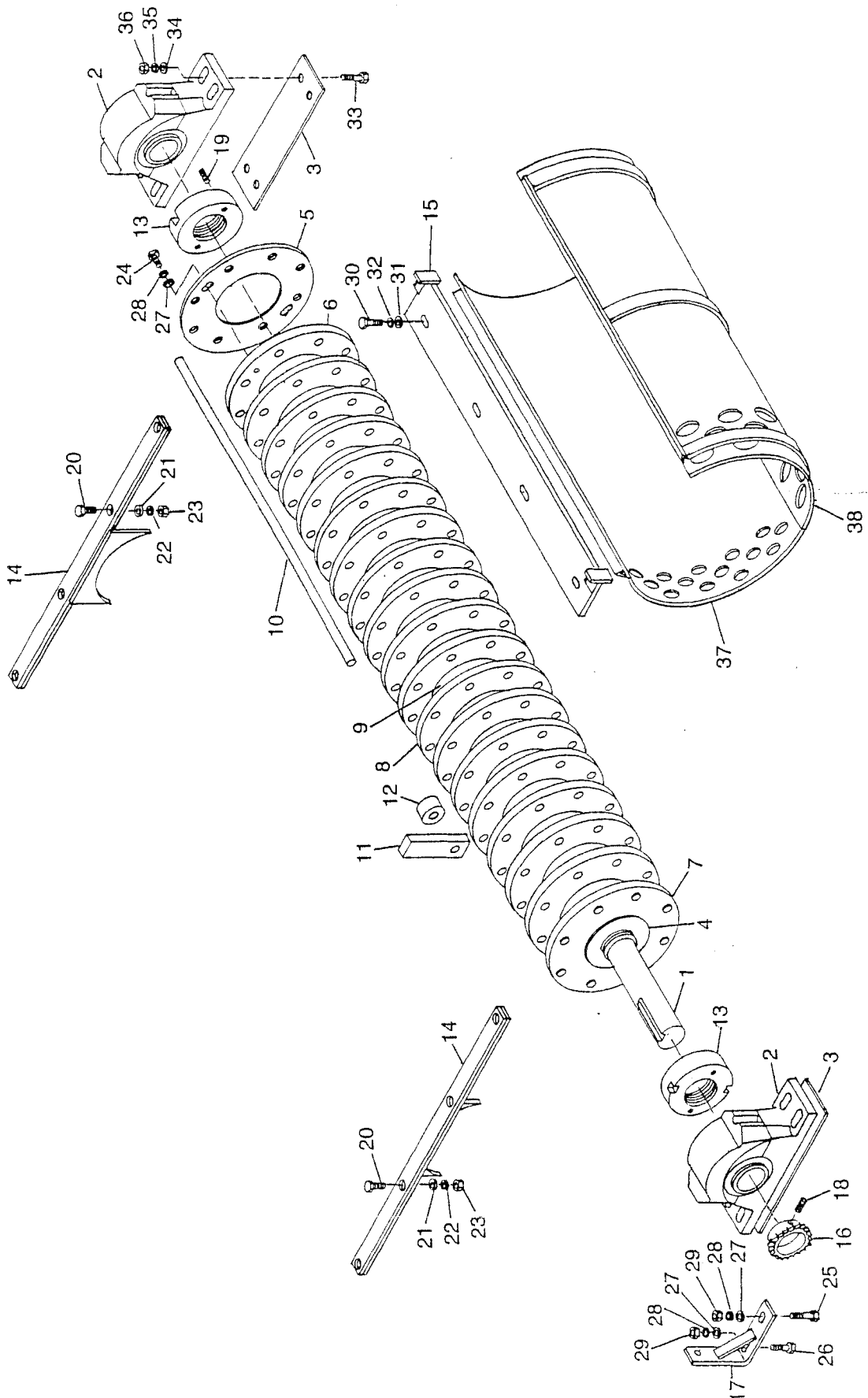
# CYLINDER 55

Serial No. 0133 thru 0183

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700513	6	Bearing Shim, 7 GA (4 Hole)
2	1800022	2	PB Bearing, 3 1/2" - 4 Hole
3	4700598	2	Cylinder Nut - 4 1/2" ID x 2"
4	4700514	1	Front Cylinder Bearing Plate
5	4700033	2	Thrust Washer
6	4700515	1	Cylinder End Plate, with Slug Welds
7	4700516	12	1.338" Solid Cylinder Spacer
	4700517	6	1.308" Solid Cylinder Spacer
8	4700951	36	1/2" Cylinder Plate - 1 1/4" Rod
9	4700518	1	Cylinder End Plate, with Tapped Holes
10	4700519	1	Moveable Plate
11	4700520	1	Rear Cylinder Bearing Plate
12	5300104	8	Hammer Rod, 1 1/4"
13	4700470	66	Hammer Rod Spacer
14	5200102	66	Hammer
15	4700522	1	Rear Cylinder Cover
16	4700523	1	Screen Hold Down
17	4800063	8	3/4" x 4" Bolt
18	5000005	8	3/4" Flat Washer
19	5000012	8	3/4" Lock Washer
20	4900004	8	3/4" Nut
21	4800079	4	5/8" x 2 1/2" Bolt
22	5000002	4	5/8" Flat Washer
23	5000003	4	5/8" Lock Washer
24	4900005	4	5/8" Nut
25	4800082	4	1/2" x 1 1/2" Bolt
26	2800018	8	1/2" x 1 1/4" Bolt
27	4800085	4	1/2" x 1" Bolt
28	5000004	4	1/2" Flat Washer
29	5000006	16	1/2" Lock Washer
30	4900001	8	1/2" Nut
31	4700524	1	Cylinder-Shaft, 4 1/2" x 67-7/8"
32	4700155	1	3" Screen
33	4700156	1	4" Screen
34	4800272	4	1/2" - 13 x 2" Set Screw
	4700186		5/8" Screen
	4700187		3/4" Screen
	4700183		1" Screen
	4700154		2" Screen
	4700201		Dummy Screen
	4700508		Demolition Screen
	4700692		Comp Cyl. 1" Plates (New)
	4700689		Comp Cyl. 1/2" Plates (New)
	4700679		RBLT - 1/2" Plate
	4700680		RBLT - 1" Plate
	4701088		Screen Track for 3/4" Thick Screen
	4701241		Screen Track for 1/2" Thick Screen
	4700689		Rotor 4 1/2 Shaft 1.25 Rods 1/2" Plate New
	4700679		Rotor 4 1/2 Shaft 1.25 Rods 1/2 Plate Rebuilt

# 56 CYLINDER

Serial No. 0210 thru



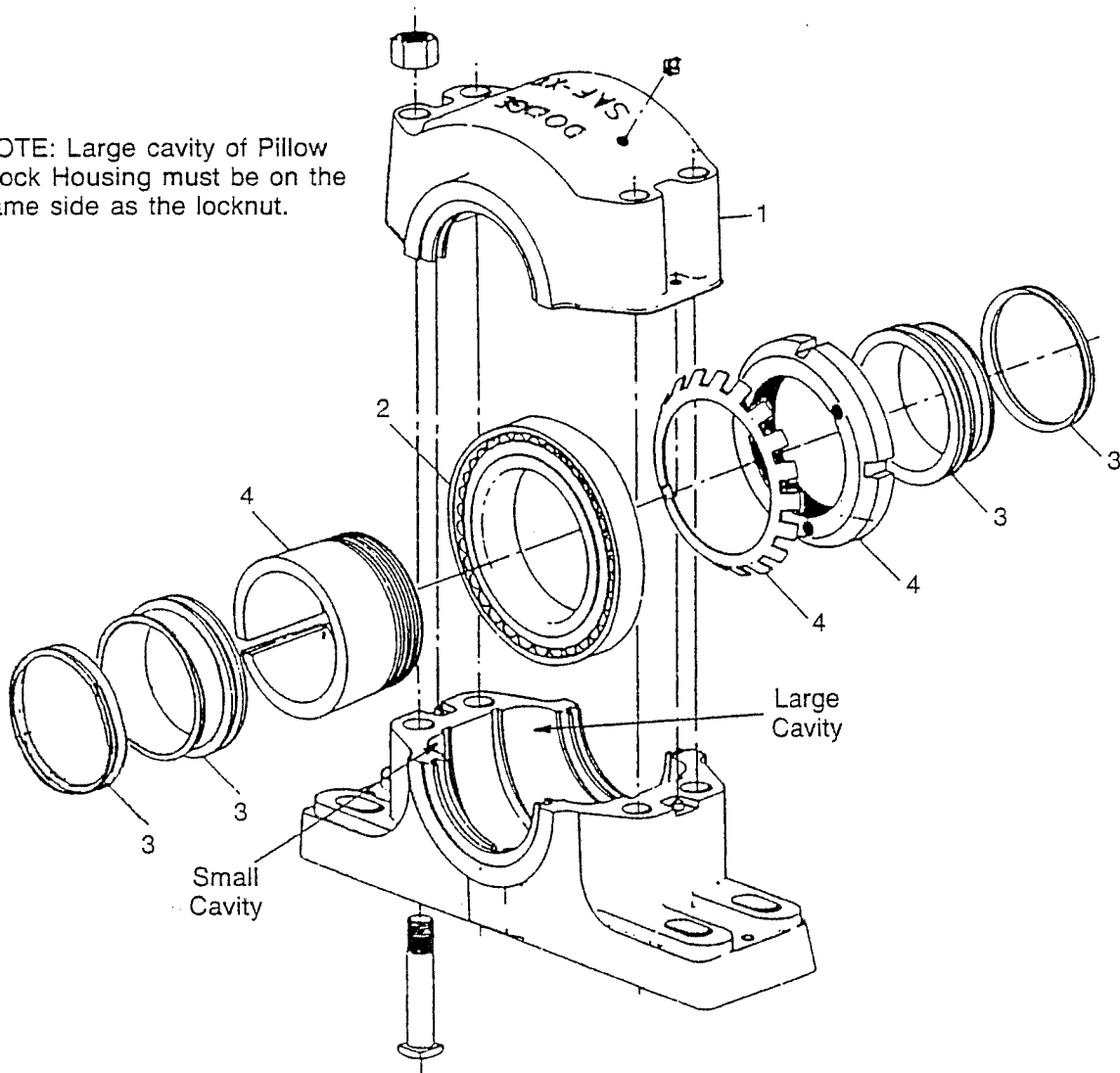
# CYLINDER 57

Serial No. 0210 thru

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700524	1	Cylinder Shafter 4 1/2" x 67 7/8"
2	1800022	2	Pillow Block Bearing 3 1/2" 4 Hole
3	4700513	6	Bearing Shim (7 Ga.)
4	4700485	2	Thrust Washer 4 9/16
5	4700519	1	Moveable Plate
6	4700668	1	Cylinder End Plate, With Tapped Holes
7	4700671	1	Cylinder End Plate, with Slug Welds
8	4700667	17	1" Cylinder Plate
9	4700716	18	1.373" Solid Cylinder Spacer
10	5300104	8	Hammer Rod
11	5200102	66	Hammer
12	4700470	66	Hammer Rod Shock Spacer
13	4700598	2	Cylinder Nut - 4 1/2" ID x 2"
14	4700567	2	Cylinder Box Seal
15	4700523	1	Screen Hold Down
16	4700702	1	60B20 3 1/2" Bore Sprocket
17	4700717	1	Sensor Mt.
18	4800326	1	1/2" - 13 x 1/2" Set Screw
19	4800272	4	1/2" - 13x2" Set Screw
20	4800034	8	3/8" x 1 1/2" Bolt
21	5000001	8	3/8" Flat Washer
22	5000019	8	3/8" Lock Washer
23	4900002	8	3/8" Nut
24	4800085	4	1/2" x 1" Bolt
25	4800082	1	1/2" x 1 1/2" Bolt
26	4800114	1	1/2" x 2" Bolt
27	5000004	3	1/2" Flat Washer
28	5000006	3	1/2" Lock Washer
29	4900001	2	1/2" Nut
30	4800079	4	5/8" x 2 1/2" Bolt
31	5000002	4	5/8" Flat Washer
32	5000003	4	5/8" Lock Washer
33	4800063	8	3/4" x 4" Bolt
34	5000005	8	3/4" Flat Washer
35	5000012	8	3/4" Lock Washer
36	4900004	8	3/4" Nut
37	4700155	1	3" Screen 1/2" Thick
38	4700156	1	4" Screen 1/2" Thick
	4700186		5/8" Screen 1/2" Thick
	4700187		3/4" Screen 1/2" Thick
	4700183		1" Screen 1/2" Thick
	4700154		2" Screen 1/2" Thick
	4700626		6" x 8" Screen 1/2" Thick
	4700664		1 1/2" Screen 1/2" Thick
<b>Serial No. 0184 thru 0209</b>			
6	4700518	1	Cylinder End Plate With Tapped Hole
7	4700515	1	Cylinder End Plate With Slug Welds
8	4700488	36	1/2" Cylinder Plate
9	4700516	12	1.338" Solid Cylinder Spacer
	4700517	6	1.308" Solid Cylinder Spacer
	4701475		S/N 0276 (15A) Screen Hold Down on 3/4" Thick
	4700788		New Cyl Shaft 68 3/8" Long
	4700692		Rotor 4 1/2" Shaft 1.25 Rods 1" Plates New
	4700680		Rotor 4 1/2" Shaft 1.25 Rods 1" Plates Rebuild

# 58 CYLINDER BEARING

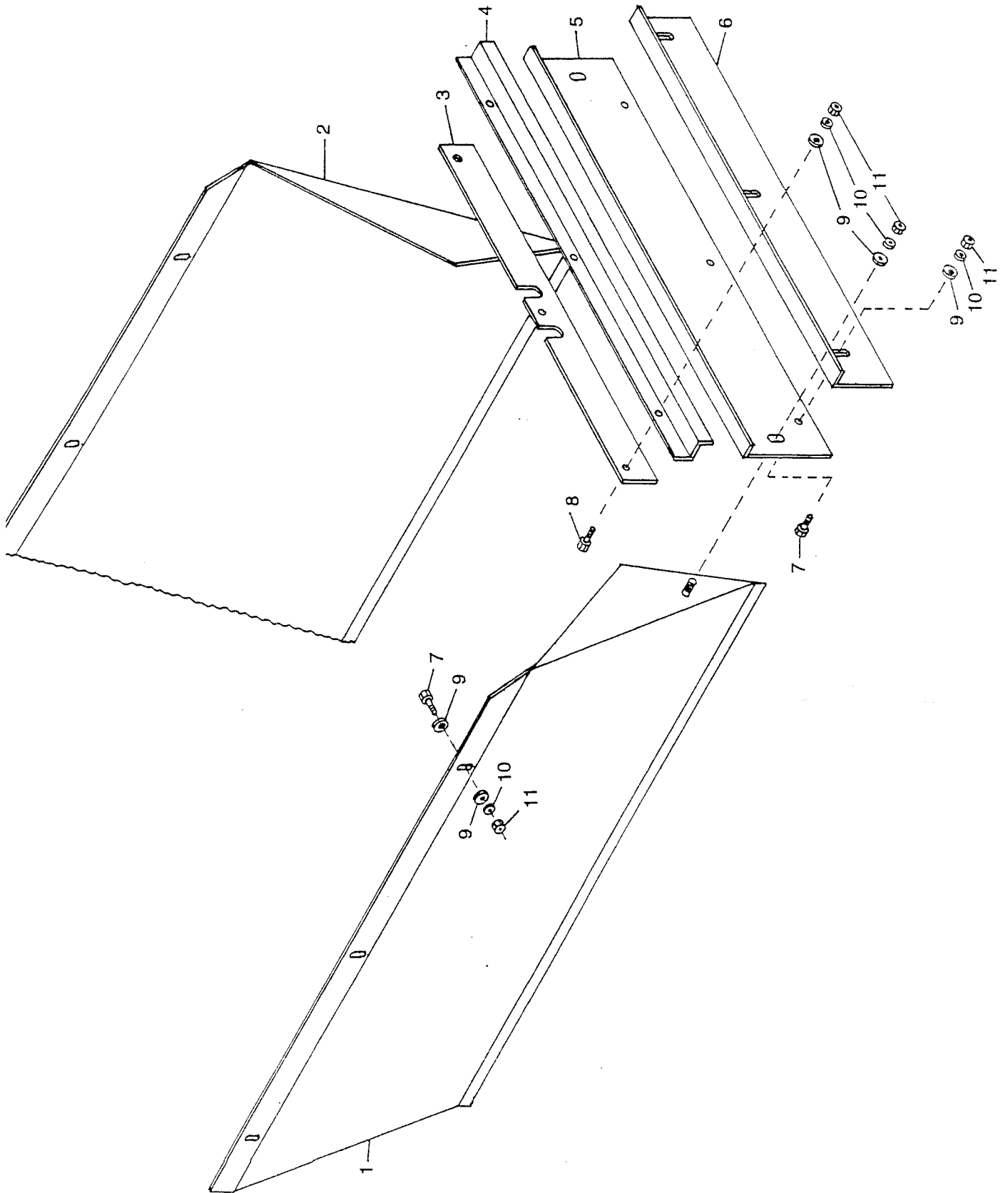
NOTE: Large cavity of Pillow Block Housing must be on the same side as the locknut.





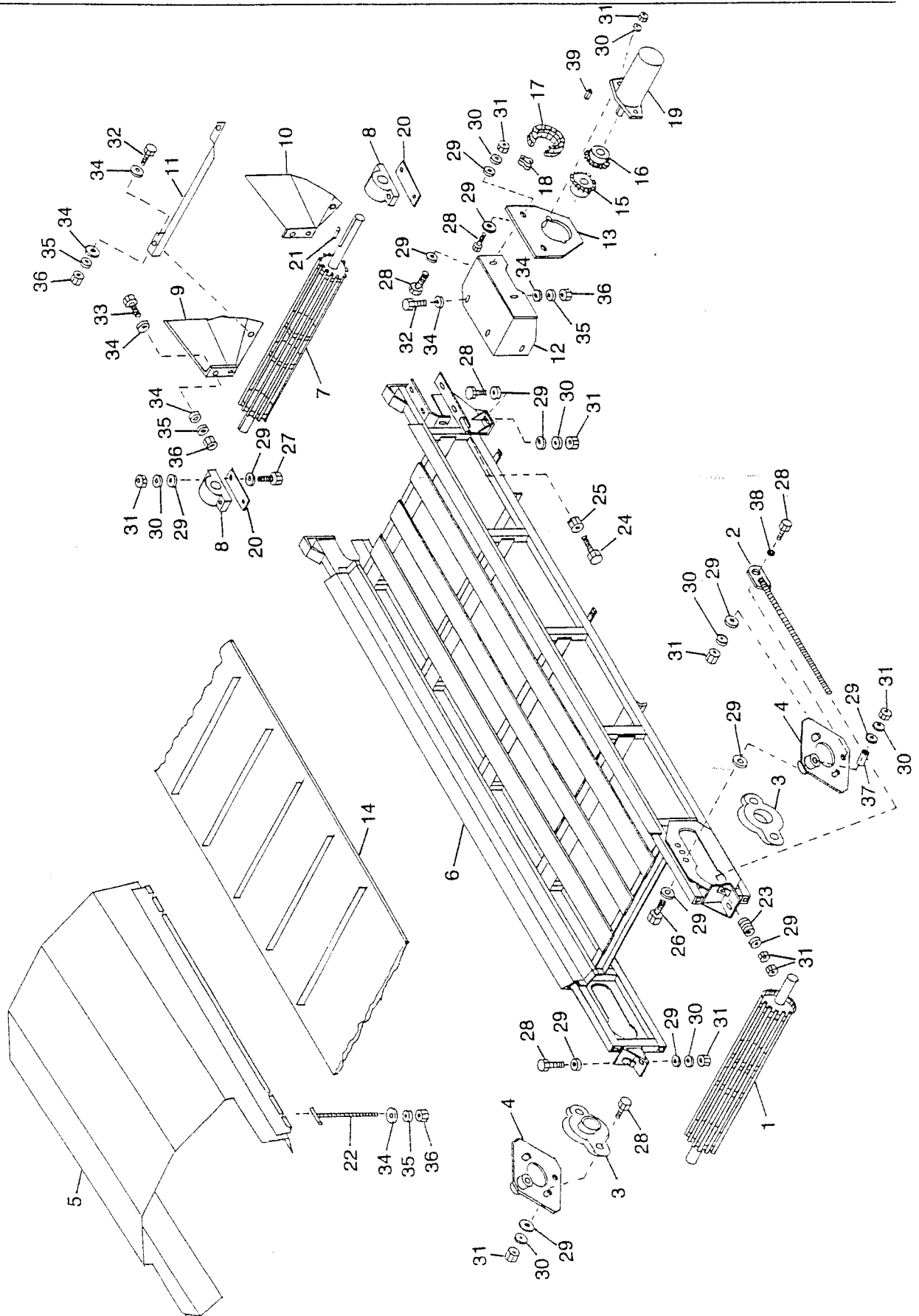


# 60 CONVEYOR PANELS





# 62 BELLY CONVEYOR



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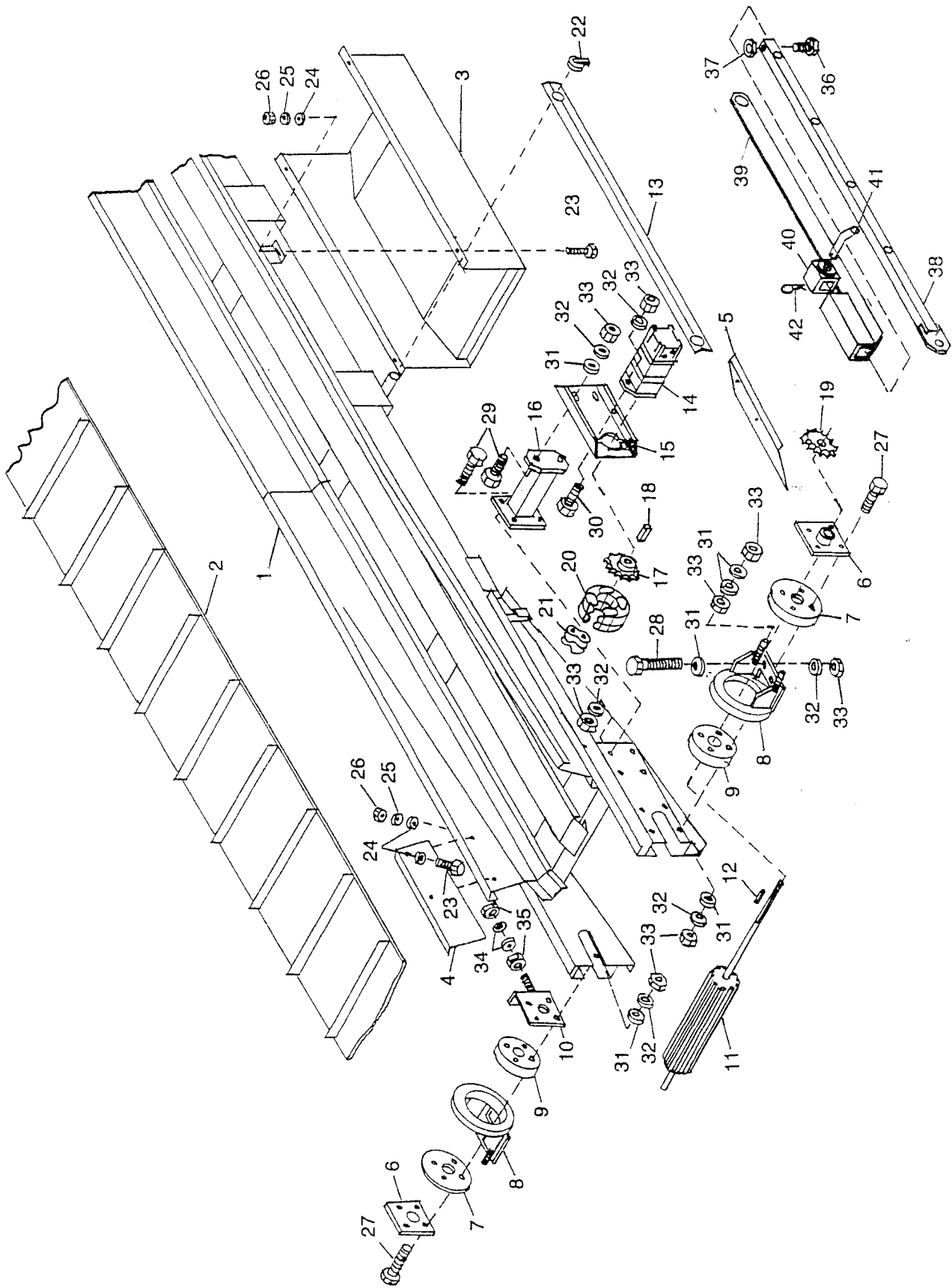
**BELLY CONVEYOR 63**

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ITEM	PART NO.	QTY.	DESCRIPTION
1	4700064	1	Idler Roller, 1 1/4" Shaft
2	4700525	2	Adjustment Rod
3	1900001	2	Flange Bearing, 1 1/4" - 2 Hole
4	4700526	2	Bearing Bracket
5	4700527	1	Cover
6	4700528	1	Belly Pan Frame
7	4700069	1	Drive Roller, 1 1/2" Shaft
8	1800001	2	Pillow Block Bearing, 1 1/2"
9	4700070	1	Deflector, Right Hand
10	4700071	1	Deflector, Left Hand
11	4700344	1	Deflector Brace
12	4700529	1	Orbit Motor Mount
13	4700530	1	Orbit Motor Mount Plate
14	1700031	1	Belly Pan Belt, 30" x 18'
15	1000081	1	Shaft Sprocket - 60-18-112
16	1000054	1	Motor Sprocket - 60-18-114
17	1100066	1	Coupler Chain - 60-17-CL Double
18	1100064	1	Connector Link - 60-CL Double
19	3900013	1	Orbit Motor, 6.2 cu. in.
20	4700531	2	Bearing Shim
21	6200007	1	3/8" Square Key
22	4700346	4	Cover Hold Down
23	6100027	2	Spring
24	4800096	2	5/8" x 6" Adjustable Bolt
25	4900005	2	5/8" Nut
26	4800068	2	1/2" x 3" Bolt
27	4800070	4	1/2" x 2 1/2" Bolt
28	4800082	14	1/2" x 1 1/2" Bolt
29	5000004	36	1/2" Flat Washer
30	5000006	20	1/2" Lock Washer
31	4900001	24	1/2" Nut
32	4800098	5	3/8" x 1 1/4" Bolt
33	4800004	4	3/8" x 1" Bolt
34	5000001	22	3/8" Flat Washer
35	5000019	13	3/8" Lock Washer
36	4900002	13	3/8" Nut
37	4700532	2	1" OD x 1/2" ID x 1 13/16" Bushing
38	4700533	2	1" OD x 1/2" ID x 5/16" Bushing
39	6200004	1	5/16" x 1 1/2" Square Key
40	1700053	2	#187 Alligator Lacing 30"
41	1700051	1	3/16" x 30 Nylon Cable

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# 64 DISCHARGE CONVEYOR (Lower)



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**DISCHARGE CONVEYOR (Lower) 65**

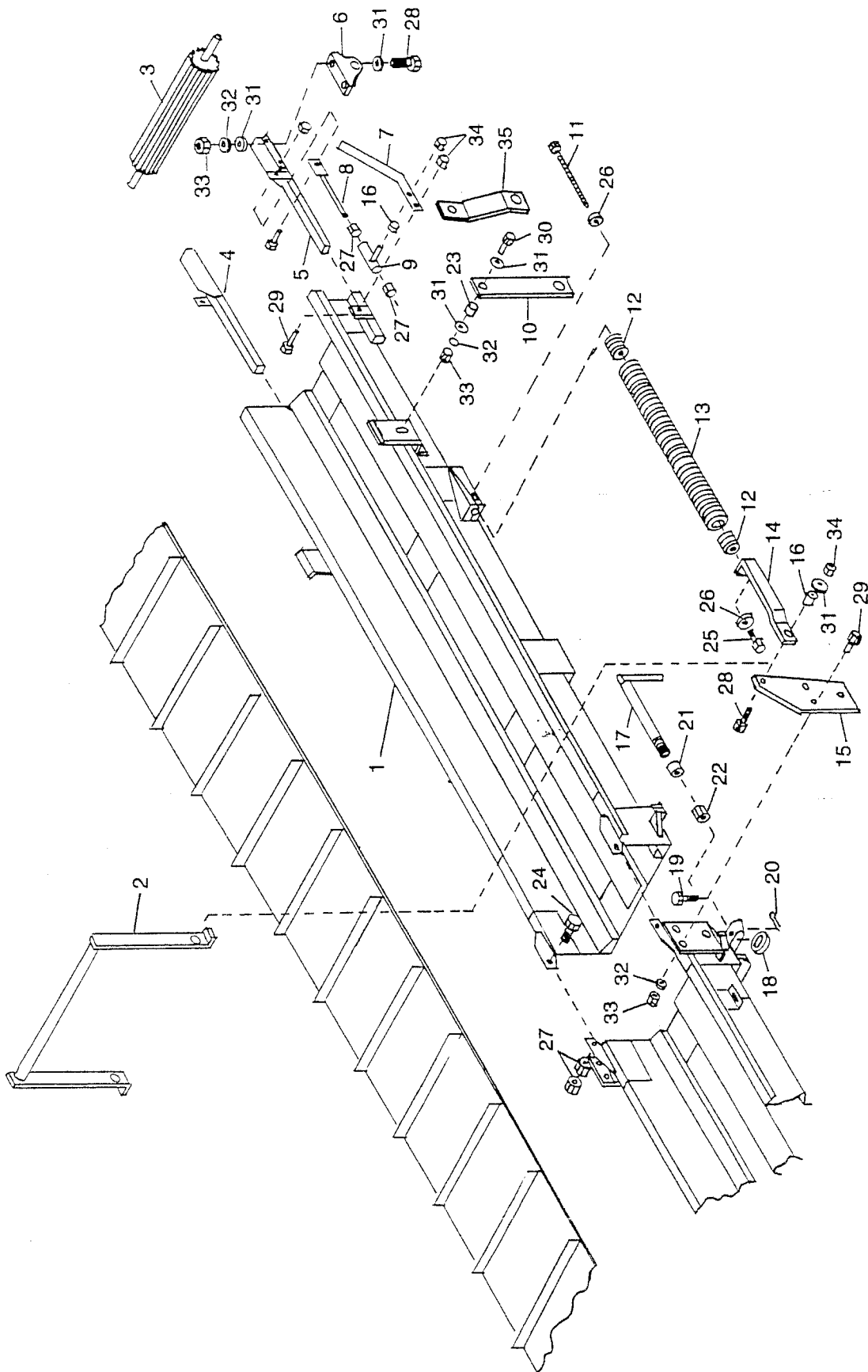
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<b>ITEM</b>	<b>PART NO.</b>	<b>QTY.</b>	<b>DESCRIPTION</b>
1	4700082	1	Bottom Conveyor Frame
2	1700006	1	Belt 18" Wide x 43'6" Long
3	4700081	1	Belt Guide
4	4700075	1	Deflector R.H.
5	4700076	1	Deflector L.H.
6	1900003	2	Bearing 1½" - 4 Hole Flange
7	4700464	2	Conveyor Hinge Retainer
8	4700465	2	Conveyor Hinge Mount
9	4700466	2	Conveyor Hinge Plate
10	4700352	1	Adjusting Bracket
11	4700185	1	Drive Roller
12	6200007	1	Key 3/8" Square x 1½"
13	4700085	2	Conveyor Transport Hanger
14	3900014	1	Orbit Motor, 9.6 cu. in.
15	4700535	1	Orbit Mount Plate
16	4700534	1	Orbit Motor Mount
17	1000019	1	Sprocket 60-18-114
18	6200004	1	Key 5/16" Square x 1½"
19	1000081	1	Sprocket 60-18-112
20	1100066	1	60-2 17 Link Chain
21	1100064	1	60-2 Connector Link
22	4800076	2	Klik Pin
23	4800003	8	3/8" x 1" Bolt
24	5000001	12	3/8" Flat Washer
25	5000019	8	3/8" Lock Washer
26	4900002	8	3/8" Nut
27	4800068	8	½" x 3" Bolt
28	4800141	4	½" x 4½" Bolt
29	4800082	6	½" x 1½" Bolt
30	4800114	2	½" x 2" Bolt
31	5000004	22	½" Flat Washer
32	5000006	20	½" Lock Washer
33	4900001	20	½" Nut
34	5000002	2	5/8" Flat Washer
35	4900005	2	5/8" Nut
<b>Serial No. 184 thru</b>			
36	4800146	2	3/8" x 2" Bolt
37	4900023	2	3/8" Lock Nut
38	4700703	2	Conveyor Safety Bar Slide
39	4700718	2	Conveyor Safety Bar
40	4700719	2	Conveyor Safety Bar Stop
41	4700720	2	Pin
42	4800056	2	Hair Pin

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# 66 DISCHARGE CONVEYOR (Upper)





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## DISCHARGE CONVEYOR (Upper) 67

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ITEM	PART NO.	QTY.	DESCRIPTION
1	4700080	1	Top Conveyor Frame
2	4700090	1	Belt Retainer
3	4700079	1	Idler Roller
4	4700083	1	Bearing Bracket R.H.
5	4700078	1	Bearing Bracket L.H.
6	1800002	2	Bearing 1 1/4" Pillow Block
7	4700351	2	Tension Adjusting Handle
8	4700348	2	Tension Adjusting Rod
9	4700349	2	Tension Adjusting Pivot
10	4700089	2	Transport Lock
11	4700353	2	Spring Adjusting Bolt, 5/8" x 12"
12	7500113	4	Screw Plug
13	6100047	2	Spring 1 1/2" ID x 33 1/2" Long
14	4700087	2	Spring Arm
15	4700086	2	Spring Arm Mount
16	4700092	2	3/4" OD x 1/2" ID x 3/4" Long Bushing
17	4700347	1	Latch Handle
18	5500001	2	Cable Sheave
19	4800026	2	Cable Sheave Pin
20	4800123	2	1/8" x 1 1/2" Cotter Key
21	2200009	1	1" Shaft Collar
22	4900015	1	1" Lock Nut
23	4700350	4	3/4" OD x 1/2" ID x 3/8" Long Bushing
24	4800010	2	5/8" x 2" Bolt
25	4800100	2	5/8" x 4" Bolt
26	5000002	4	5/8" Flat Washer
27	4900005	8	5/8" Nut
28	4800178	6	1/2" x 1 3/4" Bolt
29	4800018	8	1/2" x 1 1/4" Bolt
30	4800114	2	1/2" x 2" Bolt
31	5000004	14	1/2" Flat Washer
32	5000006	12	1/2" Lock Washer
33	4900001	12	1/2" Nut
34	4900014	6	1/2" Lock Nut

**Serial No. 0184 thru**

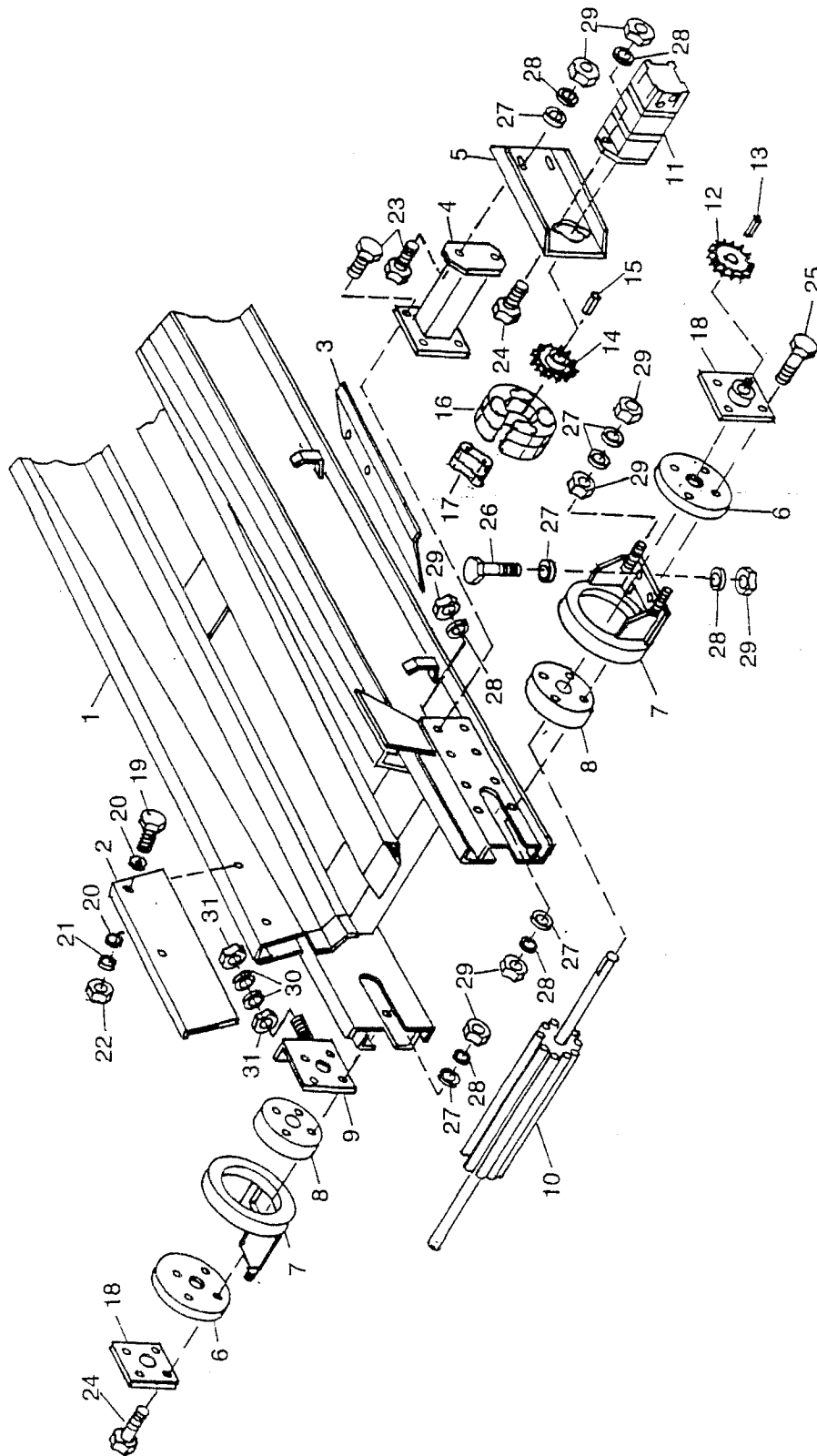
35	4700721	2	Transport Lock
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# 68 DISCHARGE CONVEYOR HYD. LIFT & FOLD (Bottom)

Serial No. 0184



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# DISCHARGE CONVEYOR HYD. LIFT & FOLD (Bottom) 69

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Serial No. 0184 thru 0259. For #0260 and up See Page #'s 134 & 135

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ITEM	PART NO.	QTY.	DESCRIPTION
1	4700722	1	Bottom Conveyor Frame
2	4700075	1	Deflector R.H.
3	4700076	1	Deflector L.H.
4	4700534	1	Orbit Motor Mount
5	4700535	1	Orbit Mount Plate
6	4700464	2	Conveyor Hinge Retainer
7	4700465	2	Conveyor Hinge Mount
8	4700466	2	Conveyor Hinge Plate
9	4700467	1	Adjusting Bracket
10	4700448	1	Drive Roller
11	3900014	1	Orbit Motor 9.6 cu. in.
12	1000081	1	60B18 Sprocket 1 1/2" Bore
13	6200007	1	3/8" Sq. Key x 1 1/2"
14	1000054	1	60B18 Sprocket 1 1/4" Bore 5/16" KW
15	6200004	1	5/16" Sq. Key x 1 1/2"
16	1100066	1	60-2 17 Link Chain
17	1100064	1	60-2 Connector Link
18	1900003	2	Bearing 1 1/2" 4 Bolt Flange
19	4800003	4	3/8" x 1" Bolt
20	5000001	8	3/8" Flat Washer
21	5000019	4	3/8" Lock Washer
22	4900002	4	3/8" Nut
23	4800082	6	1/2" x 1 1/2" Bolt
24	4800114	2	1/2" x 2" Bolt
25	4800068	8	1/2" x 3" Bolt
26	4800141	4	1/2" x 4 1/2" Bolt
27	5000004	22	1/2" Flat Washer
28	5000006	20	1/2" Lock Washer
29	4900001	20	1/2" Nut
30	5000002	2	5/8" Flat Washer
31	4900005	2	5/8" Nut
	4700787		Conveyor Mount Kit

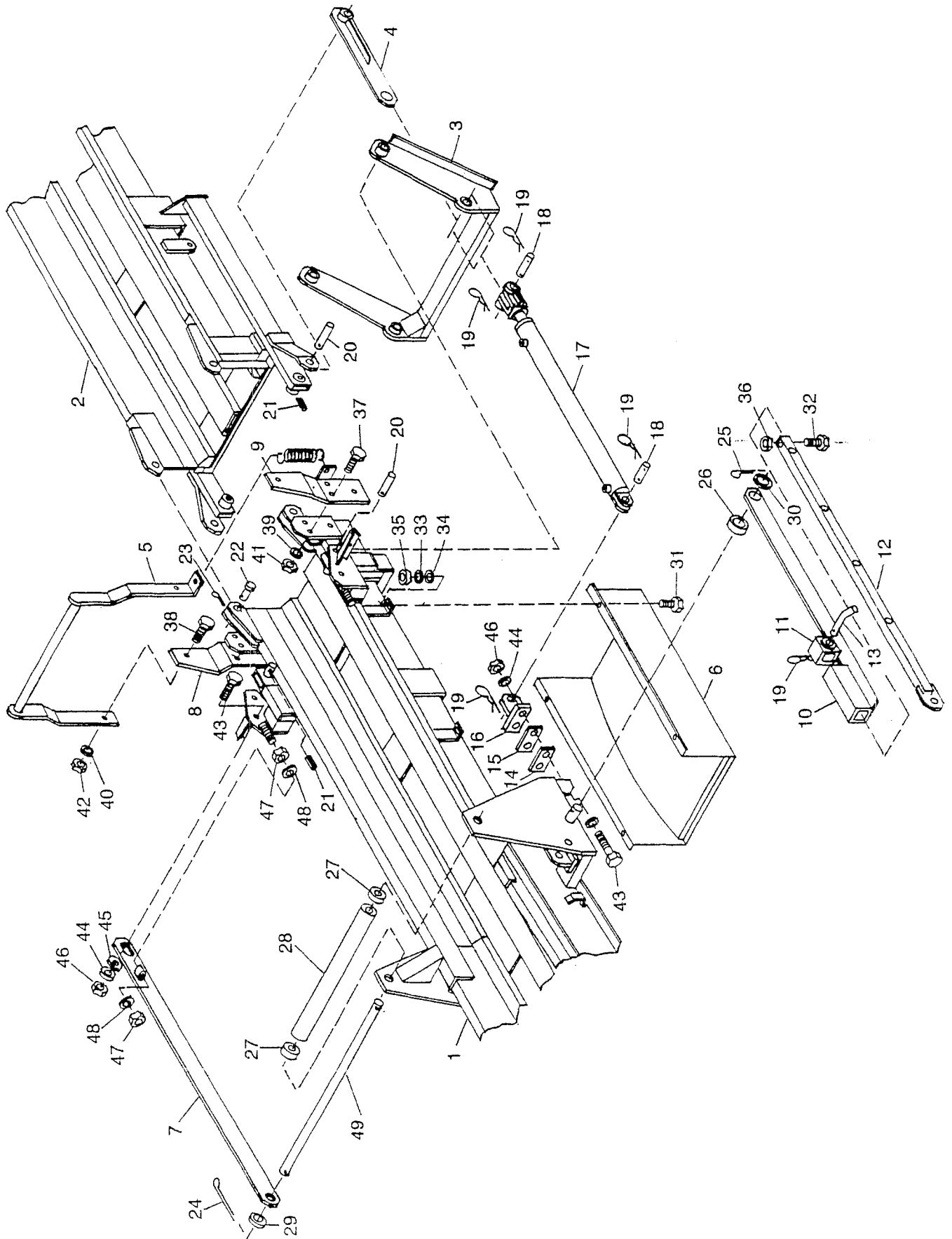
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# 70 DISCHARGE CONVEYOR HYD. LIFT & FOLD (Middle)

Serial No. 0184



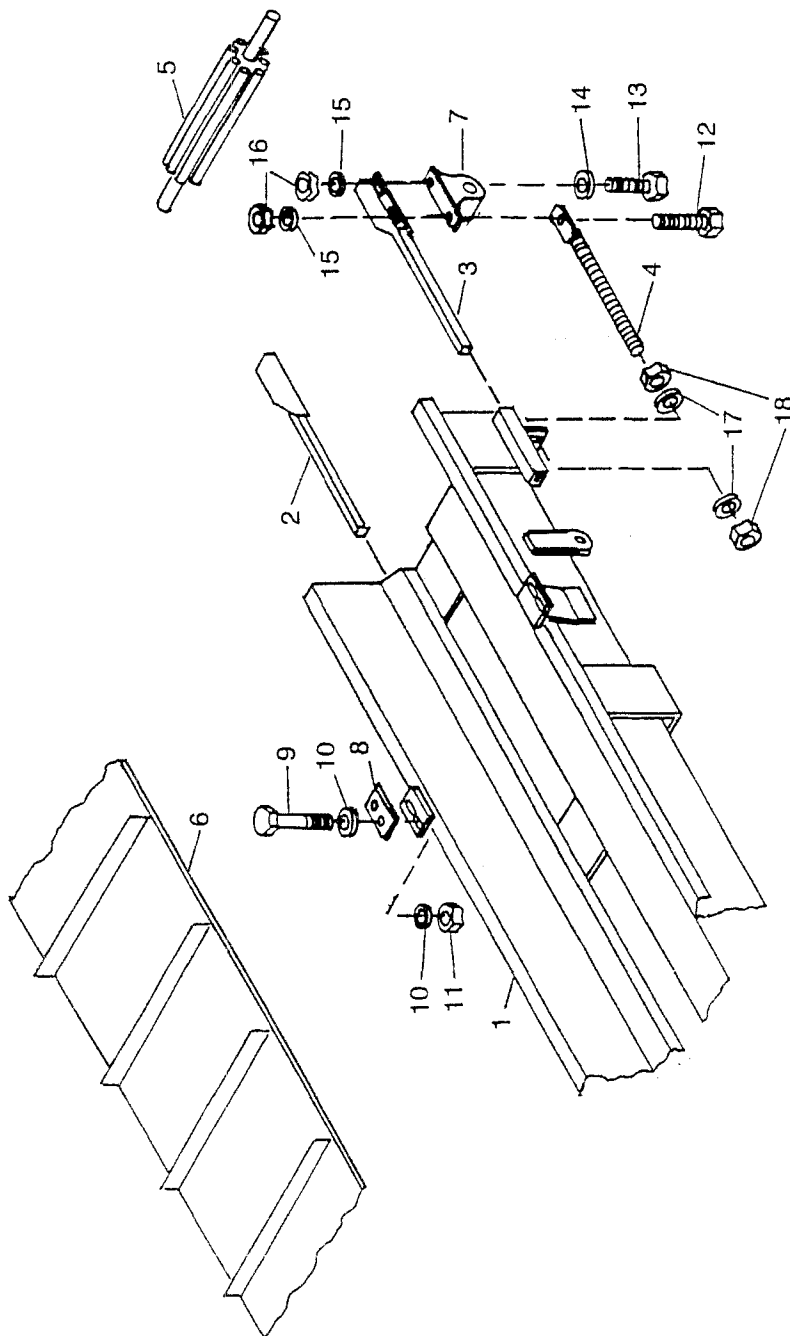
# DISCHARGE CONVEYOR HYD. LIFT & FOLD (Middle) 71

Serial No. 0184 thru #0259. For #0260 and up see pages 136 & 137

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700722	1	Bottom Conveyor Frame
2	4700723	1	Top Conveyor Frame
3	4700459	1	Control Arm
4	4700460	2	Lift Link
5	4700458	1	Belt Holder
6	4700081	1	Belt Guide
7	4700724	2	Conveyor Support Bar
8	4700457	1	Conveyor Belt Holder Mt. R.H.
9	4700456	1	Conveyor Belt Holder Mt. L.H.
10	4700718	2	Conveyor Safety Bar
11	4700719	2	Conveyor Safety Bar Stop
12	4700703	2	Conveyor Safety Bar Slide
13	4700720	2	Pin Conveyor Safety Bar
14	4700453	4	Hyd. Cylinder Shim 14 Ga.
15	4700454	4	Hyd. Cylinder Shim 10 Ga.
16	4700455	2	Hyd. Cylinder Anchor
17	4100086	2	Hyd. Cylinder 3" x 30"
18	4700473	4	1" x 3" Pin
19	4800056	10	Hair Pin 3/16" x 3"
20	4700472	4	1" x 5 1/4" Pin
21	4800267	4	1/4" x 1 3/4" Roll Pin
22	4800035	2	3/4" x 2" Clevis Pin
23	4800050	2	3/16" x 1 1/2" Cotter Pin
24	4800043	2	1/4" x 2 1/2" Cotter Pin
25	4800066	2	5/16" x 2" Cotter Pin
26	2000802	2	1 1/4" Lock Collar
27	2000809	2	1" Lock Collar
28	3700236	1	1" x 31" Suction Hose
29	5000040	2	1" Machine Bushing Narrow Rim
30	5000031	2	1 3/8" ID x 10 Ga. Machine Bushing
31	4800003	4	3/8" x 1" Bolt
32	4800146	2	3/8" x 2" Bolt
33	5000019	4	3/8" Lock Washer
34	5000001	4	3/8" Flat Washer
35	4900002	4	3/8" Nut
36	4900023	2	3/8" Lock Nut
37	4800018	6	1/2" x 1 1/4" Bolt
38	4800178	2	1/2" x 1 3/4" Bolt
39	5000006	6	1/2" Lock Washer
40	5000004	2	1/2" Flat Washer
41	4900001	6	1/2" Nut
42	4900014	2	1/2" Lock Nut
43	4800010	6	5/8" x 2" Bolt
44	5000003	6	5/8" Lock Washer
45	5000002	2	5/8" Flat Washer
46	4900005	6	5/8" Nut
47	4900004	4	3/4" Nut
48	5000077	4	1 1/2" x 25/32" x 3/16" Washer
49	4700736	1	Conveyor Support Bar Shaft
50	6100009	1	Spring - 1" OD x 6" Long

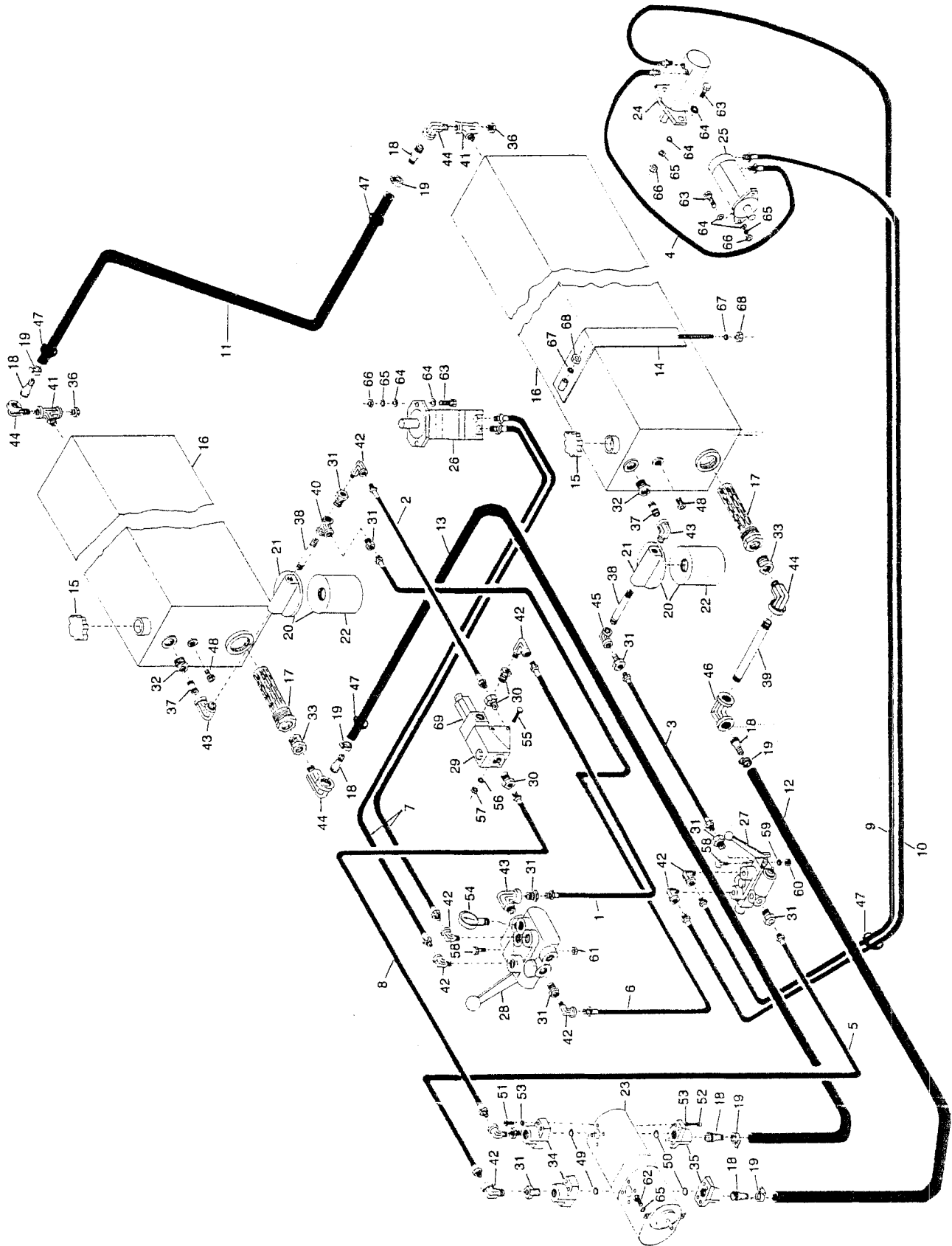
# 72 DISCHARGE CONVEYOR HYD. LIFT & FOLD (Top)

Serial No. 0184





# 74 HYDRAULICS

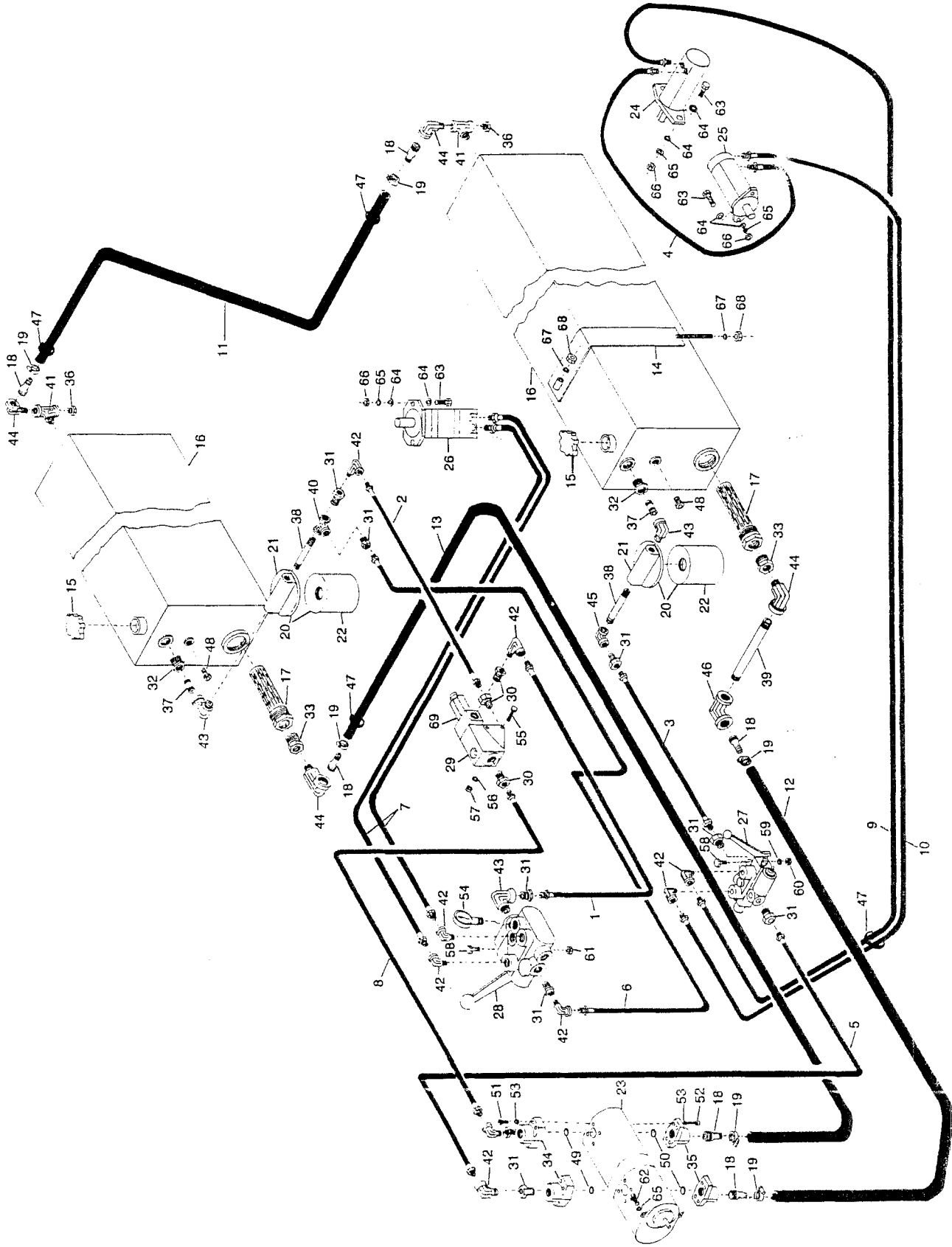




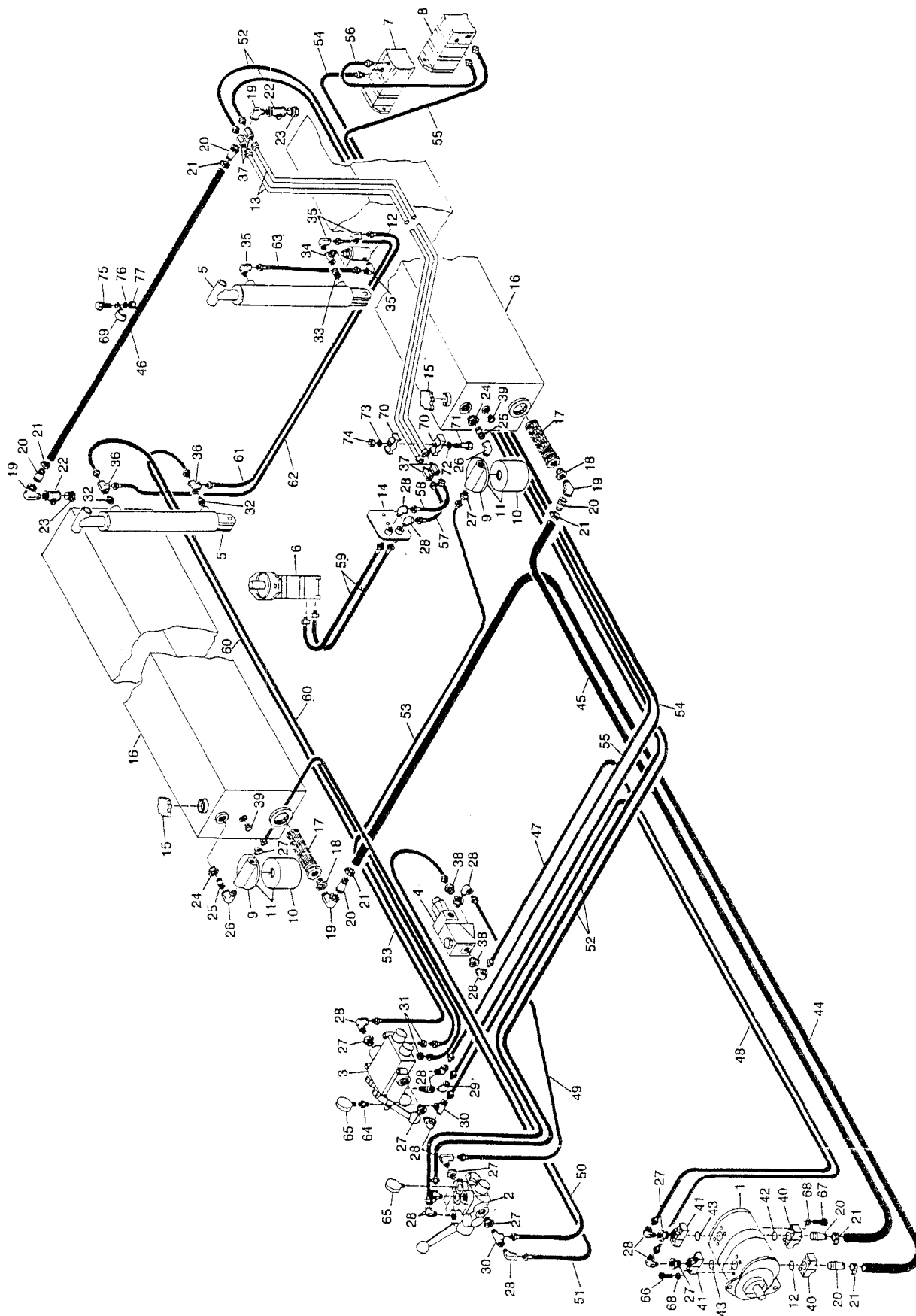
# HYDRAULICS 75

Serial No. 0133 thru 0183

ITEM	PART NO.	QTY.	DESCRIPTION
1	3700202	1	1/2" x 27" Hose
2	3700203	1	1/2" x 32" Hose
3	3700204	1	1/2" x 35" Hose
4	3700205	1	1/2" x 43" Hose
5	3700073	1	1/2" x 50" Hose
6	3700060	1	1/2" x 66" Hose
7	3700206	2	1/2" x 82" Hose
8	3700207	1	1/2" x 88" Hose
9	3700208	1	1/2" x 184" Hose
10	3700209	1	1/2" x 190" Hose
11	3700210	1	1" x 56" Suction Hose
12	3700211	1	1" x 87" Suction Hose
13	3700212	1	1" x 131" Suction Hose
14	4700737	4	Oil Tank Strap
15	7500275	2	Oil Tank Cap
16	4700738	2	Oil Tank
17	4400007	2	Strainer S25
18	3800056	6	1" King Nipple
19	3800143	6	1 1/2" Hose Clamp T-Bolt
20	4400006	2	Filter Complete F4E
21	4400004	2	Filter Base F4E
22	4400005	2	Filter Element F4E
23	4200034	1	Hydraulic Pump J.D. Engine Only
24	3900013	1	6.2 Cu. In. Orbit Motor
25	3900014	1	9.6 Cu. In. Orbit Motor
26	3900010	1	24 Cu. In. Orbit Motor
27	4000035	1	Conveyor Valve
28	4000016	1	Tub Drive Valve
29	4300030	1	Electric Valve
30	3800119	3	1 1/16" Straight to 1/2" Pipe Bushing With O-Ring
31	3800010	9	3/4" to 1/2" Bushing
32	3800131	2	1" to 3/4" Bushing
33	3800022	2	1 1/4" to 1" Bushing
34	4200005	2	3/4" Flange With O-Ring
35	4200006	2	1" Flange With O-Ring
36	3800149	2	1" Plugs
37	3800106	2	3/4" x 1 1/2" Nipple
38	3800150	2	3/4" x 3 1/2" Nipple
39	3800151	1	1" x 8" Nipple
40	3800017	1	3/4" Tee
41	3800152	2	1" St. Tee
42	3800080	9	1/2" St. Elbow
43	3800129	3	3/4" St. Elbow
44	3800021	4	1" St. Elbow
45	3800035	1	3/4" Pipe Elbow
46	3800153	1	1" Pipe Elbow
47	7500199	4	Grommet
48	3800137	2	3/4" Site Glass
	3700233		5/8 .049 Wa Tube 7/8 N-N Steel Hyd. Line



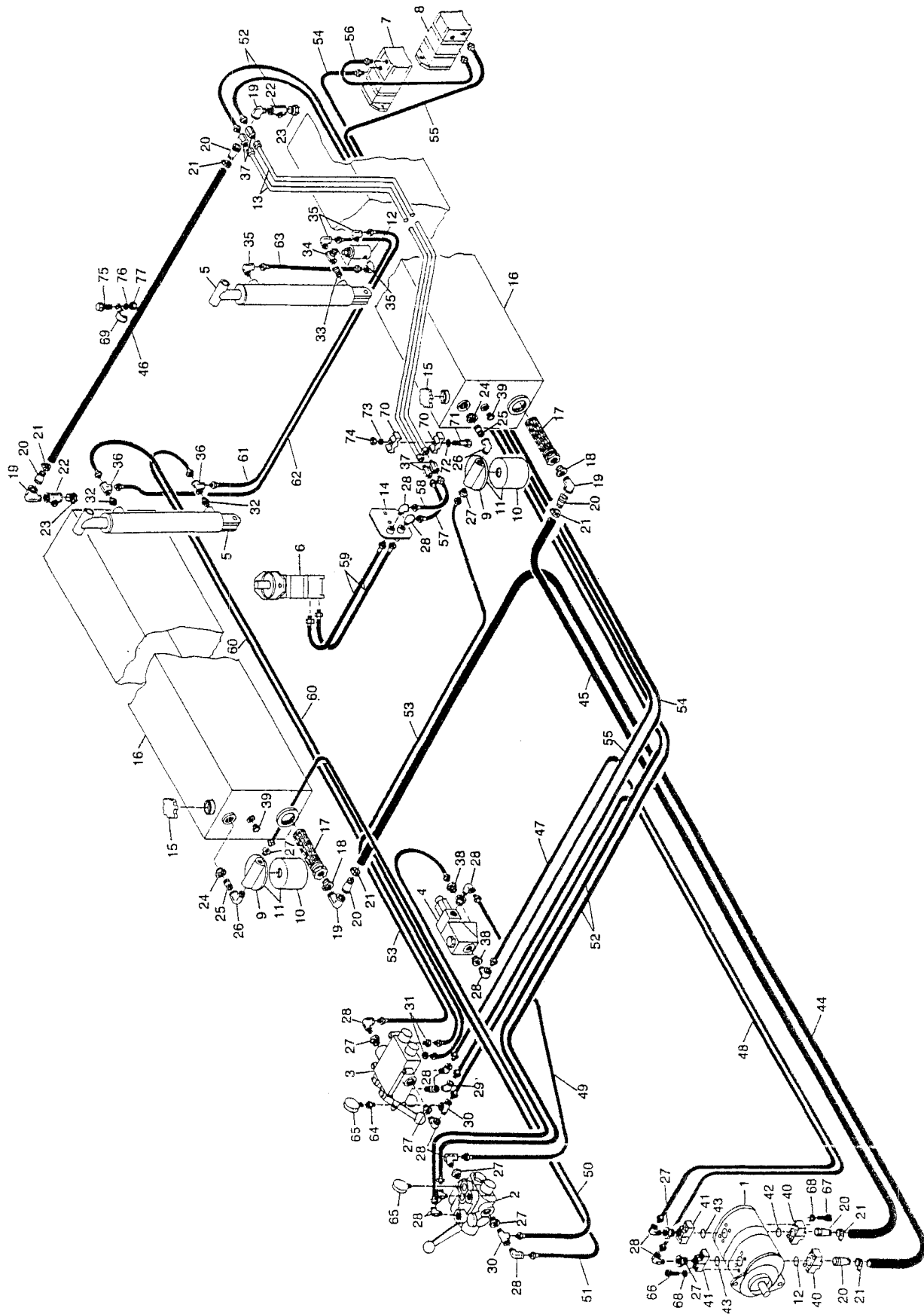




# HYDRAULICS 79

Serial No. 0184 thru

ITEM	PART NO.	QTY.	DESCRIPTION
1	4200034	1	Hydraulic Pump J.D. Engine Only
2	4000016	1	Tub Drive Valve
3	4000050	1	Hyd. Valve w/Detent 104169-48
4	4300030	1	Electric Valve
5	4100112	2	3" x 18" Cylinder Tube on 1 1/2" Ram
6	3900010	1	Orbit Motor 24 Cu. In.
7	3900013	1	Orbit Motor 6.2 Cu. In.
8	3900014	1	Orbit Motor 9.6 Cu. In.
9	4400004	2	Filter Base F4E
10	4400005	2	Filter Element F4E
11	4400006	2	Filter Complete F4E
12	4000017	1	Relief Valve
13	3700233	2	Hydraulic Tube
14	4700726	1	Hydraulic Manifold
15	7500275	2	Oil Tank Cap
16	4700738	2	Oil Tank
17	4400007	2	Strainer S25
18	3800022	2	1 1/4" to 1" Bushing
19	3800021	4	1" 90° St. Elbow
20	3800056	6	1" King Nipple
21	3800143	6	1 1/2" Hose Clamp T-Bolt
22	3800160	2	1" Male Branch Tee
23	3800149	2	1" Plug
24	3800131	2	1" to 3/4" Bushing
25	3800106	2	3/4" x 1 1/2" Nipple
26	3800129	2	3/4" 90° St. Elbow
27	3800010	8	3/4" to 1/2" Bushing
28	3800080	14	1/2" 90° St. Elbow
29	3800040	1	1/2" 45° St. Elbow
30	3800161	2	1/2" St. Tee
31	3800007	2	1/2" to 3/8" Bushing
32	3800127	2	1/2" to 3/8" Nipple
33	3800005	1	1/2" Closed Nipple
34	3800162	1	1/2" Male Branch Tee
35	3800133	4	1/2" Male to 3/8" Female 90° Elbow
36	3800100	2	3/8" Tee
37	3800163	4	7/8" Straight JIC to 1/2" Pipe Female Adapter
38	3800119	3	1 1/16" Straight to 1/2" Pipe, Bushing w/O Ring
39	3800137	2	3/4" Site Glass
40	4200006	2	1" Flange w/O Ring
41	4200005	2	3/4" Flange w/O Ring
42	N/A	2	O Ring
43	N/A	2	O Ring
44	3700237	1	1" x 140" Suction Hose
45	3700238	1	1" x 100" Suction Hose
46	3700239	1	1" x 63" Suction Hose
47	3700240	1	1/2" x 81" Hose
48	3700241	1	1/2" x 91" Hose
49	3700202	1	1/2" x 27" Hose
1A	4200030		Hyd Pump 20/15 Cat Engine



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# HYDRAULICS 81

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Serial No. 0184 thru

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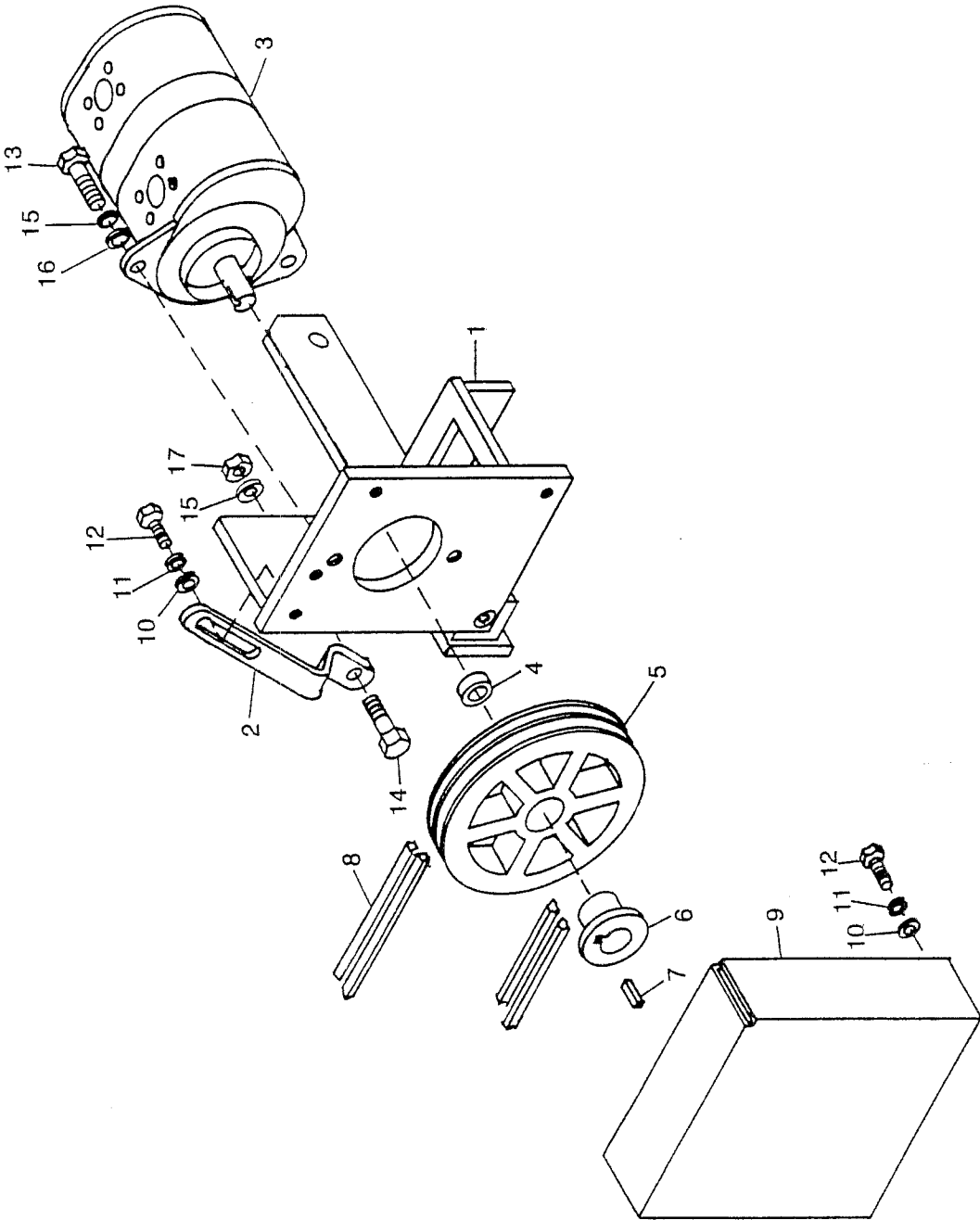
ITEM	PART NO.	QTY.	DESCRIPTION
50	3700057	1	1/2" x 58" Hose
51	3700033	1	1/2" x 78" Hose
52	3700242	2	1/2" x 250" Hose
53	3700243	1	1/2" x 100" Hose
54	3700244	1	1/2" x 210" Hose
55	3700119	1	1/2" x 216" Hose
56	3700205	1	1/2" x 43" Hose
57	3700215	1	1/2" x 17" Hose
58	3700121	1	1/2" x 19" Hose
59	3700245	2	1/2" x 54" Hose
60	3700268	2	3/8" x 140" Hose
61	3700246	1	3/8" x 140" Hose
62	3700247	1	3/8" x 68" Hose
63	3700196	1	3/8" x 20" Hose
64	3800049	1	1/2" to 1/4" Bushing
65	3800154	2	Hydraulic Pressure Gauge
66	4800167	8	3/8" x 1 1/4" Socket Head Cap Screw
67	4800269	8	3/8" x 1 1/2" Socket Head Cap Screw
68	5000061	16	3/8" Hi Collar Lock Washer
69	7500395	1	1 1/4" IH Emt Strap (1 1/4 TW)
70	7500386	8	Hyd. Oil Line Clamp
71	4800029	4	3/8" x 2 1/2" Bolt
72	5000001	4	3/8" Flat Washer
73	5000019	4	3/8" Lock Washer
74	4900002	4	3/8" Nut
75	4800301	1	1/4" x 3/4" Whiz Lock Flange/Screw
76	5000024	1	1/4" Lock Washer
77	4900009	1	1/4" Nut
78	7501018		Electric Valve Seal Kit
	4200034		Pump 15/15 J.D. Engine Only
	4701025		Belt No-Ply 1/4" x 2 x 20 For Oil Tank
	4000067		Relief Valve Spring Red

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82 HYDRAULIC PUMP JOHN DEERE 6619A-F-00

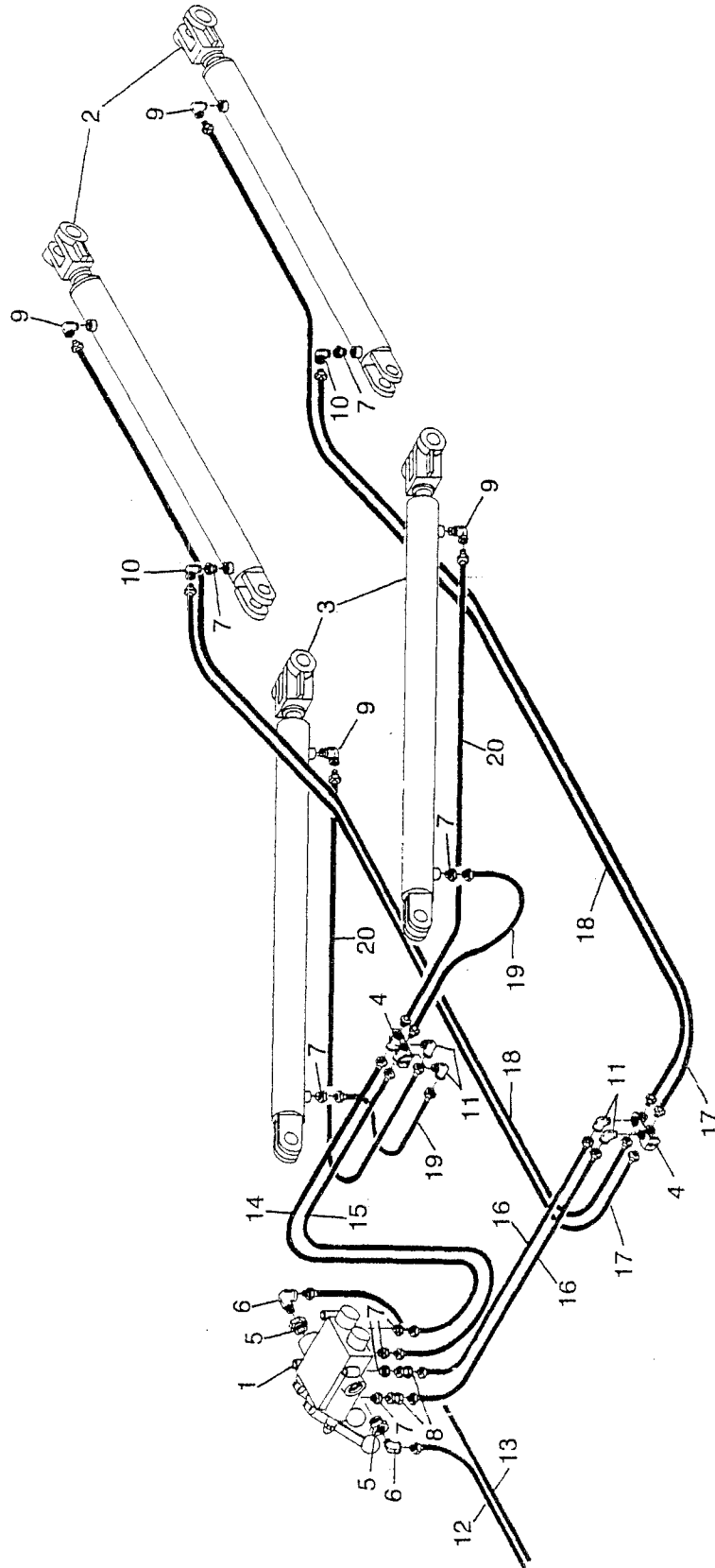






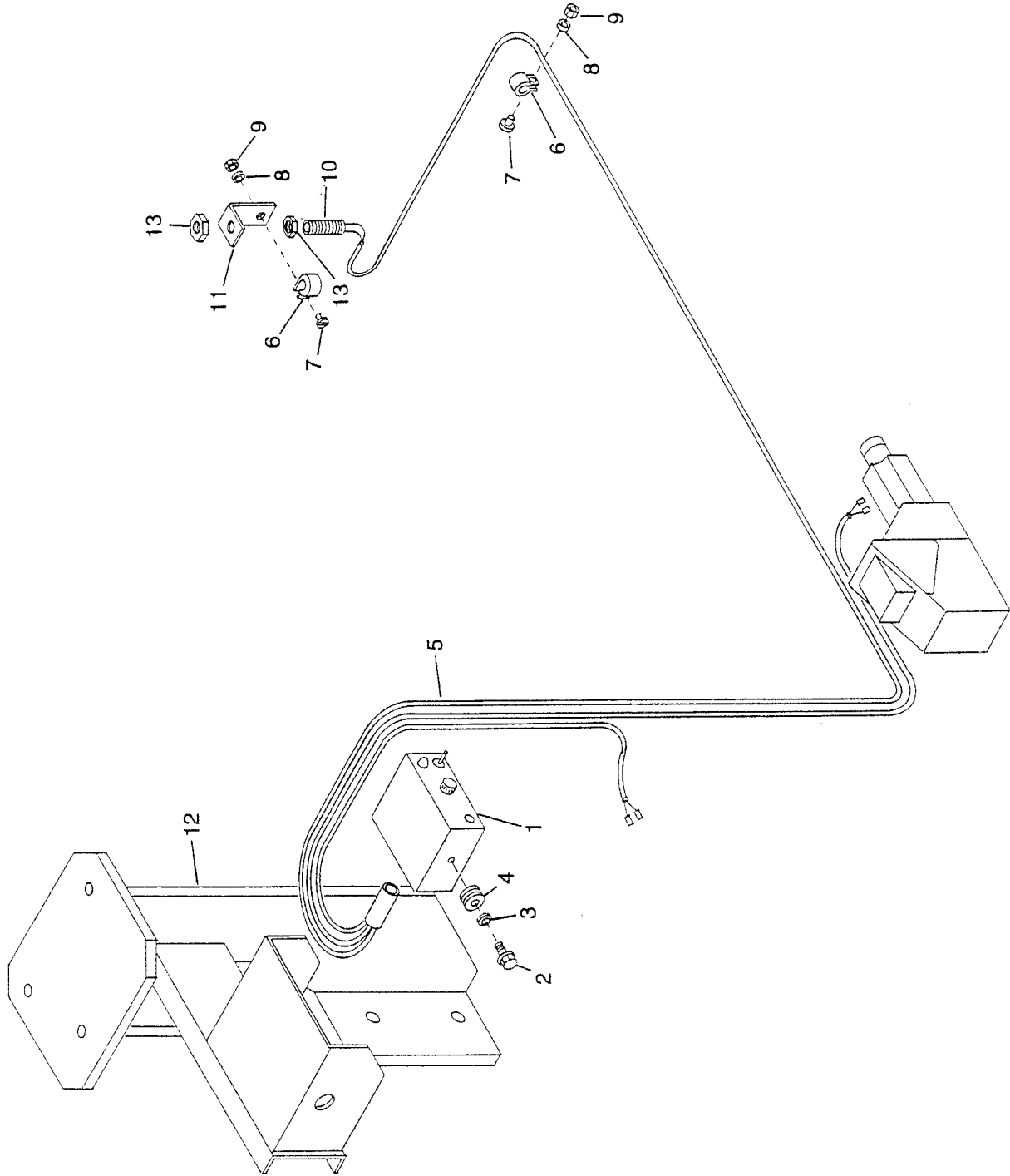
# 84 HYDRAULIC LIFT & FOLD CONVEYOR

Serial No. 0184 thru



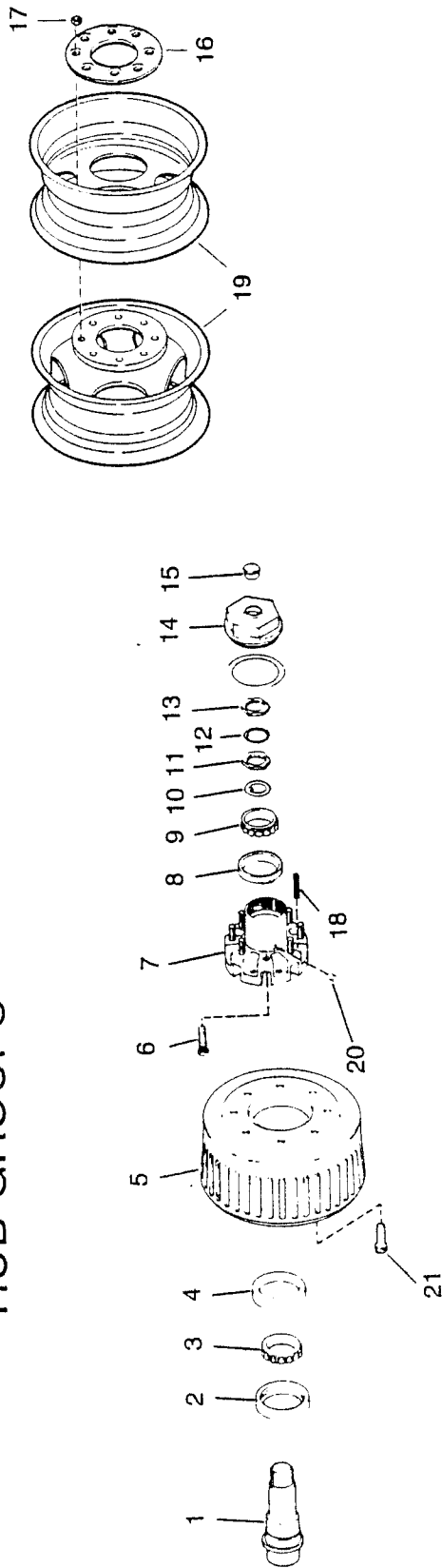


# 86 CONTROL BOX



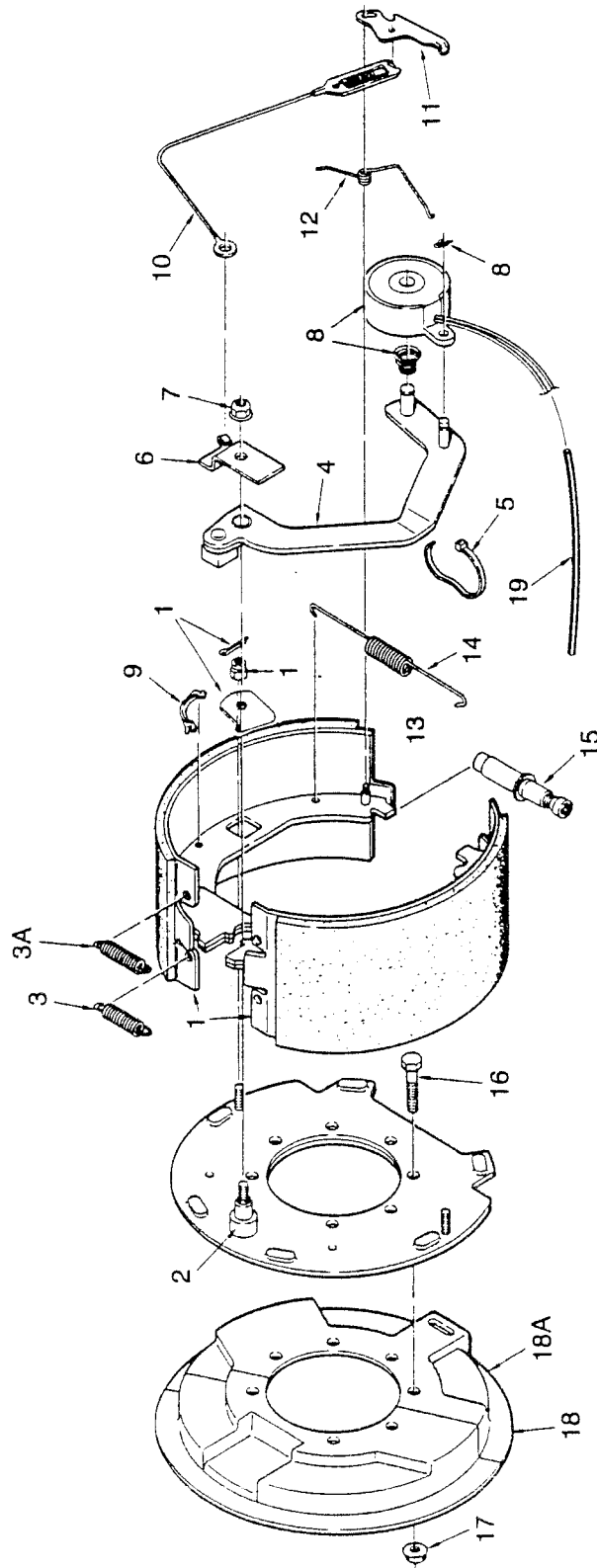


HUB GROUPS





ELECTRIC BRAKE PARTS

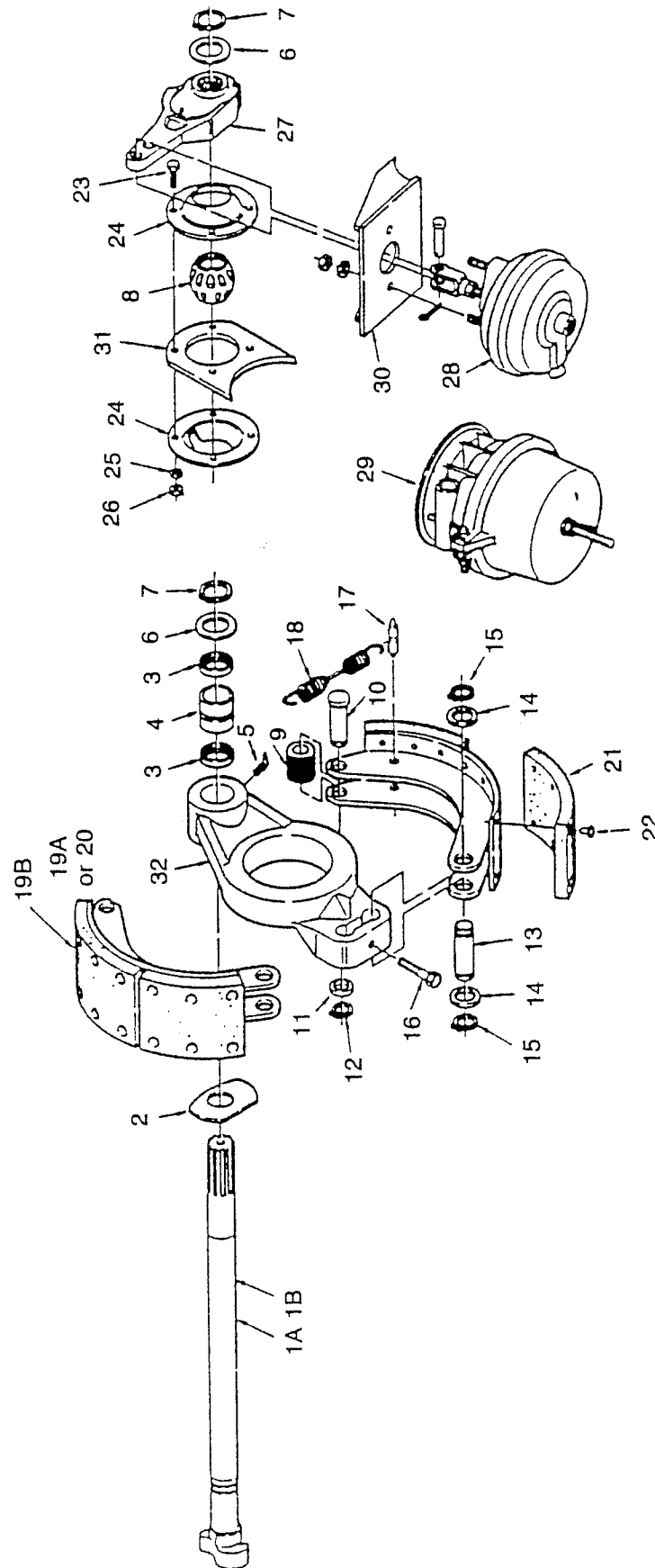






# 92 AIR BRAKES

15,000 Lb. Axle



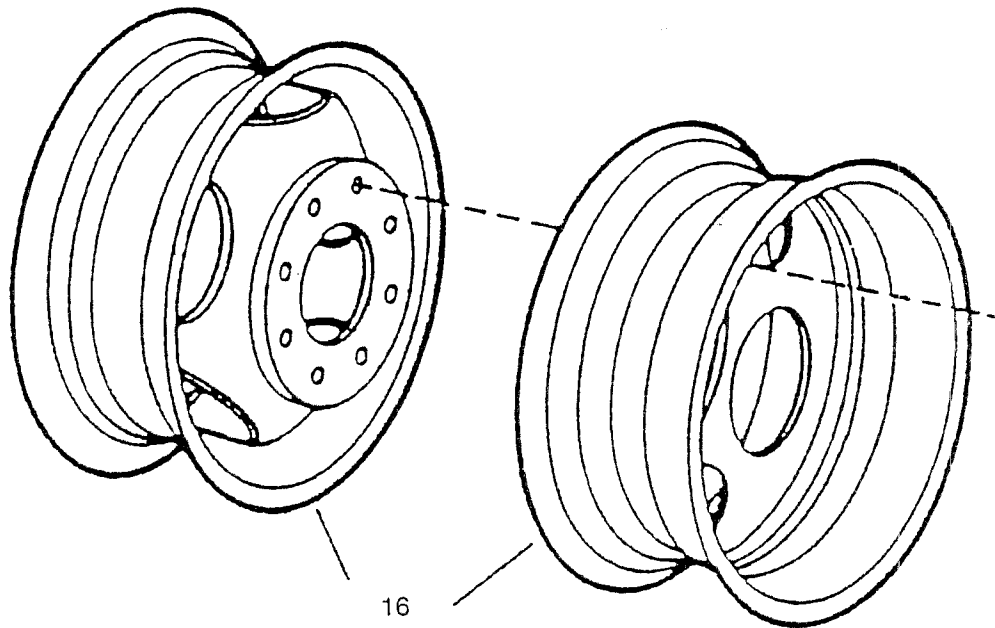
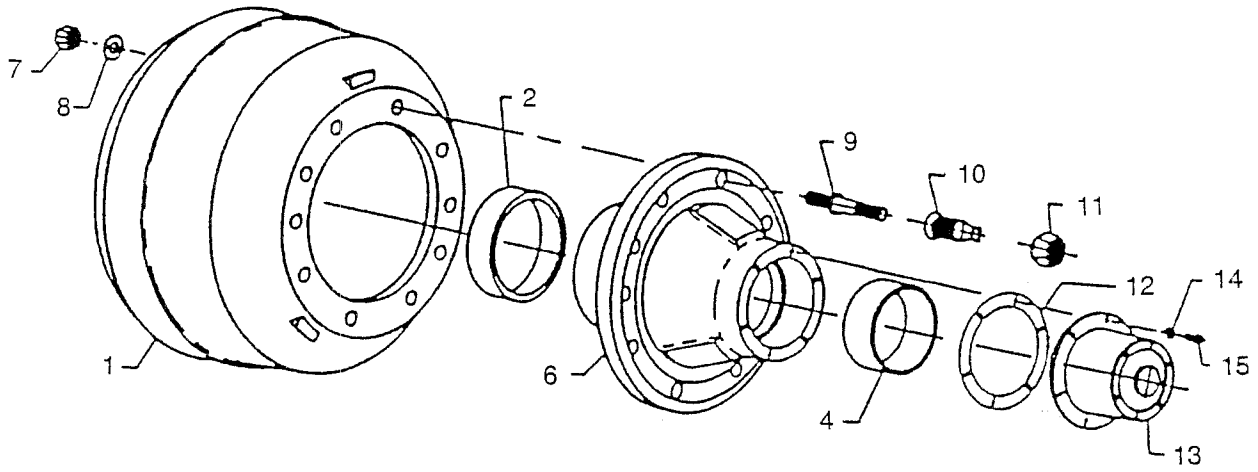
# AIR BRAKES 93

15,000 Lb. Axle

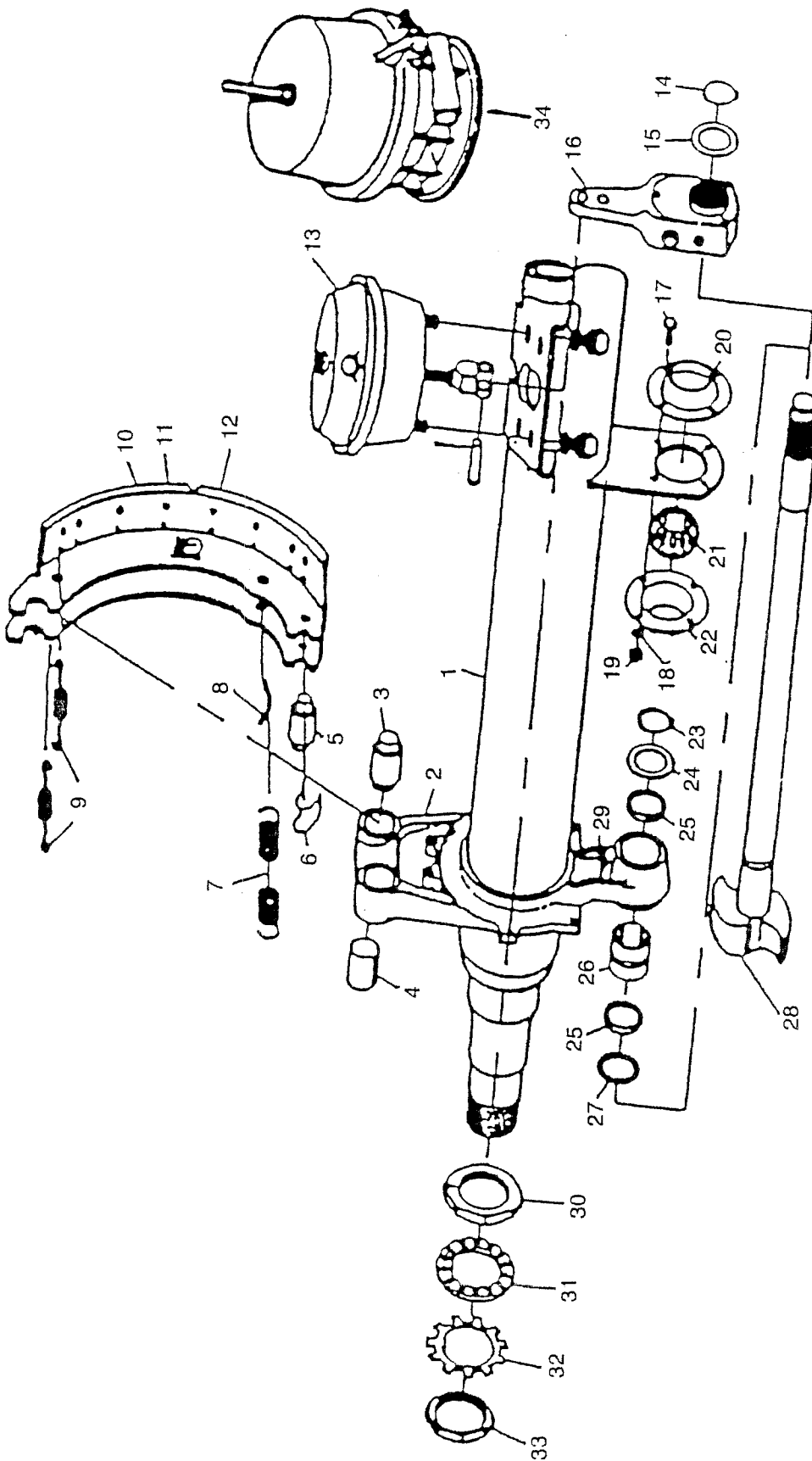
ITEM	PART NO.	QTY.	DESCRIPTION
1A	2500101	1	Camshaft L.H.
1B	2500102	1	Camshaft R.H.
2	2500103	1	D Washer Camshaft
3	2500612	2	Grease Seal
4	2500613	1	Camshaft Bushing
5	2500614	1	Grease Fitting
6	2500615	2	Camshaft Washer
7	2500616	2	Camshaft Retainer
8	2500617	1	Camshaft Support Bushing
9	2500104	2	Roller
10	2500105	2	Roller Pin
11	2500106	2	Roller Pin Spacer
12	2500107	2	Roller Pin Retainer
13	2500108	2	Anchor Pin
14	2500109	4	Anchor Pin Washer
15	2500110	4	Anchor Pin Retainer
16	2500111	1	Screw, Anchor Pin Clamping
17	2500112	2	Retainer Pin, Retractor Spring
18	2500113	1	Retractor Spring
19A	2500114	1	Shoe & Roller Assembly R.H.
19B	2500115	1	Shoe & Roller Assembly L.H.
20	2500116	2	Shoe & Block Assembly
21	2500117	4	Brake Block
22	2500118	24	Rivet
23	4800277	4	Bolt, 1/4 x 1
24	2500618	2	Plate Bushing Retainer
25	5000024	4	Lock Washer
26	4900009	4	Nut
27	2500619	1	Slack Adjuster
28	2500119	1	Air Chamber W/Hardware
29	2500120	1	Spring Brake
30		1	÷ Air Chamber Bracket
31		1	÷ Plate - Camshaft Support Bracket
32		1	÷ Brake Spider
33	2500121		Camshaft Repair Kit - For 1 Brake
34	2500122		Shoe Repair Kit - For 1 Brake
35	2500123		Brake Block Kit
			÷ Part of Axle Beam Weldment

# 94 HUB WHEELS

20,000 Lb. Axle





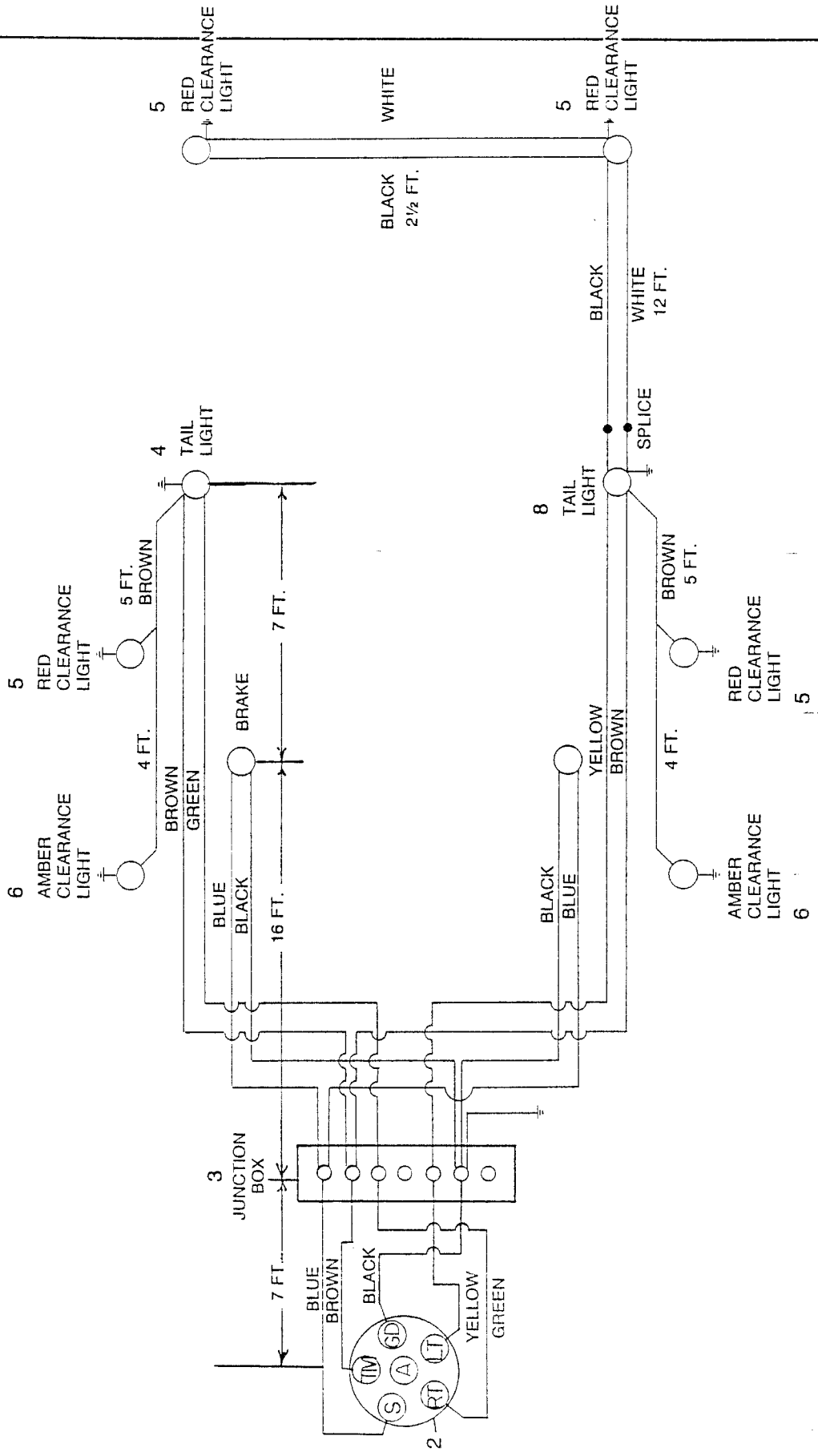


# AIR BRAKES 97

20,000 Lb. Axle

ITEM	PART NO.	QTY.	DESCRIPTION
1	2500603	1	Axle
2	2500622	2	Spider
3	2500623	4	Anchor Pin
4	2500624	4	Bushing - Spider Anchor Pin
5	2500625	4	Roller Knurled
6	2500626	4	Retainer - Roller
7	2500627	2	Spring - Shoe Retractor
8	2500628	4	Retainer Pin - Retractor Spring
9	2500629	4	Spring Shoe Keeper
10		4	Shoe & Lining Assembly?????
11	2500630	4	Lining - Brake Block Cam
12	2500631	4	Lining - Brake Block Anchor
13	2500632	2	Air Chamber w/Hardware
14	2500616	2	Retainer Camshaft End
15	2500606	2	Washer - Camshaft End
16	2500619	2	Slack Adjuster
17	4800277	8	Bolt - Retainer Plate Attachment 1/4" x 1"
18	5000024	8	Lock Washer - Cover Attachment 1/4"
19	4900009	8	Nut - Retainer Plate Attachment 1/4"
20	2500618	2	Retainer Plate - Outboard
21	2500617	2	Bushing - Camshaft Support
22	2500618	2	Retainer Plate - Outboard w/Grease Fitting Slot
23	2500615	2	Retainer - Camshaft
24	2500607	2	Washer - Camshaft (.060 Thick)
25	2500612	4	Grease Seal
26	2500613	2	Bushing - Camshaft Spider
27	2500608	2	Washer - Camshaft (.120 Thick)
28	2500633	1	Camshaft L.H.
28	2500634	1	Camshaft R.H.
29	2500614	2	Grease Fitting 45°
30	2500604	2	Nut Inner Spindle Bearing
31	2500609	2	Lock Washer - Indexing
32	2500610	2	Lock Washer - Tab
33	2500605	2	Nut Outer Spindle
34	2500635	2	Spring Brake
35	2500636		Camshaft Repair Kit - For 1 Brake
36	2500637		Brake Shoe Repair Kit - For 1 Brake
	2500620		22.5 K Axle Bar 77 1/2" Long
	2500612		Seal For 25 620 Axle
	2500928		U-Boits

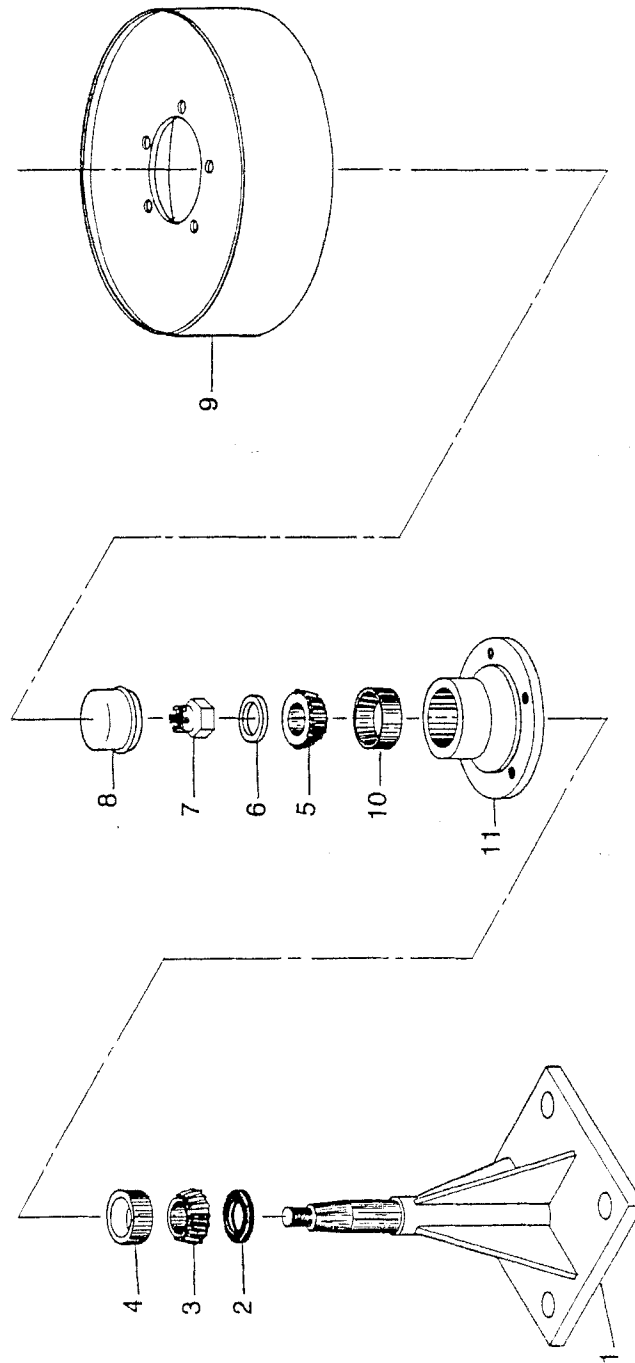
# 98 LIGHTS - WIRING SCHEMATIC





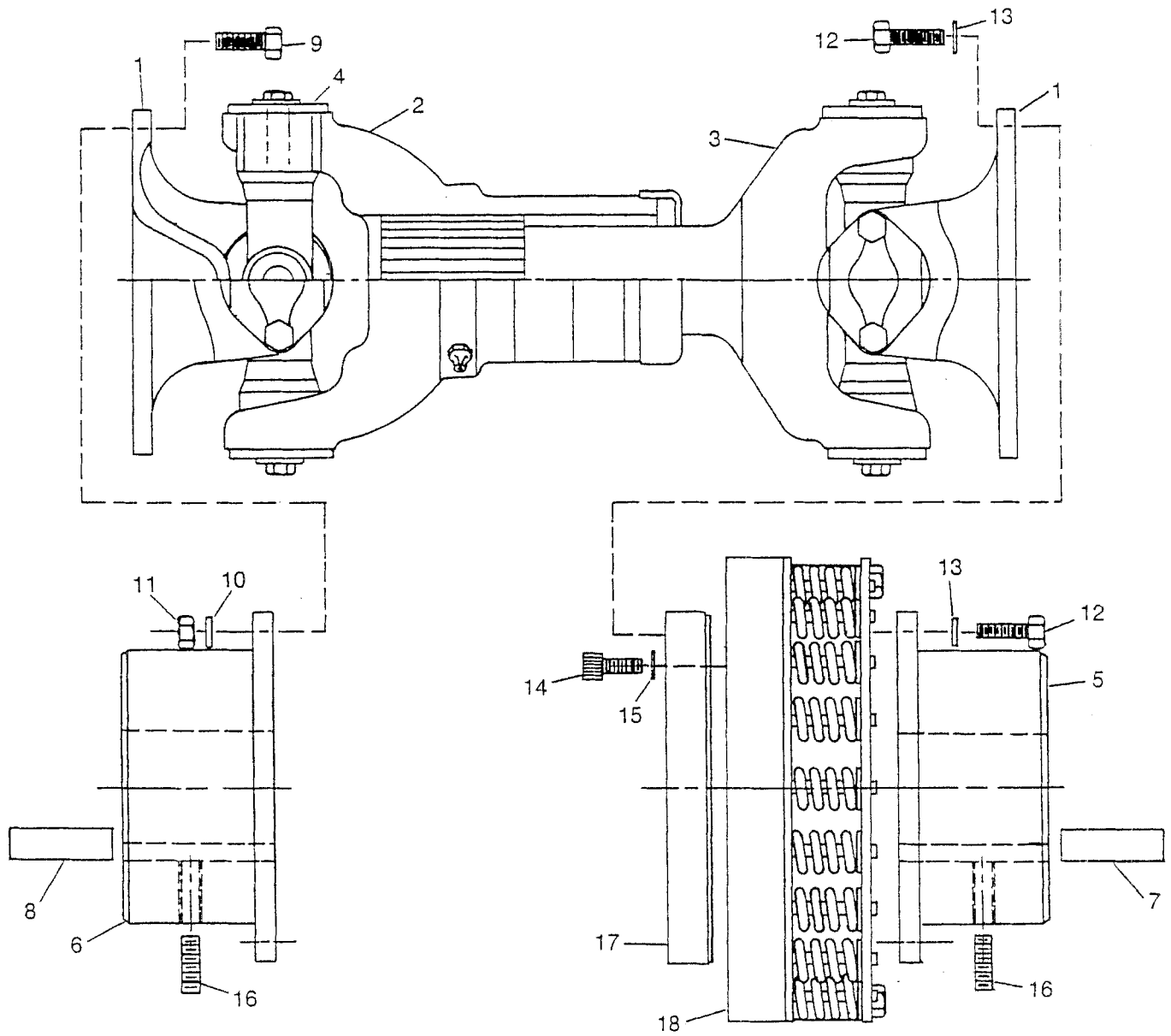


# 100 PRESSURE ROLLER



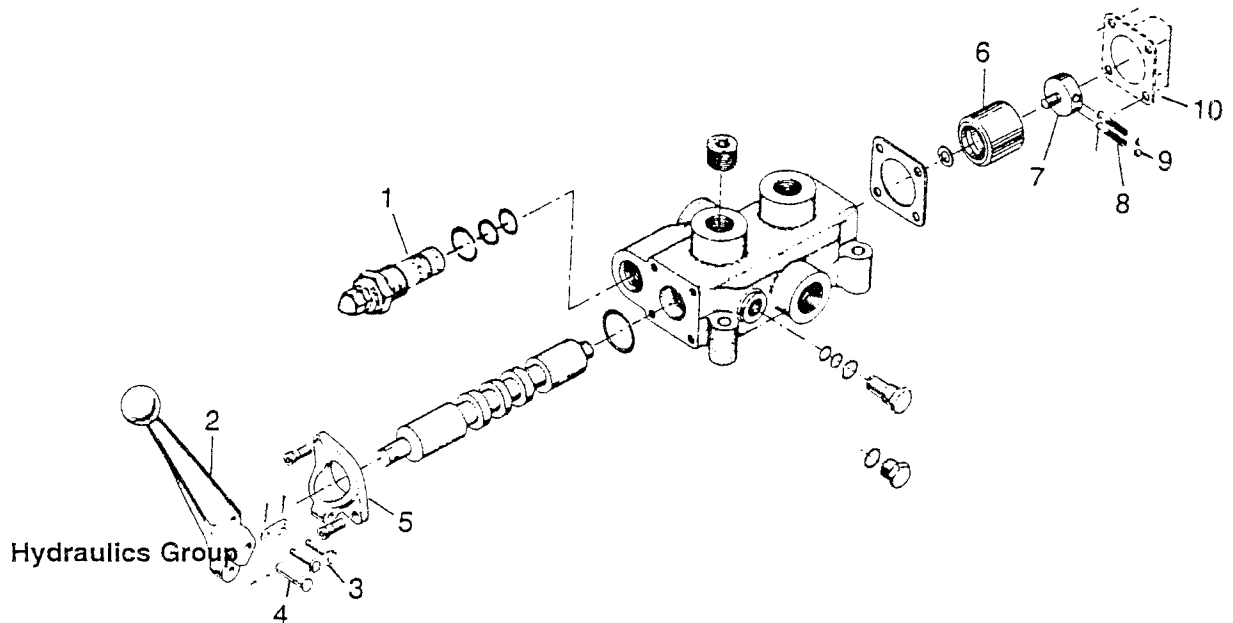


# 102 POWER SHAFT



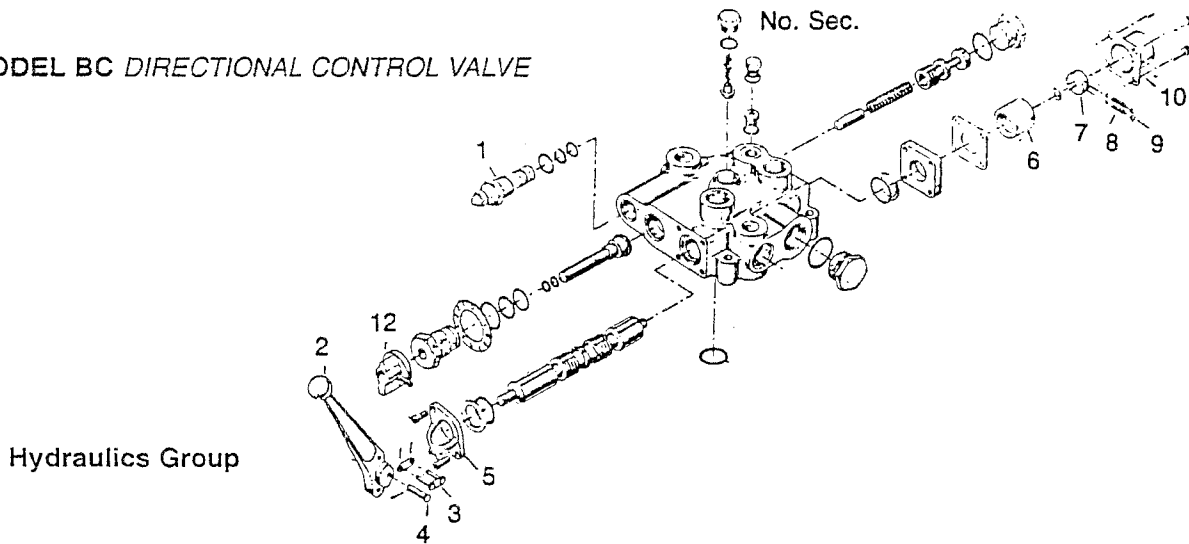


# 104 HYDRAULICS



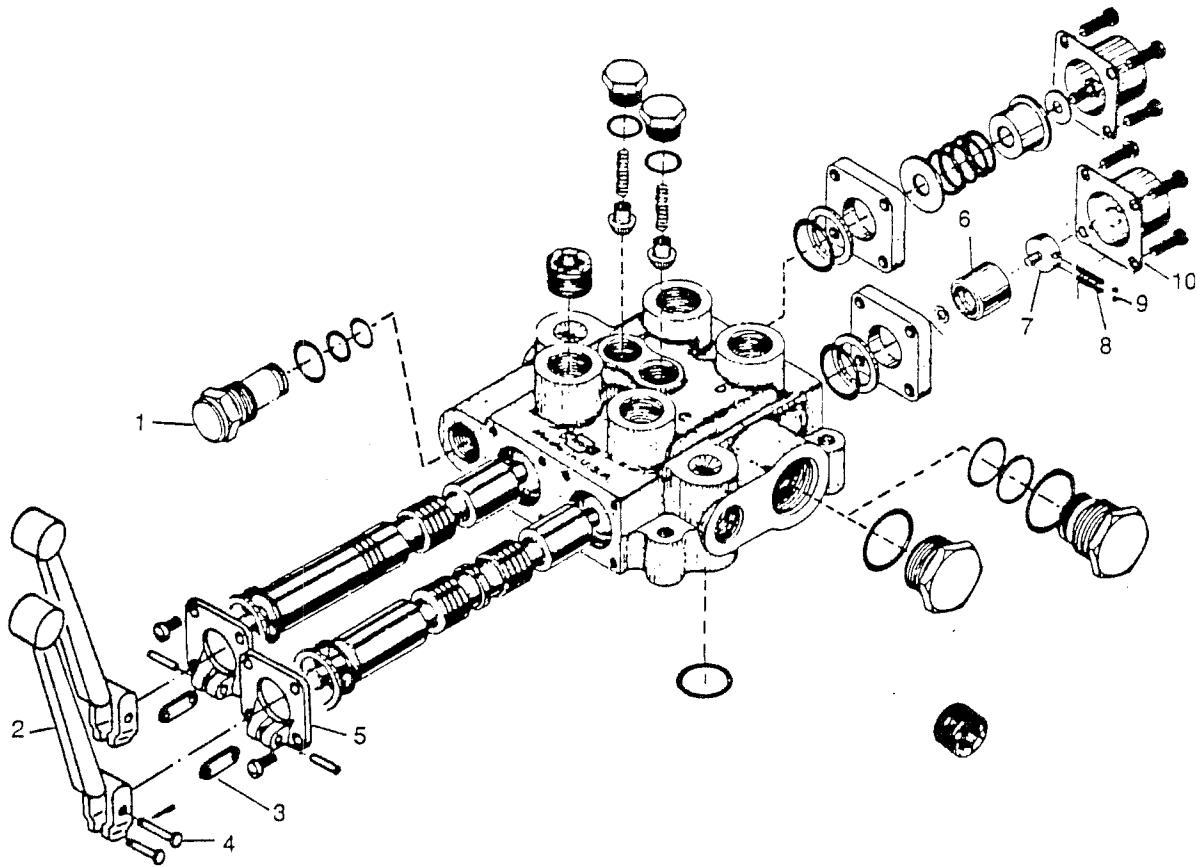
ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	4000006	1	Adj. Relief Valve	7	4000026	1	Detent Retainer
2	4000001	1	Valve Handle	(Screw)			
3	4000002	1	Connector Links	8	4000027	2	Detent Spring
Handle				9	4000028	4	Ball (1/4" Steel)
4	4000003	1	Pin Handle w/Key	10	4000029	1	End Cap
5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

## MODEL BC DIRECTIONAL CONTROL VALVE



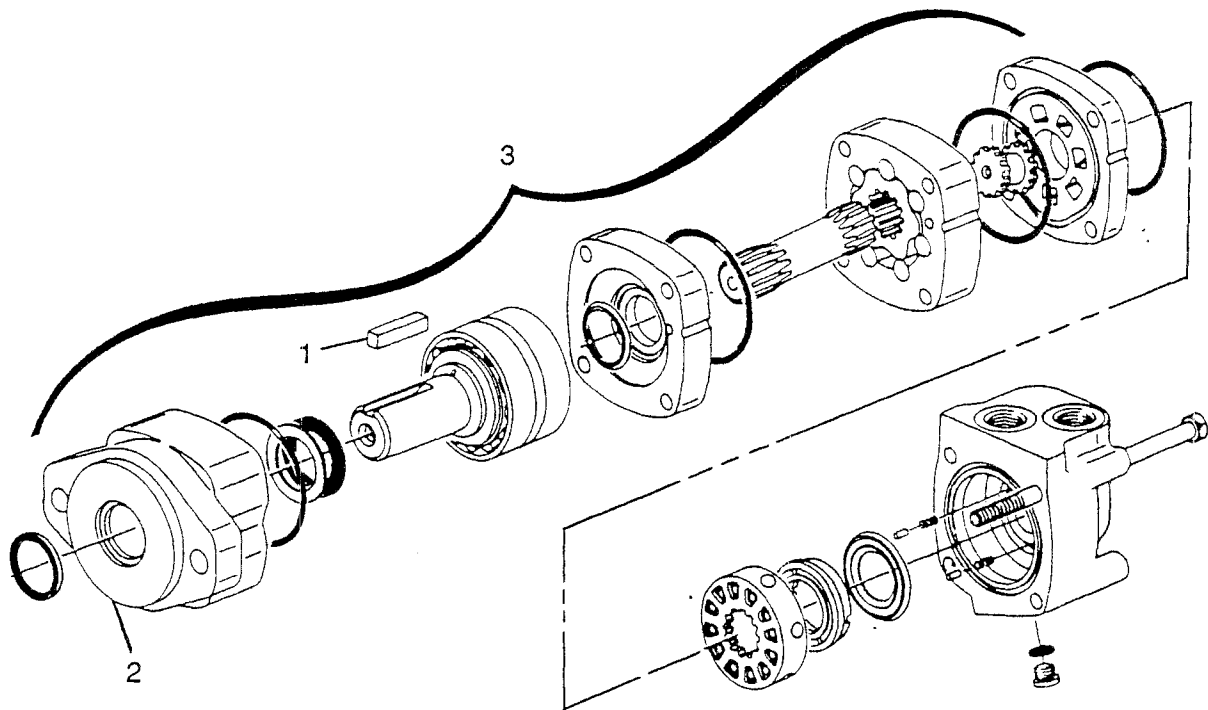
ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	4000006	1	Adj. Relief Valve	7	4000026	1	Detent Retainer (Screw)
2	4000001	1	Valve Handle	8	4000027	2	Detent Spring
3	4000002	1	Connector Link Handle	9	4000028	4	Ball (1/4" Steel)
4	4000003	1	Pin Handle w/Key	10	4000029	1	End Cap
5	4000004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

# VALVE BANK 105



ITEM	PART NO.	QTY.	DESCRIPTION
1	4000006	1	Adj. Relief Valve
2	4000001	2	Valve Handle
3	4000002	2	Connector Link Handle
4	4000003	2	Pin Handle w/Key
5	4000004	2	Handle Bracket
6	4000025	1	Detent Sleeve
7	4000026	1	Detent Retainer (Screw)
8	4000027	2	Detent Spring
9	4000028	4	Ball (1/4" Steel)
10	4000029	2	End Cap
11	7501004	1	Seal Kit (Not Shown)
	4000010	1	Valve Complete


# 106 ORBIT MOTORS



ITEM	PART NO.	QTY.	DESCRIPTION
<b>TUB DRIVE</b>			
1	6200004	1	5/16" x 1 1/2" Key
2	3900011	1	Mounting Flange
3	3900010	1	Complete M2000 Orbit Motor 24 C.I.
4	7501005	1	Seal Kit
<b>DISCHARGE CONVEYOR</b>			
1	6200004	1	5/16" x 1 1/2" Key
2	3900011	1	Mounting Flange
3	3900014	1	Complete M2000 Orbit Motor 9.6 C.I.
4	7501005	1	Seal Kit
<b>BELLY CONVEYOR</b>			
1	6200004	1	5/16" x 1 1/2" Key
2	3900011	1	Mounting Flange
3	3900013	1	Complete M2000 Orbit Motor 6.2 C.I.
4	7501005	1	Seal Kit
<b>OPTION SECOND ORBIT MOTOR TUB DRIVE</b>			
1	6200004	1	5/16" x 1 1/2" Key
2	3900011	1	Mounting Flange
3	3900005	1	Complete M2000 Orbit Motor 14.9 C.I.
4	7501005	1	Seal Kit





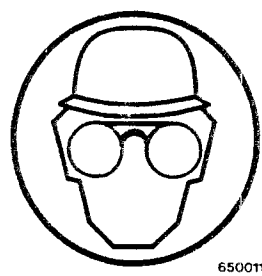
23 **Manufactured by**  


6 **KEEP WHEEL BOLTS TIGHT**  
6500042

10

**DANGER**

OBJECTS THROWN BY MACHINE.  
 DO NOT OPERATE WITHOUT WEARING SAFETY GLASSES AND A HARD HAT.  
 KEEP UNAUTHORIZED PERSONNEL OUT OF THE GRINDING AREA!

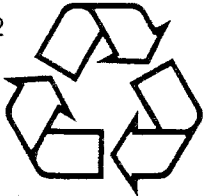


6500118

12 **OIL LEVEL**  
6500057

15 **ROTATION**  
ROTATION

4 **BIG BITE**  


2 **RECYCLE**  


1 **WARNING**  
 KEEP OFF MACHINE WHILE IN OPERATION

14

**WARNING**  
**NO RIDERS**  
 SERIOUS PERSONAL INJURY COULD RESULT FROM RIDING ON THE MACHINE  
6500042

18

**ENGINE SERVICE REPORT**

- \_\_\_\_\_ Check engine oil level
- \_\_\_\_\_ Check engine coolant
- \_\_\_\_\_ Check batteries
- \_\_\_\_\_ Check air cleaner for obstructions
- \_\_\_\_\_ Check exhaust for obstructions

7

**WARNING**  
 FOR YOUR PROTECTION KEEP ALL SHIELDS IN PLACE AND SECURED WHILE MACHINE IS OPERATING. MOVING PARTS WITHIN CAN CAUSE SEVERE PERSONAL INJURY.

8

**WARNING** FOR YOUR PROTECTION AND PROTECTION OF OTHERS, PRACTICE THE FOLLOWING SAFETY RULES:

1. BEFORE OPERATING THIS MACHINE, READ THE OPERATOR'S MANUALS SUPPLIED WITH THIS MACHINE AND YOUR TRACTOR.
2. CHECK OPERATOR'S MANUALS TO BE SURE YOUR TRACTOR MEETS THE MINIMUM REQUIREMENTS FOR THIS MACHINE.
3. READ ALL DECALS PLACED ON THIS MACHINE FOR YOUR SAFETY AND CONVENIENCE.
4. NEVER ALLOW RIDERS ON THIS IMPLEMENT OR THE TRACTOR.
5. KEEP OTHERS AWAY FROM THIS MACHINE WHILE IN OPERATION.
6. KEEP ALL SHIELDS IN PLACE WHILE MACHINE IS OPERATING.
7. KEEP HANDS, FEET, LOOSE CLOTHING, ETC., AWAY FROM POWER DRIVEN PARTS.
8. ALWAYS SHUT OFF MACHINE AND ENGINE BEFORE SERVICING, UNCLOGGING, INSPECTING, OR WORKING NEAR THIS MACHINE FOR ANY REASON. ALWAYS PLACE TRANSMISSION IN PARK OR SET PARK BRAKE AND WAIT FOR ALL MOVEMENT TO STOP BEFORE APPROACHING THIS MACHINE.

26

**DANGER**  
 OBJECTS THROWN BY MACHINE  
 DO NOT OPERATE GRINDER WITH THE PLATFORM IN THE RAISED POSITION  
6500112

16

**DIESEL FUEL**  
6500042

17

**HYDRAULIC OIL**  
6500042

24

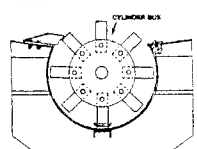
**IMPORTANT SAFETY INFORMATION**

- This brake winch is built for multipurpose hauling and lifting operations. It is not to be used as a hoist for lifting, supporting or transporting people, or for loads over areas where people could be present.
- Inspect the winch. High torque are created when using a winch, create high torsional safety hazards. It should be operated and maintained in accordance with instructions. Never allow children or anyone who is not familiar with the operation of the winch to use it. A winch accident could result in personal injury.
- Check winch for proper operation on each use. Do not use if damaged. Seek immediate repairs.
- Never exceed rated capacity. Excess load may cause premature failure and could result in serious personal injury.
- Never apply load on winch with cables fully extended. Keep at least three full turns of cable on the reel.
- Secure load properly. When winching operation is complete, do not depend on winch to support load.
- Operate with hand power only. This winch should not be operated with a motor of any kind. If the winch cannot be cranked easily with one hand, it is probably over-loaded.  
6500149

11

**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.



**ADJUSTMENT**

CLUTCH if the clutch does not pull smoothly, or the clutch slipping lever jerks out, the clutch must be adjusted. To adjust the clutch release the first step is to pull the adjusting lever across the clutch until the adjusting lever screw can be reached. Rotate or through the adjustment the lever.

BE CLUTCH Turn the adjusting ring counter clockwise to loosen recommended operating lever pressure.

NO CLUTCH Turn the adjusting ring clockwise to obtain recommended operating lever pressure.  
6500121

New clutch generally requires several adjustments until the friction surfaces are worn in. Do not let a clutch slip as this will seize the friction plates and they run them.

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

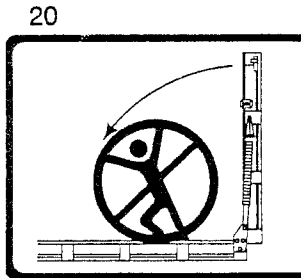
13

**CAUTION**  
 INSERT TRANSPORT LOCKS BEFORE MOVING ON ROADS  
6500112

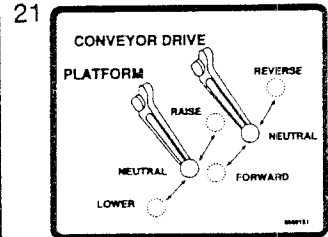
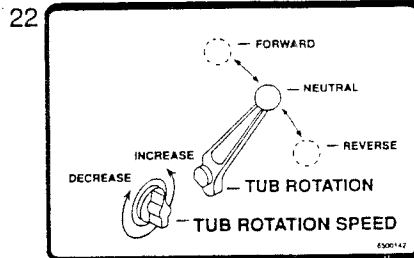
5

**DANGER**  
 ROTATING PARTS WITHIN CAN KILL OR DISMEMBER  
 WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING, UNCLOGGING OR INSPECTING MACHINE  
6500082

# 19 HD-10



**WARNING**  
Failure to use caution while Folding the conveyor could result in Serious Injury.



**WARNING**

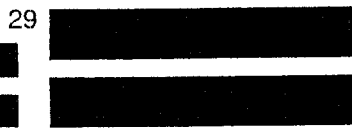
**TO RAISE PLATFORM**

1. CHECK TO SEE THAT SAFETY BAR HANDLE IS TRIPPED INTO UP POSITION.
2. SLOWLY RAISE PLATFORM UNTIL CYLINDERS ARE FULLY EXTENDED.
3. SLOWLY LOWER PLATFORM UNTIL SAFETY LATCH ENGAGES.

**TO LOWER PLATFORM**

1. CHECK TO SEE THAT SAFETY BAR IS ENGAGED AND FRAME IS FREE OF ALL FOREIGN MATERIAL.
2. MANUALLY TRIP SAFETY BAR HANDLE INTO THE DOWN POSITION.
3. WITH ALL BYSTANDERS CLEAR OF AREA, SLOWLY RAISE PLATFORM UNTIL SAFETY BAR DISENGAGES.
4. SLOWLY LOWER PLATFORM UNTIL IT RETURNS INTO WORKING POSITION.

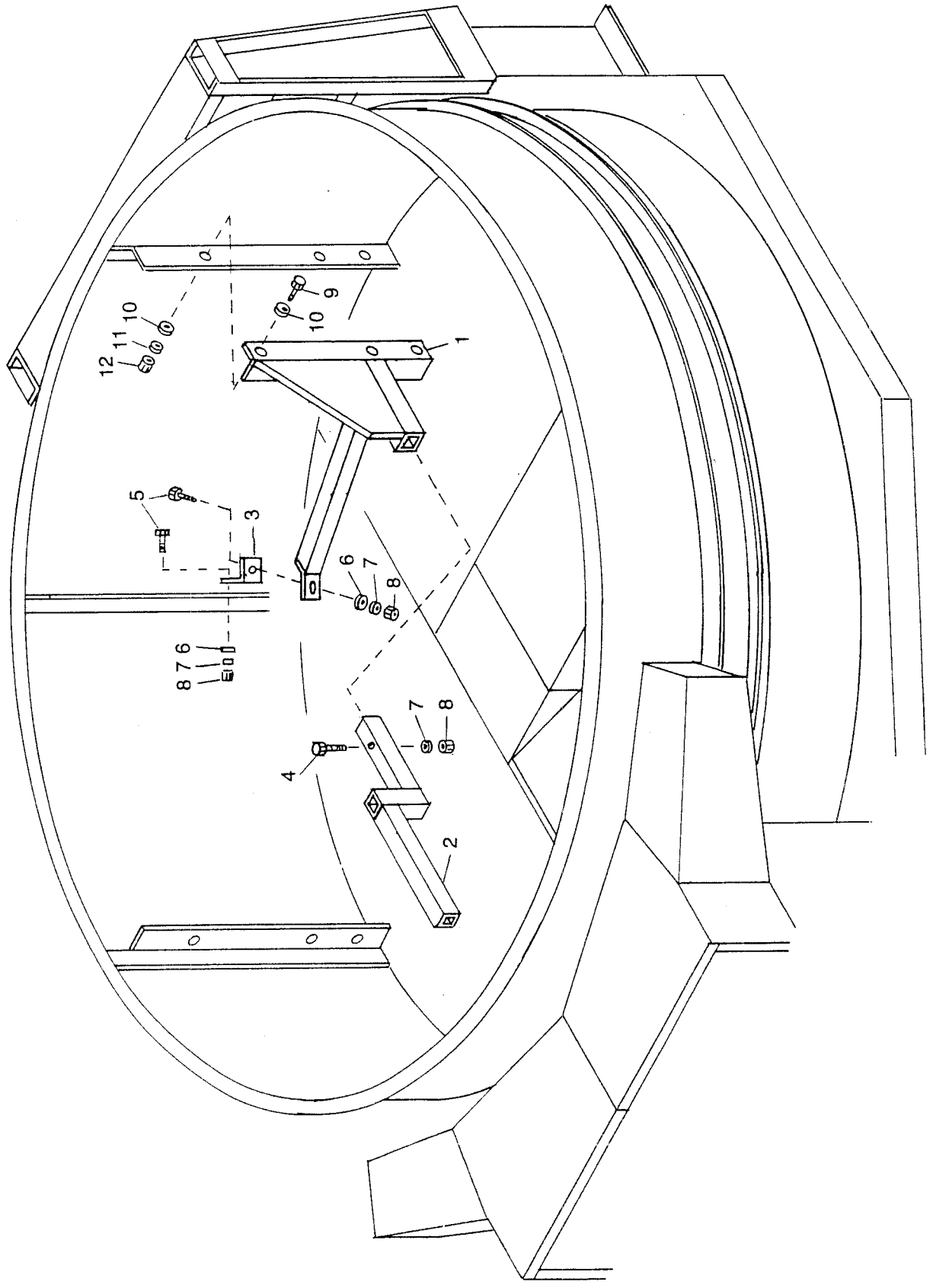
**RAISE UNFOLD** DO NOT EXCEED  
↑ ↑ 600 ENGINE R.P.M.  
↓ ↓ WHEN FOLDING CONVEYOR  
**LOWER FOLD**



# 3 INDUSTRIAL GRINDER

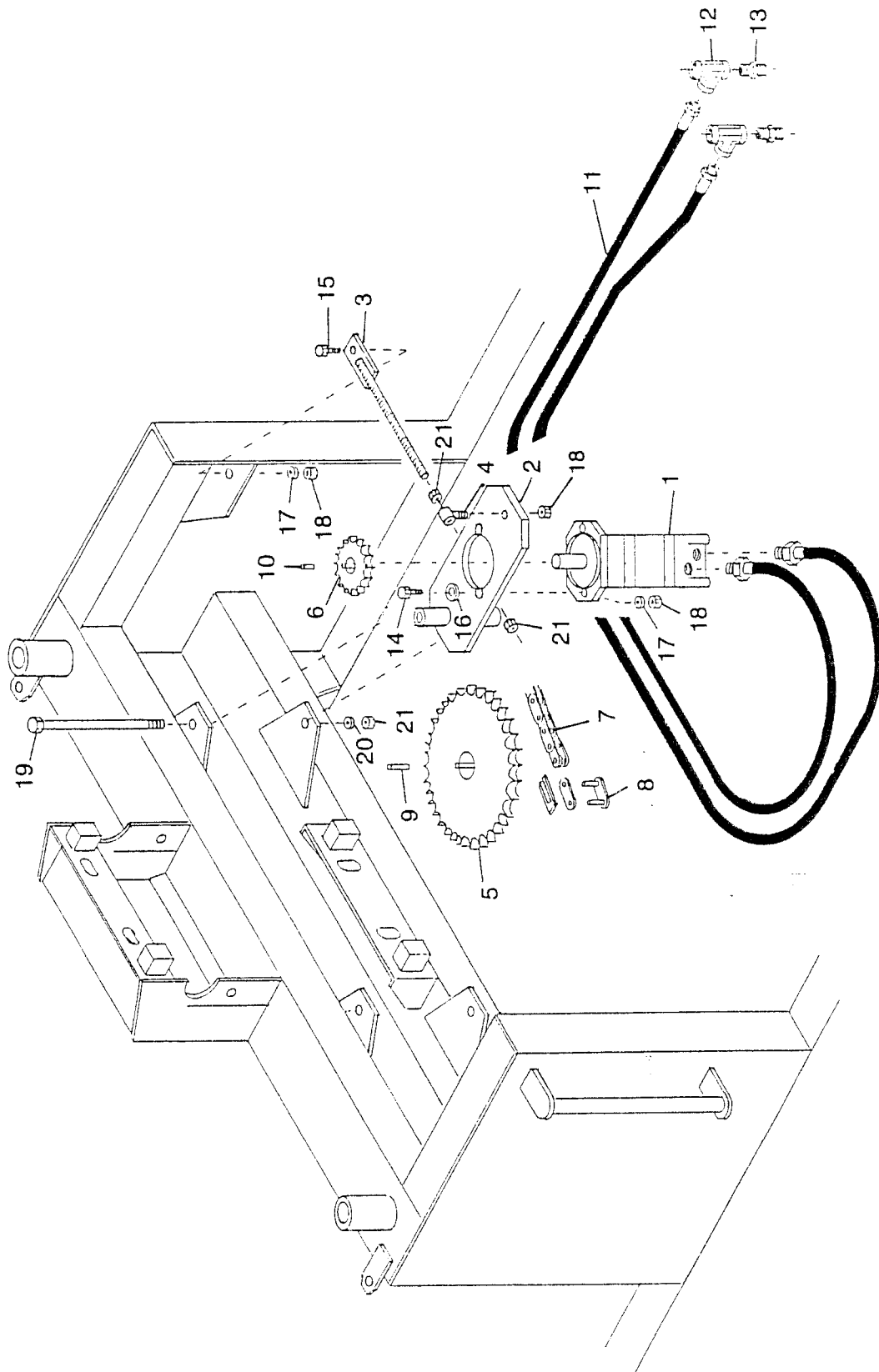
ITEM	PART NO.	QTY.	DESCRIPTION	ITEM	PART NO.	QTY.	DESCRIPTION
1	6500115	4	Keep Off	25	6500150	1	To Raise Platform
2	6500157	2	Recycle	26	6500153	2	Danger
3	6500160	2	Industrial Grinder	27	6500120	1	Conveyor Valve
4	6500159	2	Big Bite	28	6500155		4" Stripe 25'
5	6500082	4	Rotating Parts	29	6500156		2" Stripe 42'
6	6500042	2	Wheel Bolts				
7	6500040	7	Keep Shield In Place				
8	6500041	2	For Your Protection				
9	7500224	8	3M Safety-Walk 4x18"				
10	6500118	2	Danger - Objects Thrown by Machine				
11	6500121	1	Clutch				
12	6500052	2	Oil Level				
13	6500112	2	Transport Locks				
14	6500043	2	No Riders				
15	6500056	1	Rotation				
16	6500123	2	Diesei Fuel				
17	6500124	2	Hydraulic Oil				
18	6500132	1	Engine Service Report				
19	6500161	2	HD-10				
20	6500139	2	Warning Failure To Use Caution				
21	6500151	1	Conveyor Drive and Platform				
22	6500142	1	Tub Rotation & Speed				
23	6500158	4	Mfg. by Haybuster				
24	6500149	1	Important Safety Information				

# 110 TUB AGITATOR





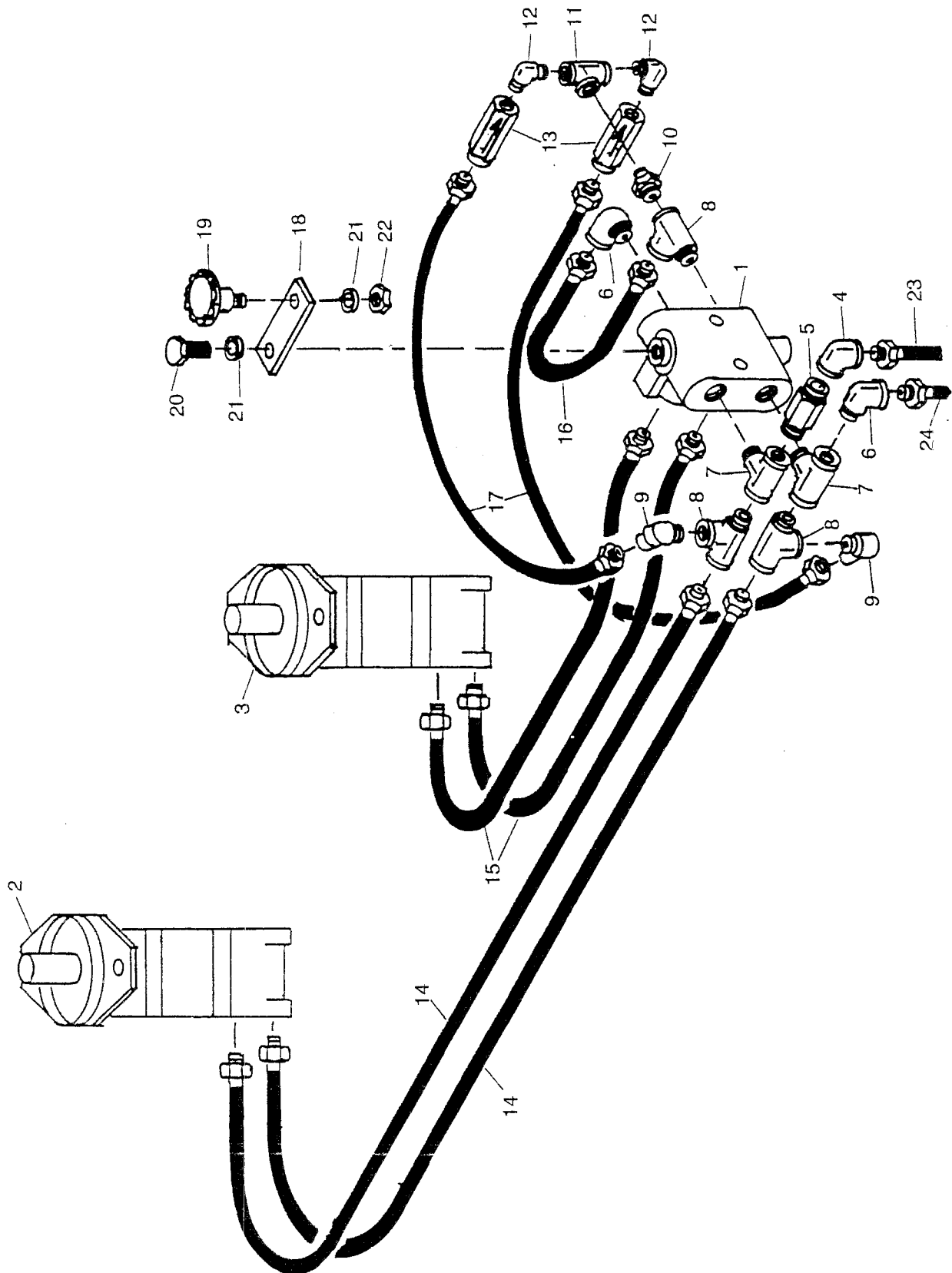
# 112 OPTION SECOND ORBIT MOTOR





# 114 HYDRAULICS - OPTION SECOND ORBIT MOTOR

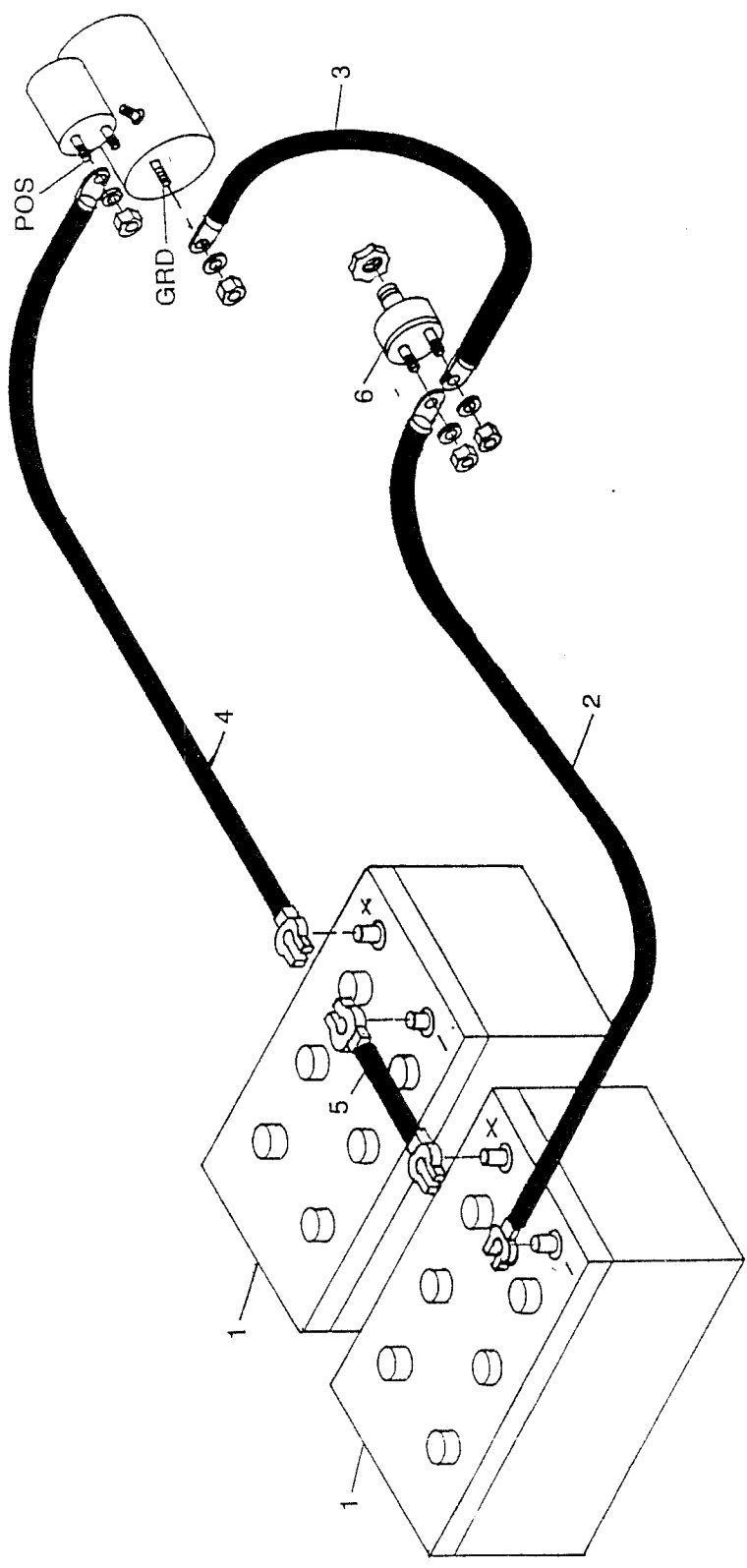
Serial No. 184 - thru







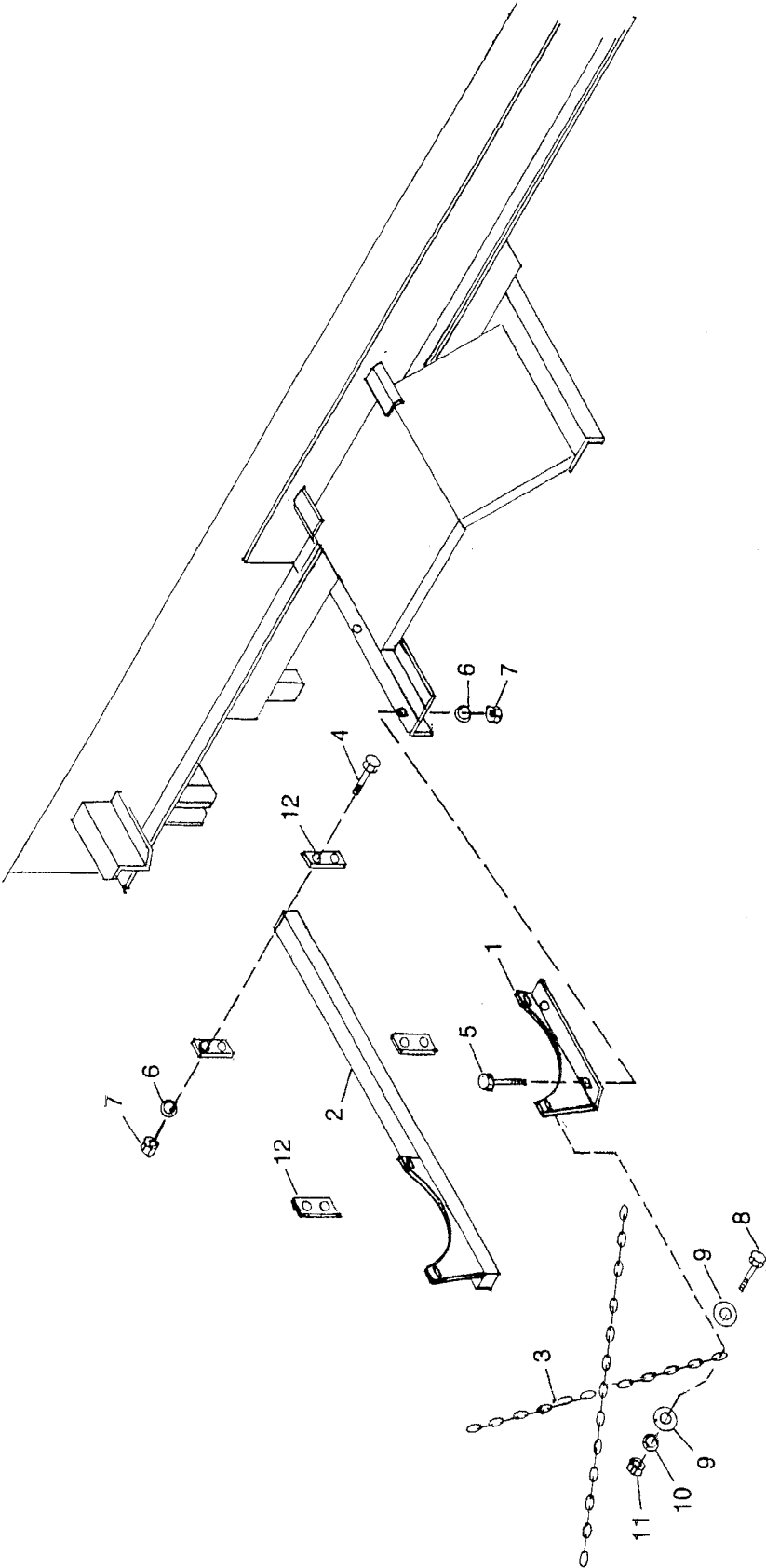
116 BATTERY DISCONNECT SWITCH CAT





118 SCREEN RACK

Serial No. 0133 thru 0183



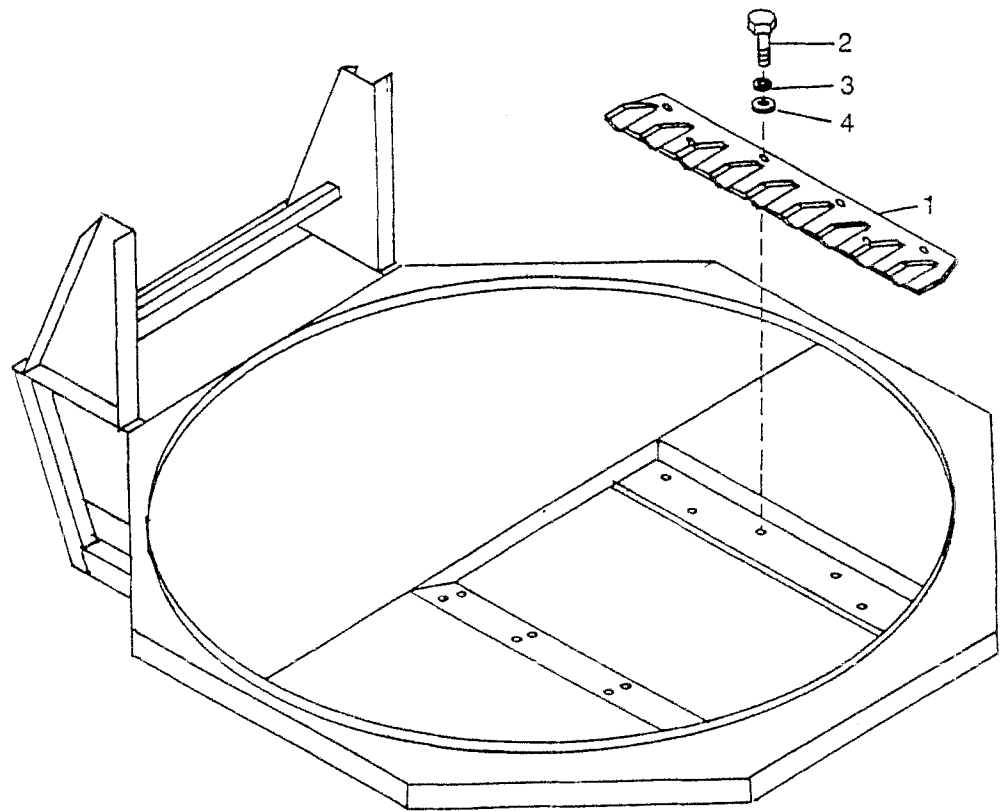
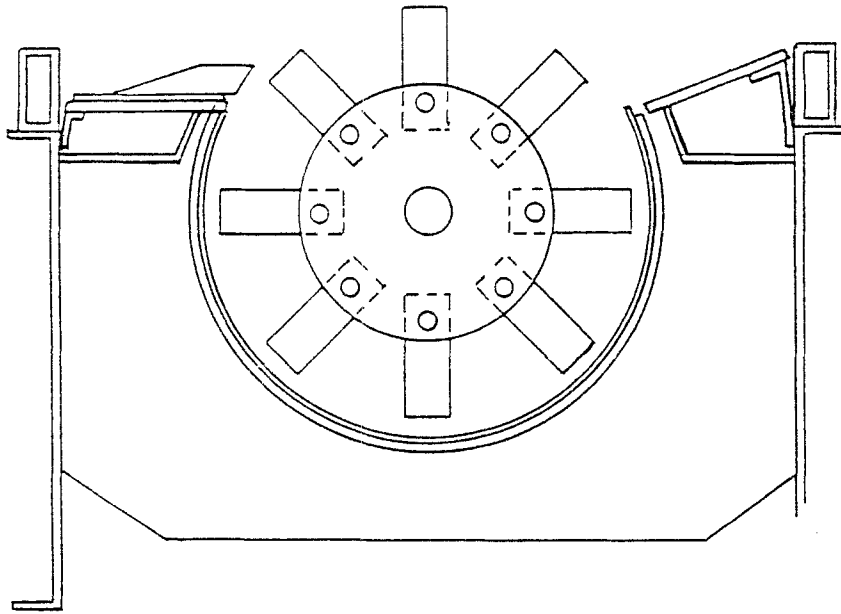


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# 120 SLUGBUSTER

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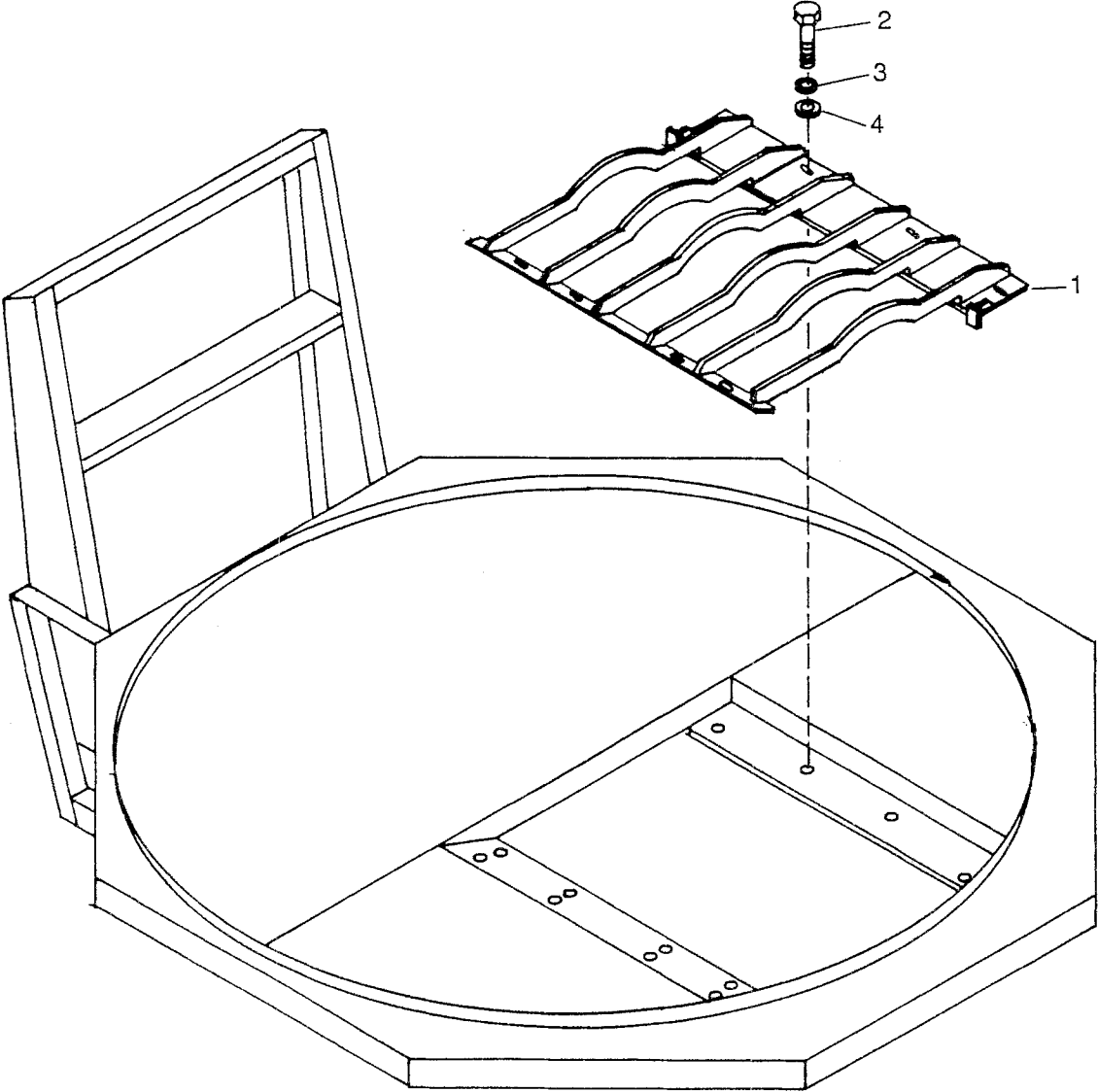
The Slugbuster is a one-piece metal bar with steel fingers that protrude over the infeed side of the cylinder. Hammers pass by the "fingers" to create a slicing action that prevents slugs of materials from being drawn into the mill. The slicing action also acts as an initial grinding of long material before it passes through the screen.



SLUGBUSTER 121

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700728	1	Slugbuster Serial No. 0184 thru
	4700605	1	Slugbuster Serial No. 0133 thru 0183
2	4800079	4	5/8" x 2 1/2" Bolt
3	5000003	4	5/8" Lock Washer
4	5000002	4	5/8" Flat Washer
	4701474		Slugbuster 3/4" Thick
	4700591		Geyser Plate

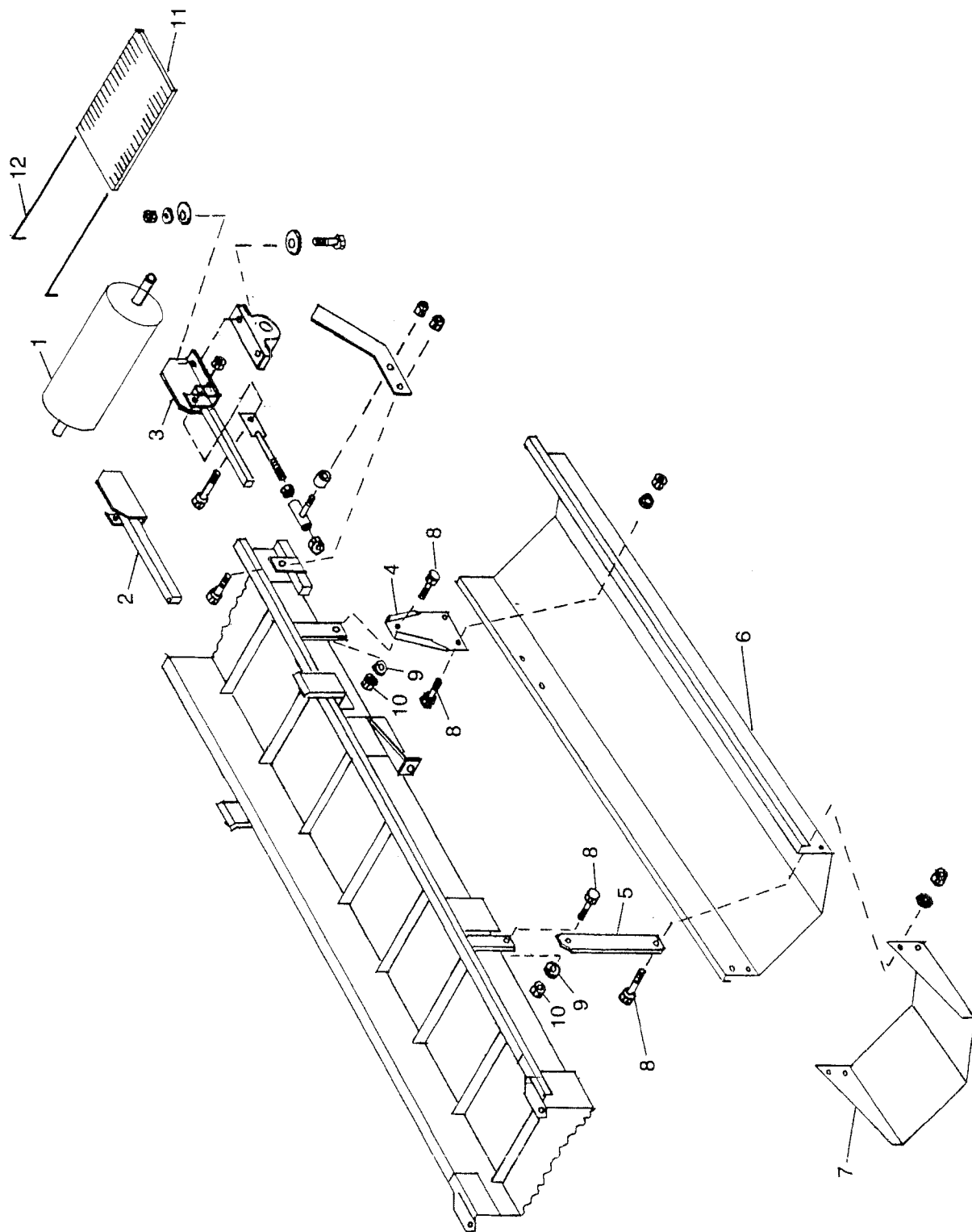
122 PAPER GRATE





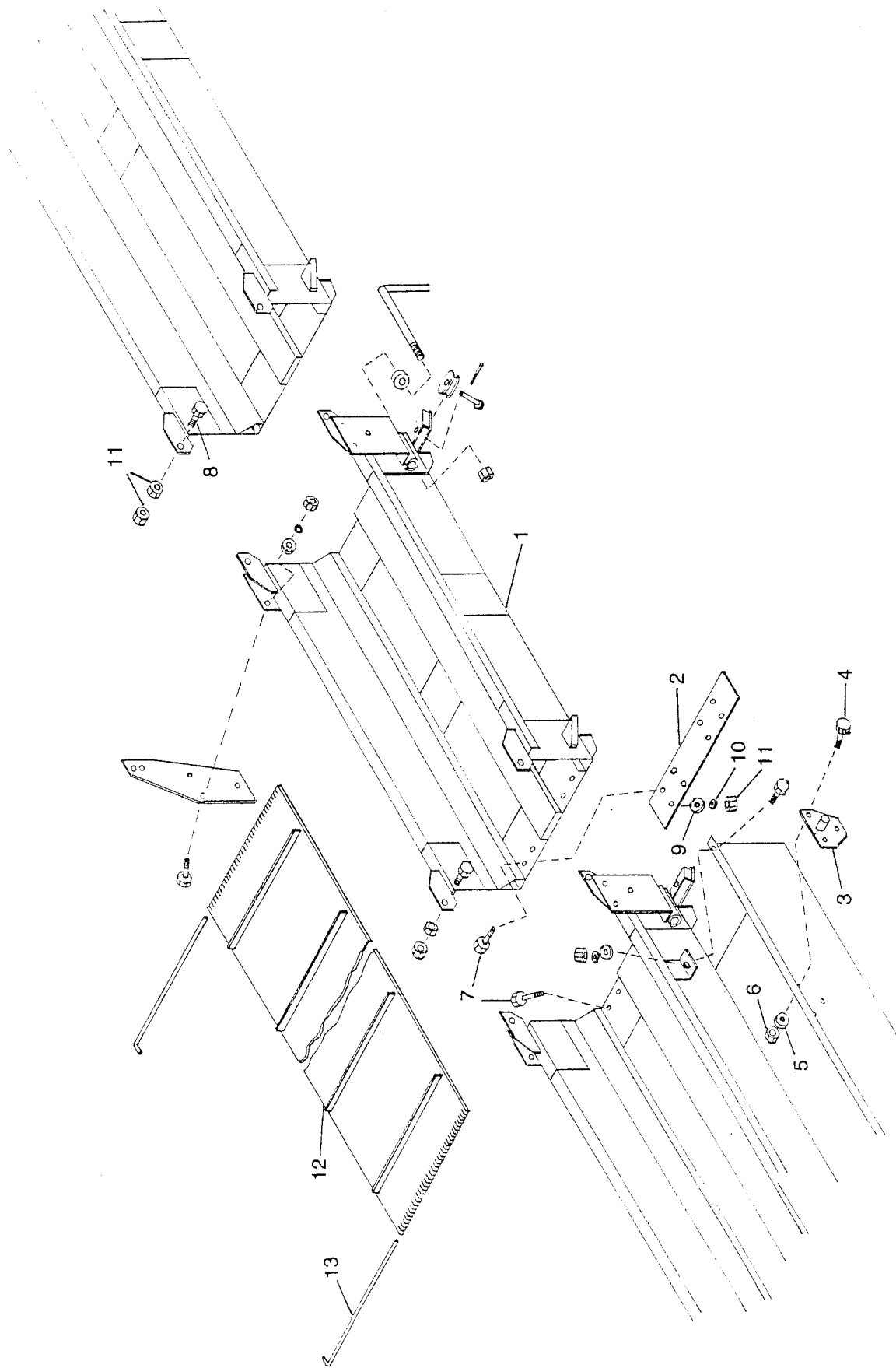


# 124 MAGNETIC ROLLER



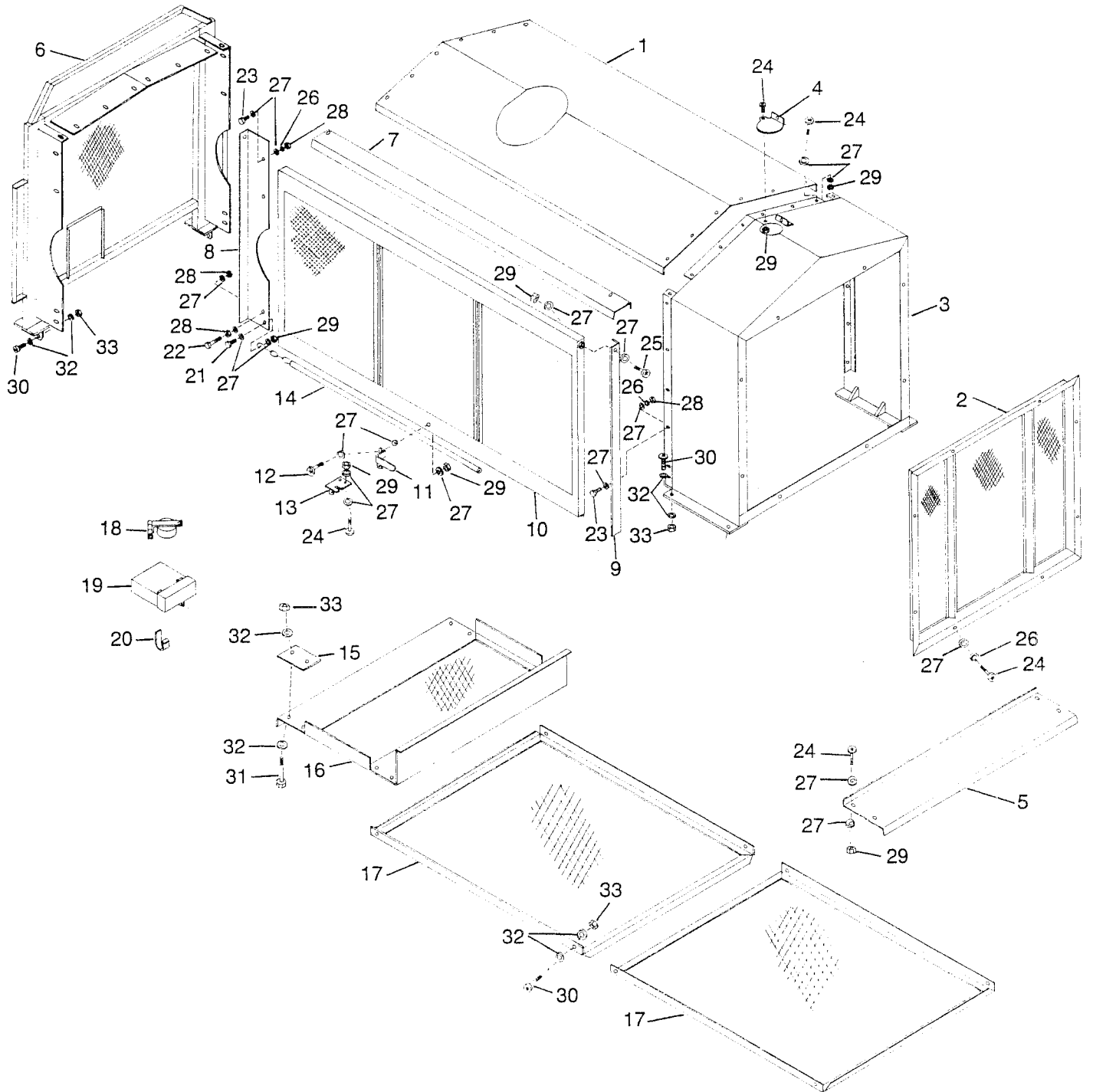


# 126 4 FT. CONVEYOR EXTENSION





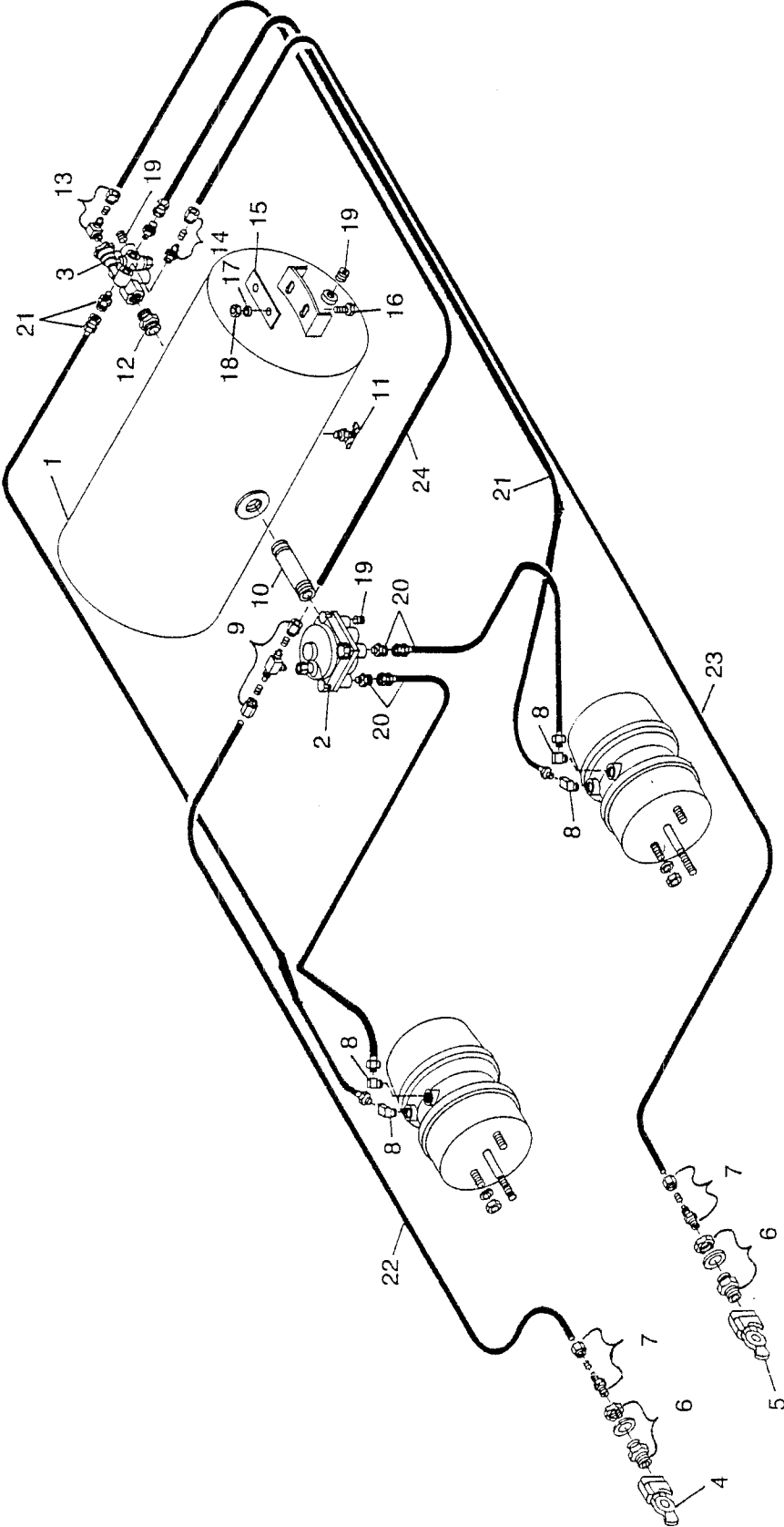
# 128 SECURITY SCREENS



ITEM	PART NO.	QTY.	DESCRIPTION
1	4700297	1	Hood Cat 260 H.P.
	4700298	1	Hood JD 270 H.P.
	4700299	1	Hood JD 300 H.P.
2	4700285	1	Grill
3	4700593	1	Cowling
4	4700539	1	Radiator Cowling Cap
5	4700595	1	Front Frame Cover
6	4700610	1	Hand Rail
7	4700611	1	Hood Side Cap R.H.
	4700612	1	Hood Side Cap L.H. (Not Shown)
8	4700613	1	Door Frame R.H. Rear
	4700614	1	Door Frame L.H. Rear (Not Shown)
9	4700615	1	Door Frame R.H. Front
	4700616	1	Door Frame L.H. Front (Not Shown)
10	4700617	2	Door
11	4700582	2	Latch Handle
12	4800029	2	3/8" x 2 1/2" Bolt
13	4700583	2	Door Latch
14	4700618	4	Door Prop
15	4700619	4	Bottom Screen Mount
16	4700620	1	Bottom Screen (Rear)
17	4700621	2	Bottom Screen
18	4700587	4	Full & Oil Tank Lock
19	4700590	1	Electric Control Security Box
20	4700622	1	Door Prop Clip
21	4800034	2	3/8" x 1 1/2" Bolt
22	4800156	4	3/8" x 3" Bolt
23	4800003	14	3/8" x 1" Bolt
24	4800274	33	3/8" x 1 1/4" Button Head Socket Screw (Trox DR)
25	4800278	4	3/8" x 1 1/2" Button Head Socket Screw (Trox DR)
26	5000019	22	3/8" Lock Washer
27	5000001	100	3/8" Flat Washer
28	4900002	24	3/8" Nut
29	4900023	29	3/8" Lock Nut
30	4800275	16	1/2" x 1 1/2" Button Head Socket Screw (Trox DR)
31	4800141	8	1/2" x 4 1/2" Bolt
32	5000004	32	1/2" Flat Washer
33	4900014	16	1/2" Lock Nut

130 AIR BRAKES

20 K Axle

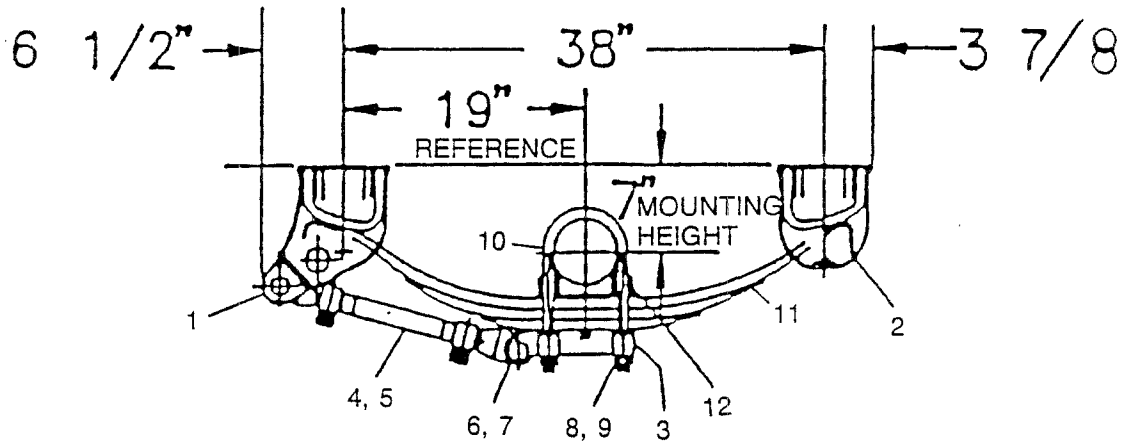






# 132 SUSPENSION

20 K Axle

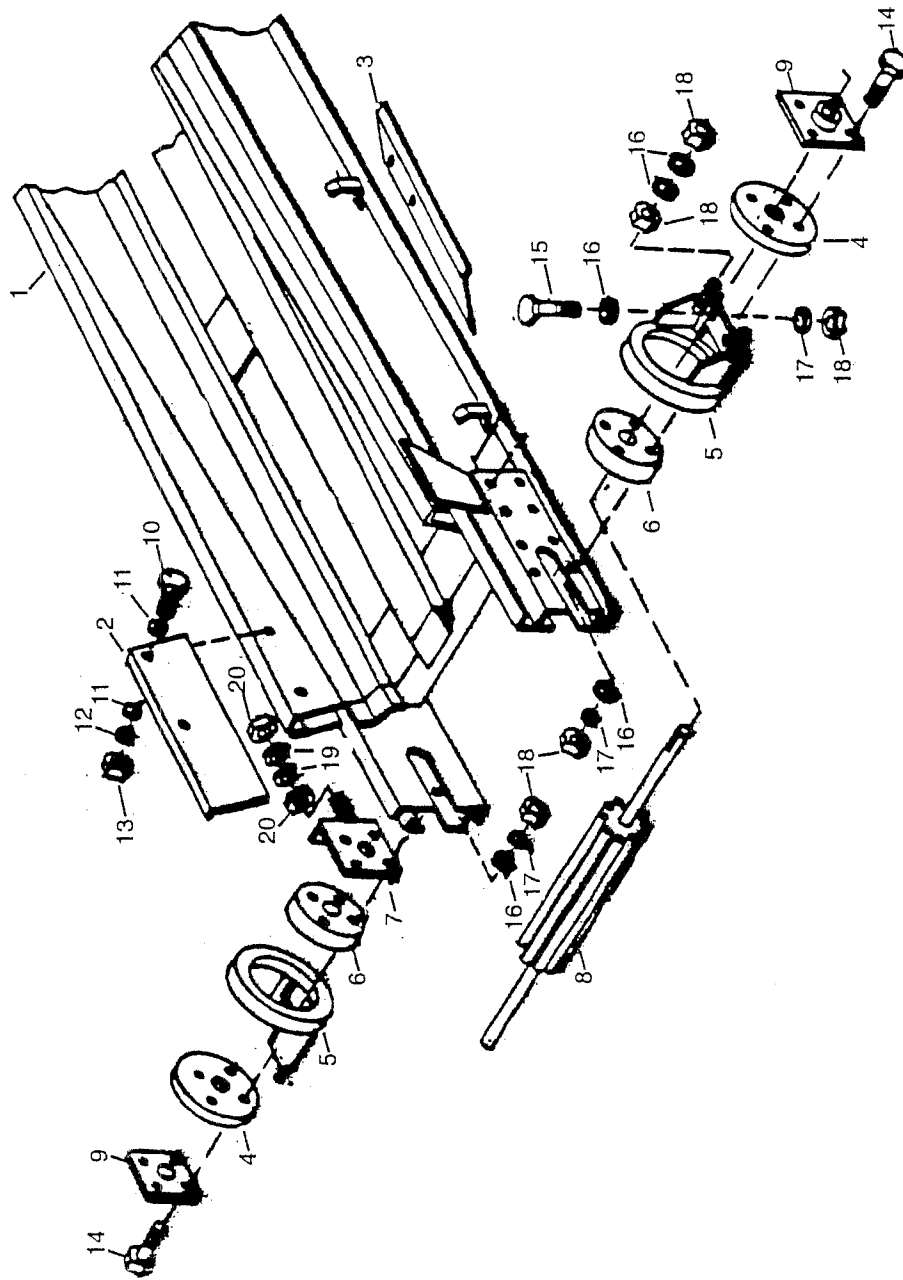


ITEM	PART NO.	QTY.	DESCRIPTION
1	2500912	2	Front Hanger
2	2500913	2	Rear Hanger
3	2500914	2	Bottom Plate
4	2500915	1	Torque Arm - Adjustable
5	2500916	1	Torque Arm - Non-Adjustable
6	4800330	4	Torque Arm Bolt
7	2500604	4	Lock Nut Flanged
8	5000083	8	7/8" Flat Washer
9	4900078	8	7/8" Hex Nut - N.F.
10	4800331	4	U-Bolt
11	2500910	2	Spring 3-Leaf Standard
12	2500917	2	Spring Seat 3/4" High
13	2500902		Hanger Kit Hap 101-00



# 134 DISCHARGE CONVEYOR HYD. LIFT & FOLD (Bottom)

Serial #0260 thru



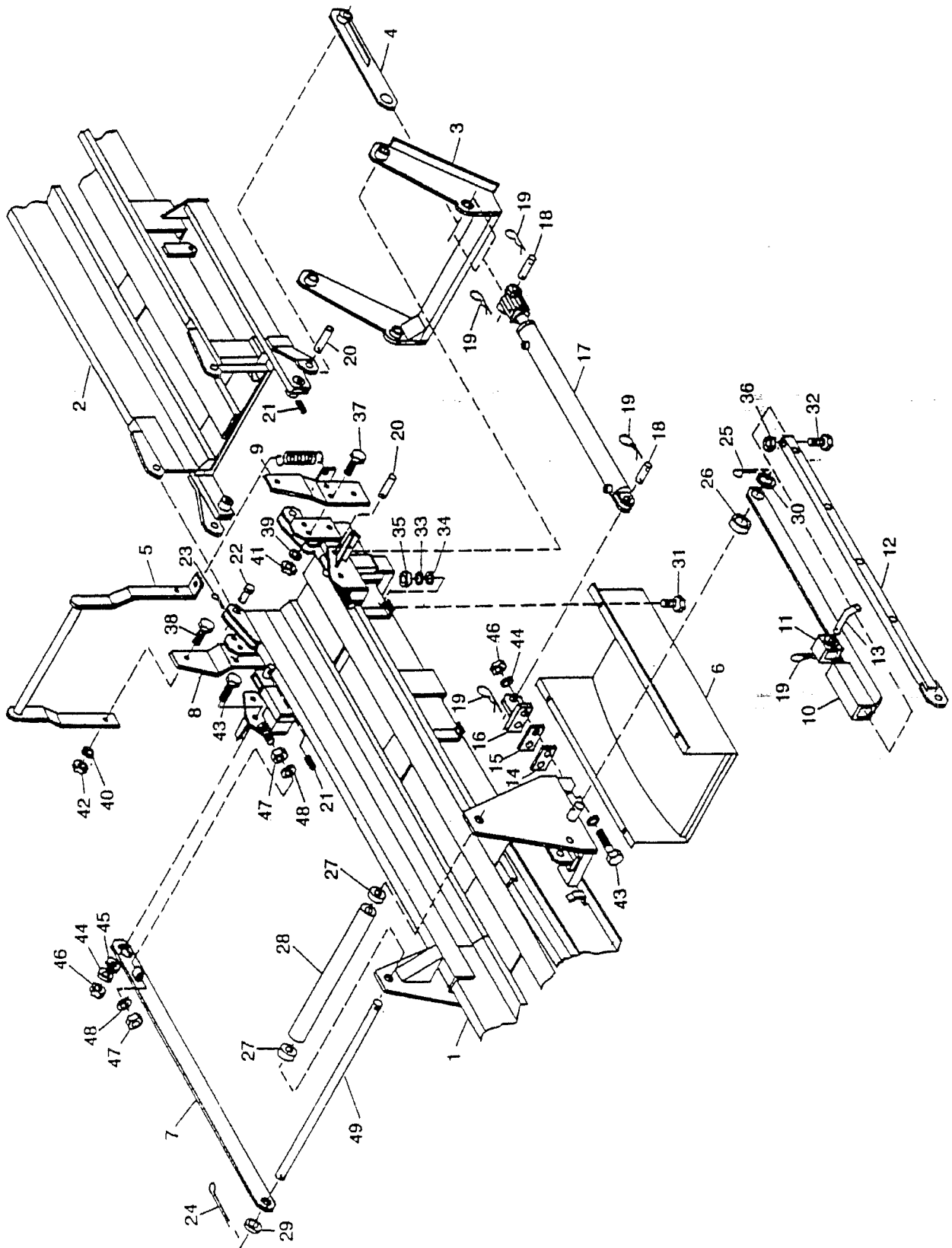
# DISCHARGE CONVEYOR HYD. LIFT & FOLD (Bottom) 135

Serial #0260 thru

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700722	1	Bottom Conveyor
2	4700075	1	Deflector R.H.
3	4700076	1	Deflector L.H.
4	4700464	2	Conveyor Hinge Retainer
5	4700465	2	Conveyor Hinge Mount
6	4700466	2	Conveyor Hinge Plate
7	4700467	1	Adjusting Bracket
8	4700782	1	Idler Roller
9	2000303	2	1 1/2" Cast Flange Bearing 4-Bolt
10	4800003	4	3/8" x 1" Bolt
11	5000001	8	3/8" Flat Washer
12	5000019	8	3/8" Lock Washer
13	4900002	4	3/8" Nut
14	4800068	8	1/2" x 3" Bolt
15	4800141	4	1/2" x 4 1/2" Bolt
16	5000004	20	1/2" Flat Washer
17	5000006	12	1/2" Lock Washer
18	4900001	20	1/2" Nut
19	5000002	2	5/8" Flat Washer
20	4900005	2	5/8" Nut

# 136 DISCHARGE CONVEYOR HYD. LIFT & FOLD (Middle)

Serial #0260 thru



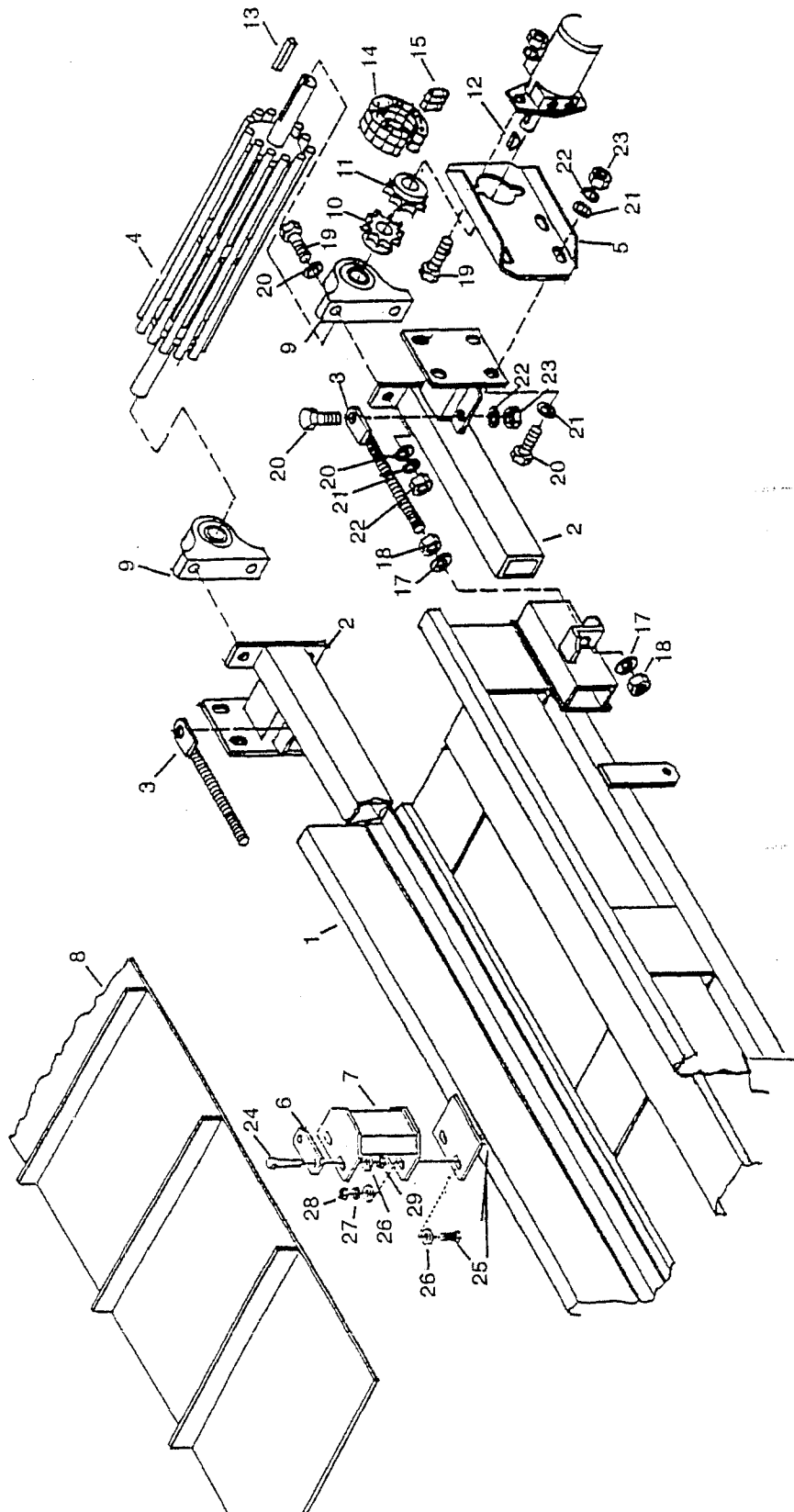
# DISCHARGE CONVEYOR HYD. LIFT & FOLD (Middle) 137

Serial #0260 thru

ITEM	PART NO.	QTY.	DESCRIPTION
1	4700722	1	Bottom Conveyor Frame
2	4701035	1	Top Conveyor Frame
3	4700459	1	Control Arm
4	4700460	2	Lift Link
5	4700458	1	Belt Holder
6	4700081	1	Belt Guide
7	4700724	2	Conveyor Support Bar
8	4700457	1	Conveyor Belt Holder Mt. R.H.
9	4700456	1	Conveyor Belt Holder Mt. L.H.
10	4700718	2	Conveyor Safety Bar
11	4700719	2	Conveyor Safety Bar Stop
12	4700703	2	Conveyor Safety Bar Slide
13	4700720	2	Pin Conveyor Safety Bar
14	4700453	4	Hyd. Cylinder Shim 14 Ga.
15	4700454	4	Hyd. Cylinder Shim 10 Ga.
16	4700455	2	Hyd. Cylinder Anchor
17	4100086	2	Hyd. Cylinder 3" x 30"
18	4700473	4	1" x 3" Pin
19	4800056	10	Hair Pin
20	4700472	4	1" x 5 1/4" Pin
21	4800267	4	1/4" x 1 3/4" Roll Pin
22	4800035	2	3/4" x 2" Clevis Pin
23	4800050	2	3/16" x 1 1/2" Cotter Pin
24	4800043	2	1/4" x 2 1/2" Cotter Pin
25	4800066	2	5/16" x 2" Cotter Pin
26	2000802	2	1 1/4" Lock Collar
27	2000809	2	1" Lock Collar
28	3700236	1	1" x 31" Suction Hose
29	5000040	2	1" Machine Bushing Narrow Rim
30	5000031	2	1 3/8" ID x 10 ga. Machine Bushing
31	4800003	4	3/8" x 1" Bolt
32	4800146	2	3/8" x 2" Bolt
33	5000019	4	3/8" Lock Washer
34	5000001	4	3/8" Flat Washer
35	4900002	4	3/8" Nut
36	4900023	2	3/8" Lock Nut
37	4800018	6	1/2" x 1 1/4" Bolt
38	4800179	2	1/2" x 1 3/4" Bolt
39	5000006	6	1/2" Lock Washer
40	5000004	2	1/2" Flat Washer
41	4900001	6	1/2" Nut
42	4900014	2	1/2" Lock Nut
43	4800010	6	5/8" x 2" Bolt
44	5000003	6	5/8" Lock Nut
45	5000002	2	5/8" Flat Washer
46	4900005	6	5/8" Nut
47	4900004	4	3/4" Nut
48	5000077	4	1 1/2" x 25/32" x 3/16" Washer
49	4700736	1	Conveyor Support Bar Shaft

# 138 DISCHARGE CONVEYOR HYD. LIFT & FOLD (Top)

Serial #0260 thru





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# DISCHARGE CONVEYOR HYD. LIFT & FOLD (Top) 139

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Serial #0260 thru

ITEM	PART NO.	QTY.	DESCRIPTION
1	4701035	1	Top Conveyor Frame
2	4700768	2	Bearing Mount
3	4700077	2	Adjusting Rod
4	4700878	1	Drive Roller
5	4700862	1	Orbit Motor Mount
6	4700461	2	Transport Lock
7	4700769	2	Transport Lock Spacer
8	1700006	1	Belt 18" x 43'6"
9	2000501	2	Bearing 1 1/2" Pillow Block
10	1000081	1	60B18 Sprocket 1 1/2" Bore 3/8 K.W.
11	1000054	1	60B18 Sprocket 1 1/4" Bore 5/16 K.W.
12	6200004	1	5/16" Sq. x 1 1/2"
13	6200007	1	3/8" Sq. x 1 1/2" Key
14	1100066	1	60.2 17 Link Chain
15	1100064	1	60.2 Connector Link
16	3900014	1	Orbit Motor 9.6 Co. In.
17	5000002	4	5/8" Flat Washer
18	4900005	1	5/8" Nut
19	4800114	6	1/2" x 2" Bolt
20	4800082	6	1/2" x 1 1/2" Bolt
21	5000004	16	1/2" Flat Washer
22	5000006	12	1/2" Lock Washer
23	4900001	12	1/2" Nut
24	4800156	4	3/8" x 3" Bolt
25	4800098	4	3/8" x 1 1/4" Bolt
26	5000001	12	3/8" Flat Washer
27	5000019	4	3/8" Lock Washer
28	4900002	4	3/8" Nut
29	4900023	4	3/8" Lock Nut
30	4900052	2	#10 Hex Nut
31	1700052	1	Lacing Cable
	4101007		Option/Rllr/Mag/Comp/HD10 After #0260
	4700722		Bottom Conveyor Frame

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