

# ***CMF-980™***

## ***Vertical Mixer***



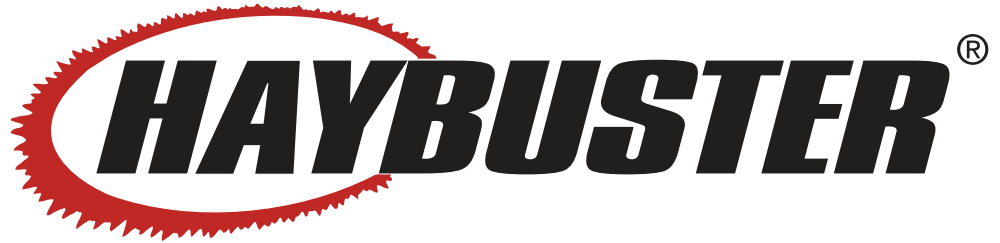
### *Operating Instructions*



### *and Parts Reference*







# ***CMF-980™*** ***Vertical Mixer***

## ***Operating Instructions***



## ***and Parts Reference***

DuraTech Industries International Inc. (DuraTech Industries) has made every effort to assure that this manual completely and accurately describes the operation and maintenance of the CMF-980™ Vertical Mixer as of the date of publication. DuraTech Industries reserves the right to make updates to the machine from time to time. Even in the event of such updates, you should still find this manual to be appropriate for the safe operation and maintenance of your unit.

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



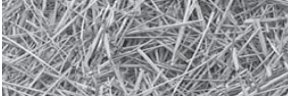
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## FOREWORD



## Foreword

All personnel must read and understand the following sections before operating the *CMF-980 VERTICAL MIXER*.

### Appropriate use of unit\Introduction

Your model CMF-980 is designed to cut, mix and distribute feed rations including baled forage. It is designed for all bale sizes and ration moisture contents.

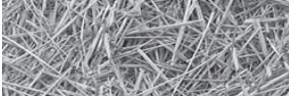


**To avoid possible damage to the machine and risk of injury to the operator, consult with a DuraTech Industries International, Inc. (DuraTech Industries) representative before attempting to mix and distribute materials other than livestock forage.**

The CMF-980 is used to mix hay and forage with grain and other supplements to feed livestock. The front conveyor with optional left, right or tandem discharge makes distribution of forage mix easier.

### Statement of Misuse

This vertical mixer is not to be used for any purpose other than for which it is intended as explained in the operator's manual, advertising material and other pertinent written material prepared by DuraTech Industries. Any machine subject to misuse may cause personal injury or death, and void manufactures warranty.



## FOREWORD

### Purpose

The purpose of this owner's manual is to explain maintenance requirements and routine adjustments for the most efficient operation of your CMF-980. 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, right hand or left hand of this machine, the reference is always made from standing at the rear end of the machine and looking towards 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: CMF-980 VERTICAL MIXER SERIAL NO \_\_\_\_\_

### Serial Number Location

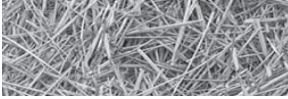
The serial number location decal can be found on the left hand side of the hitch frame. If the serial number decal is missing, the number is also stamped on the top of the hitch frame.

Please have the serial number ready when making inquiries regarding this machine.



serial number stamped location

serial number decal location



# How to use this manual

## Manual organization

This manual is organized into the following parts:

- **Part 1:** Operating Manual explains how to set up, use and maintain the CMF-980 VERTICAL MIXER.
  1. Section 1: Safety
  2. Section 2: Dealer Preparation
  3. Section 3: Operation
  4. Section 4: Lubrication
  5. Section 5: Troubleshooting
  6. Section 6: Options
  7. Section 7: Maintenance
- **Part 2:** Parts Reference contains diagrams of each assembly, with the part number of each part. A key on the facing page contains a description of the part and the quantity used.
  1. The **parts reference** section can be found towards the back of this manual behind **Appendix B**.

## Dealer responsibilities

- Read Section 2, “Dealer Preparation,” and perform the tasks outlined. Also perform a pre-operation inspection as described in Section 3.
- 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 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 Card. Receipt of this form is required to activate the warranty. **Appendix A** provides details of the warranty.

## Operator responsibilities

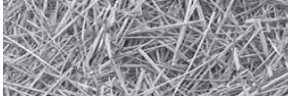
- Operator is responsible for his safety.
- Operator is also responsible for the safety of others near the machine.
- Review Section 2, “Dealer Preparation,” to verify that the machine has been prepared for use.
- Thoroughly review sections 1 and 3, which explain normal operation of the machine, and section 4, which explains maintenance requirements.
- Note the important safety information in the Forward and Section 1, “Safety”
- Keep copies of all manuals in a readily accessible location for future reference





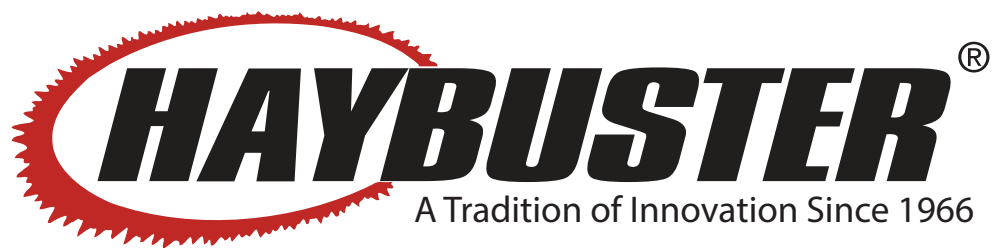
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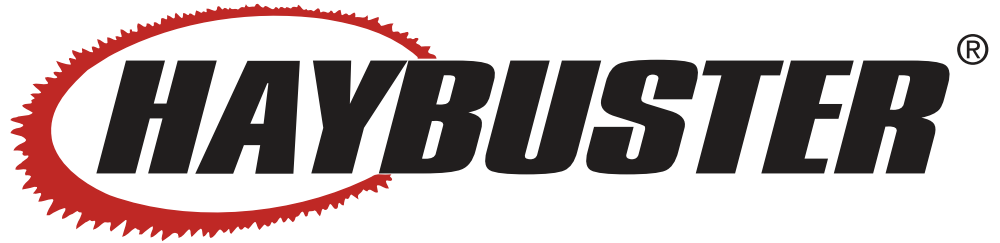
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# ***CMF-980™*** ***Vertical Mixer***

## ***Operating Instructions***



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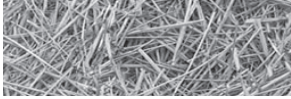


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## Section 1: Safety

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



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

THIS MACHINE IS NOT TO BE USED FOR ANY OTHER PURPOSE OTHER THAN THOSE EXPLAINED IN THE OPERATOR'S MANUAL, ADVERTISING LITERATURE OR OTHER DURATECH INDUSTRIES WRITTEN MATERIAL PERTAINING TO THE CMF-980.

### 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.

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.

**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.

**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.

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**.



**DANGER:**

Signal word - White Lettering/Red Background

Safety Alert Symbol - White Triangle/Red Exclamation Point



**WARNING:**

Signal word - Black Lettering/Orange Background

Safety Alert Symbol - Black Triangle/Orange Exclamation Point



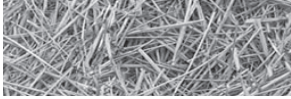
**CAUTION:**

Signal word - Black Lettering/Yellow Background

Safety Alert Symbol - Black Triangle/Yellow Exclamation Point



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



## 1.2 Operator - personal equipment

### THE OPERATOR

#### Physical Condition

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

Do not operate a **CMF-980 VERTICAL MIXER** when you are fatigued. Be alert - If you get tired while operating your **CMF-980 VERTICAL MIXER**, take a break. Fatigue may result in loss of control. Working with any farm equipment can be strenuous. If you have any condition that might be aggravated by strenuous work, check with your doctor before operating

#### Proper Clothing



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



Protect your hands with gloves when handling flail and sections. Heavyduty, nonslip gloves improve your grip and protect your hands.



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



To reduce the risk of injury to your eyes never operate a **CMF-980 VERTICAL MIXER** 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

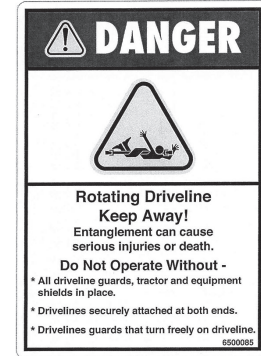
The safety decals located on your machine contain important information that will help you operate your equipment. Become familiar with the decals and their locations.




**DANGER: Rotating Driveline, Keep Away!** Entanglement can cause serious injuries or death.

Do Not Operate Without

- All driveline guards, tractor and equipment shields in place.
- Drivelines securely attached at both-ends.
- Driveline guards that turn freely on driveline.



6500085




**DANGER**

- Rotating parts can entangle or strike people, resulting in death.
- Never enter a mixer/feeder while in operation.
- Operate the mixer/feeder from the operator's seat only.



6500383



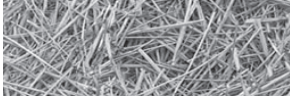
**WARNING: HIGH-PRESSURE FLUID HAZARD**

To prevent serious injury or death:

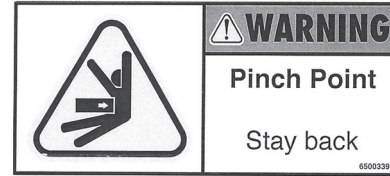
- Relieve pressure on system before repairing or adjusting or disconnecting.
- Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands.
- Keep all components in good repair.



6500220



**WARNING: Pinch Point**  
Stay Back



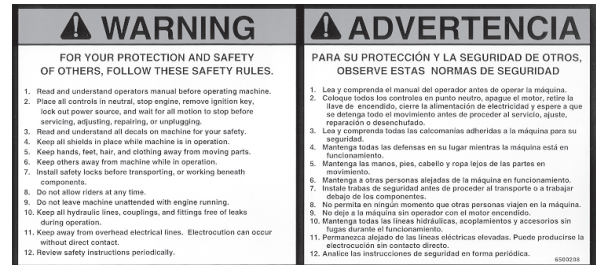
**WARNING**  
**Pinch Point**  
Stay back  
6500339

6500339



**WARNING: FOR YOUR PROTECTION AND SAFETY OF OTHERS, FOLLOW THESE SAFETY RULES.**

1. Read and understand operators manual before operating machine.
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 unplugging.
3. Read and understand all decals on machine for your safety.
4. Keep all shields in place while machine is in operation.
5. Keep hands, feet, hair, and clothing away from moving parts.
6. Keep others away from machine while in operation.
7. Install safety locks before transporting, or working beneath components.
8. Do not allow riders at any time.
9. Do not leave machine unattended with engine running.
10. Keep all hydraulic lines, couplings, and fittings free of leaks during operation.
11. Keep away from overhead electrical lines. Electrocutation can occur without direct contact.
12. Review safety instructions periodically.



**WARNING**  
FOR YOUR PROTECTION AND SAFETY  
OF OTHERS, FOLLOW THESE SAFETY RULES.

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11. Keep away from overhead electrical lines. Electrocutation can occur without direct contact.
12. Review safety instructions periodically.

**ADVERTENCIA**  
PARA SU PROTECCIÓN Y LA SEGURIDAD DE OTROS,  
OBSERVE ESTAS NORMAS DE SEGURIDAD

1. Lea y comprenda el manual del operador antes de operar la máquina.
2. Coloque todos los controles en punto neutro, apague el motor, retire la llave de encendido, cierre la alimentación de electricidad y espere a que se detenga toda el movimiento antes de proceder al servicio, ajuste, reparación o desenchufado.
3. Lea y comprenda todas las calcomanías adheridas a la máquina para su seguridad.
4. Mantenga todas las defensas en su lugar mientras la máquina está en funcionamiento.
5. Mantenga las manos, pies, cabello y ropa lejos de las partes en movimiento.
6. Mantenga a otras personas alejadas de la máquina en funcionamiento.
7. Instale trabas de seguridad antes de proceder al transporte o a trabajar debajo de los componentes.
8. No permita en ningún momento que otras personas viajen en la máquina.
9. No deje a la máquina sin operador con el motor encendido.
10. Mantenga todas las líneas hidráulicas, acoplamientos y accesorios sin fugas durante el funcionamiento.
11. Permanezca alejado de las líneas eléctricas elevadas. Puede producirse la electrocución sin contacto directo.
12. Analice las instrucciones de seguridad en forma periódica.

6500208



**WARNING: No Riders**  
Serious personal injury could result from riding on the machine.

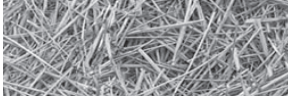


**WARNING**  
**No Riders**  
Serious personal injury  
could result from riding on  
the machine.

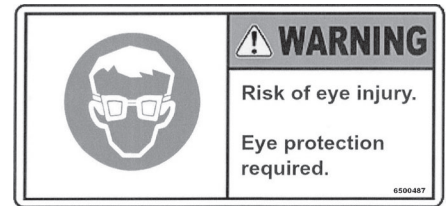


**ADVERTENCIA**  
**Pasajeros Prohibidos**  
Podrían resultar lesiones  
personales graves al  
viajar en la máquina.

6500043



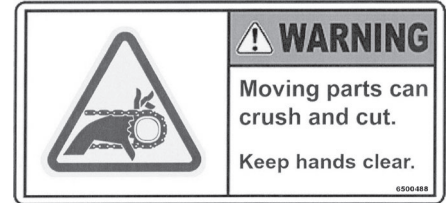
**WARNING:** Risk of eye injury  
Eye Protection required



6500487



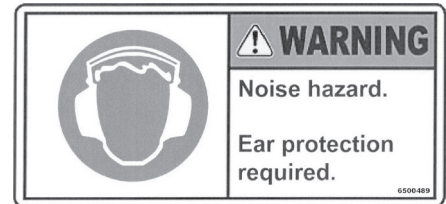
**WARNING:** Moving parts can crush and cut.  
Keep hands clear.



6500488



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



6500489



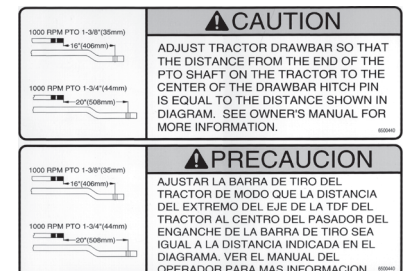
**WARNING:** No Step  
Do not step, stand or sit on this surface. May cause injury and/or equipment damage.



6500490



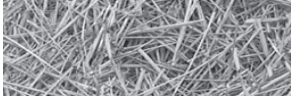
**CAUTION:** Adjust tractor drawbar so that the distance from the end of the PTO shaft on the tractor to the center of the drawbar hitch pin is equal to the distance shown in the diagram. See owner's manual for more information.



6500440

- Replacement decals can be purchased from your Haybuster dealer.





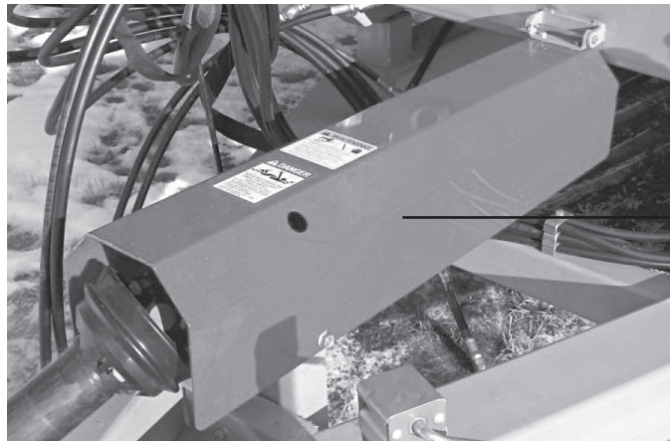
## 1.4 Shielding

Shields are installed for your protection. Keep them in place, and replace damaged shields.

figure 1.1  
PTO driveline shield

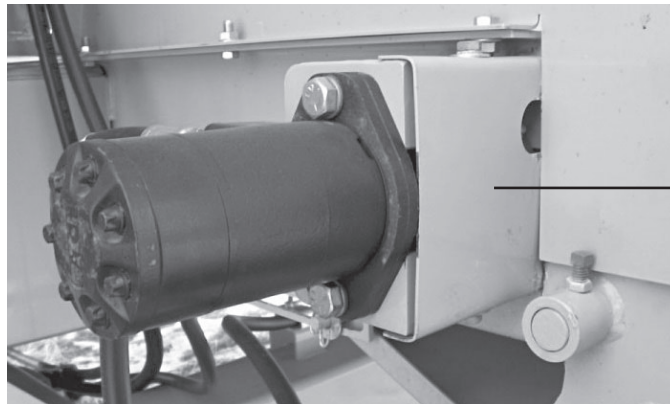


**CAUTION! NO STEP! DO NOT STEP OR STAND AT THIS LOCATION**



shield

figure 1.2  
Orbit motor auger drive shield



shield

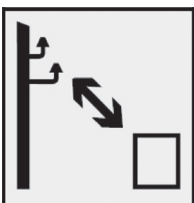
## 1.5 Safety review section

### BEFORE OPERATING

- **Read and follow all instructions contained in:**
  1. This CMF-980 operator's manual
  2. Tractor operator's manual
  3. Decals on the CMF-980



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



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



- Allow only responsible, properly instructed individuals to operate your machine. Provide proper training and carefully supervise inexperienced operators.
- Use a tractor which meets the tractor requirement contained within this manual. Additional weights may be necessary.
- Make sure all bystanders and other workers are clear before starting the tractor and CMF-980.
- Make no modifications to the machine unless specifically recommended or requested by DuraTech Industries.
- Check periodically for breaks or unusual wear and make any necessary repairs.
- Securely attach to towing unit. Use high strength, appropriately sized hitch pin with a mechanical retainer.
- If required install P.T.O. safety chain, check local regulations regarding safety chain requirements.
- Be sure that there are no tools lying on or in the CMF-980.
- Because it is possible that your CMF-980 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**

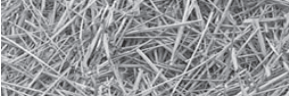
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the CMF-980.

## **DURING OPERATION**

- Be sure the tractor operator is the only person riding on the tractor.
- Never allow riders on the machine at any time.



- Keep all bystanders, pets and livestock clear of work area.
- Keep hands and clothing clear of moving parts.
- Never enter the CMF-980 while in operation. Rotating parts can entangle or strike people, resulting in personal injury or death.
- Operate the CMF-980 from the operator's seat only.
- Power takeoff shafts must be locked in place with protective P.T.O. shields in place.



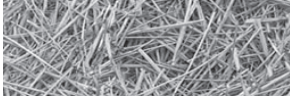
- Do not exceed load capacity of the CMF-980. **(See loading instructions in Section 3.7)**
- Do not clean, lubricate or adjust your CMF-980 while it is moving.
- Periodically clean the equipment to prevent buildup of dry combustible materials.
- Be especially observant of the operating area and terrain – watch for holes, rocks other hidden hazards. Always inspect the area prior to operation.
- Be extra careful when working on inclines.
- Pick the most level route possible when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Never leave the CMF-980 running unattended.
- As a precaution, always check the hardware on the CMF-980 following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

## **DURING SERVICE & MAINTENANCE**

- Before working on or near the CMF-980 for any reason, including servicing, cleaning, unplugging or inspecting machine, use normal shut down procedures unless instructed differently in this manual.
- Never work on or near the CMF-980 unless engine is shut off, and all power drives and PTO are disengaged. Always follow normal shutdown procedures.
- Check periodically and tighten any loose bolts or connections.
- Where replacement parts are necessary for periodic maintenance and servicing, genuine factory replacement parts must be used to restore your equipment to original specifications. DuraTech Industries will not claim responsibility for use of unapproved parts and/or accessories and other damages as a result of their use. If equipment has been altered in any way from its original design, DuraTech Industries does not accept any liability for injury or warranty.
- If it is necessary to operate the tractor engine indoors for more than a few seconds, be sure to provide enough ventilation to remove the tractor exhaust fumes.
- Hydraulic fluid escaping under pressure can be invisible and have enough force to penetrate the skin. When searching for a suspected leak, use a piece of wood or cardboard rather than your hands. If injured, seek medical attention immediately to prevent serious infection.
- Relieve all pressure in the hydraulic system before disconnecting the hose or performing other work on the system. Make sure all connections are tight and the hose is in good condition before applying pressure to the system.
- Replace all shields and guards after servicing and before moving.

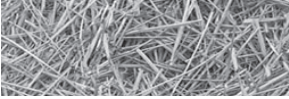


**DO NOT PERFORM MAINTENANCE ON THE INTERIOR OF THE TUB DURING WET WEATHER CONDITIONS**



## **1.6 Towing/road transport**

- Use good judgment and drive slowly over rough or uneven terrain.
- Avoid loose fill, rocks and holes; they can be dangerous for equipment operation or movement. Allow for unit length when making turns.
- Be sure tractor brakes are properly adjusted and foot pedals are locked together.
- Check your state laws regarding the use of light, slow moving vehicle signs, safety chain and other possible requirements.



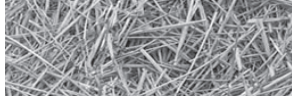
## Section 2: Dealer Preparation

### 2.1 Pre-delivery inspection

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

- ☐ Check machine for missing items or damage in transit.
- ☐ Check for loose bolts. Torque to 320-457 ft.-lbs (44-63 kg-m) lubed.
- ☐ Check all hydraulic components for leaks or damage.
- ☐ Check lug bolts for tightness.
- ☐ Check tires for proper air pressure. Tire pressure should be 135 PSI (9 bars) maximum. Verify tire markings before inflating.
- ☐ Check condition of tire rims
- ☐ Check machine for proper lubrication.
- ☐ Check all shields for proper installation and condition.
- ☐ Check condition of all decals.
- ☐ Check all phases of operation.
- ☐ Check gearbox oil levels.





## Section 3: Operation

To insure long life and economical operation, we highly recommend the operator of the CMF-980 be thoroughly instructed in the maintenance and operation of the machine. There is no substitute for a sound preventative maintenance program and well trained operator.

Prior to starting the engine of the tractor, we recommend the operator make a visual inspection of the unit. This can be done as the lubrication is being carried out. Any items that are worn, broken, missing or needing adjustment must be serviced accordingly before operating the CMF-980.

### General Operating Conditions

#### Operating Temperature

- This equipment will operate correctly in its intended ambient, at a minimum between +5°C and +40°C.

#### Relative Humidity

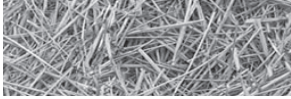
- The equipment will operate correctly within an environment at 50% RH, +40°C. Higher RH may be allowed at lower temperatures.
- Measures shall be taken by the Purchaser to avoid the harmful effects of occasional condensation.

#### Altitude

- This equipment will operate correctly up to 1000m 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 and for short periods up to +70°C.
- It has been packaged to prevent damage from the effects of normal humidity, vibration and shock.



### 3.1 Pre-starting inspection instructions



**WARNING:** Before inspecting the machine, use the normal shut-down procedure in Section 3.11.

Check the following:

- ☐ 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.

- ☐ Check for loose bolts, worn or broken parts.
- ☐ Lug nuts for tightness. Torque to 320-457 ft.-lbs (44-63 kg-m) lubed.
- ☐ Condition of tire rims.
- ☐ Tires for proper air pressure. Tire pressure should be 135 PSI (9 bars) maximum. Verify tire markings before inflating.
- ☐ Installation and condition of shields.
- ☐ Installations of slow moving vehicle (SMV) sign if required.
- ☐ Condition of decals.
- ☐ Gearbox oil levels.



## 3.2 Setup and Adjustments

### 3.2.1 Hitch Adjustments

The hitch is adjustable so that the machine is parallel to the ground when attached to the tractor drawbar. This is accomplished by removing the two mounting bolts and reinstalling them with the hitch at the proper height. The distance from the end of the P.T.O. shaft on the tractor to the center of the drawbar hitch pin hole should be 20" (51 cm), and the height from the top of the drawbar to the centerline of the P.T.O., should be 8" (20 cm).

figure 3.1  
Hitch adjustments



The hitch pin should be of proper diameter to prevent movement and length to extend through all components of the hitch. The pin should be secured with a hairpin clip or suitable device to prevent the loss of the pin.

### 3.2.2 Jack

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

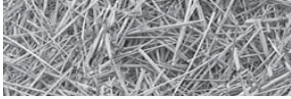


**Warning:** Never unhook the CMF-980 with material in tub.

When unhooking the machine remove the jack pin and move the jack from the storage location to the hitch position and reinstall the pin. Crank the jack until the hitch is no longer supported by the drawbar of the tractor. The hitch pin now can be removed.



**Warning:** Never use the jack without reinstalling the jack pin.



When hooking up the machine, install a proper hitch pin and secure it with a hairpin clip or comparable device, crank the jack until the foot of the jack is fully raised. Remove the jack pin and relocate the jack to the storage location. Reinstall the jack pin.

### 3.2.3 P.T.O. Shield



**Warning:** Before lifting the P.T.O. shield be sure to follow the normal shut down procedure. Be certain that the tractor is shut off and all rotating components of the machine have come to a complete stop before lifting shield. Loose clothing is discouraged, and long hair should be restrained whenever working on P.T.O. shafts.

To raise the P.T.O. shield, remove the bolts from the front of the shield and lift the shield. If it does not pivot freely look for build up of debris or other obstructions at the pivot point. Do not force the shield, as damage to the shield may occur.

figure 3.2  
Raising the P.T.O.  
shield



**CAUTION! NO STEP! DO NOT STEP OR STAND AT THIS LOCATION**



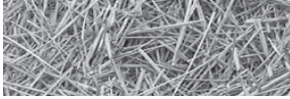
PTO shield bolt

### 3.2.4 Hydraulic Cylinder and Valve

All cylinder and valve hose connections should be tight and leak free. If the area near a hose connection becomes oily or dirty, repairs should be made to seal the leak. Hoses should be free of cracks or cuts to ensure safe operation. Cylinder seal kits are available from your dealer to repair a leaky cylinder. Pin connections should be free of excessive wear. If pins become worn they should be replaced. Also check yokes and mounts for cracks and wear.



**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 cardboard or wood rather than your hands. If injured seek qualified medical attention immediately to prevent serious infection or reaction.



### 3.2.5 Tires and Rims

Tires should be inflated to 135 PSI (9 bars) maximum, and should be free of cuts or cracks. Verify tire markings before inflating. There should also be adequate tread and no visible cords, wires or tread separation. Tires must also be of proper load rating, speed rating and size.

Rims must be free of cracks and rust pitting. Lug bolts must also be tight. Inspect the area around the lug bolts. Lug nuts need to be torqued to 320-457 ft.-lbs (44-63 kg-m) lubed. If rust develops this is a sign of loose lug bolts. Check wheel bearings and seals, replace and grease as use requires.

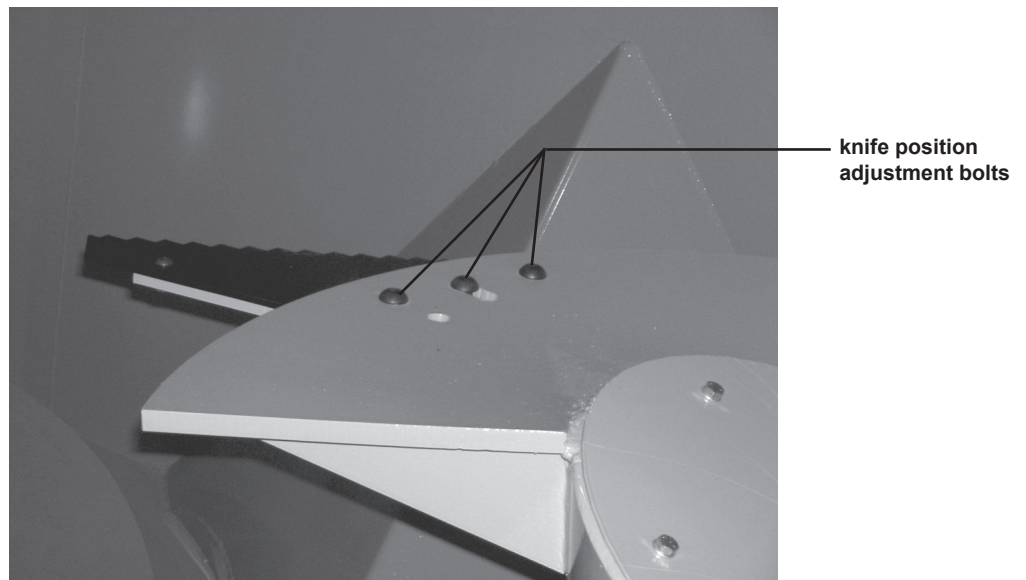
### 3.2.6 Knives

Your new CMF is setup with seven knives on each auger, the top two knives in each auger have two positions, in or out. When processing tough hay the knives should be in the out position to better attack the long stem hay. Having the knives in the out position increases the horsepower requirements. Alternatively, knives can be removed if the ration does not require much processing and/or over-processing is a possibility. Ingredient condition and rations will determine the optimum layout.

**figure 3.3**  
Knife position  
adjustments,  
knives in the 'outside'  
position



**DANGER! KEEP HANDS AWAY  
FROM CUTTING PARTS**



### 3.2.7 Vertical knives

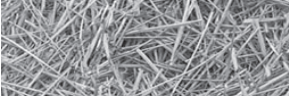
The purpose of the vertical knives is to create restriction to the flow of material around the tub and provide a shear point for the auger knives. The further into the tub the vertical knives are set the shorter the final stem length will be. The vertical knives also can affect the horsepower demand, which may be important depending on tractor size. Start using your CMF with the knives at neutral or one hole in and adjust as necessary.

**vertical knife adjuster**



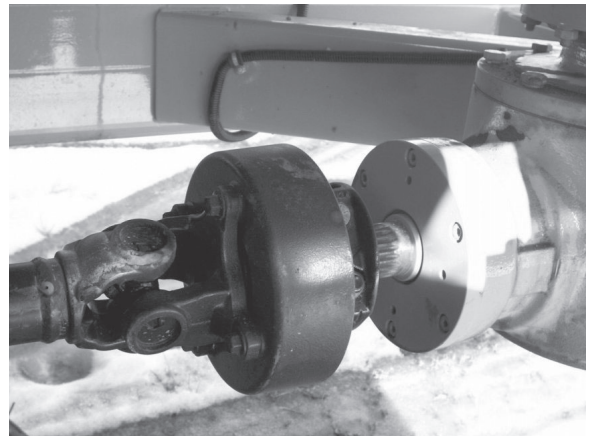
**figure 3.4**  
Vertical knife  
adjustments, shown  
with knife in the fully  
engaged position





### 3.2.8 Free motion automatic clutch

Torque protection is built into the PTO driveline with two free motion automatic clutches. These clutches are located on each driveline immediately before each gearbox. When overload occurs the clutch disengages and does not reengage until the driveline speed is reduced to near zero. The clutch makes a loud click when it disengages.



### 3.2.9 Scale Indicator

The indicator for the four-point scale should be mounted on the indicator mount located on top of the main conveyor. The mount can be mounted in the left or right side of the conveyor. The indicator is powered by a 12 volt battery located under the tub on the left side of the frame.

*See the Operator's manual from Digi-Star for scale operating instructions. For Digi-Star product support call 1-800-225-7695 or email: [tasupportds@topcon.com](mailto:tasupportds@topcon.com)*

figure 3.5  
EZ-2000 scale indicator

scale indicator



### 3.2.10 Extension Conveyor Spouts (Option)

Spouts are available with or without magnets. Spouts are adjustable in three hole positions on sides. Point spout down further when running the conveyor extensions at higher angles to avoid material build up on the end of the conveyor. When running conveyor at lower angles, direct spouts so that the magnets are positioned further into the flow of material. Pictures of available spouts can be found in **Sections 6.2 and 6.3**.



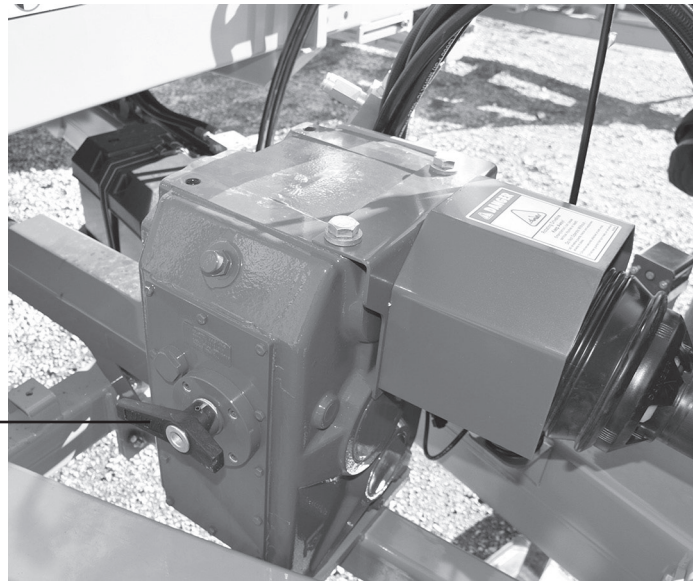


### 3.2.11 Two-Speed Gearbox

The two-speed gearbox is available on the CMF-980 for operators who want more control of their mixing speeds, want to reduce overall horsepower requirements, or prefer to turn off mixer while transporting a loaded mixer. The two-speed gearbox has two speeds, low and high.

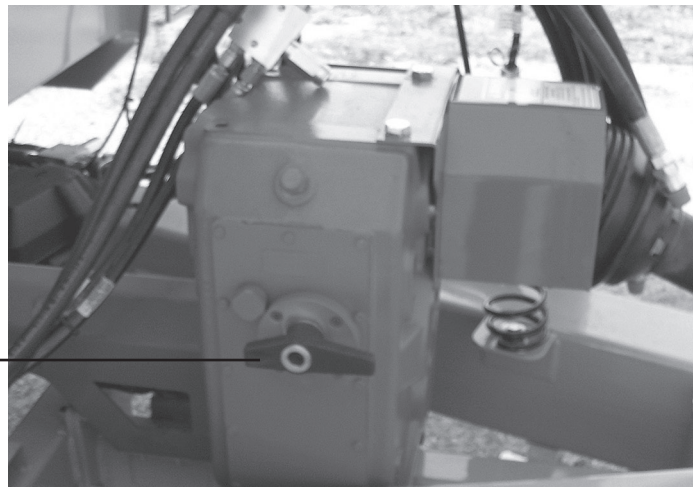
**figure 3.6**  
Two speed gearbox in  
low speed position

speed selector —  
low speed position



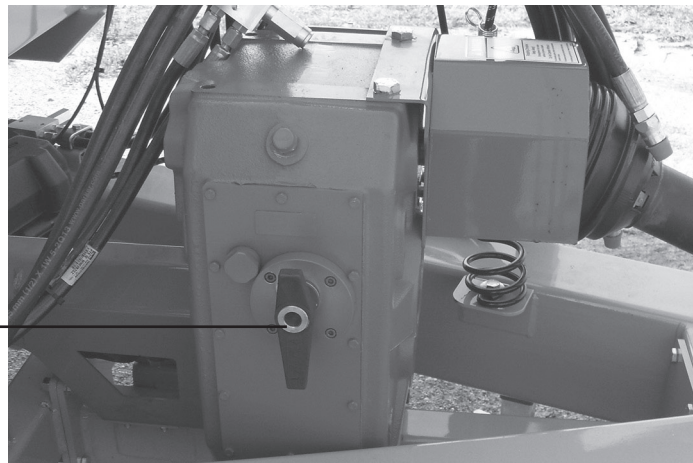
**figure 3.7**  
Two speed gearbox in  
high speed position

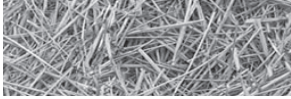
speed selector —  
high speed position



**figure 3.8**  
Two speed gearbox in  
neutral speed position

speed selector —  
neutral speed position

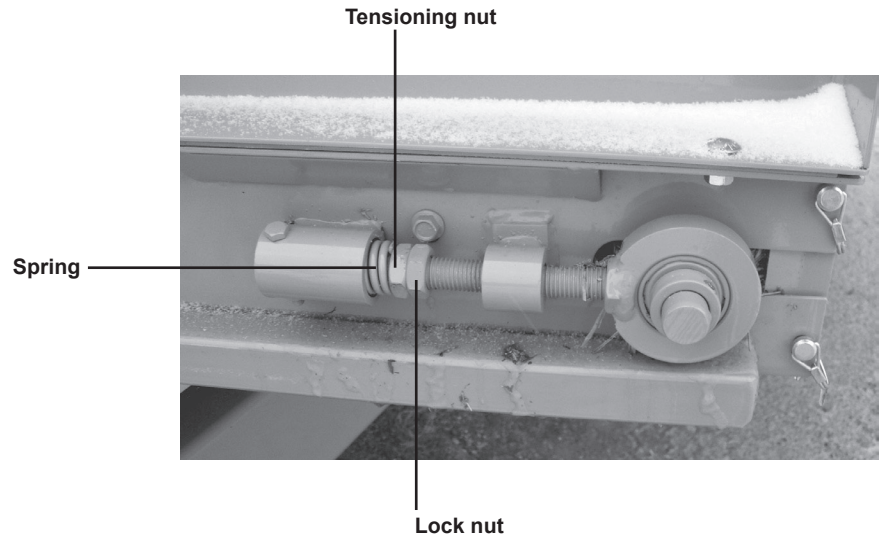




### 3.2.12 Setting Chain Tensions on Conveyors

#### Dogleg Conveyor

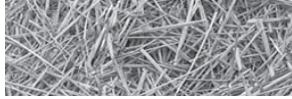
Set tension while conveyor is running. Turn tensioning nut to compress the spring into the cup until either the nut reaches the cup or the spring is fully compressed. Do not tension beyond full compression of the spring. Tension other side, and then recheck the first one adjusted. Continue until both springs are at full compression, lock with jam nuts. Monitor the chain tension by watching the relation of the nut to the cup. As the chain assembly wears, the nut will move away from cup via the spring. If the chain assembly becomes too loose, it will jump teeth on the sprocket potentially causing misalignment and chain assembly failure.



#### Main Front Conveyor w/hydraulic raise extension

Using a tape measure or ruler, set the tensioning shaft the same distance from the end of the conveyor frame on both sides. Go to the center of the conveyor and lift up on the centermost slat where the front chain is connected. Operator should be able to comfortably lift the slat off the deck 1". This should take about 15-20 lbs of force. Over-tensioned chain assemblies may cause chain coupler or shaft failures. Under-tensioned chain assemblies may become misaligned. Keep the idler shaft bearings equidistant from the conveyor frame. Should one chain become excessively worn, replace them both with new chains.

The hydraulic extension conveyor should be tensioned using the same guidelines.



### 3.3 Hitching the CMF-980



**Warning:** Do not operate the CMF-980 unless the tractor complies with the following requirements:

- Tractor has a minimum of 150 horsepower. (without two-speed option)
- Tractor has rollover protective structure and seatbelts.
- Tractor's hydraulic system has at least (2) two-way valves, and a minimum flow of 8 GPM @ 1500 psi (103 bars).
- 1000 rpm P.T.O.

To hitch the CMF-980 to the tractor, perform the following steps:

1. Adjust the tractor drawbar so that the distance from the end of the P.T.O. shaft on the tractor to the center of the drawbar hitch pin hole should be 20" (51 cm) when using a 1-3/4", 20 splined P.T.O. When using a 1-3/8", 21 splined P.T.O., the draw hitch pin hole should be 16" (41 cm) and the height for the top of the centerline of the P.T.O. should be 8" (20 cm). Refer to figures 3.9 and 3.10

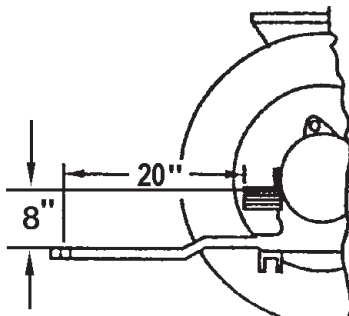


figure 3.9  
Safe P.T.O. distance  
1-3/4", 20 splined P.T.O.

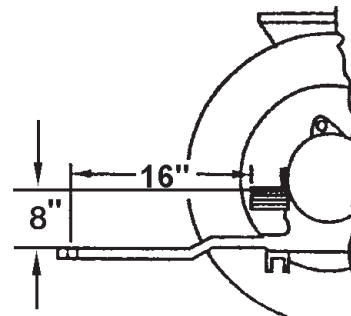
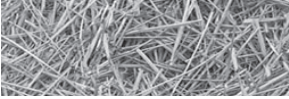
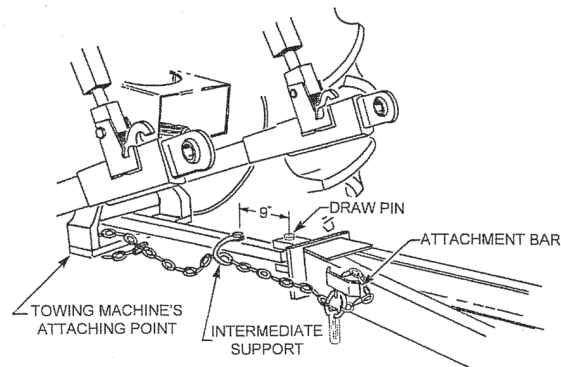


figure 3.10  
Safe P.T.O. distance  
1-3/8", 21 splined P.T.O.

- 2a. Hitch the CMF-980 to the tractor drawbar. Adjust the hitch so the machine is parallel with the ground.
  - 2b. If the CMF-980 is equipped with a two-speed gearbox, adjust the hitch to minimize the P.T.O. shaft angle.
3. The hitch pin should be sized to prevent excessive movement, and should extend through all components of the hitch. The pin should be secured with a hairpin clip or suitable device to prevent the loss of the pin.
  4. Raise the jack. Pull the lock pin and store in transport position.
  5. Attach the P.T.O. shaft to the tractor P.T.O. shaft. Depress coupling and slide the coupling onto the splined shaft. Make sure the spring loaded safety catch is properly seated.



6. This machine is set up to operate on 1000 rpm only!
7. If required, install the safety chain. Check local regulations regarding safety chain requirements. Refer to figure 3.11



**figure 3.11**  
**Safety chain installation**

8. Connect the two hydraulic hoses from the hydraulic door cylinder to one set of hydraulic couplers on the tractor. Connect the two hydraulic hoses from the discharge conveyor to the second set of hydraulic couplers on the tractor. Connect the two hydraulic hoses from the extension conveyor to the third set of hydraulic couplers on the tractor.
9. If equipped with a rear door and/or second extension conveyor, connect the two hydraulic hoses from each to the fourth and/or fifth hydraulic couplers on the tractor.

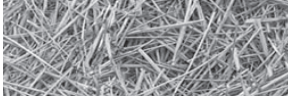
### 3.4 Unhitching the CMF-980

To unhitch the CMF-980, perform the following steps:



**Warning:** Never unhook the CMF-980 with material in tub.

1. Follow normal shut-down procedure.
2. Lower jack and secure. Raise the tongue off the tractor draw bar.
3. Place wheel chocks under wheels to keep from rolling.
4. Detach the P.T.O. shaft from the tractor.
5. Cycle the hydraulic control levers to release any pressure in the hydraulic hoses.
6. Detach the hydraulic hoses.
7. Remove the safety chain, if installed.
8. Remove the hitch pin.



### **3.5 Operation precautions and instructions**

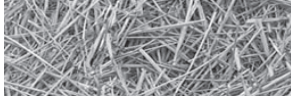
- Make sure there are no bystanders in the way.
- Before loading, run the mixer empty and check all operations.
- Do not overload the mixer.
- Be sure all shields are in place before operation.
- Use common sense when operating.
- Never attempt to climb on the CMF while the tractor is running.

### **3.6 Starting the machine**

1. Park machine on a hard level surface keeping the driveline as straight as possible.
2. Close the mixer door.
3. If the scale indicator is not at zero, re-zero indicator per the scale indicator manufacturer's instructions.
4. If equipped with two-speed gearbox option, select mixing gear desired.
5. Engage the tractor PTO and increase engine RPM to desired mixing speed.

### **3.7 Loading and processing**

1. Load baled products and materials that require processing first. The center core of round bales will be the toughest to process. Allow enough processing time to adequately process roughage.
2. Set vertical knives per adjustment section.
3. Do not over process as processing continues through the mixing stage.
4. Load silage and/or other high moisture products next.
5. Load dry ingredients.
6. Load liquid supplements last.
7. Allow three to four minutes of mixing time after last ingredient.
8. ALL PROCESSING AND MIXING TIMES WILL VARY.
9. Do not overload the CMF.



### 3.8 Unloading

To unload the CMF-980, perform the following steps:

1. If possible, move the mixer to the unloading site while finishing the mixing stage to avoid the need for loaded PTO start-up.
2. Align CMF with bunk and lower the conveyor extension to desired angle (if equipped).
3. Engage the chain conveyor; chain speed is controlled using the auxiliary valve flow control on the tractor.
4. If the augers are not already engaged, engage the PTO.
5. Open the tub door and proceed along the bunk. Engine speeds around 1500 rpm are usually adequate when the tub is full, however engine should be run at rated speed to clean out the tub and provide even feed flow when the tub is near empty. If equipped with two-speed gearbox, turn off mixer and shift to high speed and re-engage to achieve maximum clean out RPM. Most new tractors have P.T.O. brakes which will require the tractor to be turned off before the two- speed can be shifted.

### 3.9 Storing the CMF-980 mixer/feeder



**Warning:** When preparing machine for storage, use normal shut-down procedure.

To prepare the CMF-980 for storage, perform the following steps:

1. Clean all mud, dirt, grease and other foreign material from the exterior and interior of the machine. Wash the complete machine. To inhibit rusting repaint places where bare metal is exposed.
2. Place the jackstand in the down and in locked position. Place wheel chocks under wheels if needed to keep machine from rolling. If possible, store the machine in a dry, protected place. (If it is necessary to store the machine outside, cover it with waterproof canvas, plastic, or other suitable protective material.)
3. Coat exposed lift cylinder rods with grease. Oil chains on conveyors. Lubricate thoroughly according to lubrication instructions. Repack wheel bearings.
4. Check the machine for any worn or broken parts. By ordering parts now, you will avoid delays when it is time to remove the machine from storage. When ordering parts always specify machine serial number and the part number of the replacement part. Part numbers can be found in the parts section of this manual.





### 3.10 Removing the CMF-980 from storage

To remove the CMF-980 from storage, perform the following steps:

1. Remove all protective coverings.
2. Remove blockings from under the CMF-980. Check tire pressure.
3. Lubricate machine in accordance with lubrication instructions found in this manual.
4. Check the conveyor chain tension.
5. Check all hydraulic hoses for deterioration and, if necessary, replace. Tighten any loose bolts, nuts and hydraulic fittings.
6. Follow pre-starting inspection instructions.

### 3.11 Normal shut-down procedure



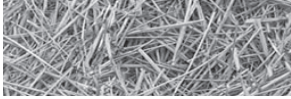
**Warning:** For your safety and the safety of others, you must use the following normal shut-down procedure before leaving the tractor controls unattended for any reason, including servicing, cleaning, or inspecting the CMF-980. A variation of the following procedure may be used if so instructed within this manual or your tractor manual or if an extreme emergency requires it.

1. Disengage P.T.O.
2. Place transmission in park or set park brake.
3. Shut off machine and remove key.
4. Wait for all movement to stop.
5. Engage tractor park brake, turnoff and remove key engine prior to entering the tub and/or making any adjustments to CMF.

### 3.12 Light Kit

figure 3.12  
light kit for the CMF-980





## Section 4: Lubrication

The operator should make a check of all grease fittings on the unit before beginning to operate it so as to become familiar with their location and correct service schedule.



**Warning:** Use normal shut-down procedure (Section 3.11) before lubricating the machine.

### 4.1 Lubrication

Use only a high quality, #2 multi-purpose grease when lubricating the unit. Make sure all fittings and the nozzle of the grease applicator are clean before applying the grease. If grease fittings are missing, replace them immediately.

Lubricate with grease every ten (10) hours of operating time.

1. P.T.O. universal joints – 8 places
  - 1a. As many as seven (8) pumps of grease are required to purge all cross and bearing lube point with fresh grease.
2. Telescoping shafts – 2 places
  - 2a. Telescoping members require enough grease to maintain a smooth sliding action. When telescoping members become contaminated with dirty grease, they should be inspected and cleaned to insure smooth operation.
  - 2b. Shield components should be lubed and inspected to insure all components are in working condition or are replaced if damaged. A properly maintained shield will inhibit dirt from contaminating telescoping members.
3. P.T.O stand bearing – 1

Lubricate with grease every fifty (50) hours of operating time.

4. Conveyor bearings - 2
5. Extension conveyor bearings – 2 each
6. Automatic clutches – Two places – 1 pump only. *Be careful **not** to over grease.*
7. Auger grease lines - 2

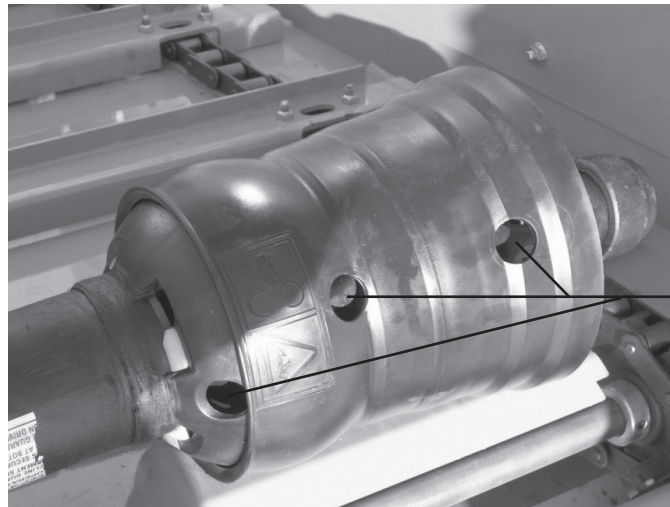


**figure 4.1**  
P.T.O. Universal joint  
(1 of 8)



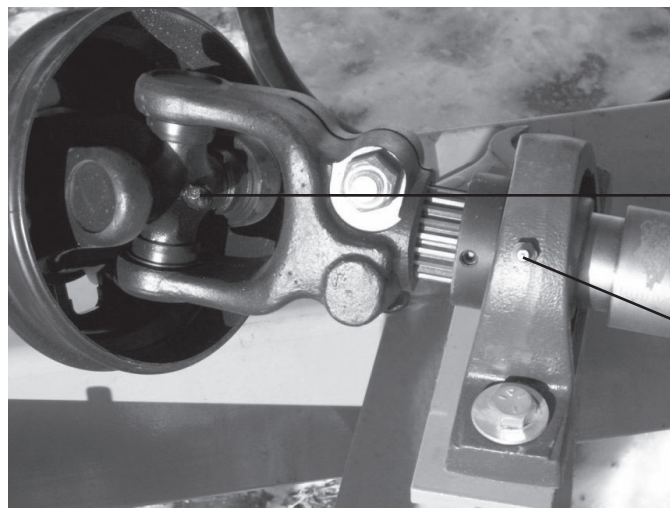
P.T.O. universal joint  
lubrication zerk

**figure 4.2**  
P.T.O. Universal joint  
(2, 3, & 4 of 8)



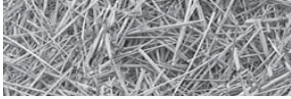
P.T.O. universal joint  
lubrication zerks

**figure 4.3**  
P.T.O. Universal joint  
(5 of 8), and P.T.O stand  
bearing (1 of 1)

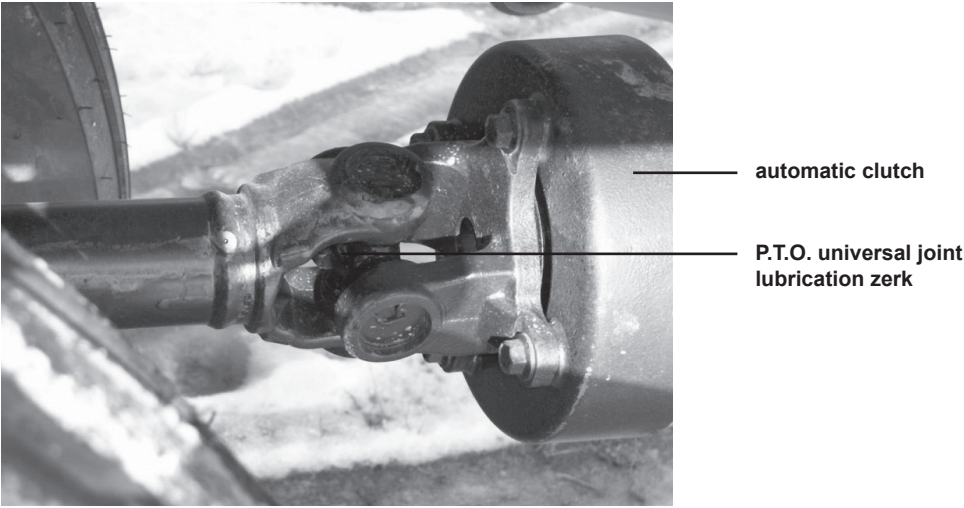


P.T.O. universal joint  
lubrication zerk

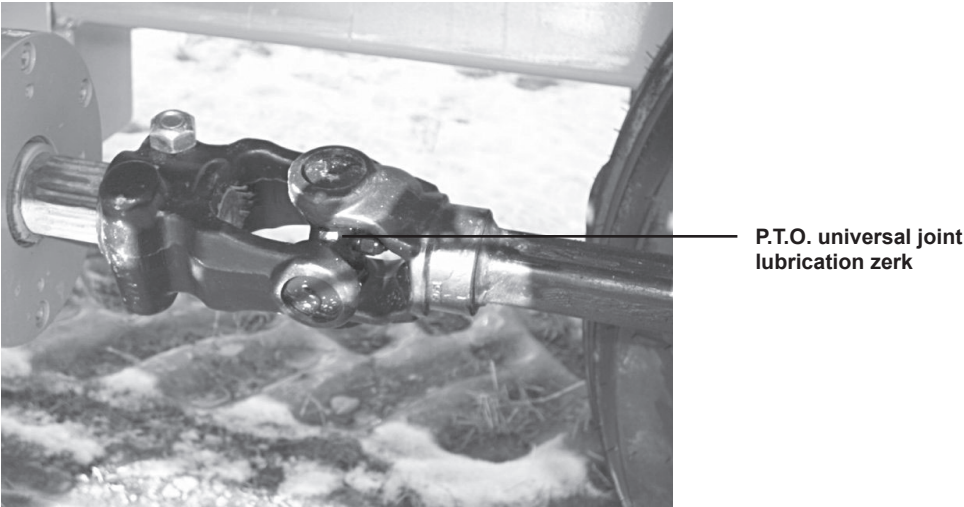
P.T.O stand bearing  
lubrication zerks



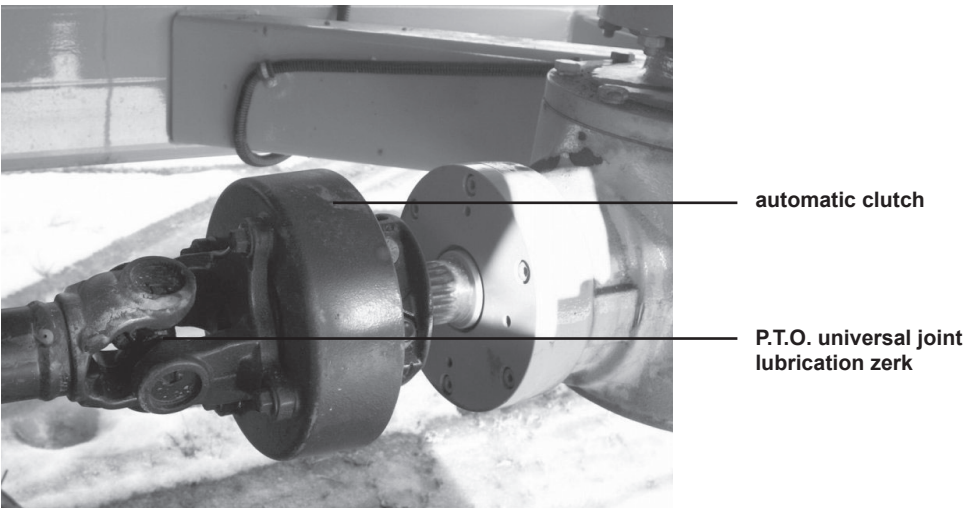
**figure 4.4**  
**P.T.O. Universal joint**  
**(6 of 8), and automatic clutch**



**figure 4.5**  
**P.T.O. Universal joint**  
**(7 of 8)**



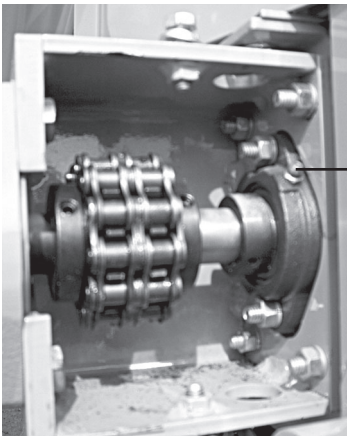
**figure 4.6**  
**P.T.O. Universal joint**  
**(8 of 8), and automatic clutch**





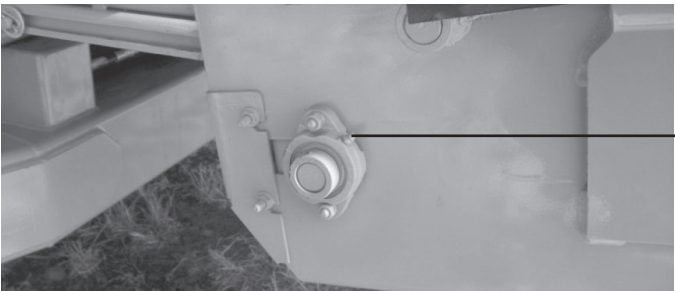


**figure 4.7**  
**Conveyor bearings**  
 lubrication point (1 of 2)



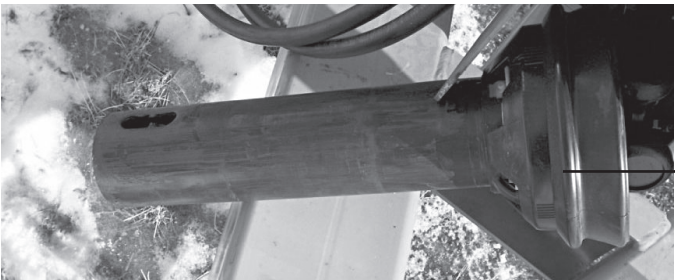
conveyor bearings  
 lubrication zerk

**figure 4.8**  
**Extention conveyor bearings**  
 lubrication point (1 of 4)



extention conveyor bearings  
 lubrication zerk

**figure 4.9**  
**Telescoping P.T.O. shaft**

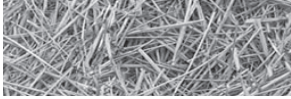


telescoping shaft

**figure 4.10**  
**Auger grease lines**



auger grease lines  
 lubrication zerk



## 4.1 Lubrication cont.

**Wheel bearings:** repack annually

**Gearbox:** Grease 20-30 pumps every 250 hours (each gearbox), located on the bottom of the tub in front of the left tires.

**Chains:** Oil conveyor chains every 15 hours.

### When to change oil in gearboxes:

- After the first 50-100 hours of operation, drain initial oil, preferably when box is warm. There after oil should be changed every 1500 hours or 12 months, whichever comes first. If machine usage is severe or more than 10 loads per day, it is advisable to change the oil every 1000 hours or 6 months. Inspect and wash oil reservoir breather cap as needed. Air dry before reinstalling. **Fill each gearbox with approximately 5 ½ gallons (21 L) of EP150 or 80w-90 GL-5 weight Gear Lube. RR-USA recommends using synthetic oil in their gearbox.** Monitor the oil level in the reservoir daily. Oil level should be in the middle of the sight gauge. The working temperature must not exceed (90 degrees C) 194 degrees F max. Proper lubrication is essential for efficient running and long life of the unit as a whole. It is also important to select the correct type of oil to ensure the long life of the gear reducer.



Do not dispose of gearbox oil in the municipal waste stream

### Procedure for changing oil in gearboxes (see chart 4.1 on the following page):

1. Remove magnetic drain plug from the bottom of the right angle gearbox and clean the magnet if it has any metal on it. Return plug to the gearbox before filling.
2. Disconnect the lube lines from the top of the gearboxes at the tee fitting. Disconnect the other lube lines from the bottom of the gearboxes at the other tee.
3. To fill, connect (-8)3/4" MJIC fitting to hose connected to the right angle box and place overflow hose in a pan. Pump oil into the gearbox until it runs out of the overflow hose. Reconnect hoses to the correct fitting. Repeat for rear gearbox.
4. Fill reservoir and continue to monitor reservoir levels during operation so that oil remains half-way up in sight gauge or higher, allow for more expansion in warmer climates.
5. Two-speed gearbox should be half full of oil so that oil is present in sight gauge. Follow same maintenance schedule and use the same oils as recommended above for vertical gearboxes.
6. Any brand of 80w-90 gear oil with a GL-5 rating may also be used; **RR\_USA recommends use of synthetic oils.**

**Recommendation:** Prior to starting each day it is advisable to check the oil level of gearboxes at the sight gauge.

### Contact information for:

**ConocoPhillips Lubricants:** Telephone: 1-800-255-9556 (Technical Hotline)  
Email: [conocolubricants@conophillips.com](mailto:conocolubricants@conophillips.com)



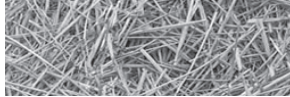
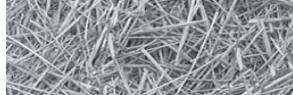


chart 4.1  
lubrication chart for reduction gears

Ambient Temperature	-4 F - +41 F	-41 F - +104F	+86 F - +149 F	+104 F- +149 F
	-20 C - +5 C	+5 C - +40 C	+30 C - ++65 C	+40 C - +65 C
<b>Viscosity</b>				
ISO VG	100	150	220	320
E/50 C	7.3	10.8 -12.5	15 -18	22 - 26
<b>AGIP</b>	BLASIA 100	BLASIA 150	BLASIA 220	BLASIA 320
<b>BP-MACH</b>	ENERGOL	ENERGOL	ENERGOL	ENERGOL
	GR-HP100	GR-HP150	GR-HP220	GR-HP320
<b>CASTROL</b>	ALPHA SP 100	ALPHA SP 150	ALPHA SP 220	ALPHA SP 320
<b>CHEVRON</b>	NL GEAR	NL GEAR	NL GEAR	NL GEAR
	COMPOUND	COMPOUND	COMPOUND	COMPOUND
	100	150	220	320
<b>ELF</b>	REDUCTELF SP 100	REDUCTELF SP 150	REDUCTELF SP 220	REDUCTELF SP 320
<b>ESSO</b>	SPARTAN EP 100	SPARTAN EP 150	SPARTAN EP 220	SPARTAN EP
				320
<b>FINA</b>	GIRAN 100	GIRAN 150	GIRAN 220	GIRAN 320
<b>IP</b>	MELLANA 100	MELLANA 150	MELLANA 220	MELLANA 320
<b>MOBIL</b>	----	MOBILGEAR 629	MOBILGEAR 630	MOBILGEAR 632
<b>SHELL</b>	OMALA EP 100	OMALA EP 150	OMALA EP 220	OMALA EP 320
<b>TOTAL</b>	CARTER EP 100	CARTER EP 150	CARTER EP 220	CARTER EP 320

## 4.2 General appearance

Clean all mud, dirt, grease and other foreign material from the exterior of the machine. Wash the entire machine. Repaint places where bare metal is exposed.



## Section 5: Troubleshooting

chart 5.1  
Troubleshooting chart

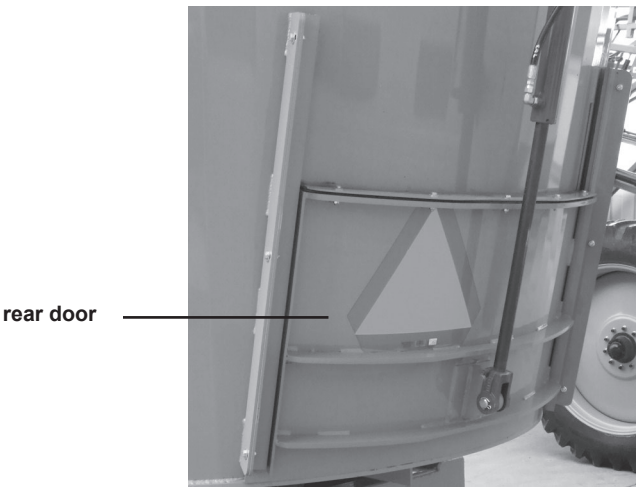
Problem	Cause	Remedy
1. Spillage over tub	1. Vertical knives are in too far.	1. Pull knives out one notch at a time until material stops spilling.
	2. Auger speed is too fast.	2. Slow engine speed
	3. Tub is overfilled	3. Wait longer while processing first bale, before adding more hay or other ingredients. Allow more time to process bulky materials.
		4. Park on level ground.
2. Augers stopped turning	1. Automatic clutch disengaged because of shock loading	1. Disengage tractor PTO. Wait till driveshaft stops and reengage PTO. Clutch automatically reengages when driveline slows to near zero rpm. May need to shift gearbox to low.
	2. Verify two-speed is engaged	2. Check lever position on two-speed gearbox,
		<b>Forward</b> -high speed
		<b>Middle</b> -neutral
		<b>Back</b> -low speed
3. Conveyor does not move	1. Conveyor plugged	1. Look for obstruction
	2. Chains too tight	2. Reduce chain tension
	3. Hoses uncoupled.	3. Make sure hoses are coupled properly.
4. Conveyor plugged/spillage at transition to extension	1. Extension conveyor running at too steep of an incline	1. Run extension conveyor at lowest height possible to reach the necessary bunk height.
5. Ration over processed	1. Processing continues through mixing stage	1. Add secondary ingredients that don't require processing to the batch sooner.
	2. Too many knives	2. Take knives out.
	3. Vertical knives in too far	3. Pull vertical knives out further,
	4. Auger speed too fast	4. Reduce tractor engine rpm
6. Ration under processed	1. Not enough knives on the augers	1. Add knives
	2. Knives are dull	2. Replace knives
	3. Auger speed not fast enough	3. Increase auger speed, careful not to cause spillage.
	4. Vertical knives not in far enough	4. Push vertical knives in one notch.
7. Scale does not power up	1. Battery not charged	1. Charge the battery/replace if necessary.
	2. Loose battery connection	2. Tighten/clean connections at battery post.
	3. Battery power cable damaged	3. Repair/replace cable.
(Consult scale manufacturer's manual for all other information)	For 24 hour Tech service, Go to <a href="http://digi-star.com">digi-star.com</a> or call 1-800-225-7695	
8. Door is loose/does not seal	1. Door clamps out of adjustment	1. Readjust door clamps



# Section 6: Options

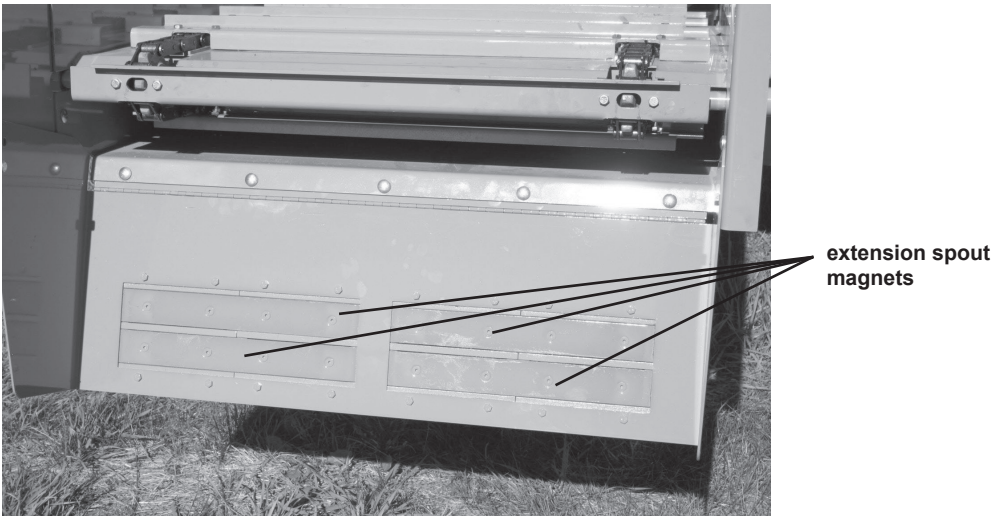
## 6.1 Rear bay door

figure 6.1  
Optional rear door



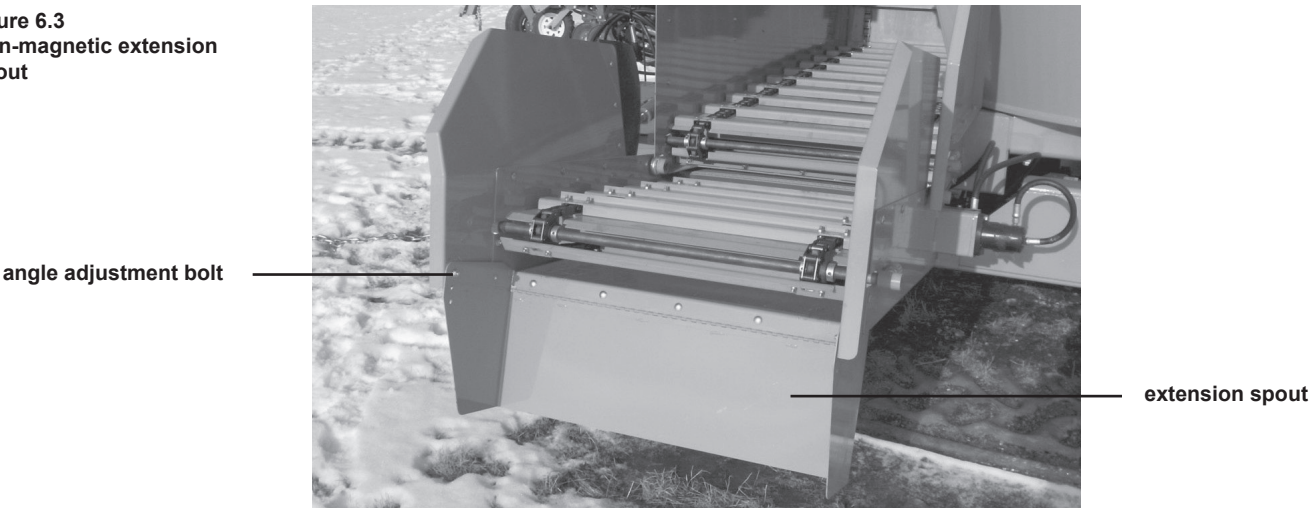
## 6.2 Magnetic extension spouts

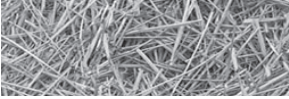
figure 6.2  
Magnetic extension spout



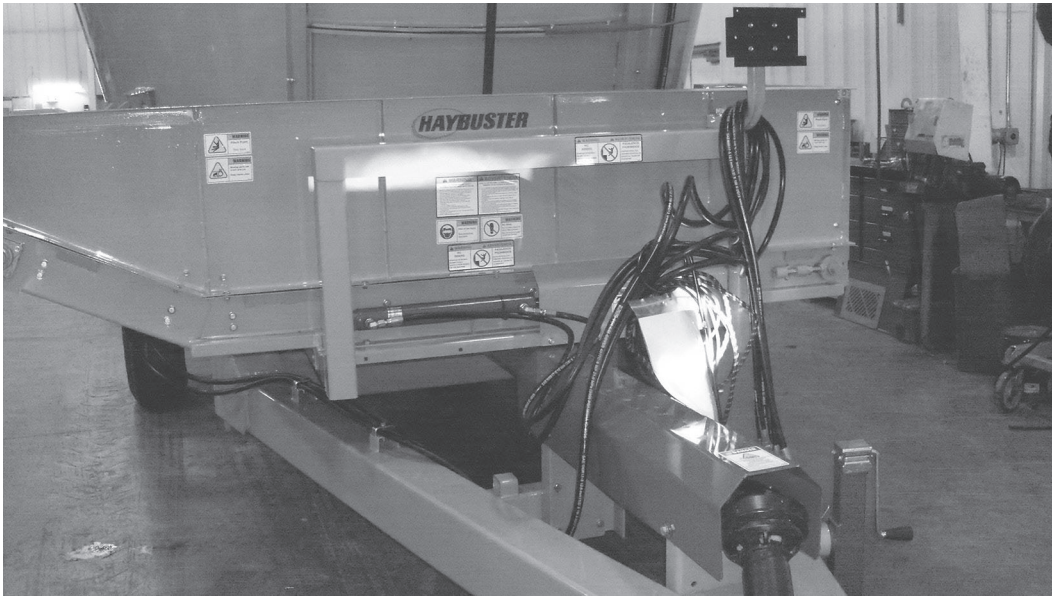
## 6.3 Non-magnetic extension spout

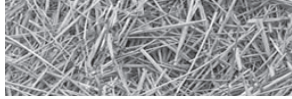
figure 6.3  
Non-magnetic extension spout





## 6.4 Dogleg Conveyor





## Section 7: Maintenance

### 7.1 Welding Procedure

CMF-980 welding procedures for machines with a weight scale

Precautions are required for welding on machines with electronic components. Electronic components including but not limited to: electronic scales.

Proper welding procedures are necessary with in order to avoid damage to the components, their sensors, and associated components.

When possible, remove the parts to be welded from the machine.

If not possible to remove the parts, follow the following procedure:



**Note:** Do not ground the welder to electrical components listed above, sensors, or wiring. Improper grounding can also damage bearings of hydraulic components. Clamp the ground cable from the welder to the part that will be welded. Place the clamp as close as possible to the weld. This will help reduce the possibility of damage.

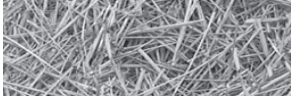
1. Unhitch the CMF-980 from the tractor.
2. Disconnect the connectors from the electronic scale. Move the connectors to a position that will not allow the connectors to accidentally move back and make contact with any of the pins.
3. Connect the welding ground cable directly to the part that will be welded. Place the ground cable as close as possible to the weld in order to reduce the possibility of welding current damage to bearings, hydraulic components, and electrical components.



**Note:** If the electrical/electronic components are used as a ground for the welder, or electrical/electronic components are located between the welder ground and the weld, current flow from the welder could damage the components.

4. Protect the wiring harnesses and hydraulic lines from welding debris and spatter.
5. Use standard techniques to weld the materials.





## Appendix A: Warranty

DuraTech Industries International Inc. warrants to the original purchaser for one year from the purchase date that this product will be free from defects in material workmanship when used as intended and under normal maintenance and operating conditions. This warranty is limited to the replacement if any defective part or parts if DuraTech Industries is notified within thirty (30) days of failure.

DuraTech Industries International Inc. uses RR planetary gear boxes in all CMF machines. The planetary gear boxes carry a two year parts and labor warranty through DuraTech Industries International Inc.

BIMA two speed gear boxes are covered under the DuraTech Industries International Inc. standard one year warranty.

This warranty shall become void if in DuraTech Industries International Inc.'s judgement the machine has been subject to misuse, negligence, alterations, damaged by accident or lack of required maintenance, or if the product has been used for a purpose for which it was not designed for. (Warranty for the front RR planetary becomes void if driveshaft to rear planetary has been removed in order to run the front gearbox independently as a means to "free" overloaded tub.)

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

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

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 loss of crops or 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 design of this product at any time without notice.

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

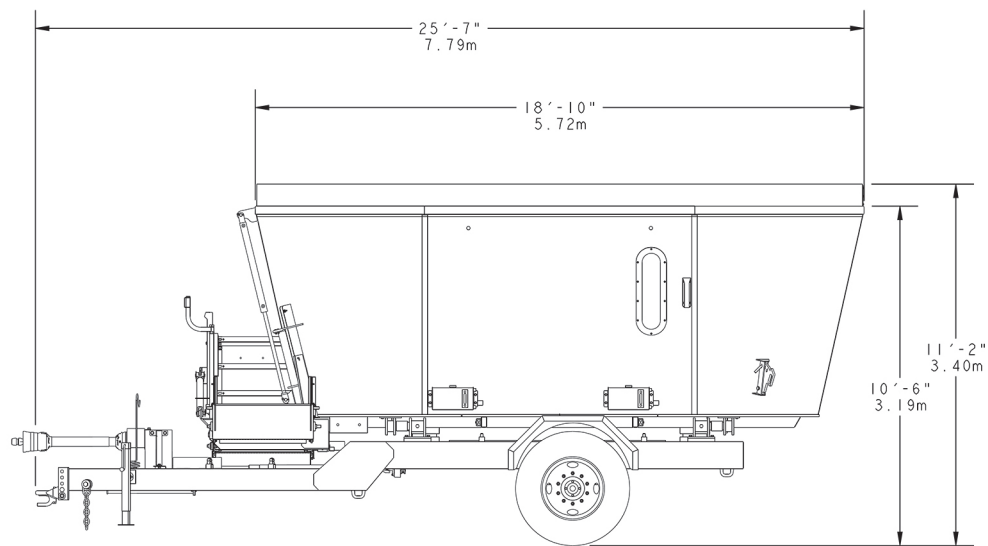
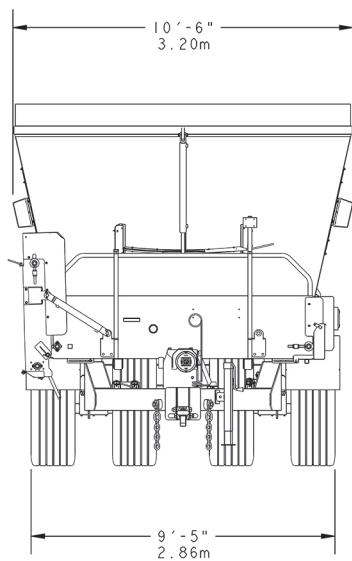


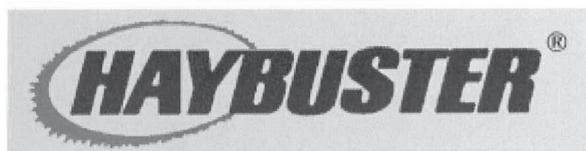


# Appendix B: CMF-980 Specifications

## General specifications

Max. Weight .....	19,100 LBS (6,663.61 kg)
Overall length, including trailer .....	25' - 7" (7.79 m)
Overall width.....	10' - 6" (3.20 m)
Tractor P.T.O speed ...(1-3/8" 21 spline).....	1000
Minimum horsepower required.....	150
Mixing capacity, w/12" extensions .....	980 cu. ft. (27.75 cu. m)
Max. Gross Weight.....	50,000 LBS (22,679.62 kg)
Tires – size.....	385/65R22.5 20 PLY
Loading height with extensions.....	11' - 2" (3.40 m)
Loading height without extensions .....	10' - 6" (3.20 m)

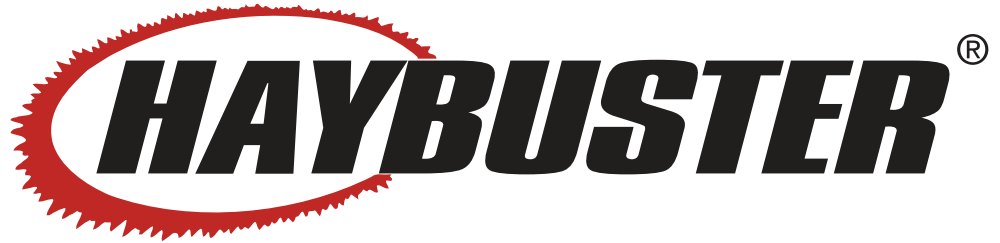




## Sound Pressure Level and Sound Power Level Information

The Duratech Industries International, Incorporated Model CMF-700 Sound Pressure and Sound Power Levels per EN ISO 11202 are as follows:

Model No: CMF-700	Serial No: 7000100050	Year of Construction: 2011	
		Operating	Idle
$L_{pAm}$ (Operator Position)		93 dB (A)	75 dB (A)
$L_{pAm}$ (Bystander Position)		101 dB (A)	75 dB (A)
Peak C-weighted instantaneous SPL in the Operator's position $L_{pcPeak}$		98 dB (c)	---
Sound power emitted where the equivalent continuous A-weighted SPL exceeds 80 dB (A).		9.3 Bel	---
The average difference between the extraneous noise level and the sound intensity level at each measuring point is:		$L_{pAm} \Delta = 17 \text{ dB (A)}$	
Ambient Correction Factor K3A calculated according to EN ISO 11204 Appendix A.		4 dB(A)	
Measurements were made at a height of 1.5 m and 1 m from the Operator Position and all four sides of the equipment.			
<p>The figures quoted are emission levels and are not necessarily safe working levels. While there is a correlation between the emission and exposure levels this cannot be used reliably to determine whether or not further precautions are required.</p> <p>Factors that influence the actual level of exposure of the workforce include characteristics of the work room, the other sources of noise, etc. such as the number of machines and other adjacent processes. Also, the permissible level of exposure can vary from country to country.</p> <p>This information, however, will enable the user of the machine to make a better evaluation of the hazard and risk.</p>			
		Duratech International Industries, Incorporated 3780 Hwy 281 SE Jamestown, ND 58401 USA	
			



# ***CMF-980™*** ***Vertical Mixer***

## ***Parts Reference***



DuraTech Industries International Inc. (DuraTech Industries) has made every effort to assure that this manual completely and accurately describes the operation and maintenance of the CMF-980™ Vertical Mixer as of the date of publication. DuraTech Industries reserves the right to make updates to the machine from time to time. Even in the event of such updates, you should still find this manual to be appropriate for the safe operation and maintenance of your unit.

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

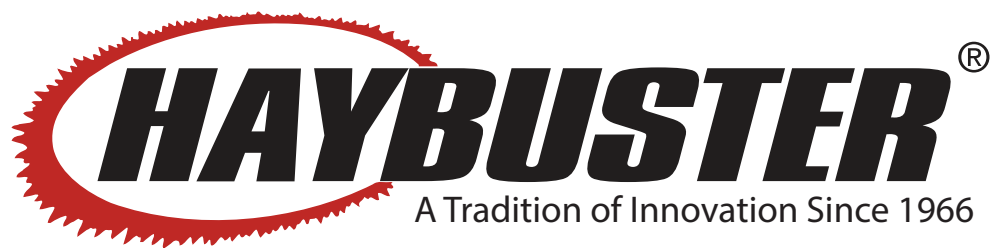


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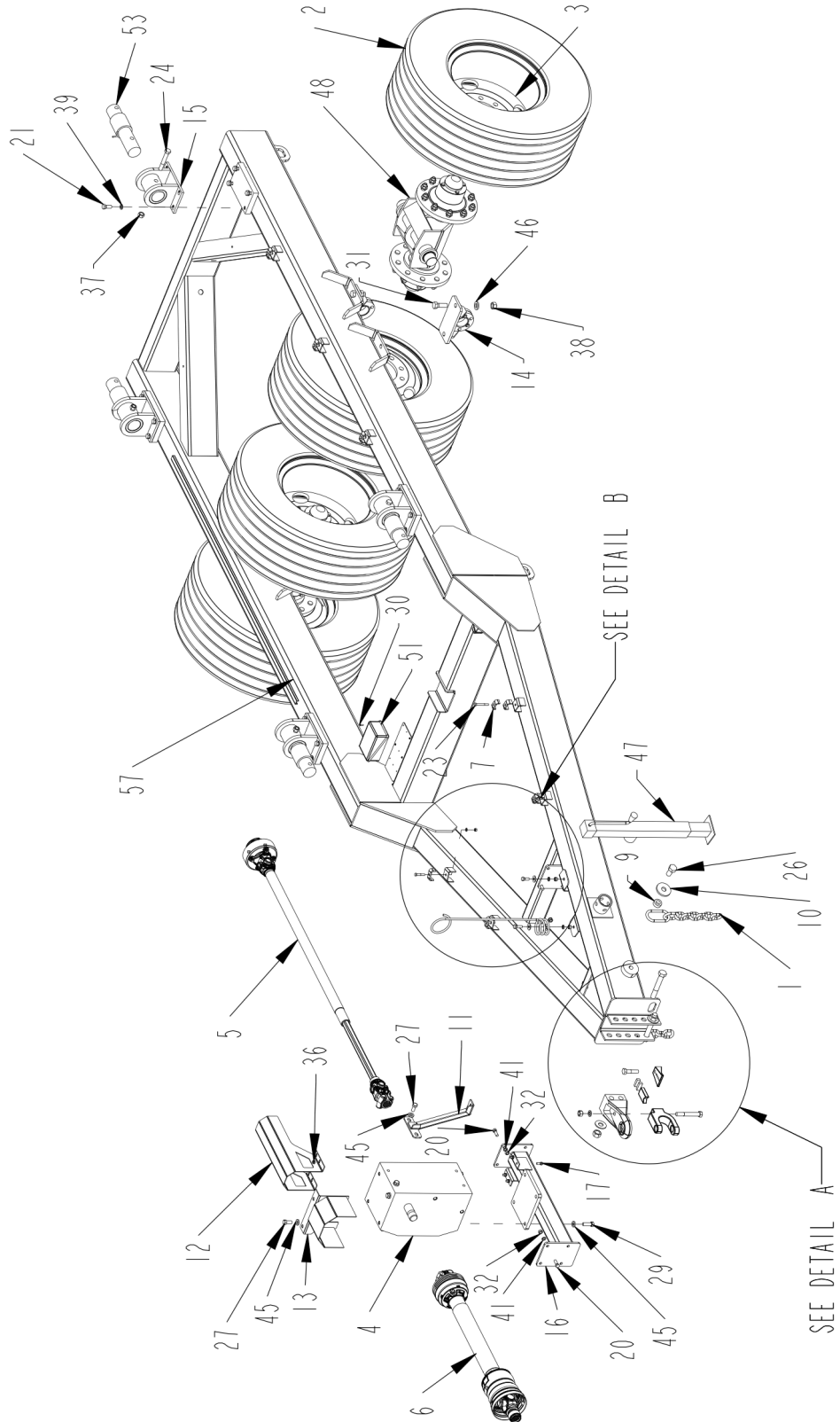
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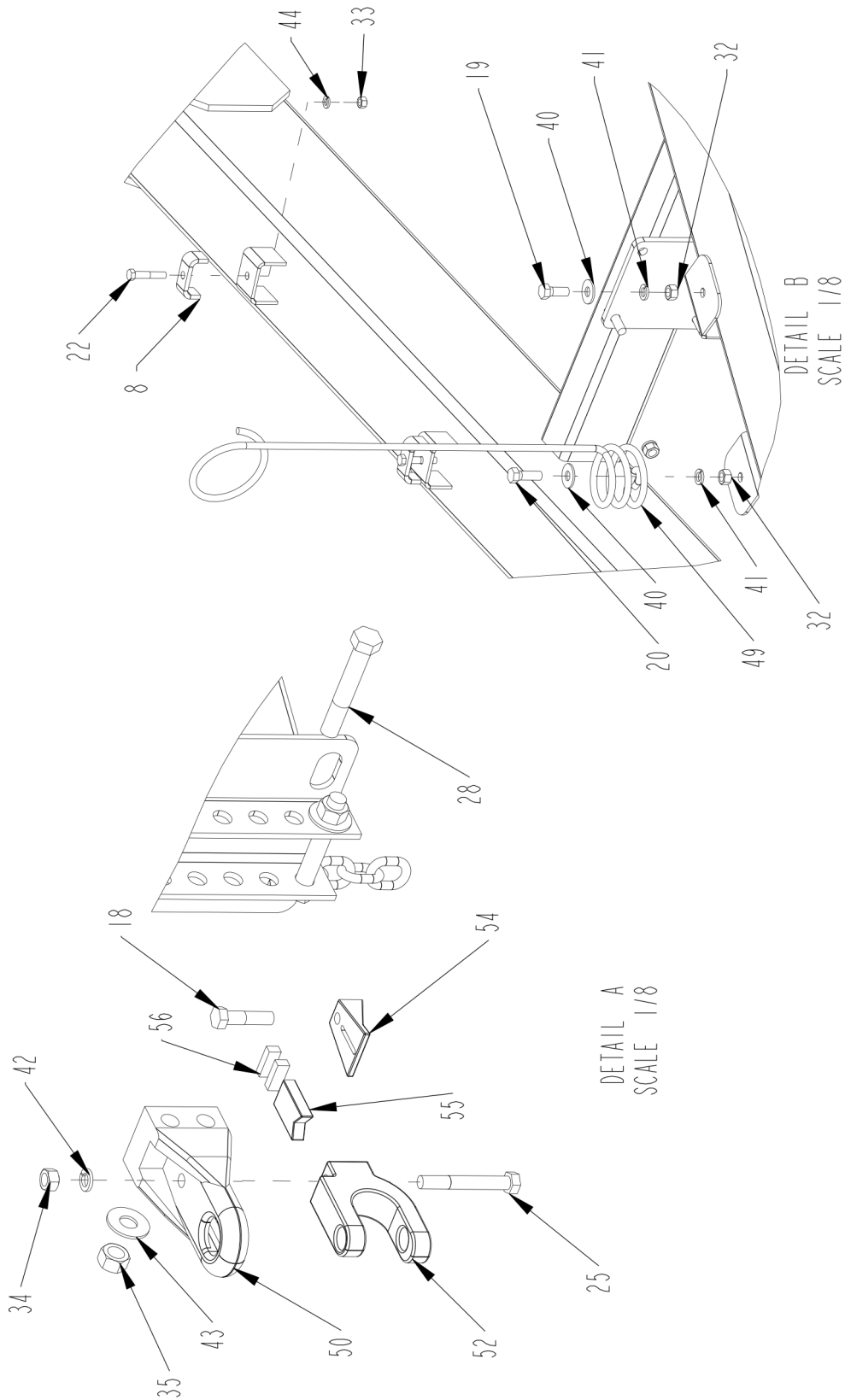


## CMF-980 Parts Reference

CMF-980 Mainframe Assembly	1
CMF-980 Tub Assembly	7
CMF-980 Auger Assembly (for SN Up to VM16000798)	13
CMF-980 Auger Assembly (for SN VM17000898 and Up)	15
CMF-980 Left Hand Discharge Conveyor Assembly - 4704976	17
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Magnetic Conveyor Chute Assembly	59
Non-Magnetic Conveyor Chute Assembly	61
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CMF-980 Single Discharge Conveyor and Tub Door Hydraulics	69
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3900025-3900032 Orbit Motors	85
4100247-4100284 Hydraulic Cylinder Assembly	87
3100225 - 2-Speed Gearbox Assembly	89
3100226 - Planetary Gearbox Assembly	91
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3600693 - Driveline	95
3600694 - Driveline	97
3600783 - 2-Speed Driveline	99
3600785 - 2-Speed Driveline	101
Digi-Star Cables, Brackets and Cells	103
CMF-980 Decals	105
CMF-980 Decal Locations	107
CMF-980 Decal Locations	108
5700713 CMF Taillight Wiring Schematic	109







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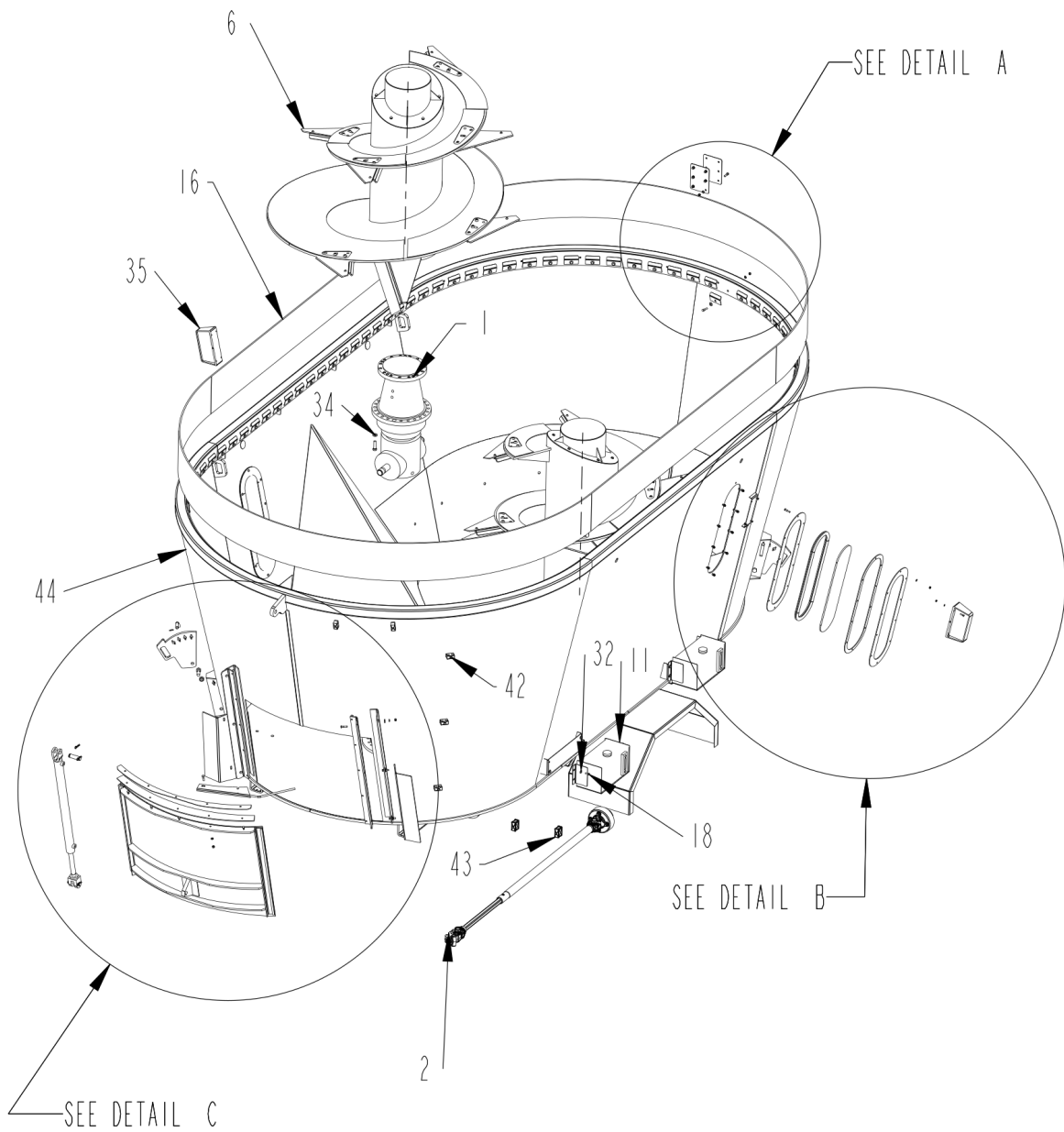
# CMF-980 Mainframe Assembly

Item	Part No.	Name	Remarks	Qty	Uom
1	1100255	CHAIN\SAFETY\AG\1/2"\40K_CAP		2	EA
2	2600056	TIRE\385/65R22.5\20PLY		4	EA.
3	2600653	WHL\10-BOLT\22.5X12.25		4	EA
CA	2600875	WHL\ASSY\385/65R22.5	(INCLUDES #2 & #3)	4	EA
4	3100225	GRBX\2SPD\1.84:1\B&P6078		1	EA
5	3600693	PTO\44E\24KCLTCH		1	EA
6	3600783	PTO\255-25003\44E\1-3/4 WWCV		1	EA.
7	4700776	CLMP\HOSE\3/8		2	EA.
8	4700777	CLMP\HOSE\1/2		9	EA.
9	4704337	BUSHING\MNT\CHAIN\SAFETY		2	EA
10	4704338	WASHER\CHAIN\SAFETY		2	EA
11	4704544	BRKT\SIDE\2-SPD\GRBX		1	EA
12	4704545	SHLD\DRVLN\2SPD\GRBX		1	EA
13	4704546	SHLD\DRVLN\2SPD\GRBX\FRNT		1	EA
14	4704878	CUP\BRG\AXLE\CMF\ASSY		4	EA
15	4704990	MNT\LOADCELL\FRAME		4	EA
16	4705158	BRKT\2-SPD\GRBX		1	EA
17	4800003	BOLT\HEX\3/8X1		4	EA.
18	4800017	BOLT\HEX\3/4X3		1	EA.
19	4800018	BOLT\HEX\1/2X1-1/4		1	EA.
20	4800082	BOLT\HEX\1/2X1-1/2		9	EA.
21	4800106	BOLT\HEX\5/8X1-1/2		16	EA.
22	4800146	BOLT\HEX\3/8X2		7	EA.
23	4800156	BOLT\HEX\3/8X3		2	EA.
24	4800224	BOLT\HEX\3/4X5		4	EA
25	4800492	BOLT\HEX\3/4X5-1/2\GR8\NC		1	EA
26	4800547	BOLT\HEX\1X2\NC		2	EA.
27	4800565	BOLT\HEX\M16XM35		4	EA
28	4800919	BOLT\HEX\1X6-1/2\GR5\NC		2	EA
29	4800944	BOLT\HEX\M16XM50		4	EA
30	4801231	SCR\HEX\#8-18X3/4"SELF-DRILLING		4	EA
31	4801234	BOLT\HEX\7/8X2-1/2\GR8\NC		8	EA
32	4900001	NUT\HEX\1/2\NC		10	EA.
33	4900002	NUT\HEX\3/8\NC		9	EA.
34	4900004	NUT\HEX\3/4\NC		1	EA.
35	4900015	NUT\NYLCK\1\NC		2	EA.
36	4900076	NUT\FLG\SERR\3/8\NC		4	EA.
37	4900139	NUT\TPLCK\3/4\GR8\NC		4	EA.

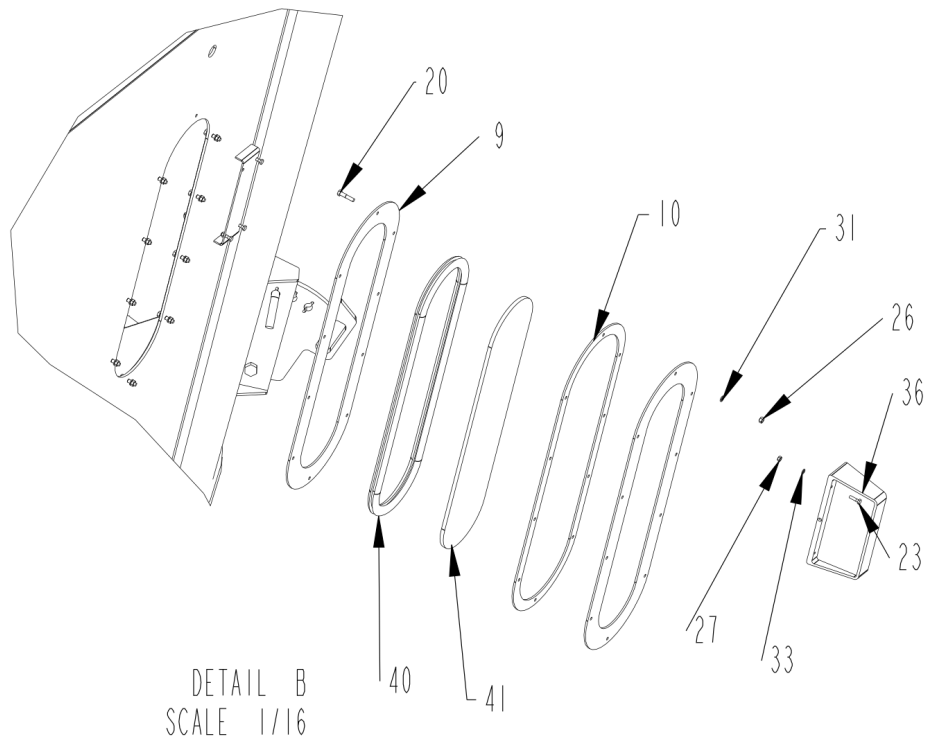
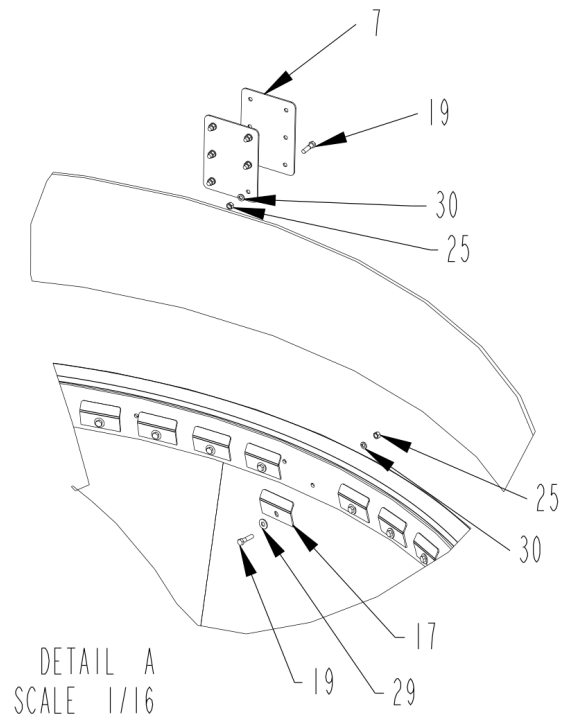
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**CMF-980 Mainframe Assembly**

Item	Part No.	Name	Remarks	Qty	Uom
38	4900192	NUT\HEX\7/8\GR8\NC		8	EA.
39	5000003	WASH\LOCK\5/8		16	EA.
40	5000004	WASH\FLAT\1/2		2	EA.
41	5000006	WASH\LOCK\1/2		10	EA.
42	5000012	WASH\LOCK\3/4		2	EA.
43	5000014	WASH\FLAT\1		2	EA.
44	5000019	WASH\LOCK\3/8		9	EA.
45	5000114	WASH\FLAT\5/8\EXTRTHK\GR8		8	EA
46	5000120	WASH\FLAT\7/8\EXTRTHK\GR8		8	EA
47	5800627	JACK\5000LB\SWIVEL-STYLE		1	EA.
48	5900081	AXLE\ASSY\CMF980/1150	See Hub and Swivel Assembly	2	EA
49	7500170	HOSE MINDER		1	EA.
50	7500641	HITCH\BASE\#3\PPI\1"PIN		1	EA
51	7500978	2620 LOADCELL JUCTION BOX, 2000		1	EA.
52	7501216	HITCH\CLEVIS\PPI\1.25"PIN		1	EA
53	7501377	LOADCELL\2.875DB\30'CABLE		4	EA
54	7501425	PL\TOP\HITCH\PERFECT\CTD		1	EA
55	7501426	BLOCK\WHITCH\PERFECT		1	EA
56	7501427	CUSHION\NEOPRENE\HITCH\PERFECT		2	EA
57	4704965	FRM\CMF1000\WELD		1	EA
CA	5900082	FRM\ASSY\CMF980/1150			EA
CA	4705165	HITCH\OPTION\BLOCK\ICTD	(Includes #18, #54, #55 & #56)		EA
CA	4705168	HITCH\OPTION\CLEVIS\1.25" PIN	(Includes #25, #34, #42 & #52)		EA
NS	5700226	ENCL\BATT\PLSTC\GRP27		1	EA
NS	5700227	BATT\12VDC\GRP24		1	EA
NS	5700275	TERM\BATT\UNIV\MARINE\		2	EA









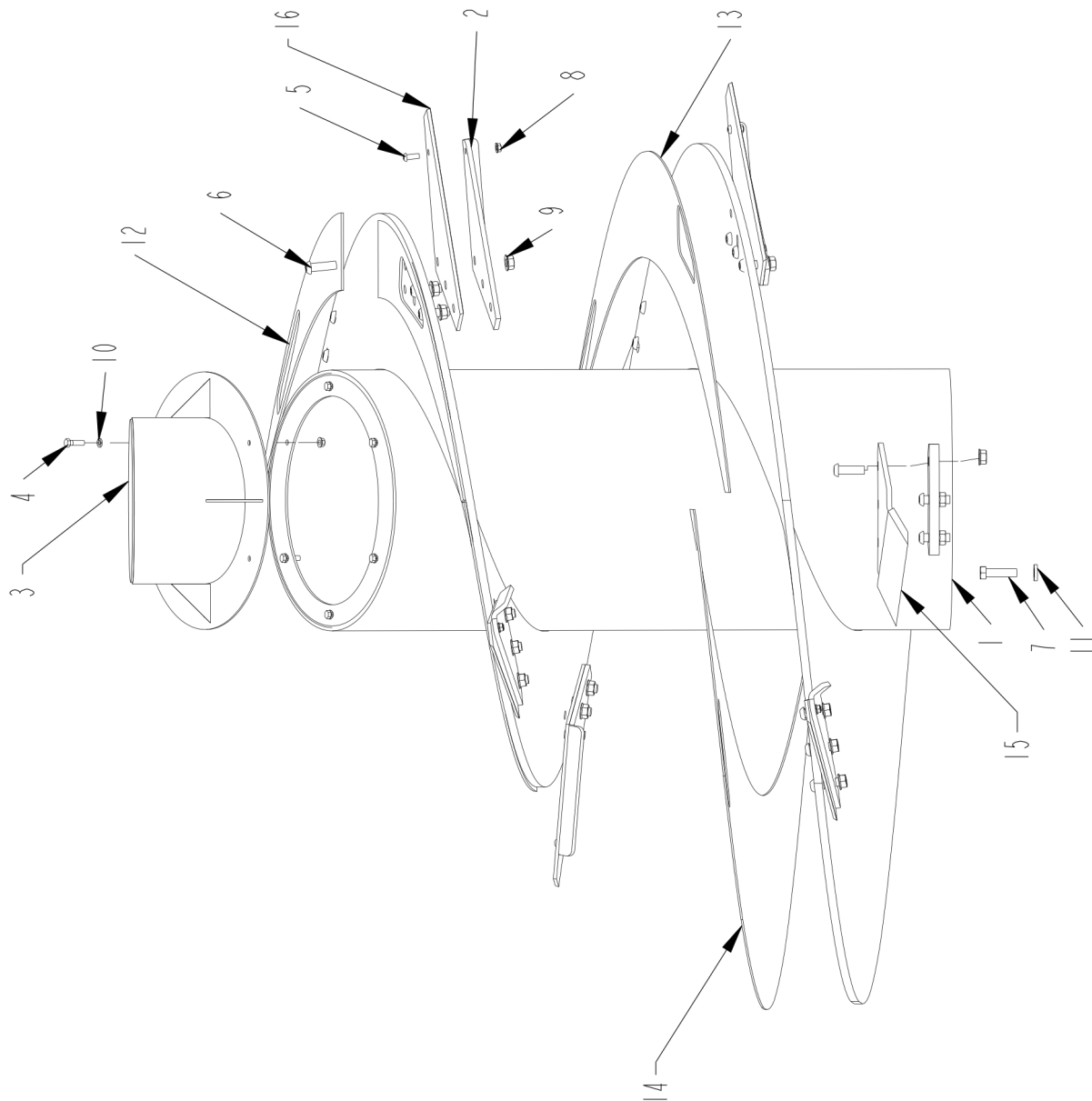
**CMF-980 Tub Assembly**

Item	Part No.	Name	Remarks	Qty	Uom
1	3100226	GRBX\PLANETARY\DBL\2100		2	EA
2	3600694	PTO\44E\14KCLUTCH		1	EA
3	4100030	PIN 1" X 3-1/2" HYD. CYL.		2	EA.
4	4100247	CYL\HYD\2"X30"\1-1/8_ROD		1	EA
5	4704181	PIN\LOCK\3/4X2-1/2		2	EA
6	4704315	AUGER\ASSY\CMF700	(FOR SN UP TO 0007)	2	EA
6A	5900119	AUGER\ASSY\SILAGE\CMF	(FOR SN 0008 & UP)	2	EA.
7	4704340	PL\CLMP\EXT\TUB		2	EA
8	4704359	BRKT\DOOR\ASSY		2	EA
9	4704372	PL\COVER\WNDW\CMF		4	EA
10	4704373	PL\SPACER\COVER\WNDW\CMF		4	EA
11	4704506	TANK\HYD\ASSY\CMF		2	EA
12	4704538	BELT\DOOR\CMF700		1	EA
13	4704556	SH\WIPER\DOOR\700		1	EA
14	4704567	KNIFE\VERT		2	EA
15	4705153	INDICATOR\HEIGHT\DOOR		1	EA
16	4705154	BELT\EXT\TUB\CMF980/1150		1	EA
17	4705376	CLAMP\BELT\CMF300		96	EA
18	4800013	BOLT\HEX\5/16X1		8	EA.
19	4800034	BOLT\HEX\3/8X1-1/2		113	EA.
20	4800081	BOLT\HEX\5/16X1-1/2		20	EA.
21	4800107	PIN\HAIR\1/8(#9)		4	EA.
22	4800115	BOLT\HEX\3/4X2-1/2		2	EA.
23	4800277	BOLT\HEX\1/4X1		8	EA.
24	4800456	PIN\RLLD\3/16X1-1/8		2	EA.
25	4900002	NUT\HEX\3/8\NC		113	EA.
26	4900003	NUT\HEX\5/16\NC		28	EA.
27	4900009	NUT\HEX\1/4\NC		8	EA.
28	4900139	NUT\TPLCK\3/4\GR8\NC		2	EA.
29	5000001	WASH\FLAT\3/8		102	EA.
30	5000019	WASH\LOCK\3/8		125	EA.
31	5000022	WASH\LOCK\5/16		28	EA.
32	5000023	WASH\FLAT\5/16		8	EA.
33	5000024	WASH\LOCK\1/4		8	EA.
34	5000114	WASH\FLAT\5/8\EXTRTHK\GR8		76	EA
35	5701058	KIT\LIGHT		1	EA.
36	5701059	KIT\LIGHT	N/A (Order 5701285 and 5701283)	1	EA.
37	5900016	EXT\DOOR\RH		1	EA

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# CMF-980 Tub Assembly

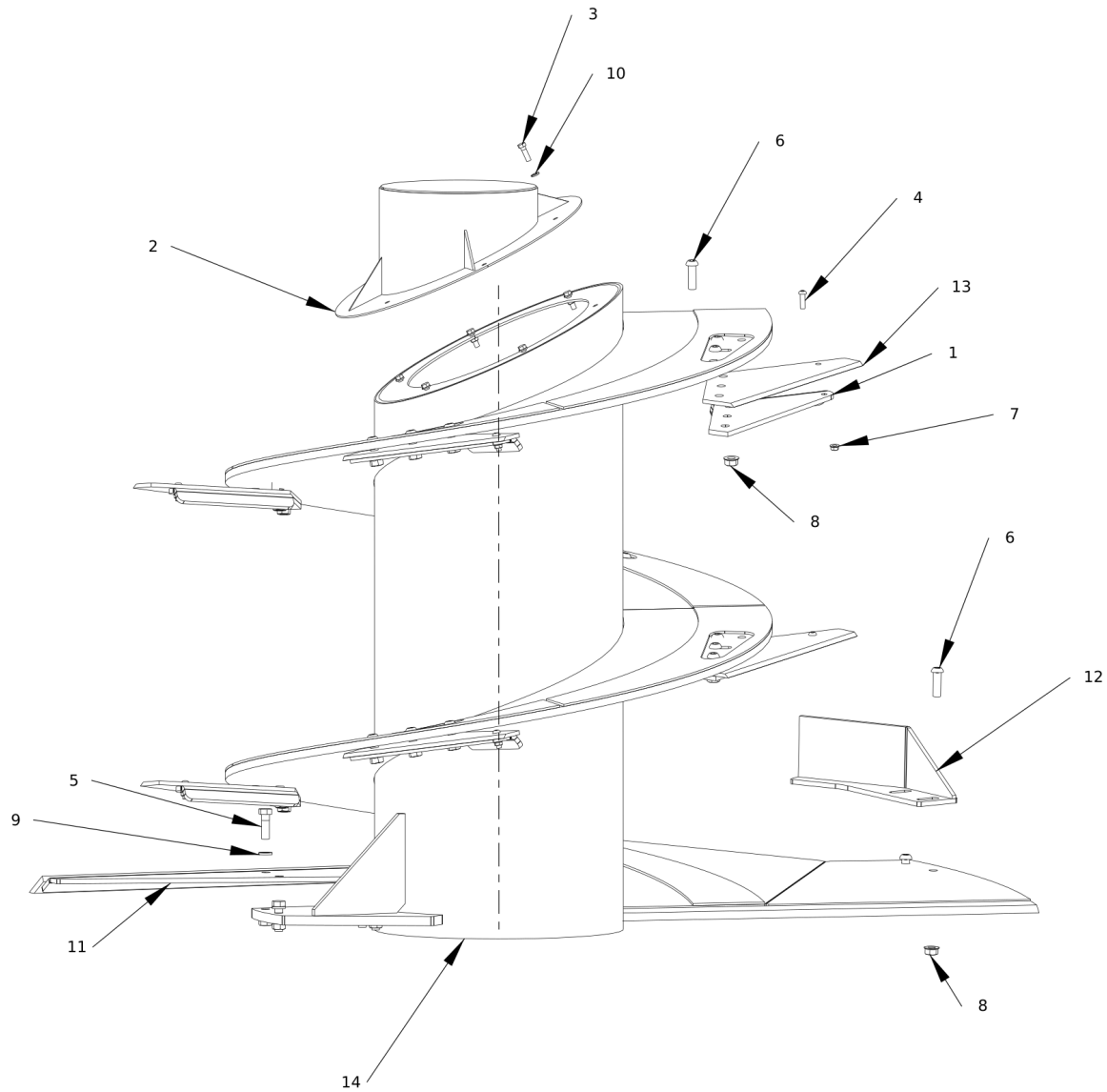
Item	Part No.	Name	Remarks	Qty	Uom
38	5900017	EXT\DOOR\LH		1	EA
39	5900068	DOOR\TUB\30IN\CMF		1	EA
40	7501138	WEATHERSTRIP\2PC\1/4X3/8X69		2	FT
41	7501139	WNDW\POLYCARB\8X30X3/8		2	EA
42	7501336	CLMP\HOSE\CUSH\3/8		5	EA
43	7501525	CLAMP\HOSE\1/2\2		4	EA
44	5900078	TUB\CMF980\WELD		1	EA
CA	5700714	KIT\LIGHT\CMF	(INCLUDES #35, #36 & 5700713)		EA.
CA	5900079	TUB\ASSY\CMF980			EA
NS	5900111	KIT\LINER\TUB\CMF1150			EA





**CMF-980 Auger Assembly (for SN Up to VM16000798)**

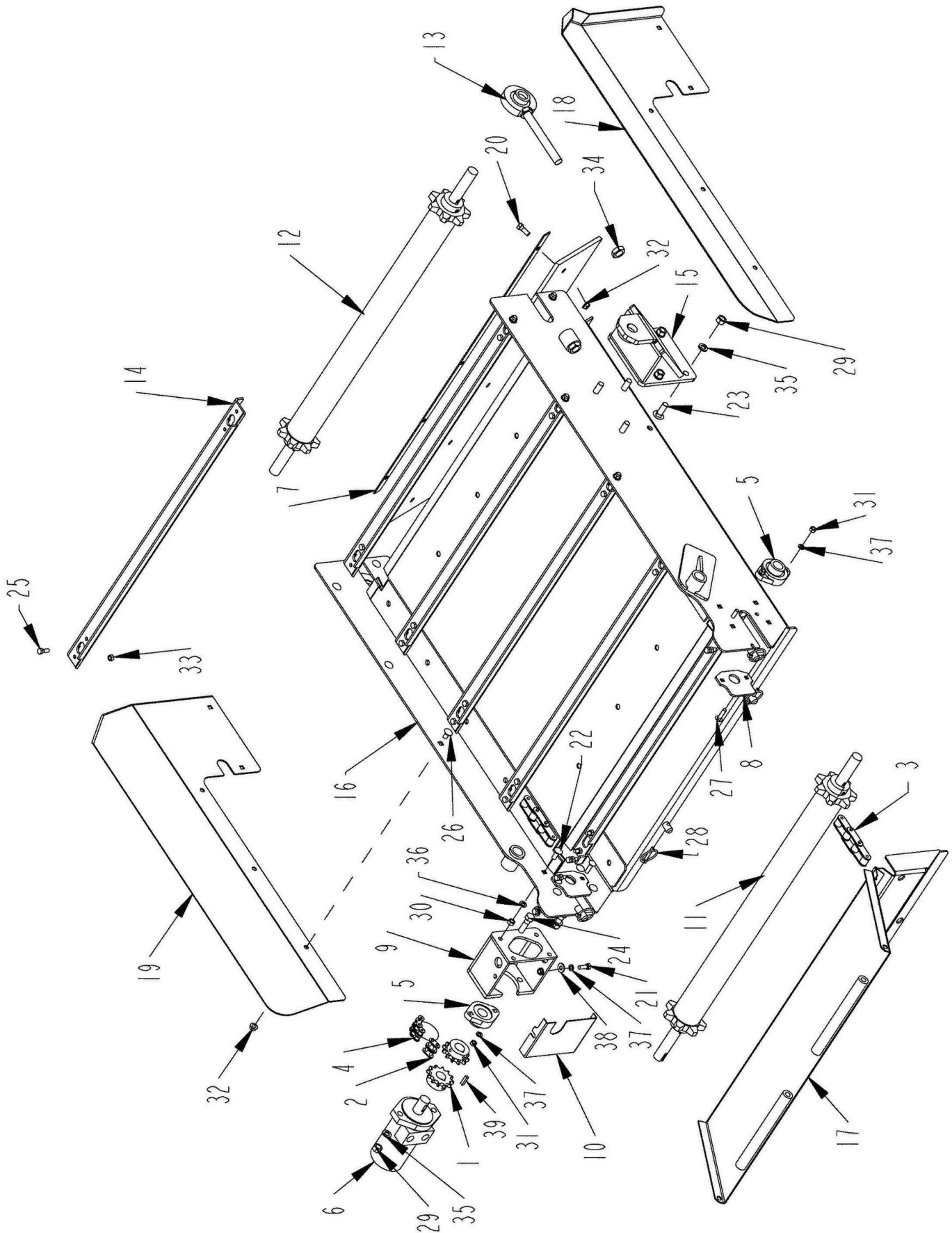
Item	Part No.	Name	Remarks	Qty	Uom
1	4704313	AUGER\WELD\CMF700		1	EA
2	4704365	PL\BACK\BLADE		7	EA
3	4704884	COVER\AUGER		1	EA
4	4800098	BOLT\HEX\3/8X1-1/4\NC		6	EA.
5	4800244	SCR\BUT\ALN\3/8X1\NC		7	EA
6	4800659	SCR\BUT\ALN\5/8X2\NC		24	EA
7	4800948	BOLT\HEX\M16XM60		15	EA
8	4900076	NUT\FLG\SERR\3/8\NC		13	EA.
9	4900110	NUT\FLG\SERR\5/8\NC		24	EA.
10	5000019	WASH\LOCK\3/8		6	EA.
11	5000114	WASH\FLAT\5/8\EXTRTHK\GR8		15	EA
12	5900061	AUGER\CMF700/830\LINER\TOP		4	EA
13	5900062	AUGER\CMF700/830\LINER\MID		1	EA
14	5900063	AUGER\CMF700/830\LINER\BOT		1	EA
15	5900070	KICKER\AUGER\CMF830		1	EA
16	7501161	BLADE\CMF\STANDARD		7	EA
CA	4704315	AUGER\ASSY\CMF700			EA



Note: Blade Kits Per Blade Mfg-(Item #4 is the only difference)  
Kooima: (PN 7501161) uses PN 4800274-SCR\BUT\ALN\3/8X1-1/4  
Renyson: (PN 7501704) uses PN 4800412-SCR\CSK\ALN\3/8X1-1/4

**CMF-980 Auger Assembly (for SN VM17000898 and Up)**

Item	Part No.	Name	Remarks	Qty	Uom
1	4704365	PL\BACK\BLADE		7	EA
2	4704884	COVER\AUGER		1	EA
3	4800098	BOLT\HEX\3/8X1-1/4\NC		6	EA.
4	4800274	SCR\BUT\ALN\3/8X1-1/4\NC	(Used with PN 7501161)	7	EA
4a	4800412	SCR\CK\ALN\3/8X1-1/4\NC	(Used with PN 7501704)	7	EA.
5	4800583	BOLT\HEX\5/8X2\GR8		5	EA
6	4800659	SCR\BUT\ALN\5/8X2\NC		23	EA
7	4900076	NUT\FLG\SERR\3/8\NC		13	EA.
8	4900110	NUT\FLG\SERR\5/8\NC		28	EA.
9	5000003	WASH\LOCK\5/8		5	EA.
10	5000019	WASH\LOCK\3/8		6	EA.
11	5900070	KICKER\AUGER\CMF830		1	EA
12	5900163	SWEEP\AUGER\SILAGE		1	EA
13	7501161	BLADE\CMF\STANDARD	(Uses PN 4800274 with this blade)	7	EA
13a	7501704	BLADE\CMF\PRM\SRRTD	(Uses PN 4800412 with this blade)	7	EA.
14	5900104	AUGER\WELD\SILAGE		1	EA
CA	5900119	AUGER\ASSY\SILAGE\CMF			EA.



**CMF-980 Left Hand Discharge Conveyor Assembly - 4704976**

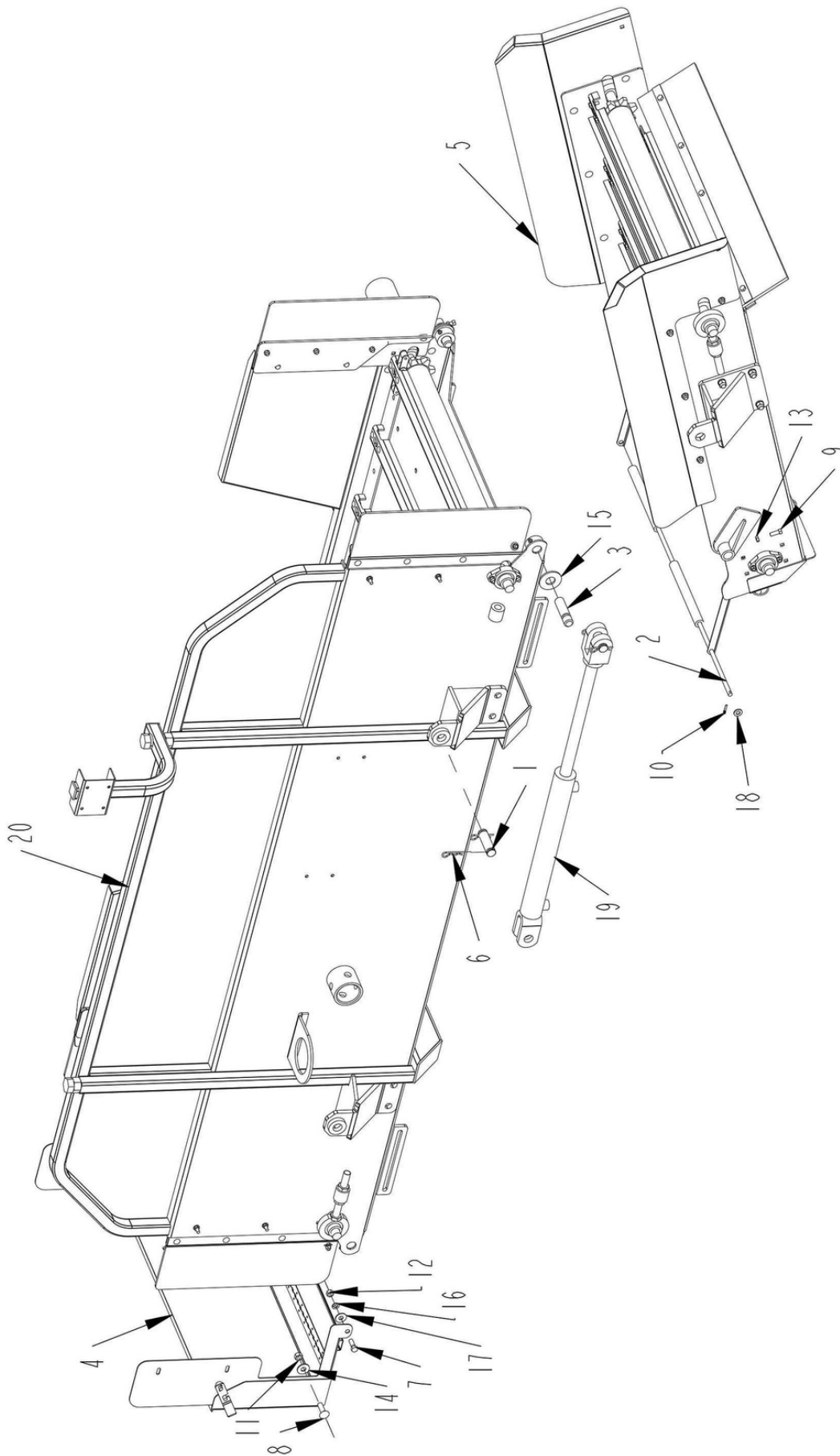
Item	Part No.	Name	Remarks	Qty	Uom
1	1000055	SPKT\50\B\12\1\1\4KW		2	EA.
2	1100099	CHAIN\50DBL\CL		1	EA
3	1100150	CHAIN\620CA\53\W\ATTCH\W-CL		2	EA.
4	1100271	CHAIN\50DBL\11		1	EA
5	2000310	BRG\FLG\CAST\1\2BOLT		2	EA.
6	3900025	MOTOR\HYD\17.9\H		1	EA.
7	4704325	FLAT\WIPER\CNVYR		1	EA
8	4704327	GUARD\CNVYR		2	EA
9	4704558	MNT\MTR\CNVYR\CMF		1	EA
10	4704559	SHLD\CPLR\CNVYR		1	EA
11	4704576	SHAFT\ASSY\CNVYR\CMF		1	EA
12	4704581	IDLER\ASSY\CNVYR\CMF		1	EA
13	4704585	BRG\ASSY\CNVYR\CMF		2	EA
14	4704584	SLAT\CHAIN\EXT\CNVYR		9	EA
15	4704971	BRKT\CYL\EXT\CNVYR\CMF		1	EA
16	4704992	CNVYR\EXT\WELD\CMF		1	EA
17	4704993	PAN\TRANS\CNVYR		1	EA
18	4704994	EXT\SIDE\CNVYR\RH		1	EA
19	4704995	EXT\SIDE\CNVYR\LH		1	EA
20	4800003	BOLT\HEX\3\8X1		5	EA.
21	4800013	BOLT\HEX\5\16X1		2	EA.
22	4800053	BOLT\CRG\3\8X1\NC		4	EA.
23	4800061	BOLT\CRG\1\2X1-1\2\NC		4	EA
24	4800178	BOLT\HEX\1\2X1-3\4		2	EA.
25	4800393	BOLT\HEX\5\16X7\8\GR8		36	EA.
26	4800394	BOLT\CRG\3\8X3\4\NC		8	EA
27	4800474	BOLT\CRG\5\16X1-1\4\NC		4	EA.
28	4801236	PIN\LYNCH\1\4X1-9\16\ZN_PLT		4	EA
29	4900001	NUT\HEX\1\2\NC		6	EA.
30	4900002	NUT\HEX\3\8\NC		4	EA.
31	4900003	NUT\HEX\5\16\NC		4	EA.
32	4900076	NUT\FLG\SERR\3\8\NC		13	EA.
33	4900099	NUT\PLCK\5\16\GR8\NC		36	EA.
34	4900104	NUT\JAM\3\4\NC		6	EA.
35	5000006	WASH\LOCK\1\2		6	EA.
36	5000019	WASH\LOCK\3\8		4	EA.
37	5000022	WASH\LOCK\5\16		6	EA.
38	5000023	WASH\FLAT\5\16		2	EA.

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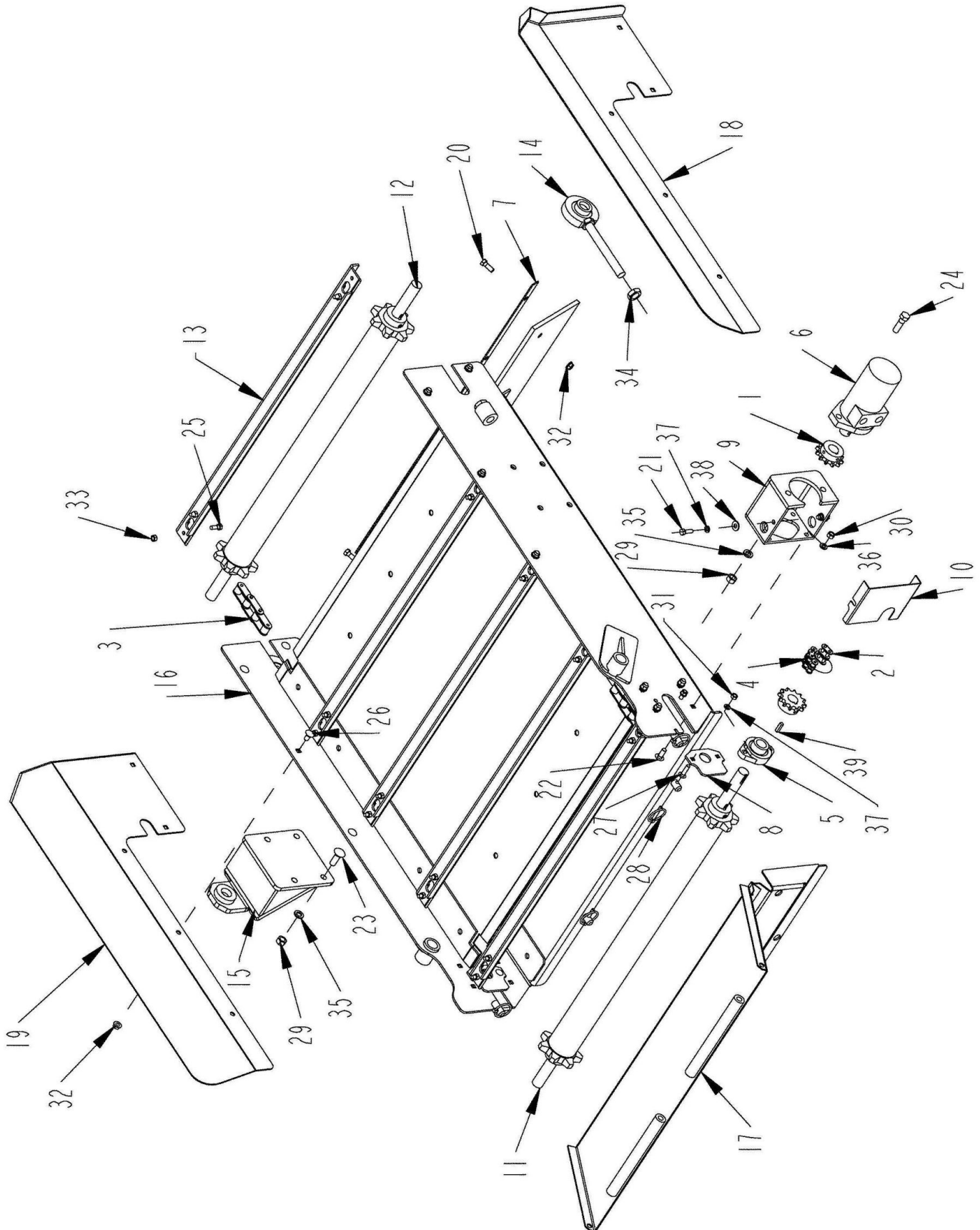
**CMF-980 Left Hand Discharge Conveyor Assembly - 4704976**

Item	Part No.	Name	Remarks	Qty	Uom
39	6200010	KEY\SQ\1/4X1		1	EA.
CA	4704976	SIDE\LH\CNVYR\ASSY			EA



## Complete Left Hand Discharge Conveyor Assembly

Item	Part No.	Name	Remarks	Qty	Uom
1	4100030	PIN 1" X 3-1/2" HYD. CYL.		2	EA.
2	4704329	ROD\TRANS\CNVYR		1	EA
3	4704330	PIN\SIDE\CNVYR		2	EA
4	4704593	GATE\END\CNVYR\ASSY		1	EA
5	4704976	SIDE\LH\CNVYR\ASSY		1	EA
6	4800107	PIN\HAIR\1/8(#9)		4	EA.
7	4800160	BOLT\HEX\7/16X1-1/4		2	EA
8	4800201	BOLT\CRG\1/2X1-3/4\NC\GR5		2	EA
9	4800307	SCR\SET\SQ\3/8X1\NC		2	EA.
10	4800531	PIN\COT\3/16X3/4		2	EA
11	4900014	NUT\TPLCK\1/2\NC		2	EA.
12	4900025	NUT\HEX\7/16\NC		2	EA.
13	4900026	NUT\JAM\3/8\NC		2	EA.
14	5000004	WASH\FLAT\1/2		2	EA.
15	5000014	WASH\FLAT\1		2	EA.
16	5000015	WASH\LOCK\7/16		2	EA.
17	5000016	WASH\FLAT\7/16		2	EA.
18	5000123	WASH\FLAT\7/16\EXTRTHK\GR8		2	EA
19	4100284	CYL\HYD\2X16\1-1/4RD\WELDE		1	EA
20	4704972	CNVYR\ASSY\MAIN\CMF\LH		1	EA
CA	4704978	CMF\CNVYR\W\LH_EXT			EA



**CMF-980 Right Hand Discharge Conveyor Assembly - 4704975**

Item	Part No.	Name	Remarks	Qty	Uom
1	1000055	SPKT\50\B\12\1\1\4KW		2	EA.
2	1100099	CHAIN\50DBL\CL		1	EA
3	1100150	CHAIN\620CA\53\W\ATTCH\W-CL		2	EA.
4	1100271	CHAIN\50DBL\11		1	EA
5	2000310	BRG\FLG\CAST\1\2BOLT		2	EA.
6	3900025	MOTOR\HYD\17.9\H		1	EA.
7	4704325	FLAT\WIPER\CNVYR		1	EA
8	4704327	GUARD\CNVYR		2	EA
9	4704558	MNT\MTR\CNVYR\CMF		1	EA
10	4704559	SHLD\CPLR\CNVYR		1	EA
11	4704576	SHAFT\ASSY\CNVYR\CMF		1	EA
12	4704581	IDLER\ASSY\CNVYR\CMF		1	EA
13	4704584	SLAT\CHAIN\EXT\CNVYR		9	EA
14	4704585	BRG\ASSY\CNVYR\CMF		2	EA
15	4704971	BRKT\CYL\EXT\CNVYR\CMF		1	EA
16	4704992	CNVYR\EXT\WELD\CMF		1	EA
17	4704993	PAN\TRANS\CNVYR		1	EA
18	4704994	EXT\SIDE\CNVYR\RH		1	EA
19	4704995	EXT\SIDE\CNVYR\LH		1	EA
20	4800003	BOLT\HEX\3\8X1		5	EA.
21	4800013	BOLT\HEX\5\16X1		2	EA.
22	4800053	BOLT\CRG\3\8X1\NC		4	EA.
23	4800061	BOLT\CRG\1\2X1-1\2\NC		4	EA
24	4800178	BOLT\HEX\1\2X1-3\4		2	EA.
25	4800393	BOLT\HEX\5\16X7\8\GR8		36	EA.
26	4800394	BOLT\CRG\3\8X3\4\NC		8	EA
27	4800474	BOLT\CRG\5\16X1-1\4\NC		4	EA.
28	4801236	PIN\LYNCH\1\4X1-9\16\ZN_PLT		4	EA
29	4900001	NUT\HEX\1\2\NC		6	EA.
30	4900002	NUT\HEX\3\8\NC		4	EA.
31	4900003	NUT\HEX\5\16\NC		4	EA.
32	4900076	NUT\FLG\SERR\3\8\NC		13	EA.
33	4900099	NUT\PLCK\5\16\GR8\NC		36	EA.
34	4900104	NUT\JAM\3\4\NC		6	EA.
35	5000006	WASH\LOCK\1\2		6	EA.
36	5000019	WASH\LOCK\3\8		4	EA.
37	5000022	WASH\LOCK\5\16		6	EA.
38	5000023	WASH\FLAT\5\16		2	EA.

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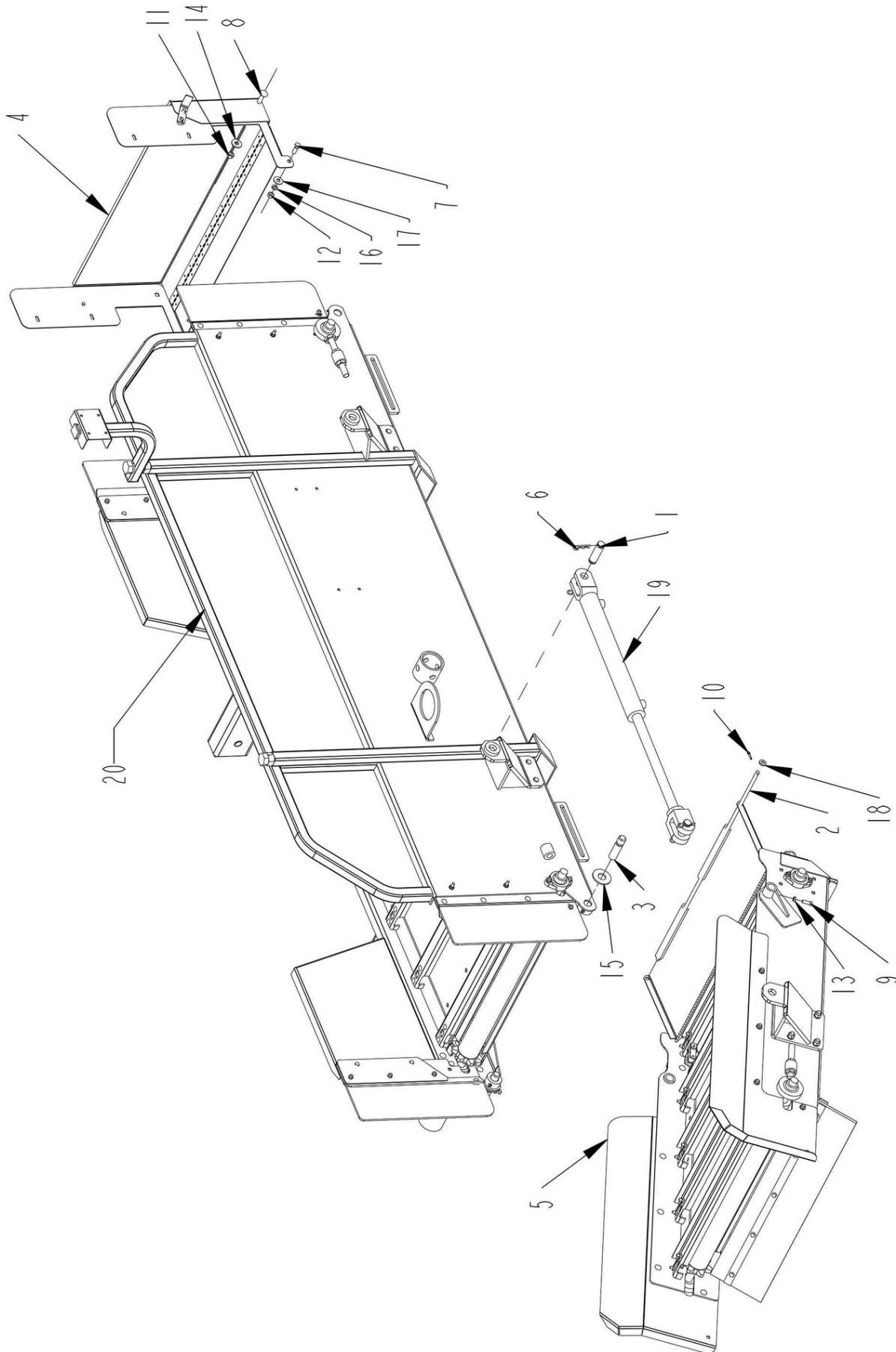
**CMF-980 Right Hand Discharge Conveyor Assembly - 4704975**

Item	Part No.	Name	Remarks	Qty	Uom
39	6200010	KEY\SQ\1/4X1		1	EA.
CA	4704975	SIDE\RH\CNVYR\ASSY			EA



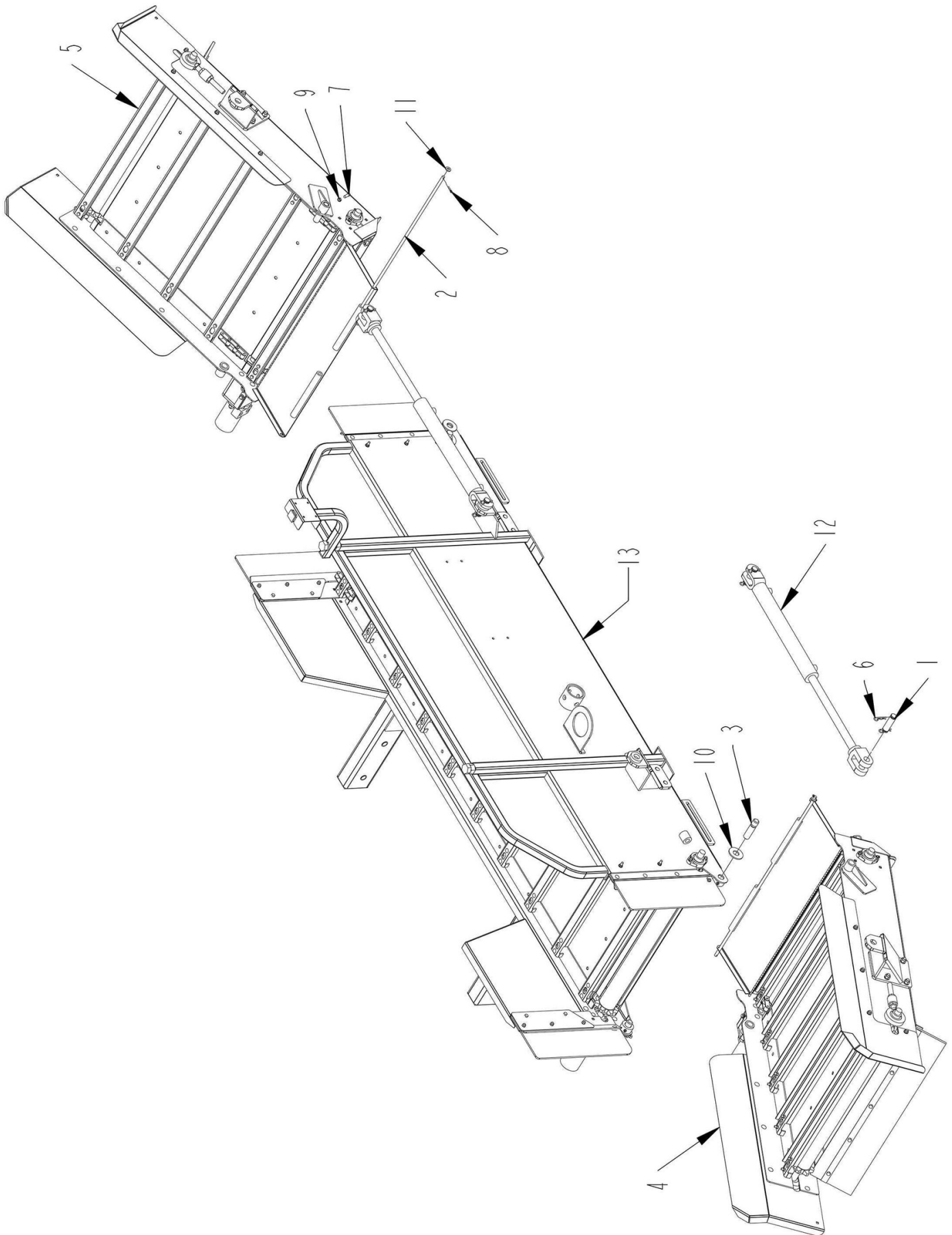
## Complete Right Hand Discharge Conveyor Assembly

CMF-980 Parts Reference



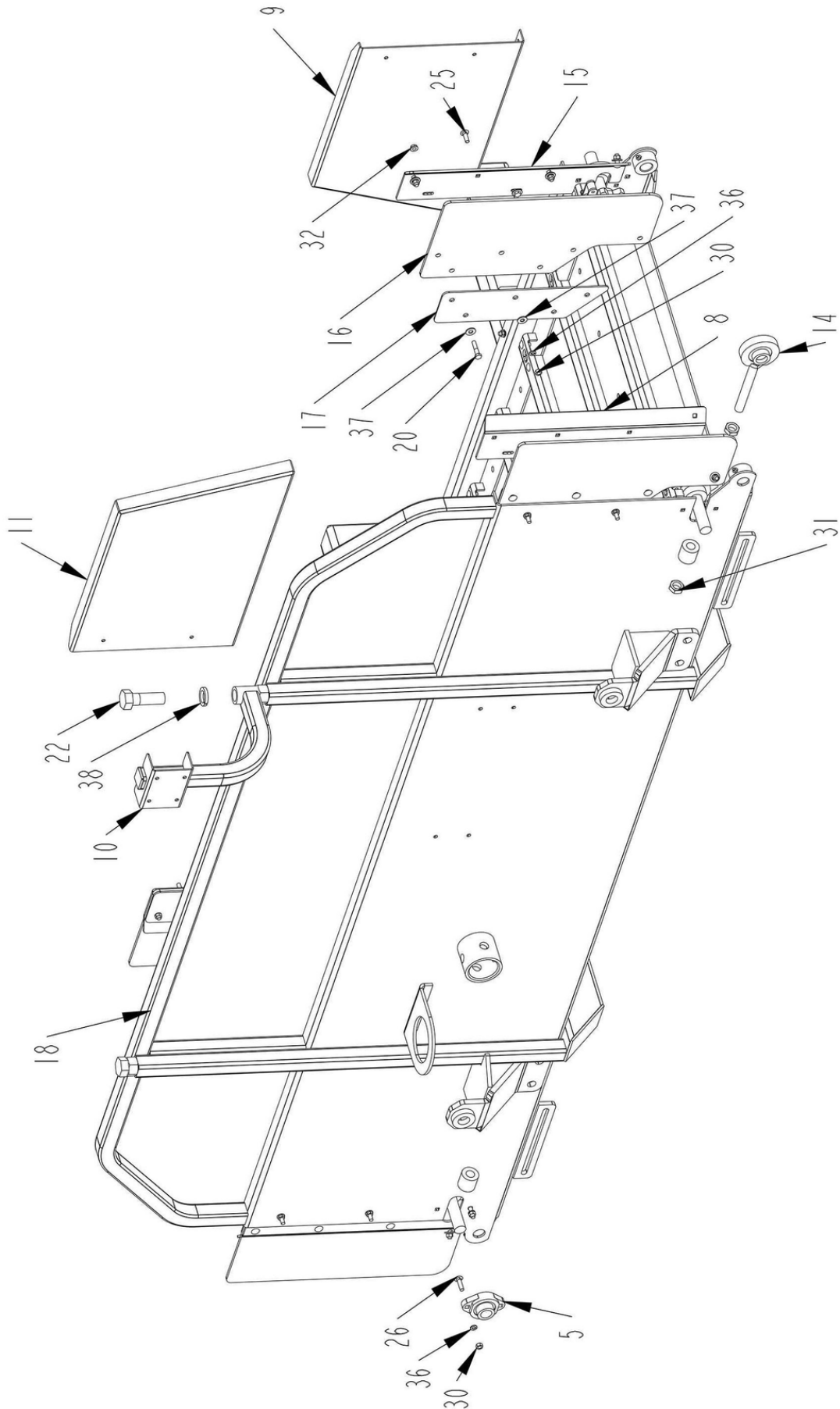
## Complete Right Hand Discharge Conveyor Assembly

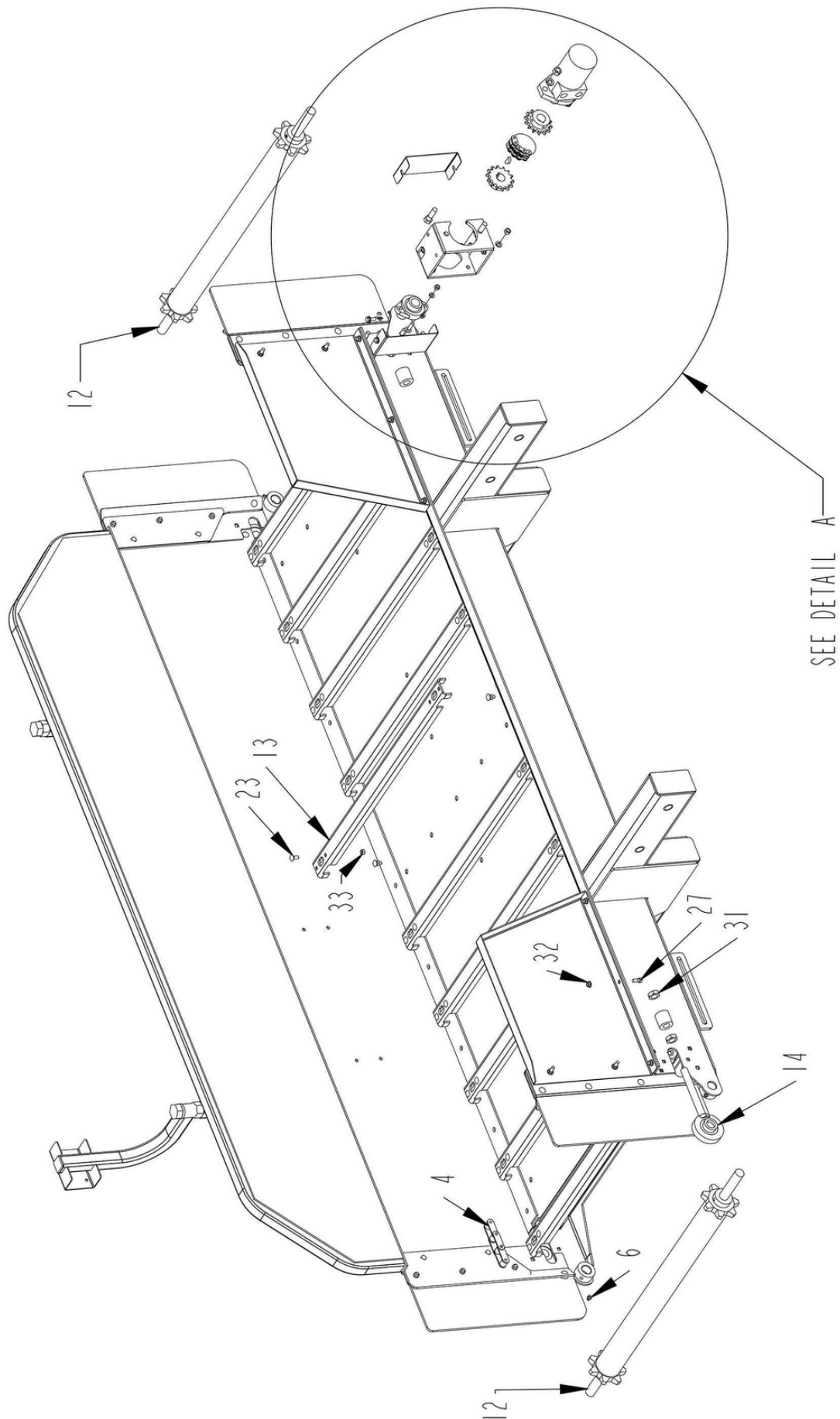
Item	Part No.	Name	Remarks	Qty	Uom
1	4100030	PIN 1" X 3-1/2" HYD. CYL.		2	EA.
2	4704329	ROD\TRANS\CNVYR		1	EA
3	4704330	PIN\SIDE\CNVYR		2	EA
4	4704593	GATE\END\CNVYR\ASSY		1	EA
5	4704975	SIDE\RH\CNVYR\ASSY		1	EA
6	4800107	PIN\HAIR\1/8(#9)		4	EA.
7	4800160	BOLT\HEX\7/16X1-1/4		2	EA
8	4800201	BOLT\CRG\1/2X1-3/4\NC\GR5		2	EA
9	4800307	SCR\SET\SQ\3/8X1\NC		2	EA.
10	4800531	PIN\COT\3/16X3/4		2	EA
11	4900014	NUT\TPLCK\1/2\NC		2	EA.
12	4900025	NUT\HEX\7/16\NC		2	EA.
13	4900026	NUT\JAM\3/8\NC		2	EA.
14	5000004	WASH\FLAT\1/2		2	EA.
15	5000014	WASH\FLAT\1		2	EA.
16	5000015	WASH\LOCK\7/16		2	EA.
17	5000016	WASH\FLAT\7/16		2	EA.
18	5000123	WASH\FLAT\7/16\EXTRTHK\GR8		2	EA
19	4100284	CYL\HYD\2X16\1-1/4RD\WELDE		1	EA
20	4704973	CNVYR\ASSY\MAIN\CMF\RH		1	EA
CA	4704977	CNVYR\ASSY\W\RH_EXT			EA



## Dual Discharge Conveyor Assembly Option

Item	Part No.	Name	Remarks	Qty	Uom
1	4100030	PIN 1" X 3-1/2" HYD. CYL.		4	EA.
2	4704329	ROD\TRANS\CNVYR		2	EA
3	4704330	PIN\SIDE\CNVYR		4	EA
4	4704975	SIDE\RH\CNVYR\ASSY		1	EA
5	4704976	SIDE\LH\CNVYR\ASSY		1	EA
6	4800107	PIN\HAIR\1/8(#9)		8	EA.
7	4800307	SCR\SET\SQ\3/8X1\NC		4	EA.
8	4800531	PIN\COT\3/16X3/4		4	EA
9	4900026	NUT\JAM\3/8\NC		4	EA.
10	5000014	WASH\FLAT\1		4	EA.
11	5000123	WASH\FLAT\7/16\EXTRTHK\GR8		4	EA
12	4100284	CYL\HYD\2X16\1-1/4RD\WELDE		2	EA
13	4704973	CNVYR\ASSY\MAIN\CMF\RH		1	EA
CA	4704979	CMF\CNVYR\DUAL_EXT			EA









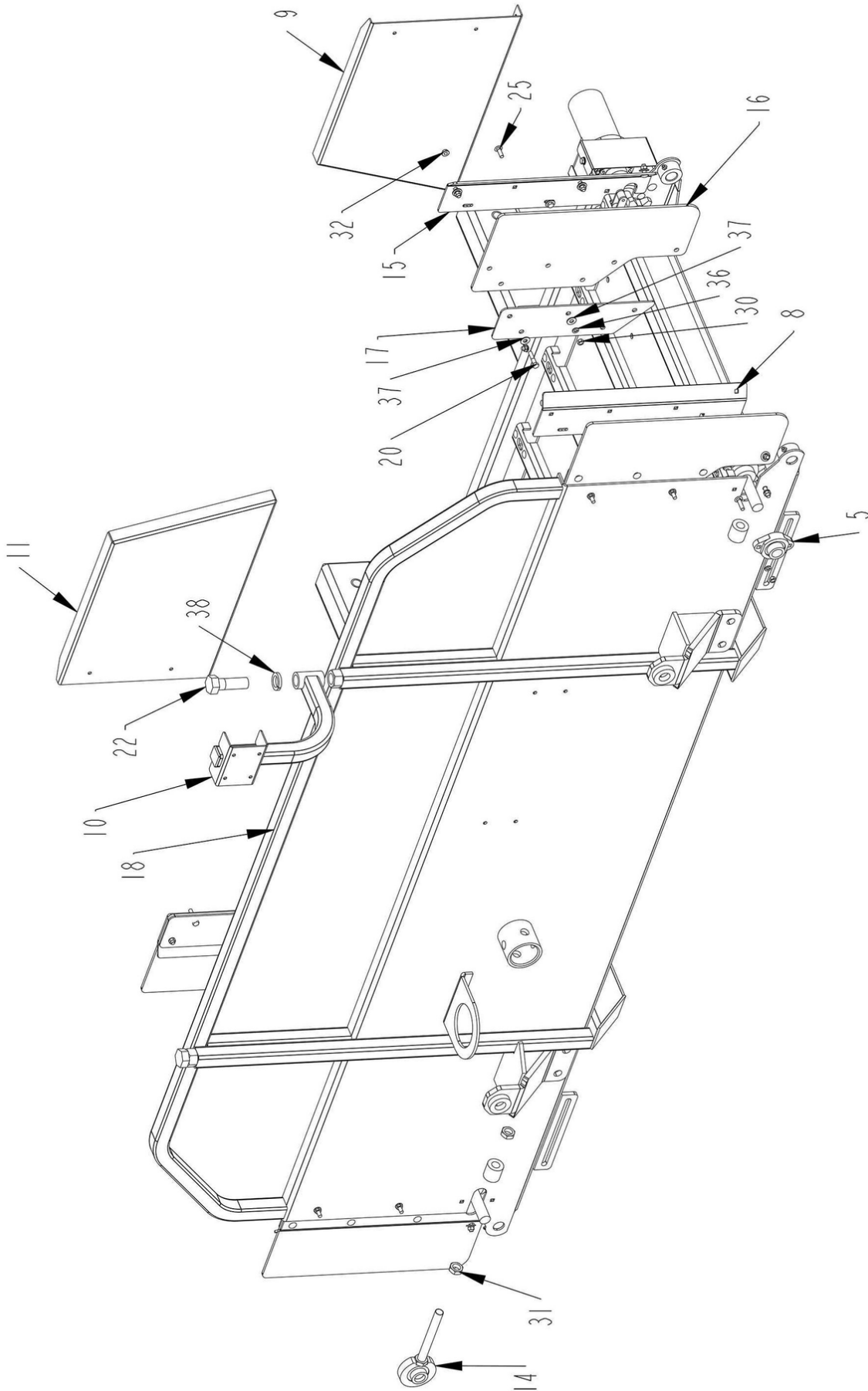
**CMF-980 Main Conveyor Assembly - 4704973 (Use W/ Dual & RH Discharge)**

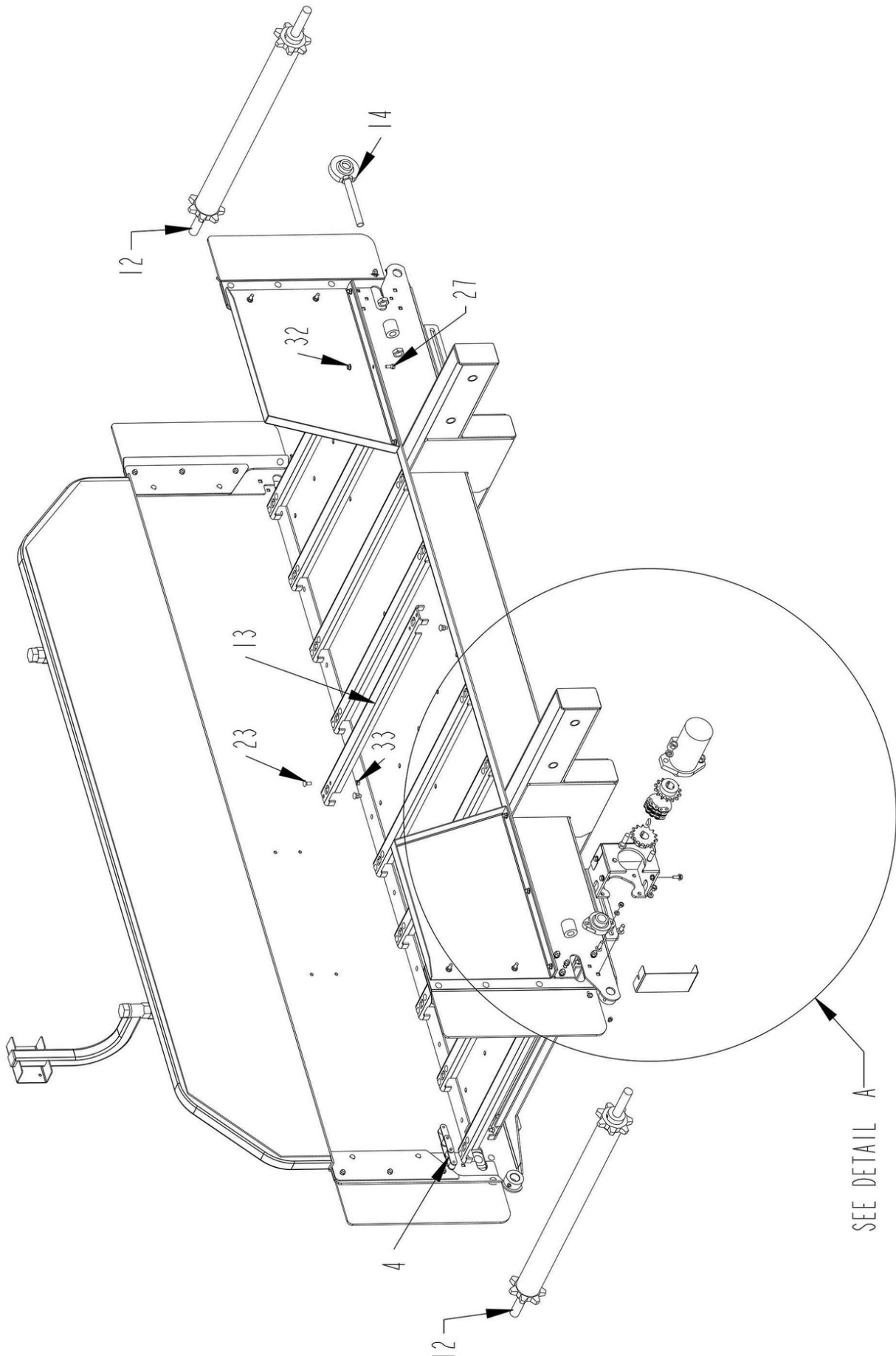
Item	Part No.	Name	Remarks	Qty	Uom
1	1000029	SPKT\50\B\14\1\1\4KW		2	EA.
2	1100026	CHAIN\50DBL\13		1	EA
3	1100099	CHAIN\50DBL\CL		1	EA
4	1100256	CHAIN\620CA\120\W\ATTCH		2	EA
5	2000310	BRG\FLG\CAST\1\2BOLT		2	EA.
6	3800043	FTG\LUB\1\8MPXZRK\SHORT		4	EA.
7	3900032	MOTOR\HYD\22.6\H		1	EA
8	4704375	SH\DEFL\MAIN\CNVYR\RH		2	EA
9	4704378	EXT\MAIN\CNVYR\LH		1	EA
10	4704388	BRKT\IND\SCALE		1	EA
11	4704519	EXT\MAIN\CNVYR\RH		1	EA
12	4704576	SHAFT\ASSY\CNVYR\CMF		2	EA
13	4704580	SLAT\CHAIN\CNVYR\CMF		20	EA
14	4704585	BRG\ASSY\CNVYR\CMF		2	EA
15	4704592	SH\DEFL\MAIN\CNVYR\LH		2	EA
16	4704598	BELT\GUIDE\MATL\HINGE		4	EA
17	4704859	DBLR\BELT\GUIDE\MATL\HINGE		4	EA
18	4704970	CNVYR\MAIN\WELD\CMF		1	EA
19	4800053	BOLT\CRG\3\8X1\NC		4	EA.
20	4800081	BOLT\HEX\5\16X1-1/2		8	EA.
21	4800113	SCR\FLNG\SERR\5\16X3\4\TP		4	EA
22	4800140	BOLT\HEX\1X3\NC		2	EA
23	4800153	BOLT\CRG\5\16X3\4\NC		80	EA.
24	4800178	BOLT\HEX\1\2X1-3/4		2	EA.
25	4800473	BOLT\CRG\5\16X1\NC		16	EA
26	4800474	BOLT\CRG\5\16X1-1/4\NC		4	EA.
27	4800643	BOLT\HEX\5\16X3/4		6	EA.
28	4900001	NUT\HEX\1\2\NC		2	EA.
29	4900002	NUT\HEX\3\8\NC		4	EA.
30	4900003	NUT\HEX\5\16\NC		20	EA.
31	4900104	NUT\JAM\3\4\NC		6	EA.
32	4900108	NUT\FLG\SERR\5\16\NC		18	EA.
33	4900142	NUT\PLCK\5\16\NC		80	EA.
34	5000006	WASH\LOCK\1\2		2	EA.
35	5000019	WASH\LOCK\3\8		4	EA.
36	5000022	WASH\LOCK\5\16		20	EA.
37	5000023	WASH\FLAT\5\16		24	EA.
38	5000053	WASH\LOCK\1		1	EA

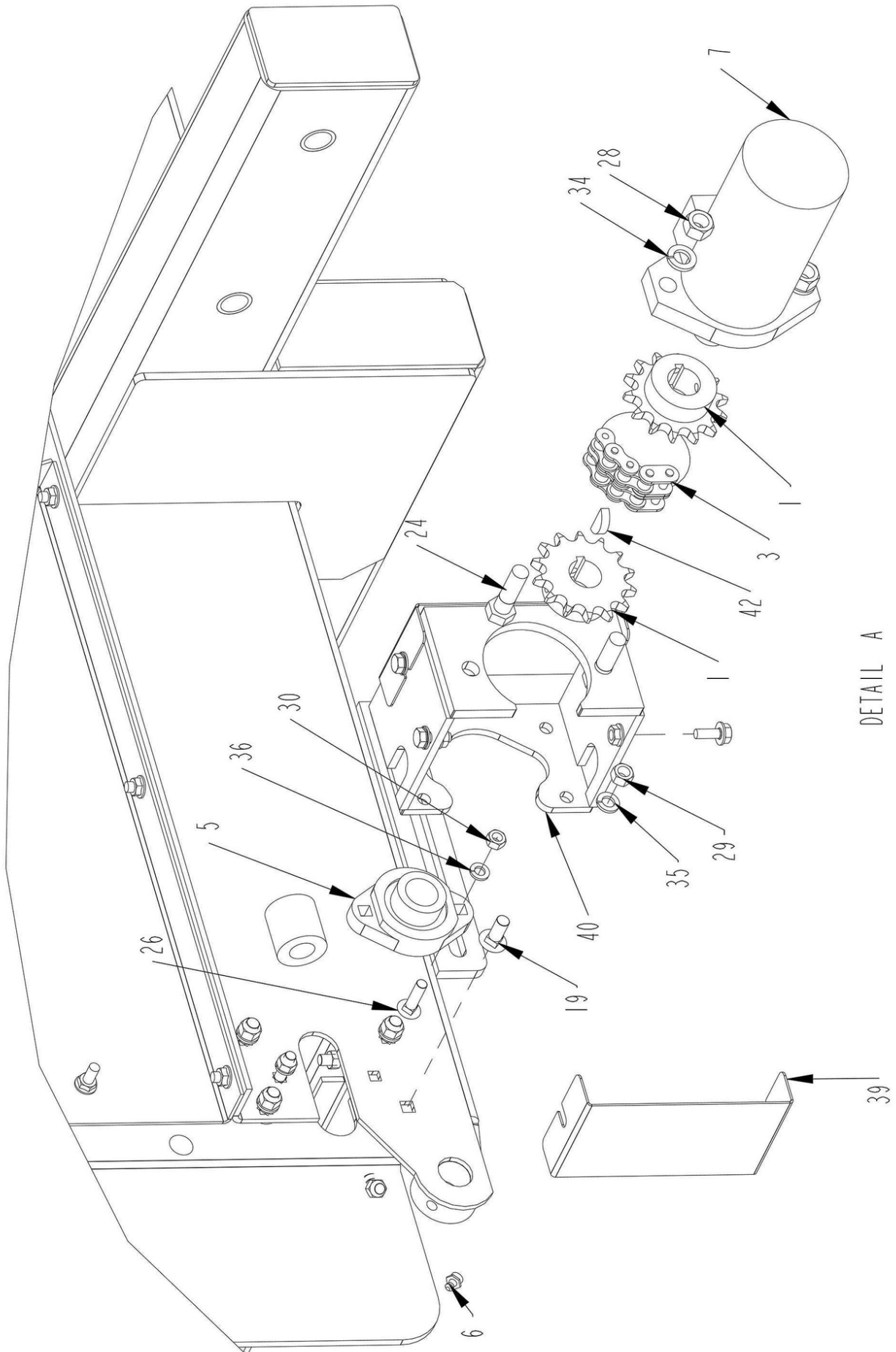
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**CMF-980 Main Conveyor Assembly - 4704973 (Use W/ Dual & RH Discharge)**

Item	Part No.	Name	Remarks	Qty	Uom
39	5900071	SHLD\CPLR\CNVYR		2	EA
40	5900072	MNT\MTR\CNVYR\EXT\CMF		1	EA
41	5900073	SHAFT\WELD\CNVYR\CMF		2	EA
42	6200011	KEY\WDF\1/4X1		1	EA.
CA	4704973	CNVYR\ASSY\MAIN\CMF\RH			EA







DETAIL A

**CMF-980 Conveyor Assembly - 4704972 (Use W/ LH Discharge)**

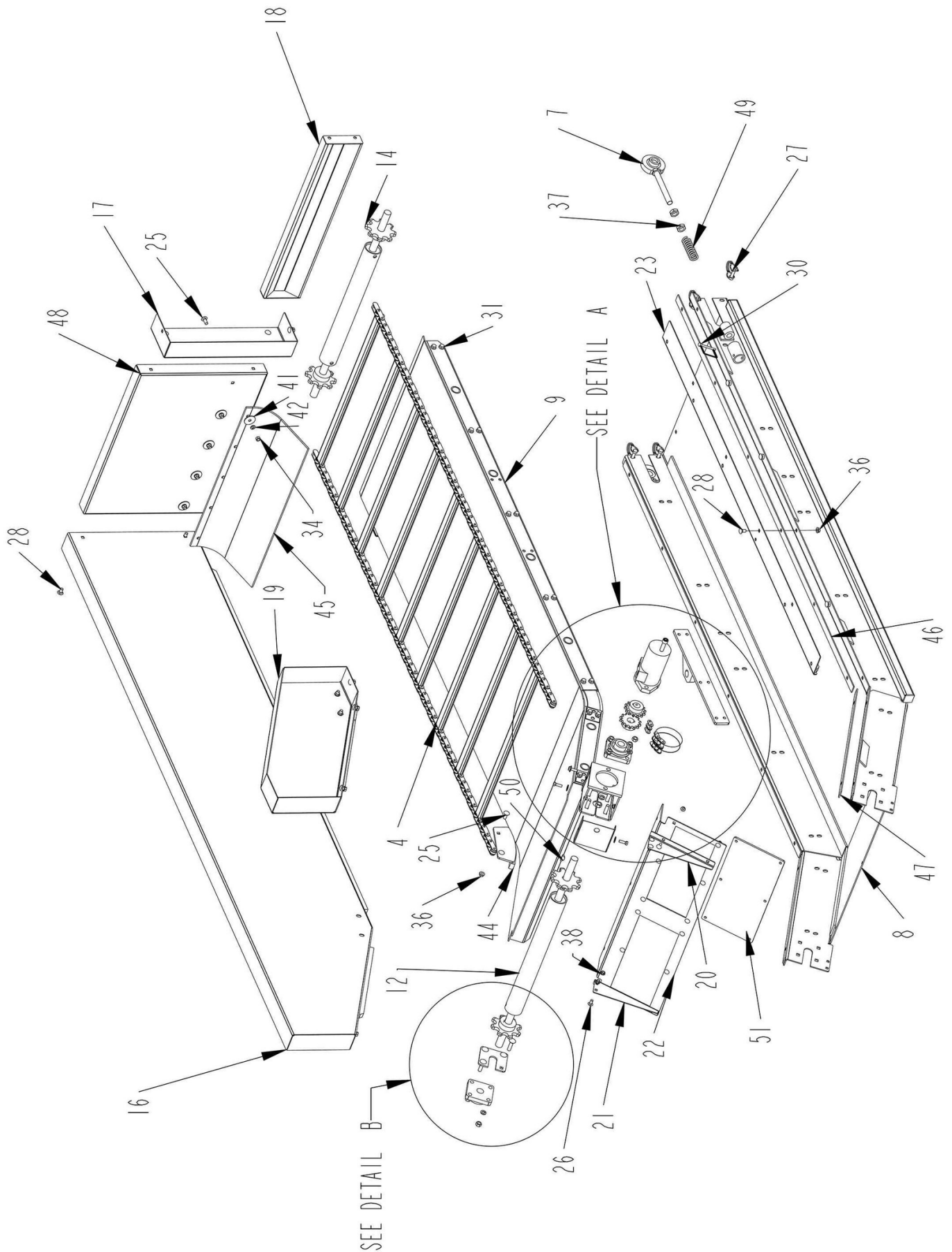
Item	Part No.	Name	Remarks	Qty	Uom
1	1000029	SPKT\50\B\14\1\1\4KW		2	EA.
2	1100026	CHAIN\50DBL\13		1	EA
3	1100099	CHAIN\50DBL\CL		1	EA
4	1100256	CHAIN\620CA\120\W\ATTCH		2	EA
5	2000310	BRG\FLG\CAST\1\2BOLT		2	EA.
6	3800043	FTG\LUB\1\8MPXZRK\SHORT		4	EA.
7	3900032	MOTOR\HYD\22.6\H		1	EA
8	4704375	SH\DEFL\MAIN\CNVYR\RH		2	EA
9	4704378	EXT\MAIN\CNVYR\LH		1	EA
10	4704388	BRKT\IND\SCALE		1	EA
11	4704519	EXT\MAIN\CNVYR\RH		1	EA
12	4704576	SHAFT\ASSY\CNVYR\CMF		2	EA
13	4704580	SLAT\CHAIN\CNVYR\CMF		20	EA
14	4704585	BRG\ASSY\CNVYR\CMF		2	EA
15	4704592	SH\DEFL\MAIN\CNVYR\LH		2	EA
16	4704598	BELT\GUIDE\MATL\HINGE		4	EA
17	4704859	DBLR\BELT\GUIDE\MATL\HINGE		4	EA
18	4704970	CNVYR\MAIN\WELD\CMF		1	EA
19	4800053	BOLT\CRG\3\8X1\NC		4	EA.
20	4800081	BOLT\HEX\5\16X1-1/2		8	EA.
21	4800113	SCR\FLNG\SERR\5\16X3\4\TP		4	EA
22	4800140	BOLT\HEX\1X3\NC		2	EA
23	4800153	BOLT\CRG\5\16X3\4\NC		80	EA.
24	4800178	BOLT\HEX\1\2X1-3/4		2	EA.
25	4800473	BOLT\CRG\5\16X1\NC		16	EA
26	4800474	BOLT\CRG\5\16X1-1/4\NC		4	EA.
27	4800643	BOLT\HEX\5\16X3\4		6	EA.
28	4900001	NUT\HEX\1\2\NC		2	EA.
29	4900002	NUT\HEX\3\8\NC		4	EA.
30	4900003	NUT\HEX\5\16\NC		20	EA.
31	4900104	NUT\JAM\3\4\NC		6	EA.
32	4900108	NUT\FLG\SERR\5\16\NC		18	EA.
33	4900142	NUT\PLCK\5\16\NC		80	EA.
34	5000006	WASH\LOCK\1\2		2	EA.
35	5000019	WASH\LOCK\3\8		4	EA.
36	5000022	WASH\LOCK\5\16		20	EA.
37	5000023	WASH\FLAT\5\16		24	EA.
38	5000053	WASH\LOCK\1		1	EA

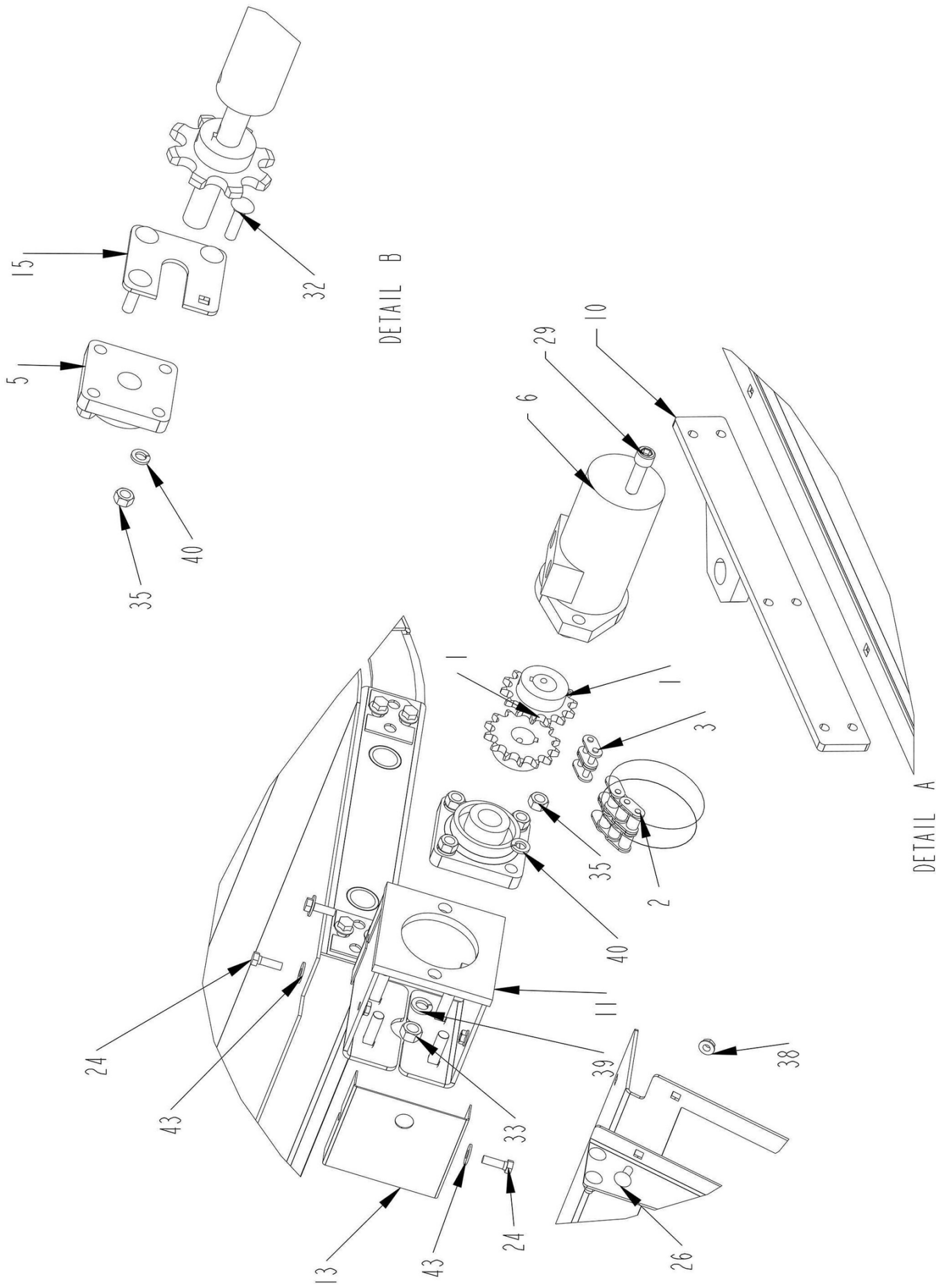


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**CMF-980 Conveyor Assembly - 4704972 (Use W/ LH Discharge)**

Item	Part No.	Name	Remarks	Qty	Uom
39	5900071	SHLD\CPLR\CNVYR		2	EA
40	5900072	MNT\MTR\CNVYR\EXT\CMF		1	EA
41	5900073	SHAFT\WELD\CNVYR\CMF		2	EA
42	6200011	KEY\WDF\1/4X1		1	EA.
CA	4704972	CNVYR\ASSY\MAIN\CMF\LH			EA





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**CMF-980 Optional LH Dogleg Discharge Conveyor**

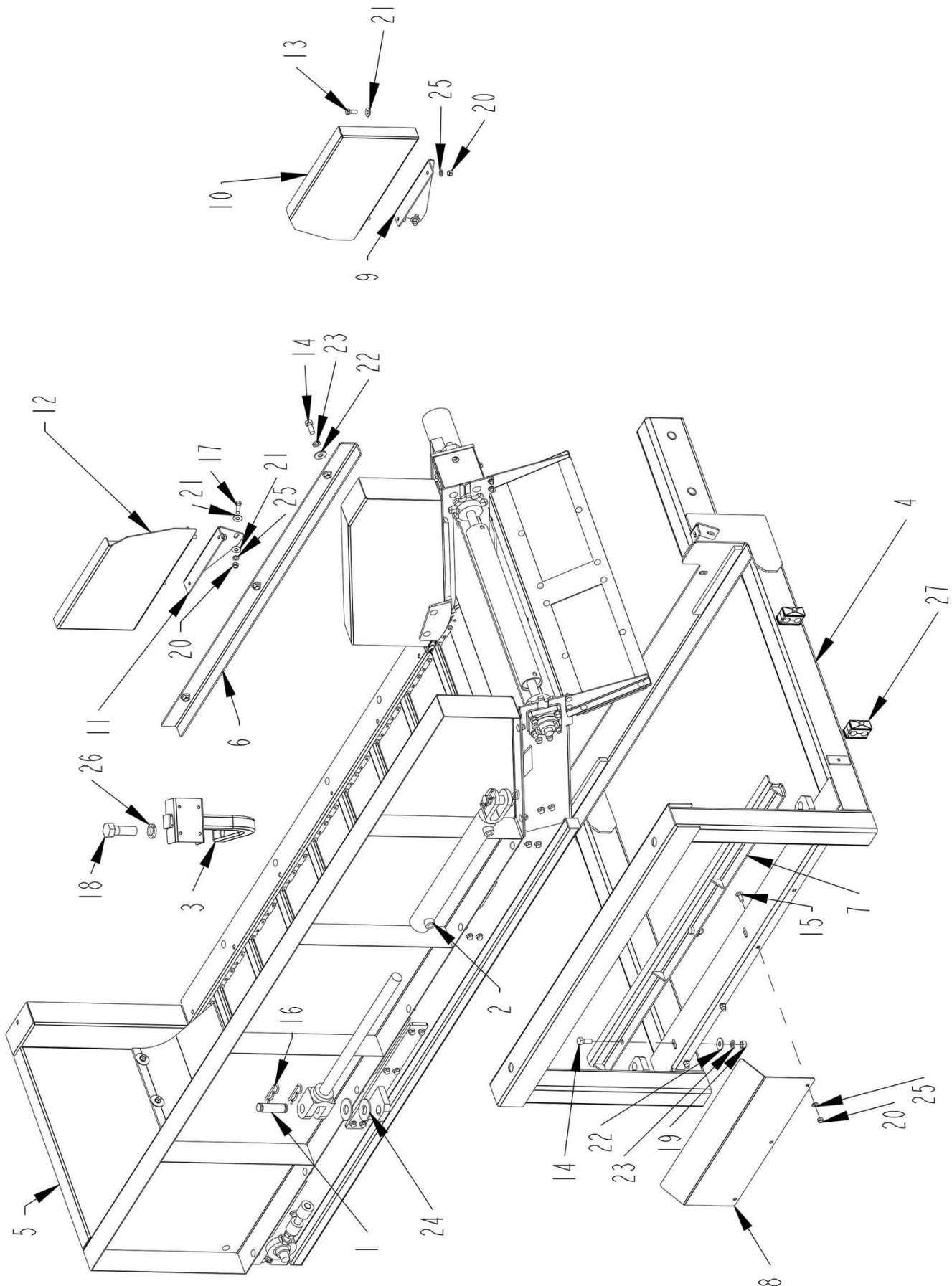
Item	Part No.	Name	Remarks	Qty	Uom
1	1000029	SPKT\50\B\14\1\1/4KW		2	EA.
2	1100026	CHAIN\50DBL\13		1	EA
3	1100099	CHAIN\50DBL\CL		1	EA
4	1100303	CHAIN\ASSY\2062H\140P\23\29" C-C		1	EA
	1100067	CHAIN\2062\CL		2	EA
5	2000323	BRG\FLG\1\4BOLT		2	EA
6	3900032	MOTOR\HYD\22.6\H		1	EA
7	4704585	BRG\ASSY\CNVYR\CMF		2	EA
8	4705179	WELD\FRM\DOG\CNVYR		1	EA
9	4705181	DECK\DOG\CNVYR		1	EA
10	4705184	MNT\CYL\DOG\CNVYR		1	EA
11	4705188	MNT\MTR\CNVYR\DOG		1	EA
12	4705191	SHAFT\ASSY\CNVYR\DOGCMF		1	EA
13	4705192	COVER\CPLR\CHAIN\CNVYR		2	EA
14	4705193	IDLER\ASSY\CNVYR\CMF		1	EA
15	4705194	PL\BRG\SHIM		1	EA
16	4705195	PANEL\FRNT\DOG\LH\CNVYR		1	EA
17	4705198	PANEL\BACK\RIGHT\DOG\LH\CNVYR		1	EA
18	4705199	COVER\CNVYR\DOGLEG		1	EA
19	4705200	PANEL\BACK\LEFT\DOG\LH\CNVYR		1	EA
20	4705351	SH\SIDE\L\RAMP\FRM\DOG		1	EA
21	4705352	SH\SIDE\R\RAMP\FRM\DOG		1	EA
22	4705353	SH\RAMP\FRM\DOG		1	EA
23	4705527	SEAL\CHAIN\CNVYR\DOGLEG		1	EA
24	4800013	BOLT\HEX\5\16X1		4	EA.
25	4800053	BOLT\CRG\3\8X1\NC		9	EA.
26	4800153	BOLT\CRG\5\16X3\4\NC		16	EA.
27	4800365	PIN\LNCH\3\8X1-1/2\W/KEEPER		4	EA
28	4800394	BOLT\CRG\3\8X3\4\NC		20	EA
29	4800434	SCR\CAP\ALN\1\2X1-3\4\NC		2	EA
30	4800911	PIN\LYNCH\1\4X2-1\2\		2	EA.
31	4800913	BOLT\FLG\SERR\3\8X1\NC		30	EA
32	4800947	BOLT\CRG\7\16X2\NC		8	EA
33	4900001	NUT\HEX\1\2\NC		2	EA.
34	4900002	NUT\HEX\3\8\NC		5	EA.
35	4900025	NUT\HEX\7\16\NC		8	EA.
36	4900076	NUT\FLG\SERR\3\8\NC		56	EA.
37	4900104	NUT\JAM\3\4\NC		6	EA.

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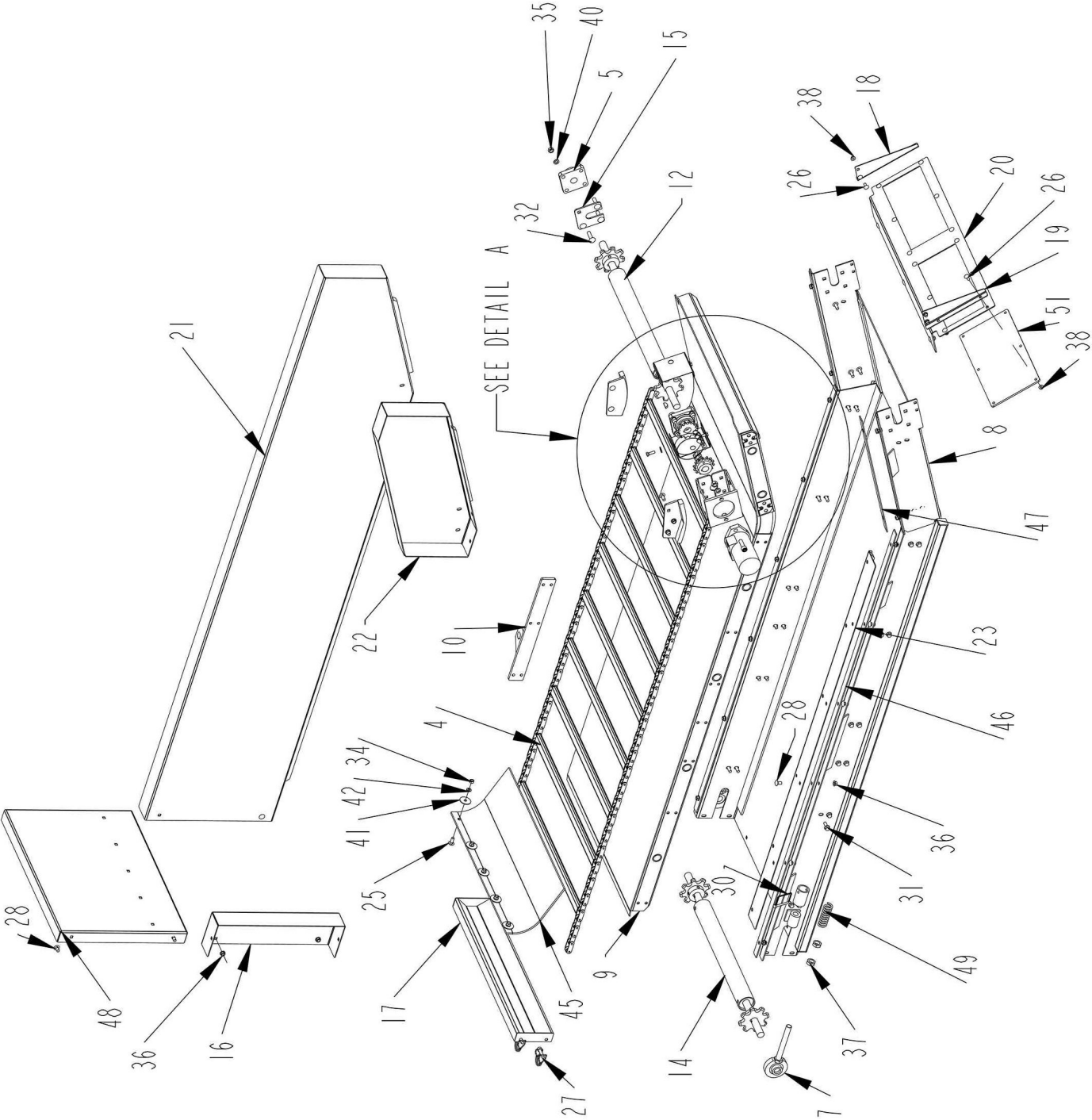
**CMF-980 Optional LH Dogleg Discharge Conveyor**

Item	Part No.	Name	Remarks	Qty	Uom
38	4900108	NUT\FLG\SERR\5\16\NC		20	EA.
39	5000006	WASH\LOCK\1\2		2	EA.
40	5000015	WASH\LOCK\7\16		8	EA.
41	5000017	WASH\FLAT\FNDR\395X1-5\8X.090		5	EA
42	5000019	WASH\LOCK\3\8		5	EA.
43	5000023	WASH\FLAT\5\16		4	EA.
44	5900026	SHOE\CHAIN\CNVYR\DOGLEG		2	EA
45	5900040	BELT\COVER\SHAFT\CNVYR		1	EA
46	5900055	SHIM\DOGLEG\LONG		2	EA
47	5900056	SHIM\DOGLEG\SHORT		2	EA
48	5900060	SH\-panel\END\CNVYR\DOGLEG		1	EA
49	6100076	SPRING\1-1\4ODX3-3\4 LX3\16WX10		2	EA.
50	6200011	KEY\WDF\1\4X1		1	EA.
51	7501271	MAG\PL\14X6X1-1\2		2	EA
CA	4705182	TBL\LH\DOG\CNVYR\CMF			EA



**CMF-980 Optional LH Dogleg Discharge Conveyor Complete**

Item	Part No.	Name	Remarks	Qty	Uom
1	4100030	PIN 1" X 3-1/2" HYD. CYL.		2	EA.
2	4100284	CYL\HYD\2X16\1-1/4RD\WELDE		1	EA
3	4704388	BRKT\IND\SCALE		1	EA
4	4705178	FRM\DOGLE\CNVYR\CMF		1	EA
5	4705182	TBL\LH\DOG\CNVYR\CMF		1	EA
6	4705183	PL\PRESS\DOG\CNVYR		1	EA
7	4705185	CLAMP\DOGLE\CNVYR		1	EA
8	4705390	COVER\ROD\CYL		1	EA
9	4705393	BRKT\PANEL\LEFT\DOG\CNVYR		1	EA
10	4705394	PANEL\LEFT\DOG\CNVYR		1	EA
11	4705395	BRKT\PANEL\RIGHT\DOG\CNVYR		1	EA
12	4705396	PANEL\RIGHT\DOG\CNVYR		1	EA
13	4800003	BOLT\HEX\3/8X1		2	EA.
14	4800018	BOLT\HEX\1/2X1-1/4		6	EA.
15	4800053	BOLT\CRG\3/8X1\NC		12	EA.
16	4800056	PIN\HAIR\3/16(#3)		4	EA.
17	4800098	BOLT\HEX\3/8X1-1/4\NC		4	EA.
18	4800140	BOLT\HEX\1X3\NC		1	EA
19	4900001	NUT\HEX\1/2\NC		5	EA.
20	4900002	NUT\HEX\3/8\NC		14	EA.
21	5000001	WASH\FLAT\3/8		10	EA.
22	5000004	WASH\FLAT\1/2		6	EA.
23	5000006	WASH\LOCK\1/2		8	EA.
24	5000014	WASH\FLAT\1		2	EA.
25	5000019	WASH\LOCK\3/8		14	EA.
26	5000053	WASH\LOCK\1		1	EA
27	7501525	CLAMP\HOSE\1/2\2		4	EA
CA	4705177	CMF\CNVYR\DOGLE\LEFT\ASSY			EA





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**CMF-980 Optional RH Dogleg Discharge Conveyor**

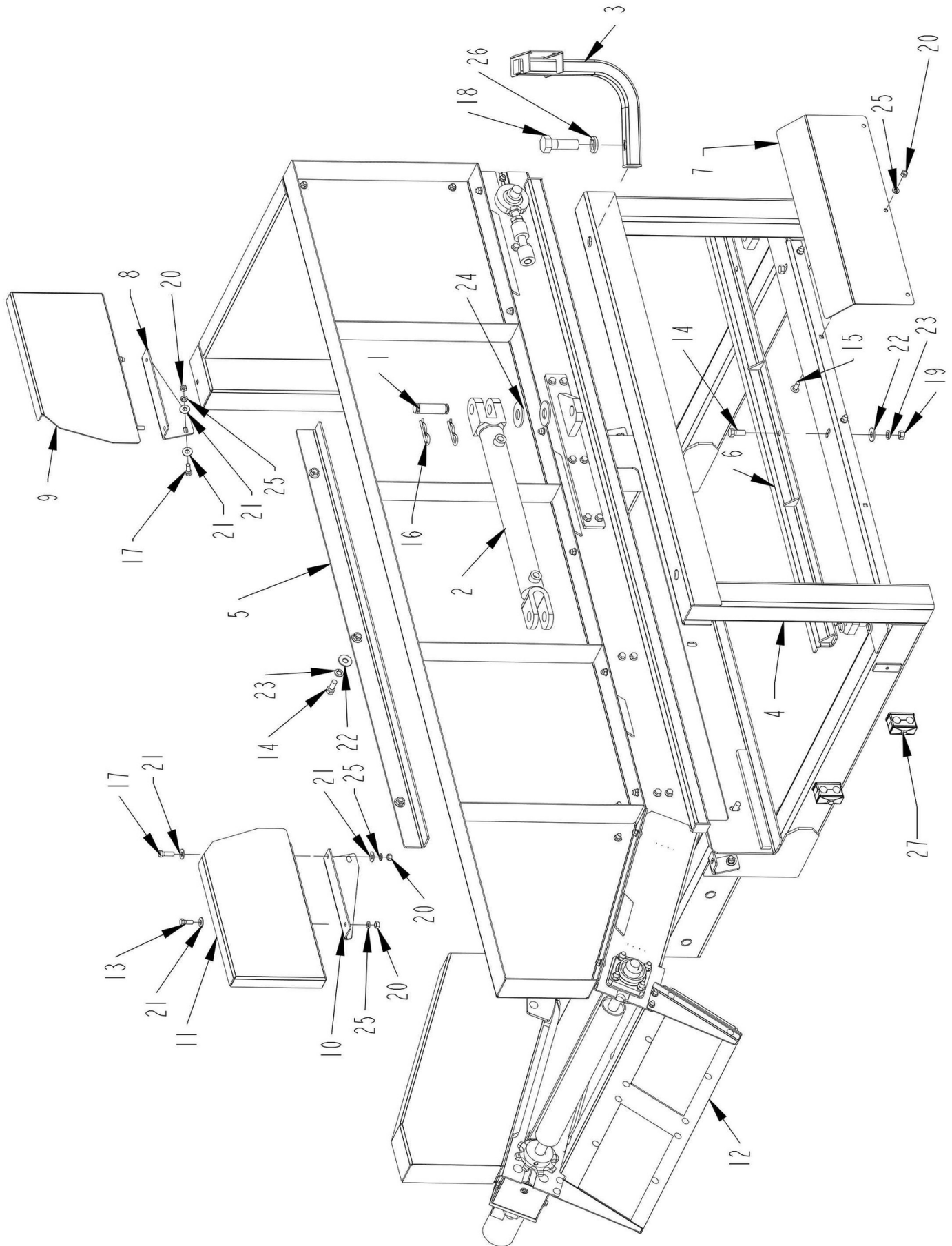
Item	Part No.	Name	Remarks	Qty	Uom
1	1000029	SPKT\50\B\14\1\1/4KW		2	EA.
2	1100026	CHAIN\50DBL\13		1	EA
3	1100099	CHAIN\50DBL\CL		1	EA
4	1100303	CHAIN\ASSY\2062H\140P\23\29" C-C		1	EA
	1100067	CHAIN\2062\CL		2	EA
5	2000323	BRG\FLG\1\4BOLT		2	EA
6	3900032	MOTOR\HYD\22.6\H		1	EA
7	4704585	BRG\ASSY\CNVYR\CMF		2	EA
8	4705179	WELD\FRM\DOG\CNVYR		1	EA
9	4705181	DECK\DOG\CNVYR		1	EA
10	4705184	MNT\CYL\DOG\CNVYR		1	EA
11	4705188	MNT\MTR\CNVYR\DOG		1	EA
12	4705191	SHAFT\ASSY\CNVYR\DOGCMF		1	EA
13	4705192	COVER\CPLR\CHAIN\CNVYR		2	EA
14	4705193	IDLER\ASSY\CNVYR\CMF		1	EA
15	4705194	PL\BRG\SHIM		1	EA
16	4705198	PANEL\BACK\RIGHT\DOG\LH\CNVYR		1	EA
17	4705199	COVER\CNVYR\DOGLEG		1	EA
18	4705351	SH\SIDE\L\RAMP\FRM\DOG		1	EA
19	4705352	SH\SIDE\R\RAMP\FRM\DOG		1	EA
20	4705353	SH\RAMP\FRM\DOG		1	EA
21	4705524	PANEL\FRNT\DOG\RH\CNVYR		1	EA
22	4705525	PANEL\BACK\RIGHT\DOG\RH\CNVYR		1	EA
23	4705527	SEAL\CHAIN\CNVYR\DOGLEG		1	EA
24	4800013	BOLT\HEX\5/16X1		4	EA.
25	4800053	BOLT\CRG\3/8X1\NC		9	EA.
26	4800153	BOLT\CRG\5/16X3/4\NC		16	EA.
27	4800365	PIN\LNCH\3/8X1-1/2\W/KEEPER		4	EA
28	4800394	BOLT\CRG\3/8X3/4\NC		23	EA
29	4800434	SCR\CAP\ALN\1/2X1-3/4\NC		2	EA
30	4800911	PIN\LYNCH\1/4X2-1/2\		2	EA.
31	4800913	BOLT\FLG\SERR\3/8X1\NC		32	EA
32	4800947	BOLT\CRG\7/16X2\NC		8	EA
33	4900001	NUT\HEX\1/2\NC		2	EA.
34	4900002	NUT\HEX\3/8\NC		5	EA.
35	4900025	NUT\HEX\7/16\NC		8	EA.
36	4900076	NUT\FLG\SERR\3/8\NC		59	EA.
37	4900104	NUT\JAM\3/4\NC		6	EA.

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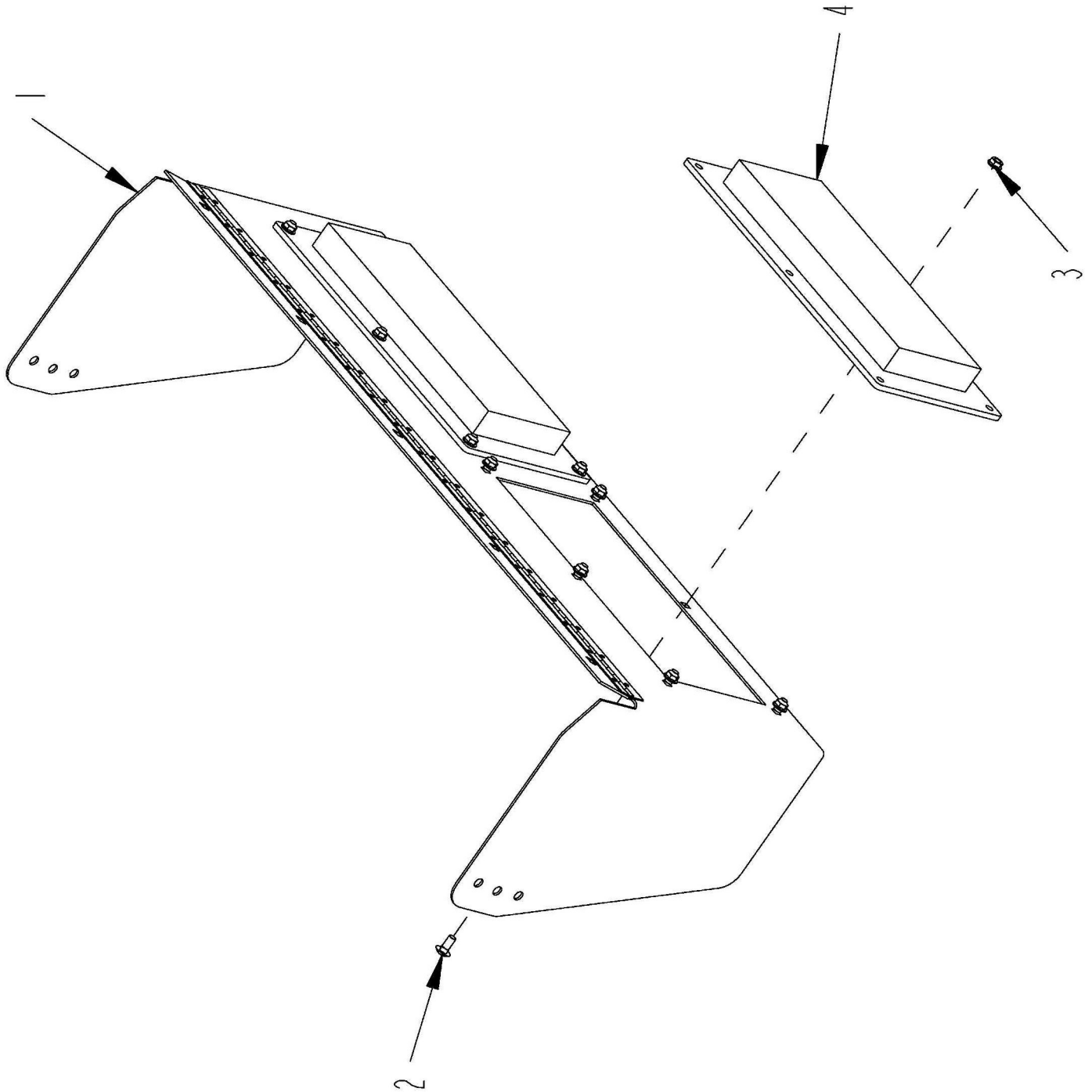
**CMF-980 Optional RH Dogleg Discharge Conveyor**

Item	Part No.	Name	Remarks	Qty	Uom
38	4900108	NUT\FLG\SERR\5\16\NC		20	EA.
39	5000006	WASH\LOCK\1\2		2	EA.
40	5000015	WASH\LOCK\7\16		8	EA.
41	5000017	WASH\FLAT\FNDR\395X1-5\8X.090		5	EA
42	5000019	WASH\LOCK\3\8		5	EA.
43	5000023	WASH\FLAT\5\16		4	EA.
44	5900026	SHOE\CHAIN\CNVYR\DOGLEG		2	EA
45	5900040	BELT\COVER\SHAFT\CNVYR		1	EA
46	5900055	SHIM\DOGLEG\LONG		2	EA
47	5900056	SHIM\DOGLEG\SHORT		2	EA
48	5900060	SH\-panel\END\CNVYR\DOGLEG		1	EA
49	6100076	SPRING\1-1\4ODX3-3\4 LX3\16WX10		2	EA.
50	6200011	KEY\WDF\1\4X1		1	EA.
51	7501271	MAG\PL\14X6X1-1\2		2	EA
CA	4705523	TBL\RH\DOG\CNVYR\CMF			EA



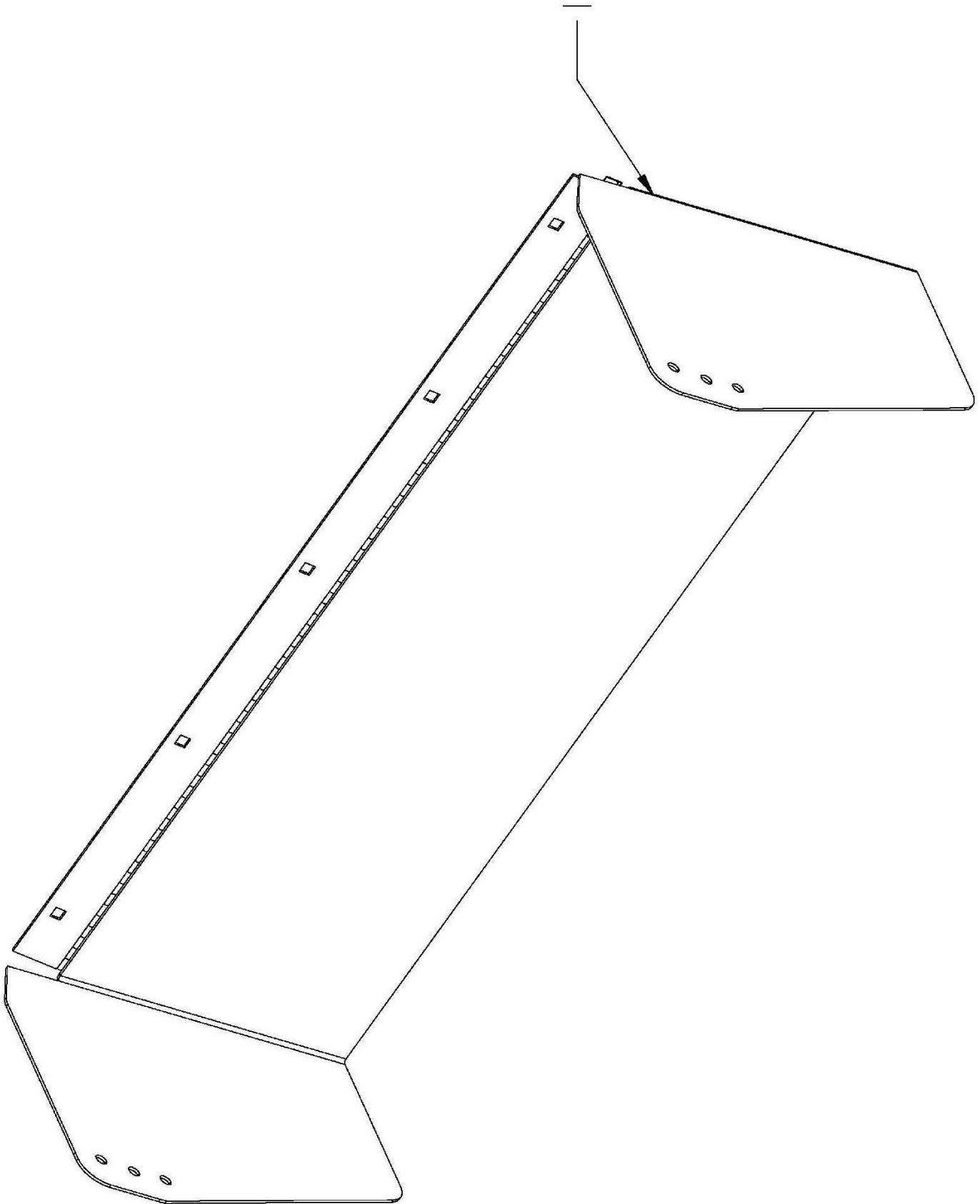
**CMF-980 Optional RH Dogleg Discharge Conveyor Complete**

Item	Part No.	Name	Remarks	Qty	Uom
1	4100030	PIN 1" X 3-1/2" HYD. CYL.		2	EA.
2	4100284	CYL\HYD\2X16\1-1/4RD\WELDE		1	EA
3	4704388	BRKT\IND\SCALE		1	EA
4	4705178	FRM\DOGLE\CNVYR\CMF		1	EA
5	4705183	PL\PRESS\DOG\CNVYR		1	EA
6	4705185	CLAMP\DOGLE\CNVYR		1	EA
7	4705390	COVER\ROD\CYL		1	EA
8	4705393	BRKT\PANEL\LEFT\DOG\CNVYR		1	EA
9	4705394	PANEL\LEFT\DOG\CNVYR		1	EA
10	4705395	BRKT\PANEL\RIGHT\DOG\CNVYR		1	EA
11	4705396	PANEL\RIGHT\DOG\CNVYR		1	EA
12	4705523	TBL\RH\DOG\CNVYR\CMF		1	EA
13	4800003	BOLT\HEX\3/8X1		2	EA.
14	4800018	BOLT\HEX\1/2X1-1/4		6	EA.
15	4800053	BOLT\CRG\3/8X1\NC		12	EA.
16	4800056	PIN\HAIR\3/16(#3)		4	EA.
17	4800098	BOLT\HEX\3/8X1-1/4\NC		4	EA.
18	4800140	BOLT\HEX\1X3\NC		1	EA
19	4900001	NUT\HEX\1/2\NC		5	EA.
20	4900002	NUT\HEX\3/8\NC		14	EA.
21	5000001	WASH\FLAT\3/8		10	EA.
22	5000004	WASH\FLAT\1/2		6	EA.
23	5000006	WASH\LOCK\1/2		8	EA.
24	5000014	WASH\FLAT\1		2	EA.
25	5000019	WASH\LOCK\3/8		14	EA.
26	5000053	WASH\LOCK\1		1	EA
27	7501525	CLAMP\HOSE\1/2\2		4	EA
CA	4705526	CMF\CNVYR\DOGLE\RIGHT\ASSY			EA



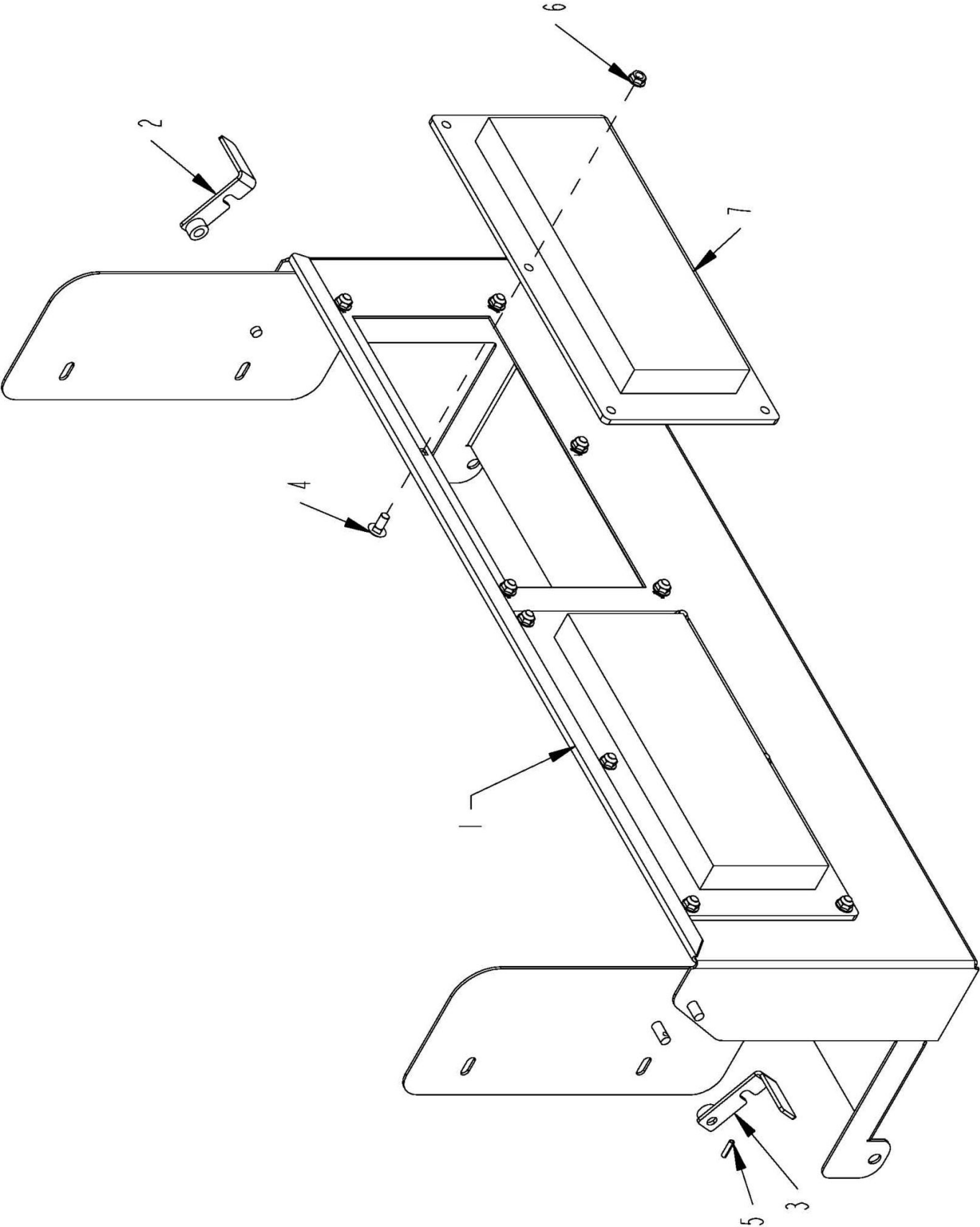
### Magnetic Conveyor Chute Assembly

Item	Part No.	Name	Remarks	Qty	Uom
1	4704357	CHUTE\MAG\CNVYR\WELD		1	EA
2	4800153	BOLT\CRG\5/16X3/4\NC		12	EA.
3	4900108	NUT\FLG\SERR\5/16\NC		12	EA.
4	7501271	MAG\PL\14X6X1-1/2		2	EA
CA	4704355	KIT\MAG\CNVYR\CMF			EA



### Non-Magnetic Conveyor Chute Assembly

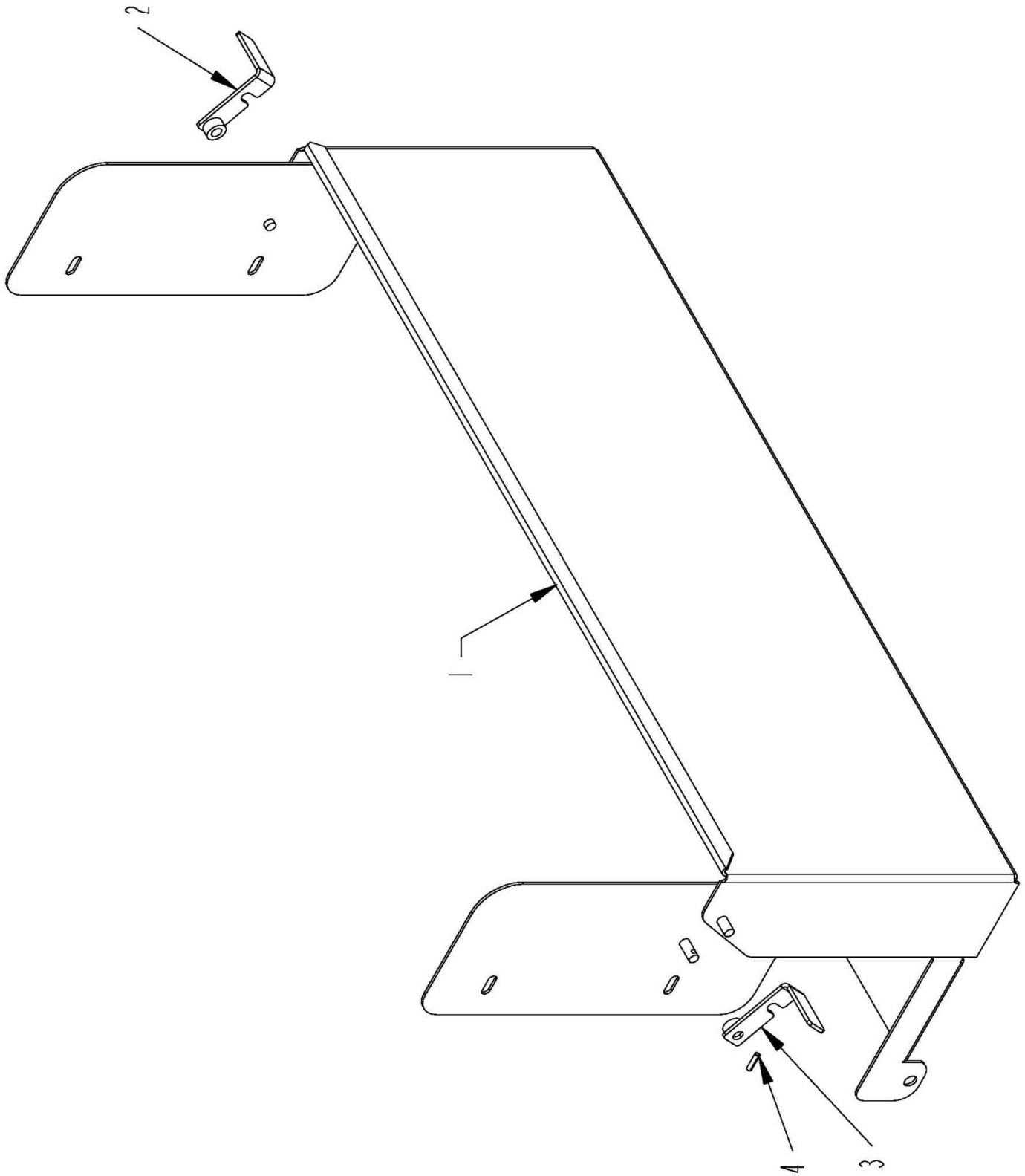
Item	Part No.	Name	Remarks	Qty	Uom
1	4704535	CHUTE\NON-MAG\CNVYR\WELD		1	EA





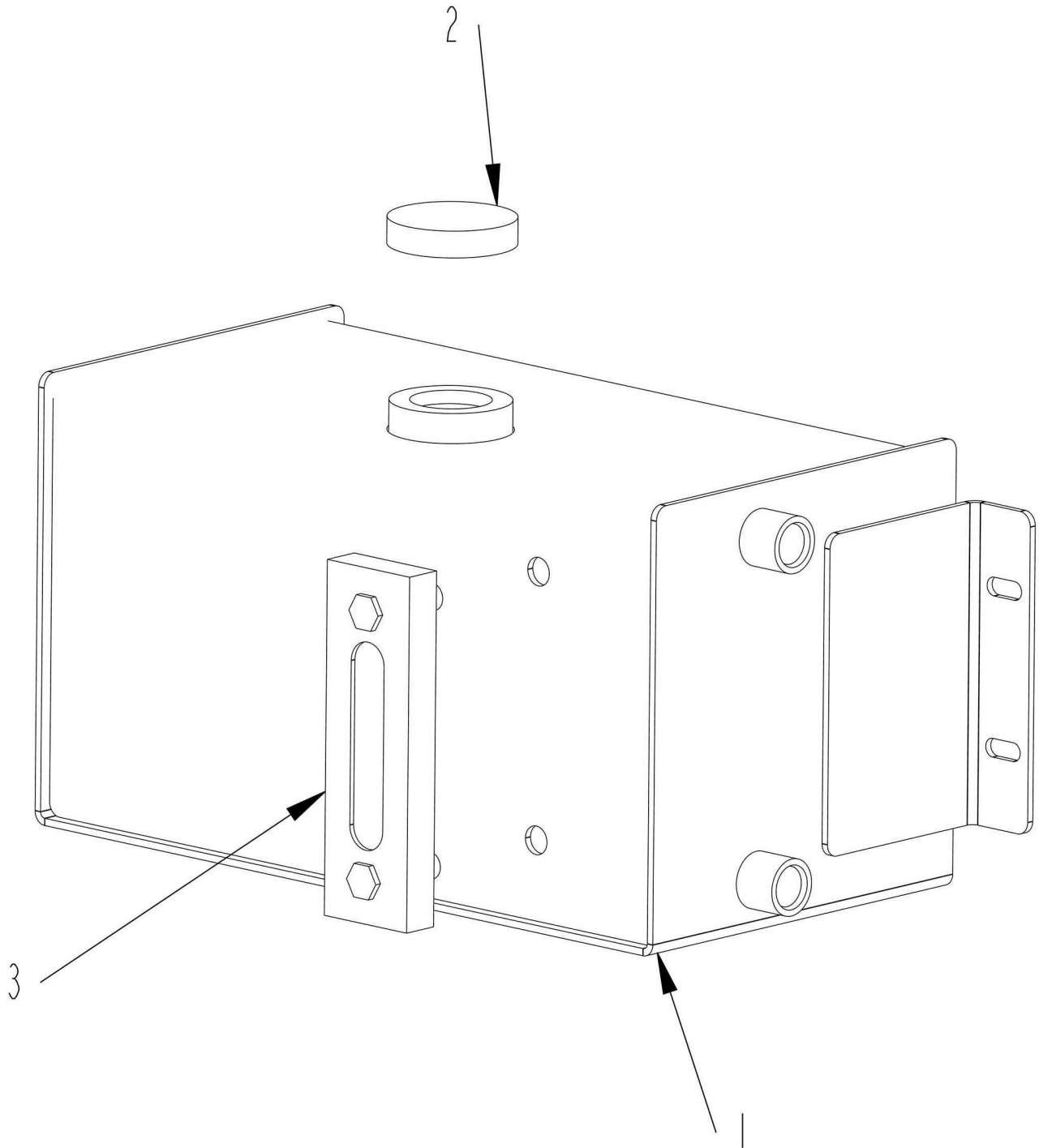
## Magnetic Conveyor End Gate Assembly

Item	Part No.	Name	Remarks	Qty	Uom
1	4704565	MAG\END\GATE\CNVYR		1	EA
2	4704594	LATCH\GATE\END\CNVYR\L		1	EA
3	4704595	LATCH\GATE\END\CNVYR\R		1	EA
4	4800153	BOLT\CRG\5/16X3/4\NC		12	EA.
5	4800313	PIN\RLLD\3/16X3/4		2	EA
6	4900108	NUT\FLG\SERR\5/16\NC		12	EA.
7	7501271	MAG\PL\14X6X1-1/2		2	EA
CA	4704566	GATE\END\MAG\CNVYR\ASSY			EA



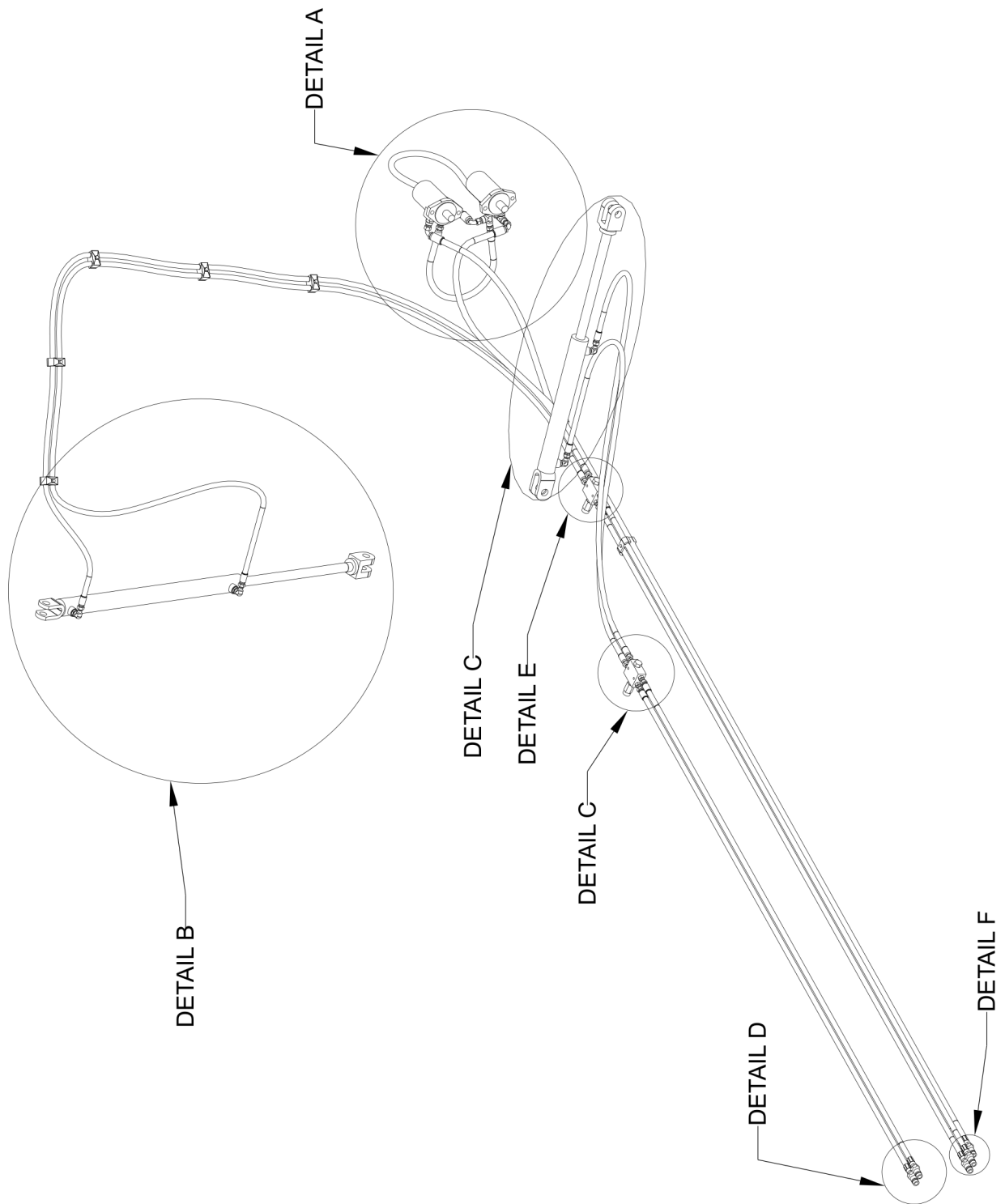
**Non-Magnetic Conveyor End Gate Assembly**

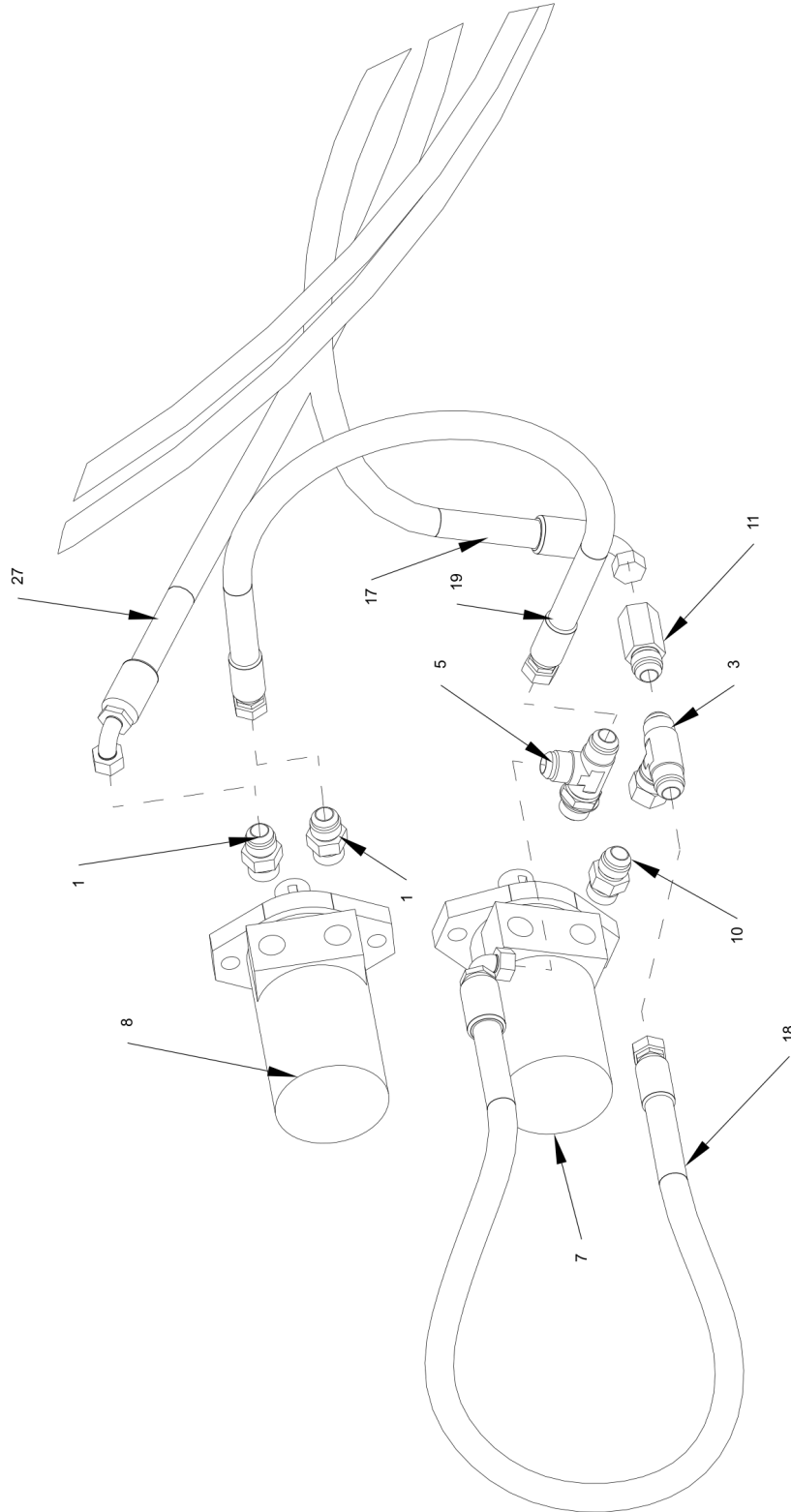
Item	Part No.	Name	Remarks	Qty	Uom
1	4704563	GATE\END\CNVYR		1	EA
2	4704594	LATCH\GATE\END\CNVYR\L		1	EA
3	4704595	LATCH\GATE\END\CNVYR\R		1	EA
4	4800313	PIN\RLLD\3/16X3/4		2	EA
CA	4704593	GATE\END\CNVYR\ASSY			EA



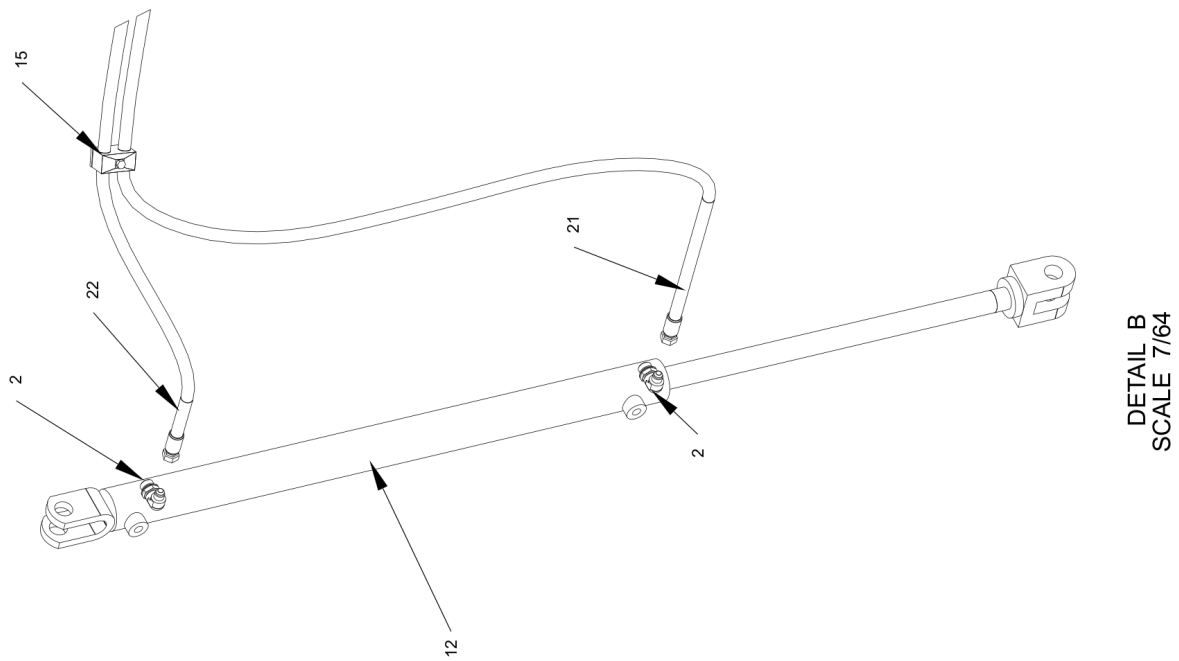
**CMF Hydraulic Tank Assembly**

Item	Part No.	Name	Remarks	Qty	Uom
1	4704505	TANK\HYD\WELD\CMF		1	EA
2	7500275	CAP\VENTED\TANK\OIL		1	EA
3	7501242	GAUGE\LEVEL\5\M12\NOTHERMOMETER		1	EA
CA	4504506	TANK\HYD\ASSY\CMF			EA.

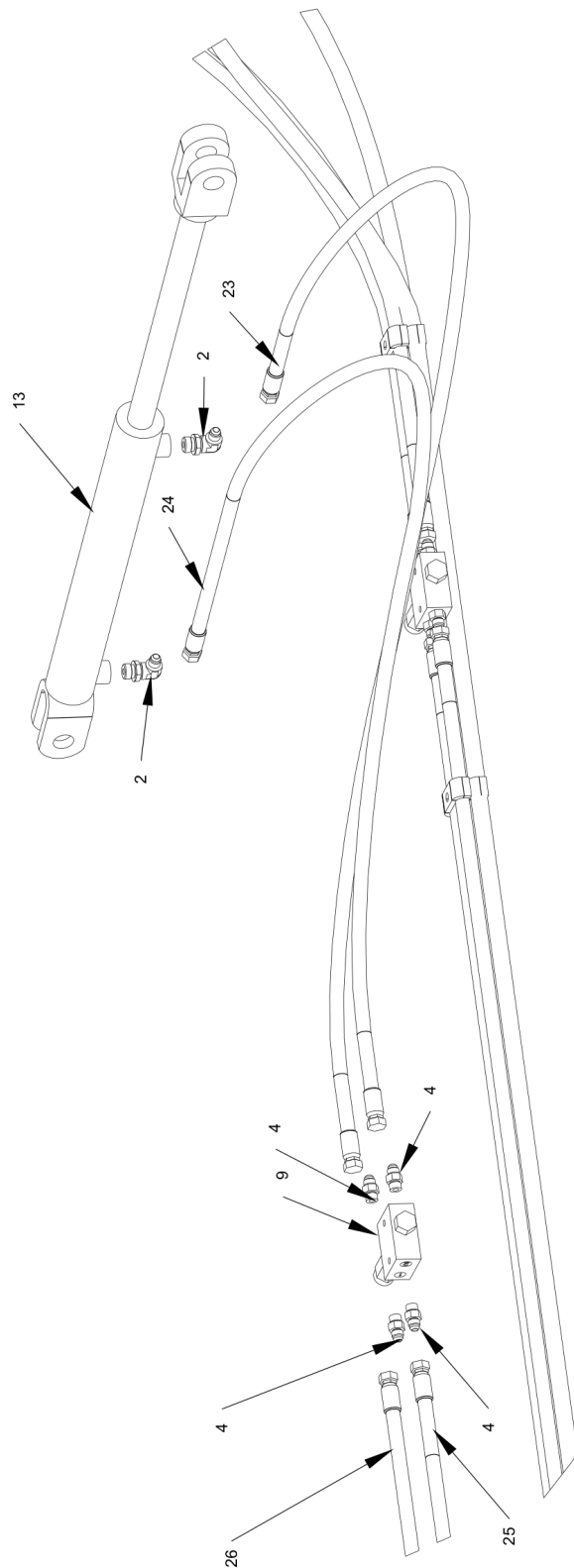




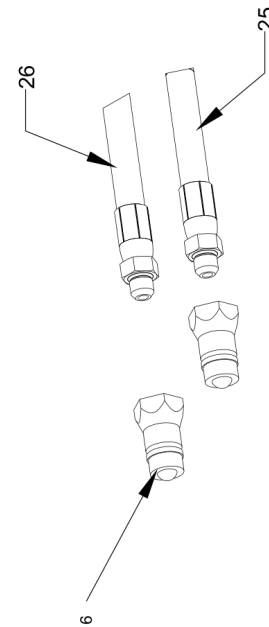
DETAIL A  
SCALE 7/32



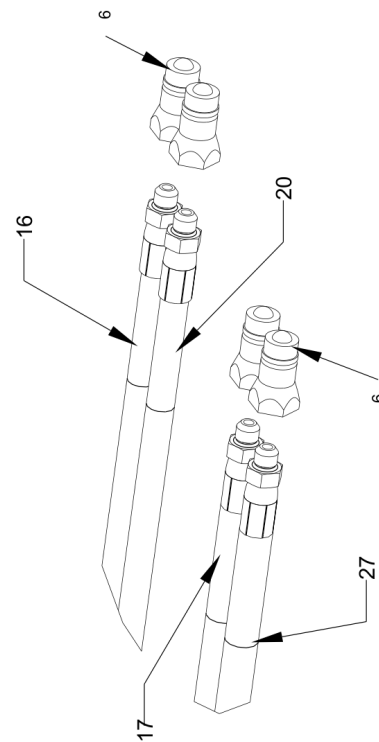
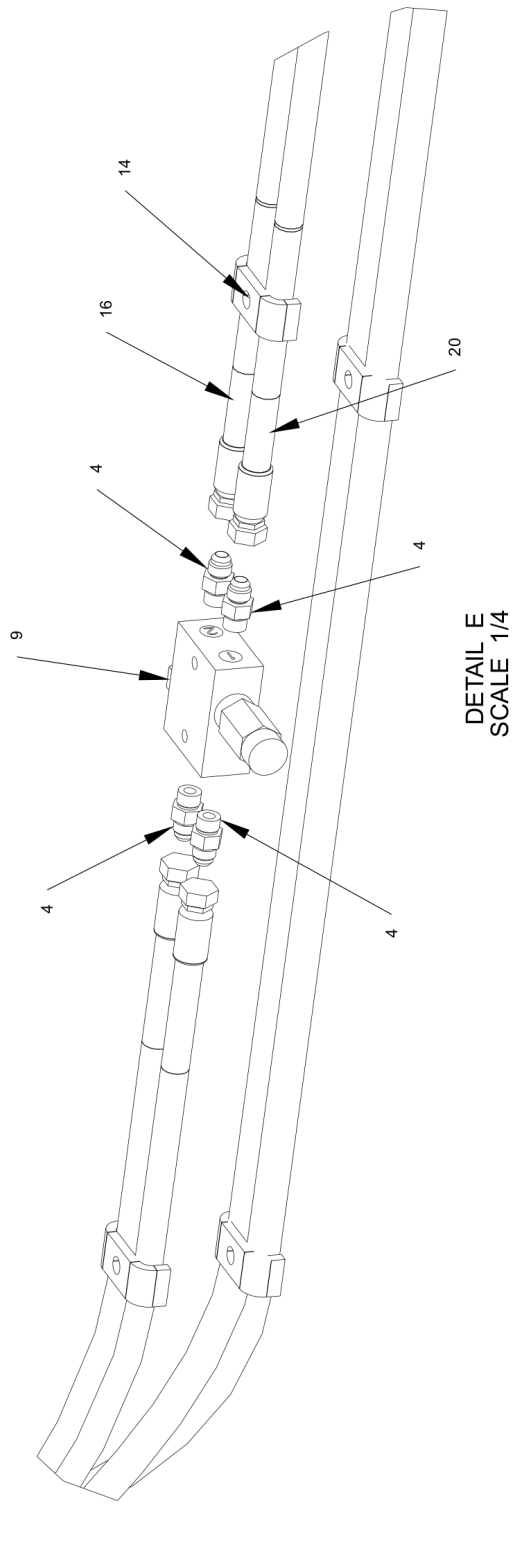




DETAIL C  
SCALE 1/8

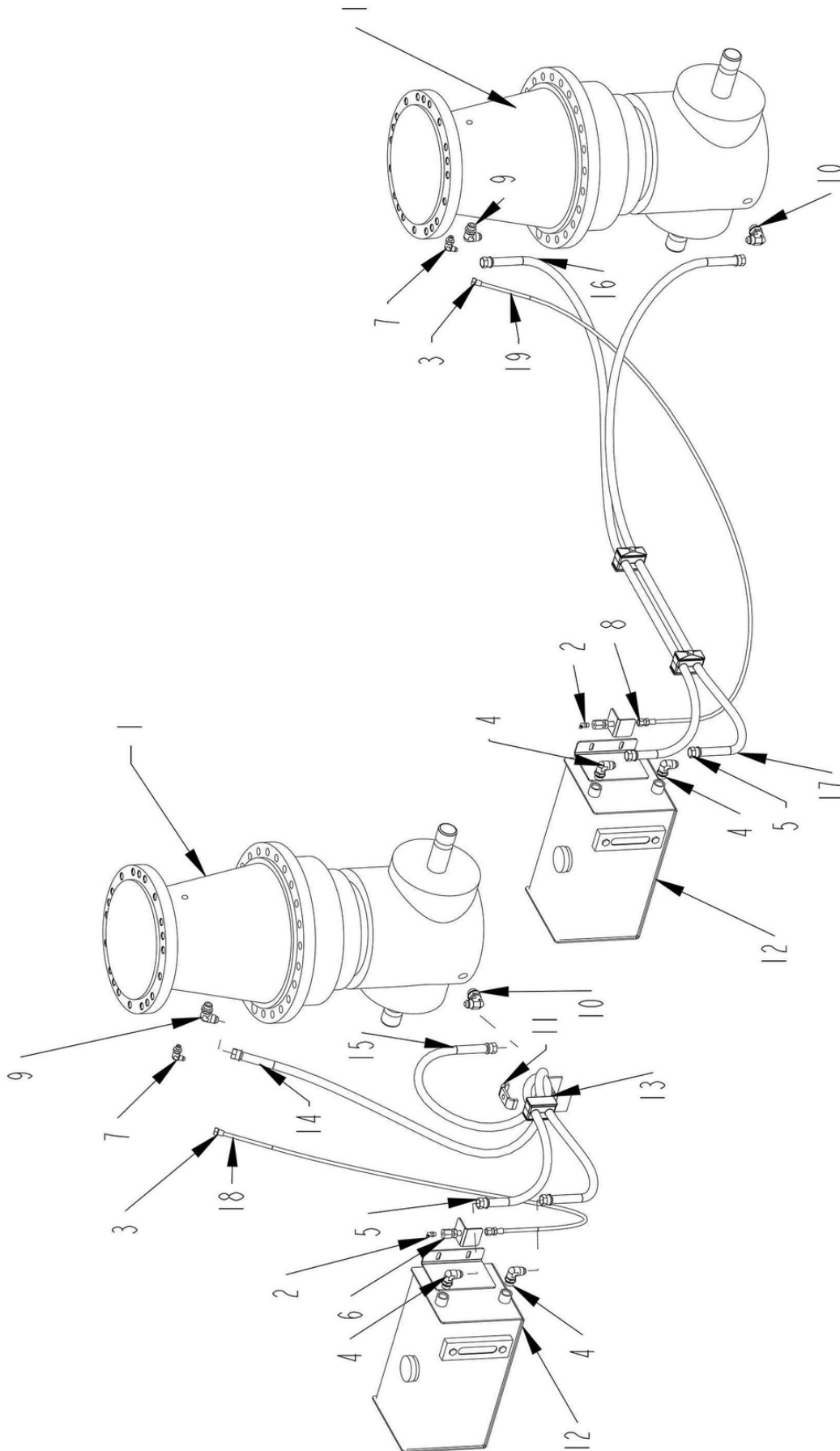


DETAIL D  
SCALE 1/4



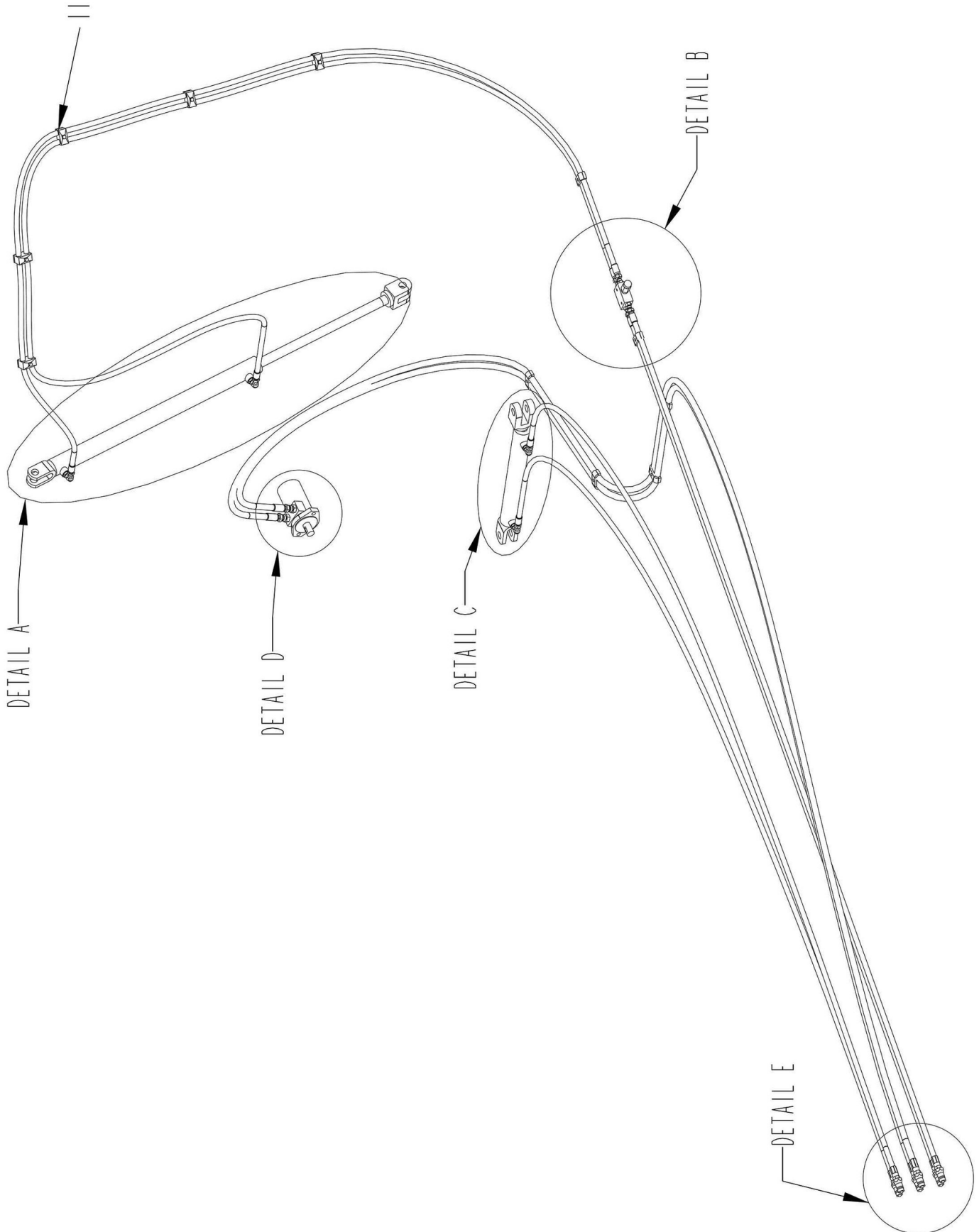
**CMF-980 Single Discharge Conveyor and Tub Door Hydraulics**

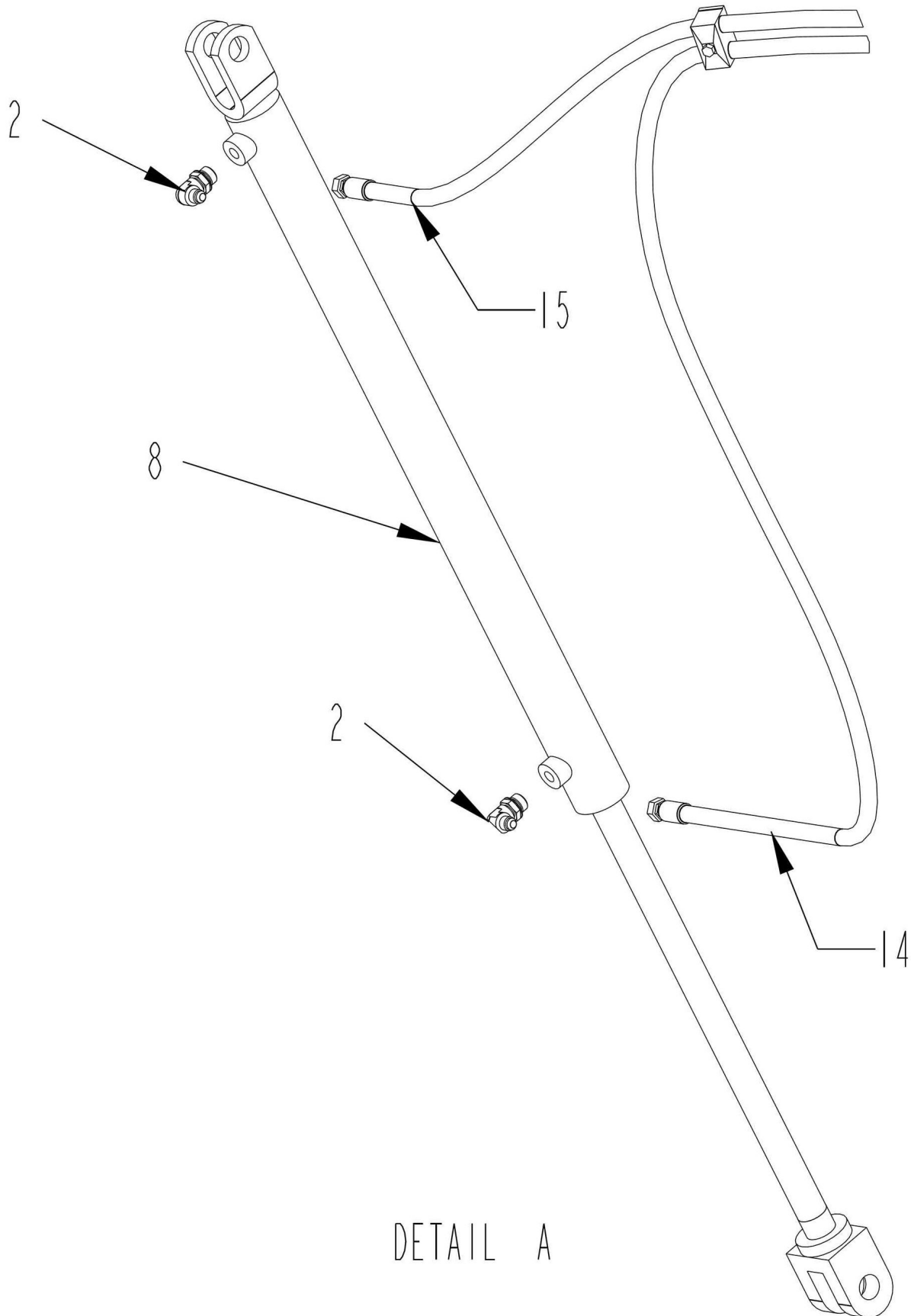
Item	Part No.	Name	Remarks	Qty	Uom
1	3800448	FTG\7/8MORX7/8MJIC\ST		2	EA
2	3800453	FTG\3/4MORX9/16MJIC\90		4	EA.
3	3800461	FTG\7/8MJIC7/8MJIC7/8FJICS\BR;TEE		1	EA
4	3800631	FTG\9/16MORX9/16MJIC\ST		8	EA.
5	3800686	FTG\7/8MORX7/8MJICX7/8MJC		1	EA
6	3800694	FTG\3/4FOR\QUICK;CPLR\MALE		6	EA.
7	3900025	MOTOR\HYD\17.9\H		1	EA.
8	3900032	MOTOR\HYD\22.6\H		1	EA
9	4000245	VALVE\RELIEF\CROSS\SINGLE		2	EA
10	4000288	FTG\7/8MORX7/8MJIC\ST\CHCK		1	EA.
11	4000293	VALVE\CHECK\7/8FJICX7/8MJIC		1	EA
12	4100247	CYL\HYD\2"X30"\1-1/8_ROD		1	EA
13	4100284	CYL\HYD\2X16\1-1/4RD\WELDE		1	EA
14	4700776	CLMP\HOSE\3/8		4	EA.
15	7501336	CLMP\HOSE\CUSH\3/8		5	EA
16	3701491	HOSE\HYD\3/8X129\9/16FJICX3/4MOR	PRESSURE RELIEF VALVE TO TRACTOR COUPLER	1	EA.
17	3701496	HOSE\HYD\1/2X194\7/8MORX3/4FJICS	BOTTOM EXTENSION CHAIN MOTOR TO TRACTOR COUPLER	1	EA.
18	3700810	HOSE\HYD\1/2X18\7/8FJIC90X7/8FJIC	TOP EXTENSION MOTOR TEE TO BOTTOM EXTENSION CHECK VALVE/TEE	1	EA
19	3700811	HOSE\HYD\1/2X34\7/8FJICX7/8FJIC	BOTTOM MAIN CHAIN MOTOR TO TOP EXTENSION MOTOR TEE	1	EA
20	3701491	HOSE\HYD\3/8X129\9/16FJICX3/4MOR	PRESSURE RELIEF VALVE TO TRACTOR COUPLER	1	EA.
21	3701492	HOSE\HYD\3/8X173\9/16FJICS	PRESSURE RELIEF VALVE TO ROD END DOOR CYLINDER	1	EA.
22	3701493	HOSE\HYD\3/8X153\9/16FJICS	PRESSURE RELIEF VALVE TO TUBE END DOOR CYLINDER	1	EA.
23	3701494	HOSE\HYD\3/8X65\9/16FJICS	PRESSURE RELIEF VALVE TO TUBE END DOOR CYLINDER	1	EA.
24	3701362	HOSE\HYD\3/8X48\9/16FJIC	PRESSURE RELIEF VALVE TO TUBE END CONVEYOR CYLINDER	1	EA
25	3701495	HOSE\HYD\3/8X95\9/16FJIC	PRESSURE RELIEF VALVE TO TRACTOR COUPLER	1	EA.
26	3701495	HOSE\HYD\3/8X95\9/16FJIC	PRESSURE RELIEF VALVE TO TRACTOR COUPLER	1	EA.
27	3701496	HOSE\HYD\1/2X194\7/8MORX3/4FJICS	TOP MAIN CHAIN MOTOR TO TRACTOR COUPLER	1	EA.

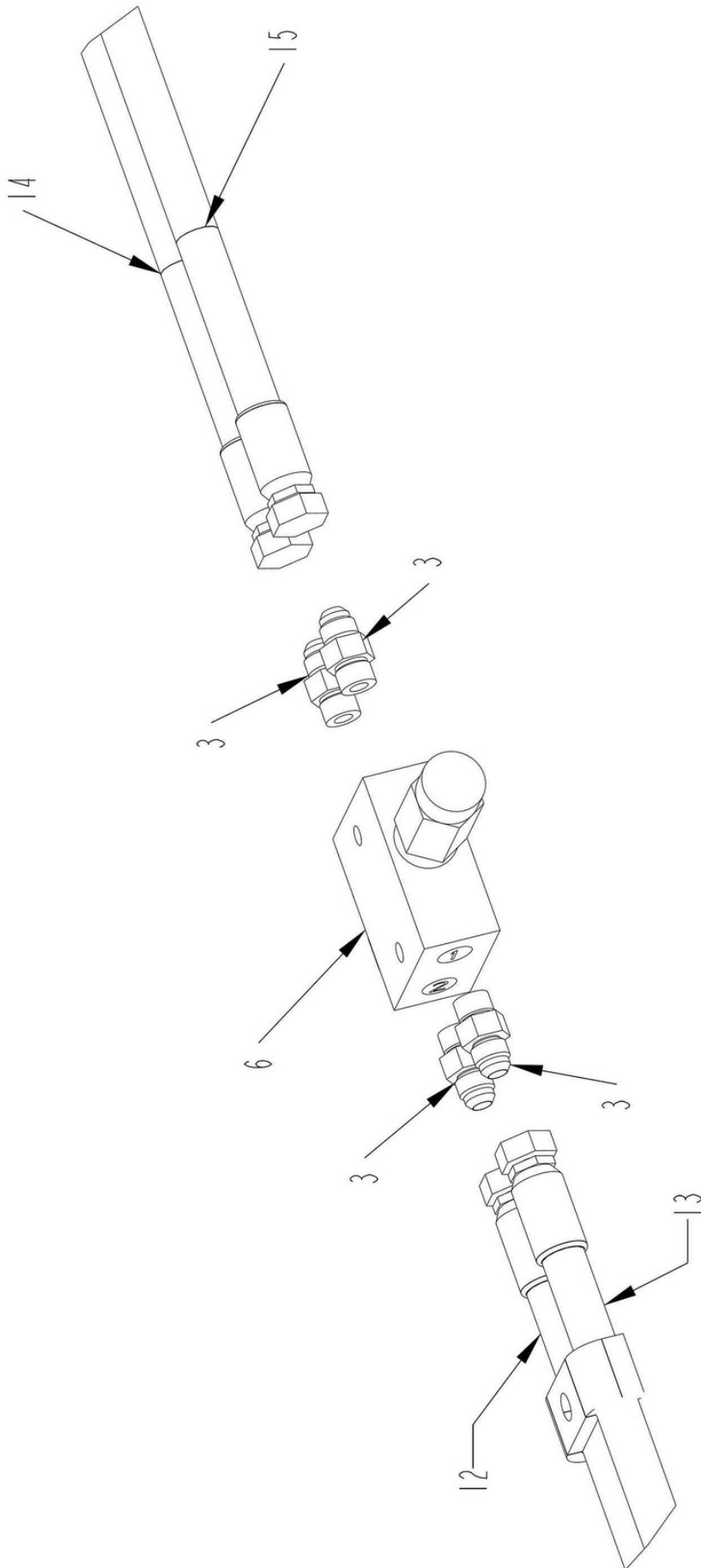


# Planetary Gearbox Hydraulic Assembly

Item	Part No.	Name	Remarks	Qty	Uom
1	3100226	GRBX\PLANETARY\DBL\2100		2	EA
2	3800135	FTG\LUB\1/8MPXZRK\SHORT		2	EA.
3	3800514	FTG\1/4MPX1/8FP\ADPT		2	EA
4	3800537	FTG\3/4MORX3/4MJIC\90		4	EA.
5	3800826	FTG\3/4FJICX1/2SHLCK		8	EA
6	3800861	FTG\7/8MJICX1/2FP\BULKHEAD		2	EA
7	3800862	FTG\7/16MJICX#4BSPP		2	EA
8	3800865	FTG\7/16FJICX1/8BARB\HEWFERRULE		2	EA
9	3800960	FTG\3/4MJICX3/8BSPP\90		2	EA
10	3800984	FTG\3/4MJICX1/2BSPP\90		2	EA
11	4700776	CLMP\HOSE\3/8		1	EA.
12	4704506	TANK\HYD\ASSY\CMF		2	EA
13	7501525	CLAMP\HOSE\1/2\2		3	EA
14	3701500	HOSE\LUB\1/2X95	FRONT TANK TOP PORT TO TOP PORT FRONT GEARBOX	1	EA.
15	3701501	HOSE\LUB\1/2X80	FRONT TANK BOTTOM PORT TO BOTTOM PORT FRONT GEARBOX	1	EA.
16	3701502	HOSE\LUB\1/2X72	REAR TANK TOP PORT TO TOP PORT REAR GEARBOX	1	EA.
17	3701503	HOSE\LUB\1/2X63	REAR TANK BOTTOM PORT TO BOTTOM PORT REAR GEARBOX	1	EA.
18	3701504	HOSE\GRS\1/8X96	GREASE PORT TO ZERK BULKHEAD	1	EA
19	3701505	HOSE\GRS\1/8X69	GREASE PORT TO ZERK BULKHEAD	1	EA
CA	3701452	HOSEKIT\LUBE\CMF830			EA.

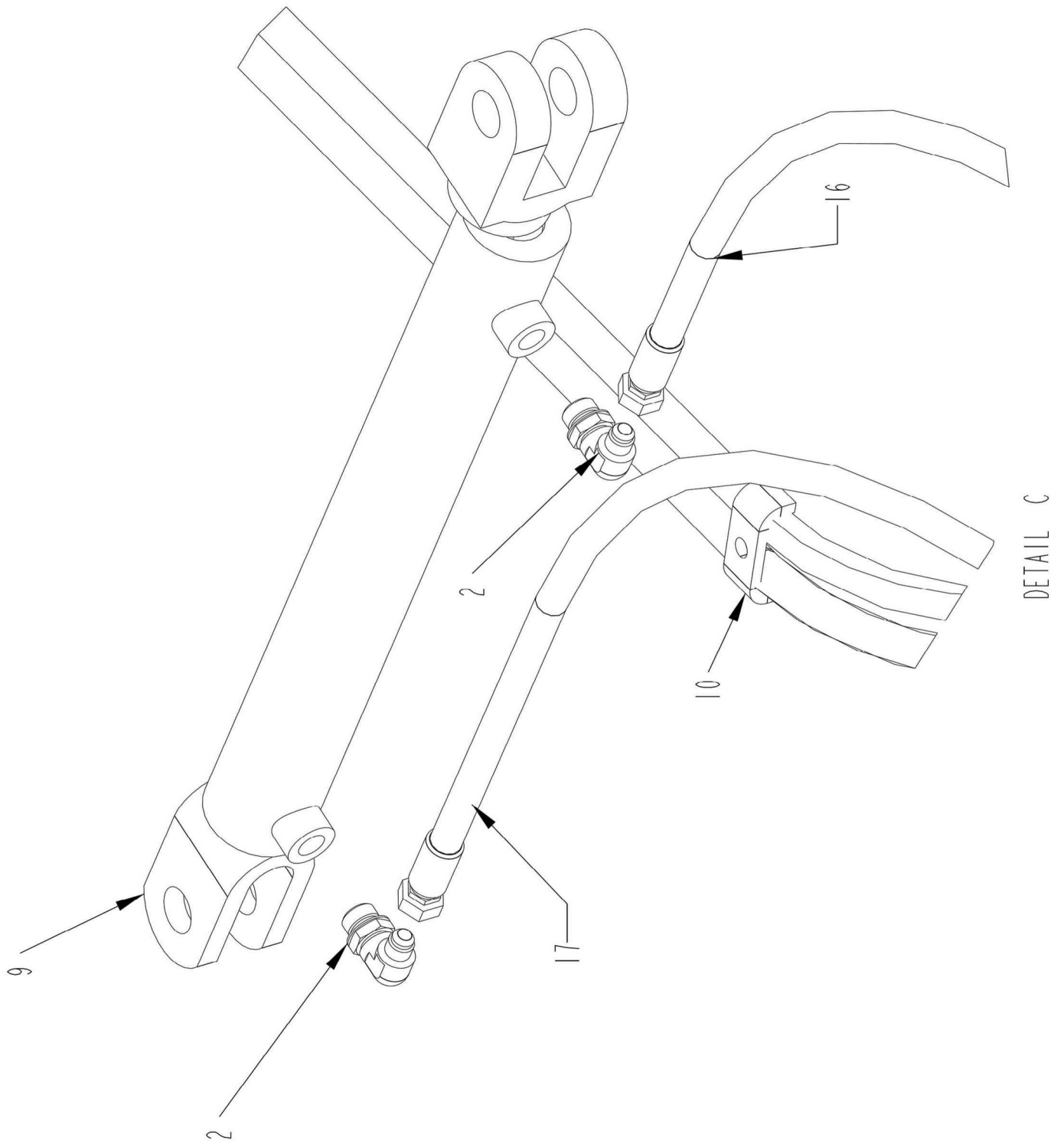


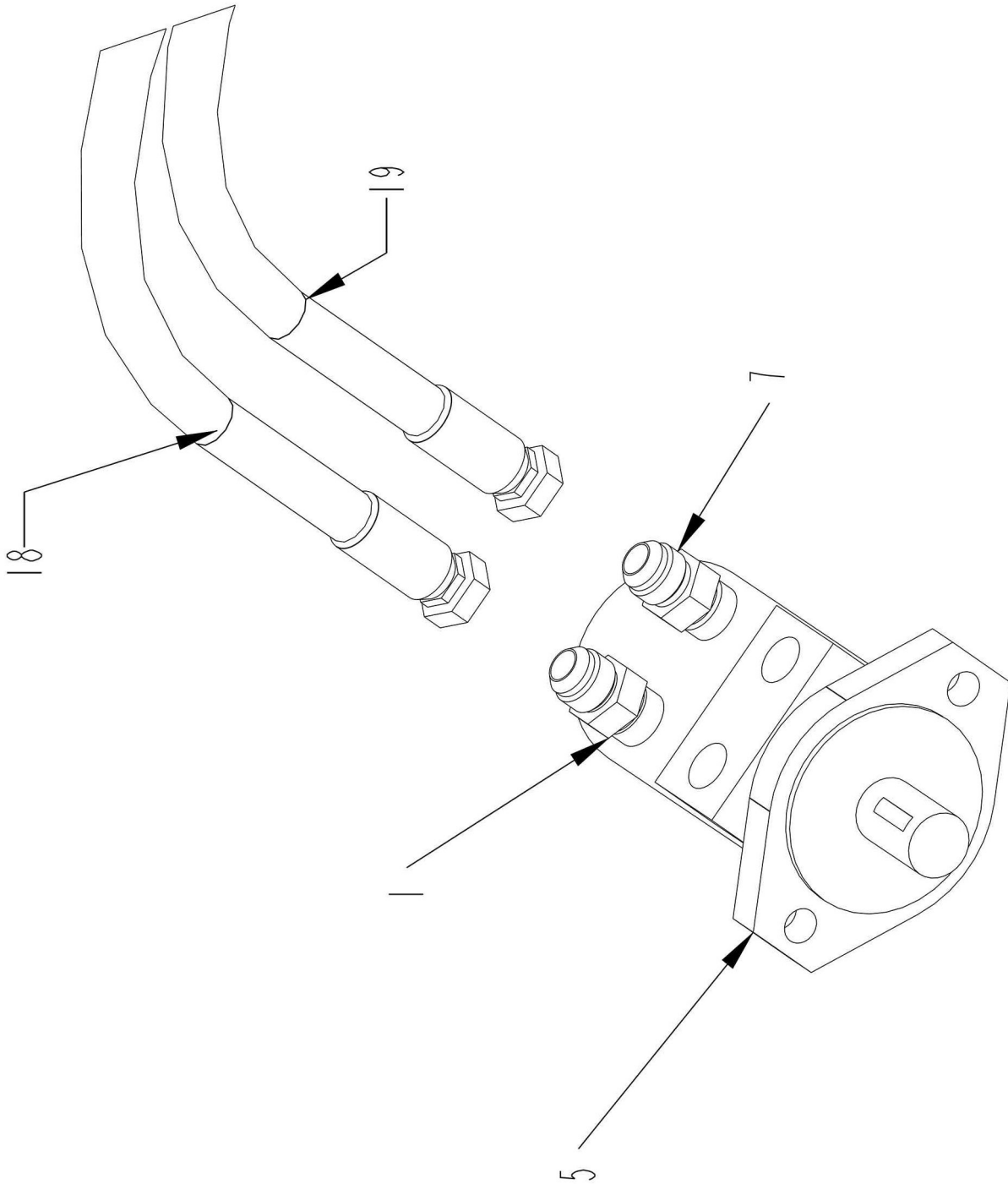




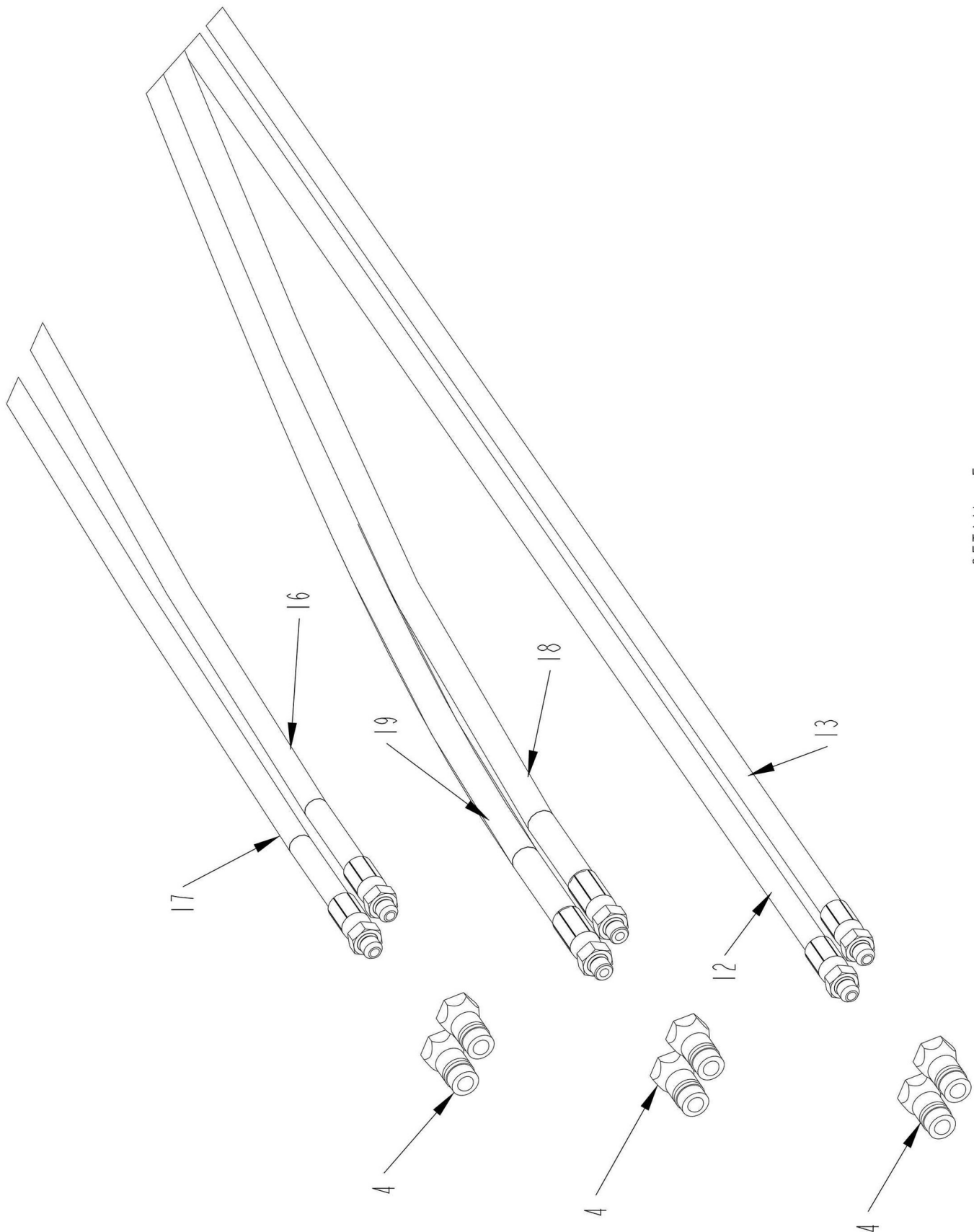
DETAIL B







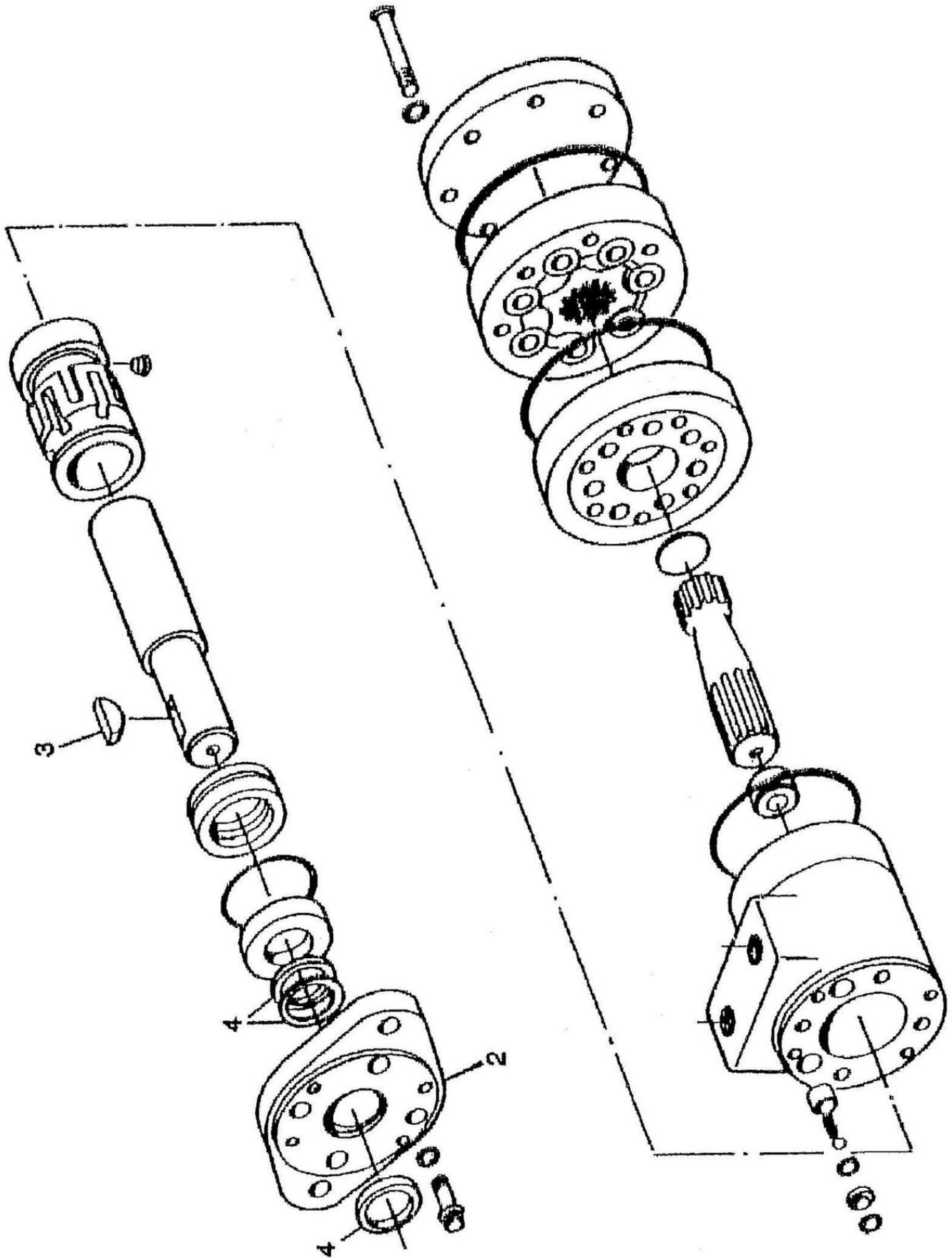
DETAIL D



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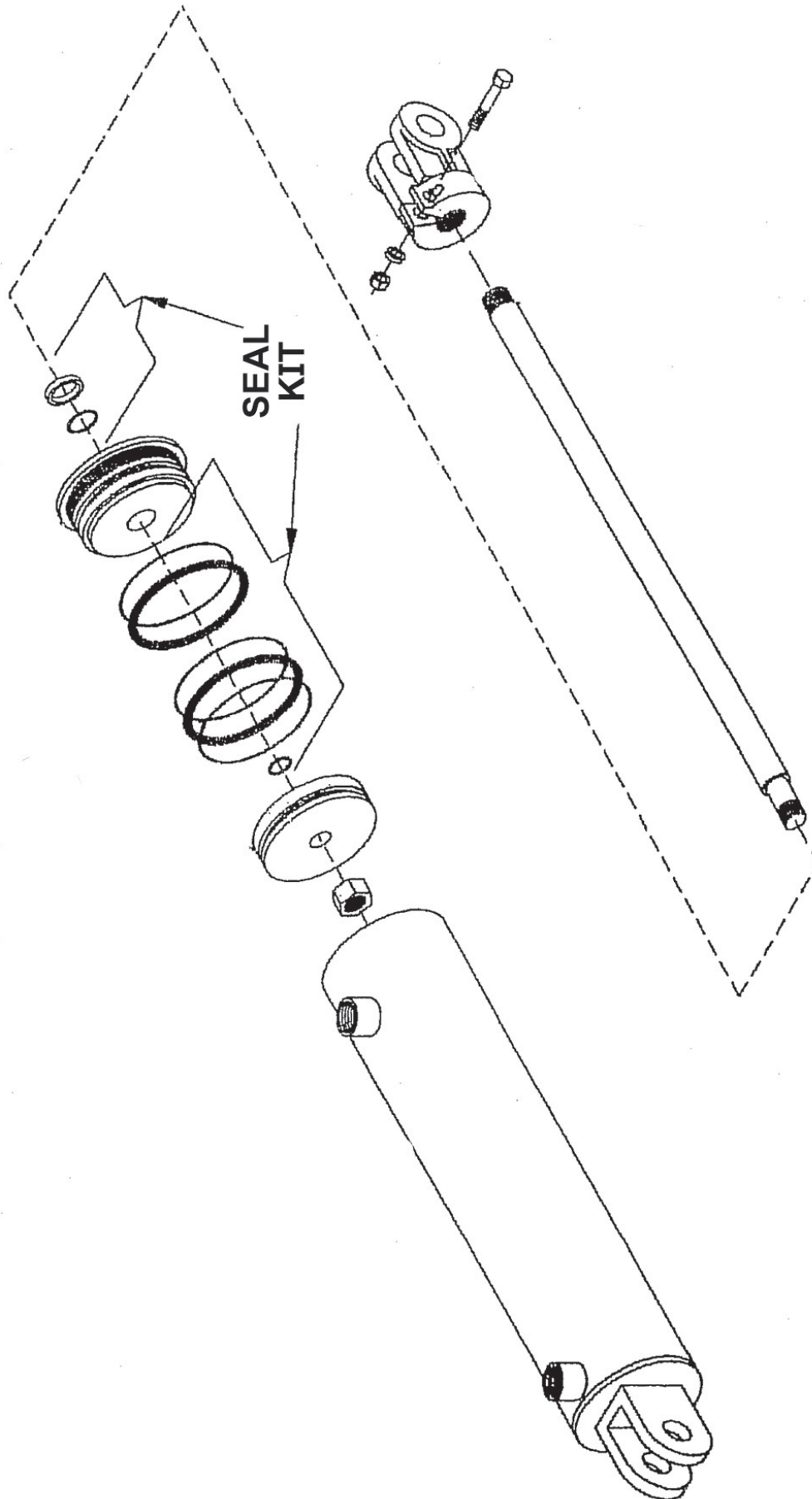
**CMF-980 Optional Dogleg Conveyor Hydraulics**

Item	Part No.	Name	Remarks	Qty	Uom
1	3800448	FTG\7/8MORX7/8MJIC\ST		1	EA
2	3800453	FTG\3/4MORX9/16MJIC\90		4	EA.
3	3800631	FTG\9/16MORX9/16MJIC\ST		4	EA.
4	3800694	FTG\3/4FOR\QUICK\CPLR\MALE		6	EA.
5	3900032	MOTOR\HYD\22.6\H		1	EA
6	4000245	VALVE\RELIEF\CROSS\SINGLE		1	EA
7	4000288	FTG\7/8MORX7/8MJIC\ST\CHCK		1	EA.
8	4100247	CYL\HYD\2"X30"\1-1/8\_ROD		1	EA
9	4100284	CYL\HYD\2X16\1-1/4RD\WELDE		1	EA
10	4700776	CLMP\HOSE\3/8		6	EA.
11	7501336	CLMP\HOSE\CUSH\3/8		5	EA
12	3701491	HOSE\HYD\3/8X129\9/16FJICX3/4MOR		1	EA.
13	3701491	HOSE\HYD\3/8X129\9/16FJICX3/4MOR		1	EA.
14	3701492	HOSE\HYD\3/8X173\9/16FJICS	PRESSURE VALVE TO ROD END DOOR CYLINDER	1	EA.
15	3701493	HOSE\HYD\3/8X153\9/16FJICS	PRESSURE VALVE TO TUBE END DOOR CYLINDER	1	EA.
16	3701497	HOSE\HYD\3/8X155\9/16FJICS	ROD END CONVEYOR CYLINDER TO TRACTOR COUPLER	1	EA.
17	3701498	HOSE\HYD\3/8X135\9/16FJIC	TUBE END CONVEYOR CYLINDER TO TRACTOR COUPLER	1	EA.
18	3701499	HOSE\HYD\1/2X235\7/8MORX3/4FJICS	TOP PORT CHAIN MOTOR TO TRACTOR COUPLER	1	EA.
19	3701499	HOSE\HYD\1/2X235\7/8MORX3/4FJICS	BOTTOM PORT CHAIN MOTOR COUPLER	1	EA.



**3900025-3900032 Orbit Motors**

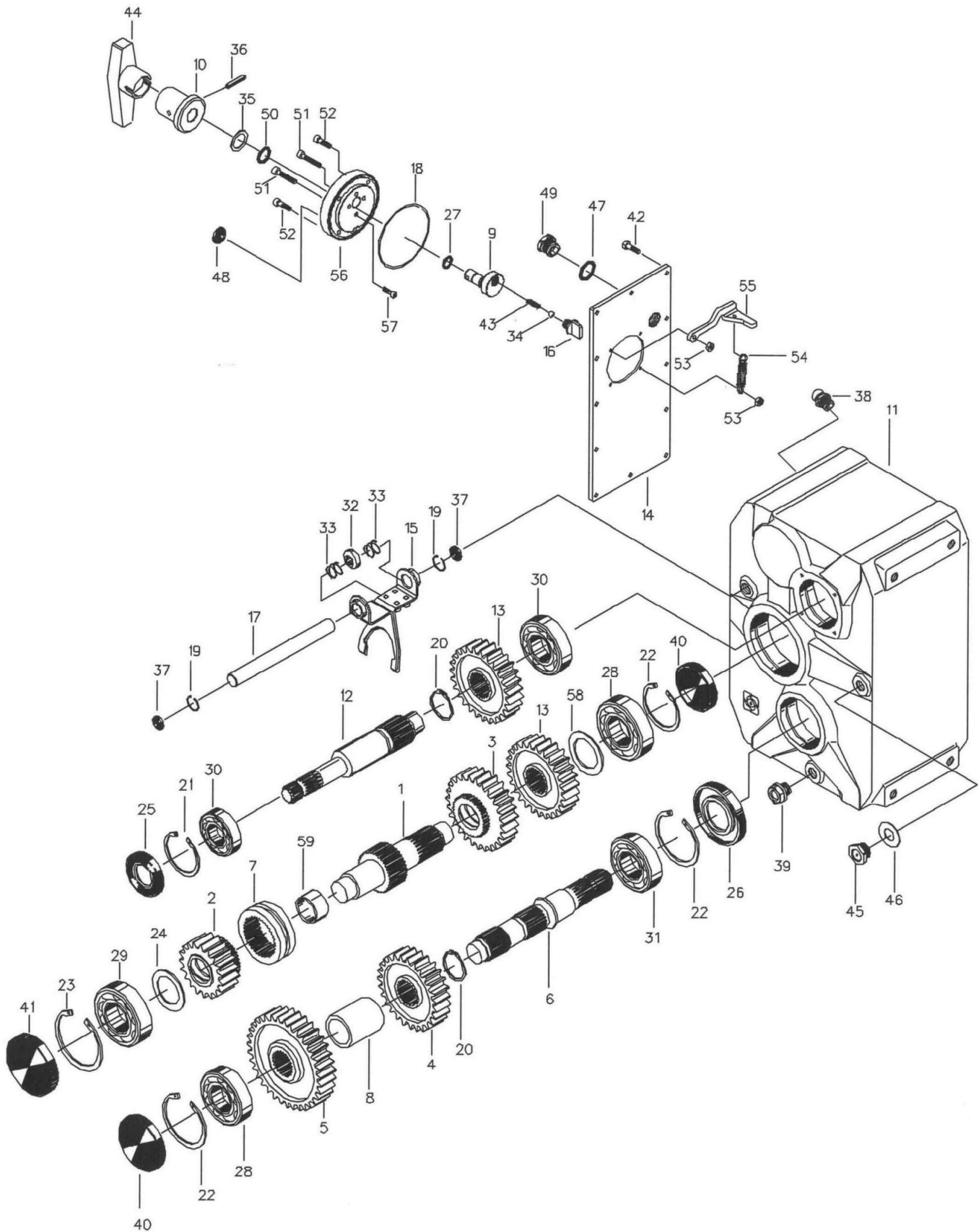
Item	Part No.	Name	Remarks	Qty	Uom
CA	3900025	MOTOR\HYD\17.9\H			EA.
CA	3900032	MOTOR\HYD\22.6\H			EA
2	3900002	MOUNTING FLANGE		1	EA.
3	6200011	KEY\WDF\1/4X1		1	EA.
4	7501038	UNISEAL KIT 007-009		1	EA.





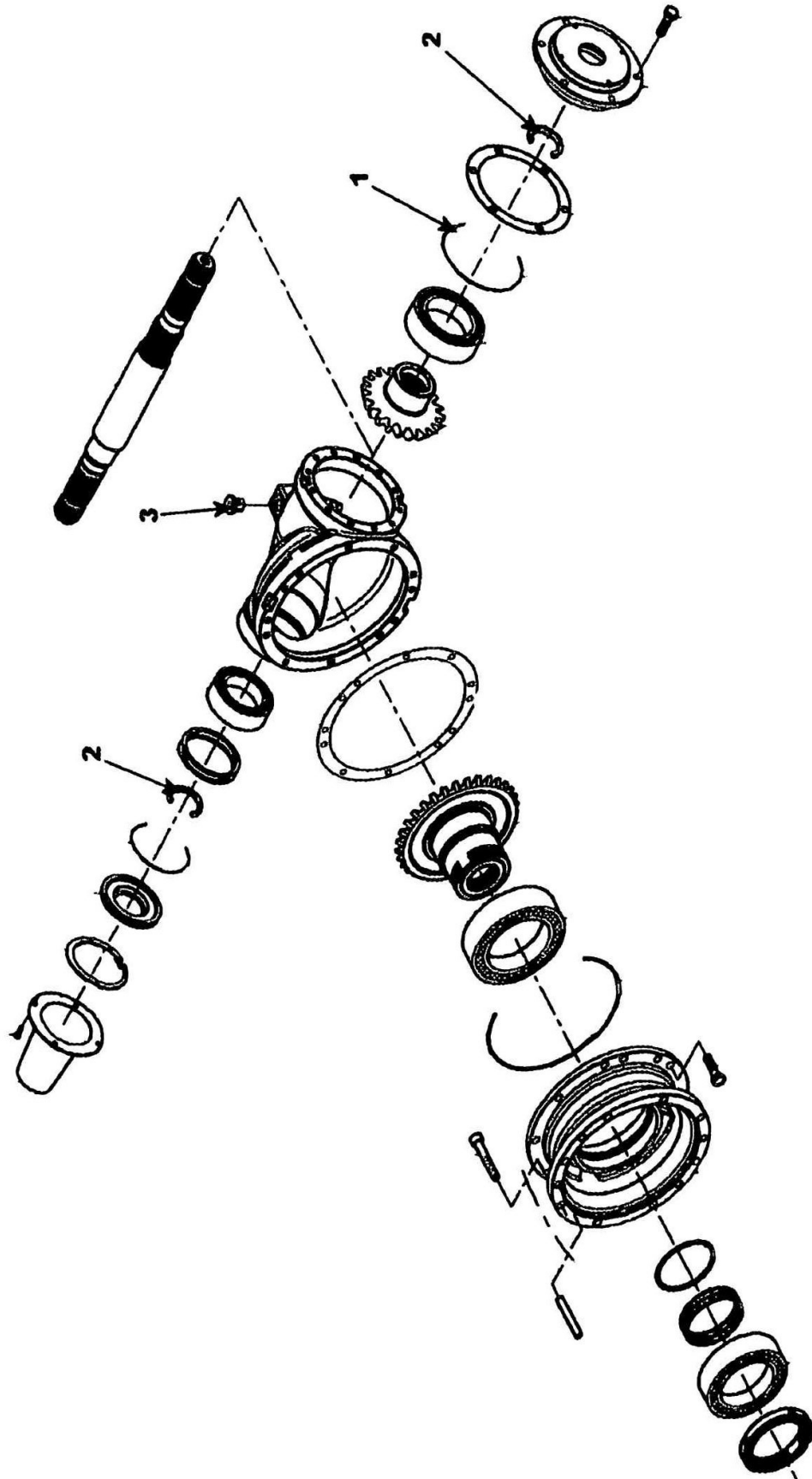
**4100247-4100284 Hydraulic Cylinder Assembly**

Item	Part No.	Name	Remarks	Qty	Uom
CA	4100247	CYL\HYD\2"X30"\1-1/8_ROD	(Used on tub door)		EA
CA	4100284	CYL\HYD\2X16\1-1/4RD\WELDE	(Used on discharge conveyors)		EA



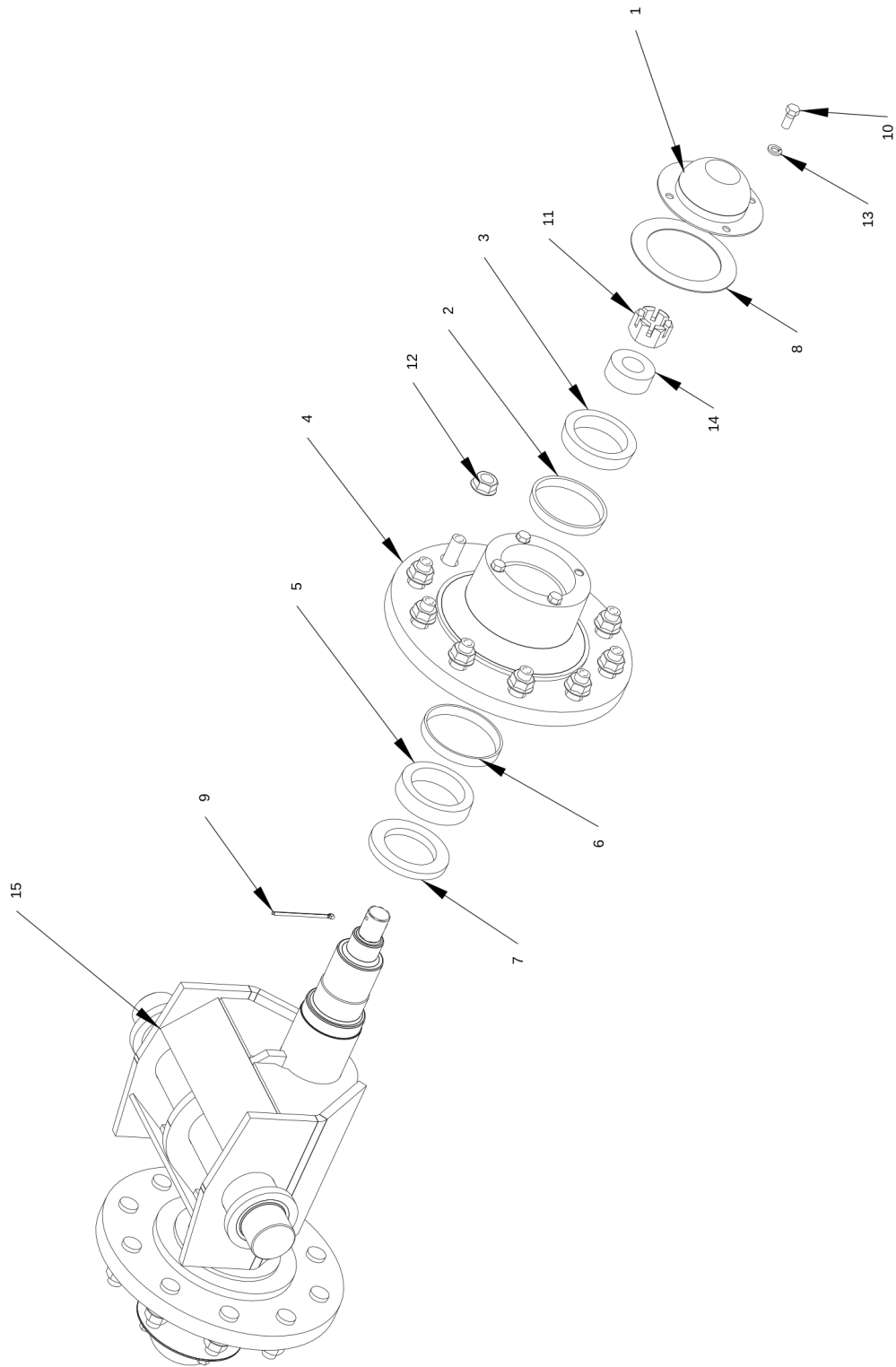
### 3100225 - 2-Speed Gearbox Assembly

Item	Part No.	Name	Remarks	Qty	Uom
CA	3100225	GRBX\2SPD\1.84:1\B&P6078			EA
18	3100412	ORING\STD\3375		1	EA.
25	3100413	SEAL\OIL\B&P\45X85X10		1	EA
26	3100414	SEAL\OIL\B&P\50X90X10		1	EA
27	3100415	ORING\STD\3043		1	EA.
38	3100416	PLUG\BRTHR\B&P\1/2		1	EA
40	3100417	PLUG\OIL\B&P\RCA90		2	EA
41	3100418	PLUG\OIL\B&P\RCA110		1	EA
45	3100419	PLUG\OIL\B&P\1/2		1	EA
46	3100420	SLEEVE\B&P\215X268X15		1	EA.
47	3100421	ORING\STD\3100		1	EA.
51	3100422	SEAL\OIL\B&P\16X22X34		1	EA.



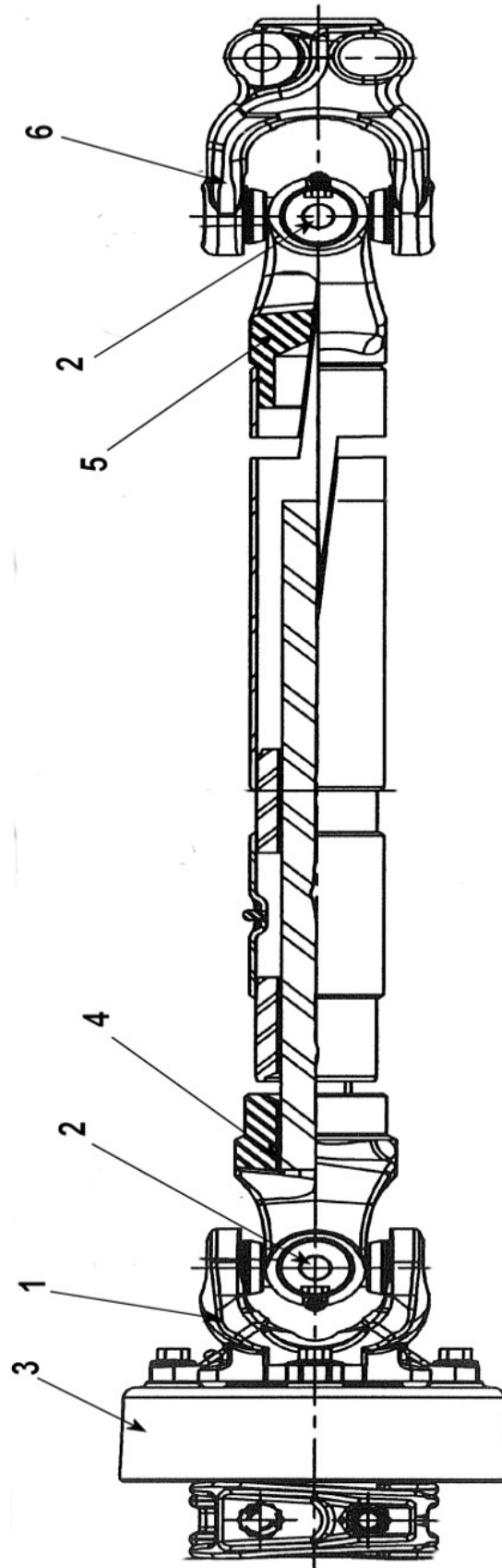
**3100226 - Planetary Gearbox Assembly**

Item	Part No.	Name	Remarks	Qty	Uom
1	3100395	SEAL\OIL\INPUT\RR1800		1	EA
2	3100396	ORING\COVER\INPUT\RR1800		2	EA
3	3100425	PLUG\MAG\1/2BSPP\GRBX\CMF		2	EA
NS	3100432	SEAL\KIT\GRBX\2100RR			EA



## Hub and Swivel Axle Assembly

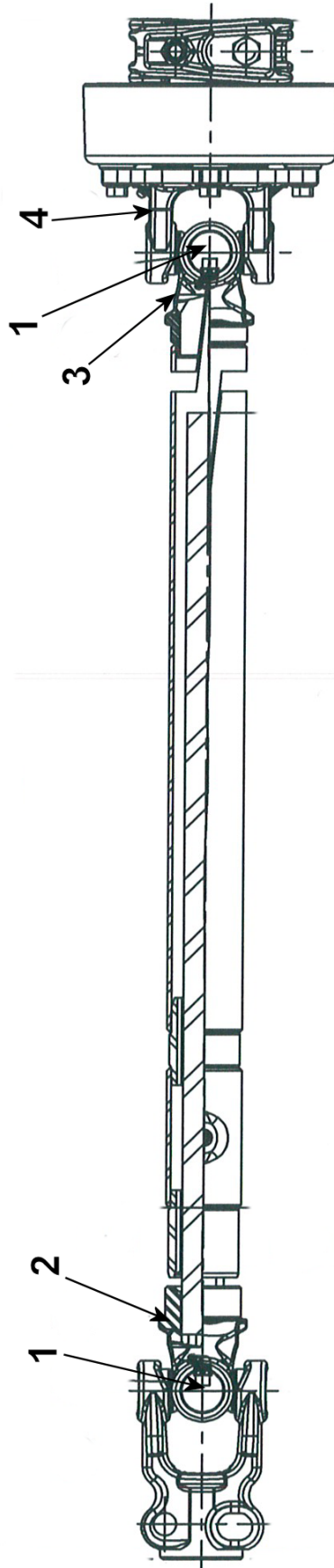
Item	Part No.	Name	Remarks	Qty	Uom
1	2900146	CAP\DUST\H1010		2	EA
2	2900149	BRG\CUP\OUTER\H1010		2	EA
3	2900150	BRG\CONE\OUTER\H1010		2	EA
4	2900154	HUB\ASSY\15KSI\10-BOLT\11-1/4BOLT_CIRCLE\8.69PILOT	Includes #1-3, 5-7, and 9-15	2	EA
5	2900156	BRG\CONE\INNER\H1010-11		2	EA
6	2900157	BRG\CUP\INNER\H1010-11		2	EA
7	2900158	SEAL\GREASE\H1010-11		2	EA
8	2900173	SEAL\HUB\DUST_CAP\H1010		2	EA
9	4800535	PIN\COT\3/16X3-1/4		2	EA
10	4800630	BOLT\HEX\7/16X1\GR8\NF		8	EA
11	4900053	NUT\CASTLE\1-1/4\NF		2	EA.
12	4900176	NUT\WHL\FLG\3/4-16		20	EA
13	5000015	WASH\LOCK\7/16		8	EA.
14	5000133	WASH\SPNDL\1-5/16ID\2-1/2OD\1/4T		2	EA.
15	5900080	AXLE\WELD\CMF980/1150		1	EA
CA	5900081	AXLE\ASSY\CMF980/1150			EA





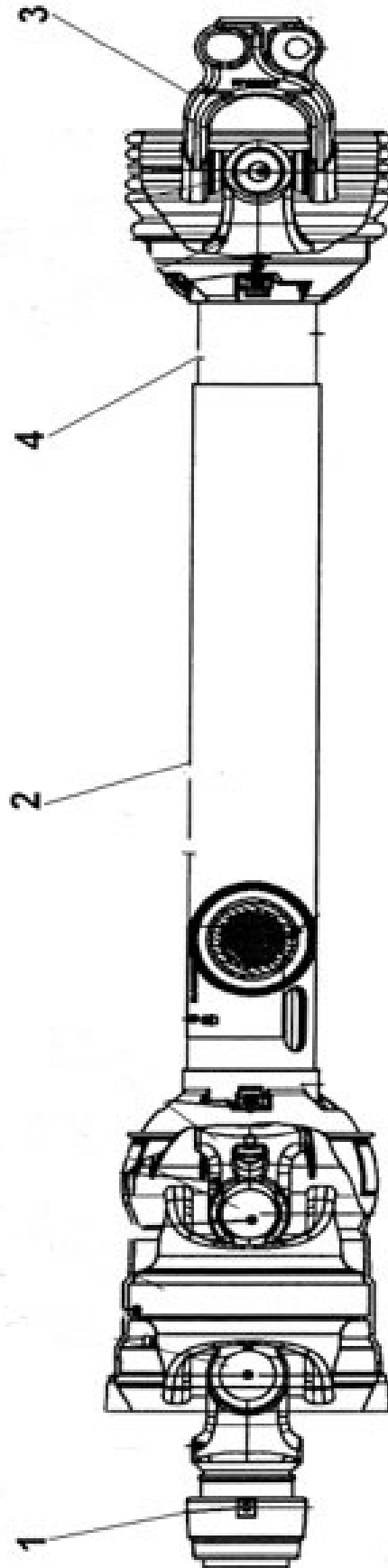
**3600693 - Driveline**

Item	Part No.	Name	Remarks	Qty	Uom
1	3600591	YOKE&HUB\44E\CLTCH\20SPL		1	EA
2	3600604	CROSS&BRG\44E\WSLR		2	EA.
3	3600696	CLUTCH\PACK\24K\AUTO		1	EA
4	3600718	YOKE&SHAFT\44E\20SPL		1	EA
5	3600719	YOKE&TUBE&SLEEVE\44E\20SPL		1	EA
6	3600720	YOKE\44E\20SPL		1	EA
CA	3600693	PTO\44E\24KCLTCH			EA



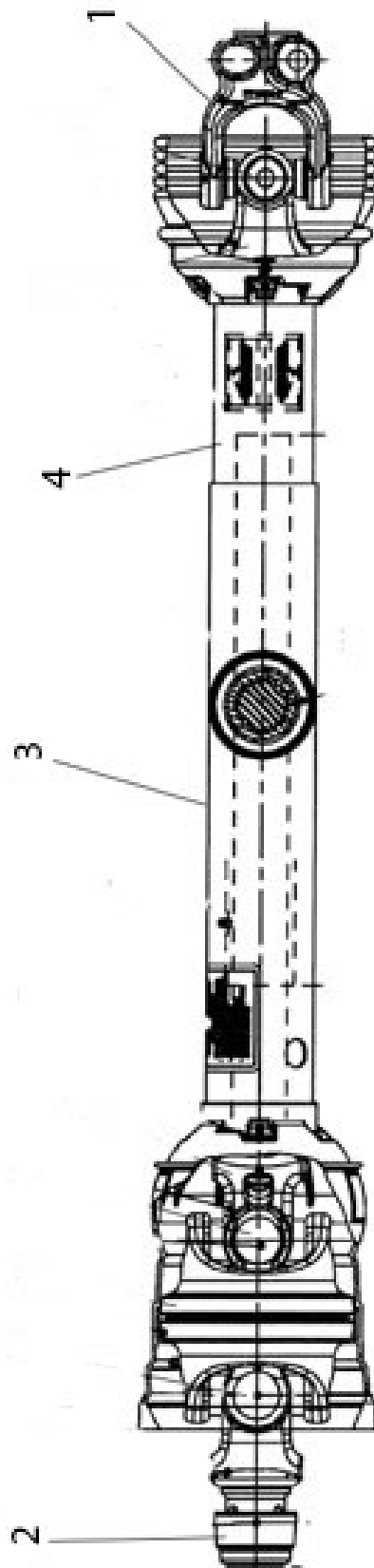
**3600694 - Driveline**

Item	Part No.	Name	Remarks	Qty	Uom
1	3600606	CROSS&BRG\35E\WLSR		2	EA
2	3600713	YOKE\35E\20SPL		1	EA
3	3600750	YOKE&TUBE&SLEEVE\35E\20SPL		1	EA
4	3600753	YOKE\CLUTCH\AUTO\ASSY\35SER\12K	Price on Request	1	EA
CA	3600694	PTO\44E\14KCLUTCH			EA



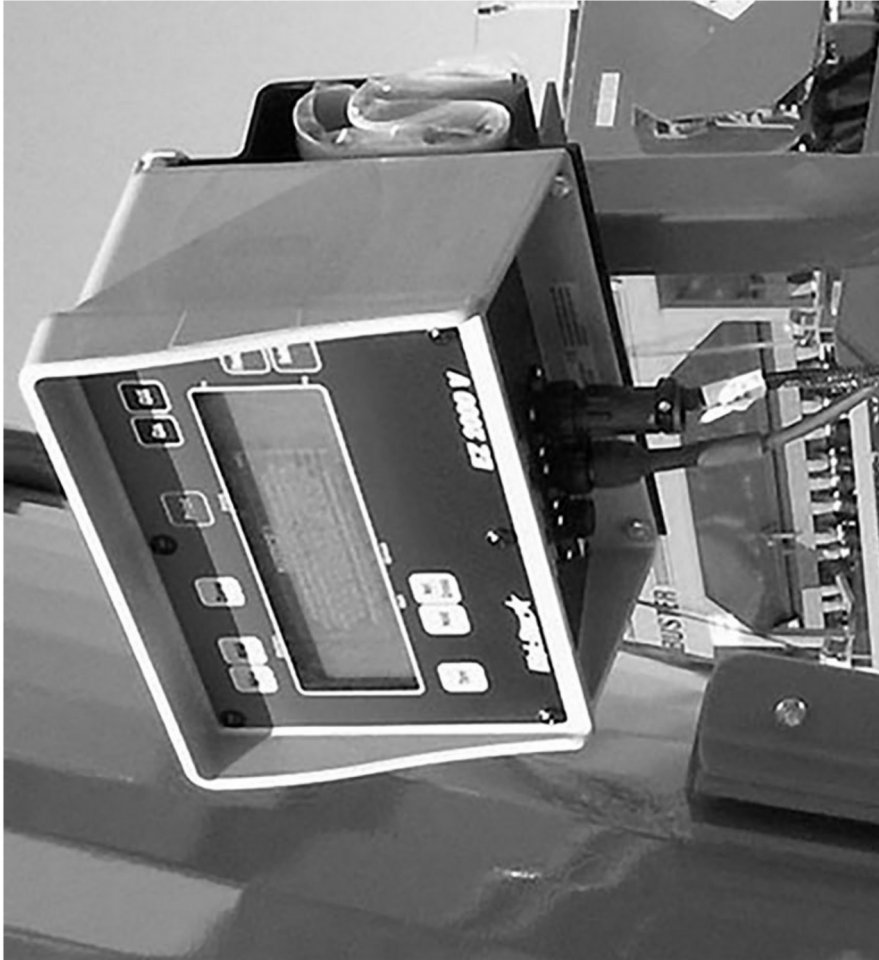
**3600783 - 2-Speed Driveline**

Item	Part No.	Name	Remarks	Qty	Uom
1	3600784	JOINT&SHFT\44E\WWCV\20SPL		1	EA
2	3600586	GUARD\PTO\FRNT\OUTER		1	EA
3	3600587	JOINT&TUBE\44E\U\20SPL		1	EA
4	3600588	GUARD\PTO\REAR\INNER		1	EA
NS	3600489	NYLON\REPAIR\KIT		2	EA.
CA	3600783	PTO\255-25003\44E\1-3/4 WWCV			EA.



**3600785 - 2-Speed Driveline**

Item	Part No.	Name	Remarks	Qty	Uom
1	3600621	JOINT&TUBE\44E\CV\21SPL		1	EA
2	3600786	JOINT&SHFT\44E\1-3/8 WWCV		1	EA
3	3600623	GUARD\PTO\FRNT\OUTER		1	EA.
4	3600624	GUARD\PTO\REAR\INNER		1	EA
NS	3600489	NYLON\REPAIR\KIT		1	EA.
CA	3600785	PTO\255-25005\44E\1-3/8 WWCV			EA.



Digi-Star product support:  
email: [tasupportds@topcon.com](mailto:tasupportds@topcon.com)  
toll free phone: 800-225-7695



## Digi-Star Cables, Brackets and Cells

Item	Part No.	Name	Remarks	Qty	Uom
1	7501612	CABLE\EXT\20\"J-BOX;TO;SCALE	DIGI-STAR P/N 408099		EA
2	7501424	BRKT\IND\MNTG	DIGI-STAR P/N 840459 (TO MOUNT MASTER INDICATOR)		EA
3	7500979	CABLE\EXT\10\"J-BOX;TO;SCALE	DIGI-STAR P/N 141941 (Replacement cable for tractor to machine. Also order 7501212)		EA
4	7501211	POWER\CORD\10\"4-WIRE	DIGI-STAR P/N 146698		EA
5	7501212	CBL\15\"J-BOX\	DIGI-STAR P/N 824316 (Replacement cable for tractor to monitor, also order 7500979) (Replacement cable between junction box and indicator)		EA
6	7501555	KIT\CONN\LOAD;CELL	DIGI-STAR P/N 403456 (Includes all necessary components to patch a Digi-Star load cell cable injury)		EA.
7	7501326	DIGI-STAR_2.5_CELL	DIGI-STAR P/N 146110 (Cal # 32000, Setup # 146050)		EA
8	7501377	LOADCELL\2.875DB\30'CABLE	DIGI-STAR P/N 403803 (Cal # 36753, Setup # 126060)		EA
9	7501431	CABLE\EXT\REMOTE\25FT	DIGI-STAR P/N 403670 (male-female 8 pin)		EA
10	7501438	HRNSS\WIRE\DOWNLDNG\DIGISTAR	DIGI-STAR P/N 400951		EA
11	7501609	MNT\RAM\3SUCTIONCUP	DIGI-STAR P/N 407434		EA.
12	7501517	PLUG\OPTNL\2400\3RDPOR	DIGI-STAR P/N 404845 (TO ADD ADDITIONAL MONITOR)		EA
13	7501659	CABLE\RD4000\33'	DIGI-STAR P/N 405190 (male-male 8 pin)		EA
14	7501615	Cable\Y\Remote	DIGI-STAR P/N 400190		EA.
15	7501350	Data Key for Legacy Monitors prior to USB ports	DIGI-STAR P/N 403247 (DATA KEY ONLY)		EA.
16	7501310	INDICATOR\EZ3600V	D-S 405211 (INCLUDES INDICATOR (7501349) AND DATA KEY (7501350))		EA.
17	7501349	INDICATOR\3600V\W/ODATAKEY	D/S 403065-23		EA.



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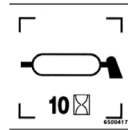
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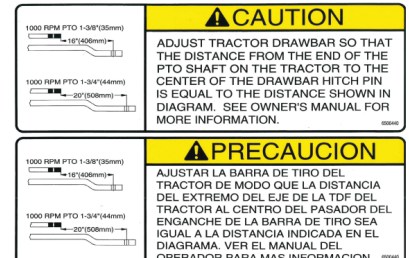
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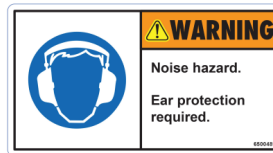
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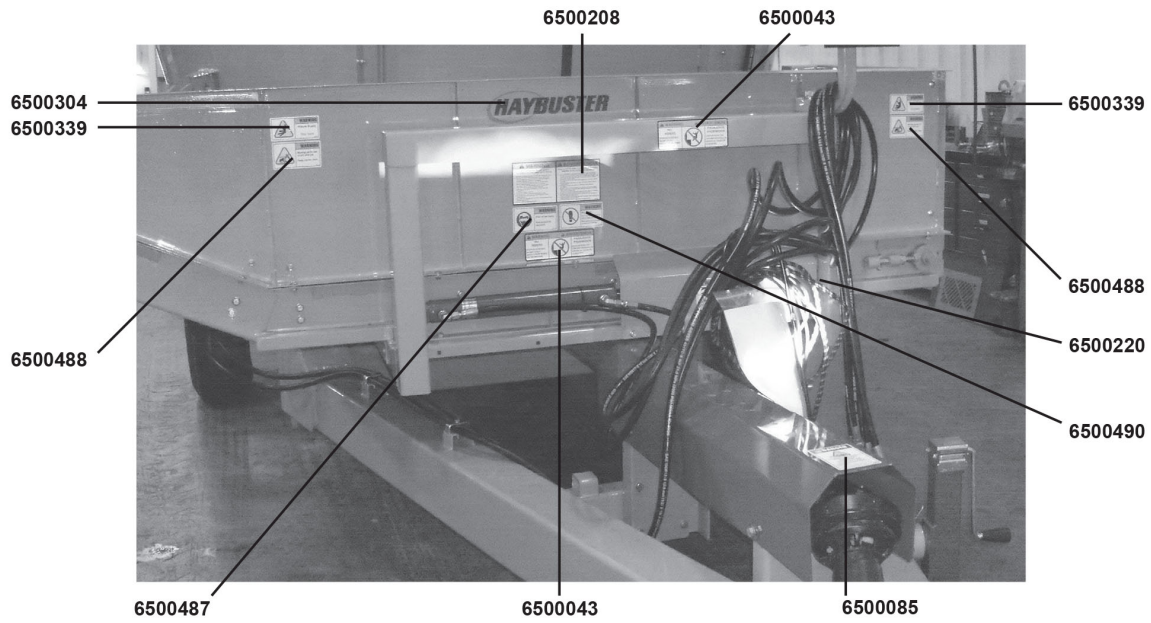


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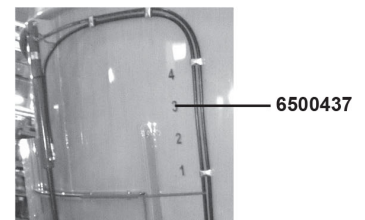
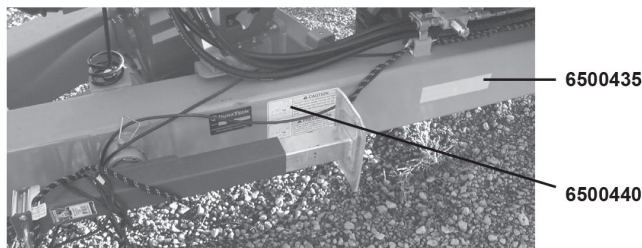
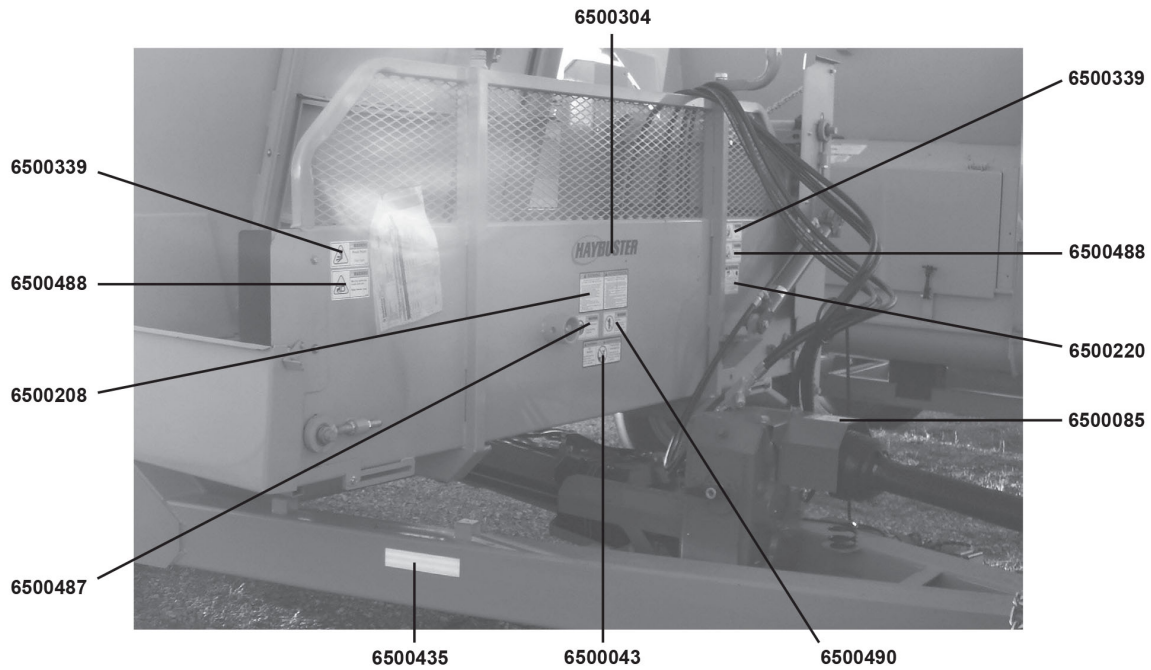
**CMF-980 Decals**

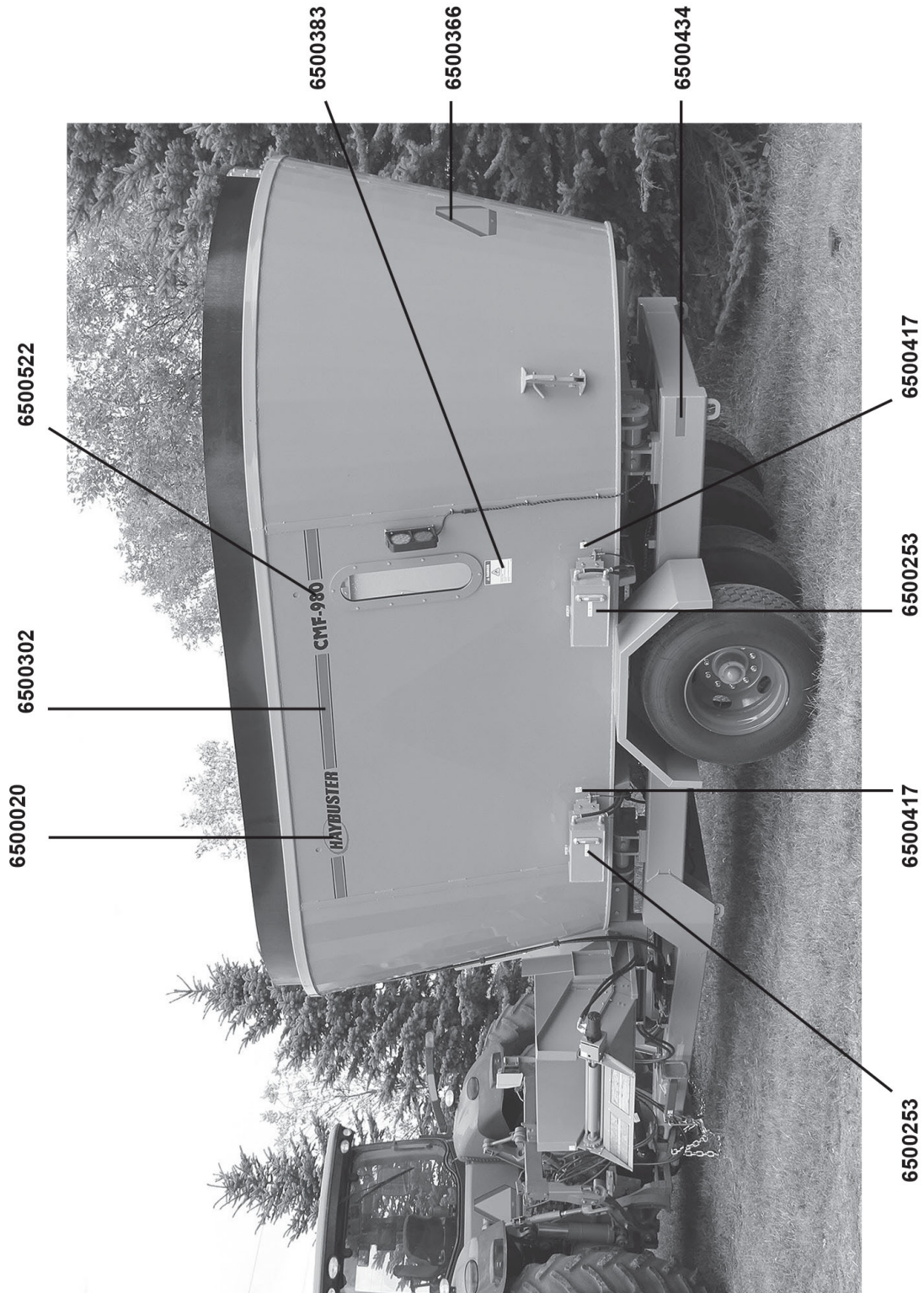
Item	Part No.	Name	Remarks	Qty	Uom
1	6500020	DECAL\LOGO\HYBSTR\SNBRS\3		3	EA.
2	6500043	DECAL\WARN\NO;RIDERS		1	EA.
3	6500085	DECAL\DNGR\ROTATNG;DR-LNE		1	EA.
4	6500208	DECAL\WARN\GENERAL		1	EA
5	6500220	DECAL\WARN\HI;PRESS;FLUID		1	EA.
6	6500253	DECAL\INFO\FLUID;LEVEL\INDICATOR		2	EA
7	6500302	DECAL\LOGO\STRIP\3\RD&BLK		9.1667	FT.
8	6500304	DECAL\LOGO\HYBSTR\1-3/4W/SUNBURST		1	EA.
9	6500339	DECAL\WARN\PINCH;POINT		2	EA
10	6500366	DECAL\SMV		1	EA
11	6500383	DECAL\WARN\AUGER\MIXER		2	EA
12	6500417	DECAL\GREASE\10 HRS		2	EA.
13	6500434	DECAL\2X9\RED\REFCT		3	EA.
14	6500435	DECAL\2X9\AMBER\REFCT		6	EA.
15	6500437	DECAL\LOCATOR\DOOR		1	EA
16	6500440	DECAL\CAUT\ADJ_DRWBAR\16&20		1	EA
17	6500487	DECAL\WARN\PPE\EYE		1	EA
18	6500488	DECAL\WARN\PARTS\MOVING		1	EA.
19	6500489	DECAL\WARN\PPE\HEARING		1	EA
20	6500490	DECAL\WARN\NO STEP		1	EA.
21	6500517	DECAL\GREASE\50HRS		3	EA.
22	6500522	DECAL\LOGO\CMF980		2	EA.
23	6500543	DECAL\GEARBOX\2SPEED\HNL		1	EA.
CA	6500521	DECAL\KIT\CMF980			EA.
NS	7500077	YELLOW SPRAY PAINT			EA.
NS	7500092	YELLOW PAINT			EA.
NS	7500091	YELLOW PAINT			EA.
NS	7500078	RED SPRAY PAINT			EA.
NS	7500105	RED PAINT			EA.
NS	7500104	RED PAINT			EA.

### DOGLEG CONVEYOR



### STANDARD CONVEYOR



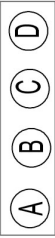
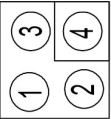




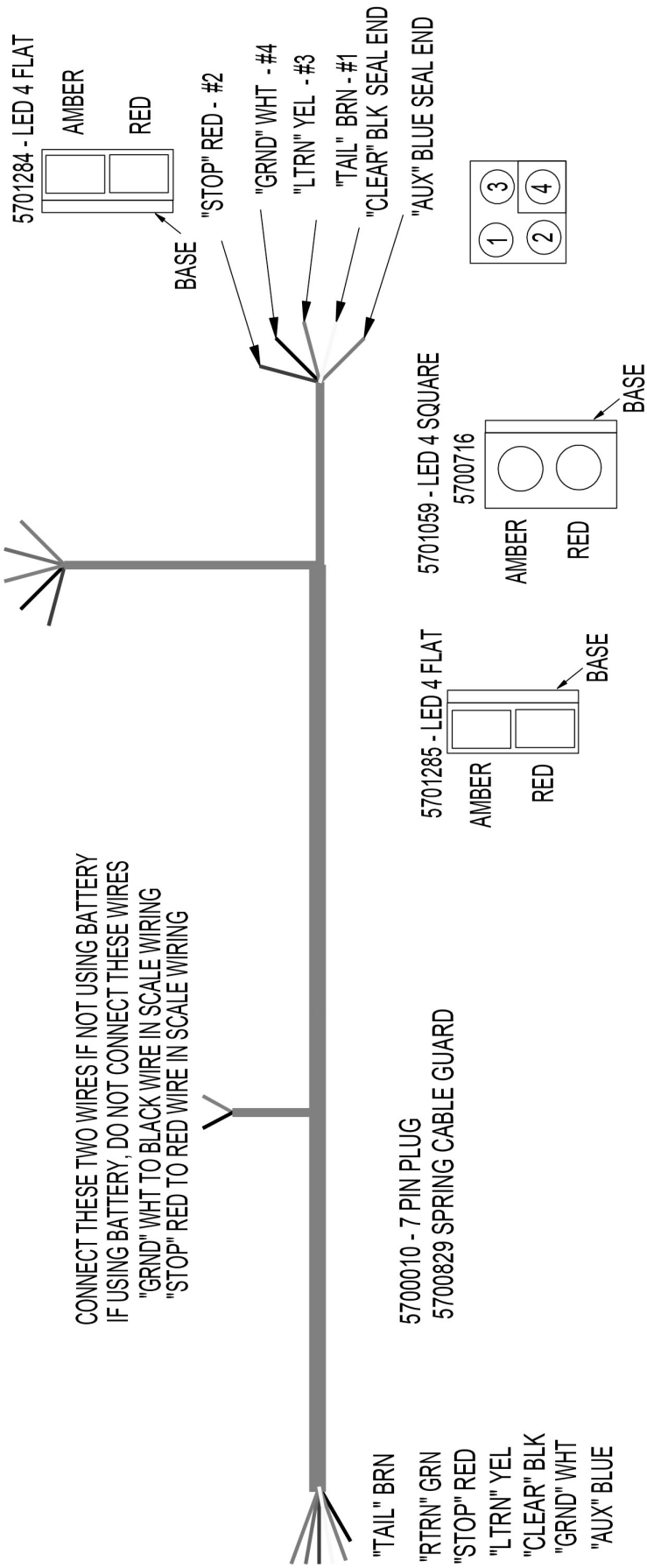
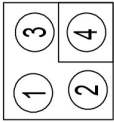
# 5700713 CMF TAIL LIGHTS

NOTE - JUMPER HARNESS 5701283 REQUIRED FOR 5701284 AND 5701285

FOR REFERENCE ONLY	FOR REFERENCE ONLY
1 - GREEN - TAIL OR CLEARANCE 2 - BROWN - BRAKE/AUX 3 - YELLOW - TURN & FLASH 4 - WHITE - GROUND WIRE	A - BROWN - TAIL OR CLEARANCE B - YELLOW - TURN & FLASH C - WHITE - GROUND WIRE D - RED - STOP



"AUX" BLUE SEAL END  
"CLEAR" BLK SEAL END  
"STOP" RED - #2  
"GRND" WHT - #4  
"RTRN" GRN - #3  
"TAIL" BRN - #1





## Delivery Report

Delivery Date	Machine Model	Serial No.	
Dealer Name		Engine Serial No.	
Dealer Address		Invoice No.	
Dealer City	State	Zip	
Dealer Email		Phone	

Customer Name		
Customer Address	Phone	
Customer City	State	Zip
Customer Email		

The following items are to be checked as they are explained to the owner / operator at the time of delivery

- ☐ Explain the delivery packet and present the operators manual(s) to the owner / operator.
- ☐ Review and inspect the machine safety signs (decals) and the operator's manual.
- ☐ Advise the owner that the dealer is the source to obtain operator training, and information regarding the correct application of the machine to the job, as well as service and warranty information.
- ☐ Explain the capabilities and restrictions of the machine as it applies to the owner's application as defined in the operator's manual.
- ☐ Explain the operation of the controls and start up and shut down procedures of the engine and power transmission components of the machine.
- ☐ Explain rated lift or carrying capacity and loading and unloading procedures of the machine to maintain safety and stability of the machine.
- ☐ Explain proper folding, unfolding, and transporting procedures to the owner / operator.
- ☐ Explain recommended fueling procedures on engine equipped machines.
- ☐ Explain proper loading and unloading of materials from the tub or grinding chamber of the machine.
- ☐ Objects thrown by shredding or spinning rotors may represent a hazard to personnel and property in the area. Minimize risks by planning and by keeping personnel and property clear of hazard area.
- ☐ Explain the availability and use of the tub cover to further reduce risks of thrown objects.
- ☐ Review maintenance and lubrication procedures with the operator / maintenance person as defined in the operators manual.
- ☐ Advise never to use the machine in an environment with explosive or flammable materials present.
- ☐ Explain warranty policy and limitations to the owner / operator.



### Warning

**Misuse of the machine or modification or removal of the guards, safety devices, or control interlocks can cause injury or death.**

The above delivery information has been explained to me. I understand the operation and maintenance of this machine. I also acknowledge the warranty conditions and limitations as outlined.	
Owner / Operator Signature	Date
Dealer Representative Signature	Date

