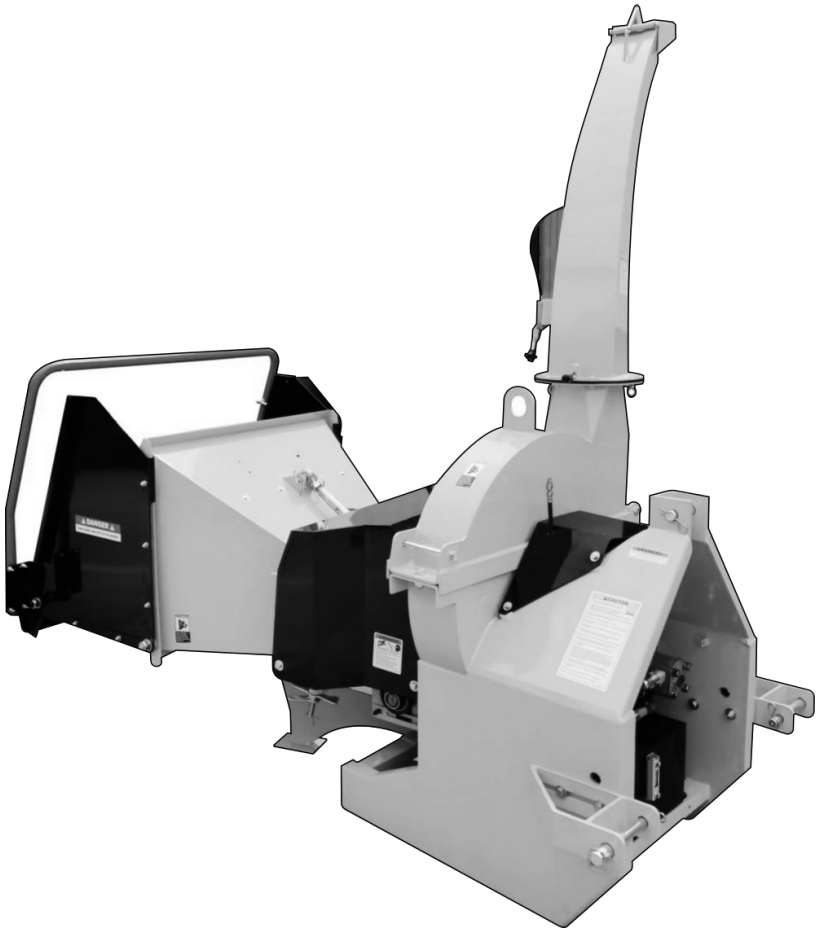
Wood Chipper

BWC-07DH - Dual Hydraulic Feed



Operator's Manual

Rev. 12/24

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TO THE DEALER:

Assembly and proper installation of this product is the responsibility of the Tar River dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery and Delivery Check Lists in the Owner's/Operator's Manual are completed before releasing equipment to the owner.

TO THE OWNER:

Read this manual before operating your Tar River equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your selling dealer. The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the machine as specified. Observe all safety information in this manual and safety decals on the equipment. For service, your authorized Tar River dealer has trained mechanics, genuine Tar River service parts, and the necessary tools and equipment to handle all your needs. Use only genuine Tar River service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation.

Record your machine model and serial number in the space provide below. Your dealer will need this information to give you prompt, efficient service.

Model Number: _____

Serial Number: _____

Date Purchased: _____

TO THE DEALER: Part 1 of 2

Assembly and proper installation of this product is the responsibility of the Belco Resources Dealer. Read manual instructions and safety rules. Make sure all items on the Dealer's Pre-Delivery List and Owners Check List in the Owner's/Operator's Manual are completed before releasing equipment to the owner.

NOTE: The machine must by inspected thoroughly by the dealer prior to delivery of machine to owner. Place a check mark in the box beside each item checked. Contact Belco Recourses Equipment of any damages, issues or shortages to the machine.

Pre-Delivery Checklist - Dealer

- ☐ **Gearbox oil level**
- ☐ **Check all fluids, hydraulic, gear oil, etc.**
- ☐ **Grease fittings properly lubricated**
- ☐ **Guards, shields, attachments securely fastened**
- ☐ **All hardware tightened**
- ☐ **Condition and tension of V-belts (if applicable)**
- ☐ **Blades properly installed, blade hardware tightened to proper torque specifications**
- ☐ **PTO attached to the machine (if applicable)**
- ☐ **All decals are clean, legible and in proper location**
- ☐ **Operator's Manual on machine**

Model #: _____ **Serial #:** _____

Inspected by (Initials): _____ **Date:** _____

TO THE DEALER: Part 2 of 2

Dealer is to review the following items to the owner. Place a check mark in the box beside each item reviewed.

Checklist - Owner

- ☐ **Correct attachment of machine to tractor**
- ☐ **Safe operation of the machine**
- ☐ **Importance of regular lubrication, maintenance and inspection**
- ☐ **Troubleshooting**
- ☐ **Replacing broken or worn parts (importance of using only OEM parts)**
- ☐ **Servicing the machine**
- ☐ **Storage**
- ☐ **Warranty**
- ☐ **Encourage owner to read and understand the Operator's Manual before operating the machine**
- ☐ **Encourage owner to fill out the "Warranty Registration", online warranty@br-equipment.com**

Purchase Date:	_____	**Delivery Date:**	_____
Model #:	_____	**Serial #:**	_____
Dealer Signature	_____	**Date:**	_____
Customer Signature	_____	**Date:**	_____

TO THE OWNER:

Read this manual before operating your Belco Resources equipment. The information presented will prepare you to do a better and safer job. Keep this manual handy for ready reference. Require all operators to read this manual carefully and become acquainted with all the adjustment and operating procedures before attempting to operate. Replacement manuals can be obtained from your selling dealer. The equipment you have purchased has been carefully engineered and manufactured to provide dependable and satisfactory use. Like all mechanical products, it will require cleaning and upkeep. Lubricate the machine as specified. Observe all safety information in this manual and safety decals on the equipment. For service, your authorized Belco Resources dealer has trained mechanics, genuine Belco Resources service parts, and the necessary tools and equipment to handle all your needs. Use only genuine Belco Resources service parts. Substitute parts will void the warranty and may not meet standards required for safe and satisfactory operation.

Table of Contents

Introduction

Thank you for purchasing your Tar River BWC-07DH Wood Chipper. The Tar River BWC-07DH Wood Chipper is Self-Contained Dual Hydraulic Feed Chipper with a 7” chipping capacity. The Tar River BWC-07DH Wood Chipper is the perfect tool to help clear your land of fallen limbs and branches.

Technical Specifications

Model	BWC-07DH
Chipping Capacity	7”
Req. HP	50-85 HP
Chipper Wheel	29.1” / 191 lbs.
Discharge Hood Height	90”
Weight	1295 lbs.
Hydraulic oil (capacity)	5 gals. (18.9 liters)

Important Safety Information

Safety

It is important that you read the entire manual and to become familiar with this product before you begin using it. This product is designed for certain applications only. The manufacturer cannot be responsible for issues arising from modification. We strongly recommend this product not be modified and /or used for any application other than that for which it is designed. If you have any questions relative to a particular application, DO NOT use the product until you have first contacted us to determine if it can or should be performed on the product.

Read and understand this manual and all safety signs before operating and maintaining. Review the safety instructions and precautions annually.

Safety Signal Words

TAKE NOTE! This safety alert symbol found though out this manual is used to call you attention to instructions involving you personal safety and the safety of others. Failure to follow these instructions can result in injury or death.

This symbol means:
Attention!
Become alert!
Your safety is involved!

Note the use of the signal words, DANGER, WARNING and CAUTION with the safety messages. The appropriate signal word for each has been selected using the following guidelines:

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 which, 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.

Important Safety Information

General Safety Guidelines

Safety of the operator is one of the main concerns in designing and developing a new piece of equipment. Designers and manufacturers build in as many safety features as possible. 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, study the following precautions and insist those working with you, or for you, follow them.

Replace any **DANGER, WARNING, CAUTION** or instruction safety decal that is not readable or is missing. Location of such decals are indicated in this manual. Do not attempt to operate this equipment under the influence of drugs or alcohol.

Review the safety instructions with all users annually.

This equipment is dangerous to children and persons unfamiliar with its operation. The operator should be a responsible adult familiar with farm machinery and trained in this equipment's operations. **Do not allow persons to operate or assemble this machine until they have read this manual and have developed a thorough understanding of the safety precautions and of how it works.**

To prevent injury of death, use a tractor equipped with a Roll Over Protection System (ROPS). Do not paint over, remove or deface any signs or warning decals on your equipment. Observe all safety signs and practice the instructions on them.

Never exceed the limits of a piece of machinery. If its ability to do a job, or to do so safely, is in question - **Don't try it!**

Safety Decal Care

- Keep safety signs clean and legible at all times.
- Replace safety signs that are missing or have become illegible.
- Replaced parts that displayed a safety sign should also display the current safety sign
- Safety signs are available from your Distributor or Dealer Parts Department or the factory.

Important Safety Information

How to Install Safety Signs

- Be sure that the installation area is clean and dry.
- Decide on the exact position before you remove the backing paper.
- Remove the smallest portion of the split backing paper.
- Align the decal over the specified area and carefully press the small portion with the exposed sticky backing in place.
- Slowly peel back the remaining paper and carefully smooth the remaining portion of the decal in place.
- Small air pockets can be pierced with a straight pin and smoothed out using the piece of decal backing paper.

Before Operation

- Carefully study and understand this manual.
- Do not wear loose-fitting clothing, which may catch in moving parts.
- Always wear protective clothing and substantial shoes.
- Assure that all tires are inflated evenly.
- Give the machine a visual inspection for any loose bolts, worn parts or cracked welds, and make necessary repairs. Follow the maintenance safety instructions included with this manual.
- Be sure that there are no tools lying on or in the equipment.
- Do not use the machine until you are sure that the area is clear, especially of children and animals.
- Don’t hurry the learning process or take the machine for granted. Ease into it and become familiar with your new equipment.
- Practice operation of your equipment and its attachments. Completely familiarize yourself and other operators with its operation before using.
- Use a tractor equipped with a Roll Over Protection System (ROPS) and fasten your seat belt prior to starting engine.
- The manufacturer does not recommend usage of tractor with ROPS removed.
- Move tractor wheels to the widest recommended settings to increase stability.
- Securely attach to towing unit. Use a high strength, appropriately sized hitch pin with a mechanical retainer and attach safety chain.
- Do not allow anyone to stand between the tongue or hitch and the towing vehicle when backing up to the equipment.

Important Safety Information

During Operation

- Children should not be allowed on the product.
- Clear the area of small children and bystanders before moving the machine.
- If using a towing unit, securely attach machine by using a hardened 3/4" pin, a metal retainer, and safety chains if required. Shift towing unit to a lower gear before going down steep downgrades, thus using the engine as a retarding force. Keep towing vehicle in gear at all times. Slow down for corners and rough terrain.
- Make sure you are in compliance with all local and state regulations regarding transporting equipment on public roads and highways. Lights and slow moving signs must be clean and visible by overtaking or oncoming traffic when machine is transported.
- Beware of bystanders, **particularly children!** Always look around to make sure that it is safe to start the engine of the towing vehicle or move the machine. This is particularly important with higher noise levels and quiet cabs, as you may not hear people shouting.
- **NO PASSENGERS ALLOWED!** Do not carry passengers anywhere on, or in, the tractor or equipment, except as required for operation.
- Keep hands and clothing clear of moving parts.
- Do not clean, lubricate or adjust your equipment while it is moving.
- When halting operation, even periodically, set the tractor or towing vehicle brakes, disengage the PTO, shut off the engine and **remove the ignition key.**
- Be especially observant of the operating area and terrain. Watch for holes, rocks or hidden hazards. Always inspect the area prior to operation.
- **DO NOT** operate near the edge of drop-offs or banks.
- **DO NOT** operate on steep slopes as overturns may result.
- Operate up and down (not across) intermediate slopes. Avoid sudden starts and stops.

Warning: Never backup with the machine on the ground! This will cause damage to the machine. *Always* lift the machine high enough to clear the ground before backing up.

Important Safety Information

Highway and Transport Operations

- Adopt safe driving practices.
- Keep the brake pedals latched together at all times. **Never use independent braking with machine in tow as loss of control and/or upset of machine can result.**
- Always drive at a safe speed relative to local conditions and ensure that your speed is low enough for an emergency stop to be safe and secure. Keep speed at a minimum.
- Reduce speed prior to turns to avoid the risk of overturning.
- Avoid sudden uphill turns on steep slopes.
- Always keep the tractor or towing vehicle in gear to provide engine braking when going downhill. Do not coast.
- Do not drink and drive!
- Comply with state and local laws governing highway safety and movement of farm machinery on public roads.
- Use approved accessory lighting flags and necessary warning devices to protect operators of other vehicles on the highway during daylight and nighttime transport. Various safety lights and devices are available from your dealer.
- The use of flashing amber lights is acceptable in most localities. However, some localities prohibit their use. Local laws should be checked for all highway and marking requirements.
- When driving the tractor and equipment on the road or highway under 40 kph (20 mph) at night or during the day, use the amber warning lights and a slow moving vehicle (SMV) identification emblem.
- Plan your route to avoid heavy traffic.
- Be a safe and courteous driver. Always yield to oncoming traffic in all situations, including narrow bridges, intersections, etc.
- Be observant of bridge loading ratings. Do not cross bridges rated at lower than the gross weight at which you are operating.
- Watch for obstructions overhead and to the side while transporting.
- Always operate in a position to provide maximum visibility at all times. Make allowances for increased length and weight of the equipment when making turns, stopping the machine, etc.
- Pick the most level route when transporting across fields. Avoid the edges of ditches or gullies and steep hillsides.
- Be extra careful when working in inclines.

Important Safety Information

Highway and Transport Operations

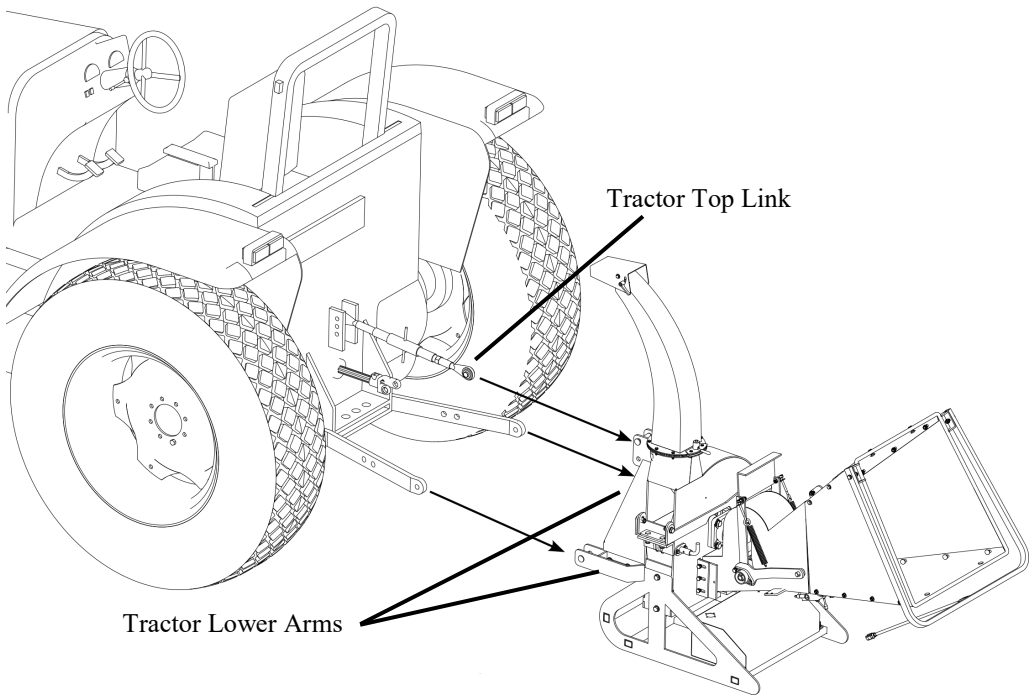
- Maneuver the tractor or towing vehicle at safe speeds.
- Avoid overhead wires or other obstacles. Contact with overhead lines could cause serious injury or death.
- Avoid loose fill, rocks and holes, they can be dangerous for equipment operation or movement.
- Allow for machine length when making turns,
- Operate the towing vehicle from the operator's seat only.
- Never stand alongside of machine with engine running or attempt to start engine and/or operate machine while standing alongside of machine.
- Never leave running equipment attachments unattended.
- As a precaution, always recheck the hardware on equipment following every 100 hours of operation. Correct all problems. Follow the maintenance safety procedures.

Attaching to Tractor

Warning: When attaching the Wood Chipper, *Never* allow anyone to stand between the machine and the tractor. Serious injury or death can occur!

Attaching the Wood Chipper

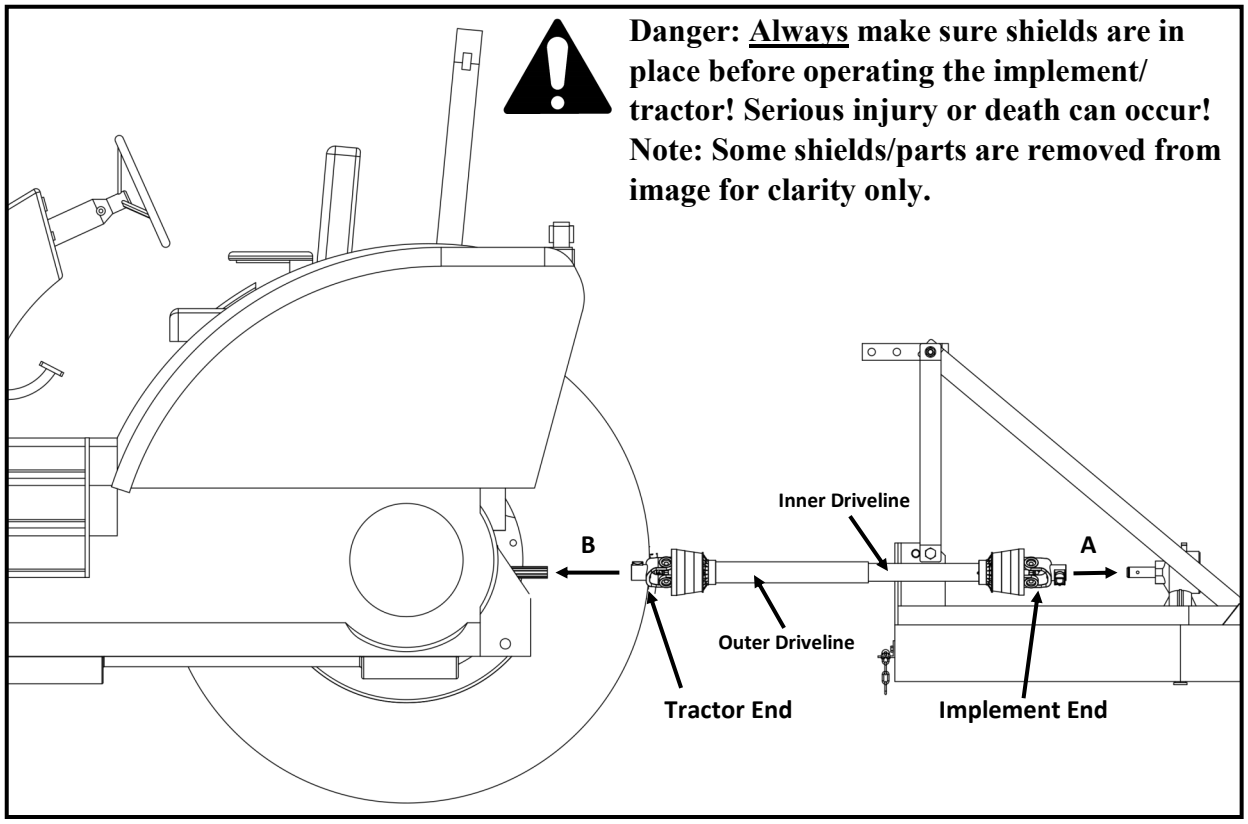
- Back up the tractor to the wood chipper, while lining up the lower tractor links to the Wood chipper lower pins.
- Stop the engine, set the brake and remove the key from the tractor and block the tractor tires.
- Secure the lower tractor arms to the wood chipper lower pins with lynch pins.
- Attach the tractor top link to the wood chipper with the top link pin and r-clip.
- Adjust the tractor sway bars/chains to center the rotary cutter and remove excess sway.
- Adjust lower links and top link so that the wood chipper is level.
- Operate the tractor hydraulic controls very slowly up and down. There should be no contact between the wood chipper or any part of the tractor. Failure to check clearance can result in damage to the Wood chipper, tractor (especially the tires) and possible injury to the operator. Maintain no less than 6” of clearance between the wood chipper, tractor and tractor tires throughout the complete range of motion.



PTO Driveline Instructions

Instructions for Installing a PTO Driveline:

1. Begin by parking the tractor and implement on a level, solid surface. Attach the implement to the tractor's hitch arms, upper and lower. Adjust the tractor's 3-point hitch so that the tractor's output shaft is level with the implement's input shaft.
2. Leave the tractor in gear, shut off the tractor engine, remove the key and set the park brake. Block the implement to prevent it from falling over or shifting.
3. Slide the inner yoke of the PTO shaft **'A'** (implement end) onto the input shaft of the implement. Make sure the yoke is securely locked in place.
4. Slide the outer yoke of the PTO shaft **'B'** (tractor end) onto the tractor input shaft. Make sure the yoke is securely locked in place.
5. Because of differences in tractor 3-point arms and implements, it may be necessary to shorten the PTO Driveline. See next page for **"Instructions for Shortening a PTO Driveline"**.
6. Check that the PTO Driveline yokes are securely attached to the tractor and implement before operating. PTO Drivelines not attached properly can cause serious injury or death!
7. If your PTO Driveline shields are equipped with chains, secure the chain to the tractor and or implement to prevent the shield from rotating.
8. Before starting tractor and engaging the PTO Driveline, make certain there are no people or animals between tractor and implement. Rotating PTO Drivelines can cause serious injury or death!

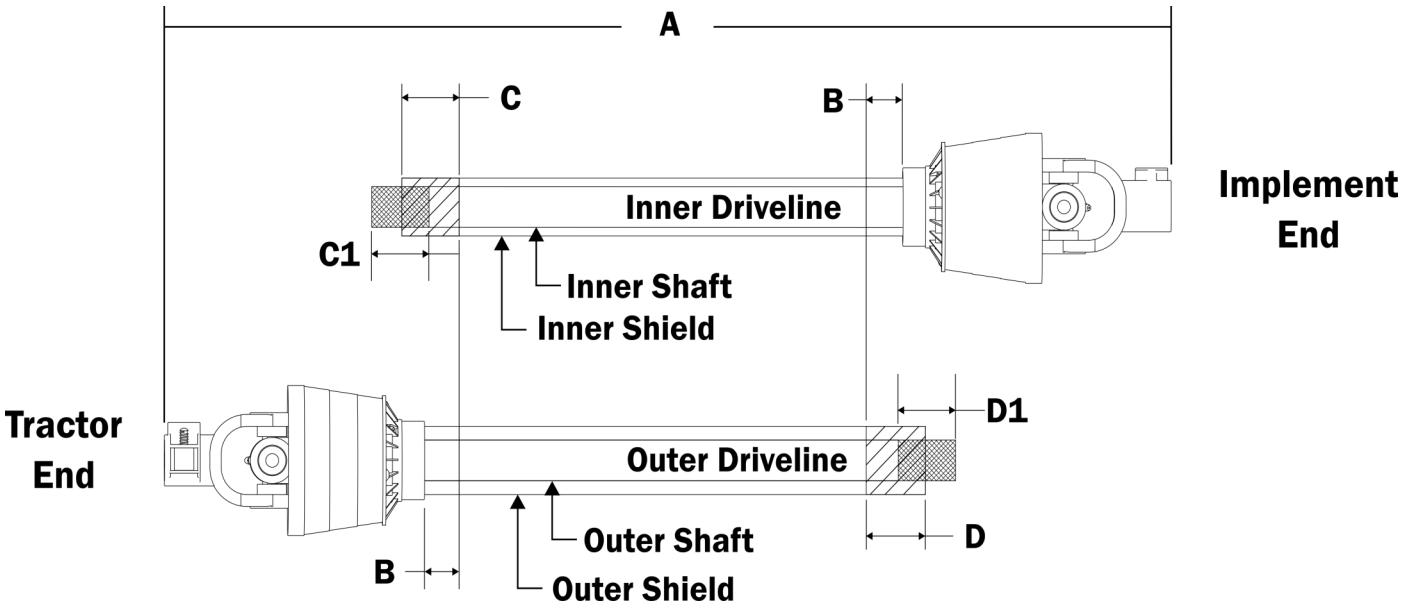


PTO Driveline Instructions

Instructions for Shortening a PTO Driveline:

Note: If you are not confident modifying the PTO Driveline, you should contact a Qualified Professional.

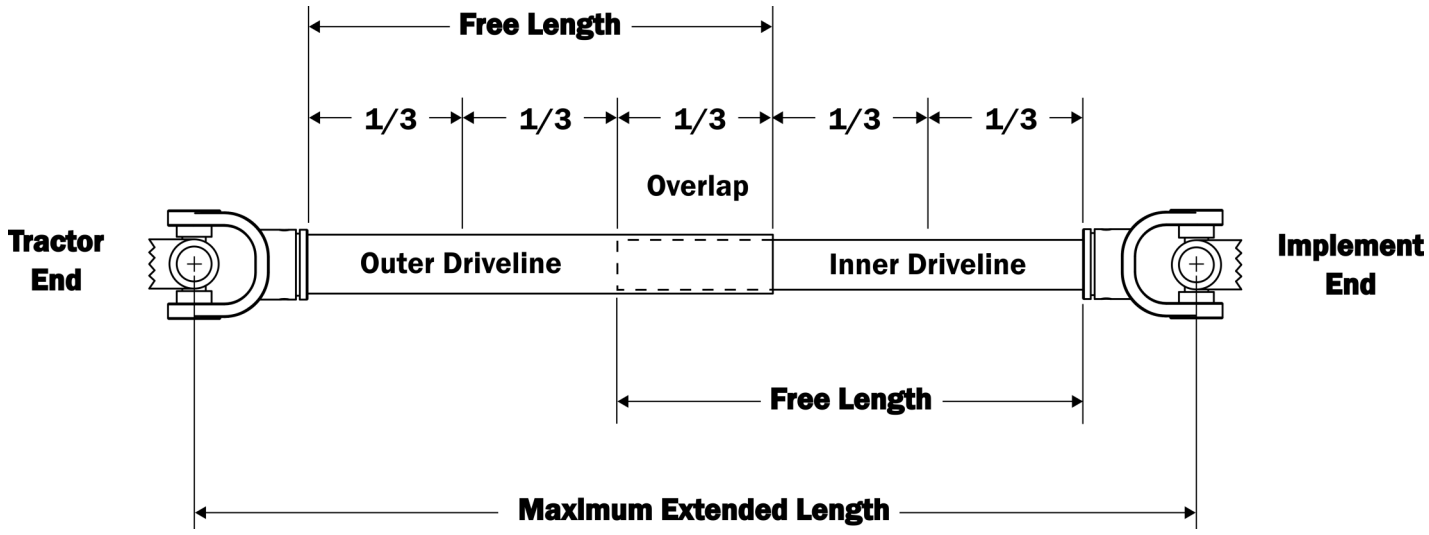
1. Separate the inner and outer PTO Drivelines. Leave separated at this time.
2. Attach the outer PTO Driveline to the tractor implement input shaft and inner PTO driveline to the implement input shaft.
3. With the drivelines parallel to one another, measure 1" (dim. **'B'**) back from the outer PTO Driveline shield (see fig. 2) and make a mark on the inner PTO Driveline.
4. Measure 1" (dim **'B'**) back from the inner PTO Driveline shield (see fig. 2) and make a mark on the outer PTO Driveline.
5. Remove the drivelines from the tractor and implement.
6. Measure from the end of the inner shield to the scribed mark (dim. **"C**"). Cut the inner shield at that mark. Cut the same amount off the inner shaft (dim. **"C1"**).
7. Measure from the end of the outer shield to the scribed mark (dim. **"D"**). Cut the outer shield at that mark. Cut the same amount off the inner shaft (dim. **"D1"**).
8. Clean off all burrs from both drivelines.
9. Refer to **"Checking PTO Driveline Extended Length"** section next.



PTO Driveline Instructions

Checking PTO Driveline Extended Length:

1. Apply multi-purpose grease to the outside of the inner driveline section. Assemble the outer and inner drivelines.
2. When fully extended, the maximum allowable length must have a minimum overlap of 1/3 the free length of the inner and outer sections. Measure and record the maximum extended length for future reference.
3. Attach the outer PTO Driveline to the tractor implement input shaft and inner PTO driveline to the implement input shaft.
4. Pull both yoke ends to make sure they are properly seated on the input shafts. **Warning:** If the drive lines are not properly seated, they can separate from the tractor or implement, causing extensive damage and possibly serious injury or death.
5. Raise and lower the implement to determine the maximum extended length. Make sure the maximum extended length does not exceed the maximum length determined from step 2.

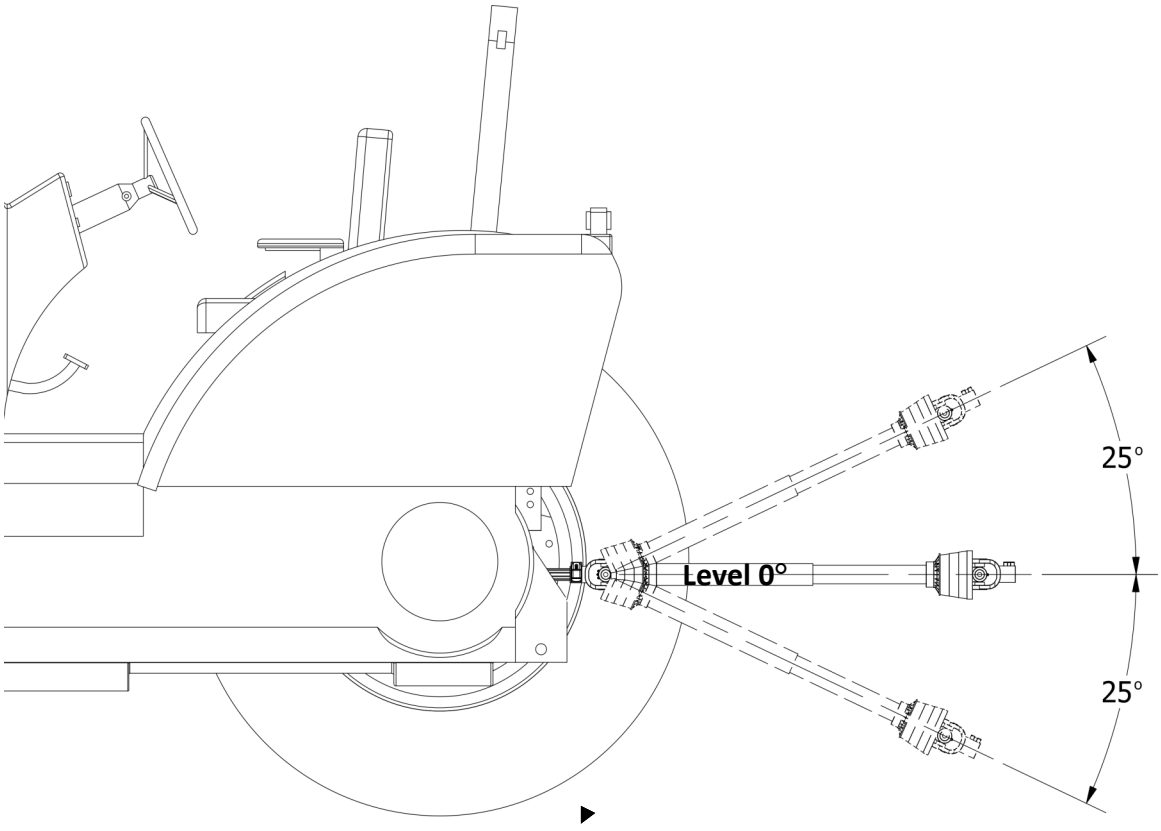


Danger: <u>Always</u> make sure shields are in place before operating the implement/tractor! Serious injury or death can occur!
Note: Some shields/parts are removed from image for clarity

PTO Driveline Instructions

Checking for PTO Driveline Interference:

1. Begin with the PTO Driveline level (0 degrees). Raise the implement at an angle no greater than 25 degrees from level. Check for any interference and the length of the PTO Driveline extended. Do not exceed the maximum extended length!
2. Next lower the PTO Driveline at an angle no greater than 25 degrees from level. Check for any interference and the length of the PTO Driveline extended. Do not exceed the maximum extended length!



Danger: <u>Always</u> make sure shields are in place before operating the implement/tractor! Serious injury or death can occur!
Note: Some shields/parts are removed from image for clarity

Operating Instructions

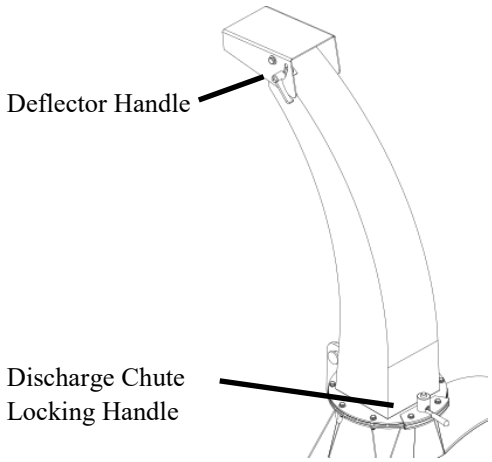
Warning: Never operate the wood chipper without PPE (Personal Protection Equipment) such as, wrap around safety glasses/face shield, hearing protection, leather gloves, steel-toe work boots, heavy pants and long sleeve shirt! Keep bystanders away from the Feed Hopper and Discharge Chute at all times. Any person operating the Wood Chipper should read and understand the Operator's Manual.

Inspect the following prior to the operating the machine for the first time and every 5 hours of operation:

- Torque all fasteners and hardware. Replace missing or damaged hardware.
- Check condition of rotor bearings.
- Check the condition and clearance of the rotor and stationary blades.
- Check for entangled material. Remove all entangled material before beginning/resuming work.
- Lubricate all grease fittings.

Operating the Wood Chipper

- The Wood chipper must be firmly seated on a solid, level surface. **DO NOT operate the wood chipper while in a raised position or with flywheel turning!**
- Block the tractor wheels and set the parking brake to prevent the tractor from rolling during operation.
- Clear the area of people and/or animals.
- After attaching the wood chipper, PTO, and prior to operating the machine, do the following:
    - Check direction of the discharge chute. The discharge chute should always be rotated in a safe direction away from the operator and locked in place with the discharge chute locking handle. Never allow bystanders in the area where material is discharged! Serious injury or death can occur.
    - Adjust the Deflector to allow the material to be thrown to the desired distance. Never operate the wood chipper without deflector attached.
- Before starting the tractor, make sure animals and people are at a safe distance. Discharged material can cause serious injury or death.
- Start the tractor and allow the engine to idle with the PTO engaged. Gradually increase the tractor engine RPM until the PTO reaches 540 RPM (not the tractor RPM). The wood chipper is designed to operate at 540 RPM. Lower RPM can cause damage to the wood chipper if material obstructs the feed roller and stops the flywheel. It is best to feed material by the larger end first.
- Prior to inserting material into the wood chipper, inspect material for foreign objects such as nails or screws. Foreign objects can damage the blades and cause premature wear.



Discharge Chute

Operating Instructions

Operating the Wood Chipper (continued)

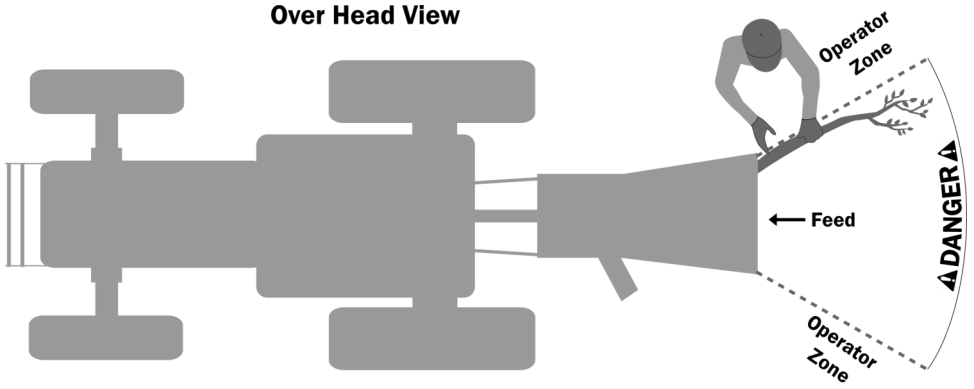
- Select only the proper size limbs to feed into the Wood Chipper. Limbs that are too large can cause damage to the machine. Smaller branches can be held together in a bundle and feed at the same time.
- It is recommended to feed brush from the side of the infeed chute rather than the front. Stay at a safe distance when feeding material into the machine to avoid being hit by brush.
- Avoid leaning into the feed chute or placing any parts of your body inside the feed chute when pushing material further into the chute. Use a stick or branch if needed.
- Never use any hand tools to push brush into the machine. Dropping a hand tool into the machine can cause extensive damage to the machine and possibly cause injury to the operator.
- Place the larger end of the branch into the feed chute first and push the branch until it comes in contact with the feed roller. The feed roller will pull the branch in on contact.

Stopping the Wood Chipper

- Never leave the wood chipper unattended or perform and inspection or service with the PTO engaged and tractor running. Always stop the wood chipper, disengage the PTO and shut off the tractor engine.
- Allow time for the wood chipper to come to a complete stop. The flywheel continues to spin after the wood chipper or tractor engine is off.
- Stop the wood chipper by following these steps:
    1. Place the tractor in the lowest RPM (idle) position.
    2. Disengage the PTO lever and shut off the tractor engine.
    3. Allow sufficient time for the wood chipper to come to a complete stop.

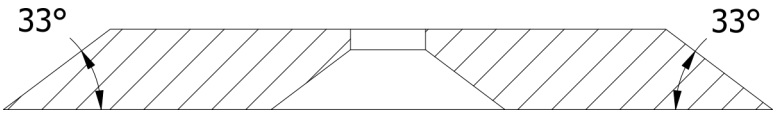
Operating Instructions

Warning: When operating the wood chipper, always stand in the "Operator Zone" to avoid serious injury or death.



Blade Maintenance

- The blades must be keep sharp for optimal chipping. The BWC Wood Chipper blades are made from high quality tool steel. Our blades are designed to last, however, they will dull over time and require sharpening. Performing regular maintenance will extend the life of the blades and the wood chipper.
- For optimal results:
  - Blades perform better when chipping fresh, green limbs. The moisture content of the material being chipped lubricates the blades and reduces friction extending the life of the blade.
  - Chipping dry material will wear down the cutting edges of the blade much faster than fresh material.
  - Avoid using dirty material as dirt and sand is very abrasive and wears down the blade edges much faster.
  - If at all possible avoid material with foreign objects that can cause premature wear and or damage to the blades.
- The blade's edge must be cut at (Check blades for correct angle) 33 degree angle for optimal performance. Dull or incorrect blade angle can cause damage to the wood chipper and poor chipper performance.
- It is recommended to sharpen the blades every 20-50 hours. Dull blades can cause issues such as:
  - Discharge chute plugged with material
  - Excessive vibration causing damage to bearings
  - Excessive vibration causing damage to flywheel
  - Damaged feed roller shaft



Blade Profile

Operating Instructions

Warning: Never attempt to inspect, remove or replace blades with tractor engine running, PTO engaged, wood chipper flywheel rotating. Serious injury or death can occur!

Blade removal/replacement

- Open the upper flywheel housing by removing the hardware shown in the Fig. 1 below.
- Slowly lift the upper flywheel housing and rotate it to the LH side of the wood chipper, Fig. 2.

  Note: The upper flywheel housing is heavy and a helper is recommended. Keep bystanders away to prevent injury. Be sure to support the upper flywheel housing to prevent damage to machine.

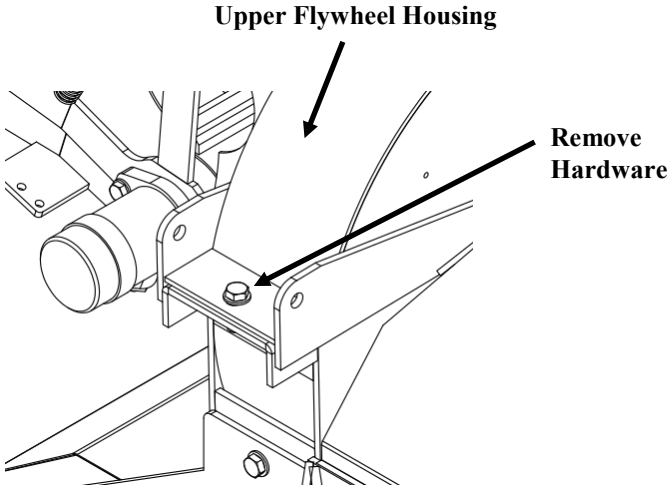


Fig. 1

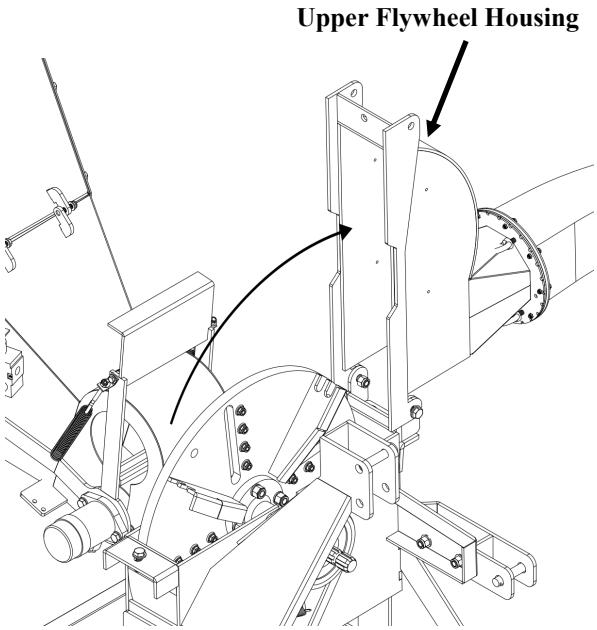
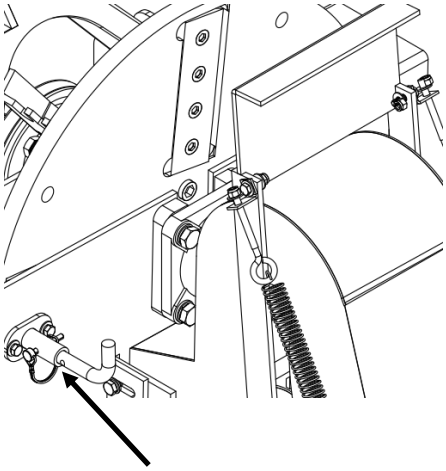


Fig. 2

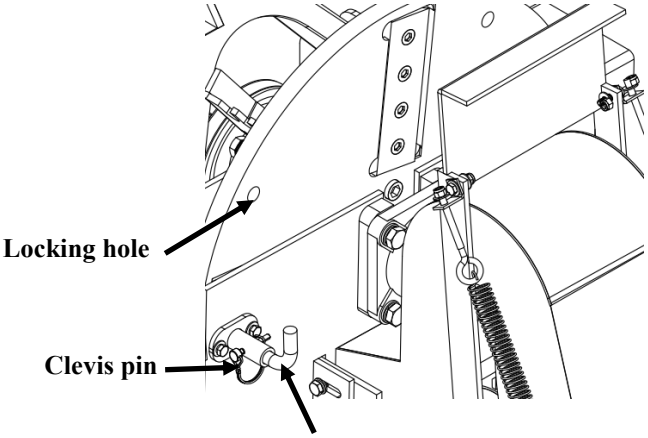
Operating Instructions

Blade removal/replacement

- Position 1: This is the standard position for chipping material. The flywheel spins freely in this position.
- Position 2: The flywheel is locked in place and ready for blade removal.
- With the flywheel exposed, manually rotate the flywheel to one of the four (4) locking holes lines up with flywheel locking pin.

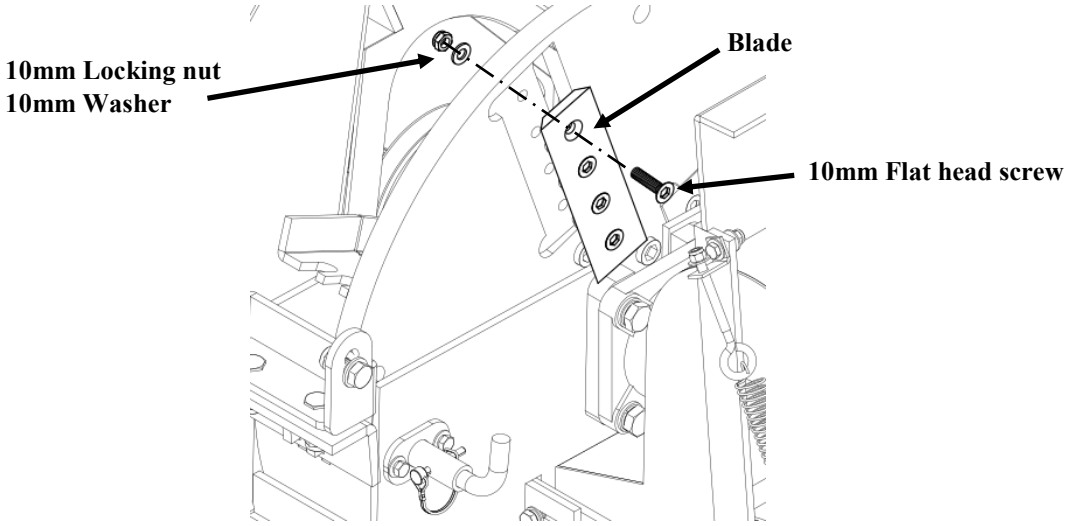


Position 1 - Flywheel turns freely.



Position 2 - Flywheel is locked, preventing rotation of flywheel.

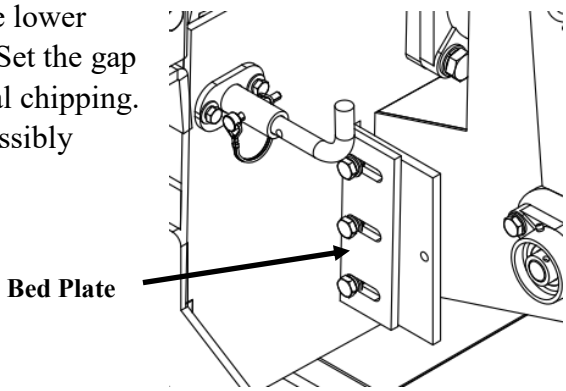
- Remove the clevis pin and push in the flywheel locking pin to lock the flywheel in place. Insert the clevis pin in the flywheel locking pin to prevent flywheel from moving.
- Remove the four (4) Flat head socket screws, washers and nuts from the chipper blade. The blades have with two cutting edges. The first time the blades are removed, they can be reversed to utilize the other sharp edge. **Caution: When removing the blades, be careful not to drop any hardware in the lower flywheel housing! This can cause damage to the wood chipper.** Use a telescoping magnetic pickup tool to retrieve any dropped hardware.
- Torque the 10mm bolts to 40-45 ft lbs when installing the blades. Always replace 10mm locking nuts when changing blades or reversing. Repeat this for the other three (3) blades. Upon replacing the blades, proceed to checking/setting the gap between the blades and bed plate.



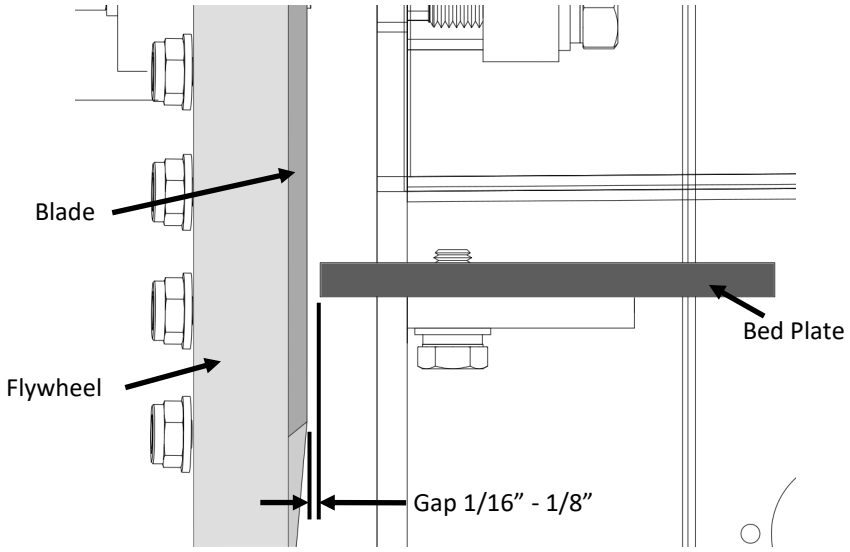
Operating Instructions

Setting the Bed Plate Gap

The Bed Plate (anvil plate) is located on the left hand side of the lower flywheel housing, slightly lower than the flywheel locking pin. Set the gap between the bed plate and blade to 1/16” - 1/8” to obtain optimal chipping. Improper bed plate gap can lead to poor chipping results and possibly clogging of material.



- Manually rotate the flywheel so that one blade lines up with the bed plate. Take notice of the amount of gap between the bed plate and blade. Repeat this process, one blade at a time to determine which blade is closest to the bed plate. This blade will be used to set the bed plate gap.
- Loosen the three 10mm hex bolts so that bed plate is loose enough to move freely. Adjust the bed plate so that there is a gap of 1/16” - 1/8” between the blade edge. The gap should be even across the entire edge of the blade.
- Once the gap is set, torque the 10mm hex bolts to 40 ft lbs. each.
- Rotate the flywheel by hand to check the gap of each blade. They must be in the range of 1/16” - 1/8” for optimal chipping.
- Close the upper flywheel housing and secure with provided hardware. **Warning: Never operate the wood chipper without guards/shields in place. Serious injury or death can occur!**



Operating Instructions

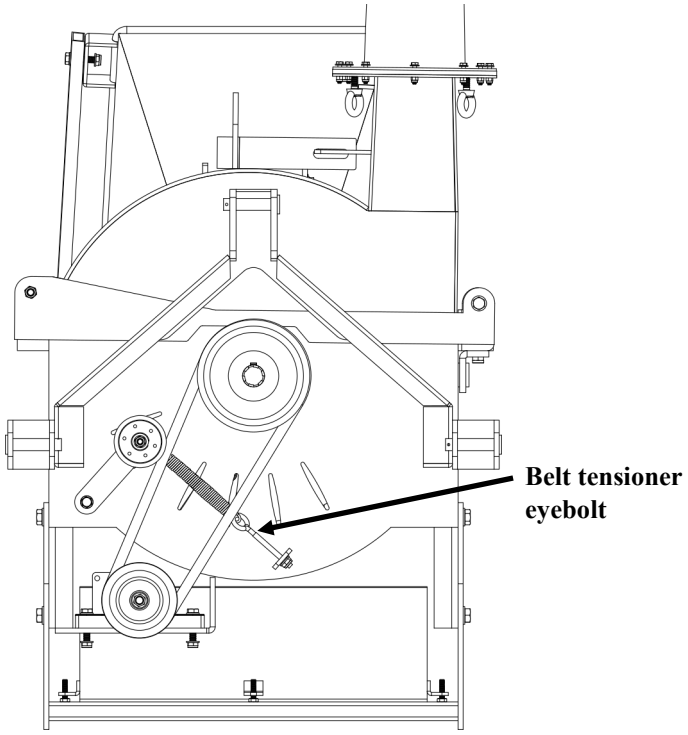
Adjusting Drive Belt Tension

Before operating the wood chipper, check the condition of the drive belt. The belt should be free of cracking and or defects. Replace the belt as needed.

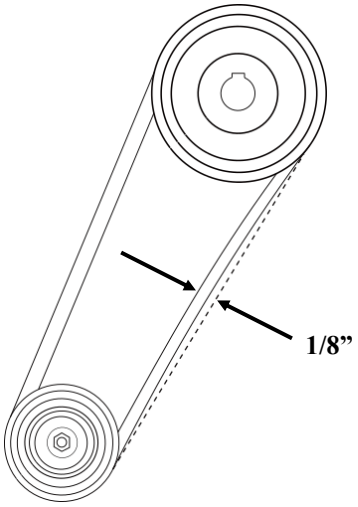
Belts will stretch over time and require adjustment.

Follow these steps when checking the tension of the belt.

1. If the PTO is attached, disconnect it from the machine. This will allow the rotation of the belt and pulleys.
2. Check the tension by pressing on the belt with your finger. The tension on the belt should be firm with no slack. A loose belt can come off the machine and cause harm to the operator and possible damage to the machine.
3. The belt tension can be adjusted by turning the nut on the idler eyebolt. Increase the pressure on the belt if there is too much play. Decrease the pressure on the belt is too tight.
4. The proper amount of belt deflection should be approximately 1/8” as shown below.



Belt adjustment

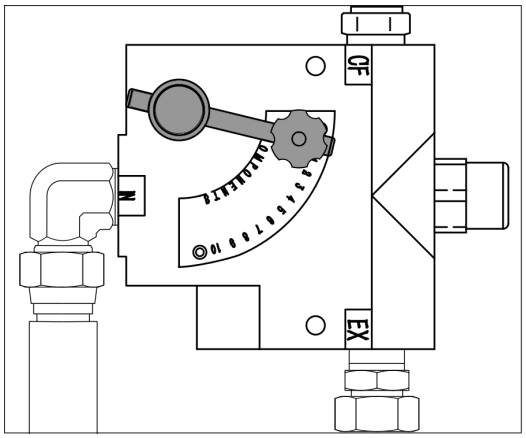


Belt deflection

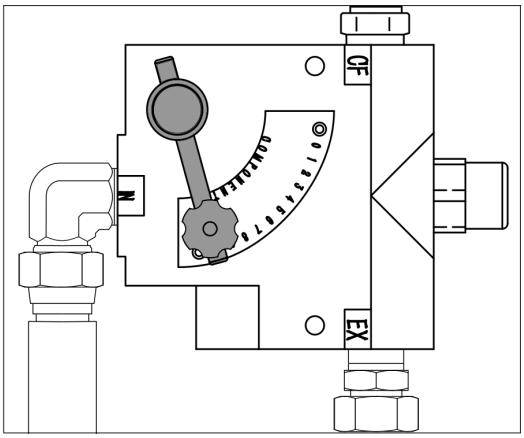
Operating Instructions

Feed Roller Speed Control

The Variable speed control valve is located on the right hand side of the wood chipper feed chute. The speed of the feed roller is controlled by rotating the arm as shown in the images below. In the "0" position the roller will not rotate. The higher the number, the faster the feed roller will rotate with "10" being "full speed".



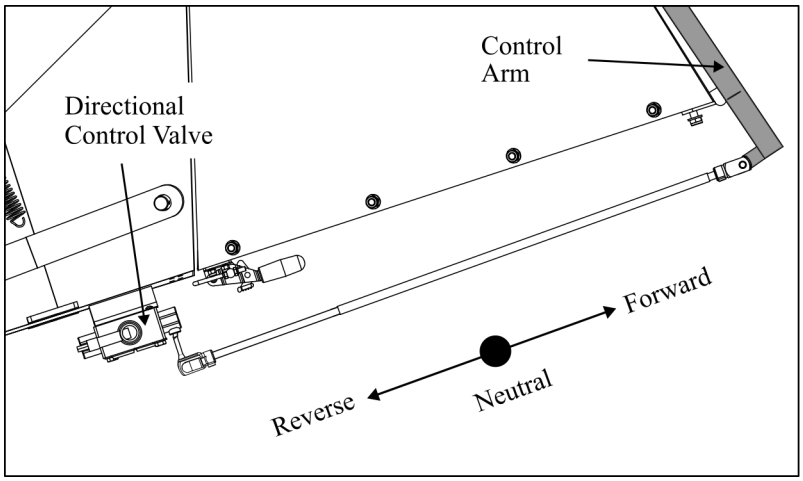
Position "0"



Position "10"

Feed Roller Direction Settings

The feed roller has three different rotation settings: Forward, Neutral and Reverse. The direction of the feed roller is changed by pushing or pulling the Control Arm. In the Forward position, the feed roller pulls branches into the wood chipper; neutral stops the feed roller rotation; and reverse pushes the branches towards the operator and out away from the chipper.



Changing Roller Feed Speed

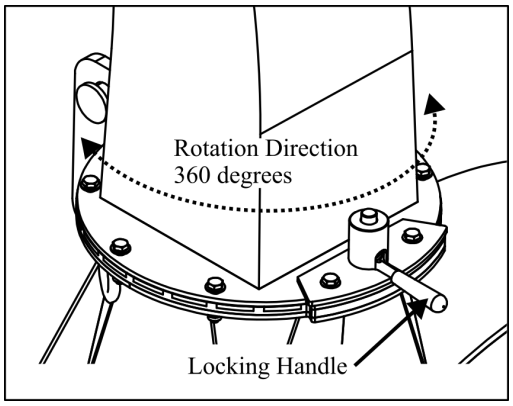
Change the feed roller speed by placing the Control Arm in the *Neutral Position.* The feed roller will stop rotating. Adjust the Variable Speed Control Valve to the desired position/speed. Reengage the Feed Roller by moving the Control Arm.

Operating Instructions

Discharge Chute Adjustment

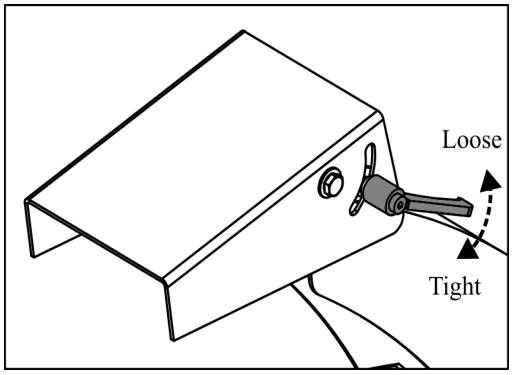
The Discharge Chute can be adjusted to direct the expelled material in a safe direction. **Warning:** Material exists the Discharge Chute at a high rate of speed. Always keep people and animals out of the work area to prevent serious injury or death.

To rotate the Discharge Chute, pull up on the Locking Handle and twist the Discharge Chute clock-wise or counter-clockwise to the desired position. Release the Locking Handle and make sure the chute is locked in place before operating the wood chipper.



Discharge Deflector Adjustment

The Deflector can easily be adjust to control the distance chips are discharged. Turn the handle counter-clockwise, raise or lower the deflector in the desired position. Tighten the handle by turning it clockwise. Note: It is not necessary to remove the handle, only loose enough to raise or lower the deflector.



Hydraulic Fluid

The Hydraulic Fluid reservoir must be filled prior to use. See chart below for capacity and oil type. The hydraulic fluid level should be checked prior to each use. Inspect hydraulic fluid and change as needed. Dispose of used hydraulic fluid properly.

Model	Capacity		Hydraulic Oil
	Gallons (gal)	Liters (L)	
BWC-07DH	5	18.9	ISO 32, ISO 46, AW 32, AW 46

Trouble Shooting

Trouble Shooting

Problem	Possible cause	Solution
Brush feed too slow	Feed roller control set too low.	Increase feed roller control to a greater value.
	PTO RPM set too low.	Tractor output RPM must be 540.
	Dull blades.	Reverse blades, sharpen or replace blades.
	Bed plate gap not correct.	Check and set bed plate gap to proper specification.
Material is stringy coming out of machine	Dull blades.	Reverse blades, sharpen or replace blades.
	High content of sap.	Clean blades and bed plate.
Excessive clogging	Dull blades.	Reverse blades, sharpen or replace blades. Clean
	Bed gap is incorrect.	Check bed plate gap and adjust to proper specs
	PTO RPM is below 540.	Adjust tractor RPM to 540 output.
Drive belt slipping	Belt tension is set incorrect.	Check belt tension and adjust accordingly.
	Belt worn or old.	Replace belt with OEM replacement belt.
Flywheel bearings making excessive noise	Bearings not sufficiently lubricated.	Apply grease to bearings.
	Worn bearings.	Replace belt with OEM replacement bearings.

Torque Specifications

Torque Specifications for Common Bolt Sizes

Inches

Bolt Head Identification

Bolt size (inches)	Thread pitch	Grade 2 N.m	Grade 2 ft-lb	Grade 5 N.m	Grade 5 ft-lb	Grade 8 N.m	Grade 8 ft-lb
1/4"	20	7	5	11	8	16	12
1/4"	28	8	6	13	10	19	14
5/16"	18	15	11	24	17	33	25
5/16"	24	17	13	26	19	37	27
3/8"	16	27	20	42	31	59	44
3/8"	24	31	23	47	35	67	49
7/16"	14	43	32	67	49	95	70
7/16"	20	48	36	75	55	106	78
1/2"	13	66	48	102	75	144	106
1/2"	20	75	55	115	85	163	120
9/16"	12	95	70	147	109	208	154
9/16"	18	106	79	164	121	232	171
5/8"	11	132	97	203	150	287	212
5/8"	18	149	110	230	170	325	240
3/4"	10	233	172	361	266	509	376
3/4"	16	261	192	403	297	569	420
7/8"	9	226	167	582	430	822	606
7/8"	14	249	184	642	473	906	668
1"	8	339	250	873	644	1232	909
1"	12	371	273	955	704	1348	995
1-1/8"	7	480	354	1077	794	1746	1288
1-1/8"	12	539	397	1208	891	1958	1445
1-1/4"	7	677	500	1519	1120	2463	1817
1-1/4"	12	750	553	1682	1241	2728	2012
1-3/8"	6	888	655	1992	1469	3230	2382
1-3/8"	12	1011	746	2268	1673	3677	2712
1-1/2"	6	1179	869	2643	1949	4286	3161
1-1/2"	12	1326	978	2974	2194	4823	3557

Metric

Bolt Head Identification

Bolt size (metric)	Thread pitch	Class 5.8 N.m	Class 5.8 ft-lb	Class 8.8 N.m	Class 8.8 ft-lb	Class 10.9 N.m	Class 10.9 ft-lb
M5	0.08	4	3	6	4	9	7
M6	1	6	4	10	7	15	11
M8	1.25	16	12	25	18	36	27
M8	1	17	13	26	19	38	28
M10	1.5	31	23	48	35	71	52
M10	1.25	33	24	51	38	75	55
M10	1	35	26	53	39	78	58
M12	1.75	54	40	84	62	123	91
M12	1.5	56	41	87	64	128	94
M12	1.25	59	44	90	66	133	98
M14	2	84	62	133	98	195	144
M14	1.5	94	69	142	105	209	154
M16	2	131	97	206	152	302	223
M16	1.5	141	104	218	161	320	236
M18	2.5	181	133	295	218	421	310
M18	2	196	145	311	229	443	327
M18	1.5	203	150	327	241	465	343
M20	2.5	256	189	415	306	592	437
M20	1.5	288	212	454	335	646	476
M22	2.5	344	254	567	418	807	595
M22	1.5	381	281	613	452	873	644
M24	3	444	327	714	526	1017	750
M24	2	488	360	769	567	1095	808
M27	3	656	484	1050	774	1496	1103
M27	2	719	530	1119	825	1594	1176
M30	3.5	906	668	1420	1047	2033	1499
M30	2	1000	738	1600	1180	2250	1659
M36	4	1534	1131	2482	1830	3535	2607

Notes:

This chart is an approximate estimate of torque values.

Always tighten hardware to these values unless a different torque value or tightening procedure is listed for a specific application.

Fasteners must always be replaced with the same grade as specified in the manual.

Always use the proper tool for tightening hardware: SAE for SAE hardware and Metric for Metric hardware.

Make sure that fastener threads are clean and that you properly start thread engagement.

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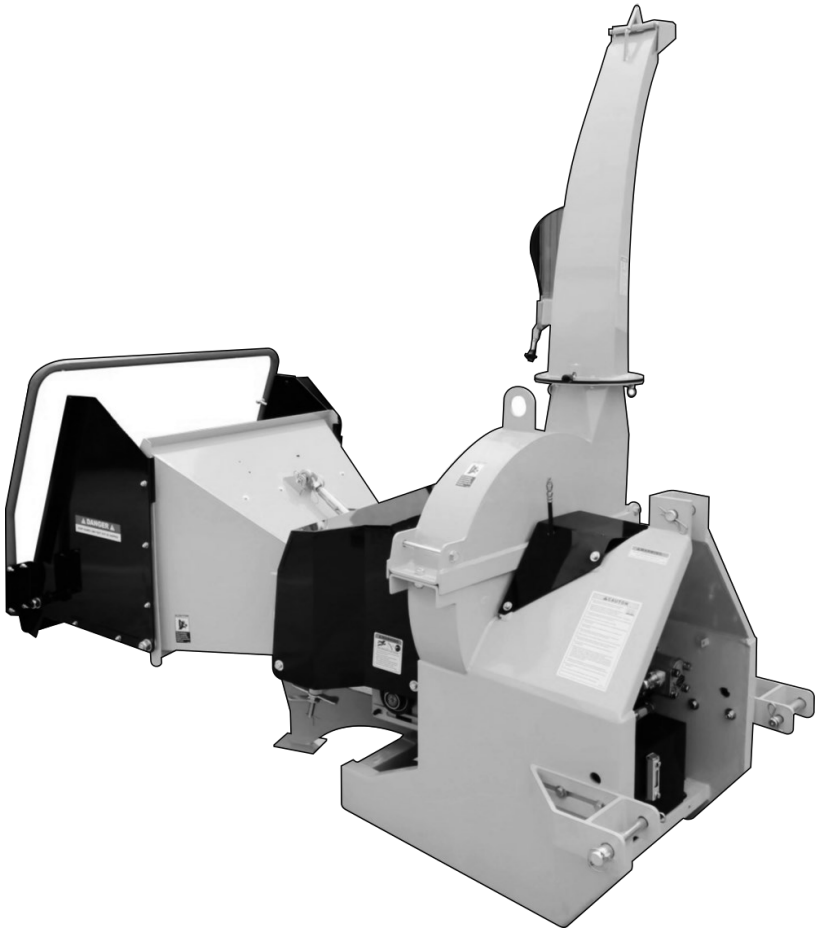
Wood Chipper

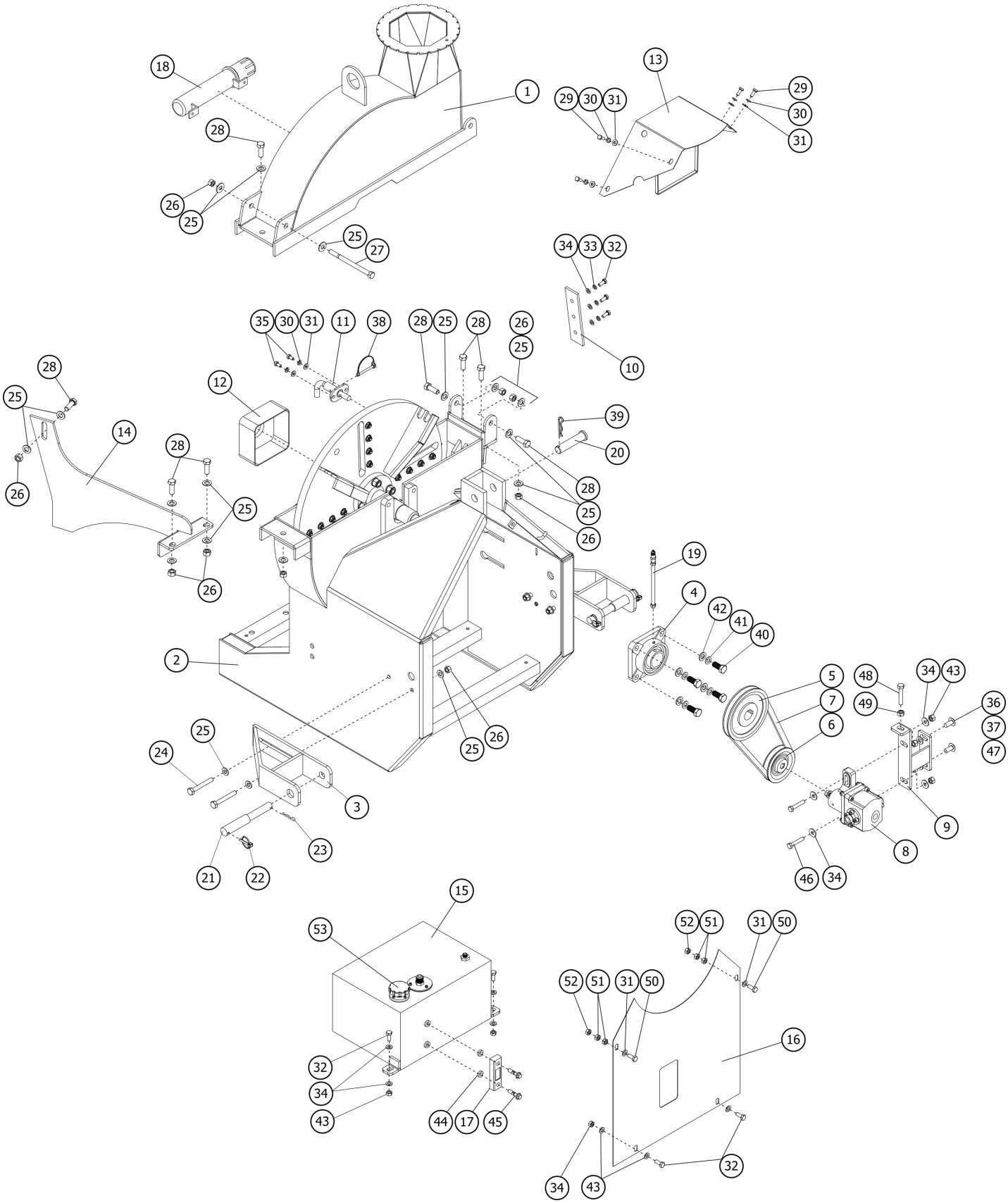
BWC-07DH - Dual Hydraulic Feed



Parts Manual

Rev. 12/24

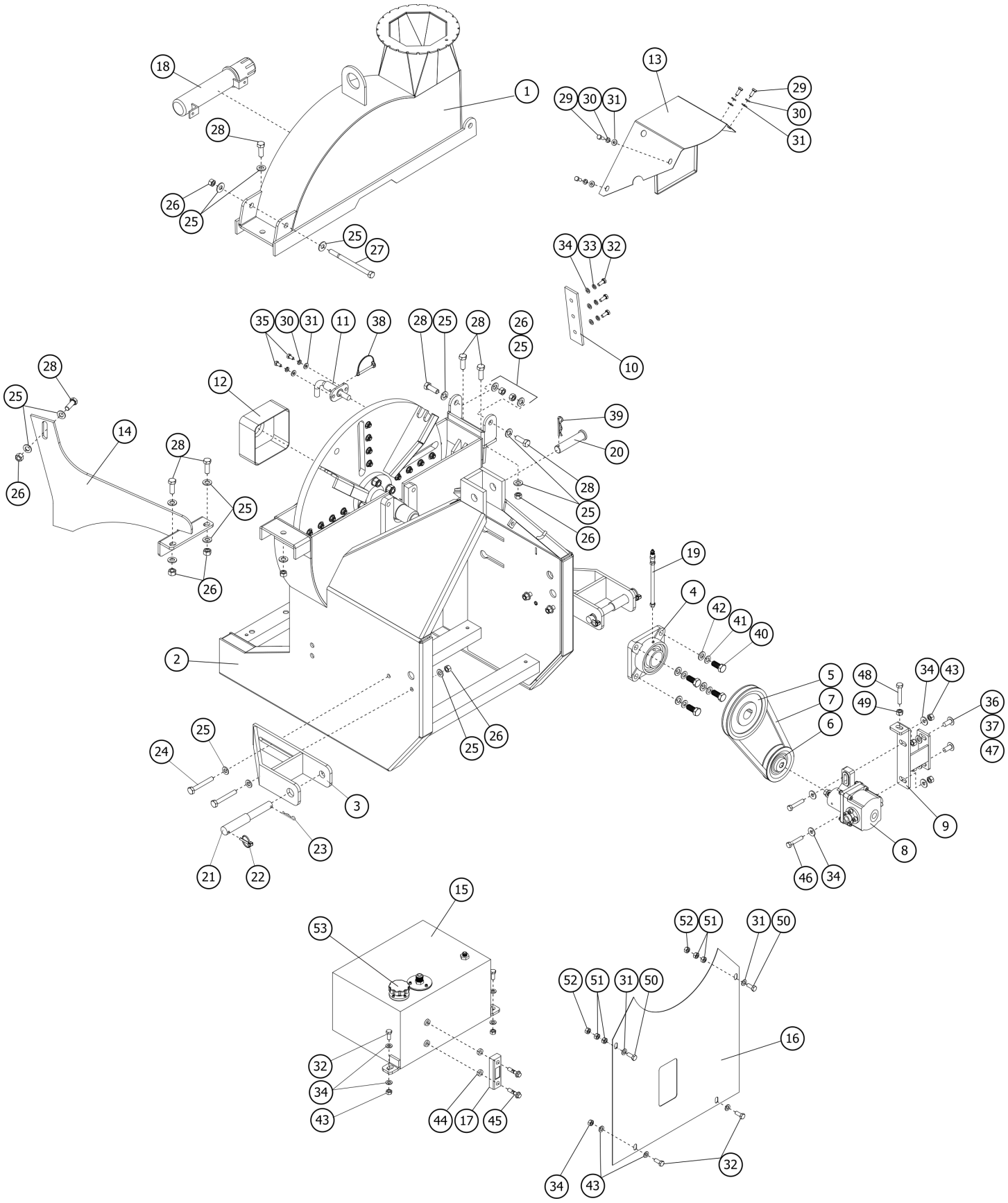
Frame BWC-07DH



Frame BWC-07DH

Item	Part #	Description	Qty.
1	BWC10158	Upper flywheel housing BWC-07DH	1
2	BWC10241	Lower flywheel housing, frame BWC-07DH	1
3	BWC10122	Lower hitch mount, Cat.1/Cat.2	2
4	BWC10031	Bearing UCF210	2
5	BWC10159	Pulley, upper BWC-07DH	1
6	BWC10207	Pulley, lower BWC-07DH	1
7	BWC10164	V-belt BWC-07DH	1
8	BWC10162	Hydraulic gear pump BWC-07DH	1
9	BWC10161	Hydraulic gear pump base BWC-07DH	1
10	BWC10160	Bed plate BWC0-07DH	1
11	BWC10024	Flywheel locking pin	1
12	BWC10208	Bearing protector cover	1
13	BWC10209	Shaft cover plate	1
14	BWC10210	Feed chute lower support	1
15	BWC10211	Hydraulic fluid reservoir BWC-07DH	1
16	BWC10212	Front panel BWC-07DH	1
17	BWC10213	Temperature gauge	1
18	MH20000	Manual holder small	1
19	BWC10214	Grease extension hose	1
20	BWC10215	Upper hitch pin BWC-07DH	1
21	SA4059	Step pin Cat.1/Cat.2	2
22	LYNPN10	Lynch pin	2
23	RC4	R-clip M4	2
24	BM1417590	Bolt HH M14-1.75x90 C8.8 Zinc	4
25	FW14	Washer flat M14 Zinc	
26	LNM14175	Nut HH self-locking M14-1.75 Zinc	
27	BM14175175	Bolt HH M14-1.75x175 C8.8 Zinc	
28	BM142040	Bolt HH M14-2.0x40 C8.8 Zinc	
29	BM0812520Z	Bolt HH M08-1.25x20 C8.8 Zinc	4
30	LW08	Washer lock M08 Zinc	4
31	FW08	Washer flat M08 Zinc	4
32	BM1012525Z	Bolt HH M10-1.25x25 C8.8 Zinc	3
33	LW10	Washer lock M10 Zinc	3
34	FW10	Washer flat M10 Zinc	3
35	BM081016Z	Bolt HH M08-1.0x16 C8.8 Zinc	2
36	CBM1217530Z	Bolt carriage M12-1.75x30 C8.8 Zinc	2
37	FW12	Washer flat M12 Zinc	2
38	BWC10216	Clevis pin w/round-retainer M6.35x45	1
39	RC4	R-clip M4	1

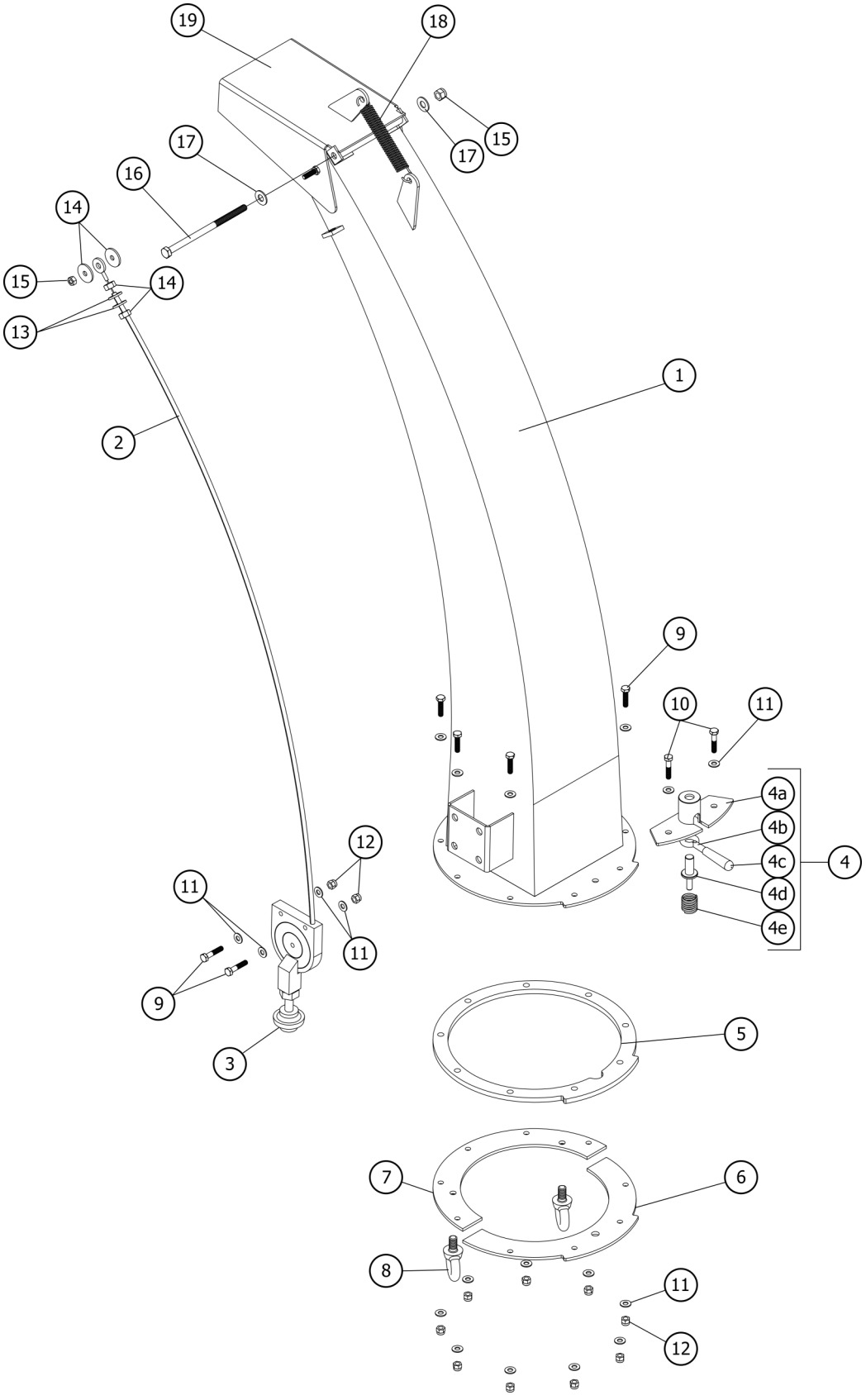
Frame BWC-07DH



Frame BWC-07DH

Item	Part #	Description	Qty.
40	BM161535	Bolt HH M16-1.5x35 C8.8 Zinc	8
41	LW16	Washer flat M16 Zinc	8
42	FW16	Washer lock M16 Zinc	8
43	LNM10125	Nut HH self-locking M10-1.25	
44	BWC10217	Nylon seal, temperature gauge	2
45	BWC10218	Banjo bolt, special M10-1.5x45 C8.8 Zinc	2
46	BM101555	Bolt HH M10-1.5x55 C10.9 Zinc	
47	LNM12175	Nut HH self-locking M12-1.75 Zinc	2
48	BM1217565Z	Bolt HH M12-1.75x65 C8.8 Zinc	1
49	NM12175	Nut HH M12-1.75 Zinc	1
50	BM0812535Z	Bolt HH M08-1.25x35 C8.8 Zinc	2
51	NM08125	Nut HH M08-1.25 Zinc	4
52	LNM08125	Nut HH self-locking M08-1.25 Zinc	2
53	BWC10243	Hydraulic reservoir cap	1

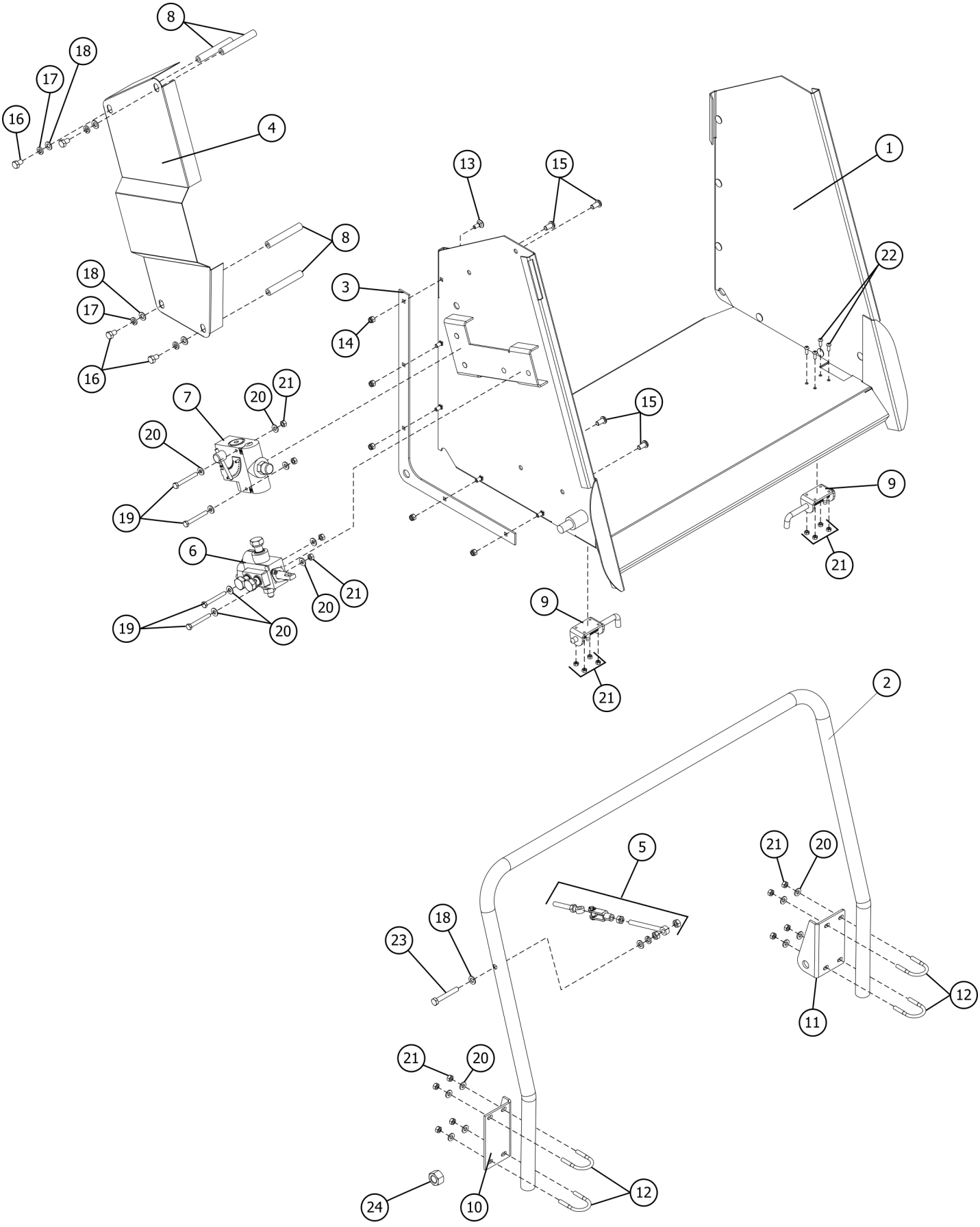
Discharge Chute BWC-07DH



Discharge Chute BWC-07DH

Item	Part #	Description	Qty.
1	BWC10165	Discharge chute BWC-07DH	1
2	BWC10166	Discharge chute controller cable	1
3	BWC10178	Discharge chute controller	1
4	BWC10219	Locking handle complete BWC-07DH	1
4a	BWC10220	Locking handle housing BWC-07DH	1
4b	BWC10174	Locking handle	1
4c	BWC10173	Locking handle cover	1
4d	BWC10170	Locking handle post	1
4e	BWC10171	Locking handle spring	1
5	BWC10221	Upper retainer plate BWC-07DH	1
6	BWC10222	Lower retainer plate w/locking handle mount BWC-07DH	1
7	BWC10223	Lower retainer plate BWC-07DH	1
8	BCW10050	Eye bolt, discharge chute	2
9	BM061025Z	Bolt HH M06-1.0x25 C8.8 Zinc	9
10	BM061030Z	Bolt HH M06-1.0x30 C8.8 Zinc	2
11	FW06	Washer flat M06 Zinc	22
12	LNM0610	Nut HH self locking M06-1.0 Zinc	11
13	NM08125	Nut HH M08-1.25 Zinc	2
14	LFW08	Washer large flat M08 Zinc	2
15	LNM08125	Nut HH self locking M08-1.25 Zinc	1
16	BM08125140	Bolt HH M08-1.25x140 C8.8 Zinc	1
17	FW08	Washer flat M08 Zinc	2
18	BWC10169	Discharge chute spring BWC-07DH	1
19	BWC10224	Discharge chute deflector BWC-07DH	1

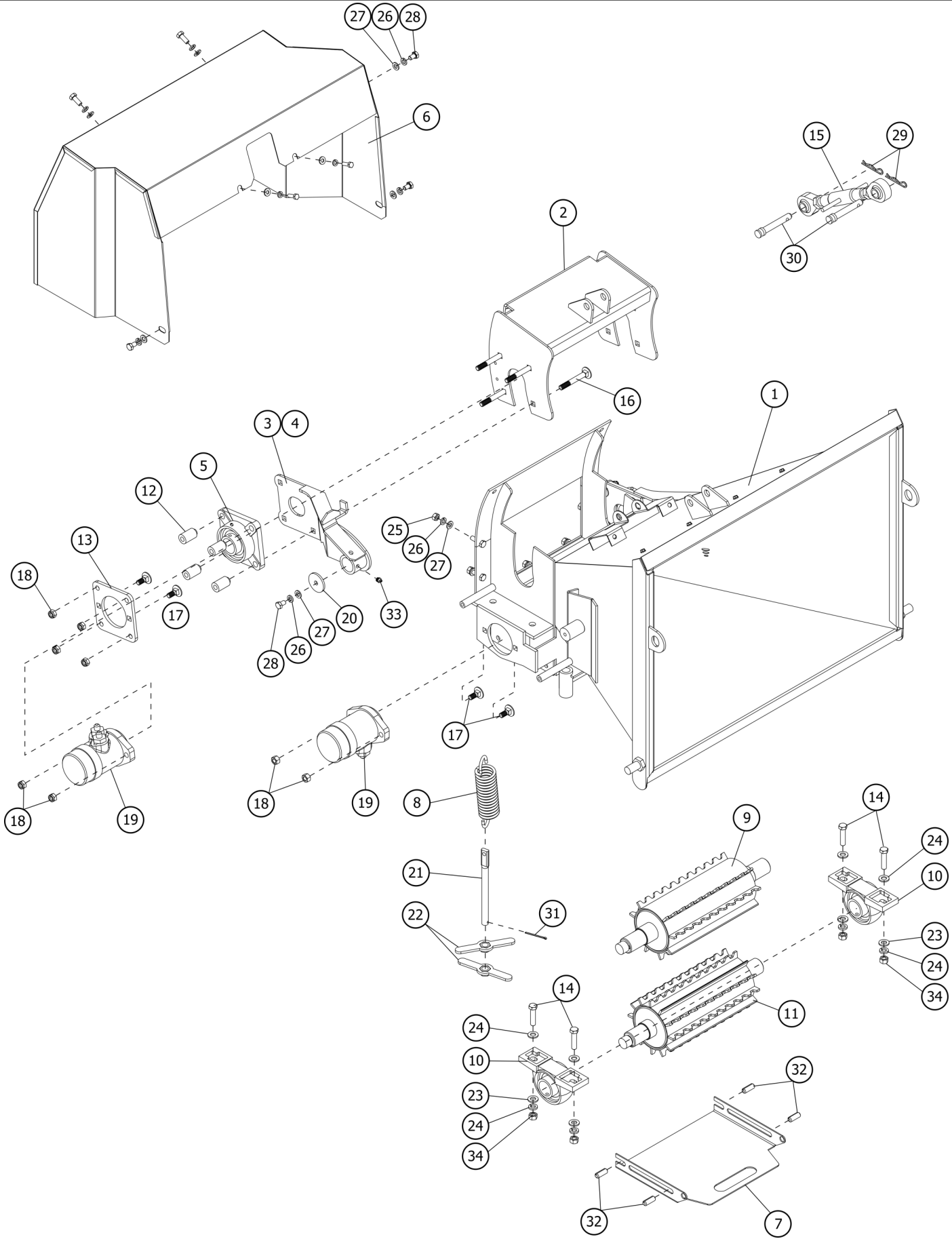
Infeed Chute BWC-07DH



Infeed Chute BWC-07DH

Item	Part #	Description	Qty.
1	BWC10179	Feed chute BWC-07DH	1
2	BWC10180	Control arm BWC-07DH	1
3	BWC10181	Chute reinforcement plate	2
4	BWC10182	Feed chute shield	1
5	BWC10183	Directional valve control linkage	1
6	BWC10184	Directional control valve	1
7	BWC10010	Variable control valve	1
8	BWC10199	Feed chute shield spacer	4
9	BWC10202	Locking mechanism	2
10	BWC10225	Control arm pivot LH	1
11	BWC10226	Control arm pivot RH	1
12	BWC10227	U-bolt - Control arm	4
13	CBM0812520Z	Bolt carriage M08-1.25x20 Zinc	10
14	LNM08125	Nut HH self locking M08-1.25 Zinc	10
15	BWC10228	Button head hex drive screw M10-1.5x20 Black	4
16	BM101516	Bolt HH M10-1.5x16 C8.8 Zinc	4
17	LW10	Washer lock M10 Zinc	4
18	LNM1015	Washer flat M10 Zinc	4
19	BM0812565Z	Bolt HH M08-1.25x65 C8.8 Zinc	4
20	FW08	Washer flat M08 Zinc	8
21	LNM08125	Nut HH self locking M08-1.25 Zinc	16
22	BWC10058	Button head hex drive screw M06-1.0X16 Zinc	8
23	BM101570PTZ	Bolt HH M10-1.5x70 partial thread C8.8 Zinc	1
24	LNM2025	Nut HH self locking M20-2.5 Zinc	2

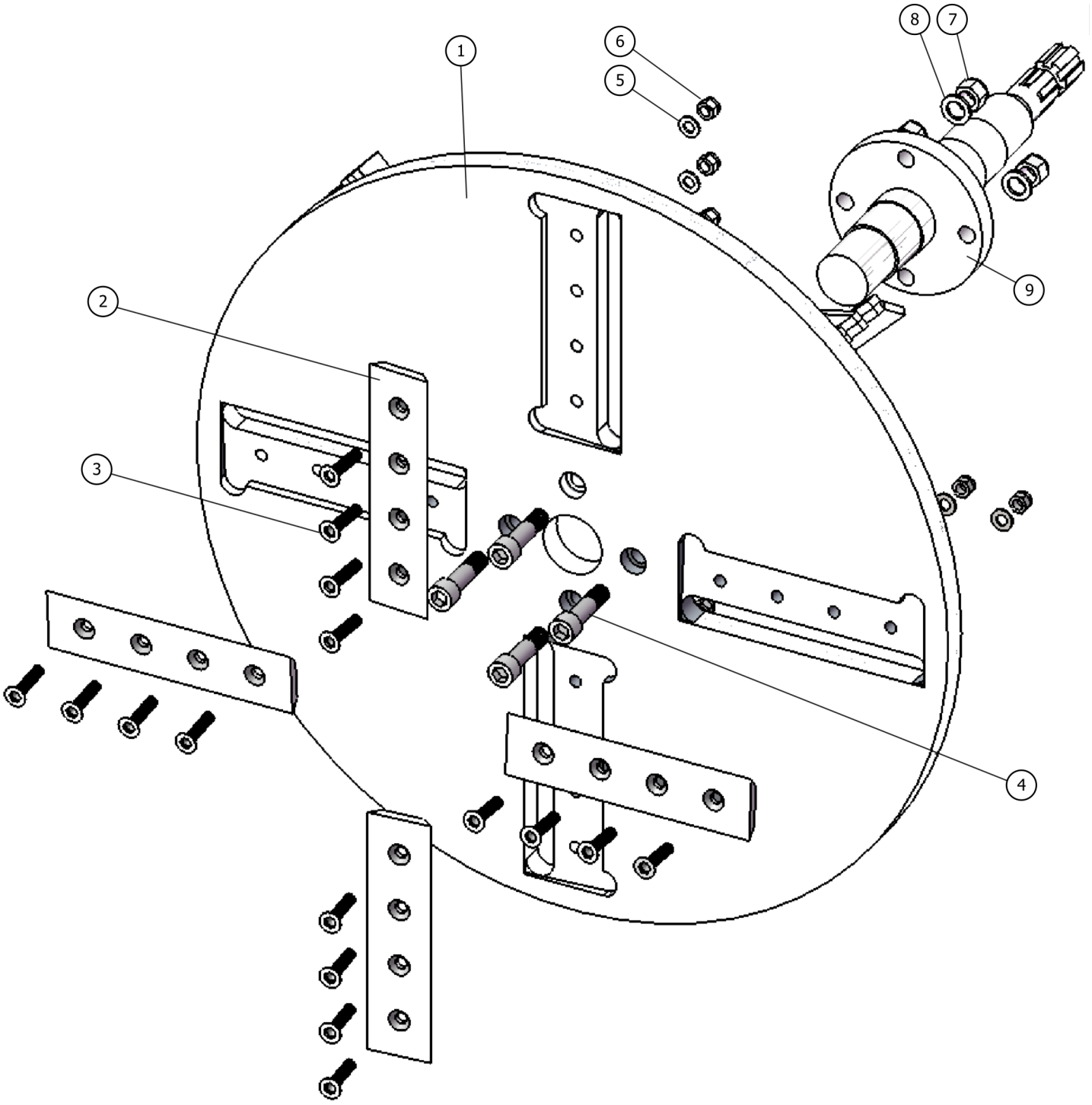
Feed Roller BWC-07DH



Feed Roller BWC-07DH

Item	Part #	Description	Qty.
1	BWC10186	Feed roller housing	1
2	BWC10187	Feed roller mount	1
3	BWC10240	Left swing arm	1
4	BWC10189	Right swing arm (not shown)	1
5	BWC10190	Bearing upper roller	2
6	BWC10191	Feed roller cover upper	1
7	BWC10192	Feed roller cover lower	1
8	BWC10193	Swing arm tension spring	2
9	BWC10194	Loading roller	1
10	BWC10195	Bearing lower roller	2
11	BWC10196	Blanking roller	1
12	BWC10197	Upper hydraulic motor support sleeve	4
13	BWC10198	Upper hydraulic motor base	1
14	BM121550	Bolt HH M12-1.5x50	4
15	BWC10200	Turnbuckle	2
16	CBM121590	Bolt carriage M12-1.5x90	8
17	CBM121550	Bolt carriage M12-1.5x50	4
18	LNM1215	Nut HH self locking M12-1.5	8
19	BWC10201	Hydraulic motor	2
20	BWC10242	Swing arm spacer	2
21	BWC10203	Swing arm tension rod	2
22	BWC10229	Swing arm tension adjustment	4
23	LW12	Washer lock M12	20
24	FW12	Washer flat M12	20
25	NM1015	Nut HH M10-1.5	16
26	FW10	Washer flat M10	16
27	LW10	Washer lock M10	16
28	BM101516	Bolt HH M10-1.5x16	7
29	RC3	R-clip M3.5	2
30	BWC12030	Pin, turnbuckle	2
31	CP3x50	Cotter pin M3x50	2
32	RP12x35	Roll pin M12x35	4
33	GN081S	Grease nipple M8x1.0 straight	2
34	NM1215	Nut HH M12-1.5	4

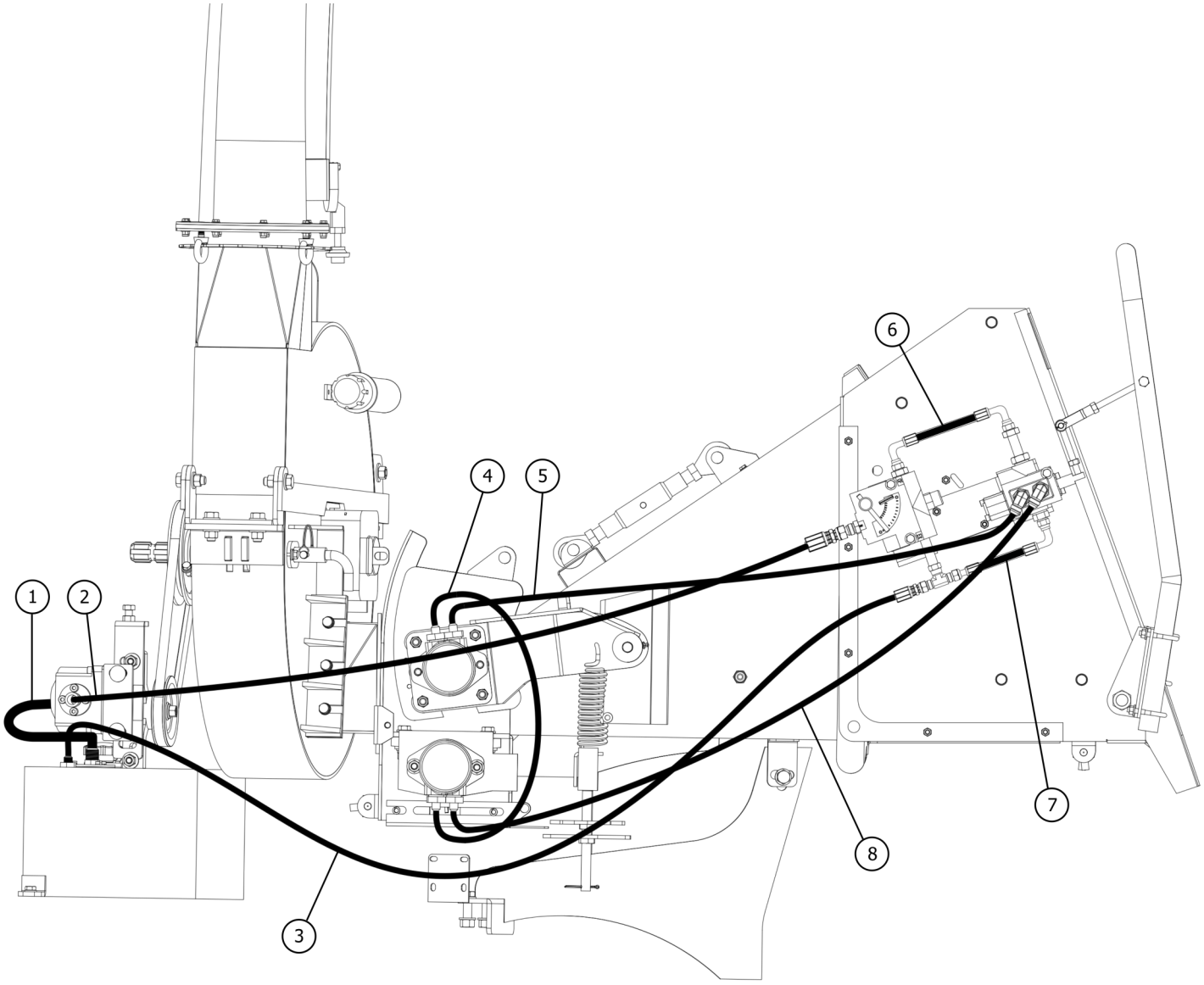
Flywheel BWC-07DH



Flywheel BWC-07DH

Item	Part #	Description	Qty.
1	BWC10204	Flywheel BWC-07DH	1
2	BWC10205	Chipper blade	4
3	SSM101545	Hex drive flat head screw, M10-1.5x45 C10.9 Zinc	12
4	ABM162060	Socket head screw M16-2.0x60 C10.9 Zinc	4
5	FW10	Washer flat M10 Zinc	12
6	LNM1015	Nut HH self locking M10-1.5 Zinc	12
7	LNM1620	Nut HH self locking M16-2.0 Zinc	4
8	FW16	Washer flat M16 Zinc	4
9	BWC10206	Flywheel shaft BWC-07DH	1

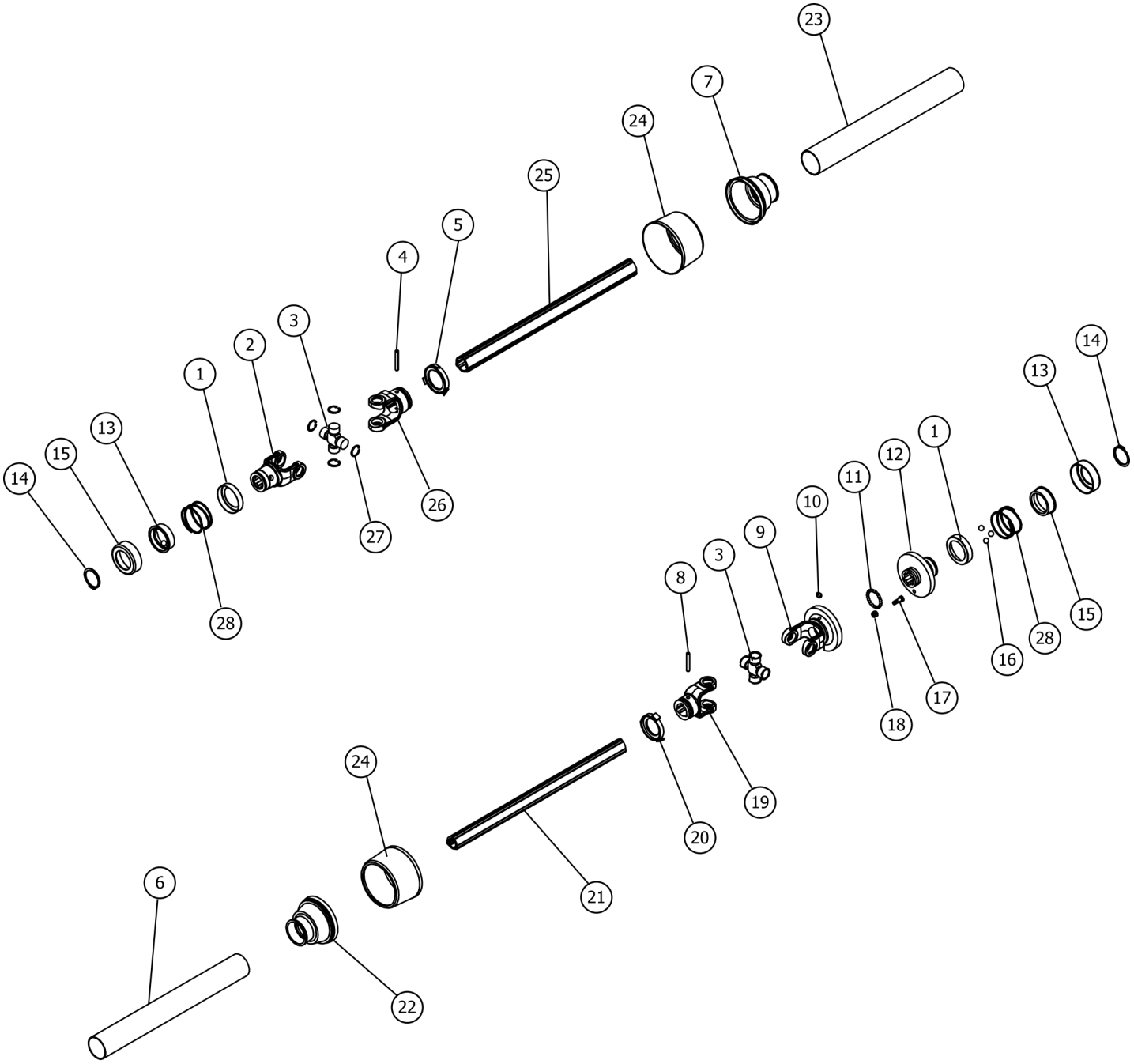
Hydraulics BWC-07DH



Hydraulics BWC-07DH

Item	Part #	Description	Qty.
1	BWC10231	Hydraulic hose, suction BWC-07DH	1
2	BWC10232	Hydraulic hose, input variable flow control valve, BWC-07DH	1
3	BWC10233	Hydraulic hose, reservoir, BWC-07DH	1
4	BWC10234	Hydraulic hose, upper roller/lower roller, BWC-07DH	1
5	BWC10235	Hydraulic hose, upper roller/directional control valve, BWC-07DH	1
6	BWC10236	Hydraulic hose, output variable control valve, BWC-07DH	1
7	BWC10237	Hydraulic hose, output directional control valve, BWC-07DH	1
8	BWC10238	Hydraulic hose, lower roller/directional control valve, BWC-07DH	1

Driveline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Driveline

Item	Part #	Description	Qty.
1	BWC10130	Drive shaft fork cover	2
2	BWC10239	Drive shaft fork	1
3	BWC10132	Cross section bearing	2
4	BWC10133	Elastic cylindrical pin 8x60	1
5	BWC10134	T4 external buckle	1
6	BWC10135	T4-1000 plastic inner tube	1
7	BWC10136	T4 outer plastic cap 1	1
8	BWC10137	Elastic cylindrical pin 8x55	1
9	BWC10138	Drive shaft fork 1	1
10	BWC10139	Grease fitting M8x1	1
11	BWC10140	Steel ball 6mm	24
12	BWC10141	Drive shaft fork flange 2	1
13	BWC10142	Drive shaft fork cover 3	2
14	BWC10143	Retaining ring for shaft 50	2
15	BWC10144	Drive shaft fork cover 2	2
16	BWC10145	Steel ball 12.7mm	6
17	BWC10146	Safety bolt M8×25	1
18	BWC10147	Lock nut M8	1
19	BWC10148	Drive shaft fork 3	1
20	BWC10149	T4 inner buckle	1
21	BWC10150	T4-1000 cat face inner tube	1
22	BWC10151	T4 inner plastic cap 1	1
23	BWC10152	T4-1000 plastic outer tube	1
24	BWC10153	T4 plastic caps	2
25	BWC10154	T4-1000 cat face outer tube	1
26	BWC10155	Drive shaft fork 2	1
27	BWC10156	Snap ring	8
28	BWC10157	Drive shaft fork cover spring	2
-	BWC10129	PTO complete, BWC Wood Chipper	1

Warranty

LIMITED WARRANTY

Belco Resources Equipment warrants to the original purchaser of any new piece of machinery from Belco Resources Equipment, purchased from an authorized Belco Resources Equipment dealer, that the equipment be free from defects in material and workmanship for a period of one (1) year for non-commercial, state, and municipalities' use, ninety (90) days for commercial use from date of retail sale. Warranty for rental purposes is thirty (30) days. The obligation of Belco Resources Equipment to the purchaser under this warranty is limited to the repair or replacement of defective parts.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of purchase of such part or to the expiration of the applicable new equipment warranty period, whichever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Belco Resources Equipment dealer during regular working hours. Belco Resources Equipment reserves the right to inspect any equipment or parts, which are claimed to have been defective in material or workmanship.

This limited warranty does not apply to and excludes wear items such as shear pins, tires, tubes knives, blades or other wear items. Oil or grease is not covered by this warranty.

All obligations of Belco Resources Equipment under this limited warranty shall be terminated if:

Proper service is not performed on the machine.
The machine is modified or altered in any way.
The machine is being used or has been used for purposes other than those for which the machine was intended.

DISCLAIMER OF IMPLIED WARRANTIES & CONSEQUENTIAL DAMAGES

Belco Resources Equipment obligation under this limited warranty, to the extent allowed by law, is in lieu of all warranties, implied or expressed, including implied warranties of merchantability and fitness for a particular purpose and any liability for incidental and consequential damages with respect to the sale or use of the items warranted. Such incidental and consequential damages shall include but not be limited to: transportation charges other than normal freight charges; cost of installation other than cost approved by Belco Resources Equipment; duty; taxes; charges for normal service or adjustment; loss of crops or any other loss of income; rental of substitute equipment, expenses due to loss, damage, detention or delay in the delivery.

REGISTRATION

The online Warranty Registration must be completed in order to qualify for coverage on this Limited Warranty. Visit br-equipment.com, click on "Warranty Registration" and completely fill out the form to register the new piece of equipment.

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