

Operating Instructions and Parts Reference

# H-1135<sup>TM</sup>

## PTO Driven Tub Grinder

Includes: Stationary Electric Supplement

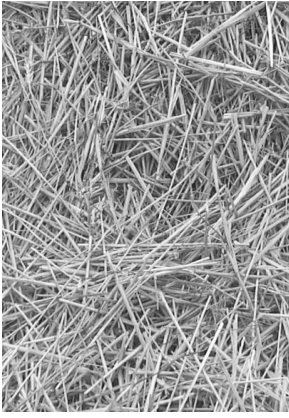


PRODUCT INFORMATION



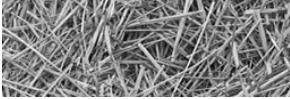
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**HAYBUSTER<sup>®</sup>**  
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## FOREWORD



## Foreword

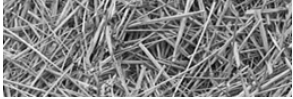
All personnel must read and understand the following sections before operating the H-1135 Tub Grinder.

- Foreword and Section 1, important safety information.
- Section 2, “Machine operation,” which explains normal operation of the machine.
- Section 2.1, “Pre-Operation Inspection”.

### **Appropriate use of unit**

The H-1135 Tilt Tub Grinder is designed to grind material into more palatable or manageable rations for your operation. It has multiple uses:

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



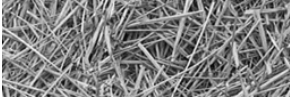
- Most small grains
3. Grind most types of crop residue
    - Stover
    - Straw
  4. Grind various sizes
    - Screens are available from 1/8" to 8"
    - Combine screen sizes to get desired cut

### **Operator protection**

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

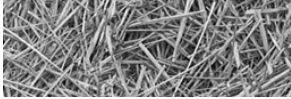


**WARNING:** The **OPERATOR IS RESPONSIBLE** for the safety of the operator and those in the surrounding area. Operators and those observing the operation of the H-1135 Tub Grinder are required to wear head, eye, and ear protection, No loose clothing is allowed.



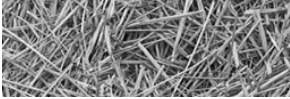
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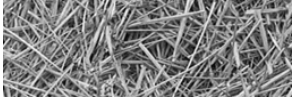
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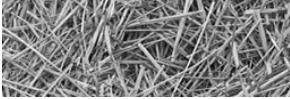


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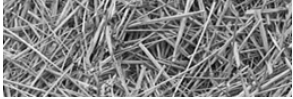


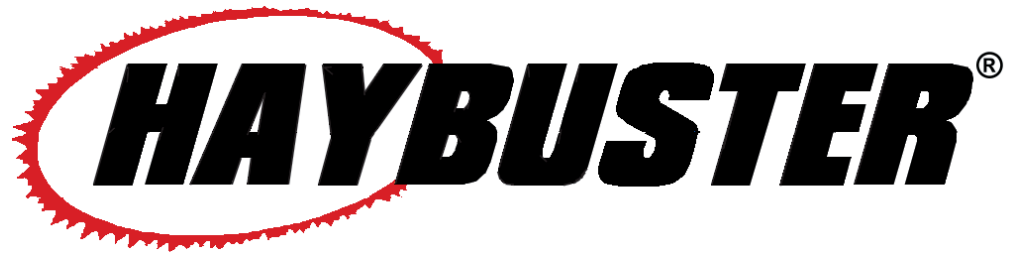
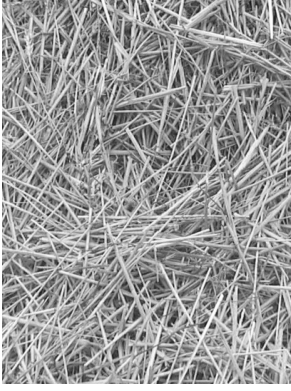
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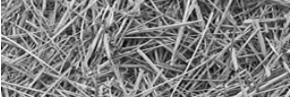




# **H-1135<sup>TM</sup>**

## **PTO Driven Tub Grinder**

### **Part 1: Operating Instructions**



# Introduction

The H-1135 Tub Grinder is designed to grind material into more palatable or manageable rations for your operation. It has multiple uses:

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

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

## Purpose

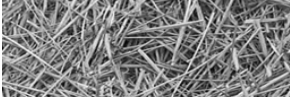
The purpose of this owner's manual is to explain maintenance requirements and routine adjustments for the most efficient operation of your H-1135 Tub Grinder. There is also a trouble shooting section that may help in case of problems in the field. Any information not covered in this manual may be obtained 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-1135

SERIAL NO. \_\_\_\_\_



## How to use this manual

### Manual organization

This manual is organized into the following parts:

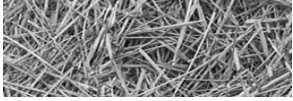
- **Part 1:** Operating Instructions
  - **Section 1:** Safety decals, safety instructions and information
  - **Section 2:** Describes the purposes of each part, and safe operating procedures.
  - **Section 3:** Describes how to maintain the H-1135 Tub Grinder.
  - **Section 4:** Describes how to trouble shoot problems with the H-1135 Tub Grinder.
- **Part 2:** Part's reference contains diagrams of each assembly, with the part number of each part. A key on the same or facing page contains a description of the part and the quantity used.

### Dealer responsibilities

- Perform a daily pre-operation inspection as described in Section 2, "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

- Note the important safety information in the Foreword and in Section 1, "Safety."
- Thoroughly review sections 1 and 2, which explain normal operation of the machine, and section 3, 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/Haybuster. We have provided decals, shield and other safety features to aid you in using your machine safely. In addition, we ask you to be a careful operator who will properly use and service your Haybuster equipment.



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

**THIS MACHINE IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THOSE EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING LITERATURE OR OTHER DURATECH INDUSTRIES WRITTEN MATERIAL PERTAINING TO THE H-1135 TUB GRINDER.**

### 1.1 Safety-alert symbols

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

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

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

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

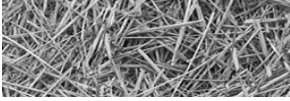
DuraTech Industries uses industry accepted **ISO/ANSI** standards in labeling its products for safety and operational characteristics.



### **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

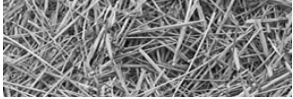
This manual uses the symbols to the right to denote important safety instructions and information.

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**.



	<p>1. Yellow warning triangle/black graphical symbol, indicates what the hazard is. Hazard Identification</p>
	<p>2. Red circle-with-slash/black graphical symbol indicates a prohibited action to avoid the hazard. Prohibited Action</p>
	<p>3. Blue mandatory action circles/white graphical symbol - indicates an action to take to avoid the hazard. Mandatory Action</p>



## 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-1135** when you are fatigued. Be alert - If you get tired while operating your **H-1135**, 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 hammers, screens, etc... Heavy-duty, nonslip gloves improve your grip and protect your hands.



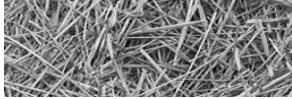
Good footing is most important. Wear sturdy boots with nonslip soles. Steel-toed safety boots are recommended.



To reduce the risk of injury to your eyes never operate a **H-1135** 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 muffers) 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.



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

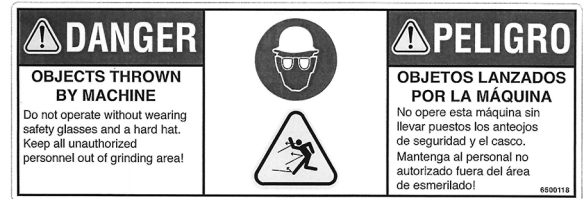
DO NOT OPERATE WITHOUT

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




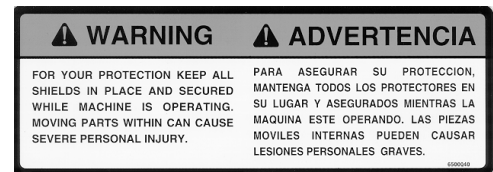
6500085

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

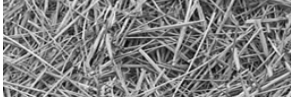


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 **WARNING:** FOR YOUR PROTECTION KEEP ALL SHIELDS IN PLACE AND SECURED WHILE MACHINE IS OPERATING MOVING PARTS WITHIN CAN CAUSE SEVERE PERSONAL INJURY.



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

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





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




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

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

 <b>WARNING</b>	 <b>ADVERTENCIA</b>
<b>FOR YOUR PROTECTION AND SAFETY OF OTHERS, FOLLOW THESE SAFETY RULES.</b>	<b>PARA SU PROTECCIÓN Y LA SEGURIDAD DE OTROS, OBSERVE ESTAS NORMAS DE SEGURIDAD</b>
<ol style="list-style-type: none"> <li>1. Read and understand operator's manual before operating machine.</li> <li>2. Place all controls in neutral, stop engine, remove ignition key, lock out power source, and wait for all motion to stop before servicing, adjusting, repairing, or untagging.</li> <li>3. Read and understand all decals on machine for your safety.</li> <li>4. Keep all people in place while machine is in operation.</li> <li>5. Keep hands, feet, hair, and clothing away from moving parts.</li> <li>6. Keep others away from machine while in operation.</li> <li>7. Fuel safety: Never before transporting, or working near any components.</li> <li>8. Do not allow riders or any this.</li> <li>9. Do not leave machine unattended with engine running.</li> <li>10. Keep all hydraulic lines, couplings, and fittings free of leaks during operation.</li> <li>11. Keep away from overhead electrical lines. Electrocutation can occur without direct contact.</li> <li>12. Review safety instructions periodically.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lea y comprenda el manual del operador antes de operar la máquina.</li> <li>2. Coloque todos los controles en punto neutro, apague el motor, retire la llave de encendido, cierre los elementos de de potencia y espere a que se detenga todo el movimiento antes de proceder al servicio, ajuste, reparación o desmontaje.</li> <li>3. Lea y comprenda todas las calcomanías adheridas a la máquina para su seguridad.</li> <li>4. Mantenga todas las personas en su lugar mientras la máquina está en funcionamiento.</li> <li>5. Mantenga las manos, pies, cabello y ropa lejos de las partes en movimiento.</li> <li>6. Mantenga a otras personas alejadas de la máquina en funcionamiento.</li> <li>7. Mantenga las manos, pies, cabello y ropa lejos de las partes en movimiento.</li> <li>8. No permita en ningún momento que otras personas vayan en la máquina.</li> <li>9. No deje a la máquina sin que nadie esté al volante.</li> <li>10. Mantenga todas las líneas hidráulicas, acoplamientos y accesorios sin fugas durante el funcionamiento.</li> <li>11. Manténgase alejado de las líneas eléctricas elevadas. Puede producirse la electrocución sin contacto directo.</li> <li>12. Analice las instrucciones de seguridad en forma periódica.</li> </ol>

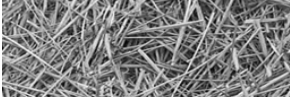
6500041

 <b>WARNING</b>		 <b>ADVERTENCIA</b>
<b>No Riders</b> Serious personal injury could result from riding on the machine.		<b>Pasajeros Prohibidos</b> Podrían resultar lesiones personales graves al viajar en la máquina.

6500043

 <b>WARNING</b>	 <b>ADVERTENCIA</b>
<b>THROWN OBJECT HAZARD</b> TO PREVENT SERIOUS INJURY OR DEATH DO NOT RAISE TUB WHEN ROTOR IS TURNING.	<b>PELIGRO DE OBJETOS DESPEDIDOS</b> PARA PREVENIR LESIONES SERIAS O LA MUERTE NO ELEVE EL TUBO CUANDO EL ROTOR ESTE GIRANDO.
<ol style="list-style-type: none"> <li>1. DISENGAGE ROTOR AND ALLOW TO COME TO A COMPLETE STOP.</li> <li>2. BE CERTAIN THAT ALL PERSONNEL ARE CLEAR OF MACHINERY AREA.</li> <li>3. RAISE TUB TO FULL VERTICAL POSITION.</li> <li>4. STOP ENGINE AND REMOVE KEY BEFORE APPROACHING TUB AND ROTOR AREA.</li> </ol>	<ol style="list-style-type: none"> <li>1. DISENGAJE EL ROTOR Y PERMITA QUE LA MÁQUINA SE DETENGA POR COMPLETO.</li> <li>2. ESTE CERTO DE QUE TODAS LAS PERSONAS ESTÁN ALEJADAS DEL ÁREA DE LA MÁQUINA.</li> <li>3. ELEVE EL TUBO HASTA SU POSICIÓN VERTICAL COMPLETA.</li> <li>4. DETENGA EL MOTOR Y REMUEVA LA CLAVE ANTES DE APROXIMARSE AL TUBO Y AL ROTOR.</li> </ol>

6500209



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

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

KEEP OTHERS AWAY.



6500214



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

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

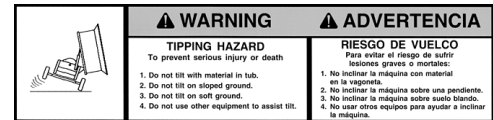


6500220



**WARNING: TIPPING HAZARD  
TO PREVENT SERIOUS INJURY OR DEATH**

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

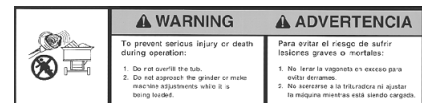


6500282



**WARNING: TO PREVENT SERIOUS INJURY OR  
DEATH DURING OPERATION:**

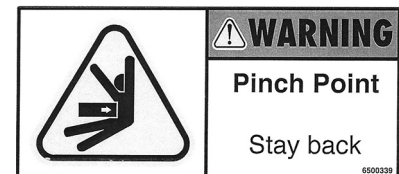
1. DO NOT OVERFILL THE TUB.
2. DO NOT APPROACH THE GRINDER OR MAKE MACHINE ADJUSTMENTS WHILE IT IS BEING LOADED.



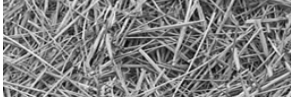
6500283




**WARNING: PINCH POINT STAY BACK**




6500339




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


 **WARNING**  
Moving parts can crush and cut.  
Keep hands clear.  
6500488


6500488


 **WARNING:** Noise hazard.  
Ear protection required.

 **WARNING**  
Noise hazard.  
Ear protection required.  
6500489


6500489

 **CAUTION:** ADJUST TRACTOR DRAWBAR SO THAT THE DISTANCE FROM THE END OF THE PTO SHAFT ON THE TRACTOR TO THE CENTER OF THE DRAWBAR HITCH PIN IS EQUAL TO THE DISTANCE SHOWN IN DIAGRAM. SEE OWNER'S MANUAL FOR MORE INFORMATION.

 **CAUTION**  
ADJUST TRACTOR DRAWBAR SO THAT THE DISTANCE FROM THE END OF THE PTO SHAFT ON THE TRACTOR TO THE CENTER OF THE DRAWBAR HITCH PIN IS EQUAL TO THE DISTANCE SHOWN IN DIAGRAM. SEE OWNER'S MANUAL FOR MORE INFORMATION. 6500440

 **PRECAUCION**  
AJUSTAR LA BARRA DE TIRO DEL TRACTOR DE MODO QUE LA DISTANCIA DEL EXTREMO DEL EJE DE LA TDF DEL TRACTOR AL CENTRO DEL PASADOR DEL ENGANCHE DE LA BARRA DE TIRO SEA IGUAL A LA DISTANCIA INDICADA EN EL DIAGRAMA. VER EL MANUAL DEL OPERADOR PARA MAS INFORMACION. 6500440

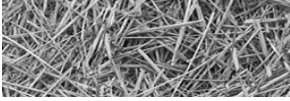
6500440

 **CAUTION:** Do not operate machine unless an approved fire extinguisher is installed.

  6500497

6500497





## 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.

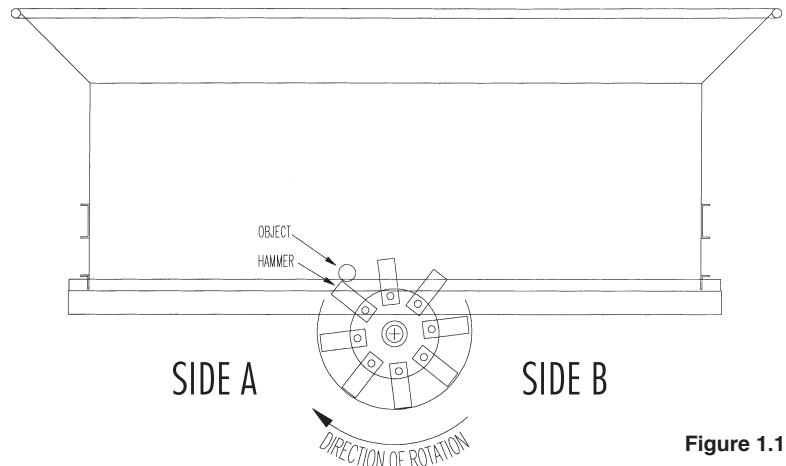


Figure 1.1

VIEWED FROM THE REAR OF THE H-1135



**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.

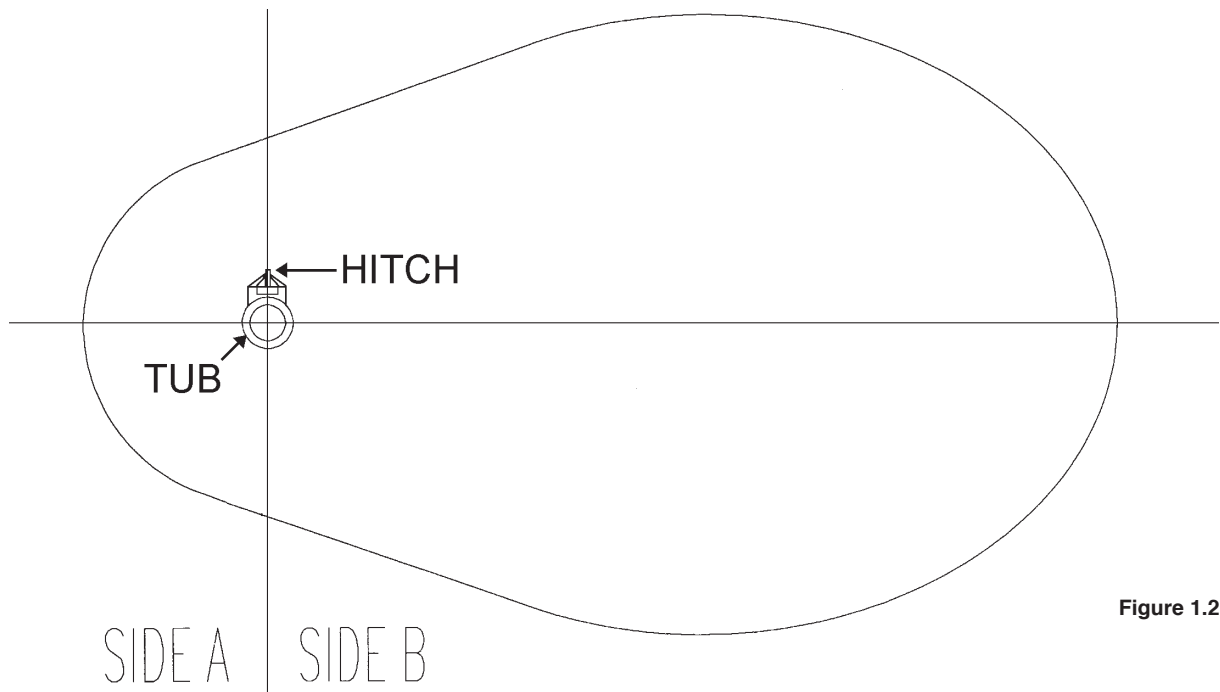
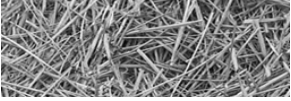


Figure 1.2



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-1135 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 Tub Grinder without shields in place.

## 1.6 Personal protection equipment

Operators and authorized observers of the H-1135 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-1135 Tub Grinder, carefully read and follow instructions given below and contained elsewhere in this manual.

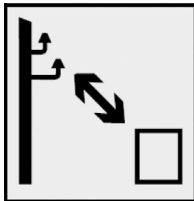
### BEFORE OPERATING

1. Read and follow all instructions contained in:
  - Operators Manual
  - Tractor Operators Manual
  - Decals placed on H-1135 Tub Grinder.

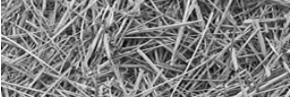


**NOTE:** Your dealer has additional copies of these materials.

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-1135 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-1135 Tub Grinder unless specifically recommended or requested by DuraTech Industries.
7. Check periodically for broken or worn parts and make necessary repairs.
8. Be sure the unit is securely attached to tractor during grinder operation and road transport.



Keep sufficient distance away from electrical power lines.  
**WARNING:** Electrocutation 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-1135 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.

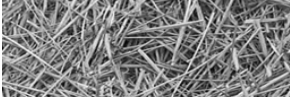


## NORMAL SHUTDOWN PROCEDURE



**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-1135 Tub Grinder until discharge conveyor is empty, and grind as much of the material in the tub as possible.
2. Reduce engine speed to idle.
3. Disengage PTO
4. Disengage hydraulics.
5. Place transmission in park and set parking brake.
6. Shut off tractor engine and remove key.
7. Wait for all movement to stop.
8. Disconnect PTO driveline from tractor.



## 1.8 Fire Prevention

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

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

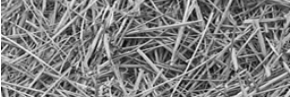
**NEVER** leave the vicinity of the unit with the engine running.

### PROPER OPERATION OF THE TUB GRINDER:

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

### REMOVAL AND CLEANING INSTRUCTIONS:

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



## TUB GRINDER MAINTENANCE:

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

## 1.9 Fire Extinguishers:



**CAUTION:** Do not operate machine unless an approved fire extinguisher is installed.

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 lose 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.



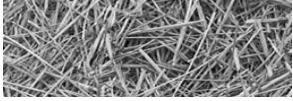


## 1.10 Towing



**CAUTION: DO NOT TRANSPORT THE H-1135 TUB GRINDER** without first securing the conveyor in the transport position (see Section 2.6.1).

1. Be sure all loose parts are securely fastened down.
2. Make sure all bystanders are clear.
3. Hitch H-1135 Tub Grinder to a tow vehicle with adequate load carrying and braking capacity. Be sure to attach safety chains between tow vehicle and H-1135 Tub Grinder. Tongue weight is 1,900 lbs. (862 kg).
4. Pull PTO apart and attach to transport bracket on the right hand side of the grinder.
5. Ensure that hitch jack is stored in the up position.
6. Check the turning clearance between H-1135 Tub Grinder and the towing vehicle.
7. Connect H-1135 light harness to the towing vehicle.
8. Check local ordinances regarding restrictions for H-1135 Tub Grinder travel on your planned route.
9. Be aware of machine width at all times and do not exceed 20 miles per hour.
10. Check your state laws regarding the use of lights, slow moving vehicle signs, and other possible requirements.
11. 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 2.4.1 of this manual.
- If the unit is still attached to a towing vehicle, place the towing vehicle's transmission in park and set the parking/emergency brake.
- Relieve all pressure in the hydraulic system before disconnecting hydraulic lines or performing work on the system. Make sure all connections are tight and the hoses and lines are in good condition before applying pressure to the system.



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

- If performing maintenance or servicing which requires the tub to be tilted up, make sure that the tub cylinder stop is in place on the tub tilt cylinder before you begin. For more information, see sections 2.2.9 and 2.7.

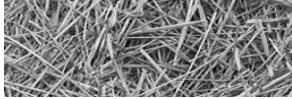


**WARNING:** For your protection **ALWAYS** install the tub cylinder stop on the tub tilt cylinder when the tub is tilted. **NEVER** engage tractor PTO when the tub is raised.



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

**THIS MACHINE IS NOT TO BE USED FOR ANY PURPOSE OTHER THAN THOSE EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING LITERATURE OR OTHER DURATECH INDUSTRIES WRITTEN MATERIAL PERTAINING TO THE H-1135 TUB GRINDER.**



## Section 2: Operation

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

To insure long life and economical operation, learn how to operate the H-1135 Tub Grinder and how to use the controls properly. Thoroughly instruct the operator in maintenance and operation of the H-1135 Tub.

### GENERAL OPERATING CONDITIONS

#### Operating Temperature

This equipment will operate correctly in its intended ambient, at a minimum between +5°C and +40°C (41°F and 104°F).

#### Relative Humidity

The equipment will operate correctly within an environment at 50% RH, +40°C (104°F). Higher RH may be allowed at lower temperatures.

Measures shall be taken by the Purchaser to avoid the harmful effects of occasional condensation.

#### Altitude

This equipment will operate correctly up to 1000 m (3,280 ft.) above mean sea level.

#### Transportation and Storage

This equipment will withstand, or has been protected against, transportation and storage temperatures of -25°C to +55°C (-13°F to +131°F) and for short periods up to +70°C (+158°F).

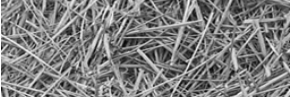
It has been packaged to prevent damage from the effects of normal humidity, vibration and shock.

### 2.1 Pre-Operating Inspection

Prior to the starting the H-1135 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-1135 Tub Grinder.



**WARNING:** Before inspecting the machine, use the normal shutdown procedure found in Section 2.4.1.



## BEFORE OPERATING CHECKS

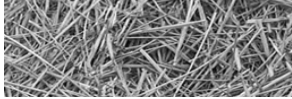
Before operating the H-1135 Tub Grinder, follow these instructions:

- Read and understand the operator's manual.
- Learn how to operate the controls properly. Do Not let anyone operate without instruction.
- Know the machine's safety features and understand the safety precautions.
- Be sure the machine is hitched properly to the tractor.
- Be sure to lubricate all lubrication points. See lubrication chart, Section 3.1.
- Check for loose bolts.
- Make sure machine is properly adjusted.
- Check hydraulic oil level
- Check hydraulic components for leaks or damage.



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

- Visually examine rotor to see if any parts have excessive wear. These parts include shaft, plates, rods, hammers and moveable plate.
- Check screens and screen hold downs for wear and tightness.
- Check installation and condition of hammers.
- Visually examine rotor bearings and mounting bolts.
- Check all bearings for wear.
- Check chains and belts for proper tension and condition.
- Make sure all shields and guards are in place.
- Check condition of decals, replace if excessively worn.
- Check lug nuts for correct tightness. Lug nut should be tightened to a minimum of 120 ft-lbs (17 Kg-M).
- Check condition of tire rims.
- Check tires for proper air pressure. 48 PSI ( 3.3 BAR)
- Always grind with the machine and tractor stationary on level ground.
- In cold weather, allow five minutes for the machine to warm up before grinding.
- Start the machine and check the tub direction, speed control governor for proper operation.
- Watch for unusual or excessive vibration. If any occur, immediately shut off the power. Check to see what is wrong and correct it before starting the grinder again.
- If grinding grain, be sure proper grain attachment is in place.



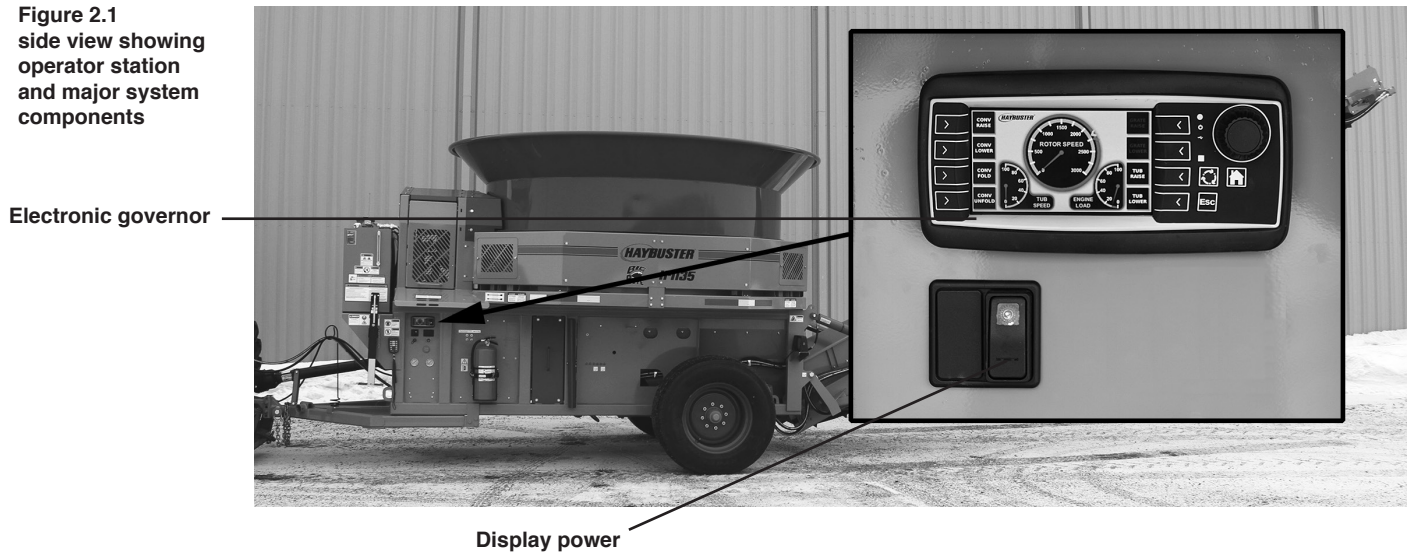
## 2.2 Introduction to the machine

### 2.2.1 Description of the H-1135 Tub Grinder

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

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

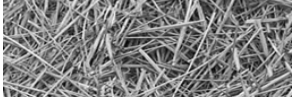
**Figure 2.1**  
side view showing  
operator station  
and major system  
components



### 2.2.2 Overview of Operator's Controls

Operator controls include:

- **Electronic governor:** The electronic governor controls all functions of the H-1135 Tub Grinder. They include tub raise/lower, tub forward/reverse, tub/rotor speed, conveyor fold/unfold and conveyor raise/lower.
- **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 rotor, runs both conveyor belt and powers the tub hydraulic drive. The conveyor must be unfolded to the working position before the PTO can be engaged.



### 2.2.3 Electronic governor

The Wachendorff A3X with an HFX32 control system will control the Tub and Discharge Conveyor functions of a Tub Grinder.

#### **Display**

##### **Start up screen:**

Company logo

Screen will show when power is applied to the display for approx. 10 sec.



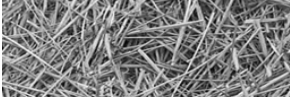
##### **Loading screen:**

Company logo, with loading bar

Screen will show right after Start up screen for approx. 10 sec.





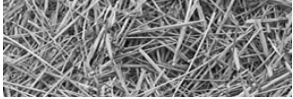


## Home screen:

Home Screen will show right after the loading screen, when the Home button is pressed from any of the other pages, or when the Encoder is pressed from the Manual Function screen.

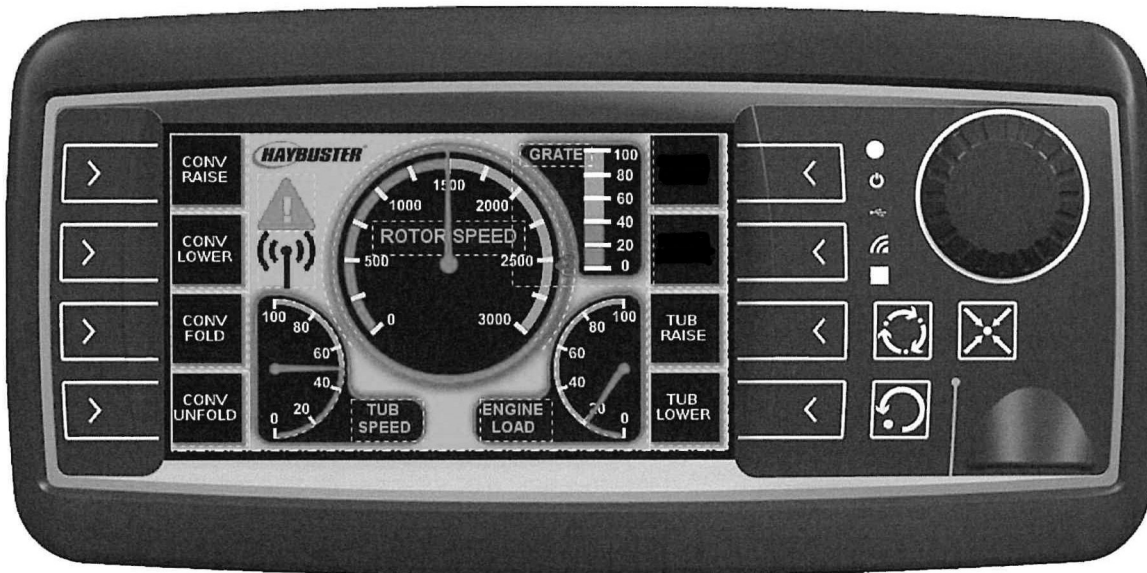


- Tub FWD/REV buttons will control the Tub FWD/REV outputs as described later in this manual.
- The Tub Speed gauge will indicate the Tub Speed output with a scale of 0-100.
  - o When the Tub Speed button is pressed the Encoder knob will be linked to the Tub Speed setting and the Tub Speed icon will change to red in color.
  - o The Tub Speed can also be adjusted by using the Tub Speed Inc. and Dec. buttons on the radio remote.
- The Engine Load gauge will indicate the Engine Load setting with a scale of 0-100.
  - o When the Engine Load button is pressed the Encoder knob will be linked to the Engine Load setting and the Engine Load icon will change to red in color.
- When the Display Light button is pressed the Encoder knob will be linked to the Display Backlight setting and the Display Light icon will change to red in color.
- The Set Speed button will set the Rotor Speed Max indicated by a blue arrow on the outside edge of the Rotor Speed gauge. The Rotor Speed Min is indicated by the green arrow. (See also Section 2.8)
- The Rotor RPM gauge will display the Rotor RPM with a scale of 0-3,000.
- A fault icon will pop up anytime there is a fault triggered in the controller.
- A radio icon will pop up when the transmitter is connected to the receiver.



## Manual Function Screen:

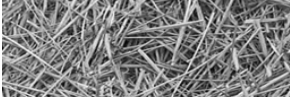
The Manual Function screen will be accessed by pressing the next button or the encoder on the Home Page.



The following functions can be operated on the Manual Function screen. Functions marked with and (\*) can also be operated with the radio remote.

1. Conveyor Raise\*
  2. Conveyor Lower\*
  3. Conveyor Fold
  4. Conveyor Unfold
  5. Tub Raise
  6. Tub Lower
- When a button for one of the functions is pressed the corresponding output will be momentarily turned ON and the button will change color. When the button is released the output will be turned OFF.
  - Interlocks:
    - o The Tub Raise output will be de-activated if there are pulses detected on the Rotor Speed input. An alarm window will show if the Tub Raise button is pressed while the function is locked out. If there are no pulses detected on the Rotor Speed input, the Tub Raise output will be activated after the Tilt Enable Timer expires. The Tilt Enable Time can be changed using the Impulse Service tool.



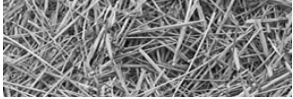


## Hours screen:

The Hours screen will be accessed by pressing the next button on the Manual Function screen.

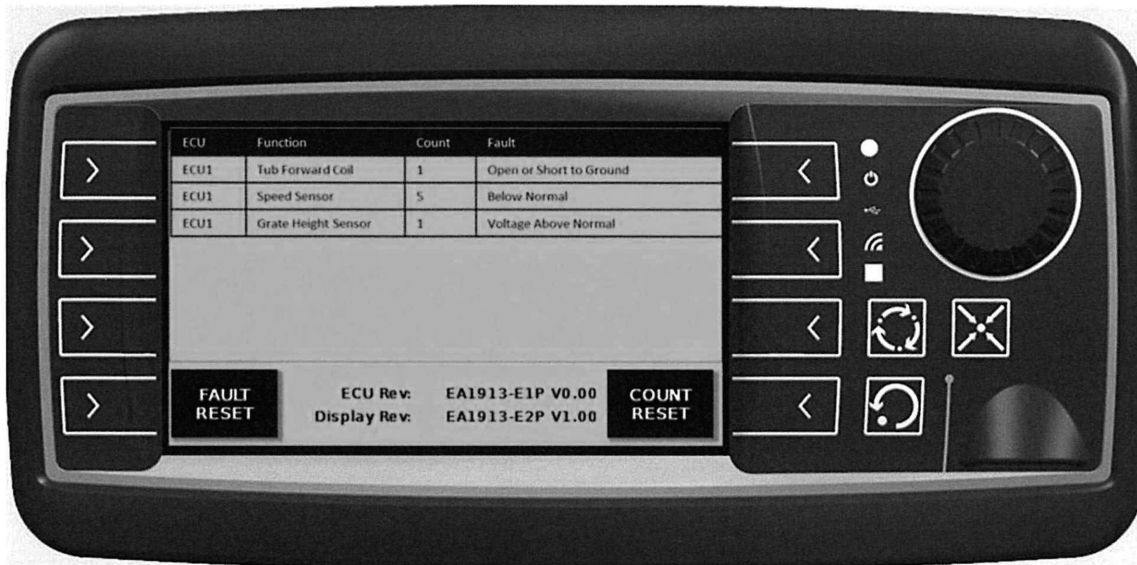


- Pressing the Fault Menu button will take the operator to the Fault Screen page.
- The Grind Hours window will display the total number of hours the machine has run with the Rotor ON.
- The Service Hours window will display the total number of hours the machine has run with the Rotor ON since the last Service Hours Reset. Pressing the Service Hours Reset button will reset the Service Hours window to zero.
- The Job Hours window will display the total number of hours the machine has run with the Rotor ON since the last Job Hours Reset. Pressing the Job Hours Reset button will reset the Job Hours window to zero.



## Fault screen:

The faults will show up in the fault table screen when they occur.



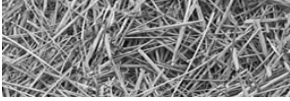
The Active Fault screen will display a table indicating the J1939 DM1 message fault codes. The fault codes will be displayed as numerical values unless otherwise specified in the Fault Codes table. (See section 4.2)

- The ECU (electronic control unit) column indicates which controller the fault is coming from.
- The SPU (suspect parameter number) column indicated what function has a fault.
- The OC (occurrence count) column indicated how many times the fault has occurred.
- The FMI (fault mode indicator) column indicated the reason for the fault.

## Fault Reset Button

- The Fault Reset button will reset all active faults.

The Display and Controller Software version will be displayed on this screen.



### Hardkeys:

#### Next

- When the Next button is pressed, the display changes to the next screen.

#### Home Button

- When the home button is pressed the display will go to the home screen.

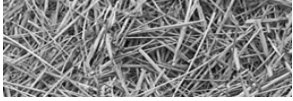
#### ESC Button

- When the ESC button is pressed the display will go back to the previous screen or view.

#### Encoder

- When the Encoder button is pressed, the display changes to the next screen.





## 2.2.4 Rotor

The Rotor and screens are the heart of the tub grinder. The rotor on this H-1135 Tub Grinder is equipped with 88 swinging hammers. Dull edges on the hammers and/or screens will result in a loss of capacity and increased horse power requirements.



**IMPORTANT:** Hammer and hammer rod life can be extended by keeping the rotor rotating at 2300 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-1135 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.**

## 2.2.5 Screens

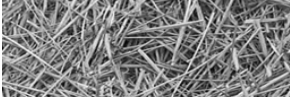
All H-1135 Tub Grinders require two screens. They come equipped from the factory with a 2” (5 cm) diameter hole screen and a 3” (8 cm) diameter hole screen. Any combination of hole sizes may be used. As a general rule, use the largest diameter screens capable of doing the job.

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

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

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

Hay	2” to 8” (5 cm to 20 cm)
Ear Corn	5/8” to 1” (1.6 cm to 2.5 cm)
Shelled Corn	3/4” (1.9 cm) dry, 5/8” (1.6 cm) high moisture
Small Grains	1/4” (.6 cm) to 3/8” (.9cm)



## 2.2.6 Tub

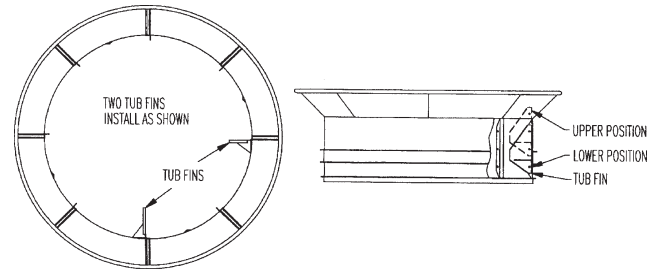
The purpose of the tub is to contain the material above the rotor, and to keep the rotor loaded

### Tub Fins

Two tub fins are furnished with the H-1135 Tub Grinder.

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

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

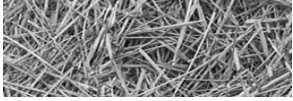


## 2.2.7 Slug Buster and Mill Grate

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

## 2.2.8 Conveyors, Lifting and Folding

An electric switch on the H-1135 tub grinder controls the conveyor lift and fold. The tractor supplies hydraulic oil for operating the conveyor lift and fold system. Activate the tractors hydraulic circuit before operating the valve on the H-1135 tub grinder.



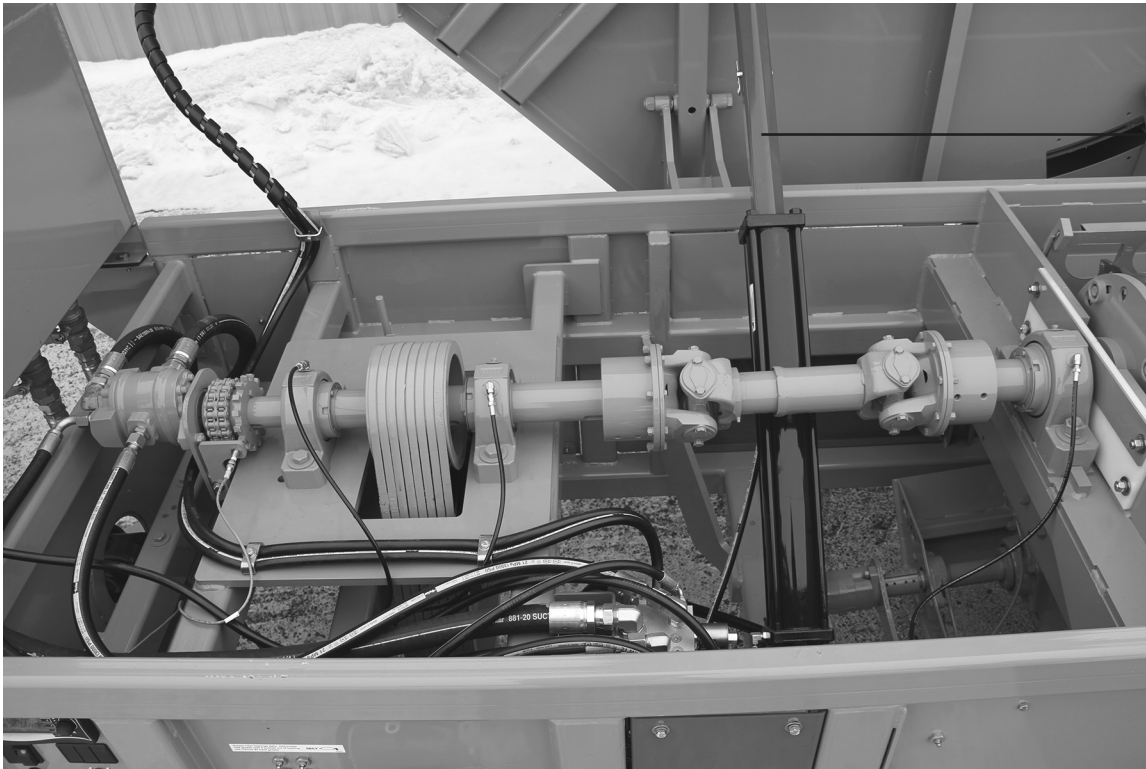
## 2.2.9 Hydraulic Tilt Platform

The H-1135 tub grinder can be tilted 90 degrees for access to the rotor, screens, and drive line. Operation of the tub tilt cylinder is performed using the controls for the tractor which is located on the tractor. After using the normal shut down procedures, the hopper platform can then be opened.

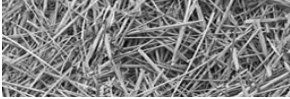


**WARNING:** To prevent serious injury or death, do not tilt platform on unlevel ground or with material in the tub.

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



tub tilt cylinder stop



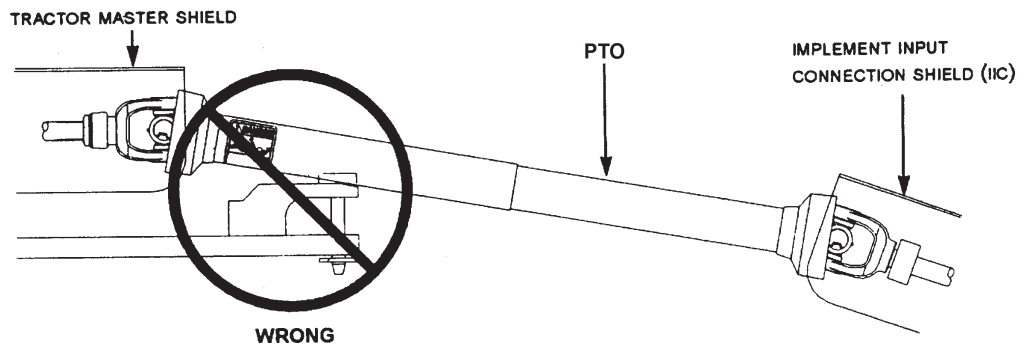
## 2.3 Machine Operation

### 2.3.1 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.

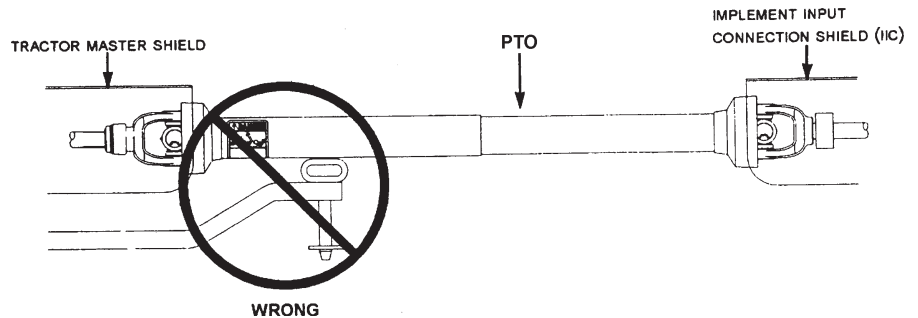
If this implement is attached to a tractor with a clevis hitch (hammer strap) style drawbar, the hammer-strap must be removed to prevent damage to the PTO guarding and the PTO telescoping members. See Figure 2.2.

**Figure 2.2**  
incorrect clevis hitch  
(hammer strap) style  
drawbar set up

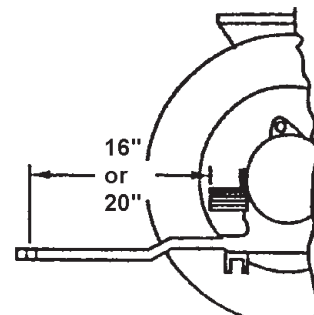


If this implement is attached to a tractor with an offset in the drawbar, be certain it is in the down position to prevent damage to the IID guarding and the IID telescoping members. See Figure 2.3.

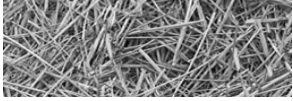
**Figure 2.3**  
incorrect offset style  
drawbar set up



If this implement is attached to a tractor with 3-point arms, the arms must be fully raised and locked in position to prevent damage to the PTO guarding and the telescoping members. Adjust the tractor drawbar so the distance from the end of the PTO shaft on the tractor to the center of the drawbar hitch pin hole is 16" (41 cm.) for a 1-3/8" shaft, or 20" (51 cm.) for a 1-3/4" shaft, as shown in the illustration to the right.







### 2.3.2 How to hook up to tractor

To hitch the H-1135 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-1135 Tub Grinder. If tractor is equipped with swinging drawbar, adjust so the tractor PTO and H-1135 Tub grinder drive shaft are in line.
2. Connect hydraulic lines to the tractor.
3. Connect electrical lines to tractor.



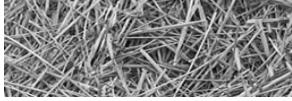
**CAUTION:** To insure a safe hook-up, the H-1135 Tub Grinder and tractor should be connected with a 1” locking pin.

### 2.3.3 How to disconnect from tractor

To disconnect the H-1135 from a tractor, perform the following steps:

1. Park H-1135 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-1135 Tub Grinder to remove weight from tractor hitch by adjusting jack.
7. Remove hitch pin.
8. Drive tractor away slowly.





## 2.3.4 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. It will be necessary to operate tractor PTO at approximately 1000 rpm.

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

### GRINDING

Place materials to be ground directly into the tub. The best method for filling the H-1135 Tub Grinder is:

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

### LOOSE HAY

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

### WET OR FROZEN HAY

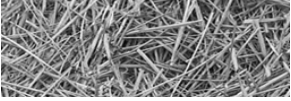
This is the toughest material for any grinder to handle. When filling the tub with wet or frozen hay, deposit small quantities on a more frequent basis rather than filling the tub with one load.

### LARGE ROUND BALES

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



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



## CROP RESIDUE

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

## SMALL GRAINS

Grinding small grains requires special attachments. These attachments fit directly over the rotor. It is not recommended that small grains be ground without the use of one of the small grain attachments. (See Appendix B: H-1135 Specifications under the heading “Options”.)

## EAR CORN

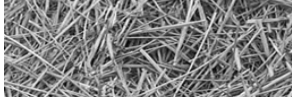
Grinding ear corn requires a special attachment. This attachment fits directly over the rotor and uses crossbars in the tub to feed corncobs into the rotor. (See Appendix B: H-1135 Specifications under the heading “Options”.)

## 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.**



## 2.4 Shutdown procedures

### 2.4.1 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-1135 Tub Grinder for any reason, including servicing, inspecting or unclogging machine:

1. Run H-1135 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.

### 2.4.2 Emergency Shutdown Procedure

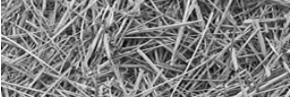
Disengage PTO and tractor hydraulics

## 2.5 Storage

### 2.5.1 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.



## **2.5.2 Removing from storage**

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

1. Perform a thorough pre-operation inspection.

## **2.6 Road Transport**

### **2.6.1 Set up to transport**

Inspect H-1135 Tub Grinder for any loose parts, tools, or any materials. Remove them or fasten them securely to the H-1135 Tub Grinder.

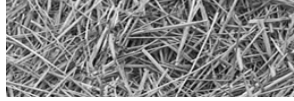
To set up the H-1135 for transport, perform the following steps:

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

### **2.6.2 Change back to operate**

To set up H-1135 for operation, perform the following steps:

1. Connect H-1135 Tub grinder to tractor.
2. Connect hydraulic hoses and electrical cable to tractor
3. Lower the discharge conveyor.
4. Unfold conveyor to working length.



## 2.7 Raising the Tub Platform



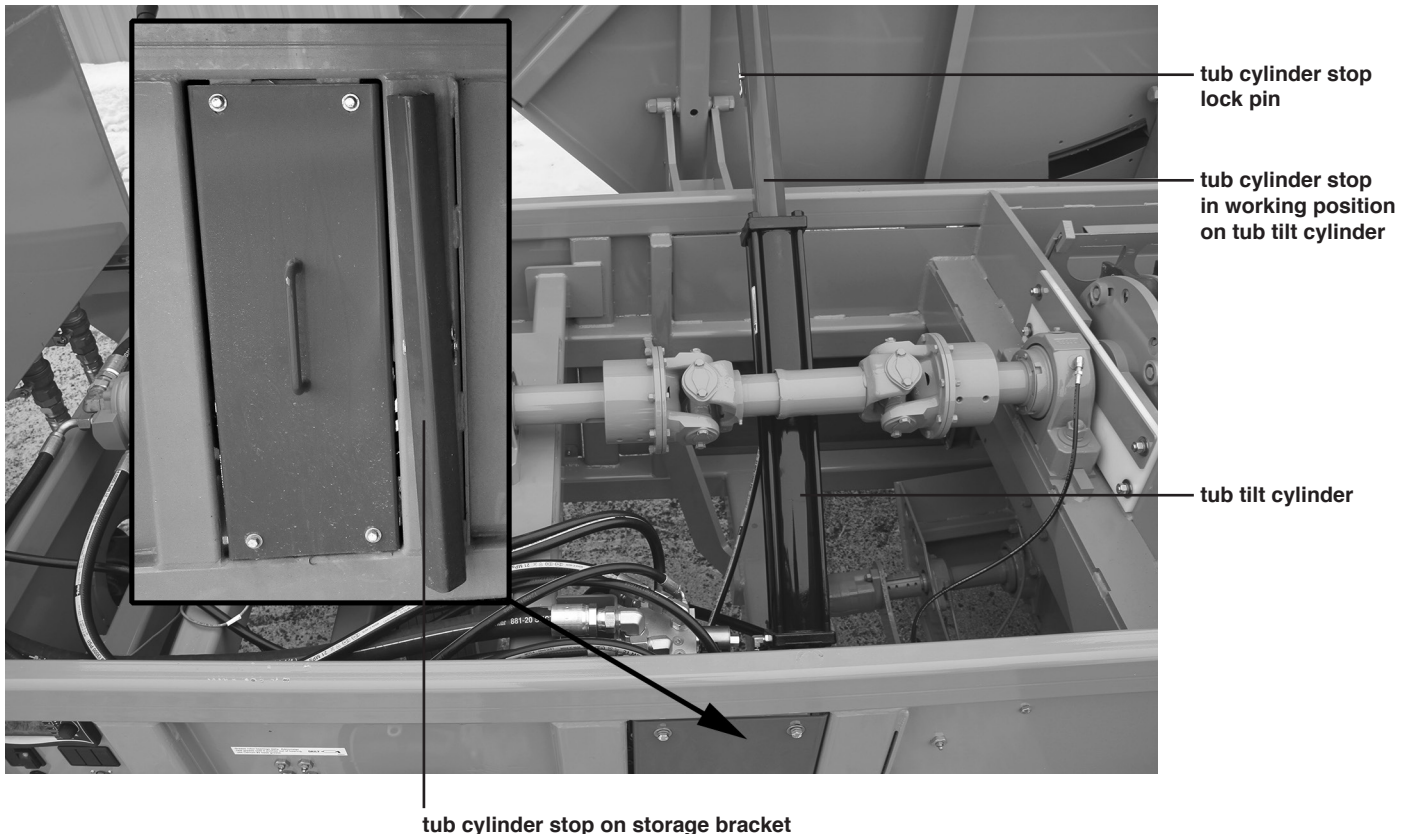
**WARNING:** To prevent serious injury or death, do not tilt platform on unlevel ground or with material in the tub.

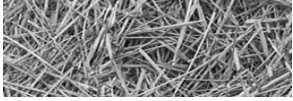
To raise the tub platform, perform the following steps:

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



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





## 2.8 Operation of the Electronic Governor

### Auto/Manual Mode

- o The system has two modes of operation: Auto Mode and Manual Mode. The mode of operation can be toggled using the Auto/Manual button on the display.

### Tub

- **Tub Forward**



- o **ON**

If the Tub Forward button is pressed on the display or the radio remote, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and either the Rotor Speed input is greater than zero, or the system is in Manual Mode:

- Tub Forward output will be activated.
- Tub Speed output will be ramped from minimum output to the output setting indicated by the display.
- Tub Forward indicator on the display will change color from black to red.

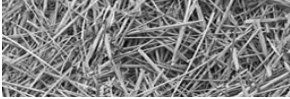
- o **OFF**

If the Tub Forward output is active, and the system is switched from Manual Mode to Auto Mode while the Rotor Speed input is zero, or the Tub Forward button is pressed on the display or radio remote, or the Tub Reverse button is pressed on the display:

- Tub Forward output will be de-activated.
- Tub Speed output will be de-activated.
- Tub Forward indicator on the display will change color from red to black.

If the Rotor Speed input goes to zero when the Tub Forward output is active, and the system is in Auto Mode:

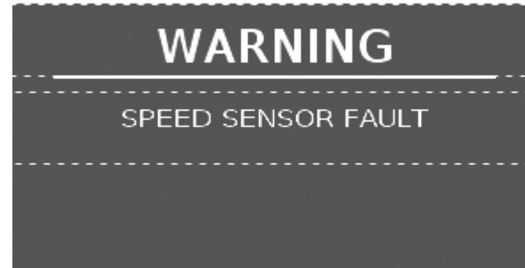
- Tub Forward output will be de-activated.
- Tub Speed output will be de-activated.
- Tub Forward indicator on the display will change color from red to black.
- Speed Sensor Fault will be activated.



o **Warning**

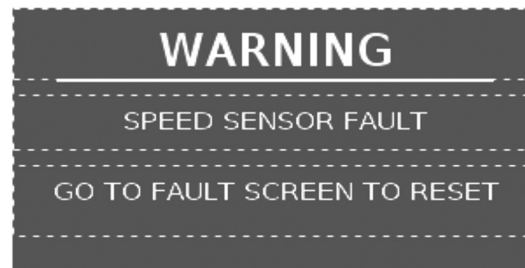
If the Tub Forward button is pressed on the display, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and the Rotor Speed input is less than zero, and the system is in Auto Mode:

- The following alarm window will be shown on the display for 3 seconds:



If the Tub Forward button is pressed on the display, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and the Rotor Speed input is less than zero, and the system is in Auto Mode, and the Speed Sensor Fault is active:

- The following alarm window will be shown on the display for 3 seconds:



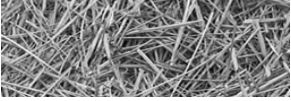
- **Tub Reverse**



o **ON**

If the Tub Reverse button is pressed on the display or radio remote, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and either the Rotor Speed input is greater than zero, or the system is in Manual Mode:

- Tub Reverse output will be activated.
- Tub Speed output will be ramped from minimum output to the output setting indicated by the display.
- Tub Reverse indicator on the display will change color from black to red.



o **OFF**

If the Tub Reverse output is active, and the system is switched from Manual Mode to Auto Mode while the Rotor Speed input is zero, or the Tub Forward button is pressed on the display or the radio remote, or the Tub Reverse button is pressed on the display:

- Tub Reverse output will be de-activated.
- Tub Speed output will be de-activated.
- Tub Reverse indicator on the display will change color from red to black.

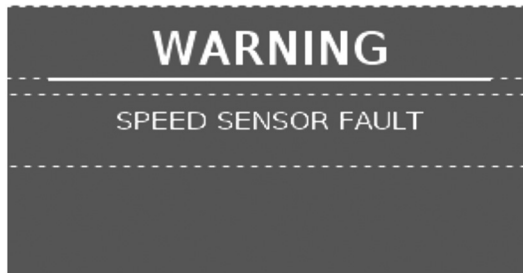
If the Rotor Speed input goes to zero when the Tub Reverse output is active and the system is in Auto Mode:

- Tub Reverse output will be de-activated.
- Tub Speed output will be de-activated.
- Tub Reverse indicator on the display will change color from red to black.
- Speed Sensor Fault will be activated.

o **Warning**

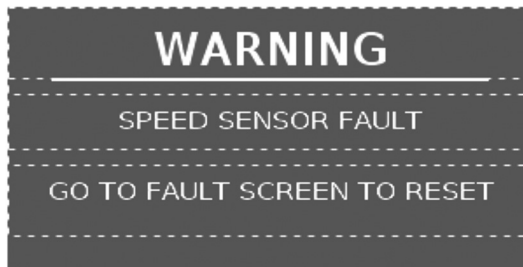
If the Tub Reverse button is pressed on the display, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and the Rotor Speed input is less than zero, and the system is in Auto Mode:

- The following alarm window will be shown on the display for 3 seconds:

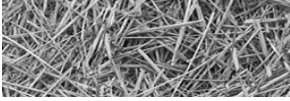


If the Tub Reverse button is pressed on the display, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and the Rotor Speed input is less than zero, and the system is in Auto Mode, and the Speed Sensor Fault is active:

- The following alarm window will be shown on the display for 3 seconds:

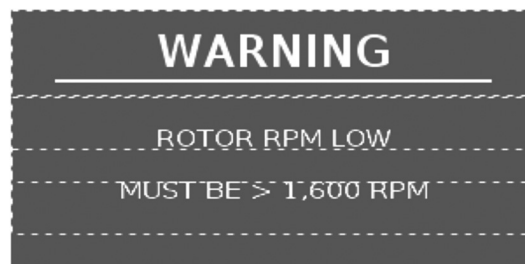


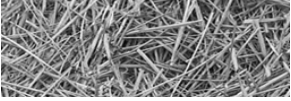




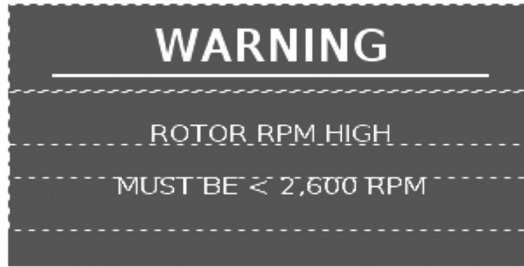
- **Tub Speed**

- o The Tub Speed ramp rate and output current will have adjustable parameters in the Impulse Service Tool.
- o Manual Mode:
  - The Tub will operate in an open loop control mode and will not compensate for rotor rpm changes.
  - There will be a Tub Speed gauge on the display to indicate the percentage of output from 0-100 percent.
  - The Tub Speed will be adjustable on Home Screen of the display.
- o Auto Mode:
  - The Tub will operate in a closed loop control mode and will compensate for rotor rpm changes.
  - The Tub Speed will be adjustable on Home Screen of the display. This will be the maximum speed the Tub will operate at and is the same speed used in Manual Mode.
  - The Engine Load will be used to reduce the Tub Speed to provide an anti-stall function to the rotor. This setting will be adjustable on the Home Screen of the display and will be displayed as 0-100%.
  - Rotor Speed Max (Blue Arrow) is the setpoint at which the Tub starts to slow down. This is set using the Set Speed button on the display. This value will not be allowed to go above the Set Speed Limit High RPM and below the Set Speed Limit Low RPM. These values can be changed with the Impulse Service Tool.
  - If the Set Speed button is pressed when the Rotor Speed is less than the Set Speed Limit Low RPM:
    - The following alarm window will be shown on the display for 3 seconds.

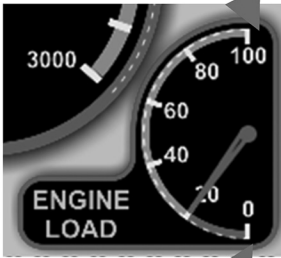




- If the Set Speed button is pressed when the Rotor Speed is greater than the Set Speed Limit High RPM:
  - The following alarm window will be shown on the display for 3 seconds.



Engine Load Max

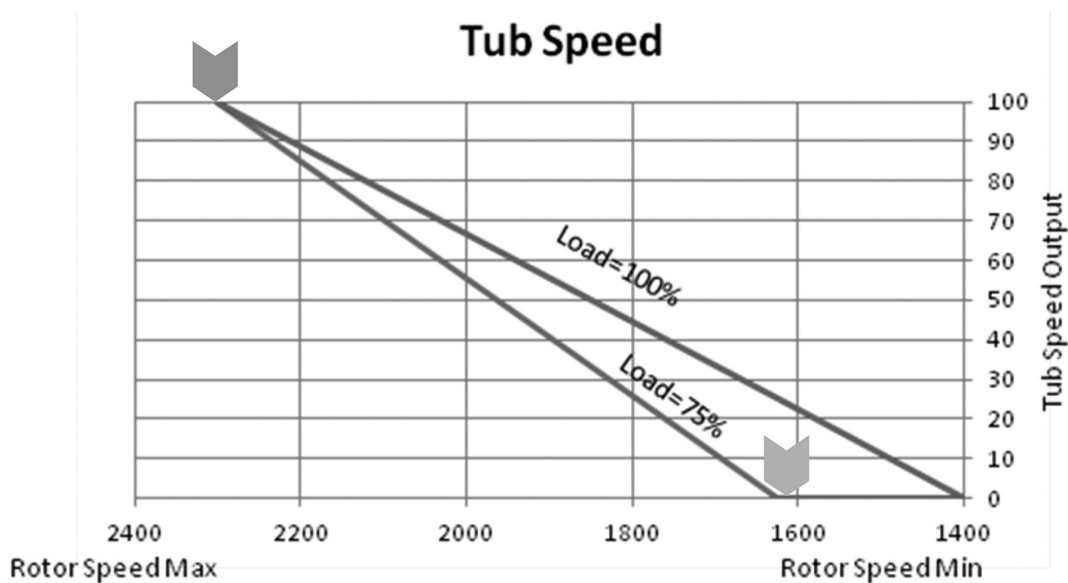


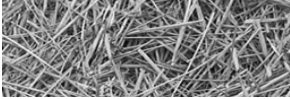
Engine Load Min

- Rotor Speed Min Limit is the RPM where the Tub will stop when the Engine Load is set to 100%.
- Rotor Speed Min (Green Arrow) is the setpoint the Tub will slow down to. If the Engine Load is set to less than 100%, the Tub will still start to slow down at the Rotor Speed Max setpoint but the Tub will be stopped at the Engine Load percentage between the Rotor Speed Max and the Rotor Speed Min Limit.
- Load Example:
  - Rotor Speed Max = 2,300 rpm
  - Rotor Speed Min Limit = 1,400 rpm
  - Engine Load Display = 75%

Calculate Engine Load RPM:  $0.75 * (2300 - 1400) = 675$  rpm

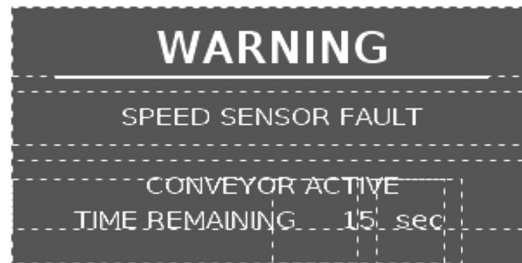
Calculate Rotor Speed Min:  $2,300 - 675 = 1,625$  rpm





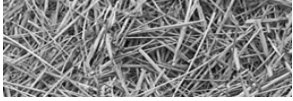
## **Conveyor**

- If the Conveyor button is pressed on the display and the Conveyor Forward output is de-active and the Rotor Speed input is greater than zero or the system is in Manual Mode:
  - Conveyor Forward output will be activated.
  - Conveyor Forward indicator on the display will change color from black to red.
- If the Conveyor Forward output is active, or the Conveyor button is pressed on the display:
  - Conveyor Forward output will be de-activated.
  - Conveyor Forward indicator on the display will change color from red to black.
- If the Conveyor Fwd output is active, and the Speed Sensor Fault is active:
  - Conveyor Forward output will be de-activated after the Conveyor Speed Off Timer expires. The Conveyor Speed Off Time can be changed with the Impulse Service Tool.
  - Conveyor Forward indicator on the display will change color from red to black.
  - The following alarm window will be shown on the display while the countdown is active:



## **Bypass**

- If the Conveyor output is active and either the Tub FWD or Tub REV outputs are active the Bypass output will be activated.
- If the Conveyor output is de-active or the Tub FWD and Tub REV outputs are de-active the Bypass output will be de-activated.



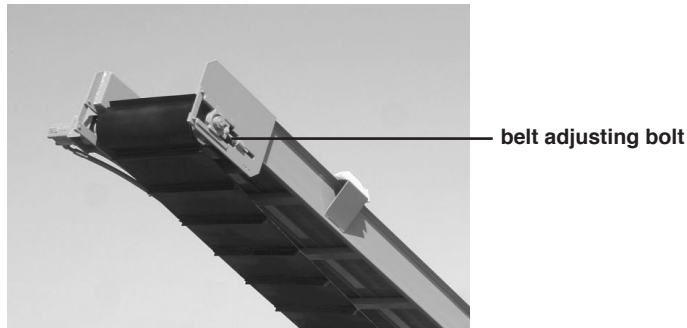
## 2.9 Adjusting the conveyor belt tension

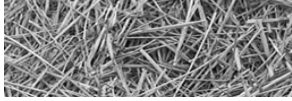
The rollers on the discharge conveyor are adjustable to allow for belt stretching and tracking. If the conveyor belt slows down or stops during operation, slippage may be the cause. To eliminate slippage, tighten the adjusting bolts on the conveyor equally. This will help to keep the belt centered on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



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

Figure 2.6  
discharge conveyor belt  
adjusting bolts





## 2.10 Adjusting the conveyor belt tracking

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

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

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

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



**NOTE:** The rotor will also be turning.

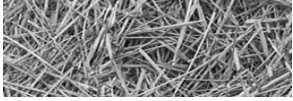
3. Observe conveyor belt tracking from a safe location.
4. If further adjustment is required, disengage tractor PTO, and shut down the machine using the normal shutdown procedure.
5. Some adjustment of the drive roller may be required if no improvement is noted by increasing the idler roller tension.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

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

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



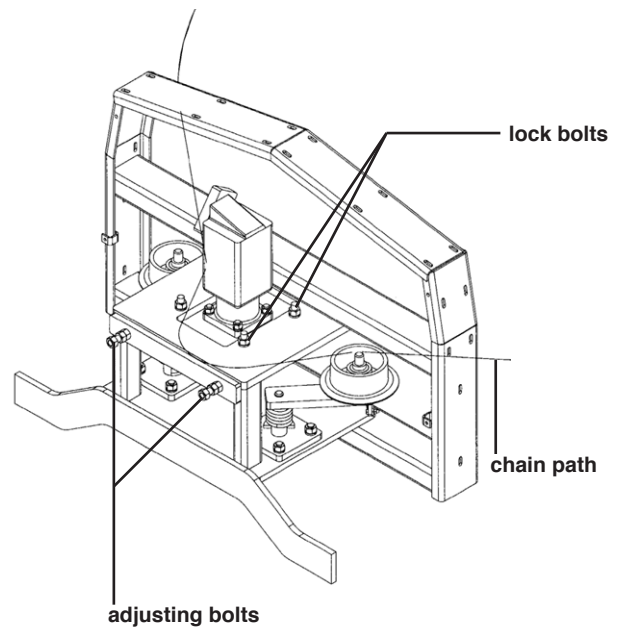
idler roller tension adjusting bolt

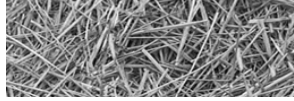


## 2.11 Adjusting tub chain tension

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

1. Loosen (4) bolts holding motor mounting plate.
2. Turn (2) adjusting bolts to set chain tension.
3. Tighten the (4) bolts holding motor mounting plate.





## 2.12 Main drive belt adjustment

Power is transferred from the drive shaft to the rotor through drive belts and two sheaves. Maintaining the proper tension on these belts is critical for reaching optimum grinder performance. A spring tensioning system is used on the H-1135 grinder to maintain tension as belts stretch over time. To properly tension the drive belts turn the tensioning rod until the spring caps come into contact with the tubes that the springs are seated into. **DO NOT OVERTIGHTEN!**

The two sheaves must be running parallel, if they are not the belts will not track, premature belt wear or belts running off of the sheaves will result. Adjust sheave alignment if needed.

### Discharge Conveyor Flow Control Valve

A flow control valve is located on the side of the discharge conveyor. This valve allows the operator to control the speed of the discharge conveyor; it will not vary the speed of the belly augers.

### Adjusting the discharge conveyor flow control valve

The discharge conveyor flow control valve can be used to slow the discharge conveyor down which is helpful when grinding in windy conditions, when loading trucks, or when the grinder output is low. The flow to the hydraulic motor can be varied from approximately zero to the maximum flow by adjusting the valve from min (0) to max setting (10).



**Note:** Whenever this valve is used to decrease the speed of the discharge conveyor, heat will be generated. The hydraulic system may not be able to dissipate the excess heat generated in warm operating conditions. Always be aware of the hydraulic oil temperature; a thermometer is located on the side of the hydraulic reservoir. If the oil temperature becomes greater than 175°F (79°C) adjust the valve to max setting (10).

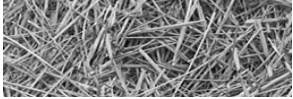
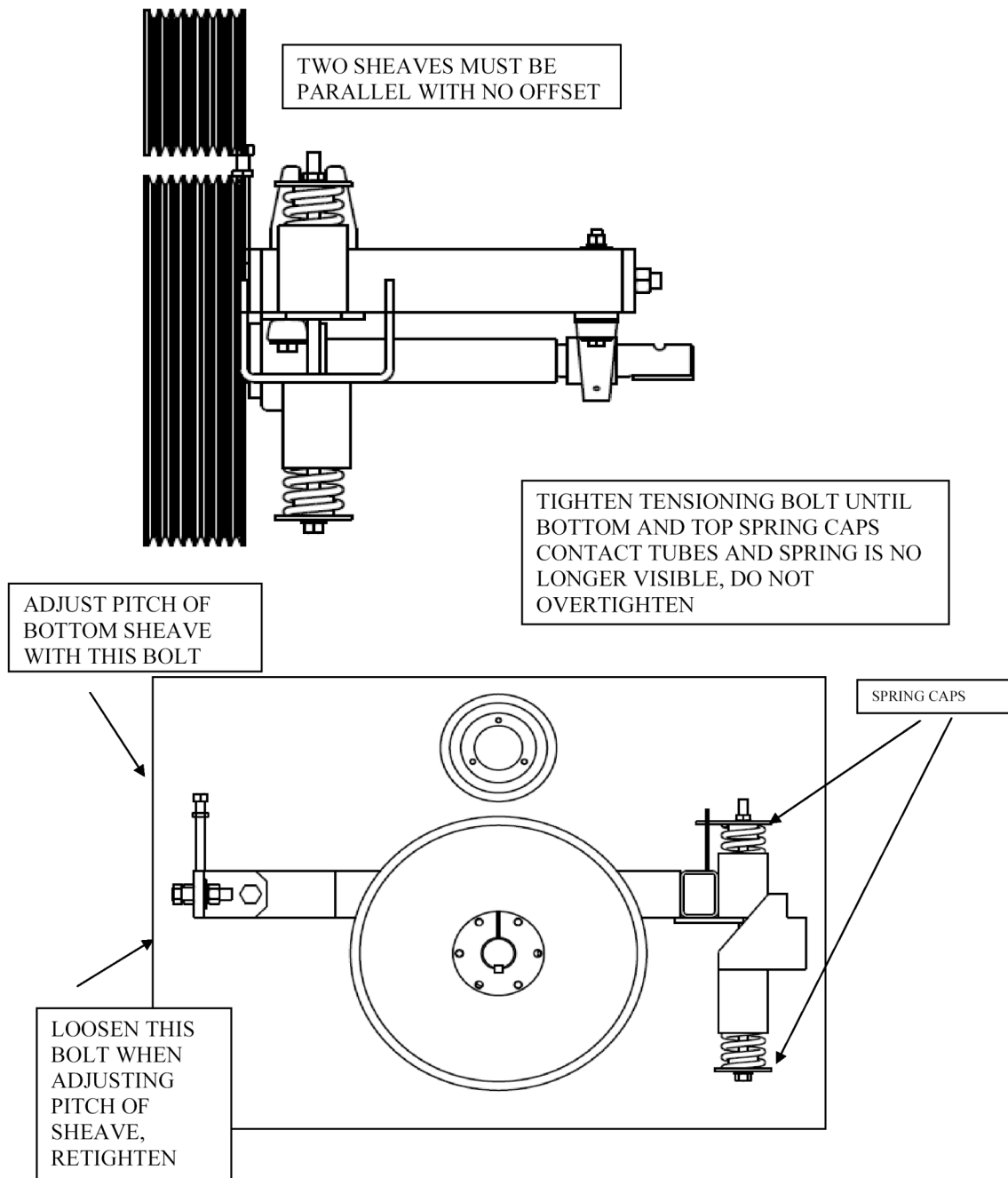


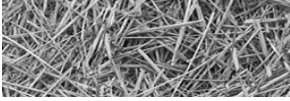
Figure 2.7  
sheave alignment



## 2.13 Sensor test

Set the gap between the sensor and the sprocket to  $\frac{3}{32}$ " (2.4 mm). Sensor resistance should be 900 ohms +/- 10%.

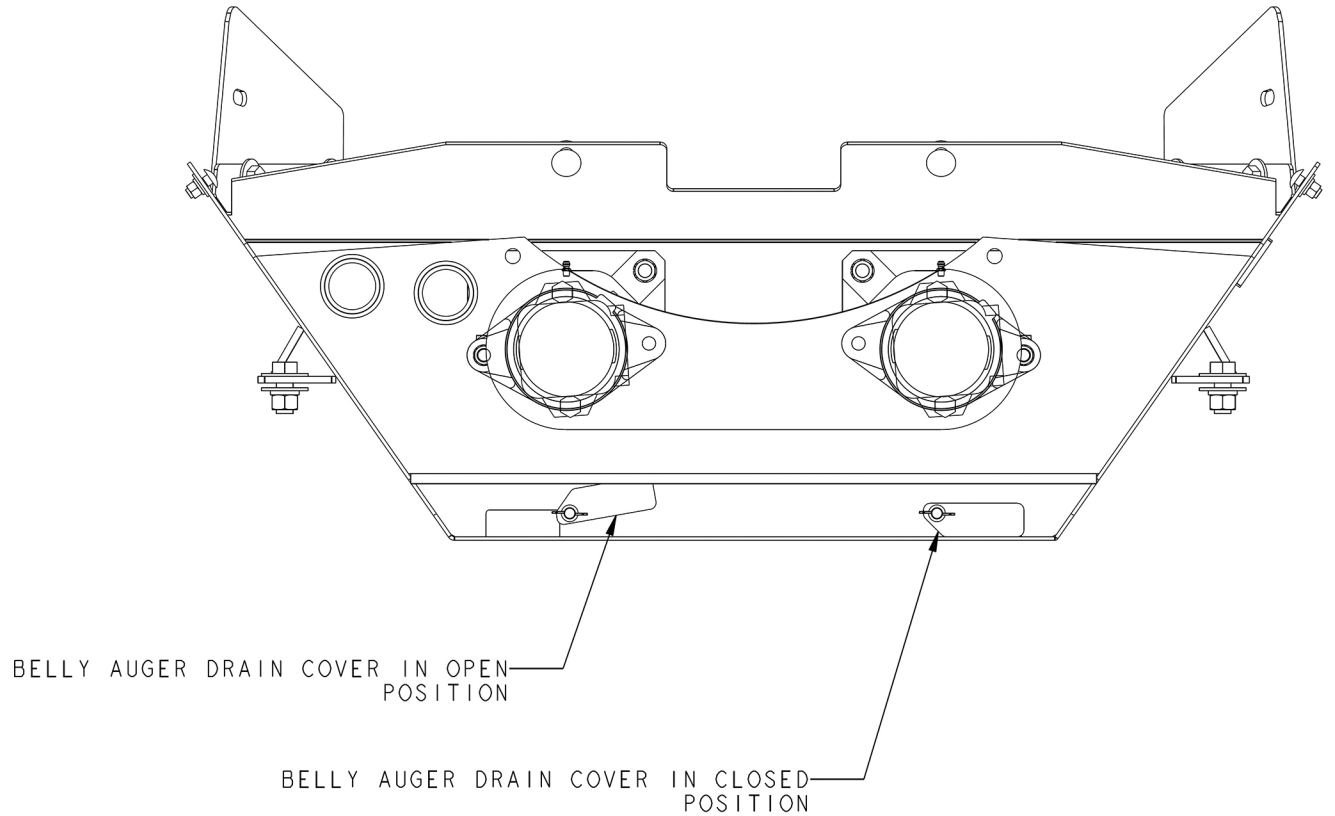


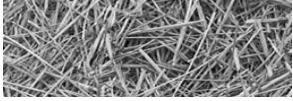


## 2.14 Belly auger drain covers

Belly auger drain covers should be in the open position to allow any moisture to drain out.

When grinding small grains the belly auger covers should be in the closed position to keep the grain from spilling out.





## 2.15 Operating grinder using the Remote Radio Transmitter

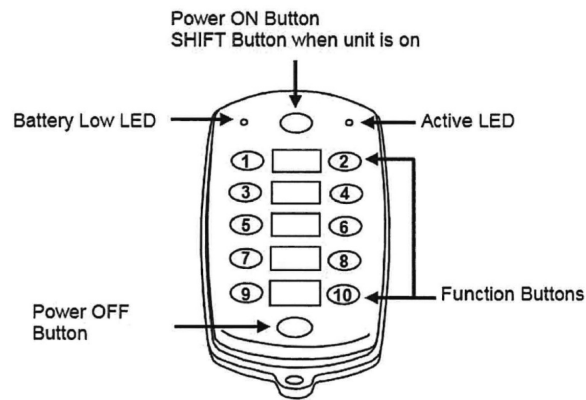
### Systems overview

The **ORIGA T110/R170** is a portable, long range, programmable radio remote control system. Designed as a compact and easy-to-use product, this member of the **ORIGA** family puts complete control of your machine where it is needed most, with the operator.

The **R170 receiver** is designed to be powered from a 12VDC or 24VDC system.

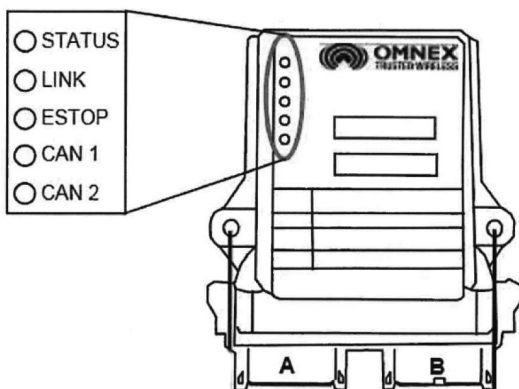
The **ORIGA T110 transmitter** comes with 10 buttons to provide the user with flexibility to control the functions needed. The transmitter uses four standard, long lasting AA batteries.

Figure 2.8  
T110 transmitter control buttons



**CAUTION:** Only clean the buttons or whole remote radio transmitter with a soft cloth lightly dampened with water.

### R170 receiver status indicators

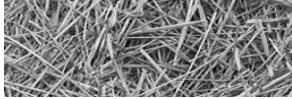


The (Status) light is GREEN when in normal operating mode.

The (Link) light flashes GREEN to indicate a signal is being received from an OMNEX transmitter.

The (E-Stop) light is RED when the Emergency-Stop relay is open and GREEN when the relay is closed (a valid radio link is received by the R170).

The (CAN 1) and (CAN 2) lights indicate when the respective CAN ports are active.



## 2.15a Replacing batteries and powering “ON” the remote radio transmitter

The battery compartment is located on the back of the transmitter. Using a slotted screwdriver, remove the battery cover and insert four “AA” batteries. Orientation of the batteries is embossed inside the battery housing.



T110 Battery Housing



**WARNING:** When using “AA” batteries do not install backwards, charge, put in fire or mix with other battery types. May explode or leak causing injury. Keep the battery compartment dry to prevent corrosion. **Replace all batteries as a complete set and do not mix and match battery types.**

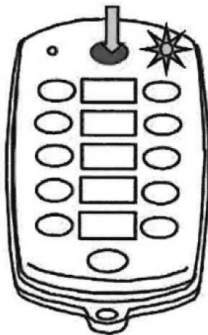


**NOTE:** For operation at temperatures below 14°F (-10° C) lithium batteries are recommended. Low temperatures reduce battery performance for both alkaline and lithium types. Refer to the battery manufacture’s specifications for detailed information on low temperature performance.

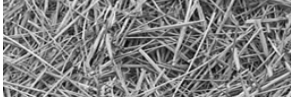
### Turning ON the Transmitter

Refer to the light legend below for diagram details.

#### 1. Press Power [ON]



If the transmitter’s (Active) light does not flash, check the battery orientaion.



## Turning OFF the Transmitter

To turn off the transmitter, press the Power (OFF) button.

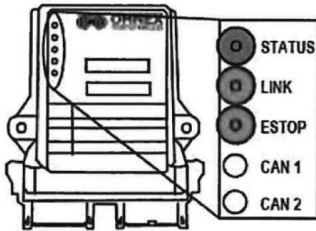
<b>Light Legend</b>	Solid	Slow Flash	Fast Flash	Red Light	Green Light	Yellow Light	Alternating Red & Green Light
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## 2.15b Test the Transmitter/Receiver Link

Follow these steps to ensure there is a Radio Link between the transmitter and receiver.

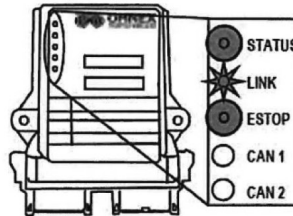
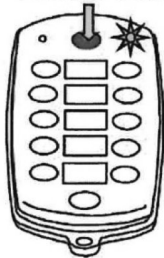
Refer to the Light Legend for diagram details.

### 1. Power the R170



The (E-Stop) light and the (Link) light will display RED (provided the transmitter is off), and the (Status) light will show GREEN.

### 2. Power the T110



If the (Active) light on the transmitter is flashing and the (Link) light on the receiver is flashing GREEN, a link between the two exists.

**The ORIGA System is now ready for use.**

<b>Light Legend</b>	Solid	Slow Flash	Fast Flash	Red Light	Green Light	Yellow Light	Alternating Red & Green Light
---------------------	-------	------------	------------	-----------	-------------	--------------	-------------------------------



## Section 3: 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.



**WARNING: DISCONNECT THE RADIO RECEIVER BEFORE WELDING!**  
Failure to disconnect will result in destruction of the radio receiver.

1. Before working on or near the H-1135 Tub Grinder for any reason, including servicing, inspecting or unclogging machine:
  - a. Run H-1135 Tub Grinder until discharge conveyor is empty, and grind as much of the material in the tub as possible.
  - b. Reduce engine speed to idle.
  - c. Disengage PTO
  - d. Disengage hydraulics.
  - e. Place transmission in park and set parking brake.
  - f. Shut off tractor engine and remove key.
  - g. Wait for all movement to stop.
  - h. Disconnect PTO driveline from tractor.
  
2. When replacing any part on your H-1135 Tub Grinder, be sure to use only DuraTech Industries authorized parts.

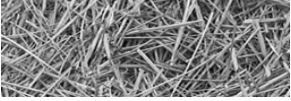


Relieve all pressure in the hydraulic system before disconnecting the lines or performing other work on the system. Make sure all connections are tight and the hoses and lines are in good condition before applying pressure to the system.

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

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

Also check rods, rod locking and retaining devices, hammers, screens, screen tracks and hold downs, main shaft, hinges or anything else that could wear and perhaps fail if not properly maintained, and cause



damage to the rotor and/or personnel safety. Check bearing alignment and mounting bolts to insure a firm foundation and reduced vibration.

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

5. Check for loose or worn chains, belts, sprockets and pulleys.
6. Keep sprockets and pulleys aligned.
7. Inspect rotor and all rotating parts for wrapped twine or wire build up.
8. If machine is going to sit idle for an extended period of time, tub floor should be cleaned to prevent rust and sticking problems at start up time.
9. The proper tire pressure is 48 PSI (3.3 BAR).
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.

### 3.1 Lubrication



**CAUTION:** Follow normal shutdown procedure before adjusting or lubricating.

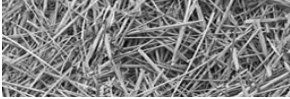
When operating the H-1135 Tub Grinder during cold weather, perform all lubrication after bearings are at operating temperatures.

#### BEARING LUBRICATION

Bearings operating in the presence of dust and water should contain as much grease as speed will permit, since a full bearing with a slight leakage is the best protection against entrance of foreign material. In the higher speed ranges, too much grease will cause overheating.

High-speed operation, abnormal bearing temperature may indicate faulty lubrication. Normal temperature may range from “cool to warm to the touch” up to a point. Unusually high temperatures “too hot to touch for more than a few seconds” accompanied by excessive leakage of grease indicates too much grease. High temperatures with no grease showing at the seals, particularly if the bearing seems noisy, usually indicate too little grease. Normal temperature and a slight showing of grease at the seals indicate proper lubrication.

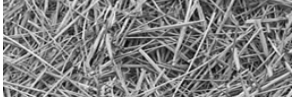
The following chart is a general guide for relubrication. Certain conditions may require a change of lubrication periods as dictated by experience.



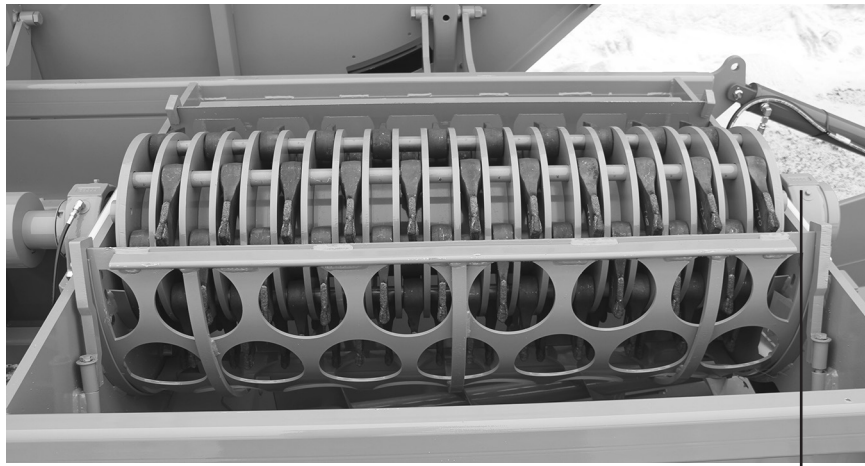
## Lubrication Chart

REF. NO.	LOCATION	NUMBER OF GREASE FITTINGS	FREQUENCY	
1	Jack Shaft Bearings	2	10 hrs.	*
2	Tub Chain Idler Pivot	2	Daily	
3	Rotor Bearings	2	Daily	*
4	Tub Pivot	2	40 hrs.	*
5	Belly Auger Bearings	4	10 hrs.	*
6	Bull Wheel	2	10 hrs.	
7	Discharge Conveyor Bearings	4	40 hrs.	*
8	Discharge Conveyor Lift Pivot	2	40 hrs.	
9	PTO	2	100 hrs	
10	Wheel Bearings	-	Annually	
11	Tub Pressure Roller	-	Sealed	
12	Roller Chains	-	Oil Daily in Dusty Conditions	





**Figure 3.1**  
rotor bearing lubrication point



rotor bearing lubrication point 1 of 2 (Ref # 3)

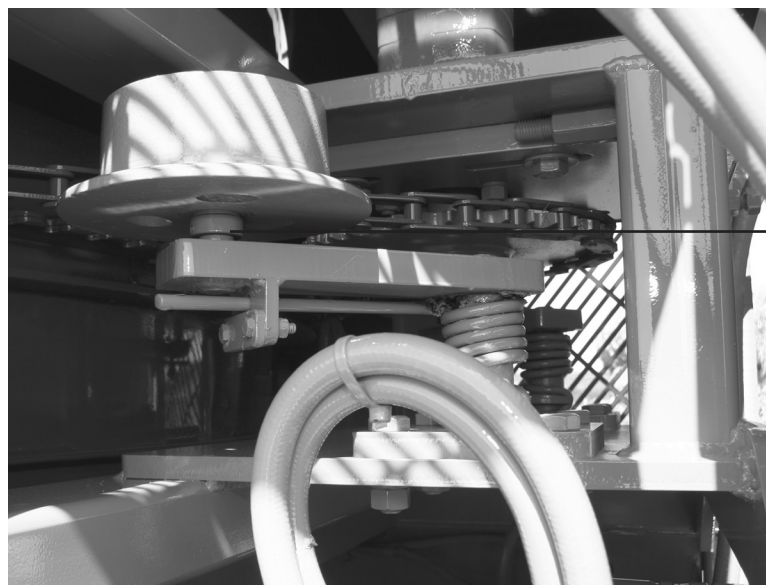
**Figure 3.2**  
belly auger bearing lubrication points and rotor bearing lubrication point



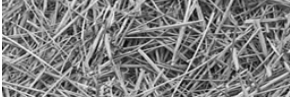
front rotor bearing lubrication point 2 of 2 (Ref # 3)

belly auger lubrication points (Ref # 5)

**Figure 3.3**  
tub chain idler pivot lubrication point



tub chain idler pivot lubrication point (Ref #2)



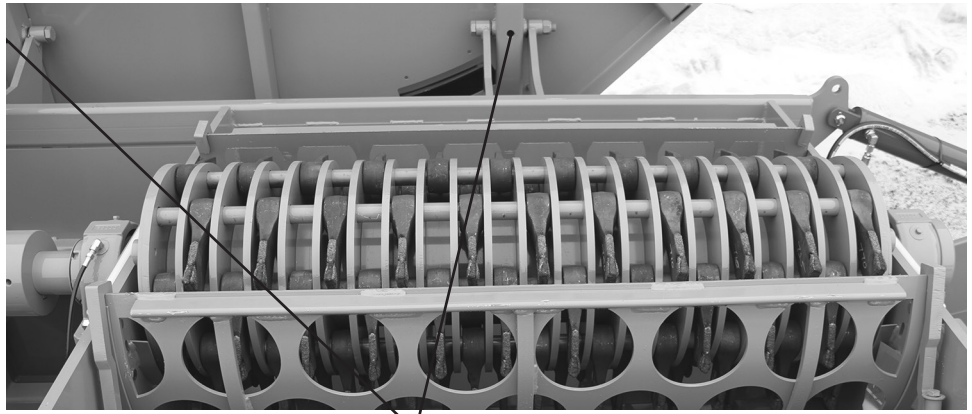
**Figure 3.4**  
**jack shaft bearing and bull wheel bearing lubrication points**

jack shaft lubrication points (Ref #1)

bull wheel bearing lubrication points (Ref #6)



**Figure 3.5**  
**tub pivot lubrication points**



tub pivot lubrication points (Ref #4)

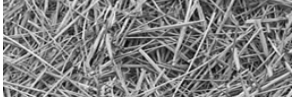
**Figure 3.6**  
**tub roller, tub pressure roller and roller chain**

pressure roller

roller chain (Ref #12)

tub pressure roller (Ref #11)





**Figure 3.7**  
PTO lubrication points



PTO lubrication points (Ref #9)

**Figure 3.8**  
discharge conveyor  
bearings (2 of 4)



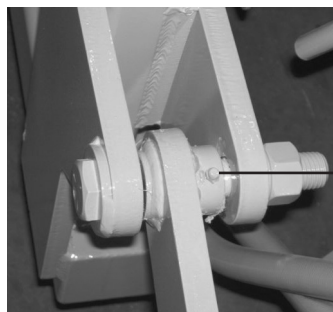
discharge conveyor bearing lube points  
(Ref #7)

**Figure 3.9**  
discharge conveyor  
bearings lubrication points  
(2 of 4)

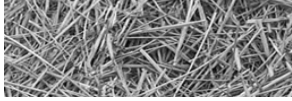


discharge conveyor bearing lube points  
-one on each side of machine (Ref #7)

**Figure 3.10**  
conveyor lift pivot  
lubrication points



conveyor lift pivot lube points -one on  
each side of machine (Ref #8)



## 3.2 Hydraulic system



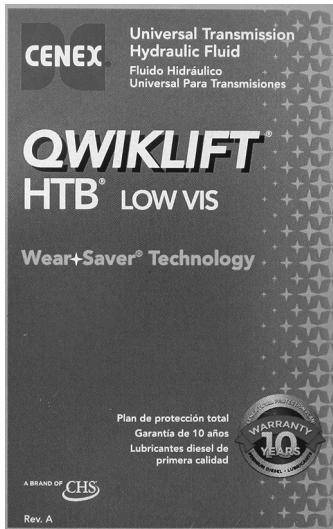
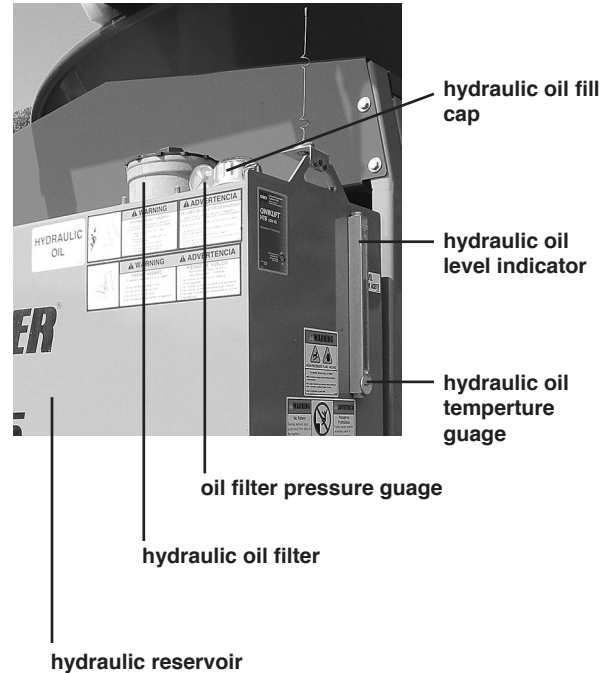
**CAUTION:** Lack of proper oil level in the reservoir tank will cause system to heat under continuous running. Check the hydraulic oil level daily and replace as necessary.

Hydraulic Oil Reservoir Capacity: 60 gallons

All machines have been pre-run at the factory to insure all functions are performing correctly. The hydraulic reservoir contain approximately 60 gallons of hydraulic oil.

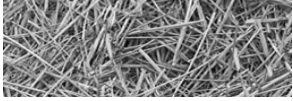
The in tank hydraulic oil filters should be changed after the first 10 hours of operation. Change hydraulic oil and filters after the first 100 hours of operation. Thereafter, change hydraulic oil filters every 500 hours and change hydraulic oil and filters at least every 1000 hours of operation. Change the in tank oil filter if the oil filter pressure gauge indicates a plugged filter

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

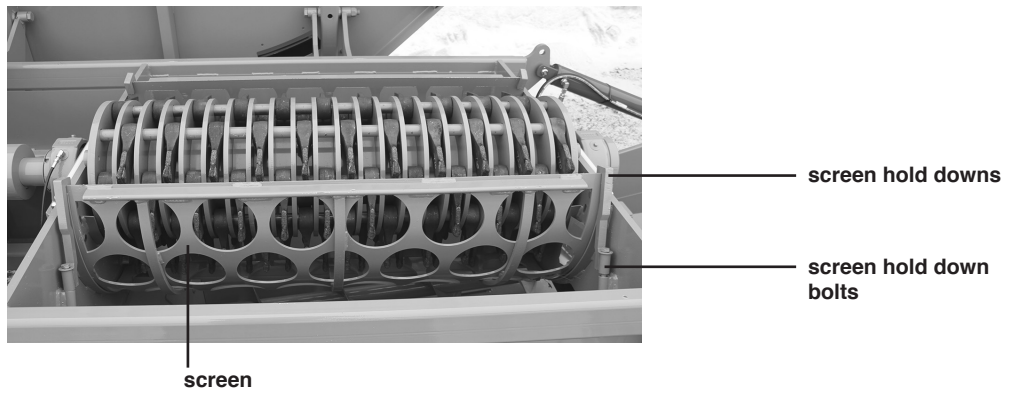


DuraTech Industries recommends using Cenex Qwicklift HTB LOW VIS if your machine has a Qwicklift decal on the hydraulic tank. Other acceptable fluids include Mobil 423, Farmland Super HTB, Conoco Hydroclear Power Tran Fluid, or other similar fluids. If the hydraulic tank does not have a decal, then all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





### 3.3 Screens



#### CHANGING SCREENS



**CAUTION:** Keep all foreign objects out of the tub and away from the rotor. Foreign objects may cause personal injury or damage to the machine.

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

To change screens on the H-1135, perform the following steps:

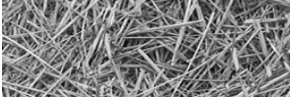
1. Raise the tub platform using the following steps



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

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

- a. Park machine on level ground or surface.
  - b. Remove all material from tub.
  - c. Clear personnel from work area.
  - e. Raise platform.
  - f. Install tub cylinder stop.
2. Loosen and remove bolts on the screen hold down.
  3. With a large hook or bar, pull the screen from its chamber.
  4. Make sure material is clear from screen track.
  5. Install the new screen.
  6. Replace the screen hold down, and bolts.
  7. Tighten all bolts securely.



### 3.4 Hammermill maintenance

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



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

The hammers have been designed and manufactured to provide the best compromise between hardness for good wearing qualities and strength for dependability and resistance to breakage.



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

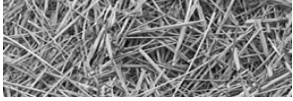
Because of the high capacity of the machine, the hammers will wear and must be considered expendable.

Screens 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 2300 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.



## 3.5 Balanced Hammer maintenance and replacement

### Important Safety Instructions-Please Read



**CAUTION:** Before entering tub to do any service work, raise the tub platform following the instructions in **Section 2.7 Raising the Tub Platform**. After raising the tub platform follow procedures 5 thru 8 of the **Normal Shutdown Procedure in Section 2.4.1**.

Any alteration of the hammer by heating, grinding, resurfacing or any other process that can change the mechanical properties of the hammer and make it unsuitable or dangerous.

These hammers are not designed to grind or crush hard materials such as metal, rocks, coal, mineral or other similar materials that can cause hammer failure and should never be allowed to enter the hammermill.

When installing or changing hammers, be sure to follow the directions on the installation diagram. The hammers being installed have been balanced by the rod. Carefully follow instructions. Misplacement could cause excessive vibrations. After installing a new set of hammers watch for unusual or excessive vibration upon start up of the hammermill. If any occurs, immediately shut off the power. Check to see what is wrong and correct it before starting the mill again. Do not mix hammers from two different sets. Hammers are balanced per rod and not per hammer.

Always wear safety glasses when hammers are being installed, changed or removed. Do not hit hammers during any of the above processes. Striking a hammer may cause particles to fly-off and become a safety hazard.



**CAUTION:** Before entering tub to do any service work, raise the tub platform following the instructions in **Section 2.7 Raising the Tub Platform**. After raising the tub platform follow procedures 5 thru 8 of the **Normal Shutdown Procedure in Section 2.4.1**.

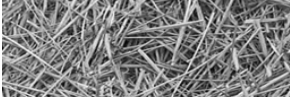
### We recommend the following for replacing hammers:

- Always replace hammers in pairs, 180 degrees apart. This process is necessary due to the weight difference of the hammers. (See figure 3.11 Hammer Layout)

Having received four boxes of forged hammers for a complete set of (88) H-1135 hammers, each box has two rows of (11) hammers for a total of 22 hammers. Each box is designated with the number of which rods each row of 11 hammers needs to be installed on.

**EXAMPLE:** First box should be tagged with 1-5; the first row should go on #1 rod (which you will designate) while the second row in the box should go 180 degrees to the #5 rod. The other three boxes repeat the process the same way on rods: 2-6, 3-7, 4-8 for a total of 8 rods.





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

1. Raise the tub platform following the instructions in **Section 2.7 “Raising the tub platform”**.

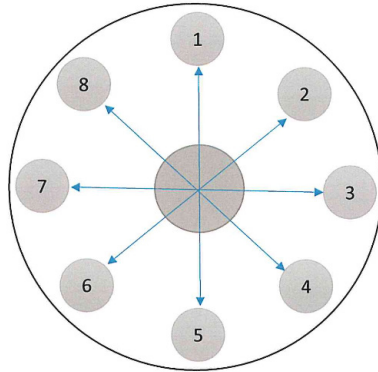


**WARNING:** To prevent serious injury or death, do not tilt platform on unlevel ground or with material in the tub.

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

2. Loosen two bolts at the rear of rotor that holds the movable plate in place.
3. Rotate the movable plate to align holes allowing hammer rods to be removed through the rear of rotor.
4. Remove one row of hammers and replace with new hammers, by assembling the 11 new hammers on the rotor from right to left as positioned in the box.
5. Rotate rotor 180 degrees and replace the hammers with the second row of hammers in the box. **(See figure 3.11 Hammer Layout)**
6. Continue steps 4 and 5 until all the hammers have been replaced on all eight rods.
7. After all hammers have been replaced, turn movable plate to lock rods in place and then tighten bolts.
8. When starting the rotor after installing a new set of hammers, 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 3.11**  
hammer layout



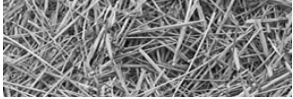
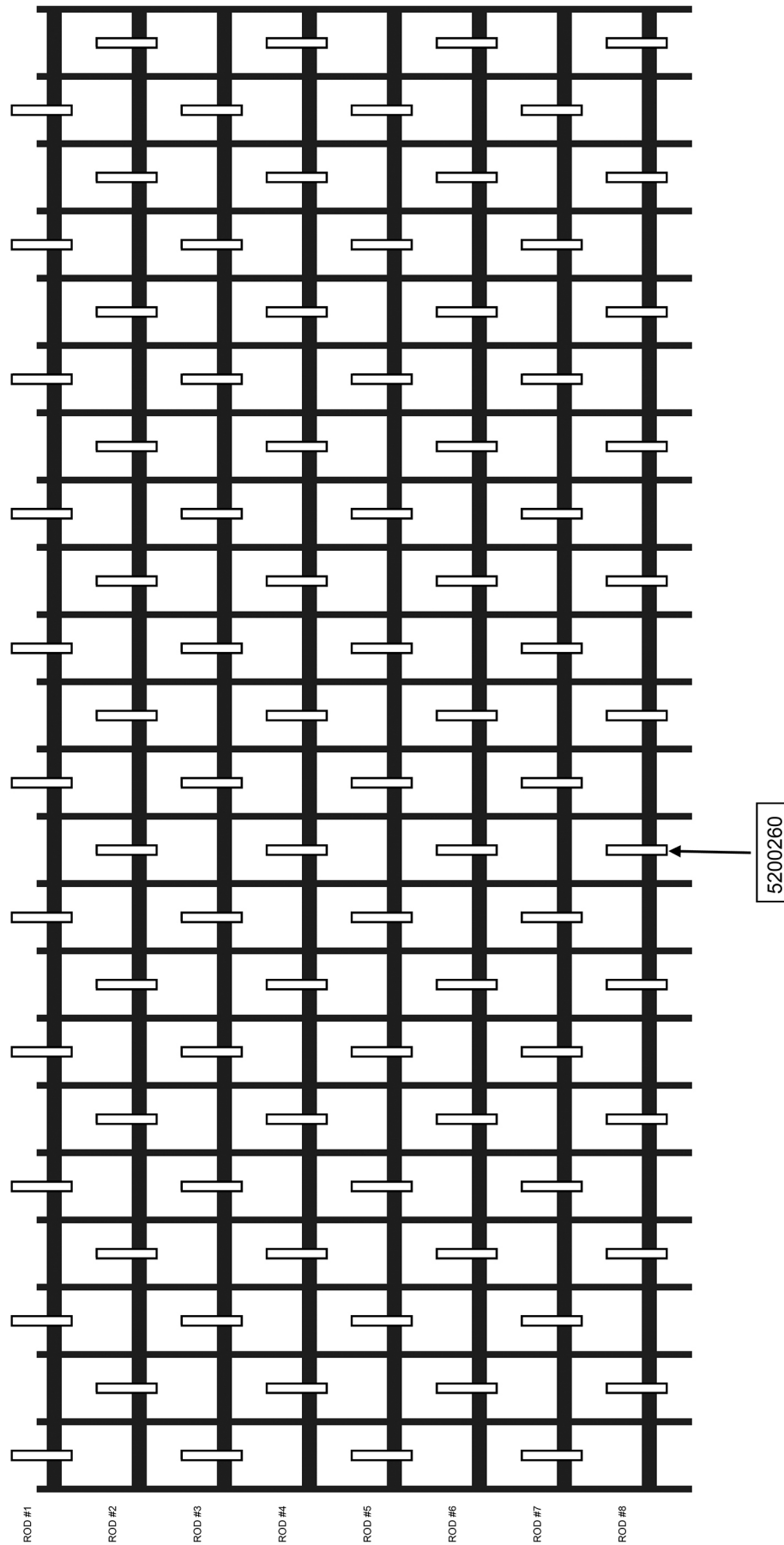
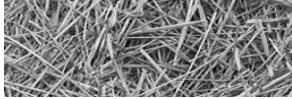


Figure 3.12  
hammer spacing chart for the  
H-1135





### 3.6 Dodge Rotor bearing installation



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



**NOTE:** Bearing housing caps and bases are not interchangeable and must be matched with mating half. Install the non-expansion bearing first.

### Instruction Manual For IMPERIAL Adapter Mounted DODGE ISAF

#### Pillow Blocks and IP Unitized Spherical Roller Bearing Pillow Blocks, Flanges, Piloted Flanges & Take Ups

#### GENERAL INFORMATION

DODGE ISAF and IP Spherical Roller Bearing mounted units incorporate a unique way of seating, mounting, and dismounting the unit to and from the shaft. The patented sealing system (Pat. #5,908,249) has proven effective in protecting the internal bearing components, due to its constant pressure, while suit allowing a full + or 1 degree of misalignment.. The patented IMPERIAL system (Pat. #5,489.156) pulls the bearing on the adapter based upon a predetermined clockwise rotation of the locknut. Dismounting is accomplished via counterclockwise rotation of the locknut Keep in mind that the thread on the locknut as well as on the adapter is a left hand thread.



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

#### INSPECTION

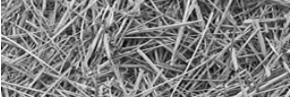
Inspect shaft Ensure that the shaft is smooth, straight, clean, and within commercial tolerance Inspect unit. Do not allow unit to be exposed to any dirt or moisture.



Keep weight off bearing during mounting via a sling or jacks



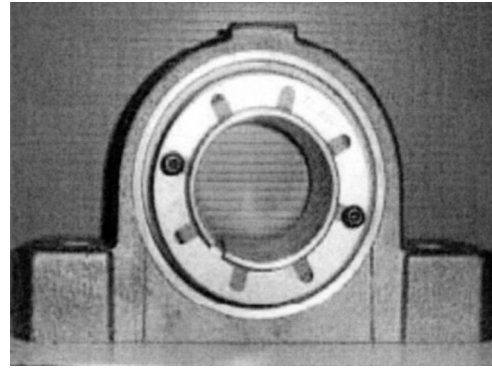
**WARNING:** Because of the possible danger to persons(s) or property from accidents which may result from the improper use of products, it is important that correct procedures be followed. Products must be used in accordance with the engineering information specified in the catalog. Proper installation, maintenance and operation procedures must be observed. The instructions in the instruction manuals must be followed. Inspections should be made as necessary to assure safe operation under prevailing conditions. Proper guards and other suitable safety devices or procedures as may be desirable or as may be specified in safety codes should be provided. and are neither provided by Baldor Electric nor are the responsibility of Baldor Electric. This Unit and its associated equipment must be installed, adjusted and maintained by qualified personnel who are familiar with the construction and operation of all equipment in the system and the potential hazards involved.



## MOUNTING

Install the non expansion unit first.

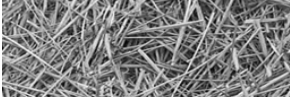
1. Apply a coating of light oil or other rust inhibitor to the adapter area of the shaft.
2. Before mounting bearing to shaft, remove lockplate from bearing and turn locknut counterclockwise one to two turns to allow adapter to expand fully. The unit is now shaft ready. Slide the bearing to the desired position on the shaft.
3. Proper locking of this unit to the shaft is based on turning the locknut clockwise 1-1/4 to 1-1/2 turns. The turning of the locknut must start from a "ZERO reference point." This "ZERO reference point" is defined as the point when the clearance between adapter sleeve, shaft and bearing bore has been removed, and all surfaces are in metal to metal contact.
- 3A. To reach the "ZERO Reference Point," rotate locknut clockwise, using both hands, as tight as possible. Continue to tighten 1-1/4 to 1-1/2 turns.



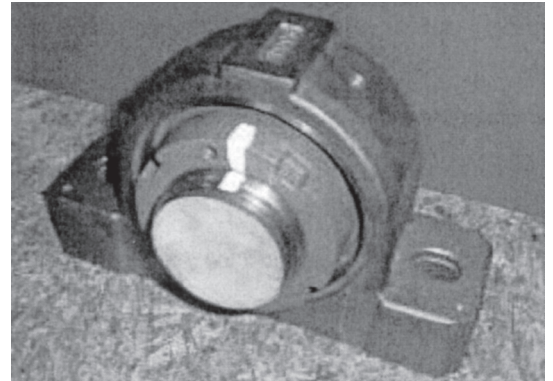
Picture 1



**NOTE:** All Weight Must Be Removed From The Bearing When Obtaining The "ZERO Reference Point."

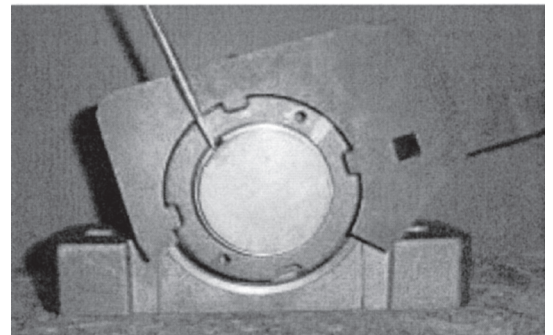


4. Once “ZERO reference point” is reached, scribe a line through both locknut face and adapter face (Picture 2). Then continue to tighten the locknut (Picture 3) by turning it clockwise using hammer and drift or spanner by the appropriate rotation angle shown on Table 1. Proper mounting has been achieved when the scribed line on the locknut has rotated from the scribed line on the adapter face by the angle shown on Table 1. To reach the full rotation of the locknut, the use of hammer blows onto spanner or drift may be needed for proper mounting.



Picture 2

5. a) Slide lockplate over shaft and align tang of lockplate with slot in adapter sleeve.  
b) Find a locknut hole that aligns with a lockplate hole. If the closest locknut hole is beyond a lockplate hole, then tighten, not loosen, the locknut to meet a lockplate hole  
c) Insert lockwasher and tighten button head screws to lock assembly. (Ref. Picture 4)
6. Bolt down pillow block or flange unit to the structure.
7. Repeat steps 1 through 6 for the expansion bearing except immediately after Step 2 do the following:



Picture 3

## EXPANSION

### Pillow Blocks (Locknut facing outboard)

Align pillow block housing mounting holes with substructure mounting holes. Position insert in center of travel on rear expanding bearing.

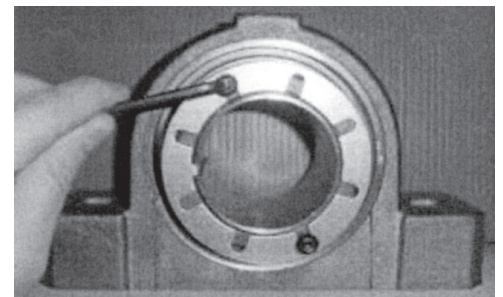


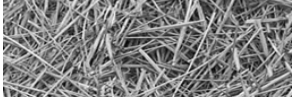
**NOTE:** This is necessary because in the process of mounting, bearing is being drawn toward locknut. **Also remember to keep weight off of bearing.**



**NOTE:** Use hardened washers and properly tightened bolts to obtain sufficient clamp force between the bearing block and the mounting structure.

Picture 4





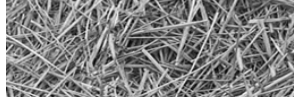
### 3.7 Cleaning the display unit



**NOTE:** Do **NOT** use high pressure when cleaning the display screen unit.

Using high pressure washers will cause damage to the display screen and is not covered by warranty.



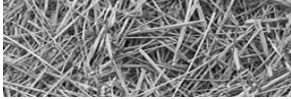


## Section 4: Troubleshooting the H-1135

### 4.1 Control parameters for electronic governor

Control Parameter	Value	Value Range	Description
<b>Tub Speed</b>			
Tub Speed Min (mA)	300	0-2,000	Minimum output current to the Tub Speed solenoid coil. The units are in milliamps.
Tub Speed Max (mA)	1,225	0-2,000	Maximum output current to the Tub Speed solenoid coil. The units are in milliamps.
Tub Speed Ramp Up (ms)	2,000	0-10,000	The amount of time the Tub Speed output will ramp from minimum output to maximum output. The units are in milli-seconds.
Tub Speed Ramp Down (ms)	0	0-10,000	The amount of time the Tub Speed output will ramp from maximum output to minimum output. The units are in milli-seconds.
<b>Service</b>			
Speed Input – Pulses Per Rev	15	0-100	Number of gear teeth for the speed sensor target ring.
Rotor Speed Input – Sample Time (ms)	10	0-10,000	Time between each sample the controller takes of the speed input. There are 25 samples the controller averages the signal over.
Tilt Enable Time (sec)	1	0-100	The time delay before the Tilt Enable output turns on after the Rotor Speed equals zero.
Rotor Speed Min Limit	1400	0-3000	The lower RPM limit for the anti-stall feature. When the Engine Load setting is at 100% the anti-stall feature will meter the Tub Speed output down to this RPM.
Set Speed Limit Low RPM	1600	0-3000	The lower RPM limit for the Set Speed button.
Set Speed Limit High RPM	2600	0-3000	The high RPM limit for the Set Speed button.
Conveyor Speed Off Time (ms)	30	0-100	The amount of time the Conveyor will stay ON for after a Speed Sensor fault occurs.
Grind Hours *Only shown in EA1667-E1P REV XX OEM.icf	0	0-65535	Changing this number will change the overall number of Grind Hours the machine has recorded. Take the number of hours and multiply by 10. After changing this number in the value box do not click Flash Parameters, just cycle power to the controller.



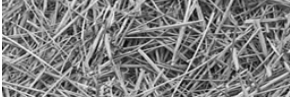


## 4.1A Monitor parameters for electronic governor

Monitor Parameter	Description
Rotor RPM	The speed the Rotor is turning.
Grate Height	The height of the grate in inches.
Tub Speed (mA)	The output current to the Tub Speed output. The units are in milliamps.
Tub FWD (0=OFF, 1=ON)	The digital output state of the Tub FWD output.
Tub REV (0=OFF, 1=ON)	The digital output state of the Tub REV output.
Conveyor FWD (0=OFF, 1=ON)	The digital output state of the Conveyor FWD output.
Bypass (0=OFF, 1=ON)	The digital output state of the Bypass output.
Conveyor Raise (0=OFF, 1=ON)	The digital output state of the Conveyor Raise output.
Conveyor Lower (0=OFF, 1=ON)	The digital output state of the Conveyor Lower output.
Conveyor Fold (0=OFF, 1=ON)	The digital output state of the Conveyor Fold output.
Conveyor Unfold (0=OFF, 1=ON)	The digital output state of the Conveyor Unfold output.
Tub Raise (0=OFF, 1=ON)	The digital output state of the Tub Raise output.
Tub Lower (0=OFF, 1=ON)	The digital output state of the Tub Lower output.
Grind Hours	The number of Grind Hours recorded.
Service Hours	The number of Service Hours recorded.
Job Hours	The number of Job Hours recorded.

## 4.2 Fault Codes

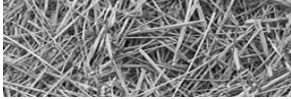
ECU	SPN-FMI	Description
ECU1	701-5	Tub Forward Output: Open or Short to Ground
ECU1	701-6	Tub Forward Output: Short to Battery
ECU1	702-5	Tub Reverse Output: Open or Short to Ground
ECU1	702-6	Tub Reverse Output: Short to Battery
ECU1	703-5	Tub Speed Output: Open or Short to Ground
ECU1	703-6	Tub Speed Output: Short to Battery
ECU1	704-5	Bypass Output: Open or Short to Ground
ECU1	704-6	Bypass Output: Short to Battery
ECU1	705-1	Speed Sensor: Below Normal
ECU1	706-5	Conv Forward Output: Open or Short to Ground
ECU1	706-6	Conv Forward Output: Short to Battery
ECU1	706-5	Conv Raise Output: Open or Short to Ground
ECU1	706-6	Conv Raise Output: Short to Battery
ECU1	707-5	Conv Lower Output: Open or Short to Ground
ECU1	707-6	Conv Lower Output: Short to Battery
ECU1	708-5	Conv Fold Output: Open or Short to Ground
ECU1	708-6	Conv Fold Output: Short to Battery
ECU1	709-5	Conv Unfold Output: Open or Short to Ground
ECU1	709-6	Conv Unfold Output: Short to Battery
ECU1	710-5	Tub Raise Output: Open or Short to Ground
ECU1	710-6	Tub Raise Output: Short to Battery
ECU1	711-5	Tub Lower Output: Open or Short to Ground
ECU1	711-6	Tub Lower Output: Short to Battery



### 4.3 General Troubleshooting

<p>1. No grinding capacity</p>	<p>1. The screen is plugged. 2. The hammers or screens are badly worn. 3. Materials are too light or fluffy.</p>	<p>1. Clean out the holes in the screen. 2. Replace or turn worn parts. 3. Mix the lighter material with heavier material. 4. Use a larger screen. 5. Use the grapple loader to force feed the material.</p>
<p>2. The tub slows down or turns slowly.</p>	<p>1. The electronic governor is not adjusted properly. 2. The electronic governor system malfunctions. 3. The hydraulic pressure is low.</p>	<p>1. See the sections on the electronic governor in the operations section of this manual. 2. See Troubleshooting the electronic governor in this manual. 3a. Check oil pressure. 3b. Look for internal leakage or wear in the orbit motor or pump.</p>
<p>3. The machine vibrates excessively.</p>	<p>1. A hammer is broken. 2. The rotor bearing is defective. 3. The driveline is worn or misaligned. 4. Foreign material is wrapped in the rotor. 5. The hammer pattern is incorrect.</p>	<p>1. Replace the broken hammer. 2. Replace the rotor bearing. 3. Replace worn part or the complete driveline. 4. Remove the foreign material. 5. See section 3.5 for more information about replacing hammers.</p>
<p>4. The engine looses excessive RPM's before the tub stops.</p>	<p>1. The electronic governor is not adjusted properly.</p>	<p>1. See the sections on the electronic governor in the operations section of this manual.</p>
<p>5. The tub stalls.</p>	<p>1. The tub hydraulic system pressure is set too low. 2. The tub is overloaded due to wet or tough grinding materials. 3. Too much material in the tub. 4. The tub is binding. 5. The hydraulic oil is too hot causing electronic governor valve to bind.</p>	<p>1a. Check oil pressure. 1b. Readjust the pressure relief valve to 2,000 PSI max. 2. Reduce amount of material in tub or shift the hydraulic tub drive to low range. 3. Reduce the amount of material in tub. 4. Remove material buildup between the tub and the platform framework. 5. Reduce the load on the hydraulic system, or stop and allow the hydraulic oil to cool.</p>
<p>6. The hydraulic oil overheats.</p>	<p>1. Pressure relief valve in control valve is faulty. 2. The tub is overloaded. 3. Worn pump, control valve, hyd. motors, etc. 4. Creating excessive heat with discharge conveyor flow control valve.</p>	<p>1. Check oil pressure. 2. Reduce the amount of material in the tub. 3. Rebuild or replace the hydraulic components as necessary. 4. Allow discharge conveyor to run at full speed.</p>



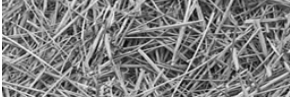


## 4.4 Troubleshooting the OMNEX Trusted Wireless T110/R170

### Diagnostics-T110 Transmitter

Indicator Lights	Description	Solution
	Occurs when ever a function is pressed. Will also remain on momentarily on Power Up.	N/A
	Transmitter is in Download mode.	To take it out of Download mode turn transmitter off and turn it back on again.
	Transmitter is in Operating mode.	N/A
	Low Battery.	Change Batteries <i>Note: Low batteries will last approximately 8 hours once the Low Battery light begins to flash. Replace batteries during next break.</i>
	Fast Flash for approx. 10 seconds indicates T110 failure.	Send the unit in for service.
	Stuck button detected.	Toggle the buttons a few times. Call for service. Send the unit in for service.
	<b>On Power Down</b> Unit is still powered, likely due to an on function or stuck button.	Toggle the buttons a few times. Call for service. Send the unit in for service.
	Transmitter is in Configuration mode.	To take it out of Configuration mode turn transmitter off and turn it back on again.
	Transmitter is downloading ID Code.	Wait for approximately 5 seconds. Once the download is complete the transmitter will automatically shut off.

Light Legend	Solid	Slow Flash	Fast Flash	Red Light	Green Light	Yellow Light	Alternating Red & Green Light
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## Diagnostics-R170 Receiver

### Normal Operation

Indicator Lights	Description
	<p><b>Transmitter is OFF</b> If the transmitter is off, the receiver is operating properly. This will be the status of the receiver after the Download ID procedure as the transmitter automatically shuts off after ID download.</p>
	<p><b>Transmitter is ON</b> When the transmitter is turned on, the Link light (fast flashing) and E-Stop (GREEN) indicates the receiver is operating properly</p>

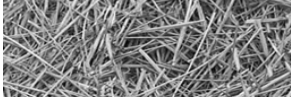
### Trouble Indicators

**Note:** In some cases, the indicator lights will be different depending on whether the transmitter is on or off. For all cases listed below, the transmitter's status is OFF unless otherwise indicated. Please note the transmitter status in the "Description" column for each case.

Indicator Lights	Description	Solution	Indicator Lights	Description	Solution
	<p><b>Transmitter is OFF</b> The SW 1 button is stuck for more than 10 seconds <i>(If the transmitter is on, the LINK light will be OFF)</i></p>	Wiggle the button to try and get unstuck. If condition persists, contact customer service.		During normal operation, this may indicate irrecoverable CAN software error or upon power-up, out of the box, the unit has no setup information or setup information is corrupt	Proceed through the Download ID procedure. If this doesn't work contact Customer Service
	<p><b>Transmitter is OFF</b> The SW 2 button is stuck for more than 10 seconds <i>(If the transmitter is on, the LINK light will be OFF)</i></p>	Wiggle the button to try and get unstuck. If condition persists, contact customer service.		Setup download failed.	Try again, no more than a couple of times, or contact customer service.
	<p><b>Transmitter is OFF</b> A low battery condition has been detected.</p>	To detect intermittent conditions caused by poor or corroded ground or power circuits, the GREEN light will continue to flash for		<p><b>Transmitter is OFF</b> E-Stop relay failure <i>(If the transmitter is ON, the LINK light will be fast flashing GREEN)</i></p>	Contact Customer Service

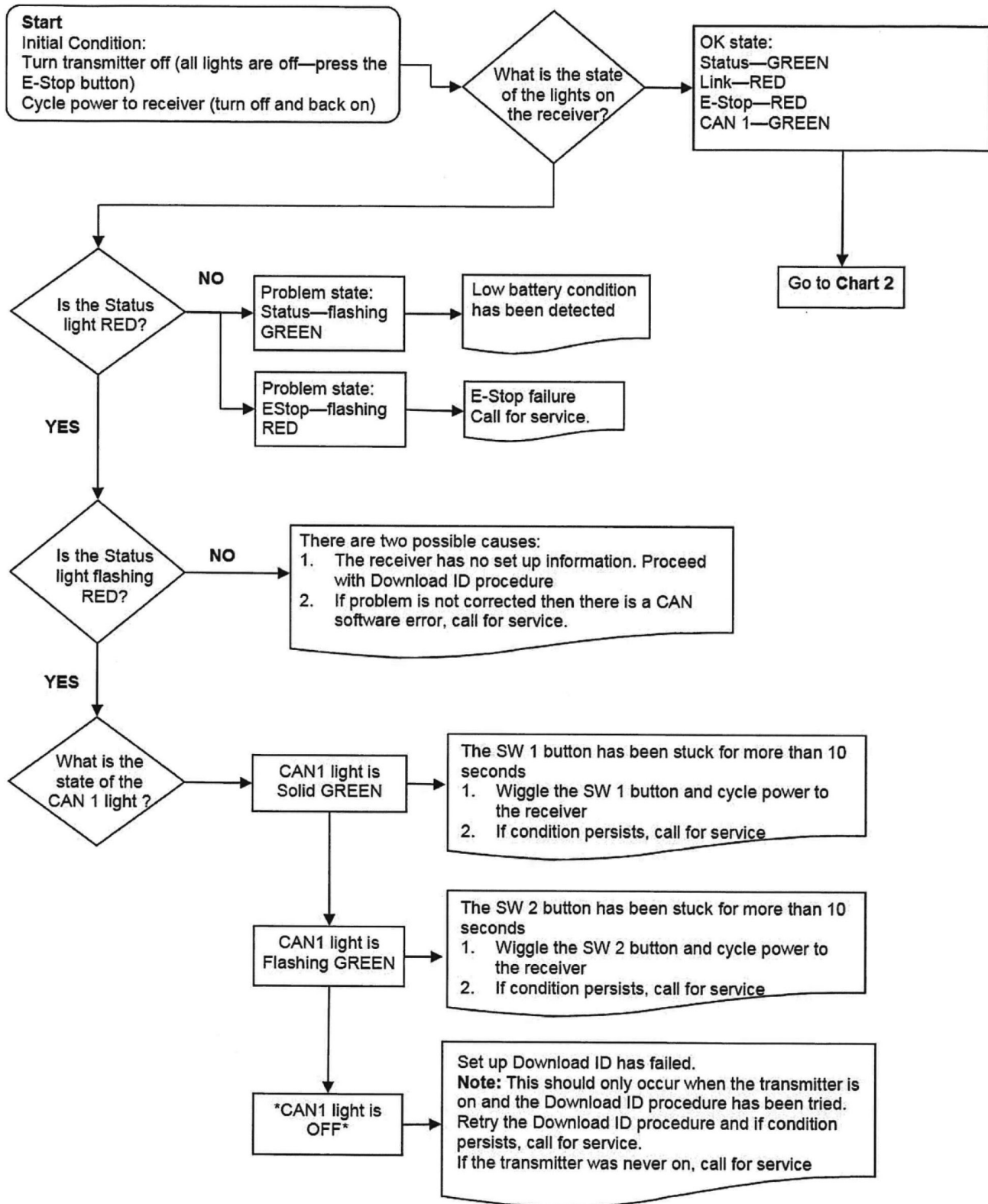
Light Legend	Solid	Slow Flash	Fast Flash	Red Light	Green Light	Yellow Light	Alternating Red & Green Light

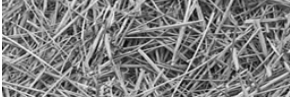




# Troubleshooting guide-Chart #1

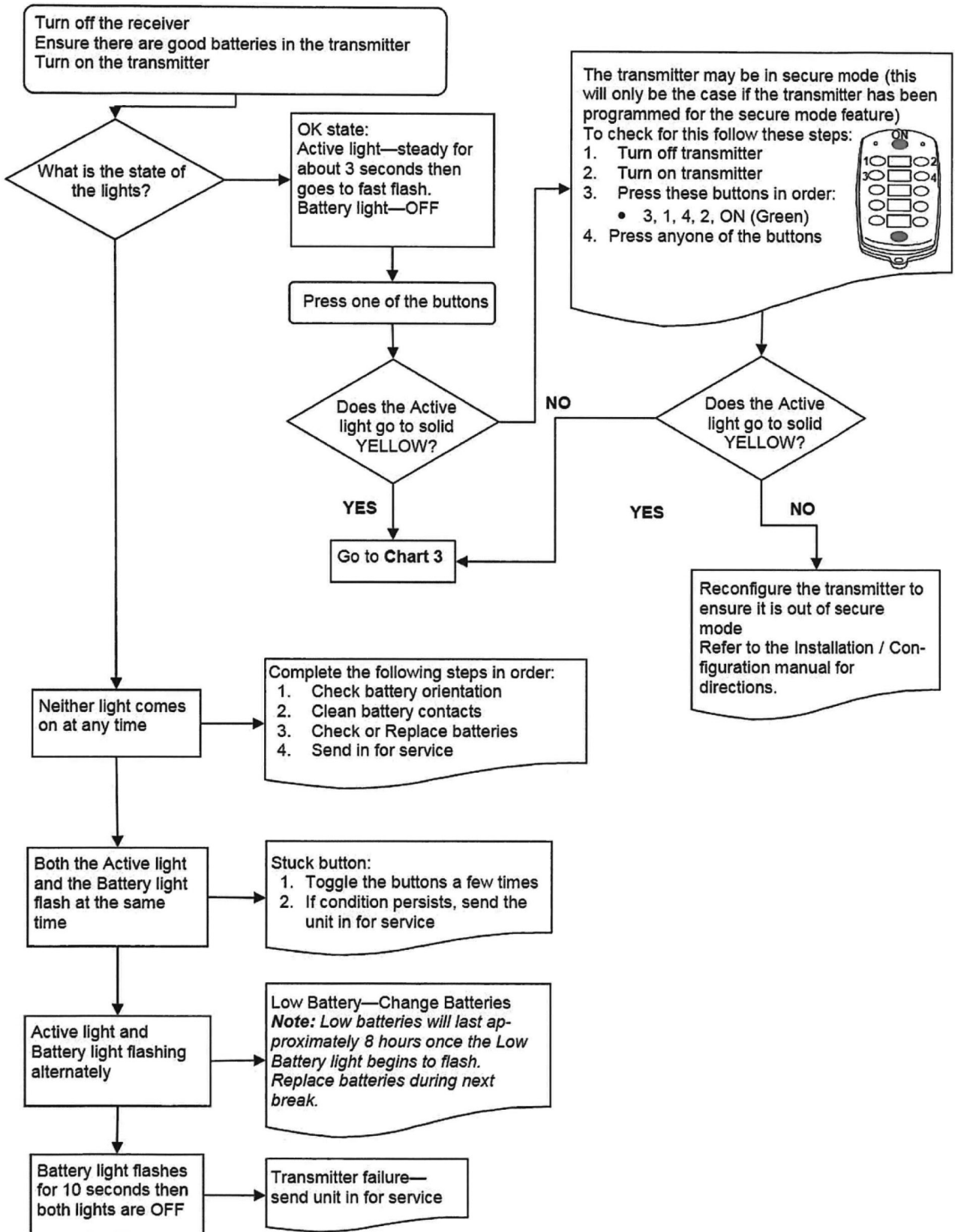
## Test the Receiver—R170

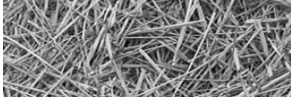




## Troubleshooting guide-Chart #2

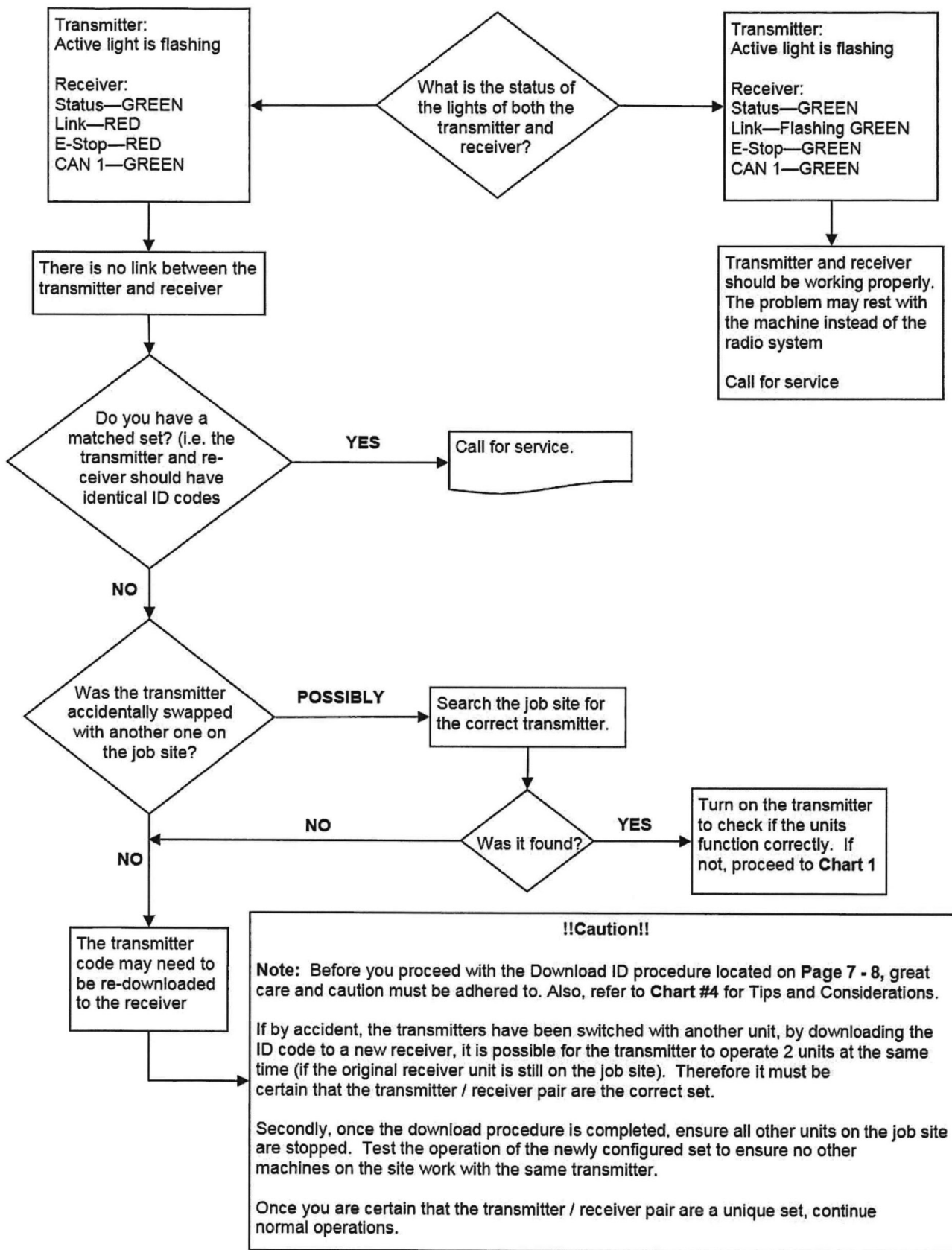
### Test the Transmitter—T110



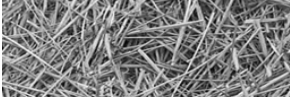


### Troubleshooting guide-Chart #3

#### Testing the Transmitter / Receiver Communication







## Troubleshooting guide-Chart #4

### Considerations when Downloading the ID

#### Potential downloading issues

If testing of the receiver and transmitter both show the system as working (Chart 1 & 2), then the transmitter and receiver will both go into Download/Configuration mode.

Possible issues could arise during Step 4, the download phase of reprogramming. In this case there are 2 symptoms to look for:

1. The Link light on the receiver will not turn GREEN when the power switch is toggled on the transmitter to download
2. The receiver will “time out” indicating that it didn’t receive a signal from the transmitter within the 30 seconds from the time the receiver was put into Setup Mode.

If all indications appear normal during the download phase, test the link by turning on the transmitter (note: the transmitter shuts off after transmitting the ID code in Step 4)

1. If the Link light on the receiver doesn’t turn GREEN, the receiver didn’t receive all of the information that was sent from the transmitter.

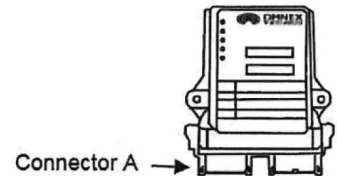
#### Possible Solutions

1. Try the Downloading steps again
2. If this doesn’t correct the problem, send both the transmitter and receiver in for service.

*Note: you could try to determine whether the fault lies with the transmitter or receiver by completing the downloading procedure with a different transmitter. If this step works, then the fault lies with the original transmitter. If not, the fault may lie with the receiver.*

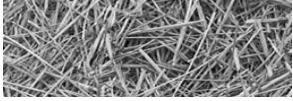
#### !!Caution!!

**Note:** Before attempting downloading with another transmitter, understand that reprogramming the receiver with another transmitter, could result in two receivers on the job site responding to the one transmitter. If the original transmitter was sent in for repair, Disconnect the receiver (disconnect connector A) to continue using the machine without remote capability and without fear of inadvertently operating the machine with the other transmitter.



#### Reprogramming Tips:

1. Use a pointy instrument to depress the Setup button on the receiver (i.e. a pen) as the button is relatively small
2. Follow each step as laid out in the procedure
3. Never lay the receiver circuit board down on anything metallic (there are contact points on the back which could contact the metal and damage the receiver)



## Appendix A: Warranty

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

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

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

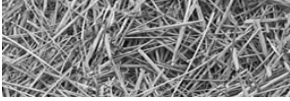
This warranty does not apply to tires or bearings or any other trade accessories not manufactured by DuraTech Industries International Inc. Buyer must rely solely on the existing warranty, if any, of these respective manufacturers.

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

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

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

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



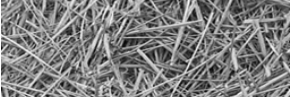
# Appendix B: H-1135 Specifications

Weight .....	14,500 lbs. (6,577.1 kg)
Width at Flare .....	11 ft 4 in. (3.54 m)
Loading Height .....	9 ft 2 in (2.79 m)
Transport Height.....	10 ft 7 in (3.2 m)
Transport Length .....	21 ft 8 in (6.6 m)
Wheels .....	Drop center rims, Tapered roller bearings
Bearings .....	All standard size, grease sealed
Recommended Tire Size .....	445/50R 225 (20 ply)
Recommended Cylinder Speed .....	2300 rpm
Capacity .....	Hay - up to 40 tons/hr.
.....	Ear corn - up to 800 Bu/hr.
.....	Grain and shelled corn -Up to 3400 Bu/hr.
Rotor - Std No. of Hammers .....	88
Hammer Size .....	2-1/2" x 7-3/4" x 1/2" (6 cm x 20 cm x 1 cm)
Rotor - Shaft diameter .....	3-1/2 in. (9 cm) stress proof steel
Rotor Size .....	50 in. long, 26 in. diameter with hammers extended
Screen Area .....	2,781 sq. in. (17,942 sq. cm.)
Screens Available (inches) .....	1/8, 3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 1, 1-1/2, 2, 3, 4,5, 6, 7, 8 Round holes. 2,3,4 Slotted Holes
Feed Delivery .....	26 ft. folding rubber belt conveyor w/cleats 24 in. Wide
Tub size .....	8'-11" (2.72 m) ID
Tub Depth .....	4 ft 2 in. (1.27 m)
Tub Drive .....	Electro-Hydraulic

## Options

AVAILABLE OPTIONS FOR DURATECH INDUSTRIES H-1135 TUB GRINDER:

- Ear Corn Kit
- Geyser Plate
- Grain Grinding Hopper
- Mill Grate / Slugbar Combination
- Various Screens Sizes
- Material Guide



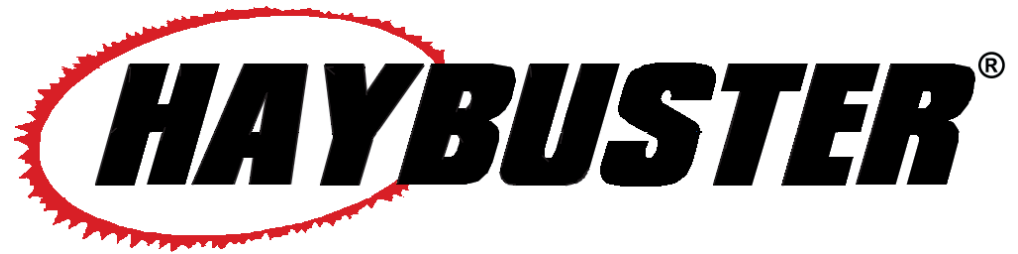
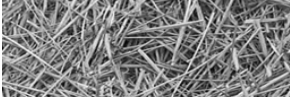
## **Appendix C: Required for operation**

Tractor - 200 to 315 hp

1000 RPM PTO Shaft

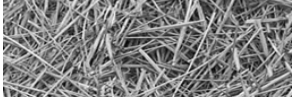
Dual Hydraulics, double acting control valve, 8 GPM, 1500 psi (30.31 lpm x 10,345 Kpa)

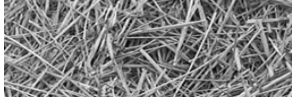
See also Section 2.3.1, Tractor Set Up.



# **H-1135 Electric<sup>TM</sup> Stationary Tub Grinder Electric Supplement**

## **Operating Instructions**





# H1135 Electric Tub Grinder-Operators Manual Supplement

This is a supplement to the H-1135 Tub Grinder Operators Manual and Partsbook. The main part of this book applies to this Tub Grinder except where described in this attached supplement.

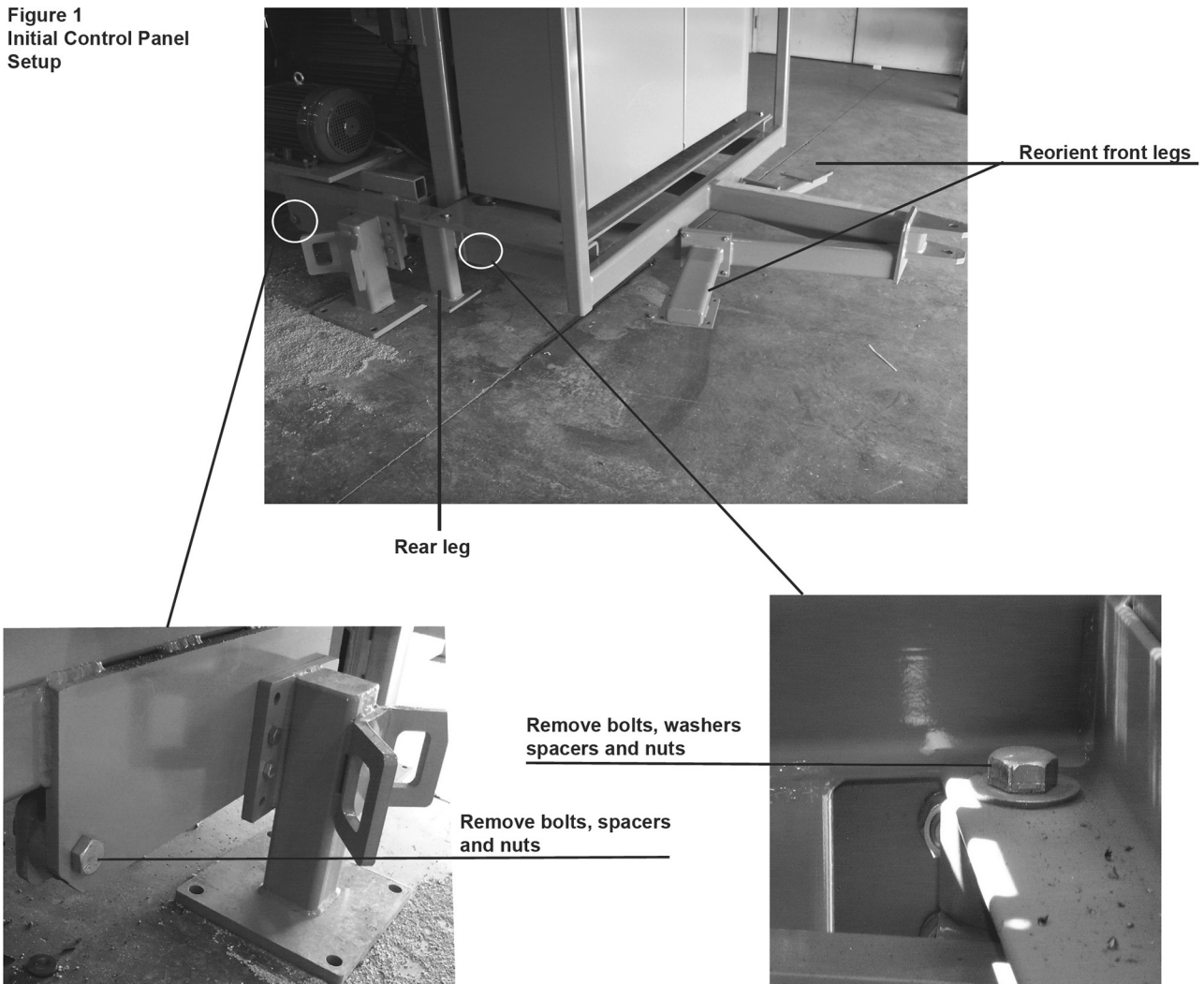
Before starting the H-1135 Electric Tub Grinder review all:

- Safety Recommendations – See **Section 1** of the Operating Instructions in this manual.
- Pre-Operation instructions– See **Section 2** of the Operating Instructions in this manual.
- **ABB Softstarters Type PSTX30...PSTX1250 Users Manual short form**-for all information regarding the soft start controller. (Manual can also be found at <https://solutions.abb/softstarters> or on the inside door of the control panel.)

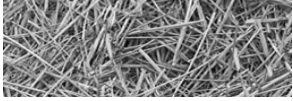
## Supplement Section 1: Initial Control Panel Set-Up

1. Unbolt front legs from hitch and reorient so that they are positioned like the rear legs of the control panel assembly and bolt back on. (See *Figure 1*)
2. Disconnect the control box assembly from the machine by removing the bolts, spacers and nuts on both sides of the machine. (Total of four bolts.)

**Figure 1**  
Initial Control Panel  
Setup







## Supplement Section 2: Start-Up



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

1. Make sure the main breaker is turned off before opening panel door.
2. Before starting the H-1135 Electric Tub Grinder make sure that “Soft Start” switch in the control panel is set on “SS”. (See Figure 2)



**NOTE:** Do **NOT** use ATL (Across The Line) if at all possible. This puts a major load on the electrical system and on the drivelines.

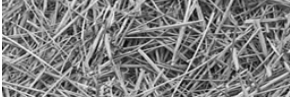


**Figure 2**  
SS/ATL Switch  
(Inside Control Panel.)

3. Perform a safety inspection: Walk around the H-1135 Electric Tub Grinder and verify that:
  - there is no damage to the machine components or to its electrical components.(See also **Section 2.1** of the Operating Instructions in this manual.)
  - it is in good operating condition and that all protective shields are in place and in proper working order. Replace damaged shields before operating.
  - all bystanders and other workers are clear and wearing personal protective equipment before starting the grinder. (See also **Section 1** of the Operating Instructions in this manual.)

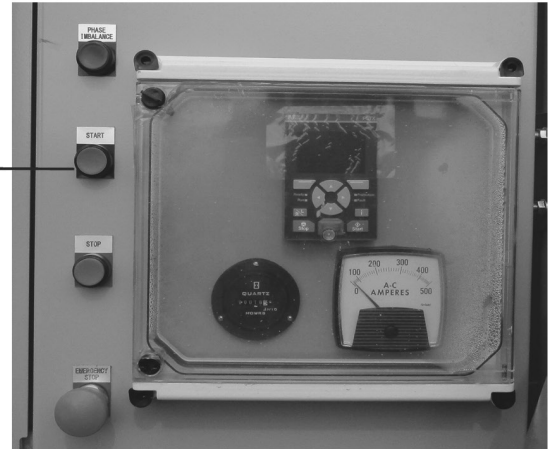


**NOTE:** Next step will bring grinder up to full operating Amperage.



**Figure 3**  
**Main Breaker**  
(Shown in the OFF position.)

Start button  
(green button)

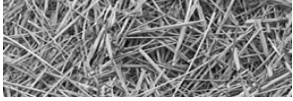


**Figure 4**  
**Start Button location**

4. Close the panel door and turn the main breaker ON by turning the handle downward. Located on the right panel door (*See Figure 3*)
5. Shout the word “CLEAR”
6. Then press the start button on the outside of the control panel. (*See Figure 4*)



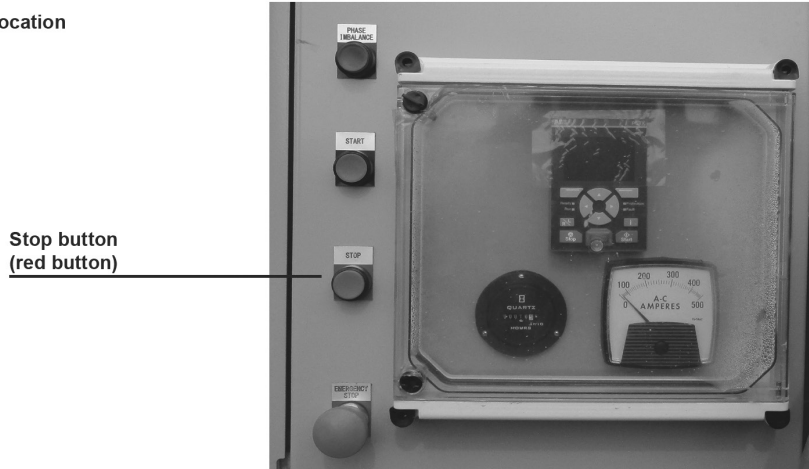
**NOTE:** Electric motor will not start if platform is raised



## Supplement Section 3: Shut-Down Procedure

1. Run H-1135 Electric Tub Grinder until no more material is being ground and the discharge conveyor is empty.
2. Push stop button on the outside of the control panel. (See Figure 5)

Figure 5  
Stop Button location



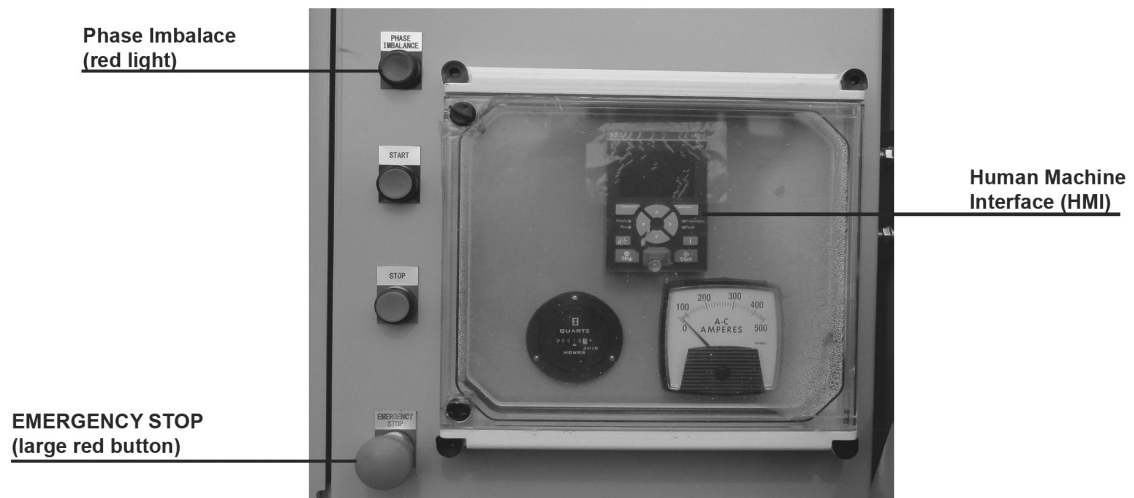
## Supplement Section 4: Other Control Panel Functions

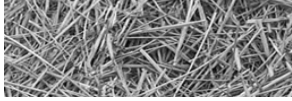
**Phase Imbalance light** will come on when the Littlefuse MotorSaver voltage monitor registers a fault. (See Supplement Section 10: Troubleshooting.)

**Emergency Stop button.** Cuts all power to machine and stops all functions immediately. Except the driveline will continue to turn for a short time before coming to a complete stop.

**Human Machine Interface (HMI):** See ABB Softstarters Type PSTX30...PSTX1250 Users Manual short form regarding use, parameters settings and troubleshooting. (Manual can also be found at <https://solutions.abb/softstarters>.)

Figure 6  
Other control panel  
functions





## Supplement Section 5: Electronic Governor

The Wachendorff A3X display will control the tub and discharge conveyor functions of the Tub Grinder.

### Display

#### Start up screen:

Company logo

Screen will show when power is applied to the display for approx. 10 sec.

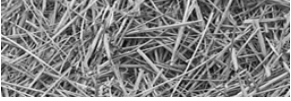


#### Loading screen:

Company logo, with loading bar

Screen will show right after Start up screen for approx. 10 sec.





## Hardkeys:

### Next

- When the Next button is pressed, the display changes to the next screen.

### Home Button

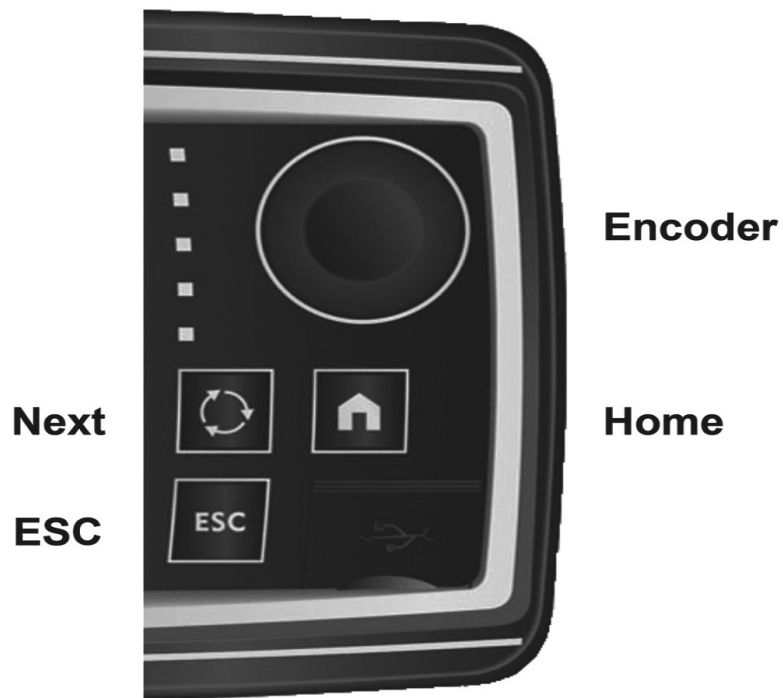
- When the home button is pressed the display will go to the home screen.

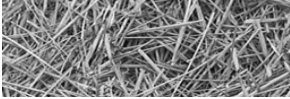
### ESC Button

- When the ESC button is pressed the display will go back to the previous screen or view.

### Encoder

- When the Encoder button is pressed, the display changes to the next screen.

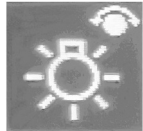






## Home screen:

Home Screen will show right after the loading screen, when the Home button is pressed from any of the other pages, or when the Encoder is pressed from the Manual Function screen.



- Tub FWD/REV buttons will control the Tub FWD/REV outputs as described in **Supplement Section 6: Operation of the Electronic Governor.**
- The Tub Speed gauge will indicate the Tub Speed output with a scale of 0-100.
  - When the Tub Speed button is pressed the Encoder knob will be linked to the Tub Speed setting and the Tub Speed icon will change to red in color.
  - The Tub Speed can also be adjusted by using the Tub Speed Increase and Decrease buttons on the radio remote.
- The Motor Load gauge will indicate the Motor Load setting with a scale of 0-100.
  - When the Motor Load button is pressed the Encoder knob will be linked to the Motor Load setting and the Motor Load icon will change to red in color.
- When the Display Light button is pressed the Encoder knob will be linked to the Display Backlight setting and the Display Light icon will change to red in color. 
- The Min Amps button will set the Amp Minimum and will be indicated by a blue arrow on the outside edge of the Amps gauge. The Amp Max is indicated by the green arrow. (See Figure 7) (See also **Supplement Section 6: Operation of the Electronic Governor.**)
- The Amps gauge will display the Amps with a scale of 0-400 Amps.
- A fault icon will pop up anytime there is a fault triggered in the controller. 
- A radio icon will pop up when the transmitter is connected to the receiver. 

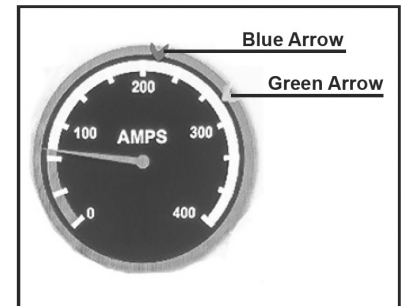
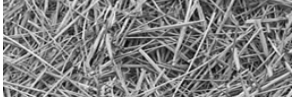


Figure 7  
Min Amps-Max Amps





## Manual Function Screen:

The Manual Function screen will be accessed by pressing the next button or the encoder on the Home Page.



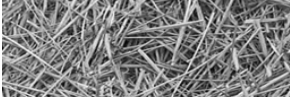
The following functions can be operated on the Manual Function screen.

1. Conveyor Raise\*
2. Conveyor Lower\*
3. Conveyor Fold
4. Conveyor Unfold
5. Tub Raise
6. Tub Lower

Functions marked with an (\*) can also be operated with the radio remote.

- When a button for one of the functions is pressed the corresponding output will be momentarily turned ON and the button will change color. When the button is released the output will be turned OFF.
- Interlocks:
  - o The Tub Raise output will be de-activated if there are pulses detected on the Rotor Speed input. An alarm window will show if the Tub Raise button is pressed while the function is locked out. If there are no pulses detected on the Rotor Speed input, the Tub Raise output will be activated after the Tilt Enable Timer expires.



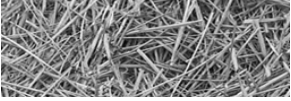


## Hours screen:

The Hours screen will be accessed by pressing the next button on the Manual Function screen.



- The Grind Hours window will display the total number of hours the machine has run with the Rotor ON.
- The Service Hours window will display the total number of hours the machine has run with the Rotor ON since the last Service Hours Reset. Pressing the Service Hours Reset button will reset the Service Hours window to zero.
- The Job Hours window will display the total number of hours the machine has run with the Rotor ON since the last Job Hours Reset. Pressing the Job Hours Reset button will reset the Job Hours window to zero.
- Pressing the Fault Menu button will take the operator to the Fault Screen page.



## Fault screen:

The faults will show up in the fault table screen when they occur.



The Active Fault screen will display a table indicating the J1939 DM1 message fault codes. The fault codes will be displayed as numerical values unless otherwise specified in the Fault Codes table. (See Section 4.2)

- The ECU (electronic control unit) column indicates which controller the fault is coming from.
- The Function column indicated what function has a fault.
- The Count column indicates how many times the fault has occurred.
- The Fault column indicated the reason for the fault.

## Fault Reset Button

- The Fault Reset button will reset all active faults.

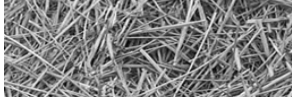
## Display and Controller Software

The Display and Controller Software version will be displayed on this screen.

Version levels must be this or above:

**ECU REV: EA1913-E10 V4.02**

**DISPLAY REV: EA1913.E2P V3.01**



## Supplement Section 6: Operation of the Electronic Governor

### Auto/Manual Mode

- o The system has two modes of operation: Auto Mode and Manual Mode. The mode of operation can be toggled using the Auto/Manual button on the display.

### Tub

- **Tub Forward**



- o **ON**

If the Tub Forward button is pressed on the display or the radio remote, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and either the Amps input is greater than zero, or the system is in Manual Mode:

- Tub Forward output will be activated.
- Tub Speed output will be ramped from minimum output to the output setting indicated by the display.
- Tub Forward indicator on the display will change color from black to red.

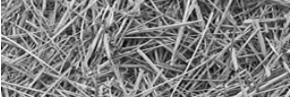
- o **OFF**

If the Tub Forward output is active, and the system is switched from Manual Mode to Auto Mode while the Amps input is zero, or the Tub Forward button is pressed on the display or radio remote, or the Tub Reverse button is pressed on the display:

- Tub Forward output will be de-activated.
- Tub Speed output will be de-activated.
- Tub Forward indicator on the display will change color from red to black.

If the Amps input goes to zero when the Tub Forward output is active, and the system is in Auto Mode:

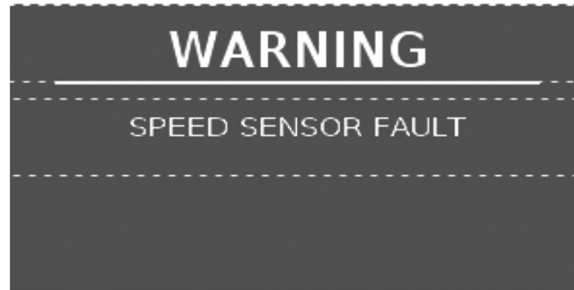
- Tub Forward output will be de-activated.
- Tub Speed output will be de-activated.
- Tub Forward indicator on the display will change color from red to black.
- Speed Sensor Fault will be activated.



o **Warning**

If the Tub Forward button is pressed on the display, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and the Amp Speed input is less than zero, and the system is in Auto Mode:

- The following alarm window will be shown on the display for 3 seconds:



If the Speed Sensor Fault is active:

- Go to the fault screen to reset the fault.

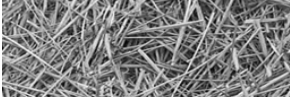
• **Tub Reverse**



o **ON**

If the Tub Reverse button is pressed on the display or radio remote, and the Tub Forward output is de-active, and the Tub Reverse output is de-active, and either the Amp Speed input is greater than zero, or the system is in Manual Mode:

- Tub Reverse output will be activated.
- Tub Speed output will be ramped from minimum output to the output setting indicated by the display.
- Tub Reverse indicator on the display will change color from black to red.



- **Tub Speed**

- o **Manual Mode:**

- The Tub will operate in an open loop control mode and will not compensate for amperage changes.
- There will be a Tub Speed gauge on the display to indicate the percentage of output from 0-100 percent.
- The Tub Speed will be adjustable on Home Screen of the display.

- o **Auto Mode:**

- The Tub will operate in a closed loop control mode and will compensate for amperage changes.
- The Tub Speed will be adjustable on Home Screen of the display. This will be the maximum speed the Tub will operate at and is the same speed used in Manual Mode.
- The Motor Load will be used to reduce the Tub Speed to provide an anti-stall function to the rotor. This setting will be adjustable on the Home Screen of the display and will be displayed as 0-100%.
- The Min Amps (Blue Arrow) is the setpoint at which the Tub starts to slow down. This is set using the Min Amps button on the display. This value will not be allowed to go above the Max Amp limit (Green Arrow) and below the Min Amp limit. (See Figure 8)

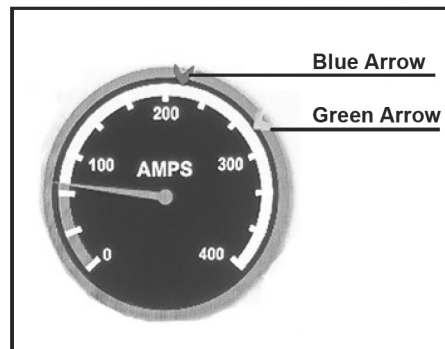
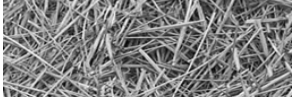
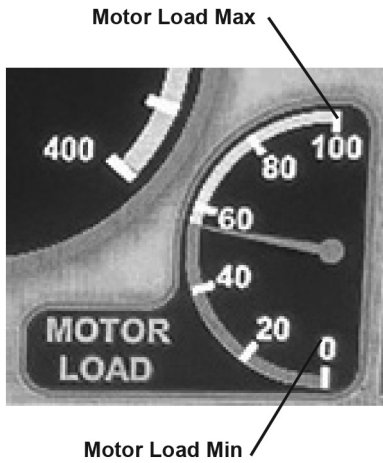


Figure 8  
Min Amps-Max Amps

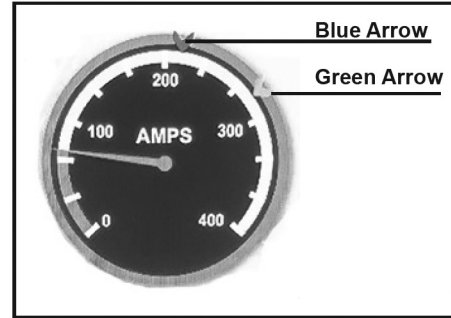


**Figure 9**  
Motor Load



- Amp Max Limit is the current draw average where the Tub will stop when the Motor Load is set to 100%. (See Figure 9)
- Amp Max (Green Arrow) is the setpoint where the Tub will stop. If the Motor Load is set to less than 100%, the Tub will still start to slow down at the Amp Minimum (Blue Arrow) setpoint but the Tub will be stopped at the Motor Load percentage between the Amp Minimum and the Amp Max Limit. (See Figure 10)

**Figure 10**  
Min Amps-Max Amps

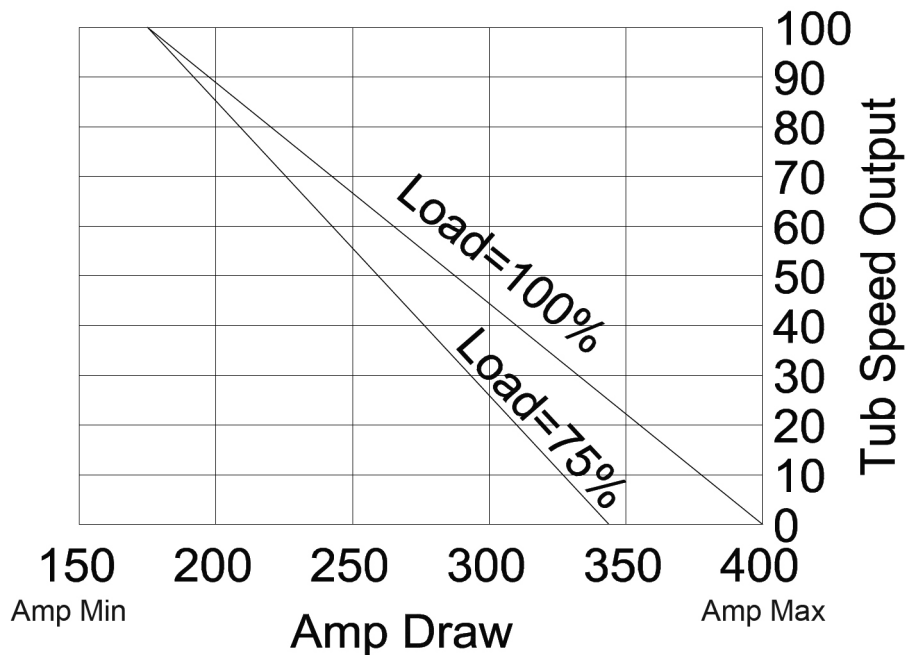


**• Load Example:**

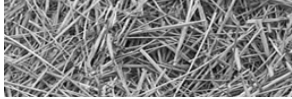
- Amp Minimum=175 amps
- Amps Max=400 amps
- Motor Load Display = 75%

Calculate Amp draw increase:  $0.75 * (400-175) = 169$  amps

Calculate Amp Max:  $175+169=344$  amps

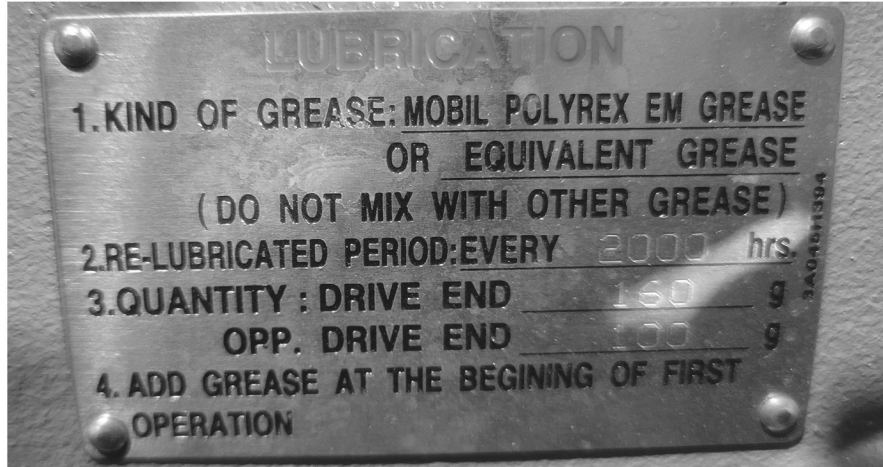




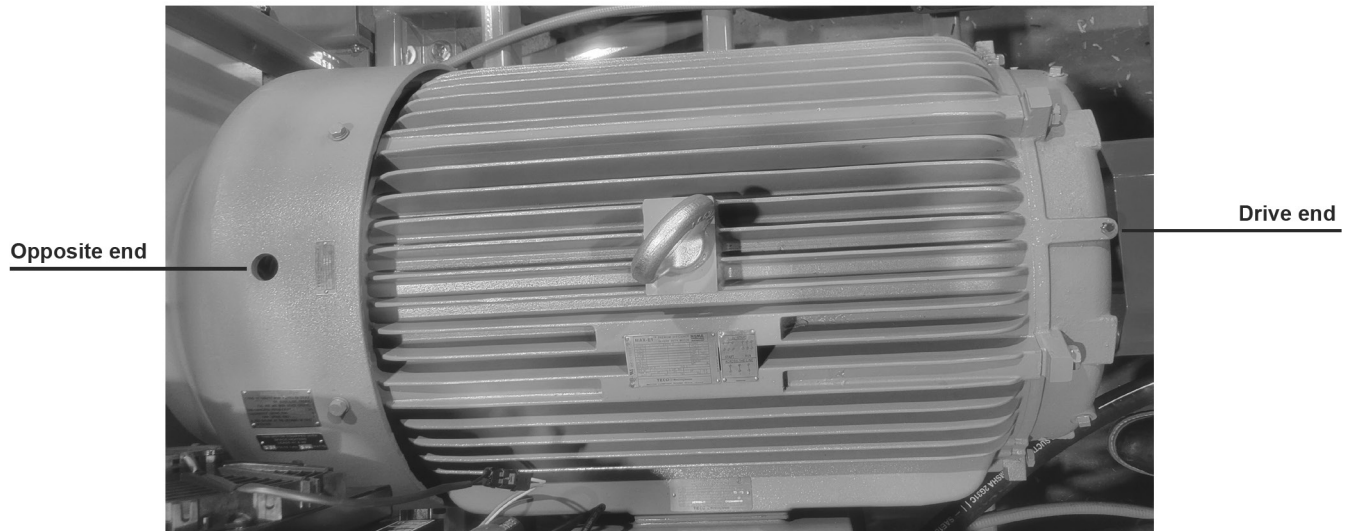


## Supplement Section 7: Lubrication

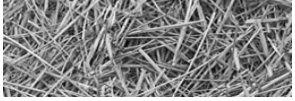
Teco-Whitewestinghouse Motor requires the use of Mobile Polyrex Em or equivalent grease. The (2) grease zerks on this motor must be re-lubricated every 2000 hours. 160 grams of grease is to be placed in the drive end zerk. 100 grams required for end opposite the drive.



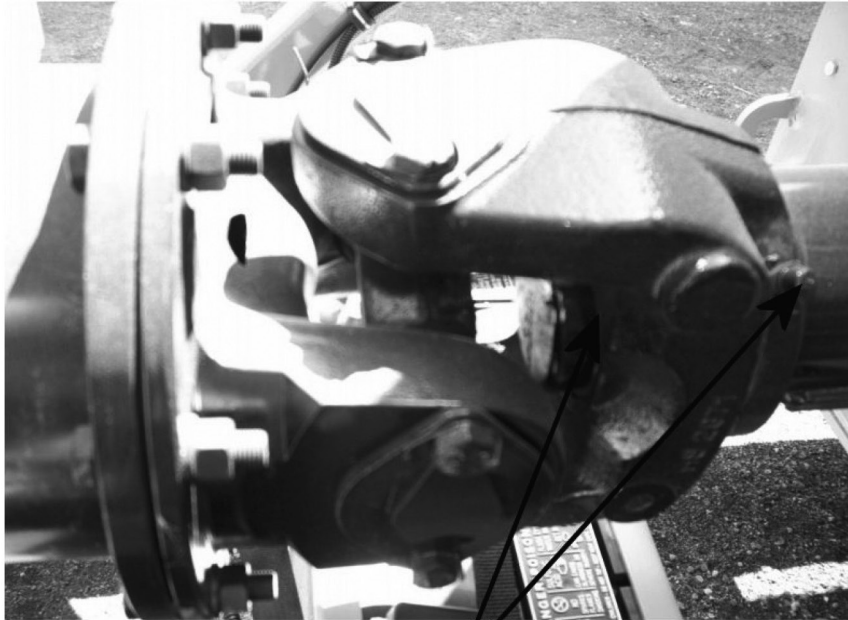
The locations of the grease zerks for the motor are shown below.







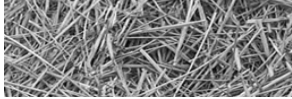
The P.T.O. shaft has (3) grease zerks that need to be lubricated every 40 hours using standard grease. These locations are shown below.



(2) P.T.O. zerk locations



(1) P.T.O. zerk location



## Supplement Section 8: Hydraulic Cooler

The H-1135 Electric Grinder is equipped with DC motor driven hydraulic oil cooler to provide supplemental cooling of the hydraulic oil. The fan on the cooler is driven by a DC electric motor. The fan on/off and direction is regulated by a controller based on the oil temperature. Air is sucked through a screen box which the cooler is attached to. Once the oil is above 125°F the fan is turned on bringing air over the cooler fins. Debris is stopped by the screen as air passes through to the cooler. If the screen plugs up and air flow is decreased to the cooler the oil will heat up, once the oil reaches 170°F the fan will stop and then reverse for 30 seconds. The debris will be blown off of the screen and the fan will resume in the forward direction. The fan will turn off once the oil temp falls below 105°F.



### Indicator LED's

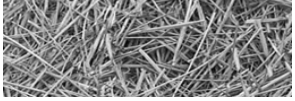
The controller has two LED's which display the system status. The green LED will light when power to the system is applied and no errors are detected. The red LED will blink if there are faults to the output (fan motor). The output is monitored for no-load or overload conditions. If a fault condition occurs, count the number of blinks of the red LED, then refers to the error codes below:

#### RED ERROR CODE LED BLINKS:

1 TIME = FAN OVERLOAD

2 TIMES = FAN OPEN

For troubleshooting the hydraulic cooler, see **Supplement Section 10: Troubleshooting: Hydraulic Cooler.**



## Supplement Section 9: Transport Hitch

The H-1135 Electric Tub Grinder is shipped with a hitch installed to aid in loading, transporting to the job site, and to protect the starter panel during shipment. This hitch is designed for low speeds (5 mph (8 km/h) and under) and is NOT to be used for road transport.

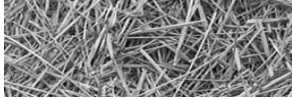


**ATTENTION:** The H-1135 Electric Tub Grinder is **NOT** designed for road transport. Transporting the H-1135 Electric over 5 mph (8km/h) can cause machine damage and will void the warranty!



Hitch



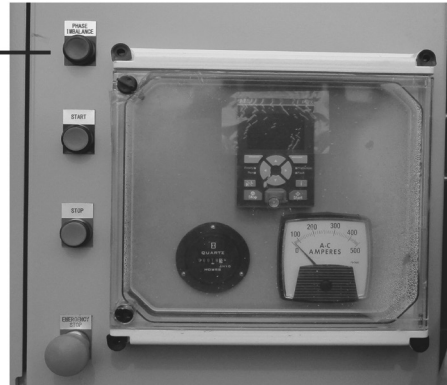


## Supplement Section 10: Troubleshooting

### 10.1 Troubleshooting: Phase Imbalance

The phase imbalance light comes on when the Littlefuse MotorSaver voltage monitor registers a fault.

Phase Imbalance light



**WARNING:** Disconnect main breaker BEFORE opening the electrical panel doors.

To see the fault:

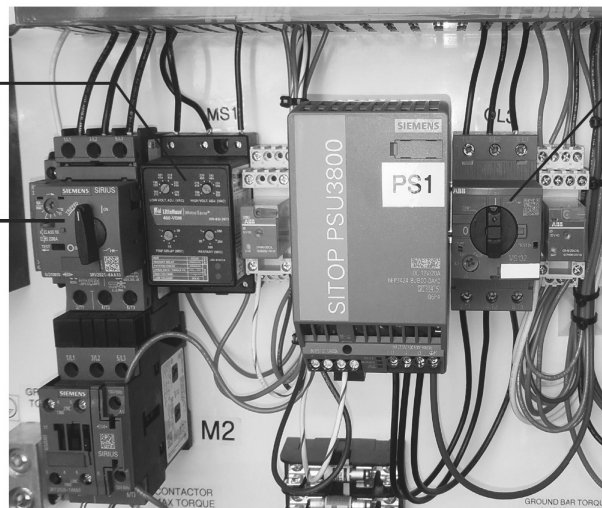
- Step #1.** Disconnect the main breaker located on front right hand door of electrical panel
- Step #2.** Stand facing the electrical panel, open the right hand door, then the left hand door.

**Figure 3**  
Main Breaker  
(Shown in the OFF position.)



Littlefuse MotorSaver voltage monitor

Hydraulic pump breaker



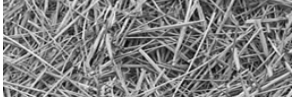
12 Volt input system

- Step #3.** Leave left hand door open. Close right hand door and close the main breaker.



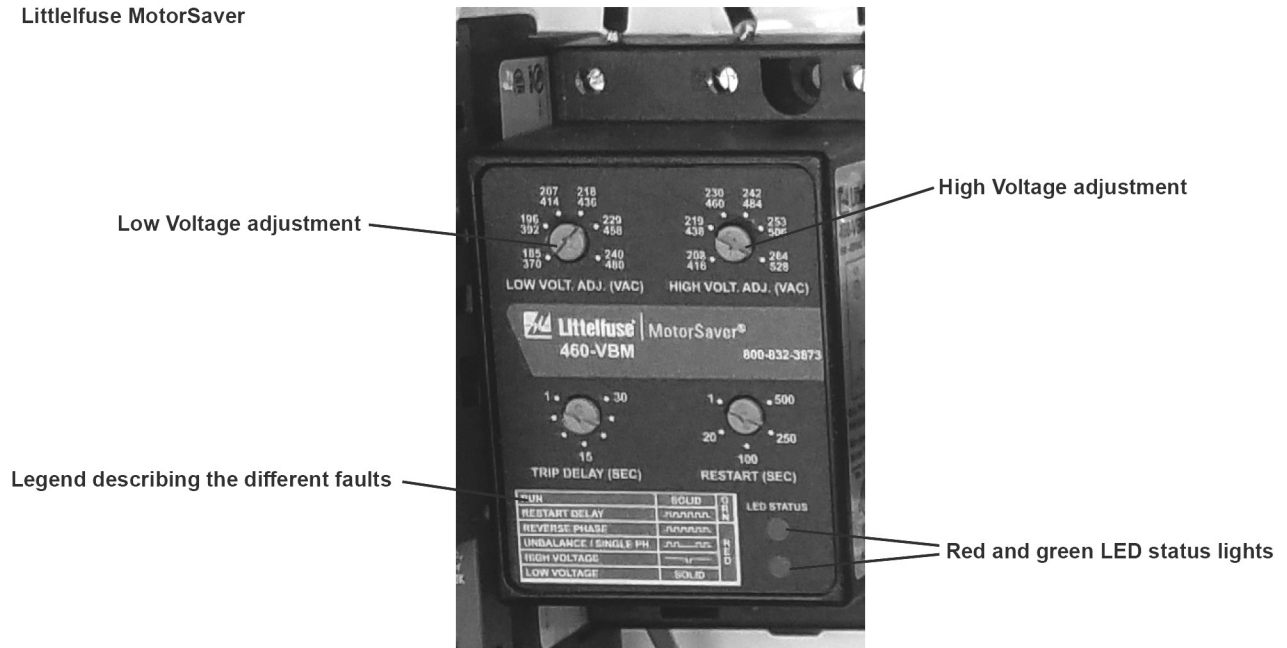
**WARNING:** The circuits inside the electric panel are **ENERGIZED!** Keep hands out!





**Step #4.** When power is applied, the red or green LED status lights will be flashing on the Littelfuse MotorSaver.

Littelfuse MotorSaver



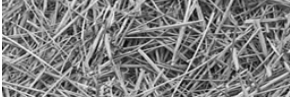
**Step #5.** The legend on the Littelfuse MotorSaver describes the different faults.

Littelfuse MotorSaver legend

RUN	SOLID	G
RESTART DELAY	~~~~~	
REVERSE PHASE	~~~~~	R
UNBALANCE / SINGLE PH.	~~~~~	
HIGH VOLTAGE	~~~~~	D
LOW VOLTAGE	SOLID	

### Other Phase Imbalance troubleshooting issues:

- High or low voltage set points may need to be adjusted during initial installation. (See photo in **Step #4**)
- If the main leads into the panel are reversed during installation, the Littelfuse MotorSaver will register a reverse phase fault.

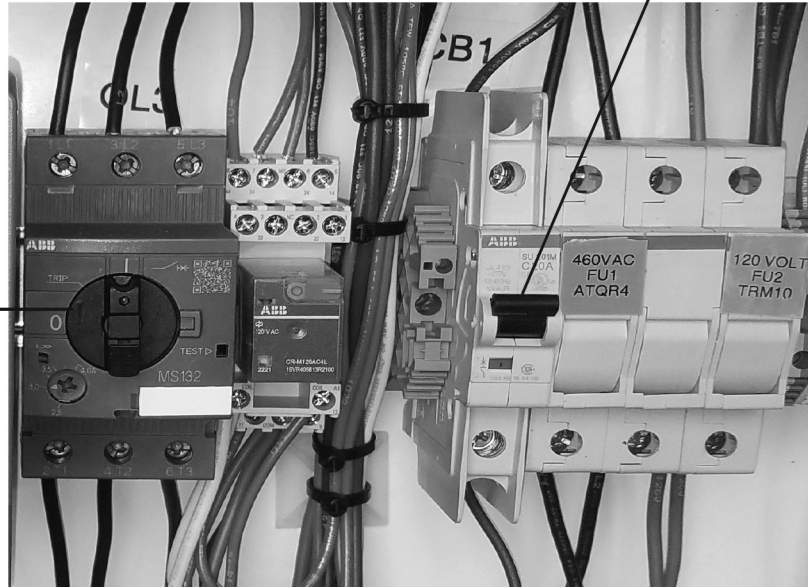


## 10.2 Troubleshooting: Other breakers in the electrical panel

- Hydraulic motor breaker needs to be in the “ON” position. (See Figure 11)
- 12 Volt input system needs to be in the “ON” position. This runs all the Haybuster controls. (See Figure 11)

Figure 11  
Hydraulic motor breaker  
12 Volt input system

12 Volt input system



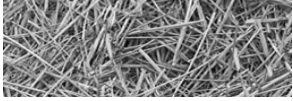
- Hydraulic pump breaker needs to be in the “ON” position. (See Figure 12)

Figure 12  
Hydraulic pump breaker

Hydraulic pump breaker







## 10.3 Troubleshooting: Hydraulic Cooler

- **The controller is overheating.**
  1. Either the fan is drawing more current than it should.
  2. The controller is not being cooled sufficiently.
  3. Check the fuse in the power wire fuse holder. (30 Amp fuse)
- **The fan is not connected.**

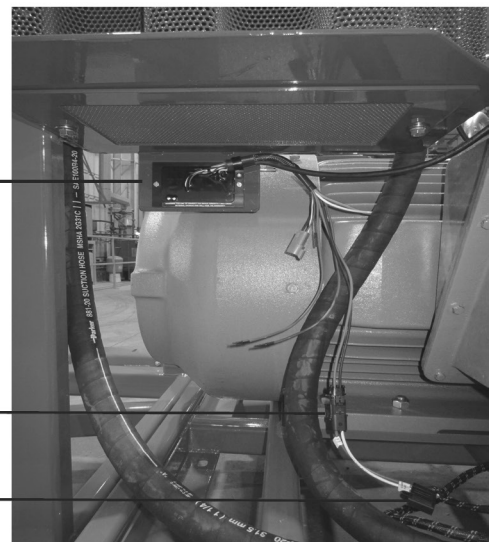
Check for broken wires.  
The minimum current draw must be 2 Amps to keep the system from showing an error.
- In case of controller failure, power can be redirected so the fan will run constantly. To redirect the power:
  1. Disconnect fan from fan controller. (See Figure 13)
  2. Disconnect power from fan controller. (See Figure 14)



**Figure 13**  
Disconnect fan from fan controller

Fan

Disconnect fan from fan controller

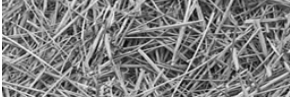


Fan controller

Disconnect power from fan controller

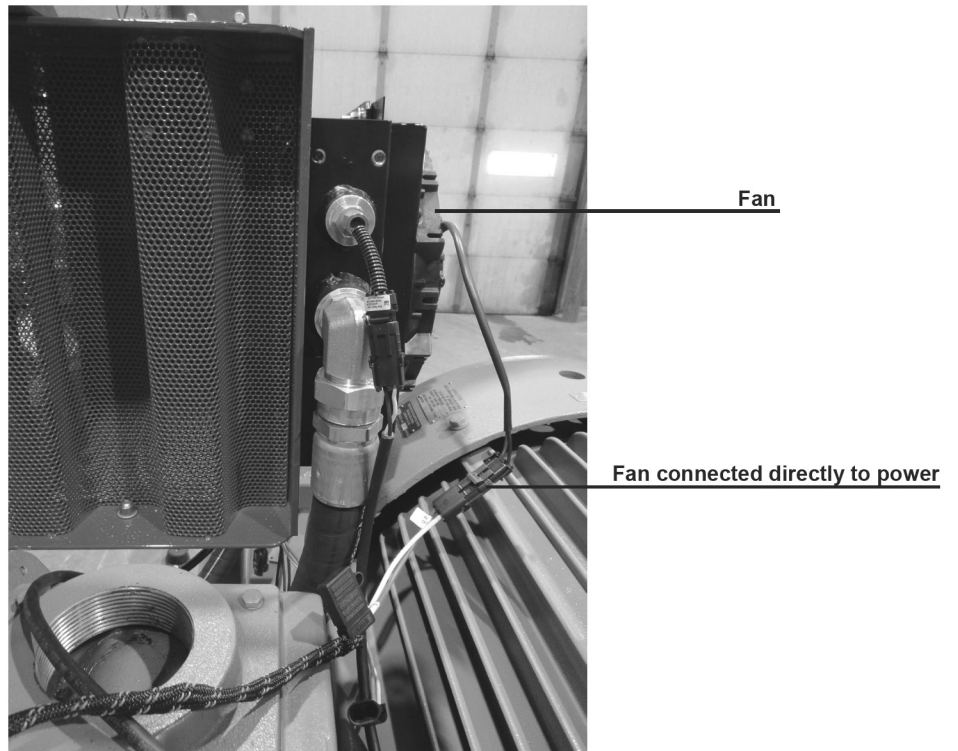
Fuse Holder

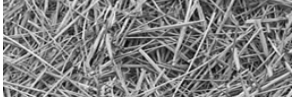
**Figure 14**  
Disconnect power from fan controller



3. Connect the fan directly to the power. The fan will now run continuously. (See Figure 15)

**Figure 15**  
Fan connected directly  
to the power.





# H-1135 Electric Specifications

Weight.....25,000 lbs. (11340kg)  
 Width at Flare..... 11 ft 4 in. (3.54 m)  
 Loading Height ..... 9 ft 2 in. (2.79 m)  
 Transport Height..... 10 ft 6 in. (3.20 m)  
 Transport Length..... ,27 ft 4 in. (8.33m)  
 Wheels ..... Drop center rims, Tapered roller bearings  
 Bearings .....All standard size, grease sealed  
 Recommended Tire Size .....445/50R22.5

Capacity .....Hay - up to 40 tons/hr.  
 .....Ear corn - up to 800 Bu/hr.  
 .....Grain and shelled corn -Up to 3400 Bu/hr.

Rotor - Std No. of Hammers. .... 88  
 Hammer Size .....2-1/2 x 7-3/4 x 1/2 (6 cm x 20 cm x 1 cm)  
 Rotor - Shaft diameter .....3-1/2 in. (9 cm) stress proof steel  
 Rotor Size .....50 in. long, 26 in. diameter with hammers extended  
 Screen Area .....2,781 sq. in. (17,942 sq. cm.)

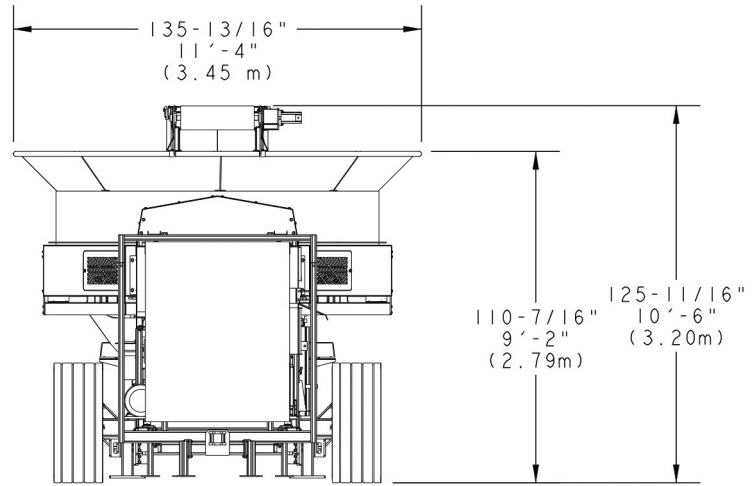
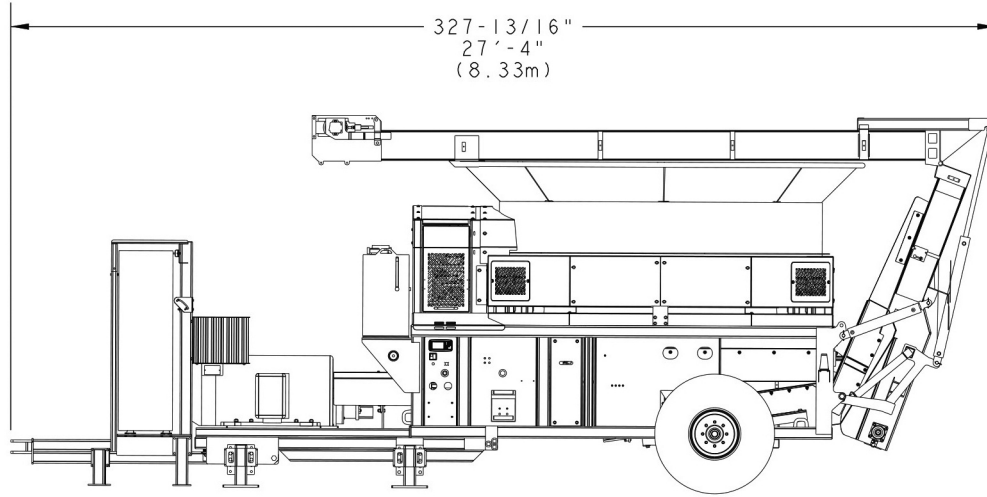
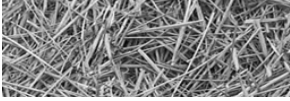
Screens Available (inches) .....1/8, 3/16, 1/4, 3/8, 1/2, 5/8, 3/4, 1,  
 ..... 1-1/2, 2, 3, 4,5, 6, 7, 8 Round holes. 2,3,4 Slotted Holes

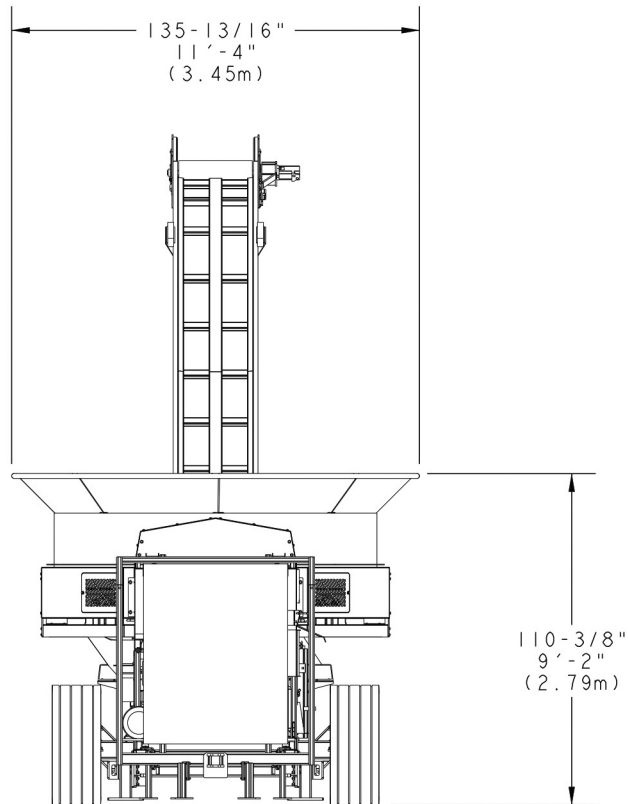
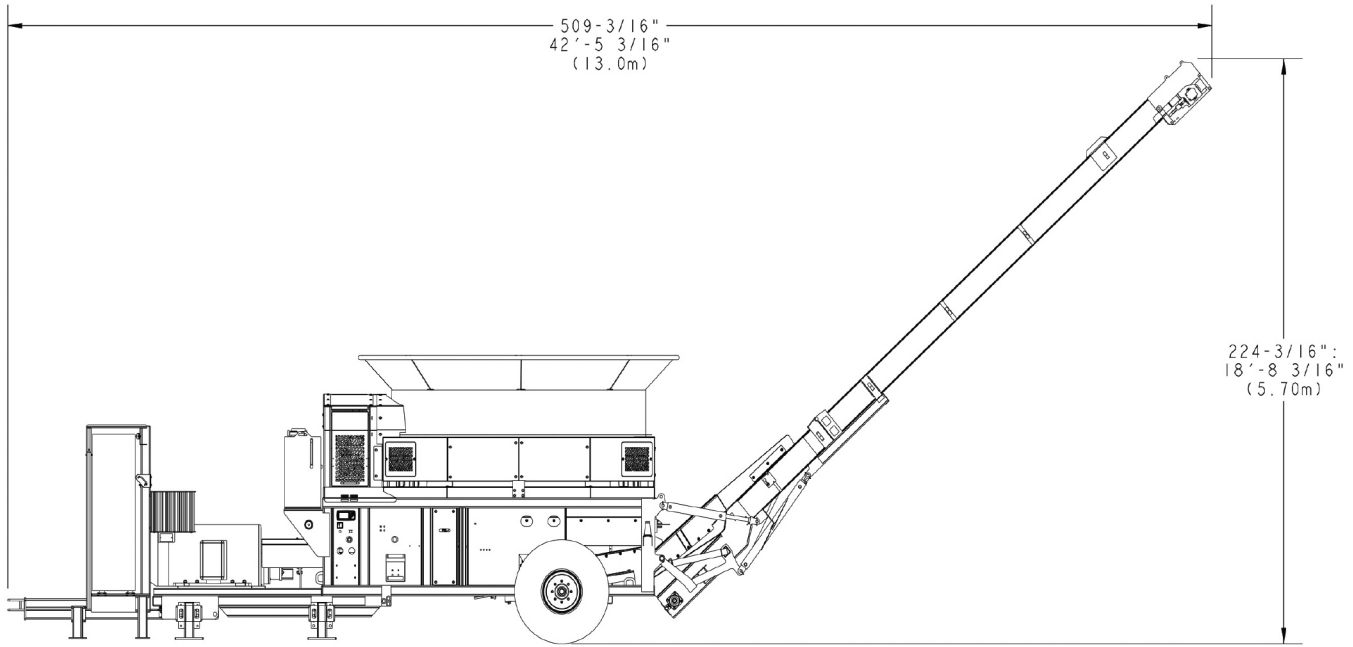
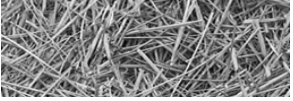
Feed Delivery ..... .26 ft. folding rubber belt conveyor w/cleats 24 in.  
 Wide Tub size.....8 ft 11 in, (2.72 m) ID  
 Tub Depth .....4 ft. 2 in. (1.27 m)  
 Tub Drive..... .Electro-Hydraulic

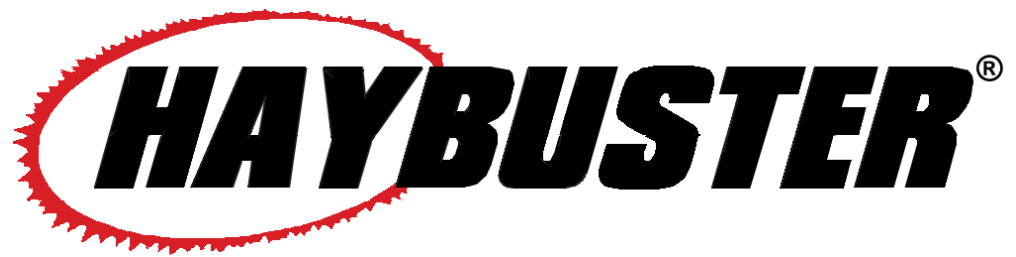
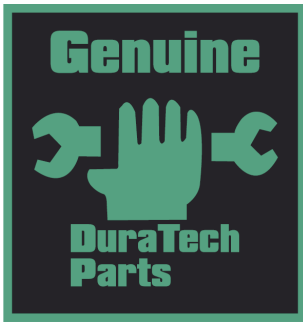
## Options

AVAILABLE OPTIONS FOR DURATECH INDUSTRIES H-1135 ELECTRIC TUB GRINDER:

- Ear Corn Kit
- Grain Grinding Hopper
- Various Screens Sizes
- Material Guide







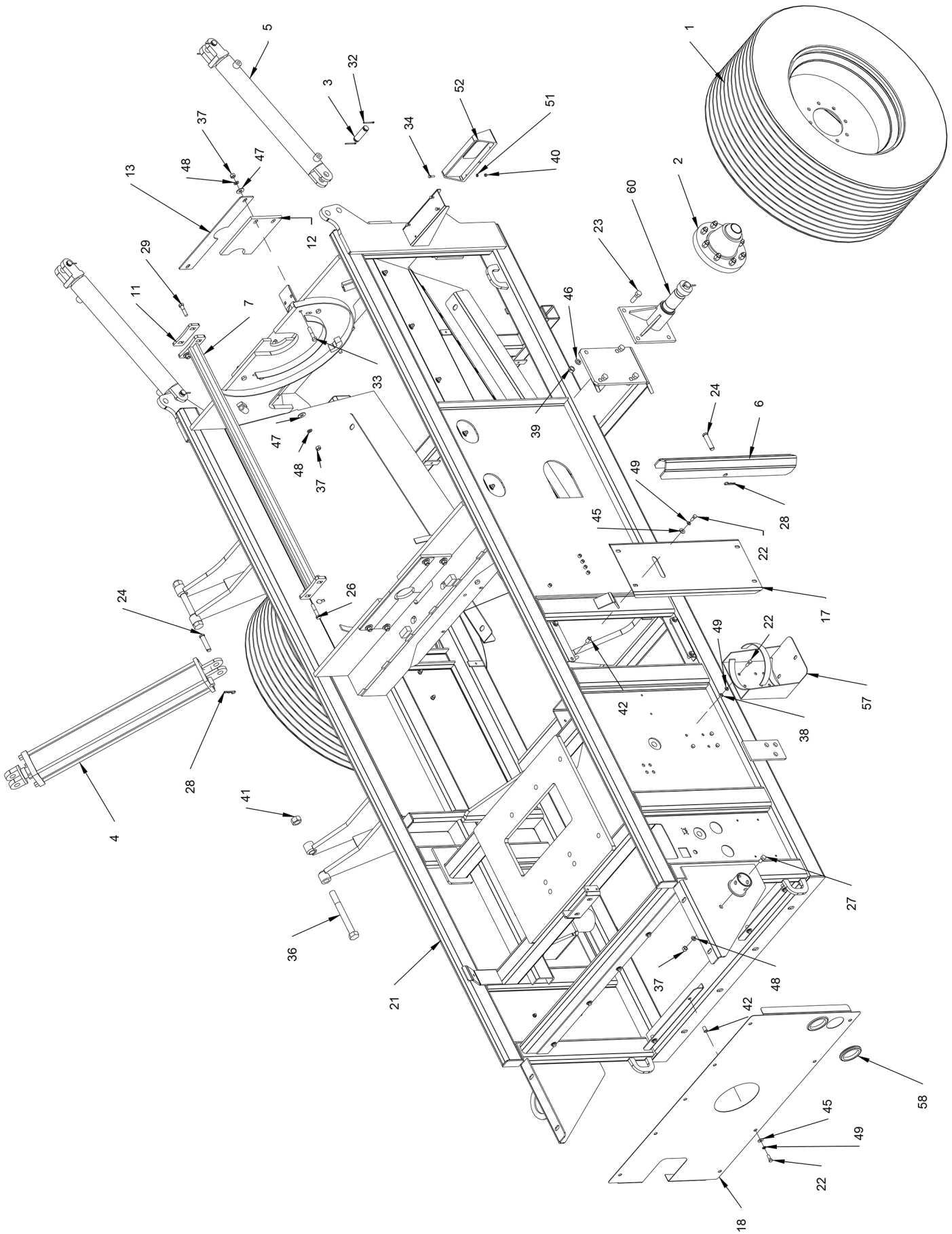
# **H-1135<sup>TM</sup>**

## **PTO Driven Tub Grinder**

### **Part 2: Parts Reference**



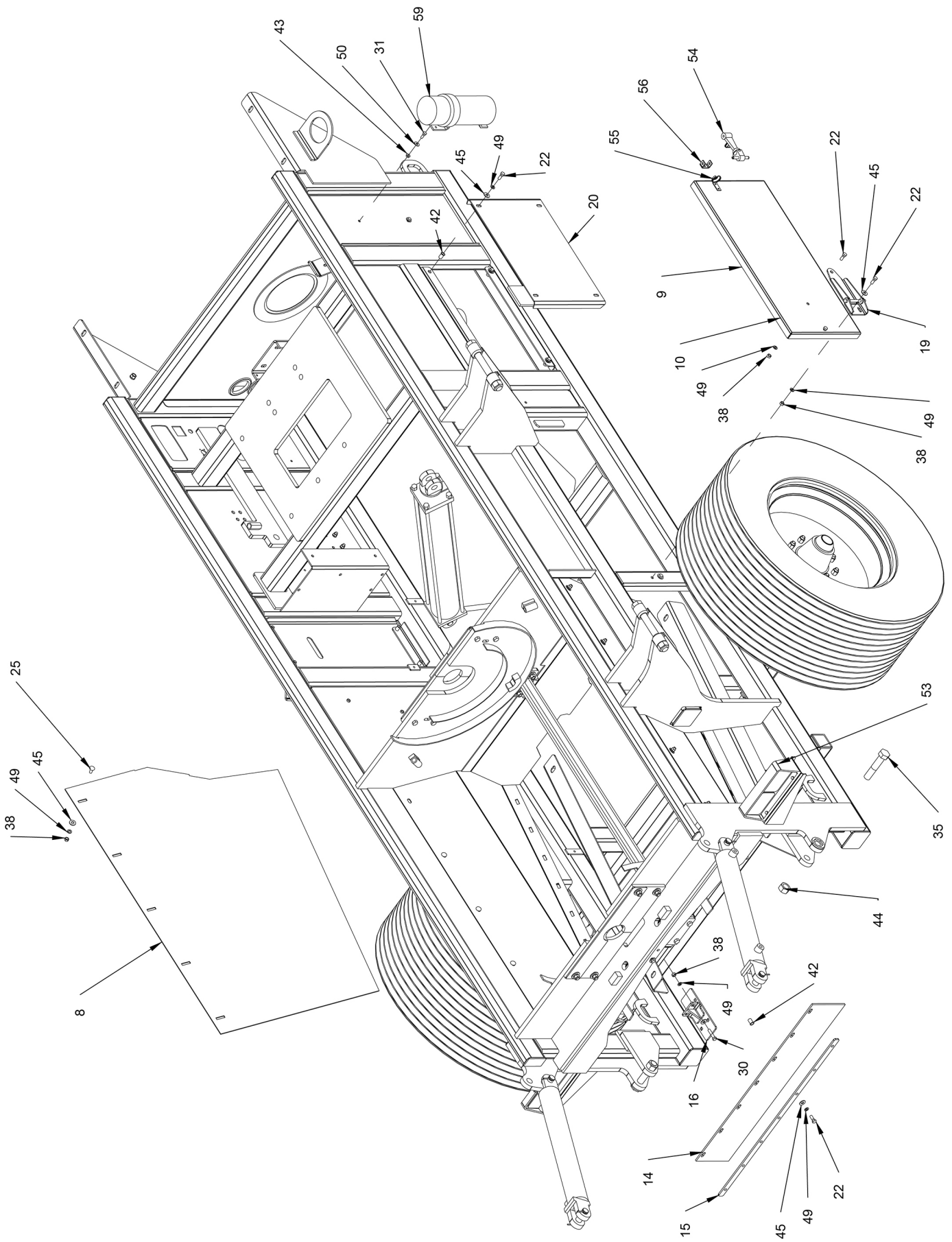
# MAINFRAME ASSEMBLY #1



**MAINFRAME ASSEMBLY**

ITEM	PART	QTY.	PART DESCRIPTION
1	2600880	2	WHL\ASSY\445X50RX22.5\20PLY\8-BOLT (SEE WHEEL AND HUB)
2	2900140	2	HUB\ASSY\H817\8BOLT\8"B.C.\6"PILOT (SEE WHEEL AND HUB)
3	4100030	4	PIN 1" X 3-1/2" HYD. CYL.
4	4100144	1	CYL\HYD\4X30\1-3/4 ROD\CLEVIS ENDS\O-RING PORTS
5	4100261	2	CYL\HYD\3X20\1-1/2ROD
6	4500737	1	STOP\CYL\PLATFORM
7	4501838	1	GUIDE\SCRN
8	4502295	2	SH\SIDE\BELLY
9	4502336	1	DOOR\ACCESS\TNSNR
10	4502337	1	DOOR\ACCESS\MAINT
11	4502386	1	SPCR\GUIDE\SCRN
12	4502391	4	SEAL\RTR
13	4502392	2	CVR\SEAL\RTR
14	4502430	1	BELT\SEAL\TRNSTN\CNVYR
15	4502431	1	STRP\RET\BLT
16	4502619	1	MNT\MNFLD\HOSE\HYD
17	4502700	1	DOOR\FRM\MN
18	4502800	1	SHLD\PTO
19	4703579	1	HINGE\ASSY\FAB\3-1/2
20	4705483	1	DOOR\FRM\MN
21	4705488	1	FRM\MAIN\H1135
22	4800003	32	BOLT\HEX\3/8X1
23	4800010	8	BOLT\HEX\5/8X2
24	4800046	2	PIN\CLEVIS\3/4X3
25	4800053	10	BOLT\CRG\3/8X1\NC
26	4800070	2	BOLT\HEX\1/2X2-1/2
27	4800085	1	BOLT\HEX\1/2X1
28	4800107	2	PIN\HAIR\1/8(#9)
29	4800114	2	BOLT\HEX\1/2X2
30	4800142	2	BOLT\HEX\3/8X1-3/4
31	4800147	2	BOLT\HEX\5/16X7/8
32	4800203	8	PIN\COT\5/32X2
33	4800251	8	BOLT\HEX\1/2X2-1/4\NC
34	4800277	8	BOLT\HEX\1/4X1
35	4800546	2	BOLT\HEX\1X5\NC
36	4800601	2	BOLT\HEX\1X9\NC
37	4900001	13	NUT\HEX\1/2\NC
38	4900002	20	NUT\HEX\3/8\NC
39	4900005	8	NUT\HEX\5/8\NC
40	4900009	8	NUT\HEX\1/4\NC
41	4900015	2	NUT\NYLCK\1\NC
42	4900083	24	NUT\INSERT\3/8\LONG\0.15-0.312\(.418/CD)
43	4900108	2	NUT\FLG\SERR\5/16\NC
44	4900127	2	NUT\TPLCK\1\NC
45	5000001	38	WASH\FLAT\3/8
46	5000003	8	WASH\LOCK\5/8
47	5000004	12	WASH\FLAT\1/2
48	5000006	13	WASH\LOCK\1/2
49	5000019	44	WASH\LOCK\3/8
50	5000023	2	WASH\FLAT\5/16
51	5000024	8	WASH\LOCK\1/4
52	5701284	1	LGHT\TAIL\AMBER-LEFT\4PN-WP\LED
53	5701285	1	LGHT\TAIL\AMBER-RGHT\4PN-WP\LED
54	7500166	1	LATCH\RBBR\6
55	7500190	1	LATCH\RBBR\CATCH\6
56	7500347	1	LATCH\RBBR\MNT\6
57	7500853	1	BRKT\EXTINGUISHER\20LB
58	7501068	2	GRMNT\RBBR\3-5/8X3IDX3/8T
59	7501629	1	CNSTRS\MANUAL\12.5X4.5
60	8101469	2	SPNDL\HUB\ASSY\2800 (SEE WHEEL AND HUB)

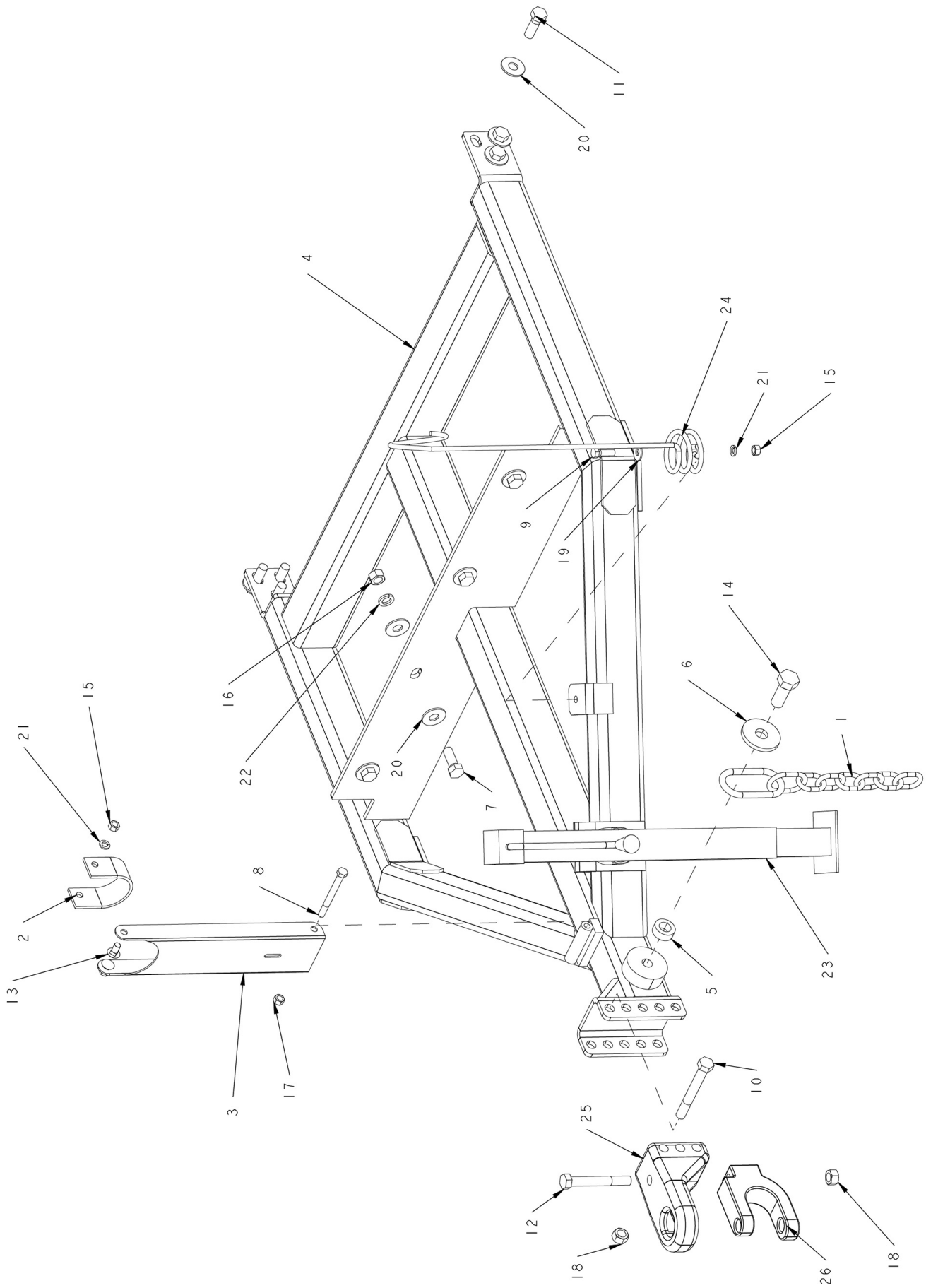
# MAINFRAME ASSEMBLY #2



**MAINFRAME ASSEMBLY**

ITEM	PART	QTY.	PART DESCRIPTION
1	2600880	2	WHL\ASSY\445X50RX22.5\20PLY\8-BOLT (SEE WHEEL AND HUB)
2	2900140	2	HUB\ASSY\H817\8BOLT\8"B.C.\6"PILOT (SEE WHEEL AND HUB)
3	4100030	4	PIN 1" X 3-1/2" HYD. CYL.
4	4100144	1	CYL\HYD\4X30\1-3/4 ROD\CLEVIS ENDS\O-RING PORTS
5	4100261	2	CYL\HYD\3X20\1-1/2 ROD
6	4500737	1	STOP\CYL\PLATFORM
7	4501838	1	GUIDE\SCRN
8	4502295	2	SH\SIDE\BELLY
9	4502336	1	DOOR\ACCESS\TNSNR
10	4502337	1	DOOR\ACCESS\MAINT
11	4502386	1	SPCR\GUIDE\SCRN
12	4502391	4	SEAL\RTR
13	4502392	2	CVR\SEAL\RTR
14	4502430	1	BELT\SEAL\TRNSTN\CNVYR
15	4502431	1	STRP\RET\BLT
16	4502619	1	MNT\MNFLD\HOSE\HYD
17	4502700	1	DOOR\FRM\MN
18	4502800	1	SHLD\PTO
19	4703579	1	HINGE\ASSY\FAB\3-1/2
20	4705483	1	DOOR\FRM\MN
21	4705488	1	FRM\MAIN\H1135
22	4800003	32	BOLT\HEX\3/8X1
23	4800010	8	BOLT\HEX\5/8X2
24	4800046	2	PIN\CLEVIS\3/4X3
25	4800053	10	BOLT\CRG\3/8X1\NC
26	4800070	2	BOLT\HEX\1/2X2-1/2
27	4800085	1	BOLT\HEX\1/2X1
28	4800107	2	PIN\HAIR\1/8(#9)
29	4800114	2	BOLT\HEX\1/2X2
30	4800142	2	BOLT\HEX\3/8X1-3/4
31	4800147	2	BOLT\HEX\5/16X7/8
32	4800203	8	PIN\COT\5/32X2
33	4800251	8	BOLT\HEX\1/2X2-1/4\NC
34	4800277	8	BOLT\HEX\1/4X1
35	4800546	2	BOLT\HEX\1X5\NC
36	4800601	2	BOLT\HEX\1X9\NC
37	4900001	13	NUT\HEX\1/2\NC
38	4900002	20	NUT\HEX\3/8\NC
39	4900005	8	NUT\HEX\5/8\NC
40	4900009	8	NUT\HEX\1/4\NC
41	4900015	2	NUT\NYLCK\1\NC
42	4900083	24	NUT\INSERT\3/8\LONG\0.15-0.312\(.418/CD)
43	4900108	2	NUT\FLG\SERR\5/16\NC
44	4900127	2	NUT\TPLCK\1\NC
45	5000001	38	WASH\FLAT\3/8
46	5000003	8	WASH\LOCK\5/8
47	5000004	12	WASH\FLAT\1/2
48	5000006	13	WASH\LOCK\1/2
49	5000019	44	WASH\LOCK\3/8
50	5000023	2	WASH\FLAT\5/16
51	5000024	8	WASH\LOCK\1/4
52	5701284	1	LGHT\TAIL\AMBER-LEFT\4PN-WP\LED
53	5701285	1	LGHT\TAIL\AMBER-RGHT\4PN-WP\LED
54	7500166	1	LATCH\RBBR\6
55	7500190	1	LATCH\RBBR\CATCH\6
56	7500347	1	LATCH\RBBR\MNT\6
57	7500853	1	BRKT\EXTINGUISHER\20LB
58	7501068	2	GRMNT\RBBR\3-5/8X3IDX3/8T
59	7501629	1	CNSTRS\MANUAL\12.5X4.5
60	8101469	2	SPNDL\HUB\ASSY\2800 (SEE WHEEL AND HUB)

# HITCH ASSEMBLY

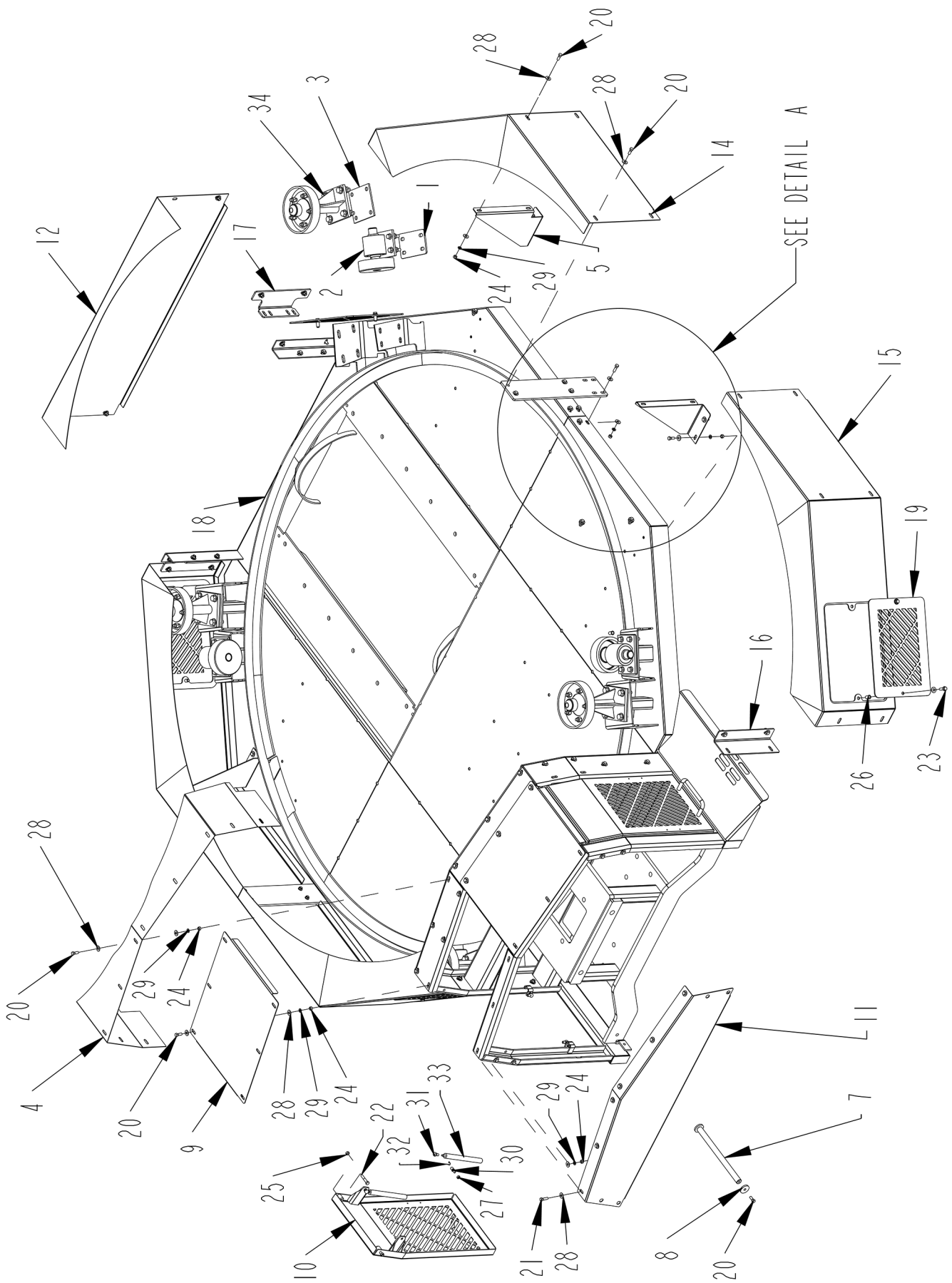


# HITCH ASSEMBLY

ITEM	PART	QTY.	PART DESCRIPTION
1	1100285	1	CHAIN\3/8\SFTY\AG\21000LB
2	4500754	1	BELT\BRKT\PTO
3	4502674	1	BRKT\STAND\PTO\1030
4	4502773	1	HITCH\PTO\H1030
5	4704337	1	BUSHING\MNT\CHAIN\SAFETY
6	4704338	1	WASHER\CHAIN\SAFETY
7	4800033	4	BOLT\HEX\3/4X2
8	4800041	1	BOLT\HEX\1/2X5
9	4800082	1	BOLT\HEX\1/2X1-1/2
10	4800248	1	BOLT\HEX\3/4X6
11	4800283	6	BOLT\HEX\3/4X2-1/4
12	4800492	1	BOLT\HEX\3/4X5-1/2\GR8\NC
13	4800908	2	BOLT\CRG\1/2X1
14	4800980	1	BOLT\HEX\1X2-1/2\GR5\NC
15	4900001	3	NUT\HEX\1/2\NC
16	4900004	4	NUT\HEX\3/4\NC
17	4900014	1	NUT\PLCK\1/2\NC
18	4900139	2	NUT\PLCK\3/4\GR8\NC
19	5000004	1	WASH\FLAT\1/2
20	5000005	14	WASH\FLAT\3/4
21	5000006	3	WASH\LOCK\1/2
22	5000012	4	WASH\LOCK\3/4
23	5800633	1	JACK\7000\SDWND\SQ\15"TRVL
24	7500170	1	HOSE MINDER
25	7501047	1	HITCH\BASE\#3\PP\1"PIN
26	7501048	1	HITCH\CLEVIS\PP\1"PIN



# PLATFORM ASSEMBLY



**PLATFORM ASSEMBLY**

ITEM	PART	QTY.	PART DESCRIPTION
1	4501131	4	SHIM\RLLR\SPPRT\TUB
2	4704069	4	RLLR\TUB\ASSY\STEEL\CAST
3	4501476	4	SHIM\RLLR\PRESS
4	4501518	1	SHLD\DRIVE\TUB
5	4501915	2	BRKT\SHLD\CHAIN\DRIVE\TUB
6	4501916	2	BRKT\SHLD\CHAIN\DRIVE\TUB
7	4501931	1	PIN\PLFRM\TILT\CYL
8	4501932	2	WASH\1-3/4 O.D.
9	4502088	2	CVR\DRV\TUB
10	4502089	2	DOOR\DRV\TUB
11	4502401	1	CVR\FR\FRM\MN
12	4502422	1	SHLD\DRV\CHAIN\TUB\REAR
13	4502631	2	SPPRT\SHLD\SD\TUB
14	4502663	2	SHLD\TUB\LR\RF
15	4502662	2	SHLD\TUB\LF\RR
16	4502640	2	MNT\SHLD\TUB\FR
17	4502641	2	MNT\SHLD\TUB\REAR
18	4502642	1	FRM\PLFRM\TILT\1130\RTR\REAR
19	4703727	4	DOOR\SHLD\TUB
20	4800003	66	BOLT\HEX\3/8X1
21	4800098	14	BOLT\HEX\3/8X1-1/4\NC
22	4800146	4	BOLT\HEX\3/8X2
23	4800914	8	BOLT\FLG\SERR\3/8X1-1/4\NC
24	4900002	70	NUT\HEX\3/8\NC
25	4900023	4	NUT\TPLCK\3/8\NC
26	4900083	8	NUT\INSERT\3/8\LONG\0.15-0.312\(.418/CD)
27	4900142	8	NUT\TPLCK\5/16\NC
28	5000001	148	WASH\FLAT\3/8
29	5000019	70	WASH\LOCK\3/8
30	7500664	8	BALL STUD\SHOCK\FITTING\M6
31	7500665	8	END FITTING\GAS SPRING \m6
32	7500666	8	SAFETY CLIP
33	7500680	4	SPRNG\GAS\60LB\9416K174
34	4500247	4	RLLR\PRESS\COMPL

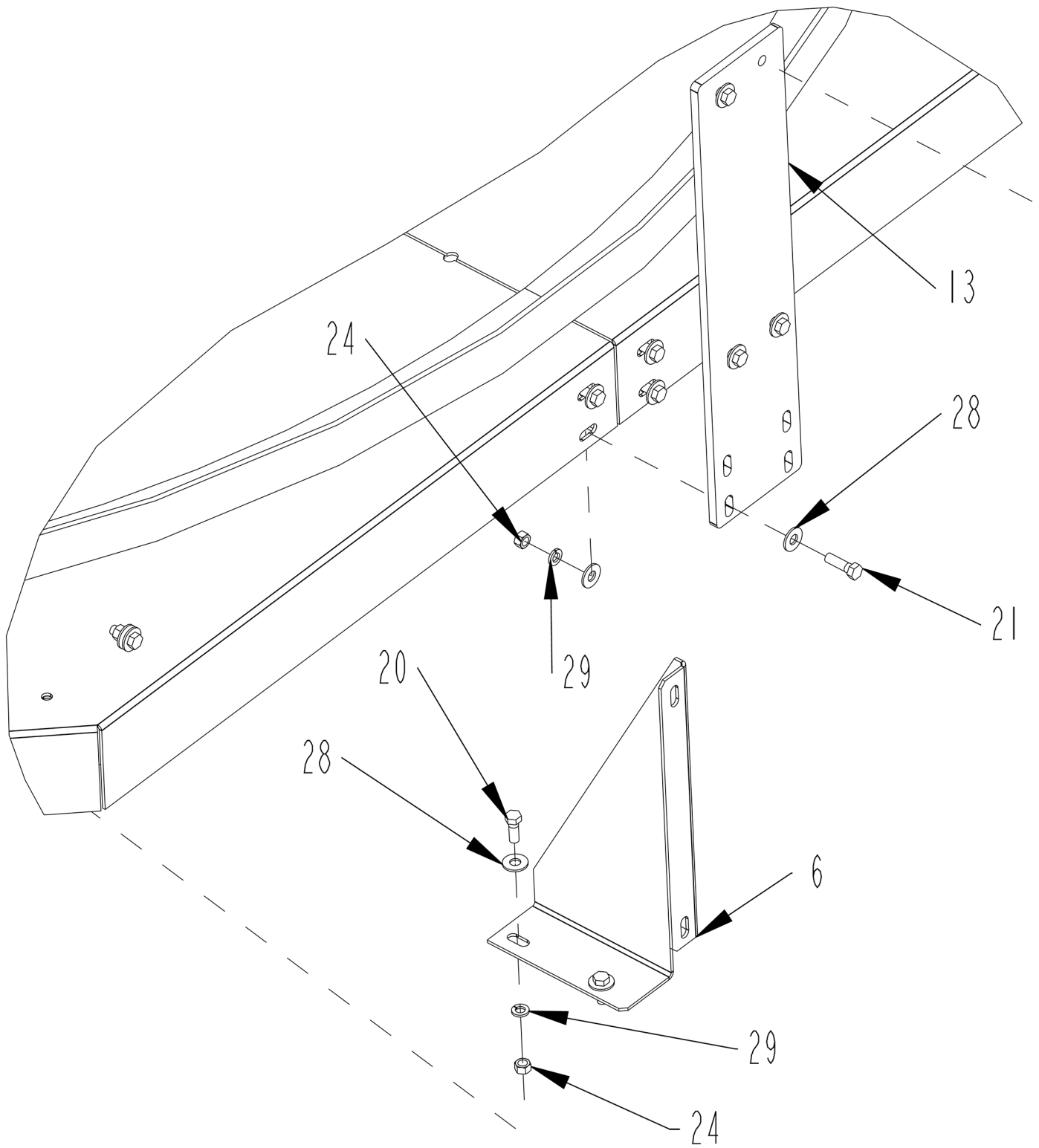
**4502348**

**PLTFRM\ASSY\SUB\H1130\H1135**

**NOT SHOWN**

4500737	1	STOP\CYL\PLFRM
4800046	1	PIN\CLEVIS\3/4X3
4800107	1	PIN\HAIR\1/8(#9)
4800468	4	SCR\RD\SLOT#10-24X1/2\NC
4900072	4	NUT\HEX\#10\NC
5000071	4	WASH\LOCK\EXT\STAR\#10
7500756	4	BMPR\RBBR\1-1/32X5/8

**PLATFORM ASSEMBLY DETAIL A**



DETAIL A

**PLATFORM ASSEMBLY DETAIL A**

ITEM	PART	QTY.	PART DESCRIPTION
1	4501131	4	SHIM\RLLR\SPPRT\TUB
2	4704069	4	RLLR\TUB\ASSY\STEEL\CAST
3	4501476	4	SHIM\RLLR\PRESS
4	4501518	1	SHLD\DRIVE\TUB
5	4501915	2	BRKT\SHLD\CHAIN\DRIVE\TUB
6	4501916	2	BRKT\SHLD\CHAIN\DRIVE\TUB
7	4501931	1	PIN\PLFRM\TILT\CYL
8	4501932	2	WASH\1-3/4 O.D.
9	4502088	2	CVR\DRV\TUB
10	4502089	2	DOOR\DRV\TUB
11	4502401	1	CVR\FR\FRM\MN
12	4502422	1	SHLD\DRV\CHAIN\TUB\REAR
13	4502631	2	SPPRT\SHLD\SD\TUB
14	4502663	2	SHLD\TUB\LR\RF
15	4502662	2	SHLD\TUB\LF\RR
16	4502640	2	MNT\SHLD\TUB\FR
17	4502641	2	MNT\SHLD\TUB\REAR
18	4502642	1	FRM\PLFRM\TILT\1130\RTR\REAR
19	4703727	4	DOOR\SHLD\TUB
20	4800003	66	BOLT\HEX\3/8X1
21	4800098	14	BOLT\HEX\3/8X1-1/4\NC
22	4800146	4	BOLT\HEX\3/8X2
23	4800914	8	BOLT\FLG\SERR\3/8X1-1/4\NC
24	4900002	70	NUT\HEX\3/8\NC
25	4900023	4	NUT\TPLCK\3/8\NC
26	4900083	8	NUT\INSERT\3/8\LONG\0.15-0.312\(.418/CD)
27	4900142	8	NUT\TPLCK\5/16\NC
28	5000001	148	WASH\FLAT\3/8
29	5000019	70	WASH\LOCK\3/8
30	7500664	8	BALL STUD\SHOCK\FITTING\M6
31	7500665	8	END FITTING\GAS SPRING \m6
32	7500666	8	SAFETY CLIP
33	7500680	4	SPRNG\GAS\60LB\9416K174
34	4500247	4	RLLR\PRESS\COMPL

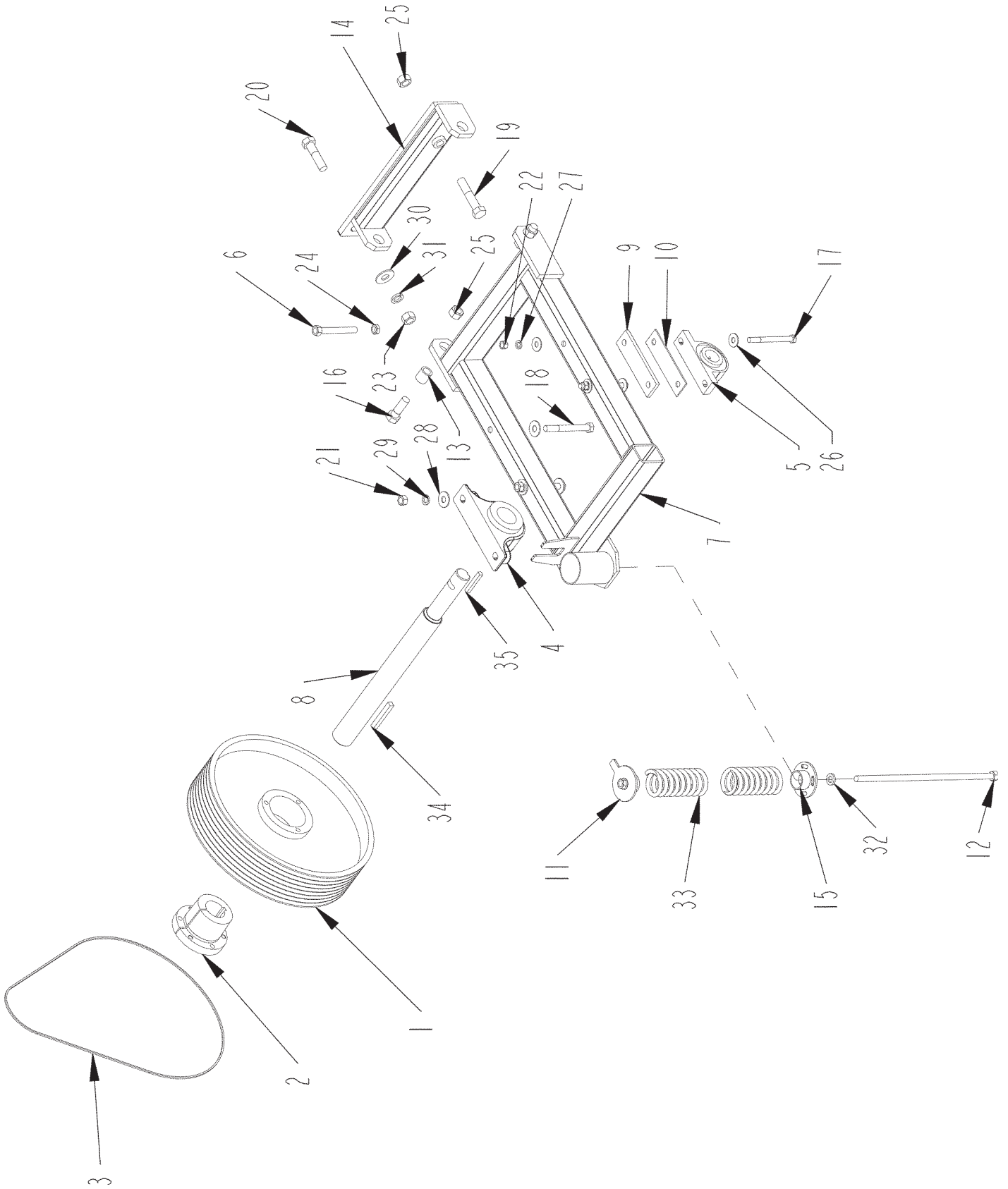
**4502348**

**PLTFRM\ASSY\SUB\H1130\H1135**

**NOT SHOWN**

4500737	1	STOP\CYL\PLFRM
4800046	1	PIN\CLEVIS\3/4X3
4800107	1	PIN\HAIR\1/8(#9)
4800468	4	SCR\RD\SLOT\#10-24X1/2\NC
4900072	4	NUT\HEX\#10\NC
5000071	4	WASH\LOCK\EXT\STAR\#10
7500756	4	BMPR\RBBR\1-1/32X5/8

# BULL WHEEL ASSEMBLY

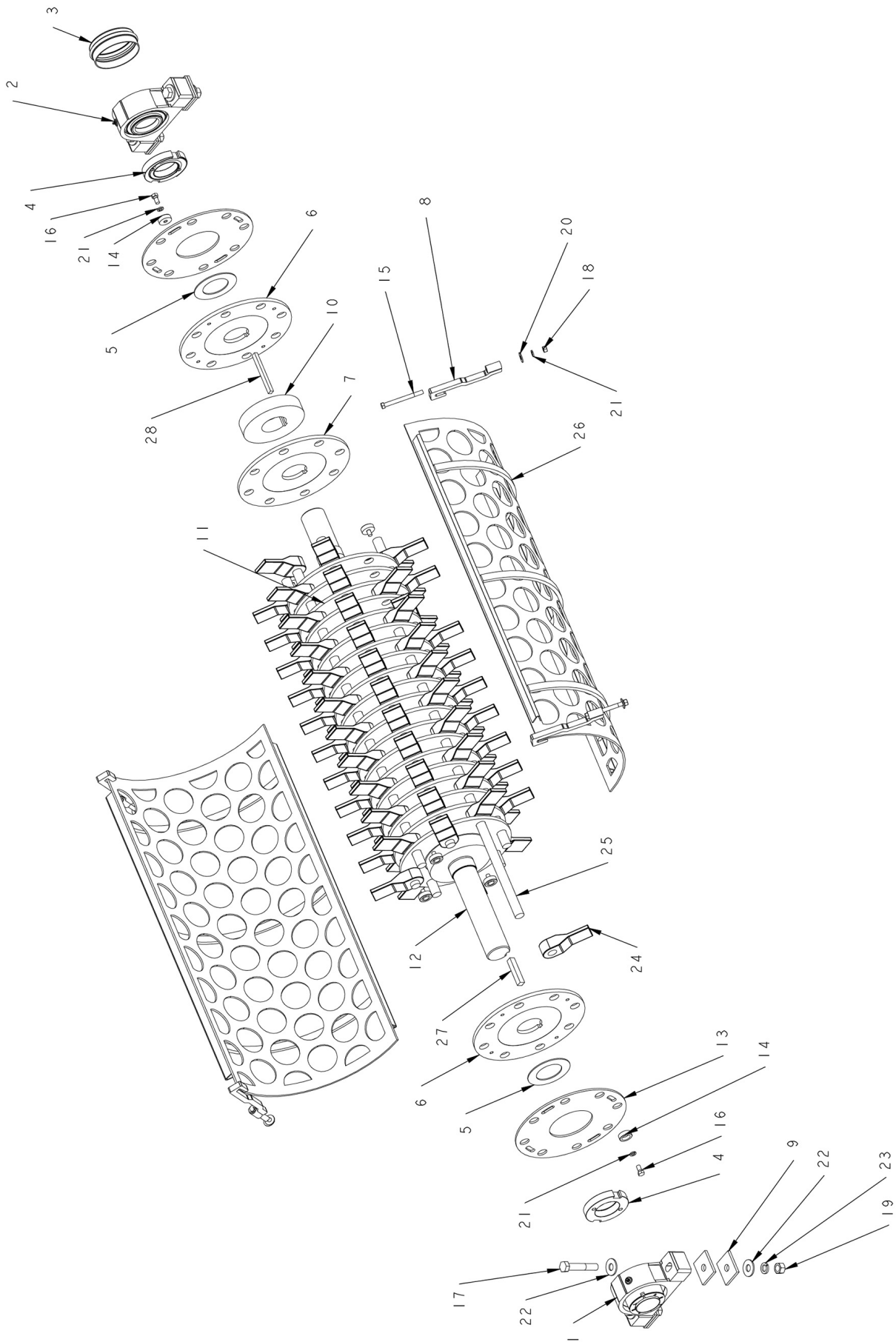


**BULL WHEEL ASSEMBLY**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1400605	1	SHVE\5V-8\21.2\85V2120J
2	1400642	1	BUSH\QDJ\2-3/4
3	1600102	8	V-BELT\5VP850
4	2000509	1	BRG\PB\2-3/4\E\DODGE
5	2000510	1	BRG\PB\2\2BOLT
6	4501170	1	BOLT\FRM\TGHTNR\CHAIN\TUB
7	4502330	1	WHL\BULL\FRM\OFFSET
8	4502331	1	SHFT\WHL\BULL\OFFSET
9	4502333	1	SHIM\BRG\WHL\BULL
10	4502334	1	SHM\THN\BRG\WHL\BLL
11	4502338	1	CAP\SPRNG\TNSNR
12	4502340	1	ROD\TNSNR\WHL\BULL
13	4502380	2	TUBE\WHL\BLL
14	4502419	1	ADJ\WHL\BLL
15	4502425	1	CAP\TNSNR\WHL\BLL
16	4800140	2	BOLT\HEX\1X3\NC
17	4800155	2	BOLT\HEX\5/8X7
18	4800295	2	BOLT\HEX\3/4X7
19	4800546	1	BOLT\HEX\1X5\NC
20	4800647	1	BOLT\HEX\1X4\NC
21	4900004	4	NUT\HEX\3/4\NC
22	4900005	2	NUT\HEX\5/8\NC
23	4900031	1	NUT\HEX\1\NC
24	4900104	1	NUT\JAM\3/4\NC
25	4900127	3	NUT\TPLCK\1\NC
26	5000002	4	WASH\FLAT\5/8
27	5000003	2	WASH\LOCK\5/8
28	5000005	4	WASH\FLAT\3/4
29	5000012	2	WASH\LOCK\3/4
30	5000014	1	WASH\FLAT\1
31	5000053	1	WASH\LOCK\1
32	5000115	1	WASH\FLAT\3/4\EXTRTHK\GR8
33	6100091	2	SPG\COMP\8X3-1/2OD\1/2WD
34	6200013	1	KEY\SQ\5/8X4-1/2
35	6200062	1	KEY\SQ\1/2X3-1/2
	<b>4502328</b>		<b>WHL\BULL\OFFSET\H1030\H1130</b>
	<b>NOT SHOWN</b>		
	3700961		HOSE\LUB\1/8X40\MPS-MPS
	3700963		HOSE\LUB\1/8X34\MPS-MPS



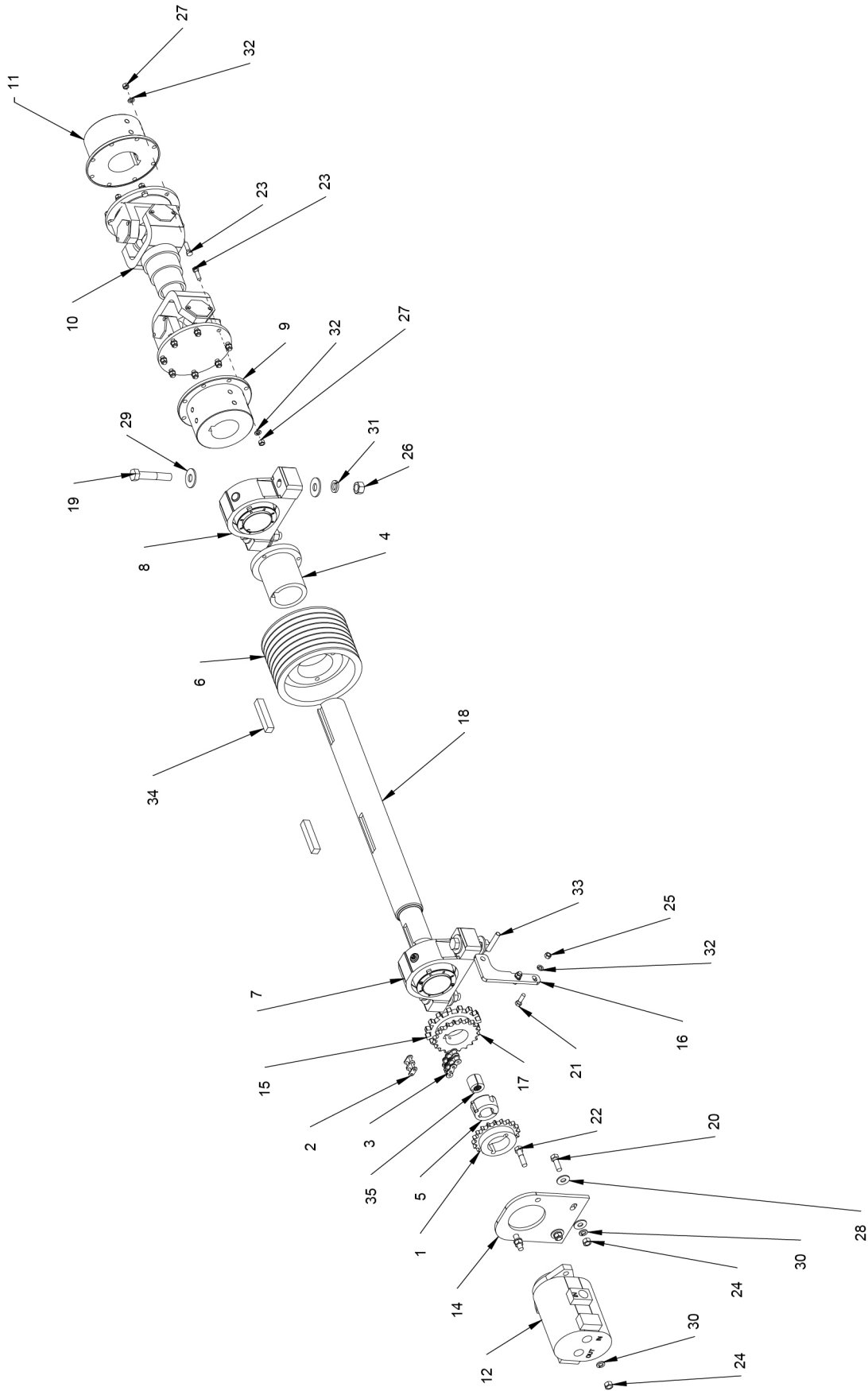
# ROTOR ASSEMBLY



**ROTOR ASSEMBLY**

ITEM	PART	QTY.	PART DESCRIPTION
1	2000585	1	BRG\PB\3-1/4\ISAF\NON-EXP
2	2000586	1	BRG\PB\3-1/4\ISAF\EXP
3	2900162	1	CAP\END\BRG\3-1/4\ISAF
4	4500142	2	NUT\CYL\3-1/2
5	4500626	2	WASH\THRUST\3-5/8IDX6
6	4502318	2	PL\RTR\1/2X3-1/2ID\1-1/4RDS\TPPD
7	4502321	21	PL\RTR\3.5X1/2X15.75\1-1/4RDS\FCD
8	4502643	4	HOLDDOWN\SCRN\LASERED
9	4502670	8	SHIM\BRG\RTR
10	4502694	14	SPCR\CAST\8.645ODX3.503IDX1.773 THICK
11	4502695	8	SPCR\CAST\8.645ODX3.503IDX1.773 THICK
12	4502986	1	SHFT\RTR\3-1/2X71-3/4\3-1/4BRG
13	4702292	2	PL\RTR\MVBL\6IDX15-3/4\1-1/4ROD
14	4704292	8	WASHER\PL\MOVEABLE\RTR
15	4800077	5	BOLT\HEX\1/2X5-1/2
16	4800085	8	BOLT\HEX\1/2X1
17	4800925	4	BOLT\HEX\7/8X5
18	4900001	5	NUT\HEX\1/2\NC
19	4900022	4	NUT\HEX\7/8\NC
20	5000004	5	WASH\FLAT\1/2
21	5000006	13	WASH\LOCK\1/2
22	5000098	8	WASH\FLAT\7/8
23	5000106	4	WASH\LOCK\7/8
24	5200262	1 set	HMMR\FORGED\1-1/4\SET\H1130 <b>(1 SET=88 HAMMERS)</b>
25	5300105	8	ROD\HMMR\1-1/4X50
26	5400062	2	SCRN\4HL\1/4\H1100
27	6200024	1	KEY\SQ\3/4X4
28	6200035	4	KEY\RECT\1/2X5/8X6-1/4
	<b>4502984</b>		<b>RTR\ASSY\50X1-1/4ROD\1135\ALLCAST&gt;</b>
	<b>4502985</b>		<b>RTR\BASE\50X1-1/4ROD\1135\ALLCAST&gt;</b>
<b>SCREENS</b>			
	5400095		SCREEN\1/8" HOLE\1/4\H1100
	5400074		SCREEN\3/16" HOLE\1/4\H1100
	5400052		SCREEN\1/4" HOLE\1/4\H1100
	5400053		SCREEN\3/8" HOLE\1/4\H1100
	5400054		SCREEN\1/2" HOLE\1/4\H1100
	5400055		SCREEN\5/8" HOLE\1/4\H1100
	5400056		SCREEN\3/4" HOLE\1/4\H1100
	5400049		SCREEN\1" HOLE\1/4\H1100
	5400066		SCREEN\1 1/2" HOLE\1/4\H1100
	5400050		SCREEN\2" HOLE\1/4\H1100
	5400051		SCREEN\3" HOLE\1/4\H1100
	5400062		SCREEN\4" HOLE\1/4\H1100
	5400102		SCREEN\5" HOLE\1/4\H1100
	5400110		SCREEN\6" HOLE\1/4\H1100E
	5400111		SCREEN\7" HOLE\1/4\H1100E
	5400103		SCREEN\8" HOLE\1/4\H1100
	5400080		SCREEN\DUMMY\1/4\H1100

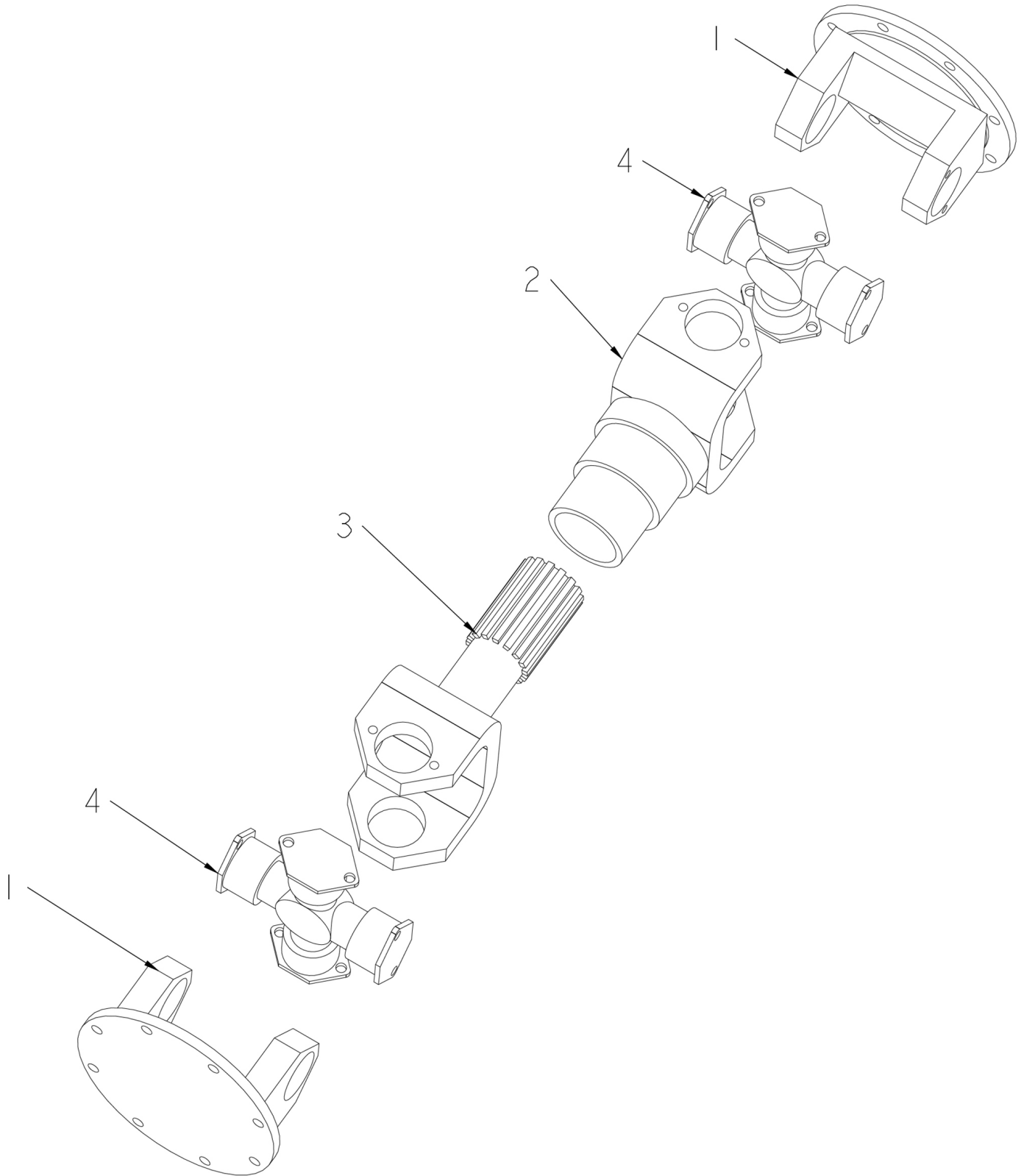
# PUMP DRIVE LINE



**PUMP DRIVE LINE**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1000295	1	SPKT\60\TPR\20\2012\REV
2	1100064	1	CHAIN\60DBL\CL
3	1100193	1	CHAIN\60DBL\19
4	1400624	1	BUSH\R2\3
5	1400658	1	BUSH\TAPER\1-1/2\2012\W\KEY
6	1400667	1	SHVE\5V-8\9.75\F
7	2001052	1	BRG\PB\3\IMPRL\NON-EXP
8	2001053	1	BRG\PB\3\IMPRL\EXP
9	3600156	1	FLG\DRLIN\3\1710
10	3600907	1	DRLIN\COMP\19.25\1710
11	3600908	1	FLG\3-1/4ID\1710\DRLIN
12	4200142	1	PUMP\HYD\TNDM\1.78CIDX1.3CID
13	4502617	4	SEAL\ADJ\SHFT\RTR
14	4502665	1	BRKT\PUMP
15	4502784	1	SPKT\SNSR
16	4502785	1	BRKT\SENSOR
17	4502796	1	SPKT\60\B\20\2-7/16\5/8KW
18	4705461	1	SHFT\JACK\PUMPDRIVE
19	4800063	4	BOLT\HEX\3/4X4
20	4800082	2	BOLT\HEX\1/2X1-1/2
21	4800098	2	BOLT\HEX\3/8X1-1/4\NC
22	4800114	2	BOLT\HEX\1/2X2
23	4800487	16	BOLT\HEX\3/8X1-1/4\GR8/NF
24	4900001	4	NUT\HEX\1/2\NC
25	4900002	2	NUT\HEX\3/8\NC
26	4900004	4	NUT\HEX\3/4\NC
27	4900125	16	NUT\HEX\3/8\GR8\NF
28	5000004	4	WASH\FLAT\1/2
29	5000005	8	WASH\FLAT\3/4
30	5000006	4	WASH\LOCK\1/2
31	5000012	4	WASH\LOCK\3/4
32	5000019	18	WASH\LOCK\3/8
33	5701157	1	SENSOR\SPEED\HALL;EFFECT
34	6200024	2	KEY\SQ\3/4X4
35	7501443	1	INSERT\SPLINED\7/8;13TTHX1-1/2OD
	<b>4502627</b>		<b>CPLR\PUMP\6020CHNX7/8SPLN (includes #1, #5 and #32)</b>

**3600907 DRIVELINE**

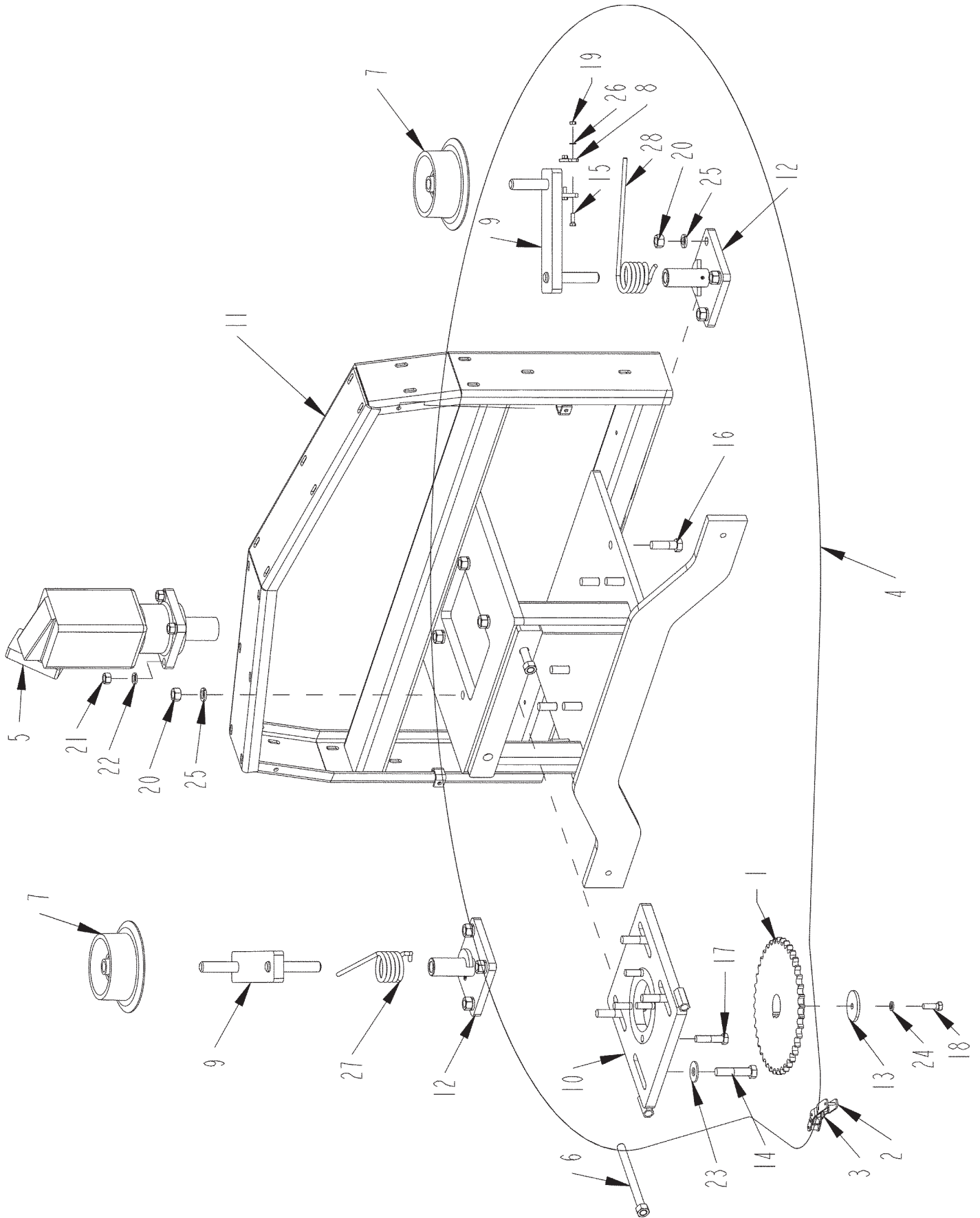


**3600907 DRIVELINE**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3600152	2	FLANGE YOKE 1710
2	3600153	1	SLIP YOKE 1710
3	3600154	1	YOKE SHAFT 1710
4	3600155	2	JOURNAL AND BEARING KIT 1710
	<b>3600907</b>		<b>DRLIN\COMP\19.25\1710</b>



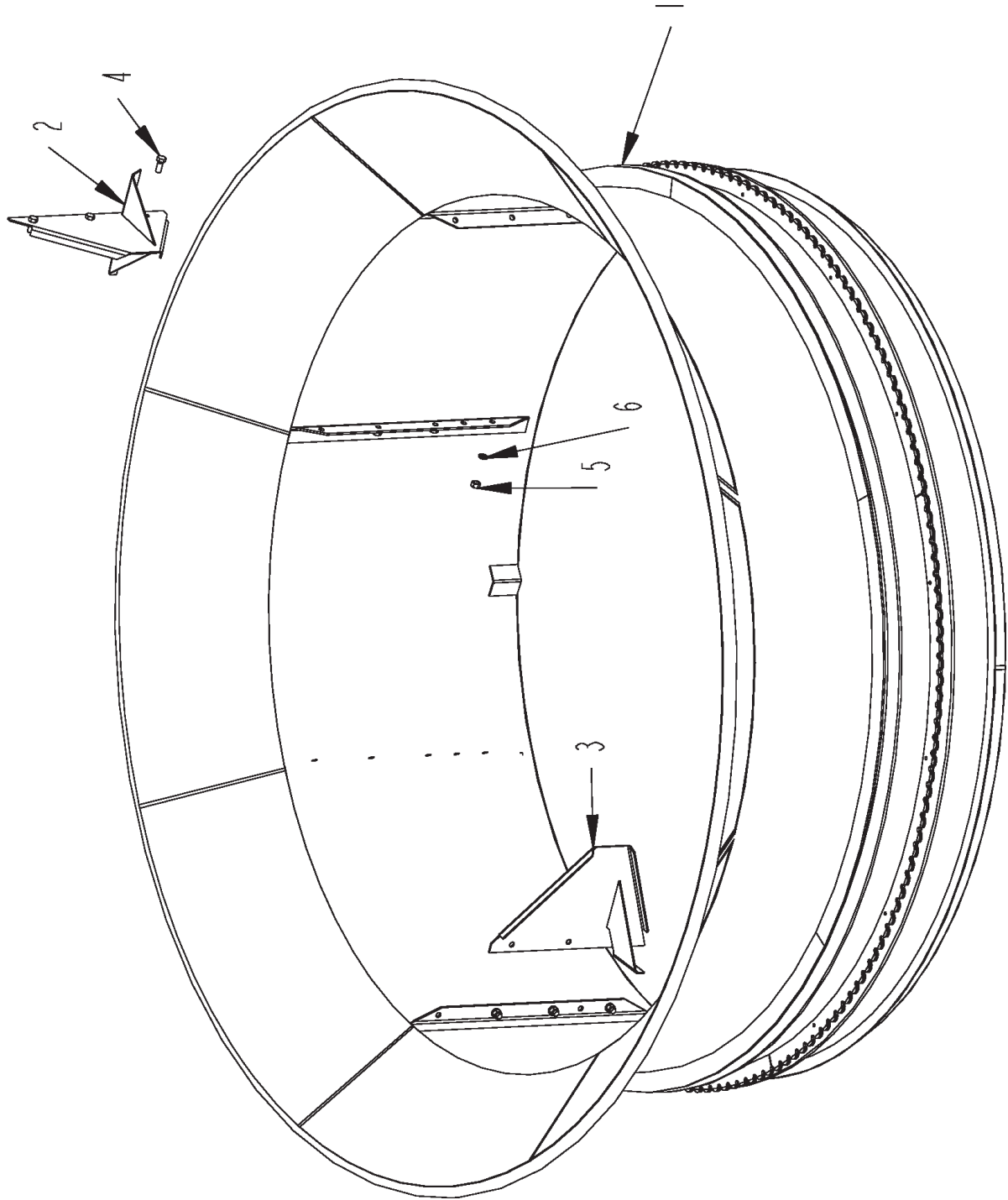
# TUB DRIVE ASSEMBLY



**TUB DRIVE ASSEMBLY**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1000311	1	SPKT\B\80\50\2-1/4\1/2KEY
2	1100070	1	CHAIN\2080\CL
3	1100071	1	CHAIN\2080\OL
4	1100260	1	CHAIN\2080\183
5	4200121	1	MTR\HYD\40.6\1000\2-1/4\1-5/16FOR
6	4501328	2	BOLT\HEX\3X4X8-1/2
7	4501331	2	RLLR\DR\TUB
8	4501383	2	BRKT\SPRING\
9	4501705	2	BRKT\RLLR\TNSN
10	4501707	1	BRKT\MTR\DRV\TUB
11	4502642	1	FRM\PLFRM\TILT\1130\RTR\REAR
12	4703168	2	BRKT\RLLR\TNSN
13	4703713	1	WASH\MTR\ORBIT
14	4800011	4	BOLT\HEX\3/4X3-1/2
15	4800013	4	BOLT\HEX\5/16X1
16	4800115	8	BOLT\HEX\3/4X2-1/2
17	4800196	4	BOLT\HEX\5/8X2-3/4
18	4800575	1	BOLT\HEX\1/2X1-1/2\NF
19	4900003	4	NUT\HEX\5/16\NC
20	4900004	14	NUT\HEX\3/4\NC
21	4900005	4	NUT\HEX\5/8\NC
22	5000003	4	WASH\LOCK\5/8
23	5000005	4	WASH\FLAT\3/4
24	5000006	1	WASH\LOCK\1/2
25	5000012	12	WASH\LOCK\3/4
26	5000022	4	WASH\LOCK\5/16
27	6100078	1	SPG\DR\TUB
28	6100079	1	SPG\DR\TUB

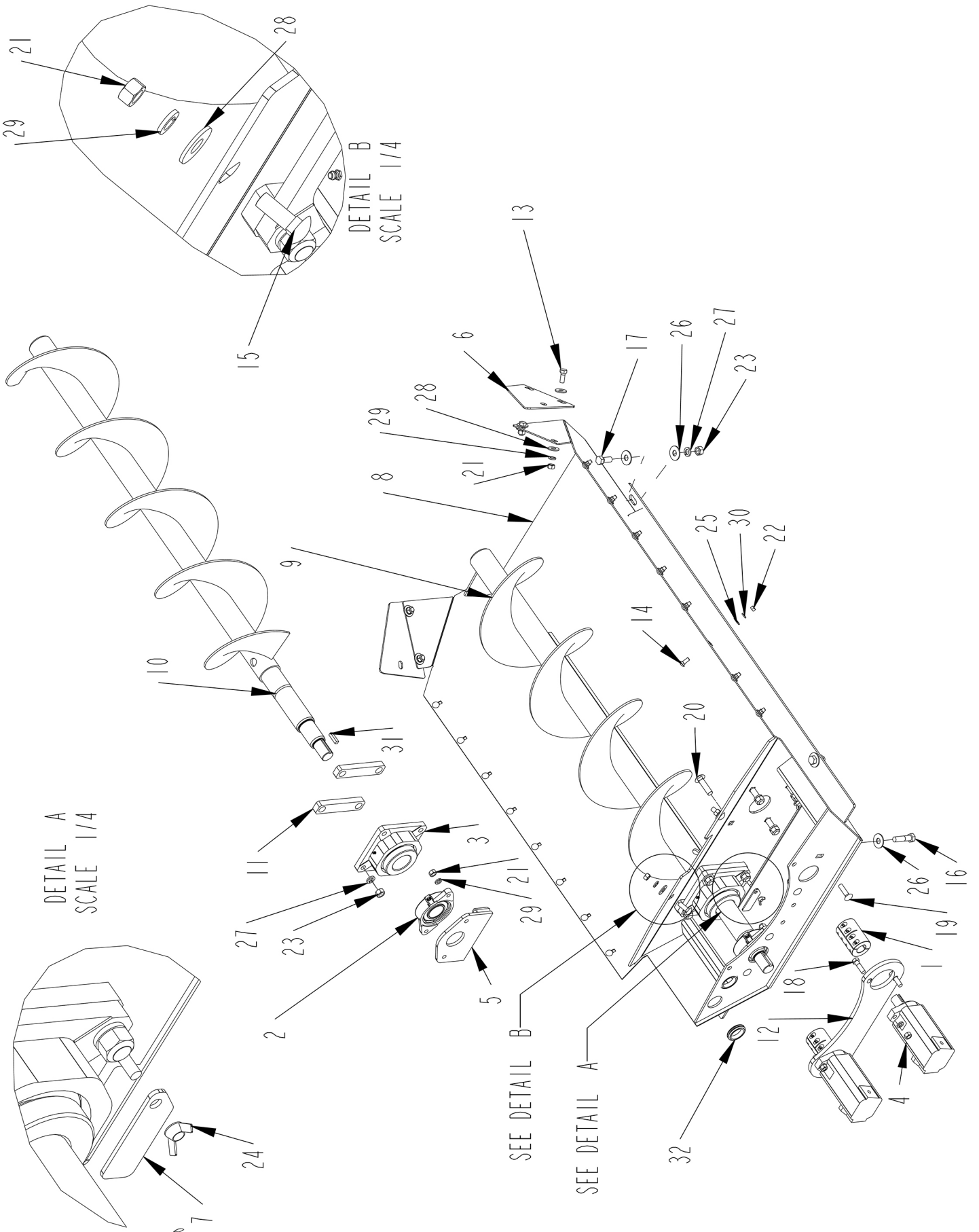
# TUB ASSEMBLY



## TUB ASSEMBLY

ITEM	PART	QTY.	PART DESCRIPTION
1	4502346	1	TUB\H1100\TTH\CNTNS
2	4502409	1	AGTTR\TUB\FIN\10
3	4502410	1	AGTTR\TUB\FIN\14
4	4800106	6	BOLT\HEX\5/8X1-1/2
5	4900005	6	NUT\HEX\5/8\NC
6	5000003	6	WASH\LOCK\5/8

# BELLY AUGER ASSEMBLY

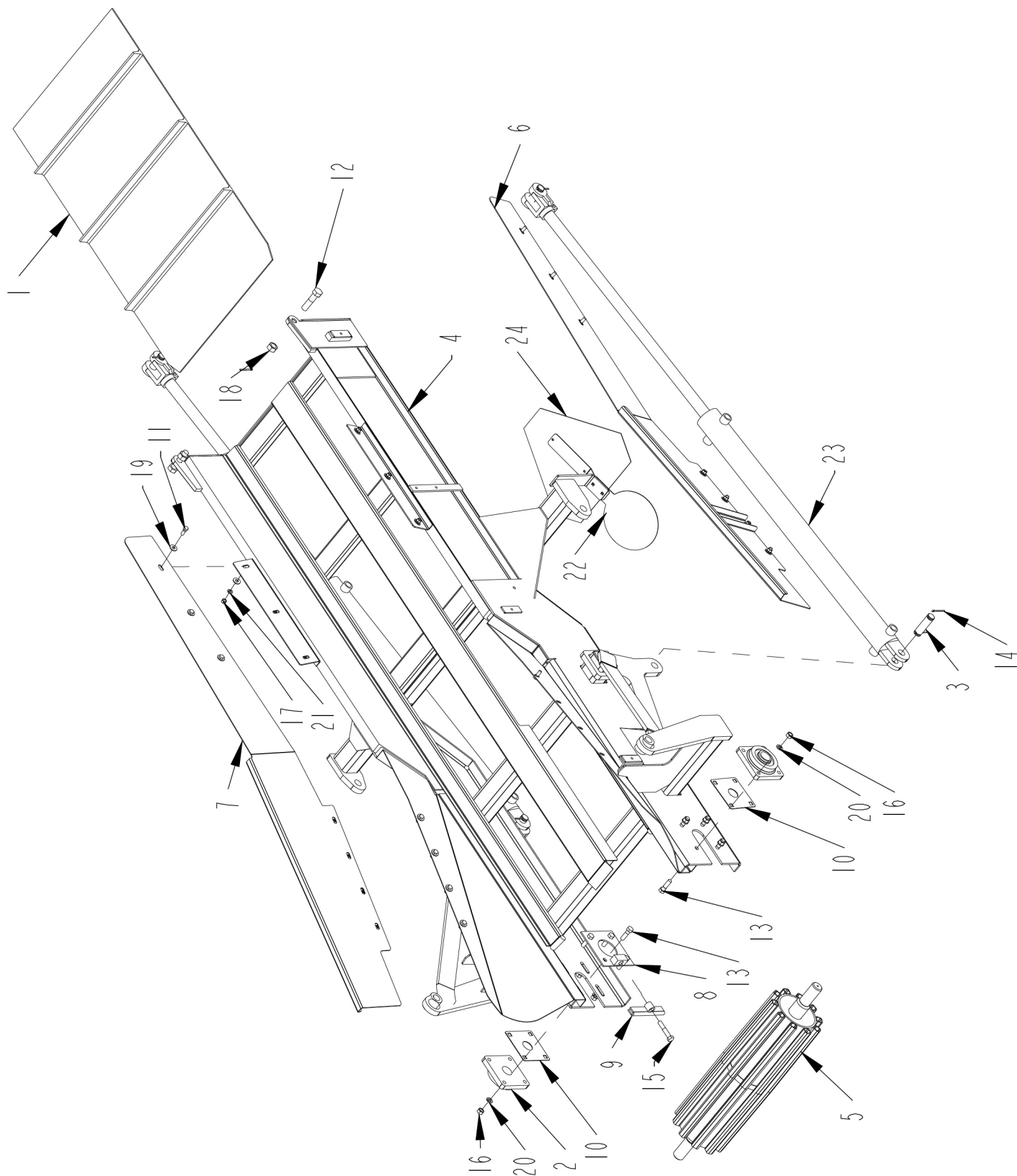


**BELLY AUGER ASSEMBLY**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1400659	2	CPLR\RIGID\1.5X1.25
2	2000587	2	BRG\FLG\2"-BLT\SSCRW
3	2000588	2	BRG\FLG\2-1/2\4-BLT\D-LOCK
4	3900005	2	MTR\HYD\14.9\2000\SAE;A
5	4502312	2	ADJSTR\BRG\FR
6	4502427	2	SH\SIDE\PAN\CNVYR
7	4502603	2	CVR\HOLE\DRN
8	4502657	1	WELD\PAN\CNVYR\BELLY\H1130
9	4502658	1	AUGER\RIGHT
10	4502659	1	AUGER\LEFT
11	4502666	4	SPCR\BRG\AGR\CNVYR
12	4502755	1	BRKT\MTR\DRIVE
13	4800018	4	BOLT\HEX\1/2X1-1/4
14	4800053	16	BOLT\CRG\3/8X1\NC
15	4800061	2	BOLT\CRG\1/2X1-1/2\NC
16	4800079	4	BOLT\HEX\5/8X2-1/2
17	4800106	4	BOLT\HEX\5/8X1-1/2
18	4800178	4	BOLT\HEX\1/2X1-3/4
19	4800334	4	BOLT\CRG\1/2X2\NC
20	4801232	8	BOLT\CRG\5/8X2-1/2
21	4900001	14	NUT\HEX\1/2\NC
22	4900002	16	NUT\HEX\3/8\NC
23	4900005	12	NUT\HEX\5/8\NC
24	4900032	2	NUT\WING\3/8\NC
25	5000001	16	WASH\FLAT\3/8
26	5000002	12	WASH\FLAT\5/8
27	5000003	16	WASH\LOCK\5/8
28	5000004	10	WASH\FLAT\1/2
29	5000006	14	WASH\LOCK\1/2
30	5000019	16	WASH\LOCK\3/8
31	6200021	2	KEY\SQ\3/8X1-1/2\HARDEND
32	7500360	2	GRMT\RBBR\2X1.75\DX1/4T
	<b>4502660</b>		<b>CNVYR\BLLY\H1130</b>



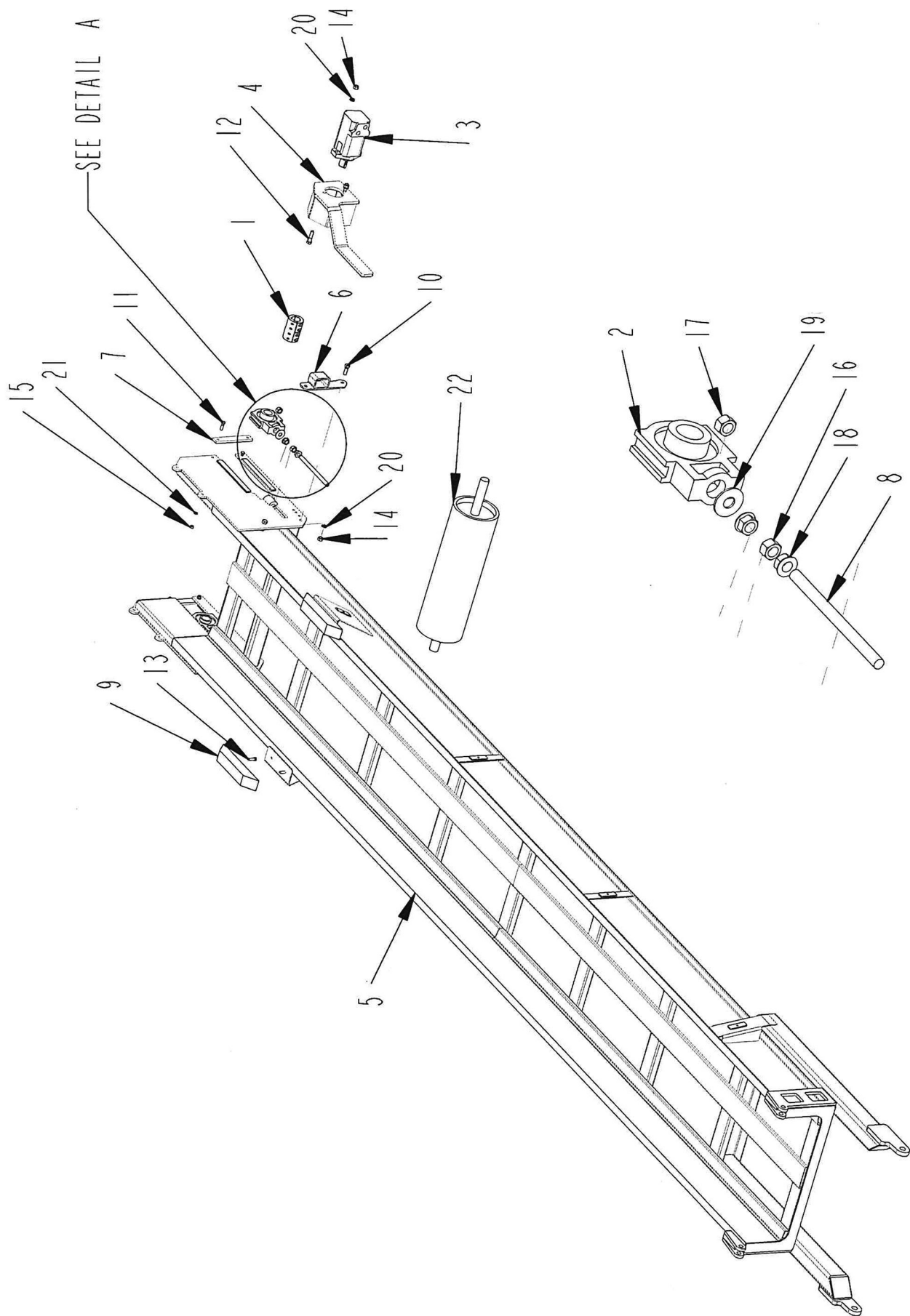
# LOWER DISCHARGE CONVEYOR ASSEMBLY



**LOWER DISCHARGE CONVEYOR ASSEMBLY**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1700231	1	BELT\CNVYR\24X606\CLEATED
2	2000303	2	BRG\FLG\1-1/2\BOLT
3	4100030	4	PIN 1" X 3-1/2" HYD. CYL.
4	4502305	1	CONV\LOWER\H1130\FLDNG
5	4502418	1	RLLR\IDLER\32-3/4X8\CNVYR\DISCH
6	4502428	1	TRNSTN\CNVYR\LFT
7	4502429	1	TRNSTN\CNVYR\RGH
8	4701528	1	BRKT\ADJ\TRACKING\CNVYR\DISCH
9	4701529	1	HOOK\ROD\ADJ\BELT\CNVYR\DISCH
10	4704067	2	PL\SEAL\BRG
11	4800003	14	BOLT\HEX\3/8X1
12	4801303	2	BOLT\HEX\3/4X2-3/4
13	4800178	8	BOLT\HEX\1/2X1-3/4
14	4800203	8	PIN\COT\5/32X2
15	4800351	1	BOLT\HEX\1/2X2-3/4
16	4900001	8	NUT\HEX\1/2\NC
17	4900002	14	NUT\HEX\3/8\NC
18	4900139	2	NUT\TPLCK\3/4\GR8\NC
19	5000001	28	WASH\FLAT\3/8
20	5000006	8	WASH\LOCK\1/2
21	5000019	14	WASH\LOCK\3/8
22	7501701	1	DECAL\ASSY\ID\SPEED\25MPH
23	4100175	2	CYL\HYD\3X36\PARALLEL -RAM INDUSTRIES
23A	4100352		CYL\HYD\3X36\PARALLEL -CANADIAN TOOL & DIE
24	7501353	1	SIGN\SMV\PLSTC-BCKNG
	<b>4502304</b>		<b>CNVYR\DISCH\ASSY\FLDG\H1130</b>
			<b>(this is for the complete upper and lower discharge conveyor)</b>
	<b>NOT SHOWN</b>		
	1700142		LCNG\CBL\R-2\24
	1700143		LCNG\R-2\24

# UPPER DISCHARGE CONVEYOR ASSEMBLY



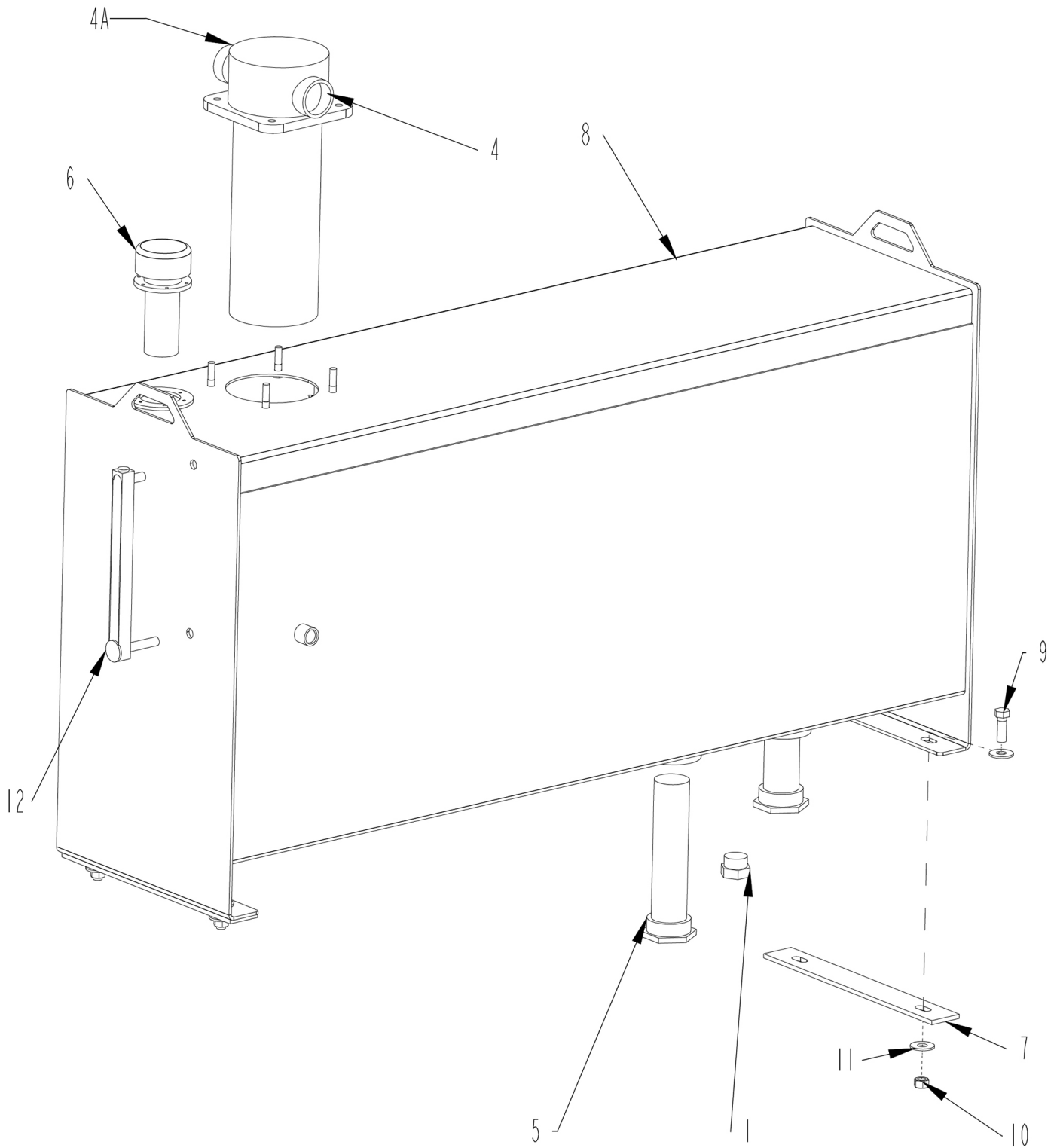
DETAIL A  
SCALE 1/8

**UPPER DISCHARGE CONVEYOR ASSEMBLY**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1400659	1	CPLR\RIGID\1.5X1.25
2	2000320	2	BRG\TUU\1-1/2\W-ECC\BSEAL
3	3900014	1	MTR\HYD\9.6\2000\1-1/4SH
4	4502227	1	BRKT\ARM\TORQUE\MTR
5	4502303	1	CONV\UPPER\FLDNG
6	4502811	1	BRKT\ARM\TORQUE
7	4702204	2	STRAP\REIN\FGUIDE\BRG\CNVYR
8	4702205	2	BOLT\ADJ\RLLR\DRV\CNVYR
9	4704099	2	BMPR\CNVYR\DISCH
10	4800082	2	BOLT\HEX\1/2X1-1/2
11	4800098	4	BOLT\HEX\3/8X1-1/4\NC
12	4800114	2	BOLT\HEX\1/2X2
13	4801198	4	SCR\LAG\3/8X1-1/2
14	4900001	4	NUT\HEX\1/2\NC
15	4900002	4	NUT\HEX\3/8\NC
16	4900005	2	NUT\HEX\5/8\NC
17	4900012	2	NUT\TPLCK\5/8\NC
18	4900110	4	NUT\FLG\SERR\5/8\NC
19	5000002	2	WASH\FLAT\5/8
20	5000006	4	WASH\LOCK\1/2
21	5000019	4	WASH\LOCK\3/8
22	7501373	1	RLLR\DSCHG\24X8\RBBR

**4502304** **CNVYR\DISCH\ASSY\FLDG\H1130**  
**(this is for the complete upper and lower discharge conveyor)**

# HYDRAULIC OIL TANK ASSEMBLY



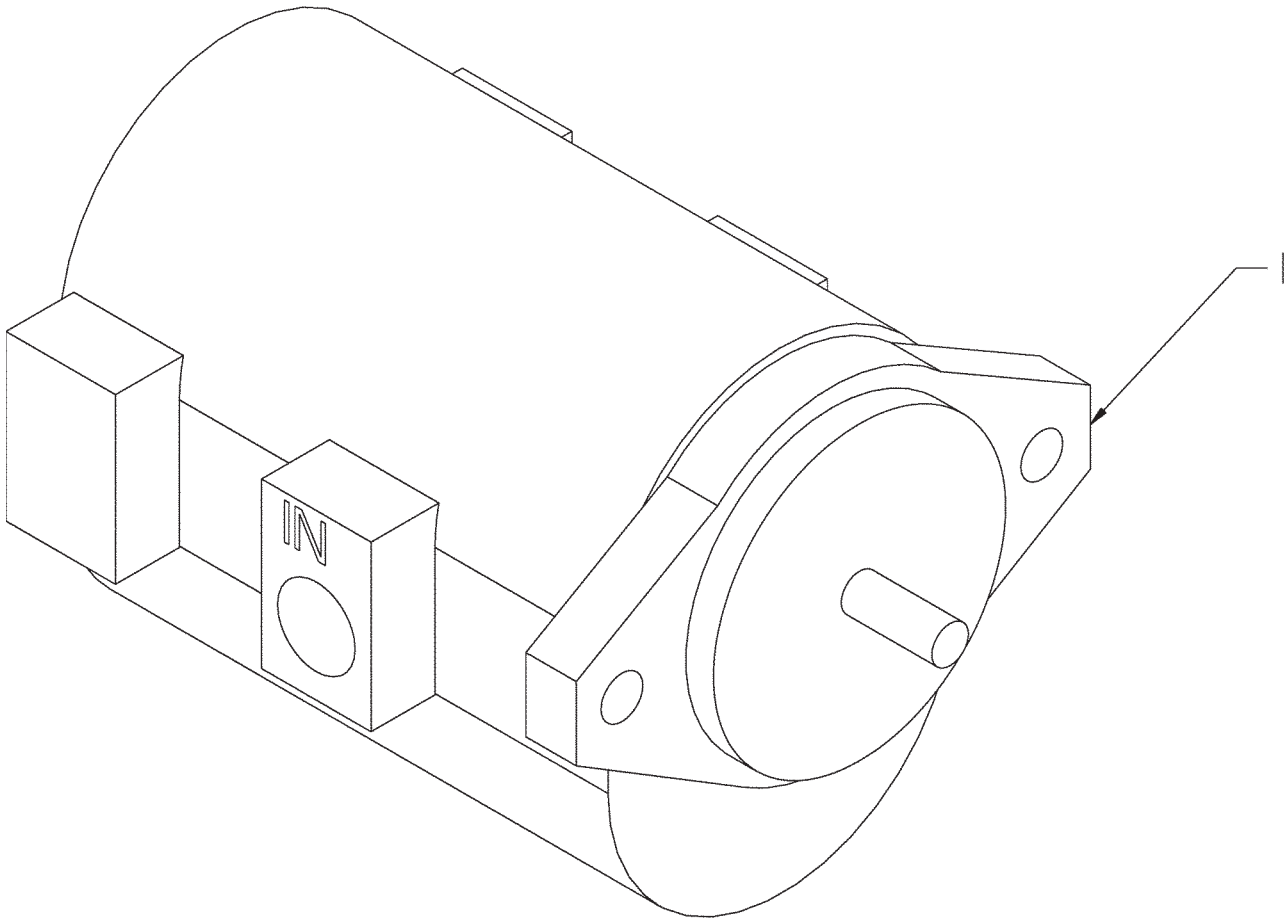
## HYDRAULIC OIL TANK ASSEMBLY

ITEM	PART	QTY.	PART DESCRIPTION
1	3800301	1	FTG\1-5/16MOR\PLUG\HEX
2	3800718	1	FTG\3/4FOR\WELD\FLG
3	3801006	2	FTG\2-1/2FOR\WELD\FLG\HVY
4	4400043	1	FILTER\HYDRAULIC\RETURN\IN-TANK ELEMENT 4400074
4A	4400066		GAUGE\FLTR\25PSI\1/8NPTF\COLOR CODED
5	4400067	2	FLTR\SCRN\2-1/2MORX1-7/8FOR\30GPM\ST30-100RV3
6	4400071	1	VENT\W\LOCK\CAP\HYD
7	4502424	2	BELT\CUSH\TNK\OIL\60GAL
8	4502799	1	TANK\OIL\60GAL
9	4800082	4	BOLT\HEX\1/2X1-1/2
10	4900014	4	NUT\TPLCK\1/2\NC
11	5000004	8	WASH\FLAT\1/2
12	7500615	1	GAUGE\LEVEL\10\W/THERMOMETER
	<b>4502526</b>		<b>TANK\OIL\ASSY\H1030</b>
	<b>WEAR PARTS</b>		
	4400074		FLTR\ELMT\10MIC\INTANK
	4400158		FLTR\FUEL\INLINE\NAPA3270
	4400159		GASKET\NECK\4400071
	4400160		GASKET\CAP\4400071
	7501587		O-RING\5/8IDX3/32\BUNA90\AS568-114

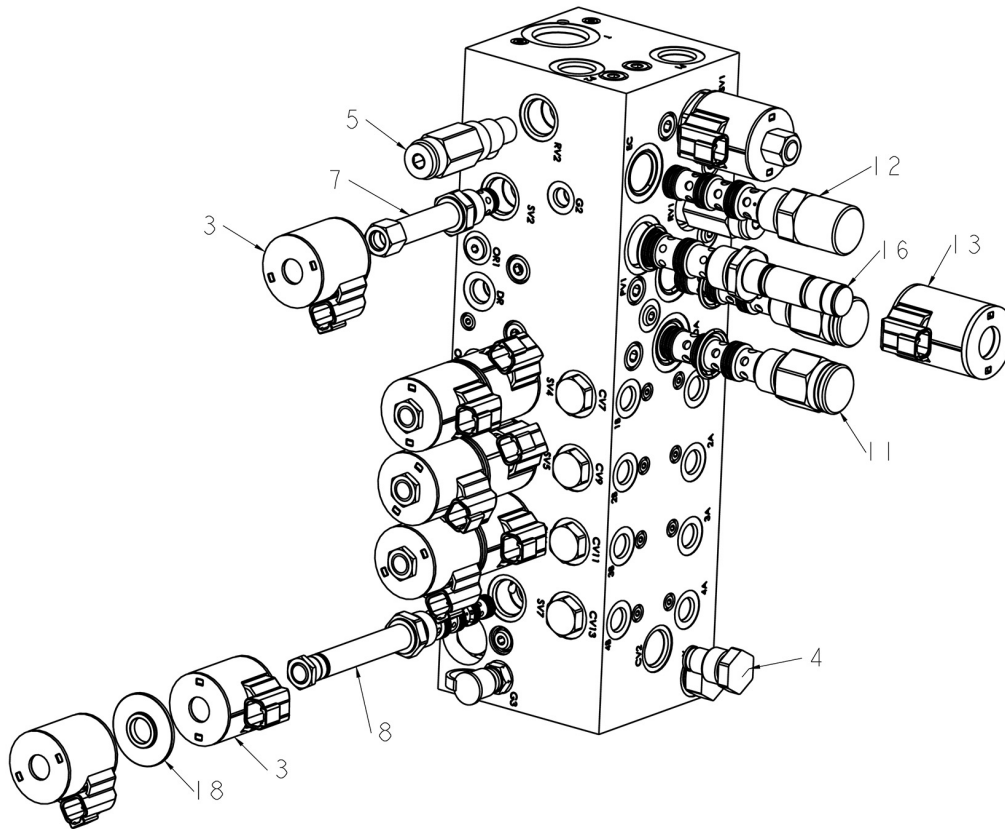


# TANDUM HYDRAULIC PUMP

ITEM	PART NO.	QTY.	PART DESCRIPTION
1	4200142	1	PUMP\HYD\TNDM\1.78CIDX1.3CID
	4200161		PUMP\SEALKIT4200142



## 4000598 HYDRAULIC VALVE - VIEW 1



ITEM	PART NO.	QTY.	PART DESCRIPTION
1	4000230	4	VALVE\HYD\PILOT\PISTON
2	4000231	8	VALVE\HYD\CART\CHECK\CV0820\100P
3	4000347	10	VALVE\HYD\SOL\12V\E10\DTZ\W/DIODE
4	4000446	2	VALVE\CHECK\CART\CV1020
5	4000510	1	VLV\HYD\RELIEF\CART\3000
6	4000548	1	VLV\HYD\RELIEF\CART\2500
7	4000549	1	VALVE\HYD\CART\N:OPEN\2WAY;2POS
8	4000550	4	VALVE\HYD\CART\5WAY;3POS
9	4000552	1	VALVE\HYD\CART\N.O.;POPPET
10	4000553	1	VALVE\CART\VENTED PRESS BLOCK\EV10
11	4000555	2	VALVE\HYD\CART\4POS3WAY\PILOTED
12	4000556	1	VALVE\HYD\CART\COMP\80PSI
13	4000557	1	VALVE\HYD\SOL\12V\E70\DTZ\W/DIODE
14	4000558	2	VALVE\HYD\SOL\12V\E08\DTZ\W/DIODE
15	4000559	1	VALVE\HYD\CART\PRESS;COMP\160PSI
16	4000560	1	VALVE\HYD\CART\PROPOR\NC\2WAY
17	4000561	1	VALVE\HYD\CART\PLUG\3WAY
18	4000562	4	VALVE\HYD\SOL\SPACER\E10
19	4000563	1	VALVE\HYD\SOL\SPACER\E8
20	4000595	1	VALVE\HYD\CART\3POS,4WAY\OPEN:CENTER
21	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V

Note - Items 15-4000559 and 17-4000561 change value from open center to closed center

Open Center

4000559 goes in port 'EPFR', 4000561 goes in 'X'

Closed Center

4000561 goes in port 'EPFR', 4000559 goes in 'X'

## 4000598 HYDRAULIC VALVE - VIEW 2

ITEM	PART NO.	QTY.	PART DESCRIPTION
1	4000230	4	VALVE\HYD\PILOT\PISTON
2	4000231	8	VALVE\HYD\CART\CHECK\CV0820\100P
3	4000347	10	VALVE\HYD\SOL\12V\E10\DTZ\W\DIODE
4	4000446	2	VALVE\CHECK\CART\CV1020
5	4000510	1	VLV\HYD\RELIEF\CART\3000
6	4000548	1	VLV\HYD\RELIEF\CART\2500
7	4000549	1	VALVE\HYD\CART\N:OPEN\2WAY;2POS
8	4000550	4	VALVE\HYD\CART\5WAY;3POS
9	4000552	1	VALVE\HYD\CART\N.O.;POPPET
10	4000553	1	VALVE\CART\VENTED PRESS BLOCK\EV10
11	4000555	2	VALVE\HYD\CART\4POS3WAY\PILOTED
12	4000556	1	VALVE\HYD\CART\COMP\80PSI
13	4000557	1	VALVE\HYD\SOL\12V\E70\DTZ\W\DIODE
14	4000558	2	VALVE\HYD\SOL\12V\E08\DTZ\W\DIODE
15	4000559	1	VALVE\HYD\CART\PRESS;COMP\160PSI
16	4000560	1	VALVE\HYD\CART\PROPOR\NC\2WAY
17	4000561	1	VALVE\HYD\CART\PLUG\3WAY
18	4000562	4	VALVE\HYD\SOL\SPACER\E10
19	4000563	1	VALVE\HYD\SOL\SPACER\E8
20	4000595	1	VALVE\HYD\CART\3POS,4WAY\OPEN:CENTER
21	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V

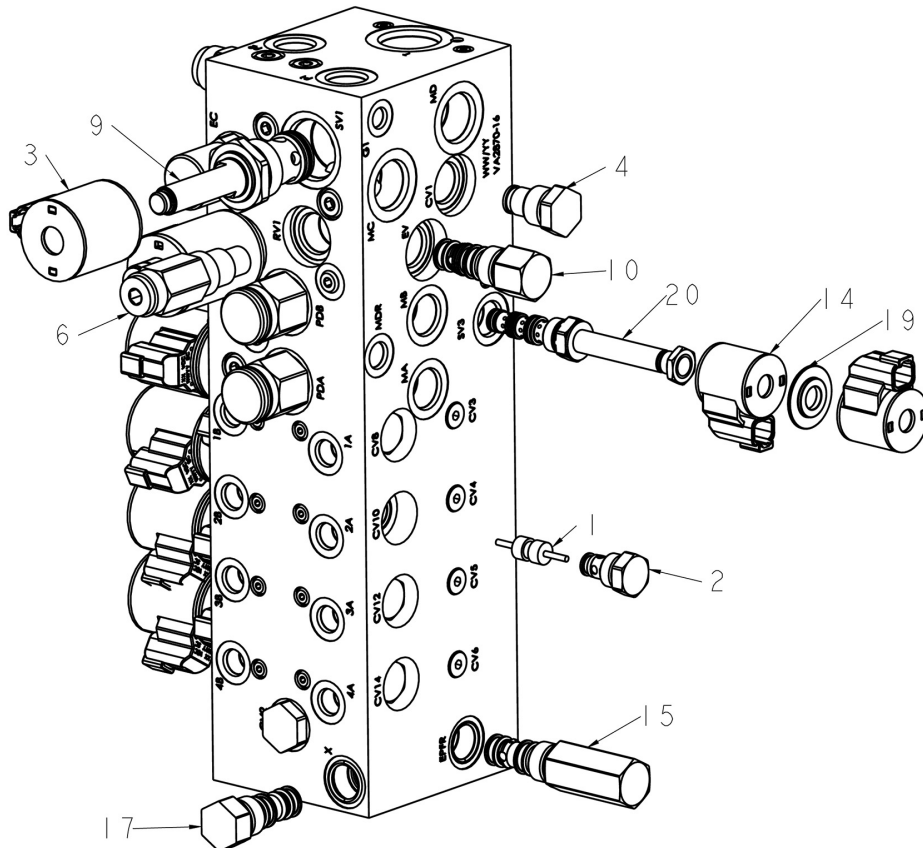
Note - Items 15-4000559 and 17-4000561 change value from open center to closed center

### Open Center

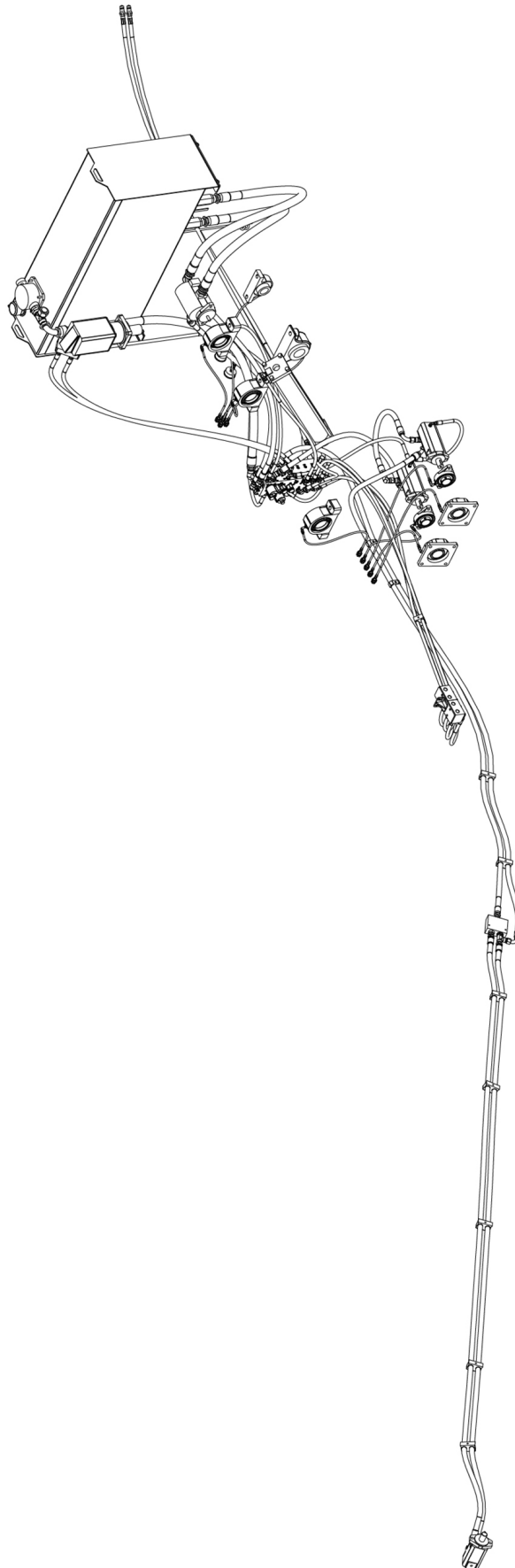
4000559 goes in port 'EPFR', 4000561 goes in 'X'

### Closed Center

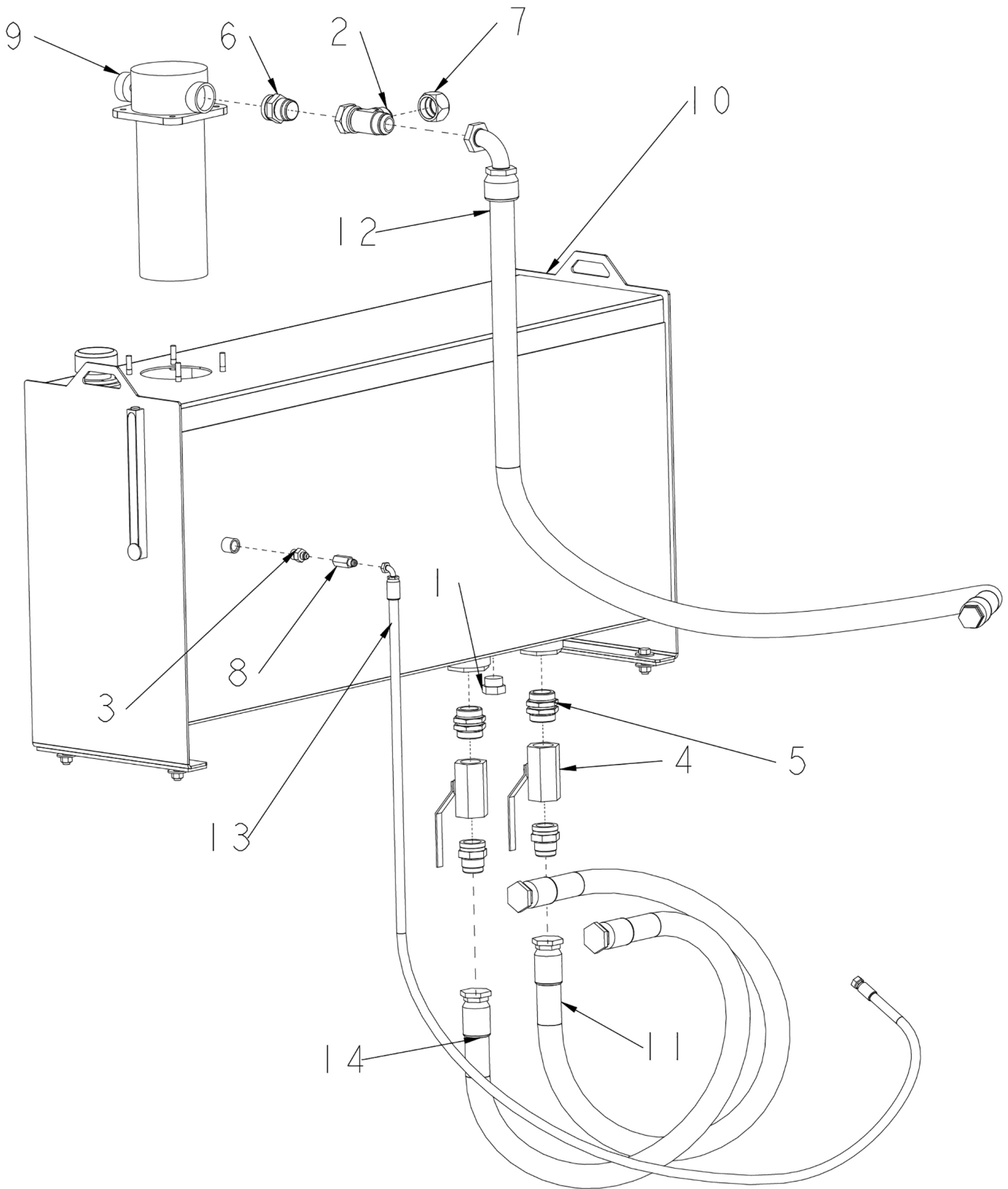
4000561 goes in port 'EPFR', 4000559 goes in 'X'



# MACHINE HYDRAULICS SCHEMATIC



# OIL TANK HYDRAULICS

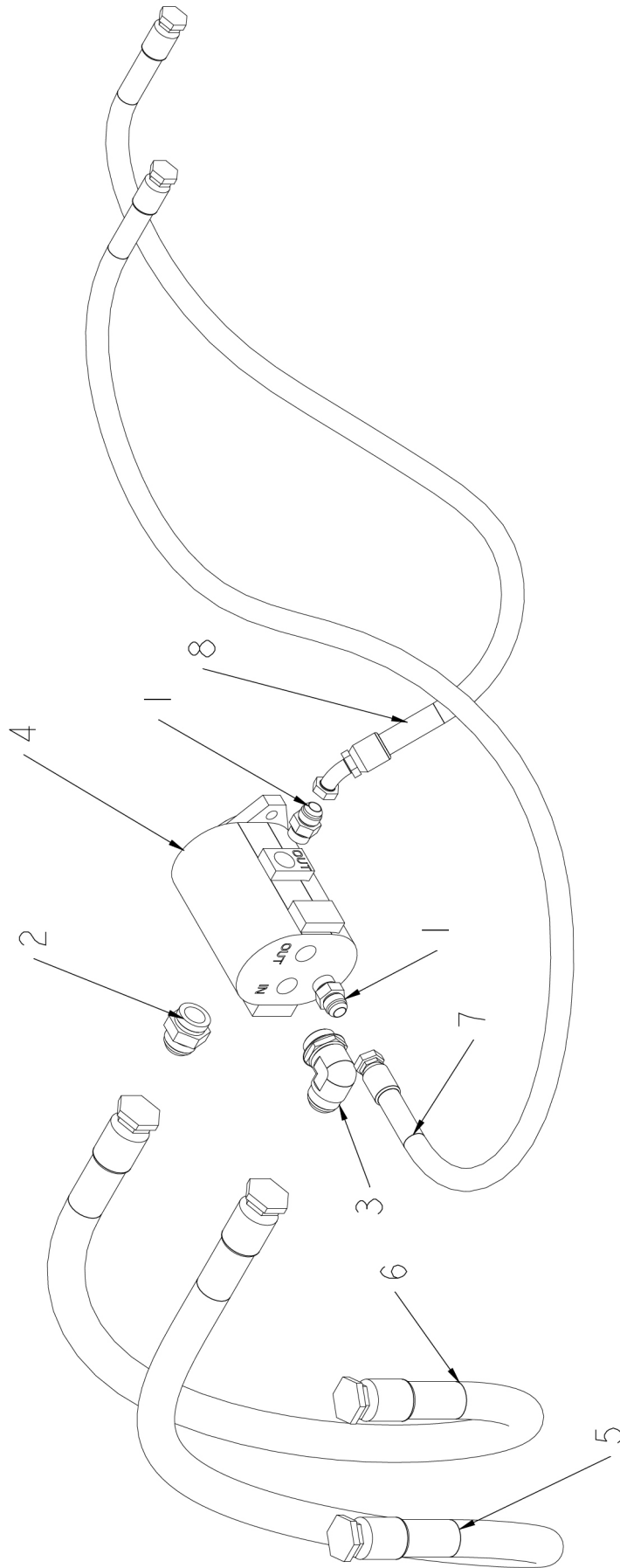


## OIL TANK HYDRAULICS

ITEM	PART	QTY.	PART DESCRIPTION
1	3800301	1	FTG\1-5/16MOR\PLUG\HEX
2	3800486	1	FTG\1-5/8FJICX1-5/8MJICX1-5/8MJIC\RUN;TEE
3	3800530	1	FTG\3/4MORX9/16MJIC\ST
4	3800740	2	VALVE\BALL\1-1/2\1-7/8FOR\1/4 TURN\W/LOCK
5	3800745	2	FTG\1-7/8MORX1-7/8MOR\ADPT
6	3800808	3	FTG\1-7/8MORX1-5/8MJIC\ST
7	3801030	1	FTG\1-5/8FJIC\CAP
8	4000601	1	VLV\CHECK\POPPET\9/16MJIC
9	4400043	1	FILTER\HYDRAULIC\RETURN\IN-TANK ELEMENT 4400074
10	4502799	1	TANK\OIL\60GAL
11	3701595	1	HOSE\HYD\1-1/4X49\1-5/8FJICX1-5/8FJIC SUPPLY PORT FRONT PUMP TO RIGHT TANK PORT SCREEN
12	3701567	1	HOSE\HYD\1-1/4X74\1-5/16FJCX1-5/8FJC90DEG T PORT AUX. VALVE TO TANK
13	3701728	1	HOSE\HYD\3/8X80\3/4FJC90X9/16FJC DR PORT AUX. VALVE TO TANK
14	3701595	1	HOSE\HYD\1-1/4X49\1-5/8FJICX1-5/8FJIC SUPPLY PORT REAR PUMP TO LEFT TANK SCREEN



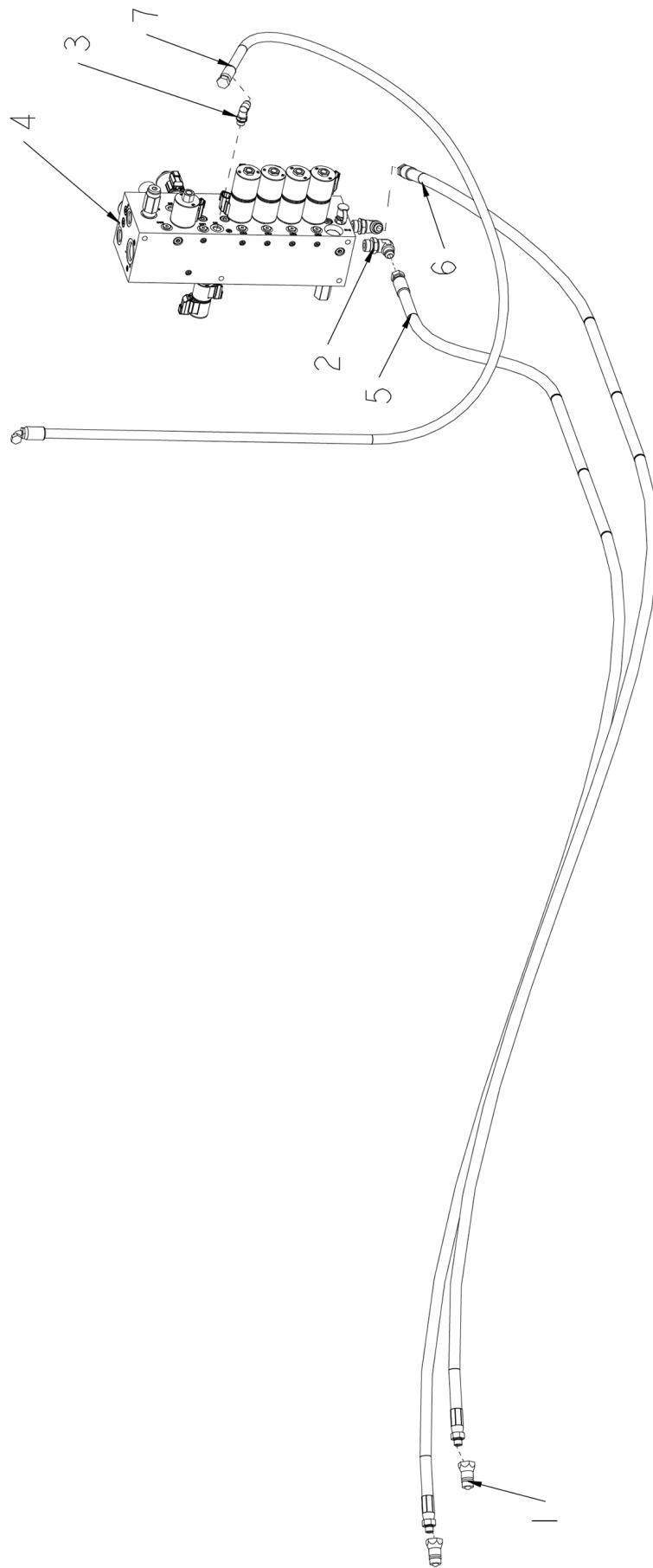
# TANDUM PUMP HYDRAULICS



**TANDUM PUMP HYDRAULICS**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800277	2	FTG\1-1/16MORX1-1/16MJIC\ST
2	3800470	1	FTG\1-5/8MORX1-5/8MJIC\ST
3	3800741	1	FTG\1-5/8MORX1-5/8MJIC\90
4	4200142	1	PUMP\HYD\TNDM\1.78CIDX1.3CID
5	3701595	1	HOSE\HYD\1-1/4X49\1-5/8FJICX1-5/8FJIC SUPPLY PORT FRONT PUMP TO RIGHT TANK PORT SCREEN
6	3701595	1	HOSE\HYD\1-1/4X49\1-5/8FJICX1-5/8FJIC SUPPLY PORT REAR PUMP TO LEFT TANK SCREEN
7	3701764	1	HOSE\HYD\3/4X53\1-1/16FJICX1-1/16FJIC PUMP TO P1 PORT AUX. VALVE
8	3701765	1	HOSE\HYD\3/4X62\1-1/16FJIC90X1-1/16FJIC PUMP TO P2 PORT AUX. VALVE

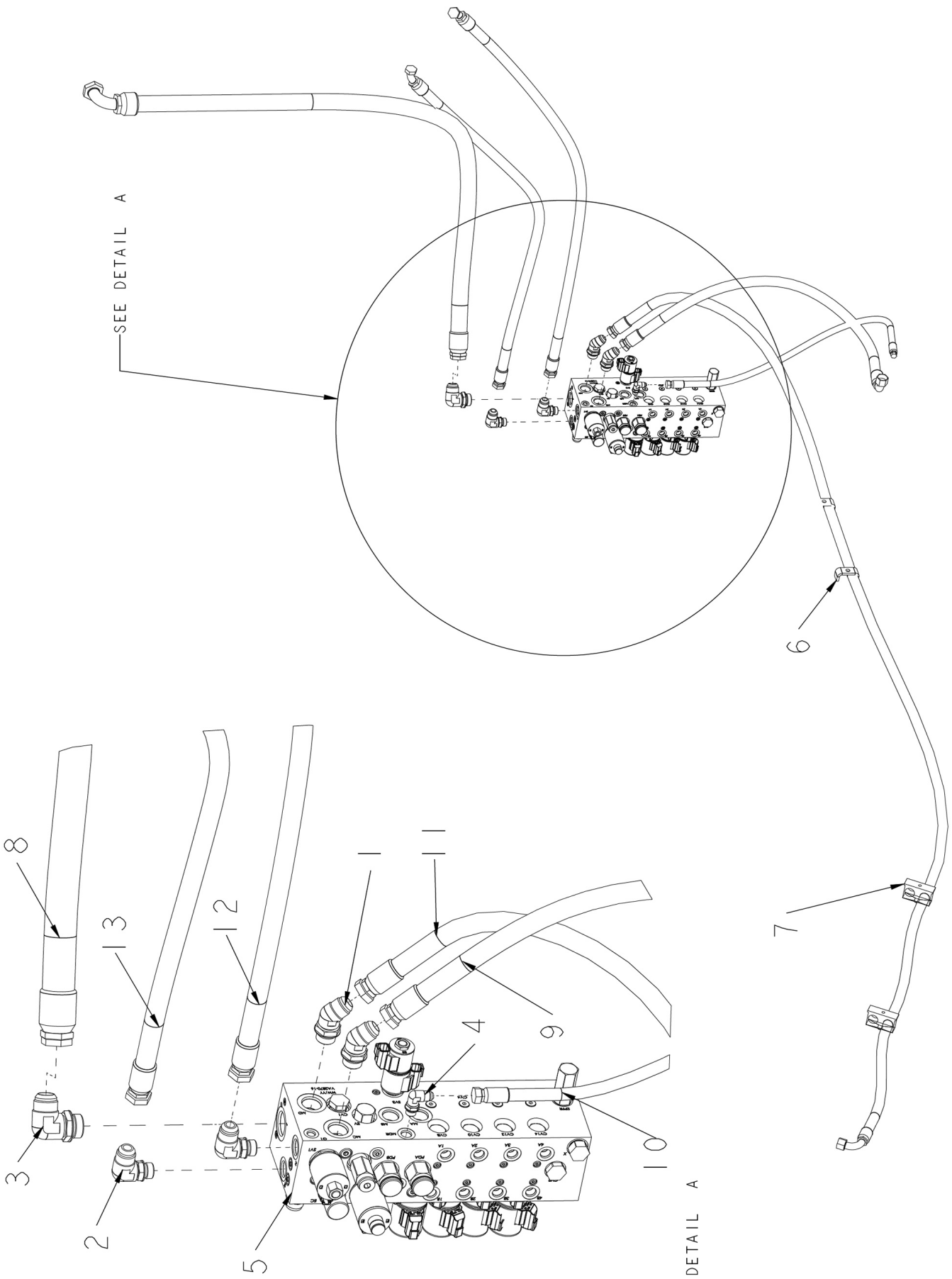
**AUX VALVE HYD - VIEW A**



**AUX VALVE HYD - VIEW A**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800694	2	FTG\3/4FOR\QUICK;CPLR\MALE
2	3800696	2	FTG\7/8MORX3/4MJIC\90
3	3800757	1	FTG\9/16MORX9/16MJIC\90
4	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V
5	3700985	1	HOSE\HYD\1/2X144\3/4MORX3/8FJICS TRACTOR TO IN PORT AUX. VALVE
6	3700985	1	HOSE\HYD\1/2X144\3/4MORX3/8FJICS TRACTOR TO OUT PORT AUX. VALVE
7	3701728	1	HOSE\HYD\3/8X80\3/4FJC90X9/16FJC DR PORT AUX. VALVE TO TANK

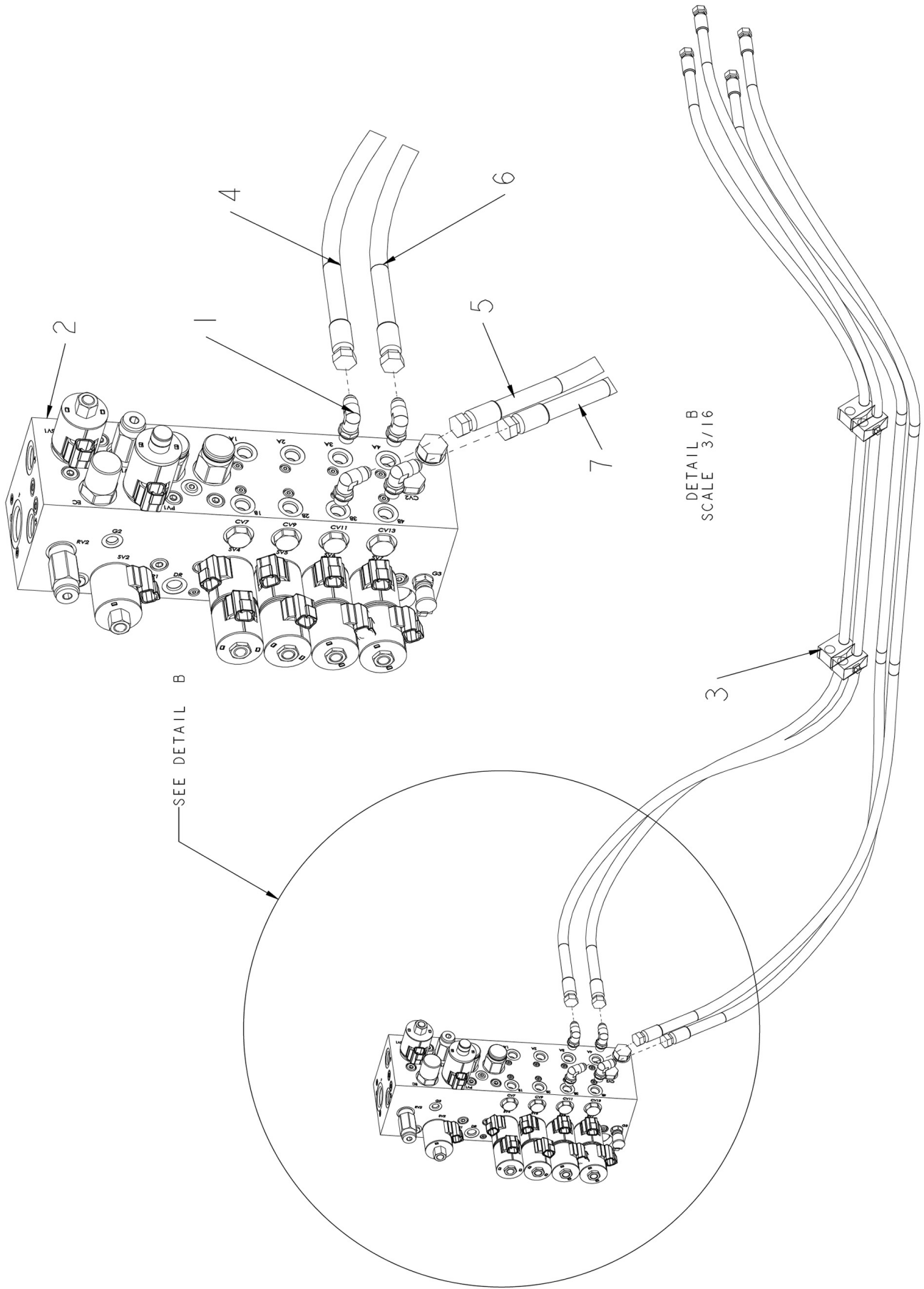
AUX VALVE HYD - VIEW B



**AUX VALVE HYD - VIEW B**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800532	2	FTG\1-1/16MORX1-1/16MJIC\45
2	3800535	2	FTG\7/8MORX1-1/16MJIC\90
3	3800728	1	FTG\1-5/16MORX1-5/16MJIC\90
4	3800757	1	FTG\9/16MORX9/16MJIC\90
5	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V
6	4700777	2	CLMP\HOSE\1/2
7	7501337	2	CLMP\HOSE\CUSH\3/4
8	3701567	1	HOSE\HYD\1-1/4X74\1-5/16FJCX1-5/8FJC90DEG T PORT AUX VALVE TO TANK FILTER
9	3701778	1	HOSE\HYD\3/4X36\1-1/16FJX1-1/16FJC45DEG MC PORT AUX VALVE TO MOTOR PORT B BELLY AUGER
10	3701767	1	HOSE\HYD\3/8X40\9/16FJICX7/16FJIC\90WH MDR PORT TO BELLY ORBIT
11	3701575	1	HOSE\HYD\3/4X184\1-1/16FJC90X1-1/16FJC MD PORT AUX VALVE TO EX PORT CONV. FLOW CONTROL VALVE
12	3701764	1	HOSE\HYD\3/4X43\1-1/16FJX1-1/16FJC45DEG PUMP TO P1 AUX. VALVE PORT
13	3701765	1	HOSE\HYD\3/4X55\1-1/16FJX1-1/16FJC45DEG PUMP TO P2 AUX. VALVE PORT

AUX VALVE HYD - VIEW C

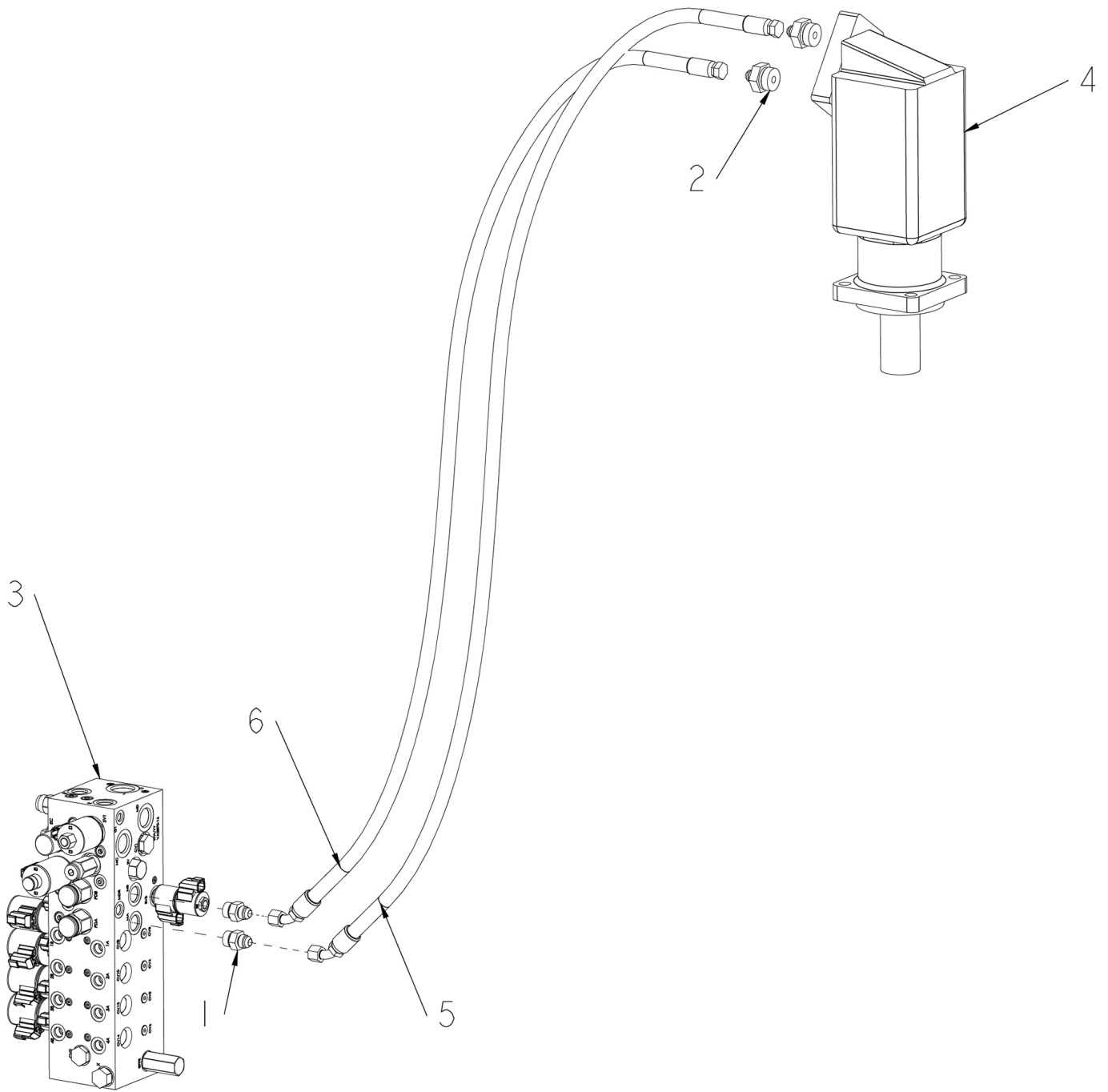




**AUX VALVE HYD - VIEW C**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800757	4	FTG\9\16MORX9\16MJIC\90
2	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V
3	7501387	2	CLMP\HOSE\CUSH\3\8\TWIN
4	3701761	1	HOSE\HYD\3\8X124\9\16FJICS PORT 3A AUX VALVE TO 4TH FROM REAR ON CONVEYOR BLOCK BOTTOM
5	3701761	1	HOSE\HYD\3\8X124\9\16FJICS PORT 3B AUX VALVE TO 3RD FROM REAR ON CONVEYOR BLOCK BOTTOM
6	3701761	1	HOSE\HYD\3\8X124\9\16FJICS PORT 4A AUX VALVE TO 2ND FROM REAR ON CONVEYOR BLOCK BOTTOM
7	3701761	1	HOSE\HYD\3\8X124\9\16FJICS PORT 4B AUX VALVE TO REAR PORT ON CONVEYOR BLOCK BOTTOM

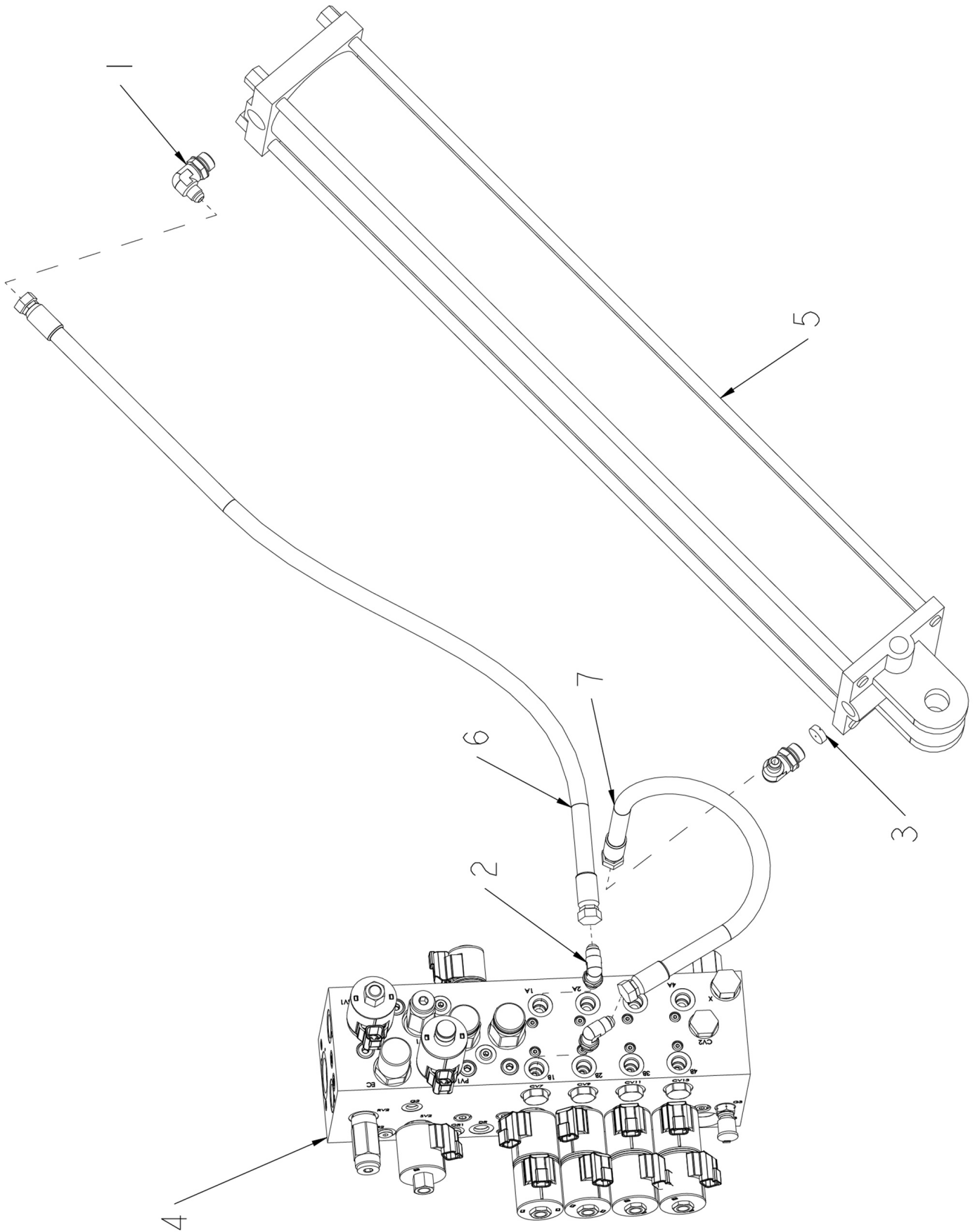
# TUB ROTATION HYDRAULICS



## TUB ROTATION HYDRAULICS

ITEM	PART	QTY.	PART DESCRIPTION
1	3800328	2	FTG\7/8MORX3/4MJIC\ADPT
2	3800938	2	FTG\1-5/16MORX3/4MJIC\ADPT
3	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V
4	4200121	1	MTR\HYD\40.6\1000\2-1/4\1-5/16FOR
5	3701566	1	HOSE\HYD\1/2X175\3/4FJICSX3/4FJIC45 PORT MA AUX. VALVE TO UPPER PORT ORBIT MOTOR
6	3701566	1	HOSE\HYD\1/2X175\3/4FJICSX3/4FJIC45 PORT MB AUX. VALVE TO LOWER PORT ORBIT MOTOR

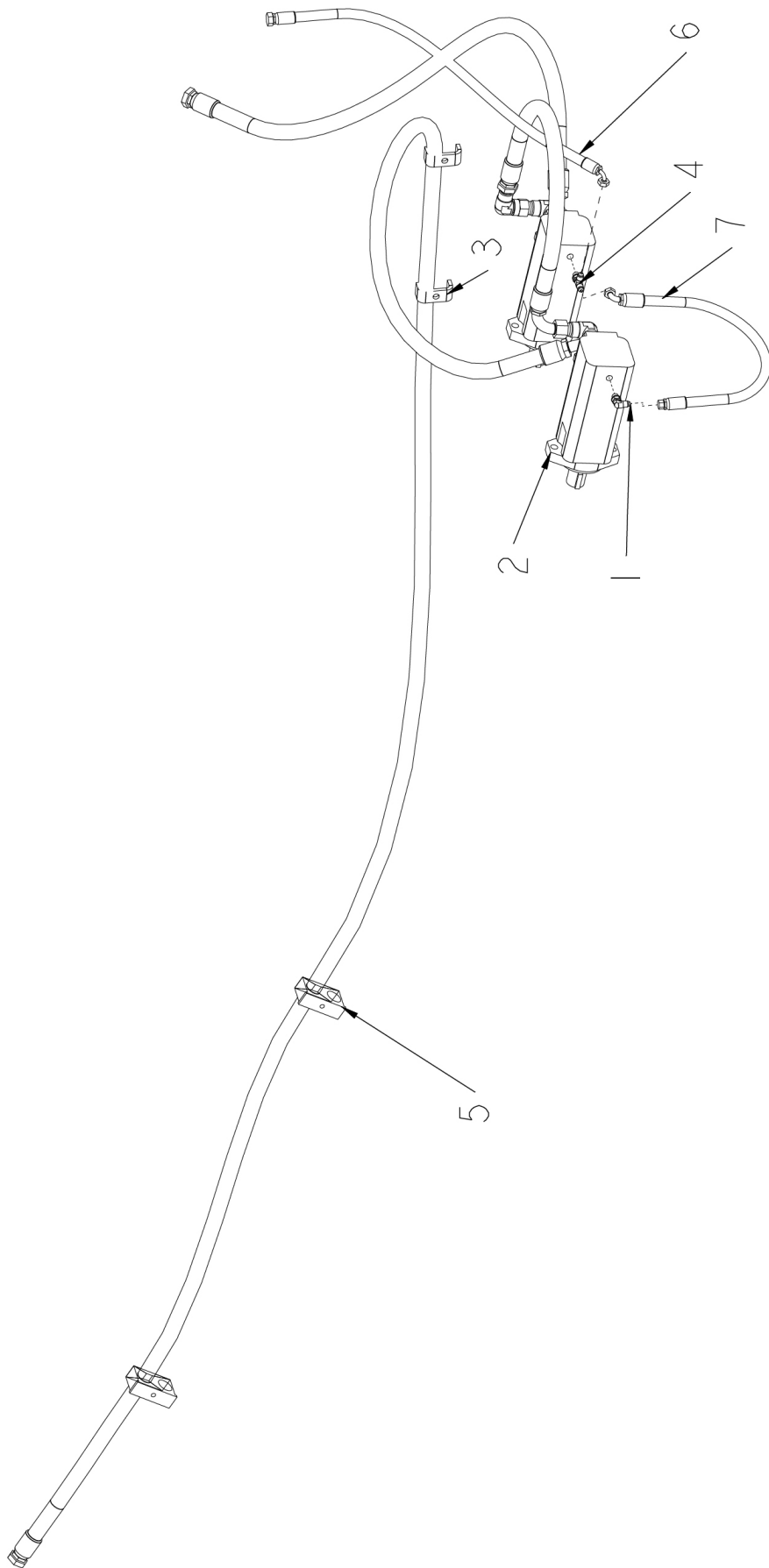
# TUB TILT HYDRAULICS



## TUB TILT HYDRAULICS

ITEM	PART	QTY.	PART DESCRIPTION
1	3800453	2	FTG\3/4MORX9/16MJIC\90
2	3800757	2	FTG\9/16MORX9/16MJIC\90
3	3800844	1	FTG\3/4MOR\ORIFICE\0.062"
4	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V
5	4100144	1	CYL\HYD\4X30\1-3/4 ROD\CLEVIS ENDS\O-RING PORTS
6	3701479	1	HOSE\HYD\3/8X50\9/16FJIC 2A PORT AUX VALVE TO ROD END TUB TILT CYL.
7	3701407	1	HOSE\HYD\3/8X26\9/16FJICS 2B PORT AUX VALVE TO BASE END TUB TILT CYL.

**BELLY AUGER HYDRAULICS - VIEW A**

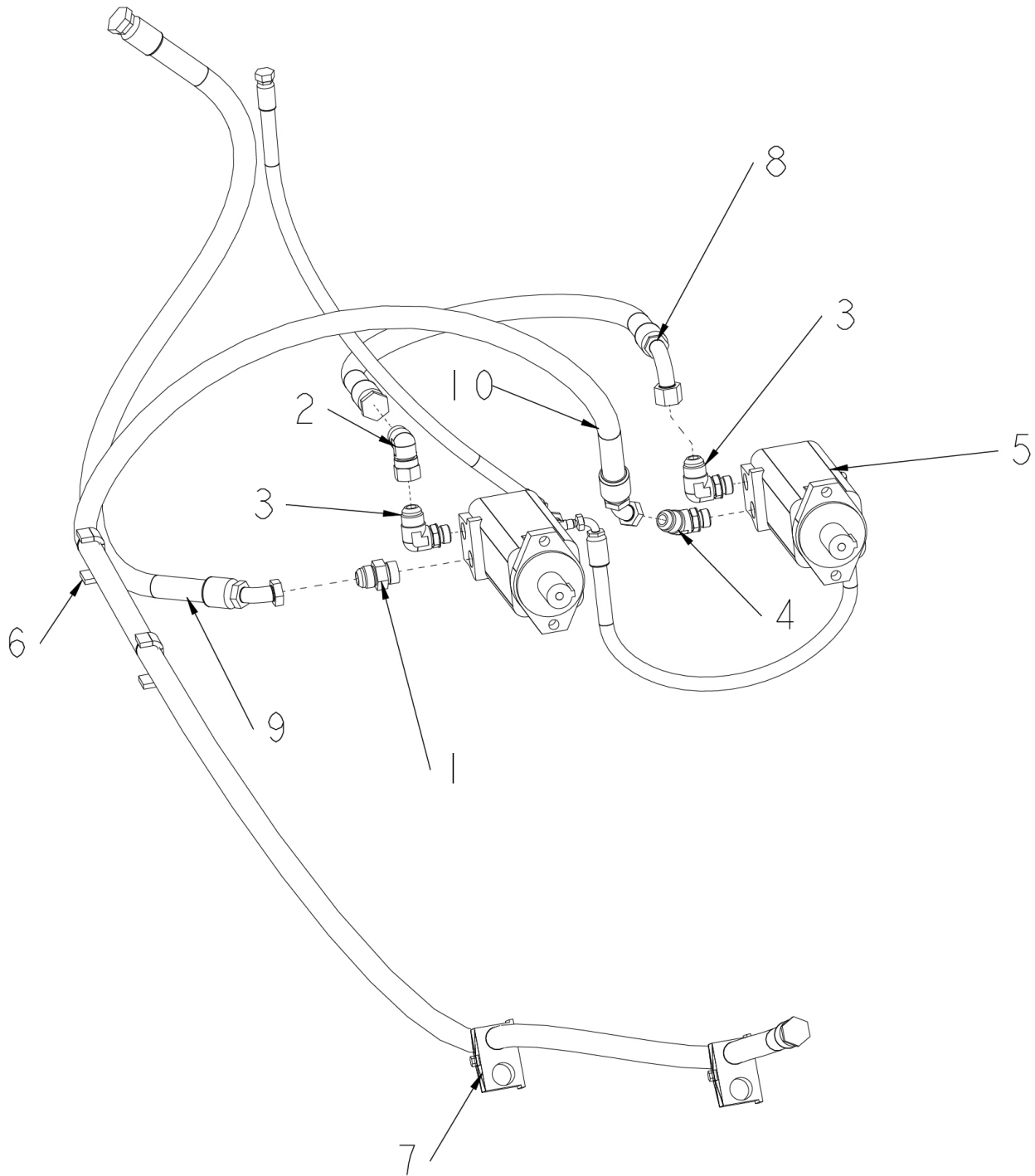


**BELLY AUGER HYDRAULICS - VIEW A**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800472	1	FTG\7/16MORX7/16MJIC\90
2	3900005	2	MTR\HYD\14.9\2000\SAE;A\>
3	4700777	2	CLMP\HOSE\1/2
4	3800988	1	FTG\7/16MJICX7/16MJICX7/16MOR\TEE
5	7501337	2	CLMP\HOSE\CUSH\3/4
6	3701767	1	HOSE\HYD\3/8X40\9/16FJICX7/16FJIC\90WH MDR TO BELLY ORBIT TEE
7	3701484	1	HOSE\HYD\3/8X21.25\7/16FJICX7/16FJIC\90 CASE DRAIN TEE RIGHT ORBIT TO CASE DRAIN LEFT ORBIT MOTOR



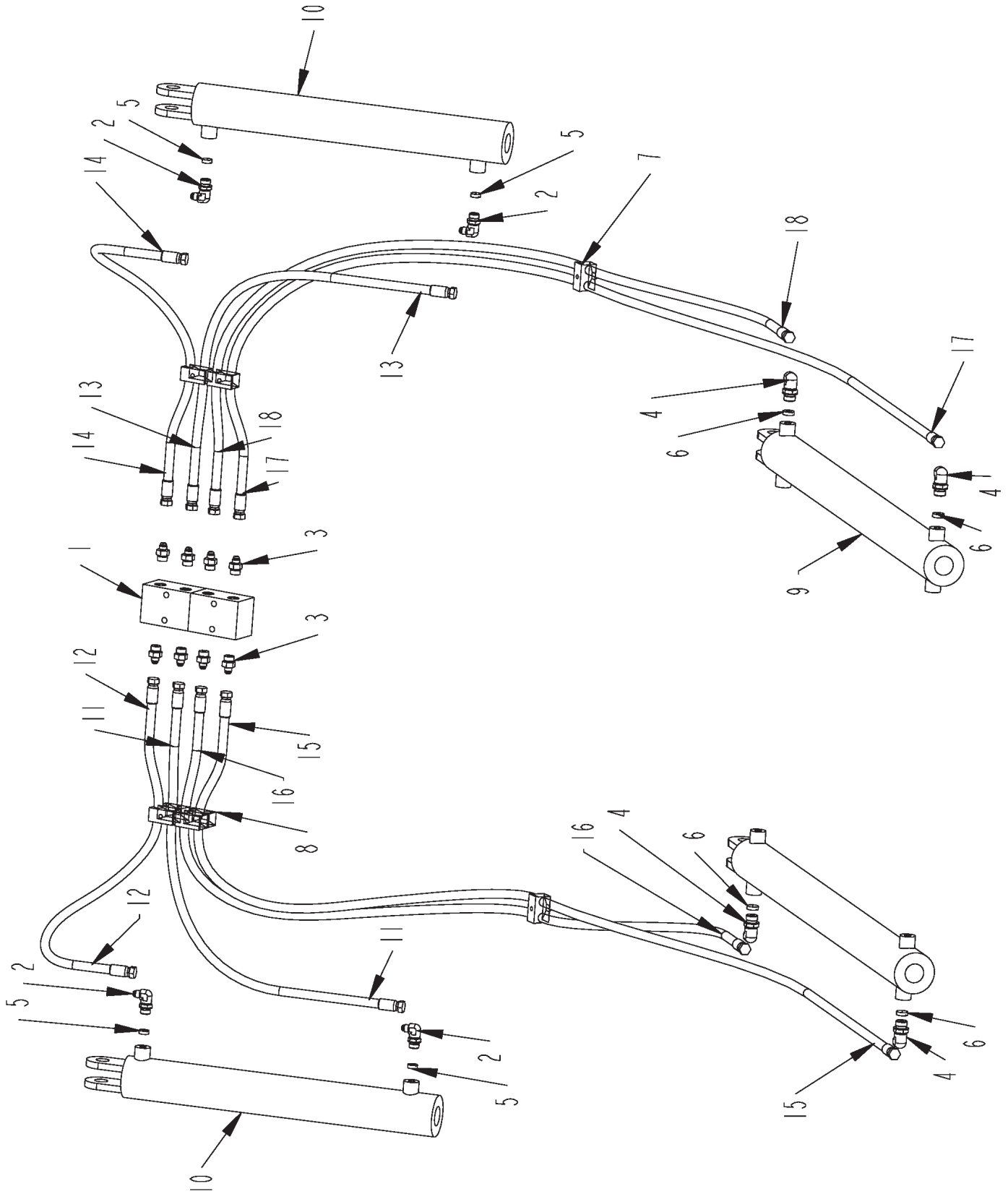
**BELLY AUGER HYDRAULICS - VIEW B**



**BELLY AUGER HYDRAULICS - VIEW B**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800277	1	FTG\1-1/16MORX1-1/16MJIC\ST
2	3800280	1	FTG\1-1/16MJICX1-1/16FJIC\90\SW
3	3800535	2	FTG\7/8MORX1-1/16MJIC\90
4	3800669	1	FTG\1-1/16MJICX7/8MOR\45
5	3900005	2	MTR\HYD\14.9\2000\SAE;A\>
6	4700777	2	CLMP\HOSE\1/2
7	7501337	2	CLMP\HOSE\CUSH\3/4
8	3701483	1	HOSE\HYD\3/4X13.5\1-1/16FJC90X1-1/16FJC PORT B LEFT ORBIT MOTOR TO PORT B RIGHT ORBIT MOTOR
9	3701778	1	HOSE\HYD\3/4X36\1-1/16FJX1-1/16FJC45DEG MC PORT AUX VALVE TO MOTOR B BELLY AUGER
10	3701575	1	HOSE\HYD\3/4X184\1-1/16FJC90X1-1/16FJC PORT A AUGER ORBIT TO IN PORT FLOW CONTROL

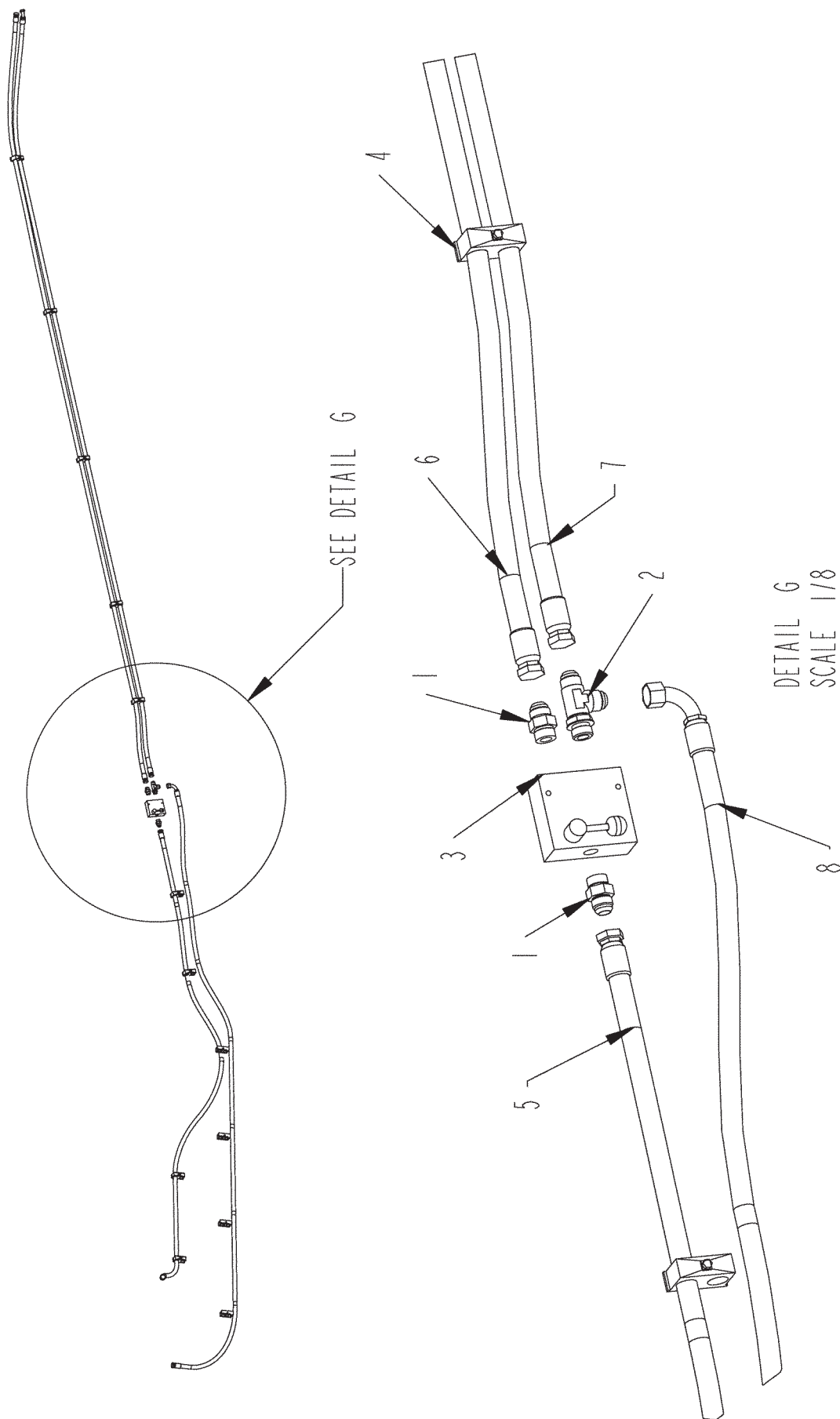
# CONVEYOR LIFT AND FOLD CYLINDER HYDRAULICS



**CONVEYOR LIFT AND FOLD CYLINDER HYDRAULICS**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800428	2	MNFLD\DBL;TEE\BLK\3/4FOR
2	3800453	4	FTG\3/4MORX9\16MJIC\90
3	3800530	8	FTG\3/4MORX9\16MJIC\ST
4	3800538	4	FTG\7/8MORX9\16MJIC\90
5	3800844	4	FTG\3/4MOR\ORIFICE\0.062"
6	3801016	4	FTG\7/8MOR\ORIFICE\0.052
7	7501336	4	CLMP\HOSE\CUSH\3/8
8	7501387	2	CLMP\HOSE\CUSH\3/8\TWIN
9	4100352 4100355	2	CYL\HYD\3X36\PARALLEL\ KIT\SEAL\CYL\HYD\3\PARALLEL\CTD (seal kit for 4100352)
10 10A	4100261 4100328	2	CYL\HYD\3X20\1-1/2ROD -CANADIAN TOOL & DIE CYL\HYD\3X20\1-1/2ROD -RAM INDUSTRIES
11	3700989	1	HOSE\HYD\3/8X53\9/16FJICS ROD END LEFT LIFT CYLINDER TO REAR PORT FRONT DIVIDER BLOCK
12	3700913	1	HOSE\HYD\3/8X34\9/16FJICS CAP END LEFT LIFT CYLINDER TO FRONT PORT FRONT DIVIDER BLOCK
13	3700989	1	HOSE\HYD\3/8X53\9/16FJICS ROD END RIGHT LIFT CYLINDER TO REAR PORT FRONT DIVIDER BLOCK
14	3700913	1	HOSE\HYD\3/8X34\9/16FJICS CAP ENF RIGHT LIFT CYLINDER TO FRONT PORT FRONT DIVIDER BLOCK
15	3700990	1	HOSE\HYD\3/8X111\9/16FJICS ROD END LEFT FOLD CYLINDER TO REAR PORT REAR DIVIDER BLOCK
16	3700735	1	HOSE\HYD\3/8X73\9/16FJIC CAP END LEFT FOLD CYLINDER TO FRONT PORT REAR DIVIDER BLOCK
17	3700990	1	HOSE\HYD\3/8X111\9/16FJICS ROD END RIGHT FOLD CYLINDER TO REAR PORT REAR DIVIDER BLOCK
18	3700735	1	HOSE\HYD\3/8X73\9/16FJIC CAP END RIGHT FOLD CYLINDER TO FRONT PORT REAR DIVIDER BLOCK

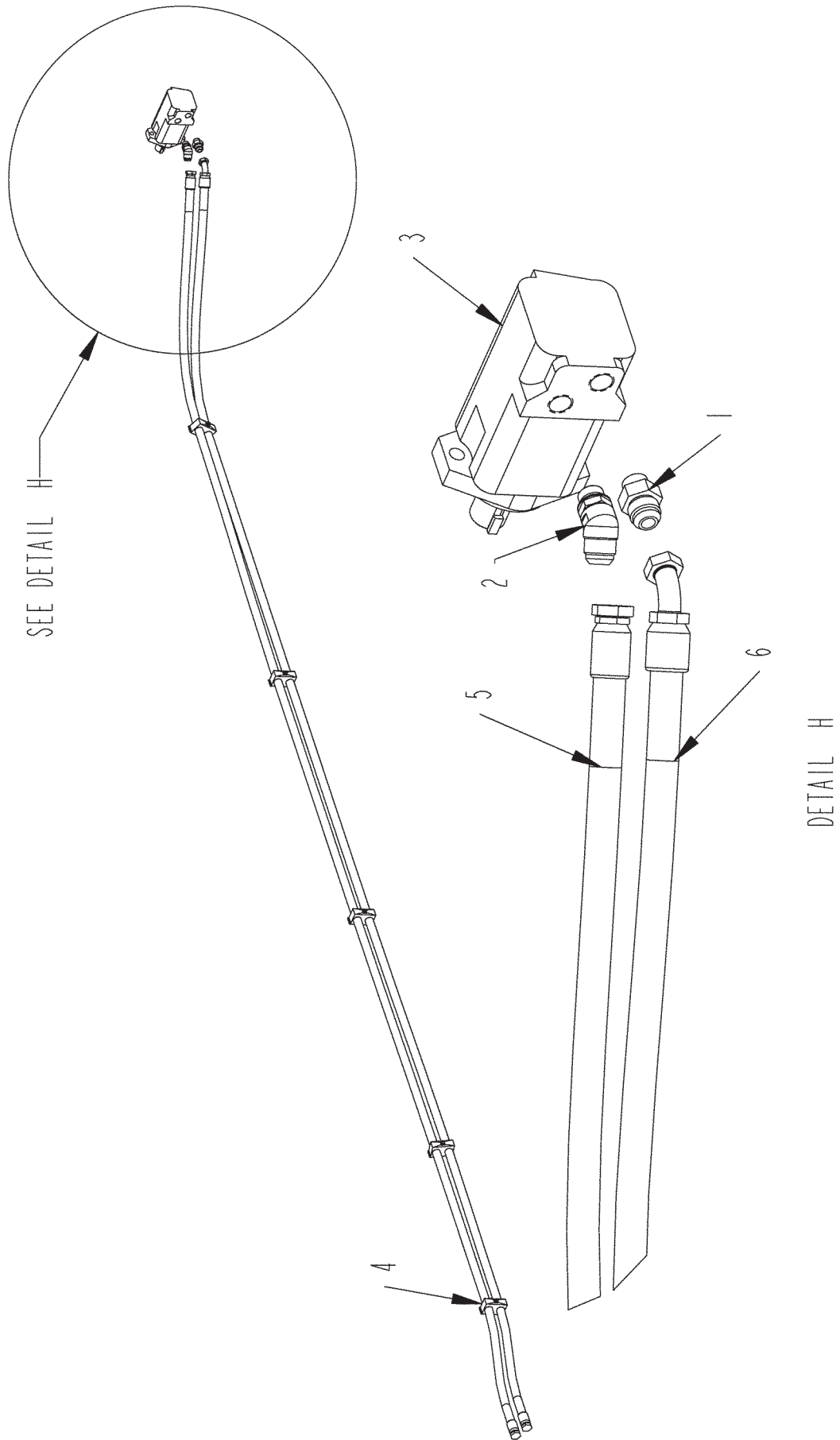
CONVEYOR FLOW CONTROL VALVE HYDRAULICS



**CONVEYOR FLOW CONTROL VALVE HYDRAULICS**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800277	2	FTG\1-1/16MORX1-1/16MJIC\ST
2	3800463	1	FTG\1-1/16MORX1-1/16MJICX1-1/16MJIC\RUN;TEE
3	4000482	1	VALVE\HYD\FLO;CNTRL\0-30\MAN
4	7501337	13	CLMP\HOSE\CUSH\3/4
5	3701575	1	HOSE\HYD\3/4X184\1-1/16FJC90X1-1/16FJC PORT A AUGER ORBIT TO IN PORT CONVEYOR FLOW CONTROL VALVE
6	3700968	1	HOSE\HYD\3/4X238\1-1/16FJCX1-1/16FJC CF PORT CONVEYOR FLOW CONTROL TO PORT B CONVEYOR ORBIT
7	3700992	1	HOSE\HYD\3/4X236\1-1/16FJX1-1/16FJC45DEG PORT A CONVEYOR ORBIT TO EX PORT ON DISCHARGE CONVEYOR FLOW CONTROL VALVE
8	3701763	1	HOSE\HYD\3/4X203\1-1/16FJC90X1-1/16FJC EX PORT DISCHARGE CONVEYOR FLOW CONTROL TO MD PORT AUX. VALVE

DISCHARGE CONVEYOR ORBIT MOTOR HYDRAULICS

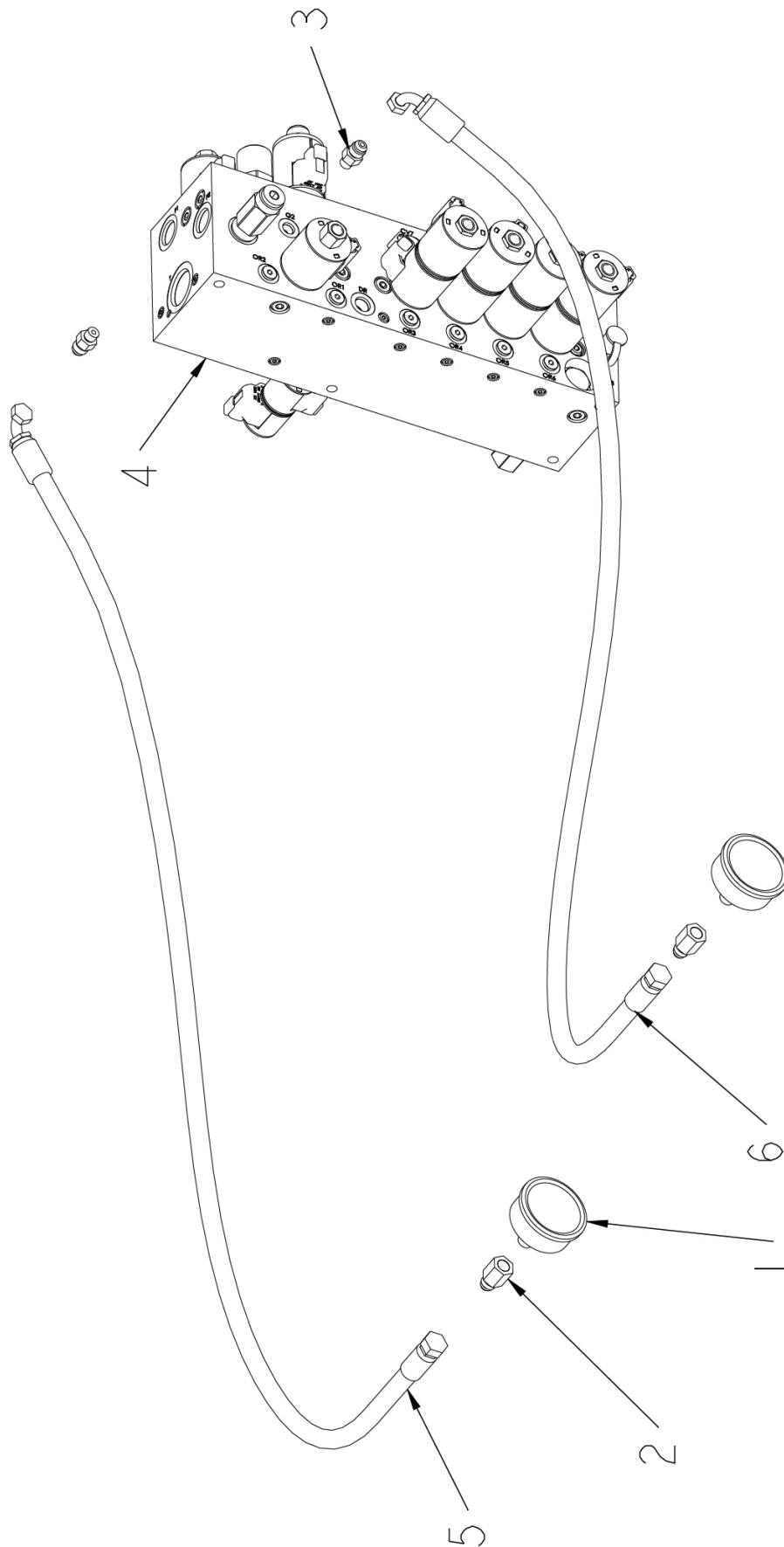




**DISCHARGE CONVEYOR ORBIT MOTOR HYDRAULICS**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800527	1	FTG\7/8MORX1-1/16MJIC\ST
2	3800669	1	FTG\1-1/16MJICX7/8MOR\45
3	3900014	1	MTR\HYD\9.6\2000\1-1/4SH
4	7501337	5	CLMP\HOSE\CUSH\3/8
5	3700968	1	HOSE\HYD\3/4X238\1-1/16FJCX1-1/16FJC CF PORT CONVEYOR FLOW CONTROL TO PORT B CONVEYOR ORBIT
6	3700992	1	HOSE\HYD\3/4X236\1-1/16FJX1-1/16FJC45DEG PORT A CONVEYOR ORBIT TO EX PORT ON DISCHARGE CONVEYOR FLOW CAONTROL VALVE

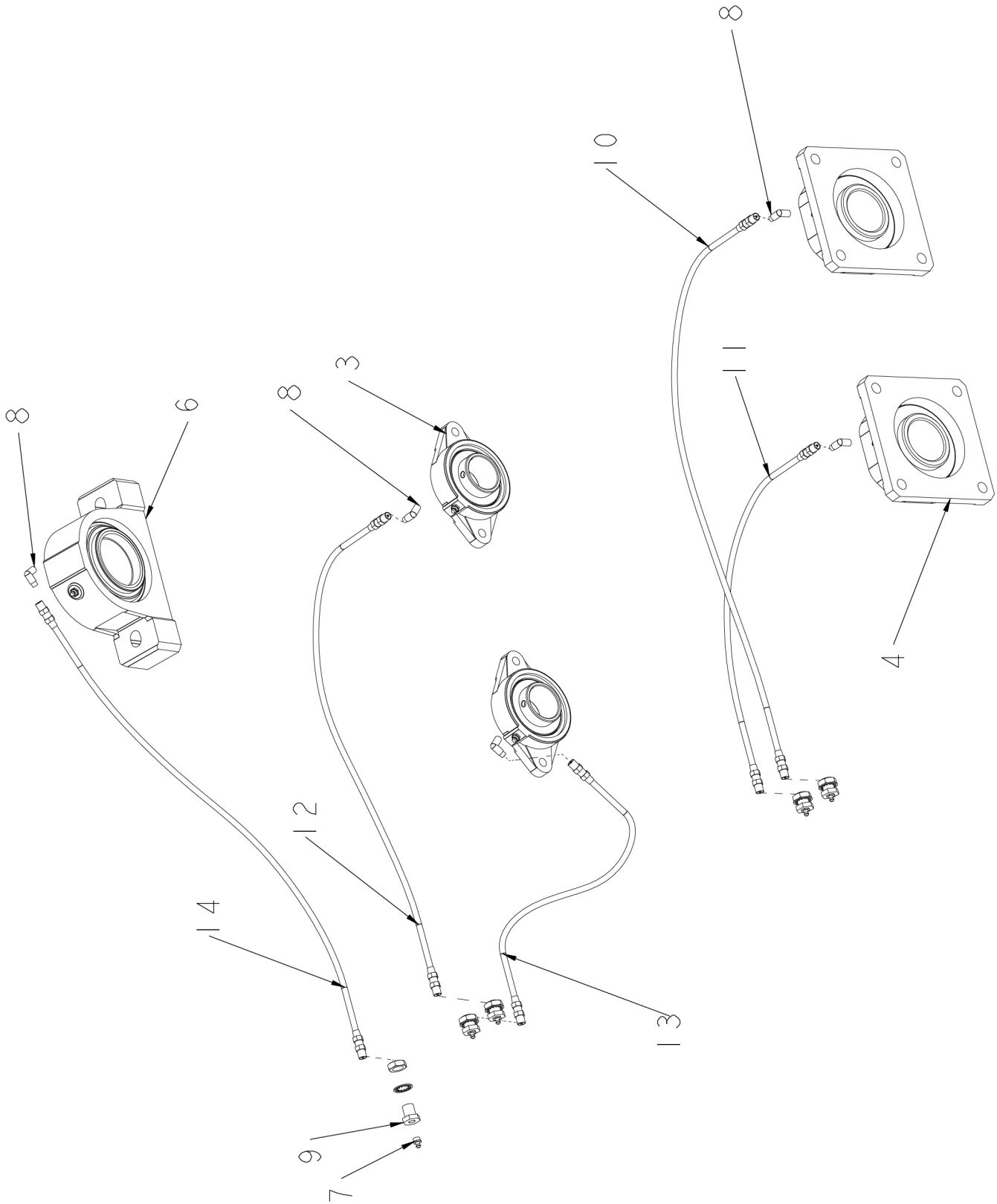
# PRESSURE GAUGES



## PRESSURE GAUGES

ITEM	PART	QTY.	PART DESCRIPTION
1	3800381	2	GAUGE\3000PSI\REAR STEM
2	3800758	2	FTG\9\16MJICX1\4FP\ADPT
3	3800763	2	FTG\7\16MORX9\16MJIC\ST
4	4000598	1	VLV\HYD\AUX\BLK\MFLD\12V
5	3701766	1	HOSE\HYD\3\8X65\9\16FJC90X9\16FJC CNVYR PRESSURE GAUGE TO G1 AUX VALVE
6	3701766	1	HOSE\HYD\3\8X65\9\16FJC90X9\16FJC TUB PRESSURE GAUGE TO G2 AUX VALVE

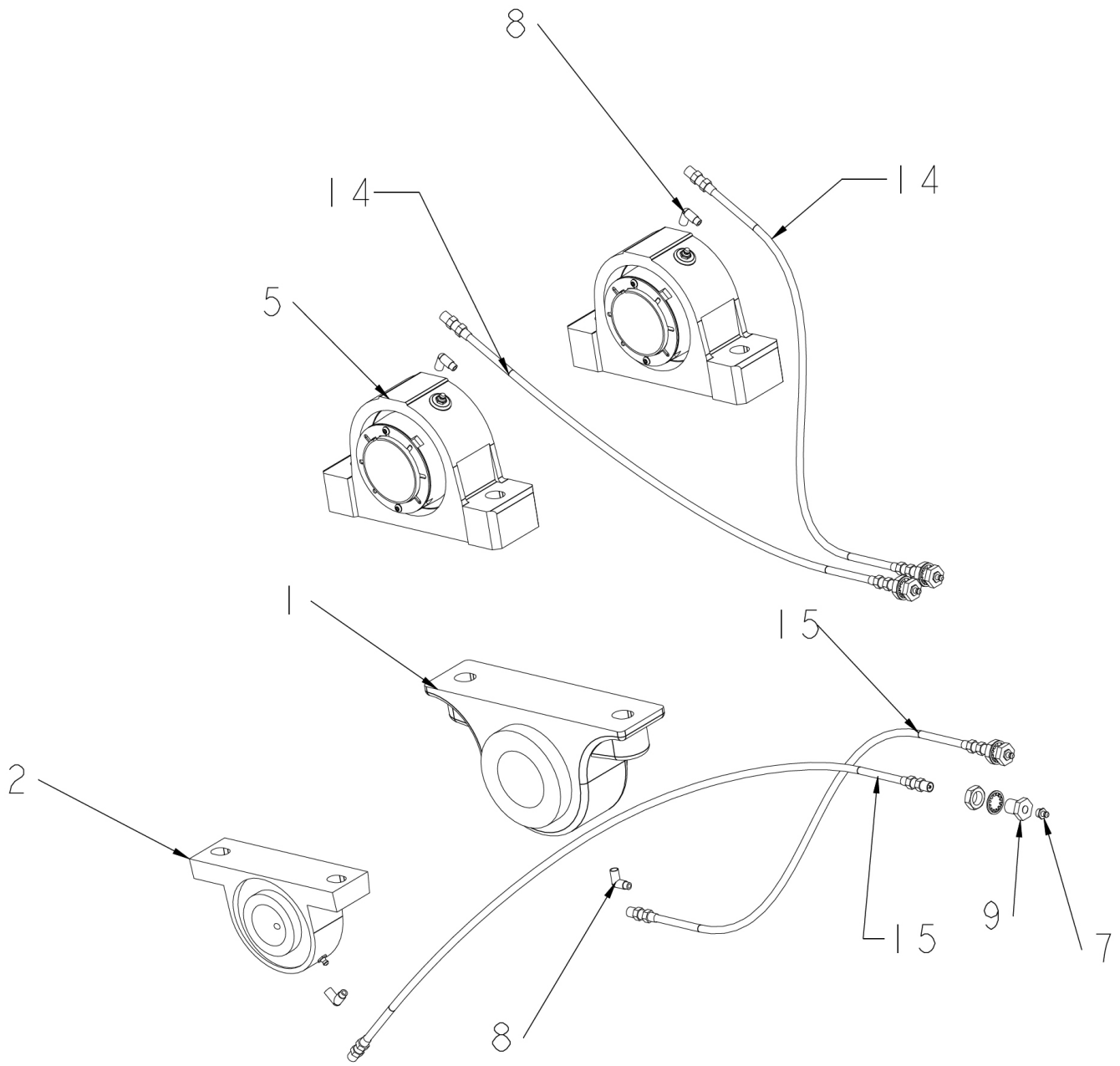
# ROTOR AND BELLY CONVEYOR GREASE LINES



**ROTOR AND BELLY CONVEYOR GREASE LINES**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	2000509	1	BRG\PB\2-3/4\E\DODGE
2	2000510	1	BRG\PB\2\2BOLT
3	2000587	2	BRG\FLG\2"-BLT\SSCRW
4	2000588	2	BRG\FLG\2-1/2\4-BLT\ID-LOCK
5	2001052	1	BRG\PB\3\IMPRL\NON-EXP
6	2001053	2	BRG\PB\3\IMPRL\EXP
7	3800043	11	FTG\LUB\1/8MPXZRK\SHORT
8	3800111	9	FTG\1/8MPX\1/8FP\90\ST;EL
9	3800895	9	FTG\1/8FP\CPLG\ANCHOR\5/8NF
10	3701488	1	HOSE\LUB\1/8X43\MPS-MPS
11	3701487	1	HOSE\LUB\1/8X27.25\MPS-MPS
12	3701486	1	HOSE\LUB\1/8X37.25\MPS-MPS
13	3701485	1	HOSE\LUB\1/8X22.5\MPS-MPS
14	3700961	3	HOSE\LUB\1/8X40\MPS-MPS
15	3701597	2	HOSE\LUB\1/8X37\MPS-MPS

# JACK SHAFT AND BULL WHEEL GREASE LINES

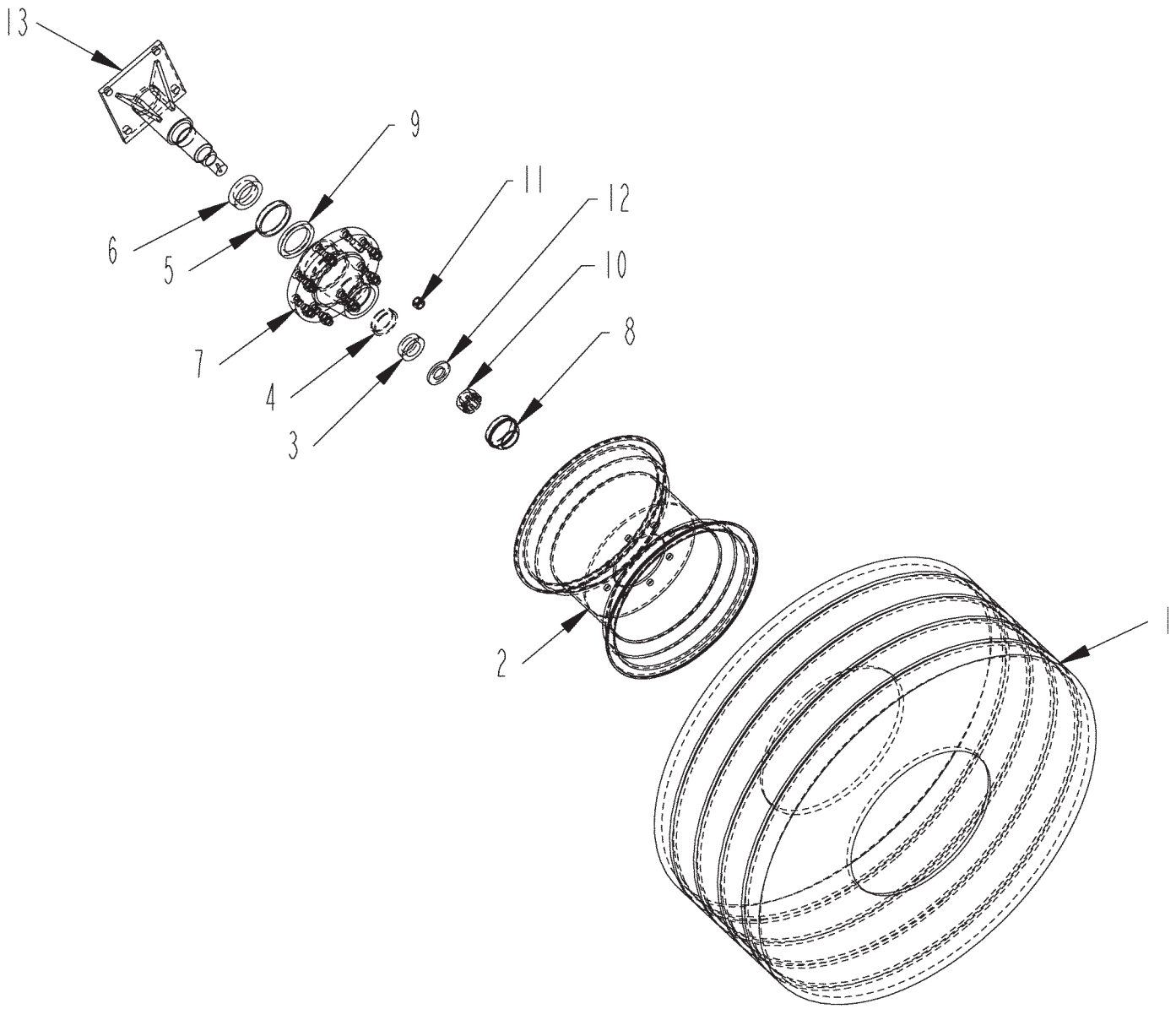


**JACK SHAFT AND BULL WHEEL GREASE LINES**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	2000509	1	BRG\PB\2-3/4\E\DODGE
2	2000510	1	BRG\PB\2\2BOLT
3	2000587	2	BRG\FLG\2"-BLT\SSCRW
4	2000588	2	BRG\FLG\2-1/2\4-BLT\ID-LOCK
5	2001052	1	BRG\PB\3\IMPRL\NON-EXP
6	2001053	2	BRG\PB\3\IMPRL\EXP
7	3800043	11	FTG\LUB\1/8MPXZRK\SHORT
8	3800111	9	FTG\1/8MPX\1/8FP\90\ST;EL
9	3800895	9	FTG\1/8FP\CPLG\ANCHOR\5/8NF
10	3701488	1	HOSE\LUB\1/8X43\MPS-MPS
11	3701487	1	HOSE\LUB\1/8X27.25\MPS-MPS
12	3701486	1	HOSE\LUB\1/8X37.25\MPS-MPS
13	3701485	1	HOSE\LUB\1/8X22.5\MPS-MPS
14	3700961	3	HOSE\LUB\1/8X40\MPS-MPS
15	3701597	2	HOSE\LUB\1/8X37\MPS-MPS



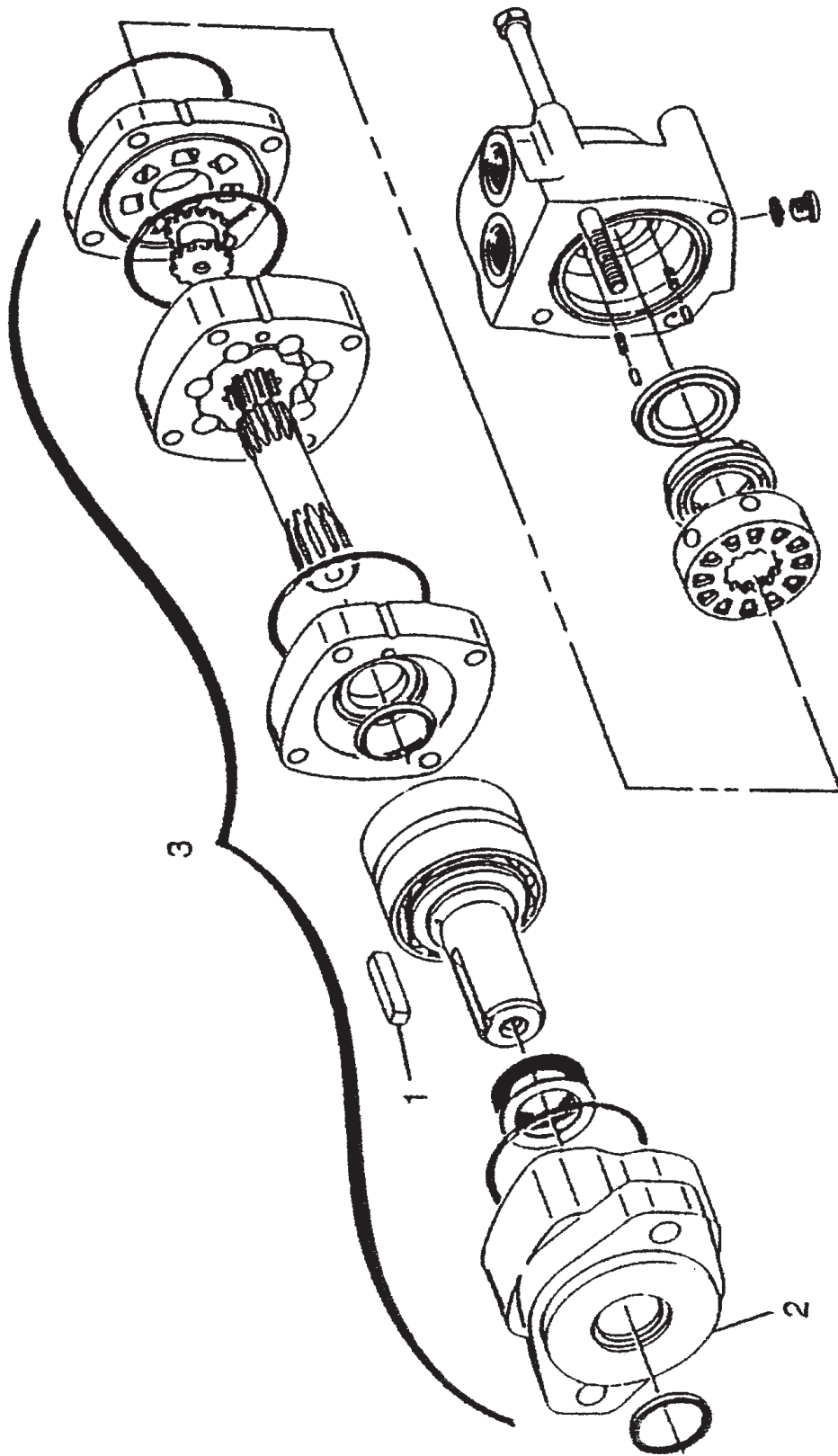
**WHEELS AND HUBS**



## WHEELS AND HUBS

ITEM	PART	QTY.	PART DESCRIPTION
1	2600859	1	TIRE\445/50R22.5
2	2600655	1	WHL\8-BOLT\22.5X13
3	2900125	1	HUB\H817\CONE\OUTER
4	2900126	1	HUB\H817\CUP\OUTER
5	2900127	1	CUP\INNER\WHL:HUB(48510
6	2900128	1	HUB\H817\CONE\INNER
7	2900140	1	HUB\8-BOLT\W/RACES\W/NUTS
8	2900130	1	CAP\DUST\H817
9	2900131	1	SEAL\GREASE\H817
10	4900053	1	NUT\CASTLE\1-1/4\NF
11	4900114	8	NUT\TAPER\WHEEL\5/8\NF
12	5000065	1	WASH\2.5OD\1.25ID\224
13	8101600	1	SPNDL\2800
	<b>2600880</b>		<b>WHL\ASSY\445X50R22.5\20PLY\8-BOLT</b> (INCLUDES 1 & 2)
	<b>2900140</b>		<b>HUB\8-BOLT\COMPIH-817</b> (INCLUDES 3,4,5,6,7,8,9 & 11)
	<b>8101469</b>		<b>SPNDL\HUB\ASSY\2800</b> (INCLUDES 2900140, 4800534, 5000133 & 8101600)
	<b>4503008</b>		<b>WHL\SPNDL\ASSY\H1135</b> (INCLUDES 2600880 & 8101469)
	<b>NOT SHOWN</b>		
	4800534		PIN\COT\3/16X2-1/2
	5000133		WASH\SPNDL\1-5/16ID\2-1/2OD\1/4T

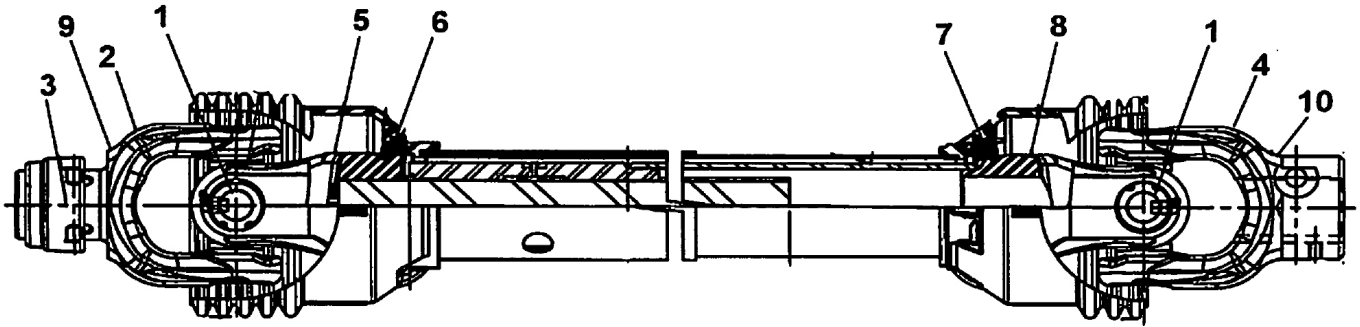
ORBIT MOTOR



**ORBIT MOTOR**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
<b>3</b>	<b>3900014</b>	<b>1</b>	<b>MTR\HYD\9.6\2000\1-1/4SH</b> (DISCHARGE MOTOR)
1	6200004	1	KEY\SQ\5/16X1-1/2
2	3900011	1	MTG FLG(2000 SER)
4	7501005	1	KIT\SEAL\2000ORBIT
<b>3</b>	<b>3900020</b>	<b>1</b>	<b>MTR\HYD\11.9\2000\SAE;A;&gt;</b> (BELLY AUGER MOTORS)
1	6200004	1	KEY\SQ\5/16X1-1/2
2	3900011	1	MTG FLG(2000 SER)
4	7501005	1	KIT\SEAL\2000ORBIT
<b>3</b>	<b>4200121</b>		<b>MTR\HYD\40.6\10000\2-1/4 1-5/16FOR</b> (TUB DRIVE MOTOR)
	4200123		SEAL\KIT\MTR\119-1030

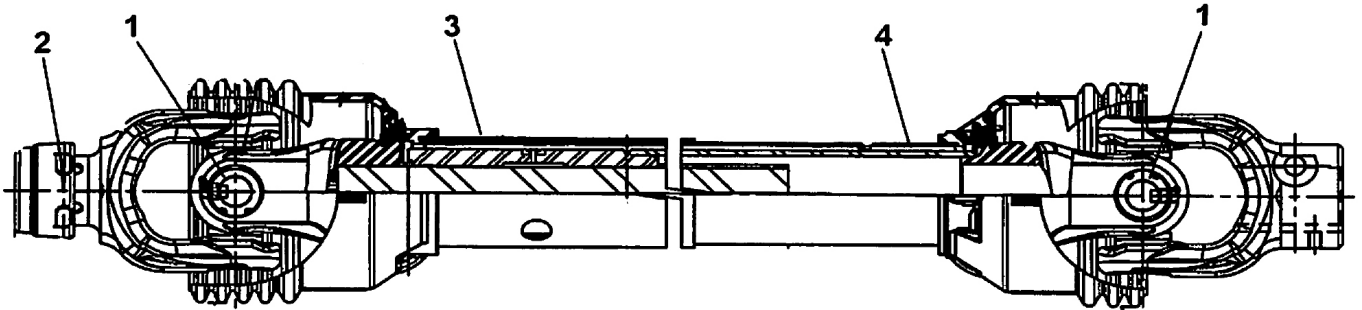
**3600831 PTO ASSEMBLY**



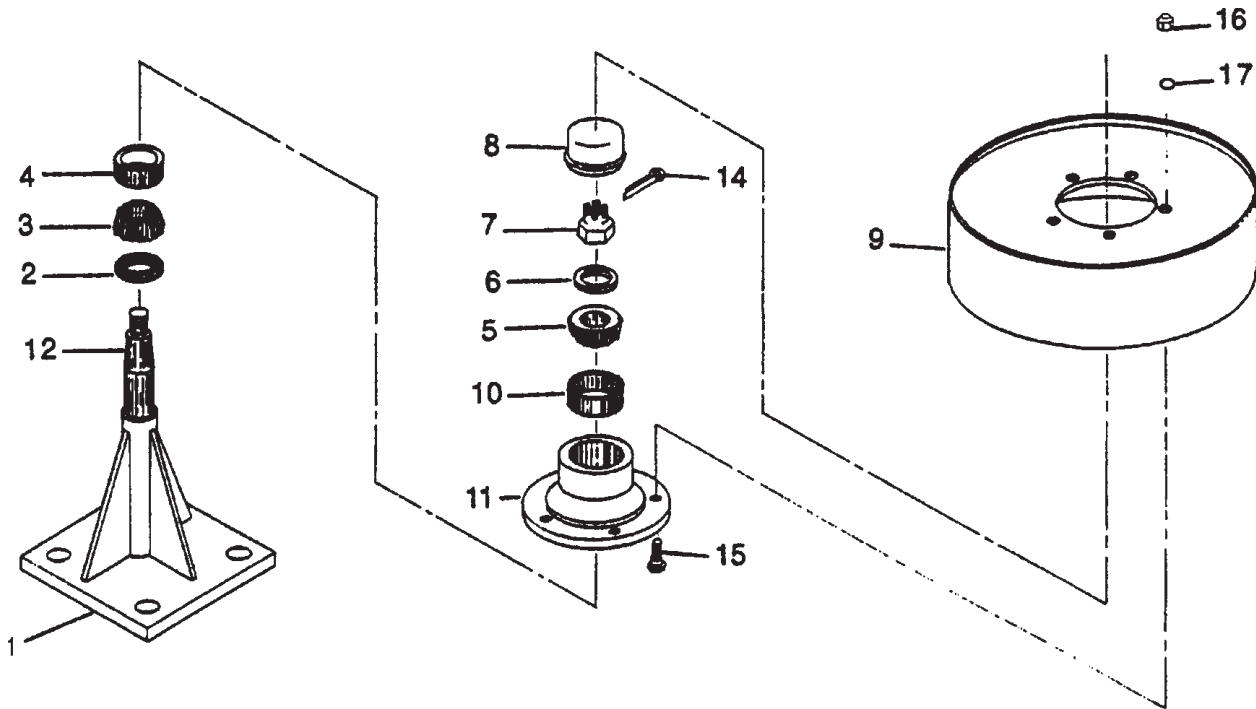
ITEM	PART	QTY.	PART DESCRIPTION
	<b>3600831</b>		<b>PTO\COMP\77E\20SP\1-3/4</b>
1	3600738	2	CROSS&BRG\77E\WSLR
2	3600741	1	YOKE\77E\1-3/4\LOCK\AUTO
3	3600775	1	LOCK\SAFETY;SLD\KIT\1-3/4\77E
4	3600852	1	JOINT&TUBE\77E\3600831
5	3600853	1	YOKE&SHAFT\77E\3600831
6	3600854	1	GUARD\PTO\1-3/4\77E\20SPLN\OUTER
7	3600855	1	GUARD\PTO\1-3/4\77E\20SPLN\INNER
8	3600856	1	YOKE&TUBE&SLEEVE\77E\3600831
9	3600871	1	PTO\HALF\TRACTOR\3600831
10	3600873	1	PTO\HALF\MACHINE\3600831 & 3600832

**3600832 PTO ASSEMBLY**

ITEM	PART	QTY.	PART DESCRIPTION
	3600832		PTO\COMP\77E\21SP\1-3/8
1	3600738	2	CROSS&BRG\77E\WSLR
2	3600777	1	LOCK\SAFTY;SLD\KIT\1-3/8\77E
3	3600872	1	PTO\HALF\TRACTOR\3600832
4	3600873	1	PTO\HALF\MACHINE\3600831 & 3600832



**PRESSURE ROLLER ASSEMBLY**

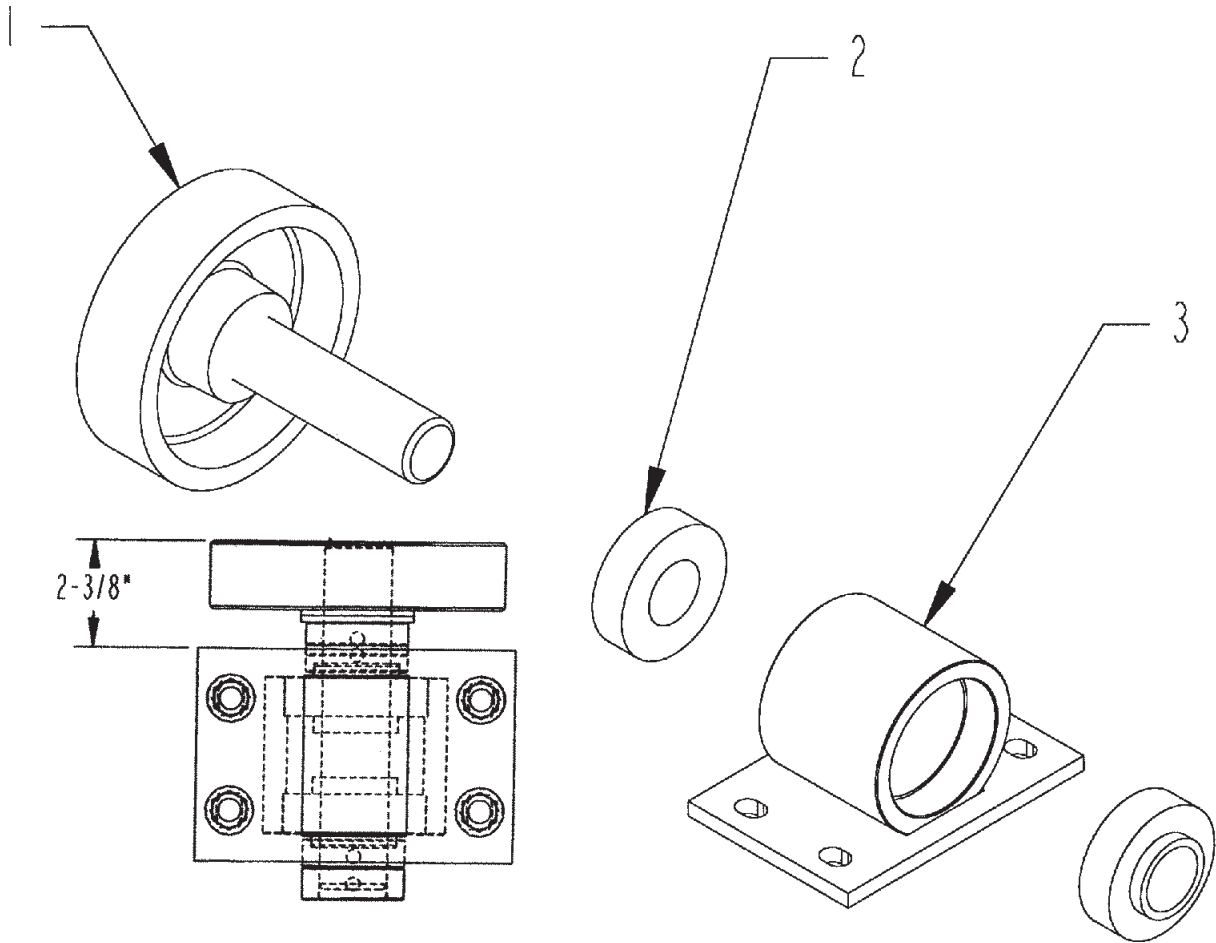


ITEM	PART	QTY.	PART DESCRIPTION
	4500247	1	PRESSURE ROLLER COMPLETE 10" SPINDLE
1	4501090	1	SINGLE STAND 10" SPINDLE
2	2900055	1	SEAL
3	2900018	1	INNER CONE
4	2900004	1	INNER CUP
5	2900061	1	OUTER CONE
6	5000094	1	5/8" WASHER\SPINDLE
7	4900112	1	NUT\SLOT\5/8\NF
8	2900064	1	DUST CAP
9	4500088	1	PRESSURE DRUM
10	2900056	1	OUTER CUP
11	NA	1	ORDER 2900057
12	3000025	1	PRESSURE ROLLER SPINDLE 10"
14	4800172	1	1/8" X 2" COTTER PIN
15	2900010	5	1/2" NF X 1-1/4" WHEEL STUD BOLT
16	4900094	5	1/2" NF WHEEL BOLT 13/16" O.D.
17	5000004	5	WASH\FLAT\1/2
	<b>2900057</b>		<b>HUB\5-BOLT\985\COMPLETE, W/BEARINGS,SEAL &amp; DUST CAP includes items 2,3,4,5,8,10,11,15,16</b>
<b>Not Shown</b>			
	4800949	4	BOLT\FLG\5/8X2\GR8\NC
	4900178	4	NUT\FLG\TPLCK\5/8\GR8\NC

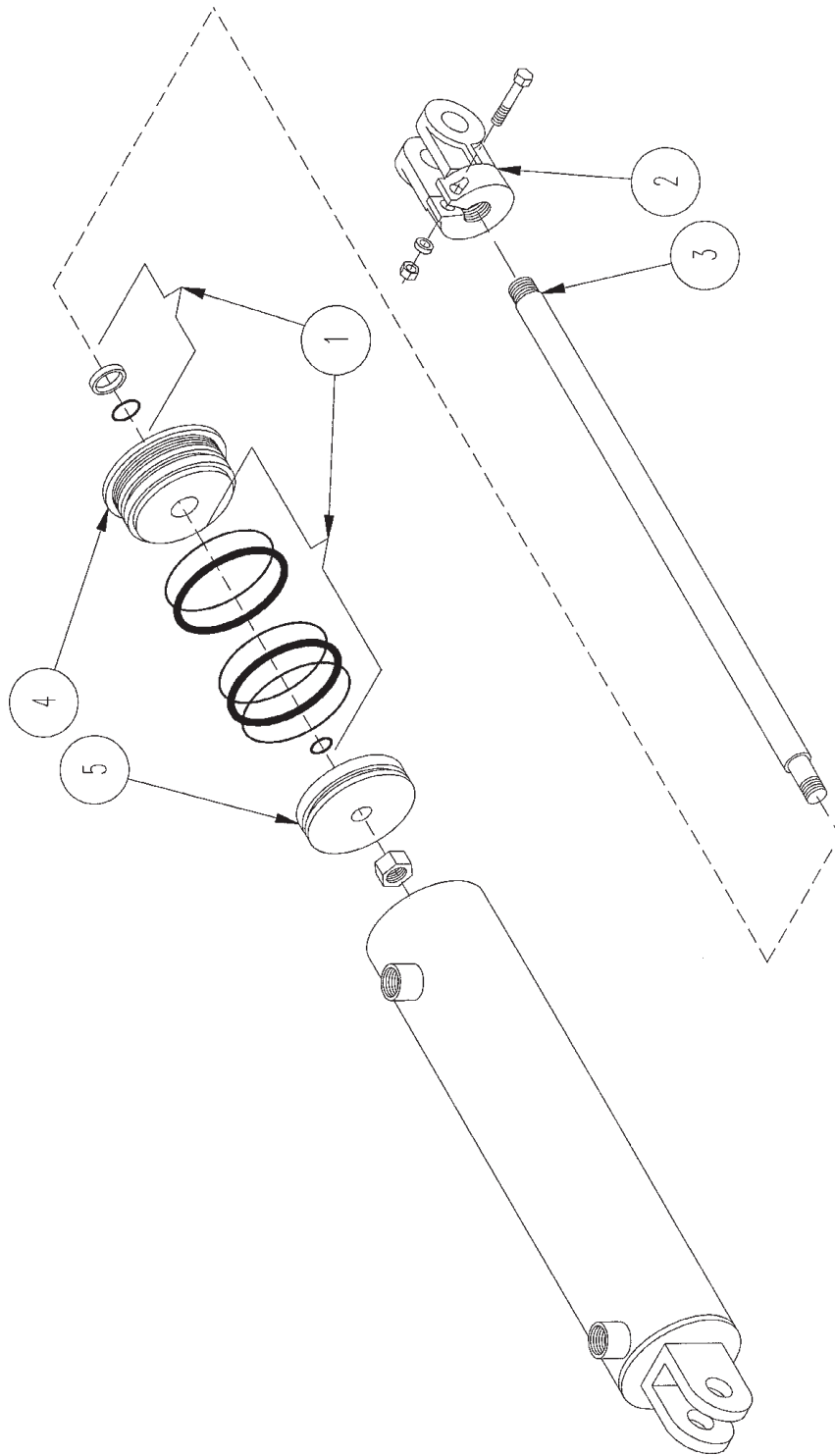


## TUB ROLLER BEARING ASSEMBLY

ITEM	PART	QTY.	PART DESCRIPTION
1	1200013	1	RLLR\TUB\1-1/2W/O FLANGE
2	2000584	2	BRG\CYL\1-1/2\DLOK
3	4702007	1	BRG\PB\RLLR\TUB\ASYW\BRGINSRT
	<b>4704069</b>		RLLR\TUB\ASSY\STEEL\CAST (INCLUDES #1, #2 & #3)
	<b>NOT SHOWN</b>		
	4800930	4	BOLT\FLG\SERR\1/2X2\NC
	4900100	4	NUT\FLG\TPLCK\1/2\NC



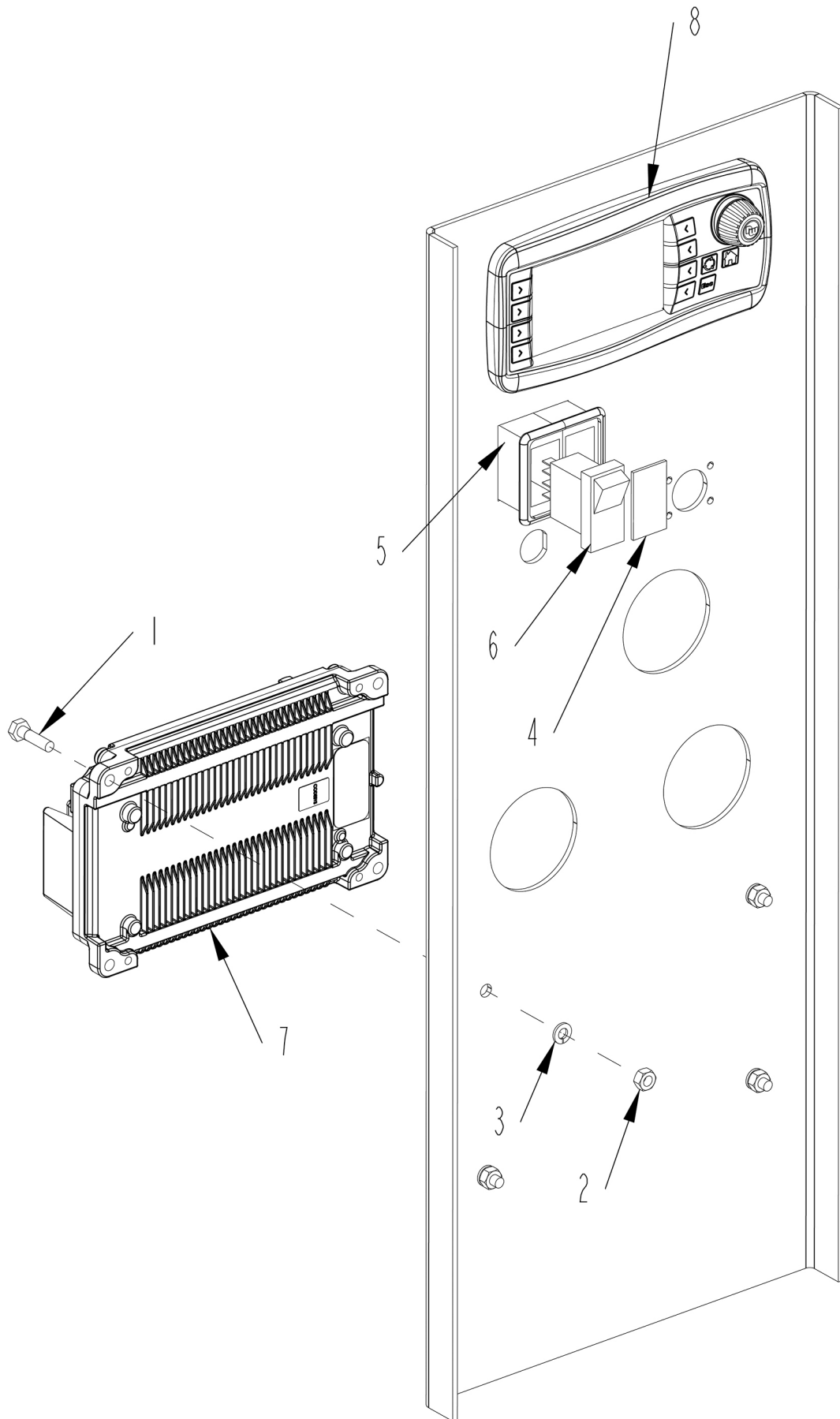
HYDRAULIC CYLINDER SEALS AND OTHER ITEMS



## HYDRAULIC CYLINDER SEALS AND OTHER ITEMS

ITEM	PART	QTY.	PART DESCRIPTION
	<b>4100144</b>		<b>CYL\HYD\4X30\1-3/4 ROD\CLEVIS ENDS\O-RING PORTS</b>
1	4100180	1	KIT\SEAL\CYL\HYD\4X30\1-3/4"ROD
2	4100181	1	YOKE\CYL\HYD\4X30\1-3/4\ROD
3	4100182	1	ROD\CYL\HYD\4X30\1-3/4\ROD
4	4100183	1	GLAND\CYL\HYD\4X30\1-3/4\ROD
5	4100184	1	PISTON\CYL\HYD\4X30\1-3/4\ROD
	4100219		
	<b>4100175</b>		<b>CYL\HYD\3X36\PARALLEL\CLEV\7/8FOR\R6-30HB2-36</b>
1	4100143	1	KIT\SEAL\CYL\HYD\3X24\>
2	4100132	1	YOKE ON 1.25" RAM ON 2.5"
3	4100174	1	ROD\CYL\HYD\1-1/2\3X36\>
4	4100102	1	GLAND\CYL\HYD\3"W\1-1/2 ROD
5	4100104	1	PISTON\CYL\HYD\3"RAM
	<b>4100261</b>		<b>CYL\HYD\3X20\1-1/2ROD\PAR</b>
1	4100289	1	KIT\SEAL\CYL\HYD\3X20
3	4100291	1	CYL\HYD\ROD\1-1/2\3X20
4	4100288	1	CYL\HYD\GLAND\3"\1-1/2"ROD\CTD
5	4100290	1	CYL\HYD\PISTON\3"\1-1/2"ROD\CTD
	<b>4100328</b>		<b>CYL\HYD\3X20\1-1/2ROD -RAM INDUSTRIES</b>
1	4100143	1	SEAL KIT FOR 4100328

**ELECTRICAL PARTS**



## ELECTRICAL PARTS

ITEM	PART	QTY.	PART DESCRIPTION
1	4800277	4	BOLT\HEX\1/4X1
2	4900009	4	NUT\HEX\1/4\NC
3	5000024	4	WASH\LOCK\1/4
4	5700329	1	SWITCH\RCKR\PLUG
5	5700333	2	SWITCH\RCKR\MNT\PNL\MTPL
6	5700547	1	SWITCH\RCKR\DPST\12V\2LIT\15A\LATCH\W/RASED BRCKT
7	5701189	1	CNTRL\HFX32
8	5701234	1	DSPLY\WACH\IOPUS\A3X

### NOT SHOWN

4300089	1	SNSR\PROX\M12X60
4502789	1	SHIM\CNTRLLR
4801439	4	BOLT\HEX\M5X12\0.8P
5701073	1	KIT\MNT\DASH\WACHENDORF

## REMOTE RADIO TRANSMITTER



PART	QTY.	PART DESCRIPTION
<b>4503004</b>		<b>RMT\RADI\H1135\OMNX\2.4GHZ (COMPLETE)</b>
4900009	4	NUT\HEX\1/4\NC
5000024	4	WASH\LOCK\1/4
5701182	1	HARN\OPT\HFX\RADIO
5701237	1	RADIO\REMOTE\OMNEX\T110R170\PS00404\2.4 GHZ (INCLUDES 5700744, 5700887 AND 5701238)
5700744	1	RADIO\REMOTE\ANTNA&CBL\12FT\MCX\R160
5700887	1	RADIO\REMOTE\OMNEX\T110\2.4GHZ
5701238	1	RADIO\REMOTE\OMNEX\R170\PS00404\2.4 GHZ
7500755	2	CUSH\RBBR\1-OD\1/4-20X3/4



# 5701182 RADIO HARNESS

DT04-2P

2  
1

TO 5701174

A  
B  
C

DT06-3S

CAN SHIELD TRIM FLUSH

A B

C PLUG

5701053

DTZ 3 PIN CAN BUS 120 OHM RESISTOR  
RESISTOR IS IN MAIN HARNESS  
REPLACE RESISTOR WITH 3 PIN PLUG, INSERT RESISTOR HERE.

5701238 - R170 RECEIVER

RADIO 12 PIN GREY RECEPTACLE

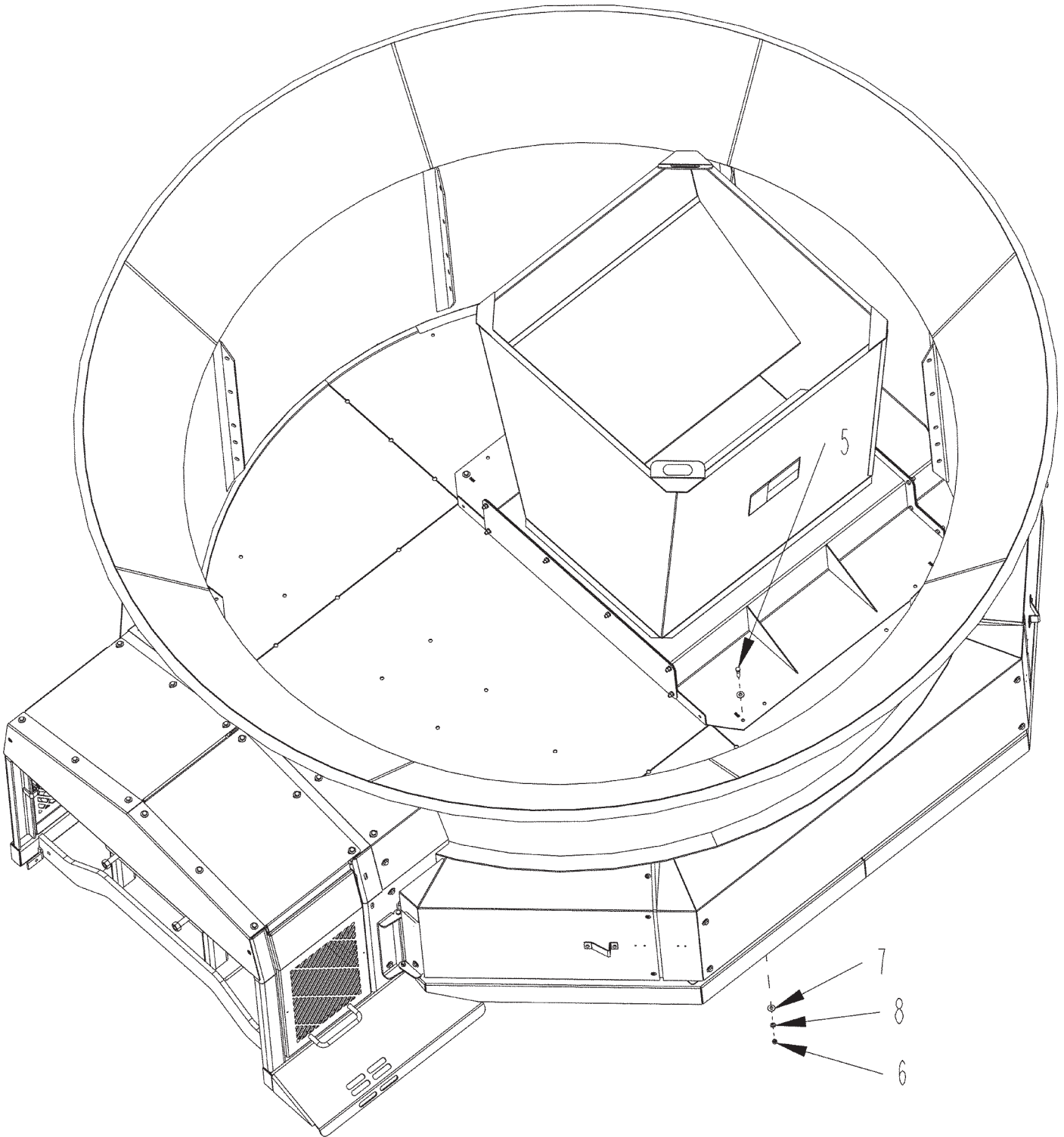
- PIN 1 PLUG
- PIN 2 PLUG
- PIN 3 97E WHITE
- PIN 4 PLUG
- PIN 5 PLUG
- PIN 6 44R ORG
- PIN 7 PLUG
- PIN 8 CAN YELLOW
- PIN 9 CAN GREEN
- PIN 10 PLUG
- PIN 11 PLUG
- PIN 12 PLUG

RADIO 12 PIN BLACK RECEPTACLE

- PIN 1 PLUG
- PIN 2 PLUG
- PIN 3 PLUG
- PIN 4 PLUG
- PIN 5 PLUG
- PIN 6 PLUG
- PIN 7 PLUG
- PIN 8 PLUG
- PIN 9 PLUG
- PIN 10 PLUG
- PIN 11 PLUG
- PIN 12 PLUG



**GRAIN HOPPER #1 (OPTION)**



## GRAIN HOPPER #1 (OPTION)

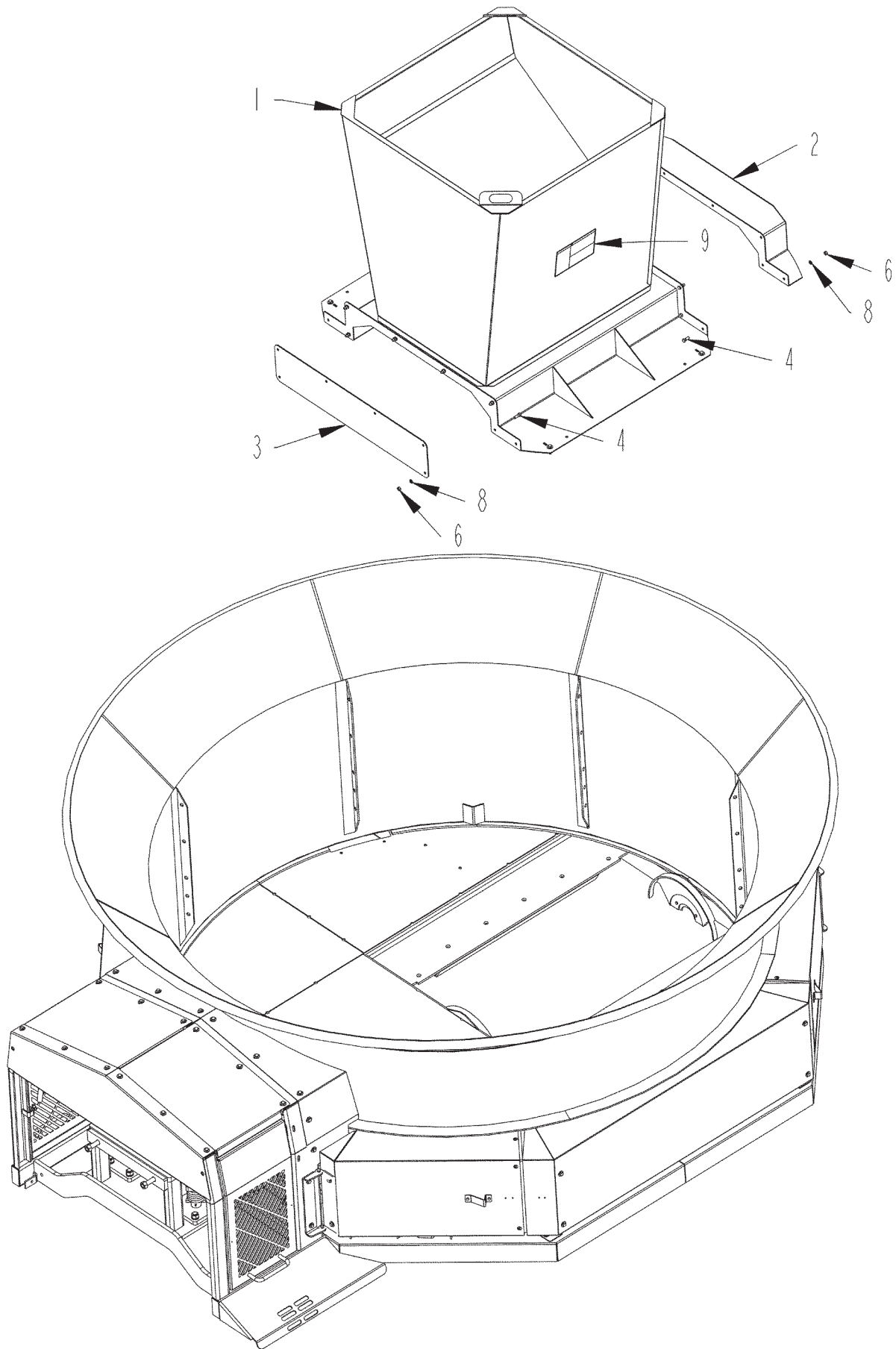
ITEM	PART	QTY.	PART DESCRIPTION
	4501347		HPPR\GRAIN\ASSY\COMPLETE
1	4501335	1	HPPR\GRAIN
2	4501340	1	CVR\RTR\HPPR\GRAIN
3	4501341	1	CVR\END\HPPR\GRAIN
4	4800003	14	BOLT\HEX\3/8X1
5	4800034	4	BOLT\HEX\3/8X1-1/2
6	4900002	18	NUT\HEX\3/8\NC
7	5000001	8	WASH\FLAT\3/8
8	5000019	18	WASH\LOCK\3/8
9	6500452	2	DECAL\INFO\GRAIN;HPPR
	<b>NOT SHOWN</b>		
	4502853		KIT\FLAP\GRAIN HPPR

### Grain Hopper Option Installation:

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

**IMPORTANT! DO NOT ROTATE TUB WITH HOPPER INSTALLED**

**GRAIN HOPPER #2 (OPTION)**



## GRAIN HOPPER #2 (OPTION)

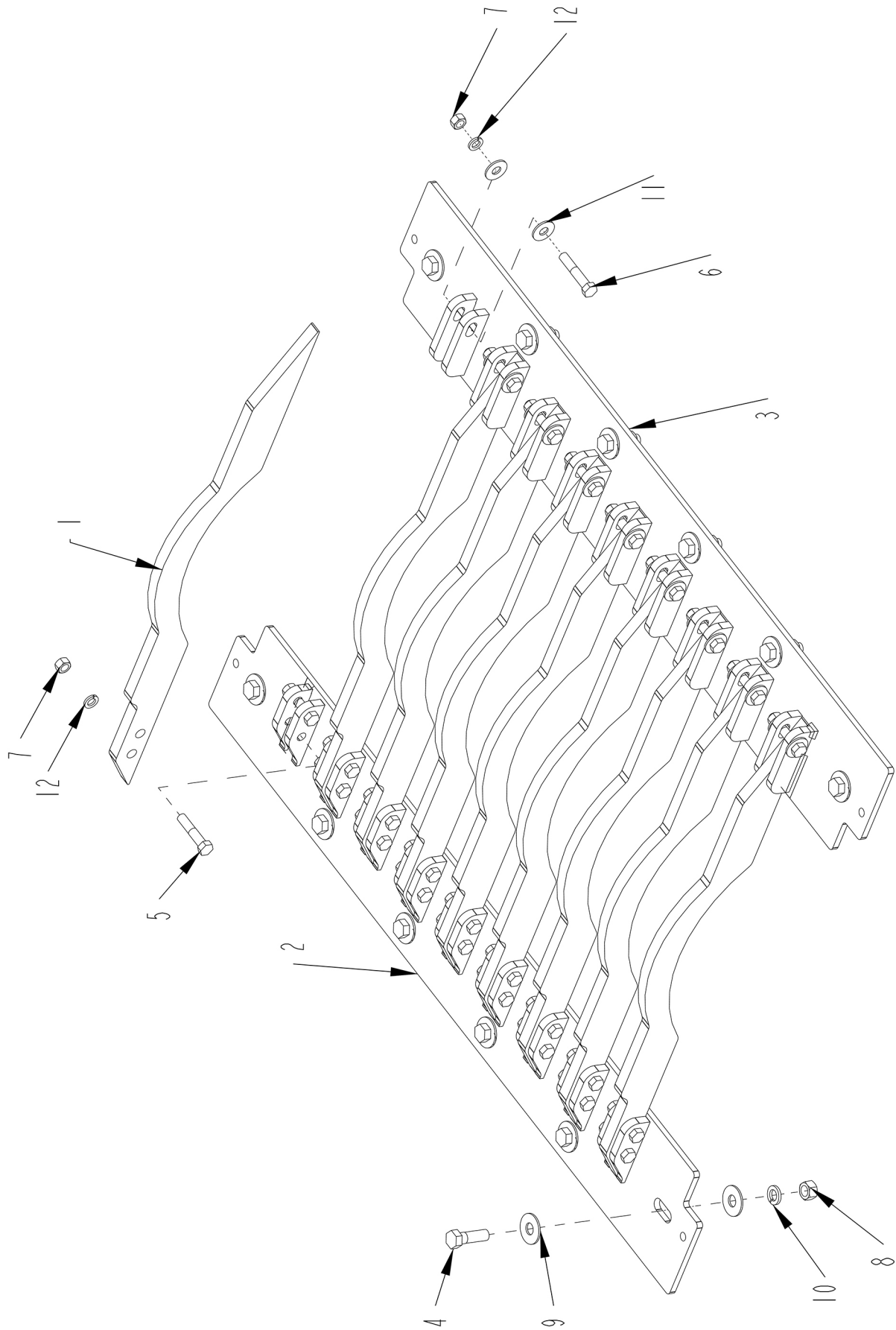
ITEM	PART	QTY.	PART DESCRIPTION
	4501347		HPPR\GRAIN\ASSY\COMPLETE
1	4501335	1	HPPR\GRAIN
2	4501340	1	CVR\RTR\HPPR\GRAIN
3	4501341	1	CVR\END\HPPR\GRAIN
4	4800003	14	BOLT\HEX\3/8X1
5	4800034	4	BOLT\HEX\3/8X1-1/2
6	4900002	18	NUT\HEX\3/8\NC
7	5000001	8	WASH\FLAT\3/8
8	5000019	18	WASH\LOCK\3/8
9	6500452	2	DECAL\INFO\GRAIN;HPPR
	<b>NOT SHOWN</b>		
	4502853		KIT\FLAP\GRAIN HPPR

### Grain Hopper Option Installation:

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

**IMPORTANT! DO NOT ROTATE TUB WITH HOPPER INSTALLED**

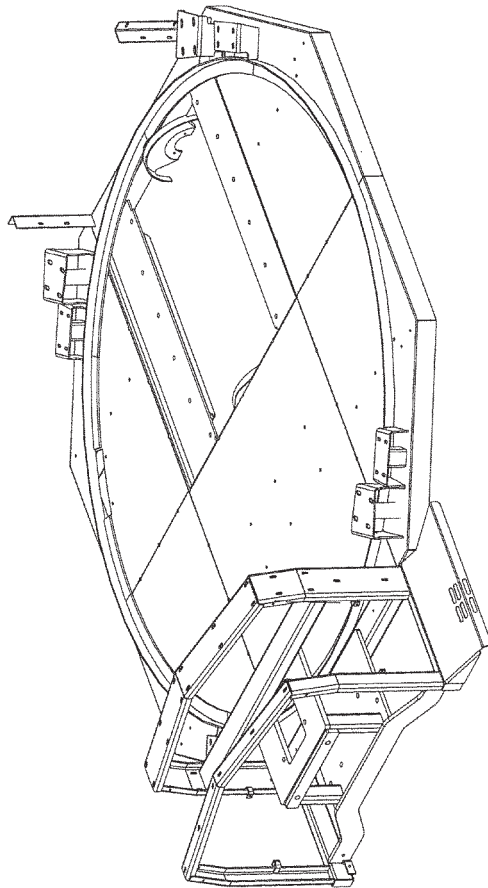
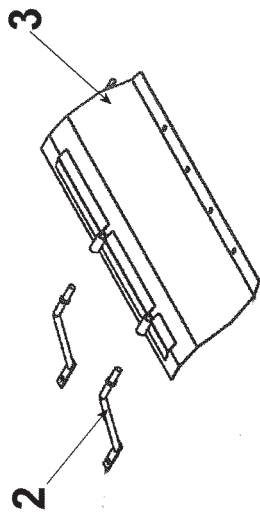
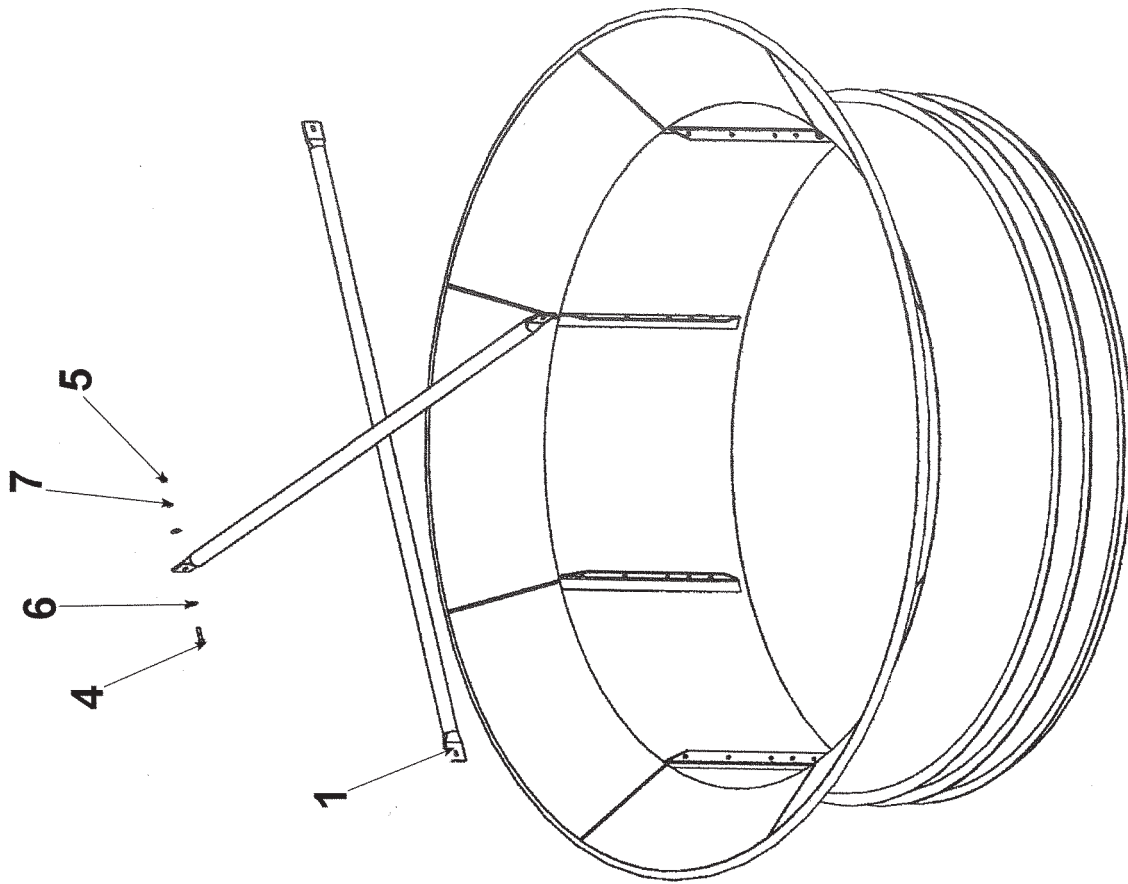
MILL GRATE - 9 BAR - 2-1/2"



**MILL GRATE - 9 BAR - 2-1/2"**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	4502678	9	BAR\GRATE\MILL\9BAR
2	4502832	1	PL\SIDE\GRATE\MILL
3	4502834	1	PL\SIDE\GRATE\MILL\9 BAR
4	4800010	12	BOLT\HEX\5/8X2
5	4800070	18	BOLT\HEX\1/2X2-1/2
6	4800351	9	BOLT\HEX\1/2X2-3/4
7	4900001	27	NUT\HEX\1/2\NC
8	4900005	12	NUT\HEX\5/8\NC
9	5000002	24	WASH\FLAT\5/8
10	5000003	12	WASH\LOCK\5/8
11	5000004	18	WASH\FLAT\1/2
12	5000006	27	WASH\LOCK\1/2
	<b>4502284</b>		<b>GRATE\MILL\9BAR\2-1/2\ASSY</b>

EAR CORN KIT (OPTION)



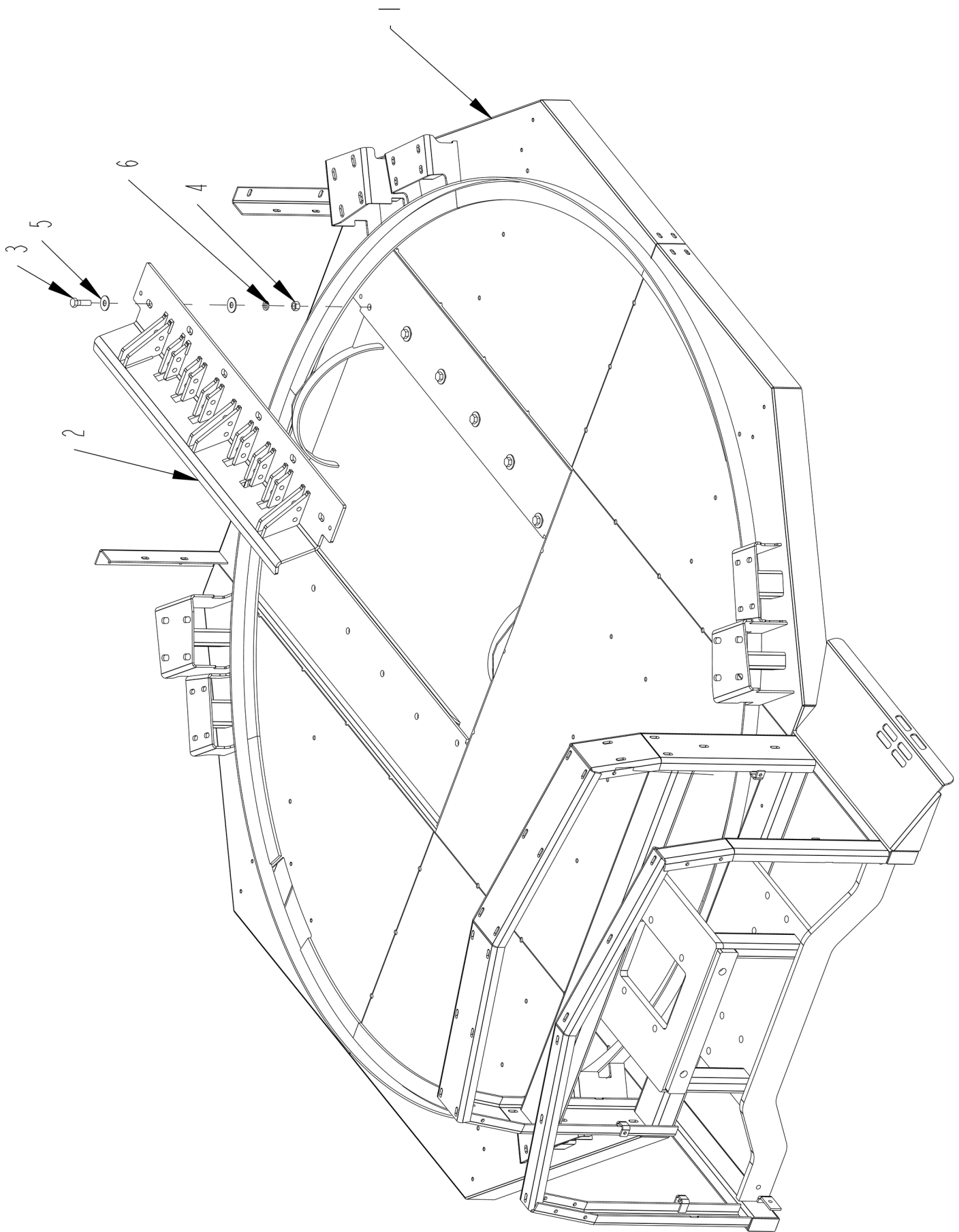


## EAR CORN KIT (OPTION)

ITEM	PART	QTY.	PART DESCRIPTION
1	4500128	2	PIPE\CROSS\2X107
2	4500751	2	BRKT\COVER\ROTOR\EARCORN
3	4501052	1	CVR\RTR\EARCORN\H1100E
4	4800114	4	BOLT\HEX\1/2X2
5	4900001	4	NUT\HEX\1/2\NC
6	5000004	8	WASH\FLAT\1/2
7	5000006	4	WASH\LOCK\1/2
	<b>4501053</b>		<b>AGTTR\EAR_CORN\KIT\H1130\H1100E\ DEALER_INSTALLED</b>

The Ear Corn Attachment is designed specifically for grinding ear corn. It should not be used when grinding hay, other bulk materials or small grains. This attachment fits directly over the rotor and bolts to the tub platform. Agitator bars inside the tub move ear corn to the rotor.

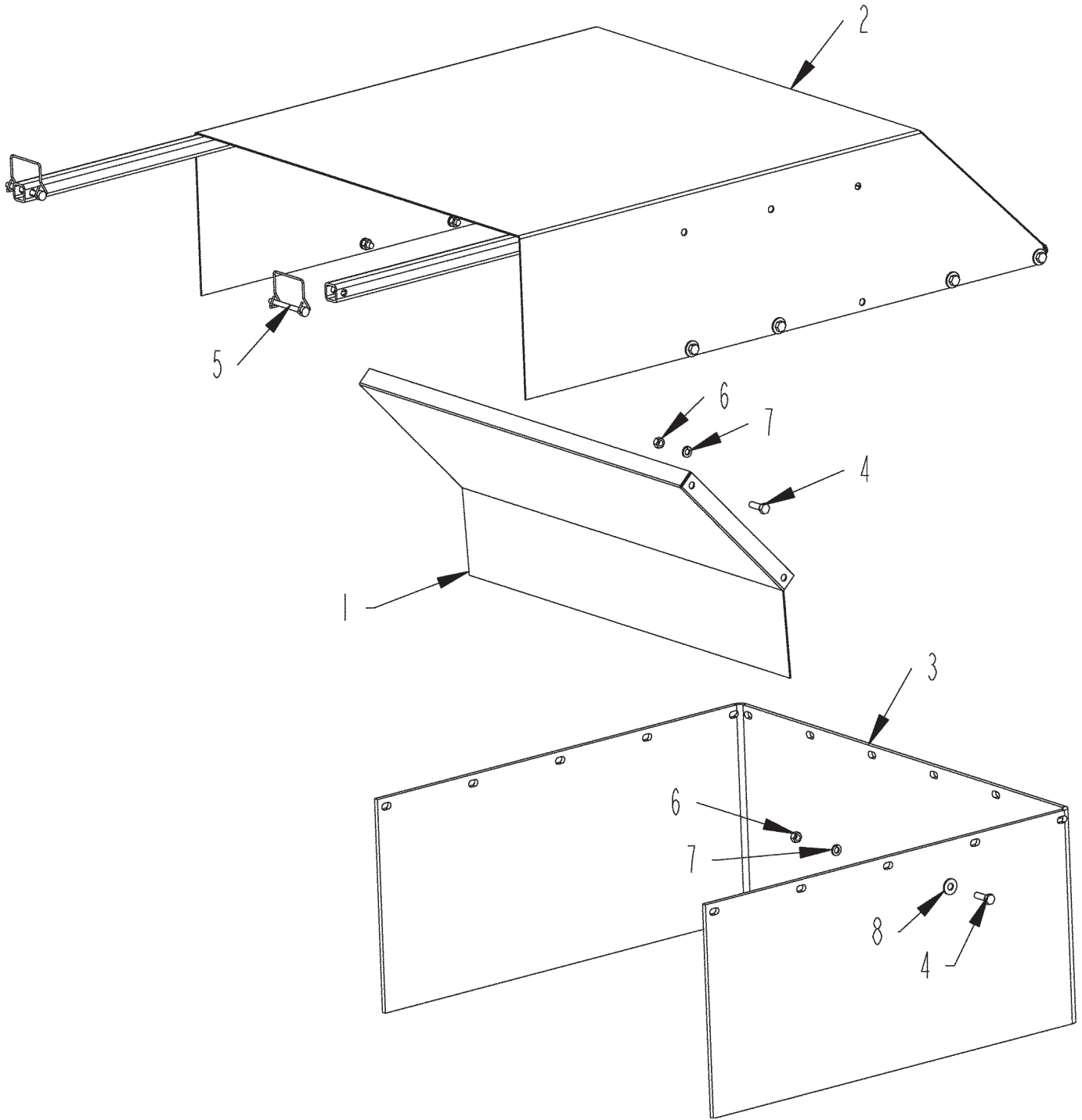
# GEYSER PLATE (OPTION)



## GEYSER PLATE (OPTION)

ITEM	PART	QTY.	PART DESCRIPTION
1	4502642	1	FRM\PLFRM\TILT\1130\RTR\REAR
2	4502839	1	PL\GEYSER\9 BAR
3	4800010	6	BOLT\HEX\5/8X2
4	4900005	6	NUT\HEX\5/8\NC
5	5000002	12	WASH\FLAT\5/8
6	5000003	6	WASH\LOCK\5/8

# MATERIAL GUIDE ASSEMBLY (OPTION)



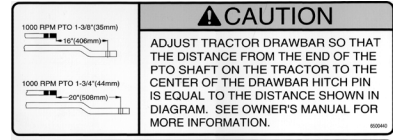
## MATERIAL GUIDE ASSEMBLY (OPTION)

ITEM	PART	QTY.	PART DESCRIPTION
1	4501616	1	DEFL\GUIDE\MATL\CNVY\UPPR
2	4501617	1	GUIDE\MATL\CNVY\UPPR\24
3	4501618	1	BELT\GUIDE\MATL\CNVYR\UPPR
4	4800013	18	BOLT\HEX\5/16X1
5	4800559	2	PIN\LYNCH\5/16X2-1/2\W\SQ;WIRE;KEEPER
6	4900003	18	NUT\HEX\5/16\NC
7	5000022	18	WASH\LOCK\5/16
8	5000023	16	WASH\FLAT\5/16
	<b>4501609</b>		<b>GUIDE\DSCH\CNVYR\24\KIT\1150</b>

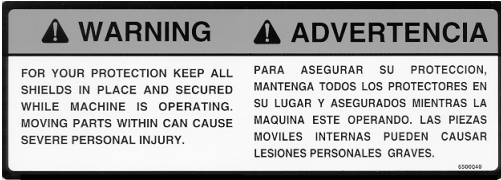
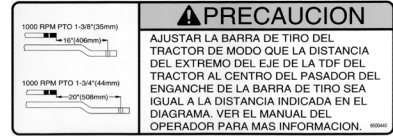
DECALS



6500118



6500440



6500040



6500209

H-1135

6500591



6500041



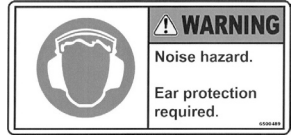
6500214



6500339



6500220



6500489



6500043



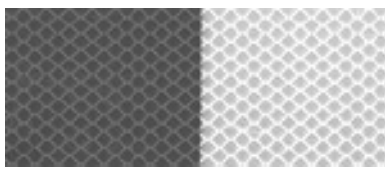
6500497



6500052



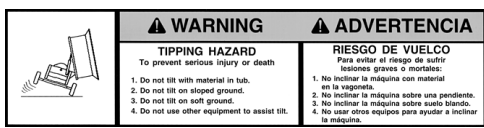
6500056



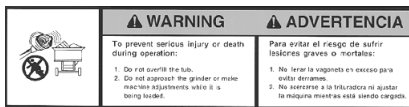
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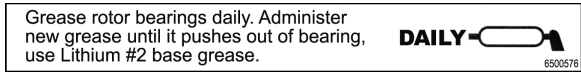
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6500282



6500283



6500576



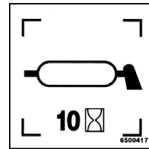
6500085

HYDRAULIC OIL

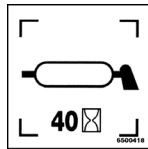
6500124



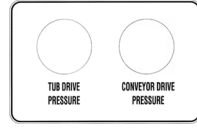
6500363



6500417



6500418



6500456

**DECALS**

ITEM	PART	QTY.	PART DESCRIPTION
1	6500020	2	DECAL\LOGO\HYBSTR\SNBRS\3
2	6500040	2	DECAL\WARN\SHIELD\PROT
3	6500052	1	DECAL\INFO\OIL;LEVEL
4	6500056	2	DECAL\INFO\ROTATION\STR
5	6500082	3	DECAL\WARN\ROTATN;PART;>
6	6500085	1	DECAL\DNGR\ROTATNG;DR-LNE
7	6500118	1	DECAL\DNGR\OBJECTS;THROWN
8	6500214	2	DECAL\WARN\OVRHED;CNVYR;>
9	6500215	2	DECAL\WARN\FOLDNG;CNVYR;>
10	6500245	8 ft.	DECAL\TAPE\REFL\RED\WHT
11	6500339	4	DECAL\WARN\PINCH;POINT
12	6500363	2	DECAL\LOGO\BIGBITE\UNVRSL
13	6500417	9	DECAL\GREASE\10 HRS
14	6500418	1	DECAL\GREASE\10 HRS
15	6500432	1	DECAL\CNVYR\H1130\GP50
16	6500433	1	DECAL\CNVYR\OFF/ON\H1130
17	6500440	1	DECAL\CAUT\ADJ_DRWBAR\16&20
18	6500456	1	DECAL\PRESSURE
19	6500489	1	DECAL\WARN\PEE\HEARING
20	6500497	1	DECAL\EXTINGUISHER\FIRE
21	6500604	4	DECAL\LOGO\STRPNG\BLK+RED-W-BARS
22	6500550	1	DECAL\notice\display\cleaning
23	6500576	2	DECAL\BRG\RTR\GREASE\DAILY
24	6500591	3	DECAL\LOGO\H1135

**6500590**

**DECAL\KIT\H1135 (LESS 6500561 DECAL\KIT\TANK\OIL\H1130)**

**NOT SHOWN**

7500077  
7500092  
7500091  
7500078  
7500105  
7500104

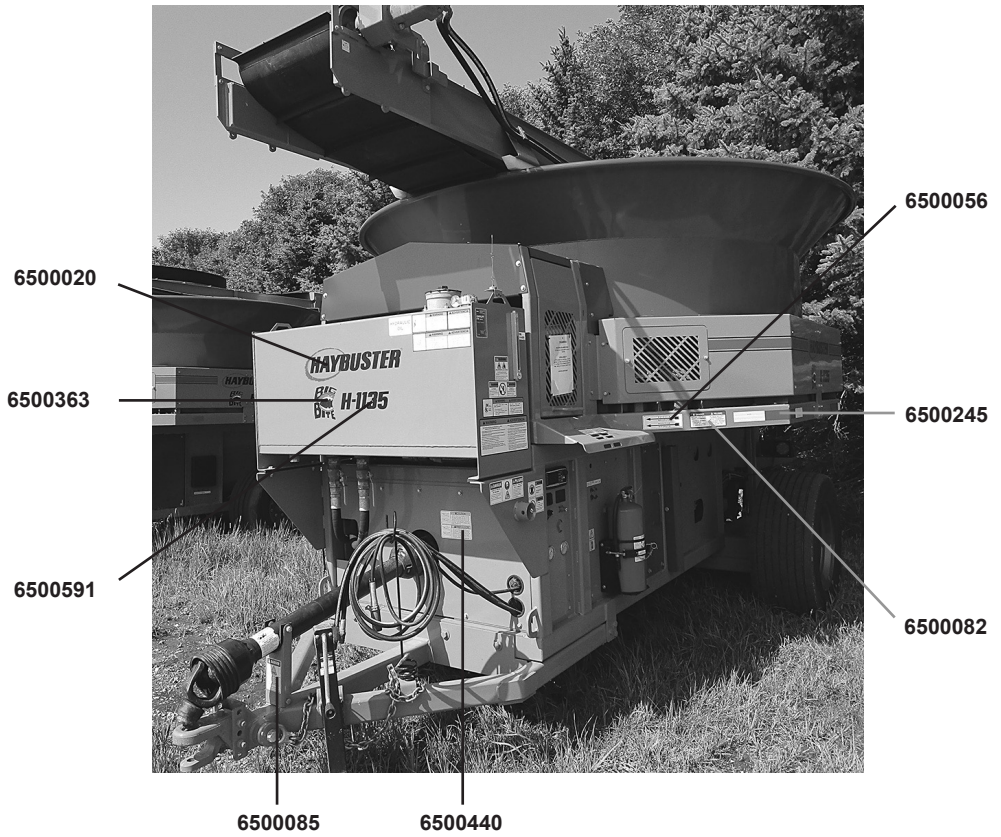
PAINT\YELLOW\SPRAY\12OZ  
PAINT\YELLOW\QUART  
PAINT\YELLOW\GALLON  
PAINT\RED\SPRAY\12OZ  
PAINT\RED\QUART  
PAINT\RED\GALLON



6500550

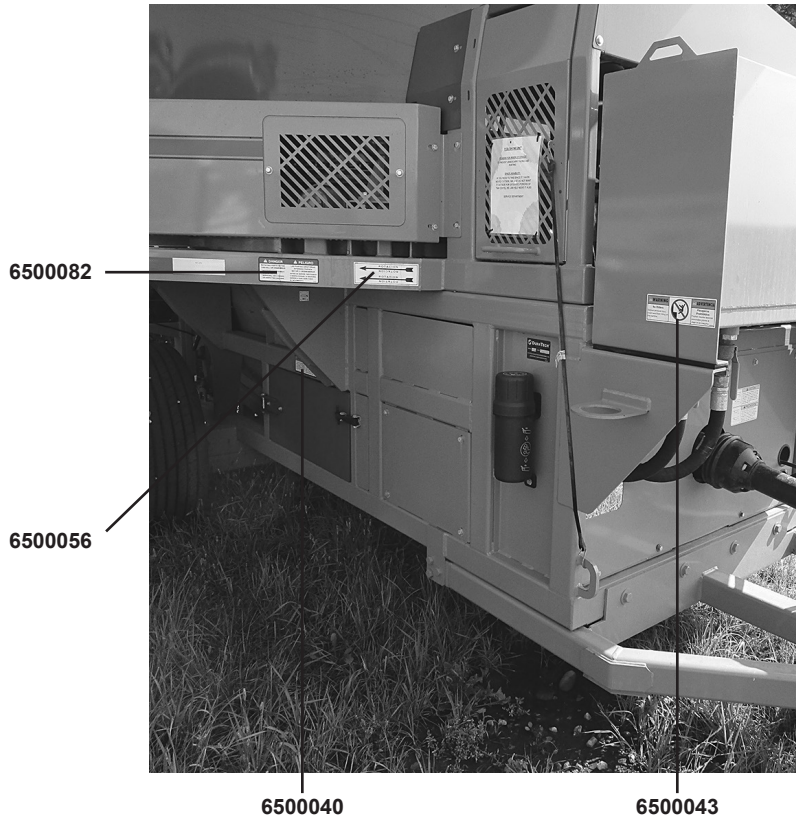


**DECAL LOCATIONS**



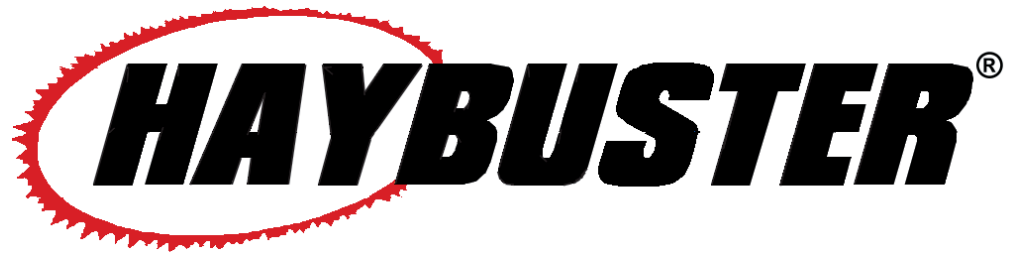
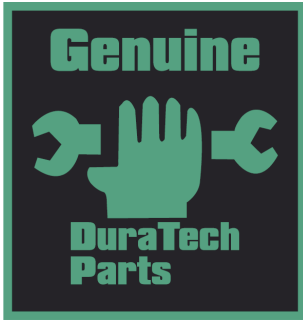


# DECAL LOCATIONS



**DECAL LOCATIONS**

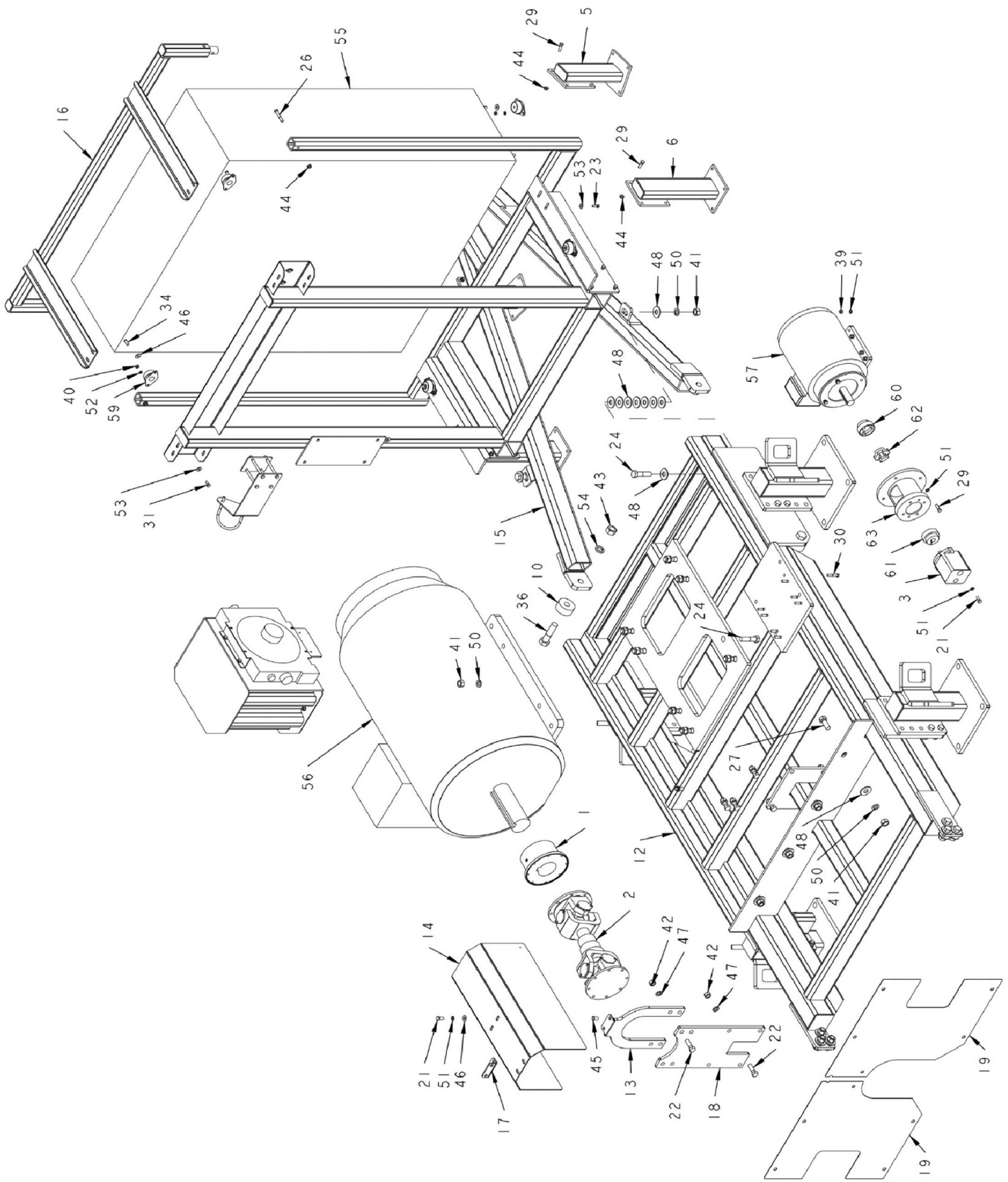




# **H-1135 Electric<sup>TM</sup> Stationary Tub Grinder Electric Supplement**

## **Parts Reference**

# ELECTRIC MOTOR ASSEMBLY - VIEW #1

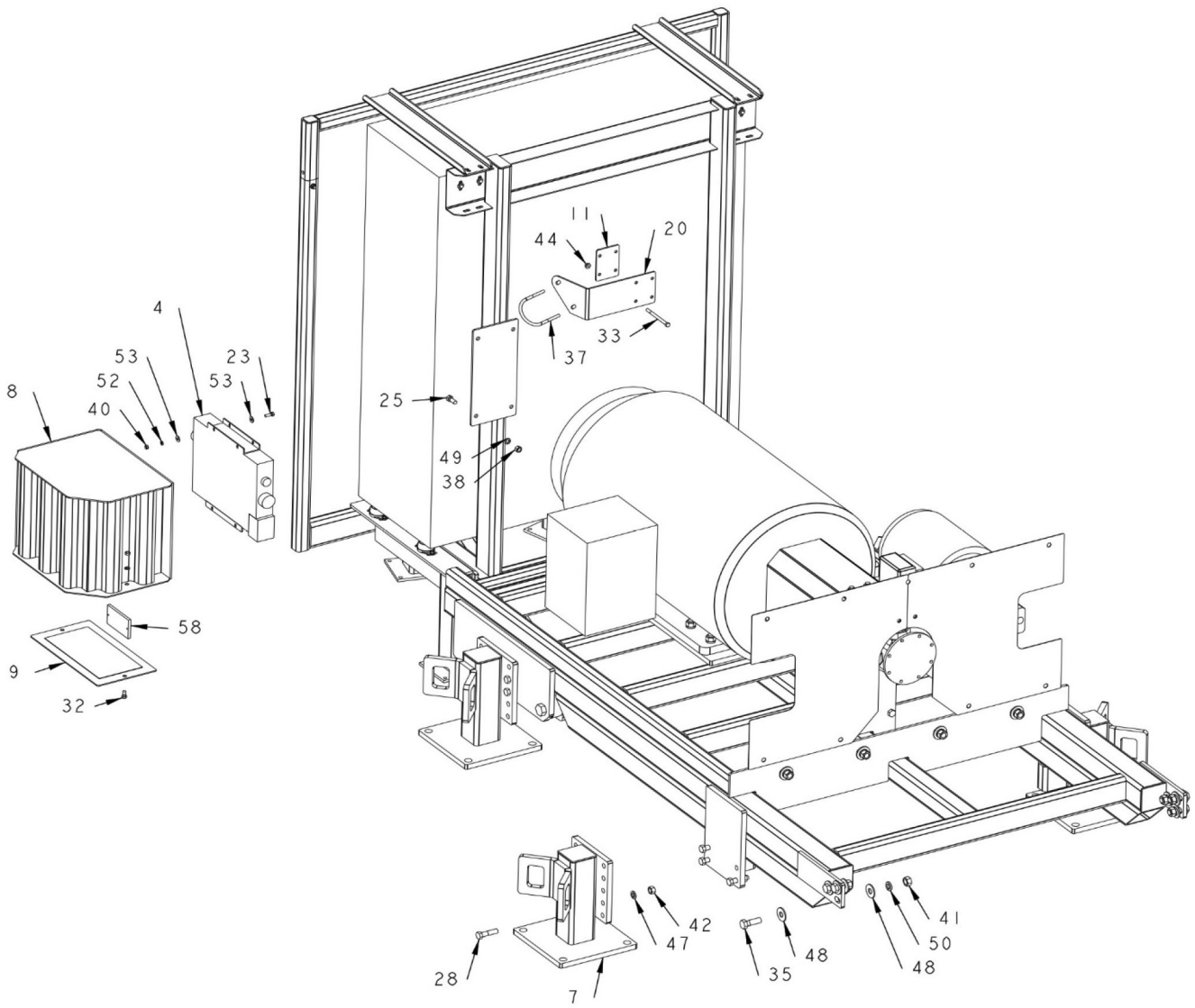




**ELECTRIC MOTOR ASSEMBLY**

ITEM	PART	QTY.	PART DESCRIPTION	ITEM	PART	QTY.	PART DESCRIPTION
1	3600603	1	FLG\3-3/8IDX4L\1710\DRLIN	55B	5701280		PKG\STRTR\380V\60HZ\300HP\4PL (USED IN THE 380V@60HZ)
2	3600907	1	DRLIN\COMP\19.25\1710				
3	4200124	1	PUMP\HYD\89CID\CASAPPA	55C	5700949		PKG\STRTR\575V\60HZ\300HP\4PL (USED IN THE 575V@60HZ)
4	4200167	1	RAD\HYD\DCS16\12VDC\W\BYPASS				
4A	5700897	1	SENSOR\TEMP	55D	5701221		PKG\STRTR\415V\3PH\50HZ (USED IN THE 415V@50HZ)
5	4501697	2	JACKSTAND\H1130EL\12				
6	4501699	2	JACKSTAND\H1130EL\16				
7	4502625	4	STND\FRI\FRMELEEC	56	5700946	1	MTR\ELEC\300HP\460\60HZ\4PL
8	4502635	1	MNT\RAD\HYD	56A	5700951		MTR\ELEC\300HP\380V\50HZ\4PL
9	4502636	1	DR\SCRN\RAD	56B	5700974		MTR\ELEC\300HP\380V\60HZ\4PL
10	4502849	2	TUBE\SPCR\MNT\HTCH\ELEC\1130	56C	5700950		MTR\ELEC\300HP\575V\60HZ\4PL
11	4502904	1	SH\MNT\CONDUIT	56D	5701277		MTR\ELEC\300HP\415V\50HZ\4PL
12	4503014	1	PLTFRM\MTR\ELEC				
13	4503016	1	STRP\DRVLN	57	5700947	1	MTR\ELEC\10HP\460\60HZ\215TC (USED IN THE 460V@60HZ)
14	4503017	1	SHLD\SHFT\DRIVE\FRONT				
15	4503019	1	HITCH\ELEC	57A	5701201		MTR\ELEC\10HP\380V\4PL\50HZ (USED IN THE 380V@50HZ)
16	4503020	1	GUARD\TOP\SOFTSTART\H1135EL				
17	4503022	1	MNT\SHLD\DRIVE\FRONT				
18	4503023	1	PL\STRP\DRVLN	57B	5700952		MTR\ELEC\10HP\380V\60HZ\4PL\254TC (USED IN THE 380V@60HZ)
19	4503026	2	CVRFRI\ELEC				
20	4503027	1	SH\MNT\CONDUIT	57C	5701266		MTR\ELEC\10HP\575\60HZ\4PL (USED IN THE 575V@60HZ)
21	4800003	4	BOLT\HEX\3/8X1				
22	4800010	8	BOLT\HEX\5/8X2				
23	4800013	12	BOLT\HEX\5/16X1	57D	5701278		MTR\ELEC\10HP\415V\4PL\50HZ (USED IN THE 415V@50HZ)
24	4800017	10	BOLT\HEX\3/4X3				
25	4800018	4	BOLT\HEX\1/2X1-1/4				
26	4800029	2	BOLT\HEX\3/8X2-1/2				
27	4800033	4	BOLT\HEX\3/4X2	58	5700955	1	CNTRL\FAN\SNGL\12&24V
28	4800079	16	BOLT\HEX\5/8X2-1/2	59	7501391	6	CUSH\RBRR\3-3/4X2-1/4X1-1/4\3/8UNC
29	4800098	20	BOLT\HEX\3/8X1-1/4\4NC				
30	4800146	8	BOLT\HEX\3/8X2				
31	4800147	4	BOLT\HEX\5/16X7/8	60	7501449	1	CPLNG\200SERIES\1-3/8"5/16"KW (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
32	4800164	2	BOLT\HEX\3/8X3/4				
33	4800202	4	BOLT\HEX\3/8X5				
34	4800276	6	BOLT\HEX\3/8X1-1/4\NF	60A	7501469		CPLNG\300SERIES\1-5/8"X3/8"KW (USED IN THE 380V @50HZ & 380V @60HZ)
35	4800283	6	BOLT\HEX\3/4X2-1/4				
36	4800647	2	BOLT\HEX\1X4\NC				
37	4801222	1	BOLT\U\3/8X4X5-1/2				
38	4900001	4	NUT\HEX\1/2\NC	61	7501450	1	CPLNG\200SERIES\7/8\13TOOTH (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
39	4900002	10	NUT\HEX\3/8\NC				
40	4900003	16	NUT\HEX\5/16\NC				
41	4900004	20	NUT\HEX\3/4\NC	61A	7501470		CPLNG\300SERIES\7/8\13TOOTH (USED IN THE 380V @50HZ & 380V @60HZ)
42	4900005	24	NUT\HEX\5/8\NC				
43	4900031	2	NUT\HEX\1\NC				
44	4900076	22	NUT\FLG\SERR\3/8\NC				
45	4900083	2	NUT\INSERT\3/8\LONG\0.15-0.312(.418/CD)	62	7501451	1	CPLNG\200SERIES\INSERT\URETH (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
46	5000001	8	WASH\FLAT\3/8				
47	5000003	24	WASH\LOCK\5/8				
48	5000005	38	WASH\FLAT\3/4	62A	7501471		CPLNG\300SERIES\INSERT\URETH (USED IN THE 380V @50HZ & 380V @60HZ)
49	5000006	4	WASH\LOCK\1/2				
50	5000012	20	WASH\LOCK\3/4				
51	5000019	18	WASH\LOCK\3/8				
52	5000022	16	WASH\LOCK\5/16	63	7501452	1	CPLNG\PUMP\MTR\ELEC\182-256TC (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
53	5000023	20	WASH\FLAT\5/16				
54	5000053	2	WASH\LOCK\1				
55	5700945	1	PKG\STRTR\380-480V\50\60HZ\4PL (USED IN THE 460V@60HZ)	63A	7501468		CPLNG\PUMP\MTR\ELEC\254TC (USED IN THE 380V @50HZ & 380V @60HZ)
55A	5701200		PKG\STRTR\380V\3PH\50HZ (USED IN THE 380V@50HZ)				

**ELECTRIC MOTOR ASSEMBLY - VIEW #2**

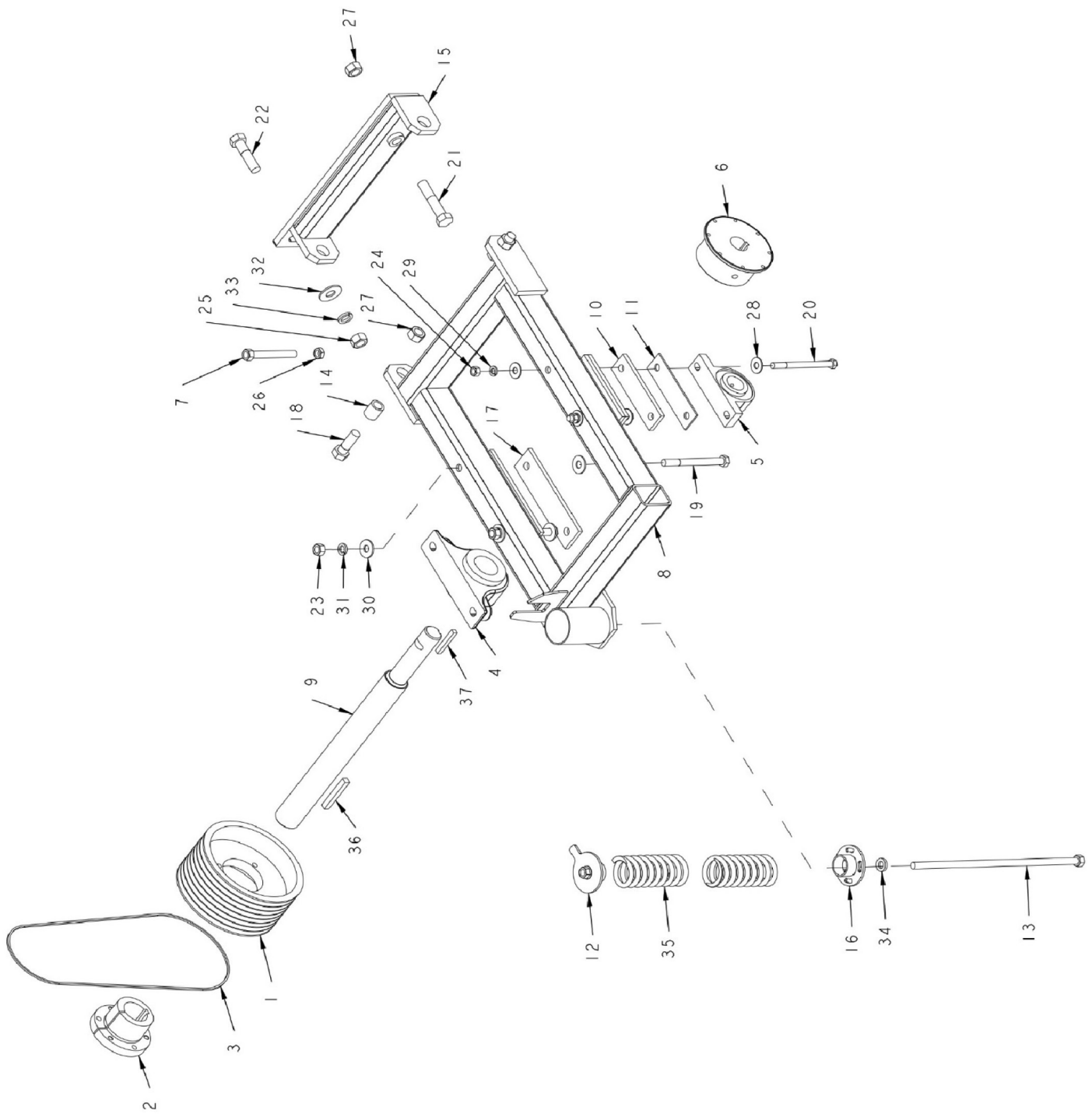


**ELECTRIC MOTOR ASSEMBLY**

ITEM	PART	QTY.	PART DESCRIPTION	ITEM	PART	QTY.	PART DESCRIPTION
1	3600603	1	FLG\3-3/8IDX4L\1710\DRLIN	55B	5701280		PKG\STRTR\380V\60HZ\300HP\4PL (USED IN THE 380V@60HZ)
2	3600907	1	DRLIN\COMP\19.25\1710				
3	4200124	1	PUMP\HYD\89CID\CASAPPA	55C	5700949		PKG\STRTR\575V\60HZ\300HP\4PL (USED IN THE 575V@60HZ)
4	4200167	1	RAD\HYD\DCS16\12VDC\W\BYPASS				
4A	5700897	1	SENSOR\TEMP	55D	5701221		PKG\STRTR\415V\3PH\50HZ (USED IN THE 415V@50HZ)
5	4501697	2	JACKSTAND\H1130EL\12				
6	4501699	2	JACKSTAND\H1130EL\16				
7	4502625	4	STND\FRI\FRMELEEC	56	5700946	1	MTR\ELEC\300HP\460\60HZ\4PL
8	4502635	1	MNT\RAD\HYD	56A	5700951		MTR\ELEC\300HP\380V\50HZ\4PL
9	4502636	1	DR\SCRN\RAD	56B	5700974		MTR\ELEC\300HP\380V\60HZ\4PL
10	4502849	2	TUBE\SPCR\MNT\HTCH\ELEC\1130	56C	5700950		MTR\ELEC\300HP\575V\60HZ\4PL
11	4502904	1	SH\MNT\CONDUIT	56D	5701277		MTR\ELEC\300HP\415V\50HZ\4PL
12	4503014	1	PLTFRM\MTR\ELEC				
13	4503016	1	STRP\DRVLN	57	5700947	1	MTR\ELEC\10HP\460\60HZ\215TC (USED IN THE 460V@60HZ)
14	4503017	1	SHLD\SHFT\DRIVE\FRONT				
15	4503019	1	HITCH\ELEC	57A	5701201		MTR\ELEC\10HP\380V\4PL\50HZ (USED IN THE 380V@50HZ)
16	4503020	1	GUARD\TOP\SOFTSTART\H1135EL				
17	4503022	1	MNT\SHLD\DRIVE\FRONT	57B	5700952		MTR\ELEC\10HP\380V\60HZ\4PL\254TC (USED IN THE 380V@60HZ)
18	4503023	1	PL\STRP\DRVLN				
19	4503026	2	CVRFRI\ELEC	57C	5701266		MTR\ELEC\10HP\575\60HZ\4PL (USED IN THE 575V@60HZ)
20	4503027	1	SH\MNT\CONDUIT				
21	4800003	4	BOLT\HEX\3/8X1	57D	5701278		MTR\ELEC\10HP\415V\4PL\50HZ (USED IN THE 415V@50HZ)
22	4800010	8	BOLT\HEX\5/8X2				
23	4800013	12	BOLT\HEX\5/16X1				
24	4800017	10	BOLT\HEX\3/4X3				
25	4800018	4	BOLT\HEX\1/2X1-1/4				
26	4800029	2	BOLT\HEX\3/8X2-1/2	58	5700955	1	CNTRL\FAN\SNGL\12&24V
27	4800033	4	BOLT\HEX\3/4X2	59	7501391	6	CUSH\RBRR\3-3/4X2-1/4X1-1/4\3/8UNC
28	4800079	16	BOLT\HEX\5/8X2-1/2				
29	4800098	20	BOLT\HEX\3/8X1-1/4\4NC				
30	4800146	8	BOLT\HEX\3/8X2	60	7501449	1	CPLNG\200SERIES\1-3/8"5/16"KW (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
31	4800147	4	BOLT\HEX\5/16X7/8				
32	4800164	2	BOLT\HEX\3/8X3/4	60A	7501469		CPLNG\300SERIES\1-5/8"X3/8"KW (USED IN THE 380V @50HZ & 380V @60HZ)
33	4800202	4	BOLT\HEX\3/8X5				
34	4800276	6	BOLT\HEX\3/8X1-1/4\NF				
35	4800283	6	BOLT\HEX\3/4X2-1/4	61	7501450	1	CPLNG\200SERIES\7/8\13TOOTH (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
36	4800647	2	BOLT\HEX\1X4\NC				
37	4801222	1	BOLT\U\3/8X4X5-1/2	61A	7501470		CPLNG\300SERIES\7/8\13TOOTH (USED IN THE 380V @50HZ & 380V @60HZ)
38	4900001	4	NUT\HEX\1/2\NC				
39	4900002	10	NUT\HEX\3/8\NC				
40	4900003	16	NUT\HEX\5/16\NC				
41	4900004	20	NUT\HEX\3/4\NC				
42	4900005	24	NUT\HEX\5/8\NC				
43	4900031	2	NUT\HEX\1\NC				
44	4900076	22	NUT\FLG\SERR\3/8\NC	62	7501451	1	CPLNG\200SERIES\INSERT\URETH (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
45	4900083	2	NUT\INSERT\3/8\LONG\0.15-0.312(.418/CD)				
46	5000001	8	WASH\FLAT\3/8	62A	7501471		CPLNG\300SERIES\INSERT\URETH (USED IN THE 380V @50HZ & 380V @60HZ)
47	5000003	24	WASH\LOCK\5/8				
48	5000005	38	WASH\FLAT\3/4				
49	5000006	4	WASH\LOCK\1/2				
50	5000012	20	WASH\LOCK\3/4				
51	5000019	18	WASH\LOCK\3/8	63	7501452	1	CPLNG\PUMP\MTR\ELEC\182-256TC (USED IN THE 460V @60HZ, 415V@50HZ & 575V @60HZ)
52	5000022	16	WASH\LOCK\5/16				
53	5000023	20	WASH\FLAT\5/16				
54	5000053	2	WASH\LOCK\1	63A	7501468		CPLNG\PUMP\MTR\ELEC\254TC (USED IN THE 380V @50HZ & 380V @60HZ)
55	5700945	1	PKG\STRTR\380-480V\50/60HZ\4PL (USED IN THE 460V@60HZ)				
55A	5701200		PKG\STRTR\380V\3PH\50HZ (USED IN THE 380V@50HZ)				



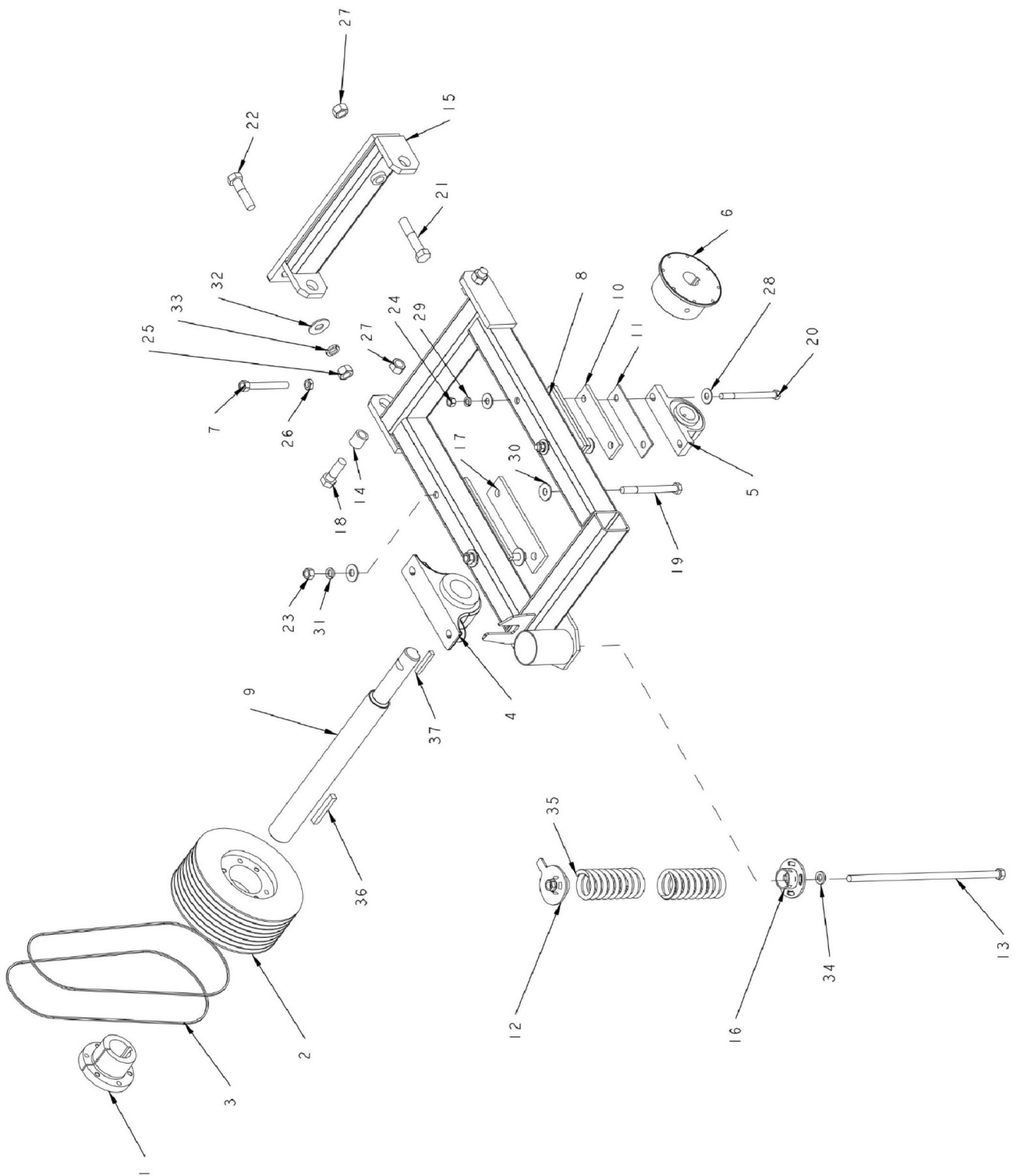
# BULL WHEEL ELECTRIC ASSEMBLY (FOR ELECTRIC 60HZ)



**BULL WHEEL ELECTRIC ASSEMBLY (FOR ELECTRIC 60HZ)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1400656	1	SHVE\5V-8\11.8\85V180F
2	1400657	1	BUSH\QD\F\2-3/4
3	1600104	1	V-BELT\4/5VP710
4	2000509	1	BRG\PB\2-3/4\EVDODGE
5	2000510	1	BRG\PB\2\2BOLT
6	3600923	1	FLG\2ID\1710\DRVLN
7	4501170	1	BOLT\FRM\TGHTNR\CHAIN\TUB
8	4502330	1	WHL\BULL\FRM\OFFSET
9	4502331	1	SHFT\WHL\BULL\OFFSET
10	4502333	3	SHIM\BRG\WHL\BULL
11	4502334	1	SHM\THN\BRG\WHL\BLL
12	4502338	1	CAP\SPRNG\TNSNR
13	4502340	1	ROD\TNSNR\WHL\BULL
14	4502380	2	TUBE\WHL\BLL
15	4502419	1	ADJ\WHL\BLL
16	4502425	1	CAP\TNSNR\WHL\BLL
17	4502622	2	SHIM\BRG\WHL\BULL\1/2"
18	4800140	2	BOLT\HEX\1X3\NC
19	4800232	2	BOLT\HEX\3/4X8
20	4800236	2	BOLT\HEX\5/8X8
21	4800546	1	BOLT\HEX\1X5\NC
22	4800647	1	BOLT\HEX\1X4\NC
23	4900004	4	NUT\HEX\3/4\NC
24	4900005	2	NUT\HEX\5/8\NC
25	4900031	1	NUT\HEX\1\NC
26	4900104	1	NUT\JAM\3/4\NC
27	4900127	3	NUT\TPLCK\1\NC
28	5000002	4	WASH\FLAT\5/8
29	5000003	2	WASH\LOCK\5/8
30	5000005	4	WASH\FLAT\3/4
31	5000012	2	WASH\LOCK\3/4
32	5000014	1	WASH\FLAT\1
33	5000053	1	WASH\LOCK\1
34	5000115	1	WASH\FLAT\3/4\EXTRTHK\GR8
35	6100091	2	SPG\COMP\8X3-1/2OD\1/2WD
36	6200013	1	KEY\SQ\5/8X4-1/2
37	6200062	1	KEY\SQ\1/2X3-1/2
	<b>NOT SHOWN</b>		
	4800958	2	SCR\SET\ALN\1/2X3/4\NC
	4801253	8	SCR\CAP\ALN\5/8X4\NF

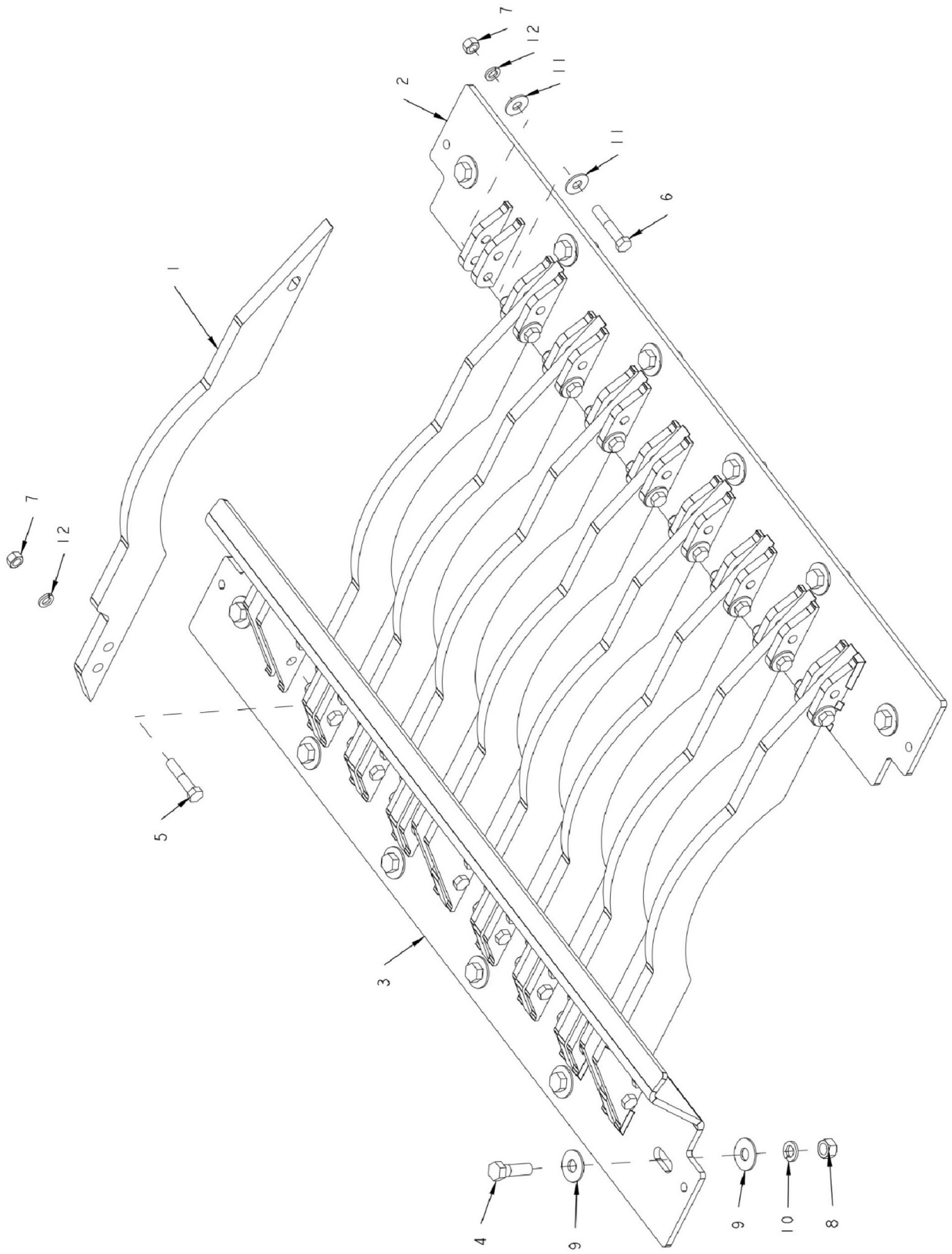
# BULL WHEEL ELECTRIC ASSEMBLY (FOR ELECTRIC 50HZ)



**BULL WHEEL ELECTRIC ASSEMBLY (FOR ELECTRIC 50HZ)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	1400657	1	BUSH\QD\F\2-3/4
2	1400860	1	SHVE\5V-8\14.0\QD85V1400F
3	1600133	2	V-BELT\4/5VP\750
4	2000509	1	BRG\PB\2-3/4\E\DODGE
5	2000510	1	BRG\PB\2\2BOLT
6	3600923	1	FLG\2ID\1710\DRVLN
7	4501170	1	BOLT\FRM\TGHTNR\CHAIN\TUB
8	4502330	1	WHL\BULL\FRM\OFFSET
9	4502331	1	SHFT\WHL\BULL\OFFSET
10	4502333	3	SHIM\BRG\WHL\BULL
11	4502334	1	SHM\THN\BRG\WHL\BLL
12	4502338	1	CAP\SPRNG\TNSNR
13	4502340	1	ROD\TNSNR\WHL\BULL
14	4502380	2	TUBE\WHL\BLL
15	4502419	1	ADJ\WHL\BLL
16	4502425	1	CAP\TNSNR\WHL\BLL
17	4502622	2	SHIM\BRG\WHL\BULL\1/2"
18	4800140	2	BOLT\HEX\1X3\NC
19	4800232	2	BOLT\HEX\3/4X8
20	4800236	2	BOLT\HEX\5/8X8
21	4800546	1	BOLT\HEX\1X5\NC
22	4800647	1	BOLT\HEX\1X4\NC
23	4900004	4	NUT\HEX\3/4\NC
24	4900005	2	NUT\HEX\5/8\NC
25	4900031	1	NUT\HEX\1\NC
26	4900104	1	NUT\JAM\3/4\NC
27	4900127	3	NUT\TPLCK\1\NC
28	5000002	4	WASH\FLAT\5/8
29	5000003	2	WASH\LOCK\5/8
30	5000005	4	WASH\FLAT\3/4
31	5000012	2	WASH\LOCK\3/4
32	5000014	1	WASH\FLAT\1
33	5000053	1	WASH\LOCK\1
34	5000115	1	WASH\FLAT\3/4\EXTRTHK\GR8
35	6100091	2	SPG\COMP\8X3-1/2OD\1/2WD
36	6200013	1	KEY\SQ\5/8X4-1/2
37	6200062	1	KEY\SQ\1/2X3-1/2
	<b>4502991</b>		<b>PARTS\ASSY\FNL\1135\ELEC\50HZ</b>
	<b>NOT SHOWN</b>		
	4800958	2	SCR\SET\ALN\1/2X3/4\NC
	4801253	8	SCR\CAP\ALN\5/8X4\NF

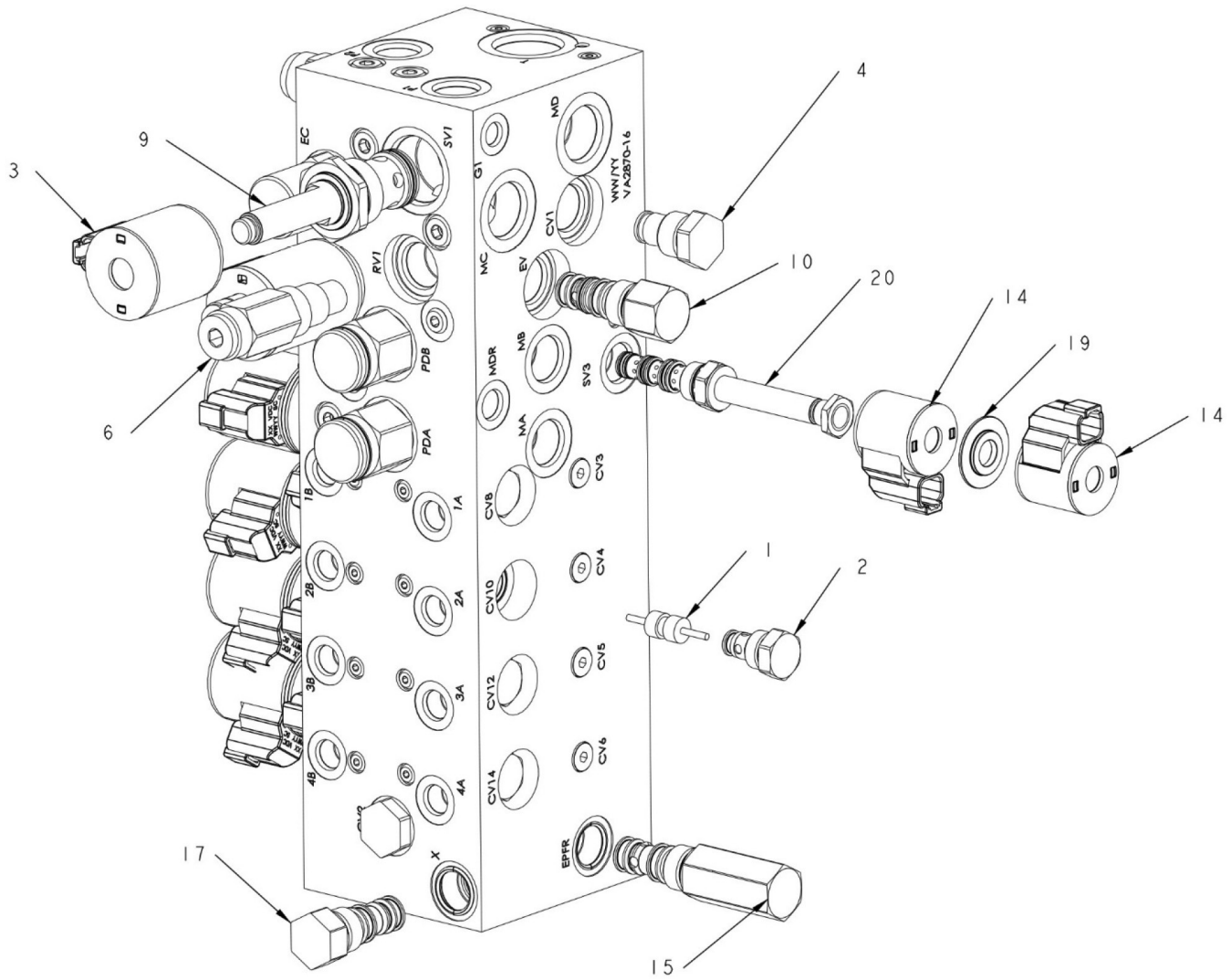
**GEYSER PLATE WITH MILL GRATE ASSEMBLY (FOR ELECTRIC)**



**GEYSER PLATE WITH MILL GRATE ASSEMBLY (FOR ELECTRIC)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	4502679	9	BAR\GRATE\MILL\RAISED\3"\9BAR
2	4502832	1	PL\SIDE\GRATE\MILL
3	4502839	1	PL\GEYSER\9 BAR
4	4800010	12	BOLT\HEX\5/8X2
5	4800070	18	BOLT\HEX\1/2X2-1/2
6	4800351	9	BOLT\HEX\1/2X2-3/4
7	4900001	27	NUT\HEX\1/2\NC
8	4900005	12	NUT\HEX\5/8\NC
9	5000002	24	WASH\FLAT\5/8
10	5000003	12	WASH\LOCK\5/8
11	5000004	18	WASH\FLAT\1/2
12	5000006	27	WASH\LOCK\1/2
	<b>4503025</b>		<b>PL\GYSR\W\MILL\9BAR\3"\ASSY</b>

**4000598 HYDRAULIC VALVE -VIEW 1(FOR ELECTRIC)**





**4000598 HYDRAULIC VALVE(FOR ELECTRIC)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	4000230	4	VALVE\HYD\PILOT\PISTON
2	4000231	8	VALVE\HYD\CART\CHECK\CV0820\100P
3	4000347	10	VALVE\HYD\SOL\12V\E10\DTZW/DIODE
4	4000446	2	VALVE\CHECK\CART\CV1020
5	4000510	1	VLV\HYD\RELIEF\CART\3000
6	4000548	2	VLV\HYD\RELIEF\CART\2500
7	4000549	1	VALVE\HYD\CART\N:OPEN\2WAY;2POS
8	4000550	4	VALVE\HYD\CART\5WAY;3POS
9	4000552	1	VALVE\HYD\CART\N.O.;POPPET
10	4000553	1	VALVE\CART\VENTED PRESS BLOCK\EV10
11	4000555	2	VALVE\HYD\CART\4POS3WAY\PILOTED
12	4000556	1	VALVE\HYD\CART\COMP\80PSI
13	4000557	1	VALVE\HYD\SOL\12V\E70\DTZW/DIODE
14	4000558	2	VALVE\HYD\SOL\12V\E08\DTZW/DIODE
15	4000559	1	VALVE\HYD\CART\PRESS;COMP\160PSI
16	4000560	1	VALVE\HYD\CART\PROPOR\NC\2WAY
17	4000561	1	VALVE\HYD\CART\PLUG\3WAY
18	4000562	4	VALVE\HYD\SOL\SPACER\E10
19	4000563	1	VALVE\HYD\SOL\SPACER\E8
20	4000595	1	VALVE\HYD\CART\3POS,4WAY\OPEN:CENTER
	<b>4000598</b>		<b>VLV\HYD\AUX\BLK\MFLD\12V</b>

**Note-** Items 15-4000559 and 17-4000561 change valve from open center to closed center

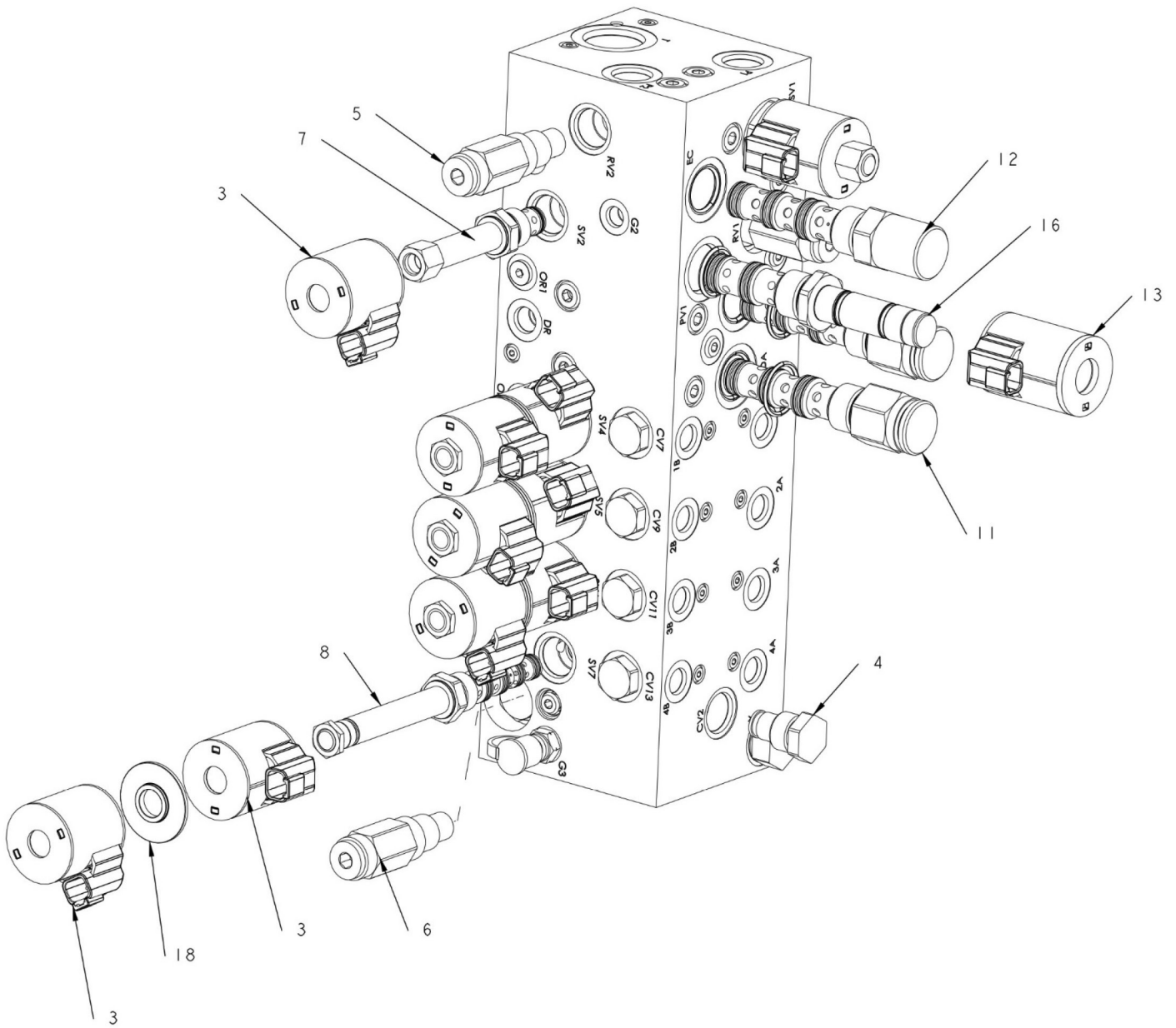
**Open Center**

4000559 goes in port 'EPFR', 4000561 goes in 'X'

**Closed Center**

4000561 goes in 'EPFR', 4000559 GOES IN 'x'

4000598 HYDRAULIC VALVE -VIEW 2(FOR ELECTRIC)



**4000598 HYDRAULIC VALVE(FOR ELECTRIC)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	4000230	4	VALVE\HYD\PILOT\PISTON
2	4000231	8	VALVE\HYD\CART\CHECK\CV0820\100P
3	4000347	10	VALVE\HYD\SOL\12V\E10\DTZW/DIODE
4	4000446	2	VALVE\CHECK\CART\CV1020
5	4000510	1	VLV\HYD\RELIEF\CART\3000
6	4000548	2	VLV\HYD\RELIEF\CART\2500
7	4000549	1	VALVE\HYD\CART\N:OPEN\2WAY;2POS
8	4000550	4	VALVE\HYD\CART\5WAY;3POS
9	4000552	1	VALVE\HYD\CART\N.O.;POPPET
10	4000553	1	VALVE\CART\VENTED PRESS BLOCK\EV10
11	4000555	2	VALVE\HYD\CART\4POS3WAY\PILOTED
12	4000556	1	VALVE\HYD\CART\COMP\80PSI
13	4000557	1	VALVE\HYD\SOL\12V\E70\DTZW/DIODE
14	4000558	2	VALVE\HYD\SOL\12V\E08\DTZW/DIODE
15	4000559	1	VALVE\HYD\CART\PRESS;COMP\160PSI
16	4000560	1	VALVE\HYD\CART\PROPOR\NC\2WAY
17	4000561	1	VALVE\HYD\CART\PLUG\3WAY
18	4000562	4	VALVE\HYD\SOL\SPACER\E10
19	4000563	1	VALVE\HYD\SOL\SPACER\E8
20	4000595	1	VALVE\HYD\CART\3POS,4WAY\OPEN:CENTER
	<b>4000598</b>		<b>VLV\HYD\AUX\BLK\MFLD\12V</b>

**Note-** Items 15-4000559 and 17-4000561 change valve from open center to closed center

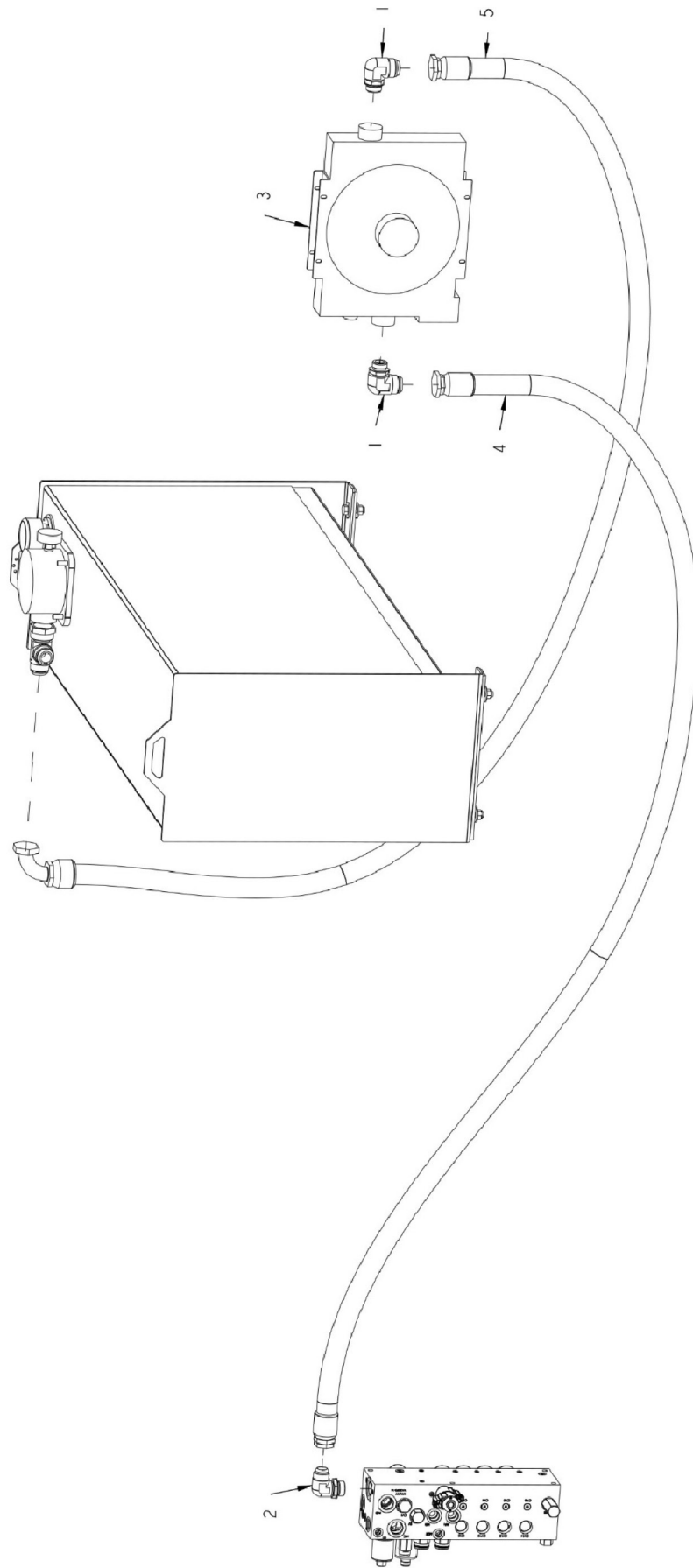
**Open Center**

4000559 goes in port 'EPFR', 4000561 goes in 'X'

**Closed Center**

4000561 goes in 'EPFR', 4000559 GOES IN 'x'

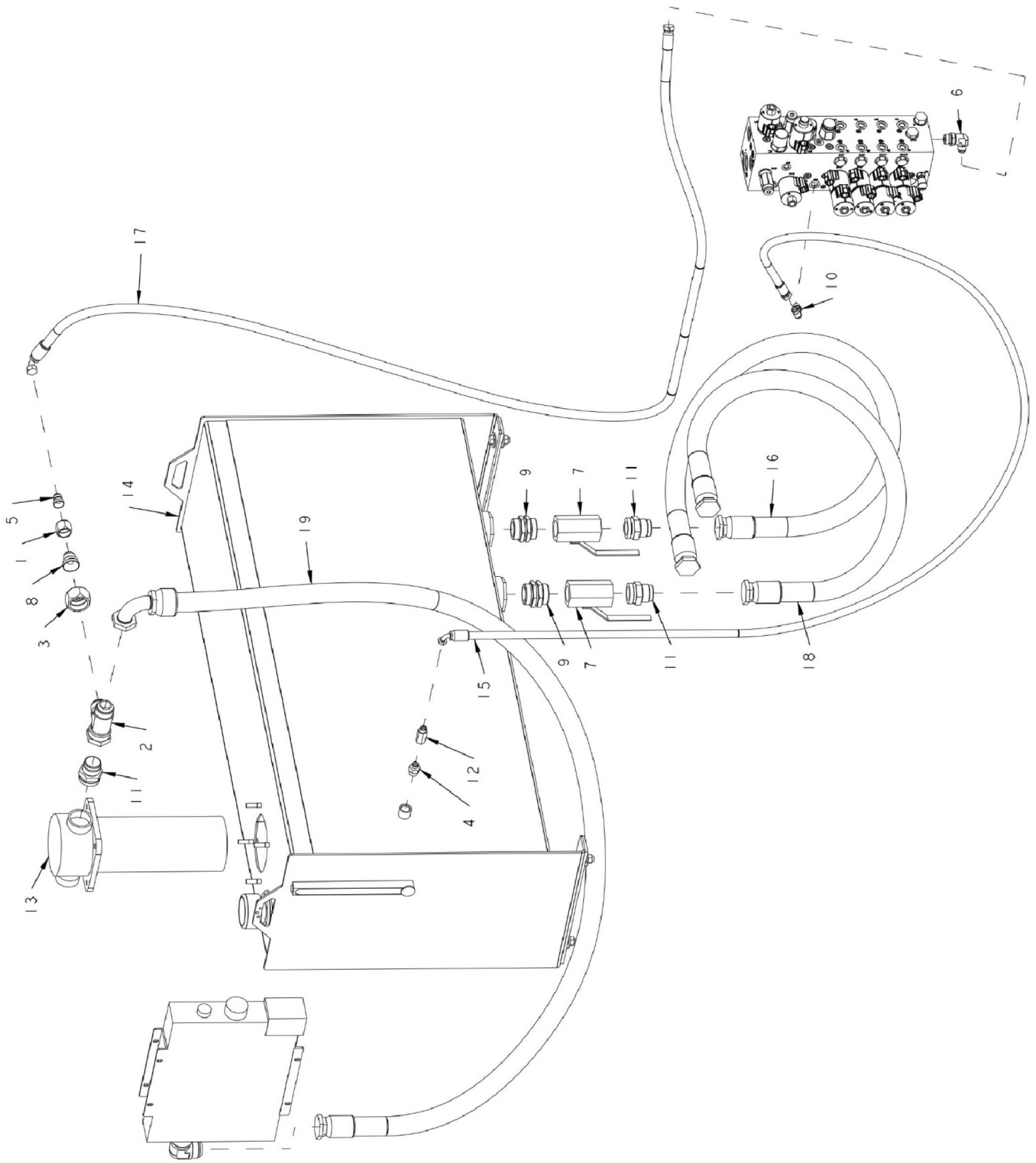
**HYDRAULIC COOLER ASSEMBLY (FOR ELECTRIC)**



**HYDRAULIC COOLER ASSEMBLY (FOR ELECTRIC)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800712	2	FTG\1-5/16MORX1-5/8MJIC\90
2	3800728	1	FTG\1-5/16MORX1-5/16MJIC\90
3	4200167	1	RAD\HYD\DCS16\12VDC\W/BYPASS
3A	4200184		RAD\FAN&MOTOR\12VDC (REPLACEMENT FAN AND MOTOR FOR 4200167)
4	3701800	1	HOSE\HYD\1-1/4X144\1-5/16FJICX1-5/8FJIC INLET PORT COOLER TO T PORT AUX VALVE
5	3701799	1	HOSE\HYD\1-1/4X158\1-5/8FJICX1/5/8FJIC\90 OUT PORT COOLER TO TANK FILTER TEE
	<b>NOT SHOWN</b>		
	5700897	1	SENSOR\TEMP
	3800949	1	FTG\3/4MORX1/8FP\ADPT

# OIL TANK HYDRAULIC ASSEMBLY (FOR ELECTRIC)

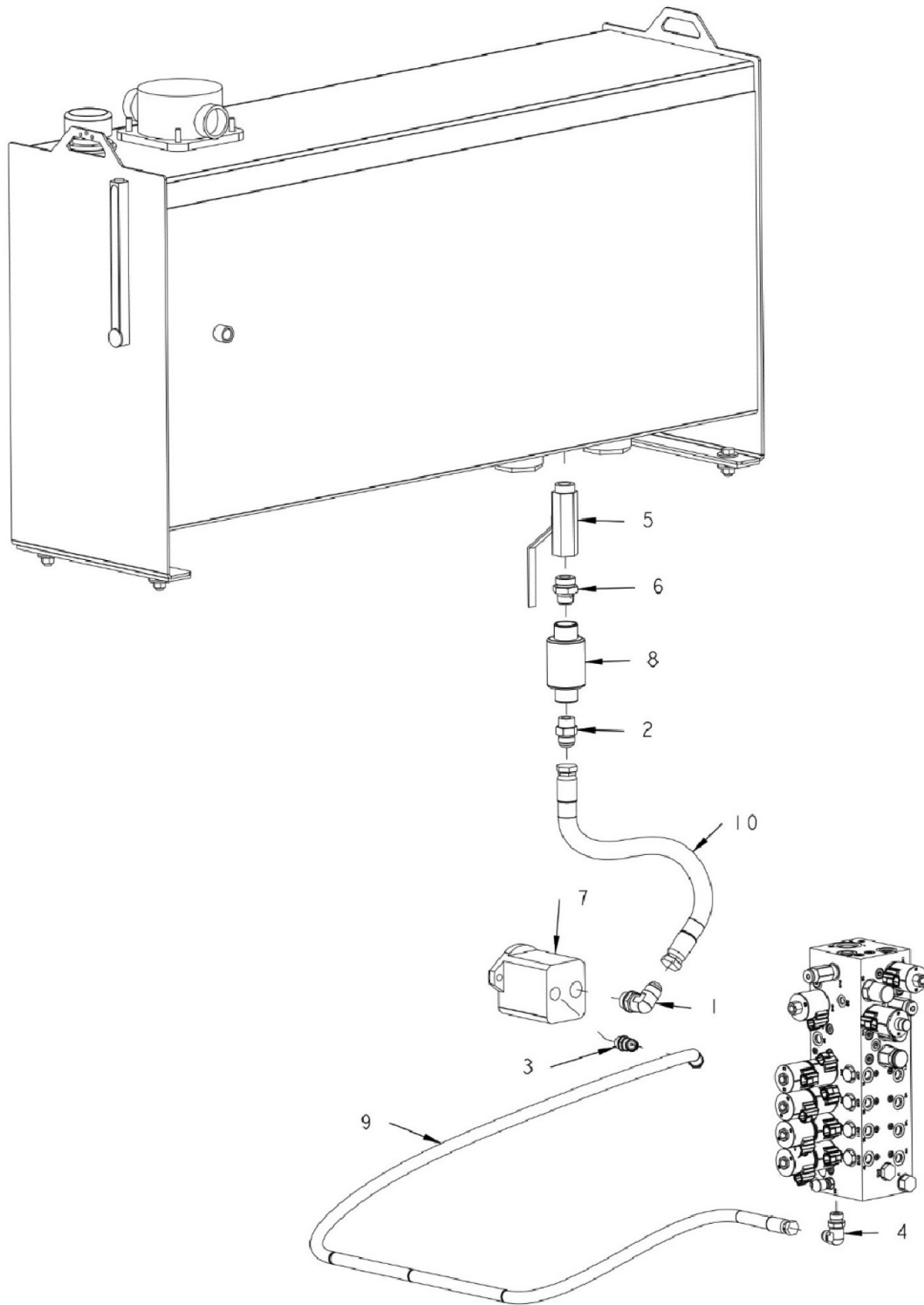


**OIL TANK HYDRAULIC ASSEMBLY (FOR ELECTRIC)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800462	1	FTG\1-1/16NUTFJICS
2	3800486	1	FTG\1-5/8FJICX1-5/8MJICX1-5/8MJIC\RUN;TEE
3	3800488	1	FTG\1-5/8NUTFJICS
4	3800530	1	FTG\3/4MORX9/16MJIC\ST
5	3800553	1	FTG\1-1/16FJICX3/4MJIC\ADPT
6	3800696	1	FTG\7/8MORX3/4MJIC\90
7	3800740	2	VALVE\BALL\1-1/2\1-7/8FOR\1/4 TURN\W/LOCK
8	3800743	1	FTG\1-5/8FJICX1-1/16MJIC\ADPT
9	3800745	2	FTG\1-7/8MORX1-7/8MOR\ADPT
10	3800757	1	FTG\9/16MORX9/16MJIC\90
11	3800808	3	FTG\1-7/8MORX1-5/8MJIC\ST
12	4000601	1	VLV\CHECK\POPPET\9/16MJIC
13	4400043	1	FLTR\COMP\10MIC\1-7/8FOR
14	4502799	1	TANK\OIL\60GAL
15	3701728	1	HOSE\HYD\3/8X80\9/16FJIC90X9/16FJIC DR PORT AUX VALVE TO TANK
16	3701595	1	HOSE\HYD\1-1/4X49\1-5/8FJICX1-5/8FJIC SUPPLY PORT FRONT PUMP TO RIGHT TANK PORT SCREEN
17	3701802	1	HOSE\HYD\1/2X117.5\3/4FJICX3/4FJIC\90 TANK FILTER TEE TO B PORT AUX VALVE
18	3701595	1	HOSE\HYD\1-1/4X49\1-5/8FJICX1-5/8FJIC SUPPLY PORT REAR PUMP TO LEFT TANK PORT SCREEN
19	3701799	1	HOSE\HYD\1-1/4X158\1-5/8FJICX1/5/8FJIC\90 OUT PORT COOLER TO TANK FILTER TEE



**CASSAPA PUMP HYDRALIC ASSEMBLY (FOR ELECTRIC)**



**CASSAPA PUMP HYDRALIC ASSEMBLY (FOR ELECTRIC)**

<b>ITEM</b>	<b>PART</b>	<b>QTY.</b>	<b>PART DESCRIPTION</b>
1	3800279	1	FTG\1-1/16MORX1-1/16MJIC\90
2	3800539	1	FTG\1-1/16MJICX3/4MP\ST\SOLID
3	3800675	1	FTG\7/8MORX3/4MJIC\45
4	3800696	1	FTG\7/8MORX3/4MJIC\90
5	3800950	1	VALVE\BALL\16MOR\16FOR
6	3800951	1	FTG\1-5/16MORX3/4MP
7	4200124	1	PUMP\HYD\89CID\CASAPPA
8	4400141	1	FLTR\HYD\SUCT\INLN\10GPM
9	3701801	1	HOSE\HYD\1/2X95\3/4FJICX3/4FJIC PRESSURE PORT CASSAPA PUMP TO A PORT AUX VALVE
10	3701219	1	HOSE\HYD\3/4X19\1-1/16FJCX1-1/16FJC BOTTOM PORT OIL TANK SUCTION PORT CASSAPA PUMP



## H-1135 Tub Grinder Documentation Comment Form

DuraTech Industries welcomes your comments and suggestions regarding the quality and usefulness of this manual. Your comments help us improve the documentation to better meet your needs.

- Did you find any errors?
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- 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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Jamestown, ND 58402-1940

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Thank you for taking the time to help us improve our documentation.

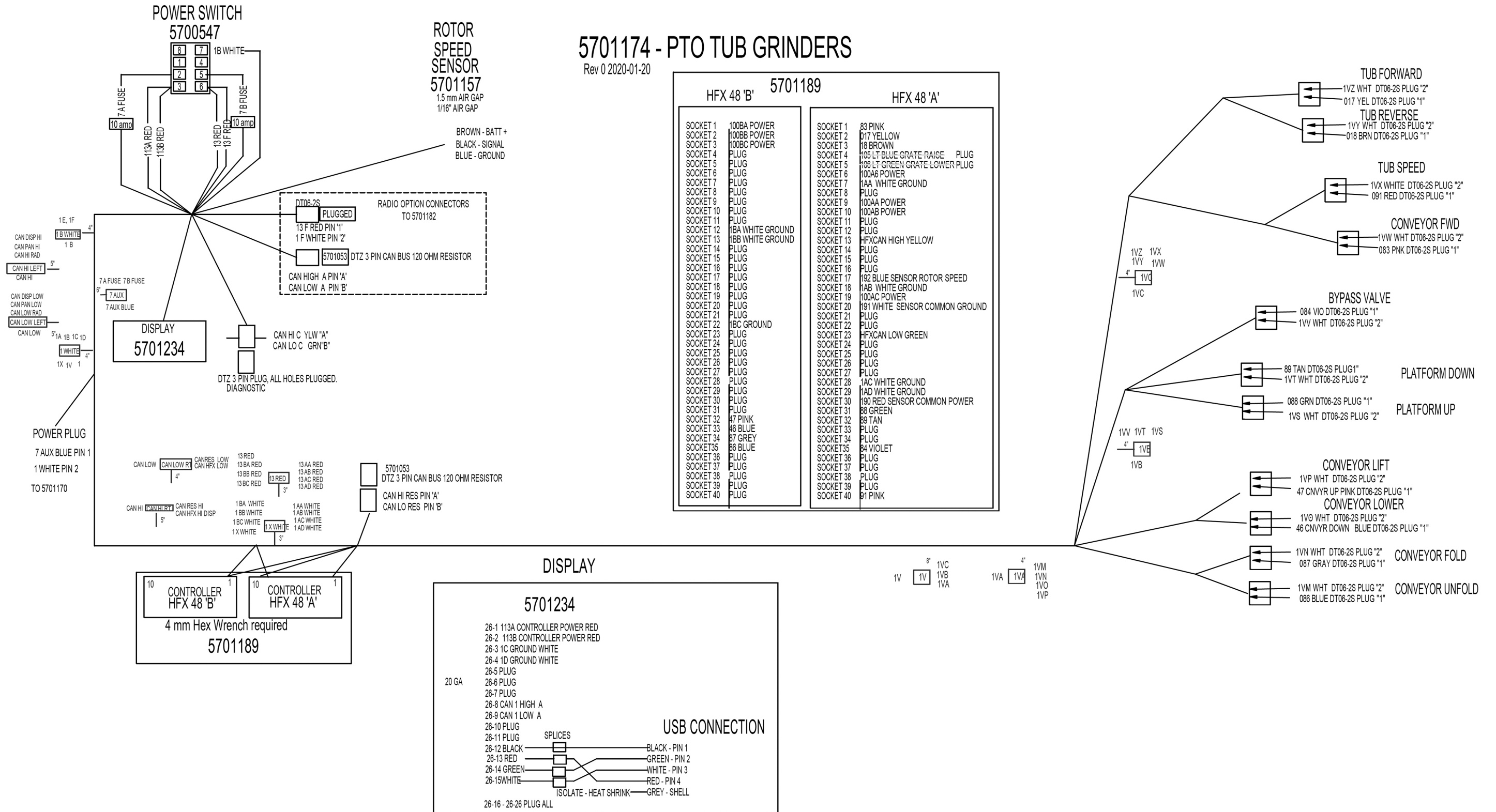
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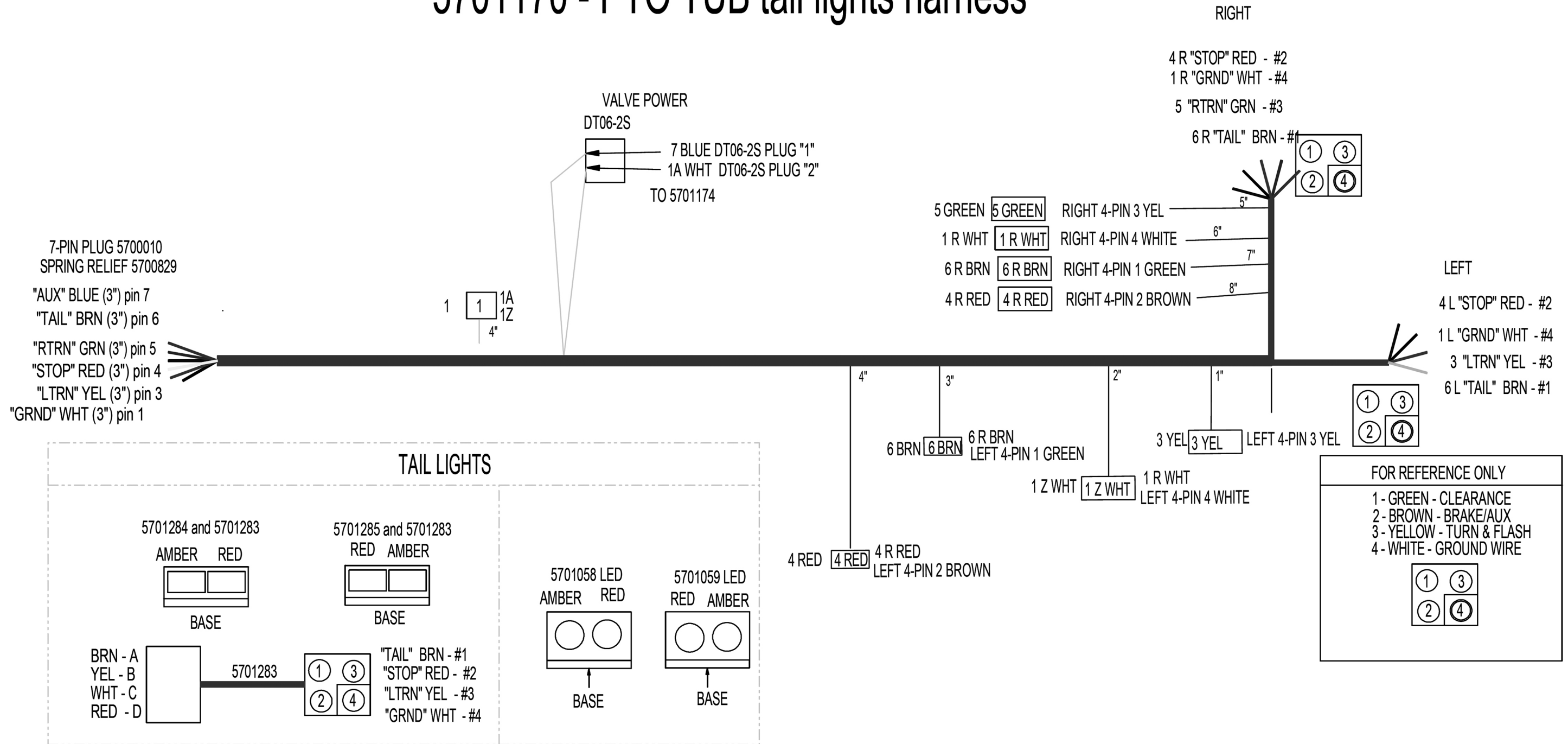
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# 5701174 - PTO TUB GRINDERS

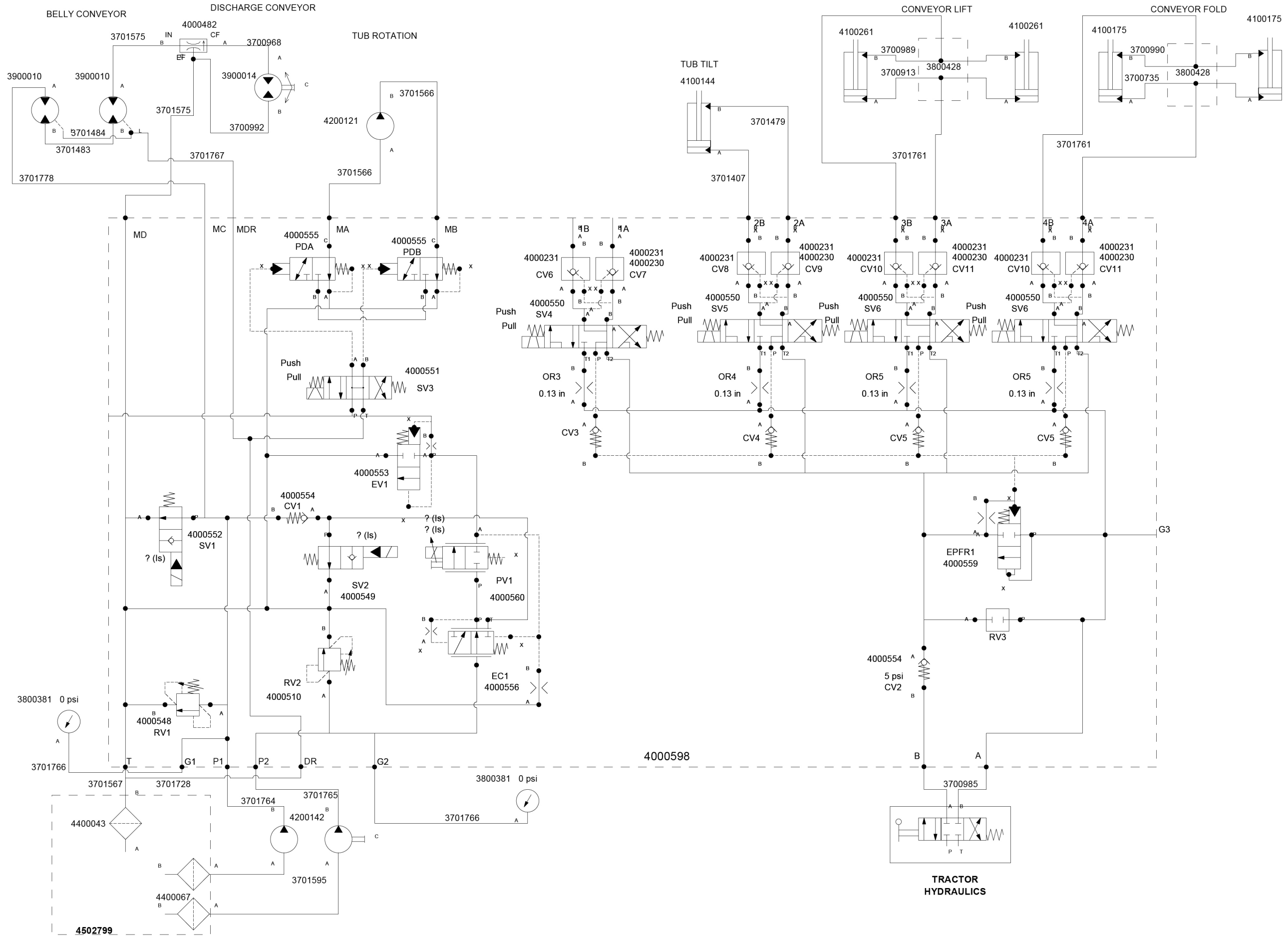
Rev 0 2020-01-20



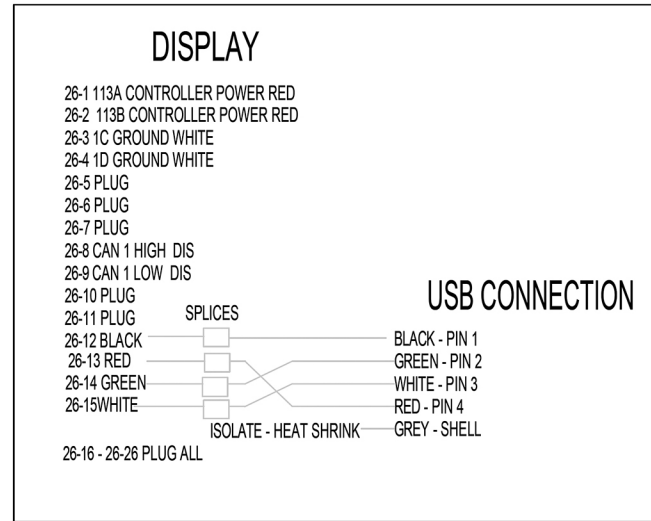
# 5701170 - PTO TUB tail lights harness



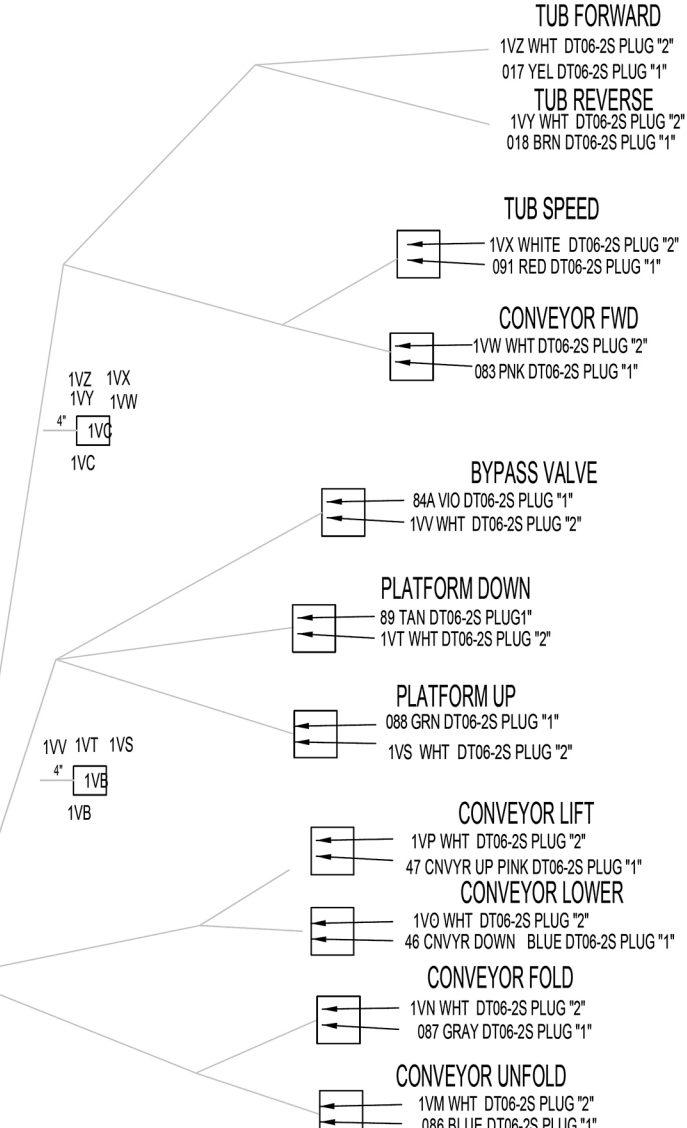
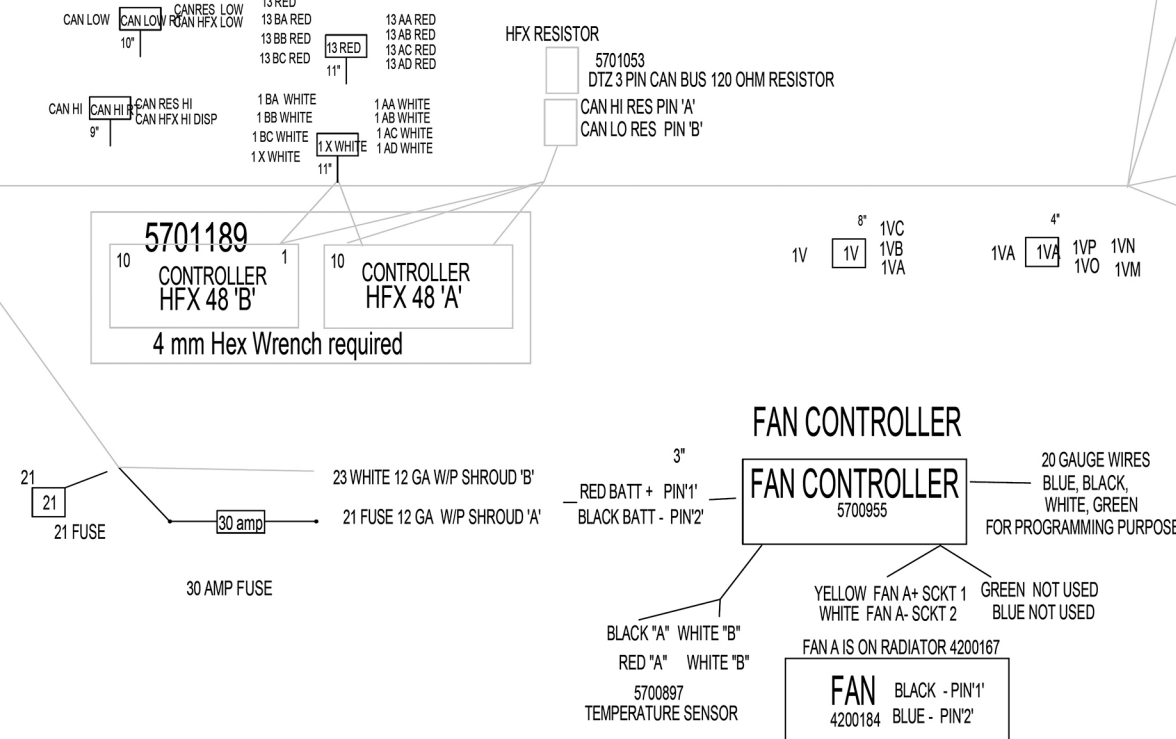
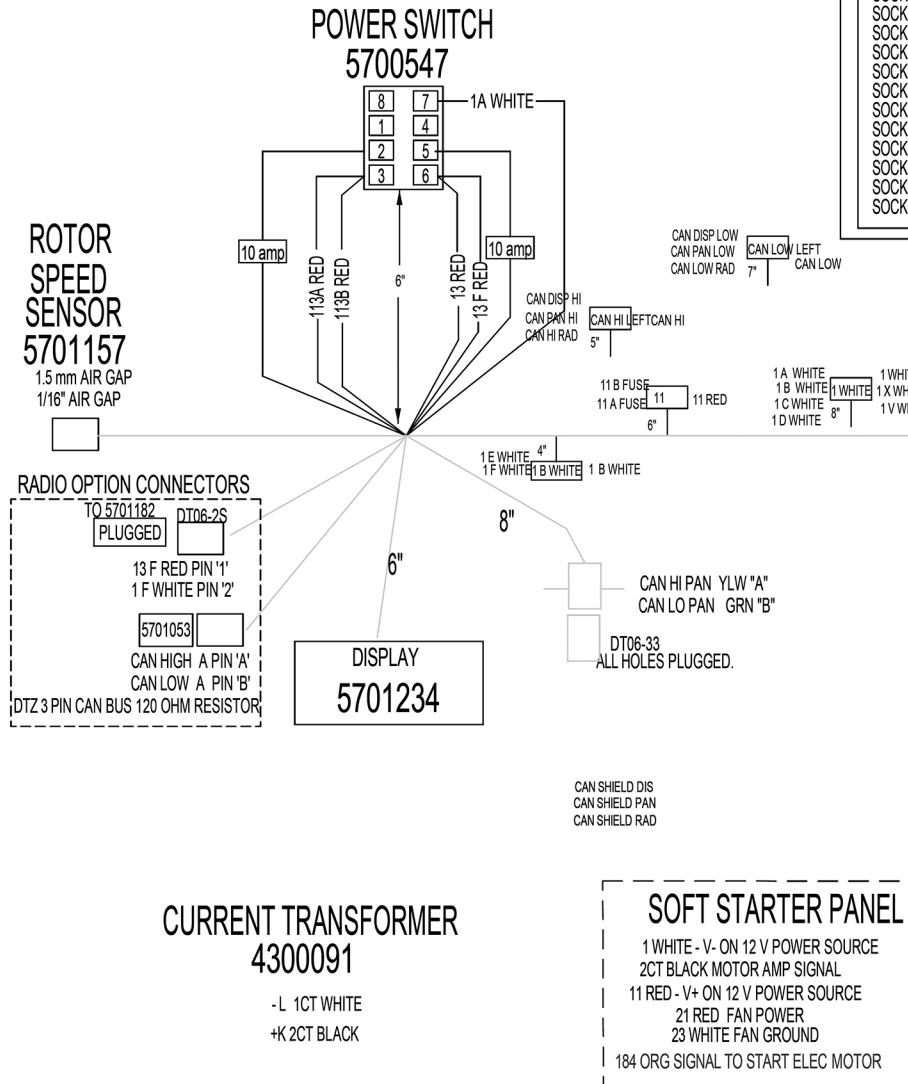




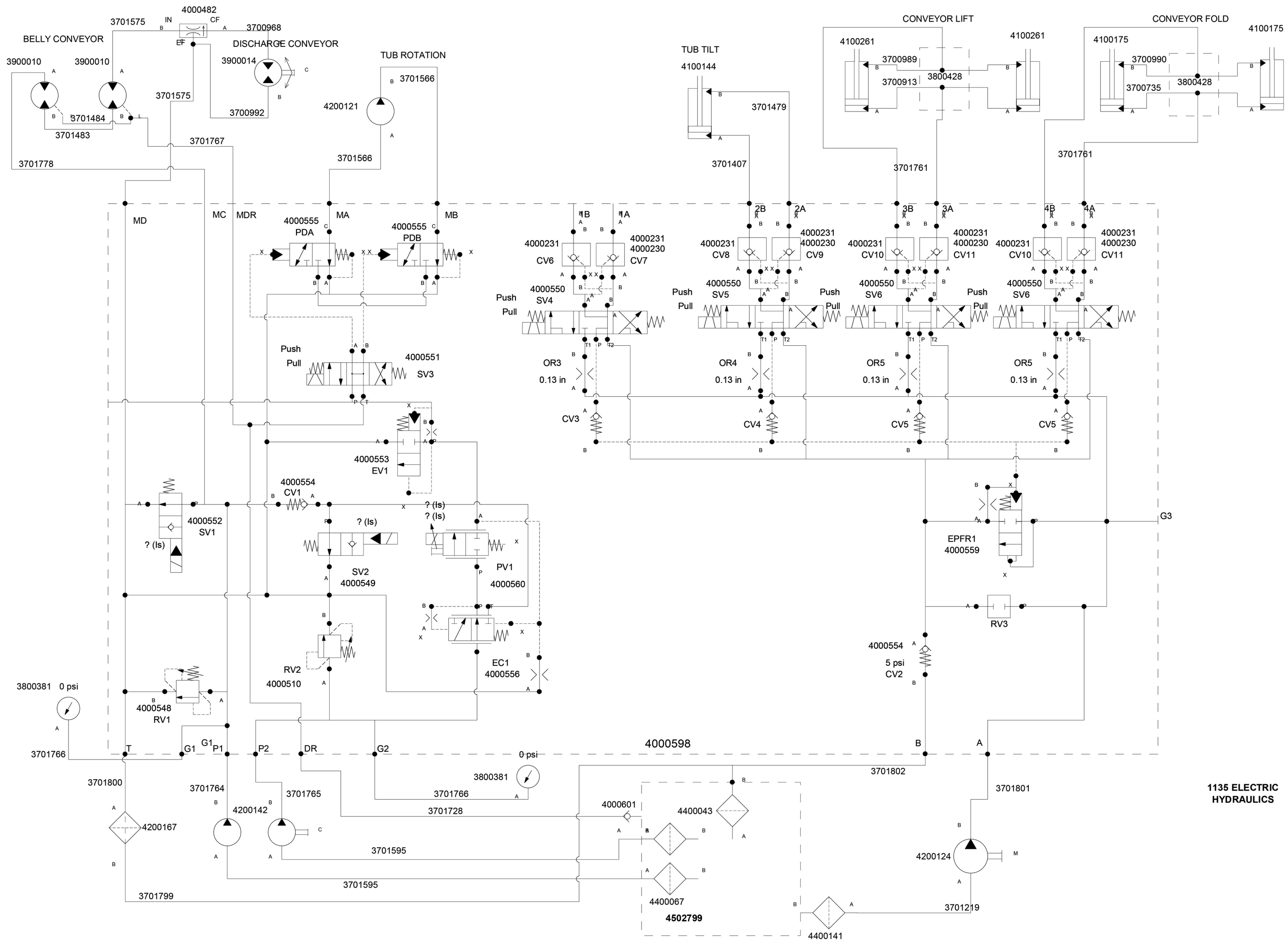
5701276 -Electric Motor 1135 Tub Grinder valve harness



HFX 48 'B' 5701189		HFX 48 'A'	
SOCKET 1	13 BA POWER	DRC26-40SB	83 PINK
SOCKET 2	13 BB POWER	0462-201-20141 SOCKET (20 GAUGE WIRE)	17 YELLOW
SOCKET 3	13 BC POWER	0462-005-20141 SOCKET (16 GAUGE WIRE)	18 BROWN
SOCKET 4	PLUG	0413-204-2005 PLUG	PLUG (AUX 1)
SOCKET 5	PLUG		PLUG (AUX2)
SOCKET 6	PLUG		13 AA POWER
SOCKET 7	PLUG		11AA WHITE GROUND
SOCKET 8	PLUG		PLUG TILT ENABLE
SOCKET 9	PLUG		13 AB POWER
SOCKET 10	PLUG		13 AC POWER
SOCKET 11	PLUG		PLUG
SOCKET 12	11BA WHITE GROUND		PLUG
SOCKET 13	11BB WHITE GROUND		HFXCAN HIGH YELLOW
SOCKET 14	PLUG		PLUG
SOCKET 15	PLUG		PLUG
SOCKET 16	PLUG		PLUG
SOCKET 17	PLUG		192 BLACK SENSOR ROTOR SPEED
SOCKET 18	PLUG		11AB WHITE GROUND
SOCKET 19	PLUG		13 AD POWER 12 V DC
SOCKET 20	PLUG		191 BLUE SENSOR GROUND
SOCKET 21	PLUG		PLUG
SOCKET 22	11BC GROUND		PLUG
SOCKET 23	1184 ORG ELECTRIC MOTOR SIGNAL		HFXCAN LOW GREEN
SOCKET 24	PLUG		PLUG
SOCKET 25	PLUG		PLUG
SOCKET 26	PLUG		PLUG
SOCKET 27	PLUG		PLUG
SOCKET 28	PLUG		1AC WHITE GROUND
SOCKET 29	PLUG		1AD WHITE GROUND
SOCKET 30	PLUG		190 BROWN SENSOR POWER 5 vdc
SOCKET 31	PLUG		88 GREEN
SOCKET 32	47 PINK		89 TAN
SOCKET 33	46 BLUE		2CT BLACK Electric Motor Amps
SOCKET 34	87 GREY		PLUG
SOCKET 35	86 BLUE		84 VIOLET
SOCKET 36	PLUG		PLUG
SOCKET 37	PLUG		PLUG
SOCKET 38	PLUG		PLUG
SOCKET 39	PLUG		PLUG
SOCKET 40	PLUG		91 RED



Note - In case of controller failure, the controller can be unplugged and power can be connected direct to fan, so the fan runs constantly



1135 ELECTRIC HYDRAULICS