HAYBUSTER®

Operating Instructions and Parts Reference

H-835™

PTO Driven Tub Grinder

Product Information

DURATECH INDUSTRIES

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H-835™

PTO Driven Tub Grinder

Operating Instructions and Parts Reference

DuraTech Industries International Inc. (DuraTech Industries) has made every effort to assure that this manual completely and accurately describes the operation and maintenance of the H-835 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-835 Tub Grinder.

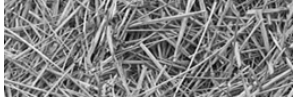
- Foreword and Section 1, important safety information.
- Section 2, “Dealer Preperation” to verify that the machine has been prepared for use.
- Section 3, “Machine operation,” which explains normal operation of the machine.
- Section 3.1, “Pre-Operation Inspection”.

Appropriate use of unit

The H-835 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
   - round bales
   - Loose hay

2. Grind most types of grain
   - Shell corn
   - High moisture corn
   - Most small grains

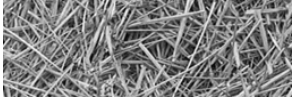


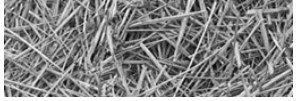
3. Grind most types of crop residue
    - Stover
    - Straw
4. Grind various sizes
    - Screens are available from 3/4” to 6”

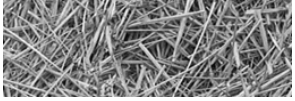
Operator protection

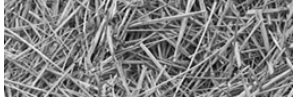
As with all machinery, care needs to be taken in order to insure the safety of the operator and those in the surrounding area.

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-835 Tub Grinder are required to wear head, eye, and ear protection, No loose clothing is allowed.









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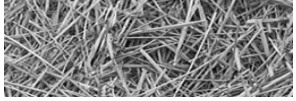
PTO Driven Tub Grinder

Part 1:
Operating Instructions



Introduction

The H-835 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
   - Round bales
   - Loose hay
2. Grind most types of grain
   - 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 3/4” to 6”

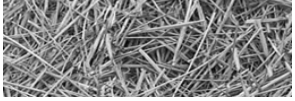
To avoid possible damage to the machine and risk of injury to the operator, consult with a DuraTech Industries International, Inc. (DuraTech Industries) representative before attempting to shred materials other than livestock forage.

Purpose

The purpose of this owner’s manual is to explain maintenance requirements and routine adjustments for the most efficient operation of your H-835 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-835 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:** Dealer preparation.
    - **Section 3:** Describes the purposes of each part, and machine opreration
    - **Section 4:** Maintenance and lubrication.
    - **Section 5:** Troubleshooting.

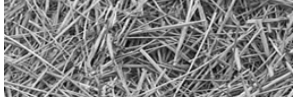
- **Part 2:** Part's reference contains diagrams of each assembly, with the part number of each part. A key on the same or facing page contains a description of the part and the quantity used.

Dealer responsibilities

- Read Section 2, "Dealer Preparation", and preform the tasks outlined.
- 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

- Operator is responsible for his safety, and the safety of others near the machine.
- Review Section 2, "Dealer Preparation", to verify that the machine 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.
- Keep copies of all manuals in a readily accessible location for future reference.



Section 1: Safety

The safety of the operator is of great importance to DuraTech Industries. 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 WRITTEN MATERIAL PERTAINING TO THE H-835 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.

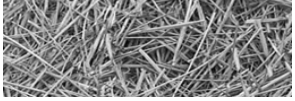
To assure that all decals remain in place and in good condition, follow the instructions below:

- 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 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. Yellow warning triangle/black graphical symbol, indicates what the hazard is.** **Hazard Identification**
	**2. Red circle-with-slash/black graphical symbol indicates a prohibited action to avoid the hazard.** **Prohibited Action**
	**3. Blue mandatory action circles/white graphical symbol - indicates an action to take to avoid the hazard.** **Mandatory Action**

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-835** when you are fatigued. Be alert - If you get tired while operating your **H-835,** 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 head with a hard hat to reduce the risk of injury from flying debris.

Protect your hands with gloves when handling flail and sections. Heavyduty, 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-835** 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, KEEP AWAY!

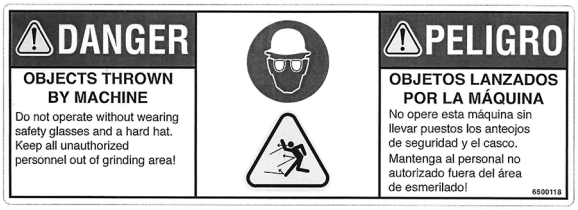
ENTANGLEMENT CAN CAUSE SERIOUS INJURIES OR DEATH.

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

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

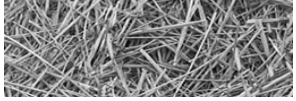


6500118

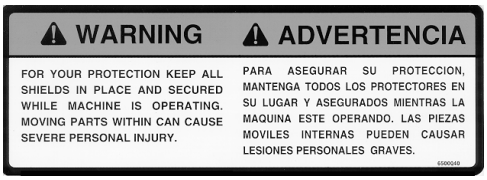
DANGER: ROTATING PART HAZARD, STAY OUT OF TUB WHEN ENGINE IS RUNNING.

1. KEEP OTHERS AWAY.
2. PLACE ALL CONTROLS IN NEUTRAL, STOP ENGINE, REMOVE KEY, AND WAIT FOR ALL MOVING PART TO STOP BEFORE SERVICING, ADJUSTING, REPAIRING, UNPLUGGING, OR ENTERING THE TUB FOR ANY REASON.
3. DISCONNECT DRIVELINE ON PTO MODELS.

6500212



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



6500040

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.

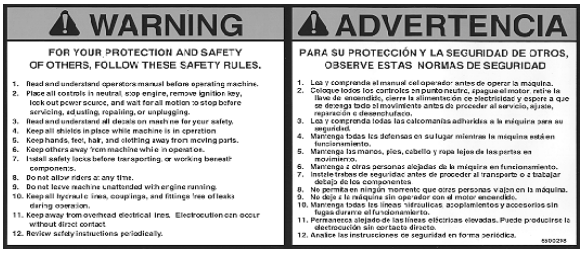
4. NEVER ALLOW RIDERS ON THIS IMPLEMENT OR THE TRACTOR.

5. KEEP OTHERS AWAY FROM THIS MACHINE WHILE IN OPERATION.

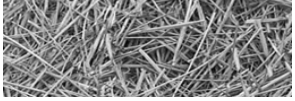
6. KEEP ALL SHIELDS IN PLACE WHILE MACHINE IS OPERATING.

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

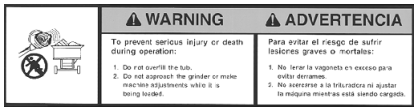
WARNING: HIGH-PRESSURE FLUID HAZARD, TO PREVENT SERIOUS INJURY OR DEATH:

- 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: 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.

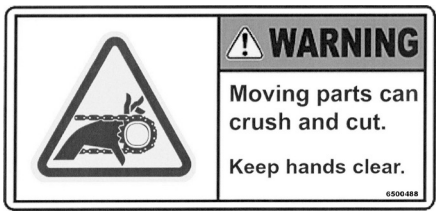


6500283

WARNING: PINCH POINT STAY BACK

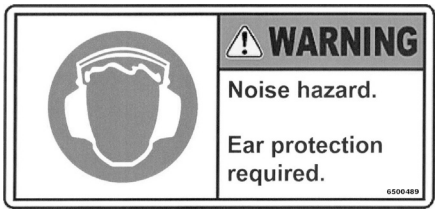
6500339

WARNING: Moving parts can crush and cut.
Keep hands clear.



6500488

WARNING: Noise hazzard.
Ear protection required.



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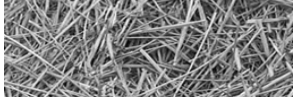


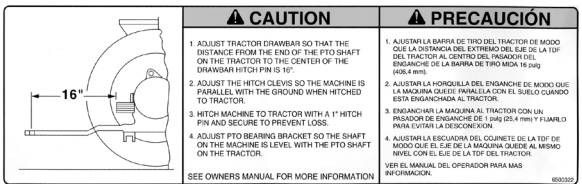
WARNING: NO STEP
DO NOT STEP, STAND, OR SIT ON THIS SURFACE.
MAY CAUSE INJURY AND/OR EQUIPMENT DAMAGE.

6500490

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".



6500322

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.

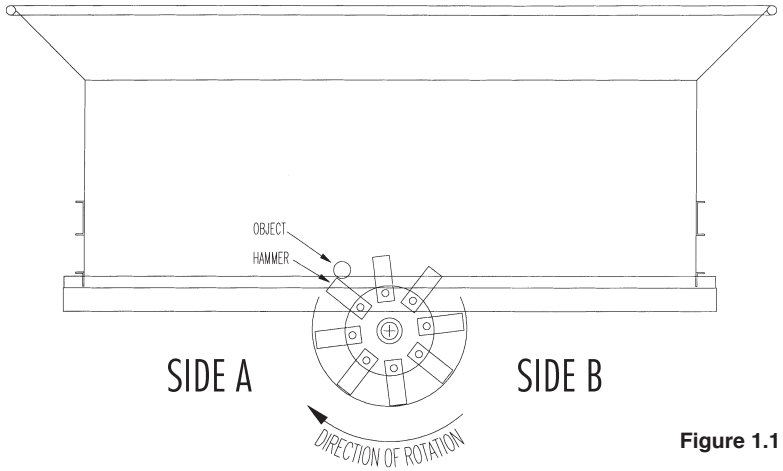


Figure 1.1

VIEWED FROM THE REAR OF THE H-835

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.

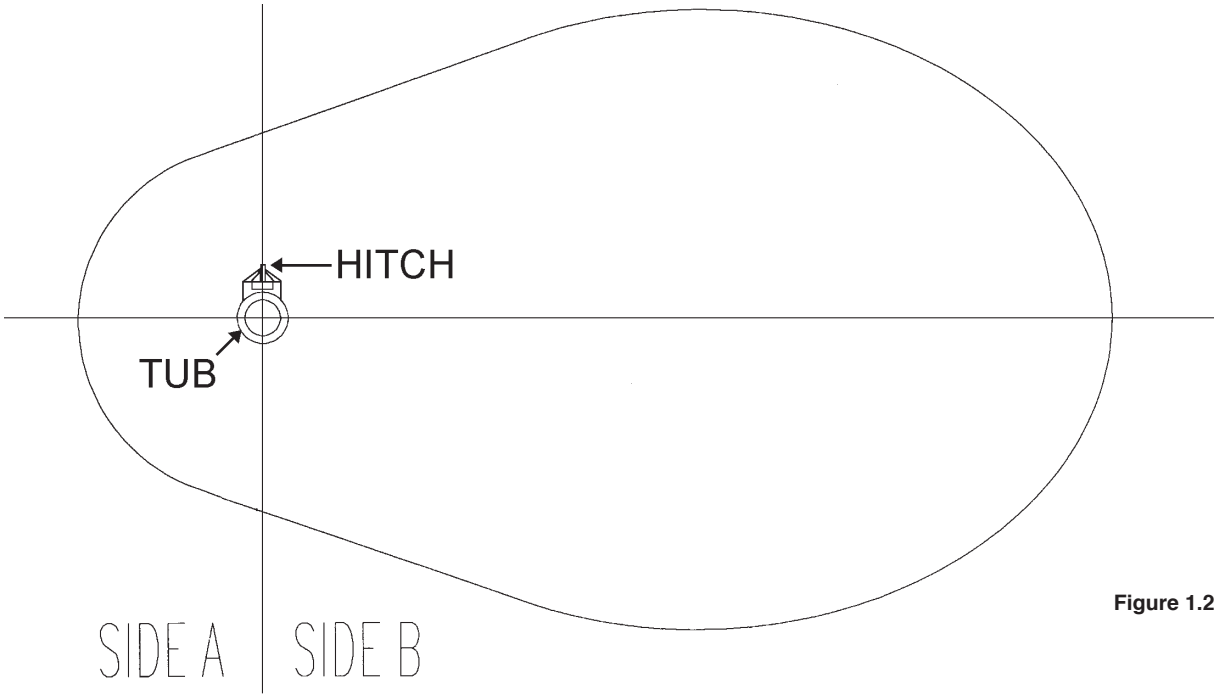
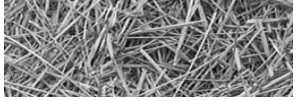


Figure 1.2



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-835 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 PTO Driven Tub Grinder without shields in place.

1.6 Personal protection equipment

Operators and authorized observers of the H-835 Tub Grinder are required to wear head, eye, and ear protection. No loose clothing is allowed.

1.7 Safety Review

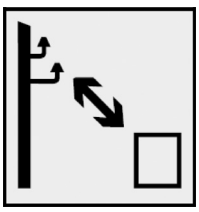
WARNING: Before attempting to operate your H-835 Tub Grinder, carefully read and follow instructions given below and contained elsewhere in this manual.

BEFORE OPERATING

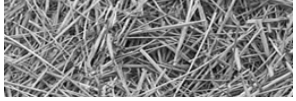
1. Read and follow all instructions contained in:
   - Operators Manual
   - Tractor Operators Manual
   - Decals placed on H-835 Tub Grinder.

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.**
4. Make sure the H-835 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-835 Tub Grinder unless specifically recommended or requested by DuraTech.
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.



Keep sufficient distance away from electrical power lines.
WARNING: Electrocution is possible when running this machine during an electric storm or heavy fog.



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.
7. Because it is possible that your H-835 may be used in dry areas or the presence of combustibles, special precautions should be taken to prevent fires and fire fighting equipment should be readily available.

NO SMOKING IN THIS AREA

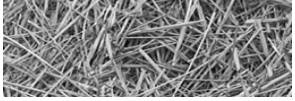
DANGER! NO OPEN FLAMES IN THIS AREA

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

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-835 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.

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**

1.8 Fire Prevention

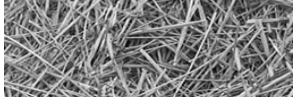
Grinding hay, and other products in a tub grinder produces a large amount of potentially combustible material. The risks of fire can be significantly reduced with proper operating and maintenance procedures. This does include frequent removal of dust, debris, and other combustible materials.

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 front of the tub and avoid placing materials on the spinning rotor. When material begins to fall over the rotor, engage the tub hydraulics and adjust the flow control valve to rotate the tub slowly while continuing to fill the tub. When the tub is 1/2 to 2/3 full, the flow control valve may be increased 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:

- 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:

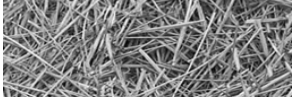
The fire extinguishers should be ABC dry chemical extinguishers that are appropriate for use with materials normally encountered on a tub grinder.

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.



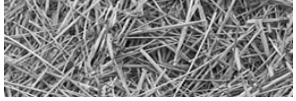
If an extinguisher is only partially used, the dry chemical will jam in the seals, allowing the extinguisher to loose its pressure charge in less than an hour, making it useless to you. It must be recharged before placing it back on the machine. Have the extinguisher recharged today; a fire will not 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-835 TUB GRINDER without first securing the conveyor in the transport position (see 3.7 Road Transport).

1. Be sure all loose parts are securely fastened down.
2. Make sure all bystanders are clear.
3. Hitch H-835 Tub Grinder to a tow vehicle with adequate load carrying and braking capacity. Be sure to attach safety chains between tow vehicle and H-835 Tub Grinder. Tongue weight is1,300 lbs. (590 kg)
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-835 Tub Grinder and the towing vehicle.
7. Check local ordinances regarding restrictions for H-835 Tub Grinder travel on your planned route.
8. Be aware of machine width at all times and do not exceed 30 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.

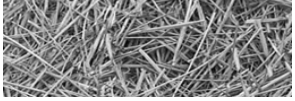
Before working on or near the Tub Grinder or any reason such as servicing, inspecting or unclogging the machine:

- Follow the normal shutdown procedure found in Section 1.7 or 3.4 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.

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 WRITTEN MATERIAL PERTAINING TO THE H-835 TUB GRINDER.



Section 2: Dealer Preparation

2.1 Pre-delivery Inspection

Instructions: Before delivering the machine, check the following items carefully and make corrections when necessary. Place an "X" in the circle after each item has been checked and found to be acceptable.

- ○ Check machine for missing items or damage in transit.
- ○ Check for loose bolts or set screws.
- ○ Check hydraulic components for leaks or damage.
- ○ Check lug bolts for tightness, torque to 85-90 ft.-lbs. (115-122 N-m)
- ○ Check tires for proper air pressure. Follow tire manufactures recommendations on side of tires.
- ○ Check conditions of tire rims.
- ○ Check machine for proper lubrication.
- ○ Check shields for installation and condition.
- ○ Check condition of all decals.
- ○ Check all phases of operation.

2.2 Pre-delivery discharge conveyor assembly required

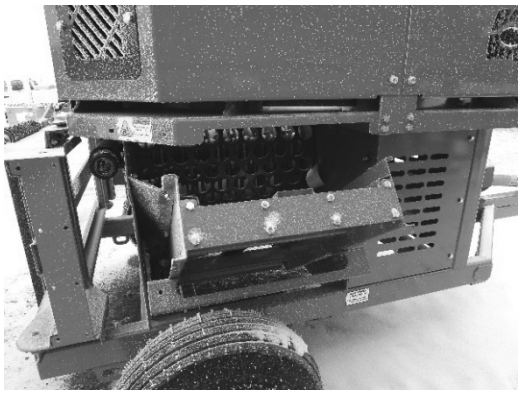
NOTE: ALL GRINDERS ARE SHIPPED WITH DISCHARGE CONVEYOR REMOVED.

Conveyor assembly

Before starting to assemble the discharge conveyor to the H-835 Tub Grinder, park the H-835 Tub Grinder on level ground. Review shipping kit list and verify that all small parts are in the shipping kit.

1. Remove shipping brackets holding the upper discharge conveyor. Place the upper conveyor on the ground by the lower discharge conveyor.

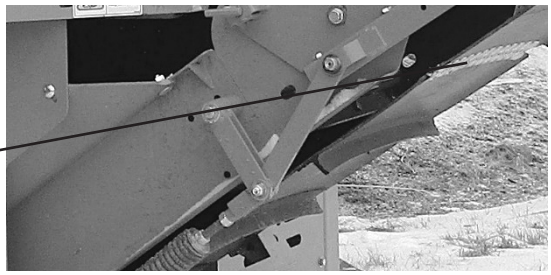
2. Remove the (8) bolts, washers, and nuts from the lower discharge.



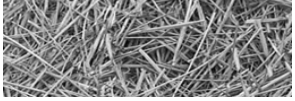
3. Using a loader or hoist, lift the upper conveyor so it lines up with the lower conveyor and bolt together using the hardware that was removed in the previous step.

4. Install the conveyor spring folding assembly.

5. Install conveyor belting (1700264) and connect the ends together using the lacing pin.



6. See **Section 3.13** for “Adjusting the conveyor belt”.



Section 3: Operation and Adjustments

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-835 Tub Grinder and how to use the controls properly. Thoroughly instruct the operator in maintenance and operation of the H-835 Tub.

3.1 Pre-Operating Inspection

Prior to the starting the H-835 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-835 Tub Grinder.

WARNING: Before inspecting the machine, use the normal shutdown procedure found in **Section 1.7** or **Section 3.4**.

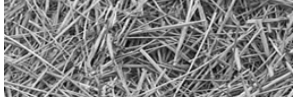
BEFORE OPERATING CHECKS

Before operating the H-835 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 points in **Section 4.1**.
- ❑ Check for loose bolts.
- ❑ Make sure machine is properly adjusted.
- ❑ 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 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. Torque to 85-90 ft.-lbs. (115-122 N-m)
- ❑ Condition of tire rims.
- ❑ Check tires for proper air pressure. Follow tire manufactures recommendations on side of tires.
- ❑ 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, 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.

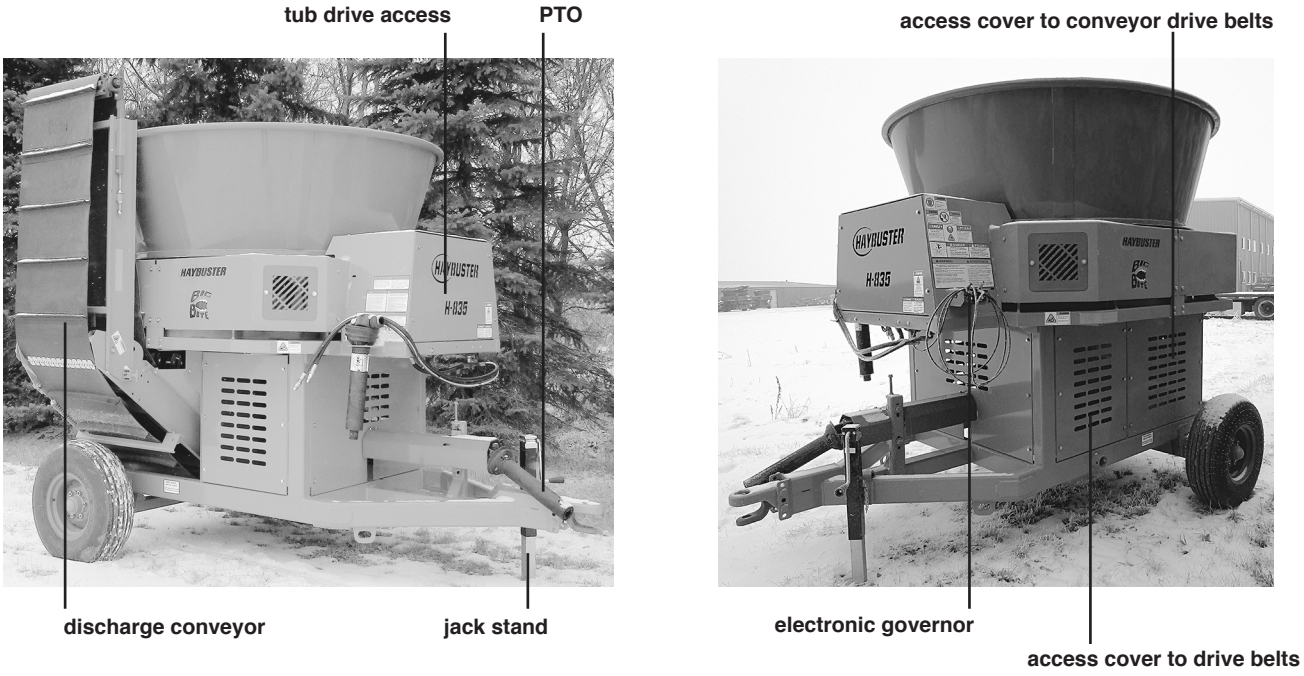
3.2 Introduction to the H-835 Tub Grinder

3.2.1 Description of the H-835 Tub Grinder

The H-835 Tub Grinder is designed to grind most types of hay, grain, and crop residue such as stover and straw. The unit incorporates several basic features including the rotating tub, the electronic governor, the rotor and hammer assemblies, the chain and drive assemblies, discharge conveyor assemblies, and the frame 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 them grind the material before the material is discharged by the conveyor.

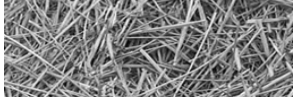
Figure 3.1
views showing major components



3.2.2 Overview of Operator's Controls

Operator controls include:

- **Electric governor:** The electric governor regulates tub rotational speed range.
- **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 and runs the conveyor belt. The conveyor must be unfolded to working position before the PTO is engaged.
- **Adjustable mill grate:** The mill grate can be adjusted to raise and lower the amount of material cut depending on the conditions and desired product.
- **SVC on tractor:** The SVC is used to operate tub rotation.



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 electonic 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's 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 flow is reduced which in turn slows 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's engine, which will maximize grinding efficiency. **See section 3.10 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 if the tub grinder. The rotor on this H-835 Tub Grinder is equipped with 48 swinging hammers. Dull edges on the hammers and/or screens will result in a loss of capacity and increased horsepower 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-835 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

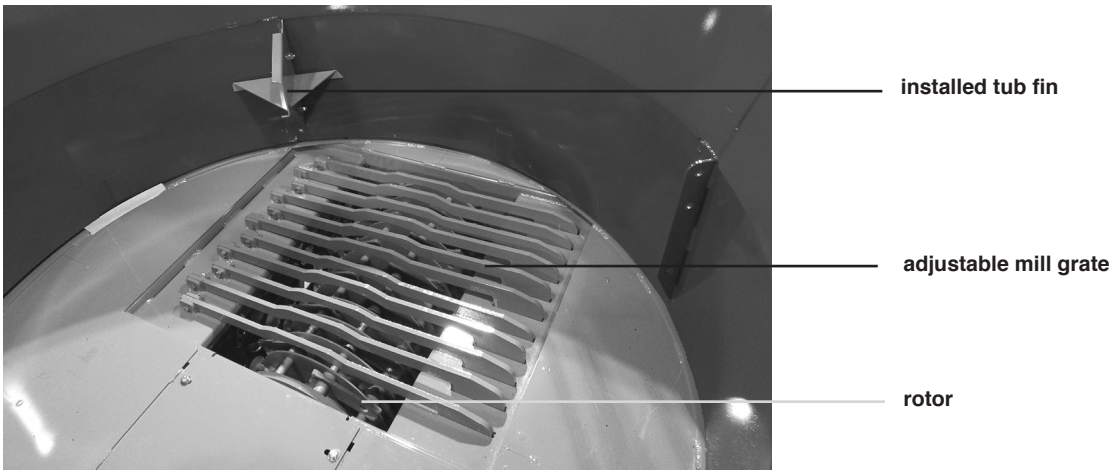
Screens are used to regulate product size. All H-835 Tub Grinders require one screen. As a rule, use the largest diameter screen capable of doing the job.

The size of the hole in the screen determines the coarseness of the grind. The larger the hole diameter, the coarser the grind. Hole sizes vary form ¾" to 6" round and 5-1/8" x9" rectangle. In general, use the larger screen sizes for grinding hay.

3.2.6 Tub

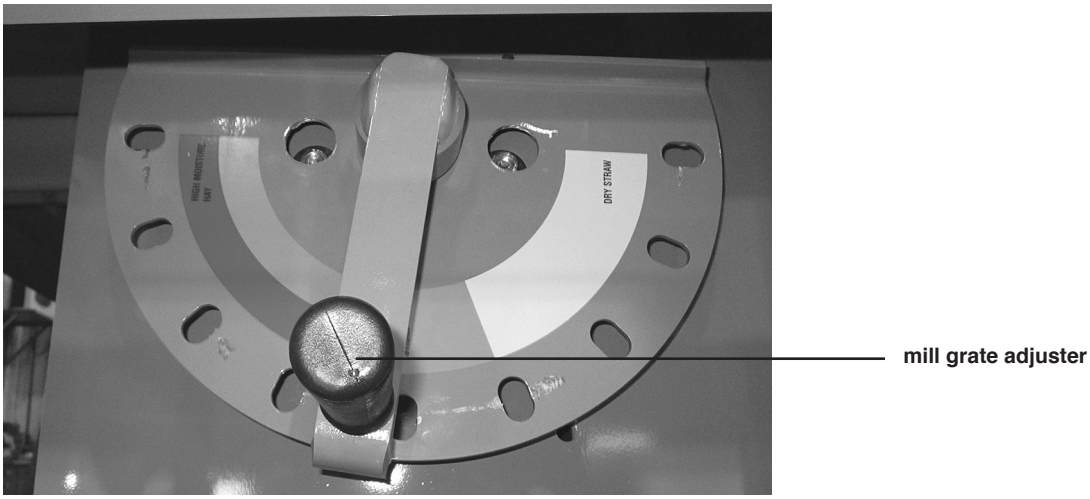
The purpose of the tub is to contain the material above the rotor, and to keep the rotor loaded

One tub fin is furnished with the H-835 Tub Grinder.



3.2.7 Adjustable Mill Grate

An adjustable mill grate is installed above the rotor to regulate the amount of material entering the rotor chamber. The adjustable mill grate can be positioned for wet or tough grasses or lower for dry hay.



3.2.8 Discharge conveyor

The discharge conveyor has a manual fold/unfold.

DANGER: NEVER allow the discharge conveyor to run unless it is in the operating position.

Figure 3.2
shows discharge conveyor in transport/storage position

Figure 3.3
shows discharge conveyor in operating position

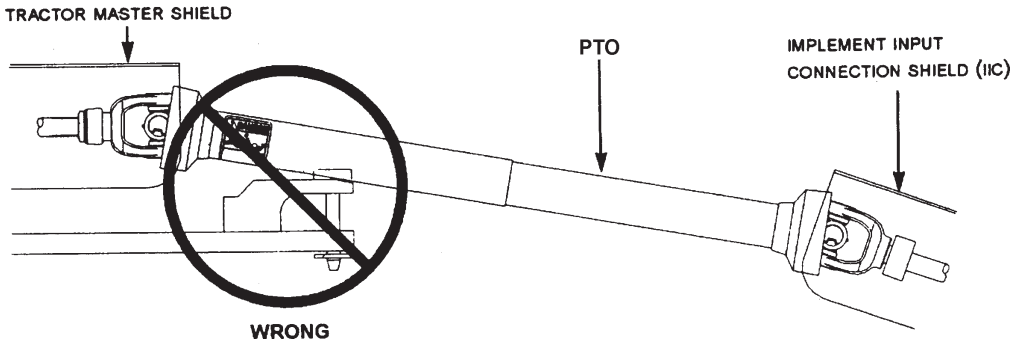
3.3 Machine Operation

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.

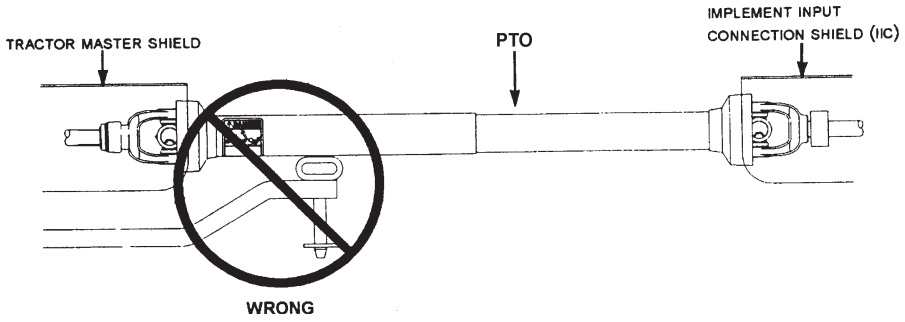
If this implement is attached to a tractor with a clevis hitch (hammer strap) style drawbar, the hammer-strap must be removed to prevent damage to the PTO guarding and the PTO telescoping members. See Figure 3.4.

Figure 3.4
incorrect clevis hitch (hammer strap) style drawbar set up

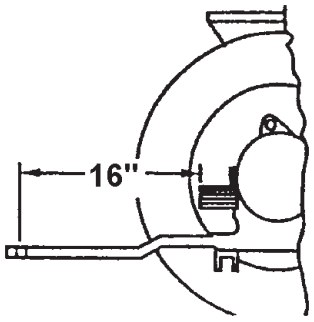


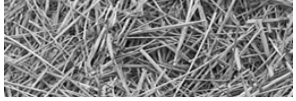
If this implement is attached to a tractor with an offset in the drawbar, be certain it is in the down position to prevent damage to the PTO guarding and the PTO telescoping members. See Figure 3.5.

Figure 3.5
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-835 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-835 Tub Grinder. If tractor is equipped with swinging drawbar, adjust so the tractor PTO and H-835 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-835 Tub Grinder and tractor should be connected with a 1" locking pin.

3.3.3 How to disconnect from tractor

To hitch the H-835 to a tractor, perform the following steps:

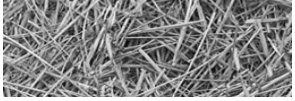
1. Park H-835 Tub Grinder and tractor on a level spot.
2. Lower jack to ground, place blocks under jack if ground is soft.
3. Disconnect electrical wires.
4. Disconnect hydraulic lines.
5. Disconnect PTO, place shaft in shaft holder.
6. Raise hitch of H-835 Tub Grinder to remove weight from tractor hitch 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.



GRINDING

Place materials to be ground directly into the tub. The best method for filling the H-835 Tub Grinder is:

1. Engage rotor and increase engine speed to 1000 RPM on the P.T.O. 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.

ROUND BALES

Place round bales in the tub on end.

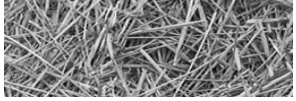
IMPORTANT: Never drop a round bale into the tub from a high level. Ease the bale over the edge and down into the tub carefully. Dropping a bale directly on top of the rotor will cause damage to the rotor.

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 a grain hopper (optional). The grain hopper fits directly over the rotor. It is not recommended that small grains be ground without the use of the grain hopper attachment. (**See Appendix B: H-835 Tub Grinder 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-835 Tub Grinder for any reason, including servicing, inspecting or unclogging machine:

1. Run H-835 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. (**See Section 3.1**)

3.6 Installing or changing screens

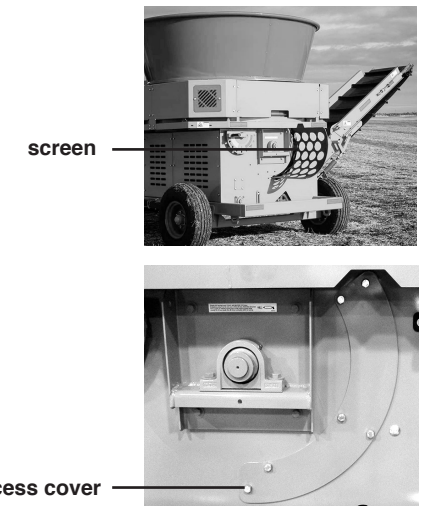
CAUTION: Follow normal shutdown procedures and make sure rotor and all moving parts come to a complete stop before installing or changing the screen.

Using a screen with smaller holes will produce a finer cut. Where a coarse cut is desired, use a screen with a larger hole.

Screens can be reversed when one edge becomes worn.

To change, the screen, perform the following steps:

1. Remove the (6) M12 x 25 bolts and lock washers from the screen access cover.
2. Remove the screen access cover.
3. Slide screen out.
4. Insert new screen or reverse the existing screen if one side is dull.
5. Replace the screen access cover, bolts, and washers.



3.7 Road Transport

3.7.1 Changing discharge conveyor to transport/storage position

Inspect the H-835 Tub Grinder for any loose parts, tools, or any material. Remove them or fasten them securely to the H-835 Tub Grinder.

DANGER: NEVER allow the discharge conveyor to run while changing from operating position to transport/storage position. **NEVER** run the discharge conveyor in the transport position.

To set up the H-835 Tub Grinder for transport/storage, perform the following steps:

1. Follow normal shutdown procedure.
2. Check for local restrictions on towing.
3. Turn latch pin from lock position and pull pin outward. Do this on each side of discharge conveyor.

latch pin

latch pin

4. Push on upper discharge conveyor and it will fold up against the tub. Reset folding pins and lock in folded position.

Figure 3.6
discharge conveyor in transport/storage position

3.7.2 Changing discharge conveyor to operating position

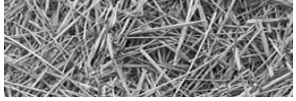
To set up the H-835 Tub Grinder for operation, perform the following steps:

1. Connect H-835 Tub Grinder to the tractor.
2. Connect the hydraulic hoses and electrical cables to the tractor.

DANGER: NEVER allow the discharge conveyor to run while changing from transport/storage to operating position. **NEVER** run the discharge conveyor in the transport position.

3. Change discharge conveyor to operating position. Turn latch pin from lock position and pull pin outward. Do this on each side of discharge conveyor.
4. Pull on the upper discharge conveyor until it unfolds away from the tub. Once conveyor is fully extended, reset folding pins and lock in operating position.

Figure 3.7 shows discharge conveyor in operating position



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 LIGHT

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 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)

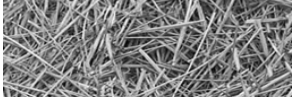
This knob sets the maximum speed at which the tub will rotate in both the tub (manual) and engine (auto) modes. In the engine (auto) mode tub speed will vary between zero and this setting depending on the tractor engine load.

• 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.



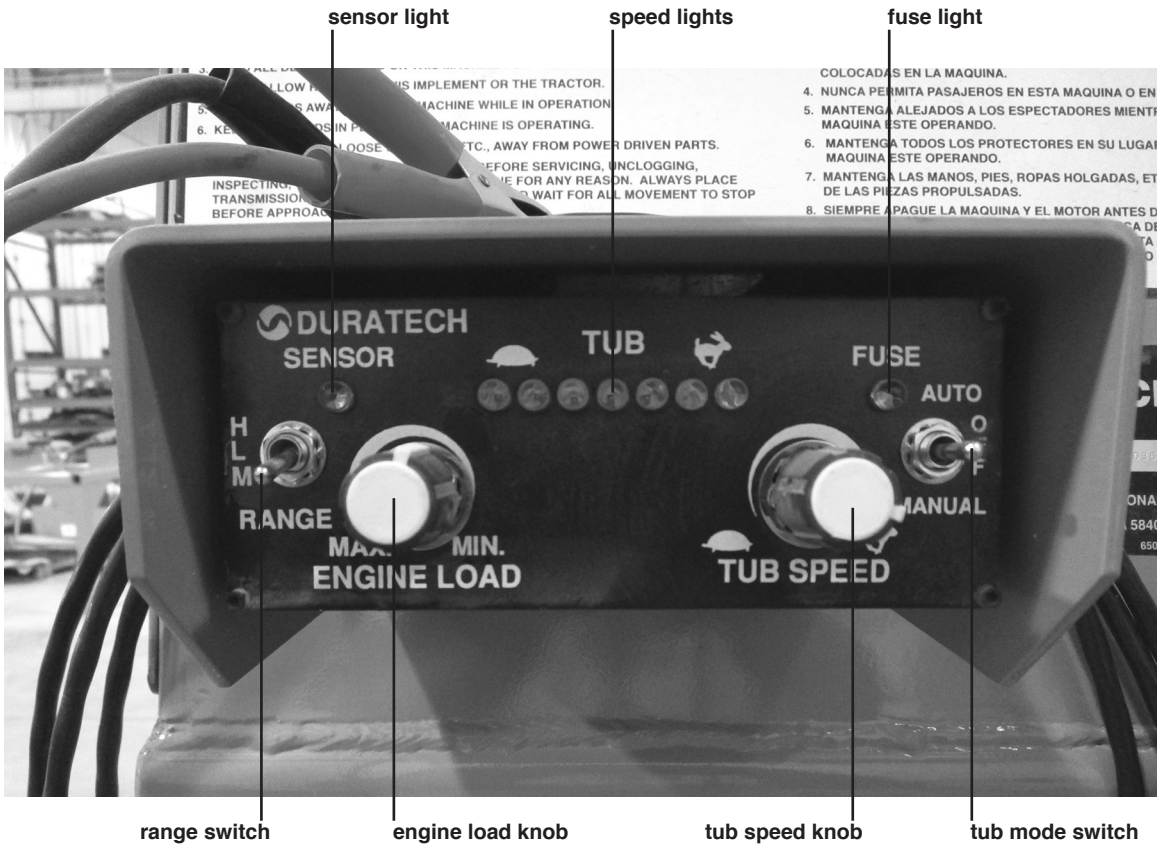


Figure 3.7
electronic governor controls

3.9 Operation of the Electronic Governor

• Engine (Auto) mode

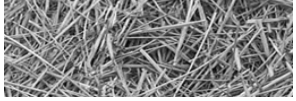
In the engine (Auto) mode, the electric governor monitors the rotation speed of the tractor's engine. The hydraulic flow to the tub drive mechanism is regulated in proportion to the tractor's engine speed. As the engine speed slows, the electronic governor decreases the hydraulic flow which slows down 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 counterclockwise 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 the 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 the H835 Tub Grinder completely shut down. 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 half 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. Th tub should not be rotating at this time. If the tub is rotating, read section 4.1 “Troubleshooting the electronic governor system” in this manual.

5. Slowly rotate the **ENGINE LOAD KNOB** counterclockwise until the tub just begins to move. The tub should begin rotating. 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 4.1 “Troubleshooting the electronic governor system” in this manual.

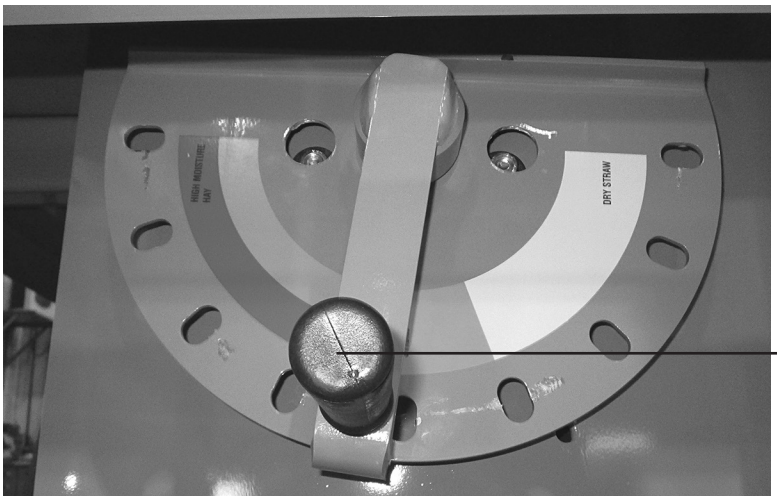
3.11 Adjusting the Tub’s Rotation Speed

Tub rotation is controlled by the **TUB LIMIT KNOB (TUB SPEED KNOB)** on the electronic governor.

3.12 Mill grate adjustment

WARNING: Before removing the left side shield, be sure to follow the normal shut down procedure. Be certain that the tractor is shut off and all rotating components of the machine have come to a complete stop.

An adjustable mill grate is installed above the rotor to regulate the amount of material entering the rotor chamber. The adjustable mill grate can be positioned for wet or tough grasses or lower for dry hay.



Rotating the mill grate adjustment handle clockwise will expose less of the hammer and produce a finer cut. Moving the handle counterclockwise will expose more of the hammer to produce a coarser cut.

To rotate the handle, squeeze the lever to release the lock and rotate the handle to the desired position and release the lever. Be sure that the lever is seated in one of the adjustment slots to ensure that the mill grate stays properly adjusted.

3.13 Adjusting discharge conveyor belt

The rollers on the discharge conveyor are adjustable to allow for belt stretching 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 keep the belt centered on the rollers.

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

Figure 3.8
discharge conveyor belt adjusting bolt

3.14 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 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:

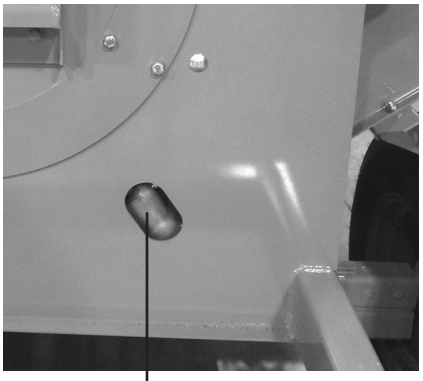
1. Adjust the idler roller bolt on the right side of the conveyor. Increase tension by approximately 2 full turns of the adjusting nut.
2. Make certain that all personnel are clear of machine and the start engine. Engage the tractor PTO.

NOTE: The rotor will also be turning.

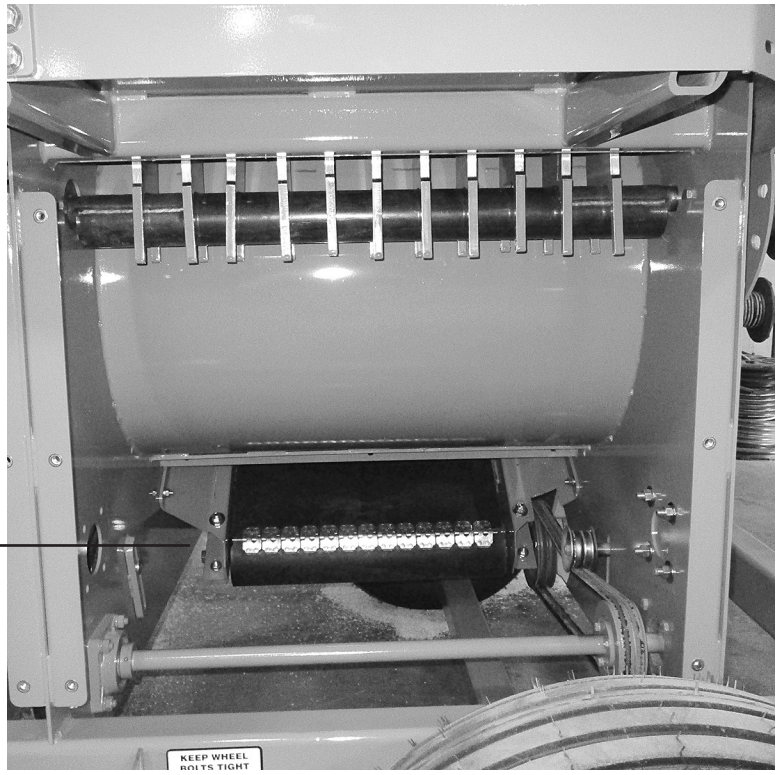
3. Observe conveyor belt tracking from a safe location.
4. If further adjustment is required, disengage tractor PTO, and shut down the machine using the normal shutdown procedure.
5. Some adjustment of the drive roller may be required if no improvement is noted by increasing the idler roller tension.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



idler roller tension adjusting bolt



idler roller tension adjusting bolt

3.15 Main drive belt adjustment

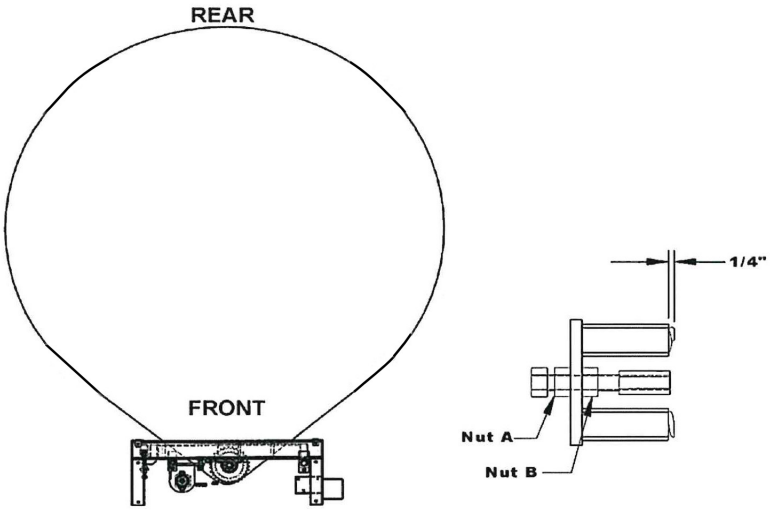
Adjustment has been provided for tightening main drive belts. Belts tend to stretch rapidly when first put into operation. Tighten regularly to prevent slippage. Belt tension should be checked at 30-minute intervals or as necessary until stretch is eliminated. Belt tension can be checked by pressing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

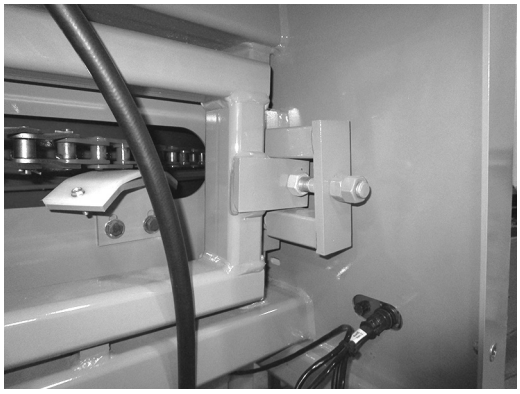
3.16 Adjusting tub chain tension

To adjust the chain tension, perform the following steps:

1. Position tub so teeth are orientated as shown.
2. Adjust bracket-spring engagement to ¼” to 3/8” using Nut A. See figure 3.9.
3. Tighten Nut B.

Figure 3.9
tub tension bracket





3.17 Electro-hydraulic valve coil test

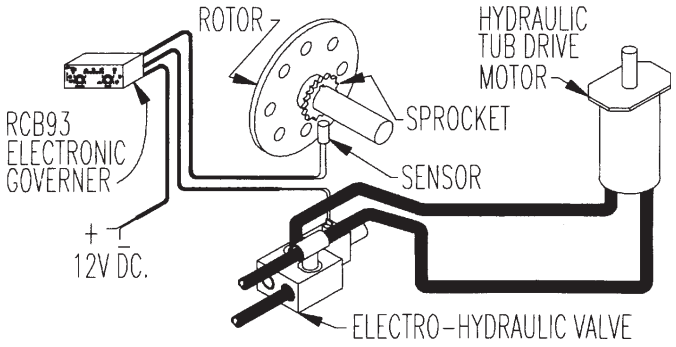
This test requires an accurate ohm meter. Disconnect the wiring harness leads at the electro-hydraulic valve coil. Check resistance of valve coil leads at the terminals. The resistance should be between 8 to 12 ohms for a 12 volt system. If the values are not within this range, replace the electro-hydraulic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

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.

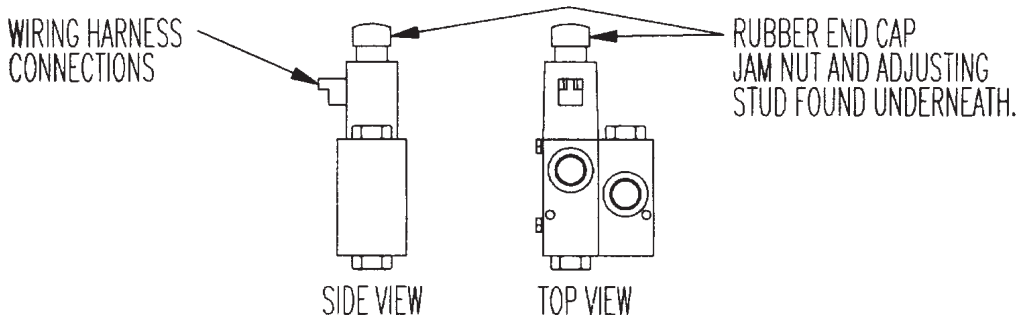
1. When first starting the machine, run at less than full throttle to allow the hydraulic system to warm up before operating.
2. With engine running at full throttle, turn the engine load knob clockwise to maximum position and set the mode switch in the engine (auto) position. Engage the tub using the 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 5.2 “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 3.10
electro-hydraulic valve



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

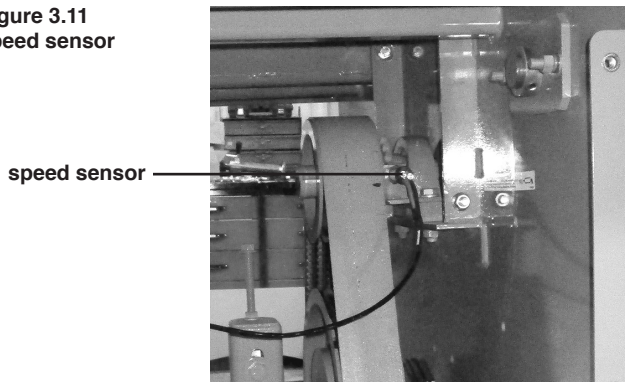
1. Remove the rubber end cap from the end of the electro-hydraulic valve. This will reveal a jam nut and an adjusting screw with a screwdriver slot.
2. Disconnect the wiring harness from the electro-hydraulic valve coil, and loosen the jam nut.
3. Start the engine, engage the tub drive in the forward 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

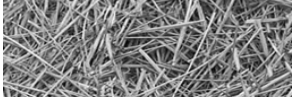
3.19 Sensor test

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

Sensor resistance is 900 ohms +/- 10%.

Figure 3.11
speed sensor





3.20 Hydraulic valve and hose connections

All valve hose connections should be tight and leak free. If the area near a hose connection becomes oily or dirty, repairs should be made to fix the leak. Hoses should be free of cracks or cuts to ensure safe operation.

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 qualified medical attention immediately to prevent serious infection or reaction.

3.21 Tires and Rims

Tires should be inflated to manufactur's requirements and should be free of cuts or cracks. There should also be adequate tread and no visible cords, wires or tread separation. Tires must also be of proper loading rating, speed rating and size.

Rims must be free of cracks and rust pitting. Lug nuts must also be tight, Inspect the area around the lug bolts. If rust develops this is a sign of loose lug bolts.

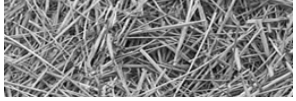
3.22 Jack

An adjustable jack is provided with the machine to support the hitch when machine is disconnected from the tractor. The jack must only be used on firm, level ground or similar base to prevent it from sinking.

When unhooking the machine, remove the jack pin and rotate the jack to the upright position and reinstall the pin. Crank the jack until the hitch is no longer supported by the drawbar of the tractor. The hitch pin can be removed.

WARNING: Never use the jack without reinstalling the jack pin.

When hooking up the machine, install a proper hitch pin and secure it with a hairpin clip or comparable device. Crank the jack until the foot of the jack is fully raised. Remove the jack and place in transport position.



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-835 Tub Grinder for any reason, including servicing, inspecting or unclogging machine:

    a. Run H-835 Tub Grinder until the auger and blower are 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-835 Tub Grinder, be sure to use only DuraTech Industries authorized parts.

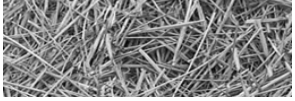
3. Relieve all pressure in the hydraulic system before disconnecting the lines or performing other work on the system. Make sure all connections are tight and the hoses and lines are in good condition before applying pressure to the system.

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, 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. Maintain the proper tire pressure.

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.

LUBRICATION INSTRUCTIONS: The operator should make a check of all grease fittings in the unit before beginning to operate it to become familiar with their locations and the correct service schedule

Bearing Lubrication

Bearing lubrication 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 operation, abnormal bearing temperature may indicate faulty lubrication. Normal temperatures may range from "cool to warm to the touch" up to a point. Unusually high temperatures "too hot to the 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 temperatures and a slight showing of grease at the seals indicate proper lubrication.

Use only a high quality, multi-purpose grease when lubricating the unit. Make sure all fittings and the nozzle of the grease applicator are clean before applying the grease. If any grease fittings are missing, replace them immediately.

4.1.1 Lubrication Points

The following points will require a ten (10) hour service interval.

- Conveyor driveline- 2 places
- P.T.O. universal joints- 2 places
- Driveline supports- 2 places
- Tub drive shaft bearings- 2 places
- Tub drive orbit motor bracket- 1 place
- Rotor bearings- 2 places
- Tub roller bearings- 4 places
- Tub pressure bearings- 4 places
- Discharge conveyor bearings- 4 places

The roller and tub chains require graphite spray or oil daily in dusty conditions.

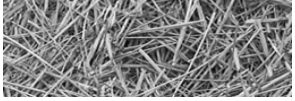
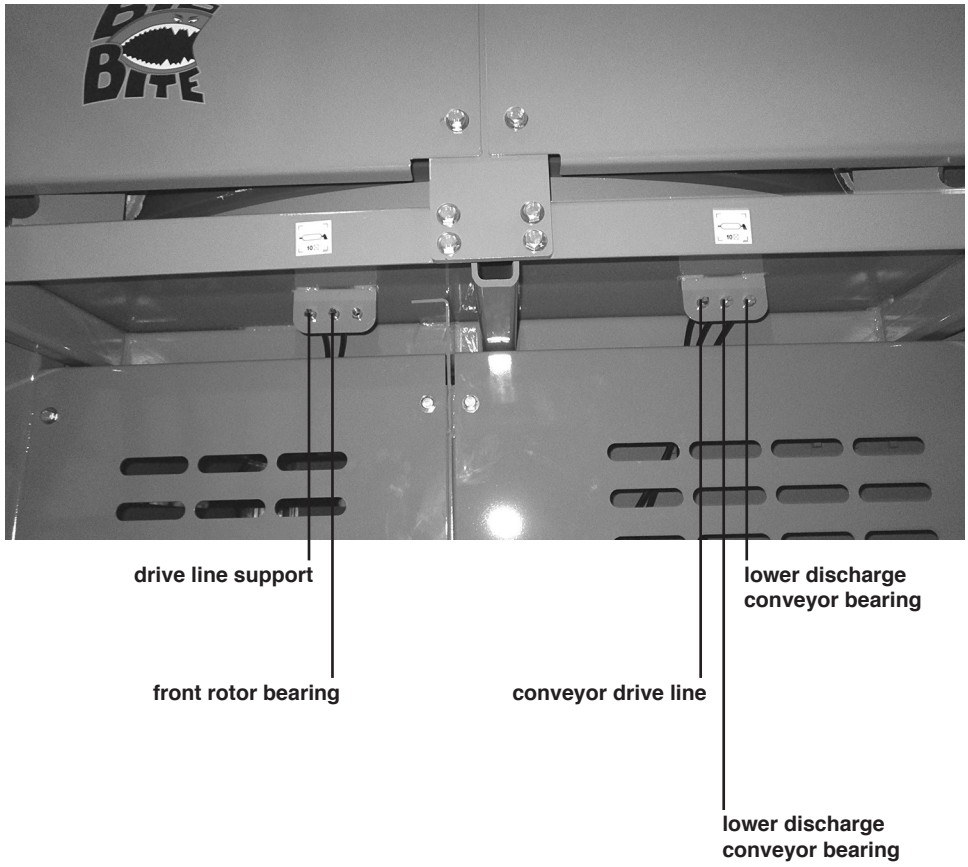


Figure 4.1
orbit motor bracket, tub drive top and bottom bearings lubrication points

Figure 4.2
driveline support, front rotor bearing, conveyor driveline, and lower conveyor discharge bearings lubrication points



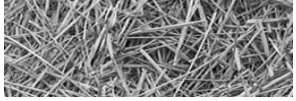


Figure 4.3
rear conveyor driveline lubrication point

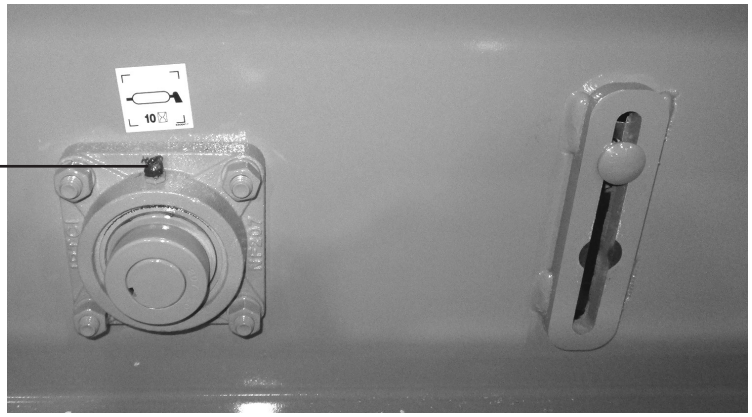
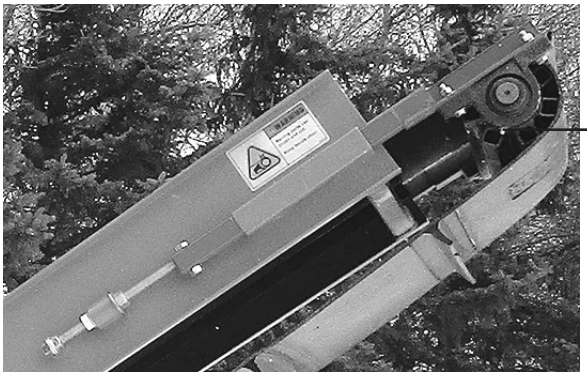


Figure 4.4
rear rotor bearing lubrication point

Figure 4.5
discharge conveyor bearings lubrication point



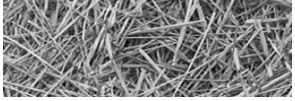


Figure 4.6
driveline support lubrication point

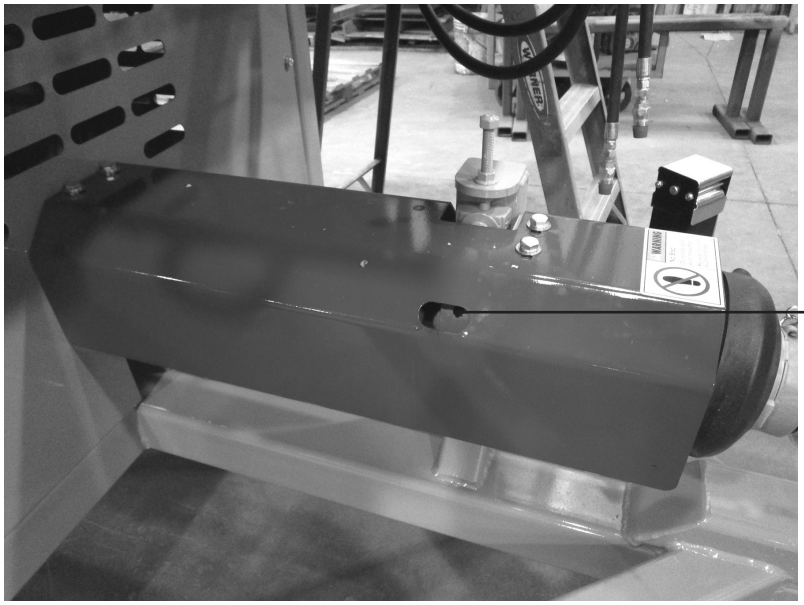
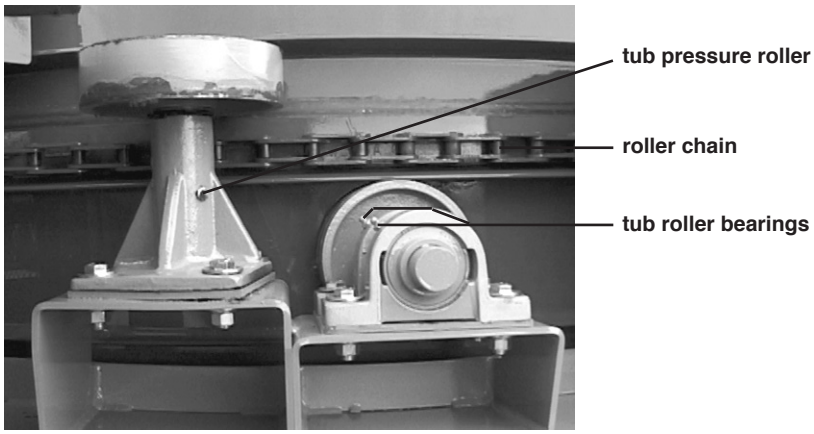


Figure 4.7
tub roller, tub pressure roller and roller chain



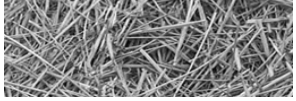
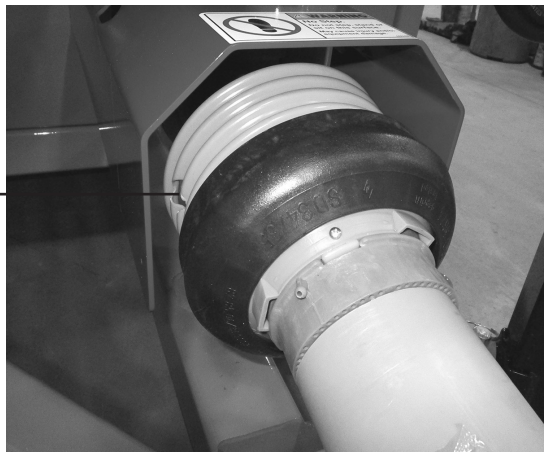
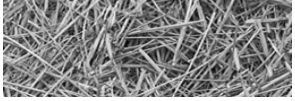


Figure 4.8
P.T.O. universal joint lubrication points





4.2 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.

4.3 Hammer maintenance and replacement

CAUTION: Follow normal shutdown procedure before entering tub to do any service work.

When installing or changing hammers, be sure to follow hammer pattern diagram carefully (page 53). Misplacement could cause excessive vibration.

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 install new hammers or change the cutting edge on existing hammers:

1. Clear tub floor of all forage to allow easy access to rotor and rear rotor bearing cover.
2. Remove rear rotor bearing cover. Item A in figure 4.9.
3. Loosen two bolts at rear of rotor which holds the movable plate in place. Item B in figure 4.9.
4. Rotate movable plate counter clockwise to align holes allowing hammer rods to be removed through rear of rotor. Item C in figure 4.9.
5. Remove one row of hammers and replace, taking note as to where spacers are located. (page 53).

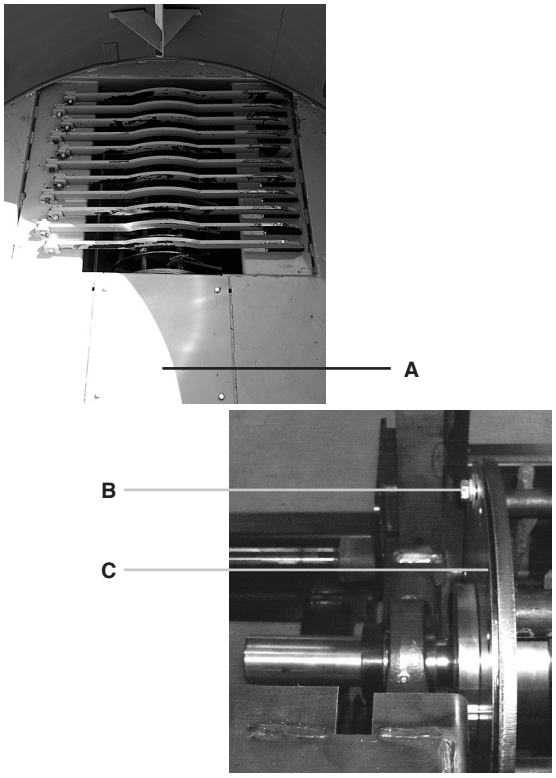


figure 4.9

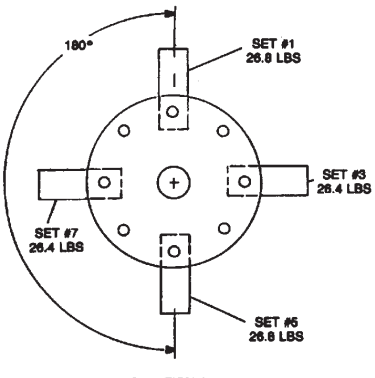


ILLUSTRATION A

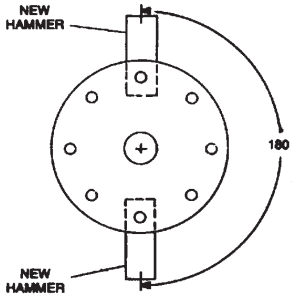


ILLUSTRATION B

6. After all hammers have been replaced or turned, reassemble movable plate and rear rotor bearing cover.
7. 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.

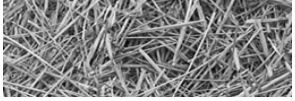
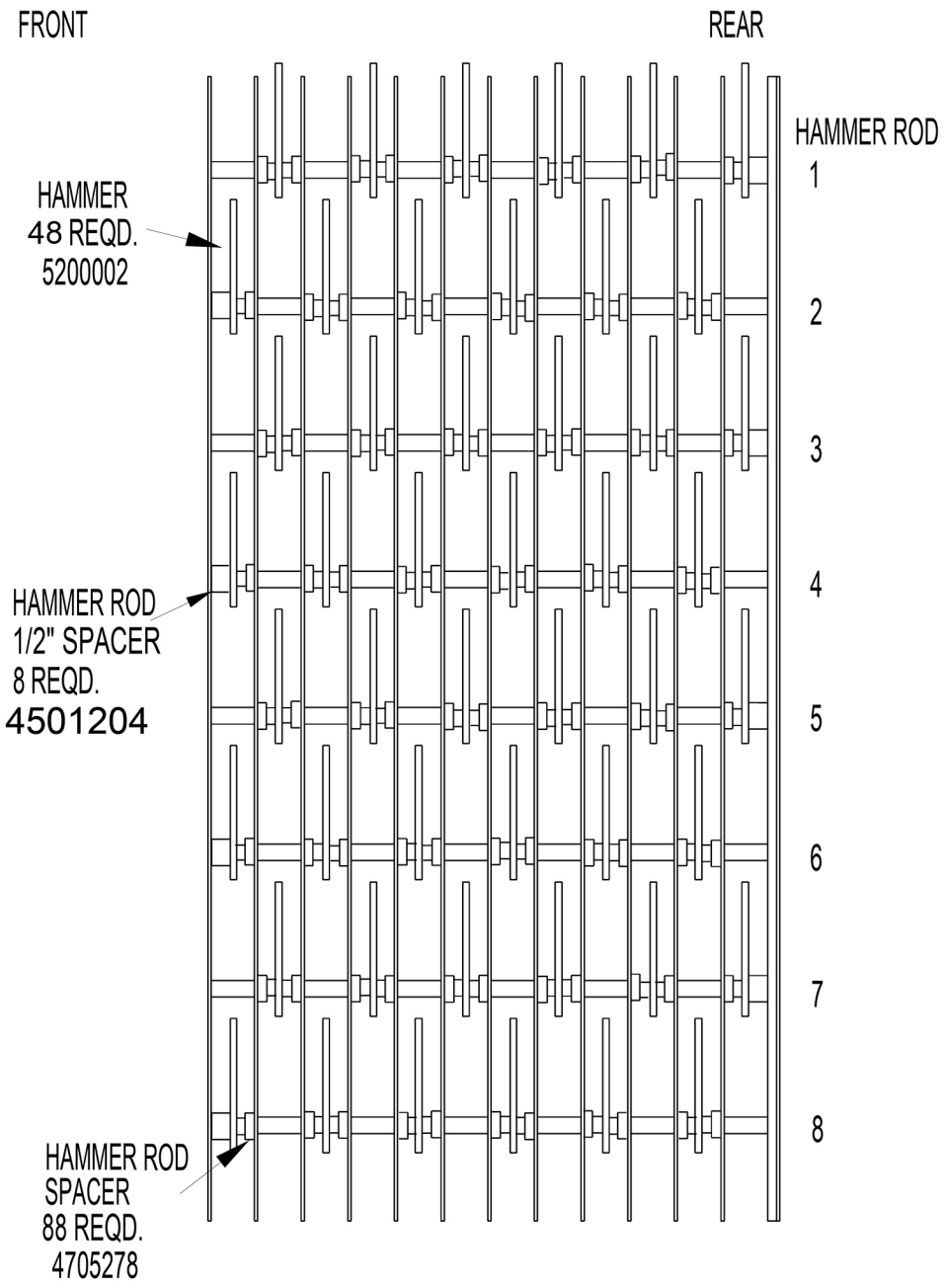
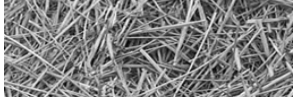


Figure 4.10
hammer spacing chart for the H-835

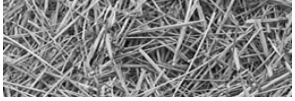




Section 5: Troubleshooting the H-835 Tub Grinder

5.1 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 holes in screen. 2. Replace or turn worn parts. 3. Mix lighter material with heavier material. 4. Use larger screen.
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 **sections 3.8-3.11** on the electronic governor. 2. See **section 5.2** Troubleshooting electronic governor. 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 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 **section 4.2 and 4.3**) 2. Replace the rotor bearing. 3. Replace worn part or complete driveline. 4. Remove foreign material. 5. See **section 4.2 and 4.3** 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 **sections 3.8-3.11** on the electronic governor.
5. The tub stalls.	1. The tub hydraulic system pressure is set to 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 hit causing electronic governor to bind.	1. Check oil pressure 2. Reduce amount of material in tub or shift the hydraulic tub drive to low range. 3. Reduce amount of material in tub. 4. Remove material build up between the tub and platform framework. 5. Reduce the load on the hydraulic system or stop and allow the hydraulic oil to cool.



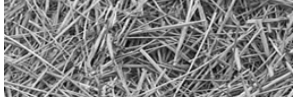
5.2 Troubleshooting the electronic governor system

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.

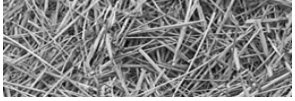
With the mode switch in the tub position, the tub should be rotating. The speed of the tub can be varied by rotating the tub limit knob. The number of tub speed lights which are lit will vary with the setting of the tub limit knob. If the number of tub speed lights lit varies as you rotate the tub limit 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 in **Section 3.10**. 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

1. Power source: 12 volts DC

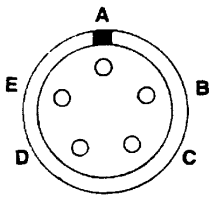
   Red wire + positive pin A wiring harness

   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.

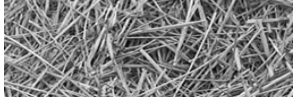


A - 12 volts DC
B - Ground
C - Digital sensor signal
D - (+) to valve
E - (-) to valve

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.

ELECTRONIC GOVERNOR VOLT-OHM READINGS

WIRE HARNESS CONNECTOR	ENGINE	IGNITION SWITCH	READING	INCORRECT READING INDICATES	CHECK IF INCORREC-T READING
Valve terminals, system in Manual (Wires attached)	Not Running	ON	13 volts DC	Defective wiring, control box	Wires to valve
Valve terminals, system in Auto (Wires attached)	Running 1500 to 2550 rpm	ON	1-10 volts DC varies with rpm *	Defective wiring, control box	Wires to valve
Valve terminals, (Wires removed)	Not Running	OFF	9.6 ohms	Defective valve	
Pin A to 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	9.6 ohms	Valve wiring or valve defective	Wires to valve, valve
Pin D to Ground	Not Running	OFF	Infinite ohms	Valve wiring or valve defective	White wire to valve, valve
Pin E to Ground	Not Running	OFF	Infinite ohms	Valve wiring or valve defective	Blue or black wire to valve



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.

ELECTROHYDRAULIC VALVE COIL TEST

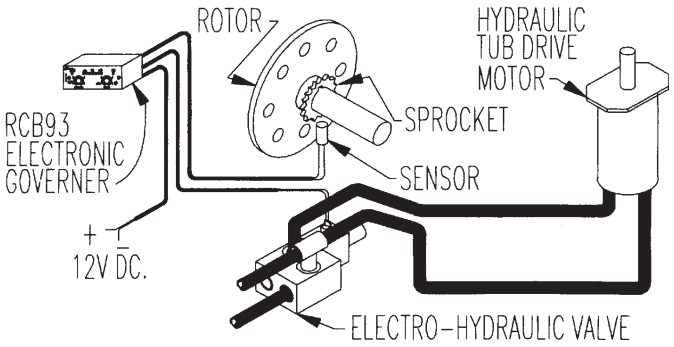
This test requires an accurate ohm meter. Disconnect the wiring harness leads at the electro-hydraulic valve coil. Check resistance of valve coil leads at the terminals. The resistance should be between 8 to 12 ohms for a 12 volt solenoid. If the values are not within this range, replace the electro-hydraulic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

MANUAL OVERRIDE

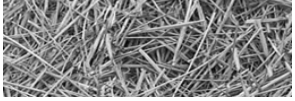
NOTE: If there is an electrical failure with the machine, it may still be able to grind. Switch the electronic governor off. Remove the rubber end cap and loosen the jam nut on the electro-hydraulic valve. Start the machine and engage the tub drive.

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 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.



Appendix A: Warranty

DuraTech Industries International Inc. (DuraTech Industries) warrants to its authorized dealer, who in turn warrants to the original purchaser for twelve (12) months from Retail Sale 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 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.

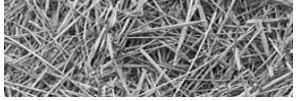
This warranty does not apply to tires or bearings or any other trade accessories not manufactured by DuraTech Industries International Inc. Buyer must rely solely on the existing warranty, if any, of these respective manufacturers.

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-835 Tub Grinder Specifications

Weight

Weight: ..... 5,500 lbs. (2,495 kg)
Tongue Weight: ..... 1,300 lbs. (590 kg)

Transportation Dimensions

Width: ..... 8’-5” (2.57 m)
Length: ..... 12’-1” (3.68 m)
Height: ..... 9’-2” (2.79 m)
Loading Height ..... 8’ -2-1/2” (2.50 m)

Working Dimensions

Width: ..... 12’-2” (3.70 m)
Length: ..... 12’-1” (3.68 m)
Height: ..... 7’-0” (2.41 m)
Loading Height ..... 8’ -2-1/2” (2.50 m)

Tub

Tub size at flare: ..... 7’ -3”
Tub size at base: ..... 5’ -10”
Max bale size: ..... 4’ long x 4’ diameter (1.22 m x 1.22 m)
Max bale weight: ..... 1,500 lbs. (680.39 kg)

Rotor

Hammermill size: ..... 33” (0.84 m) long x 26” (66.04 cm) diameter
Number of hammers: 48
Hammers: ..... 3/8” (0.95 cm) thick, two holes

Screens available:

¾” (1.905 cm), 1” (2.54 cm), 2” (5.08 cm), 3” (7.62 cm), 4” (10.16 cm), 5” (12.7 cm), 6” (15.24 cm) round and 5-5/8” x 9” rectangle (14.2875 x 22.86 cm)

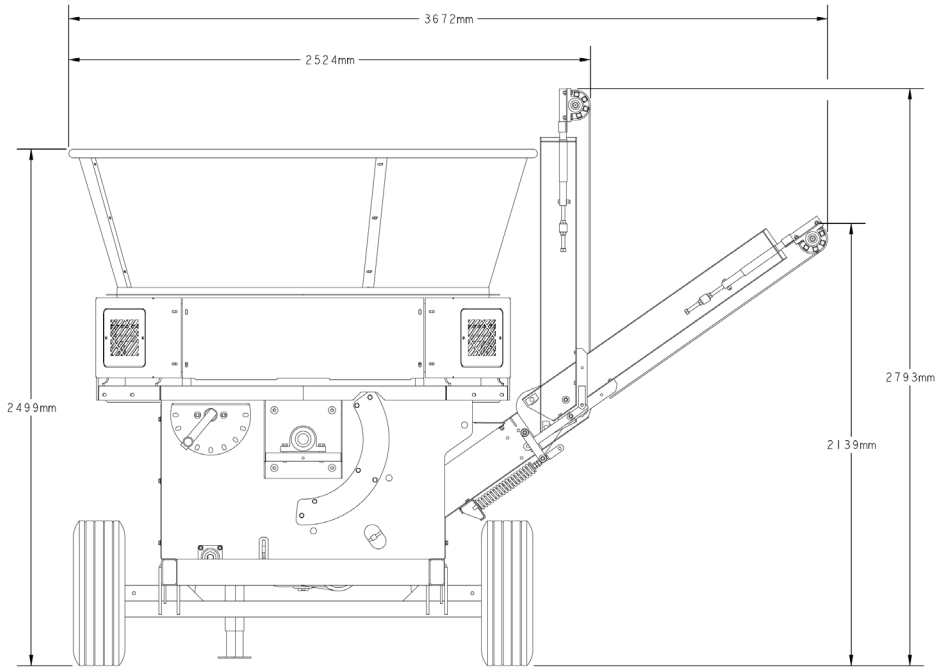
Miscellaneous

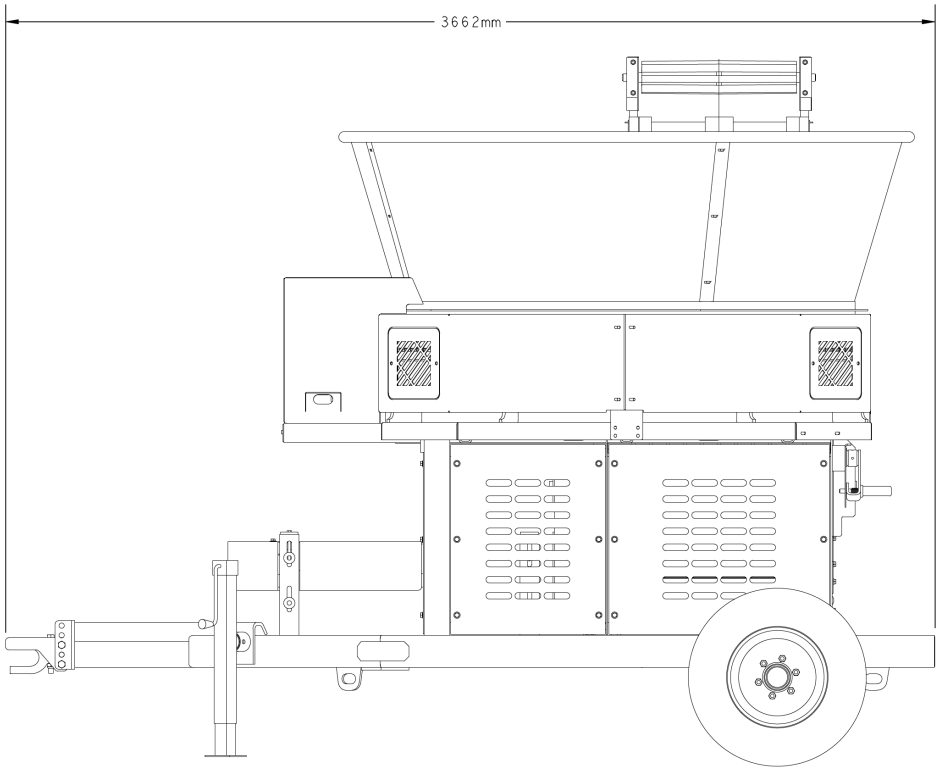
Mill grate: ..... 11 bars, individually removable and fully adjustable.
Tire size: ..... 9.5 x 14 8ply

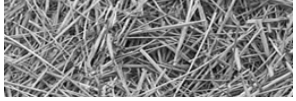
Options

AVAILABLE OPTIONS FOR HAYBUSTER H-835 Tub Grinder:

- Various Screens Sizes
- Grain Grinding Hopper







Appendix C: Required for operation

Tractor PTO Horsepower 75-130
PTO Type..... 1000 RPM, 1-3/8” diameter PTO Shaft with 21 splines
Tractor Hydraulic Controls ..... Three outlet valves and quick coupler outlets
Min. Tractor Hydraulic Output.....8 gpm at 1500 PSI (30.3 lpm x 10,345 kpa)
Requires:.....12 volt DC with 7 pin power outlet for lights
See also section 3.3.1, Tractor set up

Genuine DuraTech Parts

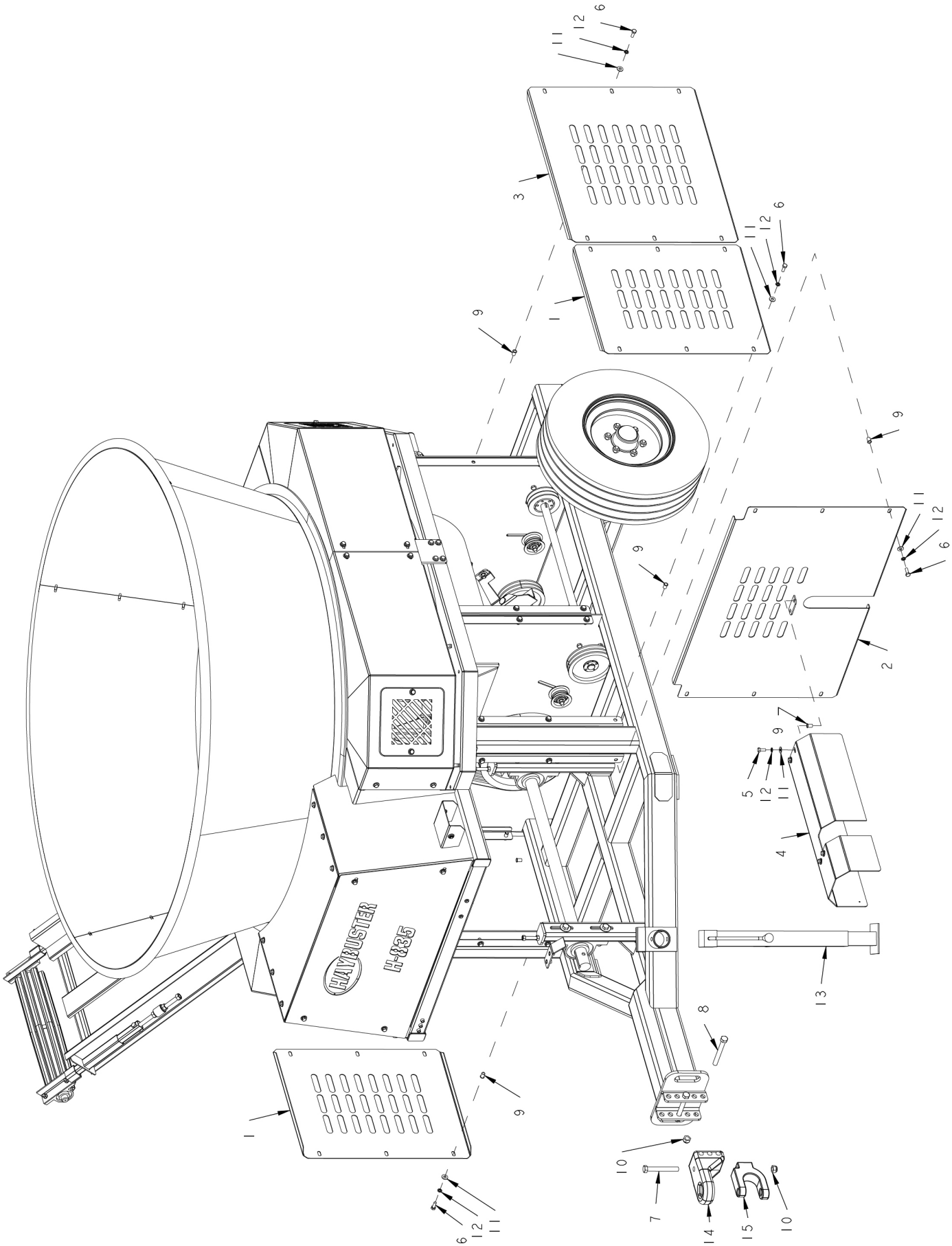
HAYBUSTER®

H-835™

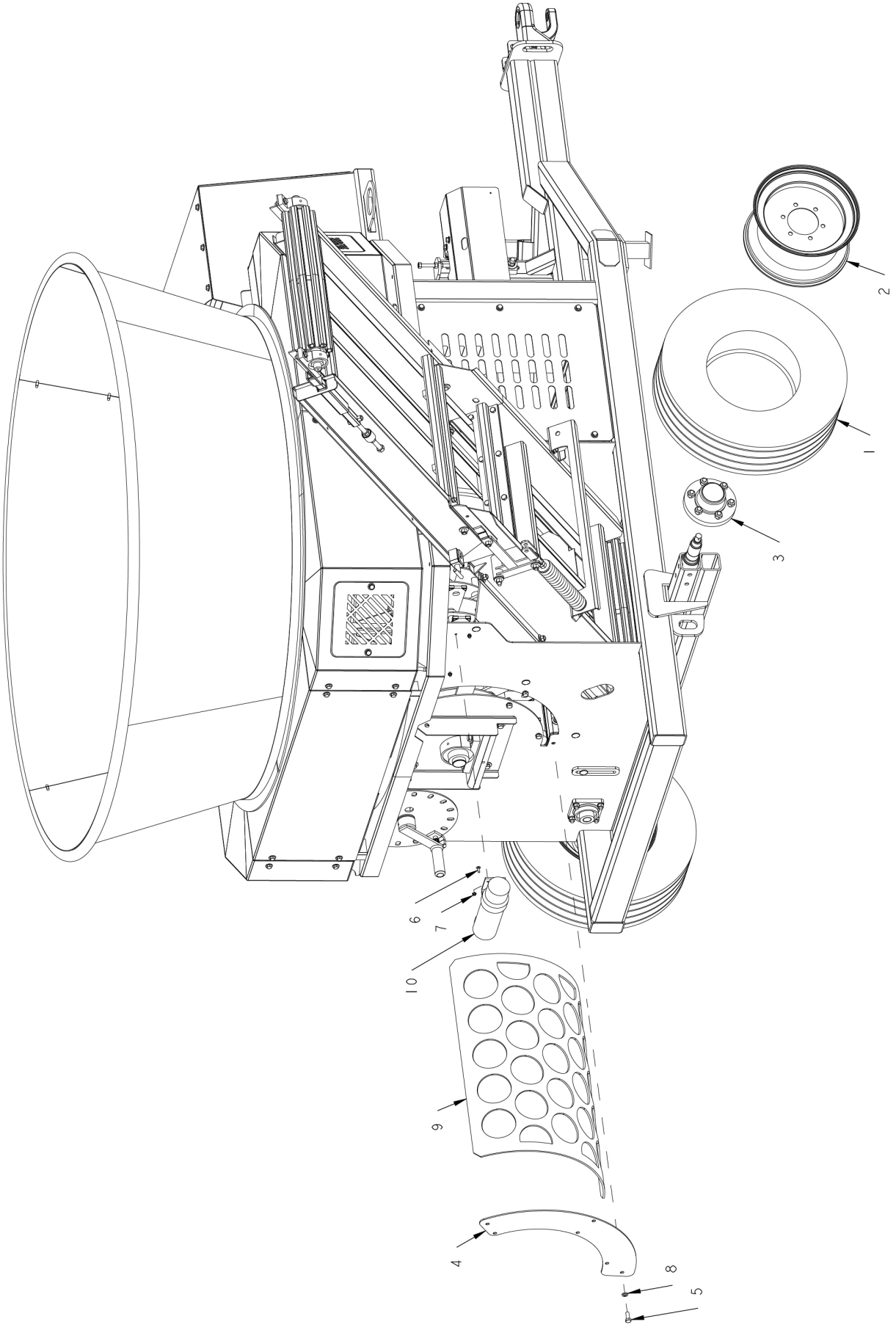
PTO Driven Tub Grinder

Part 2:
Parts Reference

MAIN FRAME FRONT ASSEMBLY



ITEM	PART	QTY.	PART DESCRIPTION
1	4705981	2	SHLD\SIDE
2	4705982	1	SHLD\DRIVE\FRONT
3	4705990	1	SHLD\SIDE
4	4706013	1	SHLD\SHFT\DRIVE\FRONT
5	4800631	4	BOLT\HEX\M10XM25
6	4800991	24	BOLT\HEX\M10X30\1.5P
7	4801446	1	BOLT\HEX\M18X140\2.5P\CL10.9
8	4801447	2	BOLT\HEX\M18X150\2.5P\CL10.9
9	4900200	28	NUT\INSERT\M10X1.5\FLNRIBNUTSRTL
10	4900206	3	NUT\NYLCK\M18\2.5P\CL8
11	5000001	28	WASH\FLAT\3/8
12	5000138	28	WASH\LOCK\M10
13	5800633	1	JACK\7000\SDWND\SQ\15”TRVL
14	7501047	1	HITCH\BASE\#3\PPI\1”PIN
15	7501048	1	HITCH\CLEVIS\PPI\1”PIN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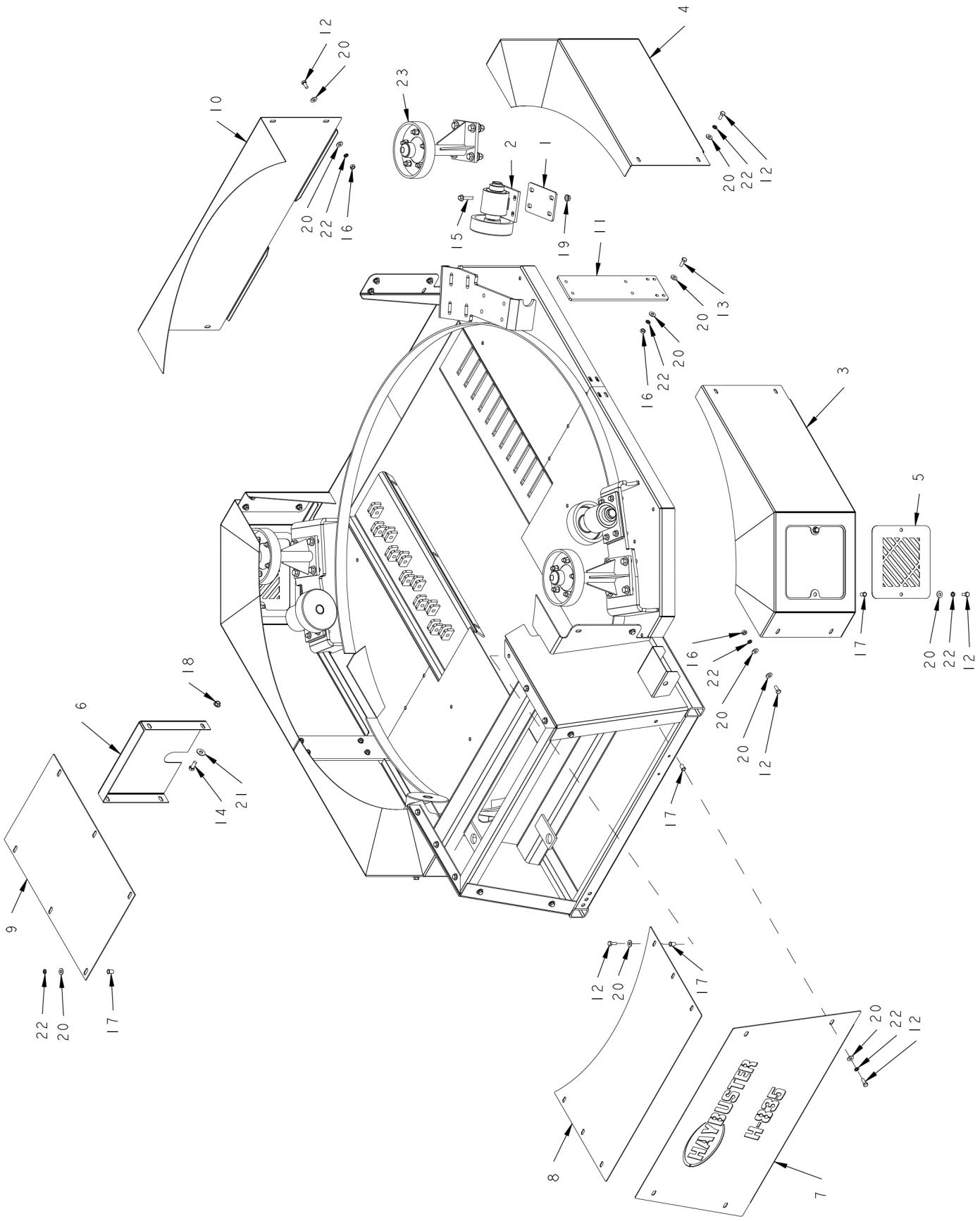
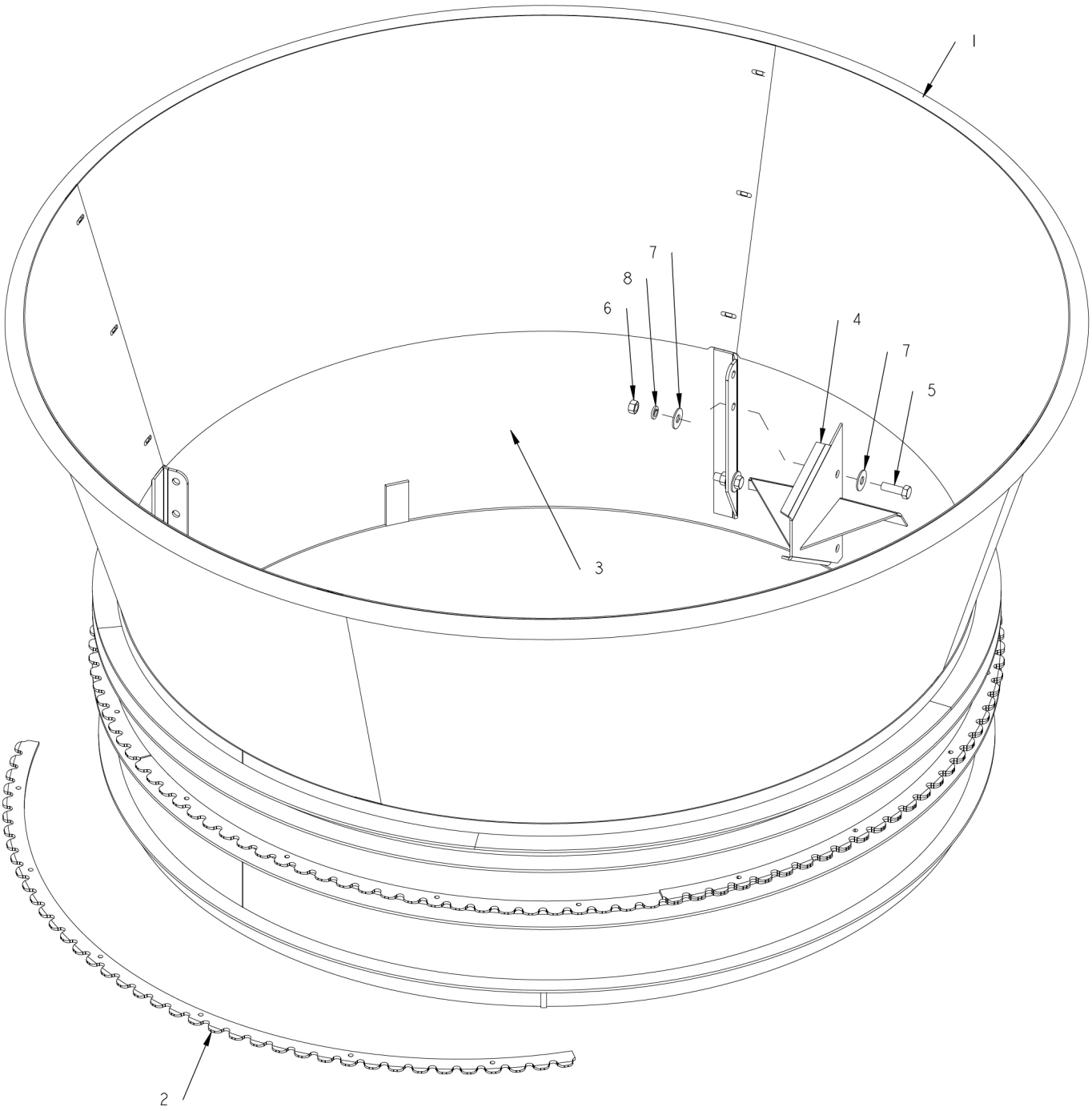
ITEM	PART	QTY.	PART DESCRIPTION
1	2600013	2	TIRE\9.5LX14\8PLY
2	2600601	2	WHL\6-BOLT\14X8
	2600825		WHL\IMP\9.5X14\TIRE&RIM (INCLUDES 2600013 TIRE AND 2600601 WHEEL)
3	2900171	2	HUB\6-BOLT\STUDS\COMPLETE
4	4706009	1	COV\ACCSS\SCRN
5	4800995	6	BOLT\HEX\M12X30\1.75P
6	4801452	3	BOLT\CRG\M6X20\1.0P
7	4900209	3	NUT\FLG\SERR\M6\1.0P\CL8
8	5000006	6	WASH\LOCK\1/2
9			SEE SCREEN LIST BELOW
10	7501628	1	CNSTRS\MANUAL\12X3.5

SCREENS

5400168	3/4” ROUND SCREEN
5400169	1” ROUND SCREEN
5400170	2” ROUND SCREEN
5400171	3” ROUND SCREEN
5400172	4” ROUND SCREEN
5400173	5” ROUND SCREEN
5400174	6” ROUND SCREEN
5400175	5” X 9” RECTANGLE SCREEN


HAYBUSTER
H-835

ITEM	PART	QTY.	PART DESCRIPTION
1	4501900	4	SHIM\RLLR\SPPRT\TUB\10GA
2		4	SEE TUB ROLLER
3	4705280	2	SHLD\TUB\LF\RR
4	4705281	2	SHLD\TUB\LR\RF
5	4705282	4	DOOR\SHLD\TUB
6	4705288	1	COVER\BRG\ROTOR\FRONT
7	4705976	1	SHLD\DR\TUB\FR
8	4705979	1	SHLD\DR\TUB\TOP\H835
9	4705980	1	CVR\PLFRM
10	4706010	1	SHLD\CHAIN\TUB\REAR\H835
11	4706032	2	SUP.\SHLD\SIDE\TUB
12	4800631	38	BOLT\HEX\M10XM25
13	4800991	8	BOLT\HEX\M10X30\1.5P
14	4800995	4	BOLT\HEX\M12X30\1.75P
15	4801444	16	BOLT\FLG\M12X50\1.75P\CL10.9
16	4900195	20	NUT\HEX\M10\1.5P\CL8
17	4900200	24	NUT\INSERT\M10X1.5\FLNRIBNUTSRTL
18	4900202	4	NUT\FLG\SERR\M12\1.75P
19	4900208	16	NUT\FLG\TPLCK\M12\1.75P\CL10
20	5000001	72	WASH\FLAT\3/8
21	5000004	4	WASH\FLAT\1/2
22	5000138	46	WASH\LOCK\M10
23		4	SEE PRESSURE ROLLER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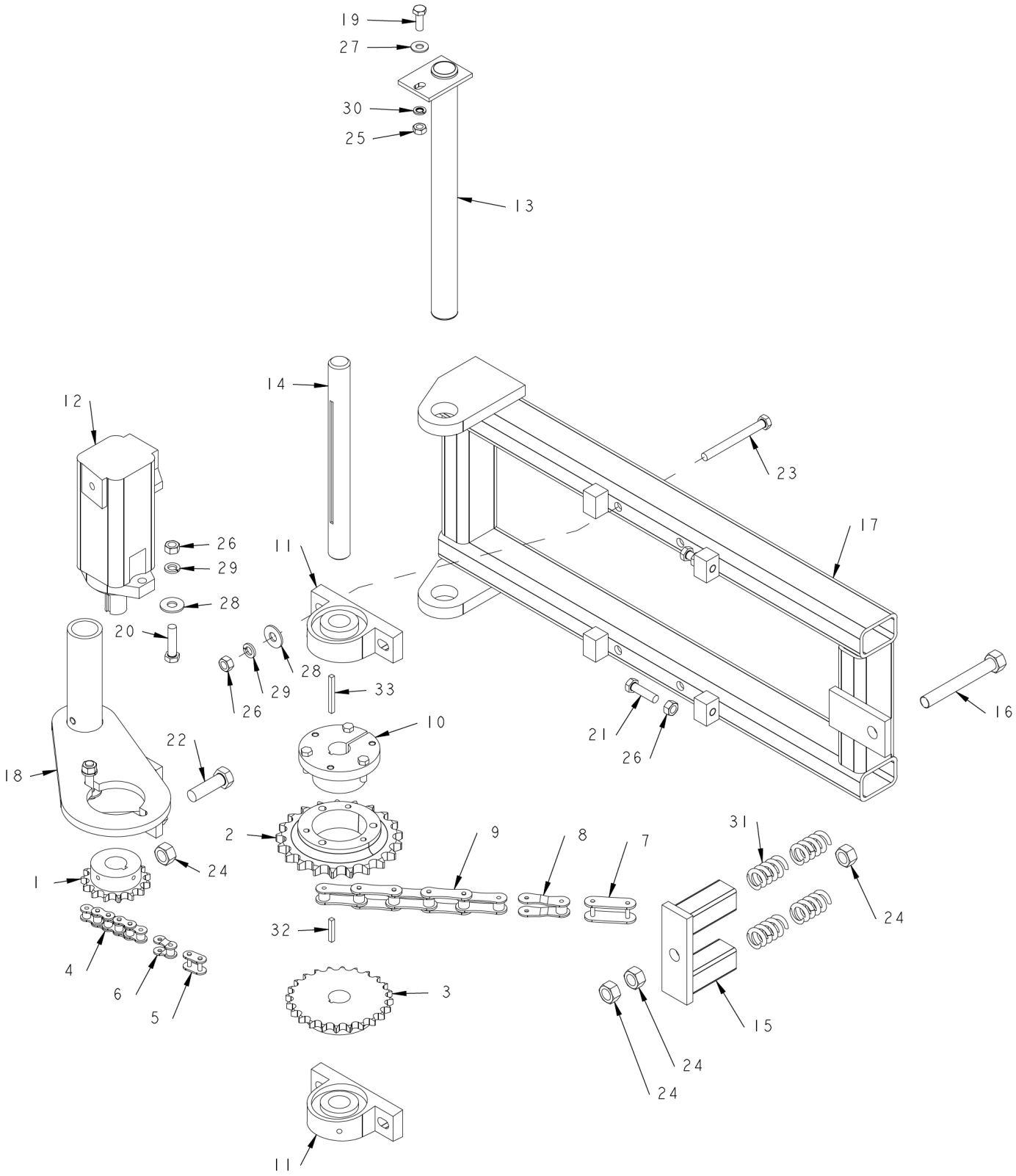
TUB ASSEMBLY

ITEM	PART	QTY.	PART DESCRIPTION
1	4705330	1	RING\TUB
2	4705339	6	TEETH\TUB
3	4705967	1	TUB\H835
4	4705970	1	AGTTR\TUB\FIN\H835
5	4801437	2	BOLT\HEX\M16X50\2.0P
6	4900198	2	NUT\HEX\M16\2.0P\CL8
7	5000002	4	WASH\FLAT\5/8
8	5000003	2	WASH\LOCK\5/8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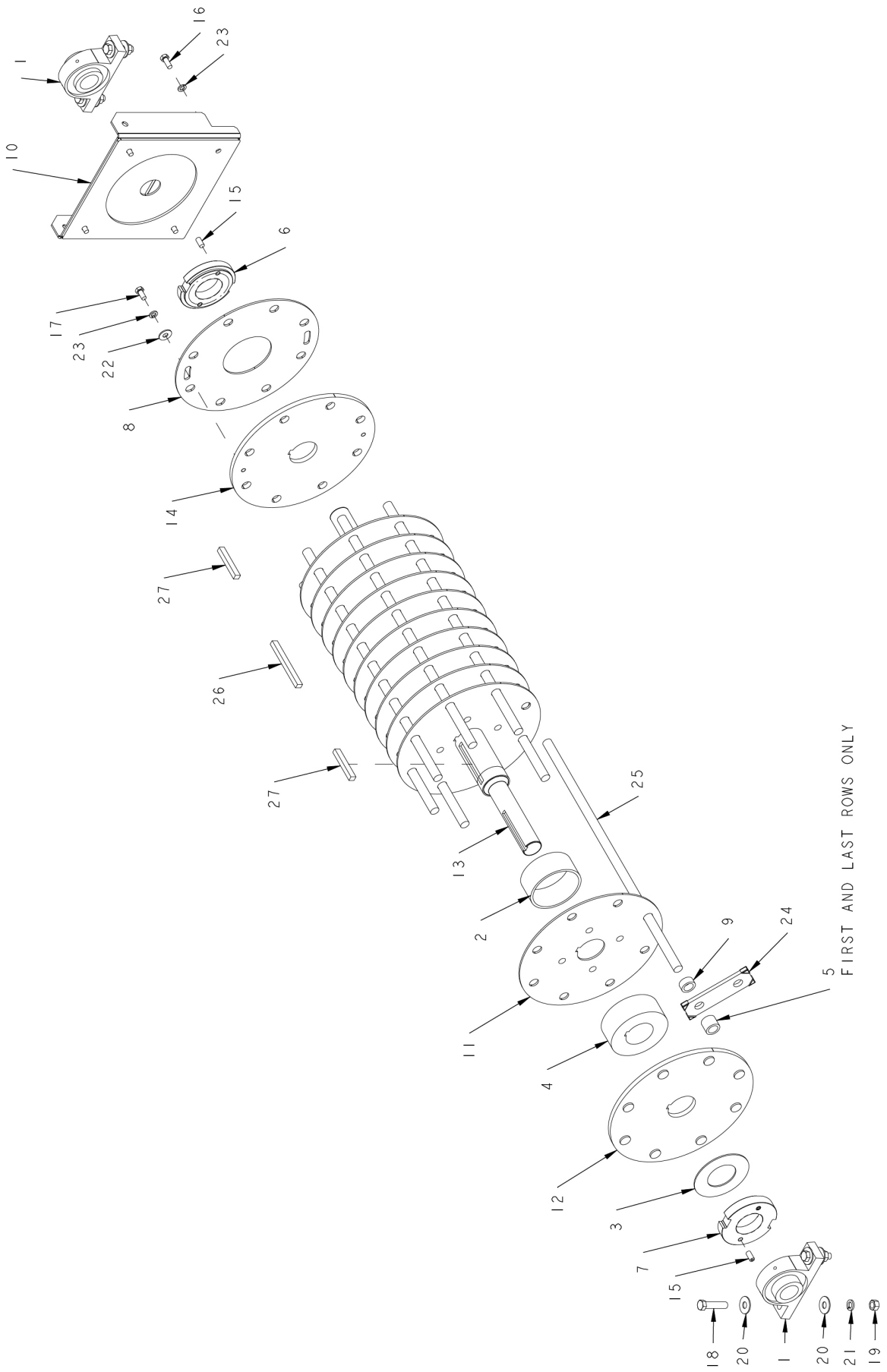
ITEM	PART	QTY.	PART DESCRIPTION
1	1000127	1	SPKT\60\B\15\1-1/4\5/16KW
2	1000268	1	SPKT\80\SF\21\H
3	1000325	1	SPKT\B\60\24\HT\1-1/4\1/4KW
4	1100013	1	CHAIN\60\45
5	1100062	1	CHAIN\60\CL
6	1100063	1	CHAIN\60\OL
7	1100070	1	CHAIN\2080\CL
8	1100071	1	CHAIN\2080\OL
9	1100154	1	CHAIN\2080\119
10	1400626	1	BUSH\1-1/4\SF
11	2000502	2	BRG\PB\1-1/4\2BOLT
12	3900005	1	MTR\HYD\14.9\2000\SAE;A
13	4702084	1	PIN\HINGE\FRM\DRIVE\TUB
14	4702407	1	SHFT\DR\TUB\1-1/4X13-1/2
15	4702666	1	BRKT\TNSN\SPG\FRM\DR\TUB
16	4706019	1	BOLT\FRM\DR\TUB
17	4706033	1	FRM\WHL\BULL\DRV\TUB\H835
18	4706034	1	BRKT\MOTOR\ORBIT\DRIVE\TUB
19	4800991	1	BOLT\HEX\M10X30\1.5P
20	4800996	2	BOLT\HEX\M12X50\1.75P
21	4801449	2	BOLT\HEX\M12X45\1.75P\FULL THREAD
22	4801450	1	BOLT\HEX\M18X60\2.5P\CL8.8\FULL THREAD
23	4801453	4	BOLT\HEX\M12X120\1.75P
24	4900194	4	NUT\HEX\M18\2.5P\CL8
25	4900195	1	NUT\HEX\M10\1.5P\CL8
26	4900196	8	NUT\HEX\M12\1.75P\CL8
27	5000001	1	WASH\FLAT\3/8
28	5000004	6	WASH\FLAT\1/2
29	5000006	6	WASH\LOCK\1/2
30	5000138	1	WASH\LOCK\M10
31	6100005	4	SPRNG\.249OT\13/16ID\1-5/16OD
32	6200005	1	KEY\SQ\1/4X1-1/2
33	6200019	1	KEY\SQ\1/4X2-1/2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FIRST AND LAST ROWS ONLY
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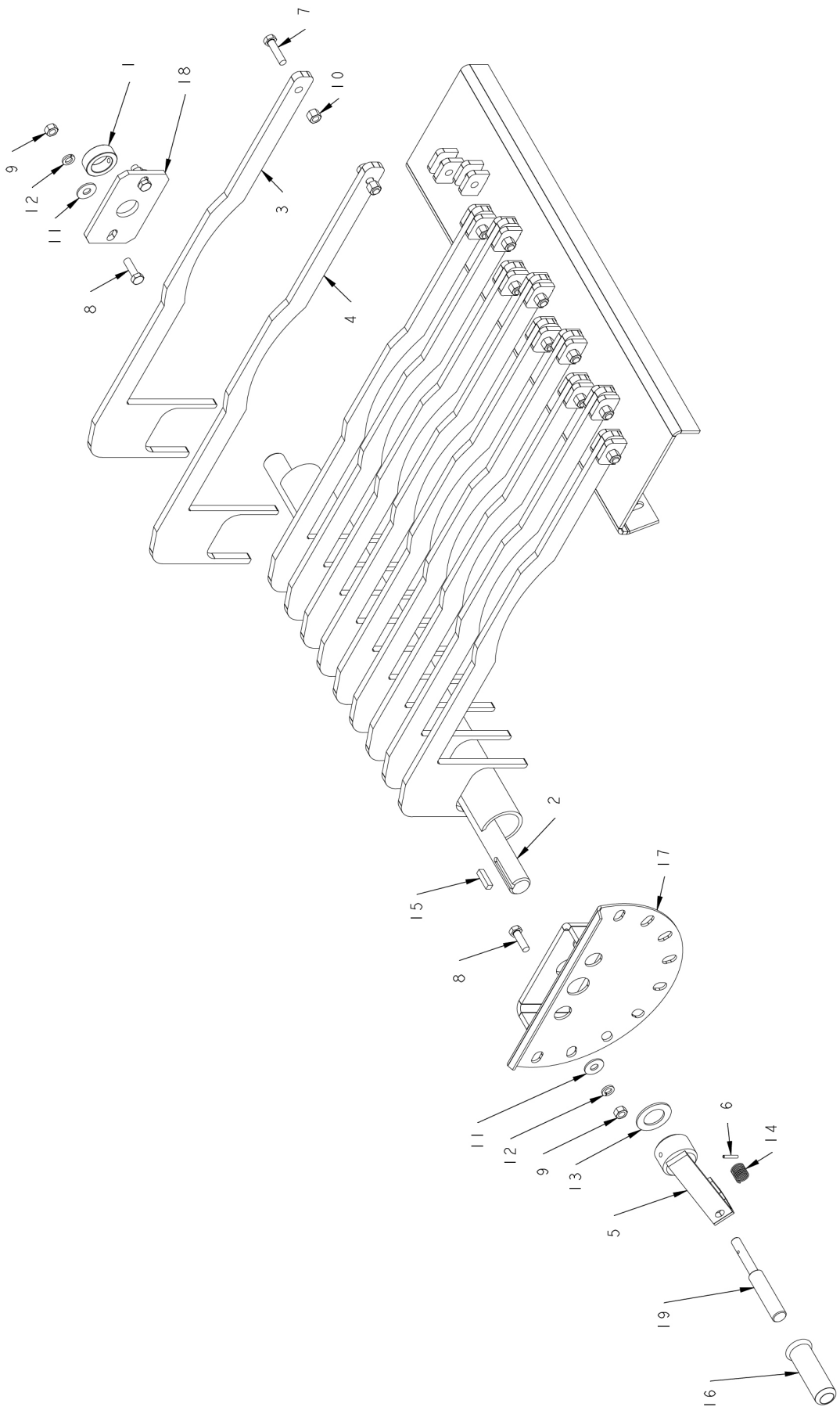
ITEM	PART	QTY.	PART DESCRIPTION
1	2000510	2	BRG\PB\2\2BOLT
2	4500134	10	SPACER\SHAFT\5.56 OD\RTR
3	4500253	1	WASH\THRUST\3-1/8IDX6SQ
4	4500425	2	SPCR\CAST\RTR\6-1/4 OD X 3 ID
5	4501204	8	SPCR\HMMR\1-1/2X1.028X1-1/4
6	4700266	1	NUT\ROTOR\3 W/SHOULDER
7	4700267	1	NUT\RTR\3\W/O;SHOULDER
8	4705276	1	PL\RTR\MOVEABLE5.32IDX3/16
9	4705278	88	SPCR\HMMR\1-1/2X1.028X11/16
10	4705287	1	BRKT\BRG\2”\REAR\RTR
11	4705348	11	PL\RTR\3IDX3/16
12	4705349	1	PL\RTR\END\SLUGS\3IDX1/2
13	4705988	1	SHAFT\ROTOR\3X47-11/16
14	4705989	1	PL\RTR\END\TAPPED\METRIC
15	4800323	4	SCR\SET\AL1/2X1\NC
16	4800995	4	BOLT\HEX\M12X30\1.75P
17	4800999	2	BOLT\HEX\M12X25\1.75P
18	4801457	4	BOLT\HEX\M16X70\2.0P\CL8.8
19	4900198	4	NUT\HEX\M16\2.0P\CL8
20	5000002	8	WASH\FLAT\5/8
21	5000003	4	WASH\LOCK\5/8
22	5000004	2	WASH\FLAT\1/2
23	5000006	6	WASH\LOCK\1/2
24	5200002	48	3/8 AB SUPREME HAMMER
25	5300120	8	ROD\HMMR\15/16X32-11/32
26	6200035	1	KEY\RECT\1/2X5/8X6-1/4
27	6200043	2	KEY\RECT\1/2X5/8X4
	4705987		**RTR\BASE\H835**
	4705986		**RTR\ASSY\H835 (COMPLETE WITH BEARINGS, HAMMERS, RODS)**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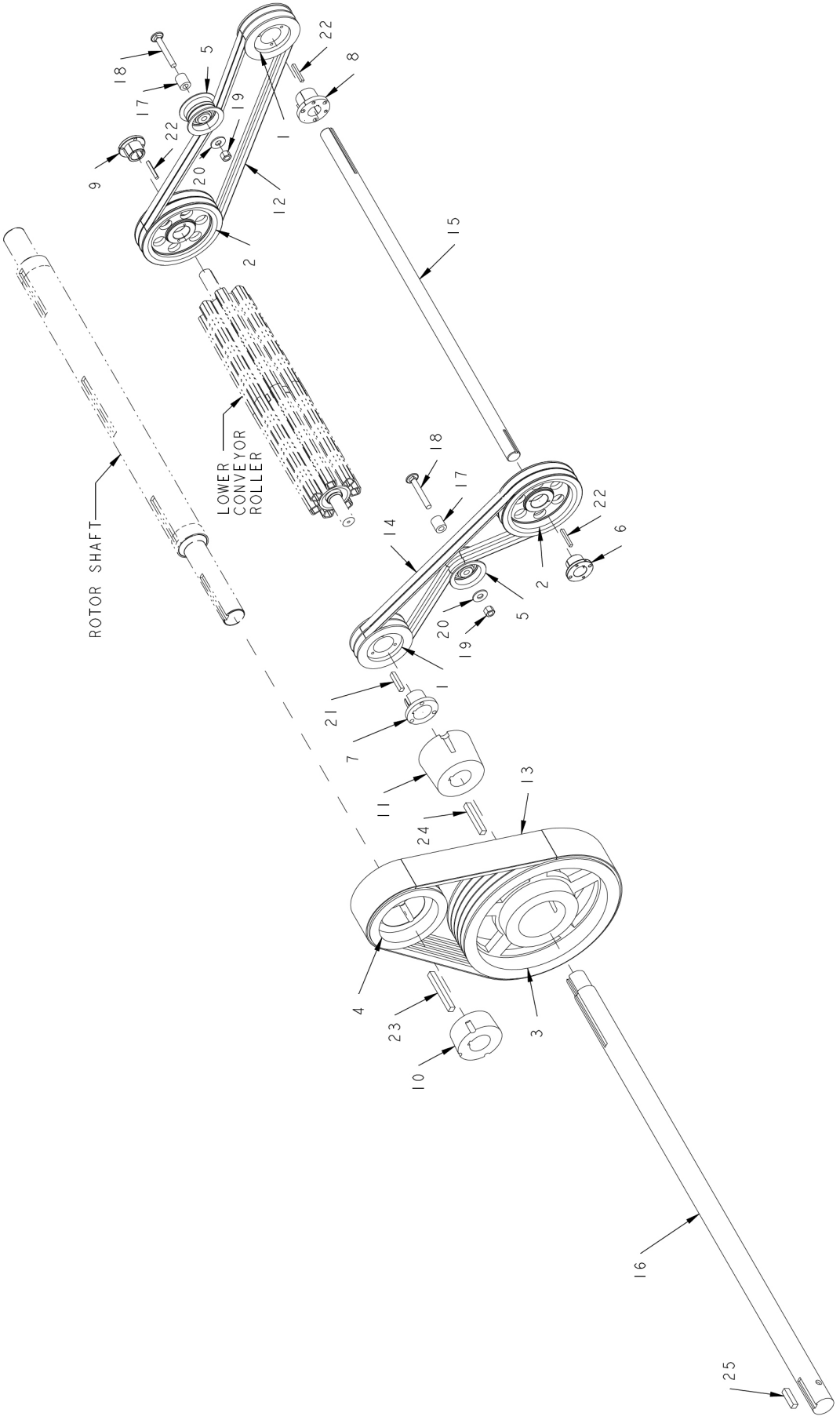
ITEM	PART	QTY.	PART DESCRIPTION
1	2000813	1	CLLR\SHFT\1-1/2\SET
2	4705343	1	SHAFT\SLUGBAR
3	4705992	6	BAR\SLUG\OPEN
4	4705993	5	BAR\SLUG\1-1/2
5	4706005	1	BRKT\MNT\HANDLE\SLUGBAR
6	4800456	1	PIN\RLLD\3/16X1-1/8
7	4800996	11	BOLT\HEX\M12X50\1.75P
8	4801436	4	BOLT\HEX\M12X40\1.75P
9	4900196	4	NUT\HEX\M12\1.75P\CL8
10	4900197	11	NUT\TPLCK\M12\1.75P\CL8
11	5000004	4	WASH\FLAT\1/2
12	5000006	4	WASH\LOCK\1/2
13	5000008	1	WASH\MACH\1-1/2IDX10GA\NR
14	6100031	1	SPRING\COMP\.072W\25/32OD
15	6200021	1	KEY\SQ\3/8X1-1/2\HARDEND
16	7500736	1	GRIP\HAND\1X4-1/2\FLG
17	8101038	1	BRKT\INDEX\SLUGBAR
18	8101039	1	BRKT\BRG\SLUGBAR
19	8101050	1	ROD\HANDLE\INDEX\SLUGBAR


ROTOR SHAFT
LOWER CONVEYOR ROLLER
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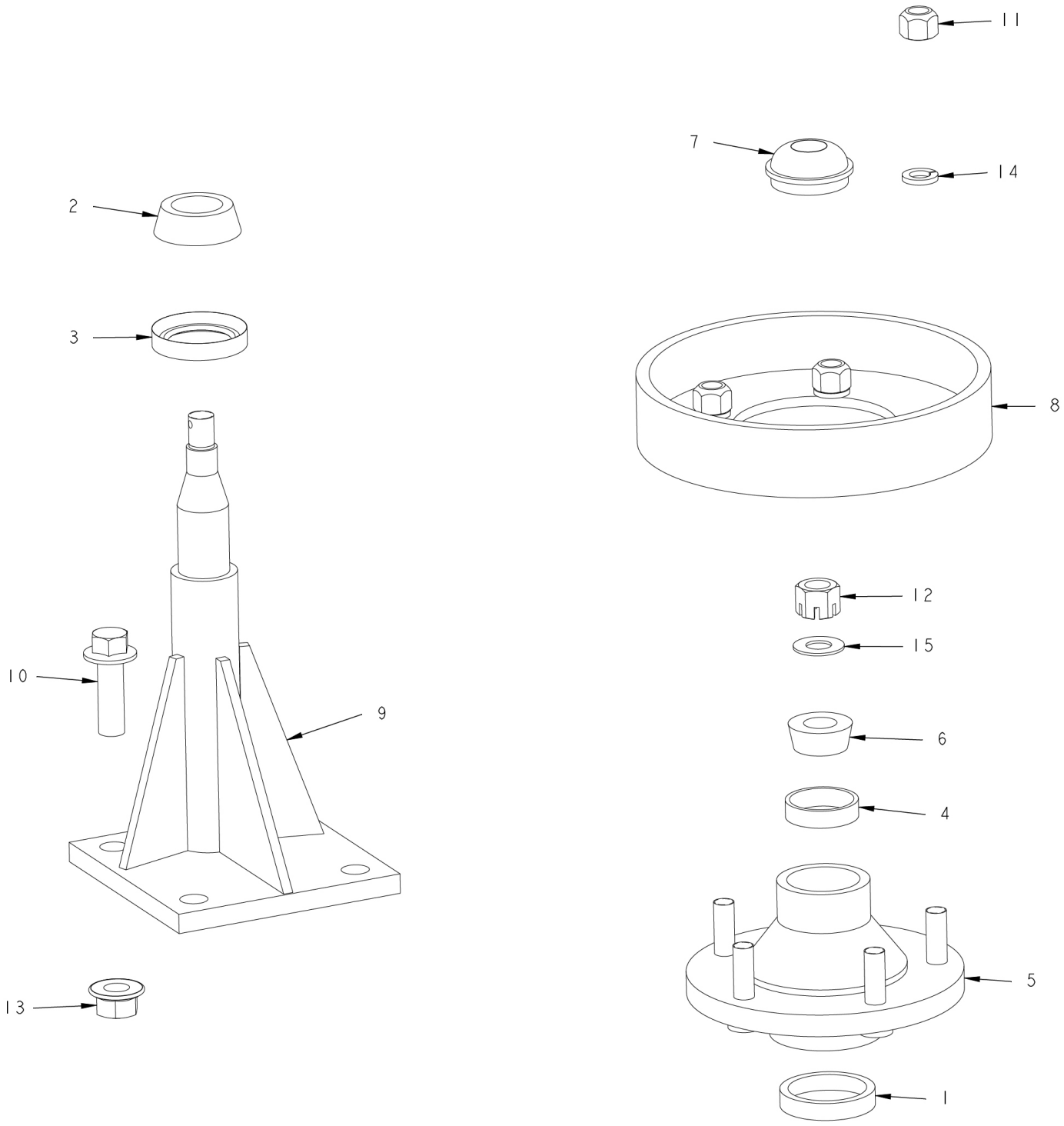
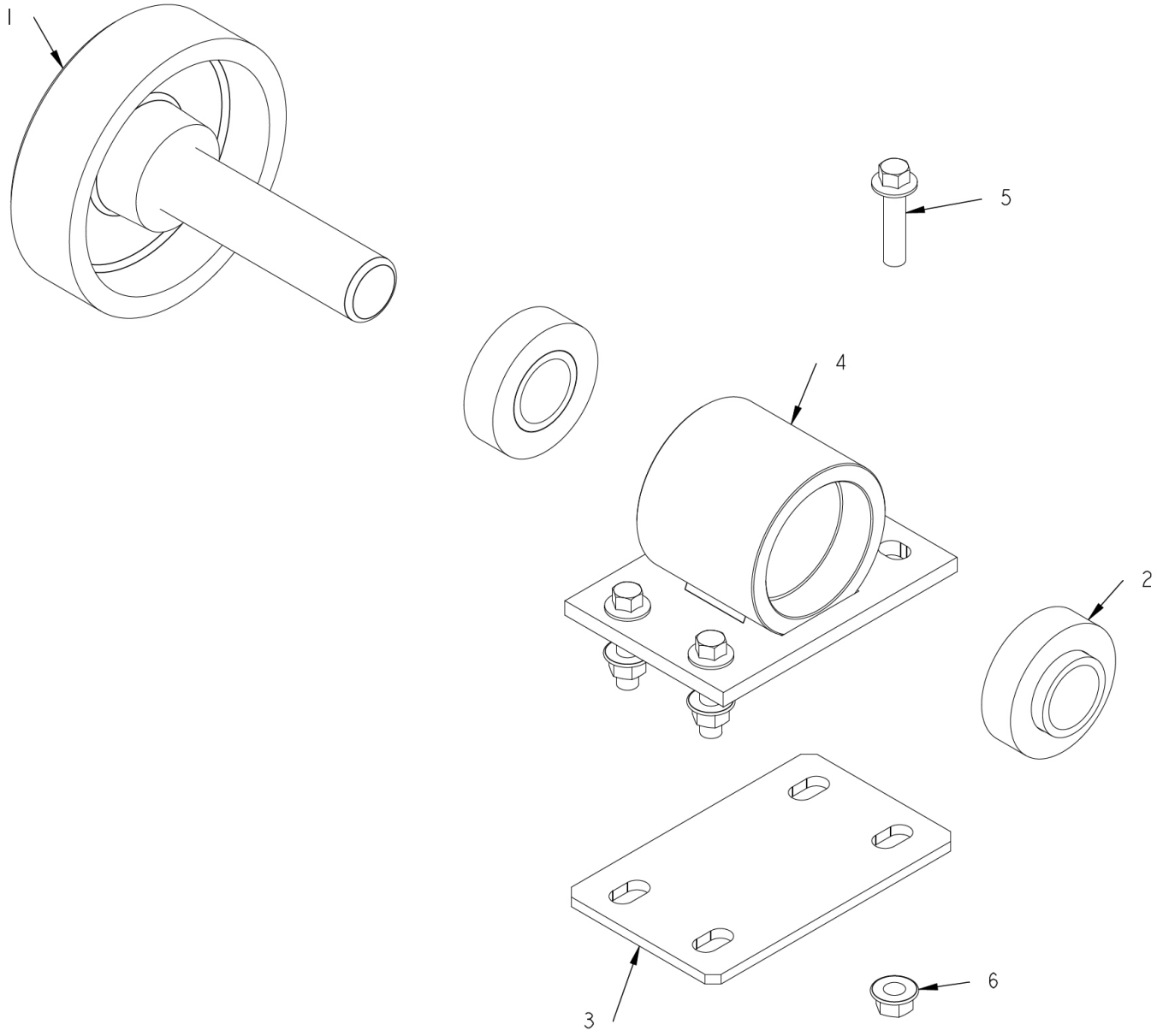
ITEM	PART	QTY.	PART DESCRIPTION
1	1400008	2	SHVE\B-2\5.0
2	1400024	2	SHVE\B-2\8.0\2BK80H
3	1400106	1	SHVE\5V-5\15.0\TB
4	1400107	1	SHVE\5V-5\7.50\TB
5	1400204	2	PULY\IDLER\DS208052080
6	1400501	1	BUSH\H\1-1/4
7	1400504	1	BUSH\P1\1-3/4
8	1400535	1	BUSH\P1\1-1/4
9	1400672	1	BUSH\H\1-1/8
10	1400844	1	BUSH\A2\2
11	1400846	1	BUSH\B3\2
12	1600003	2	V-BELT\B\68
13	1600127	1	V-BELT\5VX\5\65
14	1600128	2	V-BELT\B\59
15	4705983	1	SHFT\DR\CNVYR
16	4705984	1	SHFT\DRIVE\FRONT\H835
17	4706016	2	SPCR\PULY\DR\CNVYR
18	4801562	2	BOLT\CRG\M12X90\1.75P\CL8.8
19	4900197	2	NUT\TPLCK\M12\1.75P\CL8
20	5000004	2	WASH\FLAT\1/2
21	6200008	1	KEY\SQ\3/8X2
22	6200012	3	KEY\SQ\1/4X2
23	6200015	1	KEY\SQ\1/2X4-1/2
24	6200062	1	KEY\SQ\1/2X3-1/2
25	7000345	1	KEY\SQ\1/2X2\CR

PRESSURE ROLLER ASSEMBLY

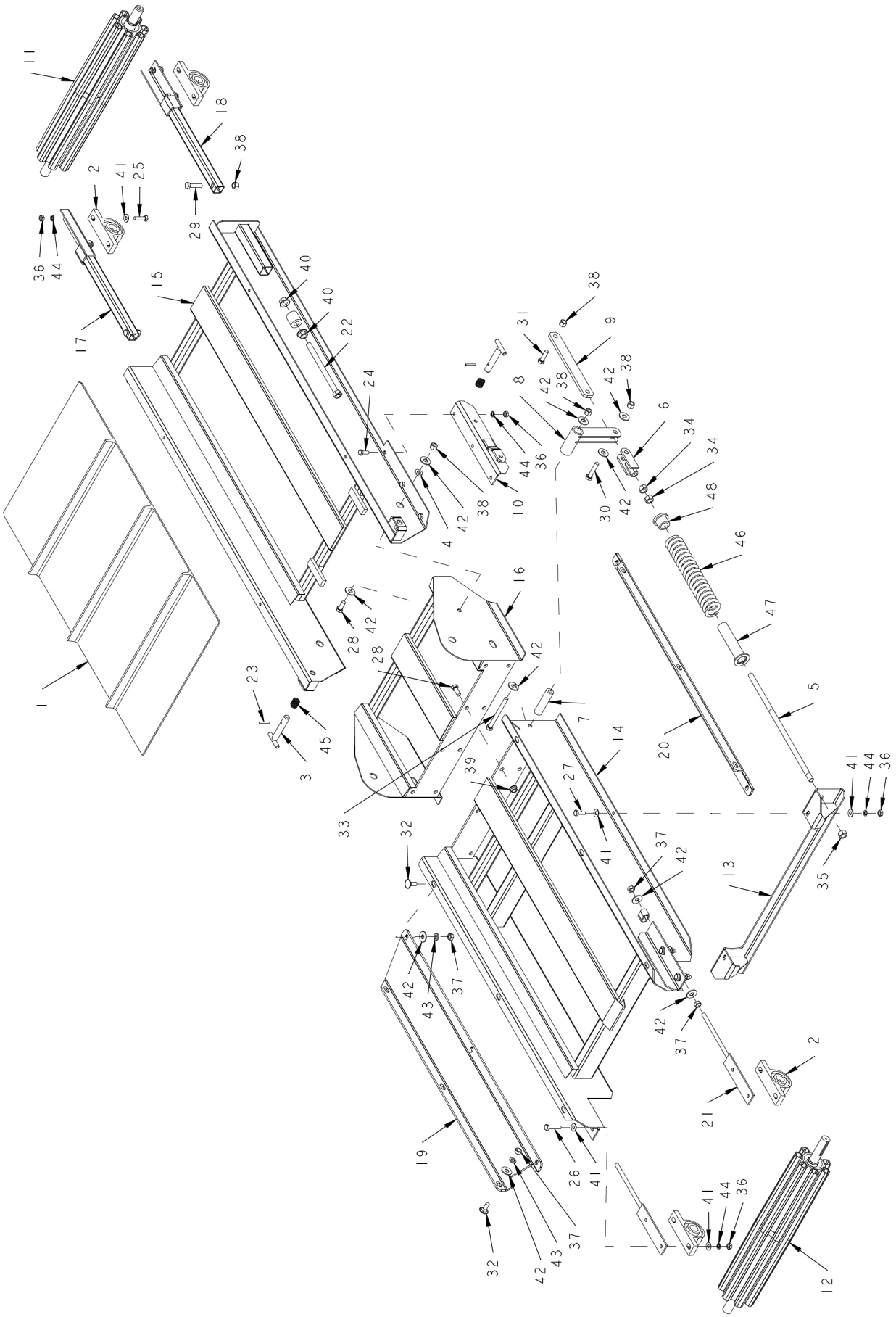


ITEM	PART	QTY.	PART DESCRIPTION
	4700886		PRESSURE ROLLER COMP. 11” includes items 1-9, 11, 12, 14, 15, and cotter pin
1	2900004	1	CUP\INNER\WHEEL HUB
2	2900018	1	CONE\OUTER\WHL;HUB(67048
3	2900055	1	SEAL\WHEEL HUB
4	2900056	1	CUP\OUTER\WHEEL HUB
5	2900057	1	HUB\5-BOLT\(985)\COMPLETE includes items 1-7, 11
6	2900061	1	CONE\OUTER\WHEEL HUB
7	2900064	1	CAP\WHEEL HUB
8	4700115	1	DRUM\RLLR\PRESS
9	4700235	1	PRESSURE ROLLER STAND 11 SP
10	4801443	4	BOLT\FLG\M16X50\2.0P
11	4900094	5	NUT\TAPER\WHEEL\1/2\NF
12	4900112	1	NUT\SLOT\5/8\NC
13	4900204	4	NUT\FLG\SERR\M16\2.0P\CL8
14	5000006	5	WASH\LOCK\1/2
15	5000094	1	WASH\SPINDLE\5/8
Not Shown			
	4800532	1	PIN\COTTER 5/32X1-3/4

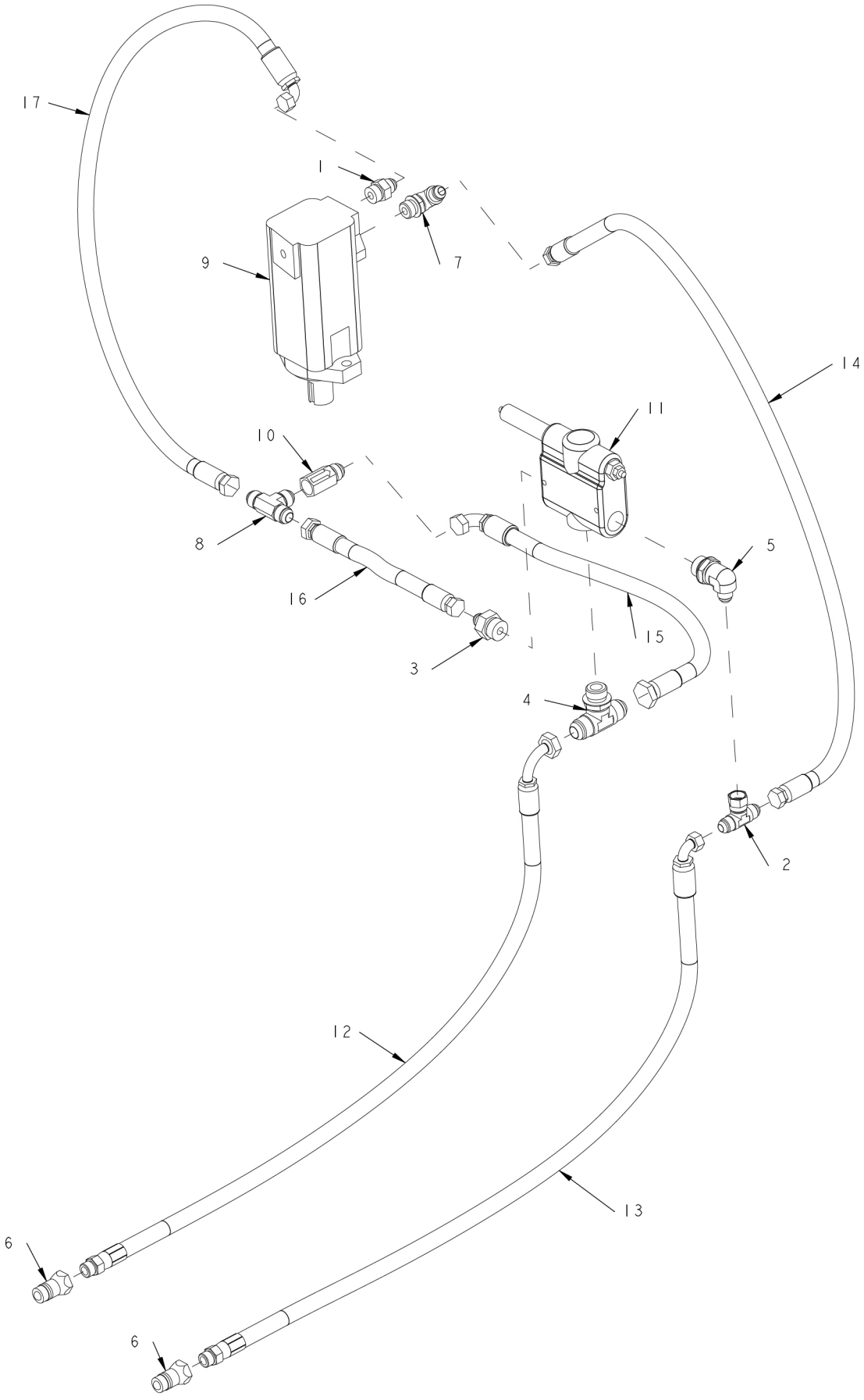
TUB ROLLER ASSEMBLY



ITEM	PART	QTY.	PART DESCRIPTION
1	1200013	1	RLLR\TUB\1-1/2\W/O FLANGE
2	2000584	2	BRG\CYL\1-1/2\DLOK
3	4501900		SHIM\RLLR\SUP\TUB\10GA
3A	4501131		SHIM\RLLR\SUP\TUB\1/4
4	4702007	1	BRG\PB\RLLR\TUB\ASY
5	4801444	4	BOLT\FLG\M12X50\1.75P\CL10.9
6	4900208	4	NUT\FLG\TPLCK\M12\1.75P\CL10



ITEM	PART	QTY.	PART DESCRIPTION
1	1700264	1	BELT\CNVYR\24X235\2PLY\150 LB
2	2000507	4	BRG\PB\1-1/8\2BOLT
3	4700246	2	PIN\LATCH\FOLD\HD-8
4	4700247	2	BUSH\HINGE
5	4700638	1	ROD\SPG\CNVYR
6	4700639	1	CLEVIS\SPRNG\CNVYR
7	4700654	1	BUSH\ARM\SPG\CNVYR
8	4700655	1	ARM\SPG\CNVYR
9	4700656	1	LINK\CNVYR\11-1/2”
10	4700657	1	MNT\LINK\CNVYR
11	4705265	1	RLLR\IDLER\CNVYR\BLLY\HD-8
12	4705266	1	RLLR\DR\CNVYR\BLLY\HD-8
13	4705963	1	MNT\SPG\CNVYR
14	4705974	1	FRM\CNVYR\LWR\H835
15	4705977	1	FRM\CNVYR\UPPER
16	4705999	1	FRM\CNVYR\MDDL
17	4706007	1	BRKT\BRG\LH
18	4706008	1	BRKT\BRG\RH
19	4706014	1	BRKT\CNVYR
20	4706015	1	BRKT\CNVYR
21	4706018	2	BRG\ADJ\STRAP
22	4706020	2	BOLT\CNVYR
23	4800256	2	PIN\RLLD\3/16X1-1/2
24	4800631	3	BOLT\HEX\M10XM25
25	4800988	4	BOLT\HEX\M10X40\1.5P
26	4800989	4	BOLT\HEX\M10X50\1.5P
27	4800991	2	BOLT\HEX\M10X30\1.5P
28	4800995	10	BOLT\HEX\M12X30\1.75P
29	4800996	2	BOLT\HEX\M12X50\1.75P
30	4800997	1	BOLT\HEX\M12X60\1.75P
31	4801436	1	BOLT\HEX\M12X40\1.75P
32	4801442	12	BOLT\CRG\M12X30\1.75P
33	4801456	1	BOLT\HEX\M12X130\1.75P\CL8.8
34	4900005	2	NUT\HEX\5/8\NC
35	4900012	1	NUT\TPLCK\5/8\NC
36	4900195	13	NUT\HEX\M10\1.5P\CL8
37	4900196	16	NUT\HEX\M12\1.75P\CL8
38	4900197	7	NUT\TPLCK\M12\1.75P\CL8
39	4900202	8	NUT\FLG\SERR\M12\1.75P
40	4900204	4	NUT\FLG\SERR\M16\2.0P\CL8
41	5000001	16	WASH\FLAT\3/8
42	5000004	24	WASH\FLAT\1/2
43	5000006	12	WASH\LOCK\1/2
44	5000138	13	WASH\LOCK\M10
45	6100031	2	SPRING\COMP\.072W\25/32OD
46	6100032	1	SPG\COMP\2.81OD\.406WD>
47	8400025	1	GUIDE\SPRING\LONG
48	8400026	1	GUIDE\SPRING\SHORT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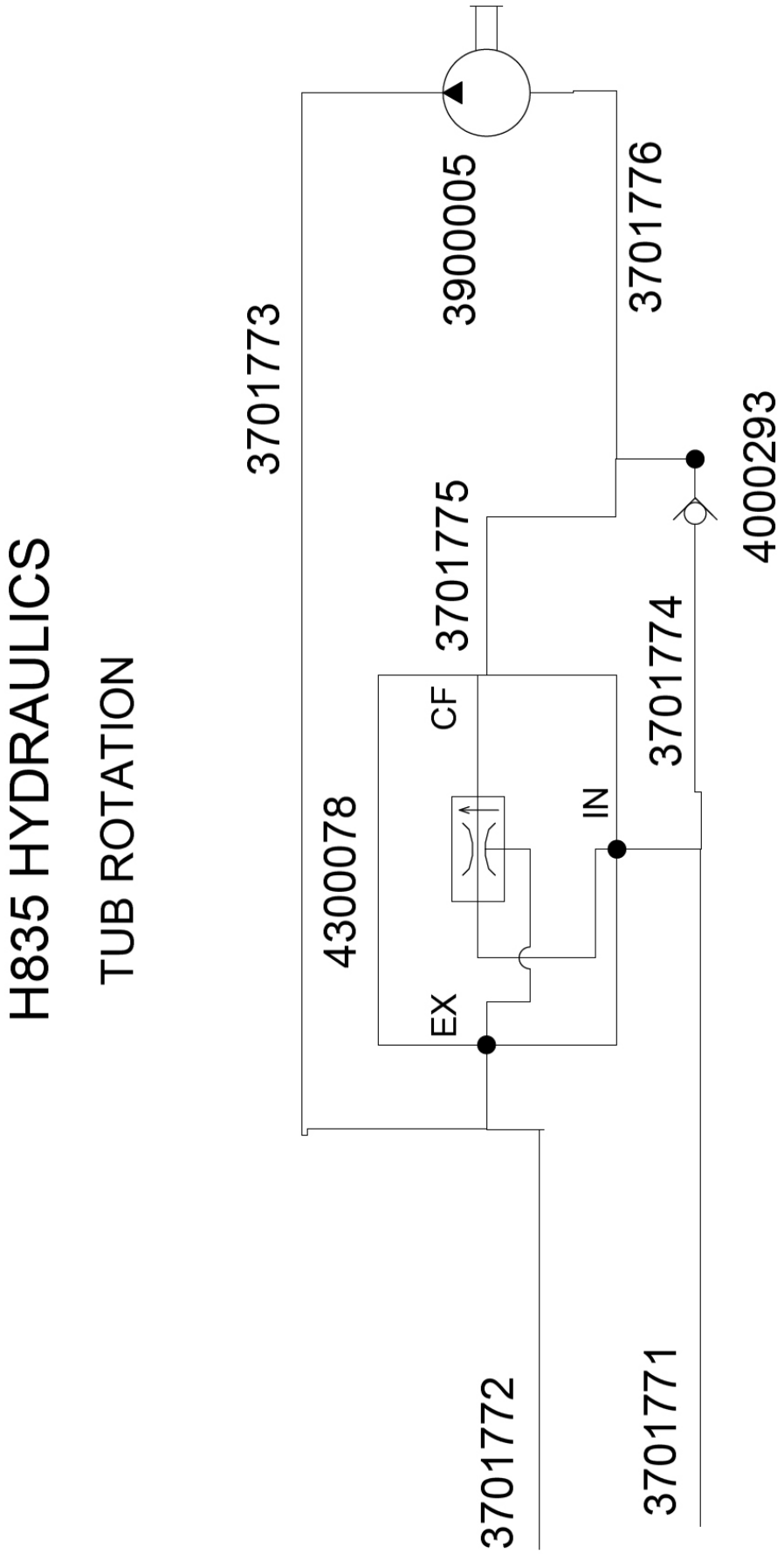
ITEM	PART	QTY.	PART DESCRIPTION
1	3800328	1	FTG\7/8MORX3/4MJIC\ADPT
2	3800478	1	FTG\3/4MJIC3/4MJIC3/4FJICS\BR;TEE
3	3800480	1	FTG\1-1/16MORX3/4MJIC\ADPT
4	3800481	1	FTG\1-1/16MJICX1-1/16MJICX1-1/16MOR\BR;TEE
5	3800536	1	FTG\1-1/16MORX3/4MJIC\90
6	3800694	2	FTG\3/4FOR\QUICK;CPLR\MALE
7	3800696	1	FTG\7/8MORX3/4MJIC\90
8	3800830	1	FTG\7/8MJICX7/8MJICX7/8MJIC\TEE
9	3900005	1	MTR\HYD\14.9\2000\SAE;A
10	4000293	1	VALVE\CHECK\7/8FJICX7/8MJIC
11	4300078	1	VALVE\SERVO\15GPM\12V
12	3701771	1	HOSE\HYD\1/2X80\3/4MORX1-1/16FJIC90 TEE ON IN PORT TO TRACTOR VALVE
13	3701772	1	HOSE\HYD\1/2X80\3/4MORX3/4FJIC90 TEE ON EX PORT TO TRACTOR VALVE
14	3701773	1	HOSE\HYD\1/2X 46\3/4FJICX3/4FJIC TOP OF TEE ON EX PORT TO PORT A ON ORBIT MOTOR
15	3701774	1	HOSE\HYD\1/2X23\1-1/16FJICX7/8FJIC90 TEE ON IN PORT TO CHECK VALVE
16	3701775	1	HOSE\HYD\1/2X13\3/4FJICX7/8FJIC CF PORT TO TEE
17	3701776	1	HOSE\HYD\1/2X43\7/8FJICX3/4FJIC\90 TEE ON CF LINE TO PORT B ON ORBIT MOTOR
GREASE LINES			
	3701485	2	HOSE\LUB\1/8X22.5\MPS-MPS (TUB DRIVE PIVOT AND TUB SPROCKET SHAFT)
	3701486	2	HOSE\LUB\1/8X37.25\MPS-MPS (REAR DRIVE LINE AND TOP BEARING TUB SPROCKET SHAFT)
	3701488	1	HOSE\LUB\1/8X43\MPS-MPS (REAR CONVEYOR DRIVE BEARING)
	3701603	1	HOSE\LUB\1/8X30\MPS-MPS (FRONT ROTOR BEARING)
	3701777	2	HOSE\LUB\1/8X53\MPS-MPS (CONVEYOR)


H835 HYDRAULICS
TUB ROTATION
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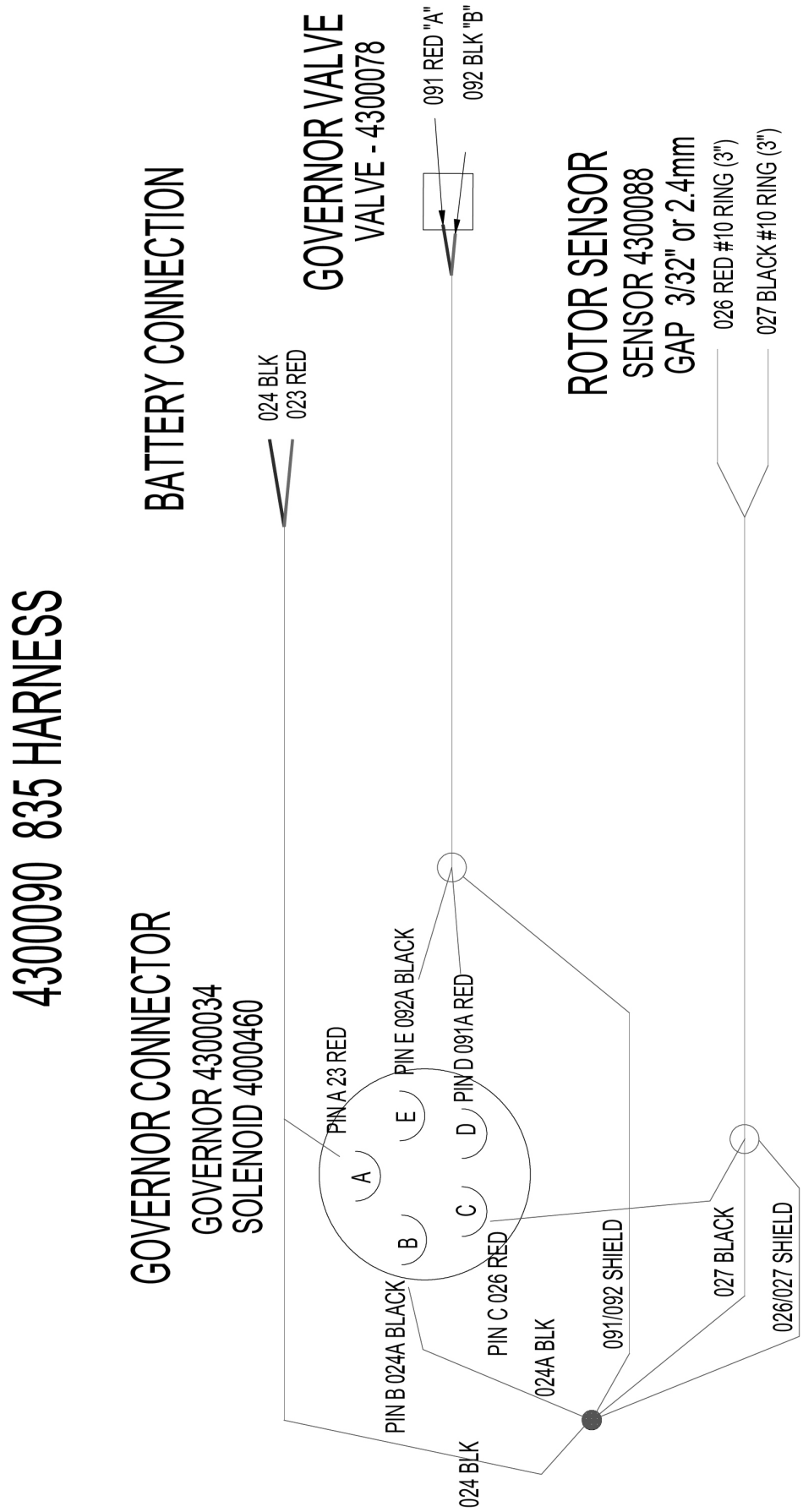
3900005
3701776
4000293
3701775
3701774
CF
IN
EX
4300078
3701772
3701771


4300090 835 HARNESS
GOVERNOR CONNECTOR
GOVERNOR 4300034
SOLENOID 4000460
BATTERY CONNECTION
024 BLK
023 RED
GOVERNOR VALVE
VALVE - 4300078
091 RED "A"
092 BLK "B"
ROTOR SENSOR
SENSOR 4300088
GAP 3/32" or 2.4mm
026 RED #10 RING (3")
027 BLACK #10 RING (3")
PIN A 23 RED
PIN E 092A BLACK
PIN D 091A RED
PIN B 024A BLACK
PIN C 026 RED
024 BLK
024A BLK
091/092 SHIELD
027 BLACK
026/027 SHIELD
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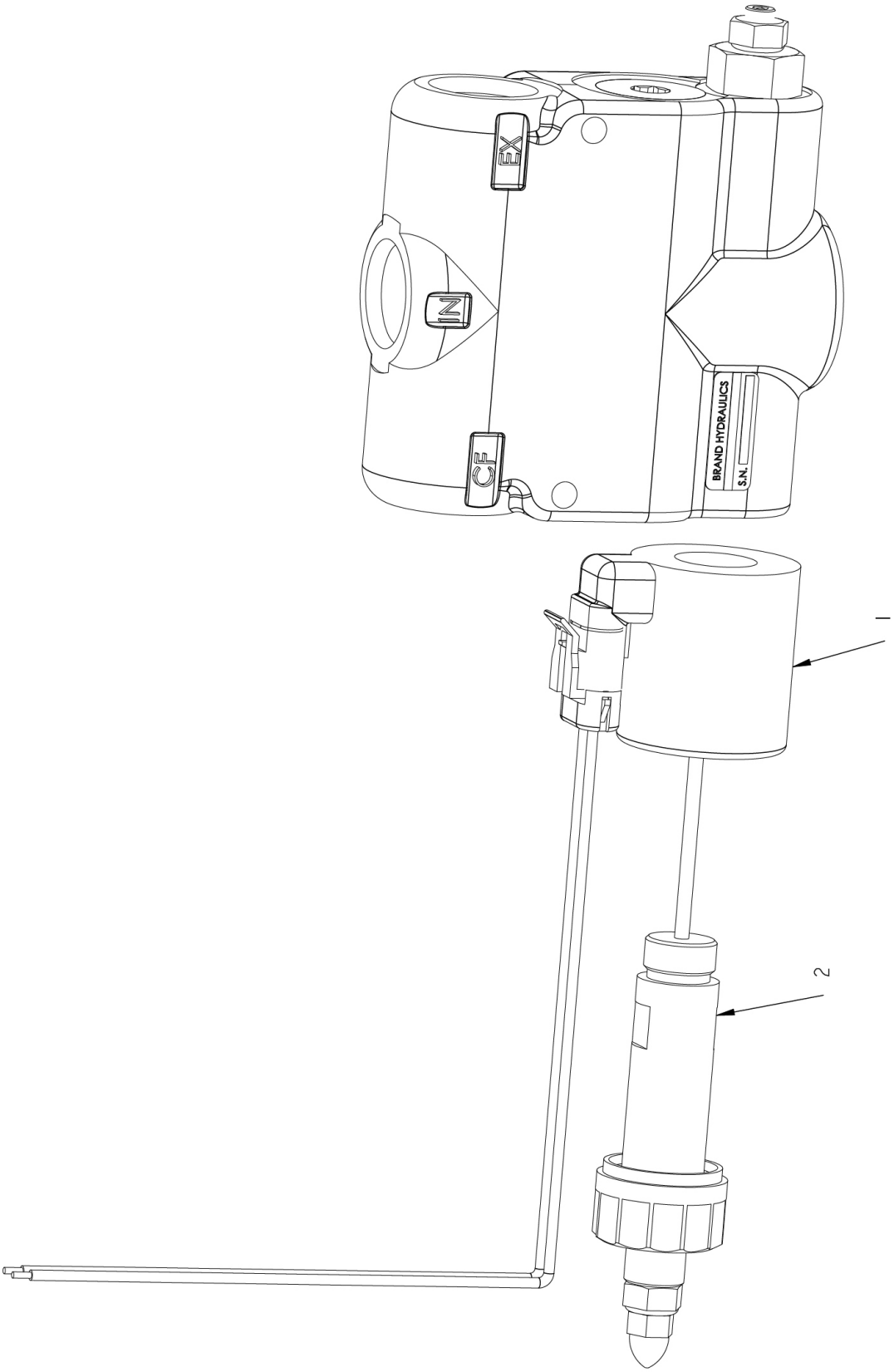
D
E


EX
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CF
BRAND HYDRAULICS
S.N.
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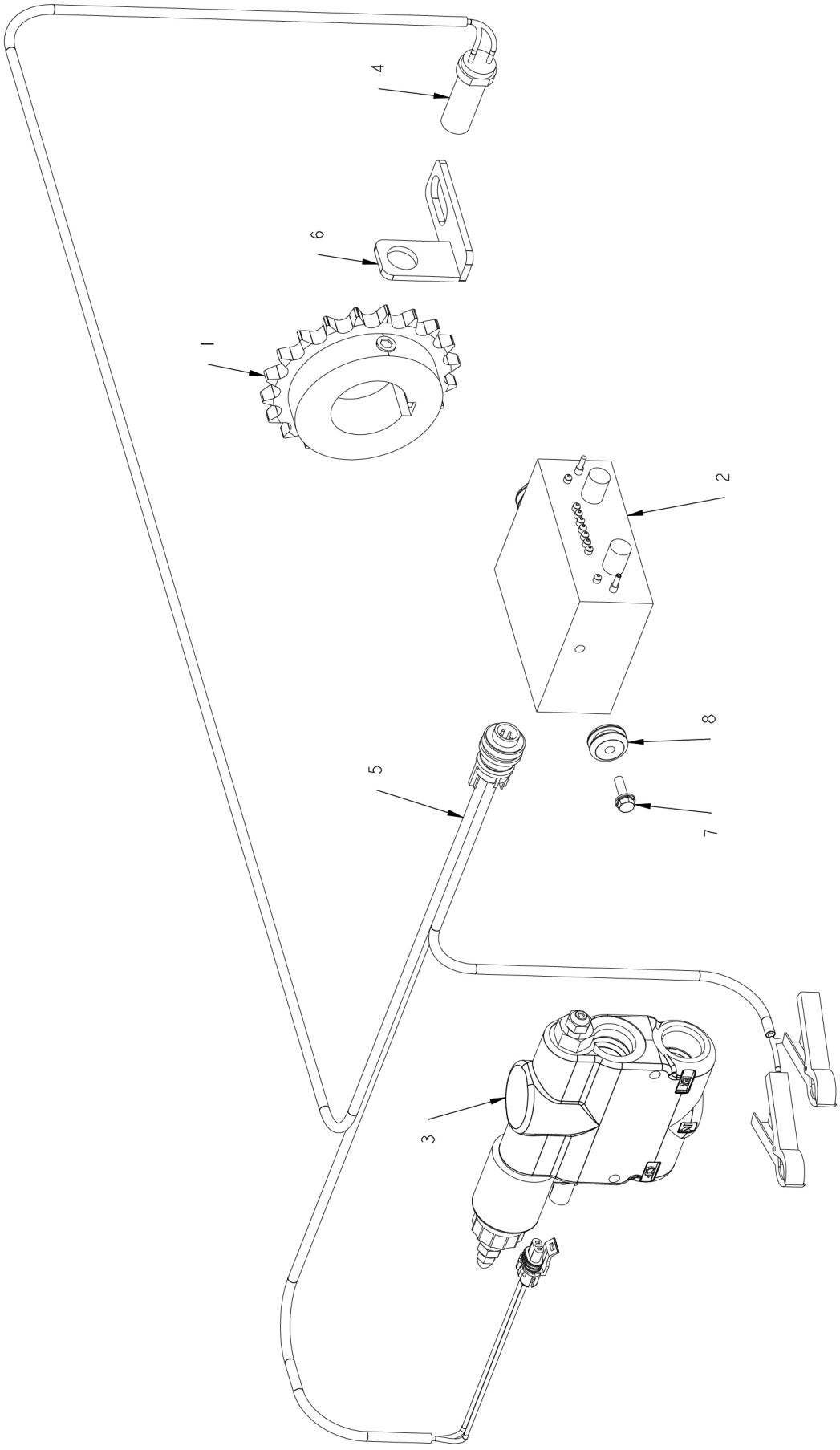
ITEM	PART	QTY.	PART DESCRIPTION
	4300078		**VALVE\SERVO\15GPM\12V\BRAND**
1	4000460	1	VALVE\HYD\SOL\12V\C961
2	4000464	1	TUBE\COIL\ASSY\W/PUSHROD
NOT SHOWN			
	4300077		KIT\SEAL\VLV\SERVO\BRAND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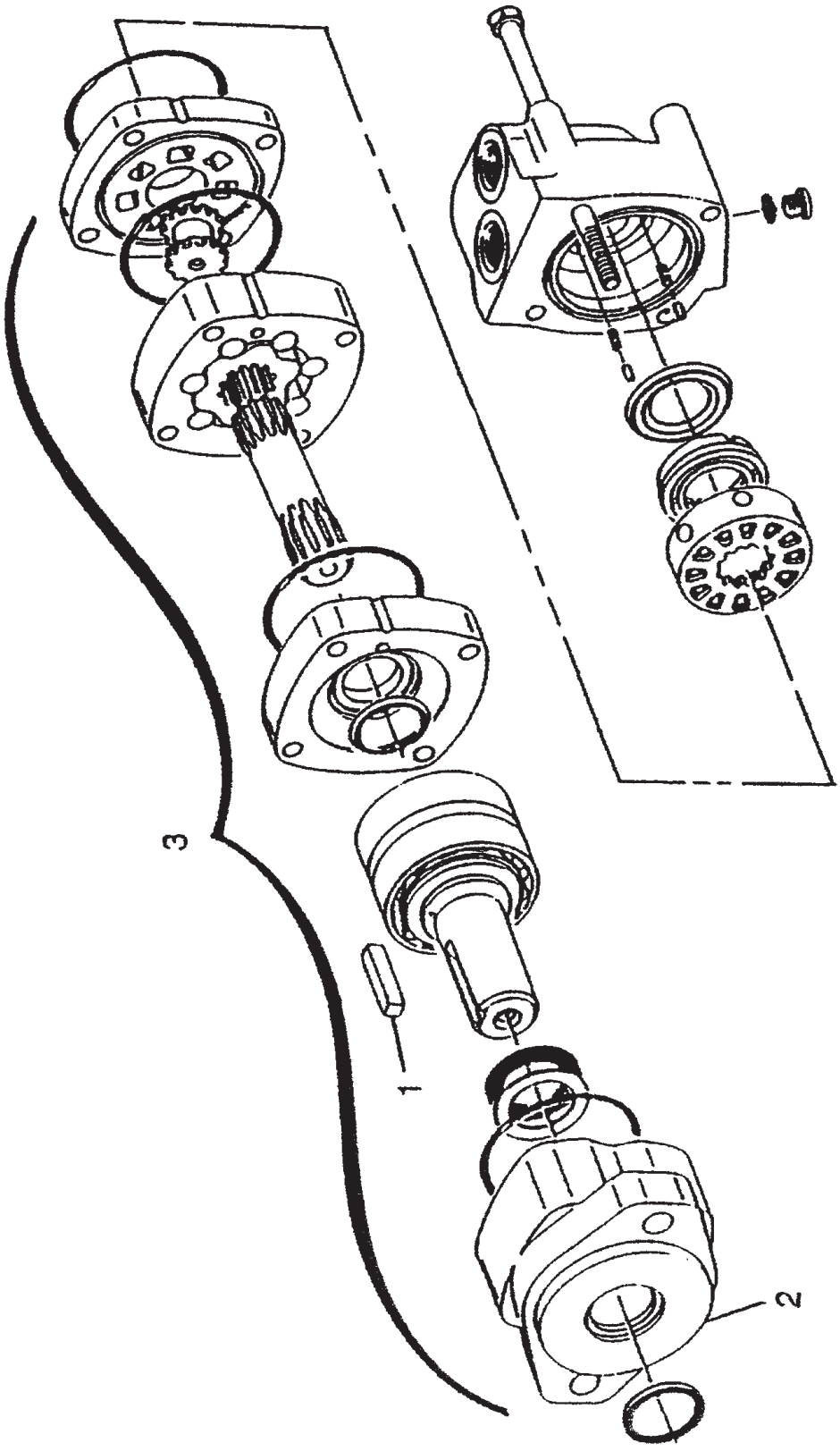
GOVERNOR ASSEMBLY

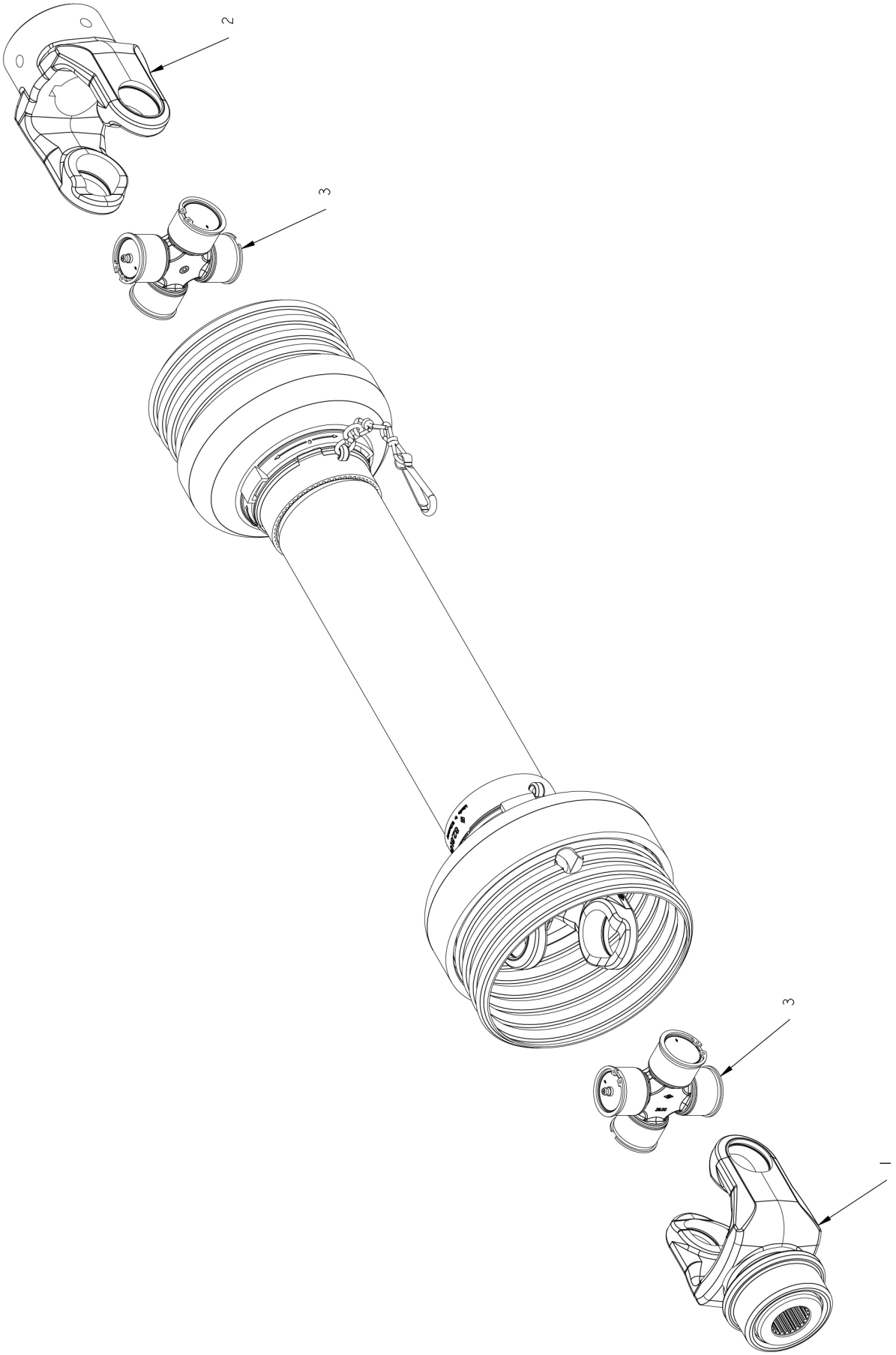
ITEM	PART	QTY.	PART DESCRIPTION
1	1000322	1	SPKT\60\B\20\2\1/2KW
2	4300034	1	CONTROL BOX
3	4300078	1	VALVE\SERVO\15GPM\12V\BRAND
4	4300088	1	SNSR\MAG\W/HDW
5	4300090	1	HARNESS\WIRING\835
6	4706029	1	BRKT\SNSR
7	4800301	2	SCR\FLNG\SERR\1/4X3/4
8	7500124	2	GRMT\RBBR\1X9/32IDX3/16T

TUB ORBIT MOTOR ASSEMBLY



TUB ORBIT MOTOR ASSEMBLY

ITEM	PART	QTY.	PART DESCRIPTION
3	**3900005**	**1**	**MTR\HYD\14.9\200\SAE;A**
1	6200004	1	5/16” X 1-1/2” KEY
2	3900011	1	MOUNTING FLANGE
4	7501005	1	SEAL KIT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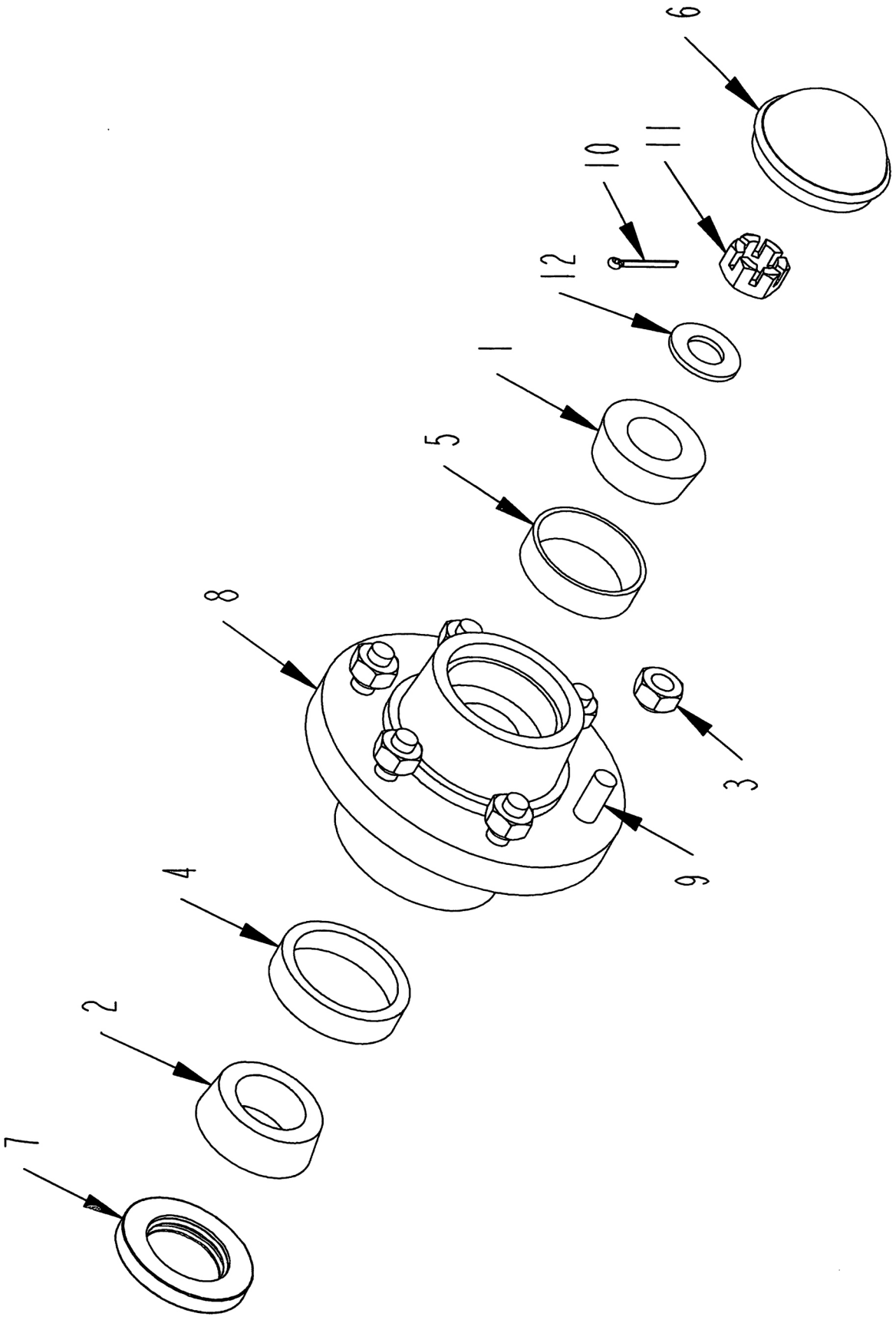
ITEM	PART	QTY.	PART DESCRIPTION
	3600914		**DRLIN\COMP\WALTERSCHEID**
1	3600916	1	YOKE\1-3/8\21SPL\WALTERSCHEID
2	3600917	1	YOKE\2\WALTERSCHEID
3	3600915	2	CROSS&BRG\WALTERSCHEID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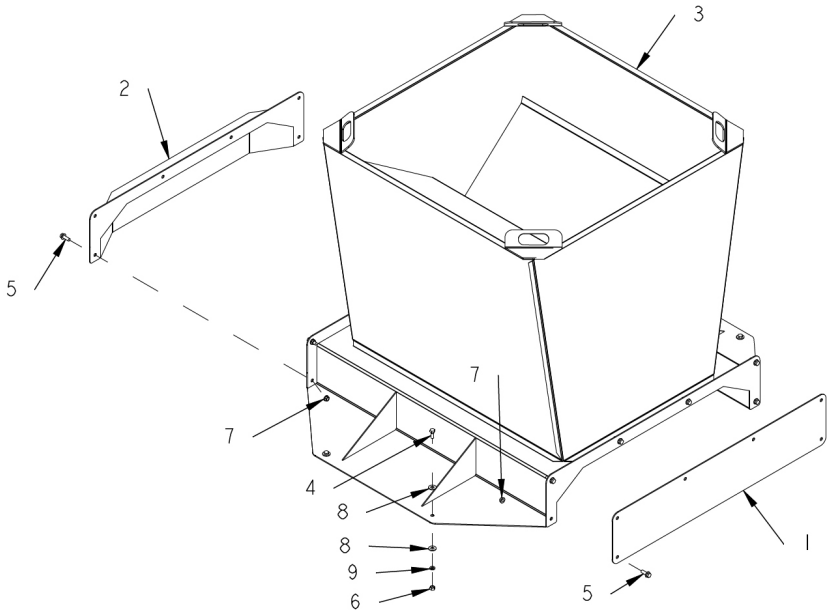
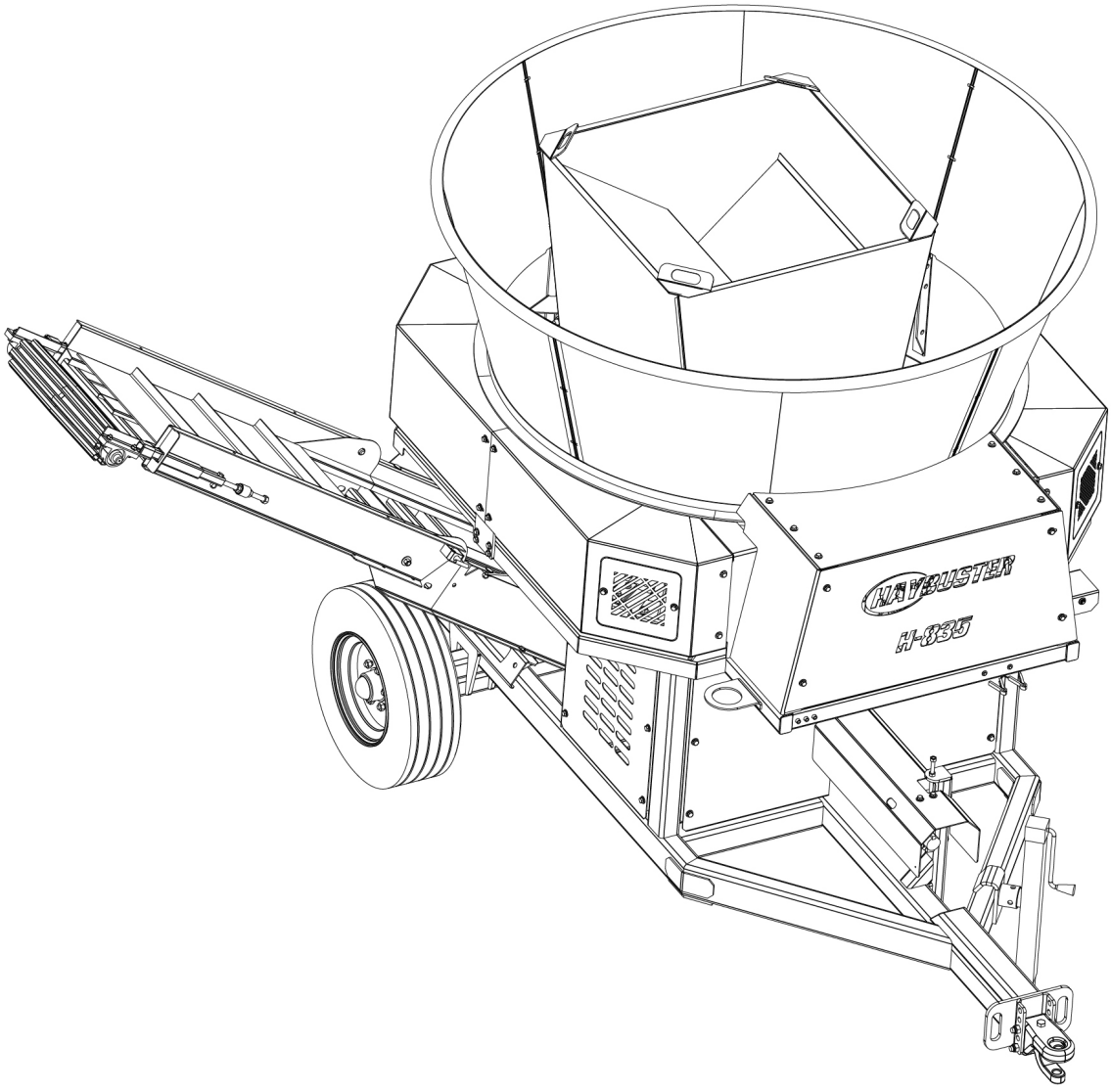
ITEM	PART	QTY.	PART DESCRIPTION
1	2900024	1	CONE\BRG\OUTER\25877
2	2900029	1	CONE INNER/WHEL HUB\25590
3	2900083	6	NUT\TAPER\WHEEL\1/2\NF\
4	2900164	1	BRG\CUP\INNER\875\25520
5	2900165	1	BRG\CUP\OUTER\875\25821
6	2900168	1	CAP\DUST\875
7	2900169	1	SEAL\GREASE\875\P602110
8	2900171	1	HUB\6-BOLT\STUDS\COMPLETE (INCLUDES ITEMS 1, 2, 3, 4, 5, 6, 7, 9)
9	2900172	6	STUD\WHL\9/16-18X2-1/8\GR5\P151403
10	4800044	1	PIN\COT\5/32X1-1/2
11	4900054	1	NUT\CASTLE\1/2\NF
12	5000055	1	WASH\SPINDLE\7/8

GRAIN HOPPER ASSEMBLY (OPTIONAL)





ITEM	PART	QTY.	PART DESCRIPTION
1	4501341	1	CVR\END\HPPR\GRAIN
2	4705296	1	CVR\RTR\HPPR\GRAIN
3	4705299	1	HPPR\GRAIN\H800
4	4800003	4	BOLT\HEX\3/8X1
5	4800913	12	BOLT\FLG\SERR\3/8X1\NC
6	4900002	4	NUT\HEX\3/8\NC
7	4900076	12	NUT\FLG\SERR\3/8\NC
8	5000001	8	WASH\FLAT\3/8
9	5000019	4	WASH\LOCK\3/8

Grain Hopper Option Installation:

1. Orient tub so that front interior tub angle is centered with cylinder box.

2. Bolt front(Item 1) and rear(Item 2) covers to grain hopper with hardware. Check to see that hopper baffle orientation is correct.

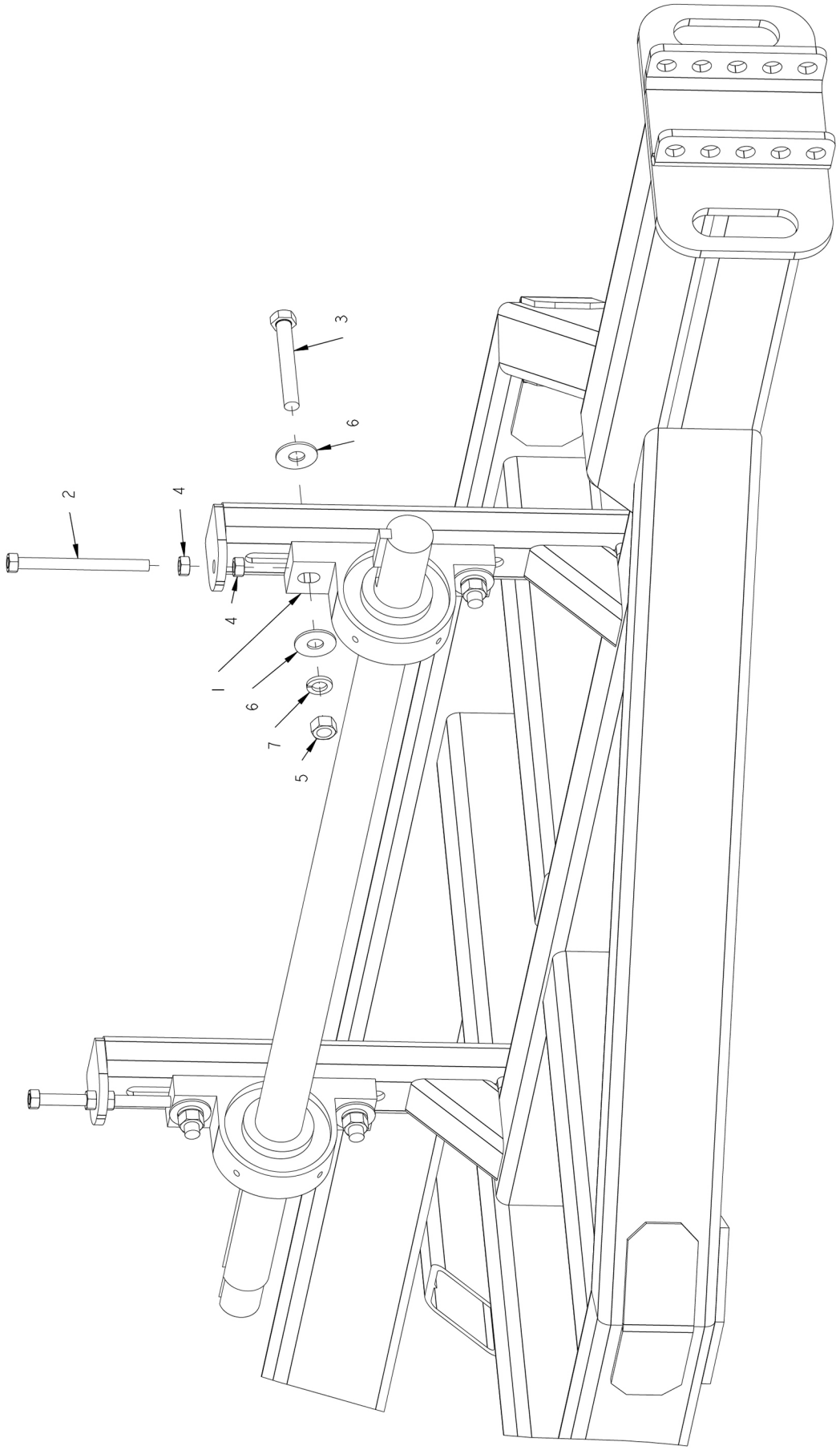
3 Place angled end of hopper tight against the tub.

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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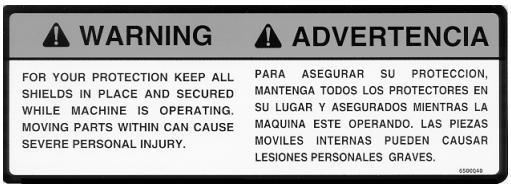
FRONT DRIVE BEARING ASSEMBLY

ITEM	PART	QTY.	PART DESCRIPTION
1	2000510	2	BRG\PB\2\2BOLT
2	4706035	2	BOLT\TGHTR\BRG\SHFT\DR
3	4801429	4	BOLT\HEX\M16X110\2.0P
4	4900196	4	NUT\HEX\M12\1.75P\CL8
5	4900198	4	NUT\HEX\M16\2.0P\CL8
6	5000002	8	WASH\FLAT\5/8
7	5000003	4	WASH\LOCK\5/8



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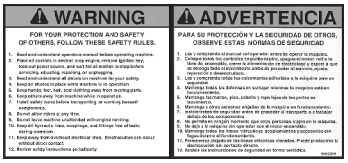

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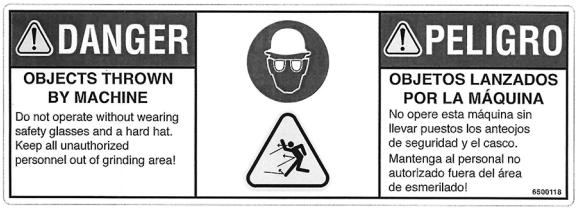

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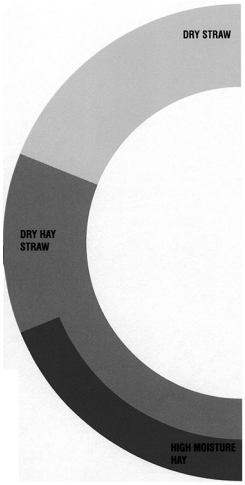

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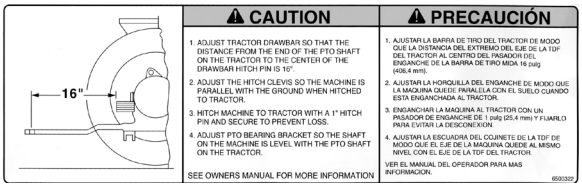

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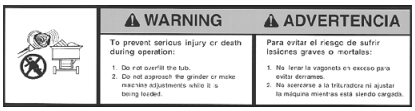

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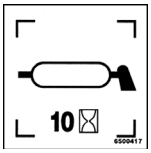

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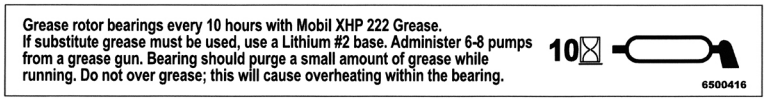

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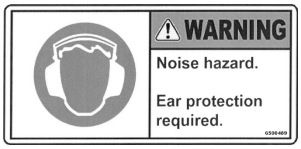
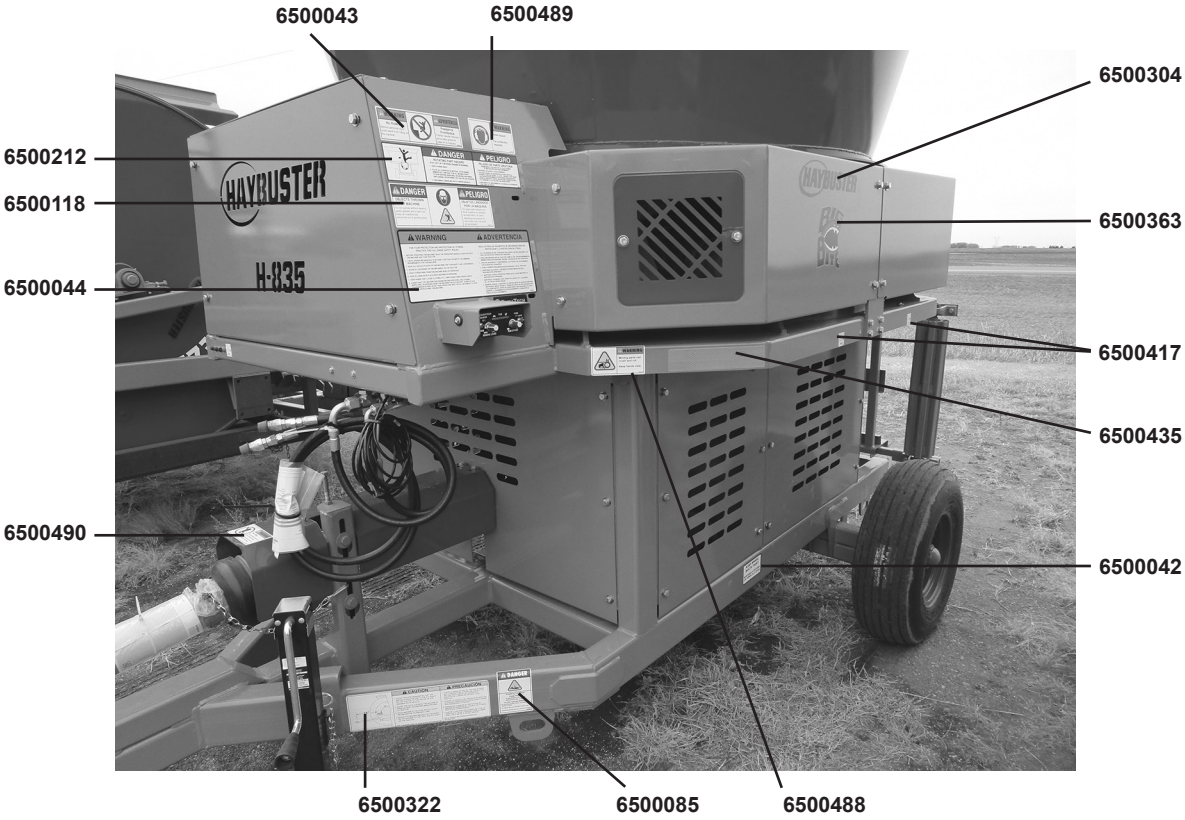


6500489

6500490

ITEM	PART	QTY.	PART DESCRIPTION
1	6500040	1	DECAL\WARN\SHIELD\PROT
2	6500041	2	DECAL\WARN\PROTECTION
3	6500042	2	DECAL\WARN\KEEP;WHL;BLTS
4	6500043	1	DECAL\WARN\NO;RIDERS
5	6500056	1	DECAL\INFO\ROTATION\STR
6	6500082	3	DECAL\WARN\ROTATN;PART;>
7	6500085	1	DECAL\DNGR\ROTATNG;DR-LNE
8	6500118	1	DECAL\DNGR\OBJCTS;THROWN
9	6500212	2	DECAL\WARN\ROTATING;PRT;>
10	6500220	1	DECAL\WARN\HI;PRESS;FLUID
11	6500283	1	DECAL\WARN\OVERLOAD;TUB
12	6500304	2	DECAL\LOGO\HYBSTR\1-3/4\W/SUNBURST
13	6500322	1	DECAL\CAUT\ADJ_DRAWBAR\16”
14	6500339	1	DECAL\WARN\PINCH;POINT
15	6500363	2	DECAL\LOGO\BIGBITE\UNVRSL
16	6500366	1	DECAL\SMV
17	6500416	2	DECAL\BRG\RTR\GREASE\10HRS
18	6500417	5	DECAL\GREASE\10 HRS
19	6500434	4	DECAL\2X9\RED\REFCT
20	6500435	2	DECAL\2X9\AMBER\REFCT
21	6500488	3	DECAL\WARN\PARTS\MOVING
22	6500489	1	DECAL\WARN\PPE\HEARING
23	6500490	1	DECAL\WARN\NO STEP
24	6500518	1	DECAL\INDEX\SLUGBAR\2574
	6500596		**DECAL\KIT\H835**
	7500077		PAINT\YELLOW\SPRAY\12OZ
	7500092		PAINT\YELLOW\QUART
	7500091		PAINT\YELLOW\GALLON
	7500078		PAINT\RED\SPRAY\11OZ>
	7500105		PAINT\RED\QUART
	7500104		PAINT\RED\GALLON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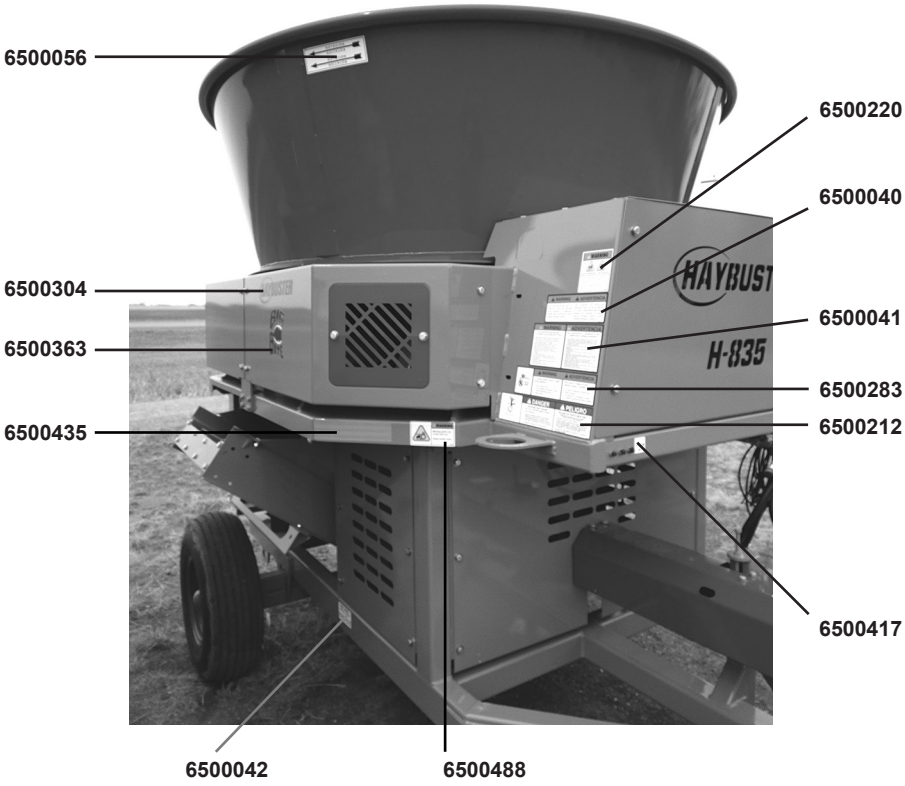
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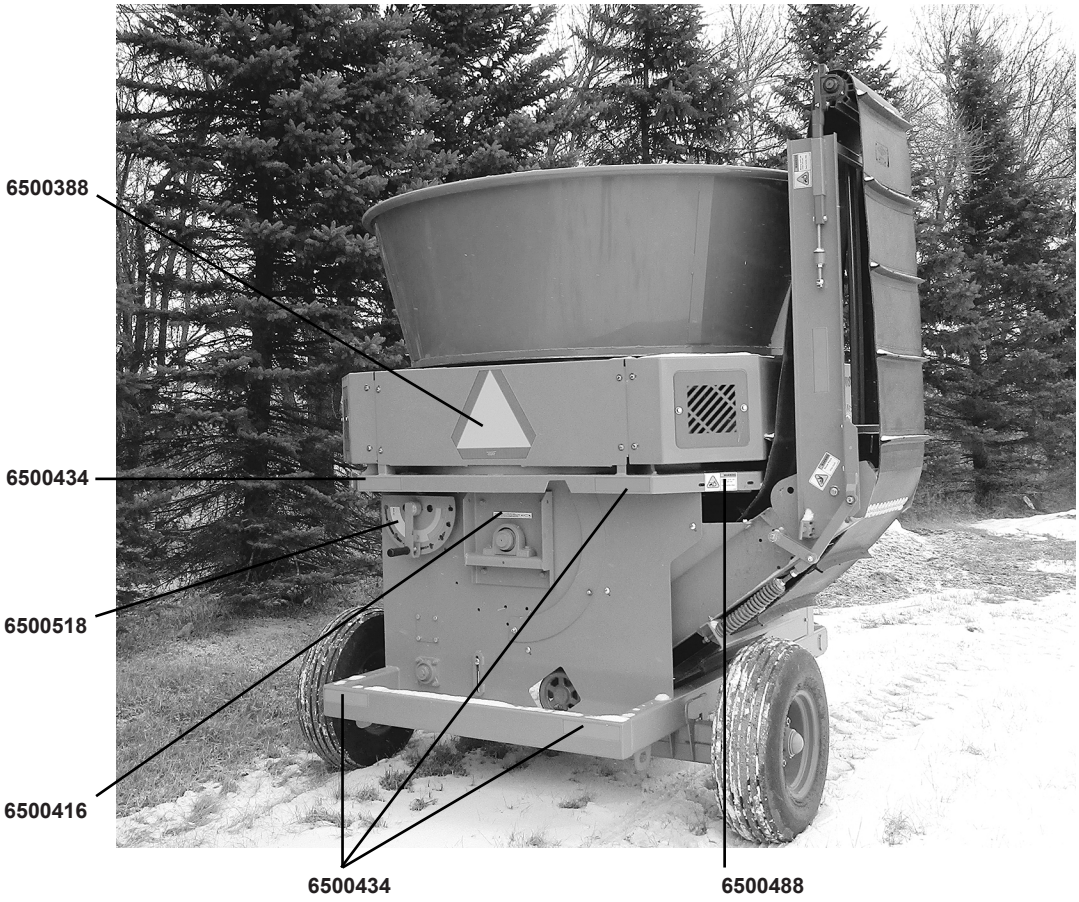
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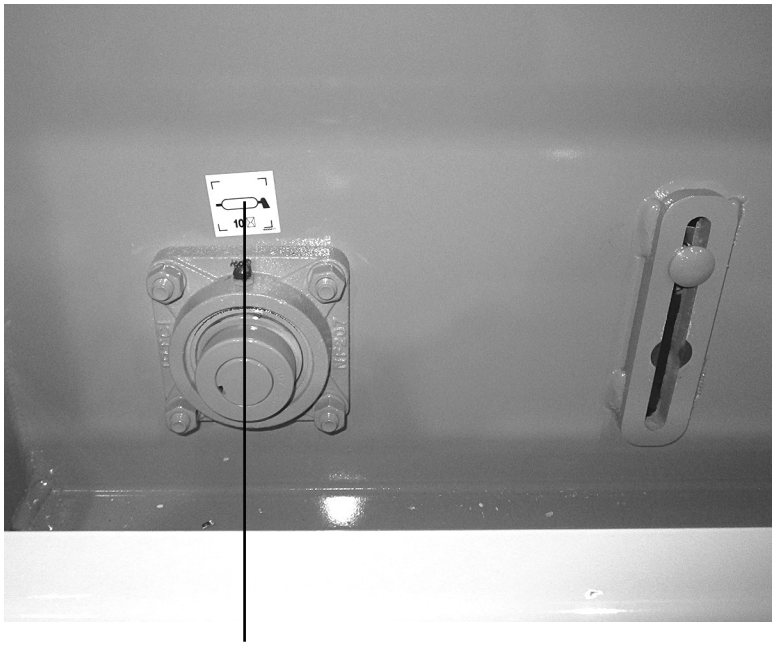
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H-835 Tub Grinder Documentation Comment Form

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- Did you find any errors?
- 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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