

# WC68H PTO HYDRAULIC WOOD CHIPPER



## Operator's Manual

***MechMaxx***

[www.mechmaxx.com](http://www.mechmaxx.com)



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## SPECIFICATIONS

| Model                      | WC68H                             |
|----------------------------|-----------------------------------|
| Tractor Power              | 20 - 50 HP                        |
| Max. Throughput Capacity   | 6 in                              |
| Infeed Opening             | 6 × 8 in                          |
| Infeed Chute Opening       | 27.5 × 25 in                      |
| Discharge Chute Rotation   | 360 Degrees                       |
| Flywheel Diameter          | 23.6 in                           |
| Flywheel Thickness         | 0.75 in                           |
| Flywheel Speed             | 540–1000 RPM                      |
| Flywheel Drive System      | Direct drive                      |
| Flywheel Shaft Diameter    | 2 in                              |
| Flywheel Housing Thickness | 5/16 in                           |
| Number Of Blades           | 4 reversible double-edged blades  |
| 3-Point Hitch              | CAT 1                             |
| Hydraulic System           | Standard RP/R fittings and valves |
| Hydraulic Pump             | Belt-driven                       |
| Hydraulic Oil Capacity     | 5.3 gal                           |
| Infeed Roller Size         | 7.3 in                            |
| Infeed Roller Pressure     | Adjustable via spring tension     |
| Infeed Roller Speed        | 34–62.5 RPM                       |
| Feed Control               | Forward / Neutral / Reverse       |
| N.W./G.W.                  | 746 / 840 LBS                     |
| Packaging Dimensions       | 45 × 33 × 45 in                   |
| Overall Dimensions         | 76 × 35.6 × (67–68.7) in          |

## SAFETY SIGNS

The rating plate on your machine may show symbols. These represent important information about the product or instructions on its use.

**! DANGER !**



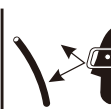

**THROWN OBJECT HAZARD**

To prevent serious injury or death from thrown objects:

- Turn machine off, stop and disable engine, remove ignition key and place in your pocket, set park brake and wait for all moving parts to stop before adjusting, servicing, maintaining, repairing or unplugging.
- Do not direct discharge duct towards people, animals or property. Always wear appropriate safety gear. Keep hands and feet out of discharge openings.
- Keep others away.

**! WARNING**

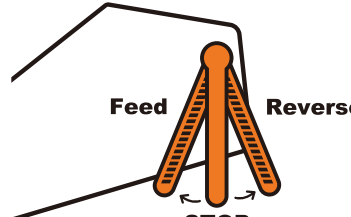
**HIGH PRESSURE FLUID HAZARD**

**To Prevent Serious Injury or Death:**

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

**CONTROL ARM**



**! DANGER !**

















**! DANGER**

**ROTATING DRIVELINE HAZARD  
KEEP AWAY**



**To Prevent Serious Injury or Death:**

- Keep all guards in place when operating.
- Operate only at 540 RPM.
- Keep hands, feet, hair and clothing away from moving parts.
- Keep U-joint angles equal and as small as possible.
- Do not exceed driveline manufacturers recommended operating length.



**! DANGER !**




**ROTATING  
BLADES  
KEEP HANDS  
AWAY**

**! DANGER**

**DO NOT OPERATE THIS CHIPPER  
WHEN THE COVER IS OPEN. DO NOT  
OPERATE WITHOUT THE RETAINING  
BOLT FIRMLY IN PLACE.**

**! WARNING**

**TORQUE BLADE BOLTS TO 35-40  
LBS. TO PREVENT BREAKAGE.**

**! WARNING !**

- ENGAGE TRACTOR CLUTCH SLOWLY DURING START UP OR DAMAGE WILL OCCUR.
- KEEP PTO SHAFT WITHIN 25° OF LEVEL DURING OPERATION.
- The PTO Driveline **MUST** be measured and cut (if required) as per the Owner's Manual.
- Failure to do so will result in damage to both the tractor and the implement.

**! CAUTION**

Consult tractor Owner's Manual for proper engine RPM to achieve 540 RPM at rear PTO.

**540 RPM ONLY**

## IMPORTANT SAFETY INFORMATION

### YOUR SAFETY

YOU are responsible for the SAFE operation and maintenance of your Tractor Wood Chipper. YOU must ensure that you and anyone else who is going to operate, maintain, or work around the Tractor Wood Chipper are familiar with the operation and maintenance procedures and related SAFETY information contained in this manual.

This manual will take you step by step through your working day and alert you to all good safety practices that should be followed while operating the Tractor Wood Chipper.

Remember, YOU are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that EVERYONE operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

1. Tractor Wood Chipper owners must provide operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
2. The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in this manual and to follow them. Most accidents can be avoided.
3. A person who has not read and understood all operating and safety instructions is not qualified to use the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
4. Do not modify the equipment in any way. Unauthorized modifications may impair the function and/or safety and could reduce the service life of the equipment.
5. Think SAFETY! Work SAFELY!

### GENERAL SAFETY



1. Read and understand the Operator's Manual and all safety signs before operating, maintaining, adjusting, or cleaning the Tractor Wood Chipper.
2. Keep a first-aid kit available and ensure you know how to use it.
3. Keep a fire extinguisher available and ensure you know how to use it.
4. Do not allow riders.
5. Wear appropriate protective gear. This includes, but is not limited to:
  - A hard hat
  - Protective shoes with slip-resistant soles
  - Heavy gloves
  - Wet weather gear
  - Hearing protection
6. Install and secure all guards before starting the machine.
7. Wear suitable ear protection during prolonged exposure to excessive noise.
8. Clear the work area of people, especially children, before operating the unit.
9. Review all safety-related items at least annually with anyone who will be operating or maintaining the Tractor Wood Chipper.

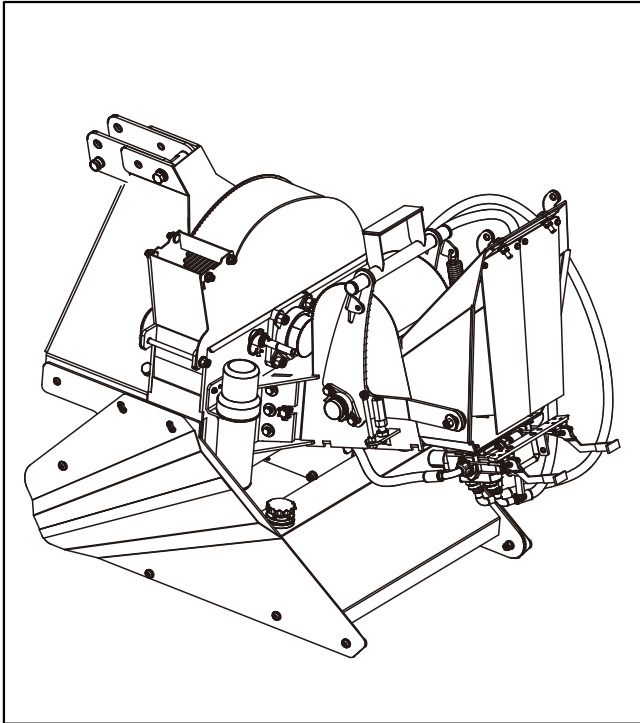
### EQUIPMENT SAFETY GUIDELINES

1. Safety of the operator and bystanders is one of the main concerns in designing and developing equipment. However, every year many accidents occur which could have been avoided by a few seconds of thought and a more careful approach to handling equipment. You, the operator, can avoid many accidents by observing the following precautions in this section. To avoid personal injury or death, study the following precautions and insist those working with you, or for you to follow them.
2. In order to provide a better view, certain photographs or illustrations in this manual may show an assembly with a safety shield removed. However, equipment should never be used in this condition. Keep all shields in place. If shield removal becomes necessary for repairs, replace the shield prior to use.

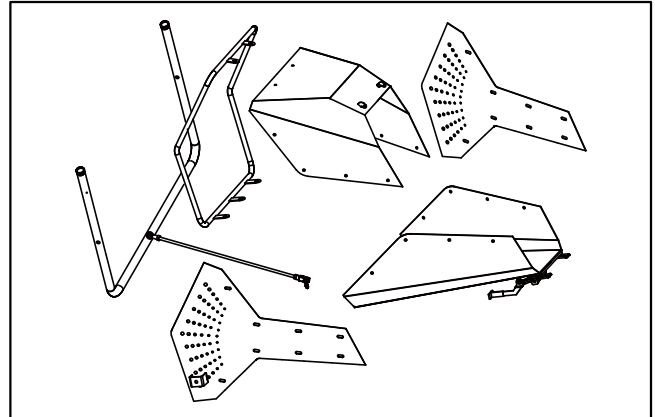
3. Replace any safety sign or instruction sign that is not readable or is missing.
4. Never use alcoholic beverages or drugs which can hinder alertness or coordination while using this equipment. Consult your doctor about using this machine while taking prescription medications.
5. Under no circumstances should young children be allowed to work with this equipment. Do not allow persons to use or assemble this unit until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works. Review the safety instructions with all users annually.
6. This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible, properly trained and physically able person familiar with machinery and trained in this equipment's operations. If the elderly are assisting with work, their physical limitations need to be recognized and accommodated.
7. Never exceed the limits of a piece of machinery.
8. If its ability to do a job, or to do so safely, is in question - DON'T TRY IT.
9. Do not modify the equipment in any way. Unauthorized modification may result in serious injury or death and may impair the function and life of the equipment.
10. In addition to the design and configuration of this implement, including Safety Signs and Safety Equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of the machine. Refer also to Safety Messages and operation instruction in each of the appropriate sections of the Tractor and machine manuals. Pay close attention to the Safety Signs affixed to the Tractor and the machine.

Many features incorporated into this machine are the result of suggestions made by customers like you. Read this manual carefully to learn how to use the chipper safely and how to set it to provide maximum field efficiency. By following the using instructions in conjunction with a good maintenance program, your tractor Wood Chipper will provide many years of trouble-free service.

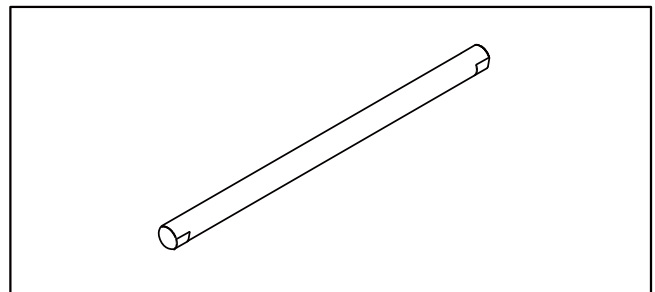
## CONTENTS SUPPLIED



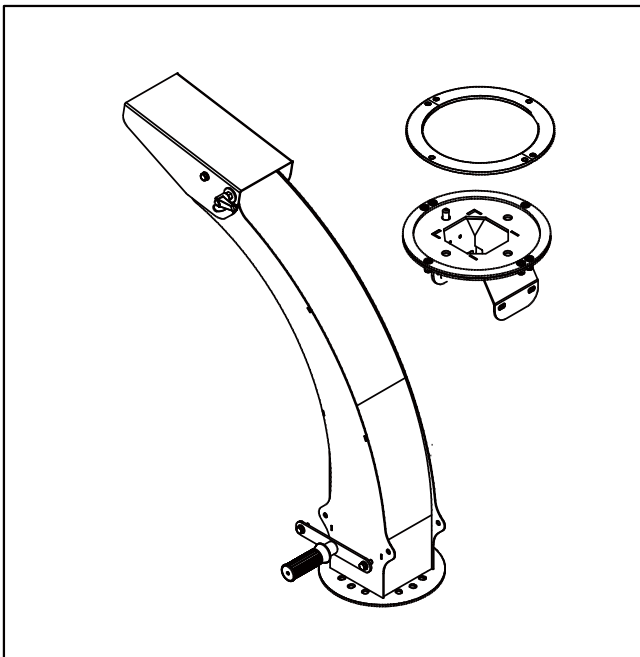
**1x Base Frame**



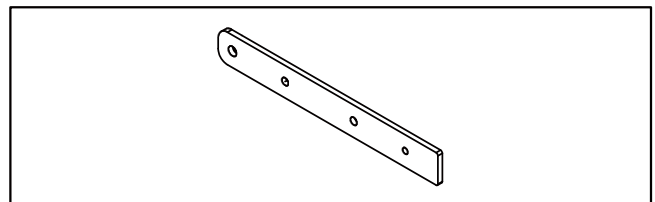
**1x Infeed Chute**



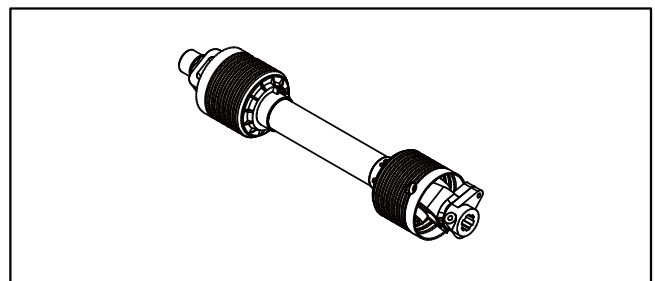
**1x Connecting Rod**



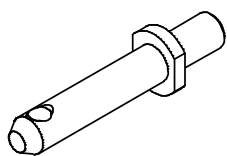
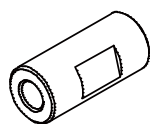
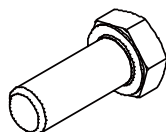
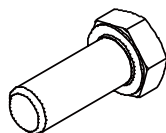
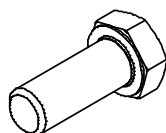
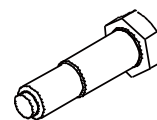
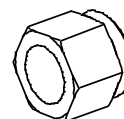
**1x Discharge Chute**

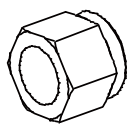


**2x Lower Hitch Arm**

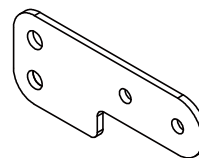


**1x PTO Shaft**

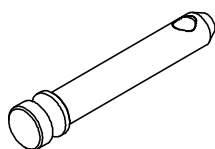
**2x Lower Hitch Pin****3x Linch Pin****2x Upper Hitch Bushing****4x M16 X 55 mm Hex Bolt****6x M16 X 40 mm Hex Bolt****6x M8 X 30 mm Hex Bolt****2x M10 X 40 mm Shoulder Bolt****14x M16 Flat Washer****4x M10 Flat Washer****18x M8 Flat Washer****6x M16 Spring Washer****4x M16 Lock Nut**



**2x M10 Lock Nut**



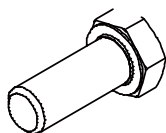
**2x Upper Hitch Plate**



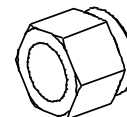
**1x Upper Hitch Pin**



**4x Nylon Flat Washer 10**



**21x M8 X 20 mm Hex Bolt**



**21x M8 Lock Nut**



**42x M8 Flat Washer**



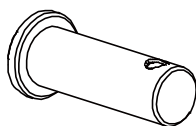
**2x M10 Flat Washer**



**4x Button Head Screw M10x16**



**21x Shaft 15**



**1x Pin Shaft 10x30**

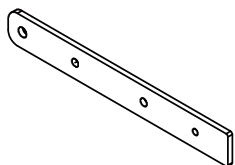


**1x R Pin 3x50**

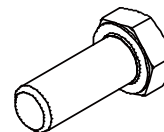
## ASSEMBLY

### LOWER HITCH ARM

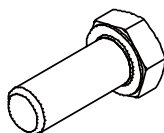
Using the hardware listed below, reorient and then assemble the lower hitch arms.



**2x Lower Hitch Arm**



**4x M16 X 55 mm Hex Bolt**



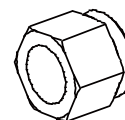
**2x M16 X 40 mm Hex Bolt**



**10x M16 Flat Washer**

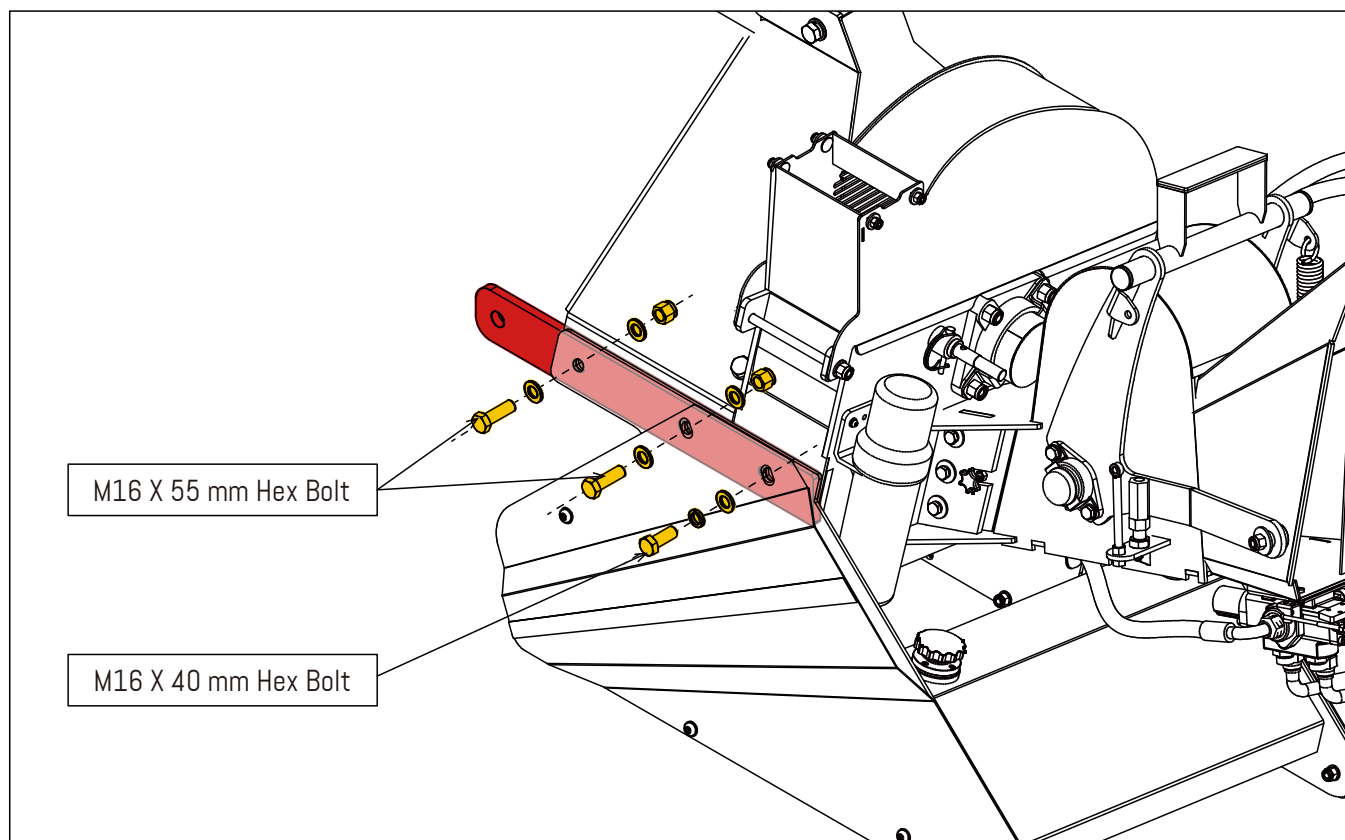


**2x M16 Spring Washer**



**4x M16 Lock Nut**

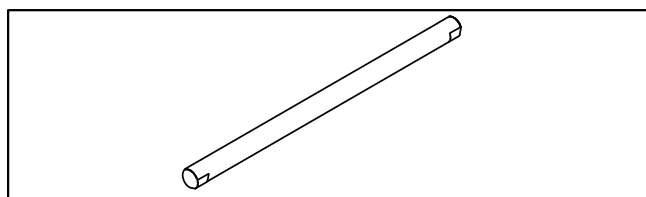
As shown in the figure, use hex head bolts M16×40, spring washers 16, and flat washers 16 to secure the Lower Hitch Arm. Then, use hex head bolts M16×55, flat washers 16, and M16 lock nuts to fasten it.



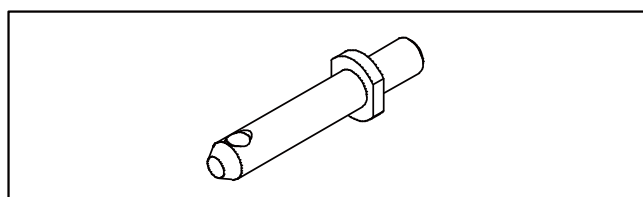
Note: The Left and Right Lower Hitch Arms are secured using the same bolt installation method.

## CONNECTING ROD

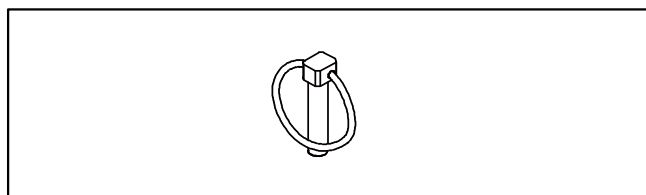
Using the components listed below, assemble the connecting rod and lower hitch pins to the lower hitch arms.



**1x**      **Connecting Rod**

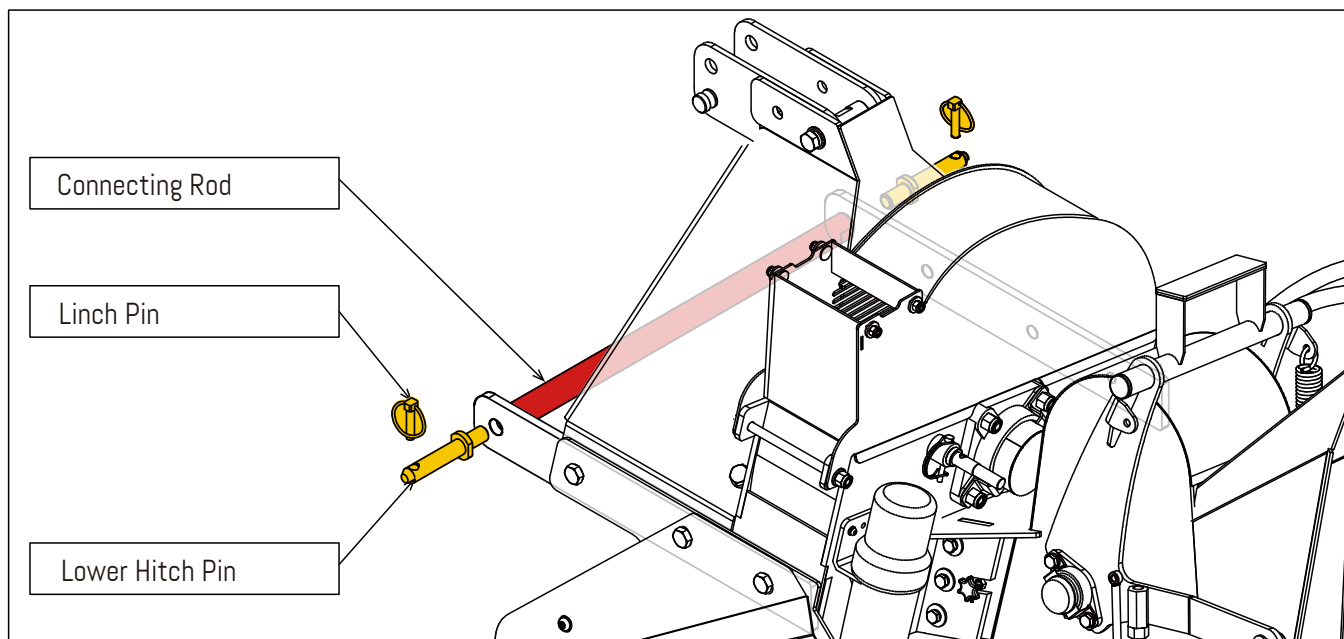


**2x**      **Lower Hitch Pin**



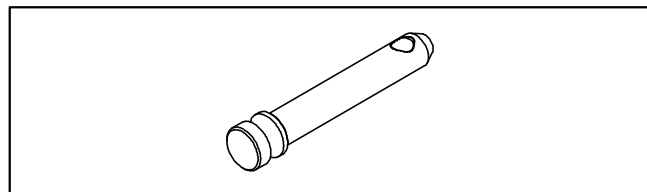
**2x**      **Linch Pin**

Place the Connecting Rod in the middle of the Lower Hitch Arm, and secure it on both sides using a Lower Hitch Pin and a Linch Pin.

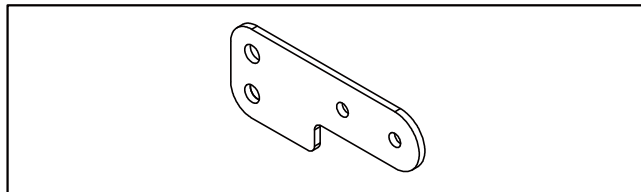


## UPPER HINGE PLATES

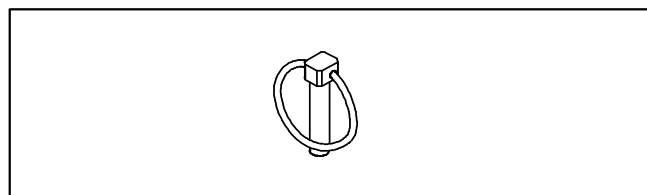
Using the hardware and components listed below, assemble the upper hitch plates to the belt guard.



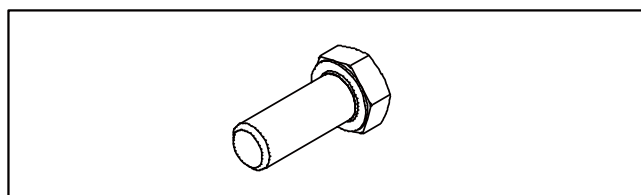
**1x**      **Upper Hitch Pin**



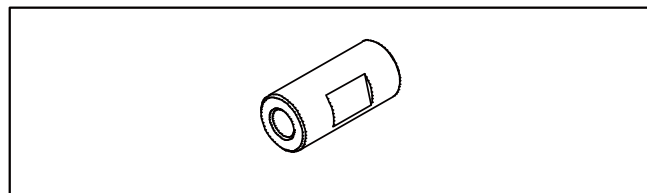
**2x**      **Upper Hitch Plate**



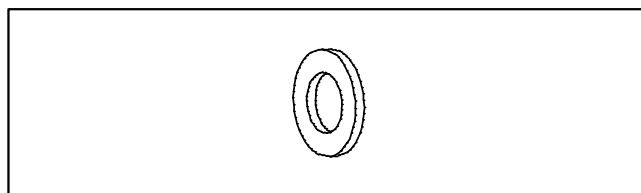
**1x**      **Linch Pin**



**4x**      **M16 X 40 mm Hex Bolt**



**2x**      **Upper Hitch Bushing**

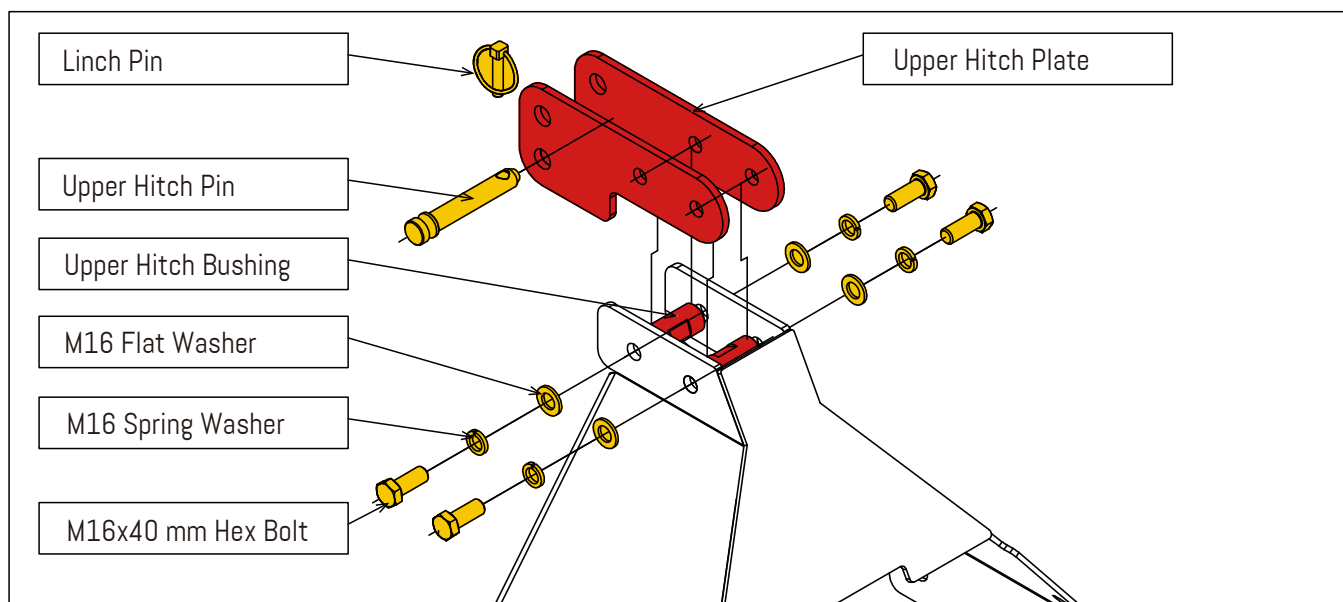


**4x**      **M16 Flat Washer**



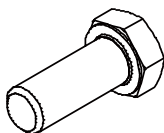
### 4x M16 Spring Washer

Secure the Upper Hitch Plate with an M16 flat washer, an M16 spring washer, and an M16x40 mm Hex Bolt. Insert the Upper Hitch Bushing in the middle, then install the Upper Hitch Pin and Linch Pin onto the Upper Hitch Plate.



## DISCHARGE CHUTE

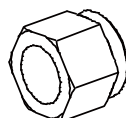
With the components and hardware listed below, assemble the discharge chute to the Base Frame.



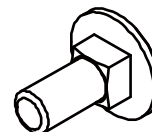
### 6x M8 X 30 mm Hex Bolt



### 22x M8 Flat Washer



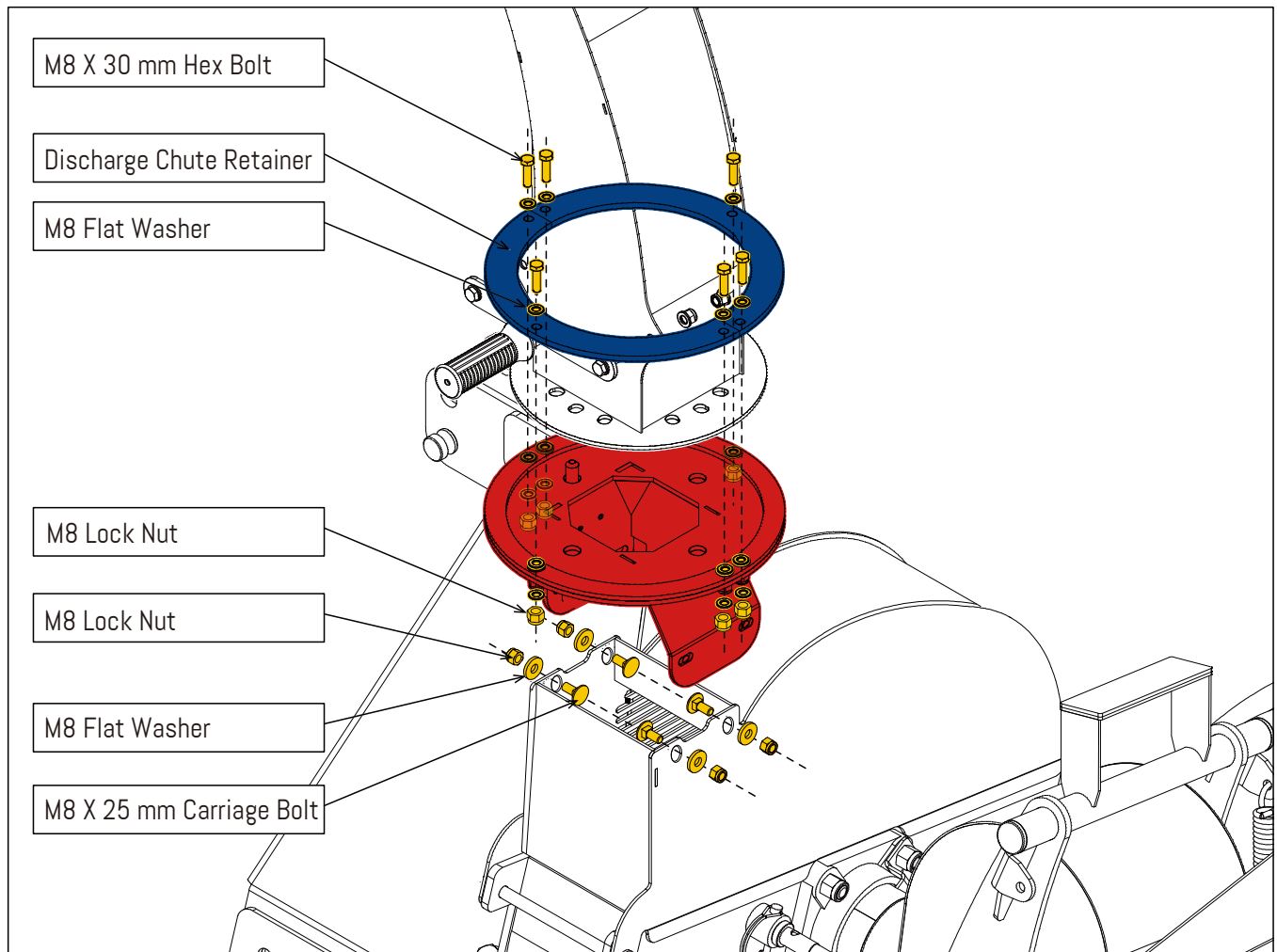
### 10x M8 Lock Nut



### 4x M8 X 25 mm Carriage Bolt

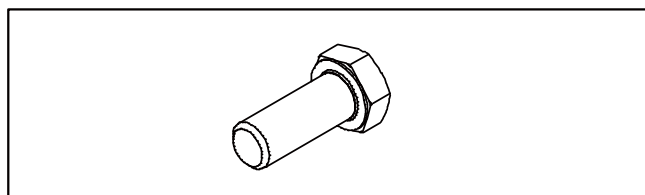
Place the discharge chute into the groove at the top of the nozzle. Use M8×30 mm hex bolts, M8 flat washers, and M8 lock nuts to fasten the discharge chute to the nozzle.

Then use M8×25 mm carriage bolts, M8 flat washers, and M8 lock nuts to secure the discharge chute to the base frame.

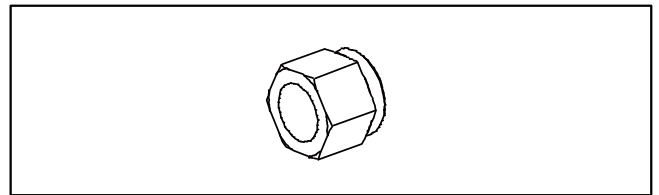


## INFEED CHUTE

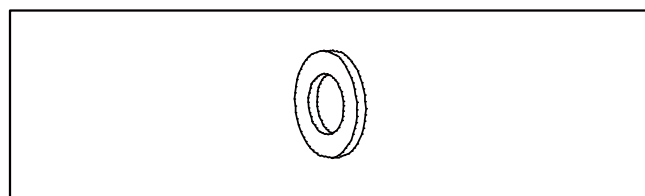
Assemble the feed chute using the following parts.



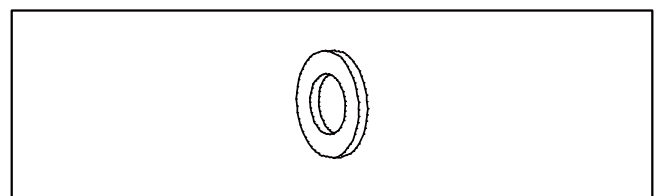
**21x M8 X 20 mm Hex Bolt**



**21x M8 Lock Nut**



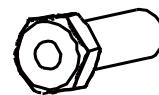
**42x M8 Flat Washer**



**2x M10 Flat Washer**

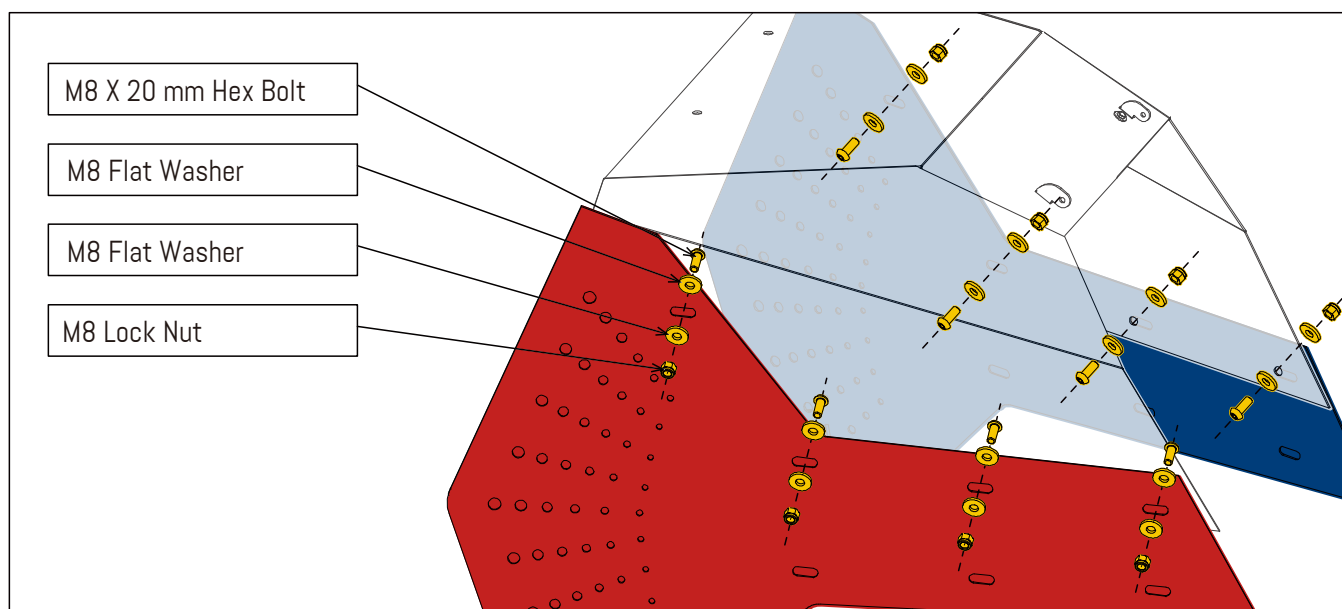


**4x Button Head Screw M10x16**

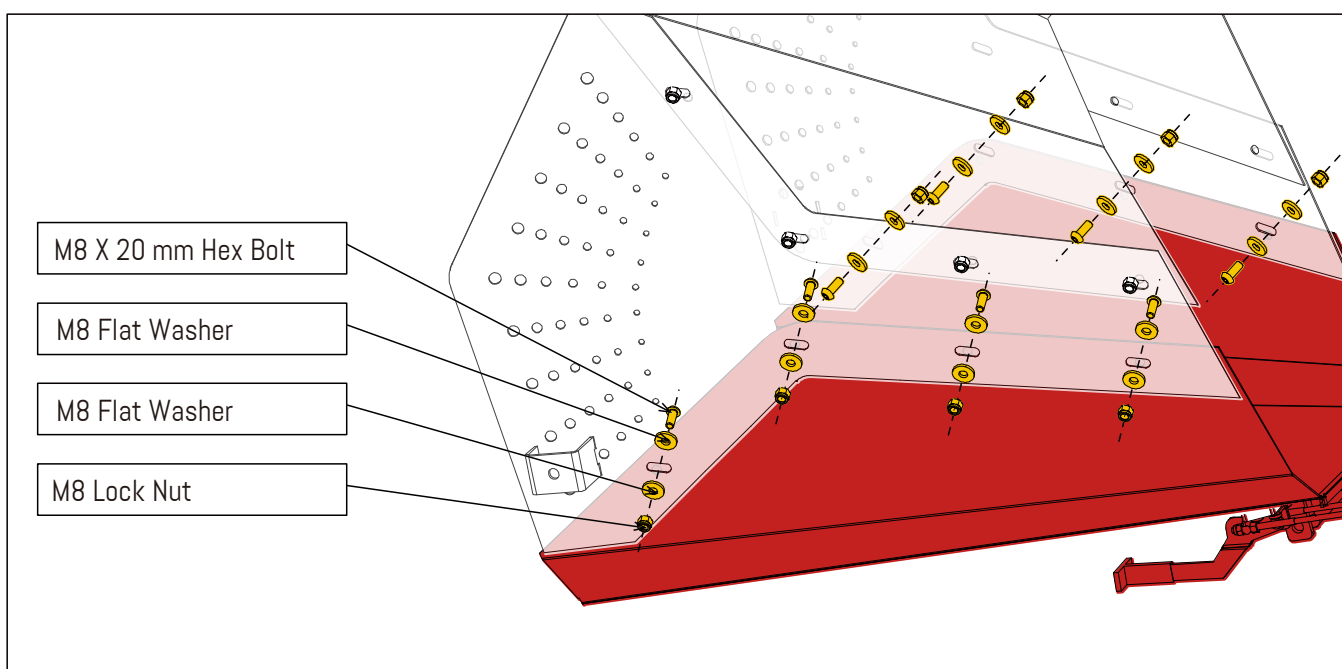


**2x Shaft 15**

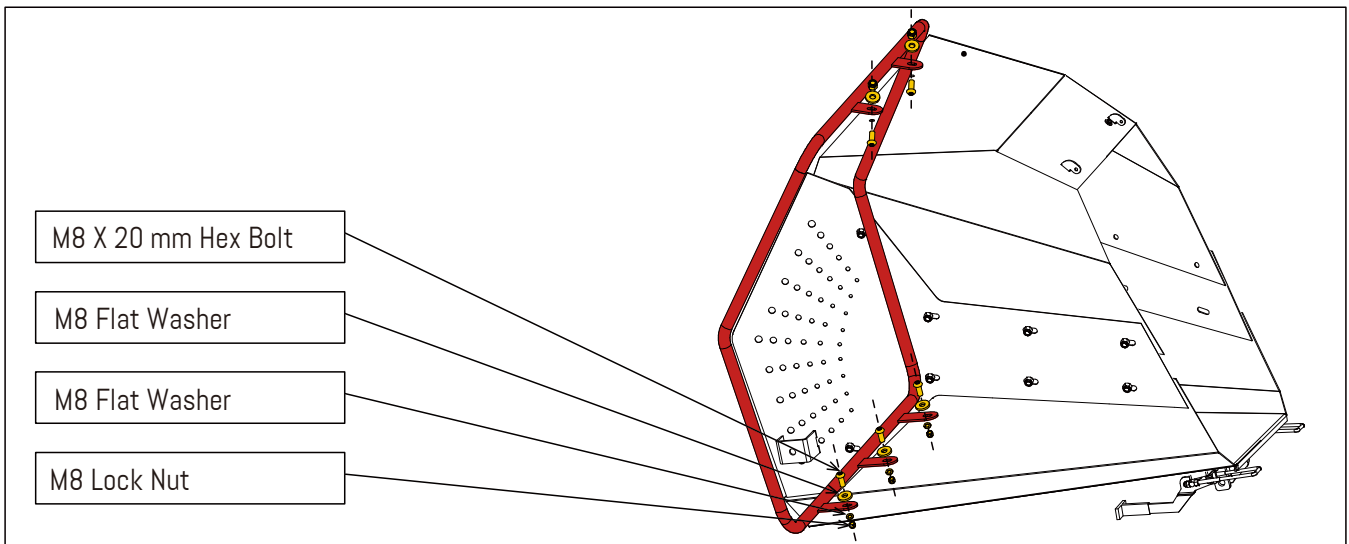
Use M8 × 20 mm Hex Bolts, M8 Lock Nuts, and M8 Flat Washers to install the left and right side panels of the feed chute onto the upper section of the chute.



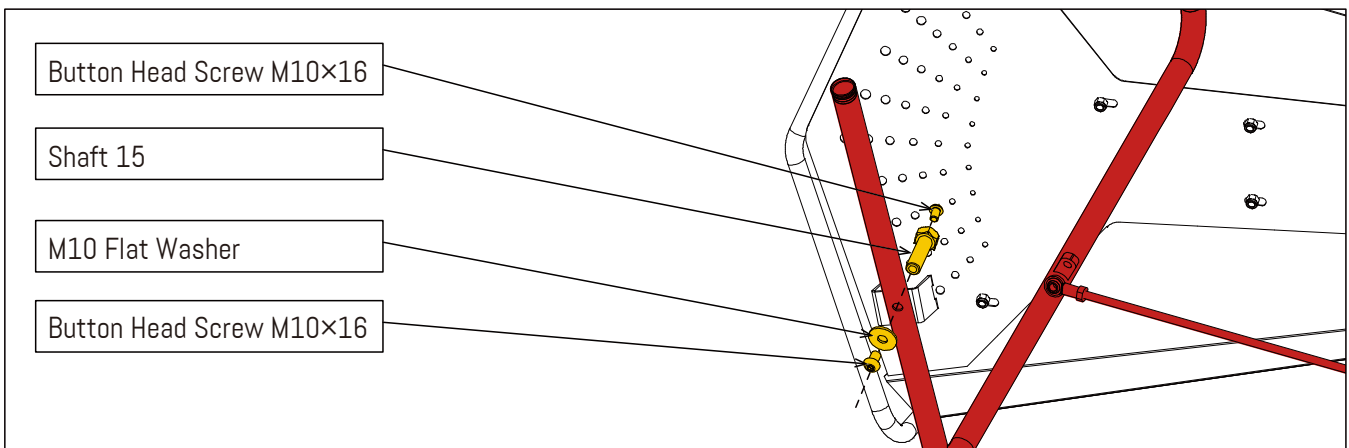
Use M8 × 20 mm Hex Bolts, M8 Lock Nuts, and M8 Flat Washers to install the left and right side panels of the feed chute onto the lower section of the chute.



Use M8 × 20 mm Hex Bolts, M8 Lock Nuts, and M8 Flat Washers to install the guard bar onto the feed chute.

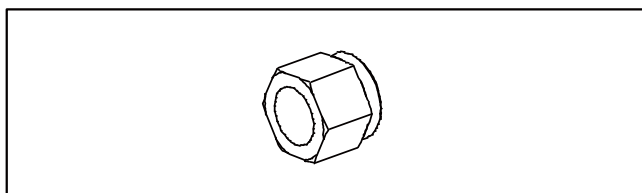


Use M8 Flat Washers, M10×16 Button Head Screws, and Shaft 15 to install the emergency stop lever onto the feed chute.

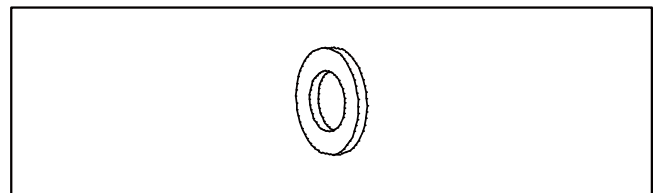


## CONTROL ARM LINKAGE

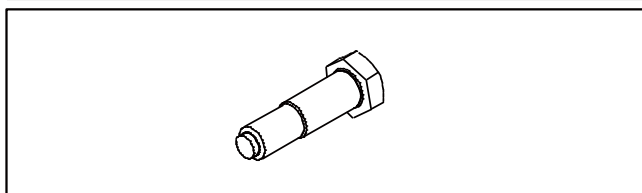
Use the following parts to install the feed chute onto the machine.



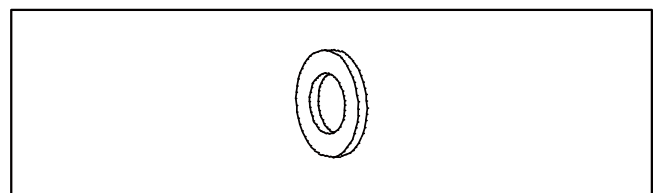
**3x M10 Lock Nut**



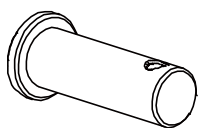
**6x M10 Flat Washer**



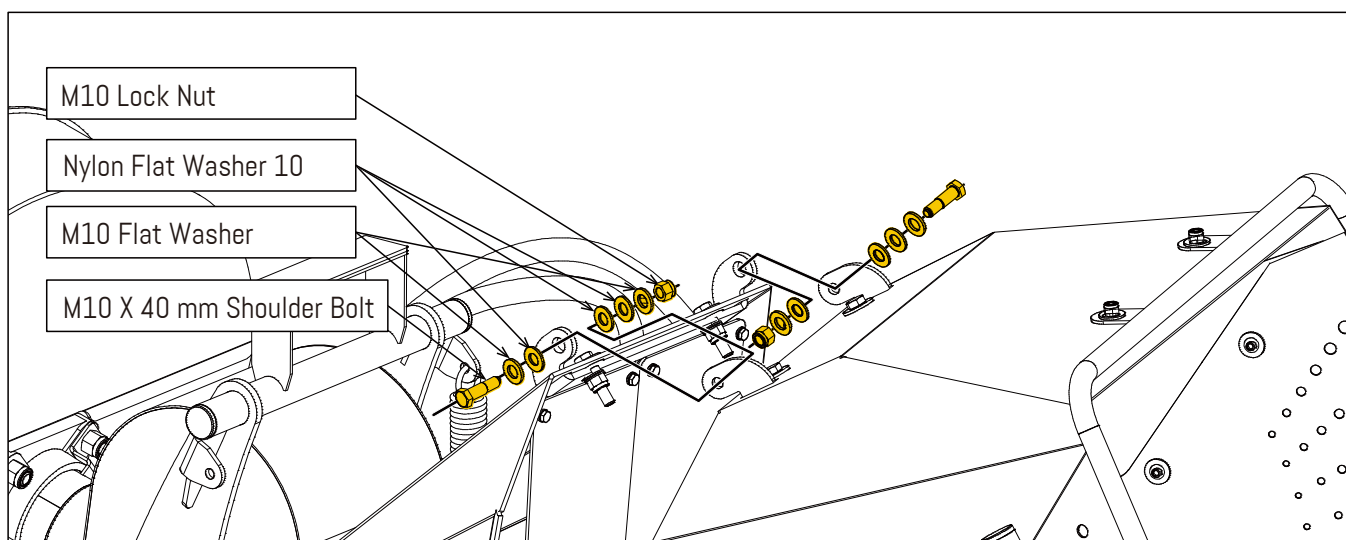
**2x M10 X 40 mm Shoulder Bolt**



**6x Nylon Flat Washer 10**

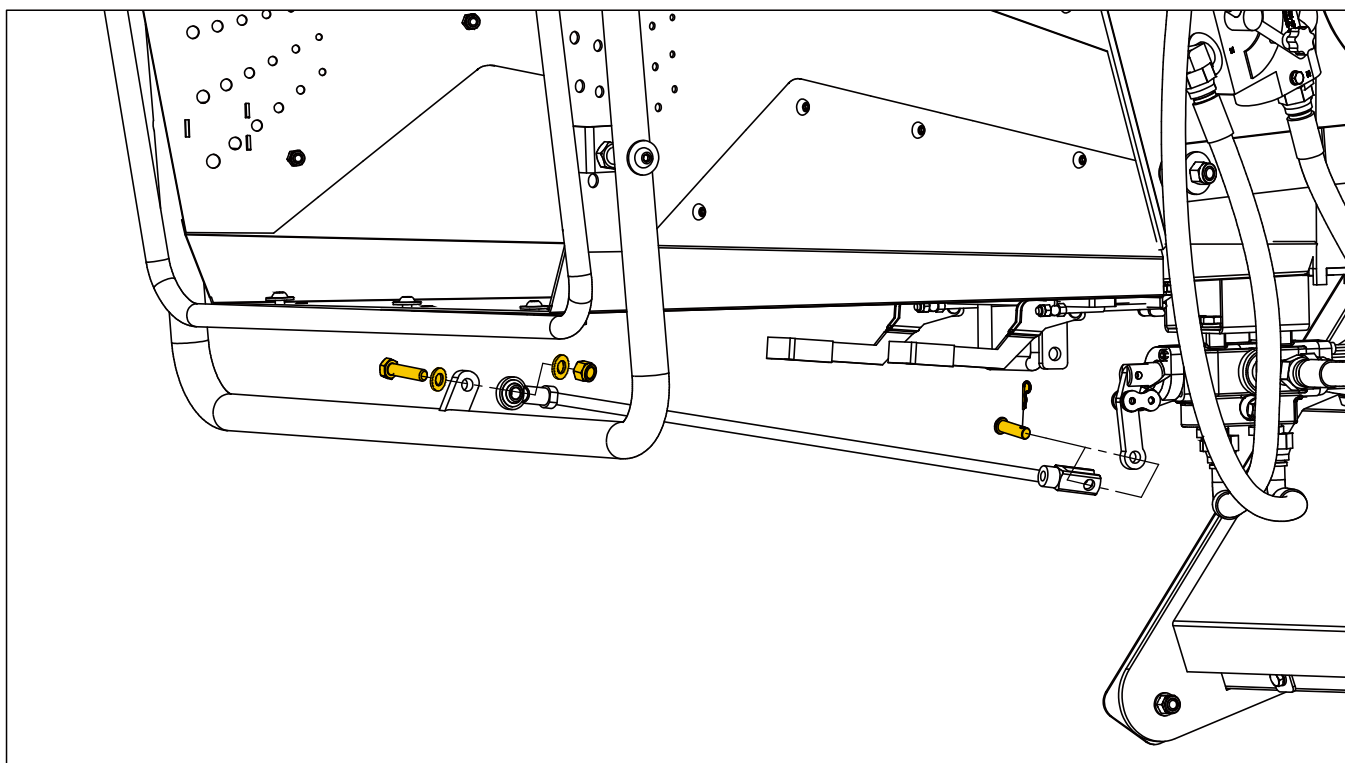
**1x****Pin Shaft 10×30****1x****R Pin 3×50**

Use an M10 Lock Nut, M10 Flat Washer, M10 × 40 mm Shoulder Bolt, and Nylon Flat Washer 10 to attach the upper part of the feed hopper to the chipper.



Use the safety lock on the feed hopper to secure it to the chipper, and then connect the emergency stop linkage using an M10 Hex Nut, M10 Flat Washer, and M10 × 40 Bolt.

Then use a 10×30 Pin Shaft and a 3×50 R Pin to connect the end of the linkage.



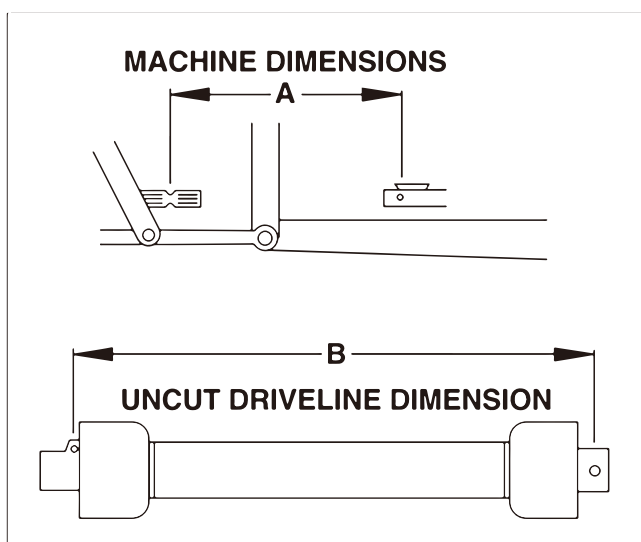
## OPERATION

### OPERATION

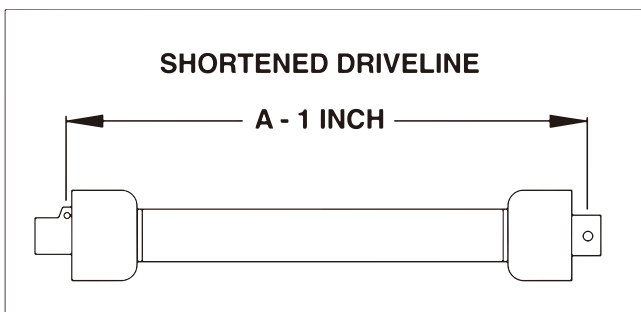
It is the responsibility of the owner or operator to read this manual and to train all other operators before they start working with the machine. Follow all safety instructions exactly. Safety is everyone's business.

By following recommended procedures, a safe working environment is provided for the operator, bystanders, and the area around the worksite. Untrained operators are not qualified to use the machine.

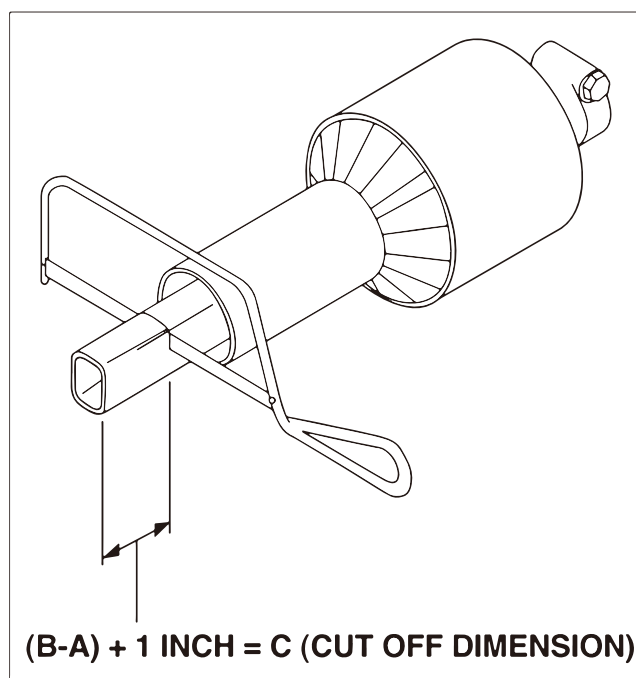
### SEPARATE PTO HALVES



1. To determine the proper length of the drive line, follow this procedure:



- Clear the area of bystanders, especially small children.
- Attach the chipper to the tractor but do not attach the drive line.
- Raise the machine until the input shaft is level with the tractor PTO shaft.
- Measure the dimension between the locking grooves on the tractor PTO shaft and the machine input shaft.
- Measure the same dimensions on the compressed drive line.
- If the compressed drive line dimension exceeds the machine dimension, the drive line will have to be cut.



- When cutting the drive line, follow this procedure:
  - Subtract the machine dimension (A) from the uncut drive line dimension (B) or (B-A). This dimension determines how much too long the drive line is.
  - Add another inch (25 mm) to the dimension to be sure it doesn't bottom out, to determine (C) the cut off dimension.
  - Use a hacksaw to cut dimension (C) from both ends. Cut both the plastic tubes and the metal cores.
  - Use a file to remove the burrs from the edges that were cut.
  - Assemble the 2 ends of the shaft.

f. Make sure the shaft can telescope freely. If it does not, separate the 2 parts and inspect for burrs or cuttings on the shaft ends. Be sure it telescopes freely before installing.

Note: Failure to perform this procedure may result in severe damage to the implement, which is not covered under warranty.

## CHIPPING OPERATION

The Wood Chipper is a strong, rugged machine that is built to a straightforward design which provides consistent chipping of logs up to 6" (152mm)

Always wear personal protective equipment (PPE) when ever operating the machine. This includes but is not limited to protective shoes with slip resistant soles, protective goggles or face shield, heavy gloves, hearing protection and protective clothing.

Do not place metal, bottles, cans, rocks, glass or other solid material into the wood chipper. If something like this gets into the machine, stop the machine immediately for a detailed inspection. Stop engine, remove ignition key and place in your pocket and wait for all moving parts to stop before inspecting or unplugging. Inspect machine for damaged or loosened parts before resuming work. Caution and care should be exercised when feeding material into the feeder. Do not reach into the hopper past the curtain barrier.

- Before beginning to feed the rotor is up to speed.
- Slowly slide the wooden material into the feed hopper and move it into the rotor.
- Do not force the material into the rotor, as the material engages the rotor, the rotor will draw the material in. Use continuous lite pressure to guide in the material.
- Be aware of how much material you feed in, slow down or stop if the rotor begins to slow down.
- Do not reach into the feed hopper further than the curtain to be sure not to contact the blades on the rotor.



f. Use a stick or branch to push any piece of material into the rotor that does not move on its own. If the jam persists then stop the engine and wait for the rotor to stop and then clear the jam. Do not take a chance with getting your hand caught in the rotor.

g. Ensure your wood chip pile is contained and doesn't affect the immediate work area.

## UNPLUGGING

Although the machine is designed to handle a wide variety of material without any problem, occasionally it plugs. When the machine plugs, follow this procedure to unplug:

- Clear the area of bystanders, especially small children.
- Turn off the hydraulics, stop the engine, remove the ignition key and place it in your pocket and wait for all moving parts to stop before unplugging.
- Pull the material out of the feed hopper. Be sure all the material is out, and nothing is jammed or wedged between the input opening and the rotor.
- Pull the material out of the discharge hood. Use a stick to poke loose any material jammed into the discharge hood. Do not allow anything to remain in this area.
- Check that everyone is clear of machine before restarting engine.
- Start the engine turn on the hydraulics, and resume working.

## SEVERE PLUG

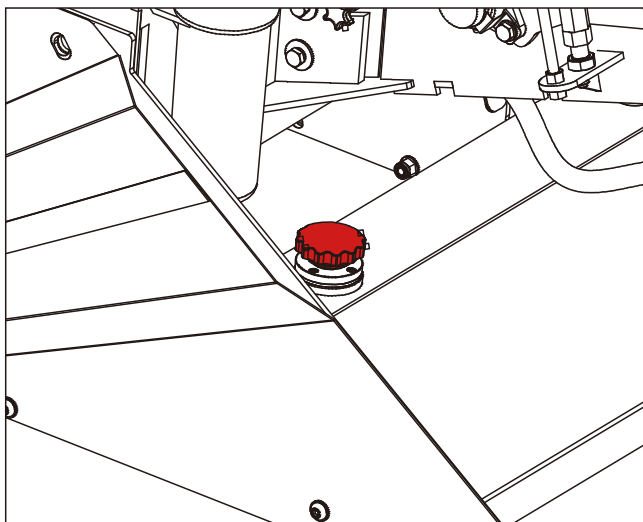
- Clear the area of bystanders, especially small children.
- Turn off the hydraulics, stop the engine, remove the ignition key and place it in your pocket or remove spark plug wire, and wait for all moving parts to stop before unplugging.
- Loosen the feed hopper anchor nuts and raise the feed hopper.
- Remove jammed material from inside the rotor compartment.

## HYDRAULIC OIL

\*Shipped with NO fluids. Must add own fluid



**USE PLASTIC GLOVES TO KEEP OIL OFF SKIN AND DISPOSE OF THE USED OIL AND FILTER IN AN ECOLOGICALLY SOUND WAY. THE OIL AND FILTER SHOULD BE CHANGED ONCE A YEAR OR AT ANY TIME IT BECOMES CONTAMINATED.**



Top up with ISO 32, ISO 46, AW 32, AW 46 hydraulic oil. Avoid overfilling.

## START UP

1. Place the tractor transmission in neutral, apply the parking brake, and shut off the tractor engine.
2. Attach the three-point hitch to the wood chipper and secure it with the hitch pins.
3. Adjust the top link of the three-point hitch so that the wood chipper sits level.
4. Connect the PTO shaft to the tractor, attaching the shear bolt end to the wood chipper. Ensure that the PTO safety chains are properly connected to both the tractor and the wood chipper to prevent the protective PTO guard from rotating.
5. Rotate the discharge chute to a safe direction and lock it in place using the spring-loaded latch and the positioning hole. Adjust the deflector to the desired position according to the required discharge distance.

6. Start the tractor engine and maintain a strong idle speed. Engage the PTO slowly. Engaging the PTO at high engine speed may damage the drive belt or shear bolt on the PTO shaft. Once the rotor spins freely, gradually increase the tractor engine speed until the PTO reaches 540 rpm. Most tractor tachometers indicate this speed with a line and/or marking.

7. When the wood chipper is running and the feed rollers are turning, you may begin chipping. Start with small-diameter branches until you become familiar with the machine and its operation. Once comfortable, you can begin feeding larger branches.

## STOPPING

Never leave the wood chipper unattended, and never perform inspection or maintenance work while the PTO shaft is engaged or the tractor engine is running. Allow sufficient time for the wood chipper to come to a complete stop.

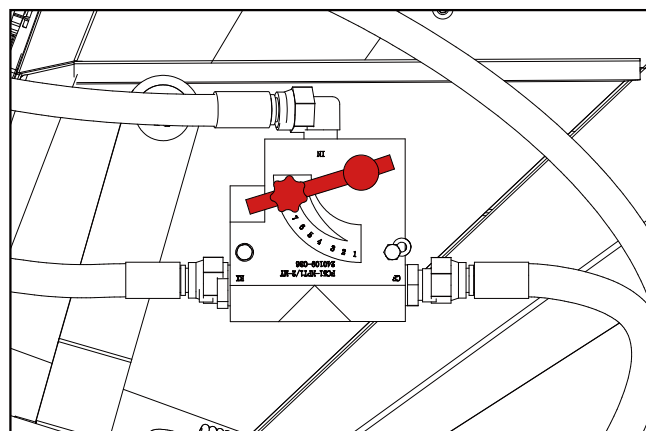
To stop the wood chipper, follow the steps below:

1. Move the tractor throttle to the slow/idle position.
2. Disengage the PTO lever and shut off the tractor engine.
3. Allow adequate time for the wood chipper to come to a complete stop.

Note: Even after the tractor or engine has been shut off, the flywheel will continue to rotate for a short period. The flywheel has stopped when no sound or vibration from the machine can be heard or felt. The PTO shaft will also have stopped rotating.

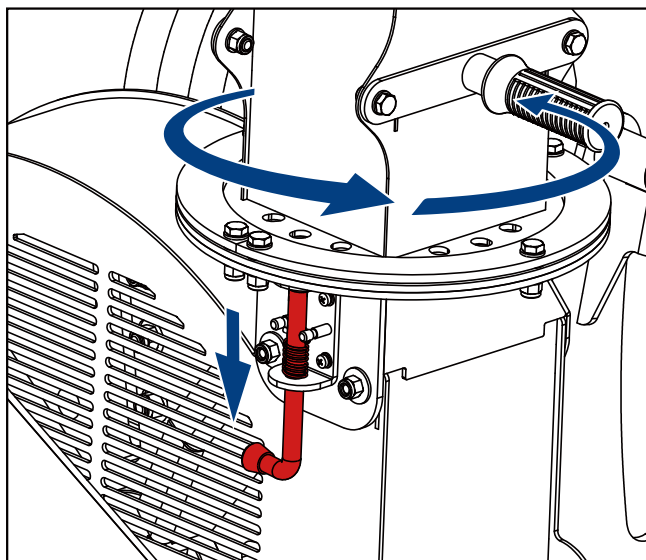
## INFEEED ROLLER CONTROL

The number "1" indicates that the infeed rollers are stopped, while "10" represents full operating speed. For maximum productivity and optimal performance, it is recommended to operate at full infeed speed during chipping.



## DISCHARGE CHUTE

To rotate the discharge chute, fully press down the spring-loaded locking pin and turn it 90° to temporarily hold it in the open position. This will allow the chute to rotate freely through 360°. Use the handles to turn the chute to the desired direction, then rotate the locking pin back 90° so it engages the nearest locking hole to secure the chute firmly in place.



## MAINTENANCE

By following a careful service and maintenance program for your machine, you will enjoy many years of trouble-free operation.

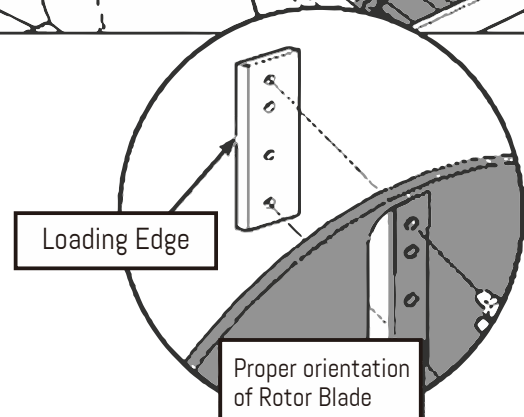
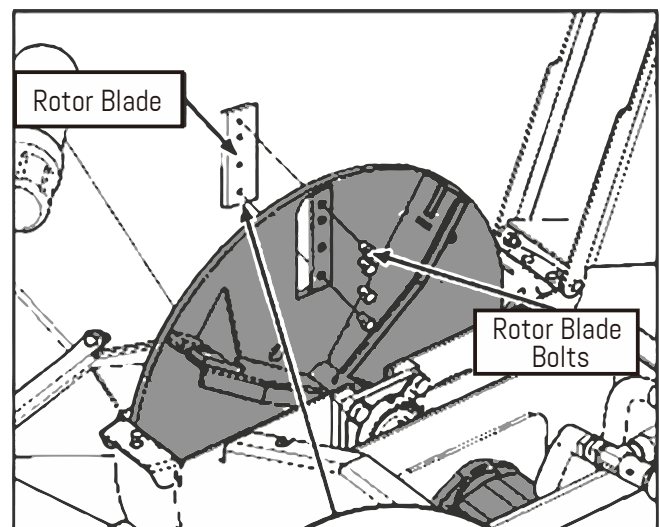
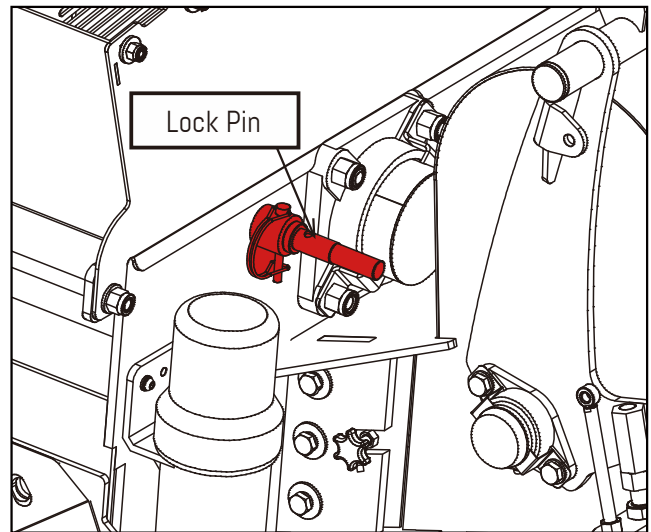
### BLADE AND BREAKER MAINTENANCE

The rotor and ledger blades need to be sharp for the Chipper to perform as expected. Periodic inspection is recommended. Keep the blades sharp to reduce the amount of power required during operation. Watch the sharpness of the blades when processing material with a lot of sand, soil or dirt mixed with it. Reverse or sharpen the blades if the cutting edge becomes dull. Twig breaker should be inspected for gouges or bent.

### ROTOR BLADES MAINTENANCE

The rotor is equipped with 4 blades spaced evenly to keep the rotor in balance. If one needs to be changed, the one opposite should also be changed.

1. Turn off the hydraulics, stop the engine, remove the ignition key, and place it in your pocket and wait for all moving parts to stop.
2. Remove the bolt that secures the upper rotor housing, and carefully open the rotor housing.
3. Manually rotate chipper rotor plate so that the blade is fully exposed.
4. Rotate the flywheel until one of the locking holes near the front edge of the blade is roughly aligned with the flywheel lock pin at the rear of the housing. Remove the round retaining pin from the flywheel lock pin, then rotate the lock pin 180° and insert it through the housing into the corresponding locking hole on the primary flywheel.
5. Remove the bolts that hold the rotor blade to the rotor, remove the blade.
6. Rotate the blade and reinstall or replace with new or resharpener blade.
7. Ensure the blade is properly oriented, with the leading edge out. The blade is designed to fit into the rotor one way only. See diagram for proper installation.
8. Tighten down bolts as specified in the torque chart.
9. Repeat steps for remaining blades.

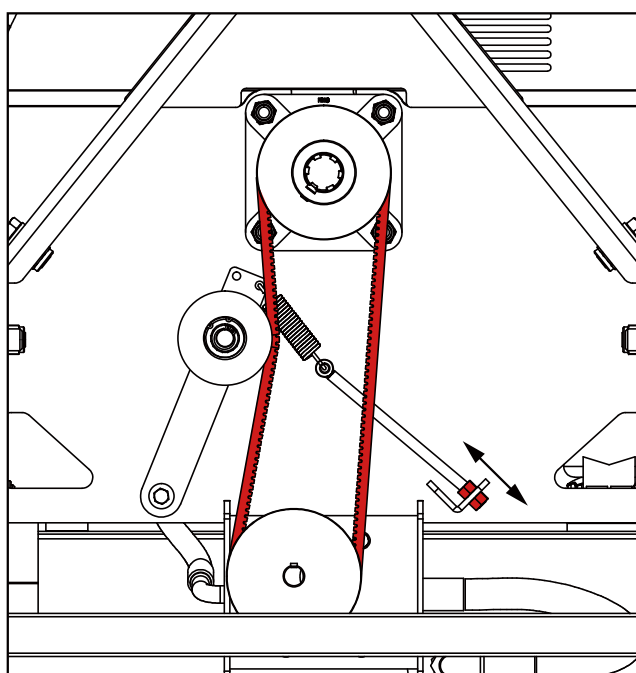


## ADJUSTING BELT TENSION

Check the belt's condition and tension every 30 hours of operation. The belt is automatically tensioned by an extension spring, but the tension can be adjusted if necessary by following these steps:

1. Check the pump belt tension by pressing it with your finger. The belt should have no slack and remain under firm tension.

2. If additional tension is needed, adjust the lower right-side eyebolt by loosening or tightening the hex nuts as shown below. This will stretch the spring and increase the belt tension until it is firm.



## BOLT TORQUE

### CHECKING BOLT TORQUE

The tables shown below give correct torque values for various bolts and cap screws. Tighten all bolts to the torques specified in chart unless otherwise noted. Check tightness of bolts periodically, using bolt torque chart as a guide. Replace hardware with the same strength bolt. Torque figures indicated above are valid for non-greased or non-oiled threads and heads unless otherwise specified. Therefore, do not grease or oil bolts or cap screws unless otherwise specified in this manual. When using locking elements, increase torque values by 5%.

\* Torque value for bolts and cap screws are identified by their head markings

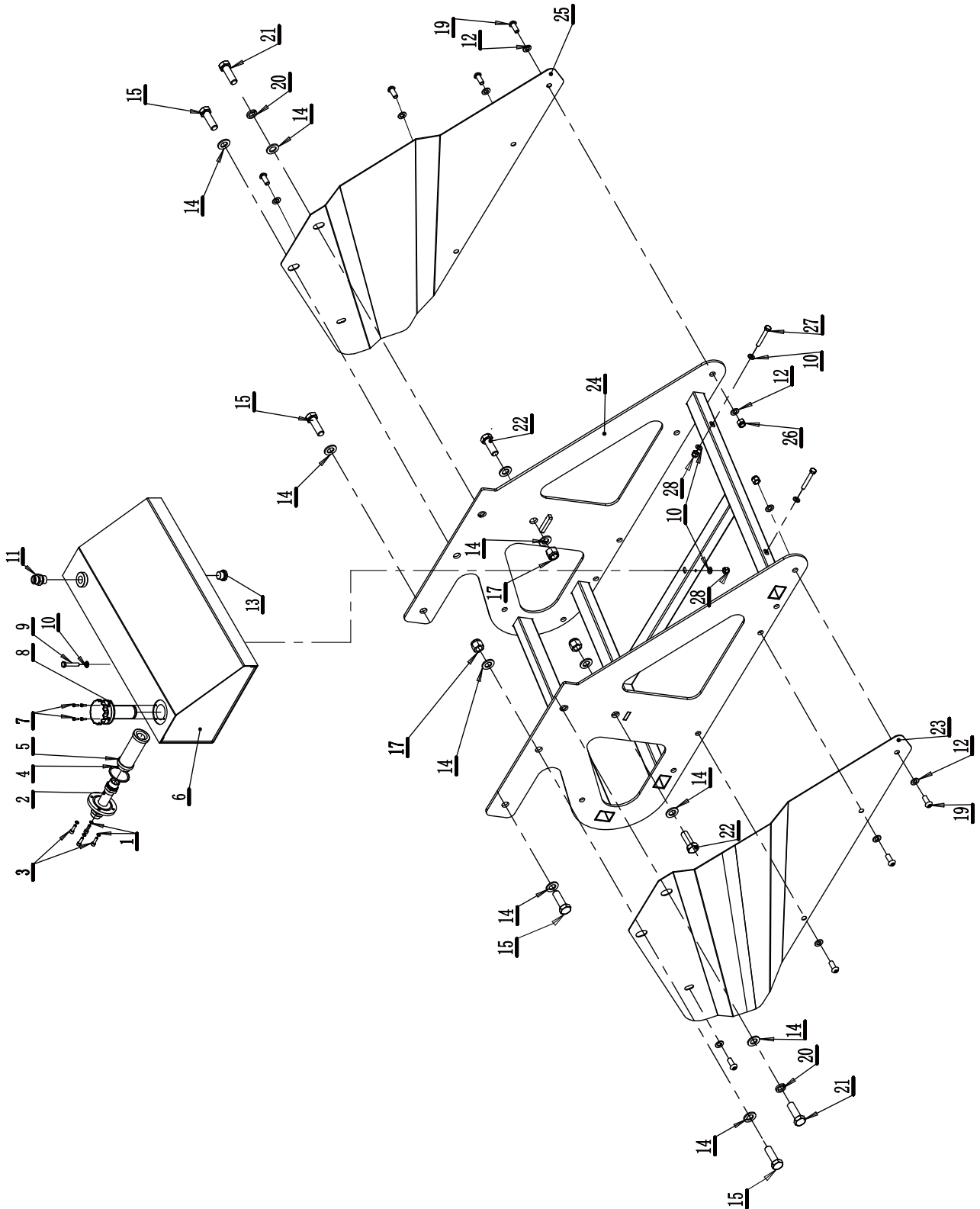
## ENGLISH TORQUE SPECIFICATIONS

| Bolt Diameter | Bolt Torque |       |       |       |       |       |
|---------------|-------------|-------|-------|-------|-------|-------|
|               | SAE 2       |       | SAE 5 |       | SAE 8 |       |
|               | N.m         | lb-ft | N.m   | lb-ft | N.m   | lb-ft |
| 1/4"          | 8           | 6     | 12    | 9     | 17    | 12    |
| 5/16"         | 13          | 10    | 25    | 19    | 36    | 27    |
| 3/8"          | 27          | 20    | 45    | 33    | 63    | 45    |
| 7/16"         | 41          | 30    | 72    | 53    | 100   | 75    |
| 1/2"          | 61          | 45    | 110   | 80    | 155   | 115   |
| 9/16"         | 95          | 60    | 155   | 115   | 200   | 165   |
| 5/8"          | 128         | 95    | 215   | 160   | 305   | 220   |
| 3/4"          | 225         | 165   | 390   | 290   | 540   | 400   |
| 7/8"          | 230         | 170   | 570   | 420   | 880   | 650   |
| 1"            | 345         | 225   | 850   | 630   | 1320  | 970   |

## METRIC TORQUE SPECIFICATIONS

| Bolt Diameter | Bolt Torque |       |      |       |
|---------------|-------------|-------|------|-------|
|               | 8.8         |       | 10.9 |       |
|               | N.m         | lb-ft | N.m  | lb-ft |
| M3            | 0.5         | 0.4   | 1.8  | 1.3   |
| M4            | 3           | 2.2   | 4.5  | 3.3   |
| M5            | 6           | 4     | 9    | 7     |
| M6            | 10          | 7     | 15   | 11    |
| M8            | 25          | 18    | 35   | 26    |
| M10           | 50          | 37    | 70   | 52    |
| M12           | 90          | 66    | 125  | 92    |
| M14           | 140         | 103   | 200  | 148   |
| M16           | 225         | 166   | 310  | 229   |
| M20           | 435         | 321   | 610  | 450   |
| M24           | 750         | 553   | 1050 | 744   |
| M30           | 1495        | 1103  | 2100 | 1550  |
| M36           | 2600        | 1917  | 3675 | 2710  |

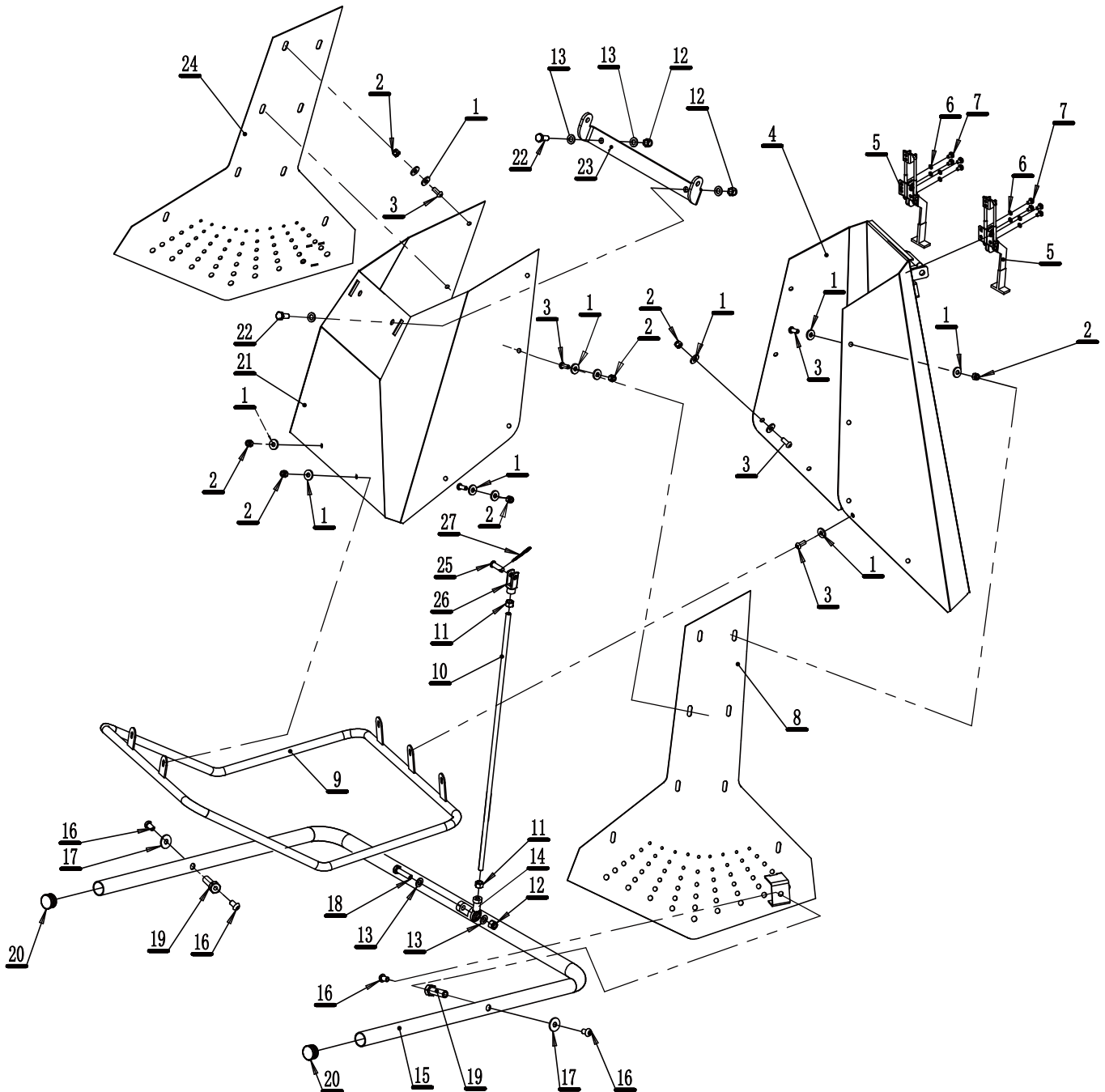
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                         | Quantity |
|--------|-------------------------------------|----------|
| 1      | Spring Washer 6                     | 4        |
| 2      | Suction Pipe Weldment               | 1        |
| 3      | Hex Socket Cap Screw M6×20          | 4        |
| 4      | O-Ring 50×3.55                      | 1        |
| 5      | Suction Oil Filter                  | 1        |
| 6      | Fuel Tank Weldment                  | 1        |
| 7      | Hex Socket Cap Screw M4×12          | 4        |
| 8      | Air Filter                          | 1        |
| 9      | Hex Head Bolt M8×45                 | 1        |
| 10     | Flat Washer 8                       | 6        |
| 11     | Straight Connector                  | 1        |
| 12     | Flat Washer 10                      | 16       |
| 13     | Fuel Tank Plug M20×1.5              | 1        |
| 14     | Flat Washer 16                      | 14       |
| 15     | Full Thread Hex Head Bolt M16×50    | 4        |
| 16     | Thick Flat Washer φ10×20×3          | 6        |
| 17     | Nylon Insert Hex Lock Nut M16       | 6        |
| 18     | Hex Socket Button Head Screw M10×12 | 4        |
| 19     | Hex Socket Button Head Screw M10×25 | 8        |
| 20     | Spring Washer 16                    | 2        |
| 21     | Full Thread Hex Head Bolt M16×40    | 2        |
| 22     | Full Thread Hex Head Bolt M16×45    | 2        |
| 23     | Left Base Guard                     | 1        |
| 24     | Base Weldment                       | 1        |
| 25     | Right Base Guard                    | 1        |
| 26     | Nylon Insert Hex Lock Nut M10       | 8        |
| 27     | Hex Head Bolt M8×55                 | 2        |
| 28     | Nylon Insert Hex Lock Nut M8        | 3        |

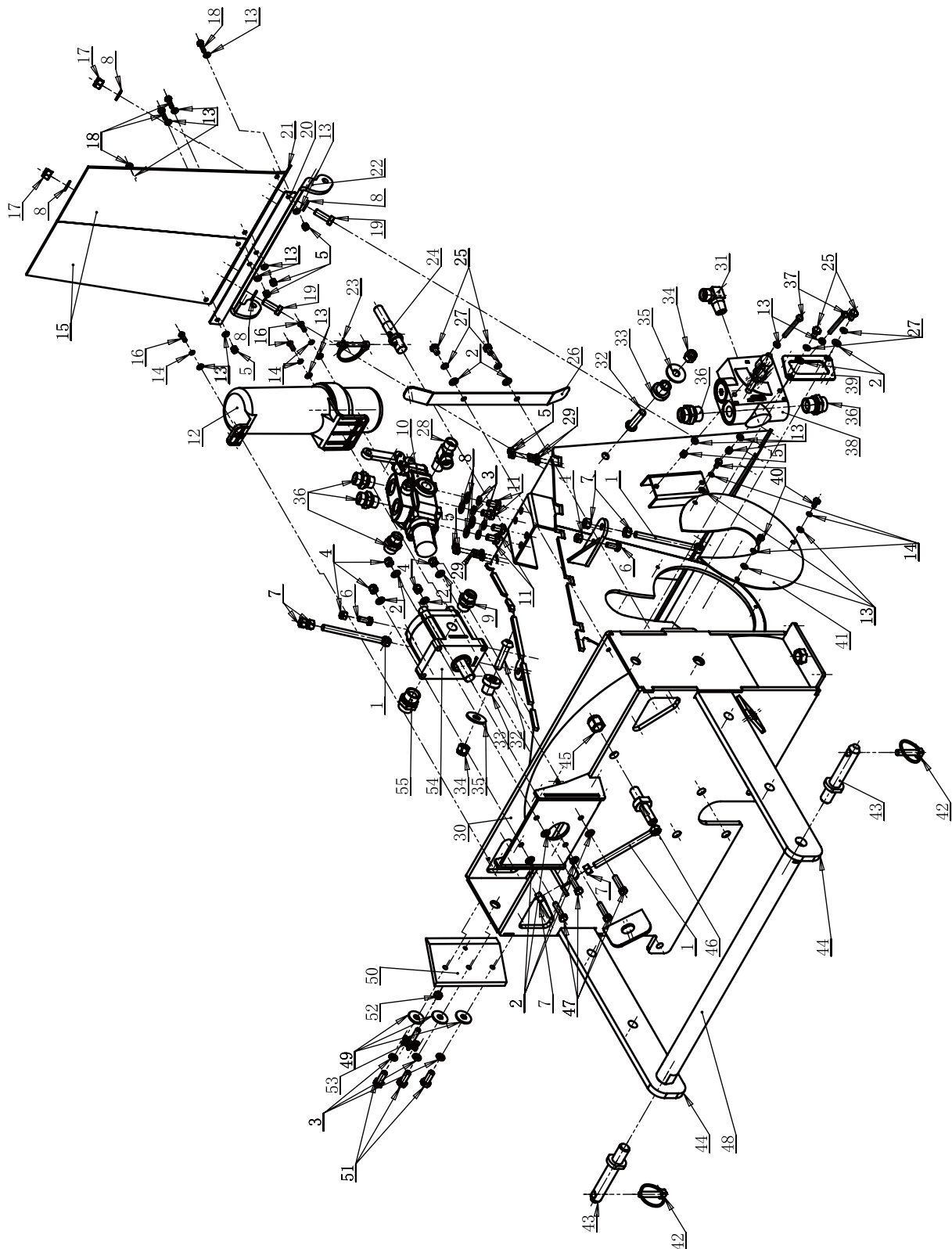
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                                | Quantity |
|--------|--------------------------------------------|----------|
| 1      | Large Flat Washer 8                        | 42       |
| 2      | Nylon Insert Hex Lock Nut M8               | 21       |
| 3      | Hex Socket Button Head Screw M8×20         | 21       |
| 4      | Infeed Housing Bottom Plate Weldment       | 1        |
| 5      | Quick Clamp                                | 2        |
| 6      | Spring Washer 6                            | 8        |
| 7      | Cross Recess Pan Head Screw M6×10          | 8        |
| 8      | Infeed Housing Right Side Plate A Weldment | 1        |
| 9      | Frame Round Bar Weldment                   | 1        |
| 10     | Double-End Stud 670                        | 1        |
| 11     | Hex Nut M10                                | 2        |
| 12     | Nylon Insert Hex Lock Nut M10              | 3        |
| 13     | Flat Washer 10                             | 6        |
| 14     | Rod End Bearing M10×1.5                    | 1        |
| 15     | Control Arm Weldment                       | 1        |
| 16     | Hex Socket Button Head Screw M10×16        | 4        |
| 17     | Large Flat Washer 10                       | 2        |
| 18     | Full Thread Hex Head Bolt M10×40           | 1        |
| 19     | Shaft 15                                   | 2        |
| 20     | Round Tube End Cap                         | 2        |
| 21     | Infeed Housing Front Panel W               | 1        |
| 22     | Full Thread Hex Head Bolt M10×25           | 2        |
| 23     | Infeed Opening Panel Hook Weldment         | 1        |
| 24     | Infeed Housing Left Side Plate A Weldment  | 1        |
| 25     | Pin Shaft 10×30                            | 1        |
| 26     | Y Fitting Y32-M10×1.5                      | 1        |
| 27     | R Pin 3×50                                 | 1        |

## PARTS DIAGRAM

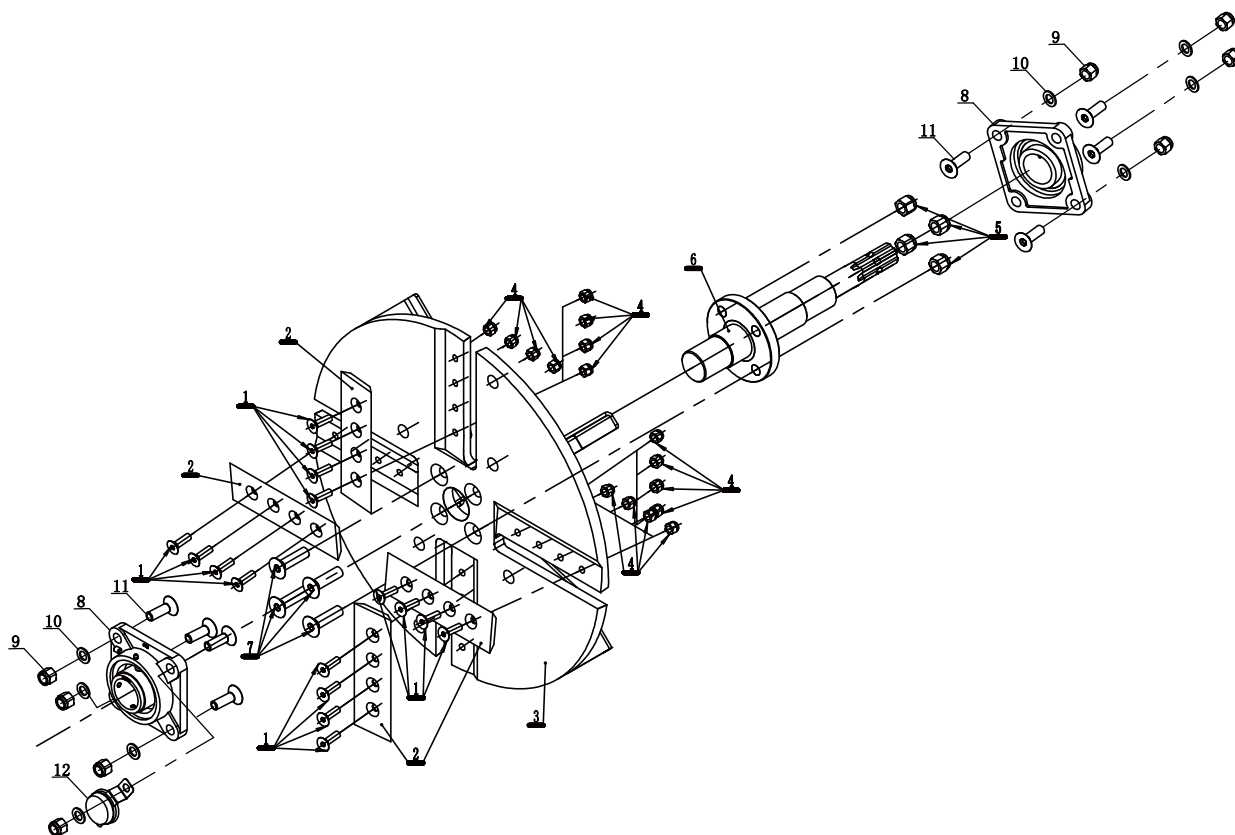


## PARTS LIST

| Parts# | Description                        | Quantity |
|--------|------------------------------------|----------|
| 1      | Eye Bolt M10×130                   | 3        |
| 2      | Flat Washer 8                      | 12       |
| 3      | Spring Washer 10                   | 7        |
| 4      | Nylon Insert Hex Lock Nut M8       | 6        |
| 5      | Nylon Insert Hex Lock Nut M6       | 10       |
| 6      | Full Thread Hex Head Bolt M8×20    | 2        |
| 7      | Hex Nut M10                        | 6        |
| 8      | Flat Washer 10                     | 8        |
| 9      | Straight Connector 1CT-22-08       | 1        |
| 10     | Control Valve                      | 1        |
| 11     | Full Thread Hex Head Bolt M10×16   | 4        |
| 12     | Xinyuan Manual Tube B              | 1        |
| 13     | Flat Washer 6                      | 18       |
| 14     | Spring Washer 6                    | 6        |
| 15     | Curtain                            | 2        |
| 16     | Hex Socket Button Head Screw M6×16 | 3        |
| 17     | Nylon Insert Hex Lock Nut M10      | 2        |
| 18     | Full Thread Hex Head Bolt M6×20    | 4        |
| 19     | Full Thread Hex Head Bolt M10×30   | 2        |
| 20     | Clamp Plate                        | 1        |
| 21     | Warning Plate                      | 1        |
| 22     | Pressure Plate                     | 1        |
| 23     | D-Shaped Lock Pin 6×60             | 1        |
| 24     | Cutter Disc Lock Pin               | 1        |
| 25     | Full Thread Hex Head Bolt M8×12    | 4        |
| 26     | Knife Adjusting Plate Weldment     | 1        |
| 27     | Spring Washer 8                    | 4        |
| 28     | Tee Fitting G1/2-M22×1.5           | 1        |

| Parts# | Description                                   | Quantity |
|--------|-----------------------------------------------|----------|
| 29     | Cross Recess Pan Head Screw M6×16             | 4        |
| 30     | Chipping Chamber Weldment                     | 1        |
| 31     | Elbow 1CG9-22-080G                            | 1        |
| 32     | Hex Socket Button Head Screw M12×50           | 2        |
| 33     | Spacer 12×28                                  | 2        |
| 34     | Nylon Insert Hex Lock Nut M12                 | 2        |
| 35     | Large Flat Washer 12                          | 2        |
| 36     | Straight Connector 1CB-22-08WD                | 6        |
| 37     | Hex Head Bolt M6×65                           | 2        |
| 38     | Flow Control Valve                            | 1        |
| 39     | Stop Plate Weldment                           | 1        |
| 40     | Full Thread Hex Head Bolt M6×12               | 3        |
| 41     | Feed Roller Cover Plate                       | 1        |
| 42     | Safety Pin 10×45                              | 2        |
| 43     | Lower Link Pin                                | 2        |
| 44     | Lower Link Arm                                | 2        |
| 45     | Nylon Insert Hex Lock Nut M16                 | 1        |
| 46     | Pin Shaft 16                                  | 1        |
| 47     | Full Thread Hex Head Bolt M8×35               | 4        |
| 48     | Connecting Rod                                | 1        |
| 49     | Large Flat Washer 10                          | 3        |
| 50     | Fixed Blade                                   | 1        |
| 51     | Full Thread Hex Head Bolt M10×25 (Grade 12.9) | 3        |
| 52     | Hex Nut M8                                    | 1        |
| 53     | Star Handle M8×30                             | 1        |
| 54     | Gear Pump                                     | 1        |
| 55     | Straight Connector 1CT-26-08                  | 1        |

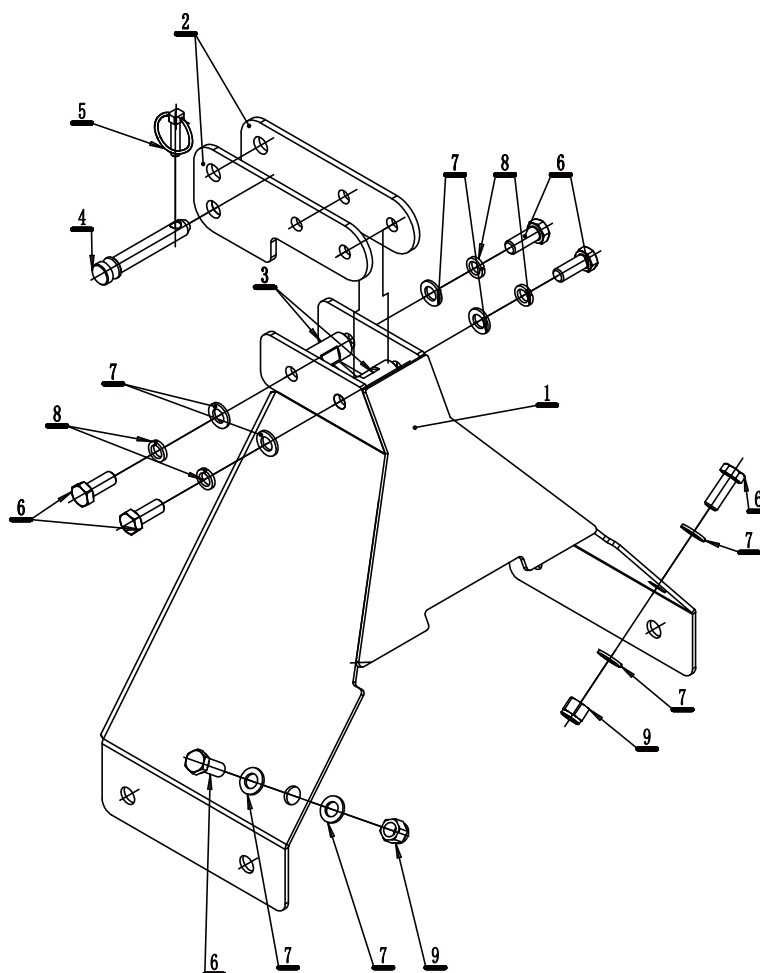
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                          | Quantity |
|--------|--------------------------------------|----------|
| 1      | Hex Socket Countersunk Screw M10×35  | 16       |
| 2      | Moving Blade 220×70×8                | 4        |
| 3      | Cutter Disc Weldment                 | 1        |
| 4      | Nylon Insert Hex Lock Nut M10        | 16       |
| 5      | Nylon Insert Hex Lock Nut M16        | 4        |
| 6      | Splined Shaft 6×28×34.85×8.6         | 1        |
| 7      | Hex Socket Countersunk Screw M16×60  | 4        |
| 8      | Square Flange Bearing                | 2        |
| 9      | Non-metallic Insert Hex Lock Nut M14 | 8        |
| 10     | Flat Washer 14                       | 8        |
| 11     | Socket Countersunk Head Screw M14×45 | 8        |
| 12     | Bearing Protection Cover 210         | 1        |

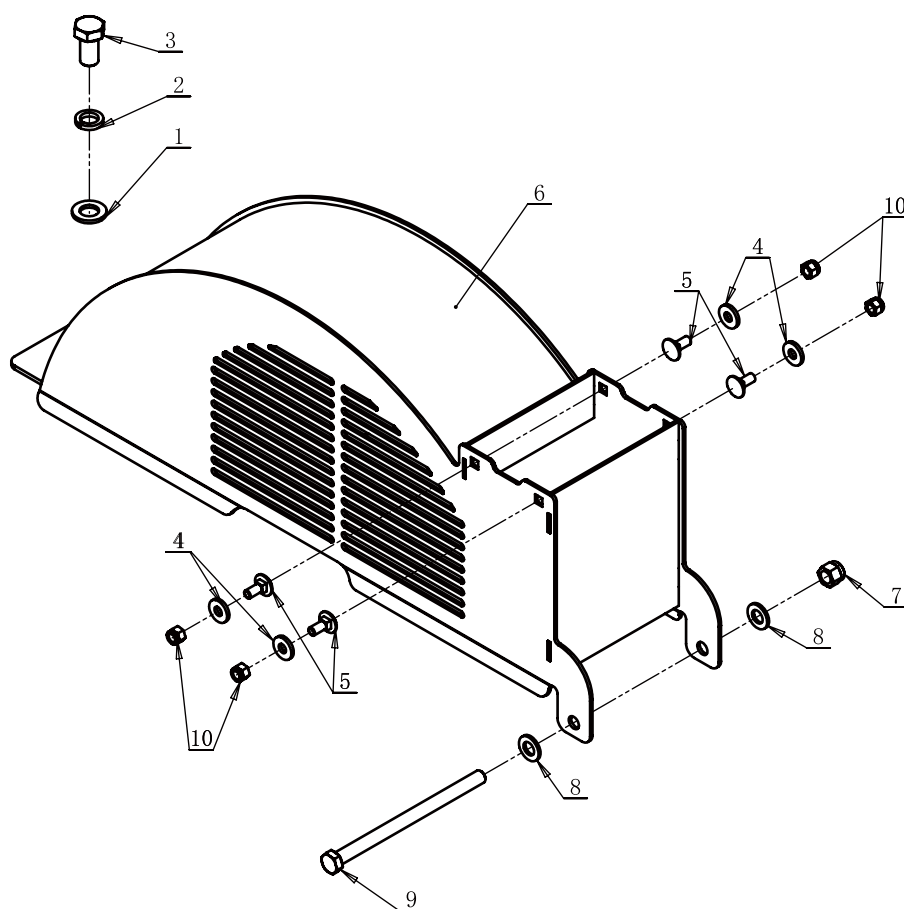
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                      | Quantity |
|--------|----------------------------------|----------|
| 1      | Belt Guard Weldment              | 1        |
| 2      | Upper Link Plate                 | 2        |
| 3      | Connecting Rod 23×64             | 2        |
| 4      | Upper Link Pin                   | 1        |
| 5      | Safety Pin 10×45                 | 1        |
| 6      | Full Thread Hex Head Bolt M16×40 | 6        |
| 7      | Flat Washer 16                   | 8        |
| 8      | Spring Washer 16                 | 4        |
| 9      | Nylon Insert Hex Lock Nut M16    | 2        |

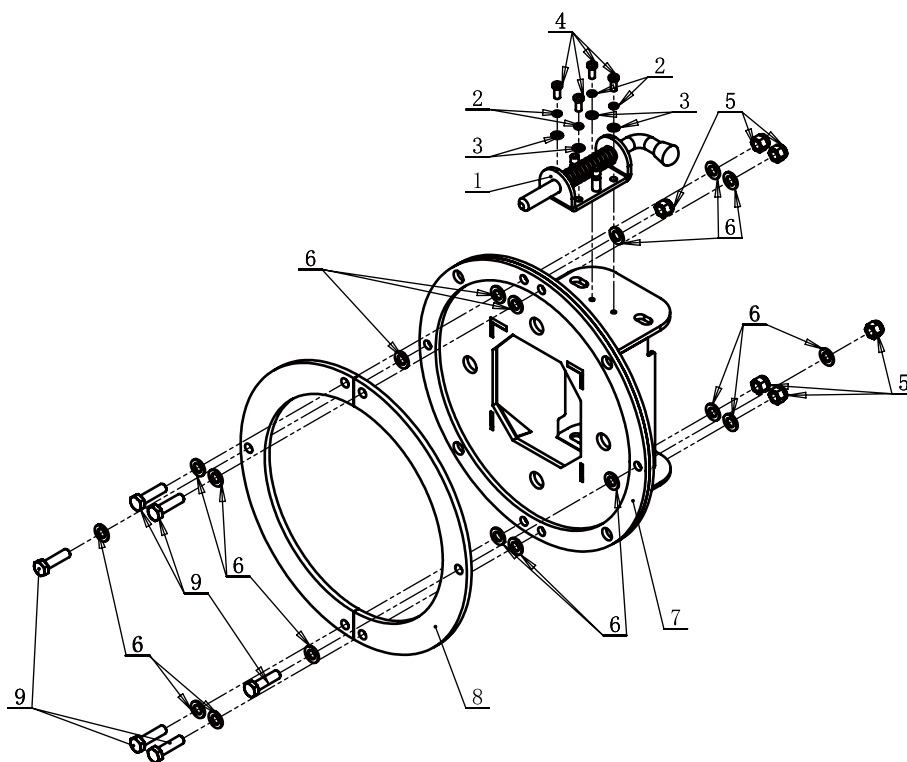
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                        | Quantity |
|--------|------------------------------------|----------|
| 1      | Flat Washer 16                     | 1        |
| 2      | Spring Washer 16                   | 1        |
| 3      | Full Thread Hex Head Bolt M16×30   | 1        |
| 4      | Large Flat Washer 8                | 4        |
| 5      | Large Semi-Round Neck Bolt M8×20   | 4        |
| 6      | Cutter Disc Upper Housing Weldment | 1        |
| 7      | Nylon Insert Hex Lock Nut M12      | 1        |
| 8      | Flat Washer 12                     | 2        |
| 9      | Hex Head Bolt M12×180              | 1        |
| 10     | Nylon Insert Hex Lock Nut M8       | 4        |

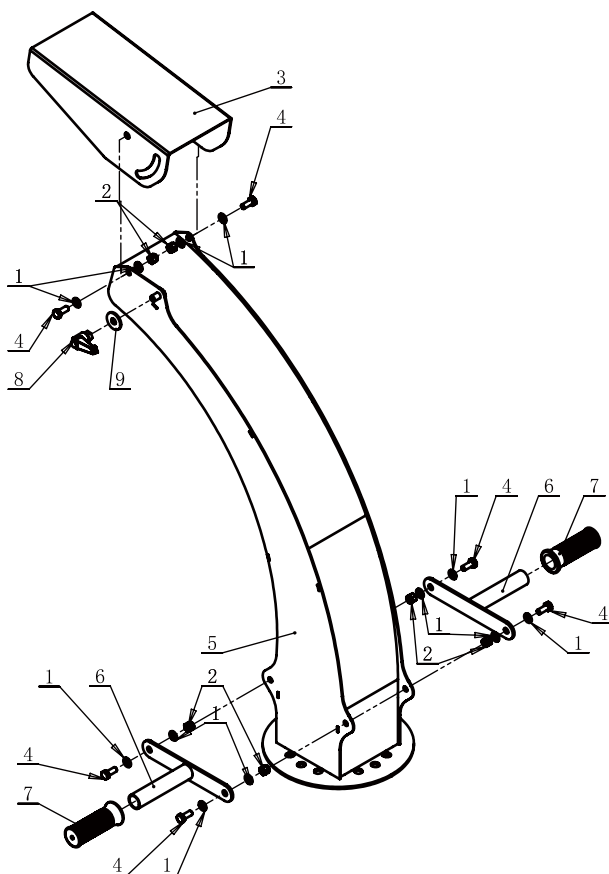
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                       | Quantity |
|--------|-----------------------------------|----------|
| 1      | Spring Pin                        | 1        |
| 2      | Spring Washer 5                   | 4        |
| 3      | Flat Washer 5                     | 4        |
| 4      | Cross Recess Pan Head Screw M5×12 | 4        |
| 5      | Nylon Insert Hex Lock Nut M8      | 6        |
| 6      | Flat Washer 8                     | 18       |
| 7      | Discharge Opening Weldment        | 1        |
| 8      | Discharge Flange Support Plate    | 2        |
| 9      | Full Thread Hex Head Bolt M8×30   | 6        |

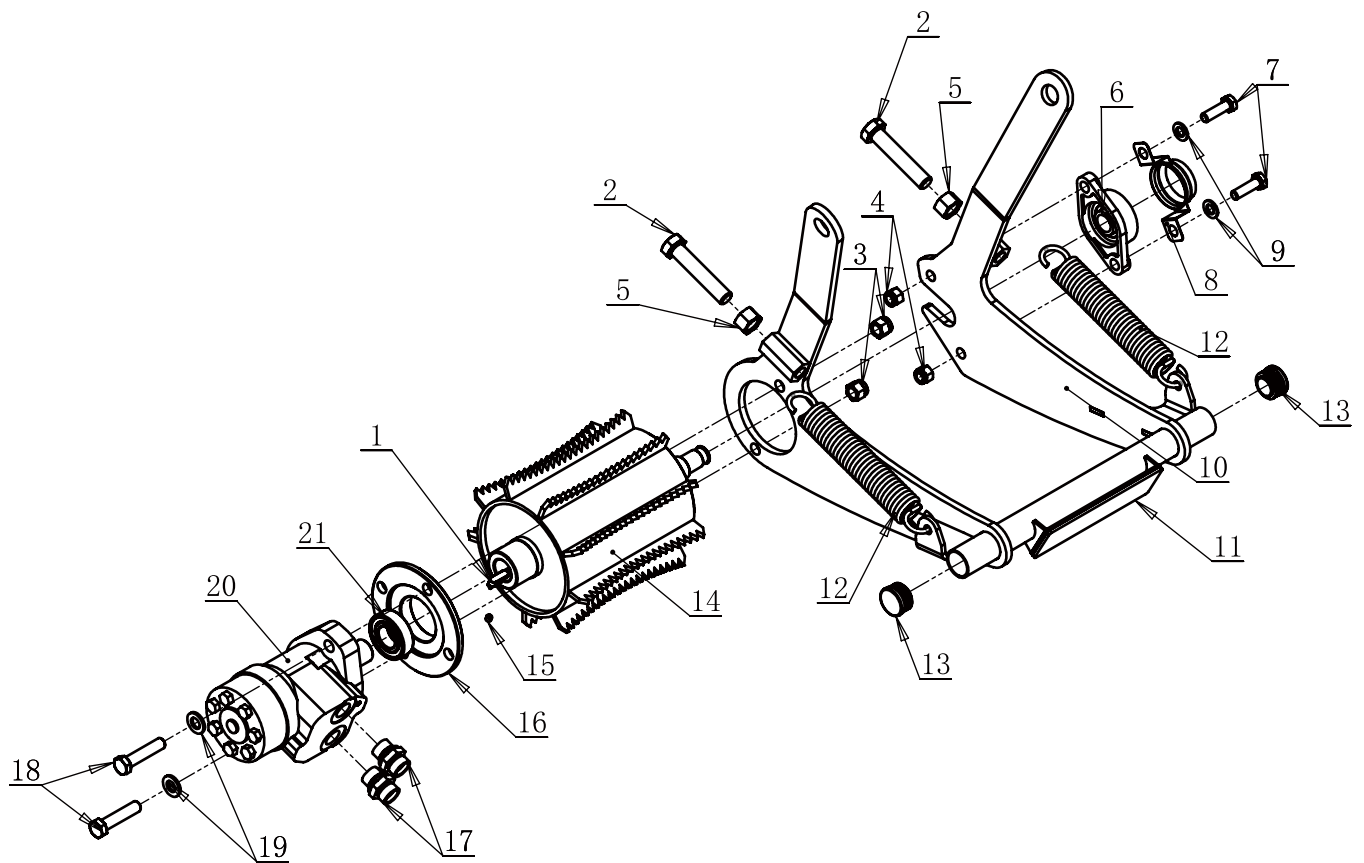
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                      | Quantity |
|--------|----------------------------------|----------|
| 1      | Flat Washer 8                    | 12       |
| 2      | Nylon Insert Hex Lock Nut M8     | 6        |
| 3      | Discharge Chute Adjustment Plate | 1        |
| 4      | Full Thread Hex Head Bolt M8×20  | 6        |
| 5      | Discharge Chute Weldment         | 1        |
| 6      | Discharge Chute Handle Weldment  | 2        |
| 7      | Handle Grip                      | 2        |
| 8      | Adjustable Handle AM10×80        | 1        |
| 9      | Large Flat Washer 10             | 1        |

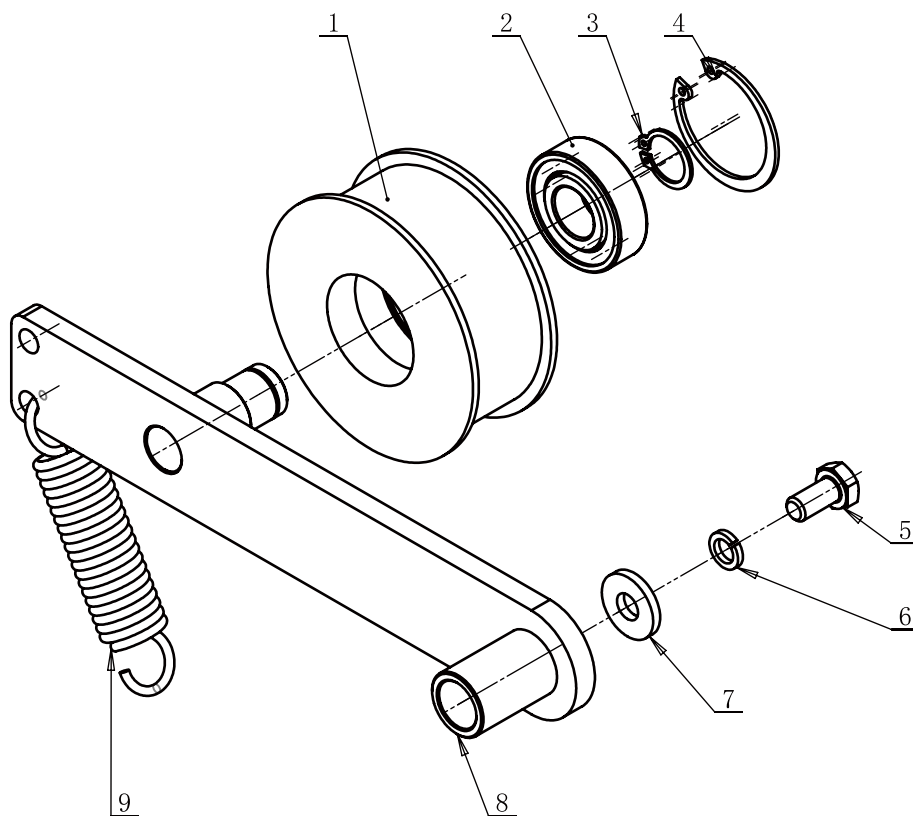
## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                           | Quantity |
|--------|---------------------------------------|----------|
| 1      | Key A Type 8×25                       | 1        |
| 2      | Full Thread Hex Head Bolt M16×80      | 2        |
| 3      | Nylon Insert Hex Lock Nut M12         | 2        |
| 4      | Nylon Insert Hex Lock Nut M10         | 2        |
| 5      | Hex Nut M16                           | 2        |
| 6      | Bearing with Diamond Base UCFLU204    | 1        |
| 7      | Full Thread Hex Head Bolt M10×35      | 2        |
| 8      | Bearing Protective Cover Weldment 204 | 1        |
| 9      | Flat Washer 10                        | 2        |
| 10     | Rocker Arm Weldment                   | 1        |
| 11     | Rocker Arm Rubber Pad                 | 1        |
| 12     | Tension Spring 33×5                   | 2        |
| 13     | Round Tube End Cap 33                 | 2        |
| 14     | Feed Roller Weldment A                | 1        |
| 15     | Hex Socket Set Screw M6×6             | 1        |
| 16     | Motor Bearing Plate                   | 1        |
| 17     | Straight Connector                    | 2        |
| 18     | Full Thread Hex Head Bolt M12×55      | 2        |
| 19     | Flat Washer 12                        | 2        |
| 20     | Hydraulic Motor                       | 1        |
| 21     | Deep Groove Ball Bearing              | 1        |

## PARTS DIAGRAM



## PARTS LIST

| Parts# | Description                     | Quantity |
|--------|---------------------------------|----------|
| 1      | Idler Pulley                    | 1        |
| 2      | Deep Groove Ball Bearing        | 1        |
| 3      | Shaft Retaining Ring A Type 17  | 1        |
| 4      | Bore Retaining Ring A Type 40   | 1        |
| 5      | Full Thread Hex Head Bolt M8×16 | 1        |
| 6      | Spring Washer 8                 | 1        |
| 7      | Large Flat Washer 8             | 1        |
| 8      | Belt Tension Arm Weldment       | 1        |
| 9      | Tension Spring 21×3             | 1        |

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