HAYBUSTER®

H-1100™ Tilt

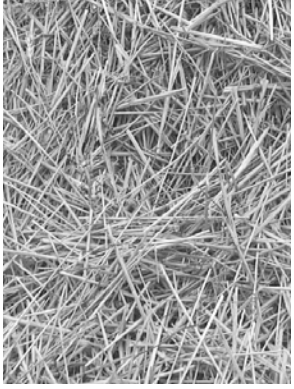
PTO Driven Tub Grinder
Series II
Serial Number HI 12966 & Up
Includes Stationary Electric Supplement

Operating Instructions and Parts Reference

DURATECH INDUSTRIES
PO BOX 1940, JAMESTOWN, ND 58402-1940
FEBRUARY 2011
0500077

HAYBUSTER®

A Tradition of Innovation Since 1966



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DuraTech Industries International Inc. (DuraTech Industries) has made every effort to assure that this manual completely and accurately describes the operation and maintenance of the H-1100 Tilt™ Tub Grinder as of the date of publication. DuraTech Industries reserves the right to make updates to the machine from time to time. Even in the event of such updates, you should still find this manual to be appropriate for the safe operation and maintenance of your unit.

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

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Foreword

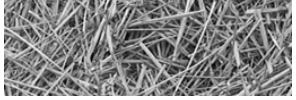
All personnel must read and understand the following sections before operating the H-1100 Tub Grinder.

- Foreword and Section 1, important safety information.
- Section 2, ”Dealer Preparation,” to verify that the machine has been prepared for use.
- Section 3, “Machine operation,” which explains normal operation of the machine.
- Section 3.1, “Pre-Operation Inspection”.

Appropriate use of unit

The H-1100 Tilt Tub Grinder is designed to grind material into more palatable or manageable rations for your operation. It has multiple uses:

1. Grind most types of hay
   - Big round bales
   - Loose hay
   - Square bales
2. Grind most types of grain
   - Ear corn
   - Shell corn
   - High moisture corn
   - Most small grains

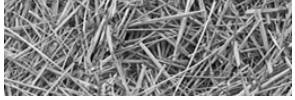


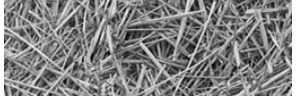
3. Grind most types of crop residue
   - Stover
   - Straw
4. Grind various sizes
   - Screens are available from 1/8” to 8”
   - Combine screen sizes to get desired cut

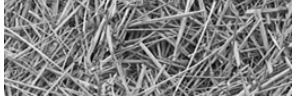
Operator protection

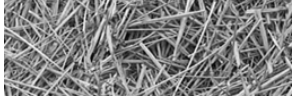
As with all machinery, care needs to be taken in order to insure the safety of the operator and those in the surrounding area.

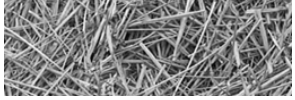
WARNING: The **OPERATOR IS RESPONSIBLE** for the safety of the operator and those in the surrounding area. Operators and those observing the operation of the H-1100 Tilt Tub Grinder are required to wear head, eye, and ear protection, No loose clothing is allowed.

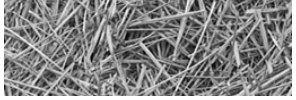












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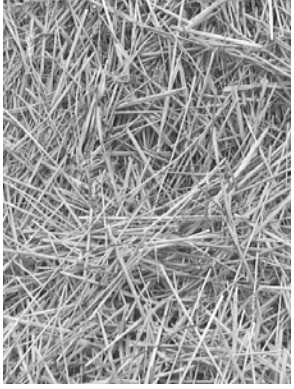

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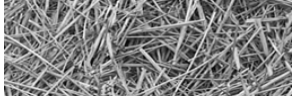
Part 1:
Operating Instructions



Introduction

The H-1100 Tilt Tub Grinder is designed to grind material into more palatable or manageable rations for your operation. It has multiple uses:

1. Grind most types of hay
   - Big round bales
   - Loose hay
   - Square bales
2. Grind most types of grain
   - Ear corn
   - Shell corn
   - High moisture corn
   - Most small grains
3. Grind most types of crop residue
   - Stover
   - Straw
4. Grind various sizes
   - Screens are available from 1/8” to 8”
   - Combine screen sizes to get desired cut

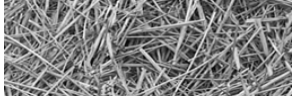
To avoid possible damage to the machine and risk of injury to the operator, consult with a DuraTech Industries International, Inc. (DuraTech Industries) representative before attempting to shred materials other than livestock forage.

Purpose

The purpose of this owner’s manual is to explain maintenance requirements and routine adjustments for the most efficient operation of your H-1100 Tilt Tub Grinder. There is also a trouble shooting section that may help in case of problems in the field. Any information not covered in this manual may be obtained from your dealer.

Special Note: When reference is made as to front, rear, left hand, or right hand of this machine, the reference is always made from standing at the rear end of the machine and looking toward the hitch. Always use serial number and model number when referring to parts or problems. Please obtain your serial number and write it below for your future reference.

MODEL: H-1100 Tilt SERIAL NO. _____



How to use this manual

Manual organization

This manual is organized into the following parts:

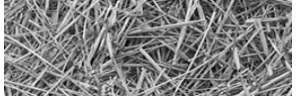
- **Part 1:** Operating Instructions
  - **Section 1:** Safety decals, safety instructions and information
  - **Section 2:** List the preparation required by the dealer before delivery,
  - **Section 3:** Describes the purposes of each part.
  - **Section 4:** Describes safe procedures.
  - **Section 5:** Tells how to use the H-1100 Tilt Tub Grinder.
  - **Section 6:** Describes how to maintain the H-1100 Tilt Tub Grinder.
- **Part 2:** Part's reference contains diagrams of each assembly, with the part number of each part. A key on the same or facing page contains a description of the part and the quantity used.

Dealer responsibilities

- Thoroughly review Section 2, "Dealer Preparation," and perform the tasks outlined. Also perform a daily pre-operation inspection as described in Section 3, "Operation."
- Upon delivery of the unit to the customer, it is your responsibility to conduct a training session on the safe operation of the unit for the primary operator(s). You must also conduct a "walk-around" inspection of all safety instructional decals on the machine itself. Decals are illustrated in **Part 2: Parts Reference.**
- Complete and return the Warranty Registration postcard. DuraTech Industries must receive this form before activating the warranty. Appendix A provides details of the warranty.

Operator responsibilities

- Review Section 2, "Dealer Preparation," to verify that the H-1100 Tilt Tub Grinder has been prepared for use.
- Note the important safety information in the Foreword and in Section 1, "Safety."
- Thoroughly review sections 1 and 3, which explain normal operation of the machine, and section 4, which explains maintenance requirements. These sections will function as your textbook during the dealer-conducted training course that is required before you can use the unit.
- Manuals for certain allied supplier's components are provided separately. You should also be familiar with their contents.



Section 1: Safety

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

WARNING: FAILURE TO COMPLY WITH SAFETY INSTRUCTIONS THAT FOLLOW WITHIN THIS MANUAL COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH. BEFORE ATTEMPTING TO OPERATE THIS MACHINE, CAREFULLY READ ALL INSTRUCTIONS CONTAINED WITHIN THIS MANUAL. ALSO READ THE INSTRUCTION MANUAL PROVIDED WITH YOUR TRACTOR.

THIS MACHINE IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THOSE EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING LITERATURE OR OTHER DURATECH INDUSTRIES WRITTEN MATERIAL PERTAINING TO THE H-1100 Tilt TUB GRINDER.

1.1 Safety-alert symbols

Decals are illustrated in **Part 2: Parts Reference.**

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

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

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

DuraTech Industries uses industry accepted **ANSI** standards in labeling its products for safety and operational characteristics.

Safety-Alert Symbol

Read and recognize safety information. Be alert to the potential for personal injury when you see this safety-alert symbol.

DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

DANGER:
Signal word - White Lettering/Red Background
Safety Alert Symbol - White Triangle/Red Exclamation Point

WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

WARNING:
Signal word - Black Lettering/Orange Background
Safety Alert Symbol - Black Triangle/Orange Exclamation Point

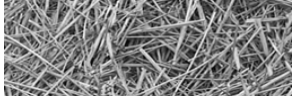
CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

CAUTION:
Signal word - Black Lettering/Yellow Background
Safety Alert Symbol - Black Triangle/Yellow Exclamation Point

This manual uses the symbols to the right to denote important safety instructions and information.

The **DANGER**, **WARNING** and **CAUTION** symbols are used to denote conditions as stated in the text above. Furthermore, the text dealing with these situations is surrounded by a box with a white background, will begin with **DANGER**, **WARNING**, or **CAUTION**.

The **INFORMATION** symbol is used to denote important information or notes in regards to maintenance and use of the machine. The text for this information is surrounded by a box with a light grey background, and will begin with either **IMPORTANT** or **NOTE.**



1.2 Operator - personal equipment

THE OPERATOR

Physical Condition

You must be in good physical condition and mental health and not under the influence of any substance (drugs, alcohol) which might impair vision, dexterity or judgment.

Do not operate a **H-1100 Tilt** when you are fatigued. Be alert - If you get tired while operating your **H-1100 Tilt,** take a break. Fatigue may result in loss of control. Working with any farm equipment can be strenuous. If you have any condition that might be aggravated by strenuous work, check with your doctor before operating

Proper Clothing

Clothing must be sturdy and snug-fitting, but allow complete freedom of movement. Avoid loosefitting jackets, scarfs, neckties, jewelry, flared or cuffed pants, unconfined long hair or anything that could become entangled with the machine.

Protect your hands with gloves when handling hammers, screens, etc.. . Heavy-duty, nonslip gloves improve your grip and protect your hands.

Good footing is most important. Wear sturdy boots with nonslip soles. Steel-toed safety boots are recommended.

To reduce the risk of injury to your eyes never operate a **H-1100 Tilt** unless wearing goggles or properly fitted safety glasses with adequate top and side protection.

Tractor noise may damage your hearing. Always wear sound barriers (ear plugs or ear mufflers) to protect your hearing. Continual and regular users should have their hearing checked regularly.

1.3 Machine safety labels

The safety decals located on your machine contain important information that will help you operate your equipment. Become familiar with the decals and their locations.

DANGER: ROTATING PARTS WITHIN CAN KILL OR DISMEMBER. WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING, UNLOADING, OR INSPECTING MACHINE.

6500082

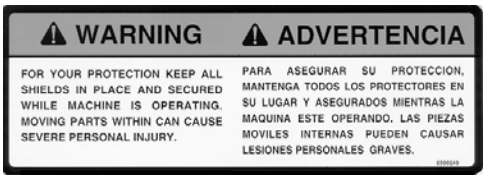
DANGER: ROTATING DRIVELINE, CONTACT CAN CAUSE DEATH, KEEP AWAY!

DO NOT OPERATE WITHOUT

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

6500085

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



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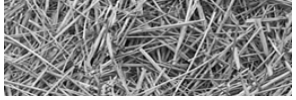


WARNING: FOR YOUR PROTECTION AND PROTECTION OF OTHERS, **PRACTICE THE FOLLOWING SAFETY RULES**.

1. BEFORE OPERATING THIS MACHINE, READ THE OPERATOR'S MANUALS SUPPLIED WITH THIS MACHINE AND YOUR TRACTOR.

2. CHECK OPERATORS 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.

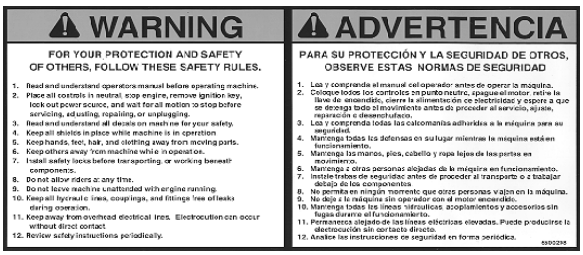
4. NEVER ALLOW RIDERS ON THIS IMPLEMENT OR THE TRACTOR.

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.



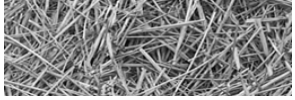
6500041

WARNING: NO RIDERS
SERIOUS INJURY COULD RESULT FROM RIDING ON THE MACHINE.

6500043

WARNING: FAILURE TO USE CAUTION WHILE FOLDING THE CONVEYOR COULD RESULT IN SERIOUS INJURY.

6500139



WARNING: THROWN OBJECT HAZARD
TO PREVENT SERIOUS INJURY OR DEATH DO NOT RAISE TUB WHEN ROTOR IS TURNING.

1. DISENGAGE ROTOR AND ALLOW TO COME TO A COMPLETE STOP.
2. BE CERTAIN THAT ALL PERSONNEL ARE CLEAR OF MACHINERY AREA.
3. RAISE TUB TO FULL VERTICAL POSITION.
4. STOP ENGINE AND REMOVE KEY BEFORE APPROACHING TUB AND ROTOR AREA.

6500209

WARNING: OVERHEAD CONVEYOR HAZARD
TO PREVENT SERIOUS INJURY OR DEATH:

DO NOT WALK UNDER CONVEYOR AT ANY TIME. STAY CLEAR OF CONVEYOR DURING OPERATION, RAISING, AND LOWERING. LOWER CONVEYOR FULLY BEFORE SERVICING.

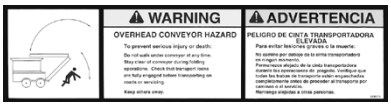
KEEP OTHERS AWAY.

6500214

WARNING: OVERHEAD CONVEYOR HAZARD
TO PREVENT SERIOUS INJURY OR DEATH:

DO NOT WALK UNDER CONVEYOR AT ANY TIME. STAY CLEAR OF CONVEYOR DURING FOLDING OPERATIONS. CHECK THAT TRANSPORT LOCKPINS ARE FULLY ENGAGED BEFORE TRANSPORTING ON ROADS OR SERVICING.

KEEP OTHERS AWAY.

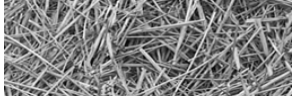


6500215

WARNING: HIGH-PRESSURE FLUID HAZARD, TO PREVENT SERIOUS INJURY OR DEATH:

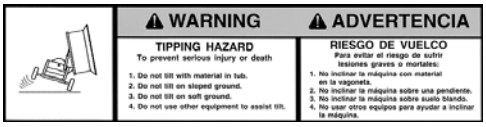
- RELIEVE PRESSURE ON SYSTEM BEFORE REPAIRING OR ADJUSTING OR DISCONNECTING.
- WEAR PROPER HAND AND EYE PROTECTION WHEN SEARCHING FOR LEAKS. USE WOOD OR CARDBOARD INSTEAD OF HANDS.
- KEEP ALL COMPONENTS IN GOOD REPAIR.

6500220



WARNING: TIPPING HAZARD
TO PREVENT SERIOUS INJURY OR DEATH

1. DO NOT Tilt WITH MATERIAL IN TUB.
2.. DO NOT Tilt ON SLOPED GROUND.
3. DO NOT Tilt ON SOFT GROUND.
4. DO NOT USE OTHER EQUIPMENT TO ASSIST Tilt.

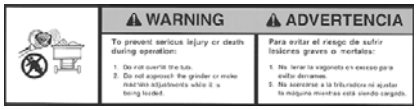


6500282

WARNING: TO PREVENT SERIOUS INJURY OR DEATH DURING OPERATION:

1. DO NOT OVERFILL THE TUB.

2. DO NOT APPROACH THE GRINDER OR MAKE MACHINE ADJUSTMENTS WHILE IT IS BEING LOADED.

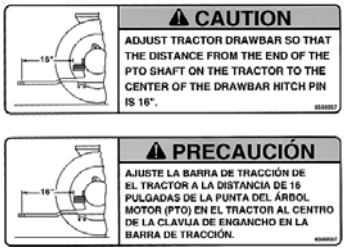


6500283

CAUTION: KEEP WHEEL BOLTS TIGHT.

6500042

CAUTION: ADJUST TRACTOR DRAWBAR SO THAT THE DISTANCE FROM THE END OF THE P.T.O. SHAFT ON THE TRACTOR TO THE CENTER OF THE DRAWBAR HITCH PIN IS 16".



6500057

CAUTION: INSERT TRANSPORT LOCKS BEFORE MOVING ON ROADS.

6500112

1.4 Thrown objects and operator safety

An operational characteristic of all grinders is that objects may be thrown out of the hopper. Thrown objects may present a safety hazard to persons in the area. This section is to inform the operator of this characteristic, and what can be done to reduce the risk of injury to the operator and persons in the area. Keep all observers away from the machine.

Figure 1.1 shows an object being hit as the hammer is on the upswing. A general pattern for where thrown objects may land is shown in Figure 1.2.

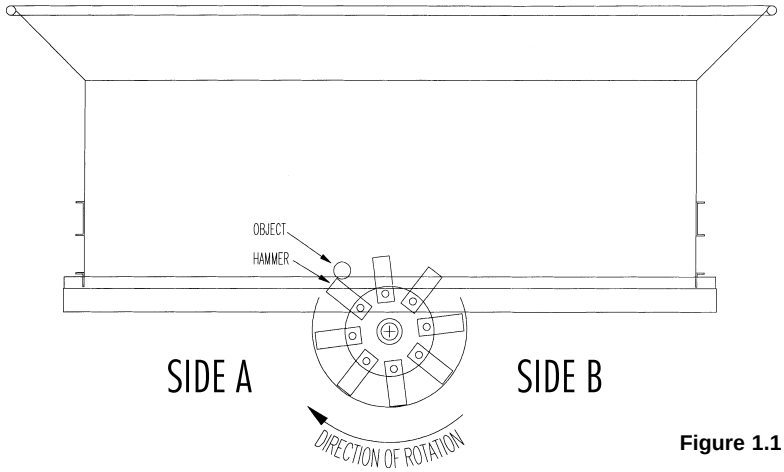


Figure 1.1

VIEWED FROM THE REAR OF THE H-1100 TILT

NOTE: The difference in the size of the area for side A versus side B. Side B is larger.

Dimensioning the size of this area is not practical. The distance a thrown object may travel is dependent on several conditions, including, but not limited to, rotor speed and diameter, condition of the hammers, style of hammers, object mass, object shape, amount of material in the tub, and how the hammer strikes the object.

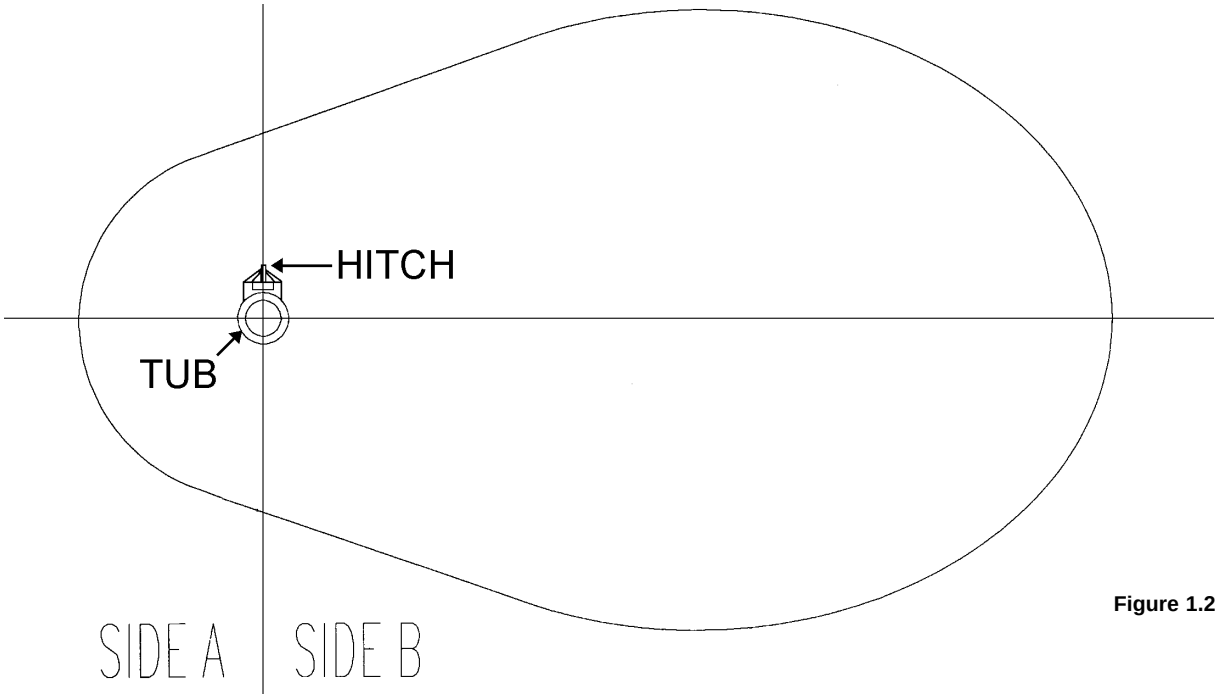
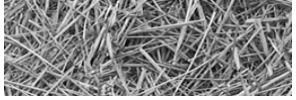


Figure 1.2



The amount of material in the tub can dampen or stop the object's potential flight. Keeping the tub full will reduce the risks. Filling the tub at least 1/2 full when starting will reduce the risk. Using a geyser plate can help reduce thrown objects. A risk may arise when the tub is being emptied, such as at the end of the grind. Running the engine at slower speeds when starting or finishing the grind will also help, especially slowing down when emptying the tub.

WARNING: To minimize the potential risk of injury or property damage, the operator must:

a) Place side B towards open areas, away from property and people.

b) Load the grinder from side A with a loader equipped with an enclosed cab.

c) Keep observers out of the area.

d) Wear a hard hat and safety glasses, at a minimum, and require that any other persons in the area are similarly equipped.

1.5 Shielding

This H-1100 Tilt Tub Grinder is equipped with shielding at all major points of potential injury. All Shields should be kept in place during operation. Bodily injury may occur if the unit is operated without shields.

WARNING: Shields are installed for your protection and to keep material off machine parts. Do not operate this Industrial Tub Grinder without shields in place.

1.6 Personal protection equipment

Operators and authorized observers of the H-1100 Tilt Tub Grinder are required to wear head, eye, and ear protection. No loose clothing is allowed.

1.7 Safety Review

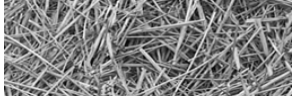
WARNING: Before attempting to operate your H-1100 Tilt Tub Grinder, carefully read and follow instructions given below and contained elsewhere in this manual.

BEFORE OPERATING

1. Read and follow all instructions contained in:
   - Operators Manual
   - Tractor Operators Manual
   - Decals placed on H-1100 Tilt Tub Grinder.

NOTE: Your dealer has additional copies of these materials.

2. Allow only properly instructed, responsible individuals to operate your machine. Carefully supervise inexperienced operators.
3. Use a tractor that meets the requirements contained in this manual. **See Appendix C, Required for Operation, page 62.**
4. Make sure the H-1100 Tilt Tub Grinder is in good operating condition and that all protective shields are in place and in proper working order. Replace damaged shields before operating.
5. Be sure all bystanders and other workers are clear before starting tractor and grinder.
6. Make no modifications to the H-1100 Tilt Tub Grinder unless specifically recommended or requested by DuraTech Industries.
7. Check periodically for broken or worn parts and make necessary repairs.
8. Be sure the unit is securely attached to tractor during grinder operation and road transport.



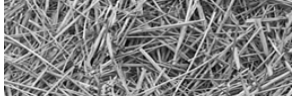
DURING OPERATION

1. Enforce the following safety precautions to prevent serious personal injury.
   - Keep everyone clear of work area except operator seated at tractor controls.
   - **Never work on or near grinder unless engine is off, and all motion has stopped.**
   - Disengage PTO before starting engine.
2. Power take off shafts must be locked in place with protective PTO shields in place.
3. Keep hands, feet, and clothing away from power driven parts.
4. Keep shields in place and in good condition.
5. Watch out for and avoid any object that might interfere with the proper operation of the machine.
6. Loose clothing, necklaces, and similar items are more easily caught in moving parts. Avoid the use of these items and keep long hair confined.

NORMAL SHUTDOWN PROCEDURE

WARNING: For your safety and the safety of others, you must use the following normal shutdown 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 if an extreme emergency requires it.

1. Run H-1100 Tilt Tub Grinder until discharge conveyor is empty, and grind as much of the material in the tub as possible.
2. Reduce engine speed to idle.
3. Disengage PTO
4. Disengage hydraulics.
5. Place transmission in park and set parking brake.
6. Shut off tractor engine and remove key.
7. Wait for all movement to stop.
8. Disconnect PTO driveline from tractor.



1.8 Fire Prevention

Grinding wood, hay, and other products in a tub grinder produces a large amount of potentially combustible material. The risks of fire can be significantly reduced with proper operating and maintenance procedures. This does include frequent removal of dust, debris, and other combustible materials.

Most of the products that are ground are dry and the grinding process can produce fine, dusty material. The grinding process can produce heat and the spinning rotor will circulate air within the grinding chamber. For a fire to start, fuel, oxygen and heat in sufficient quantity, must be present. During normal operation and with a properly maintained tub grinder, the material being ground will move through the grinding chamber so quickly that it doesn't have a chance to heat up sufficiently to start a fire. Also, the rapid rate that a tub grinder can pile material will quickly smother small hot spots that might occur during normal grinding operations. Keeping the material moving through the machine and across the top of the rotor is important to keep frictional heating of the material to a minimum.

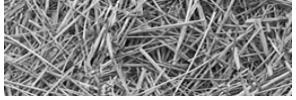
NEVER leave the vicinity of the unit with the engine running**.**

PROPER OPERATION OF THE TUB GRINDER:

- Do not grind materials any finer than necessary. Finely ground materials will produce more dust and increase the risk of fire. If finely ground materials are required, it is better to grind the materials coarse first with large opening screens installed in the grinder and then regrind them to the desired consistency by installing smaller opening screens in the grinder. Be especially cautious when grinding materials that can burn easily.
- When filling the tub grinder during start-up begin by filling the rear of the tub and avoid placing materials on the spinning rotor. When material begins to fall over the rotor, set the governor control on "Manual" and rotate the tub slowly while continuing to fill the tub. Use the tub cover to control thrown objects as much as possible. When the tub is 1/2 to 2/3 full, the governor control can be set to "auto" and grinding operations can resume normally. Do not allow the tub to stop for any significant amount of time with material over the rotor to minimize frictional heating.
- Do not smoke when working with combustible materials.

REMOVAL AND CLEANING INSTRUCTIONS:

- Clean the engine compartment or electric motor area daily or more often if conditions require it be done more frequently. When cleaning the engine compartment, always clean the top of the engine and the areas around exhaust manifolds, exhaust plumbing and turbochargers.
- Check the rotor box for debris built up around the rotor. Remove material that may be packed tight near the bearings, on shaft or other rotating components because it will become hot due to friction.
- At shutdown, always clean and remove all dust, debris, or combustible material off the entire grinder. Use high-pressure air or water if necessary. Always move the grinder and all other equipment away from the ground material pile before leaving the job site in case of smoldering combustion in the ground material.



TUB GRINDER MAINTENANCE:

- Repair any fuel or hydraulic leaks as quickly as they are discovered. Clean up spills immediately. Fuel or oil soaked materials can contribute significantly to the rapid spreading of a fire once it has begun.
- Inspect all electrical wiring periodically. Any chafed or damaged wires should be repaired immediately. Keep all electrical connections tight to prevent arcs or sparks.
- Contact between the rotor and any stationary component of the grinding chamber such as contact between the hammers and the screens must be corrected immediately.

1.9 Fire Extinguishers:

The fire extinguishers should be ABC dry chemical extinguishers that are appropriate for use with materials normally encountered on a tub grinder.

If a fire does start, CALL THE LOCAL FIRE DEPARTMENT IMMEDIATELY. Then, use the fire extinguisher if you feel confident that you can extinguish the fire. A 10# extinguisher will last about 15-20 seconds and a 20# extinguisher will last about 20-24 seconds, so they will not stop a large fire. The fire extinguishers should be at least 10#, but the preferred are 20# .

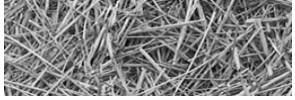
When using a fire extinguisher, use the P A S S method:

- Approach the fire with the wind at your back.
- **Pull the pin,**
- **Aim the spout,**
- **Squeeze the trigger, and**
- **Sweep along the base of the fire from about 6-8 feet away.**

Read the label on your extinguisher now, most extinguishers have descriptions of this method, and an estimated working time.

f an extinguisher is only partially used, the dry chemical will jam in the seals, allowing the extinguisher to loose its pressure charge in less than an hour, making it useless to you. It must be recharged before placing it back on the machine. Have the extinguisher recharged today; a fire will not wait for you to recharge your extinguisher tomorrow!

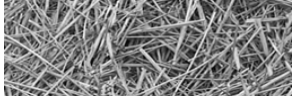
Fire extinguishers should be inspected and recharged by a professional at least annually to keep them at optimum performance! A “verification of service” collar that confirms the month and year of service should be attached to the neck of the container to confirm when the extinguisher was last serviced.



1.10 Towing

CAUTION: DO NOT TRANSPORT THE H-1100 Tilt TUB GRINDER without first securing the conveyor in the transport position (see 3.6.1, page 33).

1. Be sure all loose parts are securely fastened down.
2. Make sure all bystanders are clear.
3. Hitch H-1100 Tilt Tub Grinder to a tow vehicle with adequate load carrying and braking capacity. Be sure to attach safety chains between tow vehicle and H-1100 Tilt Tub Grinder. Tongue weight is 900 lbs.
4. Pull PTO apart and attach to transport bracket on the right hand side of the grinder.
5. Ensure that hitch jack is in the up position.
6. Check the turning clearance between H-1100 Tilt Tub Grinder and the towing vehicle.
7. Check local ordinances regarding restrictions for H-1100 Tilt Tub Grinder travel on your planned route.
8. Be aware of machine width at all times and do not exceed 20 miles per hour.
9. Check your state laws regarding the use of lights, slow moving vehicle signs, and other possible requirements.
10. Use good judgment and drive carefully, especially over rough and uneven roads.



1.11 Service and maintenance

WARNING: Before performing any maintenance on the machine or getting into the tub, be sure rotor and all moving parts have come to a complete stop. Shut off engine and remove the key.

Before working on or near the Tub Grinder or any reason such as servicing, inspecting or unclogging the machine:

- Follow the normal shutdown procedure found on page 28 of this manual.
- If the unit is still attached to a towing vehicle, place the towing vehicle's transmission in park and set the parking/emergency brake.
- Relieve all pressure in the hydraulic system before disconnecting hydraulic lines or performing 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.

WARNING: 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 a cardboard rather than your hands. If injured, seek medical attention immediately to prevent serious infection or reaction.

- If performing maintenance or servicing which requires the tub to be tilted up, make sure that the tub cylinder stop or tub prop is in place on the tub tilt cylinder before you begin. For more information, see sections 3.2.9 and 3.7.

WARNING: For your protection **ALWAYS** install the tub cylinder stop on the tub tilt cylinder when the tub is tilted. **NEVER** engage tractor PTO when the tub is raised.

WARNING: FAILURE TO COMPLY WITH SAFETY INSTRUCTIONS THAT FOLLOW WITHIN THIS MANUAL COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH. BEFORE ATTEMPTING TO OPERATE THIS MACHINE, CAREFULLY READ ALL INSTRUCTIONS CONTAINED WITHIN THIS MANUAL. ALSO READ THE INSTRUCTION MANUAL PROVIDED WITH YOUR TRACTOR.

THIS MACHINE IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THOSE EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING LITERATURE OR OTHER DURATECH INDUSTRIES WRITTEN MATERIAL PERTAINING TO THE H-1100 Tilt TUB GRINDER.

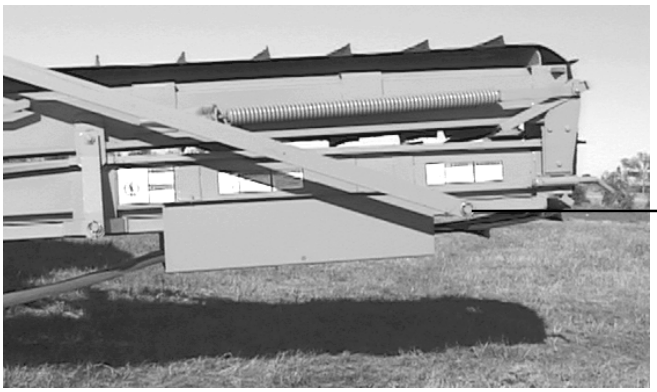
Section 2: Dealer Preparation

2.1 Assembly Required

Conveyor Assembly

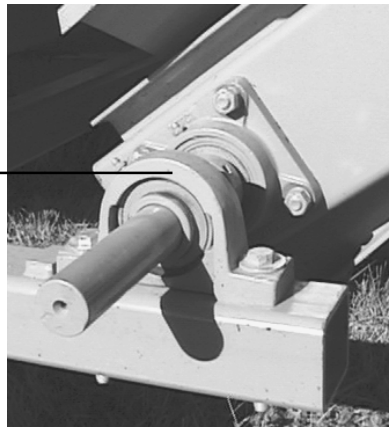
Before starting to assemble conveyor to H-1100 Tilt Tub Grinder frame, park H-1100 Tilt Tub Grinder on level ground and place conveyor behind H-1100 Tilt Tub Grinder. Review shipping kit list and verify that all small parts are in the shipping kit. Review Part Book pages on the Hydraulic Conveyor Lift to identify arrangement of parts listed below.

Figure 2.1
folded conveyor with lift straps installed



1. Conveyor lift straps (4500960) are shipped with the conveyor, and must be installed. Attach the end of the lift strap to the upper end of the discharge conveyor; on lift pin (see Figure 2.1), secure strap with click pin.

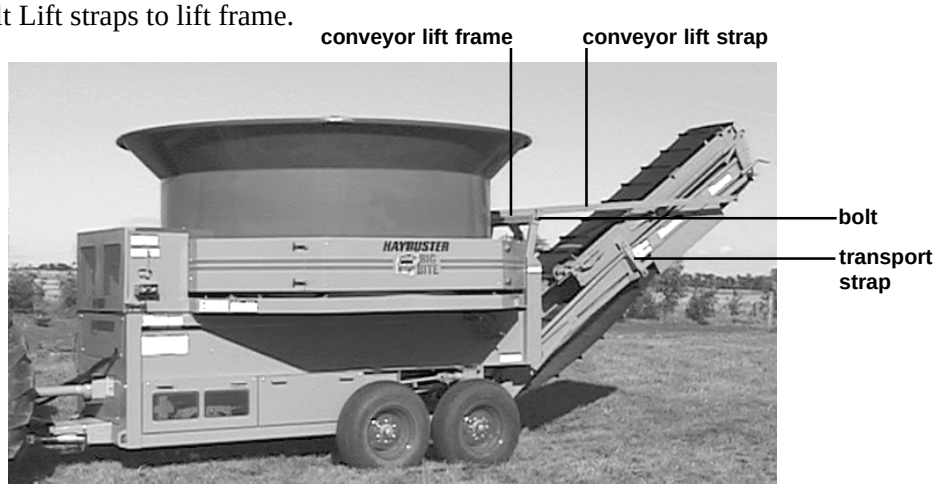
2. Remove drive chain shield from rear of conveyor frame. Two pillow block bearings should be on the lower conveyor shaft. Using a chain hoist or loader, place the lower end of the conveyor on the bearing mounts. Loosen eccentric lock collars so the bearing can slide freely on the shaft. Bolt pillow block bearings in place.

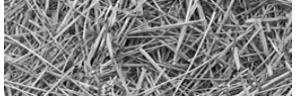


3. Center conveyor within the frame by sliding shaft in bearings. Lock bearings to shaft.

4. Raise conveyor with loader or hoist until the other end of the lift straps can be bolted to the conveyor lift frame 4501215. Bolt Lift straps to lift frame.

Figure 2.2
conveyor setup





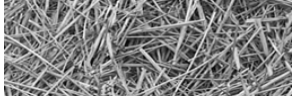
5. Attach hydraulic hoses to tractor. On a tractor with adjustable hydraulic flow rate, adjust the oil flow to a minimum rate. With tractor engine idling, engage the tractor hydraulics to purge air out of the control valve line. If the hydraulics kick out, reverse the hoses to the tractor or reverse the lever position and try again. Leave the tractor hydraulics engaged. Clear the area around the discharge conveyor of objects and people. Move the conveyor lift valve lever (rear valve) to raise the conveyor. Remove the lock pins and move the lever to lower the conveyor. The conveyor cylinder may need to be cycled several times until the air is purged from the cylinder. Stop the conveyor lift frame in the fully raised position and insert the transport lock pins.

6. Conveyor lift valve is available for open and closed center hydraulic systems. The valve is set up for open center systems. Parts 4000008 and 4000192 are required to connect to closed center. This conversion is required for older John Deere tractors.

7. Loosen allen screws and align sprocket on conveyor shaft with driving sprocket.

8. Install No. 60 chain, adjust chain idler.

9. Install drive chain shield



Section 3: Operation

There is no substitute for a sound preventative maintenance program and a well-trained operator.

To insure long life and economical operation, learn how to operate the H-1100 Tilt Tub Grinder and how to use the controls properly. Thoroughly instruct the operator in maintenance and operation of the H-1100 Tilt Tub.

3.1 Pre-Operating Inspection

Prior to the starting the H-1100 Tilt Tub Grinder, make a visual inspection of the machine. This can be done when lubricating the machine. Any items that are worn, broken, missing or needing adjustment must be serviced accordingly before operating the H-1100 Tilt Tub Grinder.

WARNING: Before inspecting the machine, use the normal shutdown procedure found on page 30.

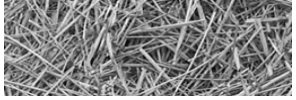
BEFORE OPERATING CHECKS

Before operating the H-1100 Tilt Tub Grinder, follow these instructions:

- ❑ Read and understand the operator's manual.
- ❑ Learn how to operate the controls properly. Do Not let anyone operate without instruction.
- ❑ Know the machine's safety features and understand the safety precautions.
- ❑ Be sure the machine is hitched properly to the tractor.
- ❑ Be sure to lubricate all lubrication points. See lubrication chart, page 46.
- ❑ Check for loose bolts.
- ❑ Make sure machine is properly adjusted.
- ❑ Check hydraulic oil level
- ❑ Check hydraulic components for leaks or damage.

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

- ❑ Visually examine rotor to see if any parts have excessive wear. These parts include shaft, plates, rods, hammers and moveable plate.
- ❑ Check screens and screen hold downs for wear and tightness.



- ❑ Check installation and condition of hammers.
- ❑ Visually examine rotor bearings and mounting bolts.
- ❑ Check all bearings for wear.
- ❑ Check chains and belts for proper tension and condition.
- ❑ Make sure all shields and guards are in place.
- ❑ Condition of decals.
- ❑ Lug nuts for tightness.
- ❑ Condition of tire rims.
- ❑ Tires for proper air pressure.
- ❑ Always grind with the machine and tractor stationary on level ground.
- ❑ In cold weather, allow five minutes for the machine to warm up before grinding.
- ❑ Start the machine and check the tub direction, speed control governor for proper operation.
- ❑ 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.
- ❑ If grinding grain, be sure proper grain attachment is in place.

3.2 Introduction to the machine

3.2.1 Description of the H-1100 Tilt Tub Grinder

The Tub Grinder is designed to grind most types of hay, grain and crop residue such as stover and straw. The unit incorporates a number of basic features including the rotating tub, the electronic governor, the rotor and hammer assemblies, the tub chain and drive assemblies, belly and discharge conveyors, and the axle and hitch assemblies.

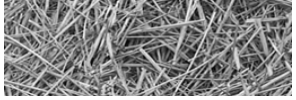
Material is fed into the tub of the unit by appropriate means, such as a wheel loader. As the tub rotates, the material is exposed to the rotating hammers. The hammers then grind the material before the material is discharged by the belly and discharge conveyors.

Figure 3.1
side view showing operator station and major system components

3.2.2 Overview of Operator's Controls

Operator controls include:

- **Electronic governor:** The electronic governor regulates tub rotational speed range.
- **Front hydraulic valve:** The front hydraulic valve controls hydraulic oil flow to tub orbit motors. Starts and stops the tub rotation.
- **Rear hydraulic valve:** The rear hydraulic valve raises and lowers discharge conveyor. One tractor hydraulic circuit is required to power this circuit. This valve can be converted to a closed center hydraulic system for older John Deere tractors.
- **Tractor engine speed:** The tractor engine speed should be set so 1000 PTO shaft is running at 1000 RPM.
- **Tractor PTO lever**: Engaging the tractor's PTO lever spins the rotor, runs both conveyor belts and powers tub hydraulic drive. The conveyor must be unfolded to working position before the PTO is engaged.
- **Tub tilt cylinder:** The tub tilt cylinder uses the tractor's second hydraulic circuit to raise and lower the tub platform. Operation of the tub tilt cylinder is performed using the controls for the tractor's second hydraulic circuit which are located on the tractor. Figure 3.1 shows the tub platform in the operating position with the tub platform lowered to the frame.



3.2.3 Electronic governor

The Model RCB93 Electronic Governor regulates the speed at which the tub rotates. The electronic governor has two modes of operation, the Engine (Auto) mode and the Tub (Manual) mode. The Engine (Auto) mode is the preferred mode of operation and should be used whenever possible.

IMPORTANT: Except when calibrating or trouble shooting the electronic governor always use the Engine (Auto) mode of the electronic governor.

Engine (Auto) Mode

When the electronic governor is switched to the Engine (Auto) mode, it is monitoring the rotation speed of the tractor engine. The hydraulic flow to the tub drive mechanism is regulated proportionally to the tractor engine speed. When the engine begins to lug down, the hydraulic oil flow is reduced which in turn slows down the tub rotation. With proper calibration, the engine will only lug down to its optimum horsepower RPM and the tub rotation will be varied proportionally to keep the engine at this RPM. The result is a nearly constant load on the tractor' engine, which will maximize grinding efficiency. **See section 3.10 (pg. 37) for calibration instructions.**

Tub (Manual) Mode

In this mode the tub speed is constant and it will not change to match varying load conditions.

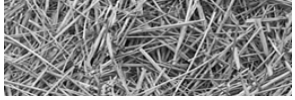
3.2.4 Rotor

The Rotor and screens are the heart of the tub grinder. The rotor on this H-1100 Tilt Tub Grinder is equipped with 88 swinging hammers. Dull edges on the hammers and/or screens will result in a loss of capacity and increased horse power requirements.

IMPORTANT: Hammer and hammer rod life can be extended by keeping the rotor rotating at 2000 RPM. **Excessive tractor horsepower and/or overfeeding the rotor can cause the hammers to lay back resulting in excessive wear on both the hammers and hammer rods.**

CAUTION: Keep all foreign objects out of the tub and away from the rotor. Foreign objects may cause personal injury or damage to the H-1100 Tilt Tub Grinder.

CAUTION: At full speed, energy is stored in the rotor. **Do not use the tractor PTO brake to stop the rotor. Reduce engine speed before disengaging the PTO.**



3.2.5 Screens

All H-1100 Tilt Tub Grinders require 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. As a general rule, use the largest diameter screens capable of doing the job.

When using a combination, place the smallest hole diameter on the right hand side of the rotor box where the material enters the rotor.

The size of the hole in the screen determines the coarseness of grind. The larger the hole diameter, the coarser the grind. Hole sizes can vary from 1/8” diameter through 8” diameter. In general, use the larger screen sizes for grinding hay.

As a general guide, DuraTech Industries recommends the following screen sizes:

Hay	2” to 8”
Ear Corn	5/8” to 1”
Shelled Corn	3/4” dry, 5/8” high moisture
Small Grains	1/4” to 3/8”

3.2.6 Tub

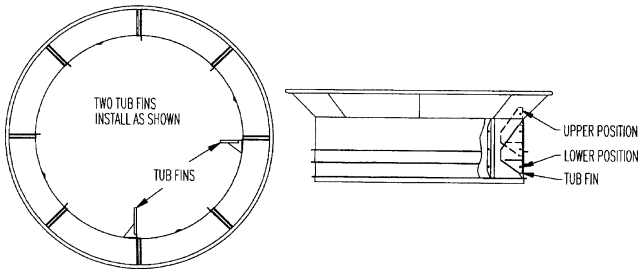
The purpose of the tub is to contain the material above the rotor, and to keep the rotor loaded

Tub Fins

Two tub fins are furnished with the H-1100 Tilt Tub Grinder.

When grinding large round bales, use only one of the tub fins, bolted in the upper position. Two tub fins across from each other may hold the bale up and reduce capacity.

When grinding small round bales, square bales, or loose hay, use two tub fins bolted in the lower position.



3.2.7 Slug Buster and Mill Grate

A slug buster or mill grate is installed above the rotor to regulate the amount of material entering the rotor chamber. The standard slug buster is used for ideal grinding conditions (dry hay). The mill grate is used for “less than ideal grinding”, (wet hay or tough grasses).

3.2.8 Conveyors, Drives & Lifting

Hydraulic Lift Discharge Conveyor

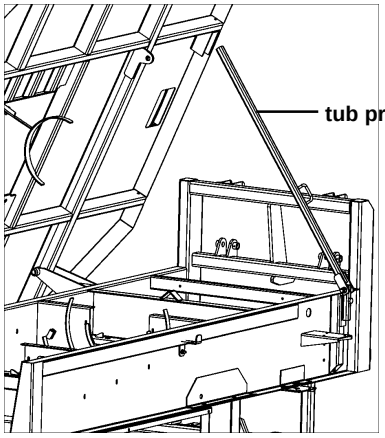
A manual valve on the H-1100 Tilt Tub Grinder controls the conveyor lift. The tractor supplies hydraulic oil for operating the conveyor lift system. Activate the tractor hydraulic circuit before operating the valve on the H-1100 Tilt Tub Grinder.

To correct a reverse flow, either change the hoses around where they connect to the tractor, or reverse the tractor operating lever position. On a tractor with adjustable hydraulic flow rate, adjust the oil flow to a minimum rate.

A velocity check valve (4000119) is in the hose to the hydraulic cylinder. This valve is to keep the conveyor from falling in the event of a broken hose. If this does happen, the valve will not open until the hose is repaired and pressure is applied to the hose.

3.2.9 Hydraulic Tilt Platform

The H-1100 Tilt's tub can be tilted 65 degrees for access to the rotor, screens, and drive line. A relief valve, (4000017) is installed at the base of the tub cylinder to prevent the operator from tilting the platform when the tub has too much material in it. A velocity check valve is also supplied in the line to the cylinder. This valve prevents the platform from falling in the event of a hose failure. It also limits the speed at which the platform can be lowered.



WARNING: To prevent serious injury or death, do not tilt platform on unlevel ground or with material in the tub.

WARNING: For your protection **ALWAYS** install the tub cylinder stop or tub prop when the tub is tilted. **NEVER** engage tractor PTO when the tub is raised.

Note that different versions of the machine have different tub cylinder stops. Older machines will have a cylinder stop that attaches to the hydraulic cylinder as shown here. Illustration above shows the version which uses a pivoting bar for a cylinder stop. In this case the tub cylinder stop is referred to as a tub prop.

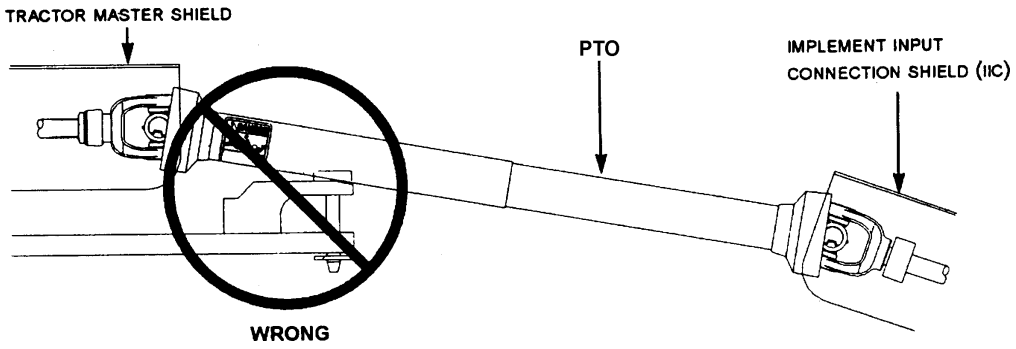
3.3 Machine Operation

3.3.1 Tractor Set Up

A tractor drawbar and 3-point arms can cause interference with the PTO driveline. This interference can cause serious damage to the PTO guarding and the PTO telescoping members.

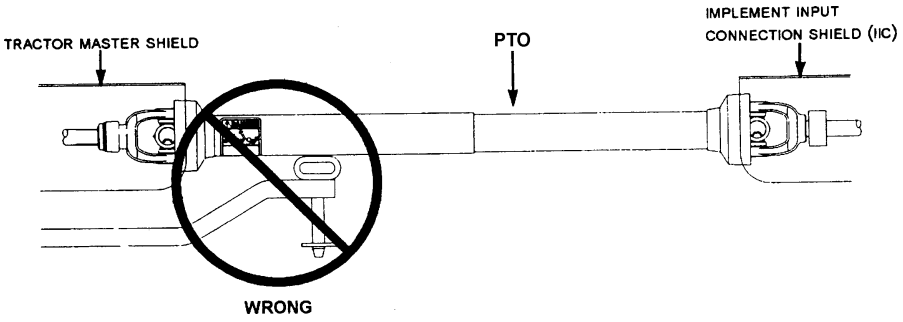
If this implement is attached to a tractor with a clevis hitch (hammer strap) style drawbar, the hammer-strap must be removed to prevent damage to the PTO guarding and the PTO telescoping members. See Figure 3.2.

Figure 3.2
incorrect clevis hitch (hammer strap) style drawbar set up

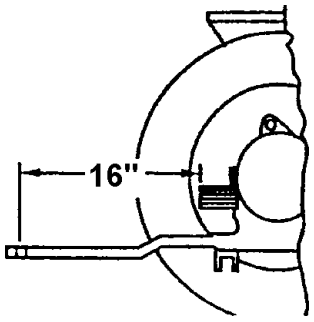


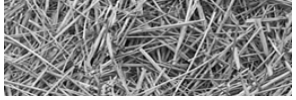
If this implement is attached to a tractor with an offset in the drawbar, be certain it is in the down position to prevent damage to the IID guarding and the IID telescoping members. See Figure 3.3.

Figure 3.3
incorrect offset style drawbar set up



If this implement is attached to a tractor with 3-point arms, the arms must be fully raised and locked in position to prevent damage to the PTO guarding and the telescoping members. Adjust the tractor drawbar so the distance from the end of the PTO shaft on the tractor to the center of the drawbar hitch pin hole is 16” (41 cm.) for a 1000 RPM shaft as shown at right.





3.3.2 How to hook up to tractor

To hitch the H-1100 Tilt to a tractor, perform the following steps:

1. To reduce wear on the PTO shaft knuckle joints, tractor PTO shaft should be in line (parallel) with the H-1100 Tilt Tub Grinder. If tractor is equipped with swinging drawbar, adjust so the tractor PTO and H-1100 Tilt Tub grinder drive shaft are in line.
2. Connect hydraulic lines to the tractor.
3. Connect electrical lines to tractor.

CAUTION: To insure a safe hook-up, the H-1100 Tilt Tub Grinder and tractor should be connected with a 1" locking pin.

3.3.3 How to disconnect from tractor

To hitch the H-1100 Tilt to a tractor, perform the following steps:

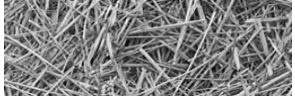
1. Park H-1100 Tilt Tub Grinder and tractor on a level spot.
2. Lower jack to ground, place blocks under jack if ground is soft.
3. Disconnect electrical wires.
4. Disconnect hydraulic lines.
5. Disconnect PTO, place shaft in shaft holder.
6. Raise hitch of H-1100 Tilt Tub Grinder to remove weight from tractor hitch by adjusting jack.
7. Remove hitch pin.
8. Drive tractor away slowly.

3.3.4 How to operate machine as a unit

INTRODUCTION

Tractor engines are designed to reach maximum power at PTO speed (1000 rpm), and most tractors are capable of engine speeds from 10 to 20 percent over PTO speed. A rotor speed of 2000 rpm is recommended. It will be necessary to operate tractor PTO at approximately 1100 rpm.

The Electronic Governor controls the feed rate to keep the tractor at its peak power point. The operator is able to select the operating range so that when the feed of material lugs down the tractor, the Electronic Governor will reduce the feed at a high enough PTO speed for the tractor to recover automatically if a slug is encountered.



GRINDING

Place materials to be ground directly into the tub. The best method for filling the H-1100 Tilt Tub Grinder is:

1. Engage Rotor and increase speed to 1000 RPM on the PTO shaft
2. Fill the tub about half full of unground materials before starting tub rotation.
3. Start tub.
4. Place additional materials in the tub.

LOOSE HAY

The best capacity will be obtained if the tub is consistently kept no less than half full of loose hay. When loading the tub, place materials slightly to the rear rather than directly over the rotor. For best results feed the tub with small portions.

WET OR FROZEN HAY

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

LARGE ROUND BALES

Place large round bales in the tub on end or on the side. Try grinding bales each way to determine which method will work best for you.

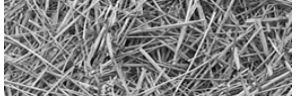
IMPORTANT: Never drop a large round bale into the tub from a high level. Ease the bale over the edge and down into the tub carefully. Dropping a large bale directly on top of the rotor will cause damage to the rotor.

CROP RESIDUE

When grinding crop residues, use the same methods as with loose hay. Extremely wet or frozen materials should be placed sparingly into the tub.

SMALL GRAINS

Grinding small grains requires special attachments. These attachments fit directly over the rotor. It is not recommended that small grains be ground without the use of one of the small grain attachments. (See Appendix B: H-1100 Tilt Specifications under the heading “Options”.)



EAR CORN

Grinding ear corn requires a special attachment. This attachment fits directly over the rotor and uses crossbars in the tub to feed corncobs into the rotor. (See Appendix B: H-1100 Tilt Specifications under the heading “Options”.)

IF LODGING OCCURS

Materials may lodge against the side of the tub and not feed down to the rotor. If this occurs, reverse the tub direction briefly and then start the tub in a forward direction again. This practice normally dislodges any materials.

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

3.4 Shutdown procedures

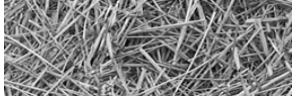
3.4.1 Normal Shutdown Procedure

CAUTION: At full speed, energy is stored in the rotor. **Do not use the tractor PTO brake to stop the rotor.**

WARNING: The stored up energy in the rotor causes it to rotate long after disengaging the tractor PTO. Before performing any maintenance on the machine or getting into the tub, be sure rotor and all moving parts have come to a complete stop.

Before working on or near the H-1100 Tilt Tub Grinder for any reason, including servicing, inspecting or unclogging machine:

1. Run H-1100 Tilt Tub Grinder until discharge conveyor is empty, and grind as much of the material in the tub as possible.
2. Reduce engine speed to idle.
3. Disengage PTO
4. Disengage hydraulics.
5. Place transmission in park and set parking brake.
6. Shut off tractor engine and remove key.
7. Wait for all movement to stop.
8. Disconnect PTO driveline from tractor.



3.4.2 Emergency Shutdown Procedure

Disengage PTO and tractor hydraulics

3.5 Storage

3.5.1 Preparing for storage

To prepare the unit for storage, perform the following steps:

1. Check the wheel bearings for lubrication requirements and adjustments at the end of the season.
2. Check the pressure roller bearings for lubrication and adjustments at the end of the season.
3. Clean the machine thoroughly to prevent rust and to make inspections easier. Clean and repaint the tub floor to prevent rust and sticking problems at start up time.
4. Check for loose or worn chains, belts, sprockets, and pulleys.
5. Check the condition of bearings.

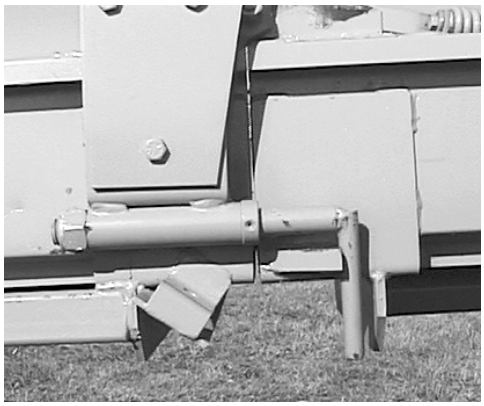
3.5.2 Removing from storage

To prepare the unit for use after storage, perform the following steps:

1. Perform a thorough pre-operation inspection.

Figure 3.4
steps to folding the conveyor procedure

Step 1



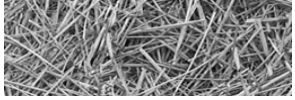
Step 2

Step 3

Step 4

Step 5

Step 6



3.6 Road Transport

3.6.1 Folding the conveyor

To fold the conveyor, perform the following steps:

1. Lower conveyor until it is level with the ground.
2. Turn latch up to unlock conveyor
3. Release Tension Adjusting Handles on Idler Roller
4. Standing beside conveyor, Raise discharge conveyor end and follow it over to its folded position.
5. Lock conveyor down into folded position with straps and lock pin.
6. Raise conveyor and lock into transport position

3.6.2 Set up to transport

Inspect H-1100 Tilt Tub Grinder for any loose parts, tools, or any materials. Remove them or fasten them securely to the H-1100 Tilt Tub Grinder.

To set up the H-1100 Tilt for transport, perform the following steps:

1. Fold the conveyor.
2. Check for local restrictions on towing.

3.6.3 Change back to operate

To set up H-1100 Tilt for operation, perform the following steps:

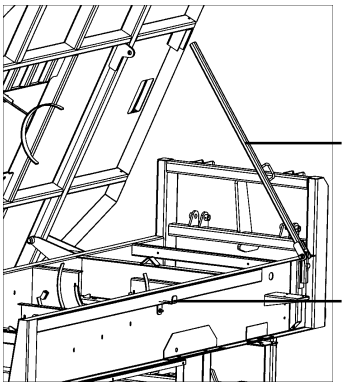
1. Connect H-1100 Tilt Tub grinder to tractor.
2. Connect hydraulic hoses and electrical cable to tractor
3. Raise hydraulic conveyor lift.
4. Remove transport lock pin 4800215 and hair pin 4800107, place pin in bracket so it is not lost.
5. Unfold conveyor to working length.

3.7 Raising the Tub Platform

WARNING: To prevent serious injury or death, do not tilt platform on unlevel ground or with material in the tub.

To raise the tub platform, perform the following steps:

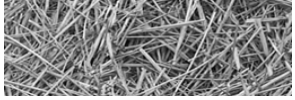
1. Park machine on firm level ground or surface.
2. Remove all material from tub.
3. Disengage the PTO.
3. Clear personnel from work area.
4. Raise platform.
5. Install tub cylinder stop or tub prop.



newer H-1100 Tilt models are equipped with a tub prop instead of a tub cylinder stop.

WARNING: For your protection **ALWAYS** install the tub cylinder stop or tub prop when the tub is tilted. **NEVER** engage tractor PTO when the tub is raised.

older H-1100 Tilt models are equipped with a tub cylinder stop that is attached to the tub tilt cylinder with a lock pin.



3.8 Parts of the electronic governor

FUSE LIGHT

This light is on whenever the electronic governor is receiving power.

SENSOR LIGHT

This light is on whenever the electronic governor is receiving an adequate input signal from the sensor and the rotor is engaged.

SPEED LIGHTS

These lights provide a relative indication of how fast your tub should be turning based on the output signal that the electronic governor is sending to the electro-hydraulic valve.

MODE SWITCH

The mode switch has three possible positions. The off position which turns the electronic governor off and two other positions which correspond to the tub (manual) and engine (auto) modes of operation. In the “tub (manual)” position the tub will rotate at a constant speed based on the settings of the Tub Limit Knob (Tub Speed Knob). The “engine (auto)” position uses all the functions of the Electronic Governor. The maximum tub speed will be limited by the Tub Limit Knob (Tub Speed Knob), and the tractor engine load will be controlled by the Engine Load Knob.

TUB SPEED KNOB (TUB LIMIT KNOB)

This knob sets the maximum speed at which the tub will rotate in both the tub (manual) and engine (auto) modes. In the engine (auto) mode tub speed will vary between zero and this setting depending on the tractor engine load.

ENGINE LOAD KNOB

This knob is used only in engine (auto) mode. It controls the load placed on the tractor’s engine. Turning the knob clockwise decreases engine load, and turning the knob counterclockwise increases the engine load.

RANGE SWITCH

This switch is a coarse adjustment for the engine load knob and can be switched to a H- high, M-medium or L-low setting.

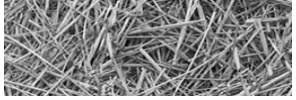
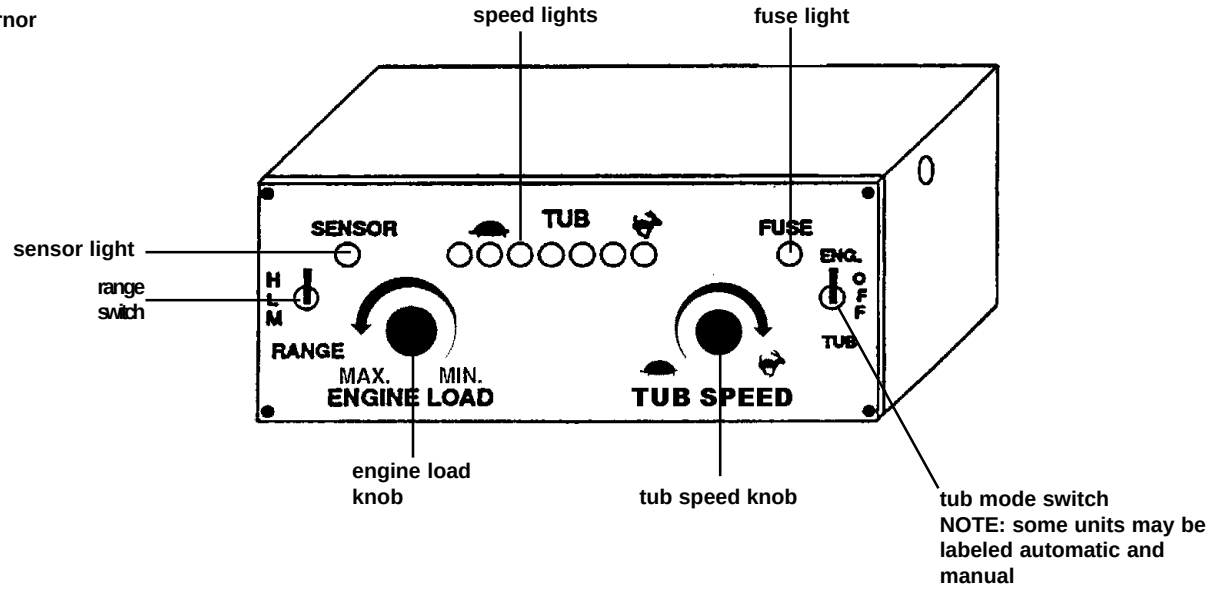


Figure 3.5
electronic governor controls



3.9 Operation of the electronic governor

Engine (Auto) mode

IMPORTANT: Except when calibrating or trouble shooting the electronic governor always use the engine (Auto) mode of the electronic governor.

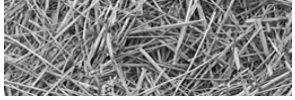
In engine (Auto) mode, the electronic governor monitors the rotation speed of the tractor's engine. The hydraulic flow to the tub drive mechanism is regulated in proportion to the tractor's engine speed. As the engine speed slows, the electronic governor decreases the hydraulic flow which slows down the tub's rotation. Conversely, as the tractor's engine speed increases, the electronic governor increases the hydraulic flow which speeds up the tub's rotation. This allows the electronic governor to automatically control the feed rate keeping the tractor's engine running within the governor's optimum power zone. When the load on the grinding rotor begins to lug the tractor's engine, the governor automatically reduces the tub's rotation speed in proportion to the load. The result is nearly a constant load on the tractor's engine, which maximizes the grinding efficiency.

The range of rotor speeds for which the electronic governor will regulate the hydraulic flow is determined by the setting of the engine load knob. For example, turning the engine load knob counter clockwise will increase the load on the engine by keeping the tub engaged to a lower engine RPM.

With proper calibration, the tractor's engine will only load down to its optimum horsepower RPM, and the tub's rotation speed will be varied proportionally to keep the tractor's engine at this RPM.

Tub (Manual) mode

In tub (manual) mode, the electronic governor performs as a simple tub speed control. In this mode the tub speed is constant and it will not change to match varying load conditions.



3.10 Calibration of the electronic governor

To calibrate the electronic governor, perform the following steps:

1. Begin calibration procedure with H-1100 Tilt Tub Grinder completely shutdown. Place the MODE switch in the OFF position and the RANGE switch in the H-High position. Rotate the TUB LIMIT KNOB fully clockwise toward the rabbit position. Turn the ENGINE LOAD KNOB fully clockwise, and switch the MODE switch to Engine (Auto) Position.

2. Verify that tub rotation lever is in neutral. Inspect machine to verify that all personnel are clear of the machine.

3. Start tractor and run the grinder at about 1/2 throttle to allow the hydraulic system to warm up before calibrating the RCB93 Electronic Governor.

4. When the system has reached operating temperature, throttle the tractor to 1000-1200 engine RPM. Engage the tub drive and throttle up to PTO speed. The FUSE light and the SENSOR light should come on. The tub should not be rotating at this time. If the tub is rotating, read section 5.1 “Troubleshooting the electronic governor system” in this manual.

5. Slowly rotate the ENGINE LOAD KNOB counter-clockwise until the tub just begins to move. The tub should begin to rotate. If it does not begin to rotate, switch the range switch to M-Medium or L-Low and repeat as necessary.

TEST: Throttle the tractor’s engine down and the tub should stop rotating, return the tractor’s engine to PTO RPM and the tub should start to rotate.

If the tub will not rotate, read section 5.1 “Troubleshooting the electronic governor system” in this manual.

3.11 Adjusting the tub’s rotation speed

Tub rotation is controlled by two components . The tub is started, stopped and reversed by the front hydraulic valve, and the tub’s rotation speed is controlled by the tub limit knob (tub speed knob) on the electronic governor.

3.12 Adjusting the conveyor belt tension

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

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

Figure 3.6
belly conveyor belt adjusting bolt

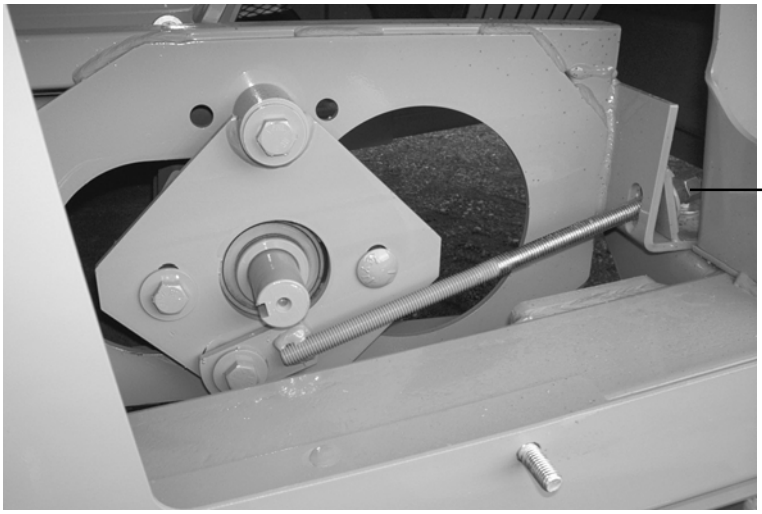
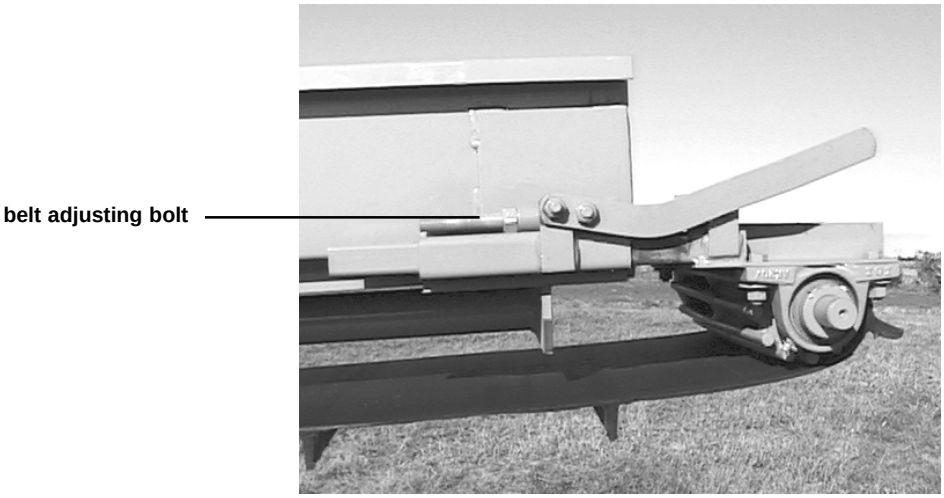
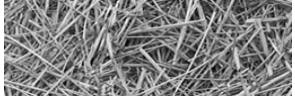


Figure 3.7
discharge conveyor belt adjusting bolt





3.13 Adjusting the conveyor belt tracking

A. When a new belt is installed: Use only genuine DuraTech Industries parts.

1. Begin by adjusting the drive roller so that the mounting bearings are the same distance from the end of the conveyor frame. This ensures that the roller centerline is square with conveyor frame. Adjust the idler roller tension bolts so that they are equal on both sides of the conveyor.

B. If the belt is running to the right side, perform the following steps:

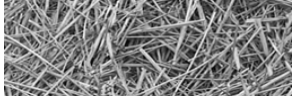
1. Adjust the idler roller tension bolt on the right side of the conveyor. Increase tension by approximately 2 full turns of the adjusting nut.
2. Make certain that all personnel are clear of machine and the start engine. Engage the tractor PTO.

NOTE: The rotor will also be turning.

3. Observe conveyor belt tracking from a safe location.
4. If further adjustment is required, disengage tractor PTO, and shut down the machine using the normal shutdown procedure.
5. Some adjustment of the drive roller may be required if no improvement is noted by increasing the idler roller tension.
6. Repeat steps 1-5 until proper tracking is achieved.

C. If the belt is running to the left side, perform the following steps:

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



3.14 Main drive belt adjustment

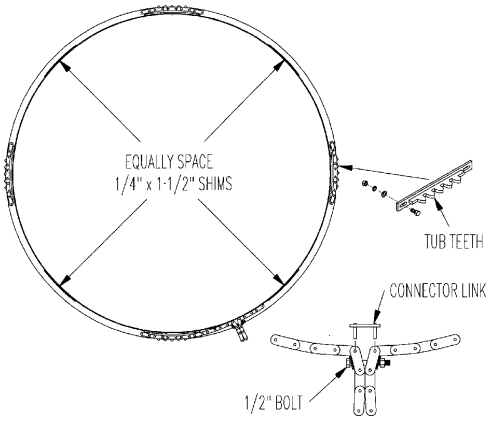
Adjustment has been provided for tightening main drive belts. Belts tend to stretch rapidly when first put into operation. Tighten regularly to prevent slippage. Belt tension should be checked at 30-minute intervals or as necessary until stretch is eliminated. Belt tension can be checked by pressing on individual belts with thumb (approximately 20 lbs.) in the center of the span. Deflection should be 1/2” or thickness of V-belt.

3.15 Sizing the tub drive chain

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

To size the tub drive chain, perform the following steps:

1. Remove the tub drive chain from the drive sprocket. Loosen the tub teeth and wrap the chain around tub, but do not run the chain around tightener idlers or drive sprocket. Using a 1/2" bolt inserted through the chain links, draw the chain together so that the center to center measurement on link pins matches the pins on the connector link. If the distance is less than or greater than the connector link, shims must be added. Equally space shims of the same thickness and length under the chain until the proper distance is obtained. Do not add shims under the tub teeth.



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

3.16 Adjusting tub chain tension

To adjust the tub chain tension, perform the following steps:

To adjust the tub chain tension, perform the following steps:

1. Position tub so teeth are oriented as shown.
2. Adjust bracket - spring engagement to 1/4” to 3/8” using Nut A. Refer to figure 3.8 for illustration.
3. Tighten Nut B.

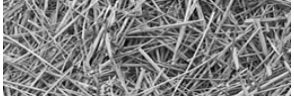
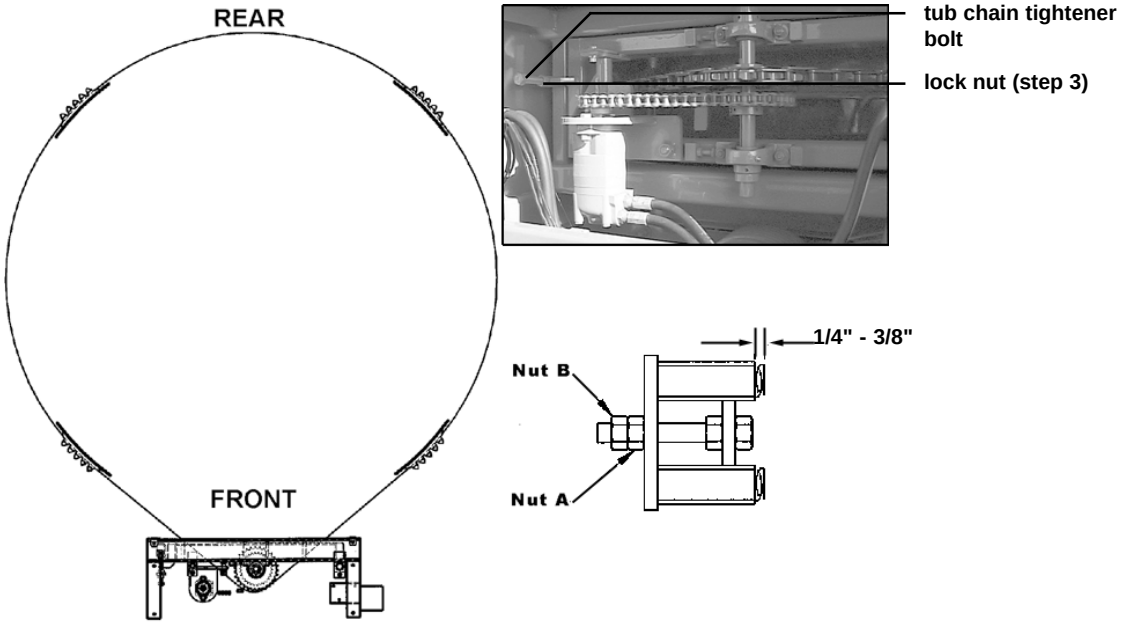


Figure 3.8
adjusting tub
chain tension



see pages 72-73 for parts illustration and parts list

3.17 Electro-hydraulic valve coil test

This test requires an accurate ohm meter. Disconnect the wiring harness leads at the electro-hydraulic valve coil. Check resistance of valve coil leads at the terminals. The resistance should be between 8 to 12 ohms for a 12 volt system. If the values are not within this range, replace the electro-hydraulic valve coil.

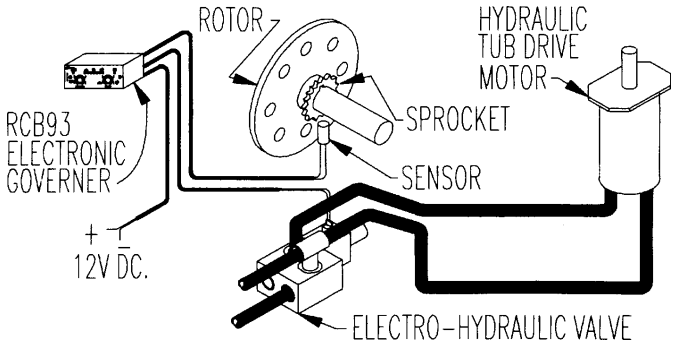
MANUAL OVERRIDE

NOTE: If there is an electrical failure with the machine, it may still be able to grind. Switch the electronic governor off. Remove the rubber end cap and loosen the jam nut on the electro-hydraulic valve. Start the machine and engage the tub drive.

CAUTION: PTO must be engaged at this time. Watch for moving parts.

Turn the adjusting screw clockwise until the tub rotates at the desired speed. Lock the jam nut on the adjusting stud and replace the rubber end cap on the electro-hydraulic valve. When the electro-hydraulic valve is adjusted in this manner, it will function only as a manual flow control. The tub speed will be constant and it will not change to match varying load conditions.

Contact your dealer for repairs or replacement parts. When the problems are corrected, calibrate the electro-hydraulic valve.



3.18 Electro-hydraulic valve calibration

DuraTech Industries International Inc. test runs every grinder before it leaves the factory. The electronic governor system was calibrated at this time and should not need any further adjustment. Before attempting to adjust the electro-hydraulic valve, follow the instructions below.

NOTE: With the electronic governor switched to tub (manual) mode, the tub will continue to rotate regardless of the engine RPM.

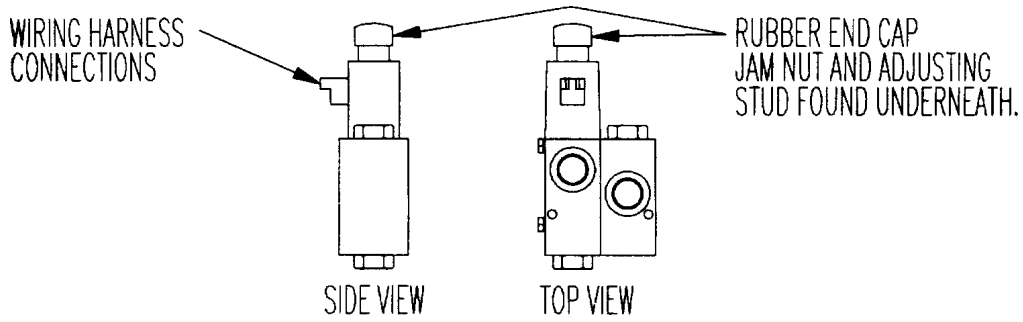
1. When first starting the machine, run at less than full throttle to allow the hydraulic system to warm up before operating.
2. With engine running at full throttle, turn the engine load knob clockwise to maximum position and set the mode switch in the engine (auto) position. Engage the tub using the tub control lever. Check the sensor light on the electronic governor before doing any adjusting! At this point, the sensor light should be lit. If the sensor light is not lit, read section 5.1 “Troubleshooting the electronic governor system” in this manual.

NOTE: Turning the engine knob clockwise will decrease the load on the engine by disengaging the tub at a higher engine RPM.

3. If tub is not turning, you are ready to proceed to the grinding section of this book. Remember the engine load knob adjusts the load placed on the engine, and under normal conditions this will be the only adjustment you will have to make.

IMPORTANT: Stay clear of all moving parts while calibrating the electro-hydraulic valve. **The tub will be rotating during this adjustment.**

Figure 3.9
electro-hydraulic valve



To calibrate the electro-hydraulic valve coil after following the three steps above, perform the following steps:

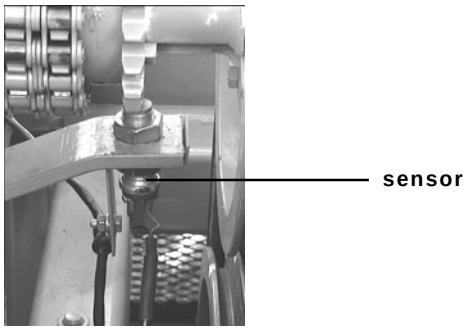
1. Remove the rubber end cap from the end of the electro-hydraulic valve. This will reveal a jam nut and an adjusting screw with a screwdriver slot.
2. Disconnect the wiring harness from the electro-hydraulic valve coil, and loosen the jam nut.
3. Start the engine, engage the tub drive in the forward direction and engage the PTO. Throttle the engine up to a fast idle.
4. If the tub is not rotating, turn the adjusting screw clockwise until it bottoms out. Turn the adjusting screw counterclockwise until the tub stops. The electro-hydraulic valve is now calibrated.
5. Lock the adjusting screw with the jam nut and replace the rubber cap. Shut down the machine using the normal shutdown procedure in this manual. Reconnect the wiring harness to the electro-hydraulic valve coil

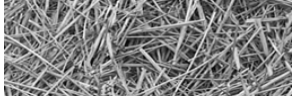
3.19 Sensor test

Gap between sensor and sprocket tooth is 3/32” (2.4 mm).

Sensor resistance is 900 ohms +/- 10%.

Figure 3.10
sensor location





Section 4: General Maintenance

SERVICE AND MAINTENANCE

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

1. Before working on or near the H-1100 Tilt Tub Grinder for any reason, including servicing, inspecting or unclogging machine:

    a. Run H-1100 Tilt Tub Grinder until discharge conveyor is empty, and grind as much of the material in the tub as possible.

    b. Reduce engine speed to idle.

    c. Disengage PTO

    d. Disengage hydraulics.

    e. Place transmission in park and set parking brake.

    f. Shut off tractor engine and remove key.

    g. Wait for all movement to stop.

    h. Disconnect PTO driveline from tractor.

2. When replacing any part on your H-1100 Tilt Tub Grinder, be sure to use only DuraTech Industries authorized parts.

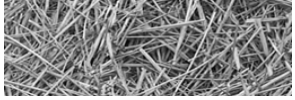
3. Relieve all pressure in the hydraulic system before disconnecting the lines or performing other work on the system. Make sure all connections are tight and the hoses and lines are in good condition before applying pressure to the system.

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

4. Visually examine to see if any internal parts show excessive wear. Repair or replace needed parts. These parts include rotor plates and holes in the plates that support the rods. Enlarged holes can cause rods to break.

    Also check rods, rod locking and retaining devices, hammers, screens, screen tracks and hold downs, main shaft, hinges or anything else that could wear and perhaps fail if not properly maintained, and cause damage to the rotor and/or personnel safety. Check bearing alignment and mounting bolts to insure a firm foundation and reduced vibration.

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



5. Check for loose or worn chains, belts, sprockets and pulleys.

6. Keep sprockets and pulleys aligned.

7. Inspect rotor and all rotating parts for wrapped twine or wire build up.

8. If machine is going to sit idle for an extended period of time, tub floor should be cleaned to prevent rust and sticking problems at start up time.

9. The proper tire pressure is 50 PSI.

10. The wheel bearings should be checked for lubrication and adjustments yearly, 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, wash the bearing to remove old grease. Repack the bearing.

4.1 Lubrication

CAUTION: Follow normal shutdown procedure before adjusting or lubricating.

Hydraulic oil reservoir capacity: 18 gallons. Change hydraulic oil and filter at least once a year.
(See page 50 for details)

Gear Box: Check level periodically. Drain and refill with No. 90 gear lube once a year.

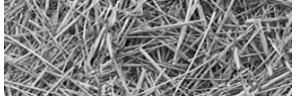
When operating the H-1100 Tilt Tub Grinder during cold weather, perform all lubrication after bearings are at operating temperatures.

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 indicate 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	NUMBEROF GREASE FITTINGS	FREQUENCY
1	Tub Drive Shaft Bearings	2	40 hrs.
2	Tub Chain Pivot	1	40 hrs.
3	Rotor Bearings	2	10 hrs.
4	Input Shaft Bearings	2	10 hrs.
5	Belly Conveyor Bearings	4	40 hrs.
6	Hydraulic Lift	2	40 hrs.
7	Discharge Conveyor Bearings	4	40 hrs.
8	Discharge Conveyor Support Pivot	2	40 hrs.
9	Walking Beam Pivots	2	40 hrs
10	Wheel Bearings	-	Annually
11	Tub Pressure Roller	-	Annually
12	PTO	3	40 hrs.
13	Discharge Conveyor Driveline bearings	3	40 hrs.
14	Discharge Conveyor Driveline U Joints	3	40 hrs.
15	Roller Chains	-	Oil Daily in Dusty Conditions
16	Tub Drive Orbit Motor Pivot	1	40 hrs.

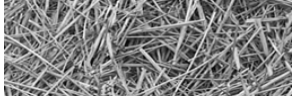


Figure 4.1
both rotor bearing lubrication points

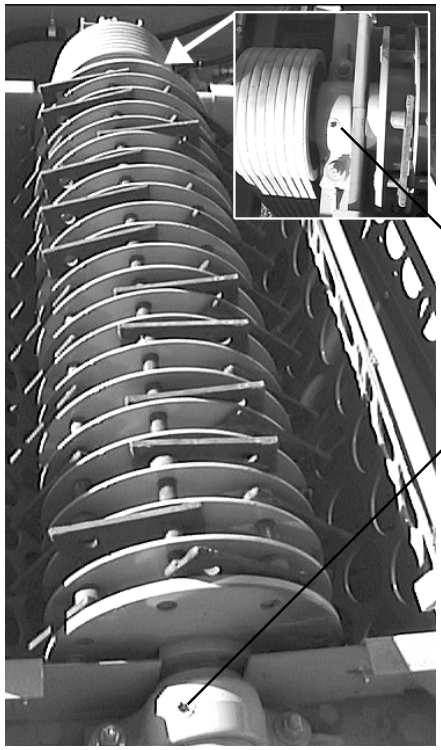


Figure 4.2
belly conveyor bearing lubrication point

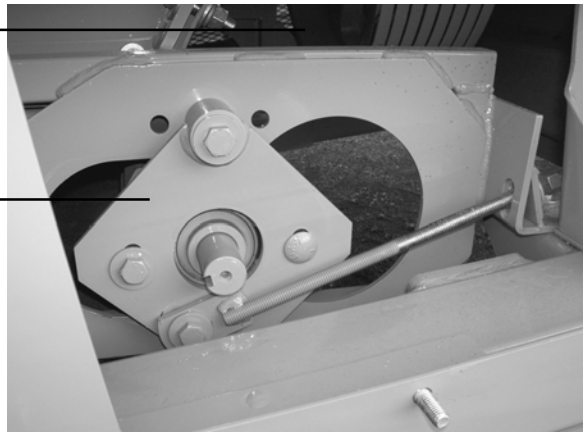
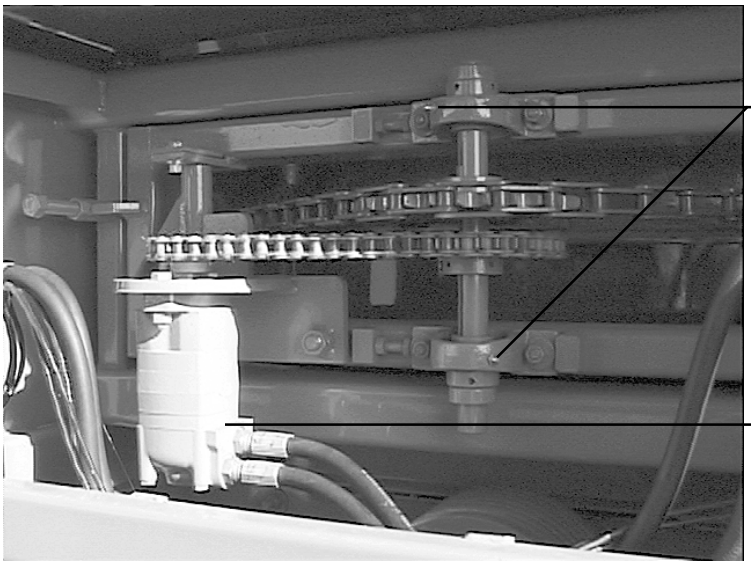


Figure 4.3
both tub drive shaft bearing lubrication points



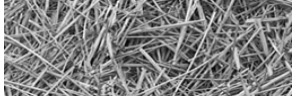


Figure 4.4
both hydraulic lift lubrication points, and one discharge conveyor lubrication point

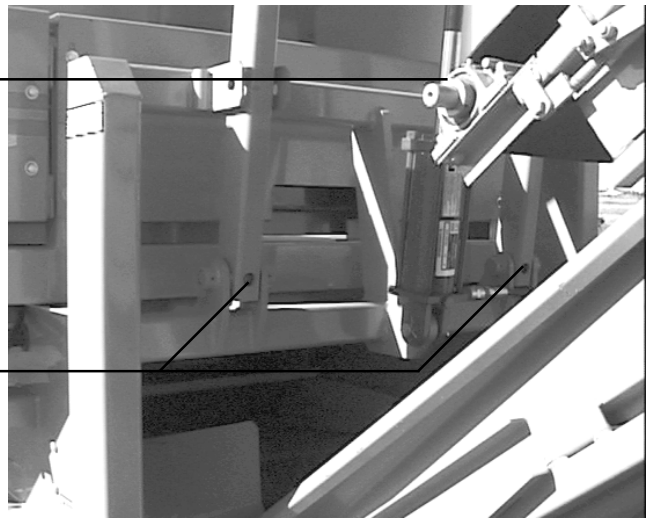


Figure 4.5
one discharge conveyor driveline bearing, two discharge conveyor bearing and both discharge conveyor support pivot lubrication points

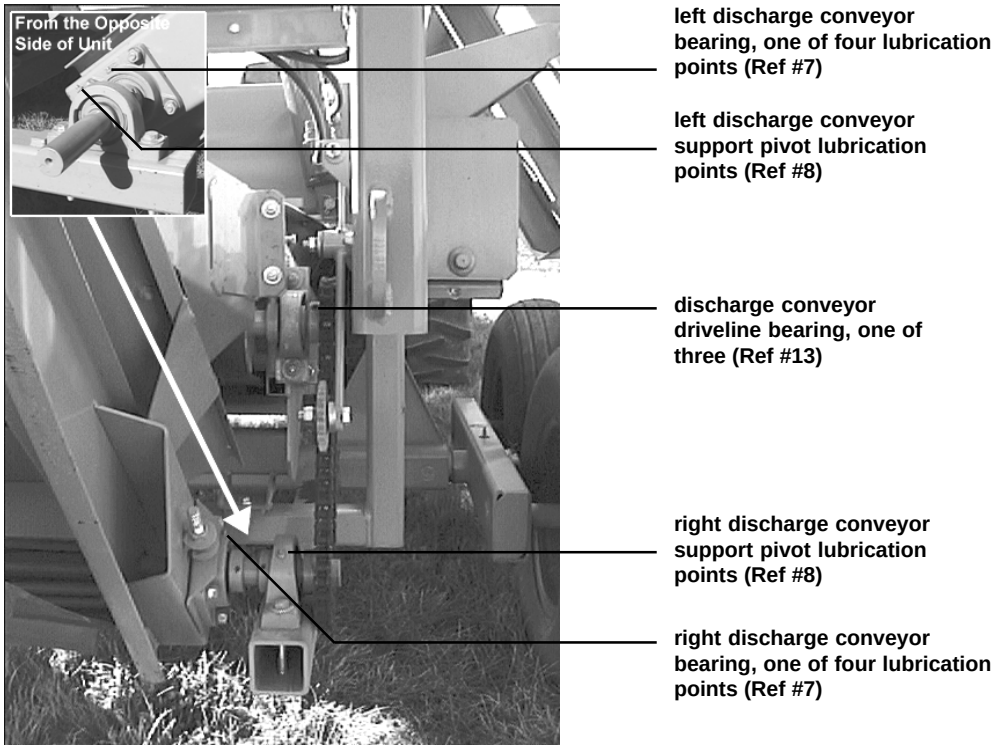


Figure 4.6
tub roller, tub pressure roller and roller chain

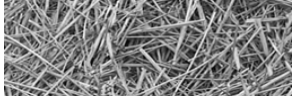


Figure 4.7
two of three PTO lubrication points

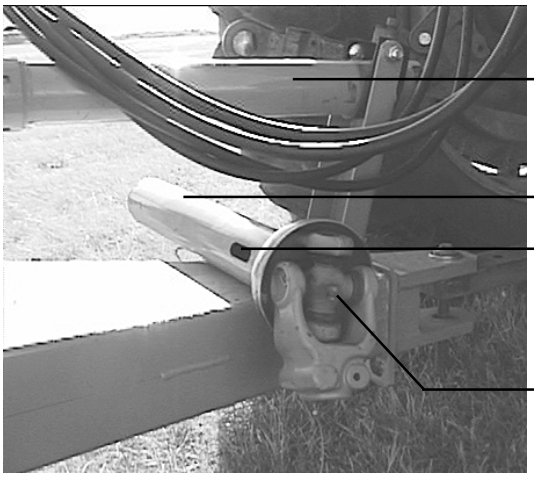


Figure 4.8
one of three PTO lubrication points

Figure 4.9
one of two walking beam pivot lubrication points

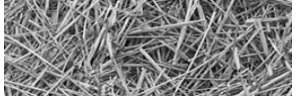
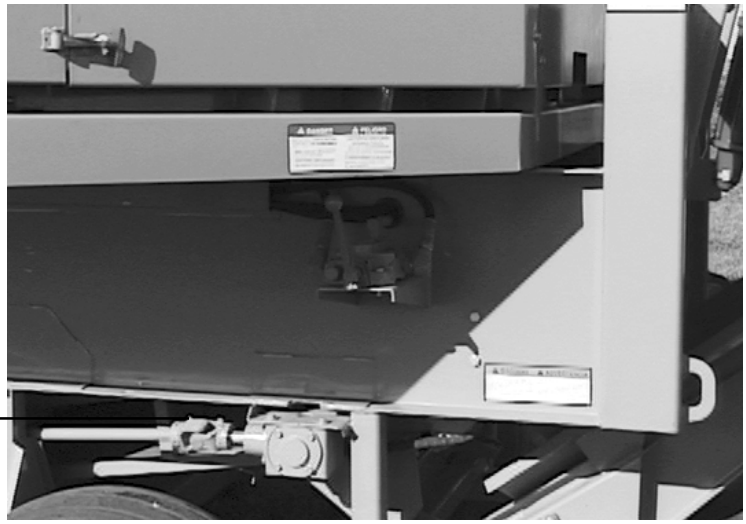


Figure 4.10 discharge conveyor driveline U-joint

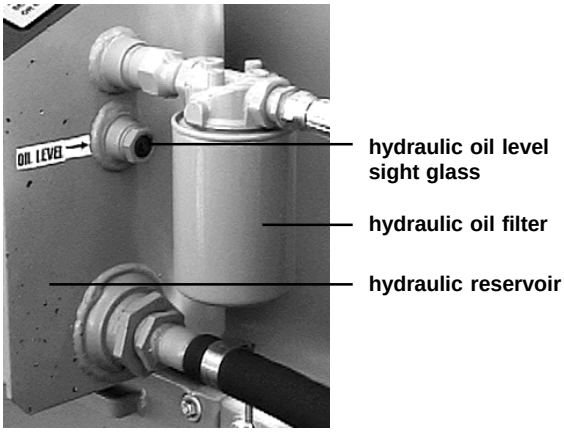


4.2 Hydraulic system

CAUTION: Lack of proper oil level in the reservoir tank will cause system to heat under continuous running. Check the hydraulic oil level daily and replace as necessary.

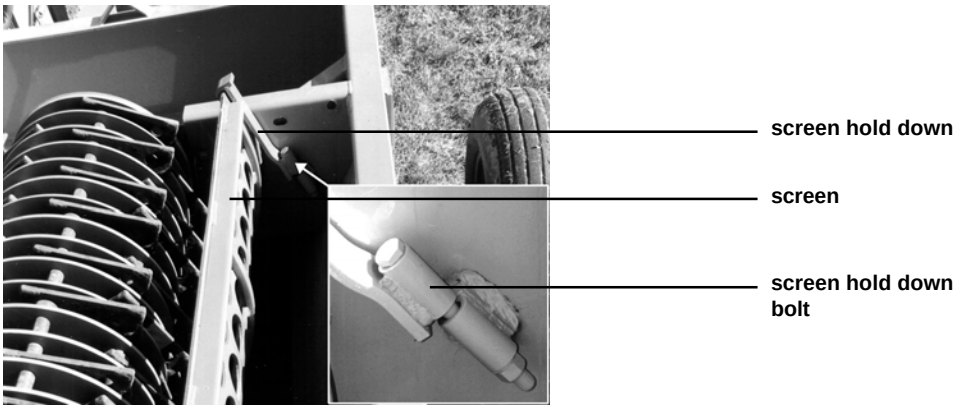
All machines have been pre-run at the factory to insure all functions are performing correctly. The hydraulic reservoir contains approximately 8 gallons of hydraulic oil for test running only. Before operating the machine, add additional oil to the reservoir tank. It will take approximately 10 additional gallons of hydraulic oil. This should bring the oil level to the sight glass on side of reservoir.

Check the hydraulic oil regularly, and if the oil has a burnt smell or milky appearance, change it immediately.



DuraTech Industries recommends using Cenex Qwiklift HTB if your machine has a Qwiklift decal on the hydraulic tank. Other acceptable fluids include Mobil 423, Farmland Super HTB, Conoco Hydroclear Power Tran Fluid or other similar fluids. If the hydraulic tank does not have this decal, then all of the above fluids are acceptable.

4.3 Screens



CHANGING SCREENS

> **CAUTION:** Keep all foreign objects out of the tub and away from the rotor. Foreign objects may cause personal injury or damage to the machine.
>
> **CAUTION:** Follow normal shutdown procedure before entering tub to do any service work.

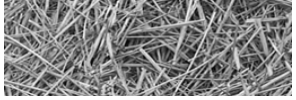
To change screens on the H-1100 Tilt, perform the following steps:

1. Raise the tub platform using the following steps

> **WARNING:** To prevent serious injury or death, do not tilt platform on unlevel ground or with material in the tub.
>
> **WARNING:** For your protection **ALWAYS** install the tub cylinder stop or tub prop when the tub is tilted. **NEVER** engage tractor PTO when the tub is raised.

   a. Park machine on level ground or surface.
   b. Remove all material from tub.
   c. Clear personnel from work area.
   e. Raise platform.
   f. Install tub cylinder stop or tub prop.

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



4.4 Hammermill maintenance

Visually examine the mill to see if any of the internal parts show excessive wear. These parts should include rotor discs and the holes in the discs that support the rods. Enlarged holes can cause rods to break or bend. Also check rods, rod locking or retaining devices, hammers, screens, screen tracks and hold downs, main shaft, platform locking devices, hinges or anything else that could wear and perhaps fail and causing damage to the hammermill and/or personnel safety if not properly maintained. The bearings should also be checked along with mounting bolts to insure a firm foundation and reduced vibration.

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.

The 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.

WARNING: The hammers have been heat treated, and any alteration of the hammers by heating, grinding, resurfacing or any other process can change the mechanical properties of the hammer and make it unsuitable or dangerous to use.

Because of the high capacity of the machine, the hammers will wear and must be considered expendable. Each hammer has four cutting edges. For maximum life, it is suggested that hammers be rotated periodically to even out the wear over the entire rotor. If one end of a hammer is allowed to wear too long, one of the hammer's cutting edges will be lost.

Screens also have two cutting edges. When cutting edges become rounded, the screen can be turned end for end exposing the new cutting edges. The results of badly worn hammers and screens is loss of capacity, and added horse power requirements.

Hammer rods are case hardened to maximize wearability and toughness, although hammer rods must be considered expendable.

NOTE: Hammer and hammer rod life can be extended by keeping rotor rotating at 2000 RPM. Over powering or over feeding the rotor will cause the swinging hammers to lay back resulting in excessive wear on both the hammers and the rods.

4.5 Hammer maintenance and replacement

CAUTION: Before entering tub to do any service work, raise the tub platform following the instructions on page 34 under the heading “Raising the Tub Platform”. After raising the tub platform follow procedures 5 through 8 of the normal shutdown procedure on page 30.

We recommend the following:

A. Always replace hammers in pairs, 180 degrees apart. (illustrations A & B below).

B. Tips placed 180 degrees apart should be the same weight.

To replace the hammers on this machine, perform the following steps:

1. Raise the tub platform following the instructions on page 34 under the heading “Raising the Tub Platform”.

WARNING: To prevent serious injury or death, do not tilt platform on unlevel ground or with material in the tub.

WARNING: For your protection **ALWAYS** install the tub cylinder stop on the tub tilt cylinder when the tub is tilted. **NEVER** engage tractor PTO when the tub is raised.

2. Loosen two bolts at rear of rotor that holds the movable plate in place.
3. Rotate movable plate counter clockwise to align holes allowing hammer rods to be removed through rear of rotor.
4. Remove one row of hammers and replace, taking note as to where spacers are located. (illustrations A & B below).
5. After all hammers have been replaced or turned, turn movable plate to lock rods in place and then tighten bolts.
6. When starting the rotor after installing a new set of hammers or turning corners, watch for unusual or excessive vibration. If any occurs, immediately shut off the rotor. Check to see what is wrong and correct it before starting the rotor again.

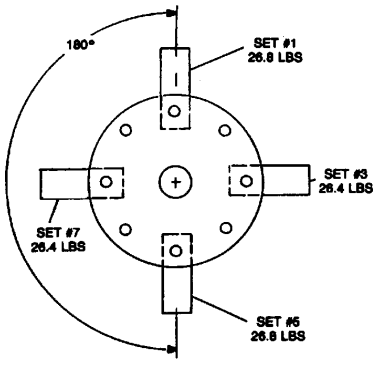


ILLUSTRATION A

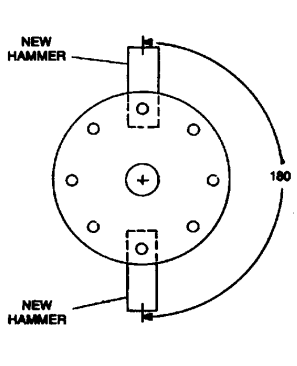


ILLUSTRATION B

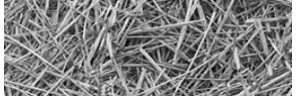
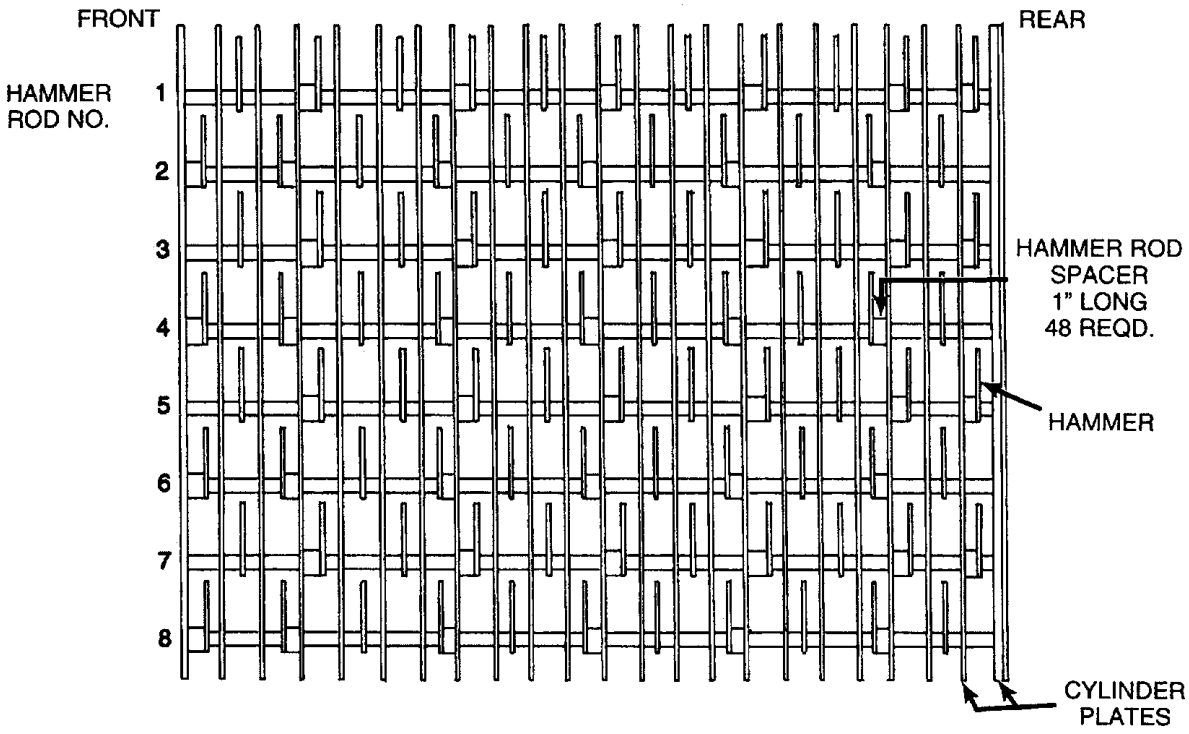
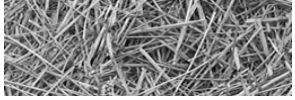


Figure 4.11
hammer spacing chart for the H-1100 Tilt





Section 5: Troubleshooting the H-1100 Tilt

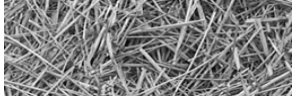
5.1 Troubleshooting the electronic governor system

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

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

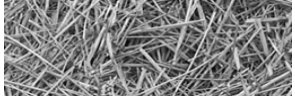
With the mode switch in the tub position, the tub should be rotating. The speed of the tub can be varied by rotating the tub limit knob. The number of tub speed lights which are lit will vary with the setting of the tub limit knob. If the number of tub speed lights lit varies as you rotate the tub limit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

PROBLEM	CAUSE	REMEDY
1. The tub does not rotate but the electronic governor and the manual hydraulic valve are working properly. There is pressure to the orbit motor.	1. The tub is binding. 2. There is too much material in tub, or the tub is overloaded due to wet or tough grinding material. 3. The pressure relief valve in the control valve set too low or is faulty.	1. Remove the material causing problem. 2. Reduce the amount of material in the tub. 3. Check oil pressure
2. The tub does not rotate, but the valve is receiving 10 to 12 volts of DC power. There is no pressure to the orbit motor. **Note:** The valve refers to the valve where you disconnect the wiring harness. For more information see "Electronic governor hardware test" later in this section.	1. The manual hydraulic valve is not engaged. 2. The valve assembly is dirty or faulty. 3. The solenoid is faulty.	1. Engage the manual hydraulic valve. 2. Clean or replace the valve assembly. 3. Test the solenoid and replace as necessary.
3. The tub does not rotate, and there is no voltage to the valve.	1. There is no power to the electronic governor. a The electronic governor is switched off. b The fuse is blown. c The tub limit knob is set fully counterclockwise. 2. A wire in the wiring harness is broken. 3. The electronic governor is faulty.	1. a Switch the electronic governor mode switch to tub. b Replace the fuse. c Turn the tub speed knob clockwise. 2. Replace or repair the wiring harness. 3. Replace the electronic governor.
4. The tub runs with the electronic governor switch off. Disconnect the wiring harness at the valve. A. If the tub stops B. If the tub keeps turning	1A. The electronic governor is out of adjustment. 2.A The electronic governor is faulty. 1B. The valve override screw is adjusted in too far. 2.B The valve is faulty.	1.A Readjust the electronic governor. 2.A Replace electronic governor. 1.B Adjust the override screw. 2.B Replace the valve.
5. The tub speed can not be varied with the tub limit knob.	1. Valve override is not adjusted correctly. 2. The valve is stuck. 3. The solenoid is stuck. 4. The electronic governor is faulty.	1. Adjust the override screw. 2. Clean or replace the valve assembly. 3. Test the solenoid and replace as necessary. 4. Replace the electronic governor.

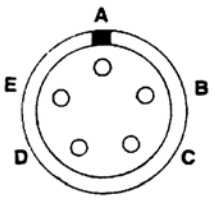


3. Checking the ENGINE MODE operation of the electronic governor. If the tub mode controls function correctly after following the tub mode trouble shooting check list, then follow the calibration instructions on page 35 of this manual. If the tub will not rotate, proceed to trouble shooting table below.

PROBLEM	CAUSE	REMEDY
1. The tub will not rotate, and the sensor light is not lit.	1. The sensor gap is out of adjustment. 2. There is a broken wire on the wiring harnes 3. The sensor is fault. 4. The sensor light bulb is faulty. 5. The electronic governor is faulty.	1. Readjust the sensor gap to 3/32". This is roughly the thickness of a nickel. 2. Repair or replace the wiring harness. 3. Test and replace the sensor as necessary. 4. Replace the sensor light bulb 5. Replace the electronic governor.
2. The tub will not rotate, and the sensor light is lit.	1. The tub limit knob is set to "turtle". 2. The manual hydraulic valve is in the neutral position. 3. The electronic governor is faulty.	1 Adjust the tub limit knob to a value toward rabbit. 2 Engage the manual hydraulic valve. 3. Replace the electronic governor.



ELECTRONIC GOVERNOR HARDWARE TEST



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

1. Power source: 12 volts DC

   Red wire + positive pin A wiring harness

   Black wire - Negative Pin B wiring harness

2. Test output voltage to valve DC

   Red wire + positive pin D wiring harness.

   Black wire - negative pin E. wiring harness.

Test the electronic governor with power supplied to the governor control box and the mode switch set to the tub position. The grinder does not need to be running for this test. Disconnect the wiring harness at the valve. With a voltmeter set for 12 volts DC, connect the red lead of the voltmeter to the red lead of the wiring harness and black lead to the black wire. Turn the tub limit knob until the left speed light (turtle) is on. The voltmeter should read approximately 3 volts. Turn the tub limit knob clockwise. As more speed lights light up, the voltage should increase. Turn the knob until the right speed light (Rabbit) is lit. The volt meter should now read a minimum of 9 volts.

3. Output voltage of sensor AC

   red wire - Pin C wiring harness

   Black wire - Pin B wiring harness.

Set the sensor gap to 3/32”.

Remove the wiring harness from the electronic governor.

With the grinder at operating speed. Set volt meter to AC volts, connect leads to pins B and C. The volt meter should read at least 2 to 3 volts AC.

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	8-12ohms	Defective solenoid valve	
Pin A to 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 E	Not Running	OFF	8-12 ohms	Valve wiring or solenoid valve defective	Wires to valve, valve

ELECTROHYDRAULIC VALVE COIL TEST

This test requires an accurate ohm meter. Disconnect the wiring harness leads at the electro-hydraulic valve coil. Check resistance of valve coil leads at the terminals. The resistance should be between 8 to 12 ohms for a 12 volt solenoid. If the values are not within this range, replace the electro-hydraulic valve coil.

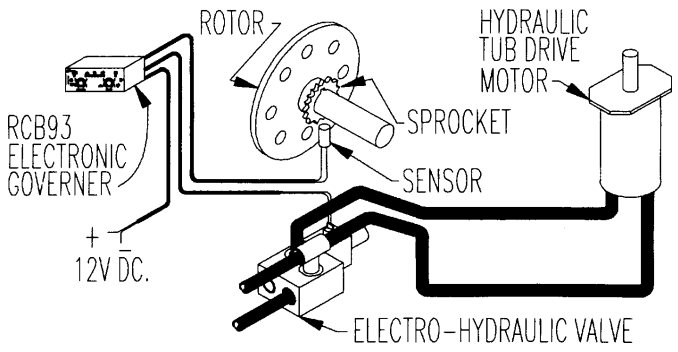
MANUAL OVERRIDE

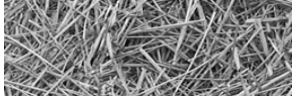
NOTE: If there is an electrical failure with the machine, it may still be able to grind. Switch the electronic governor off. Remove the rubber end cap and loosen the jam nut on the electro-hydraulic valve. Start the machine and engage the tub drive.

IMPORTANT! - DO NOT ENGAGE THE PTO AT THIS TIME!

Turn the adjusting screw clockwise until the tub rotates at the desired speed. Lock the jam nut on the adjusting stud and replace the rubber end cap on the electro-hydraulic valve. When the electro-hydraulic valve is adjusted in this manner, it will function only as a manual flow control. The grinder will now operate as it would if the electronic governor were switched to the tub (manual) mode. The tub speed will be constant and it will not change to match varying load conditions.

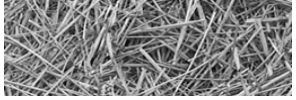
Contact your dealer for future repairs or replacement parts. When the problems are corrected, calibrate the electro-hydraulic valve.





5.2 General Troubleshooting

1. No grinding capacity	1. The screen is plugged. 2. The hammers or screens are badly worn. 3. Materials are too light or fluffy.	1. Clean out the holes in the screen. 2. Replace or turn worn parts. 3. Mix the lighter material with heavier material. 4. Use a larger screen. 5. Use the grapple loader to force feed the material.
2. The tub slows down or turns slowly.	1. The electronic governor is not adjusted properly. 2. The electronic governor system malfunctions. 3. The hydraulic pressure is low.	1. See the sections on the electronic governor in the operations section of this manual. 2. See Troubleshooting the electronic governor in this manual. 3a. Check oil pressure. 3b. Look for internal leakage or wear in the orbit motor or pump.
3. The machine vibrates excessively.	1. A hammer is broken. 2. The rotor bearing is defective. 3. The driveline is worn or misaligned. 4. Foreign material is wrapped in the rotor. 5. The hammer pattern is incorrect.	1. Replace the broken hammer. See page 51 for more information about replacing hammers. 2. Replace the rotor bearing. 3. Replace worn part or the complete driveline. 4. Remove the foreign material. 5. See page 51 for more information about replacing hammers.
4. The engine looses excessive RPM's before the tub stops.	1. The electronic governor is not adjusted properly.	1. See the sections on the electronic governor in the operations section of this manual.
5. The tub stalls.	1. The tub hydraulic system pressure is set too low. 2. The tub is overloaded due to wet or tough grinding materials. 3. Too much material in the tub. 4. The tub is binding. 5. The hydraulic oil is too hot causing electronic governor valve to bind.	1a. Check oil pressure. 1b. Readjust the pressure relief valve to 2,000 PSI max. 2. Reduce amount of material in tub or shift the hydraulic tub drive to low range. 3. Reduce the amount of material in tub. 4. Remove material buildup between the tub and the platform framework. 5. Reduce the load on the hydraulic system, or stop and allow the hydraulic oil to cool.
6. The hydraulic oil overheats.	1. Pressure relief valve in control valve is faulty. 2. The tub is overloaded. 3. Worn pump, control valve, hyd. motors, etc.	1. Check oil pressure. 2. Reduce the amount of material in the tub. 3. Rebuild or replace the hydraulic components as necessary.



Appendix A: Warranty

DuraTech Industries International Inc. warrants to the original purchaser for 12 months from purchase date that this product will be free from defects in material and workmanship when used as intended and under normal maintenance and operating conditions. This warranty is limited to the replacement of any defective part or parts returned to our factory in Jamestown, North Dakota, USA, within thirty (30) days of failure.

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

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

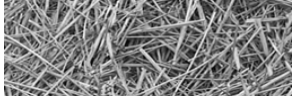
This warranty does not apply to tires or bearings or any other trade accessories not manufactured by DuraTech Industries International Inc. Buyer must rely solely on the existing warranty, if any, of these respective manufacturers.

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

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

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

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



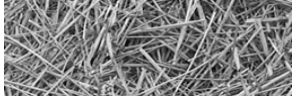
Appendix B: H-1100 Tilt Specifications

Weight	9440 lbs.
Width at Flare	11 ft 3 in.
Loading Height	8 ft 9 in
Transport Height	9 ft 8 in
Transport Length	24 ft 6 in
Wheels	Drop center rims, Tapered roller bearings
Bearings	All standard size, grease sealed
Recommended Tire Size	9.5 x 15 (4)
Recommended Cylinder Speed	2000 rpm
Capacity	Hay - up to 40 tons/hr. Ear corn - up to 800 Bu/hr. Grain and shelled corn - Up to 3400 Bu/hr.
Rotor - Std No. of Hammers	88
Hammer Size	2-1/2 x 7-3/4 x 3/8
Rotor - Shaft diameter	3-1/2 in. stress proof steel
Rotor Size	50 in. long, 26 in. diameter with hammers extended
Screen Area	2,565 sq. in.
Screens Available (inches)	1/8, 3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 1, 1-1/2, 2, 3, 4,5, 6, 7, 8 Round holes. 2,3,4 Slotted Holes
Feed Delivery	20 ft. folding rubber belt conveyor w/cleats 18 in. Wide
Tub size	108 in. ID
Tub Depth	50 in.
Tub Drive	Electro-Hydraulic

Options

AVAILABLE OPTIONS FOR DURATECH INDUSTRIES H-1100 Tilt TUB GRINDER:

- Ear Corn Kit
- Geyser Plate
- Grain Grinding Hopper
- Mill Grate
- 4 Foot Conveyor Extension
- Various Screens Sizes
- Hay Guide



Appendix C: Required for operation

Tractor - 150 to 200 hp

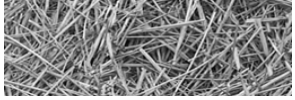
1000 RPM PT0 Shaft

Dual Hydraulics, double acting control valve, 8 GPM, 1500 psi

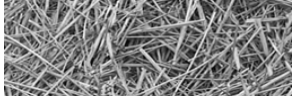
See also Section 3.3.1, Tractor Set Up.

Grinder

Approximately 10 gallons of hydraulic oil. DuraTech Industries recommends using Cenex Qwiklift HTB if your machine has a Qwiklift decal on the hydraulic tank. Other acceptable fluids include Mobil 423, Farmland Super HTB, Conoco Hydroclear Power Tran Fluid or other similar fluids. If the hydraulic tank does not have this decal, then all of the above fluids are acceptable.



Notes



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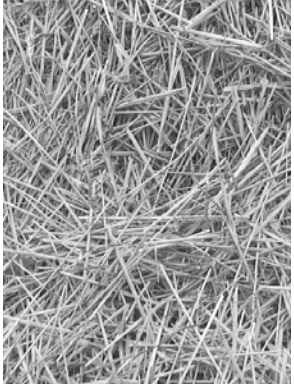


HAYBUSTER®

H-1100™ Tilt

Series II
Serial Number FJ13498 & Up

Stationary Electric Supplement

Operating Instructions

H1100 Electric Tub Grinder Operators Manual Supplement

This is a supplement to the H1100 Tub Grinder Operators Manual and Parts book. The main part of this book applies to this Tub Grinder except where described in this attached supplement.

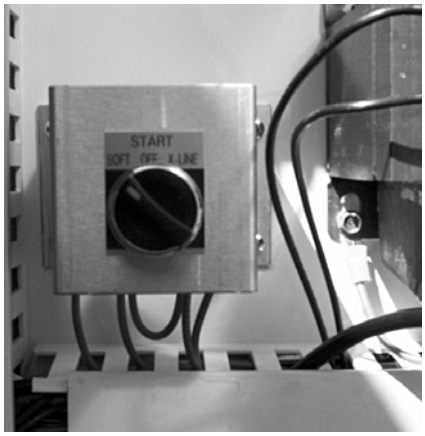
Before Starting the H1100 Electric Tub Grinder review all:

- Safety Recommendations – **See Section 1** of this operator's manual
- Pre-Operation – **See Section 3** of this operator's manual
- *Safetronics Instructional Manual* – for all information regarding the soft start controller.

Supplement Section 1: Start-Up

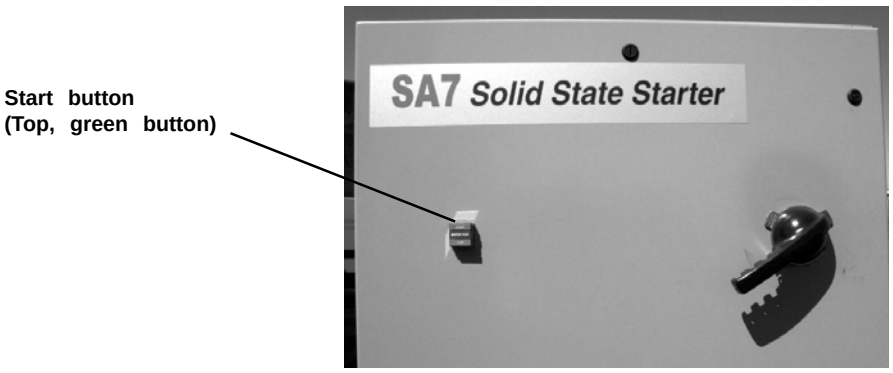
Warning: Make sure that all safety measures have been taken before switching on the power supply.

1. Before starting the H1100 Electric Tub Grinder make sure that **"Start"** switch in the control panel is set on **"soft"**.
2. Make sure battery disconnect is switched to "ON".
3. Shout the word "CLEAR"



Note: Next step will bring grinder up to full operating RPM

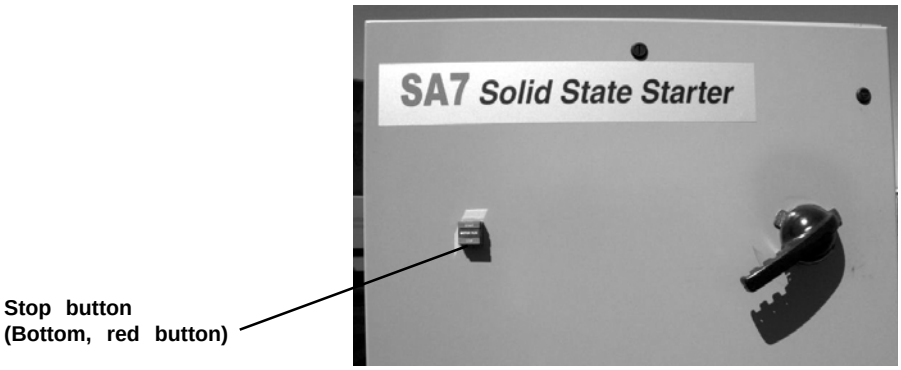
4. Then press the start button on the outside of the control panel.



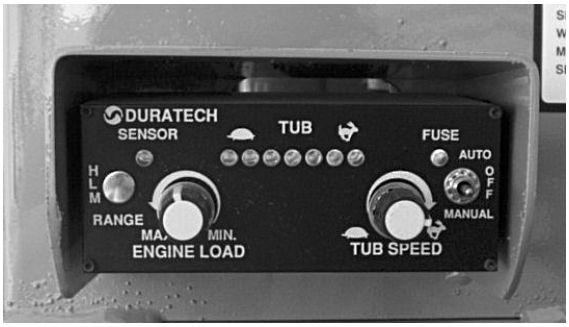
Supplement Section 2: Shut-Down Procedure

1. Run H1100 Tilt Tub Grinder until discharge conveyor is empty, and grind as much of the material in the tub as possible.

2. Push stop button.



Supplement Section 3: Governor System



Electric motor speeds change very little between no load and full load conditions, necessitating a change of systems from the engine driven and P.T.O. units.

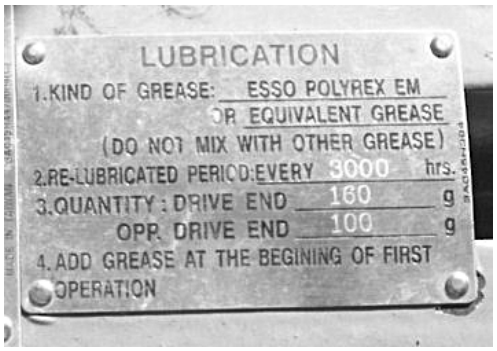
A current transformer sensor sends a variable signal to the electronic governor as the current flow varies. The electronic governor then sends a varying signal to a solenoid valve that diverts some oil from the tub drive and reduces tub rotational speed. As the load increases on the motor (and increases the current flow), the tub slows down, reducing the load on the rotor.

A 24 Volt DC power supply is provided with the H1100 Electric Tub Grinder to power the Electronic Governor system.

Refer to the grinder operator's manual for calibrating and operating the Electronic Governor system.

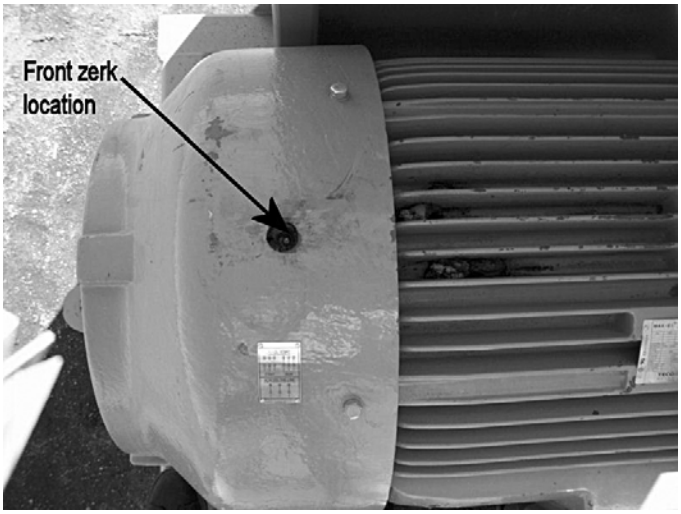
Supplement Section 4: Lubrication

Teco-Whitewestinghouse Motor ***requires*** the use of **Esso Polyrex Em** or equivalent grease. The (2) grease zerks on this motor must be re-lubricated every 3000 hours. 160 grams of grease is to be placed in the drive end zerk. 100 grams required for end opposite the drive.

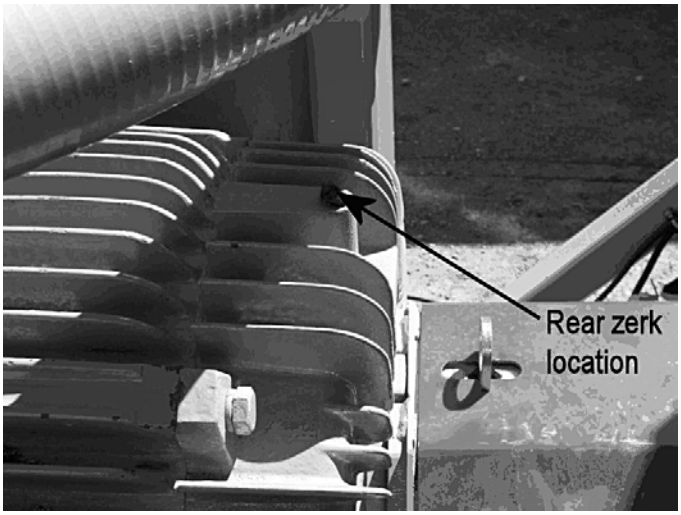


The locations of the grease zerks for the motor are shown below.

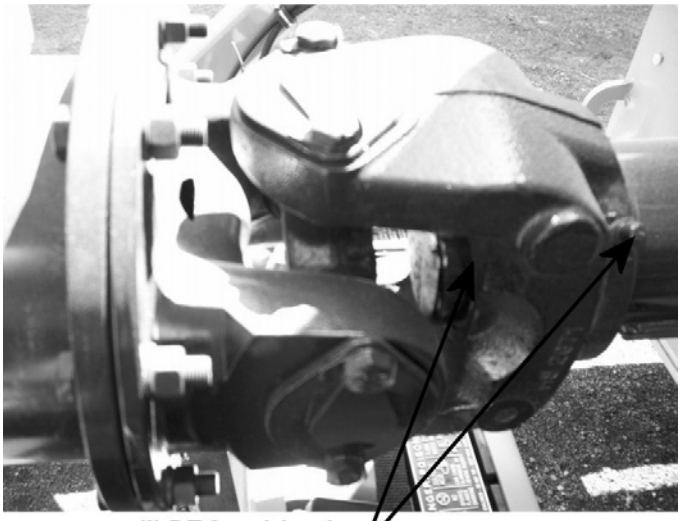
Front location (top of motor)

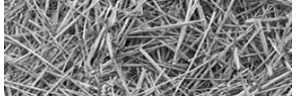


Drive end location (top of motor)



The P.T.O. shaft has (3) grease zerks that need to be lubricated every 40 hours. These locations are shown below.





H1100 ELECTRIC SPECIFICATIONS

Weight	15,500 lbs
Width at flares	1' 3-13/16"
Loading Height	8'- 9"
Transportation Height	13' - 3-3/8"
Transportation Length	30' 11-11/16"
Wheels	Drop center rims, Tapered roller bearings
Bearings	All standard size, greased sealed
Recommended Tire Size	9.5 x 15 (4)
Recommended Cylinder speed	2000 rpm
Rotor - Standard number of hammers	88
Hammer size	2-1/2 x 7-3/4 x 3/8
Rotor - Shaft Diameter	3-1/2 "stress proof steel
Rotor Size	50" long, 26" diameter with hammers extended
Screen Area	2,565 sq. ft.
Screens Available (inches)	1/8, 3/16, ¼, 3/8, ½, 5/8, ¾, 1, 1-1/2, 2, 3, 4, 5, 6, 7, 8 Round holes. 2, 3, 4 Slotted Holes
Feed Delivery	20' folding rubber belt conveyor w/cleats 18" wide
Tub Size	108" I.D.
Tub Depth	50"
Tub Drive	Electo-Hydraulic

Options:

Ear Corn Kit

Geyer Plate

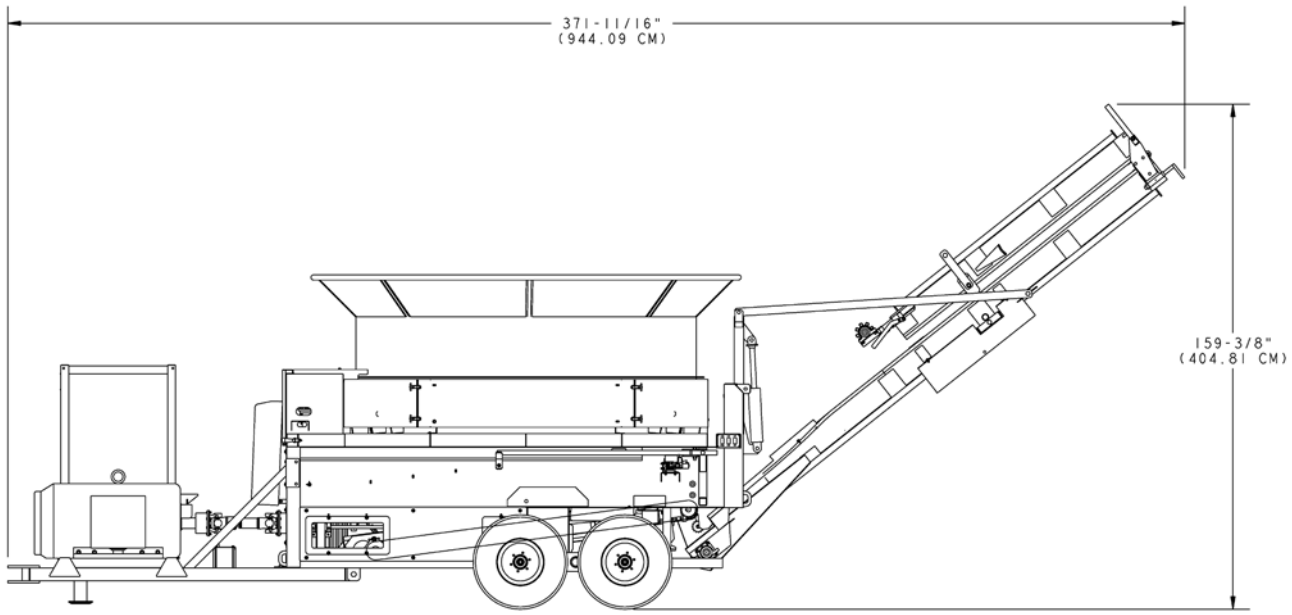
Grain Grinding Hopper

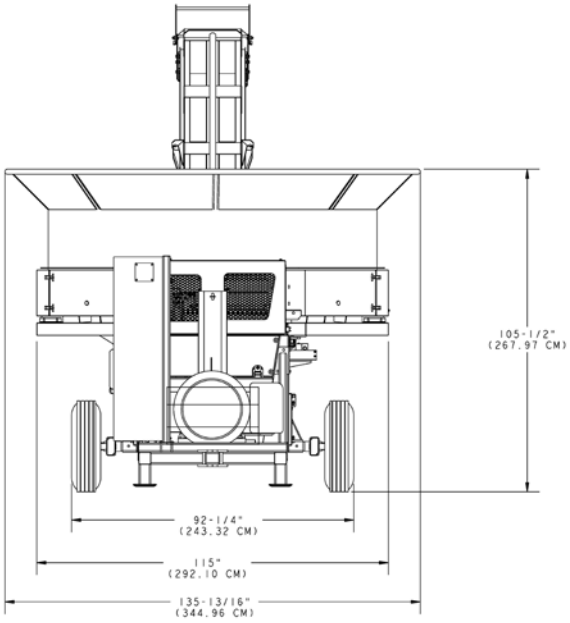
Mill Grate

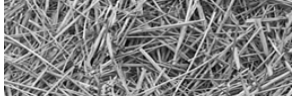
4 Foot Conveyor Extension

Various Screen Sizes

Hay Guide


371-11/16"
(944.09 CM)
159-3/8"
(404.81 CM)


105-1/2"
(267.97 CM)
92-1/4"
(243.32 CM)
115"
(292.10 CM)
135-13/16"
(344.96 CM)



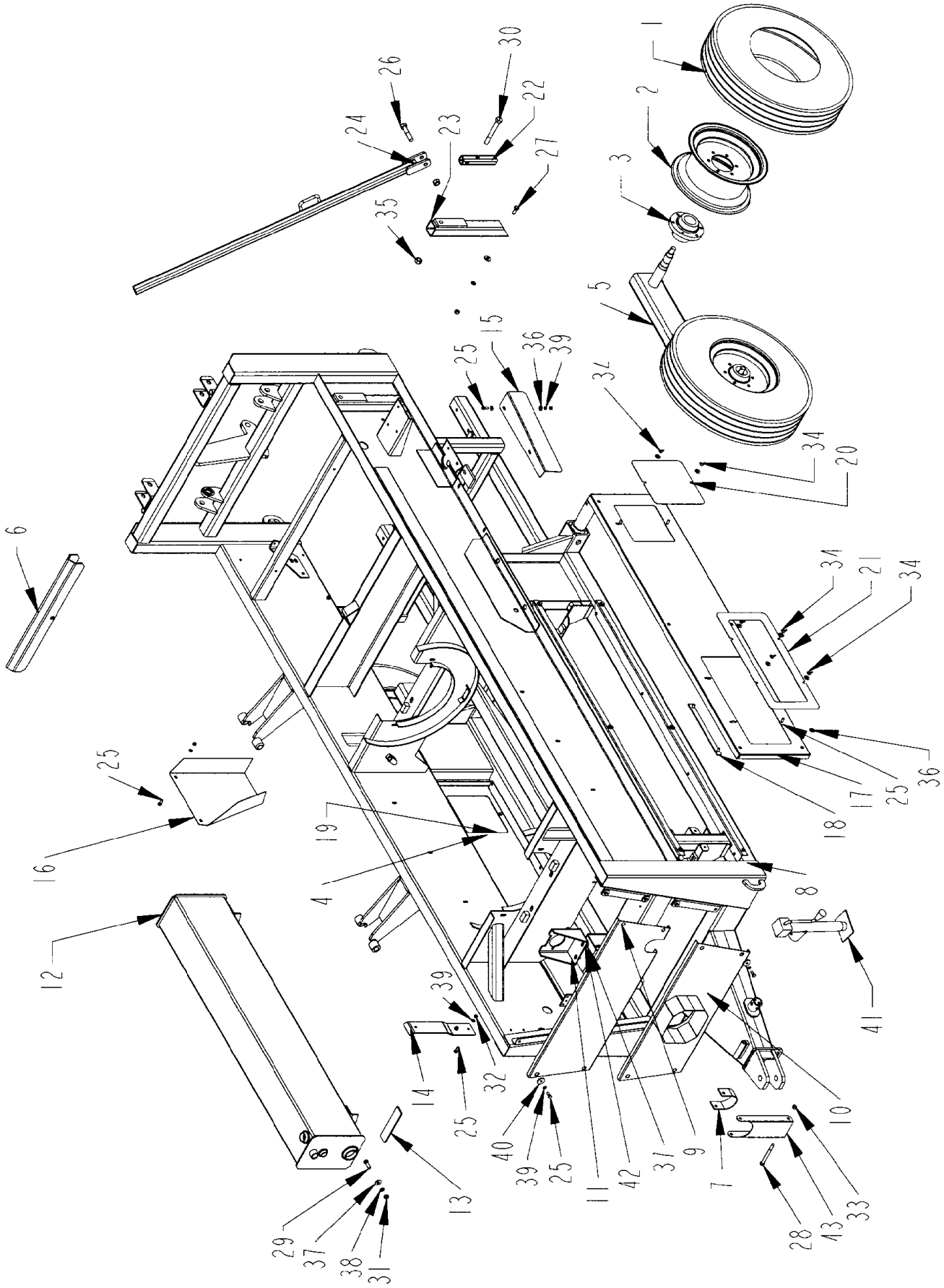
HAYBUSTER®

A Tradition of Innovation Since 1966

H-1100™ Tilt

PTO Driven Tub Grinder
Series II
Serial Number HI 12966 & Up
Includes Stationary Electric Supplement

Part 2:
Parts Reference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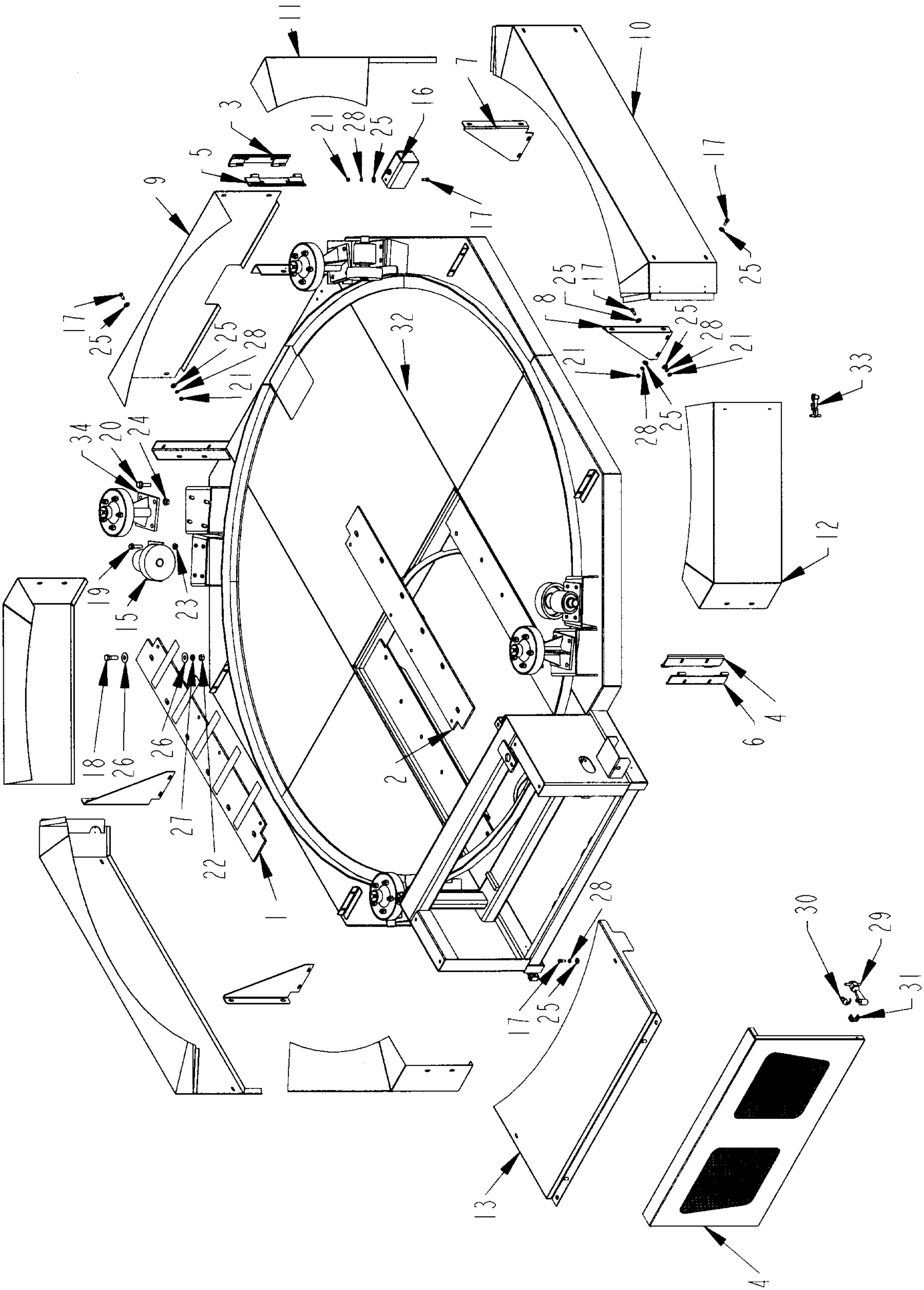
ITEM	PART	QTY.	PART DESCRIPTION
1	2600009	4	9.5LX15 8PLY TIRE
2	2600612	4	15 X 8 6BOLT WHEEL
1&2	2600826		WHL\ASSY\9.5X15\8PLY\IMP
1A&2A	2600823	OPTION	WHL\ASSY\31X10.5X15\MOUNTED AND BALANCED
3	2900069	4	HUB\6BOLT\631\COMP
4	4500140	1	WLKNG BEAM W/SPINDLES RH
5	4500674	1	WLKNG BEAM W/SPINDLES LH
6	4500737	1	STOP\CYL\PLATFORM
7	4500754	1	BELT\BRKT\PTO
8	4501150	1	FRM\GRDR\H110098
9	4501173	1	CVR\DRIVE\TUB\FRNT
10	4501174	1	CVR\DRIVE\BTTM\FRNT
11	4501177	1	BRKT\PUMP\HYD
12	4501187	1	TANK\OIL
13	4501188	2	BELT\ISLTR\VIB\TANK\OIL
14	4501189	1	BRKT\HOSE\TILT\TUB
15	4501199	1	CVR\SHFT\DRIVE\CNVYR\REAR
16	4501201	1	SHLD\CHAIN\DRIVE\CNVYR
17	4501207	1	CVR\DRIVE\CNVYR\LOWER\LH
18	4501208	2	BRKT\BOLT\COVER\DRIVE\CNVYR
19	4501209	1	COVER\DRIVE\CNVYR\LOWER\RH
20	4501210	2	DOOR\ACCESS\SIDE\REAR
21	4501211	2	DOOR\ACCESS\BRG\DRIVE\FRNT
22	4501280	1	BRKT\ARM\STND\SAFETY\TUB
23	4501300	1	BRKT\STND\SAFETY\TUB
24	4501301	1	ARM\STND\SAFETY\TUB
25	4800003	18	BOLT\HEX\3/8X1
26	4800011	1	BOLT\HEX\3/4X3-1/2
27	4800018	1	BOLT\HEX\1/2X1-1/4
28	4800041	1	BOLT\HEX\1/2X5
29	4800082	2	BOLT\HEX\1/2X1-1/2
30	4800248	1	BOLT\HEX\3/4X6
31	4900001	3	NUT\HEX\1/2\NC
32	4900002	5	NUT\HEX\3/8\NC
33	4900014	1	NUT\TPLCK\1/2\NC
34	4900032	12	NUT\WING\3/8\NC
35	4900139	2	NUT\TPLCK\3/4\GR8\NC
36	5000001	26	WASH\FLAT\3/8
37	5000004	7	WASH\FLAT\1/2
38	5000006	3	WASH\LOCK\1/2
39	5000019	25	WASH\LOCK\3/8
40	5000096	8	WASH\FLAT\SPCL\13/32X7GAX1-1/2OD
41	5800620	1	JACK\5000\ONE;SPD\10\
42	7500310	4	GROMMET\1-1/4ODX17/32ID
43	8100434	1	BRKT\PTO
Not Shown			
	4500045	1	BOLT\WLDD\3/4X10"
	4501281	1	BRKT\REST\PROP\SFTY\PLFRM
	4501302	1	STOP\STND\SAFETY\TUB
	4501402		STND\SAFETY\TUB\H1100 includes 4701280, 4701281, 4701300, 4701301, 4701302 and hardware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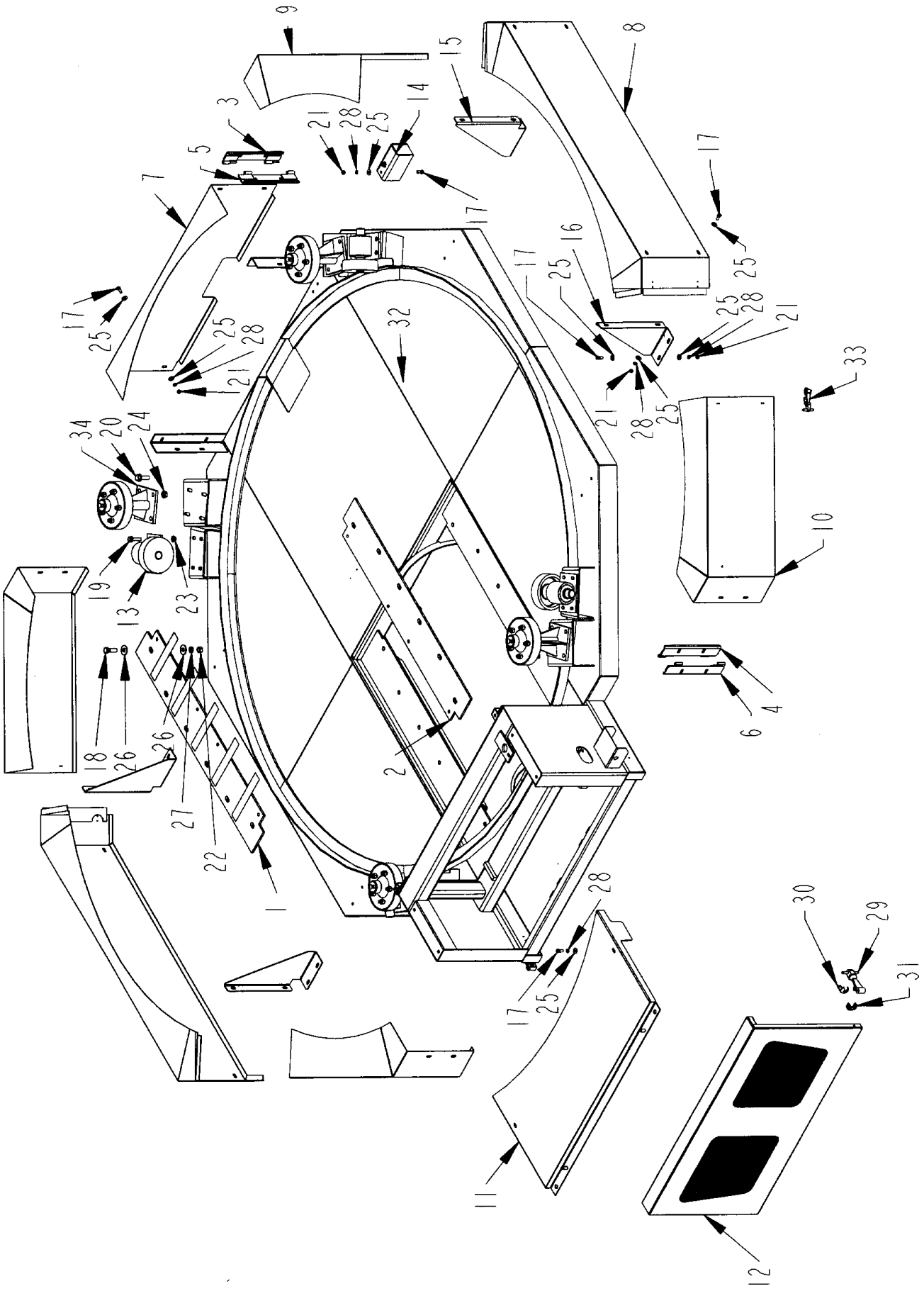
ITEM	PART	QTY.	PART DESCRIPTION
1	4500715	1	PL\HLDDWN\SCRN\W\TEETH
2	4500716	1	PL\HLDDWN\SCRN
3	4501021	1	BRKT\HINGE\MALE\LH
4	4501022	1	BRKT\HINGE\MALE\RH
5	4501023	1	BRKT\HINGE\FEMALE\LH
6	4501024	1	BRKT\HINGE\FEMALE\RH
7	4501160	2	BRKT\SHLD\CHAIN\DRIVE\TUB
8	4501161	2	BRKT\SHLD\CHAIN\DRIVE\TUB
9	4501162	1	SHLD\CHAIN\DRIVE\TUB\REAR
10	4501163	2	SHLD\CHAIN\DRIVE\TUB\SIDE
11	4501164	2	SHLD\DRIVE\TUB\LH
12	4501165	2	SHLD\DRIVE\TUB\RH
13	4501175	1	CVR\DRIVE\TUB\TOP
14	4501176	1	CVR\DRIVE\TUB\FRNT
15	TUBRLLR	4	SEE PAGE 111
16	4501302	2	STOP\STND\SAFETY\TUB
17	4800003	7	BOLT\HEX\3/8X1
18	4800010	1	BOLT\HEX\5/8X2
19	4800930	16	BOLT\FLG\SERR\1/2X2\NC SN 13342 and up
19A	4800114		BOLT\HEX\1/2X2 SN 12966 to 13341
19B	5000004		WASH\FLAT\1/2 SN 12966 to 13341
20	4800949	16	BOLT\FLG\5/8X2\GR8\NC SN 13342 and up
20A	4800114		BOLT\HEX\1/2X2 SN 12966 to 13341
20B	5000004		WASH\FLAT\1/2 SN 12966 to 13341
21	4900002	5	NUT\HEX\3/8\NC
22	4900005	1	NUT\HEX\5/8\NC
23	4900100	16	NUT\FLG\TPLCK\1/2\NC SN 13342 and up
23A	5000004		WASH\FLAT\1/2 SN 12966 to 13341
23B	5000006		WASH\LOCK\1/2 SN 12966 to 13341
23C	4900001		NUT\HEX\1/2\NC SN 12966 to 13341
24	4900178	16	NUT\FLG\TPLCK\5/8\GR8\NC SN 13342 and up
24A	5000004		WASH\FLAT\1/2 SN 12966 to 13341
24B	5000006		WASH\LOCK\1/2 SN 12966 to 13341
24C	4900001		NUT\HEX\1/2\NC SN 12966 to 13341
25	5000001	10	WASH\FLAT\3/8
26	5000002	2	WASH\FLAT\5/8
27	5000003	1	WASH\LOCK\5/8
28	5000019	7	WASH\LOCK\3/8
29	7500166	2	LATCH\RBBR\6
30	7500190	2	LATCH\RBBR\CATCH\6
31	7500347	2	LATCH\RBBR\MNT\6
32	4501158	1	FRM\PLFRM\TILT\H1100
33	7500606	8	LATCH\RBBR\6
34	PRESRLLR	4	SEE PAGE 121
	4501232		PLATE\GEYSER\H1100TILT See Geyser Plate Option
	4501145		PL\GEYSER\SLOTTED\H1100TILT See Mill Grate Option
	D1002039		GUARD\TWINE\PLFRM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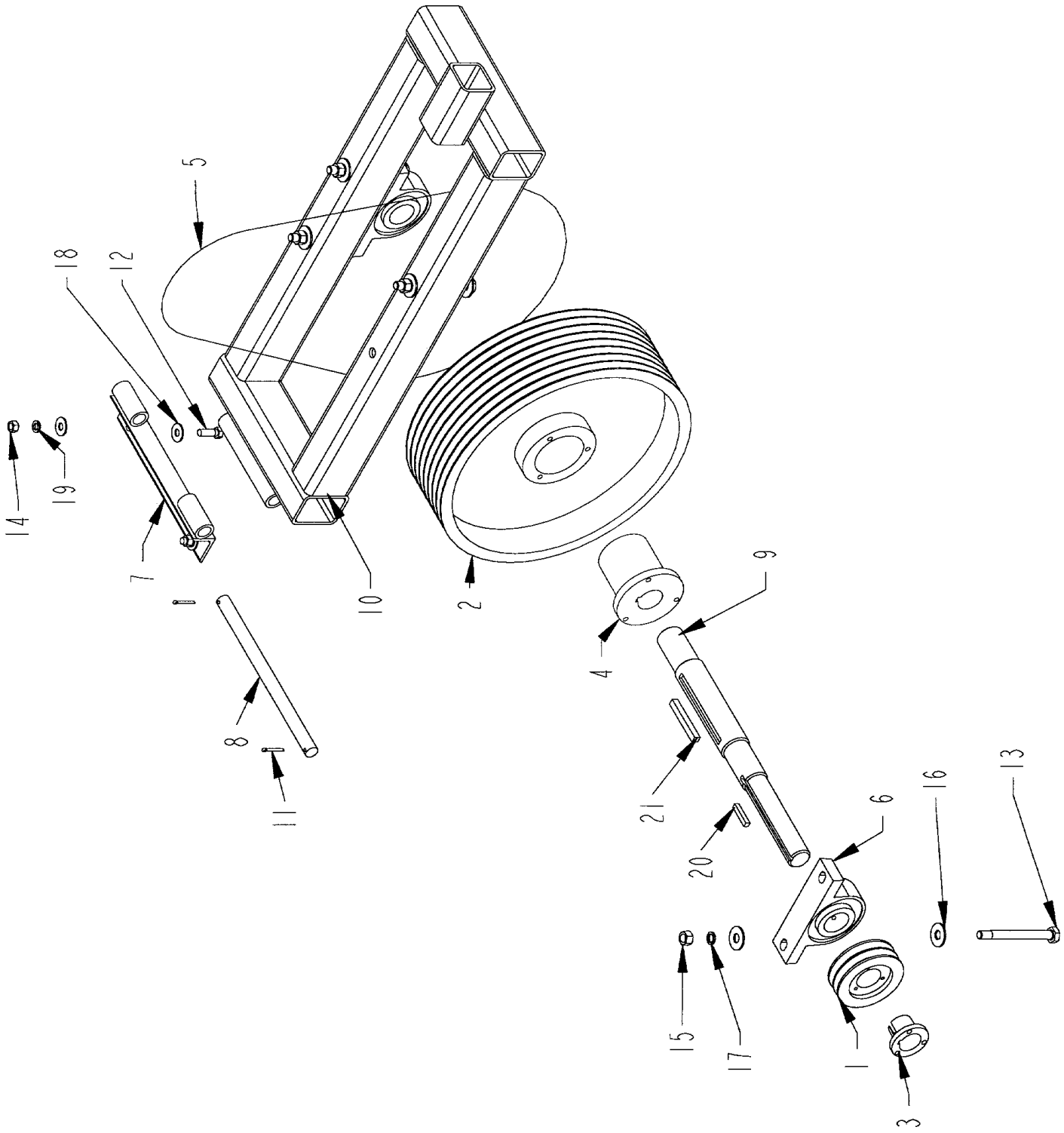
ITEM	PART	QTY.	PART DESCRIPTION
1	4500715	1	PL\HLDDWN\SCRN\W\TEETH
2	4500716	1	PL\HLDDWN\SCRN
3	4501021	1	BRKT\HINGE\MALE\LH
4	4501022	1	BRKT\HINGE\MALE\RH
5	4501023	1	BRKT\HINGE\FEMALE\LH
6	4501024	1	BRKT\HINGE\FEMALE\RH
7	4501162	1	SHLD\CHAIN\DRIVE\TUB\REAR
8	4501163	2	SHLD\CHAIN\DRIVE\TUB\SIDE
9	4501164	2	SHLD\DRIVE\TUB\LH
10	4501165	2	SHLD\DRIVE\TUB\RH
11	4501175	1	CVR\DRIVE\TUB\TOP
12	4501176	1	CVR\DRIVE\TUB\FRNT
13	4501184	4	BRG\PB\RLLR\TUB\ASY\W/BEARING INSERTS
14	4501302	2	STOP\STND\SAFETY\TUB
15	4501915	2	BRKT\SHLD\CHAIN\DRIVE\TUB
16	4501916	2	BRKT\SHLD\CHAIN\DRIVE\TUB
17	4800003	7	BOLT\HEX\3/8X1
18	4800010	1	BOLT\HEX\5/8X2
19	4800930	16	BOLT\FLG\SERR\1/2X2\NC
20	4800949	16	BOLT\FLG\5/8X2\GR8\NC
21	4900002	5	NUT\HEX\3/8\NC
22	4900005	1	NUT\HEX\5/8\NC
23	4900100	16	NUT\FLG\TPLCK\1/2\NC
24	4900178	16	NUT\FLG\TPLCK\5/8\GR8\NC
25	5000001	10	WASH\FLAT\3/8
26	5000002	2	WASH\FLAT\5/8
27	5000003	1	WASH\LOCK\5/8
28	5000019	7	WASH\LOCK\3/8
29	7500166	2	LATCH\RBBR\6
30	7500190	2	LATCH\RBBR\CATCH\6
31	7500347	2	LATCH\RBBR\MNT\6
32	4501158	1	FRM\PLFRM\TILT\H1100
33	7500606	8	LATCH\RBBR\6
34	PRESRLLR	4	SEE PAGE 121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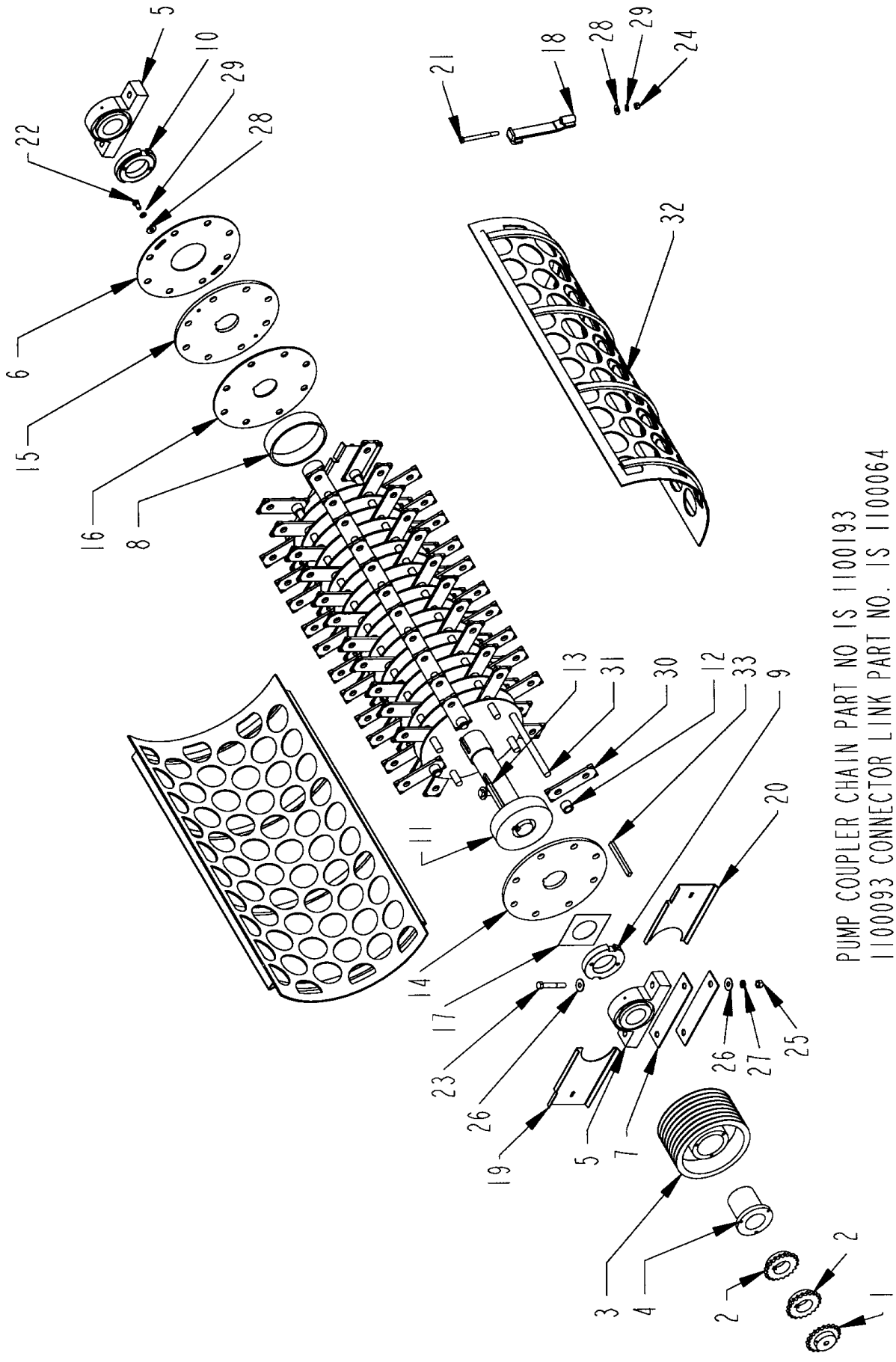
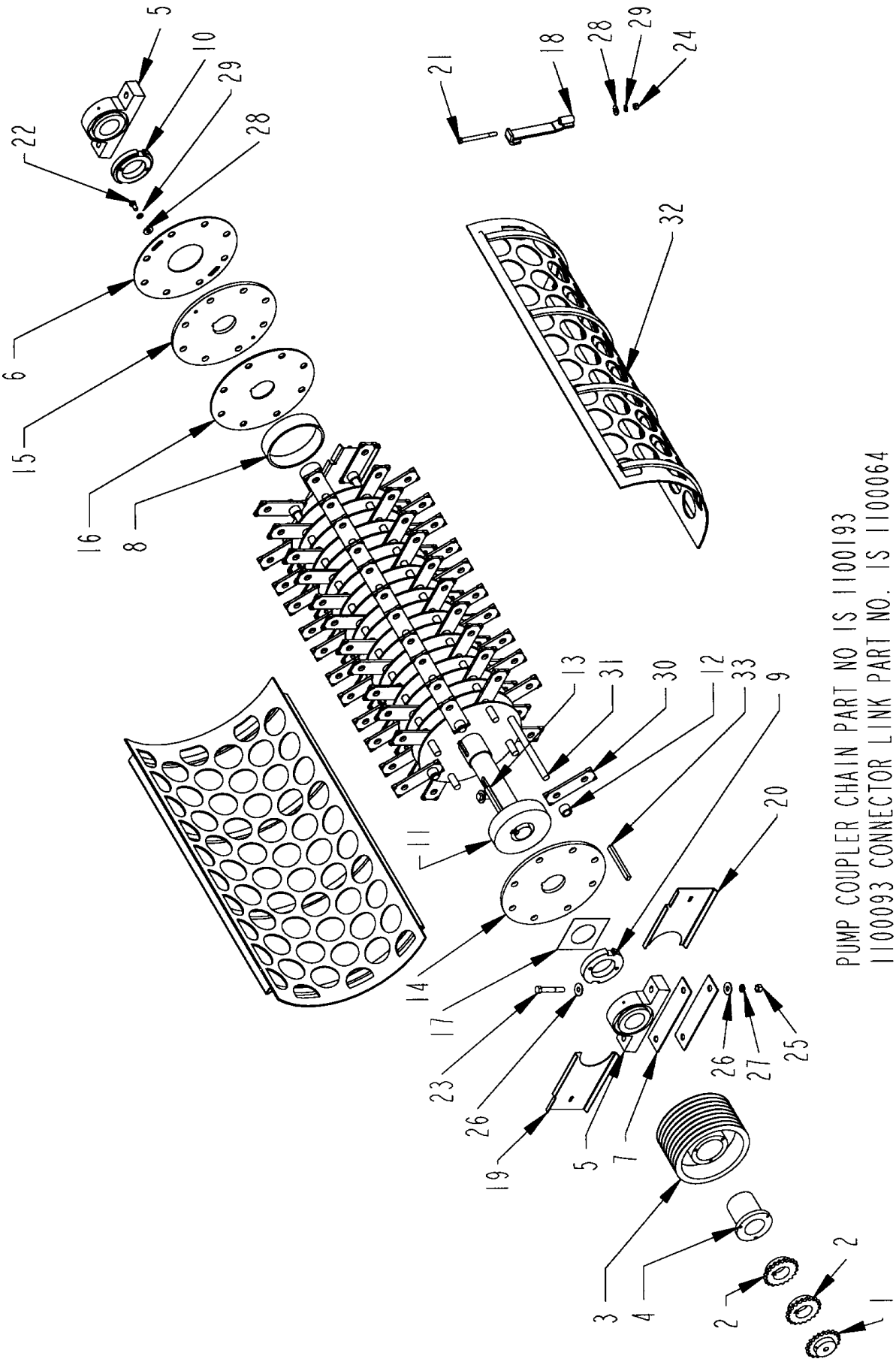
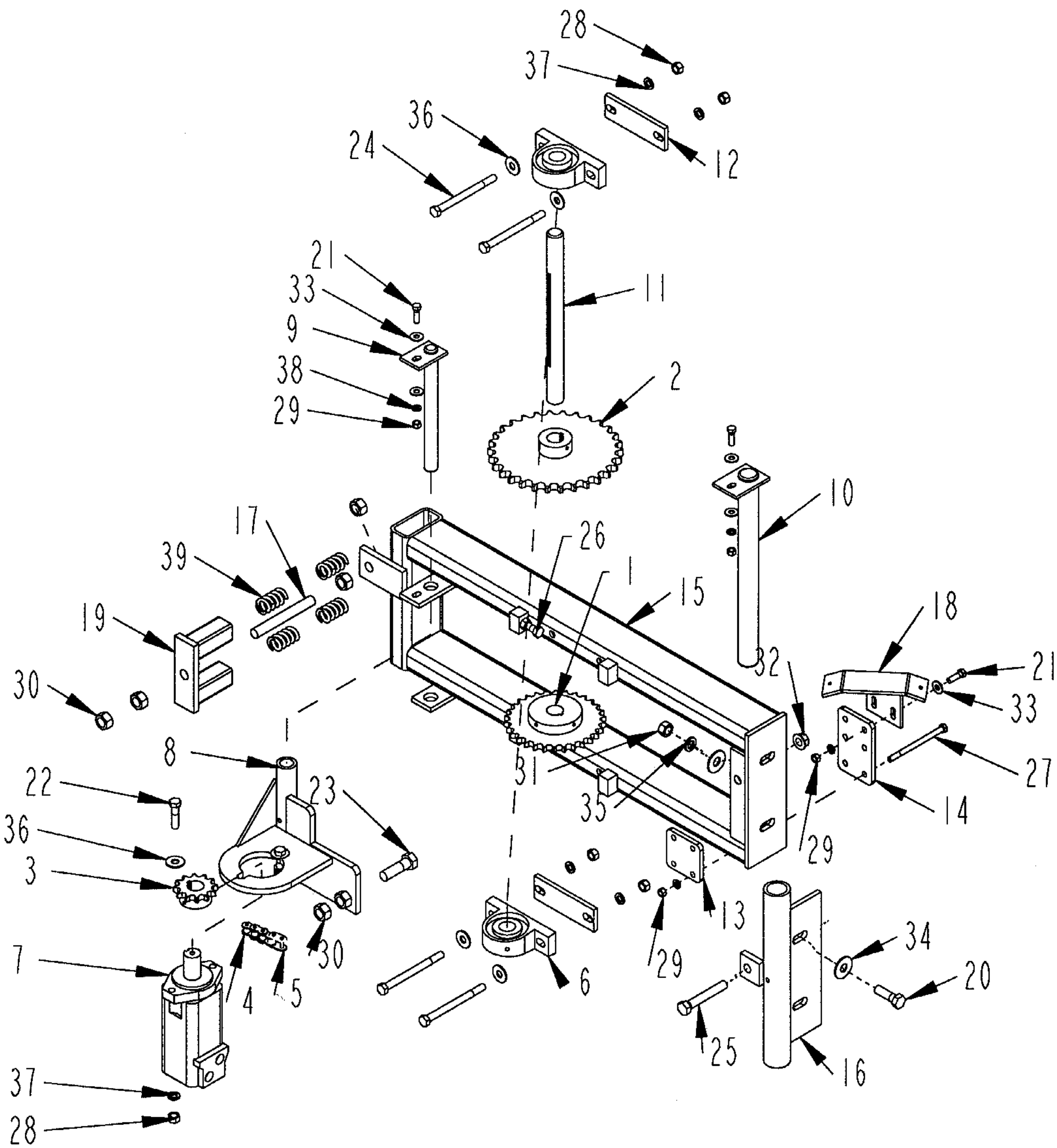
ITEM	PART	QTY.	PART DESCRIPTION
1	1400008	1	SHVE\B-2\5.0
2	1400069	1	SHVE\B-8\200
3	1400504	1	BUSH\P1\1-3/4
4	1400526	1	BUSH\R2\2-1/4
5	1600030	8	V-BELT\B\85
5a	1600084		V-BELT\4B\85\BANDED
6	2000510	2	BRG\PB\2\2BOLT
7	4500232	1	HINGE\FRN\BULLWHL
8	4500233	1	PIN\RD\CR\1X16
9	4500490	1	SHFT\BELT\DRIVE\RTR\INPUT
10	4501157	1	FRM\TGHTNR\BULLWHL\H1100
11	4800103	2	PIN\COT\1/4X2
12	4800082	3	BOLT\HEX\1/2X1-1/2
13	4800144	4	BOLT\HEX\5/8X6-1/2
14	4900001	2	NUT\HEX\1/2\NC
15	4900005	4	NUT\HEX\5/8\NC
16	5000002	8	WASH\FLAT\5/8
17	5000003	4	WASH\LOCK\5/8
18	5000004	5	WASH\FLAT\1/2
19	5000006	2	WASH\LOCK\1/2
20	6200008	1	KEY\SQ\3/8X2
21	6200015	1	KEY\SQ\1/2X4
	Not Shown		
	4500045	1	BOLT\WELDED\3/4"X10"


PUMP COUPLER CHAIN PART NO IS 1100193
1100093 CONNECTOR LINK PART NO. IS 1100064

ITEM	PART	QTY.	PART DESCRIPTION
	4500151		**ROTOR\NEW\50X15/16RD\H1100\3.5X72SHAFT\ 3.0BRG** Includes 6,8,9,10,11,13,14,15,16,17,22,28(2),29(2),33 no hammer rods, hammers, spacers, or bearings included
1	1000203	1	SPKT\60\B\20\3/4\3/16KEY
2	1000219	2	SPKT\60\B\20\2-7/16\5/8KW
3	1400016	1	SHVE\B8\11
4	1400520	1	BUSH\R2\3
5	2000512	2	BRG\PB\3\2BOLT\E\DODGE
6	4500019	1	PL\RTR
7	4500097	4	SHIM\BRG\RTR
8	4500106	16	SPCR\PL\RTR
9	4500142	1	NUT\RTR\3-1/2 W/O SHLDR
10	4500146	1	NUT\RTR\3-1/2 W/SHOULDER
11	4500149	6	SPCR\RTR\CAST\2
12	4500248	48	SPCR\HMMR\1-1/2 X 1 X 1
13	4500482	1	SHFT\RTR\3-1/2X72
14	4500505	1	PL\RTR\END\SLUGS\3.5ID
15	4500506	1	PL\RTR\TPPD\3-1/2ID
16	4500507	21	PL\RTR\3.5IDX1/4\STD
17	4500626	1	WASH\THRUST\RTR
18	4501200	4	HOOK\SCRN\GRDR\BOLTED
19	4501290	2	CVR\BRG
20	4501291	2	CVR\BRG
21	4800077	4	BOLT\HEX\1/2X5-1/2
22	4800085	2	BOLT\HEX\1/2X1
23	4800100	4	BOLT\HEX\5/8X4
24	4900001	4	NUT\HEX\1/2\NC
25	4900005	4	NUT\HEX\5/8\NC
26	5000050	8	WASH\FLAT\11/16\2OD\1/4T
27	5000003	4	WASH\LOCK\5/8
28	5000004	6	WASH\FLAT\1/2
29	5000006	6	WASH\LOCK\1/2
30	5200002	88	3/8 AB SUPREME HAMMER
31	5300019	8	SHFT\HMMR\15/16 X 50
32	5400062	2	SCRN\4HL\1/4\H1100
33	6200035	4	KEY\RECT\1/2X5/8X6-1/4
	1100064	1	CL\60\DBL
	1100193	1	CHAIN\60\DBL\19
	4501196	88	SPACER\SHOCK
SCREENS			
	5400095		SCREEN\1/8" HOLE\1/4\H1100
	5400074		SCREEN\3/16" HOLE\1/4\H1100
	5400052		SCREEN\1/4" HOLE\1/4\H1100
	5400053		SCREEN\3/8" HOLE\1/4\H1100
	5400054		SCREEN\1/2" HOLE\1/4\H1100
	5400055		SCREEN\5/8" HOLE\1/4\H1100
	5400056		SCREEN\3/4" HOLE\1/4\H1100
	5400049		SCREEN\1" HOLE\1/4\H1100
	5400066		SCREEN\1 1/2" HOLE\1/4\H1100
	5400050		SCREEN\2" HOLE\1/4\H1100
	5400051		SCREEN\3" HOLE\1/4\H1100
	5400062		SCREEN\4" HOLE\1/4\H1100
	5400102		SCREEN\5" HOLE\1/4\H1100
	5400110		SCREEN\6" HOLE\1/4\H1100E
	5400111		SCREEN\7" HOLE\1/4\H1100E
	5400103		SCREEN\8" HOLE\1/4\H1100
	5400080		SCREEN\DUMMY\1/4\H1100


PUMP COUPLER CHAIN PART NO IS 1100193
1100093 CONNECTOR LINK PART NO. IS 1100064

ITEM	PART	QTY.	PART DESCRIPTION
	4500412		**RTR\NEW\50X15/16RD\H1100E\3.5X72SFT\3.0BRG**
			Includes 6,8,9,10,11,13,14,15,16,17,22,28(2),29(2),33
			no hammer rods, hammers, spacers, or bearings included
1	1000203	1	SPKT\60\B\20\3/4\3/16KEY
2	1000219	2	SPKT\60\B\20\2-7/16\5/8KW
3	1400016	1	SHVE\B8\11
4	1400520	1	BUSH\R2\3
5	2000512	2	BRG\PB\3\2BOLT\E\DODGE
6	4500019	1	PL\RTR
7	4500097	4	SHIM\BRG\RTR
8	4500348	16	SPCR\RTR\8"ODX1.878
9	4500142	1	NUT\RTR\3-1/2 W/O SHLDR
10	4500146	1	NUT\RTR\3-1/2 W/SHOULDER
11	4500680	6	SPCR\CAST\8.645ODX3.5IDX1.75 THICK H1100E 3.5SFT
12	4501204	48	SPCR\HMMR\1-1/2X1X1-1/4
13	4500482	1	SHFT\RTR\3-1/2X72
14	4501315	1	PL\RTR\3-1/2X1/2X15-3/4\SLUGS
15	4501314	1	PL\RTR\1/2X3-1/2ID\TPPD
16	4500349	16	PL\RTR\1/2X3-1/2ID\GRV
16a	4500350	5	PL\RTR\1/2X3-1/2ID\FACED
17	4500626	1	WASH\THRUST\RTR
18	4501200	4	HOOK\SCRN\GRDR\BOLTED
19	4501290	2	CVR\BRG
20	4501291	2	CVR\BRG
21	4800077	4	BOLT\HEX\1/2X5-1/2
22	4800085	2	BOLT\HEX\1/2X1
23	4800100	4	BOLT\HEX\5/8X4
24	4900001	4	NUT\HEX\1/2\NC
25	4900005	4	NUT\HEX\5/8\NC
26	5000050	8	WASH\FLAT\11/16\2OD\1/4T
27	5000003	4	WASH\LOCK\5/8
28	5000004	6	WASH\FLAT\1/2
29	5000006	6	WASH\LOCK\1/2
30	5200002	88	3/8 AB SUPREME HAMMER
	5200180	88	HMMR\SWING\1/2X2.5\2-HOLE\15/16 ROD
31	5300019	8	SHFT\HMMR\15/16 X 50
32	5400062	2	SCRN\4HL\1/4\H1100
33	6200035	4	KEY\RECT\1/2X5/8X6-1/4
Not Shown			
	1100064	1	CL\60\DBL
	1100193	1	CHAIN\60\DBL\19
	4500853	88	SPCR\SHOCK\2.5X1X1.5LONG
	4501410		RTR\HVY_1/2"\ASSY\H1100
			includes rotor 450412, hammers 5200180,
			shock spacers 4500853, and hammer spacers 4501204
	4501411		RTR\HVY_3/8"\ASSY\H1100
			includes rotor 450412, hammers 5200002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ITEM	PART	QTY.	PART DESCRIPTION
1	1000033	1	SPKT\60\B\30\1-1/4\1/4
2	1000077	1	SPKT\80\B\30\1-1/4\1/4KW
3	1000134	1	SPKT\60\B\12\1
4	1100061	1	52 LINKS 60 CHAIN
5	1100062	1	CHAIN\60\CL
6	2000502	2	BRG\PB\1-1/4\2BOLT
6a	2000805	2	CLLR\SHFT\1-1/4\W/SET SCREW, used as spacers between bear
7	3900005	1	MTR\HYD\14.9\2000\SAE;A
8	4501167	1	BRKT\MTR\ORBIT\DRIVE\TUB
9	4501168	1	PIN\HINGE\BRKT\MTR\ORBIT
10	4501169	1	PIN\HINGE\FRM\DRIVE\TUB
11	4501171	1	SHFT\DR\TUB
12	4501217	2	SHIM\BRG\DRIVE\TUB
13	4501274	1	BRKT\GUIDE\CHAIN
14	4501275	1	BRKT\GUIDE\CHAIN
15	4501303	1	FRM\TGHTR\CHAIN\TUB for SN JJ3067 and up
16	4501304	1	BRKT\FRM\TGHTR\CHAIN\DR\TUB for SN JJ3067 and up
15+16	4501166		FRAME\TIGHTNER\CHAIN\TUB for SN II2966-II3066
17	4502705	1	BOLT\FRM\TGHTR\CHAIN\TUB
18	4702617	1	BRKT\GUIDE\CHAIN\TUB
18A	4703784	1	PL\WEAR\GUIDE\CHAIN\TUB
18B	4800214	2	BOLT\CRG\1/4X1\NC
18C	4900040	2	NUT\FLG\SERR\1/4\NC
19	4702666	1	BRKT\TNSN\SPG\FRM\DR\TUB
20	4800010	2	BOLT\HEX\5/8X2
21	4800098	2	BOLT\HEX\3/8X1-1/4\NC
21	4800034	2	BOLT\HEX\3/8X1-1/2\NC
22	4800114	2	BOLT\HEX\1/2X2
23	4800115	1	BOLT\HEX\3/4X2-1/2
24	4800145	4	BOLT\HEX\1/2X6
25	4800176	1	BOLT\HEX\5/8X4\FULL THRD
26	4800178	2	BOLT\HEX\1/2X1-3/4
27	4800226	4	BOLT\HEX\3/8X5-1/2
28	4900001	8	NUT\HEX\1/2\NC
29	4900002	8	NUT\HEX\3/8\NC
30	4900004	5	NUT\HEX\3/4\NC
31	4900005	2	NUT\HEX\5/8\NC
32	4900110	1	NUT\FLG\SERR\5/8\NC
33	5000001	6	WASH\FLAT\3/8
34	5000002	4	WASH\FLAT\5/8
35	5000003	2	WASH\LOCK\5/8
36	5000004	6	WASH\FLAT\1/2
37	5000006	6	WASH\LOCK\1/2
38	5000019	8	WASH\LOCK\3/8
39	6100005	4	SPRNG\.249OT\13/16ID\1-5/16OD\2-3/8LOA
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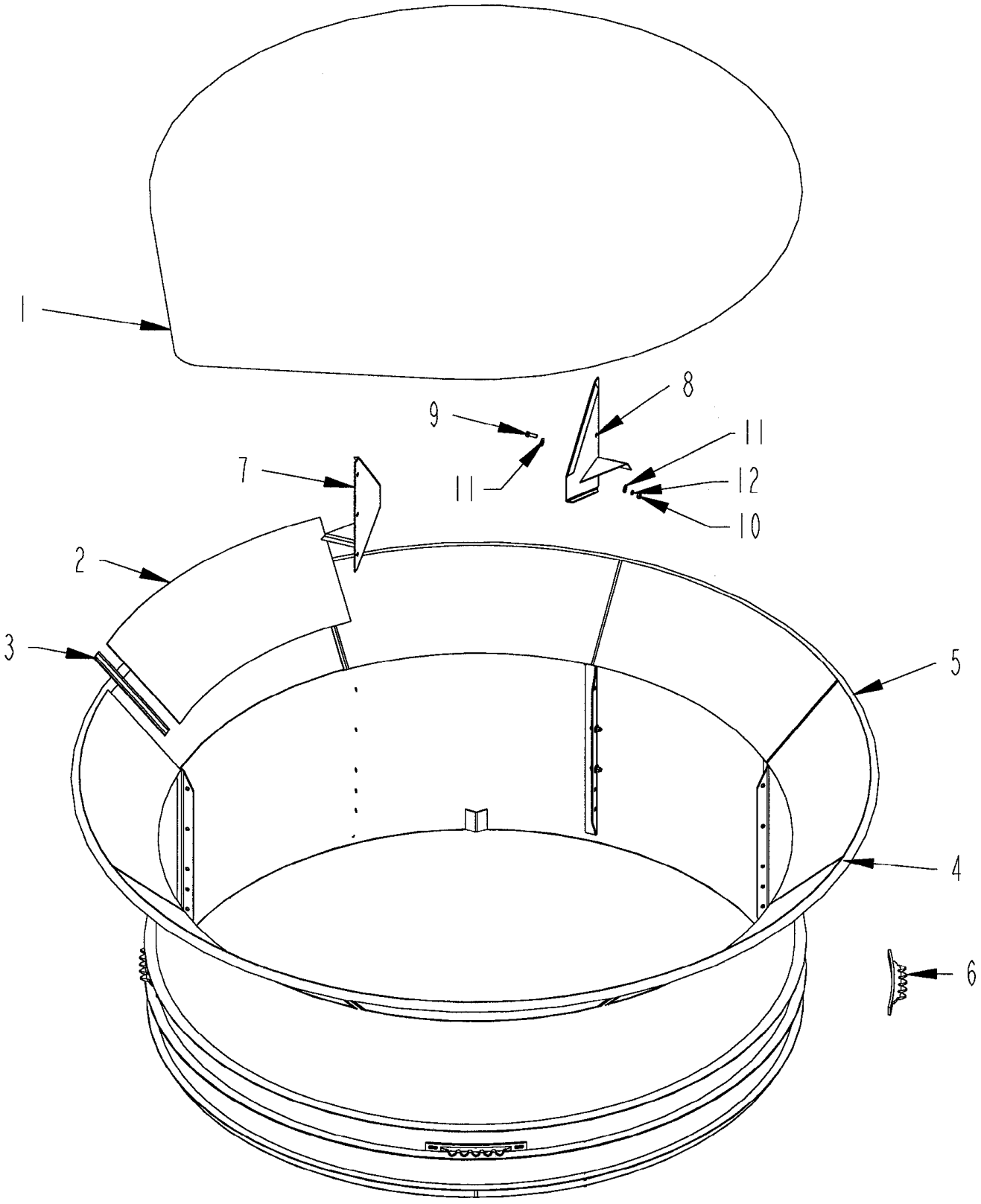
	4501276		BRACKET\SPROCKET\CHAIN\KIT includes 13,14,18,18A, and necessary bolts, washers, and nuts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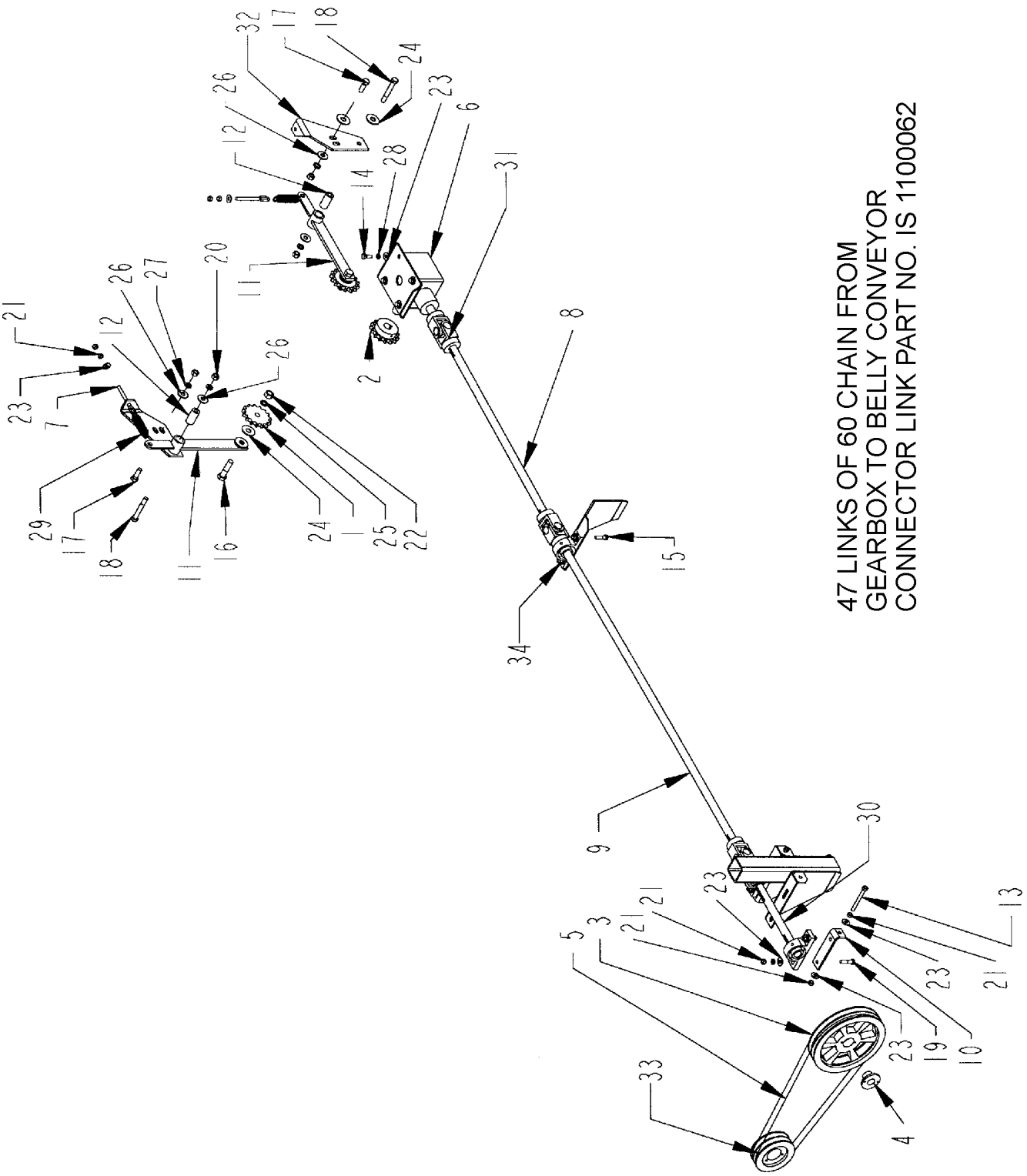
ITEM	PART	QTY.	PART DESCRIPTION
1	1100075	1	CHAIN\2080\177 LINKS
2	4500213	8	PETAL\TUB
3	4500214	8	TUB PETAL BAR
4	4500504	1	TUBE\RING\TUB
5	4500699	1	TUB
6	4500802	4	SPKT\TUB\SGMNT
7	4501205	1	AGTTR\TUB\FIN\10
8	4501206	1	AGTTR\TUB\FIN\14
9	4800082	6	BOLT\HEX\1/2X1-1/2
10	4900001	6	NUT\HEX\1/2\NC
11	5000004	12	WASH\FLAT\1/2
12	5000006	6	WASH\LOCK\1/2
Not Shown			
	1100070		CHAIN\2080\CONNECTING LINK
	1100071		CHAIN\2080\OFFSET LINK


47 LINKS OF 60 CHAIN FROM
GEARBOX TO BELLY CONVEYOR
CONNECTOR LINK PART NO. IS 1100062

ITEM	PART	QTY.	PART DESCRIPTION
1	1000007	2	SPKT\IDLER\60\15\5/8
2	1000128	1	SPKT\60\B\15\1\1/4
3	1400046	1	SHVE\2B\10\2BK100H
4	1400503	1	BUSH\H\1
5	1600009	2	V-BELT\B\60
6	3100187	1	PRAIRIE GEARBOX
7	4500368	2	BOLT\TNSN\CHAIN\CNVYR\BELLY
8	4500484	1	SHFT\RD\CR\1X29-1/2
9	4500485	1	SHFT\RD\CR\1X55
10	4501179	2	BRKT\TIGHTNER\BELT
11	4501182	2	BRKT\IDLER\DRIVE\CNVYR\BELLY
12	4501183	2	BUSH\BRKT\IDLER\CNVYR\BELLY
13	4501216	2	BOLT\HEX\TGHTNR\BELT\DRIVE\CNVYR
14	4800003	4	BOLT\HEX\3/8X1
15	4800034	2	BOLT\HEX\3/8X1-1/2
16	4800079	2	BOLT\HEX\5/8X2-1/2
17	4800082	2	BOLT\HEX\1/2X1-1/2
18	4800135	2	BOLT\HEX\1/2X3-1/2
19	4800142	4	BOLT\HEX\3/8X1-3/4
20	4900001	4	NUT\HEX\1/2\NC
21	4900002	14	NUT\HEX\3/8\NC
22	4900005	2	NUT\HEX\5/8\NC
23	5000001	18	WASH\FLAT\3/8
24	5000002	8	WASH\FLAT\5/8
25	5000003	3	WASH\LOCK\5/8
26	5000004	6	WASH\FLAT\1/2
27	5000006	3	WASH\LOCK\1/2
28	5000019	10	WASH\LOCK\3/8
29	6100010	2	SPRING\EXT\.55W X 1/2O.D. X 3
30	4500483	1	SHFT\RD\CR\1X11
31	3600091	3	SINGLE U-JOINT #6
31A	3600008		#6 CROSS &BEARING KIT - REPAIR KIT FOR 3600091
31B	3600103		#6 RW1" YOKE - REPAIR PART FOR 3600091
32	4501247	2	BRKT\IDLER\DR\CNVYR\BELLY\H1100TILT
33	1400008	1	SHVE\B-2\5.0
34	2000503	3	BRG\PB\1

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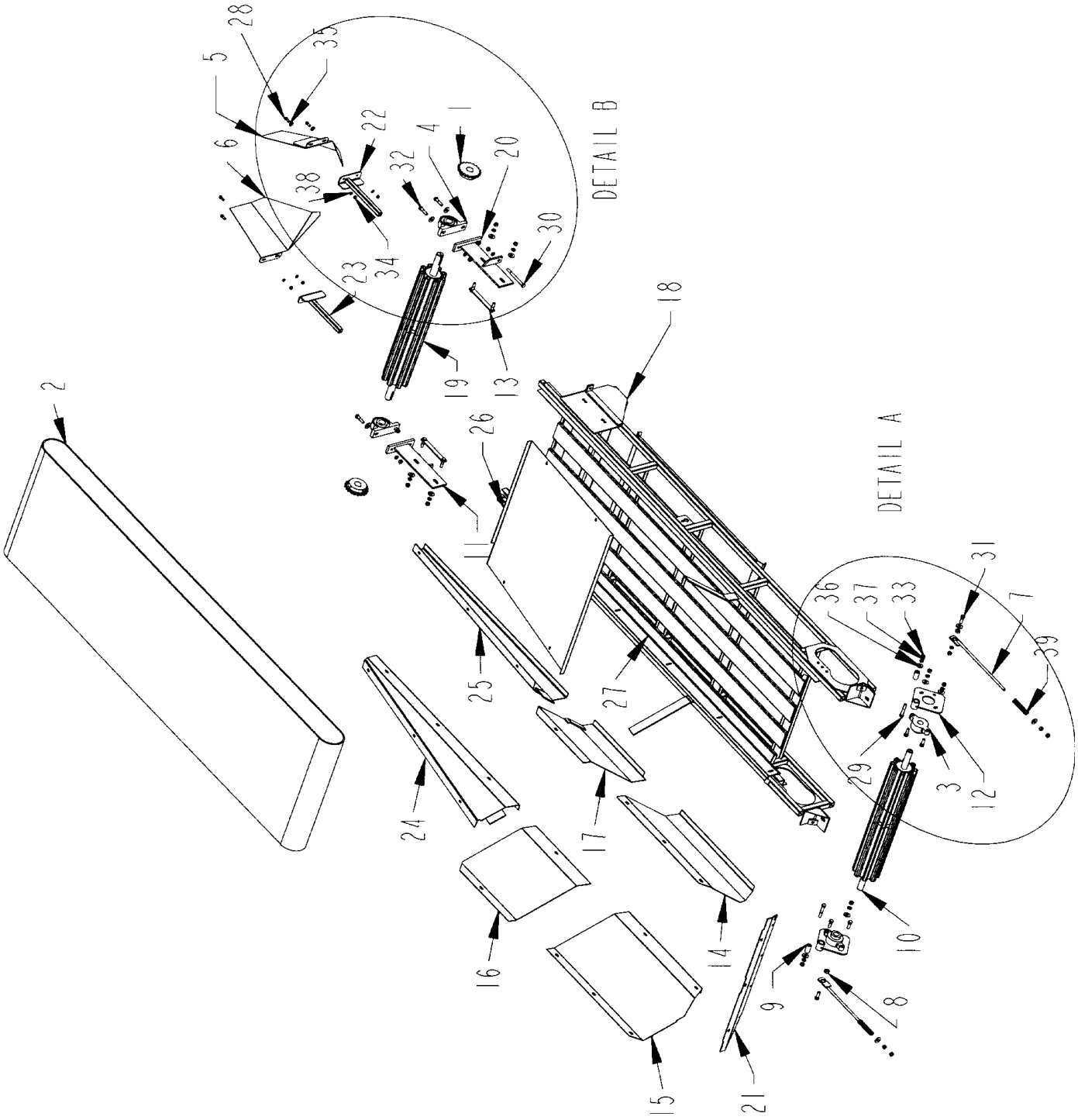
1100045		CHAIN\60\47 LINKS
1100062		CHAIN\60\CONNECTING LINK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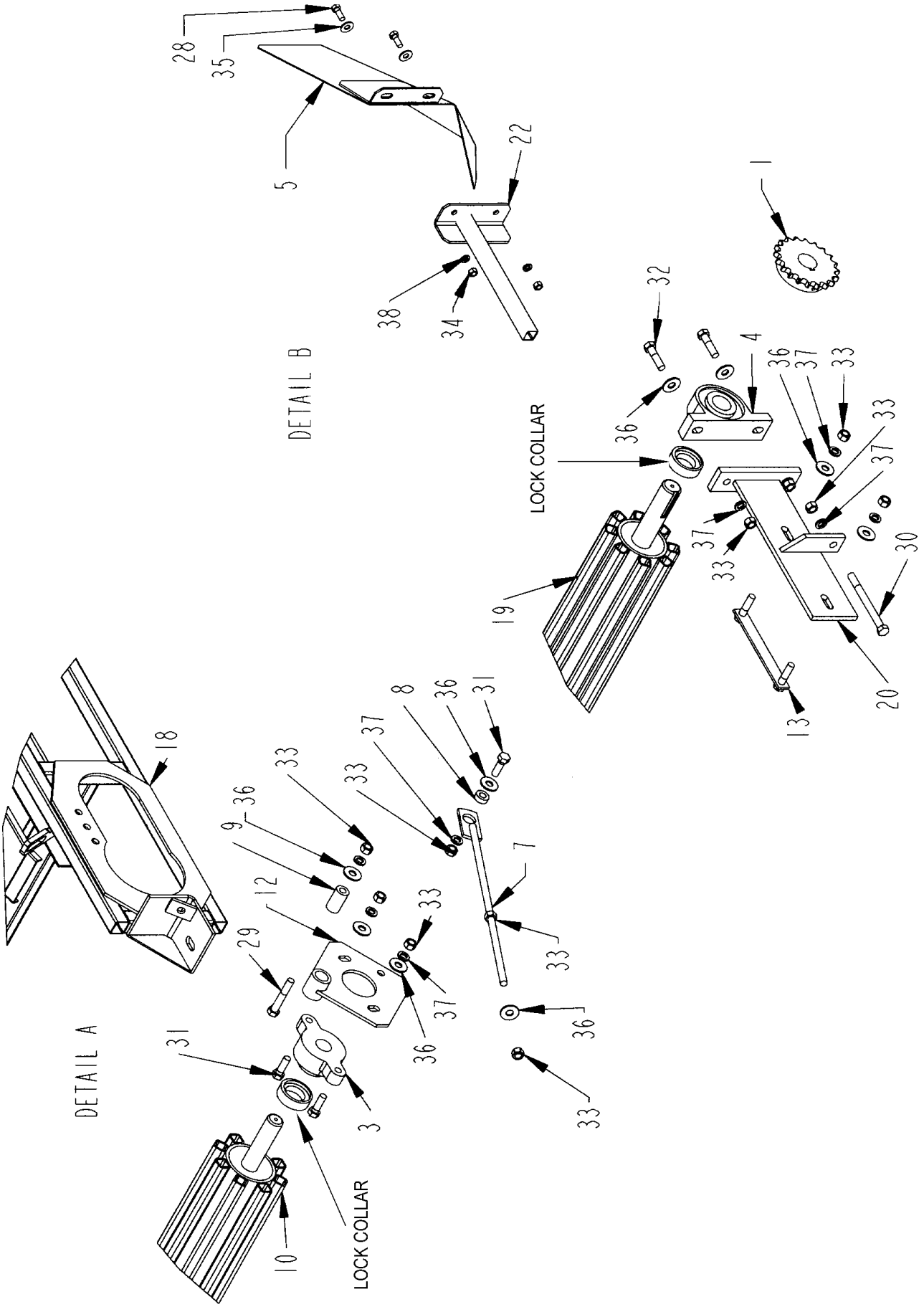
ITEM	PART	QTY.	PART DESCRIPTION
	4501400		**CONVEYOR\BELLY\with belt\H1100"T"**
1	1000085	2	SPKT\60\B\20\1-1/2\3/8
2	1700031	1	BELT\BELLY\PAN\30"X18'
3	2000301	2	BRG\FLG\CAST\1-1/4\2BOLT
4	2000501	2	BRG\PB\1-1/2\2BOLT
5	4500155	1	GUIDE\MATL\CNVYR\BELLY\REAR
6	4500156	1	GUIDE\MATL\CNVYR\BELLY
7	4500362	2	TGHTNR\RLLR\CNVYR\BELLY
8	4500363	2	BUSH\1\1/2\5/16
9	4500364	2	BUSH\1\.5\1-3/16L
10	4500871	1	RLLR\IDLER\39X6\CNVYR\BELLY
11	4500875	1	BRKT\BRG\RLLR\RH
12	4500877	2	BEARING BRACKET
13	4500926	2	BRKT\TGHTNER\RLLR\CNVYR\BELLY
14	4501152	1	GUIDE\MATL\CNVYR\LH\FRNT
15	4501153	1	GUIDE\MATL\CNVYR\RH\FRNT
16	4501154	1	GUIDE\MATL\CNVYR\RH\REAR
17	4501155	1	GUIDE\MATL\CNVYR\LH\REAR
18	4501156	1	CNVYR\BELLY\H1100
19	4501180	1	RLLR\DRIVE\39-3/4X6\CNVYR\BELLY
20	4501181	1	BRKT\SLIDE\BRNG\DR\LH\CNVYR\BELLY
21	4501193	1	SH\SEAL\CNVYR\BELLY
22	4501202	1	BRKT\GUIDE\MATL\CNVYR\LH
23	4501203	1	BRKT\GUIDE\MATL\CNVYR\RH
24	4501213	1	GUIDE\MATL\CNVYR\BELLY\REAR\RH
25	4501214	1	GUIDE\MATL\CNVYR\BELLY\REAR\LH
26	4501227	1	SH\COVER\CNVYR\BELLY\REAR
27	4702640	1	PL\SEAL\CNVYR\BELLY\SIDE
28	4800003	4	BOLT\HEX\3/8X1
29	4800068	2	BOLT\HEX\1/2X3
30	4800077	2	BOLT\HEX\1/2X5-1/2
31	4800082	6	BOLT\HEX\1/2X1-1/2
32	4800114	4	BOLT\HEX\1/2X2
33	4900001	20	NUT\HEX\1/2\NC
34	4900002	4	NUT\HEX\3/8\NC
35	5000001	4	WASH\FLAT\3/8
36	5000004	18	WASH\FLAT\1/2
37	5000006	20	WASH\LOCK\1/2
38	5000019	4	WASH\LOCK\3/8
39	6100027	2	SPRING\COMPRESSION for Serial Number up to AJ13176

Not Shown

1700130		LACING\R-2\30\PURCH
1700131		LACING\PIN\R-2\30\PURCH
1700132		LACING\RIVET\R-2\PURCH
1700137		LACING\TOOL\APPLICATOR\R-2\41213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DETAIL B
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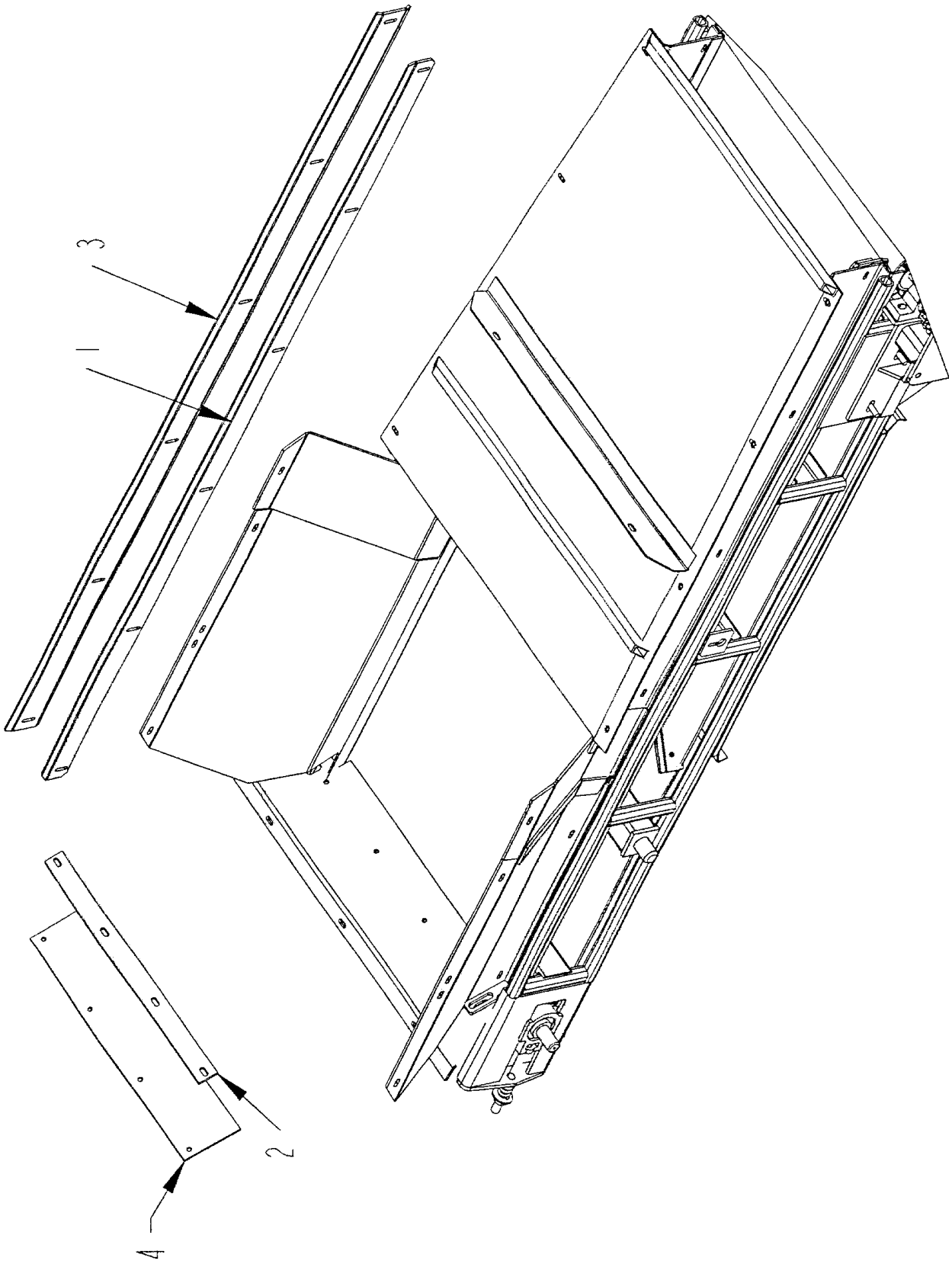
ITEM	PART	QTY.	PART DESCRIPTION
	4501400		**CONVEYOR\BELLY\with belt\H1100"T"**
1	1000085	2	SPKT\60\B\20\1-1/2\3/8
2	1700031	1	BELT\BELLY\PAN\30"X18'
3	2000301	2	BRG\FLG\CAST\1-1/4\2BOLT
4	2000501	2	BRG\PB\1-1/2\2BOLT
5	4500155	1	GUIDE\MATL\CNVYR\BELLY\REAR
6	4500156	1	GUIDE\MATL\CNVYR\BELLY
7	4500362	2	TGHTNR\RLLR\CNVYR\BELLY
8	4500363	2	BUSH\1\1/2\5/16
9	4500364	2	BUSH\1\.5\1-3/16L
10	4500871	1	RLLR\IDLER\39X6\CNVYR\BELLY
11	4500875	1	BRKT\BRG\RLLR\RH
12	4500877	2	BEARING BRACKET
13	4500926	2	BRKT\TGHTNER\RLLR\CNVYR\BELLY
14	4501152	1	GUIDE\MATL\CNVYR\LH\FRNT
15	4501153	1	GUIDE\MATL\CNVYR\RH\FRNT
16	4501154	1	GUIDE\MATL\CNVYR\LH\REAR
17	4501155	1	GUIDE\MATL\CNVYR\RH\REAR
18	4501156	1	CNVYR\BELLY\H1100
19	4501180	1	RLLR\DRIVE\39-3/4X6\CNVYR\BELLY
20	4501181	1	BRKT\SLIDE\BRNG\DR\LH\CNVYR\BELLY
21	4501193	1	SH\SEAL\CNVYR\BELLY
22	4501202	1	BRKT\GUIDE\MATL\CNVYR\LH
23	4501203	1	BRKT\GUIDE\MATL\CNVYR\RH
24	4501213	1	GUIDE\MATL\CNVYR\BELLY\REAR\RH
25	4501214	1	GUIDE\MATL\CNVYR\BELLY\REAR\LH
26	4501227	1	SH\COVER\CNVYR\BELLY\REAR
27	4702640	1	PL\SEAL\CNVYR\BELLY\SIDE
28	4800003	4	BOLT\HEX\3/8X1
29	4800068	2	BOLT\HEX\1/2X3
30	4800077	2	BOLT\HEX\1/2X5-1/2
31	4800082	6	BOLT\HEX\1/2X1-1/2
32	4800114	4	BOLT\HEX\1/2X2
33	4900001	20	NUT\HEX\1/2\NC
34	4900002	4	NUT\HEX\3/8\NC
35	5000001	4	WASH\FLAT\3/8
36	5000004	18	WASH\FLAT\1/2
37	5000006	20	WASH\LOCK\1/2
38	5000019	4	WASH\LOCK\3/8

Not Shown

1700130		LACING\R-2\30\PURCH
1700131		LACING\PIN\R-2\30\PURCH
1700132		LACING\RIVET\R-2\PURCH
1700137		LACING\TOOL\APPLICATOR\R-2\41213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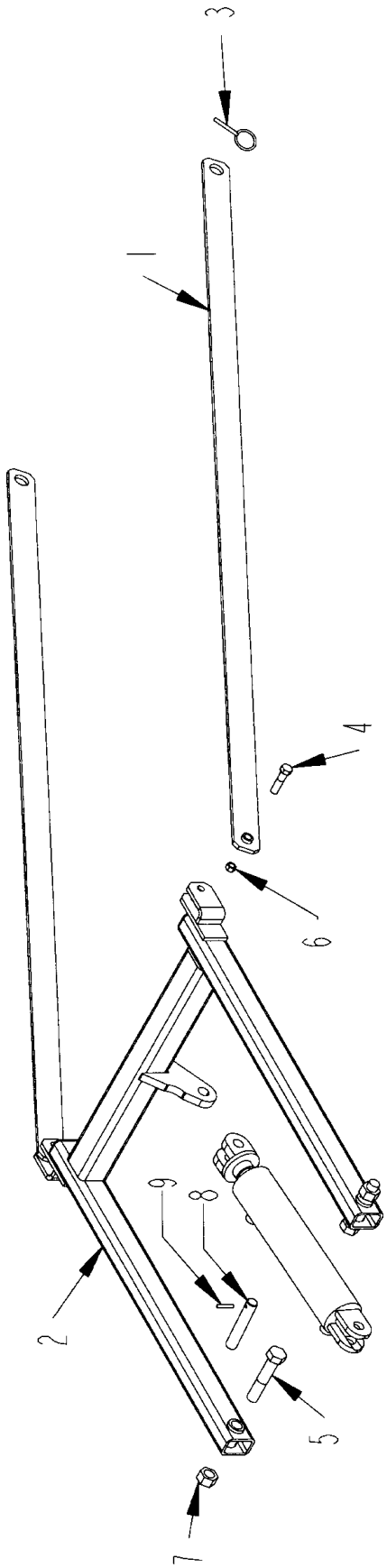
ITEM	PART	QTY.	PART DESCRIPTION
1	4501261	2	DOUBLER\SEAL\CNVYR\BELLY
2	4501289	1	DOUBLER\SEAL\MATL\CNVYR\FRONT
3	4703038	2	SEAL\CNVYR\BELLY\SIDE
4	4501288	1	SEAL\MATL\CNVYR\BELLY\FRONT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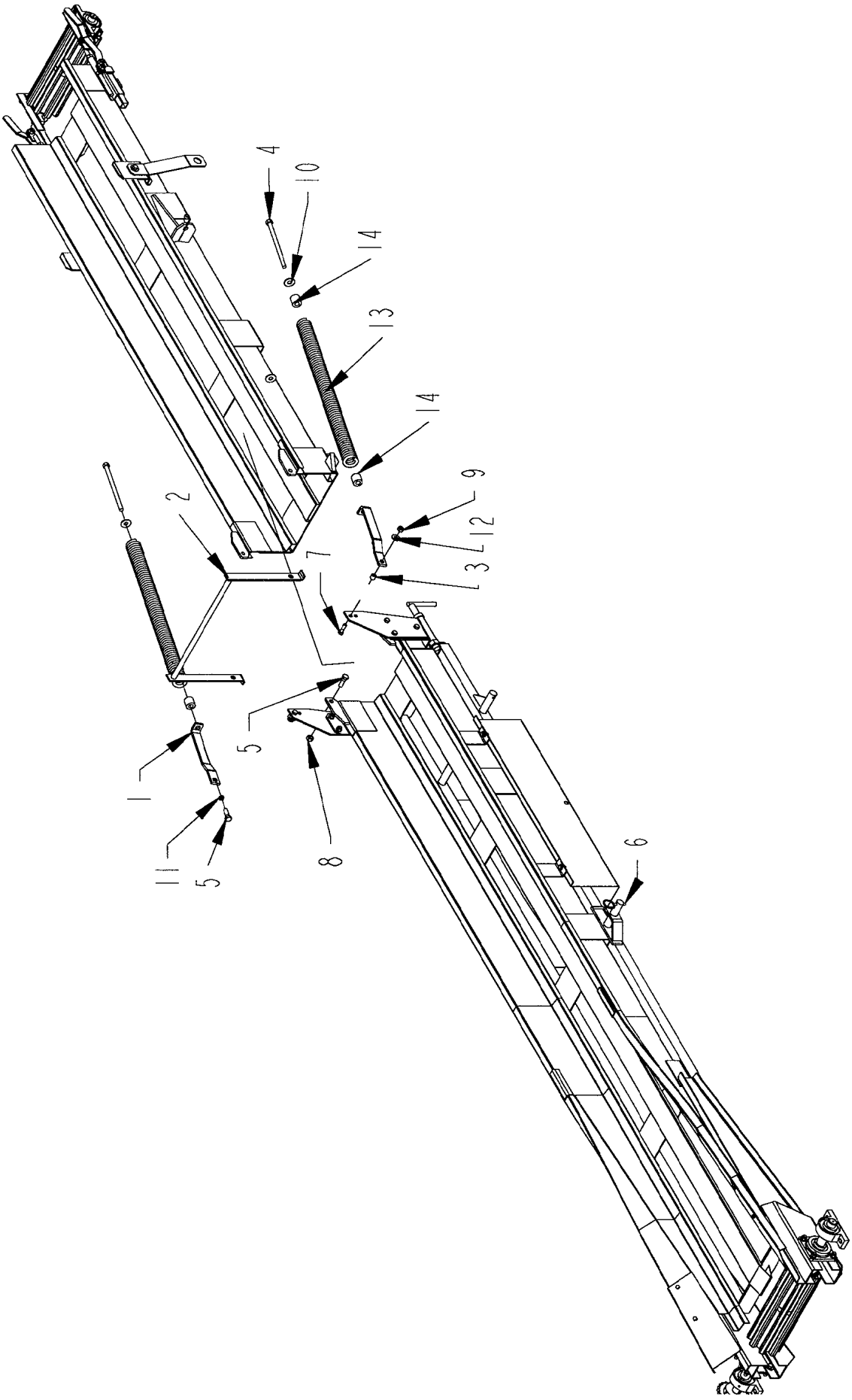
ITEM	PART	QTY.	PART DESCRIPTION
1	4500960	2	STRAP\LIFT\CNVYR\DISCH
2	4501215	1	FRM\LIFT\CNVYR\DISCH\H110098
3	4800076	2	PIN\KLIK\5/16
4	4800079	2	BOLT\HEX\5/8X2-1/2
5	4800546	2	BOLT\HEX\1X5\NC
6	4900012	1	NUT\TPLCK\5/8\NC
7	4900127	2	NUT\TPLCK\1\NC
8	4500964	2	PIN\HINGE\FRM\LIFT\CNVYR(THRU S/N 13201)
9	4800455	2	PIN\RLLD\1/4X1-1/2(THRU S/N 13201)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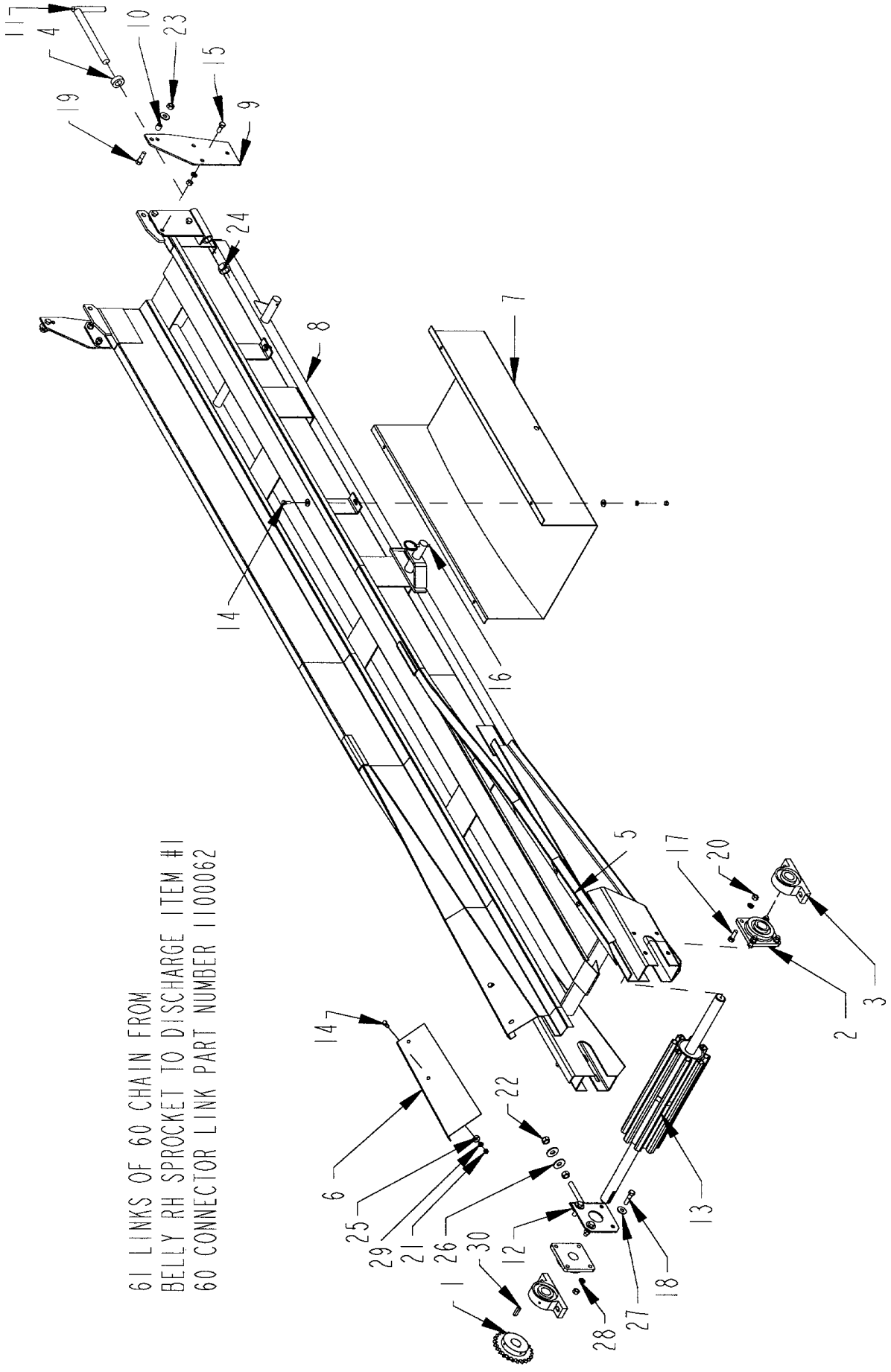
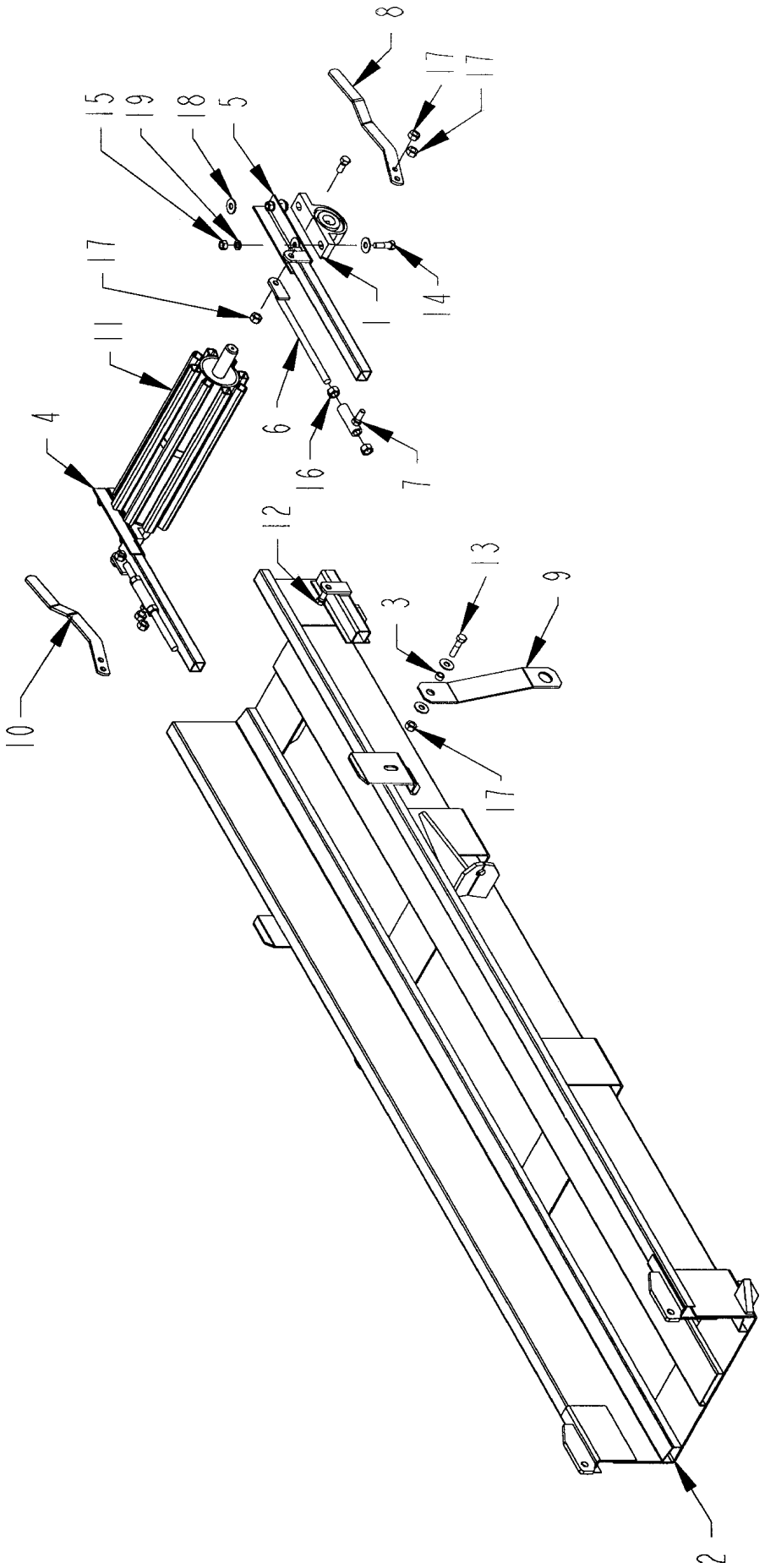
ITEM	PART	QTY.	PART DESCRIPTION
	4501350		**CONVEYOR\DISCHARGE\without belt\H1100 TILT\SN 2966+**
1	4500196	2	ARM\SPRING
2	4500199	1	GUIDE\CNVYR\BELT
3	4500201	2	TUBE\PIVOT\RETAINER\BELT
4	4500380	2	BOLT\SPRING\FOLD
5	4800010	4	BOLT\HEX\5/8X2
6	4800076	2	PIN\KLIK\5/16
7	4800178	6	BOLT\HEX\1/2\1-3/4
8	4900012	2	NUT\TPLCK\5/8\NC
9	4900014	10	NUT\TPLCK\1/2\NC
10	5000002	6	WASH\FLAT\5/8
11	5000003	2	WASH\LOCK\5/8
12	5000004	18	WASH\FLAT\1/2
13	6100047	2	SPRNG\.249OT\13/16ID\1-5/16OD\2-3/8LOA
14	7500113	4	SCREW\PLUG


61 LINKS OF 60 CHAIN FROM
BELLY RH SPROCKET TO DISCHARGE ITEM #1
60 CONNECTOR LINK PART NUMBER 1100062

ITEM	PART	QTY.	PART DESCRIPTION
	4501350		**CONVEYOR\DISCHARGE\without belt\H1100 TILT\SN 2966+**
1	1000132	1	SPKT\60\B\24\1-1/2\3/8
2	2000303	2	BRG\FLG\1-1/2\BOLT
3	2000501	2	BRG\PB\1-1/2\2BOLT
4	2000809	1	CLLOR\SHFT\1\(SET)
5	4500158	1	GUIDE\MATL\CNVYR\DISCH\LH
6	4500157	1	GUIDE\MATL\CNVYR\DISCH\RH
7	4500159	1	GUIDE\CNVYR\BELT\BOTTOM
8	4501600	1	FRM\CNVYR\DISCH\LOWER\H1100 TILT
9	4500536	2	BRACKET\CONVEYOR\SPRING ARM
10	4500201	2	TUBE\PIVOT\RETAINER\BELT
11	4500372	1	HANDLE\CNVYR\LATCH
12	4500379	1	BRKT\ADJ
13	4501195	1	RLLR\DRIVE\CNVYR\DISCH
14	4800003	9	BOLT\HEX\3/8X1
15	4800018	6	BOLT\HEX\1/2X1-1/4
16	4800076	2	PIN\KLIK\5/16
17	4800082	4	BOLT\HEX\1/2X1-1/2
18	4800114	4	BOLT\HEX\1/2X2
19	4800178	2	BOLT\HEX\1/2\1-3/4
20	4900001	14	NUT\HEX\1/2\NC
21	4900002	9	NUT\HEX\3/8\NC
22	4900005	2	NUT\HEX\5/8\NC
23	4900014	2	NUT\TPLCK\1/2\NC
24	4900015	1	NUT\NYLOCK\1\NC
25	5000001	12	WASH\FLAT\3/8
26	5000002	2	WASH\FLAT\5/8
27	5000004	6	WASH\FLAT\1/2
28	5000006	14	WASH\LOCK\1/2
29	5000019	9	WASH\LOCK\3/8
30	6200007	1	KEY\SQ\3/8X1-1/2
Not Shown			
	1100005		CHAIN\60\61 LINKS
	1100062		CHAIN\60\CONNECTING LINK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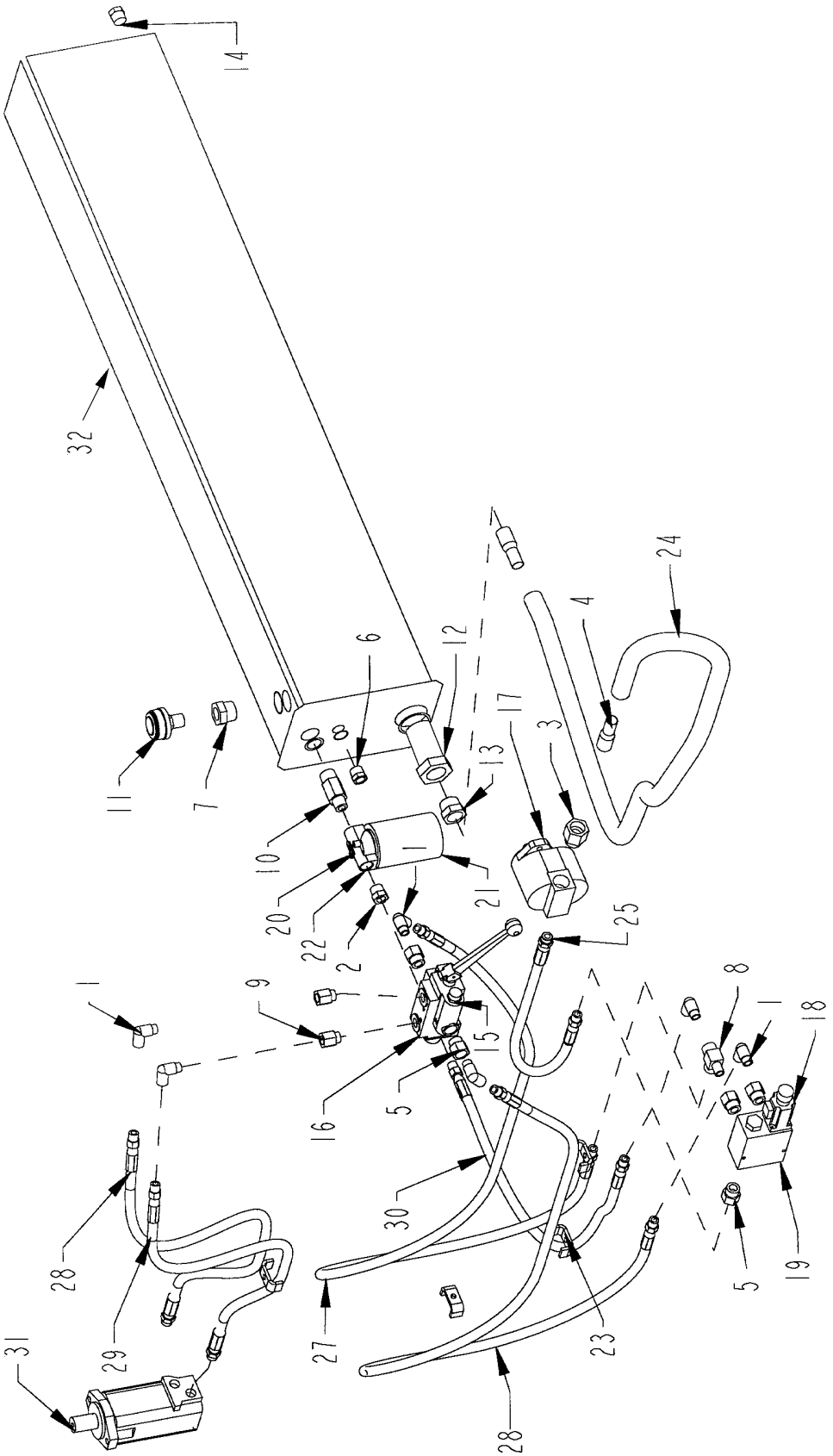
ITEM	PART	QTY.	PART DESCRIPTION
	4501350		**CONVEYOR\DISCHARGE\without belt\H1100 TILT\SN 2966+**
1	2000502	2	BRG\PB\1-1/4\2BOLT
2	4500164	1	FRM\CNVYR\DISCH\UPPER
3	4500200	2	TUBE\CNVYR\3/4X1/2X3/8
4	4500373	1	BRKT\CNVYR\BRG\RH
5	4500374	1	BRKT\CNVYR\BRG\LH
6	4500375	2	BRKT\TGTNR\BELT\CNVYR\DISCH
7	4500376	2	HINGE\CNVYR\TENS ADJ
8	4500378	1	HNDL\TIGHTNR\BELT\CNVYR
9	4500399	2	LATCH\FOLD\CNVYR
10	4500678	1	HNDL\TIGHTNR\BELT\CNVYR
11	4501194	1	RLLR\IDLER\CNVYR\DISCH\EZ-CLEAN
12	4800018	6	BOLT\HEX\1/2X1-1/4
13	4800114	2	BOLT\HEX\1/2X2
14	4800178	4	BOLT\HEX\1/2\1-3/4
15	4900001	4	NUT\HEX\1/2\NC
16	4900005	4	NUT\HEX\5/8\NC
17	4900014	8	NUT\TPLCK\1/2\NC
18	5000004	12	WASH\FLAT\1/2
19	5000006	4	WASH\LOCK\1/2
Not Shown			
	1700006	1	BELT\CNVYR\DISCH\18"X43-1/2'
	1700052	1	LCNG\CBL\1/8X18\NYL
	1700055		LCNG\ALGTR#125\W/STPLS\18
	4900072	2	NUT\HEX\#10\NC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ITEM	PART	QTY.	PART DESCRIPTION
1	3800008	7	FTG\1/2MPX1/2FP\90\ST;EL
2	3800010	1	FTG\3/4MPX1/2FP\BUSH
3	3800012	1	FTG\1-5/16MORX1FP
4	3800056	2	FTG\1MPX1BARB\LW
5	3800119	5	FTG\1-1/16MORX1/2FP
6	3800137	1	FTG\3/4MP\SIGHT:GLASS
7	3800155	1	FTG\1-1/4MPX3/4FP\BUSH
8	3800161	1	FTG\1/2FPX1/2MPX1/2FP
9	3800171	2	FTG\3/4MORX1/2FP
10	3800239	1	FTG\1MPX3/4MP\NPL
11	3800253	1	FTG\3/4MP\VENT
12	4400007	1	FLTR\SCRN\2MPX1-1/4FP\25GPM
13	3800427	1	FTG\1-1/4MPX1FP\BUSH
15	4000065	1	NON-ADJUSTABLE RELIEF VALVE 1800P
16	4000095	1	VALVE\HYD\1-SPL\W/DETENT
17	4200025	1	PUMP\HYD\1.87CU.IN.\RH\EATON\15
18	4300010	1	VALVE\SOLENOID\12VDC\JEMM
19	4300065	1	VALVE\SERVO\15GPM\12VDC
20	4400004	1	FL/TR\BASE\3/4FP\3.7D
21	4400005	1	FLTR\ELMNT\10MICRON\3.7D\35 GPM
22	4400006	1	FLTR\COMP\10MICRON\3.7D\35 GPM
23	4700777	4	CLMP\HOSE\1/2
24	3700474	1	HOSE\SUCT\1X83
25	3700493	1	HOSE\HYD\1/2X30\7/8MORSX1/2SW
26	3700470	1	HOSE\HYD\1/2X80\1/2SW-1/2SW
27	3700470	1	HOSE\HYD\1/2X80\1/2SW-1/2SW
28	3700494	1	HOSE\HYD\1/2X41\7/8MORSX1/2SW
29	3700090	1	HOSE\HYD\1/2X38\7/8MORSX1/2SW
30	3700421	1	HOSE\HYD\1/2X39\1/2SW-1/2SO
31	3900005	1	MTR\HYD\14.9\2000\SAE;A\2-BOLT\7/8FOR\1-1/4SFT
32	4501187	1	TANK\OIL\H1100
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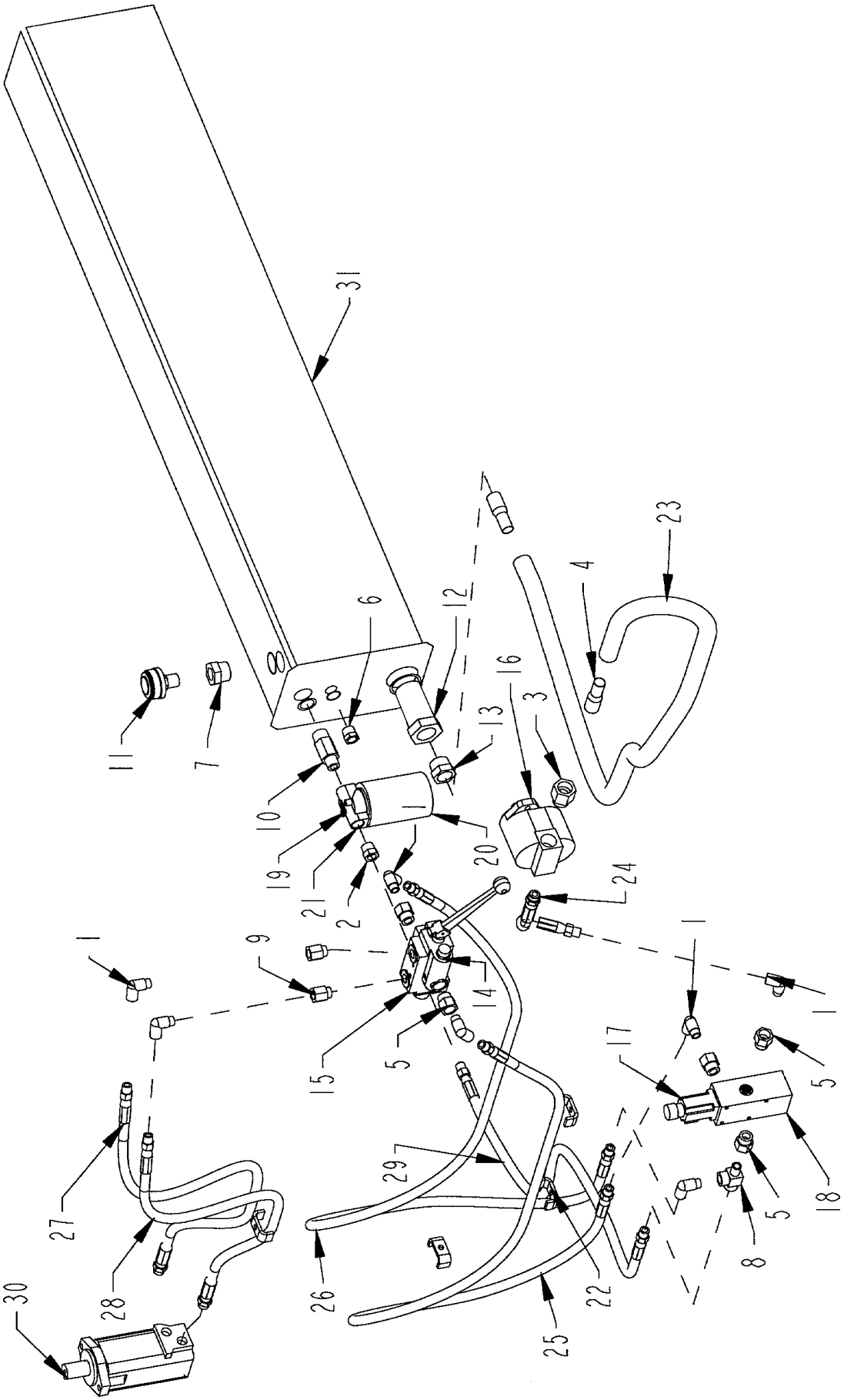
	3800154		GAUGE\3000PSI\1/4MP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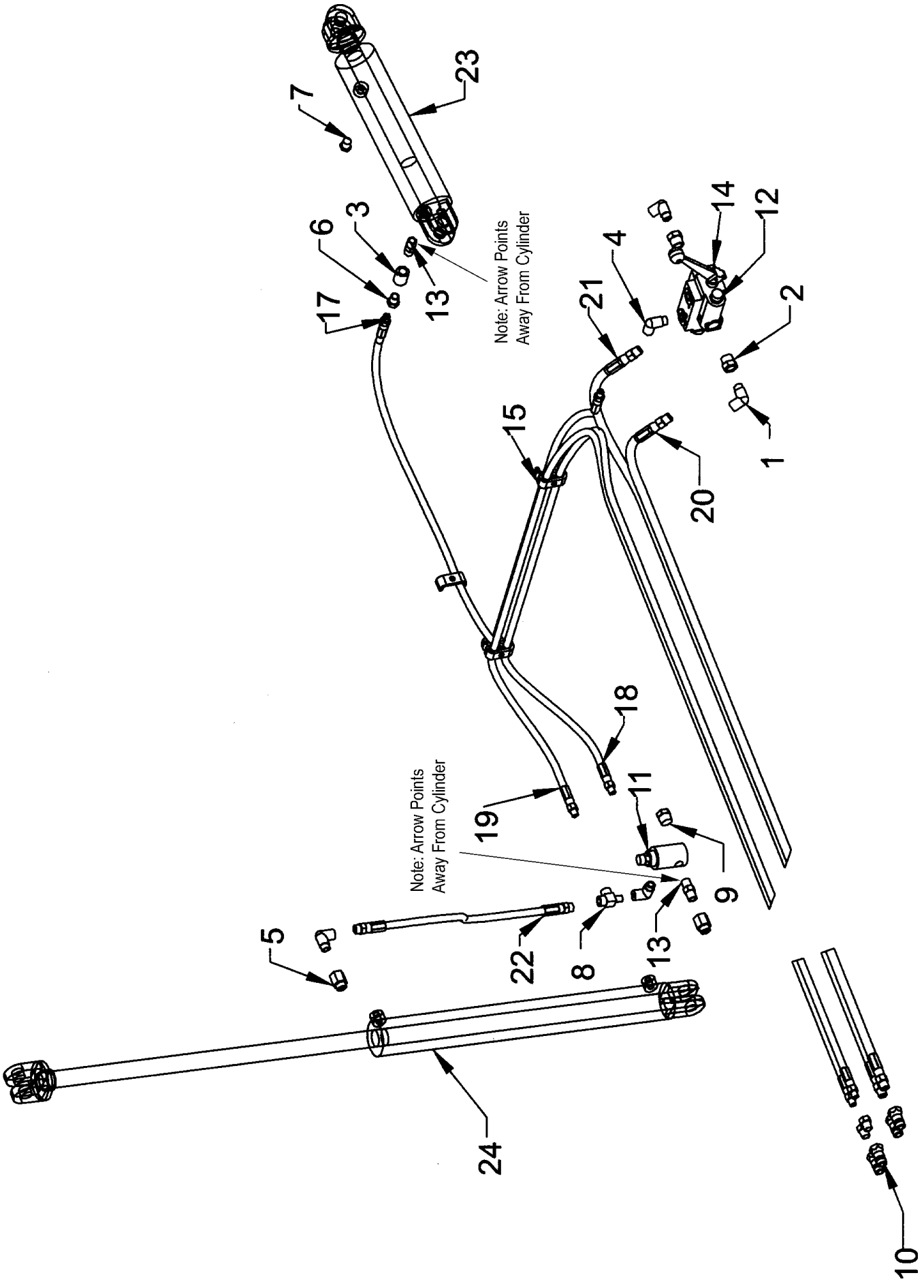
ITEM	PART	QTY.	PART DESCRIPTION
1	3800008	7	FTG\1/2MPX1/2FP\90\ST;EL
2	3800010	1	FTG\3/4MPX1/2FP\BUSH
3	3800012	1	FTG\1-5/16MORX1FP
4	3800056	2	FTG\1MPX1BARB\LW
5	3800119	5	FTG\1-1/16MORX1/2FP
6	3800137	1	FTG\3/4MP\SIGHT:GLASS
7	3800155	1	FTG\1-1/4MPX3/4FP\BUSH
8	3800161	1	FTG\1/2FPX1/2MPX1/2FP
9	3800171	2	FTG\3/4MORX1/2FP
10	3800239	1	FTG\1MPX3/4MP\NPL
11	3800253	1	FTG\3/4MP\VENT
12	4400007	1	FLTR\SCRN\2MPX1-1/4FP\25GPM
13	3800427	1	FTG\1-1/4MPX1FP\BUSH
14	4000065	1	NON-ADJUSTABLE RELIEF VALVE 1800P
15	4000095	1	VALVE\HYD\1-SPL\W/DETENT
16	4200025	1	PUMP\HYD\1.87CU.IN.\RH\EATON\15
17	4300010	1	VALVE\SOLENOID\12VDC\JEMM
18	4300065	1	VALVE\SERVO\15GPM\12VDC
19	4400004	1	FL/TR\BASE\3/4FP\3.7D
20	4400005	1	FLTR\ELMNT\10MICRON\3.7D\35 GPM
21	4400006	1	FLTR\COMP\10MICRON\3.7D\35 GPM
22	4700777	4	CLMP\HOSE\1/2
23	3700474	1	HOSE\SUCT\1X83
24	3700493	1	HOSE\HYD\1/2X30\7/8MORSX1/2SW
25	3700470	1	HOSE\HYD\1/2X80\1/2SW-1/2SW
26	3700470	1	HOSE\HYD\1/2X80\1/2SW-1/2SW
27	3700494	1	HOSE\HYD\1/2X41\7/8MORSX1/2SW
28	3700090	1	HOSE\HYD\1/2X38\7/8MORSX1/2SW
29	3700421	1	HOSE\HYD\1/2X39\1/2SW-1/2SO
30	3900005	1	MTR\HYD\14.9\2000\SAE;A\2-BOLT\7/8FOR\1-1/4SFT
31	4501187	1	TANK\OIL\H1100


Note: Arrow Points
Away From Cylinder
Note: Arrow Points
Away From Cylinder
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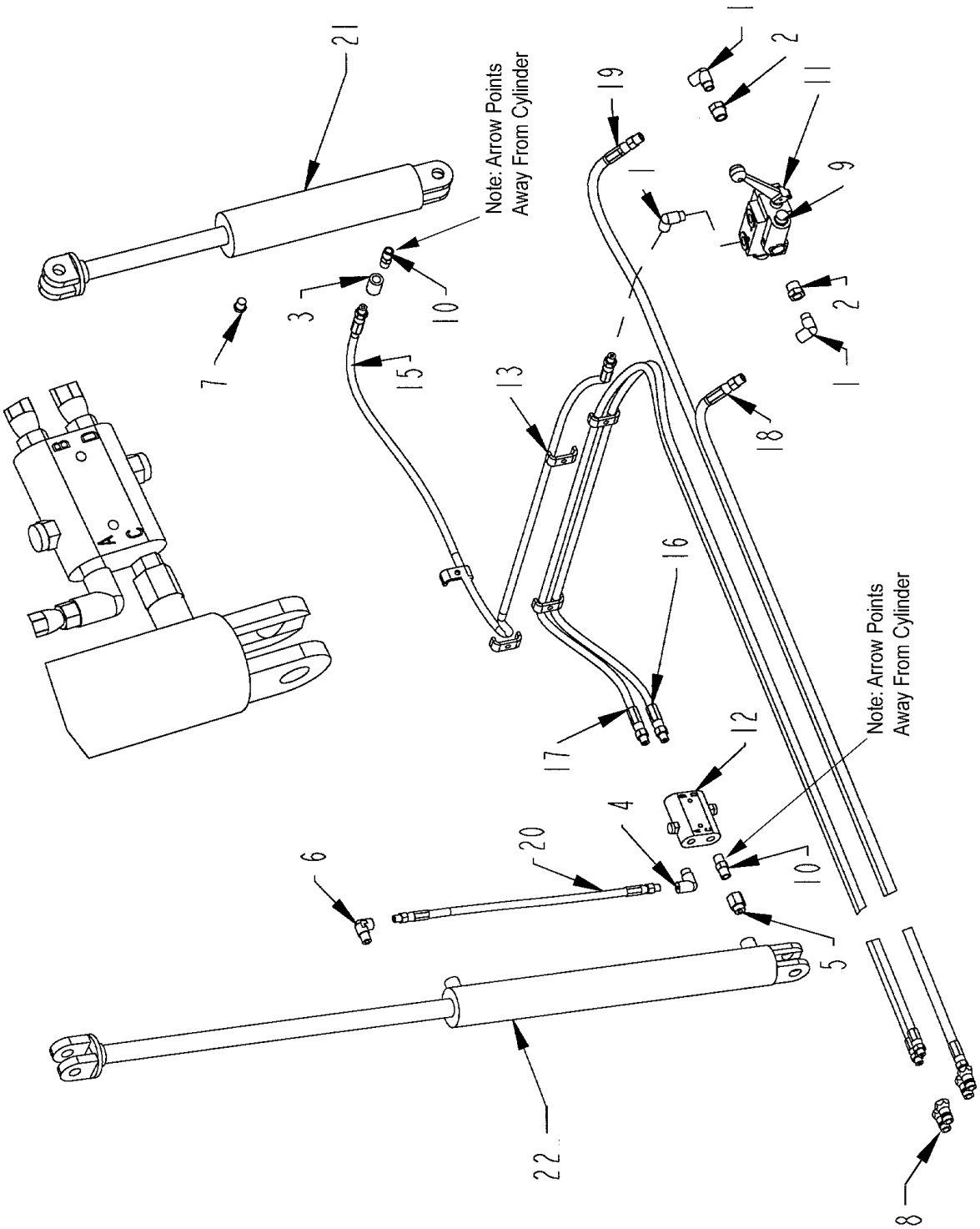
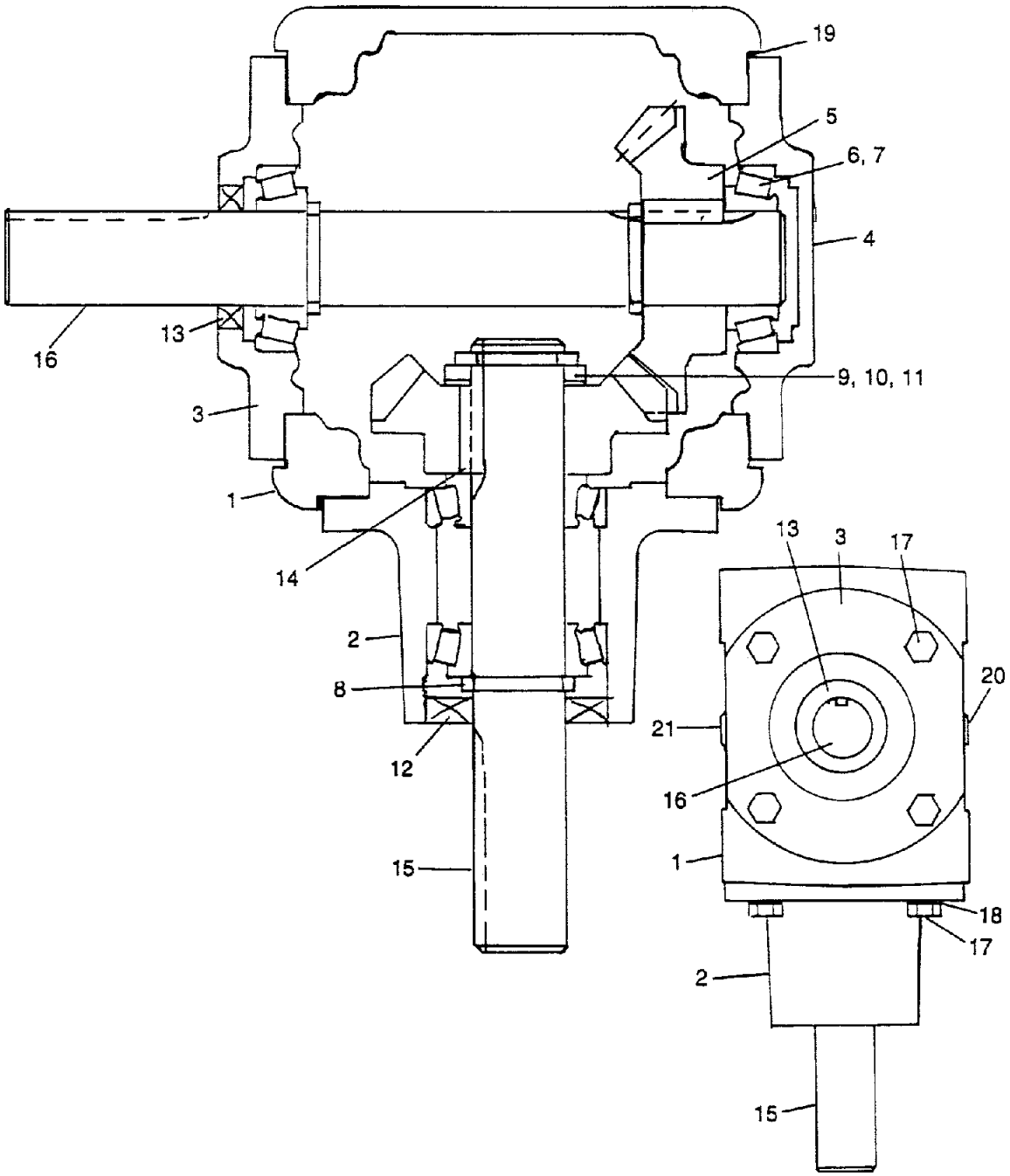
ITEM	PART	QTY.	PART DESCRIPTION
1	3800008	2	FTG\1/2MPX1/2FP\90\ST;EL
2	3800010	2	FTG\3/4MPX1/2FP\BUSH
3	3800051	1	FTG\1/2FP\CPLG
4	3800133	3	FTG\1/2MPX3/8FP\90\ST;EL
5	3800171	2	FTG\3/4MORX1/2FP
6	3800216	3	FTG\1/2MPX3/8FP\BUSH
7	3800361	1	FTG\1/2MP\VENT
8	3800406	1	FTG\3/8FPX3/8MPX3/8FP
9	3800441	1	FTG\3/4MP\PLUG\HEX
10	3800525	4	FTG\1/2\NPTF\QUICK;CPLR
11	4000017	1	RELIEF VALVE
12	4000065	1	NON-ADJUSTABLE RELIEF VALVE 1800P
13	4000119	2	VALVE\CHECK\VEL\9GPM
14	4000128	1	VALVE\HYD\1SPL\SPRNG;CNTR\
15	4700776	6	CLMP\HOSE\3/8
16	4700777	1	CLMP\HOSE\1/2
17	3700199	1	HOSE\HYD\3/8X84\SW-SW
18	3700466	1	HOSE\HYD\3/8X256\SW-SW
19	3700466	1	HOSE\HYD\3/8X256\SW-SW
20	3700467	1	HOSE\HYD\1/2X202\SW-SO
21	3700468	1	HOSE\HYD\1/2X212\SW-SO
22	3700465	1	HOSE\HYD\3/8X22-1/2\SW-SW
23	4100077	1	CYL\HYD\3-1/2X12\PARAL\CLEV\1/2NPTF
24	4100191	1	CYL\HYD\3X24\1-1/2ROD\PARAL\3/4FOR


Note: Arrow Points
Away From Cylinder
Note: Arrow Points
Away From Cylinder

ITEM	PART	QTY.	PART DESCRIPTION
1	3800008	3	FTG\1/2MPX1/2FP\90\ST;EL
2	3800010	2	FTG\3/4MPX1/2FP\BUSH
3	3800051	1	FTG\1/2FP\CPLG
4	3800133	1	FTG\1/2MPX3/8FP\90\ST;EL
5	3800171	1	FTG\3/4MORX1/2FP
6	3800268	1	FTG\3/4MORX3/8FP\90\ST;EL
7	3800361	1	FTG\1/2MP\VENT
8	3800525	4	FTG\1/2\NPTF\QUICK;CPLR
9	4000065	1	NON-ADJUSTABLE RELIEF VALVE 1800P
10	4000119	2	VALVE\CHECK\VEL\9GPM
11	4000128	1	VALVE\HYD\1SPL\SPRNG;CNTR\
12	4000177	1	VALVE\HYD\RELIEF\DOUBLE\1500\1000\1/2NPT
13	4700776	6	CLMP\HOSE\3/8
14	4700777	1	CLMP\HOSE\1/2
15	3700495	1	HOSE\HYD\3/8X84\1/2SW-1/2SW
16	3700496	1	HOSE\HYD\3/8X256\1/2SW-1/2SO
17	3700496	1	HOSE\HYD\3/8X256\1/2SW-1/2SO
18	3700467	1	HOSE\HYD\1/2X202\SW-SO
19	3700468	1	HOSE\HYD\1/2X212\SW-SO
20	3700465	1	HOSE\HYD\3/8X22-1/2\SW-SW
21	4100077	1	CYL\HYD\3-1/2X12\PARAL\CLEV\1/2NPTF
22	4100191	1	CYL\HYD\3X24\1-1/2ROD\PARAL\3/4FOR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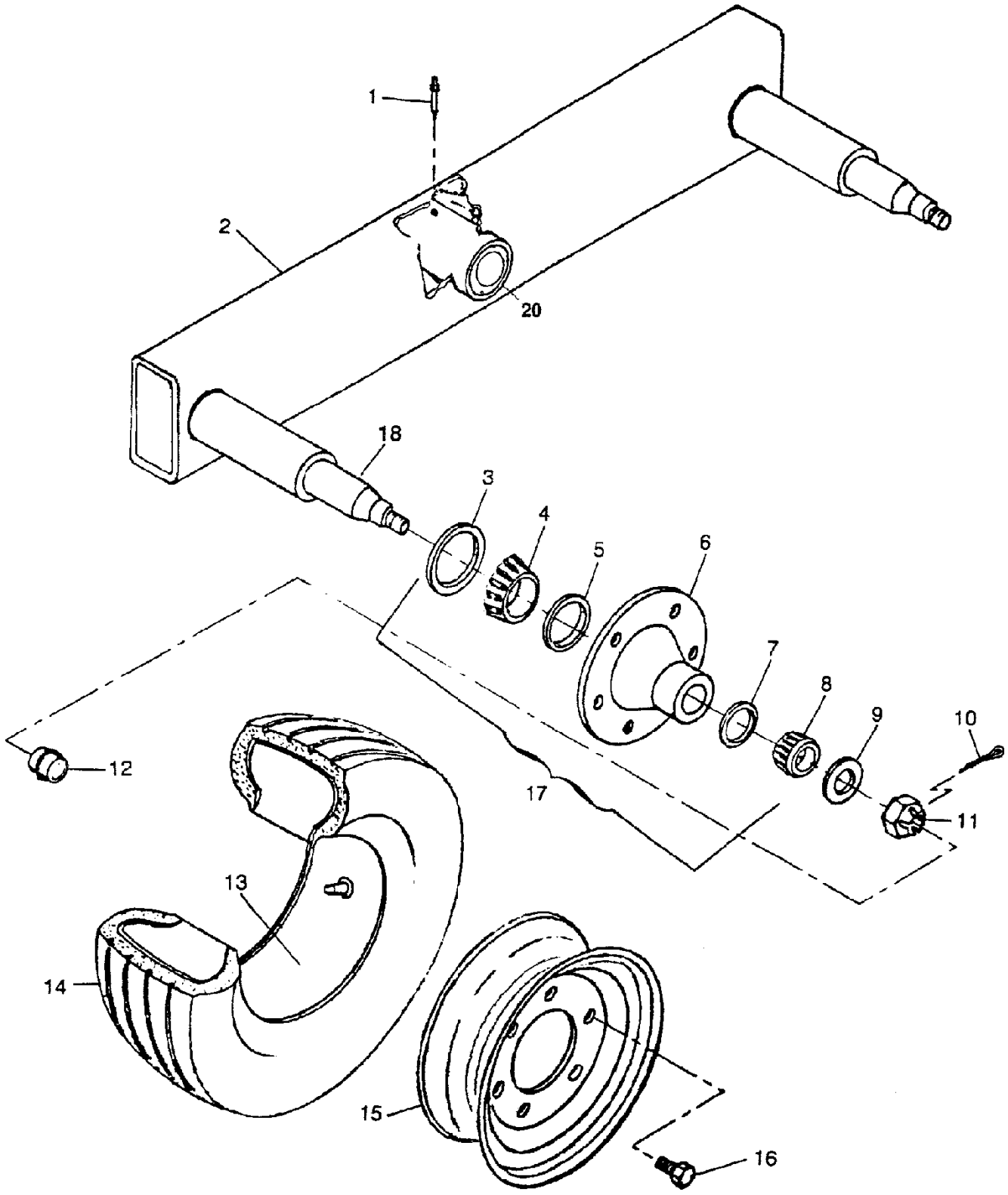
ITEM	PART	QTY.	PART DESCRIPTION
1	3100322	1	Open Center Case
2	3100323	1	Quill 1.98 Dia. Seal
3	3100324	1	Open Cover
4	3100325	1	Closed Cover
5	3100326	2	19T Gear
6	2900032	4	Cone
7	2900033	4	Cup
8	3100327	3	Snap Ring
9	3100335	Var.	Shim. .007 1809 OG
10	3100328	1	1 ID x 1-1/2 OD x .130 Washer
11	3100329	1	Snap Ring
12	3100309	1	1 x 1.98 Seal
13	3100313	1	1 x 1-1/2 Seal
14	3100330	2	1/4 x 1/4 x .93 Key
15	3100331	1	Pinion Shaft
16	3100332	1	Cross Shaft
17	3100301	12	5/16 x 7/8 Bolt
18	3100333	12	5/16 Lock Washer
19	3100336	Var.	Shim .020
	3100337	Var.	Shim .007
	3100338	Var.	Shim .005
20	3100318	1	1/4 NPT Plug
21	3100319	1	1/4 NPT Vent
22	3100334	1	Shaft (to Reverse Gear Box)
23	3100187	1	Gear Box Complete-Prairie Gear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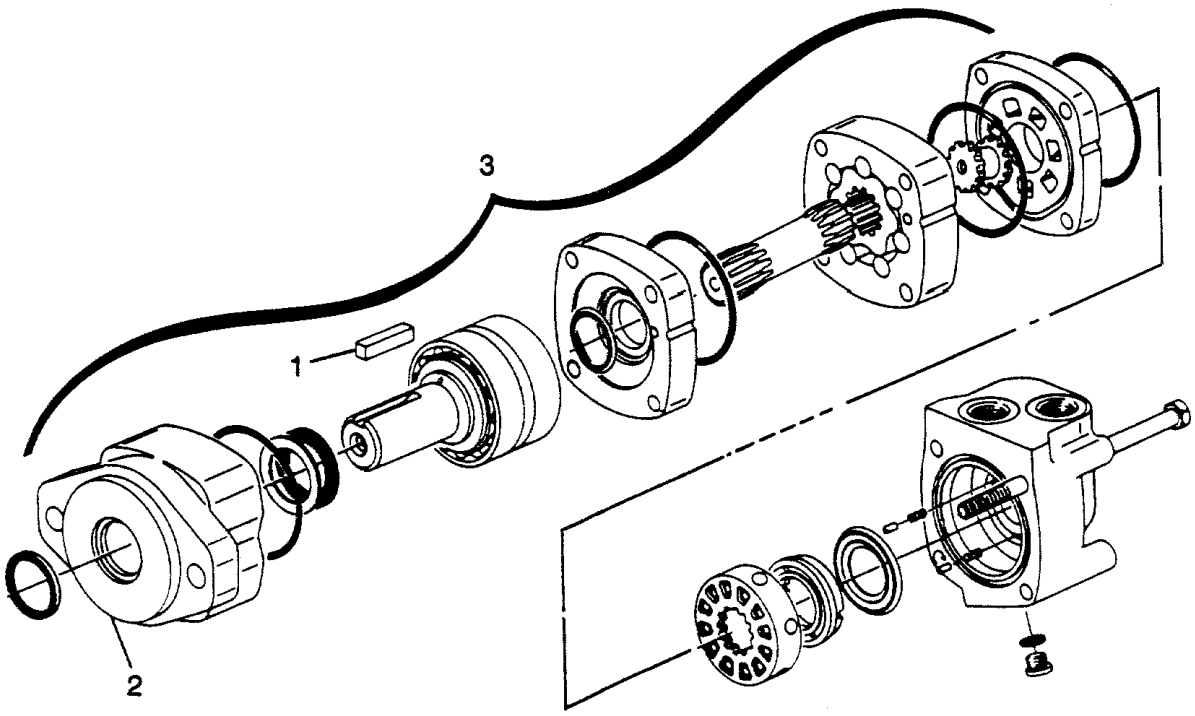
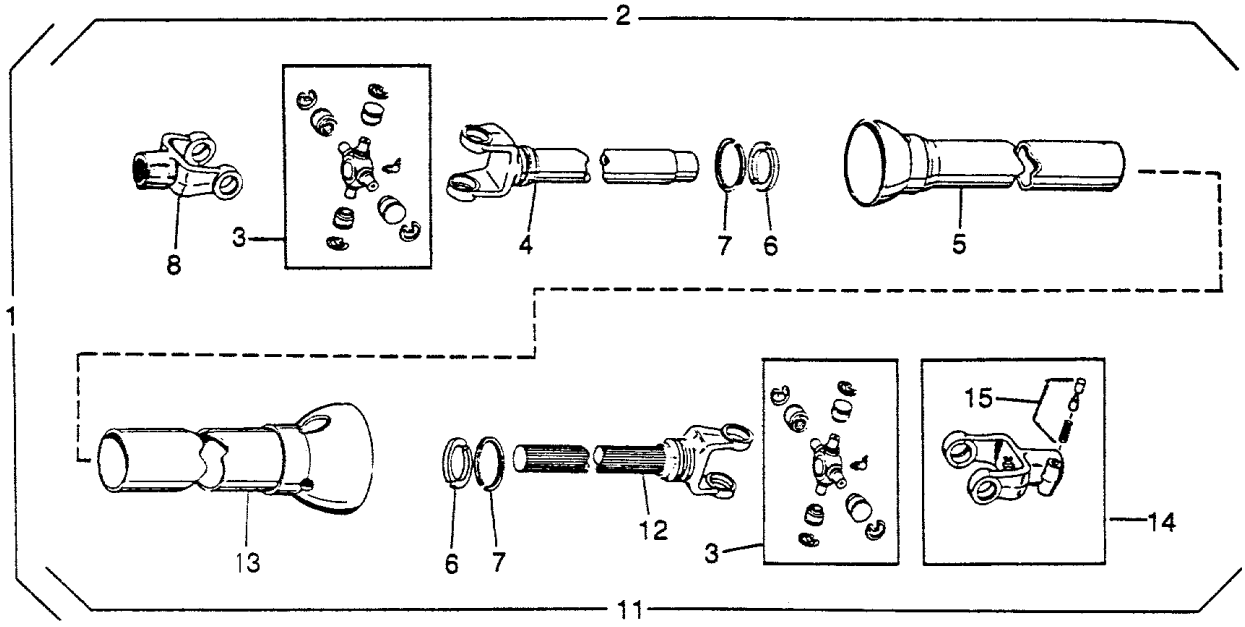
ITEM	PART	QTY.	PART DESCRIPTION
	4500634	1	WHEEL\ASSY\SUB
1	3800067	2	FTG\LUB\1/8MPXZERK\2-5/8
2	4500140	1	WLKNG BEAM W/SPINDLES RH
2A	4500674	1	WLKNG BEAM W/SPINDLES LH
3	2900008	1	SEAL/WHL HUB 631(18823)
4	2900007	1	CONE\INNER\WHL;HUB501349
5	2900006	1	CUP\INNER/WHL;HUB501310
6	2900068	1	HUB\6-BOLT\WHL;HUB (631)
7	2900004	1	CUP\OUTER\WHL;HUB 67010
8	2900018	1	CONE\OUTER\WHL;HUB(67048
9	5000055	1	WASH\SPINDLE\7/8
10	4800533	1	PIN\COT\3/16X1
11	4900054	1	NUT\CASTLE\7/8\NF
12	2900013	1	CAP\DUST\WHL;HUB(DC-13)
13	2600406	4	TUBE\9.5LX14-15
14&15	2600826		WHL\ASSY\9.5X15\8PLY\IMP
	2600009		TIRE\9.5LX15\8PLY
	2600612		WHL\6-BOLT\15X8
	2600823	OPT	WHL\ASSY\31X10.5X15\MOUNTED AND BALANCED
	2600041	OPT	TIRE\31X10.5X15\LOAD;C
	2600624	OPT	WHL\6-BOLT\15"X10"
16	2900012	6	BOLT\WHEEL\WHL;HUB
17	2900069	4	HUB\6-BOLT\(631)\COMPL
18	3000026	4	12-15/16 SPINDLE (631)
19	4500262	2	WALKING BEAM SPINDLE
20	4500552	2	WALKING BEAM BUSHING
	4800228		PIN\RLLD\1/2X3-1/4
	5000054		2.5 X 10 GA MACH BUSH(NR)



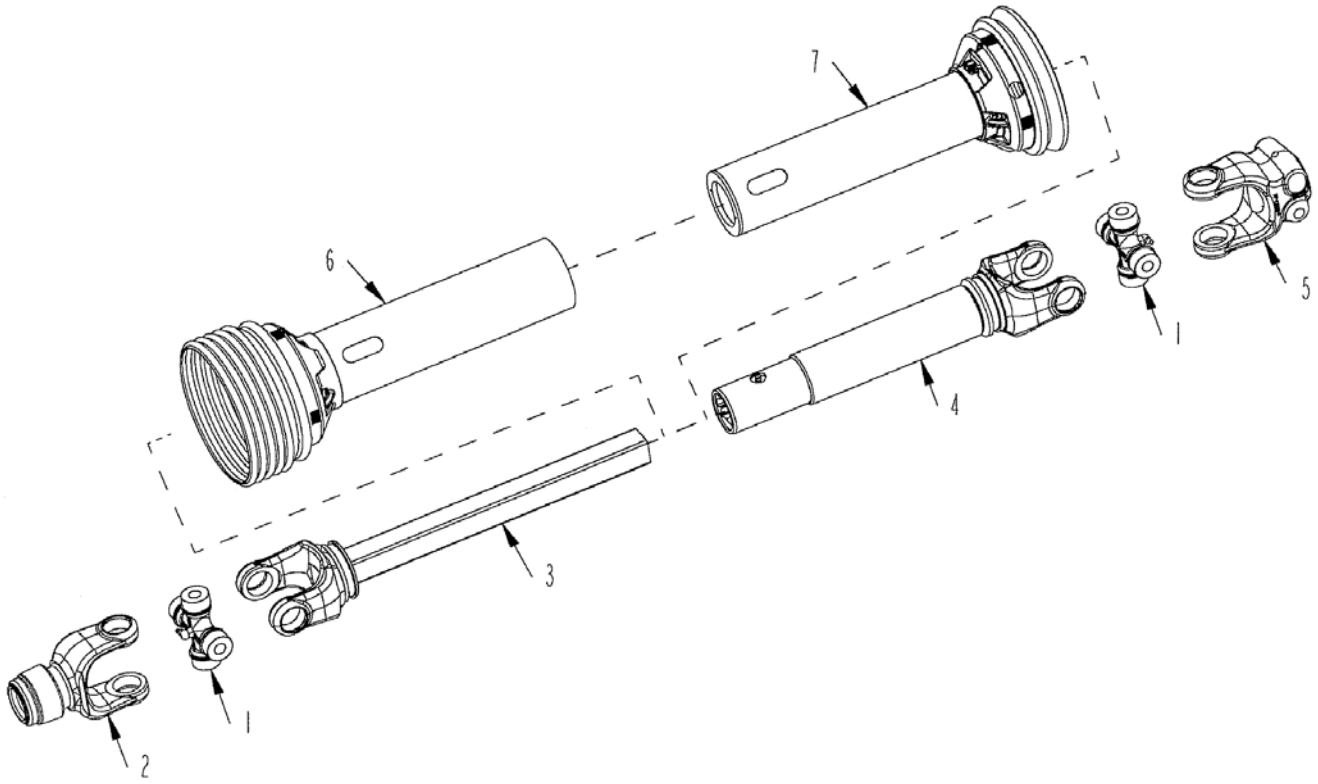
ITEM	PART NO.	QTY.	PART DESCRIPTION
1	6200004	1	5/16 X 1-1/2 Key
2	3900011	1	Flange Mount
3	3900005	1	Complete Orbit Motor-2000 Series 14.9 C.I.
4	7501005	1	Seal Kit Complete 2000 Series
5	3900010		Complete Orbit Motor-2000 Series 24 C.I.(Optional)

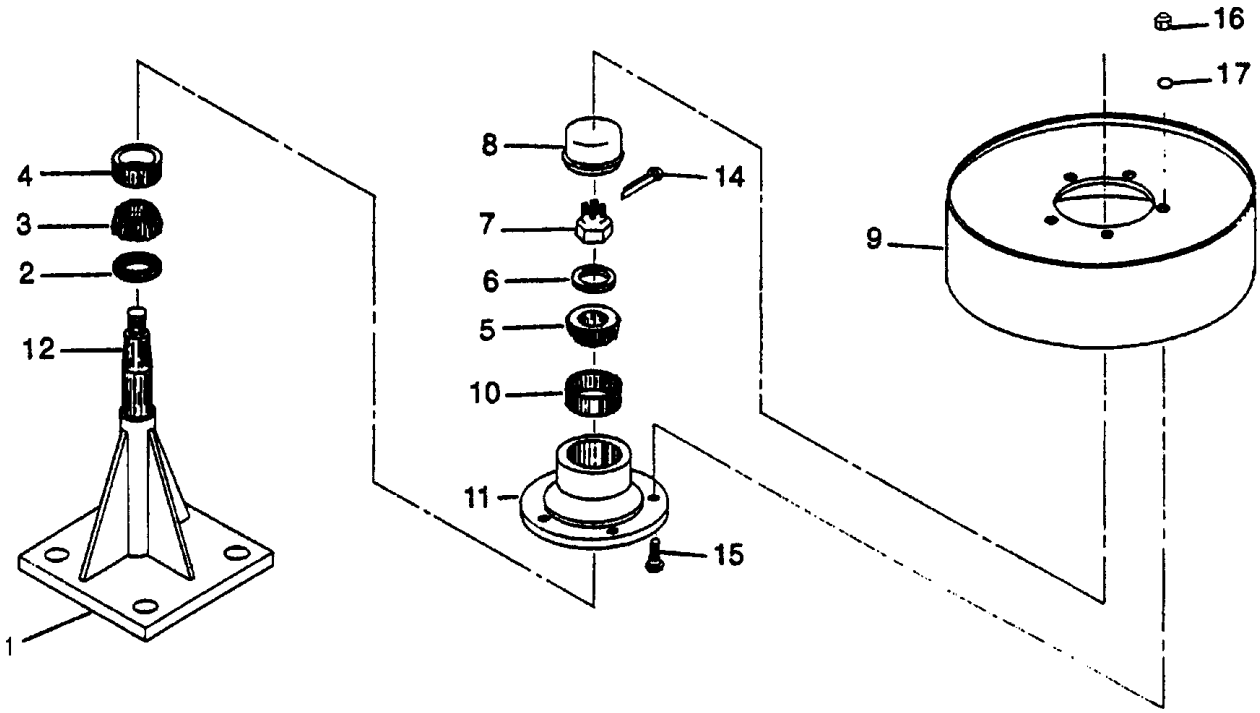
ITEM	PART NO.	QTY.	PART DESCRIPTION
1	3600067	1	HD PTO W/1-3/8" 21 SPLINE
1A	3600140	1	HD PTO W/1-3/4" 20 SPLINE
2	3600065	1	MACHINE HALF HD
3	3600013	2	CROSS & BEARING KIT 55W
4	3600063	1	YOKE W/TUBE HD
5	3600062	1	INNER SHIELD HD
6	3600092	2	NYLON BEARING HD
7	3600093	2	BEARING RETAINER
8	3600012	1	MACHINE YOKE 1-3/4" L55
11	3600066	1	TRCTR HALF HDW/1-3/8 21 SPL
11A	3600068		TRCTR HALF HDW/1-3/4" 20 SPLINE
12	3600061	1	YOKE W/SHAFT HD
13	3600060	1	OUTER SHIELD HD
14	3600016	1	YOKE ASSY 1 3/8 21 SPLINE
14A	3600064	1	YOKE ASSY 1 3/4 20 SPLINE
15	3600094	1	SAF-T-PIN & SPRING KIT



ITEM	PART NO	QTY	DESCRIPTION
	3600479		PTO\COMPLETE\55R\1-3/8\PLASTIC GUARD
A	3600484		PTO\COMPLETE\55R\1-3/4\PLASTIC GUARD
1	3600013	2	CROSS & BEARING KIT 55W
2	3600535	1	YOKE ASSY\55W\1-3/8\21-SP
	3600271		LOCK\SAFTY;SLID\KIT\1-3/8
2A	3600536	1	YOKE\55\QD\CLR\1-3/4\20SP
	3600532		LOCK\SAFTY;SLID\KIT\1-3/4
1,2,3 & 6	3600482	1	JOINT&SHAFT\ASM\1-3/8"\W-GRD SET FOR\3600479 (TRACTOR)
1,2A,3 & 6	3600487	1	JOINT&SHAFT\ASM\1-3/4"\W-GRD SET FOR\3600484 (TRACTOR)
1,4,5, & 7	3600488	1	JOINT&TUBE\ASM\W-GRD SET FOR 3600479, 484 (MACHINE)
5	3600012	1	MACHINE YOKE 1-3/4" L55 W/KEYWAY
6,7	3600480	1	GUARD\SET\PTO
Not Shown	6500085	1	DECAL\DNGR\ROTATNG;DR-LNE
Not Shown	6500310	1	DECAL\DNGR\GUARD;MISSING
Not Shown	3600489	2	NYLON\REPAIR\KIT\PLASTIC

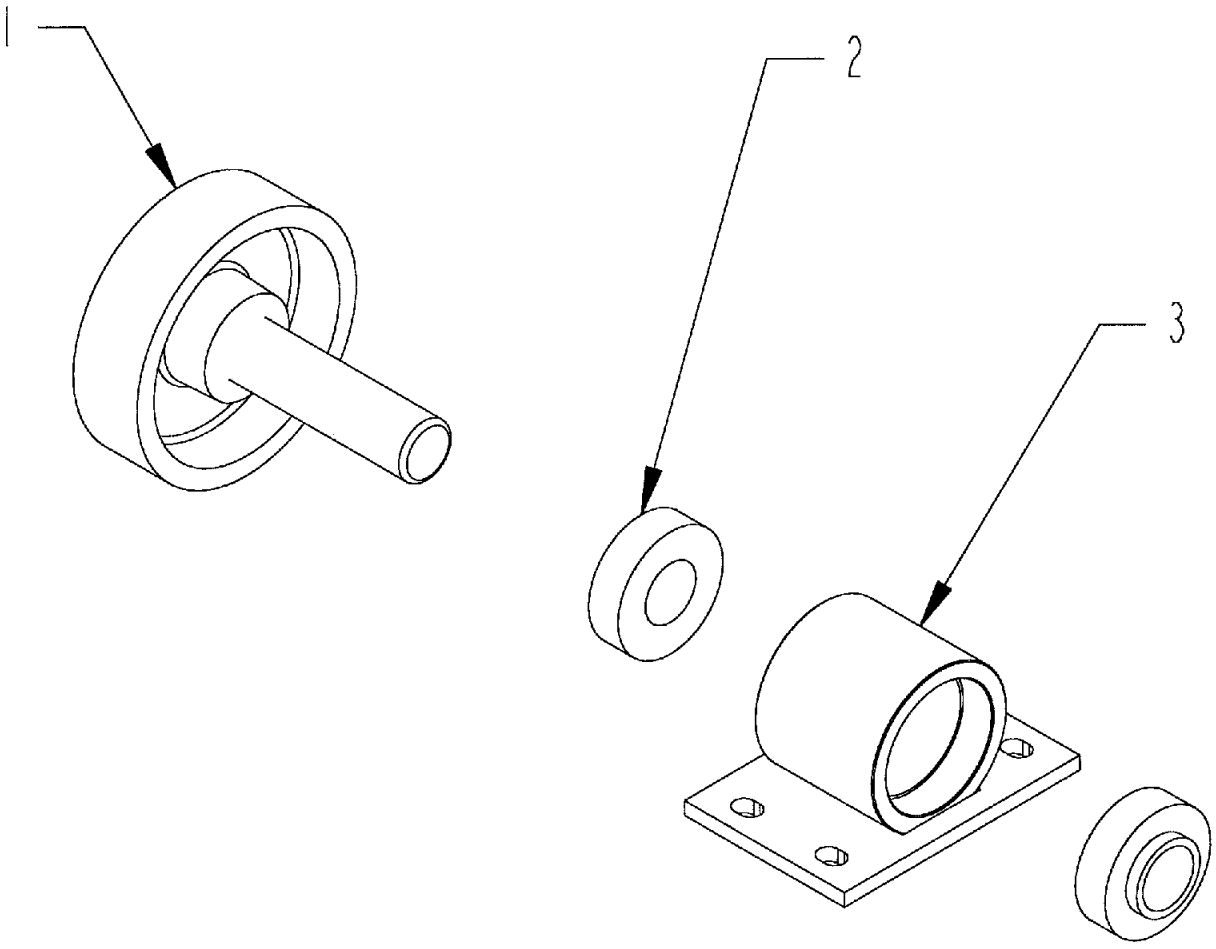
Note: 3600479 and 3600484 are the drivelines for this grinder.



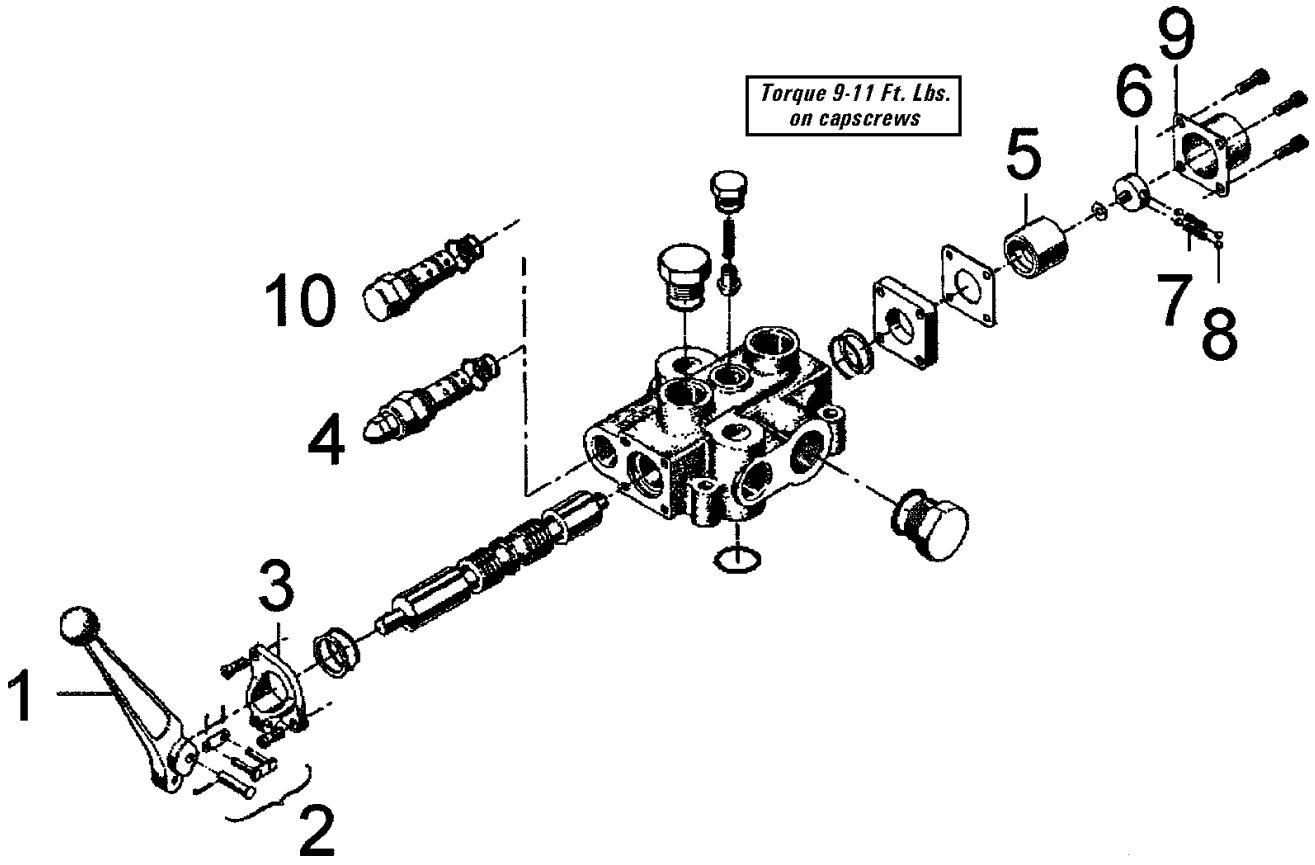


ITEM	PART	QTY.	PART DESCRIPTION
	4500247	1	PRESSURE ROLLER COMPLETE 10” SPINDLE
1	4501090	1	SINGLE STAND 10” SPINDLE
2	2900055	1	SEAL
3	2900018	1	INNER CONE
4	2900004	1	INNER CUP
5	2900061	1	OUTER CONE
6	5000094	1	5/8” WASHER\SPINDLE
7	4900112	1	NUT\SLOT\5/8\NF
8	2900064	1	DUST CAP
9	4500088	1	PRESSURE DRUM
10	2900056	1	OUTER CUP
11	NA	1	ORDER 2900057
12	3000025	1	PRESSURE ROLLER SPINDLE 10”
14	4800172	1	1/8” X 2” COTTER PIN
15	2900010	5	1/2” NF X 1-1/4” WHEEL STUD BOLT
16	4900094	5	1/2” NF WHEEL BOLT 13/16” O.D.
17	5000004	5	WASH\FLAT\1/2
	2900057		**HUB\5-BOLT\(985)\COMPLETE, W/BEARINGS,SEAL & DUST CAP includes items 2,3,4,5,8,10,11,15,16**

ITEM	PART	QTY.	PART DESCRIPTION
1	1200013	1	ROLLER\TUB\1-1/2\W/O;FLANGE
2	2000078	2	BRG\CYL\1-1/2\SET;SCREW
3	4702007	1	BEARING\PB\ROLLER\TUB\ASSY W/BEARINGS



MODEL BA - one spool

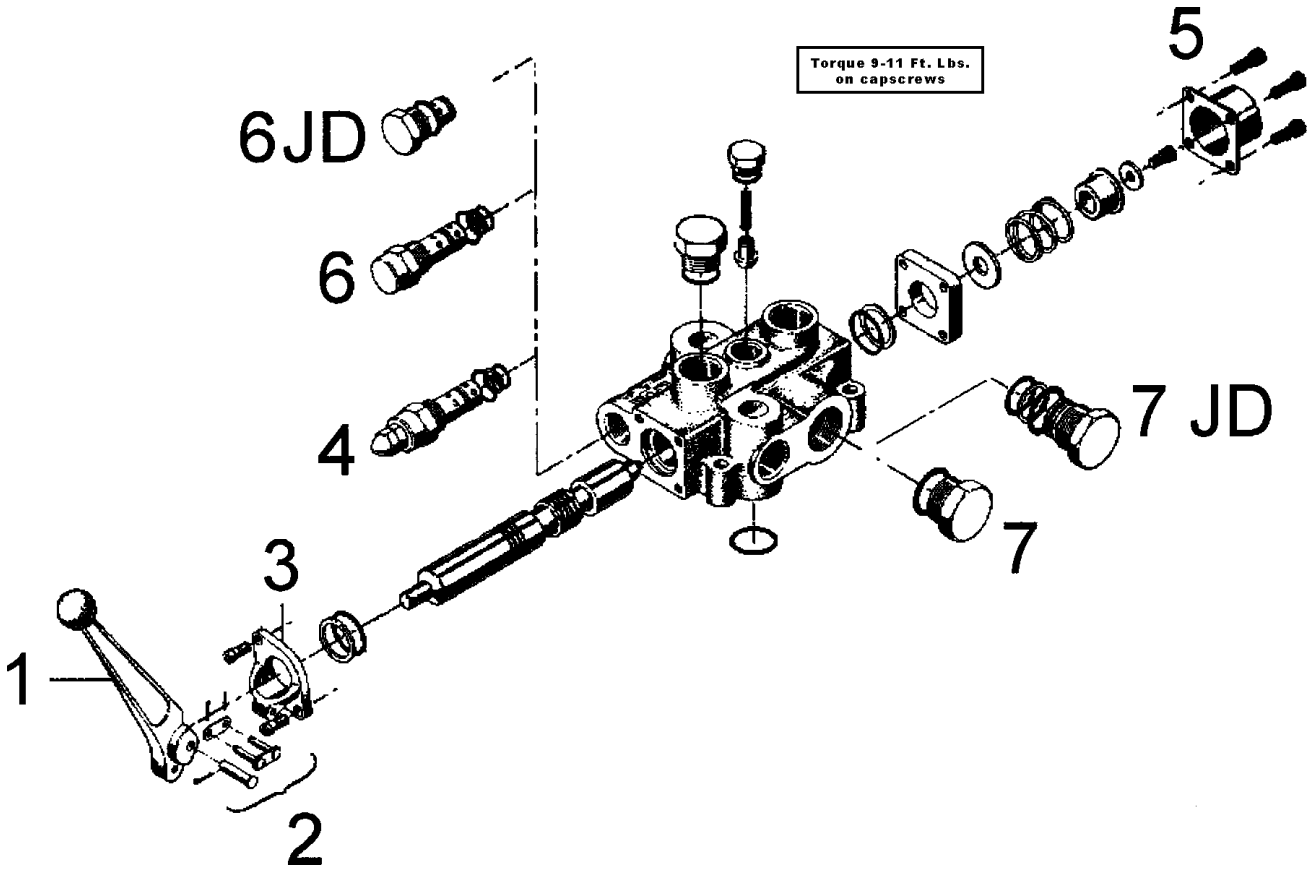


ITEM	PART	PART DESCRIPTION
1	4000001	HANDLE/HYD/VALVE BANK
2	4000002	CONNECTOR LINK W/PIN
3	4000004	BRKT/HYD/VALVE BANK
4	4000006	VALVE\ADJ\RELIEF
5	4000025	DETENT SLEEVE-HYD VALVE
6	4000026	DETENT RETAINER (SCREW)
7	4000027	DETENT SPRING-HYD VALVE
8	4000028	BALL 1/4"STEEL-HYD VALVE
9	4000029	(END CAP -HYD VALVE VALVE)
10	4000065	NON ADJ.VALVE 1R003710180

Not Shown

4000021	DETENT SCREW ASSEMBLY FOR B&C VALVES
7501013	SEAL KIT
4000095	VALVE\HYD\1-SPL\W/DETENT

MODEL BA - one spool

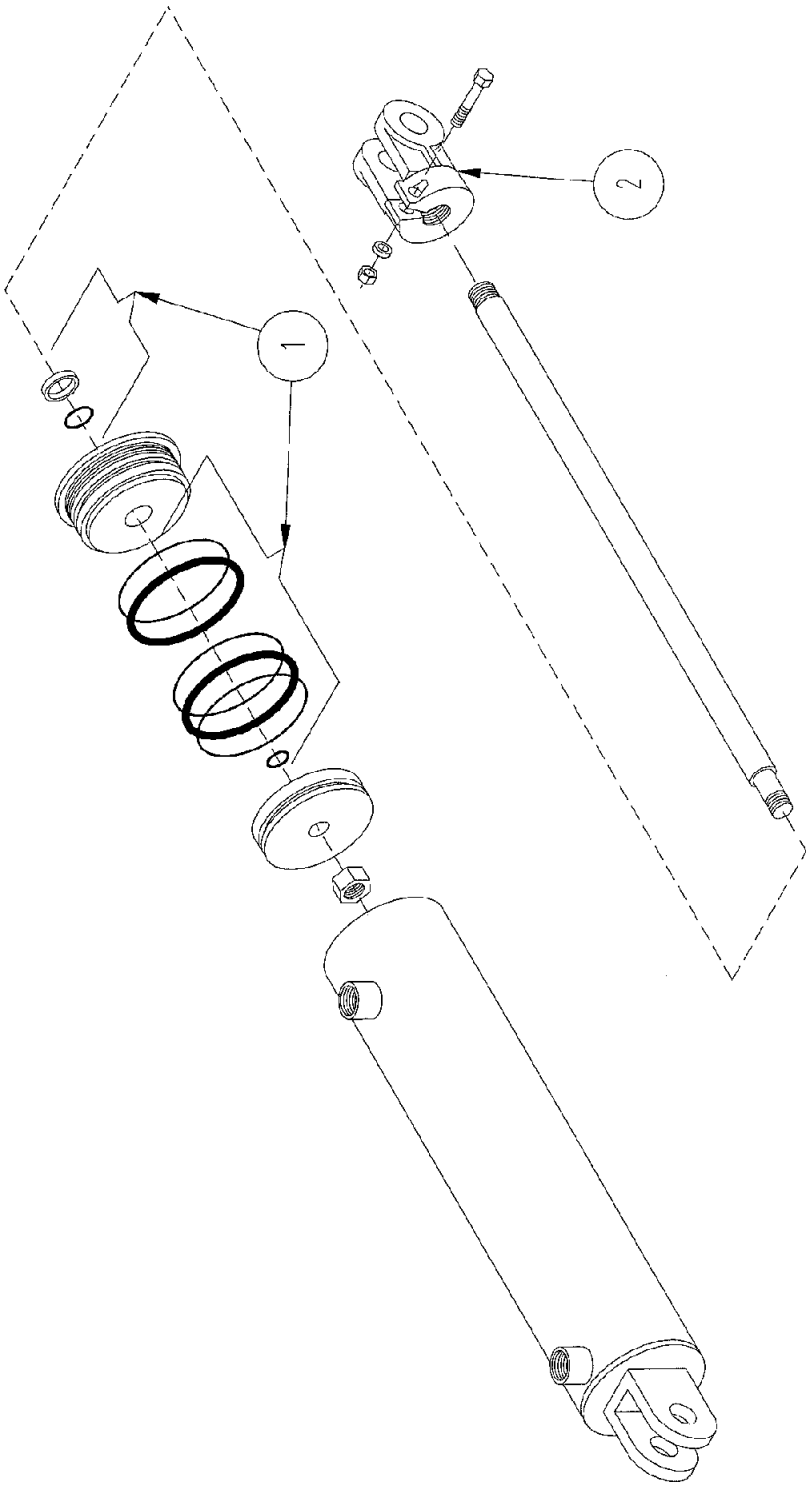


ITEM	PART	PART DESCRIPTION
1	4000001	HANDLE/HYD/VALVE BANK
2	4000002	CONNECTOR LINK W/PIN
3	4000004	BRKT/HYD/VALVE BANK
4	4000006	VALVE\ADJ\RELIEF
5	4000029	(END CAP -HYD VALVE VALVE)
	4000106	VALVE\KIT\SPRING\CENTER
	7501013	SEAL KIT
OLD STYLE VALVE		
6	4000065	NON ADJ.VALVE 1R003710180
7	NA	NO HOLE DRILLED IN VALVE BODY
NEW STYLE VALVE		
6	4000065	NON ADJ.VALVE 1R003710180
6JD	4000192	PLUG\NO-RELIEF\CR 1R0035
7	4000007	OPEN CENTER PLUG-HYD. VALVE
7JD	4000008	CLOSED CENTER PLUG-HYD. VALVE

NOTE: 4000008 AND 4000192 TO BE USED WITH SERIES 60 AND OLDER JOHN DEERE TRACTORS.

OLDER MACHINES MUST HAVE VALVE REPLACED WITH ONE THAT HAS HOLE DRILLED FOR ITEM 7.


HAYBUSTER®
A Tradition of Innovation Since 1966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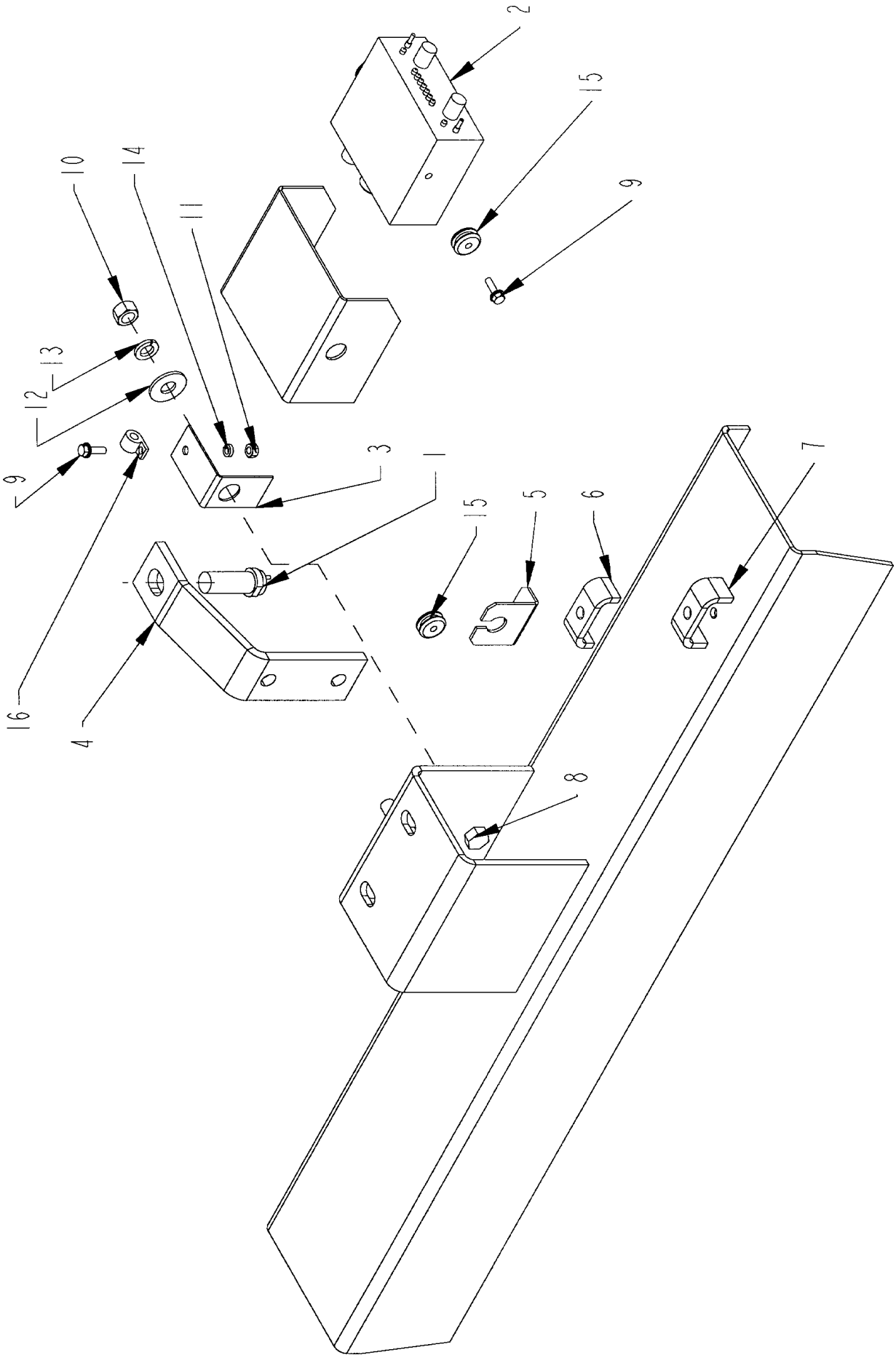
ITEM	PART NO	QTY.	PART DESCRIPTION
	4100077	1	CYL\HYD\3-1/2X12\PARAL\CLEV\1/2NPTF
1	4100105	1	SEAL KIT 3.50 RAM CYL.
2	4100132	1	YOKE

ITEM	PART NO	QTY.	PART DESCRIPTION
	4100191	1	CYL\HYD\3X24\1-1/2ROD\PARAL\3/4FOR
1	4100103	1	3" SEAL KIT 1 1/2" ROD

ITEM	PART NO	QTY.	PART DESCRIPTION
	4100265	1	CYL\HYD\3-1/2X12\1-1/2ROD

ITEM	PART NO	QTY.	PART DESCRIPTION
	4100266	1	CYL\HYD\3X24\1-1/2ROD\>
1	4100227	1	SEAL\KIT\3X24\1-1/2RD\CTD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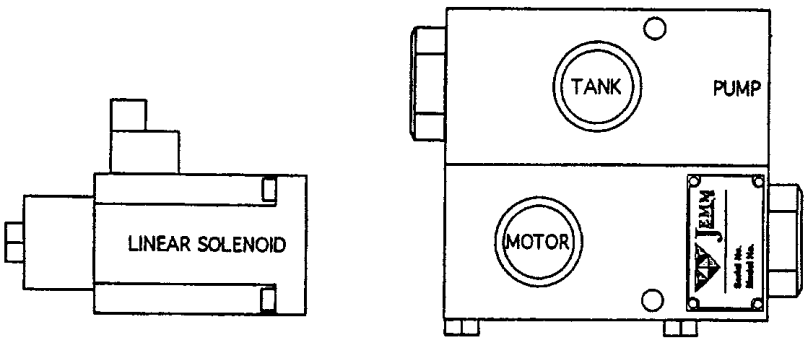
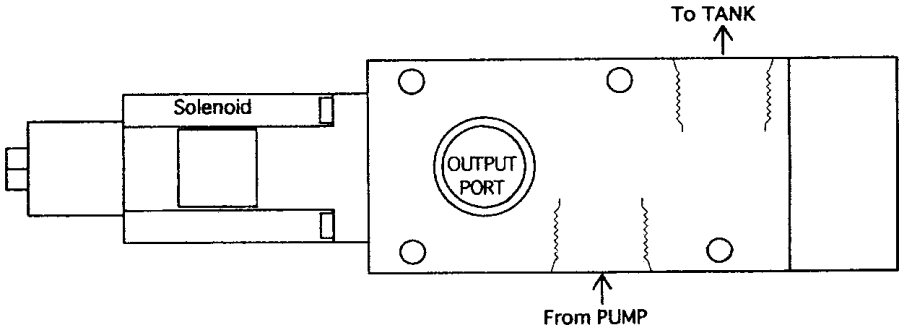
ITEM	PART	QTY.	PART DESCRIPTION
1	4300009	1	SENSOR\MAG\W/HARDWARE
2	4300034	1	CONTROL BOX
2a	4300062	1	CNTRL\GOV\ELEC\MTR\ELEC\
3	4500205	1	BRKT\WIRE\SNSR
4	4501132	1	BRKT\SNSR\GOVERNOR\H1100
5	4501133	1	BRKT\WIRE\BATTERY
6	4700776	1	CLMP\HOSE\3/8
7	4700777	1	CLMP\HOSE\1/2
8	4800082	2	BOLT\HEX\1/2X1-1/2
9	4800301	3	SCR\FLNG\SERR\1/4X3/4
10	4900001	2	NUT\HEX\1/2\NC
11	4900009	1	NUT\HEX\1/4\NC
12	5000004	1	WASH\FLAT\1/2
13	5000006	2	WASH\LOCK\1/2
14	5000024	1	WASH\LOCK\1/4
15	7500124	3	GROMMET\RUBBER\1"ODX9/32"ID
16	7500219	1	WIRE CLIP
Not Shown			
	4300066	1	HARNESS\WIRE\CA998\H1100
	4300038		REBUILT CONTROL BOX

CV93



Valve 4300030

CV98

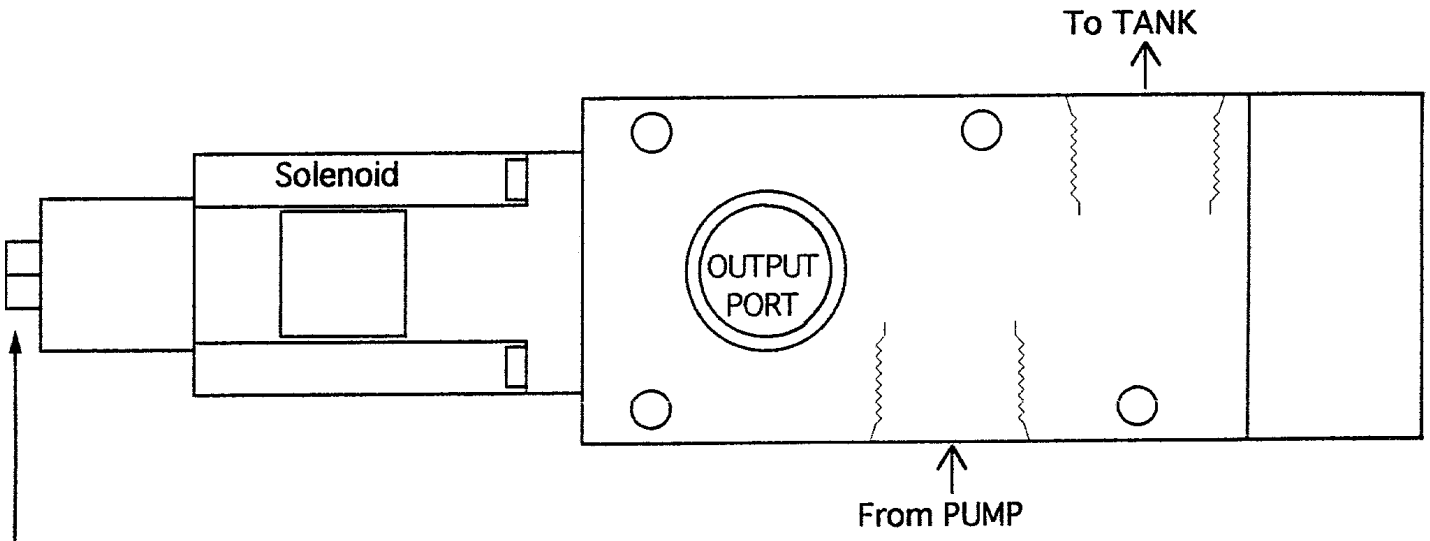


Valve 4300065

PART	QTY.	PART DESCRIPTION
		CV93
4300030	1	HYD. ELECTRIC SOLENOID VALVE 12V 20GPM
		NA - Order 4300065
		CV98
4300065		VALVE\SERVO\15GPM\12VDC
4300010		SOLENOID\HYD VALVE\12V, SEE NOTES BELOW
4800648		SCR\CAP\ALN\10-24 X 1
4800650		SCR\CAP\ALN\10-24 X 2-1/2

NOTE: THE DIFFERENCE BETWEEN THE 12 VOLT AND 24 VOLT SOLENOID IS LISTED ON THE SERIAL NUMBER PLATES. THE SOLENOIDS ARE ELWOOD 160261--xx6 or 160261-xx9. THE 6 IS A 12 VOLT SOLENOID, THE 9 IS A 24 VOLT SOLENOID. ALSO, 12 OR 24 ARE STAMPED ON THE NEWEST SERIAL NUMBER PLATES. 12 VOLT SOLENOID RESISTANCE IS 8 TO 12 OHMS, 24 VOLT RESISTANCE IS 38-44 OHMS

NOTE: 15 GPM IS STANDARD FLOW RATE. ANY VALVES THAT ARE NOT 15 GPM ARE TO BE STAMPED IN METAL OF THE VALVE CASING NEXT TO THE SERIAL NUMBER INDICATING THE FLOW RATE, E.G. 25 INDICATES 25 GPM.

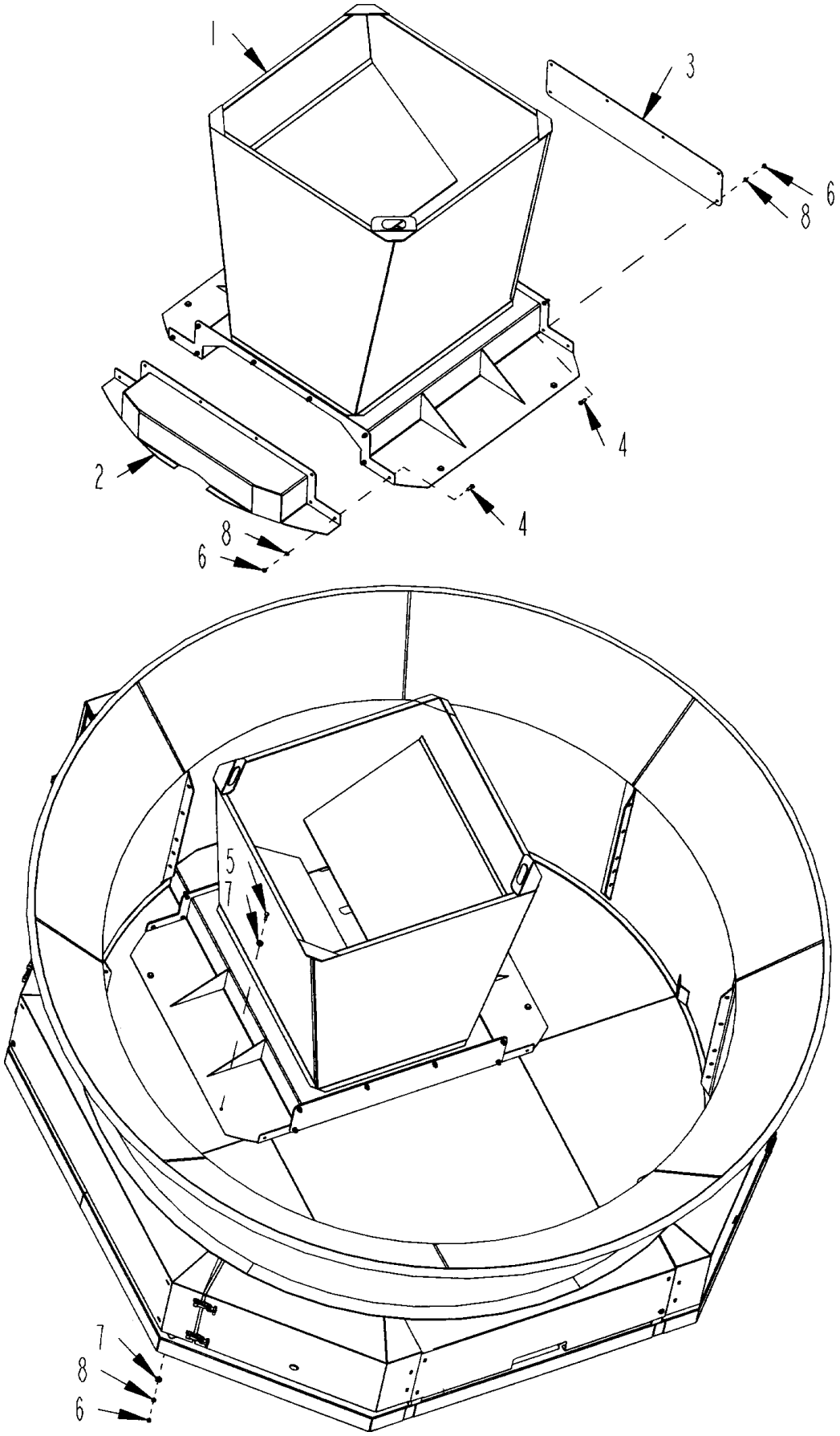


Starting Point/Manual Override Adjustment

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

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

For manual operation when electrical control fails, turn the adjusting screw clockwise until the desired constant flow is obtain.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ITEM	PART	QTY.	PART DESCRIPTION
	4501347		HPPR\GRAIN\ASSY\COMPLETE
1	4501335	1	HPPR\GRAIN
2	4501340	1	CVR\RTR\HPPR\GRAIN
3	4501341	1	CVR\END\HPPR\GRAIN
4	4800003	14	BOLT\HEX\3/8X1
5	4800034	4	BOLT\HEX\3/8X1-1/2
6	4900002	18	NUT\HEX\3/8\NC
7	5000001	8	WASH\FLAT\3/8
8	5000019	18	WASH\LOCK\3/8

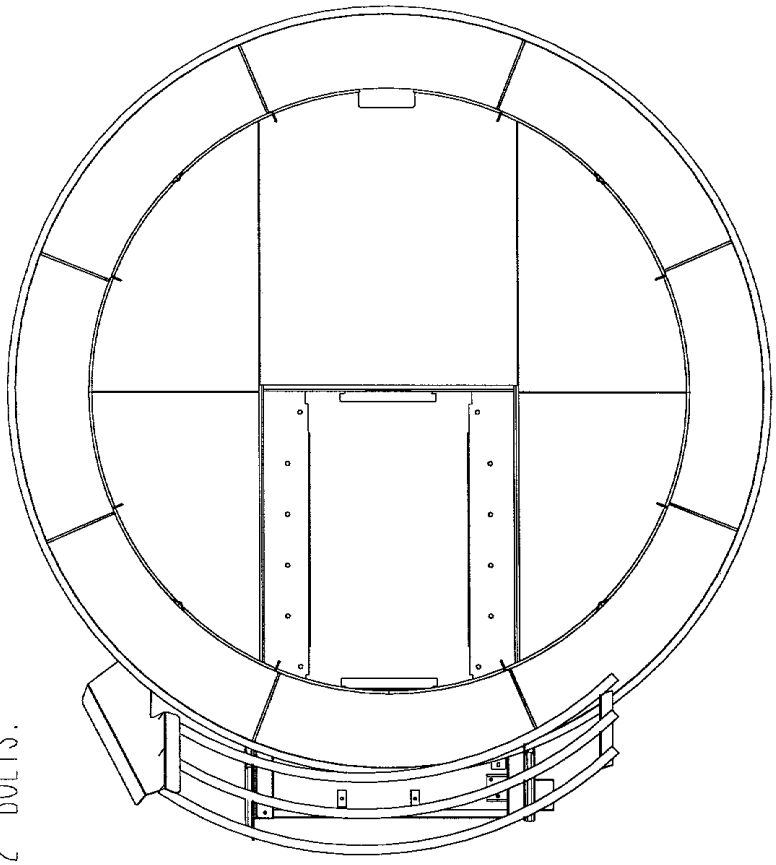
Grain Hopper Option Installation:

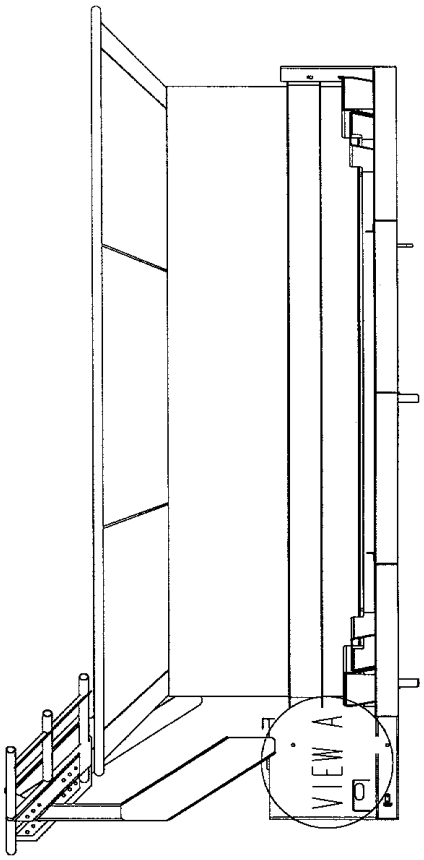
1. Orient tub so that two interior tub angles are centered in front of cylinder box.
2. Bolt front(Item 2) and rear(Item 3) covers to grain hopper with hardware. Check to see that hopper baffle orientation is correct.
3. Place rounded end of hopper tight against the tub seal ring.
4. Check to see the hopper is centered side to side over rotor.
5. Drill four 7/16" holes through tub floor using hopper as guide.
6. Secure hopper to the floor with provided 3/8" hardware.

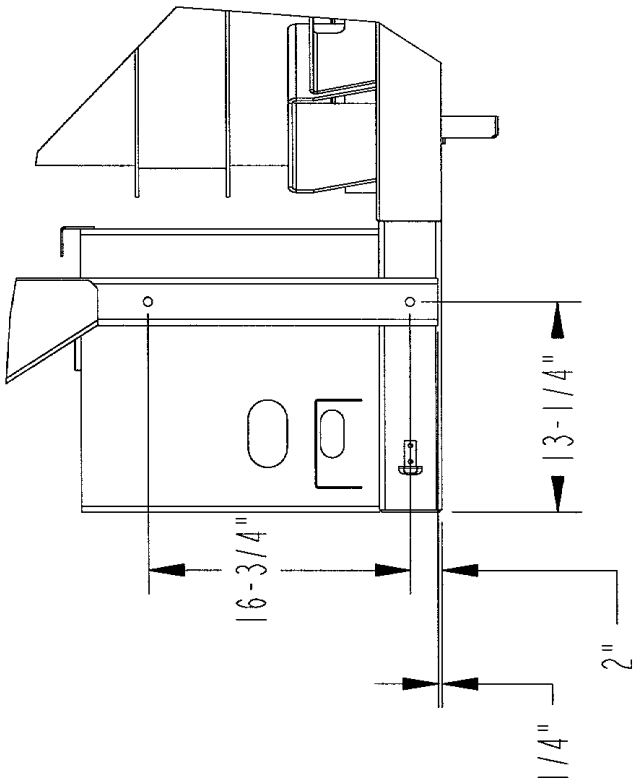
IMPORTANT! DO NOT ROTATE TUB WITH HOPPER INSTALLED

HAY GUIDE OPTION INSTALLATION INSTRUCTIONS

1. CENTER PUNCH AND DRILL 9/16" HOLES AS SHOWN IN VIEW A.
2. MOUNT LH AND RH UPRIGHT HAY GUIDE FRAME BRACKETS USING 1/2" BOLTS.
3. SECURE HAY GUIDE FRAME TO BRACKETS USING 1/2" BOLTS.

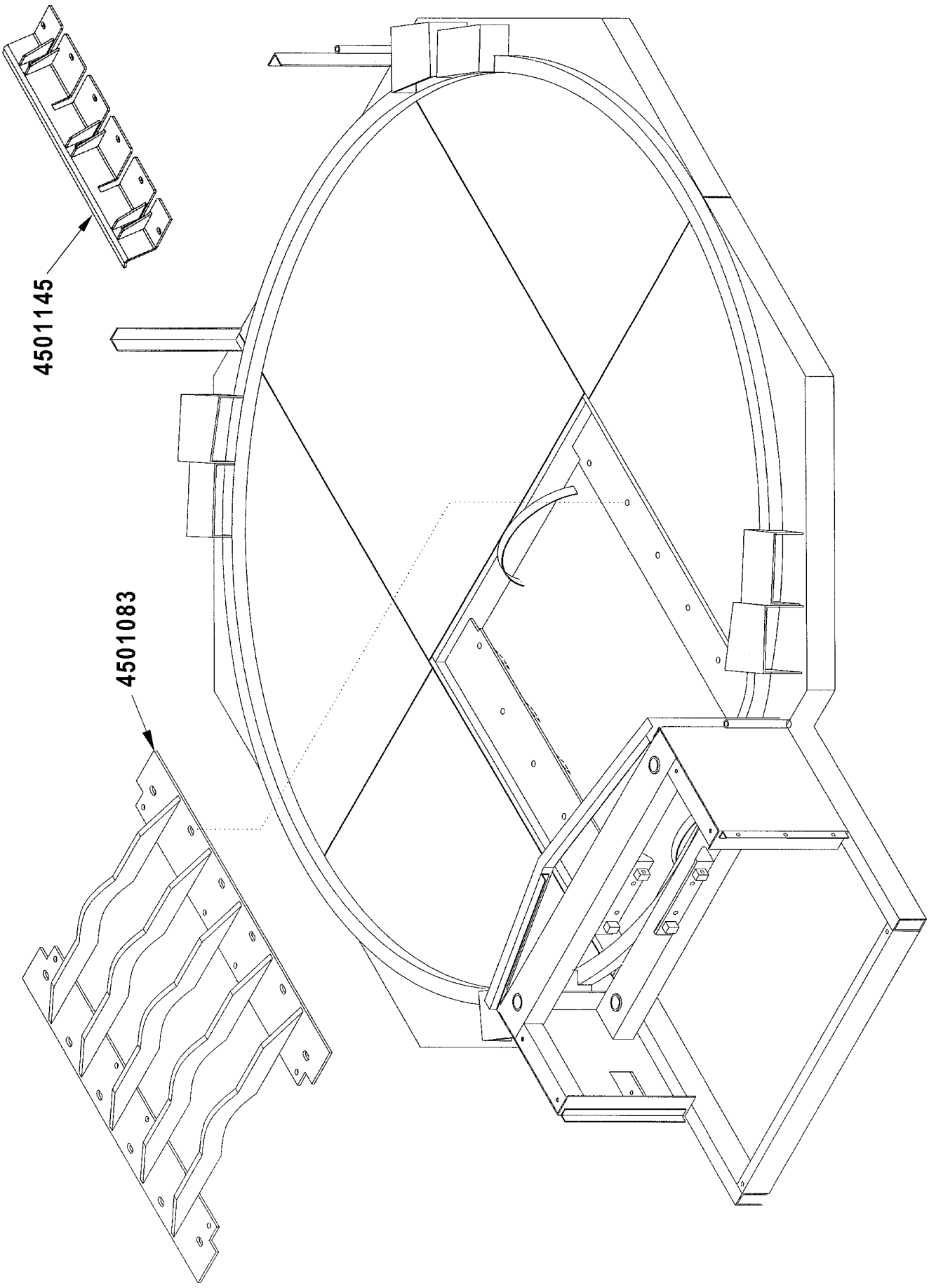




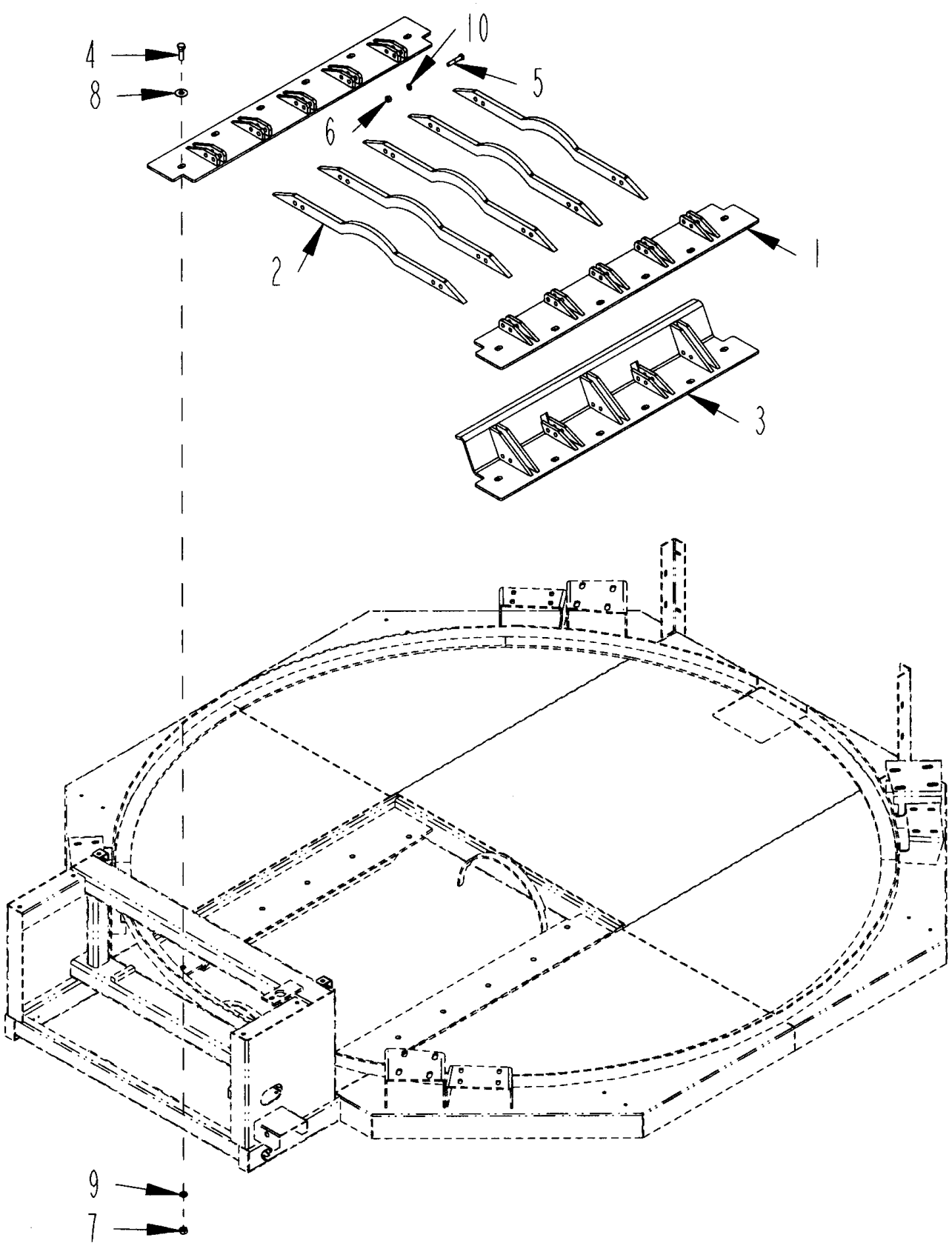


VIEW A

PART	QTY.	PART DESCRIPTION
4501144		**GUIDE\HAY\LOOSE\H1100TILT**
4501218	1	BRKT\GUIDE\HAY\RH
4501219	1	BRKT\GUIDE\HAY\LH
4501220	1	FRM\GUIDE\HAY\H1100TILT
4800070	6	BOLT\HEX\1/2X2-1/2
4800141	2	BOLT\HEX\1/2X4-1/2
4900001	8	NUT\HEX\1/2\NC
5000004	12	WASH\FLAT\1/2
5000006	8	WASH\LOCK\1/2


4501145
4501083

PART	QTY.	PART DESCRIPTION
4501083	1	GRATE\MILL\H1100E&TILT
4703718		GRATE\MILL\LOWERED\H1150
4501145	1	PL\GEYSER\SLOTTED\H1100TILT fits over mill grate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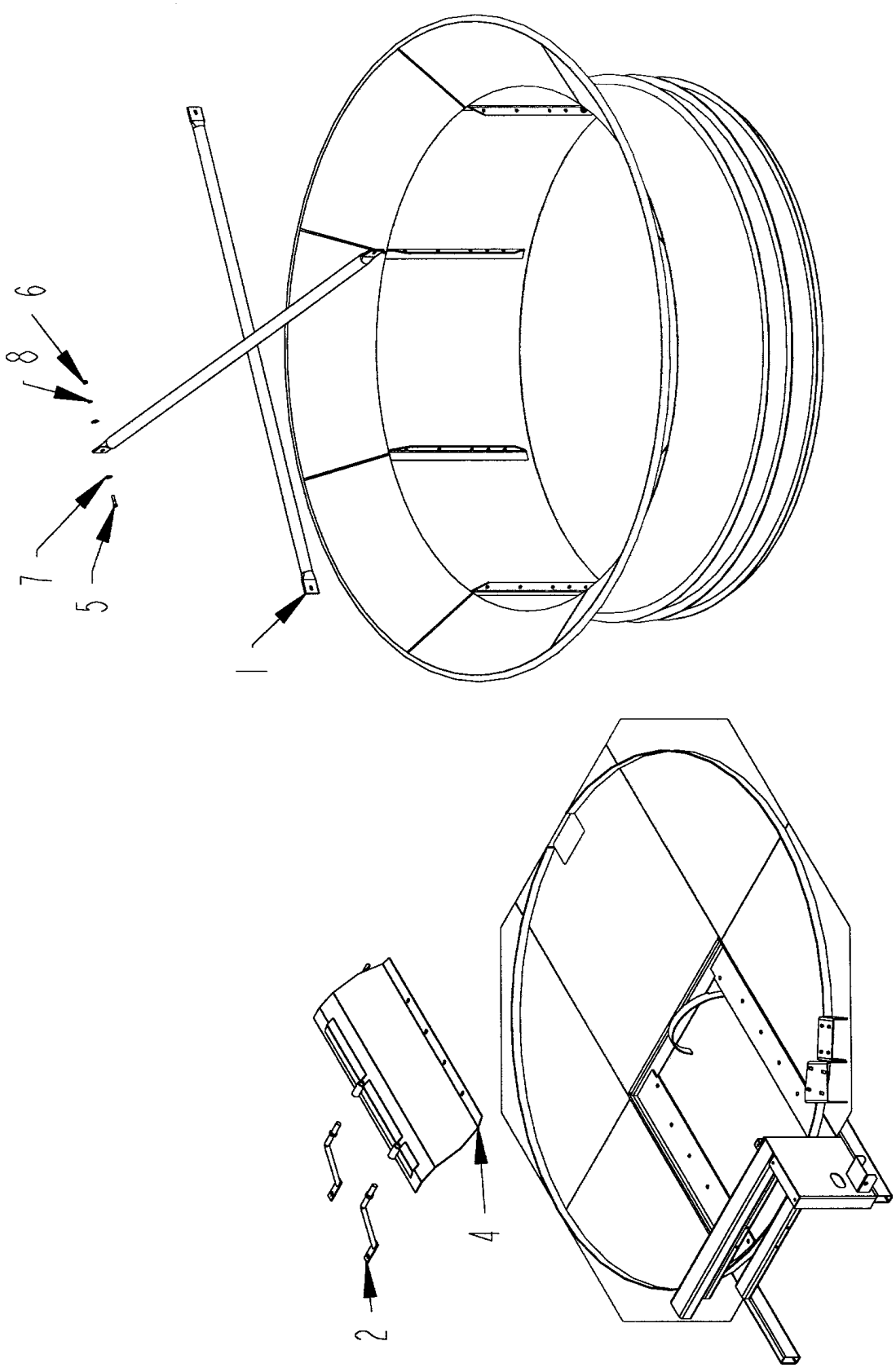
ITEM	PART	QTY.	PART DESCRIPTION
	4501843		GRATE\MILL\BOLTED\ASSY (Includes items 1, 2, 5, 6, 10)
1	4501844	2	PL\SIDE\GRATE\MILL
2	4501845	5	BAR\GRATE\MILL
3	4501847	1	PL\GEYSER
4	4800010	12	BOLT\HEX\5/8X2
5	4800070	20	BOLT\HEX\1/2X2-1/2
6	4900001	20	NUT\HEX\1/2\NC
7	4900005	12	NUT\HEX\5/8\NC
8	5000002	12	WASH\FLAT\5/8
9	5000003	12	WASH\LOCK\5/8
10	5000006	20	WASH\LOCK\1/2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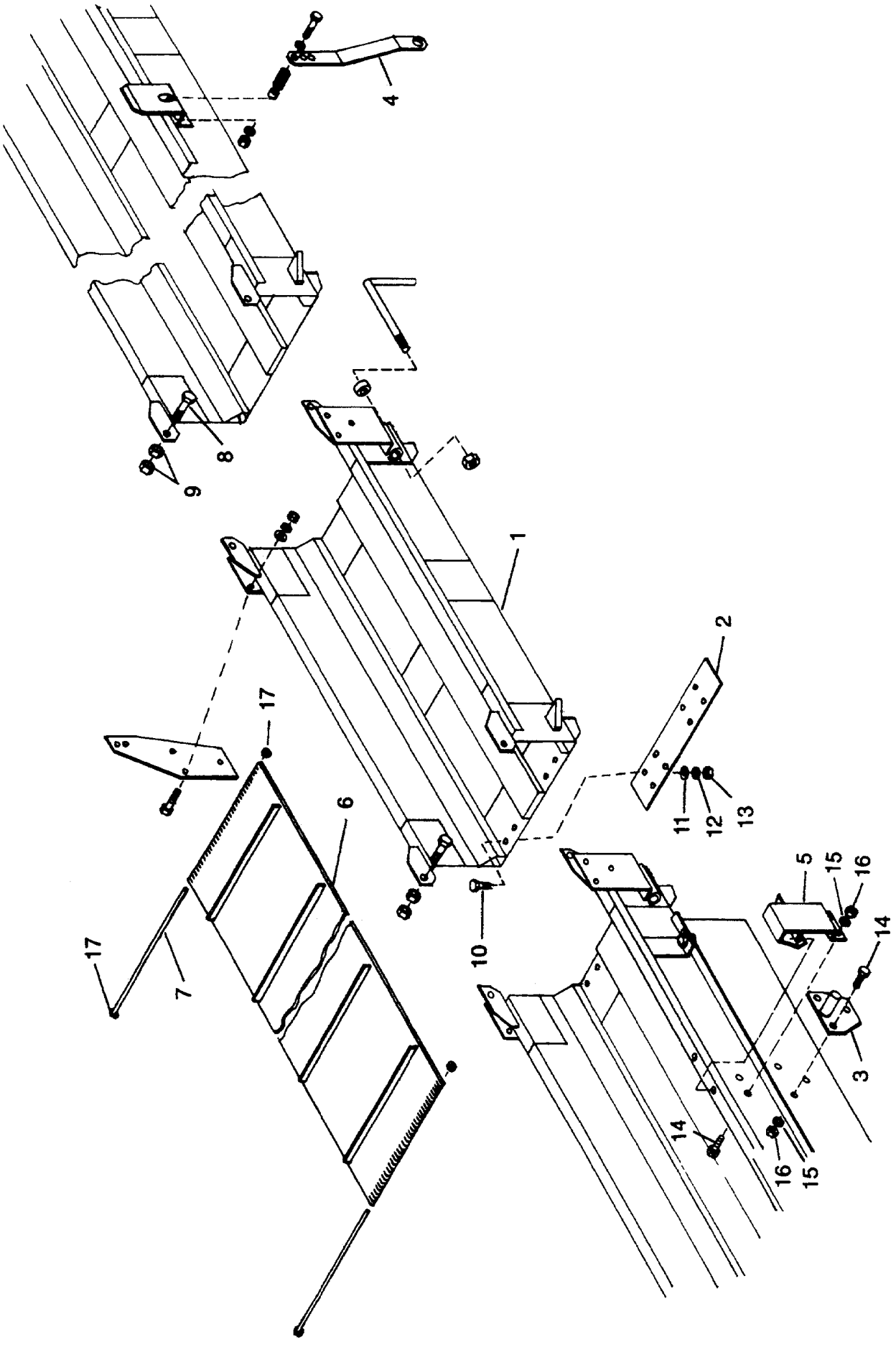
ITEM	PART	QTY.	PART DESCRIPTION
	4501234		KIT\CORN\EAR\H1100TILT
1	4500128	2	PIPE\CROSS
2	4500751	2	BRKT\COVER\ROTOR\EARCORN
3	4501236	1	CVR\RTR\EARCORN\H1100TILT
4	4800114	4	BOLT\HEX\1/2X2
5	4900001	4	NUT\HEX\1/2\NC
6	5000004	8	WASH\FLAT\1/2
7	5000006	4	WASH\LOCK\1/2

The Ear Corn Attachment is designed specifically for grinding ear corn.
It should not be used when grinding hay, other bulk materials or small grains.
This attachment fits directly over the rotor and bolts to the tub platform.
Agitator bars inside the tub move ear corn to the rotor.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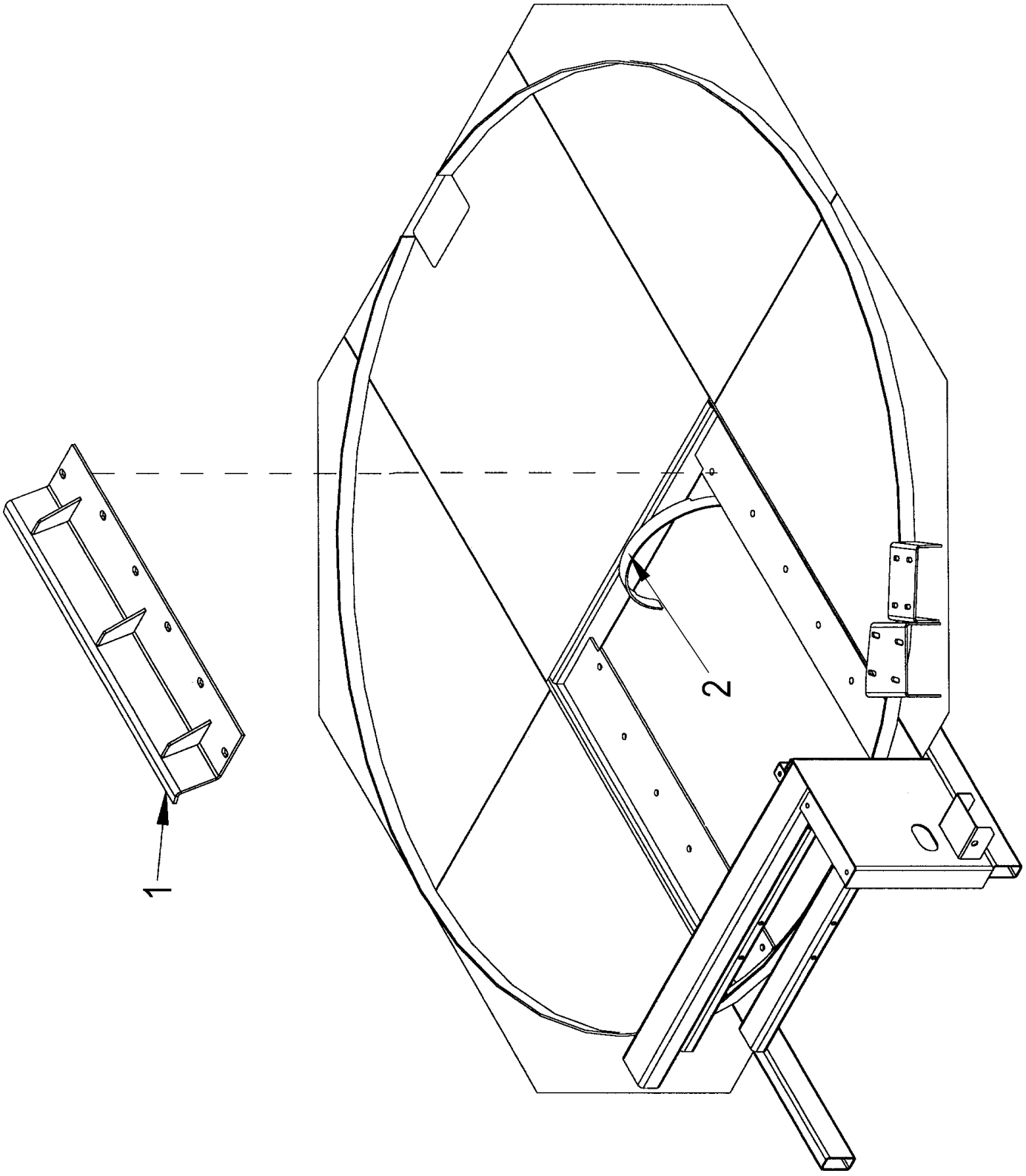
ITEM	PART	QTY.	PART DESCRIPTION
	4500603		**TUB\CNVYR EXT\KIT H1100**
1	4500396	1	4' CONVEYOR EXTENSION
2	4500397	1	CNVYR CONNECTOR PLATE
3	4500398	2	CNVYR LOCK
4	4500539	2	TRANSPORT LOCK 4 FT EXT
5	4500540	2	CNVYR SUPPORT 4 FT EXT
6	1700039	1	BELT\CNVYR\18"X8FT
7	1700052	2	LCNG\CBL\1/8X18\NYL
8	4800010	2	BOLT\HEX\5/8X2
9	4900005	4	NUT\HEX\5/8\NC
10	4800018	8	BOLT\HEX\1/2X1-1/4
11	5000004	8	WASH\FLAT\1/2
12	5000006	8	WASH\LOCK\1/2
13	4900001	8	NUT\HEX\1/2\NC
14	4800003	14	BOLT\HEX\3/8X1
15	5000019	14	WASH\LOCK\3/8
16	4900002	14	NUT\HEX\3/8\NC
17	4900072	4	NUT\HEX\#10\NC
17	5800317	1	CABLE\1/4\48'

GEYSER PLATE (OPTION)

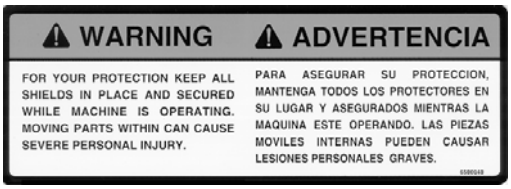


ITEM	PART	QTY.	PART DESCRIPTION
	4501417		**PLATE\GEYSER\ASSY\H1100**
	includes		
1	4501232	1	PLATE\GEYSER\H1100TILT
	4800079	6	BOLT\HEX\5/8X2-1/2
	4900012	6	NUT\TPLCK\5/8\NC
	5000002	12	WASH\FLAT\5/8
	4501145	1	PL\GEYSER\SLOTTED\H1100TILT
			fits over mill grate (See Mill Grate Option)
2	D1002039		GUARD\TWINE\PLFRM

6500020

6500039

6500363



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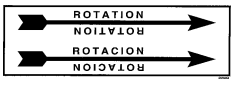
6500052



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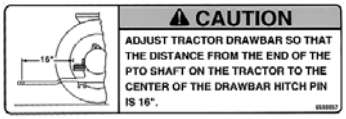

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6500082

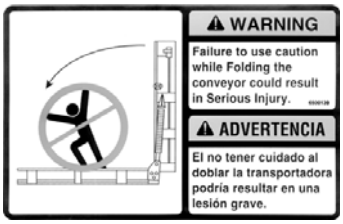
6500096

6500102

6500085

6500112

6500220



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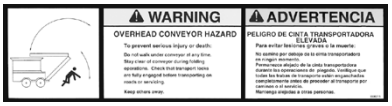
6500284

6500209

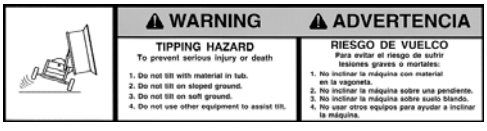
6500214



6500215

5700192

5700193



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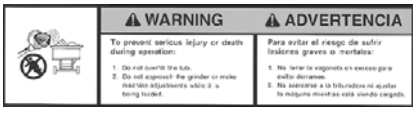
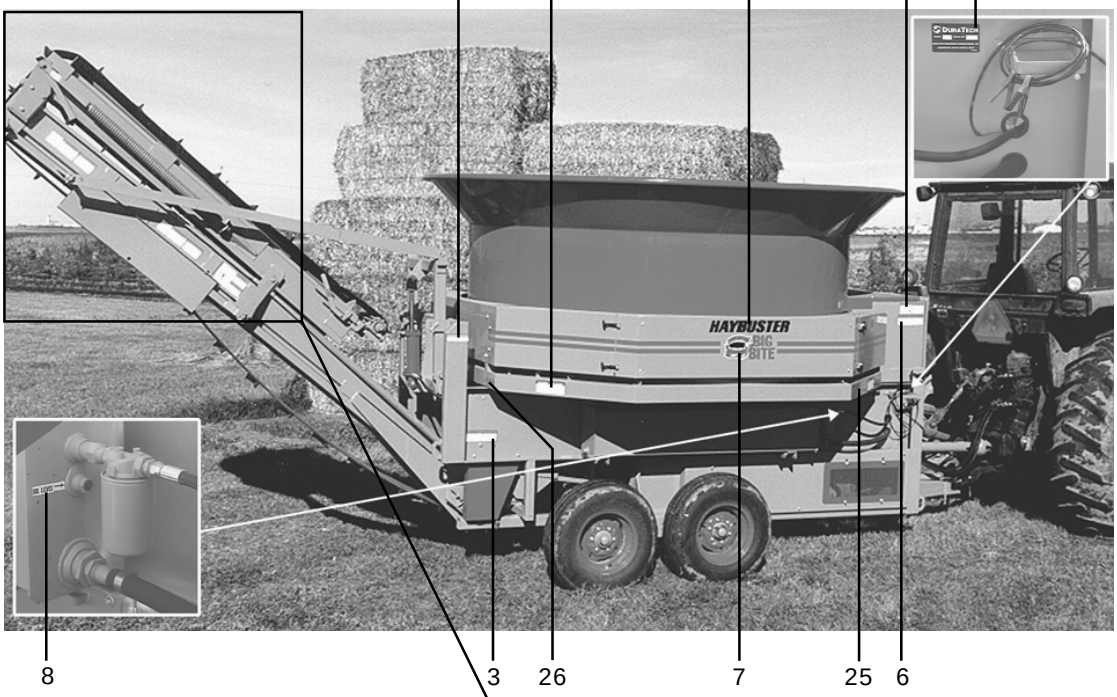


6500283

ITEM	PART	QTY.	PART DESCRIPTION
	6500280		**DECAL\ KIT\ 1100\97**
1	6500020	1	DECAL\LOGO\HYBSTR\SUNBRST
2	6500039	1	DECAL\INFO\S/N\DURATECH
3	6500040	4	DECAL\WARN\SHIELD;PROT
4	6500041	2	DECAL\WARN\PROTECTION
5	6500042	2	DECAL\WARN\KEEP;WHL;BLTS>
6	6500043	2	DECAL\WARN\NO;RIDERS
7	6500363	2	DECAL\LOGO\BIGBITE\UNVRSL
8	6500052	1	DECAL\INFO\OIL;LEVEL
9	6500053	1	DECAL\LOGO\H-1100
10	6500056	1	DECAL\INFO\ROTATION\STR
11	6500057	1	DECAL\CAUT\ADJ.DRAW BAR
12	6500082	4	DECAL\WARN\ROTATN;PART;>
13	6500085	1	DECAL\DNGR\ROTATNG;DR-LNE
14	6500096	2	DECAL\LOGO\HYBSTR\W/O;>
15	6500102	22.1	DECAL\LOGO\STRIPE\RED\FT
16	6500139	2	DECAL\INFO\FOLDING;CNVYR
17	6500220	1	DECAL\WARN\HI;PRESS;FLUID
18	6500282	1	DECAL\WARN\TIPPING;HZRD
19	6500283	1	DECAL\WARN\OVERLOAD;TUB
20	6500284	1	DECAL\LOGO\TILT>
21	6500209	1	THROWN OBJECT
22	6500214	2	DECAL\WARN\OVERHEAD\HZD
23	6500215	2	DECAL\WARN\FOLD\HZD
24	6500112	2	DECAL\INSERT TRANSPORT LOCKS
25	5700192	2	LAMP\RFLCTR\AMB\4-3/8X>
26	5700193	2	LAMP\RFLCTR\RED\4-3/8X>

NOT SHOWN

7500077	12 Oz Yellow Spray Paint
7500092	Quart Yellow Paint
7500091	Gallon Yellow Paint
7500078	12 Oz Red Spray Paint
7500105	Quart Red Paint
7500104	Gallon Red Paint


24
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HAYBUSTER
BIG BITE
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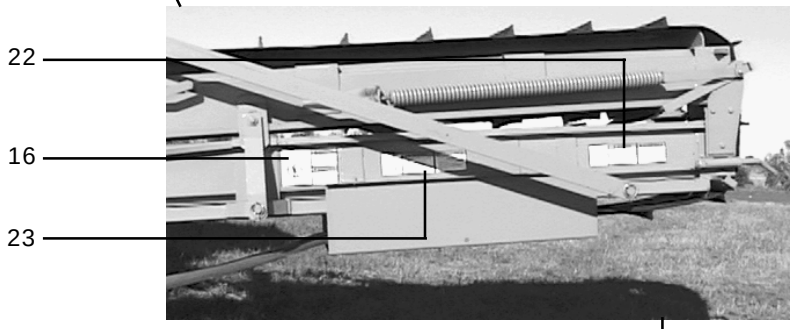
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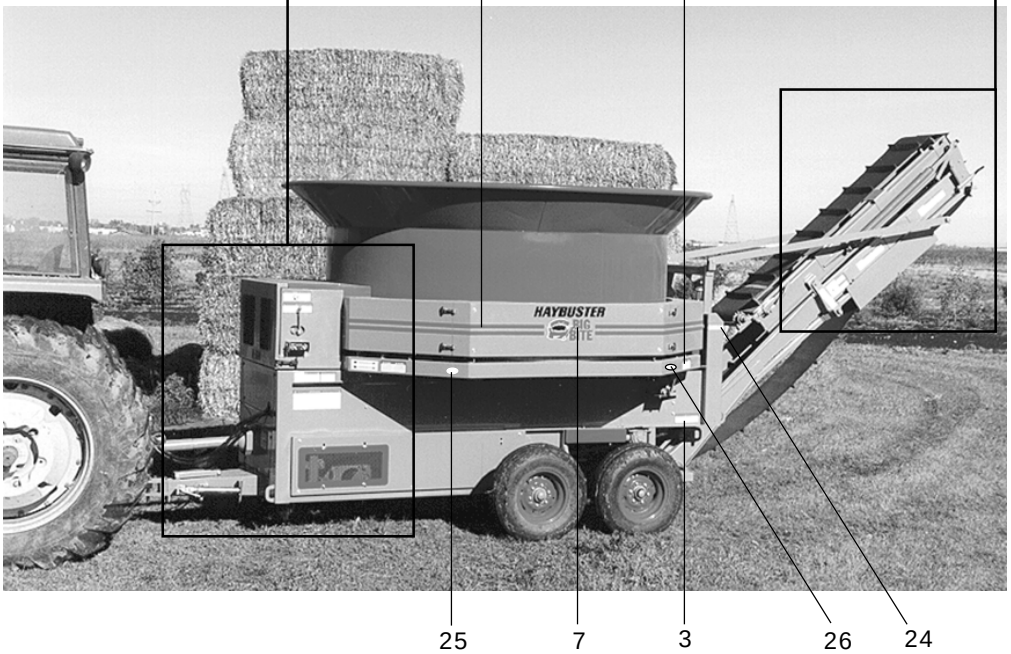
SEE NEXT PAGE
15
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HAYBUSTER
BIG BITE
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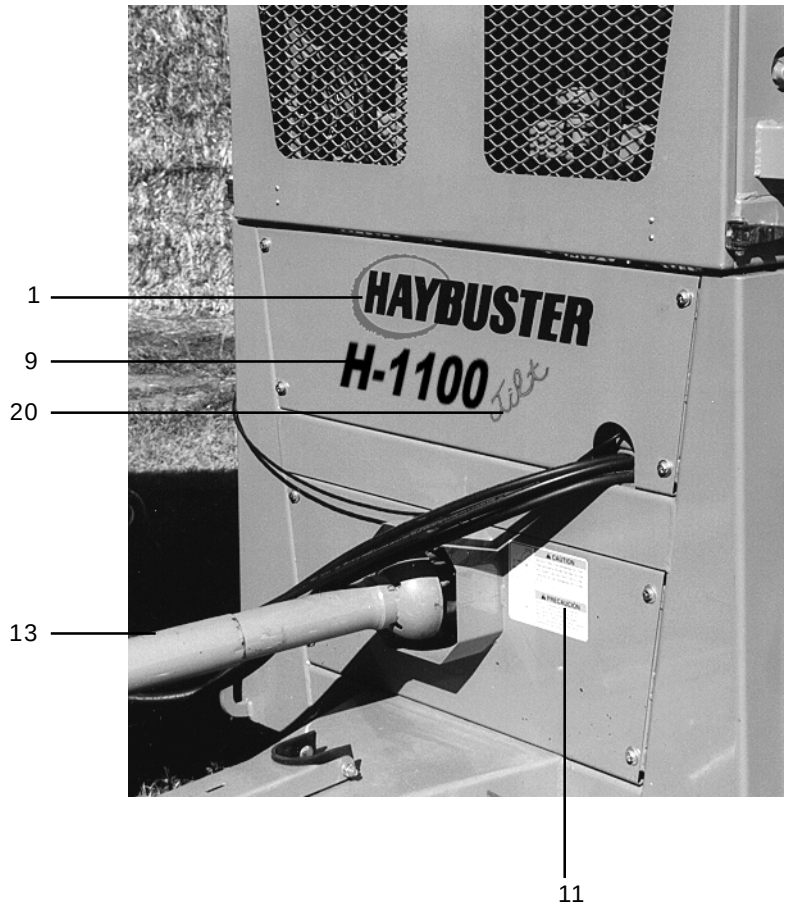
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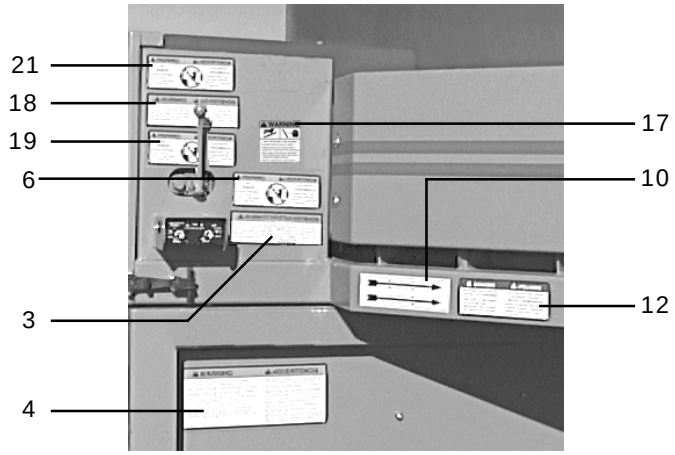
HAYBUSTER
H-1100
Tilt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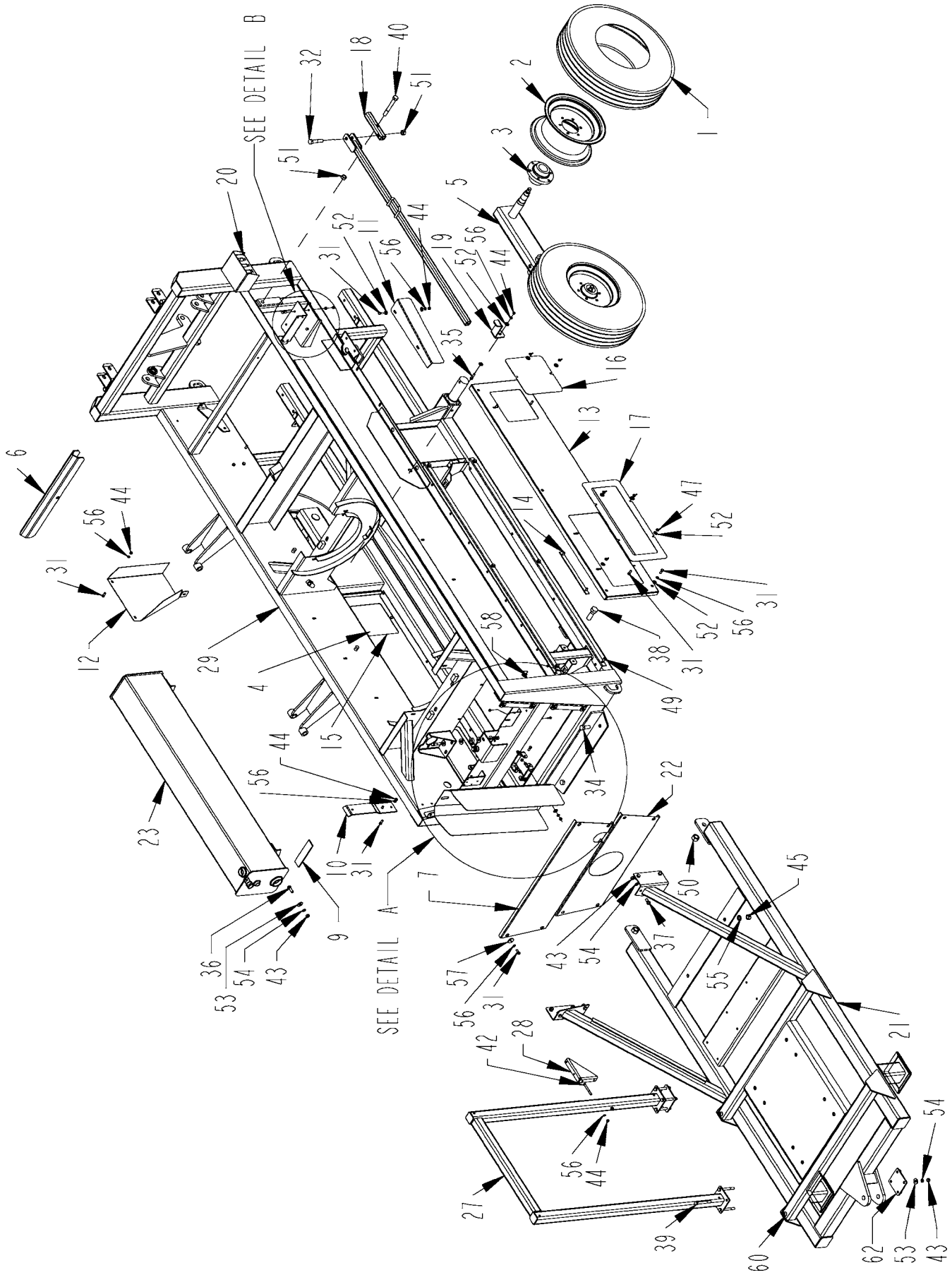
HAYBUSTER®
A Tradition of Innovation Since 1966

H-1100™ Tilt

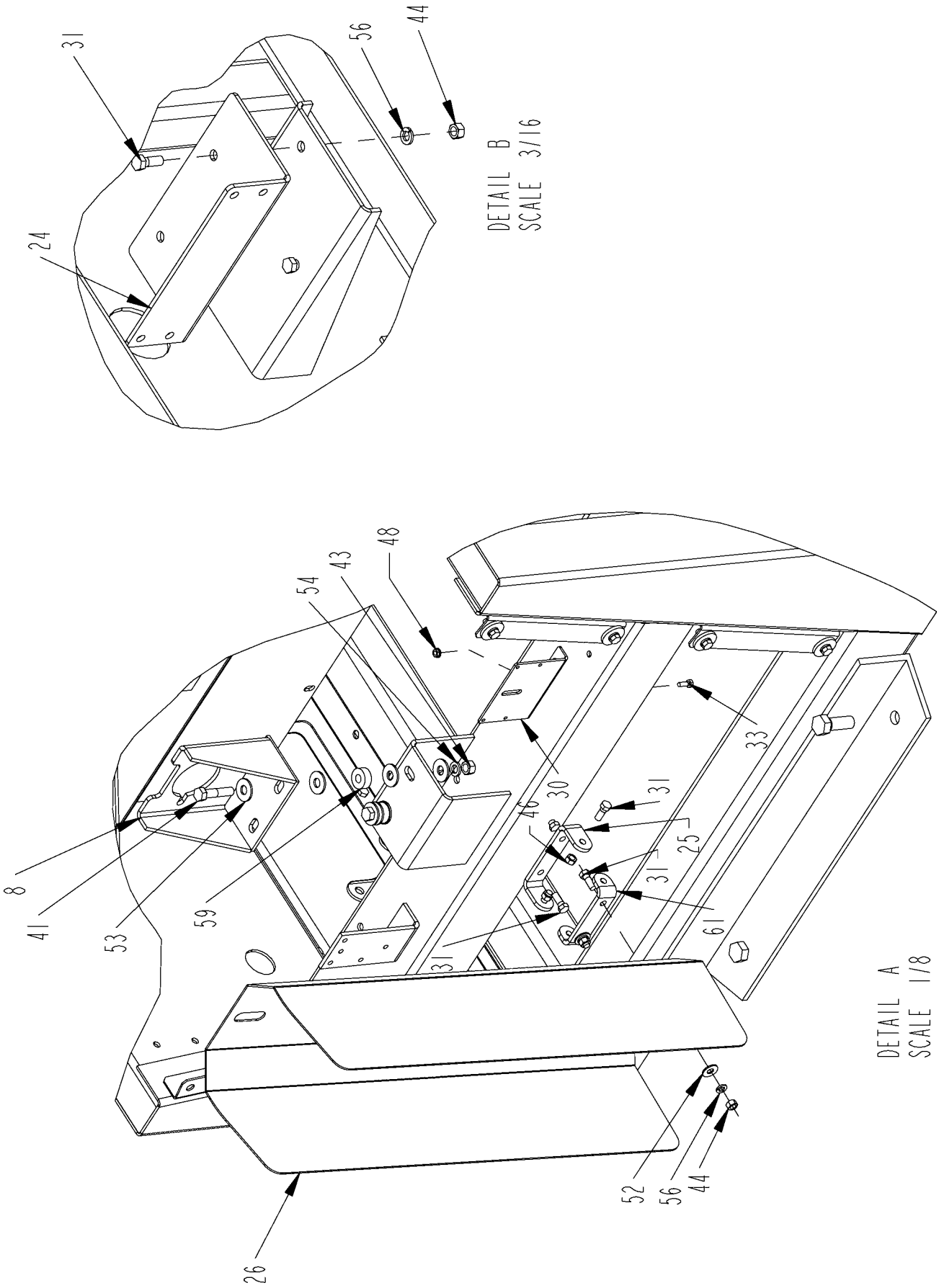
Series II
Serial Number FJ13498 & Up

Stationary Electric Supplement

Parts Reference


SEE DETAIL B
SEE DETAIL A

ITEM	PART	QTY.	PART DESCRIPTION
1	2600009	4	9.5LX15 8 PLY TIRE
2	2600612	4	15 X 8 6 BOLT WHEEL
3	2900069	4	HUB\6BOLT\631\COMP
4	4500140	1	WLKNG BEAM W/SPINDLES RH
5	4500674	1	WLKNG BEAM W/SPINDLES LH
6	4500737	1	STOP\CYL\PLATFORM
7	4501173	1	CVR\DRIVE\TUB\FRNT
8	4501177	1	BRKT\PUMP\HYD
9	4501188	2	BELT\ISLTR\VIB\TANK\OIL
10	4501189	1	BRKT\HOSE\TILT\TUB
11	4501199	1	CVR\SHFT\DRIVE\CNVYR\REAR
12	4501201	1	SHLD\CHAIN\DRIVE\CNVYR
13	4501207	1	CVR\DRIVE\CNVYR\LOWER\LH
14	4501208	2	BRKT\BOLT\COVER\DRIVE\CNVYR
15	4501209	1	COVER\DRIVE\CNVYR\LOWER\RH
16	4501210	2	DOOR\ACCESS\SIDE\REAR
17	4501211	2	DOOR\ACCESS\BRG\DRIVE\FRNT
18	4501280	1	BRKT\ARM\STND\SAFETY\TUB
19	4501281	1	BRKT\REST\STND\SAFETY\TUB
20	4501734	1	SHEET\PANEL\CONTROL\AUX\REAR
21	4502059	1	FRM\MTR\ELEC
22	4502060	1	CVR\DRIVE\BTTM\FRNT
23	4502061	1	TANK\OIL
24	4502062	1	BRKT\VLV\HYD\ELEC
25	4502064	1	BRKT\SHLD\DRV
26	4502066	1	SHLD\DRV
27	4502067	1	FRM\STRTR\BOX
28	4502070	1	BRKT\CONDUIT
29	4502074	1	FRM\GRDR\ELEC\H1100
30	4502077	1	BRKT\BOX\CNTRL\SAFETY\SHUTDN
31	4800003	47	BOLT\HEX\3/8X1
32	4800011	1	BOLT\HEX\3/4X3-1/2
33	4800024	2	BOLT\HEX\1/4X3/4
34	4800033	2	BOLT\HEX\3/4X2
35	4800034	1	BOLT\HEX\3/8X1-1/2
36	4800082	2	BOLT\HEX\1/2X1-1/2
37	4800085	8	BOLT\HEX\1/2X1
38	4800140	2	BOLT\HEX\1X3\NC
39	4800141	8	BOLT\HEX\1/2X4-1/2
40	4800248	1	BOLT\HEX\3/4X6
41	4800251	2	BOLT\HEX\1/2X2-1/4\NC
42	4800515	2	BOLT\HEX\3/8X3-1/4\NC
43	4900001	20	NUT\HEX\1/2\NC
44	4900002	15	NUT\HEX\3/8\NC
45	4900004	2	NUT\HEX\3/4\NC
46	4900023	2	NUT\TPLCK\3/8\NC
47	4900032	12	NUT\WING\3/8\NC
48	4900040	2	NUT\FLG\SERR\1/4\NC
49	4900082	20	NUT\INSERT\3/8\.027X.150GR
50	4900127	2	NUT\TPLCK\1\NC
51	4900139	2	NUT\TPLCK\3/4\GR8\NC
52	5000001	34	WASH\FLAT\3/8
53	5000004	20	WASH\FLAT\1/2
54	5000006	20	WASH\LOCK\1/2
55	5000012	2	WASH\LOCK\3/4
56	5000019	37	WASH\LOCK\3/8
57	5000096	8	WASH\FLAT\SPCL\13/32X7GAX1-1/2OD
58	5700016	1	SWITCH\DISC\BATT\KEYED
59	7500310	2	GROMMET\1-1/4ODX17/32ID
60	7500756	2	BMPR\RBBR\1-1/32X5/8
61	8101076	1	MNT\SHLD\DRV
62	D1024923	2	PL\FRM\BOX\STRTR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DETAIL B
SCALE 3/16
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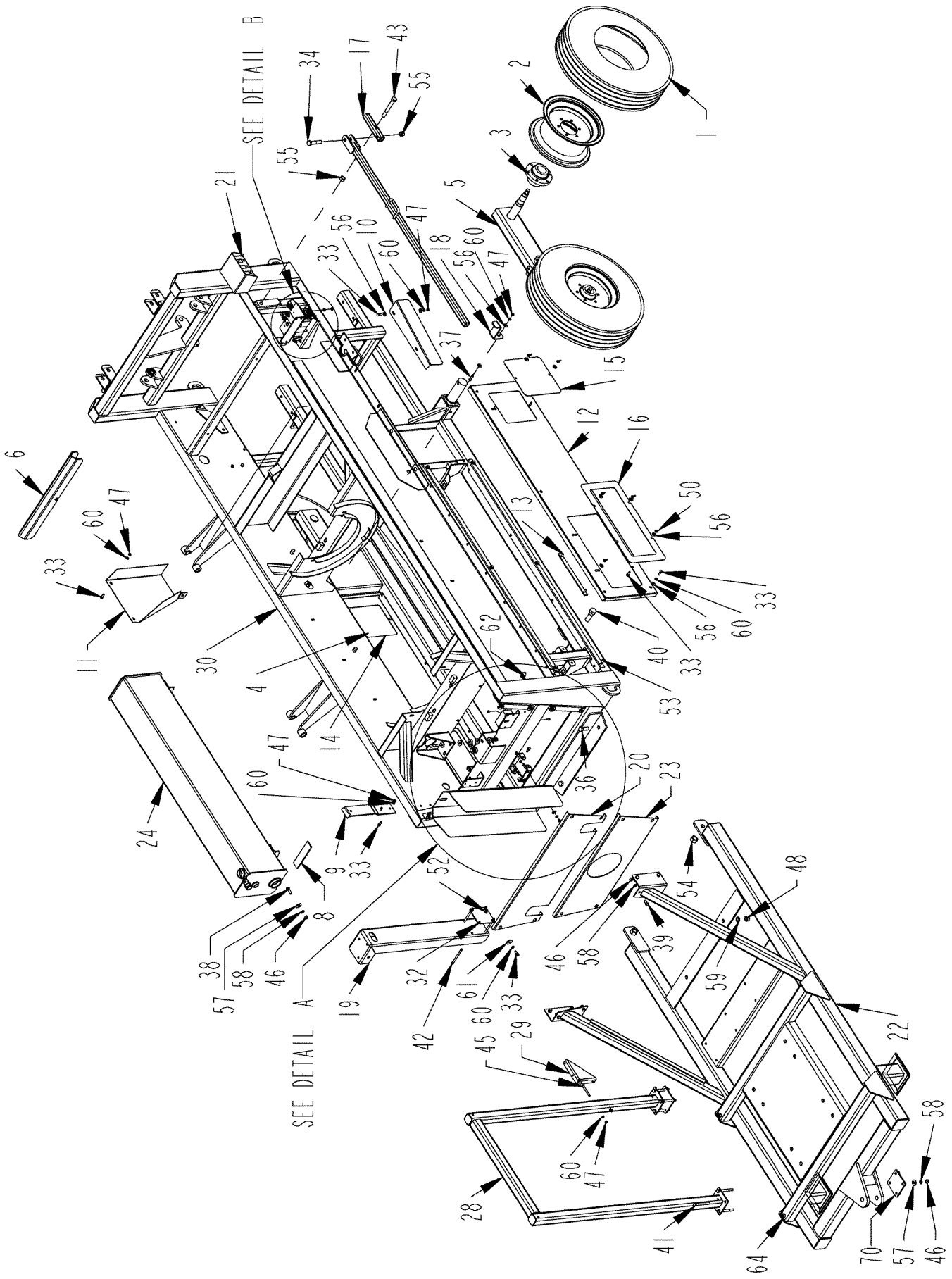
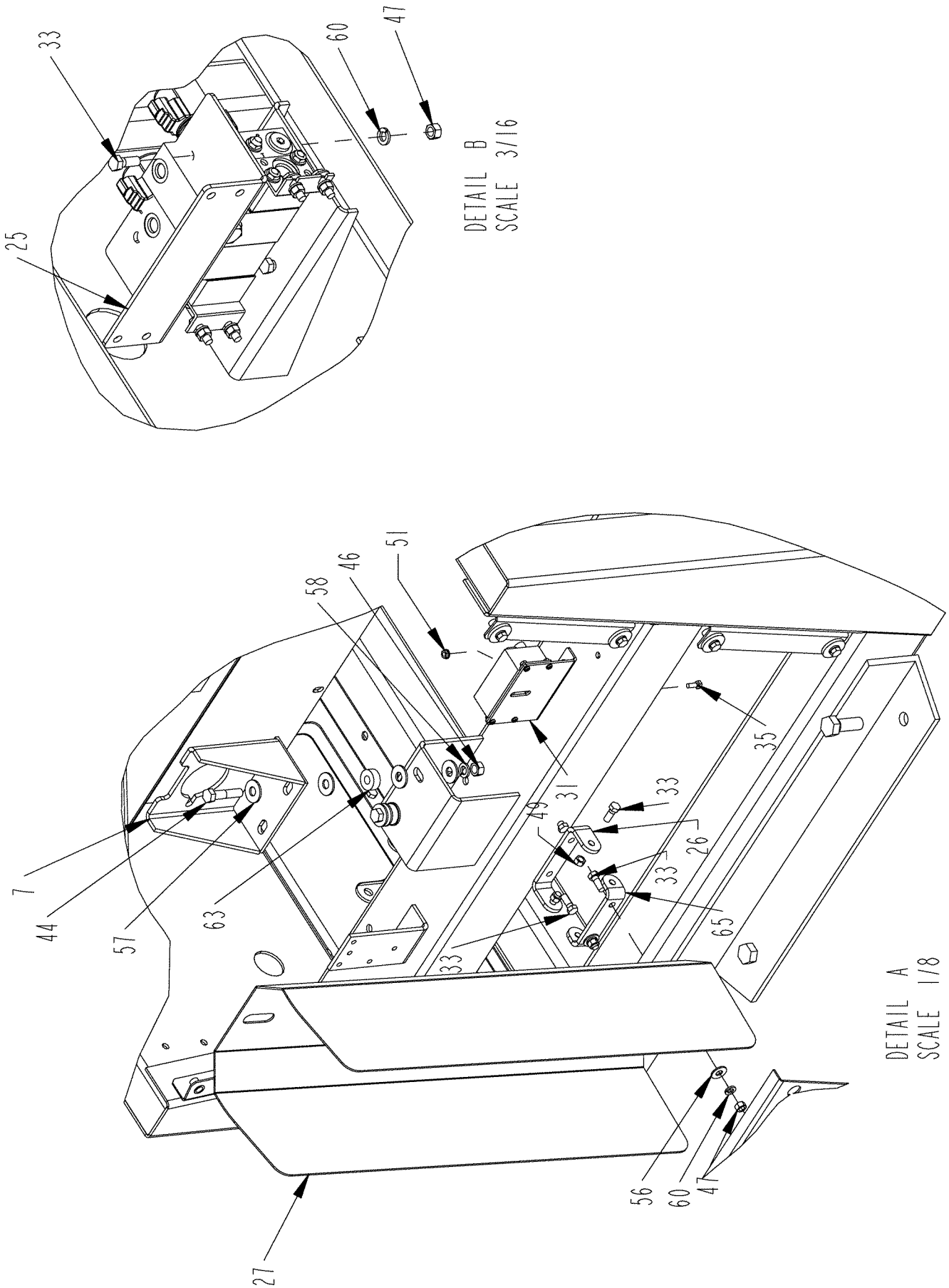
DETAIL A
SCALE 1/8

ITEM	PART	QTY.	PART DESCRIPTION
1	2600009	4	9.5LX15 8 PLY TIRE
2	2600612	4	15 X 8 6 BOLT WHEEL
3	2900069	4	HUB\6BOLT\631\COMP
4	4500140	1	WLKNG BEAM W/SPINDLES RH
5	4500674	1	WLKNG BEAM W/SPINDLES LH
6	4500737	1	STOP\CYL\PLATFORM
7	4501173	1	CVR\DRIVE\TUB\FRNT
8	4501177	1	BRKT\PUMP\HYD
9	4501188	2	BELT\ISLTR\VIB\TANK\OIL
10	4501189	1	BRKT\HOSE\TILT\TUB
11	4501199	1	CVR\SHFT\DRIVE\CNVYR\REAR
12	4501201	1	SHLD\CHAIN\DRIVE\CNVYR
13	4501207	1	CVR\DRIVE\CNVYR\LOWER\LH
14	4501208	2	BRKT\BOLT\COVER\DRIVE\CNVYR
15	4501209	1	COVER\DRIVE\CNVYR\LOWER\RH
16	4501210	2	DOOR\ACCESS\SIDE\REAR
17	4501211	2	DOOR\ACCESS\BRG\DRIVE\FRNT
18	4501280	1	BRKT\ARM\STND\SAFETY\TUB
19	4501281	1	BRKT\REST\STND\SAFETY\TUB
20	4501734	1	SHEET\PANEL\CONTROL\AUX\REAR
21	4502059	1	FRM\MTR\ELEC
22	4502060	1	CVR\DRIVE\BTTM\FRNT
23	4502061	1	TANK\OIL
24	4502062	1	BRKT\VLV\HYD\ELEC
25	4502064	1	BRKT\SHLD\DRV
26	4502066	1	SHLD\DRV
27	4502067	1	FRM\STRTR\BOX
28	4502070	1	BRKT\CONDUIT
29	4502074	1	FRM\GRDR\ELEC\H1100
30	4502077	1	BRKT\BOX\CNTRL\SAFETY\SHUTDN
31	4800003	47	BOLT\HEX\3/8X1
32	4800011	1	BOLT\HEX\3/4X3-1/2
33	4800024	2	BOLT\HEX\1/4X3/4
34	4800033	2	BOLT\HEX\3/4X2
35	4800034	1	BOLT\HEX\3/8X1-1/2
36	4800082	2	BOLT\HEX\1/2X1-1/2
37	4800085	8	BOLT\HEX\1/2X1
38	4800140	2	BOLT\HEX\1X3\NC
39	4800141	8	BOLT\HEX\1/2X4-1/2
40	4800248	1	BOLT\HEX\3/4X6
41	4800251	2	BOLT\HEX\1/2X2-1/4\NC
42	4800515	2	BOLT\HEX\3/8X3-1/4\NC
43	4900001	20	NUT\HEX\1/2\NC
44	4900002	15	NUT\HEX\3/8\NC
45	4900004	2	NUT\HEX\3/4\NC
46	4900023	2	NUT\TPLCK\3/8\NC
47	4900032	12	NUT\WING\3/8\NC
48	4900040	2	NUT\FLG\SERR\1/4\NC
49	4900082	20	NUT\INSERT\3/8\.027X.150GR
50	4900127	2	NUT\TPLCK\1\NC
51	4900139	2	NUT\TPLCK\3/4\GR8\NC
52	5000001	34	WASH\FLAT\3/8
53	5000004	20	WASH\FLAT\1/2
54	5000006	20	WASH\LOCK\1/2
55	5000012	2	WASH\LOCK\3/4
56	5000019	37	WASH\LOCK\3/8
57	5000096	8	WASH\FLAT\SPCL\13/32X7GAX1-1/2OD
58	5700016	1	SWITCH\DISC\BATT\KEYED
59	7500310	2	GROMMET\1-1/4ODX17/32ID
60	7500756	2	BMPR\RBBR\1-1/32X5/8
61	8101076	1	MNT\SHLD\DRV
62	D1024923	2	PL\FRM\BOX\STRTR


SEE DETAIL B
SEE DETAIL A

ITEM	PART	QTY.	PART DESCRIPTION
1	2600009	4	9.5LX15 8 PLY TIRE
2	2600612	4	15 X 8 6 BOLT WHEEL
3	2900069	4	HUB\6BOLT\631\COMP
4	4500140	1	WLKNG BEAM W/SPINDLES RH
5	4500674	1	WLKNG BEAM W/SPINDLES LH
6	4500737	1	STOP\CYL\PLATFORM
7	4501177	1	BRKT\PUMP\HYD
8	4501188	2	BELT\ISLTR\VIB\TANK\OIL
9	4501189	1	BRKT\HOSE\TILT\TUB
10	4501199	1	CVR\SHFT\DRIVE\CNVYR\REAR
11	4501201	1	SHLD\CHAIN\DRIVE\CNVYR
12	4501207	1	CVR\DRIVE\CNVYR\LOWER\LH
13	4501208	2	BRKT\BOLT\COVER\DRIVE\CNVYR
14	4501209	1	COVER\DRIVE\CNVYR\LOWER\RH
15	4501210	2	DOOR\ACCESS\SIDE\REAR
16	4501211	2	DOOR\ACCESS\BRG\DRIVE\FRNT
17	4501280	1	BRKT\ARM\STND\SAFETY\TUB
18	4501281	1	BRKT\REST\STND\SAFETY\TUB
19	4501683	1	MNT\VLV&BOX\H1100 ELECTRIC
20	4501684	1	CVR\DRIVE\TUB\FRNT
21	4501734	1	SHEET\PANEL\CONTROL\AUX\REAR
22	4502059	1	FRM\MTR\ELEC
23	4502060	1	CVR\DRIVE\BTTM\FRNT
24	4502061	1	TANK\OIL
25	4502062	1	BRKT\VLV\HYD\ELEC
26	4502064	1	BRKT\SHLD\DRV
27	4502066	1	SHLD\DRV
28	4502067	1	FRM\STRTR\BOX
29	4502070	1	BRKT\CONDUIT
30	4502074	1	FRM\GRDR\ELEC\H1100
31	4502077	1	BRKT\BOX\CNTRL\SAFETY\SHUTDN
32	4704445	1	MNT\VLV&GOV BOX\H1100 ELECTRIC
33	4800003	47	BOLT\HEX\3/8X1
34	4800011	1	BOLT\HEX\3/4X3-1/2
35	4800024	2	BOLT\HEX\1/4X3/4
36	4800033	2	BOLT\HEX\3/4X2
37	4800034	1	BOLT\HEX\3/8X1-1/2
38	4800082	2	BOLT\HEX\1/2X1-1/2
39	4800085	8	BOLT\HEX\1/2X1
40	4800140	2	BOLT\HEX\1X3\NC
41	4800141	8	BOLT\HEX\1/2X4-1/2
42	4800202	4	BOLT\HEX\3/8X5
43	4800248	1	BOLT\HEX\3/4X6
44	4800251	2	BOLT\HEX\1/2X2-1/4\NC
45	4800515	2	BOLT\HEX\3/8X3-1/4\NC
46	4900001	20	NUT\HEX\1/2\NC
47	4900002	15	NUT\HEX\3/8\NC
48	4900004	2	NUT\HEX\3/4\NC
49	4900023	2	NUT\TPLCK\3/8\NC
50	4900032	12	NUT\WING\3/8\NC
51	4900040	2	NUT\FLG\SERR\1/4\NC
52	4900076	4	NUT\FLG\SERR\3/8\NC
53	4900082	20	NUT\INSERT\3/8\.027X.150GR
54	4900127	2	NUT\TPLCK\1\NC
55	4900139	2	NUT\TPLCK\3/4\GR8\NC
56	5000001	34	WASH\FLAT\3/8
57	5000004	20	WASH\FLAT\1/2
58	5000006	20	WASH\LOCK\1/2
59	5000012	2	WASH\LOCK\3/4
60	5000019	37	WASH\LOCK\3/8
61	5000096	8	WASH\FLAT\SPCL\13/32X7GAX1-1/2OD
62	5700016	1	SWITCH\DISC\BATT\KEYED
63	7500310	2	GROMMET\1-1/4ODX17/32ID
64	7500756	2	BMPR\RBBR\1-1/32X5/8
65	8101076	1	MNT\SHLD\DRV
70	D1024923	2	PL\FRM\BOX\STRTR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DETAIL B
SCALE 3/16
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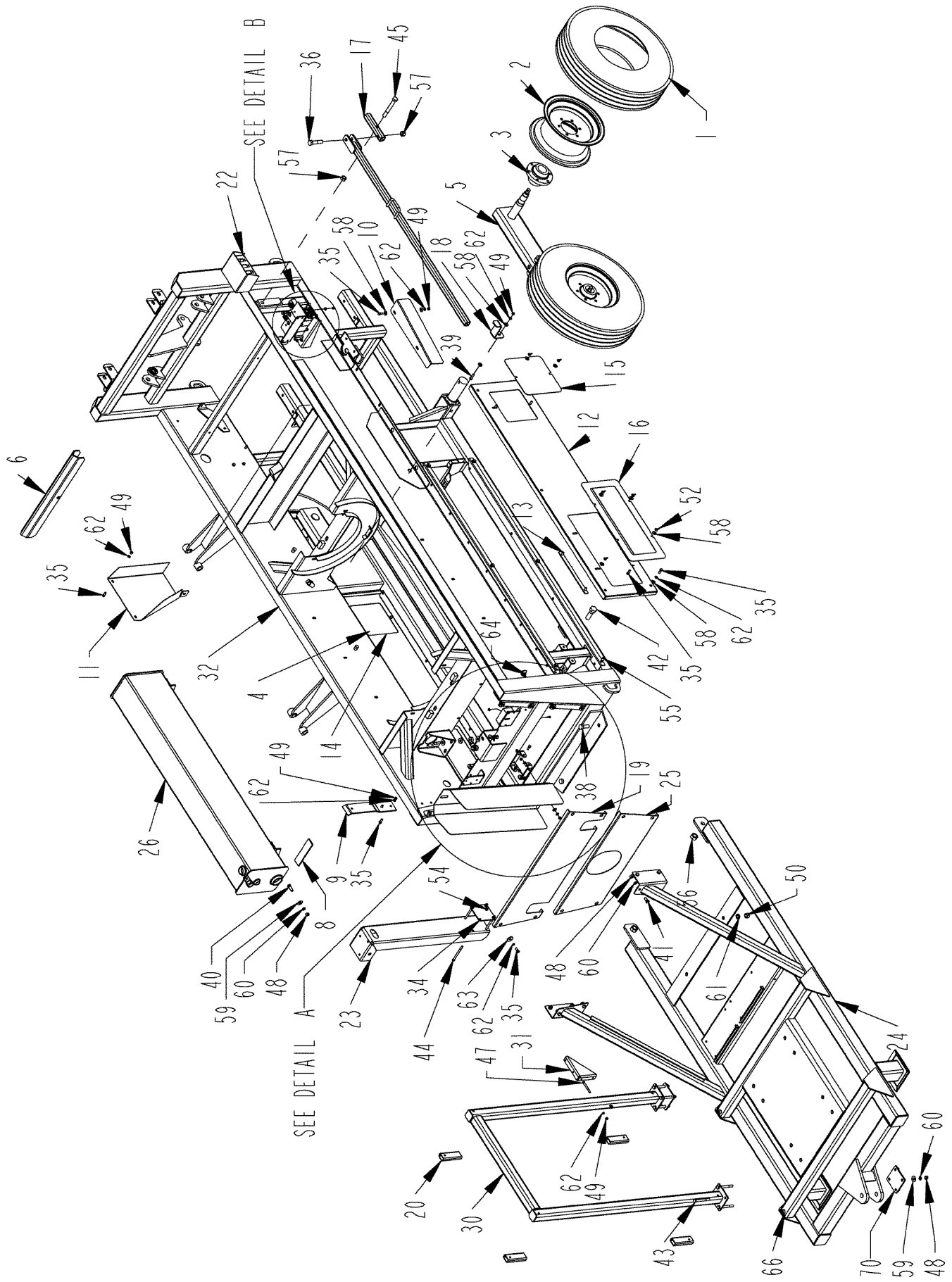
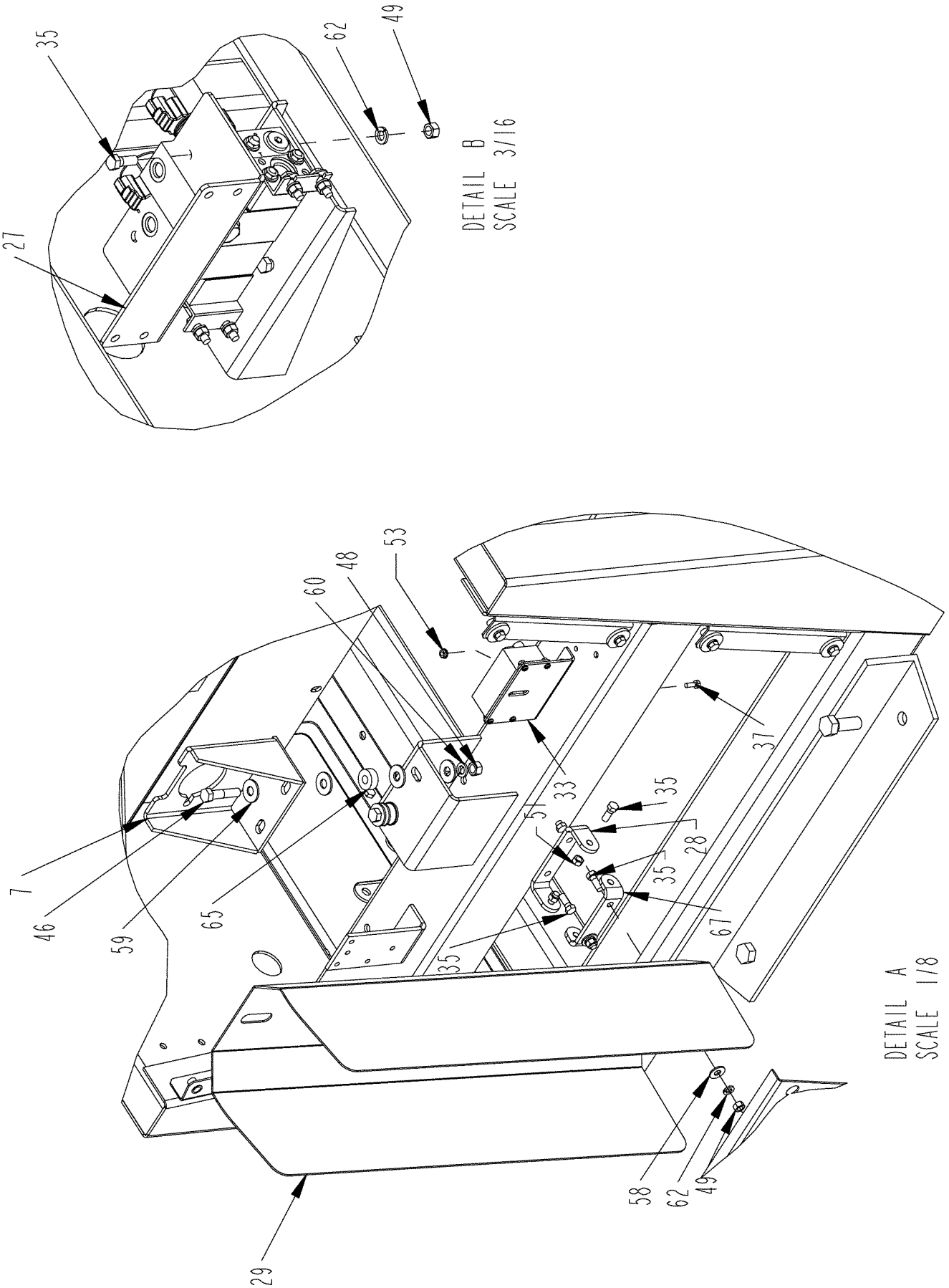
27
DETAIL A
SCALE 1/8

ITEM	PART	QTY.	PART DESCRIPTION
1	2600009	4	9.5LX15 8 PLY TIRE
2	2600612	4	15 X 8 6 BOLT WHEEL
3	2900069	4	HUB\6BOLT\631\COMP
4	4500140	1	WLKNG BEAM W/SPINDLES RH
5	4500674	1	WLKNG BEAM W/SPINDLES LH
6	4500737	1	STOP\CYL\PLATFORM
7	4501177	1	BRKT\PUMP\HYD
8	4501188	2	BELT\ISLTR\VIB\TANK\OIL
9	4501189	1	BRKT\HOSE\TILT\TUB
10	4501199	1	CVR\SHFT\DRIVE\CNVYR\REAR
11	4501201	1	SHLD\CHAIN\DRIVE\CNVYR
12	4501207	1	CVR\DRIVE\CNVYR\LOWER\LH
13	4501208	2	BRKT\BOLT\COVER\DRIVE\CNVYR
14	4501209	1	COVER\DRIVE\CNVYR\LOWER\RH
15	4501210	2	DOOR\ACCESS\SIDE\REAR
16	4501211	2	DOOR\ACCESS\BRG\DRIVE\FRNT
17	4501280	1	BRKT\ARM\STND\SAFETY\TUB
18	4501281	1	BRKT\REST\STND\SAFETY\TUB
19	4501683	1	MNT\VLV&BOX\H1100 ELECTRIC
20	4501684	1	CVR\DRIVE\TUB\FRNT
21	4501734	1	SHEET\PANEL\CONTROL\AUX\REAR
22	4502059	1	FRM\MTR\ELEC
23	4502060	1	CVR\DRIVE\BTTM\FRNT
24	4502061	1	TANK\OIL
25	4502062	1	BRKT\VLV\HYD\ELEC
26	4502064	1	BRKT\SHLD\DRV
27	4502066	1	SHLD\DRV
28	4502067	1	FRM\STRTR\BOX
29	4502070	1	BRKT\CONDUIT
30	4502074	1	FRM\GRDR\ELEC\H1100
31	4502077	1	BRKT\BOX\CNTRL\SAFETY\SHUTDN
32	4704445	1	MNT\VLV&GOV BOX\H1100 ELECTRIC
33	4800003	47	BOLT\HEX\3/8X1
34	4800011	1	BOLT\HEX\3/4X3-1/2
35	4800024	2	BOLT\HEX\1/4X3/4
36	4800033	2	BOLT\HEX\3/4X2
37	4800034	1	BOLT\HEX\3/8X1-1/2
38	4800082	2	BOLT\HEX\1/2X1-1/2
39	4800085	8	BOLT\HEX\1/2X1
40	4800140	2	BOLT\HEX\1X3\NC
41	4800141	8	BOLT\HEX\1/2X4-1/2
42	4800202	4	BOLT\HEX\3/8X5
43	4800248	1	BOLT\HEX\3/4X6
44	4800251	2	BOLT\HEX\1/2X2-1/4\NC
45	4800515	2	BOLT\HEX\3/8X3-1/4\NC
46	4900001	20	NUT\HEX\1/2\NC
47	4900002	15	NUT\HEX\3/8\NC
48	4900004	2	NUT\HEX\3/4\NC
49	4900023	2	NUT\TPLCK\3/8\NC
50	4900032	12	NUT\WING\3/8\NC
51	4900040	2	NUT\FLG\SERR\1/4\NC
52	4900076	4	NUT\FLG\SERR\3/8\NC
53	4900082	20	NUT\INSERT\3/8\.027X.150GR
54	4900127	2	NUT\TPLCK\1\NC
55	4900139	2	NUT\TPLCK\3/4\GR8\NC
56	5000001	34	WASH\FLAT\3/8
57	5000004	20	WASH\FLAT\1/2
58	5000006	20	WASH\LOCK\1/2
59	5000012	2	WASH\LOCK\3/4
60	5000019	37	WASH\LOCK\3/8
61	5000096	8	WASH\FLAT\SPCL\13/32X7GAX1-1/2OD
62	5700016	1	SWITCH\DISC\BATT\KEYED
63	7500310	2	GROMMET\1-1/4ODX17/32ID
64	7500756	2	BMPR\RBBR\1-1/32X5/8
65	8101076	1	MNT\SHLD\DRV
70	D1024923	2	PL\FRM\BOX\STRTR


SEE DETAIL B
SEE DETAIL A

ITEM	PART	QTY.	PART DESCRIPTION
1	2600009	4	9.5LX15 8 PLY TIRE
2	2600612	4	15 X 8 6 BOLT WHEEL
3	2900069	4	HUB\6BOLT\631\COMP
4	4500140	1	WLKNG BEAM W/SPINDLES RH
5	4500674	1	WLKNG BEAM W/SPINDLES LH
6	4500737	1	STOP\CYL\PLATFORM
7	4501177	1	BRKT\PUMP\HYD
8	4501188	2	BELT\ISLTR\VIB\TANK\OIL
9	4501189	1	BRKT\HOSE\TILT\TUB
10	4501199	1	CVR\SHFT\DRIVE\CNVYR\REAR
11	4501201	1	SHLD\CHAIN\DRIVE\CNVYR
12	4501207	1	CVR\DRIVE\CNVYR\LOWER\LH
13	4501208	2	BRKT\BOLT\COVER\DRIVE\CNVYR
14	4501209	1	COVER\DRIVE\CNVYR\LOWER\RH
15	4501210	2	DOOR\ACCESS\SIDE\REAR
16	4501211	2	DOOR\ACCESS\BRG\DRIVE\FRNT
17	4501280	1	BRKT\ARM\STND\SAFETY\TUB
18	4501281	1	BRKT\REST\STND\SAFETY\TUB
19	4501684	1	CVR\DRIVE\TUB\FRNT
20	4501687	4	SPCR\FRM\PANEL\STARTER
21	4501688	2	STRAP\ANGLE\BATT\43-3/4
22	4501734	1	SHEET\PANEL\CONTROL\AUX\REAR
23	4501923	1	MNT\VLV&BOX\H1100 ELECTRIC
24	4502059	1	FRM\MTR\ELEC
25	4502060	1	CVR\DRIVE\BTTM\FRNT
26	4502061	1	TANK\OIL
27	4502062	1	BRKT\VLV\HYD\ELEC
28	4502064	1	BRKT\SHLD\DRV
29	4502066	1	SHLD\DRV
30	4502067	1	FRM\STRTR\BOX
31	4502070	1	BRKT\CONDUIT
32	4502074	1	FRM\GRDR\ELEC\H1100
33	4502077	1	BRKT\BOX\CNTRL\SAFETY\SHUTDN
34	4704445	1	MNT\VLV&GOV BOX\H1100 ELECTRIC
35	4800003	47	BOLT\HEX\3/8X1
36	4800011	1	BOLT\HEX\3/4X3-1/2
37	4800024	2	BOLT\HEX\1/4X3/4
38	4800033	2	BOLT\HEX\3/4X2
39	4800034	1	BOLT\HEX\3/8X1-1/2
40	4800082	2	BOLT\HEX\1/2X1-1/2
41	4800085	8	BOLT\HEX\1/2X1
42	4800140	2	BOLT\HEX\1X3\NC
43	4800141	8	BOLT\HEX\1/2X4-1/2
44	4800202	4	BOLT\HEX\3/8X5
45	4800248	1	BOLT\HEX\3/4X6
46	4800251	2	BOLT\HEX\1/2X2-1/4\NC
47	4800515	2	BOLT\HEX\3/8X3-1/4\NC
48	4900001	20	NUT\HEX\1/2\NC
49	4900002	15	NUT\HEX\3/8\NC
50	4900004	2	NUT\HEX\3/4\NC
51	4900023	2	NUT\TPLCK\3/8\NC
52	4900032	12	NUT\WING\3/8\NC
53	4900040	2	NUT\FLG\SERR\1/4\NC
54	4900076	4	NUT\FLG\SERR\3/8\NC
55	4900082	20	NUT\INSERT\3/8\.027X.150GR
56	4900127	2	NUT\TPLCK\1\NC
57	4900139	2	NUT\TPLCK\3/4\GR8\NC
58	5000001	34	WASH\FLAT\3/8
59	5000004	20	WASH\FLAT\1/2
60	5000006	20	WASH\LOCK\1/2
61	5000012	2	WASH\LOCK\3/4
62	5000019	37	WASH\LOCK\3/8
63	5000096	8	WASH\FLAT\SPCL\13/32X7GAX1-1/2OD
64	5700016	1	SWITCH\DISC\BATT\KEYED
65	7500310	2	GROMMET\1-1/4ODX17/32ID
66	7500756	2	BMPR\RBBR\1-1/32X5/8
67	8101076	1	MNT\SHLD\DRV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DETAIL B
SCALE 3/16
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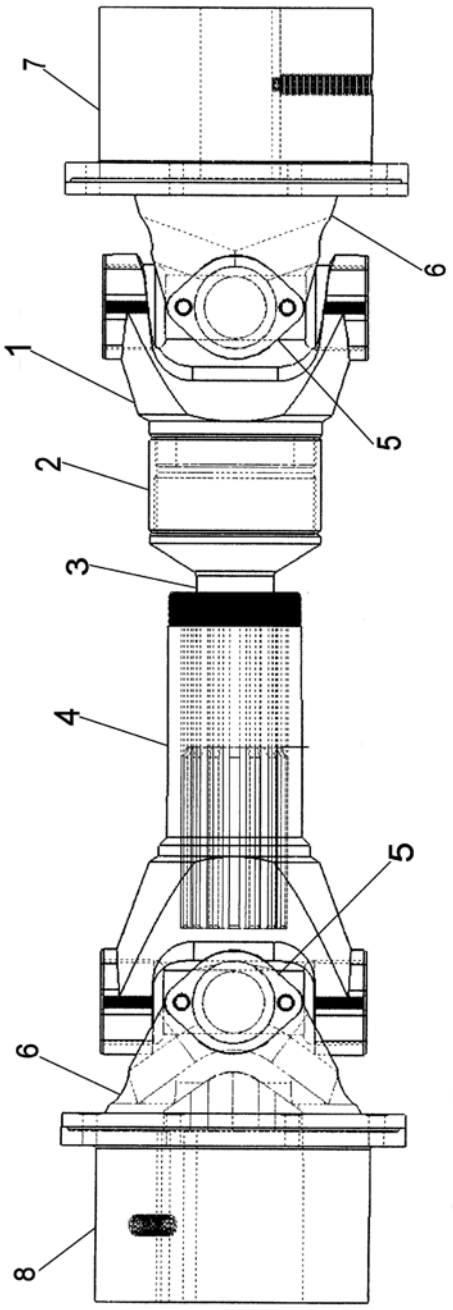
DETAIL A
SCALE 1/8

ITEM	PART	QTY.	PART DESCRIPTION
1	2600009	4	9.5LX15 8 PLY TIRE
2	2600612	4	15 X 8 6 BOLT WHEEL
3	2900069	4	HUB\6BOLT\631\COMP
4	4500140	1	WLKNG BEAM W/SPINDLES RH
5	4500674	1	WLKNG BEAM W/SPINDLES LH
6	4500737	1	STOP\CYL\PLATFORM
7	4501177	1	BRKT\PUMP\HYD
8	4501188	2	BELT\ISLTR\VIB\TANK\OIL
9	4501189	1	BRKT\HOSE\TILT\TUB
10	4501199	1	CVR\SHFT\DRIVE\CNVYR\REAR
11	4501201	1	SHLD\CHAIN\DRIVE\CNVYR
12	4501207	1	CVR\DRIVE\CNVYR\LOWER\LH
13	4501208	2	BRKT\BOLT\COVER\DRIVE\CNVYR
14	4501209	1	COVER\DRIVE\CNVYR\LOWER\RH
15	4501210	2	DOOR\ACCESS\SIDE\REAR
16	4501211	2	DOOR\ACCESS\BRG\DRIVE\FRNT
17	4501280	1	BRKT\ARM\STND\SAFETY\TUB
18	4501281	1	BRKT\REST\STND\SAFETY\TUB
19	4501684	1	CVR\DRIVE\TUB\FRNT
20	4501687	4	SPCR\FRM\PANEL\STARTER
21	4501688	2	STRAP\ANGLE\BATT\43-3/4
22	4501734	1	SHEET\PANEL\CONTROL\AUX\REAR
23	4501923	1	MNT\VLV&BOX\H1100 ELECTRIC
24	4502059	1	FRM\MTR\ELEC
25	4502060	1	CVR\DRIVE\BTTM\FRNT
26	4502061	1	TANK\OIL
27	4502062	1	BRKT\VLV\HYD\ELEC
28	4502064	1	BRKT\SHLD\DRV
29	4502066	1	SHLD\DRV
30	4502067	1	FRM\STRTR\BOX
31	4502070	1	BRKT\CONDUIT
32	4502074	1	FRM\GRDR\ELEC\H1100
33	4502077	1	BRKT\BOX\CNTRL\SAFETY\SHUTDN
34	4704445	1	MNT\VLV&GOV BOX\H1100 ELECTRIC
35	4800003	47	BOLT\HEX\3/8X1
36	4800011	1	BOLT\HEX\3/4X3-1/2
37	4800024	2	BOLT\HEX\1/4X3/4
38	4800033	2	BOLT\HEX\3/4X2
39	4800034	1	BOLT\HEX\3/8X1-1/2
40	4800082	2	BOLT\HEX\1/2X1-1/2
41	4800085	8	BOLT\HEX\1/2X1
42	4800140	2	BOLT\HEX\1X3\NC
43	4800141	8	BOLT\HEX\1/2X4-1/2
44	4800202	4	BOLT\HEX\3/8X5
45	4800248	1	BOLT\HEX\3/4X6
46	4800251	2	BOLT\HEX\1/2X2-1/4\NC
47	4800515	2	BOLT\HEX\3/8X3-1/4\NC
48	4900001	20	NUT\HEX\1/2\NC
49	4900002	15	NUT\HEX\3/8\NC
50	4900004	2	NUT\HEX\3/4\NC
51	4900023	2	NUT\TPLCK\3/8\NC
52	4900032	12	NUT\WING\3/8\NC
53	4900040	2	NUT\FLG\SERR\1/4\NC
54	4900076	4	NUT\FLG\SERR\3/8\NC
55	4900082	20	NUT\INSERT\3/8\.027X.150GR
56	4900127	2	NUT\TPLCK\1\NC
57	4900139	2	NUT\TPLCK\3/4\GR8\NC
58	5000001	34	WASH\FLAT\3/8
59	5000004	20	WASH\FLAT\1/2
60	5000006	20	WASH\LOCK\1/2
61	5000012	2	WASH\LOCK\3/4
62	5000019	37	WASH\LOCK\3/8
63	5000096	8	WASH\FLAT\SPCL\13/32X7GAX1-1/2OD
64	5700016	1	SWITCH\DISC\BATT\KEYED
65	7500310	2	GROMMET\1-1/4ODX17/32ID
66	7500756	2	BMPR\RBBR\1-1/32X5/8
67	8101076	1	MNT\SHLD\DRV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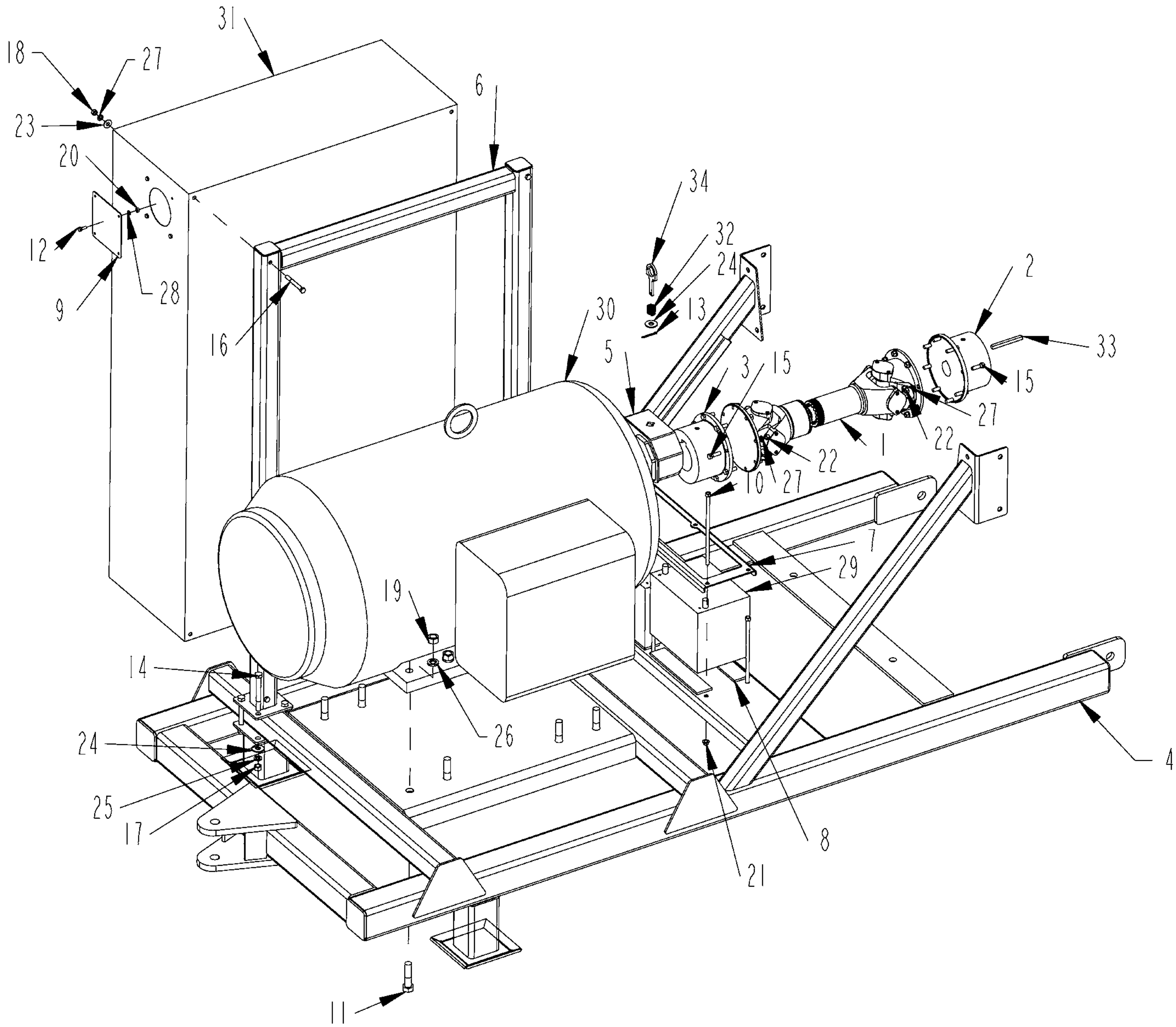
ITEM	PART	QTY.	PART DESCRIPTION
	3600601		**DRIVELINE**
1			WELD YOKE ROUND
2			TUB\DOM
3			SLIP STUB
4			1710 SLIP YOKE
5			U-JOINT & BEARING
6			FLANGE YOKE ROUND
			DRIVELINE FLANGES
7	3600602		FLG\1-3/4IDX4L\1710\DRLIN
8	3600603		FLG\3-3/8IDX4L\1710\DRLIN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29
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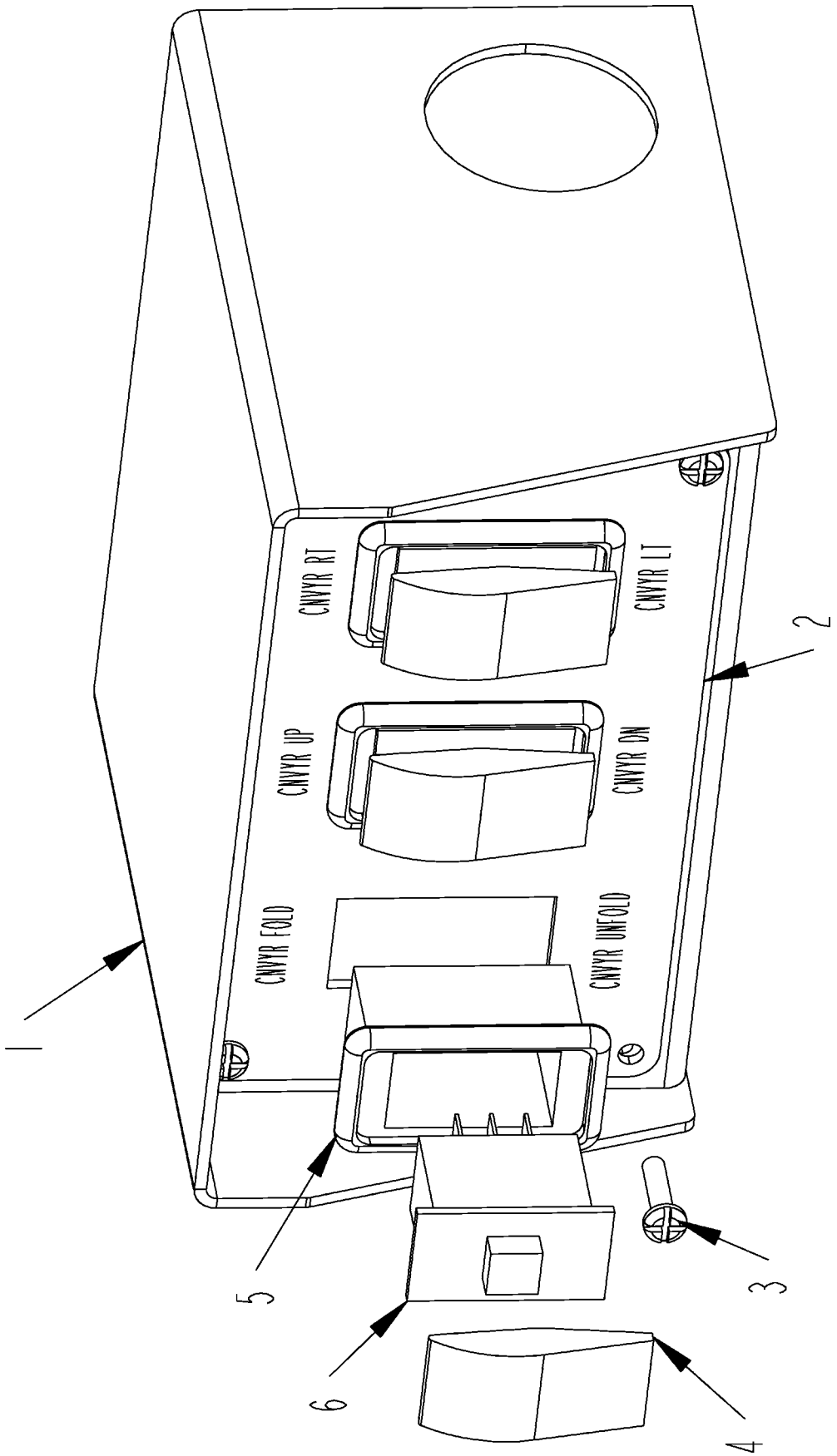
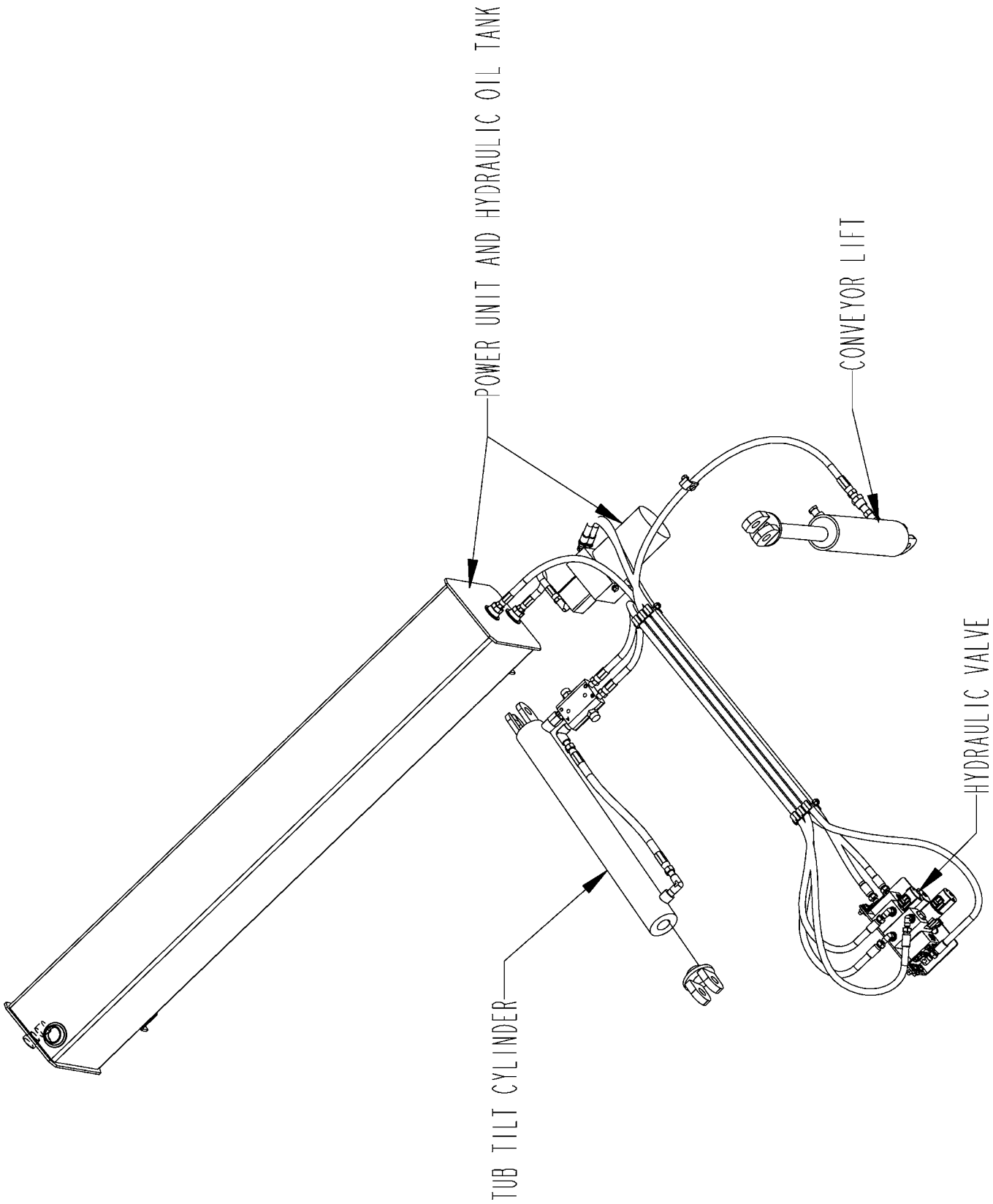
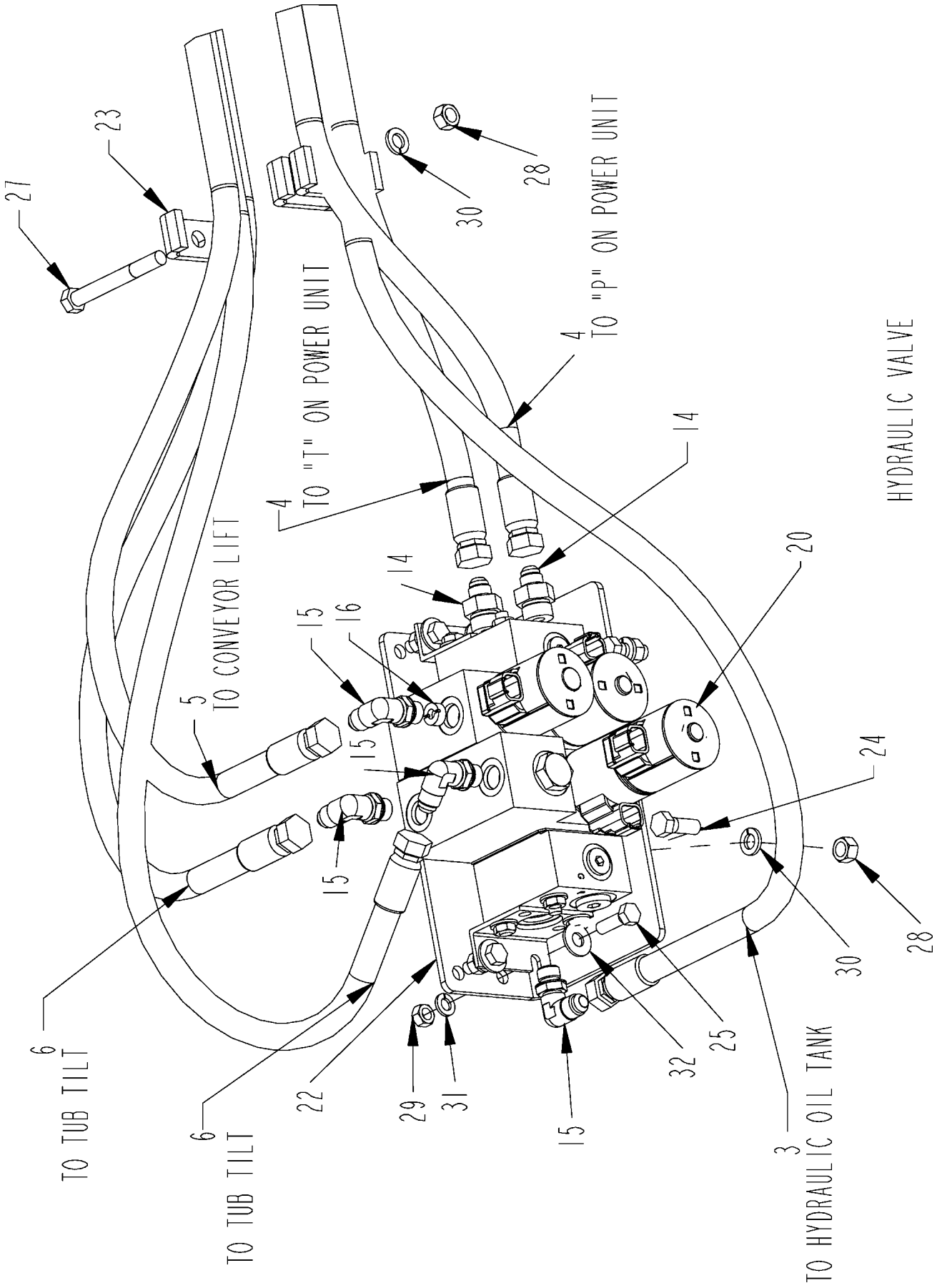
ITEM	PART	QTY.	PART DESCRIPTION
1	3600601	1	DRLIN\IND\1710\22.09COMP
2	3600602	1	FLG\1-3/4IDX4L\1710\DRLIN
3	3600603	1	FLG\3-3/8IDX4L\1710\DRLIN
4	4502059	1	FRM\MTR\ELEC
5	4502065	1	BRKT\SHLD\DRV
6	4502067	1	FRM\STRTR\BOX
7	4502068	1	SH\BRKT\BATT
8	4502069	4	BELT\CUSHION\BATTERY
9	4502071	1	CVR\HOLE\BOX\STRTR
10	4502072	6	HLDN/BRKT/BTTRY
11	4800017	8	BOLT\HEX\3/4X3
12	4800024	4	BOLT\HEX\1/4X3/4
13	4800044	1	PIN\COT\5/32X1-1/2
14	4800141	8	BOLT\HEX\1/2X4-1/2
15	4800487	16	BOLT\HEX\3/8X1-1/4\GR8/NF
16	4800515	4	BOLT\HEX\3/8X3-1/4\NC
17	4900001	8	NUT\HEX\1/2\NC
18	4900002	10	NUT\HEX\3/8\NC
19	4900004	8	NUT\HEX\3/4\NC
20	4900009	4	NUT\HEX\1/4\NC
21	4900076	6	NUT\FLG\SERR\3/8\NC
22	4900125	16	NUT\HEX\3/8\GR8\NF
23	5000001	4	WASH\FLAT\3/8
24	5000004	9	WASH\FLAT\1/2
25	5000006	8	WASH\LOCK\1/2
26	5000012	9	WASH\LOCK\3/4
27	5000019	20	WASH\LOCK\3/8
28	5000024	4	WASH\LOCK\1/4
29	5700227	2	BATT\12V\DC
30	5700731	1	MTR\ELEC\200HP\TECO
31	5700732	1	PKG\STRTR\TECO
32	6100031	1	SPRING\COMP\.072W\25/32OD
33	6200006	1	KEY\SQ\3/8X4
34	8101071	1	LATCH\SHLD


CNVYR RT
CNVYR LT
CNVYR UP
CNVYR DN
CNVYR FOLD
CNVYR UNFOLD
1
2
3
4
5
6

ITEM	PART	QTY.	PART DESCRIPTION
1	4501733	1	MNT\SHEET\PANEL\CNTRL\
2	4501734	1	SHEET\PANEL\CONTROL\AUX\REAR
3	4800498	4	SCR\PAN\PHL\#10X3/4\NF
4	5700324	3	SWITCH\RCKR\ACTR\BLK
5	5700328	3	SWITCH\RCKR\MNT\PNL\SNGL
6	5700432	3	SWITCH\RCKR\DPDT\24VUNLIT\MOM\15A


POWER UNIT AND HYDRAULIC OIL TANK
CONVEYOR LIFT
HYDRAULIC VALVE
TUB TILT CYLINDER


HYDRAULIC VALVE
TO "P" ON POWER UNIT
TO "T" ON POWER UNIT
TO CONVEYOR LIFT
TO TUB TILT
TO TUB TILT
TO HYDRAULIC OIL TANK
23
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28
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4
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16
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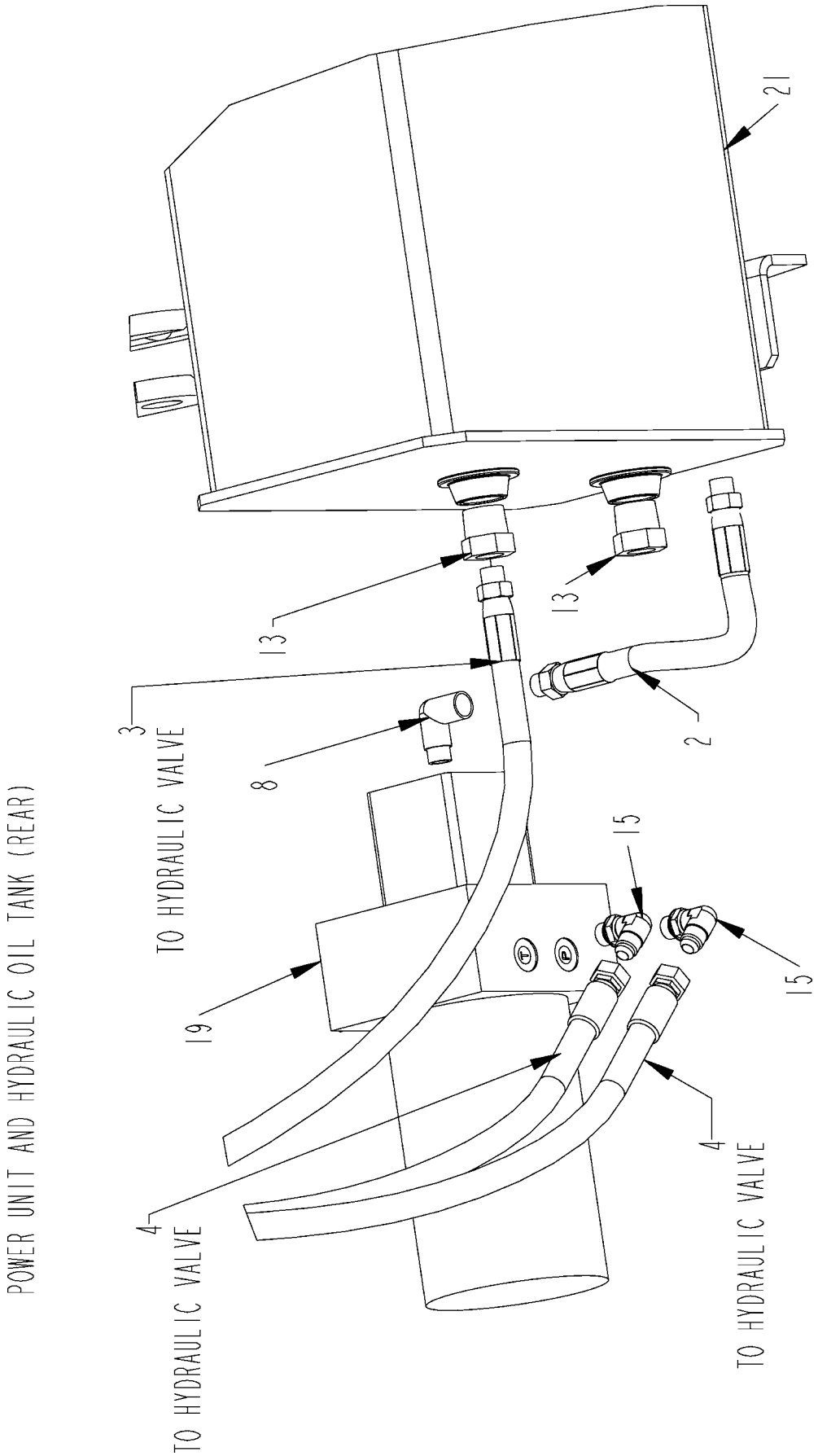
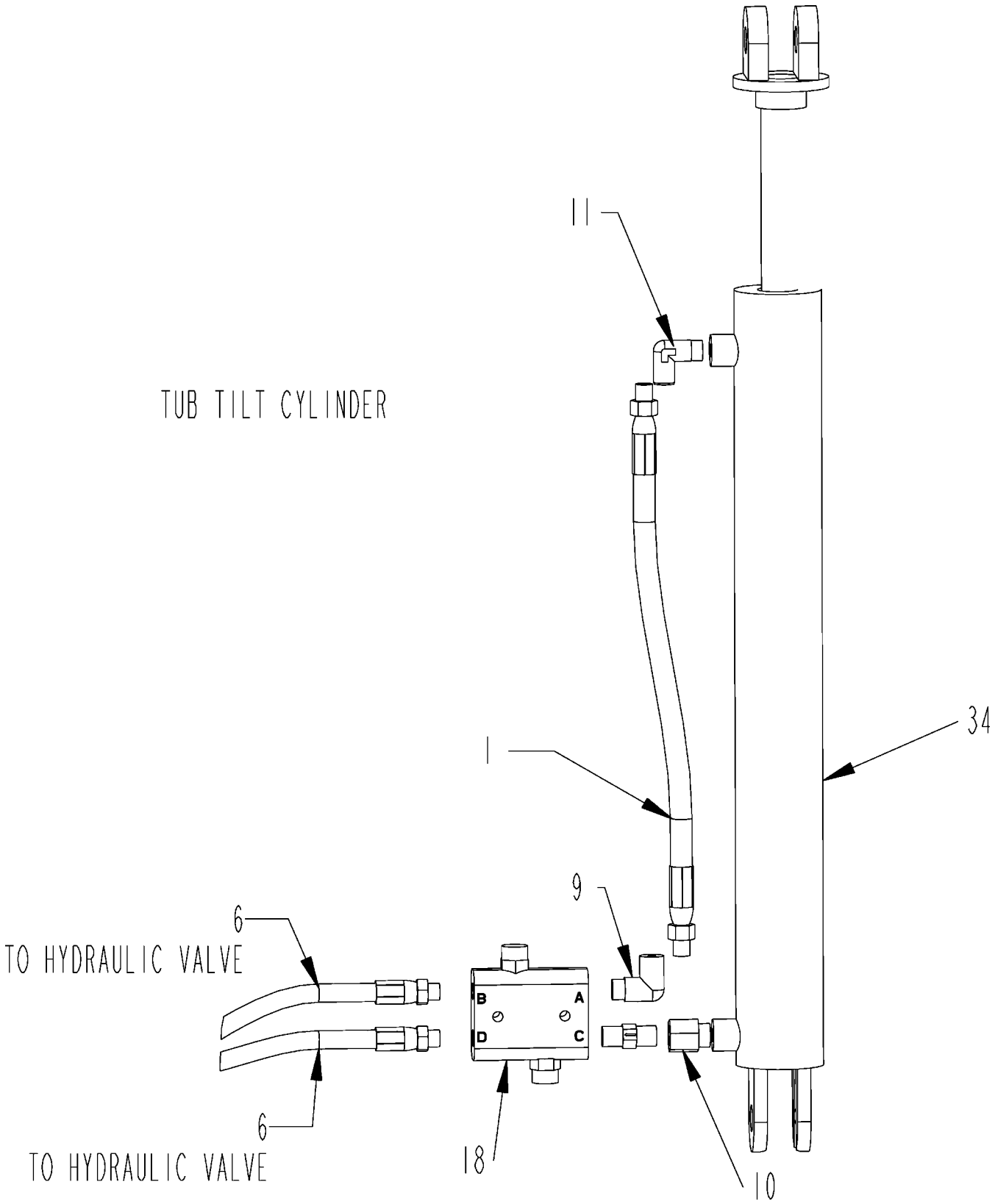
22
29
31
32
25
1
28
30


POWER UNIT AND HYDRAULIC OIL TANK (REAR)
21
13
13
3
TO HYDRAULIC VALVE
8
2
15
19
15
4
TO HYDRAULIC VALVE
4
TO HYDRAULIC VALVE


TUB TILT CYLINDER
11
34
1
9
6
TO HYDRAULIC VALVE
B
A
D
C
6
TO HYDRAULIC VALVE
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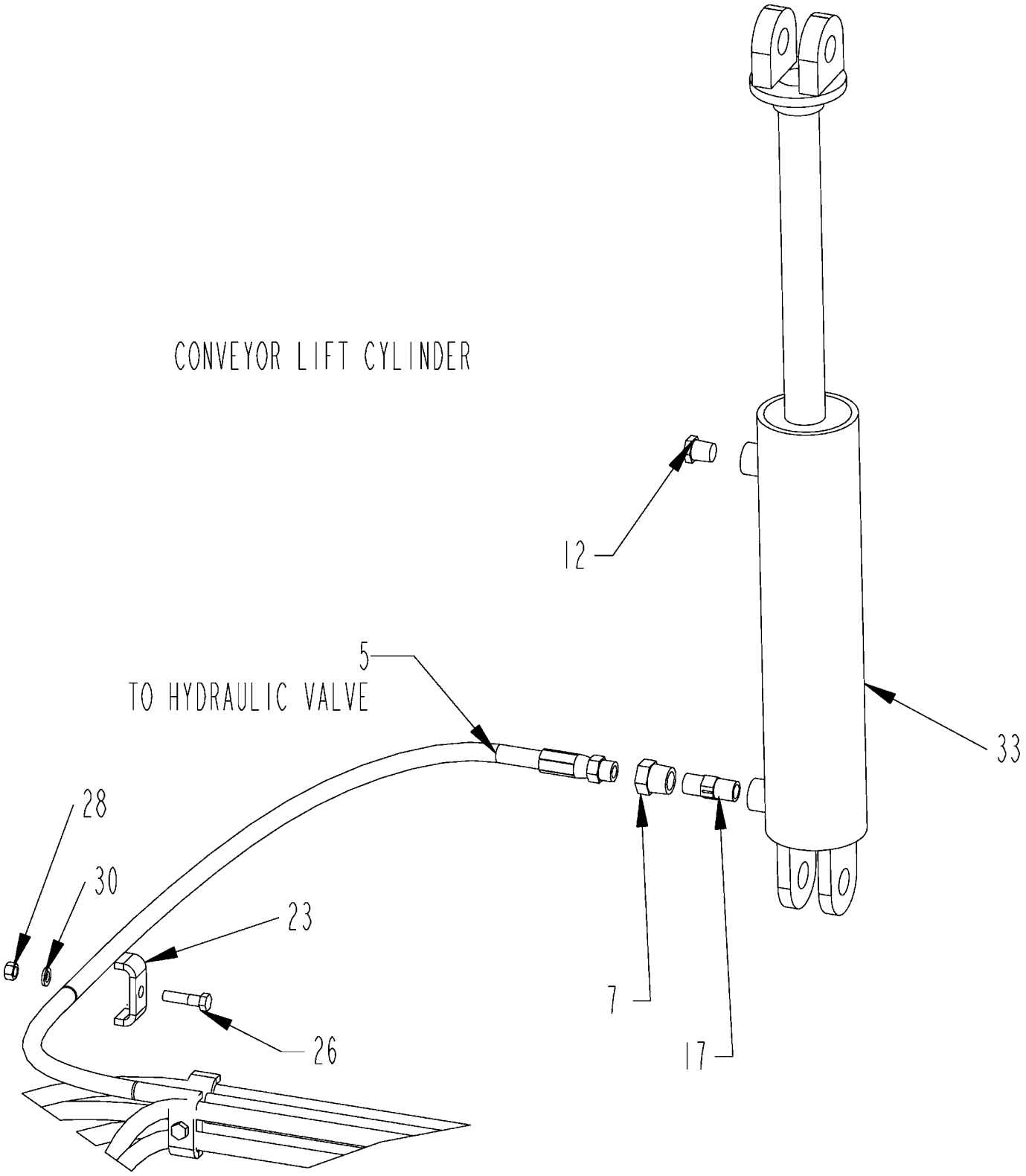
CONVEYOR LIFT CYLINDER
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TO HYDRAULIC VALVE
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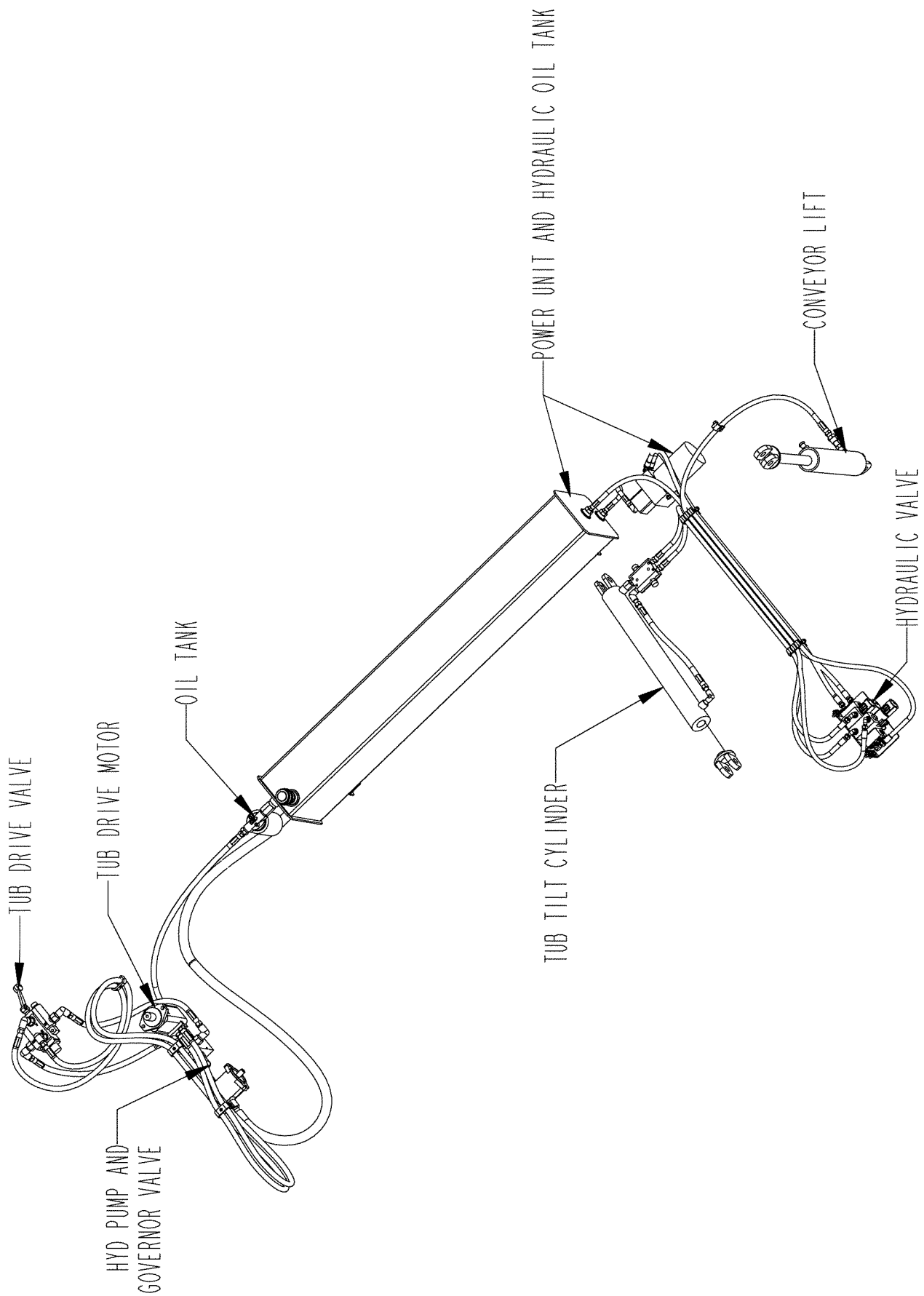
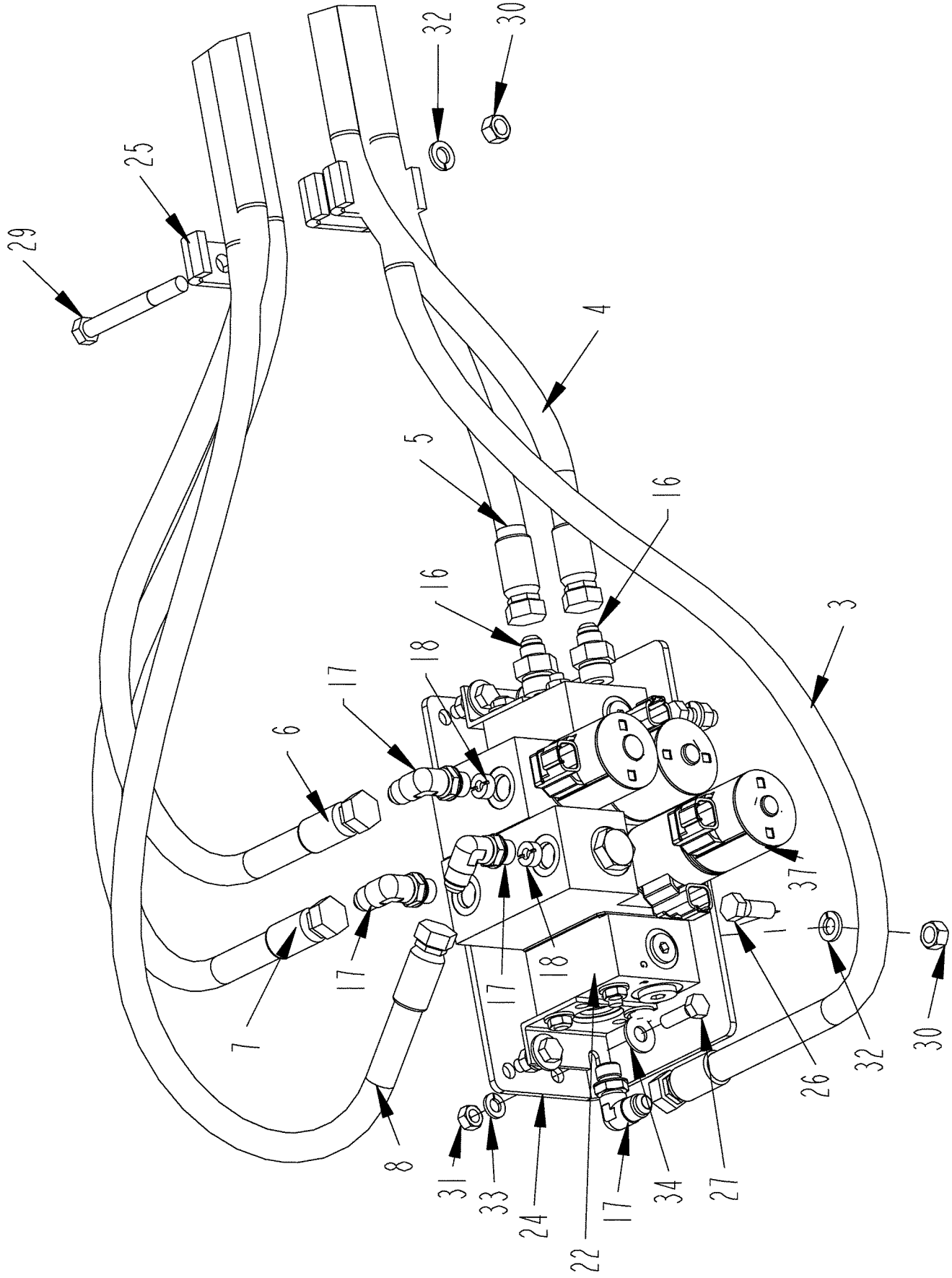
ITEM	PART	QTY.	PART DESCRIPTION
1	3700465	1	HOSE\HYD\3/8X23\3/8SWX3/8SW
2	3700771	1	HOSE\HYD\SUCT\3/8X6\3/8MPX3/8MP
3	3700772	1	HOSE\HYD\3/8X90\9/16FJICX3/8MP
4	3700773	2	HOSE\HYD\3/8X62\9/16FJICX9/16FJIC
5	3700774	1	HOSE\HYD\3/8X84\1/2SWX9/16SW
6	3700775	2	HOSE\HYD\3/8X72\9/16FJICX1/2MP
7	3800010	1	FTG\3/4MPX1/2FP\BUSH
8	3800031	1	FTG\3/8MPX3/8FP\90\ST;EL
9	3800133	1	FTG\1/2MPX3/8FP\90\ST;EL
10	3800171	1	FTG\3/4MORX1/2FP
11	3800268	1	FTG\3/4MORX3/8FP\90\ST;EL
12	3800361	1	FTG\1/2MP\VENT
13	3800443	2	FTG\3/4MPX3/8FP\BUSH
14	3800530	2	FTG\3/4MORX9/16MJIC\ST
15	3800757	6	FTG\9/16MORX9/16MJIC\90
16	3800770	1	FTG\9/16MOR\ORFC\.0225"
17	4000119	2	VALVE\CHECK\VEL\9GPM
18	4000177	1	VALVE\HYD\RELIEF\DBL\>
19	4000304	1	UNIT\PWR\24V\W/O RES
20	4000342	1	VLV\HYD\BRANDT\5-BANK
21	4502061	1	TANK\OIL\H1100\ELEC
22	4502062	1	BRKT\VLV\HYD\ELEC
23	4700776	7	CLMP\HOSE\3/8
24	4800003	5	BOLT\HEX\3/8X1
25	4800013	4	BOLT\HEX\5/16X1
26	4800034	1	BOLT\HEX\3/8X1-1/2
27	4800515	2	BOLT\HEX\3/8X3-1/4\NC
28	4900002	6	NUT\HEX\3/8\NC
29	4900003	4	NUT\HEX\5/16\NC
30	5000019	8	WASH\LOCK\3/8
31	5000022	4	WASH\LOCK\5/16
32	5000023	4	WASH\FLAT\5/16
33	4100265	1	CYL\HYD\3-1/2x12\1-1/2ROD
34	4100266	1	CYL\HYD\3X24\1-1/2ROD


POWER UNIT AND HYDRAULIC OIL TANK
CONVEYOR LIFT
HYDRAULIC VALVE
TUB TILT CYLINDER
OIL TANK
TUB DRIVE MOTOR
TUB DRIVE VALVE
HYD PUMP AND GOVERNOR VALVE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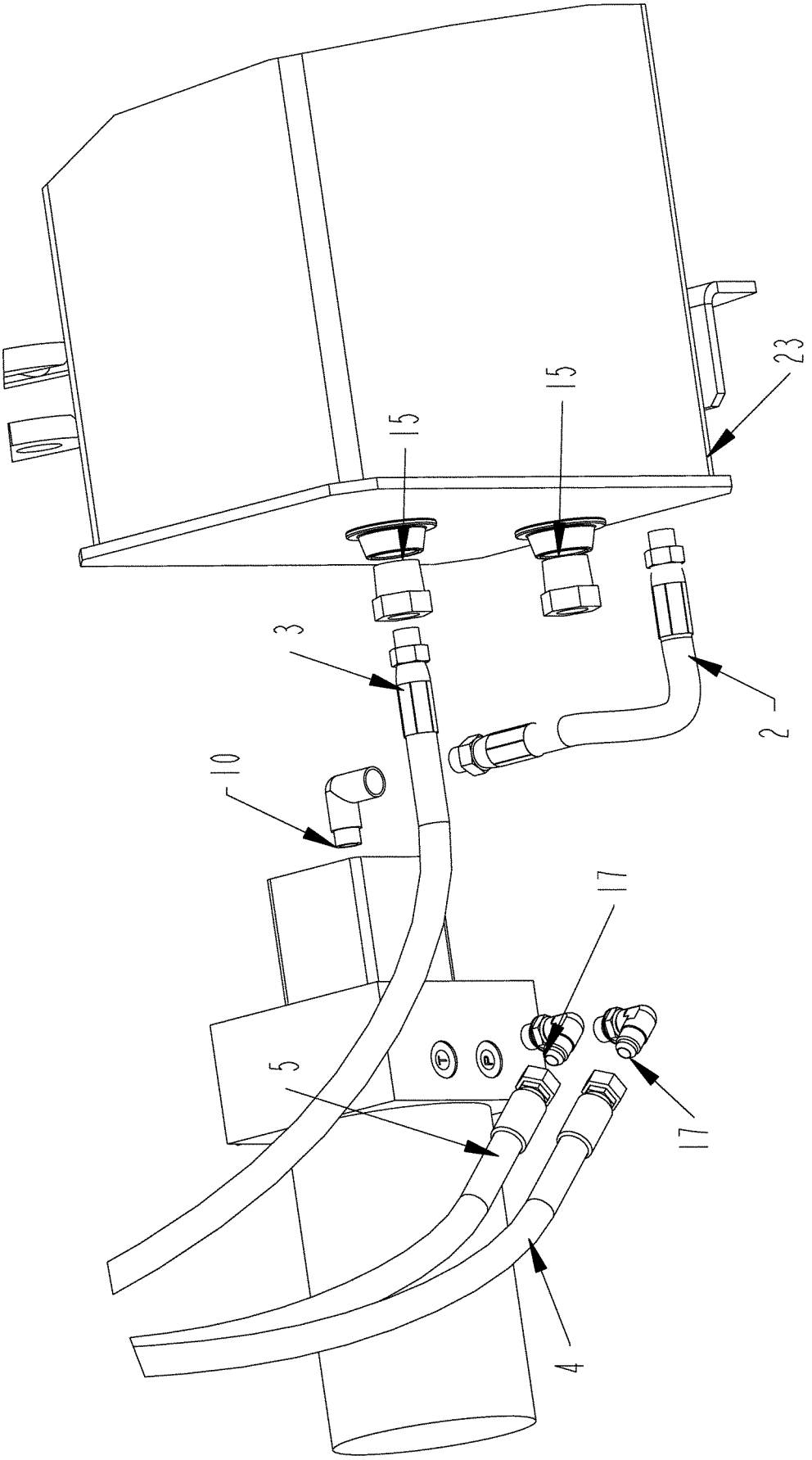
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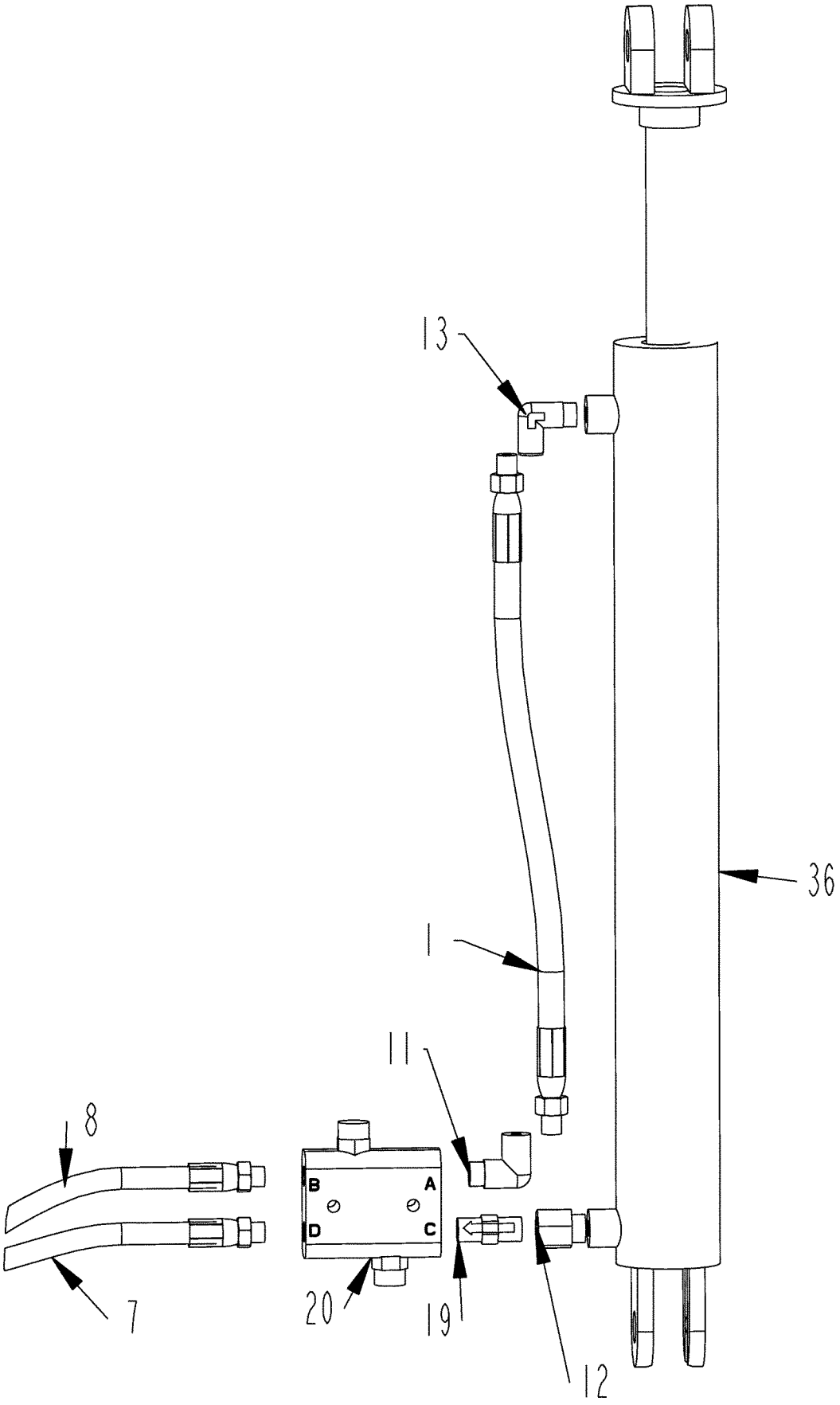
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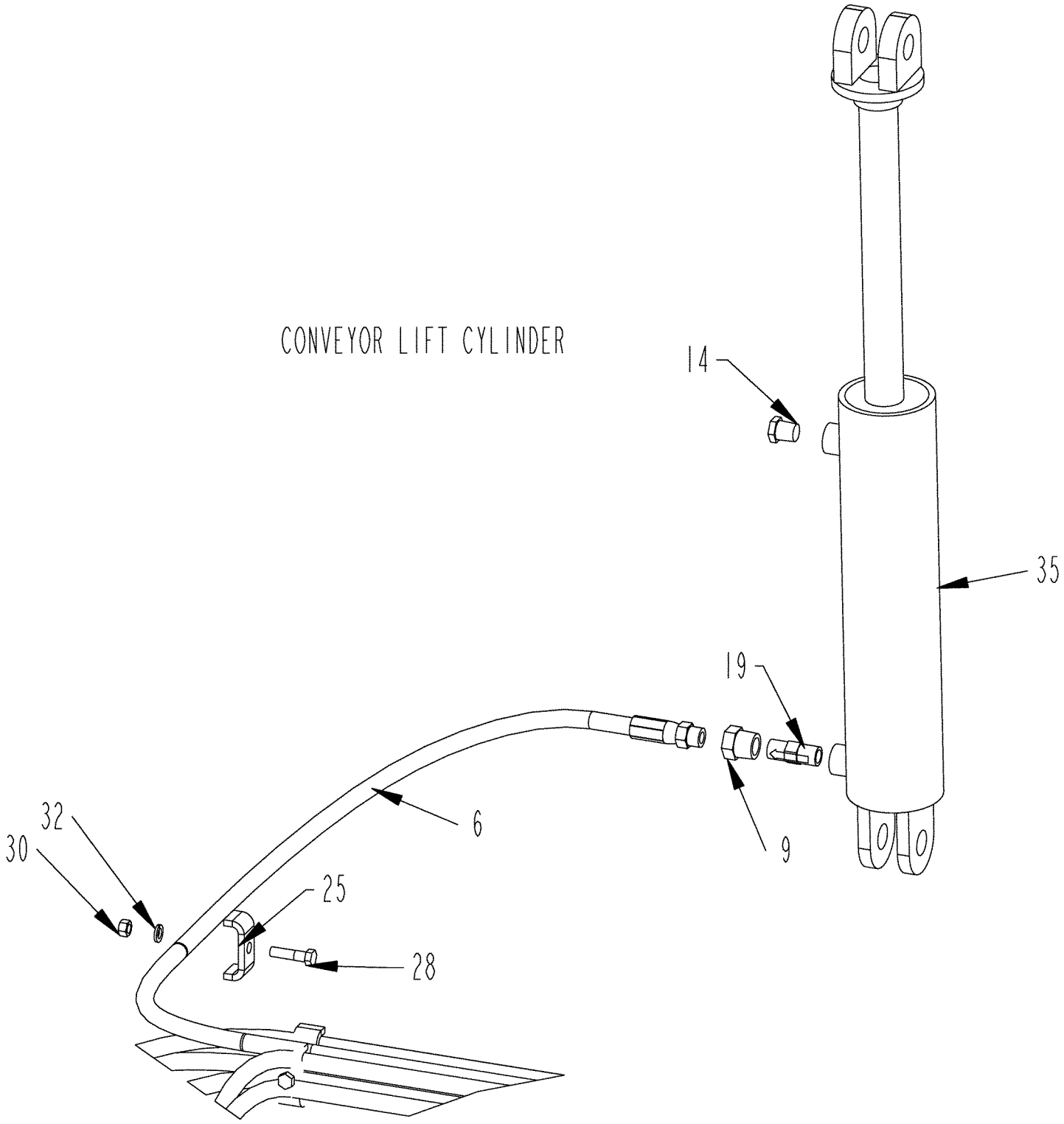
CONVEYOR LIFT CYLINDER
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ITEM	PART	QTY.	PART DESCRIPTION
1	3700465	1	TUB TILT CYLINDER ROD END TO RELIEF VALVE PORT A
2	3700771	1	ELECTRIC PUMP TO TANK
3	3700772	1	VALVE RETURN TO TANK
4	3700773	1	ELECTRIC PUMP PORT P TO VALVE
5	3700773	1	VALVE TO ELECTRIC PUMP PORT T
6	3700774	1	VALVE TO CONVEYOR LIFT BUTT END
7	3700775	1	VALVE TO RELIEF VALVE PORT D
8	3700775	1	VALVE TO RELIEF VALVE PORT B
9	3800010	1	FTG\3/4MPX1/2FP\BUSH
10	3800031	1	FTG\3/8MPX3/8FP\90\ST;EL
11	3800133	1	FTG\1/2MPX3/8FP\90\ST;EL
12	3800171	1	FTG\3/4MORX1/2FP
13	3800268	1	FTG\3/4MORX3/8FP\90\ST;EL
14	3800361	1	FTG\1/2MP\VENT
15	3800443	2	FTG\3/4MPX3/8FP\BUSH
16	3800530	2	FTG\3/4MORX9/16MJIC\ST
17	3800757	6	FTG\9/16MORX9/16MJIC\90
18	3800770	2	FTG\9/16MOR\ORFC\.0225"
19	4000119	2	VALVE\CHECK\VEL\9GPM
20	4000177	1	VALVE\HYD\RELIEF\DBL\>
21	4000304	1	UNIT\PWR\24V\W/O RES
22	4000342	1	VLV\HYD\2SPL\SOL\24VDC
23	4502061	1	TANK\OIL
24	4502062	1	BRKT\VLV\HYD\ELEC
25	4700776	7	CLMP\HOSE\3/8
26	4800003	5	BOLT\HEX\3/8X1
27	4800013	4	BOLT\HEX\5/16X1
28	4800034	1	BOLT\HEX\3/8X1-1/2
29	4800515	2	BOLT\HEX\3/8X3-1/4\NC
30	4900002	6	NUT\HEX\3/8\NC
31	4900003	4	NUT\HEX\5/16\NC
32	5000019	8	WASH\LOCK\3/8
33	5000022	4	WASH\LOCK\5/16
34	5000023	4	WASH\FLAT\5/16
35	4100265	1	CYL\HYD\3-1/2X12\1-1/2ROD
36	4100266	1	CYL\HYD\3X24\1-1/2ROD
37	4000407	4	VALVE\HYD\SOL\24V\E10\DTZ\


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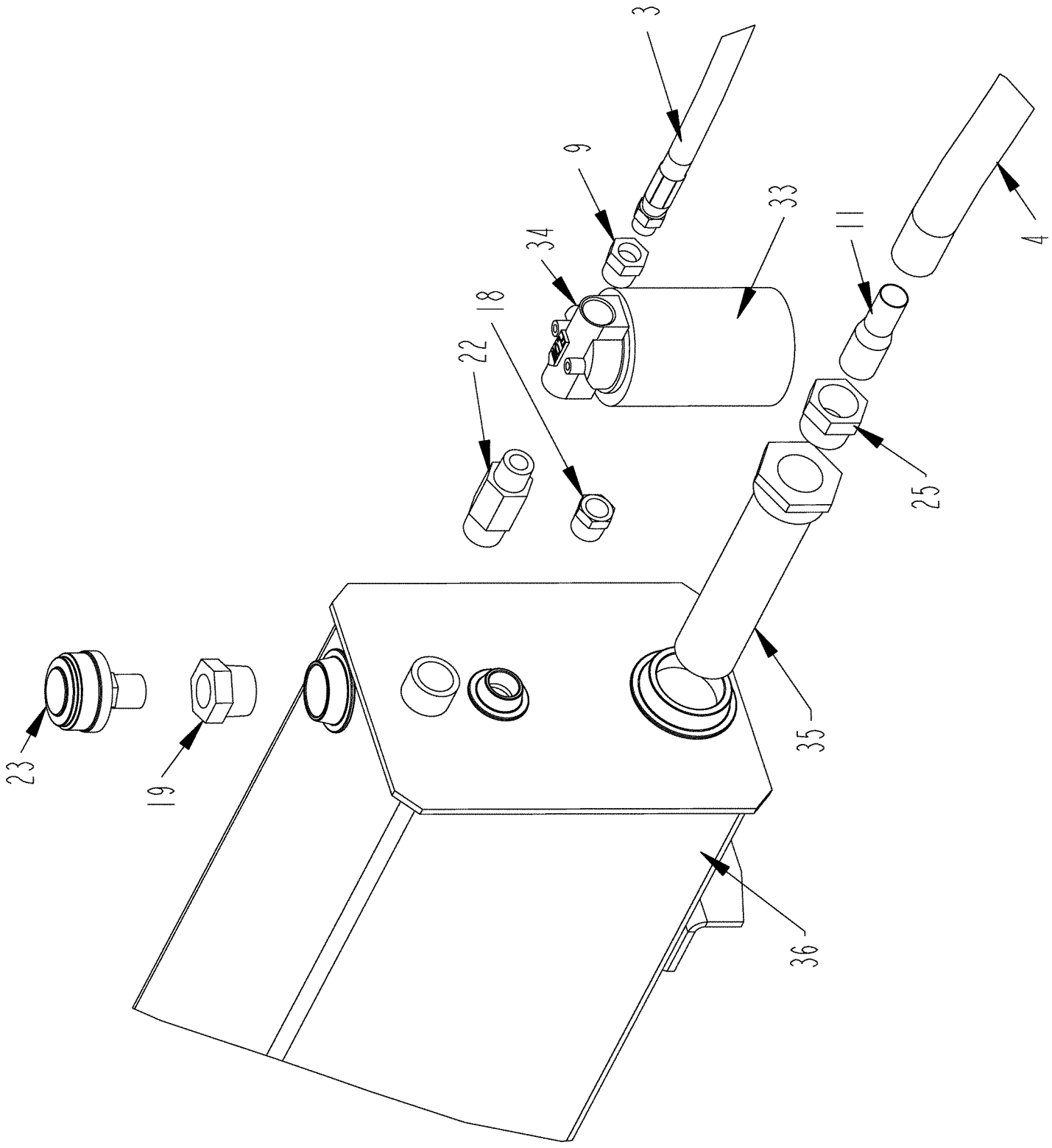
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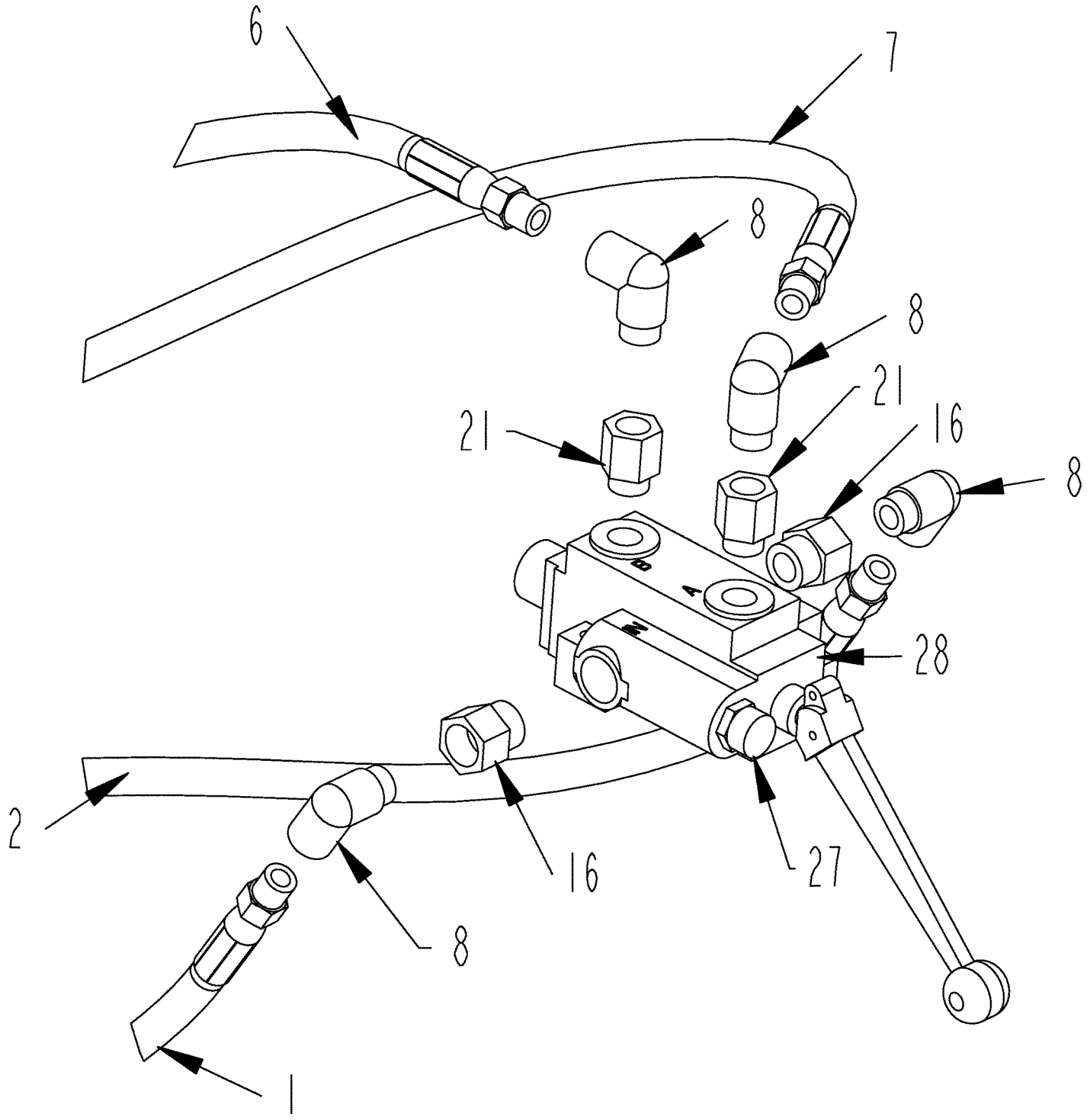
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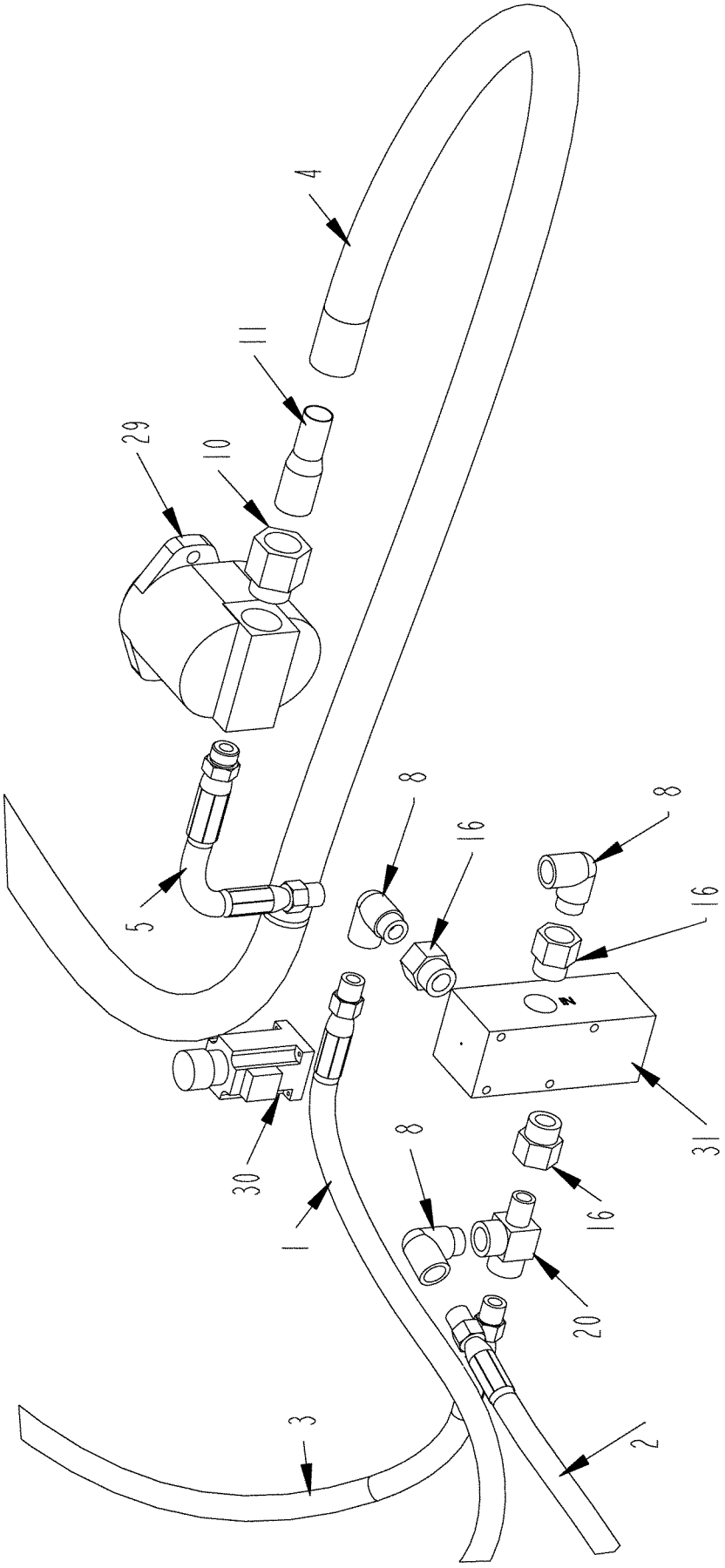
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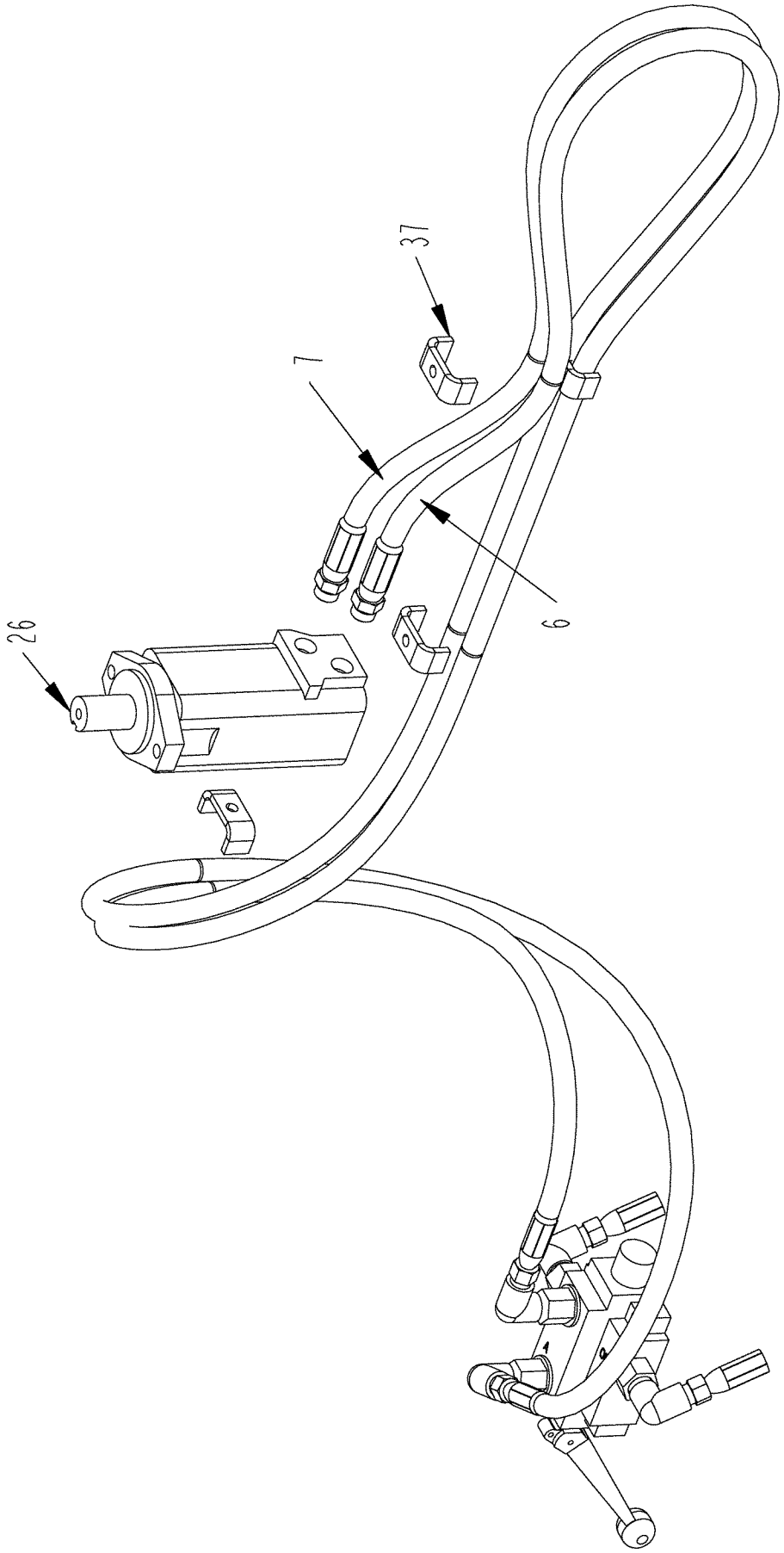
37
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ITEM	PART	QTY.	PART DESCRIPTION
1	3700397	1	GOVERNOR CONTROL FLOW TO VALVE INLET
2	3700397	1	VALVE RETURN TO GOVERNOR RETURN
3	3700421	1	GOVERNOR RETURN TO TANK
4	3700474	1	OIL TANK TO PUMP INLET
5	3700493	1	PUMP TO GOVERNOR VALVE
6	3700828	1	TUB DRIVE MOTOR TO VALVE
7	3700829	1	TUB DRIVE MOTOR TO VALVE
8	3800008	7	FTG\1/2MPX1/2FP\90\ST;EL
9	3800010	1	FTG\3/4MPX1/2FP\BUSH
10	3800012	1	FTG\1-5/16MORX1FP
11	3800056	2	FTG\1MPX1BARB\LW
12	3800074	1	FTG\1/2MPX1/2BARB\HE\W/FRRL
13	3800075	8	FTG\1/2MPSX1/2BARB\HE\W/FRRL
14	3800107	3	FTG\3/4FP\WELD\FLG\LW
15	3800115	3	FTG\7/8MORSX1/2BARB\HE\W/FRRL
16	3800119	5	FTG\1-1/16MORX1/2FP
17	3800130	1	FTG\2FP\WELD\FLG\LW
18	3800137	1	FTG\3/4MP\SIGHT:GLASS
19	3800155	1	FTG\1-1/4MPX3/4FP\BUSH\LW
20	3800161	1	FTG\1/2FPX1/2MPX1/2FP
21	3800171	2	FTG\3/4MORX1/2FP
22	3800239	1	FTG\1MPX3/4MP\NPL
23	3800253	1	FTG\3/4MP\VENT
24	3800349	1	FTG\1-1/4FP\WELD\FLG\LW
25	3800427	1	FTG\1-1/4MPX1FP\BUSH
26	3900005	1	MTR\HYD\14.9\2000\SAE;A
27	4000065	1	NON-ADJUSTABLE RELIEF VALVE 1800P
28	4000095	1	VALVE\HYD\1-SPL\W/DETENT
29	4200025	1	PUMP\HYD\1.87CU.IN.\RH\EATON\15
30	4300054	1	VALVE\SOLENOID\24V\JEMM
31	4300064	1	VALVE\SERVO\15GPM\24VDC\>
32	4400004	1	FL/TR\BASE\3/4FP\3.7D
33	4400005	1	FLTR\ELMNT\10MICRON\3.7D\35GPM
34	4400006	1	FLTR\COMP\10MICRON\3.7D\35GPM
35	4400007	1	FLTR\SCRN\2MPX1-1/4FP\25GPM
36	4502061	1	TANK\OIL
37	4700777	4	CLMP\HOSE\1/2


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H-1100 Tilt Tub Grinder Documentation Comment Form

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- Is the information clearly presented?
- Does the manual give you all the information you need to operate the equipment safely and effectively?
- Are the diagrams and illustrations correct?
- Do you need more illustrations?
- What features do you like most about the manual? What features do you like least?

If you find errors or have specific suggestions, please note the topic, chapter and page number.

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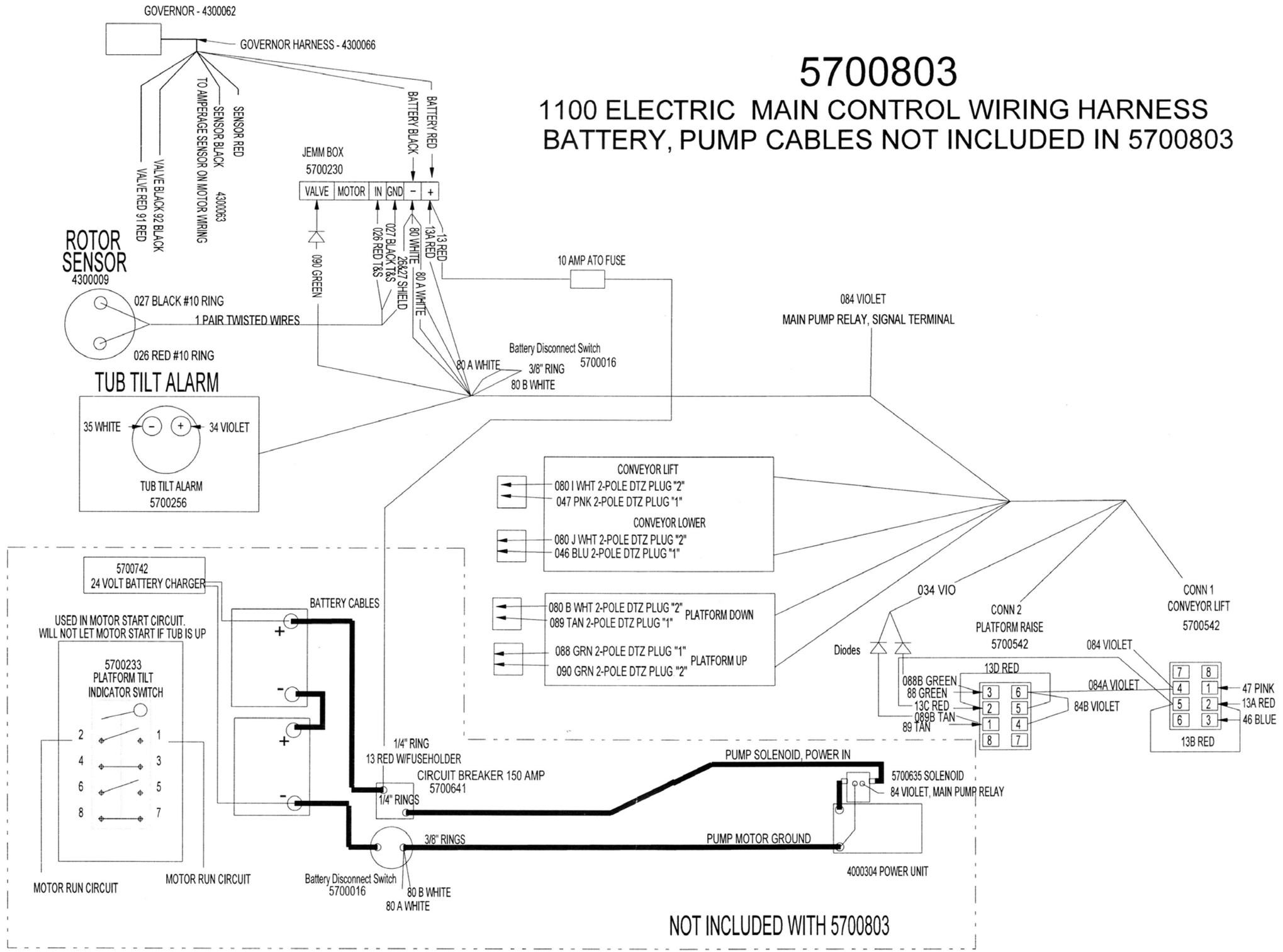
5700803
1100 ELECTRIC MAIN CONTROL WIRING HARNESS
BATTERY, PUMP CABLES NOT INCLUDED IN 5700803
GOVERNOR - 4300062
GOVERNOR HARNESS - 4300066
VALVE RED 91 RED
VALVE BLACK 92 BLACK
TO AMPERAGE SENSOR ON MOTOR WIRING
4300063
SENSOR BLACK
SENSOR RED
BATTERY BLACK
BATTERY RED
JEMM BOX
5700230
VALVE
MOTOR
IN
GND
-
+
090 GREEN
026 RED T&S
027 BLACK T&S
26&27 SHIELD
80 WHITE
80 A WHITE
13A RED
13 RED
ROTOR SENSOR
4300009
027 BLACK #10 RING
1 PAIR TWISTED WIRES
026 RED #10 RING
10 AMP ATO FUSE
084 VIOLET
MAIN PUMP RELAY, SIGNAL TERMINAL
Battery Disconnect Switch
5700016
80 A WHITE
3/8" RING
80 B WHITE
TUB TILT ALARM
35 WHITE
34 VIOLET
TUB TILT ALARM
5700256
CONVEYOR LIFT
080 I WHT 2-POLE DTZ PLUG "2"
047 PNK 2-POLE DTZ PLUG "1"
CONVEYOR LOWER
080 J WHT 2-POLE DTZ PLUG "2"
046 BLU 2-POLE DTZ PLUG "1"
080 B WHT 2-POLE DTZ PLUG "2"
089 TAN 2-POLE DTZ PLUG "1"
PLATFORM DOWN
088 GRN 2-POLE DTZ PLUG "1"
090 GRN 2-POLE DTZ PLUG "2"
PLATFORM UP
034 VIO
Diodes
CONN 2
PLATFORM RAISE
5700542
CONN 1
CONVEYOR LIFT
5700542
084 VIOLET
13D RED
088B GREEN
88 GREEN
13C RED
089B TAN
89 TAN
084A VIOLET
84B VIOLET
47 PINK
13A RED
46 BLUE
13B RED
5700742
24 VOLT BATTERY CHARGER
BATTERY CABLES
USED IN MOTOR START CIRCUIT.
WILL NOT LET MOTOR START IF TUB IS UP
5700233
PLATFORM TILT
INDICATOR SWITCH
1/4" RING
13 RED W/FUSEHOLDER
CIRCUIT BREAKER 150 AMP
5700641
1/4" RINGS
PUMP SOLENOID, POWER IN
5700635 SOLENOID
84 VIOLET, MAIN PUMP RELAY
3/8" RINGS
PUMP MOTOR GROUND
4000304 POWER UNIT
MOTOR RUN CIRCUIT
MOTOR RUN CIRCUIT
Battery Disconnect Switch
5700016
80 B WHITE
80 A WHITE
NOT INCLUDED WITH 5700803