

# Heavy Duty Excavator Drum Mulcher

Operation and Maintenance Manual



190510, 190515, & 190520



888-376-7027 | [BlueDiamondAttachments.com](http://BlueDiamondAttachments.com)

Register your  
**WARRANTY**  
within 30 days  
of purchase



BD-092

# Introduction: Owner Information

---

Thank you for your decision to purchase a Blue Diamond® Heavy Duty Excavator Drum Mulcher. To ensure maximum performance of your equipment, it is mandatory that you thoroughly study the Operator's manual and follow the recommendations. Proper operation and maintenance are essential to maximize equipment life and prevent personal injury.

Operate and maintain this equipment in a safe manner and in accordance with all applicable local, state, and federal codes, regulations and /or laws. Follow all on-product labeling and instructions.

Make sure that all personnel have read this Operator's Manual and thoroughly understand safe and correct operating, installation and maintenance procedures.

Blue Diamond® is continually working to improve its products. Blue Diamond® reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

Although great care has been taken to ensure the accuracy of this publication, Blue Diamond® makes no warranty or guarantee of any kind, written or expressed, implied or otherwise with regard to the information contained within this manual. Blue Diamond assumes no responsibility for any errors that may appear in this manual and shall not be liable under any circumstances for incidental, consequential or punitive damages in connection with, or arising from the use of this manual.

Keep this manual available for frequent reference. All new operators or owners must review the manual before using the equipment and annually thereafter. Contact your Blue Diamond® Attachments Dealer for assistance, information, or additional copies of the manual. Contact [www.bluediamondattachments.com](http://www.bluediamondattachments.com) or call 888-376-7027 for a complete list of dealers in your area.

## Serial Number Location:

Please record attachment information in the space provided for future reference.



Model Number: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Dealer Name: \_\_\_\_\_

Dealer Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

The serial number plate is located on the left side of the main frame.

Always use your serial number when requesting information or when ordering parts.

**NOTE:** The directions left, right, front, and rear, as mentioned throughout this manual, are as viewed from the operator's position.

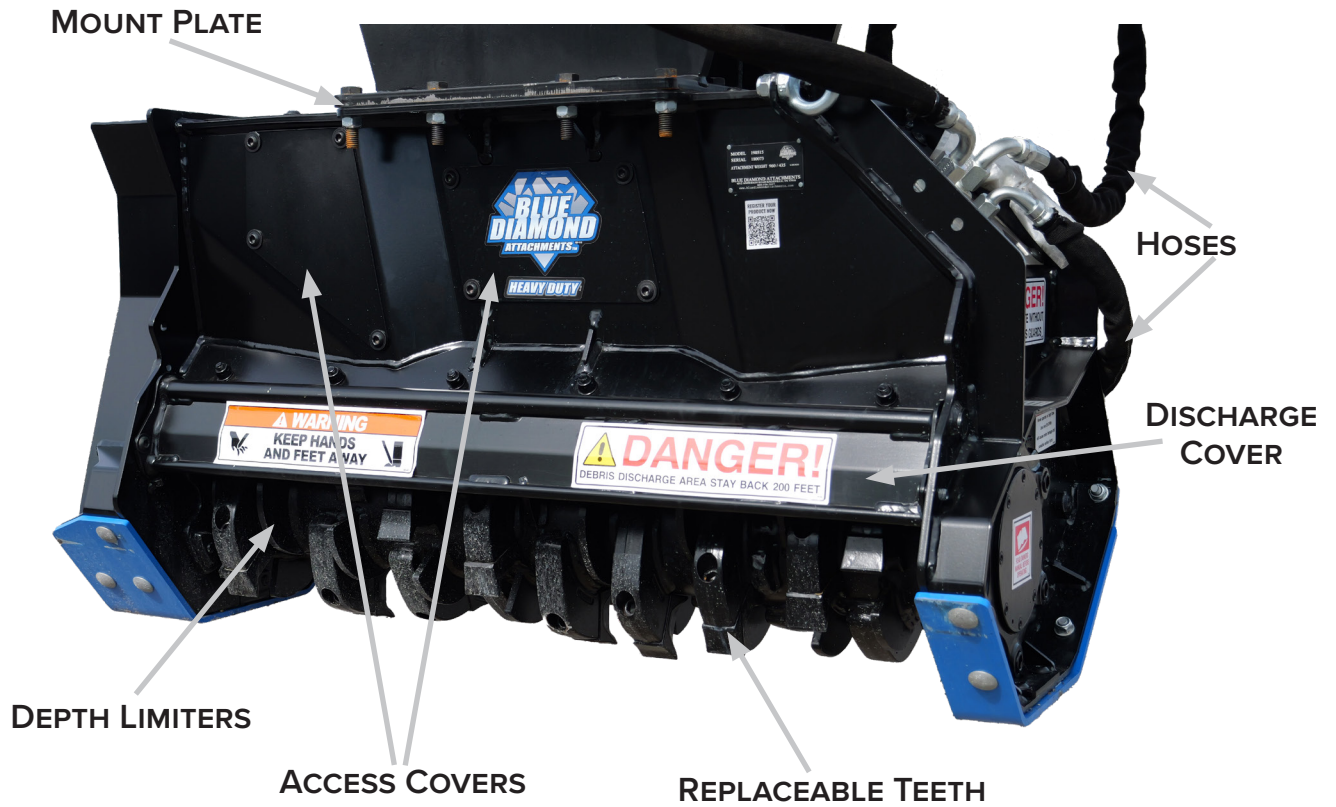
# Table of Contents

---

1. Introduction.....	4-7	7. Warranty.....	50
1.1 Attachment Identification.....	4		
1.2 About this Attachment.....	5		
1.3 Attachment Model Numbers.....	5		
1.4 Key Parts of the Drum Mulcher.....	6		
2. Safety.....	8-13		
2.1 General Safety Information.....	8		
2.2 Operators.....	9		
2.3 Operational Safety.....	10		
2.4 Safety Regulations.....	12		
3. Start-Up and Operation.....	14-18		
3.1 General Information.....	14		
3.2 Checks Prior to Connecting the Machine.....	15		
3.3 Mechanical Coupling of the Machine.....	15		
3.4 Initial Set Up Instructions.....	16		
3.5 Machine Operation.....	18		
4. Maintenance.....	19-25		
4.1 Precautions During Maintenance.....	19		
4.2 Cleaning.....	19		
4.3 Greasing and Lubrication.....	19		
4.4 Connecting Hoses.....	20		
4.5 Belts.....	21		
4.6 Cutting Elements.....	22		
4.7 Spare Parts.....	22		
4.8 Service Schedule.....	23		
4.9 Troubleshooting.....	24		
5. Parts.....	26-47		
5.1 30-inch Main Breakdown.....	26		
5.2 40-inch Main Breakdown.....	30		
5.3 50-inch Main Breakdown.....	34		
5.4 Main Frames.....	38		
5.5 30-inch Top Plate Assembly.....	39		
5.6 45cc Motor and Drive Assembly Breakdown.....	40		
5.7 Direct Drive Assembly Breakdown.....	41		
5.8 Belt Drive Assembly for 30-inch.....	42		
5.9 Belt Drive Assembly for 40 and 50-inch.....	43		
5.10 Drive Side Rotor Bearing Assembly.....	44		
5.11 Non-Drive Side Rotor Bearing Assembly.....	45		
5.12 Rotor Bearing Assembly.....	46		
5.13 Rotors with Tooth Options.....	47		
6. Specifications.....	48-49		
6.1 Attachment Specifications.....	48		
6.2 Torque Specifications.....	49		

# 1. Introduction

## 1.1 Attachment Identification





# 1. Introduction

## 1.2 About this Attachment

Blue Diamond® recommends that you carefully read and understand this manual before putting the machine into operation. Follow all safety measures and maintenance procedures described in this manual to ensure proper and efficient use of machine.

**NOTE:** Blue Diamond® cannot be held liable if specified limits are exceeded.

**NOTE:** Noise emissions in the environment measured as sound power level (LWA) according to EC directive 2000/14/EC.

The Heavy Duty Excavator Drum Mulchers are specially designed for work with excavators. They meet the highest requirements of the forestry sector, as their configuration and design allow them to perform any work with maximum reliability and efficiency. They are made of high elastic limit steel and coated with wear resistant steel. They also have thermally hardened replaceable counterblades and an optimized rotor for lower power consumption, making them the most reliable hydraulic machines on the market.

### Intended Use

The Heavy Duty Excavator Drum Mulcher is specially designed for basic clearing, maintenance, and mulching of trees and stumps.



### WARNING



If you do not understand any of the points in this manual, do not connect, operate, or service the machine. Immediately contact Blue Diamond® for your own safety and that of the machine.

### Sound Pressure Level Indication

NOISE EMISSIONS	dB(A)
Measured sound power level	85
Guaranteed sound power level (LWA)	85

## 1.3 Attachment Model Numbers



### IMPORTANT



DO NOT exceed max flow.

MODEL NUMBER	MOTOR SIZE	FLOW (GPM)	CUTTING WIDTH
190510	45cc	11-24	30"
190515		15-35	40"
190520		15-35	50"

# 1. Introduction

## 1.4 Key Parts of the Drum Mulcher

### Discharge Cover with Manual Adjustment

This mulcher is fitted with a manually adjusted discharge cover [Figure 1] (choose open or closed, for more efficient mulching or finer finish).



Figure 1

### Rotor

The rotor [Figure 2] is responsible for mulching the material and is driven by pulleys.



## CAUTION



- Before operating the machine, check that the cutting elements are correctly fastened.
- Before starting operation of the machine, check that the rotor and its hammers are in good condition.
- Check that there are no objects wrapped around the rotor.

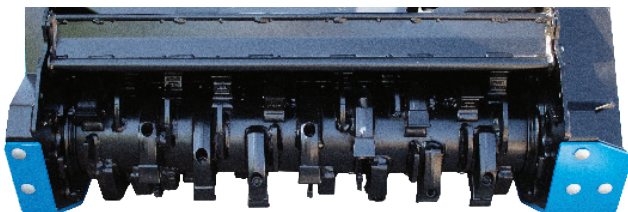


Figure 2

### Replaceable Liner

This mulcher features a liner (Item 1) [Figure 3] made from high strength steel that is easily replaceable.

### Counterblades

The counterblades (Item 2) [Figure 3] and the rotor grind and process the material.

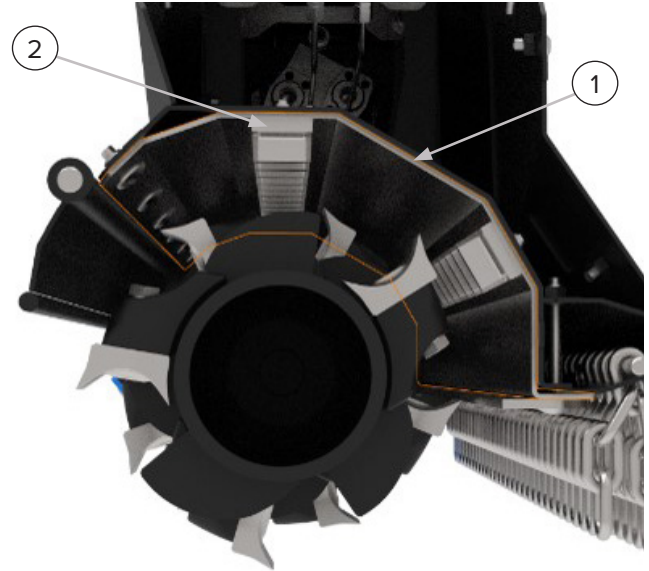


Figure 3

### Belt Drive

Belts and pulleys transmit the rotary motion from the gearbox to the rotor.

The belt tension is manually adjusted [Figure 4].

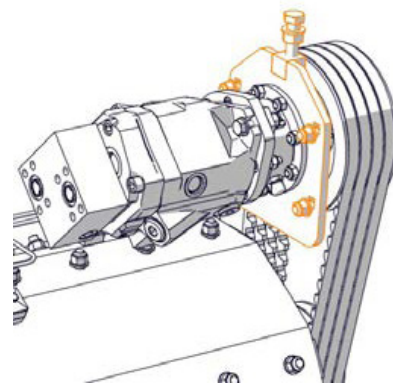


Figure 4

# 1. Introduction

## 1.4 Key Parts of the Drum Mulcher Cont'd

### Replaceable Skid Shoes

This mulcher features skid shoes [Figure 5] made from wear-resistant steel that are easily replaceable.

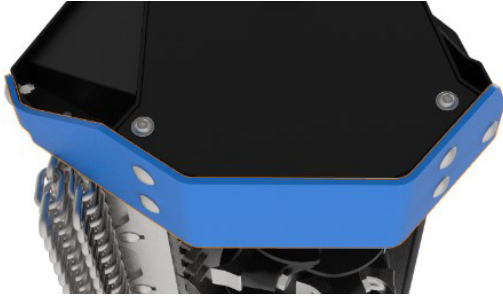


Figure 5

### Hydraulic Motor

The mulcher is powered by hydraulic motor [Figure 6].

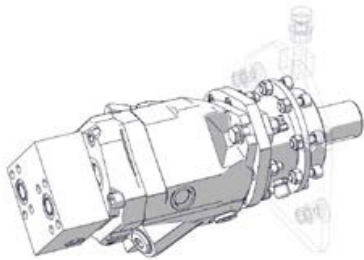


Figure 6

### Hydraulic Connection Panel

The hydraulic connection panel [Figure 7] connects the excavator hoses to the mulcher.



Figure 7

### Front Guarding

The Heavy Duty Excavator Drum Mulcher uses chain guards [Figure 8] to prevent mulched material from getting out of control.



Figure 8

### Mount Plate

The mulcher has a 18x19 inch plate to allow for any excavator mount.

### Adjustable Intake Plate

This mulcher features an adjustable intake plate [Figure 9] to control the size of material processed.

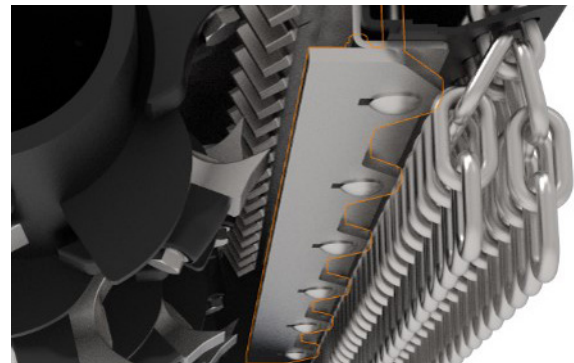


Figure 9

## 2. Safety

### 2.1 General Safety Information



This **SAFETY ALERT SYMBOL** identifies important safety messages on the equipment and in the owner's manual. When you see this symbol, be alert to the possibility of personal injury and carefully read the message that follows.



The signal word **IMPORTANT** identifies procedures which must be followed to avoid damage to the machine.



The signal word **DANGER** on the machine and in the manuals indicates a hazardous situation which, if not avoided, will result in death or serious injury.



The signal word **WARNING** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



The signal word **CAUTION** on the machine and in the manuals indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

**NOTE:** Notes are used to indicate important information. This information may be repeated in other areas of the manual.

### Operating Safety

- Read and follow instructions in this manual and the machine's Operators Manual before operating.
- The manual must always remain with the machine. In case of loss or damage, request a new copy from your dealer or from Blue Diamond®.
- Strictly follow all rules prescribed by the safety pictograms/decals applied to the machine. Ensure that all safety pictograms/decals are legible. If pictograms/decals are worn, they must be replaced with new ones obtained from Blue Diamond® and placed in the position indicated by this manual.
- Before using the machine, make sure that all safety devices are installed and in good working conditions. In case of damage or shields, replace them immediately.
- remove or alter safety devices and/or safety precautions
- Pay maximum attention to avoid any accidental contact with rotating parts of the machine.
- If the use of the machine is required at night or in conditions of reduced visibility, use the lighting system of the prime mover and possibly an auxiliary lighting system.



Before performing any of the actions in this section, section 2.0 Safety must be read in its entirety and understood fully to avoid any type of risk or accident. If you do not fully understand this manual, **DO NOT** connect or operate the machine or carry out any maintenance operations. Contact your local dealer or Blue Diamond® Product Support immediately to ensure your safety and that of the machine.



## 2. Safety



**DANGER**



- The machine may only be operated, maintained, repaired, serviced, or handled by qualified personnel or an authorized service technician.
- DO NOT approach the mulcher, carry out maintenance, inspections, or connect or disconnect components while the machine is running. Before carrying out any of the aforementioned tasks, disengage the hydraulics to stop the rotor. Once the rotor has stopped, rest the mulcher (without applying excessive pressure with the excavator arm) on a level, flat, and firm surface. Park the machine, set the parking brake, turn the machine off, and remove the key from the ignition. Wait until all moving parts have come to a complete stop before approaching the machine.

- The new operator must start in an area without bystanders and use all the controls until he or she can operate the machine safely under all conditions of the work area.

### Operator Safety

- Before starting, and during operation of the attachment, make sure there are no people or animals in the operation area; the machine can project material, causing serious injury or death.
- During operation, adjustment, maintenance, repairing, or transportation of the machine, the operator must always use appropriate Personal Protective Equipment (PPE) including, but not limited to, safety glasses, working gloves, dust mask, safety helmet, and hearing protection.
- DO NOT operate the attachment or machine while wearing loose fitting clothing that can be caught or entangled in parts of the machine.
- DO NOT operate the implement when tired, not in good condition, or under the influence of alcohol or drugs.

## 2.2 Operators

### Qualified Operators

The operator is a person suited to the work and who is physically and psychologically able to withstand the demands connected with operating the equipment for its intended use. The operator must not allow anyone to approach the machine while it is working and must not allow external personnel to operate the machine or attachment.

The operator is to follow the given instructions in this manual and the machine operator's manual in order to obtain maximum performance, minimum consumption, and maximum safety for himself and for others.

The operator is responsible for scrupulously observing all the instructions given in this manual.

### Operator Training

- Check the rules and regulations at your location. The rules may include an employer's work safety requirements. Regulations may apply to local driving requirements or use of a Slow Moving Vehicle (SMV) emblem. Regulations may identify a hazard such as a utility line.

## 2. Safety

---

### 2.3 Operational Safety

#### Operating Safety

- Follow all laws and regulations in your jurisdiction when operating and maintaining your equipment.
- Users must strictly observe all safety regulations indicated in this user manual and all warning signs indicated on the machine.
- Correct use of the machine implies compliance with all maintenance and operating instructions described in this manual and the use of original Blue Diamond® spare parts.
- Prolonged use of the machine causes components to become hot, and there is a burn hazard from direct contact with them. Avoid direct contact with the machine until these components have cooled down.
- DO NOT handle hydraulic components until the pressure in the hydraulic circuit has been relieved. Avoid direct contact with the machine until these components have cooled down.
- The operator must ensure at all times that there are no persons, animals, or obstacles within 200 feet (60 meters) of the machine's location while in operation.
- Make sure that the machine is in a proper state of repair (cleaning), maintenance (lubrication), and components.
- If the machine vibrates, behaves strangely, or makes unusual noises, stop operation and contact your local dealer or Blue Diamond® Product Support immediately.
- When operating on sloping terrain, check that you are working safely and that there is no risk of tipping over.
- The movement of the excavator arm must be as near to the ground as possible to avoid the risk of overturning.
- The machine must be stopped and inspected for damage after striking an object. In the event of damage, it must be repaired before continuing with the machine operation.

#### Operator Training

- Read and follow instructions in this manual and the machine's Operators Manual before operating.
- Under no circumstances should young children be allowed to work with this equipment.
- This equipment is dangerous to persons unfamiliar with its operation.
- Check for overhead and/or underground utility lines before operating equipment (if applicable).
- In addition to the design and configuration of 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 equipment.
- Check that the attachment is securely fastened to the machine.
- Make sure all the machine controls are in the NEUTRAL before starting the machine.
- Operate the equipment only from the operator's position.
- Operate the equipment according to the Operator's Manual.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders.
- DO NOT permit personnel to be in the work area when operating the equipment. This attachment discharges debris that can be hazardous.
- The equipment must be used ONLY on approved machines.
- DO NOT modify the equipment in any way. Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- DO NOT make any adjustments or repairs on the equipment while the machine is running.
- Keep shields and guards in place. Replace if damaged.

## 2. Safety

---

### 2.3 Operational Safety Cont'd

- DO NOT operate equipment in poor visibility conditions such as fog, darkness, or any conditions that limit clear visibility less than 200 feet (60 meters) in front of and to the sides of the equipment.
- When conditions make it necessary to slow ground speed, shift to a lower gear rather than reducing engine speed. The engine will maintain rated speed and keep cutter running at optimal cutting speed.
- DO NOT operate in a work area that has not been inspected for foreign debris and obstacles.
- Remove any foreign objects, and clearly mark any objects that cannot be removed.
- Wear safety glasses, gloves, hearing protection, and other protective clothing when required.
- DO NOT position and work with the rotor facing the operator's cab.

#### **Machine Requirements and Capabilities**

- The machine operator's cab should be equipped with a thermoplastic polycarbonate or similar material front window, and similar protection on the sides of the operator's cab before operating the equipment.
- Keep bystanders clear of moving parts and the work area. Keep children away.
- DO NOT exceed 4000 psi (275 bar) operating pressure.
- Use caution on slopes and near banks and ditches to prevent overturn

#### **Fire Prevention Safety**

- Flammable debris (leaves, grass, etc.) must be removed regularly. If flammable debris is allowed to accumulate, it can cause a fire hazard. Clean often to avoid this accumulation.
- The equipment's hydraulic motor compartment must be inspected every day and cleaned if necessary to prevent fire hazards and overheating.
- All fuels, most lubricants, and some coolant mixtures are flammable. Flammable fluids that

are leaking or spilled onto hot surfaces or onto electrical components can cause a fire.

- Power equipment can cause sparks and start fires. Be especially careful on hot, dry days. Exercise caution while operating and watch for sparks.
- Keep a working fire extinguisher and shovel should be kept near the working area.

#### **Transporting Safety**

- Blue Diamond® Attachments cannot be held responsible for any damage due to transport that was carried out by the customer and/or operator or by carriers chosen by the customer and/or operator.
- Comply with state and local laws governing highway safety and movement of machine on public roads.
- Check local laws for all highway lighting and marking requirements.
- Always yield to oncoming traffic and move to the side of the road so any following traffic may pass.
- Never allow riders on either machine or equipment.
- If transporting the drum mulcher on a truck or trailer, make sure the drum mulcher is properly secured to the transport vehicle.

## 2. Safety

### 2.3 Operational Safety Cont'd

#### Hydraulic System

- Check hydraulic tubes, hoses, and fittings for damage and leakage. Never use open flame or bare skin to check for leaks. Hydraulic tubes and hoses must be properly routed and have adequate support and secure clamps. Tighten or replace any parts that show leakage.
- Always clean fluid spills. Do not use gasoline or diesel fuel for cleaning parts. Use commercial nonflammable solvents.

raising the machine off the ground.

- DO NOT transport persons or animals or to load or transport goods on the machine.
- DO NOT exceed the machine's power capacity as specified by the manufacturer.
- Keep a sufficient distance from utility lines and pipes.
- When the mulcher is in operation, fire may occur. Keep a fire extinguisher nearby the work area.



#### WARNING



Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required.

Wear goggles. Use cardboard to check for leaks.



#### DANGER



- Before any maneuver, the operator must ensure that there are no persons, animals, or obstacles within 200 feet (60 meters) of the machine's location.
- DO NOT work with the machine at a distance of less than 300 feet (100 meters) from roads on which motor vehicles, lorries, or horse-drawn vehicles may travel if the operator does not comply with all the safety procedures in this manual.
- DO NOT work with the machine at a distance of less than 300 feet (100 meters) from public areas (parks and/or gardens), civil, residential, or industrial buildings if the operator does not comply with all the safety procedures in this manual.
- DO NOT handle hydraulic hoses and connections when the machine is running, as there is a high risk of penetration into the skin and eyes due to oil pressure.

### 2.4 Safety Regulations

#### Precautions and Hazards during Machine Operation

- When moving the machine from the transport position to the working position, the operator must keep all persons and animals in the operation area at least 60 feet (20 meters) away from the outer contour of the machine.
- Keep away from crushing or shearing zones between moving parts driven by mechanical, hydraulic, or pneumatic power.
- DO NOT operate the machine without its safety devices and guards in place.
- DO NOT operate the machine if the safety devices and guards are not in perfect condition. Replace them before continuing to work with the machine.
- DO NOT to climb on the machine while it is in operation or when it is off.
- DO NOT start the mulcher rotor without first



#### WARNING



Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required.

Wear goggles. Use cardboard to check for leaks.



## 2. Safety

### 2.4 Safety Regulations Cont'd



#### Precautions and Hazards during Machine Operation Cont'd


- DO NOT leave the machine unless the rotor of the mulcher is stopped, there is no excessive pressure being applied to the excavator arm, the machine is placed on a flat, level, and firm surface, the excavator (excavator arm) is placed in the rest position, parking brake is engaged, the machine is off, and the key is removed from the ignition.
- Use Blue Diamond® approved spare parts for better performance and increased safety.

#### Precautions during Maintenance

- Refer to the user manual of the machine.
- A qualified operator must carefully read the entire safety manual and fully understand and follow the information before connecting or disconnecting the machine.
- Use appropriate PPE including but not limited to eye and ear protection, work gloves, work boots, safety hat, dust mask, and work clothes.
- The machine may only be operated, maintained, repaired, serviced, and/or handled by qualified personnel or an authorized service technician.
- DO NOT conduct maintenance work while in the field. All maintenance must be completed as authorized technical service in the proper environment with all safety precautions.
- DO NOT stand between the excavator and the machine.
- Before carrying out any maintenance, all fastening elements (fittings, screws, nuts, bolts, pins, etc) must be checked for tightness to prevent moving parts from coming loose on the operator.

- There is a risk of leaks in hoses or hydraulic components.

**WARNING**



**Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required. Wear goggles. Use cardboard to check for leaks.**

#### Storage of the Machine

- When the machine is not in operation and must be stored for a certain time, the mulcher must be separated from the excavator according to all the safety rules in this manual.
- For storage, the mulcher must be placed on a level, flat, and firm surface.
- It is advisable to store the machine in a covered and dry place.
- Before storing the machine, clean, dry, and lubricate all components.
- Always use original greases and lubricants recommended by Blue Diamond®.
- Once the machine has been positioned and cleaned on a flat, level, and firm surface, a general inspection must be made to ensure that there are no anomalies (i.e. condition of the cutting elements).
- Before storage, check that all fasteners (fittings, screws, nuts, pins, bolts, etc) are tight, and check for leaks in the hydraulic circuit.
- Use original Blue Diamond® spare parts for better performance and increased safety.
- Check that the safety decals are in perfect condition. Otherwise, replace them before operating the machine.
- When operating or maintaining the machine again, the safety rules mentioned in this manual must be followed.

## 3. Start-Up and Operation

### 3.1 General Information

Before starting up the machine, the operator must carefully read and understand the installation and operating instructions of the machine.



#### WARNING



Before performing any of the actions in this section, section 2.0 Safety in this manual must be read in its entirety and understood fully to avoid any type of risk or accident. If, after reading this manual, you do not understand any point, DO NOT connect or operate the machine or carry out any maintenance operations. Contact your local dealer or Blue Diamond® Product Support immediately to ensure your safety and that of the machine.

#### Pre-Operation Inspection

Before operating the Heavy Duty Excavator Drum Mulcher for the first time and each time thereafter, use the following list as a guideline during equipment inspection.



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

- Disengage machine's auxiliary hydraulics, engage the machine's parking brake, stop the engine and make sure all rotating components are completely stopped before connecting, disconnecting, adjusting or cleaning equipment.
- Always keep shields and all guards in place when using the equipment.
- Disengage machine's auxiliary hydraulics for road travel.
- Keep hands, feet and clothing away from rotating parts.

Fully clean the attachment. See "Cleaning" on page 19.

- Lubricate the attachment per the schedule outline in the Maintenance Section. See "Service Schedule" on page 23.

- Check the drum mulcher mounting plate for damage. Check for loose or missing parts. Repair as needed before operation.
- Check that teeth are in good condition. Sharpen or replace them, if necessary.
- Check that all shields and guards are in place.
- Check for loose bolts and tighten them if necessary.
- Check all welds on the attachment for wear and damage each time the attachment is removed from the machine.
- Check for damaged or missing safety decals. Replace if necessary.
- Inspect the machine's mounting frame. (See the machine's Operator's Manual for inspecting the mounting frame). Replace any parts that are damaged, bent, or missing. Keep all fasteners tight. Look for cracked welds.



#### WARNING



Leaking fluids under pressure can enter the skin and cause serious injury or death. Immediate medical attention is required.

**Wear goggles. Use cardboard to check for leaks.**

- Check condition of all hydraulic components for leaks. Repair as required.

**NOTE:** DO NOT operate with hydraulic leaks

- Verify that the drum mulcher is properly connected to the machine.

## 3. Start-Up and Operation

---

### 3.2 Checks Prior to Connecting the Machine

In order to connect the machine correctly to the excavator, the following instructions must be observed:

- Before coupling the mulcher to the excavator, check that the mulcher weight, pressure, and flow is compatible with the excavator.
- Make sure the hydraulic circuit is depressurized.
- Place excavator and excavator arm in front of mulcher (rest position).
- Check that the hydraulic connections are compatible. See section 3.4 Hydraulic Connection Panel on page 16.

### 3.3 Mechanical Coupling of the Machine

- The machine must be coupled to the excavator when it is at rest on a level, flat, and firm surface.
- Attach the mulcher's mount plate to excavator arm.
- Next, check that the mulcher mount is securely attached and will not move unexpectedly.
- Check that the rotor is not touching the ground.

## 3. Start-Up and Operation

### 3.4 Initial Set Up Instructions



#### WARNING



Read and follow completely before operating or using the mulcher in any capacity.

TOOLS NEEDED	PURPOSE
Adjustable Wrenches	Hose Connections
Laser Tachometer and Reflective Tape	Speed Measurement
19mm Deep Socket	Motor Adjustment
5mm Allen Key	
8 mm Allen Key	Access Plates

#### Hydraulic Connection Panel

The hydraulic connection panel [Figure 10] is labeled as follows:

- Hydraulic Connections
  - ◇ P: Pressure 3/4" (#12) Male JIC
  - ◇ R: Return 3/4" (#12) Male JIC
  - ◇ D: Drain 5/8" (#10) Male JIC
- Greasing Points
  - ◇ R: Rotor
  - ◇ E: Direct Drive



Figure 10

#### Hose Connection

1. Connect the case drain hose.
2. Connect the return hose.
3. Connect the pressure hose.

NOTE: Disconnect in reverse order.

#### Adjust Rotor Speed

The displacement of the motor may need adjusted to match the mulcher to the hose machine.

The motor displacement is adjustable between 26cc and 45cc. The configuration from the factory is at maximum displacement (45cc).

#### Measure Rotor Speed

1. Remove the front cover to access the rotor pulley.



#### WARNING



Keep all body parts clear of moving belts.

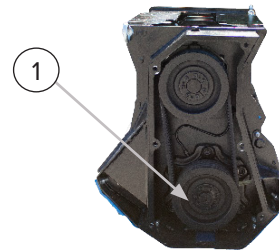


Figure 11

2. Apply the reflective tape to the rotor pulley (Item 1) [Figure 11].
3. Engage the rotor. Use a tachometer to measure the speed. The rotor speed should be between 2200 – 2800 rpm. If the rotor speed is not within the stated range, adjust the displacement.



## 3. Start-Up and Operation

### 3.4 Initial Set Up Instructions Cont'd

#### Adjust Displacement



## WARNING



Disengage the hydraulics and wait for all moving parts to stop before performing any adjustments. Place the mulcher on a firm, level surface before performing any maintenance procedures.

1. Remove the access cover (Item 1) [Figure 12] to access the motor.



Figure 12

2. Remove the hex cap (Item 1) [Figures 13 and 14] on the bottom of the motor to access the adjustment screw (Item 2) [Figure 13].
3. Loosen the jam nut.
4. Turn the screw to adjust the displacement.

DIRECTION	DISPLACEMENT	ROTOR SPEED
Clockwise	Increase	Decrease
Counter-clockwise	Decrease	Increase

5. When the rotor speed is within 2200 – 2800 rpm, tighten the jam nut, reinstall the hex cap, and replace the access cover.
6. Record the host machine information on the owner's manual 6.1 Attachment Specifications page (see page 48).

#### Relief Valve Pressure

The relief valve (Item 2) [Figure 14] pressure is preset at 4050 PSI (280 bar).

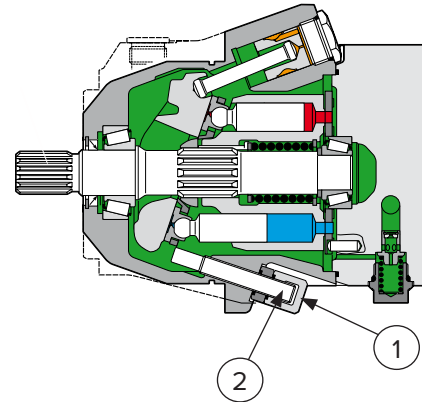


Figure 13

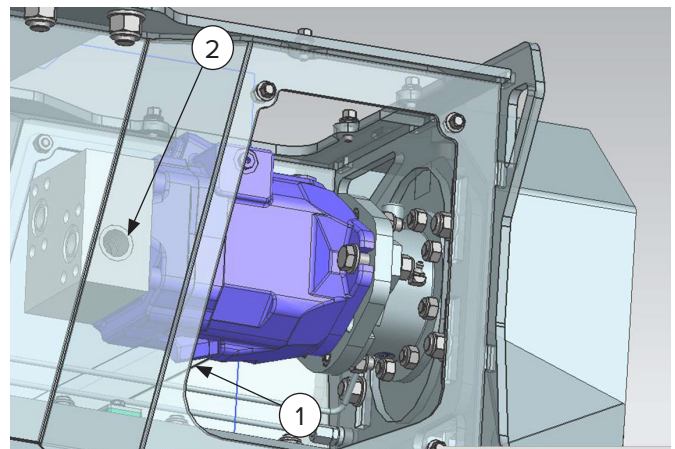


Figure 14

## 3. Start-Up and Operation

### 3.5 Machine Operation



#### WARNING



- DO NOT start the mulcher rotor without first raising the machine off the ground.
- The movement of the excavator arm must be as near to the ground as possible to avoid the risk of overturning.

#### Starting the Machine

- Check that the coupling and adjustment operations have been in accordance with this manual.
- Check that the machine's hoses have enough length to move freely and that the mulcher is securely attached to the excavator arm and cannot move unexpectedly.
- Raise the machine off the ground.

#### Mulching Procedure

- When first using the machine, open the discharge cover while moving to the left to mulch a greater volume, and then close the discharge cover to obtain a finer finish while moving to the right.
- DO NOT put pressure on the mulcher when it is on the ground. This could damage the machine.
- For best results, find the balance between speed, power, and material mulched.

#### Alignment of the Machine to Terrain

- At working position, DO NOT put pressure on the mulcher with the arm (ground), as this could damage a component.

#### Turning with the Machine

- When changing direction, avoid abrupt maneuvers that can cause damage to the machine components that come into contact with the ground.
- Lift the machine slightly and perform the rotation or direction change. Once the maneuver is completed, lower the machine carefully without applying pressure to the mulcher with the excavator arm to continue operation.

#### Switching off the Machine

Once all moving parts of the machine have come to a complete stop, follow these steps:

- Disconnect the hydraulic system.
- Disconnect the fittings from the hydraulic connections (release hydraulic pressure before disconnecting hoses).
- Disconnect the mulcher from the excavator arm.

## 4. Maintenance

Before carrying out any maintenance operations, the operator must carefully read and understand the instructions contained in this manual.

Regular and thorough maintenance keeps the machine in optimal condition and prolongs its service life.



### WARNING



Before performing any of the actions in this section, section 2.0 Safety in this manual must be read in its entirety and understood fully to avoid any type of risk or accident. If, after reading this manual, you do not understand any point, DO NOT connect or operate the machine or carry out any maintenance operations. Contact your local dealer or Blue Diamond® Product Support immediately to ensure your safety and that of the machine.

### 4.1 Precautions During Maintenance

- If a safety device is removed during maintenance of the machine, it must be replaced and checked for correct operation of the machine.
- Check that the safety symbols are in perfect condition. Otherwise, replace them before operating the machine.
- Before and after all maintenance work on the machine, check that all fastening elements (fittings, screws, nuts, pins, bolts, etc) are tight, and check for leaks in the hydraulic circuit.
- Before carrying out any welding work (with Blue Diamond's approval) on the machine, the mulcher must be uncoupled from the excavator.
- Cleaning of the mulcher and its parts must be done with the machine stopped and disconnected from the excavator.
- DO NOT throw away, dump, or burn products that could pollute the environment.
- Blue Diamond® shall not be held responsible in the event of poor waste management by any maintenance personnel.

- Use original Blue Diamond® spare parts for better performance and increased safety.
- Always use original greases and lubricants recommended by Blue Diamond®

### 4.2 Cleaning

- Before conducting any maintenance work on the machine, a general cleaning of the working area must be carried out.
- Remove items such as branches, twigs, ropes, wires, or cables from the rotor.
- Remove brush, wood chips, or mulched material from the top of the machine.
- Clean the inside walls of the machine and the cutting elements according to section 4.8 Maintenance Chart on page 23.
- Before greasing, clean the grease zerks.
- Use the lubricants listed in this manual.

### 4.3 Greasing and Lubrication

Lubrication of the machine is simple and can be performed by the operator following the instructions in this manual and the following recommendations:

- Lubrication and greasing of moving components is essential to prevent friction between moving and stationary bodies.
- Excessive lubrication and greasing can be harmful, so the times and quantities specified in these instructions must be observed.
- The use of approved PPE is mandatory for this operation. The safety measures to be followed during the greasing process are indicated on the greasing container.



### CAUTION



The greases and oils must be disposed of in accordance with the local regulations. Blue Diamond® cannot be held responsible for improper waste disposal.

## 4. Maintenance

### 4.3 Greasing and Lubrication Cont'd



- Clean grease zerks prior to greasing.
- Use LITHIC SYNTHETIC EP NI GI grade 2 grease or equivalent.

#### Lubrication of the Machine

- Grease according to procedures in section 4.8 page 23.
- The lubrication points are shown in Figures 15-1 and 15-2.



Figure 15-1



Figure 15-2

#### Lubrication of the Machine Cont'd

- The grease zerks for the rotor bearing housings should be lubricated every 4 hours by applying 10 pumps or every 8 hours by applying 20 pumps using the grease pump.
- The drive side zerk is labeled R on the hydraulic connections panel, and the non-drive side zerk is below the hydraulic connections panel on the bearing housing.

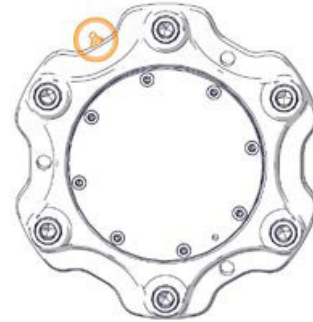


Figure 16

- The direct drive grease zerk should be lubricated every 20 hours applying 10 pumps using the grease pump. The direct drive grease zerk is labeled E on the hydraulic connections panel.
- After greasing, remove any grease residue from the surface of the machine.

### 4.4 Connecting Hoses

- Every 20 hours check for oil leaks.



Figure 17

- Verify that the hoses do not have cracks that could cause leaks.

**NOTE:** Use original Blue Diamond® spare parts for better performance and increased safety.



## 4. Maintenance

### 4.5 Belts

The Heavy Duty Excavator Drum Mulchers use toothed V-belts [Figure 18] with a manual tensioning system.

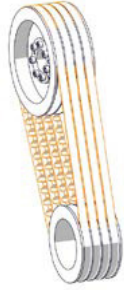


Figure 18

#### Manual Tensioning System

- After the first 5 hours of operation, check the tension and condition of the belts.
- Every 50 hours, check the tension and condition of the belts.
- Check tension with a tensiometer.
- The tension is correct when the deflection is between 5 and 10 millimeters at point A [Figure 19], taking into account the data given in the following table and Figure 19.

BELT SECTION	FORCE REQUIRED TO DEFLECT THE BELT FOR EACH METER FROM CENTER DISTANCE		
	Ø SMALL PULLEY (MM)	BASIC CONFIGURATION FORCE	1.25 X RATED STRENGTH
		NEWTON (N)	NEWTON (N)
SPB/ XPB	112 – 160	40	50
	170 – 224	50	62
	236 – 355	62	77
	> 355	65	81

**NOTE:** Apply the force indicated in the table with the tensiometer at the midpoint of the center-to-center distance (Point A) [Figure 19]

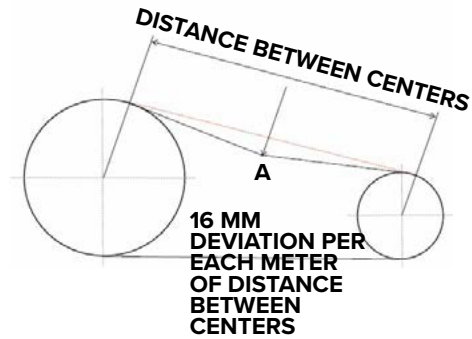


Figure 19

- If necessary, tighten the belt to the value shown in the table.

!
DANGER
!

**Belt tensioning must be done by qualified personnel or an authorized service technician.**

#### Belt Replacement

- Replace worn or broken belts.
- When one or more belts need to be replaced due to damage or wear, replace all belts to maintain even tension.

**NOTE:** Use original Blue Diamond® spare parts for better performance and increased safety.

## 4. Maintenance

### 4.6 Cutting Elements

The Heavy Duty Excavator Drum Mulchers can use chipping or carbide teeth.

#### Chipping Teeth [Figure 20]

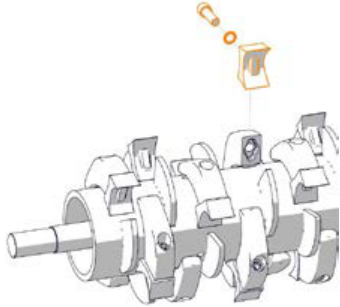


Figure 20

#### Carbide Teeth [Figure 21]

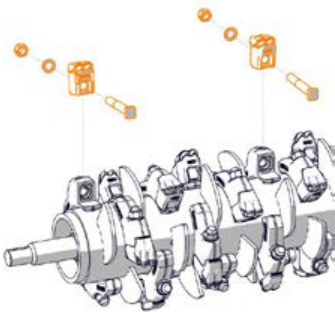


Figure 21

- See section 6.2 Torque Specifications on page 49 for the proper tightening torque that must be applied to the screws that secure the cutting elements.
- After the first 5 hours of operation, check the torque of the teeth as indicated in section 6.2.
- After every 20 hours, check the torque of the teeth as indicated in section 6.2.
- Every 8 hours clean the teeth.
- DO NOT operate the machine with worn teeth as this may cause damage to the rotor.
- When replacing one or more teeth, replace all teeth to maintain the balance of the rotor.
- Stop operating the machine immediately if you notice any abnormal vibration of the rotor or machine. Contact Blue Diamond® immediately or an authorized technical service.

**NOTE:** Use original Blue Diamond® spare parts for better performance and increased safety.



**DANGER**



The replacement of cutting elements and tightening torque of cutting elements must be carried out by qualified personnel or an authorized service technician.

### 4.7 Spare Parts

- To order a spare part, the customer must contact an authorized Blue Diamond® dealer.
- The customer must provide the authorized dealer with the machine model and serial number.

## 4. Maintenance

### 4.8 Service Schedule

DESCRIPTION	Every 4h	After first 5 hours	Every			
			8h	20h	40h	50h
<b>Cleaning / Maintenance</b>						
*Teeth			•			
Machine				•		
<b>Checking</b>						
Condition of teeth	•			•		
*Seals	•			•		
*Belts		•				•
<b>Adjusting</b>						
*Teeth		•		•		
*Tooth holders and hardware				•		
*Other machine hardware		•				•
*Belts		•				•
<b>Greasing</b>						
*Rotor bearing housings (20 pumps)			*•			
*Direct drive (10 pumps)				*•		

\* These tasks must be carried out by qualified personnel or authorized service technicians.

## 4. Maintenance

### 4.9 Troubleshooting

PROBLEM	CAUSE	SOLUTION
Abnormal vibrations of the machine.	Unevenly worn teeth.	Replace all teeth with new ones.
	Unbalanced rotor.	Have the rotor balanced by a service technician.
	Accumulation of debris or rolled-up elements on the rotor.	Check the rotor for dirt or other unbalance-causing elements.
	Loss of one or more of the teeth.	Replace the teeth with one of equal features.
	Rotor bearings damaged or broken.	Replace the rotor bearings with new ones.
Poorly mulched material or poor finish.	The rotor does not reach the intended speed.	Check the tension of the belts. This must be done by qualified personnel or authorized service technicians.
	Adjustment of the machine not in accordance with the instructions.	Check the manufacturer's recommended power take-off RPM.
	High ground speed.	Reduce the working speed and adjust it to the working conditions.
	Worn teeth.	Replace worn teeth with new ones.
High power consumption.	Too much material.	Reduce speed.
	High ground speed.	Reduce the working speed and adjust it to the working conditions.
Loud and continuous noise during operation of the machine.	Low oil level in the excavator tank.	Check hydraulic oil level, and check for leaks.
Broken seals.	Lack or excess of lubrication.	Lubricate correctly, respecting the times indicated in this manual.
	Wear and tear.	Replace broken seals with new ones.
	Mechanical problems in bearings or shafts near the seal.	Replace damaged components.
Frequent bearing breakage	Frame bent with excessive axial loads.	Contact the authorized service center.
	Lack of lubrication.	Lubricate according to the times indicated in this manual.
	Machine overloaded.	Respect the working limits indicated by the manufacturer (in case of doubt, contact Blue Diamond®).
	Incorrect rotor mounting or adjustment.	Check assembly and adjustments.
	Excessive vibrations due to unbalance in the rotor.	Contact an authorized service center.

## 4. Maintenance

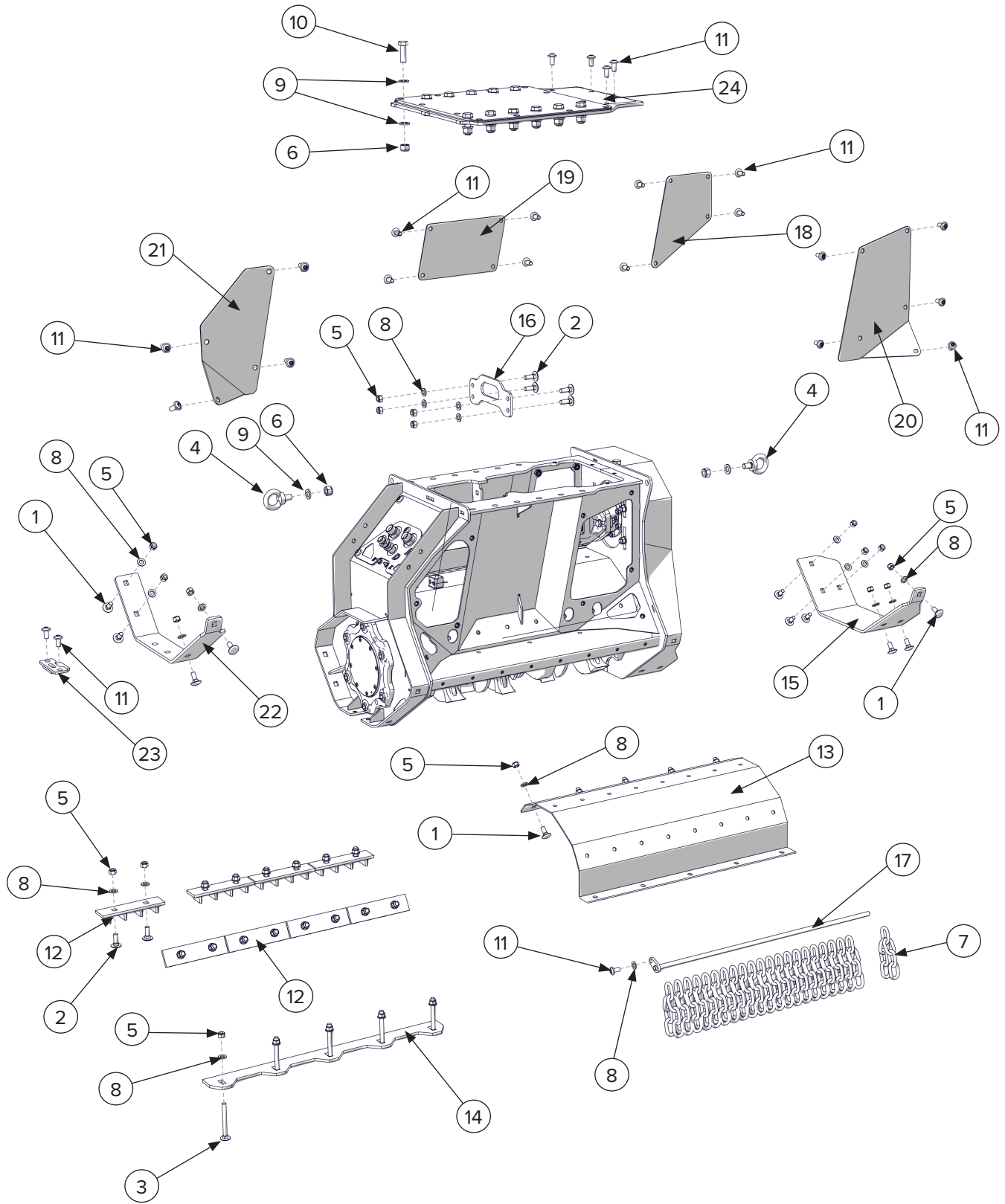
### 4.9 Troubleshooting Cont'd

PROBLEM	CAUSE	SOLUTION
Blocked rotor.	Jamming (due to the presence of a foreign body).	Turn the rotor in the reverse direction.
	Lack of lubrication.	Lubricate according to the times indicated in this manual.
	Belt breakage or wear.	Replace the belts with new ones.
	Broken hydraulic motor bearing or drive shaft.	Check the hydraulic motor drive shaft and if necessary, have it repaired by qualified personnel or an authorized service technician.
	Oil leakage hydraulic motor shaft.	Check hydraulic motor drive shaft for leaks.
Hydraulic motor drive shaft rotates and the rotor is stationary.	The hydraulic motor drive shaft is broken.	Replace or repair hydraulic motor drive shaft.
	Broken belts.	Replace the belts.
	Rotor blocked by an external element that prevents rotation.	Check and clean rotor and cutting elements according to the times stated in this manual.
Breakage of cutting elements and fastening screws.	Stones or other elements (metals, foreign bodies, etc).	Avoid these working conditions.
	Low rotor RPM, low power, and low excavator.	Consult authorized technical service.
Premature belt wear.	Rotation rate too low.	Adjust the rotation speed according to the operating instructions.
	Starting the mulcher with the rotor touching the terrain.	Lift the machine slightly to start the rotor. Replace the belts.
	Rotor does not start and belts slip.	Check that the rotor is not jammed.
	Slack belts.	Tighten the belts (this operation must be performed by qualified personnel or an authorized service center).
Oil leak in the hydraulic motor half shaft.	Rotary shaft in bad condition.	Replace the rotary shaft oil. Contact an authorized technical service.
High-pitched noise during operation, with the machine working harder when overloaded.	Slack belts.	Tighten the belts (this operation must be performed by qualified personnel or an authorized service center).
Excavator in motion and rotor does not turn or turns without power.	Leaks on hydraulic circuit components.	Replace components in bad condition.
	Excavator pump in bad condition.	Contact an authorized technical service.
	Mulcher hydraulic motor malfunctioning.	



# 5. Parts

## 5.1 30-inch Main Breakdown



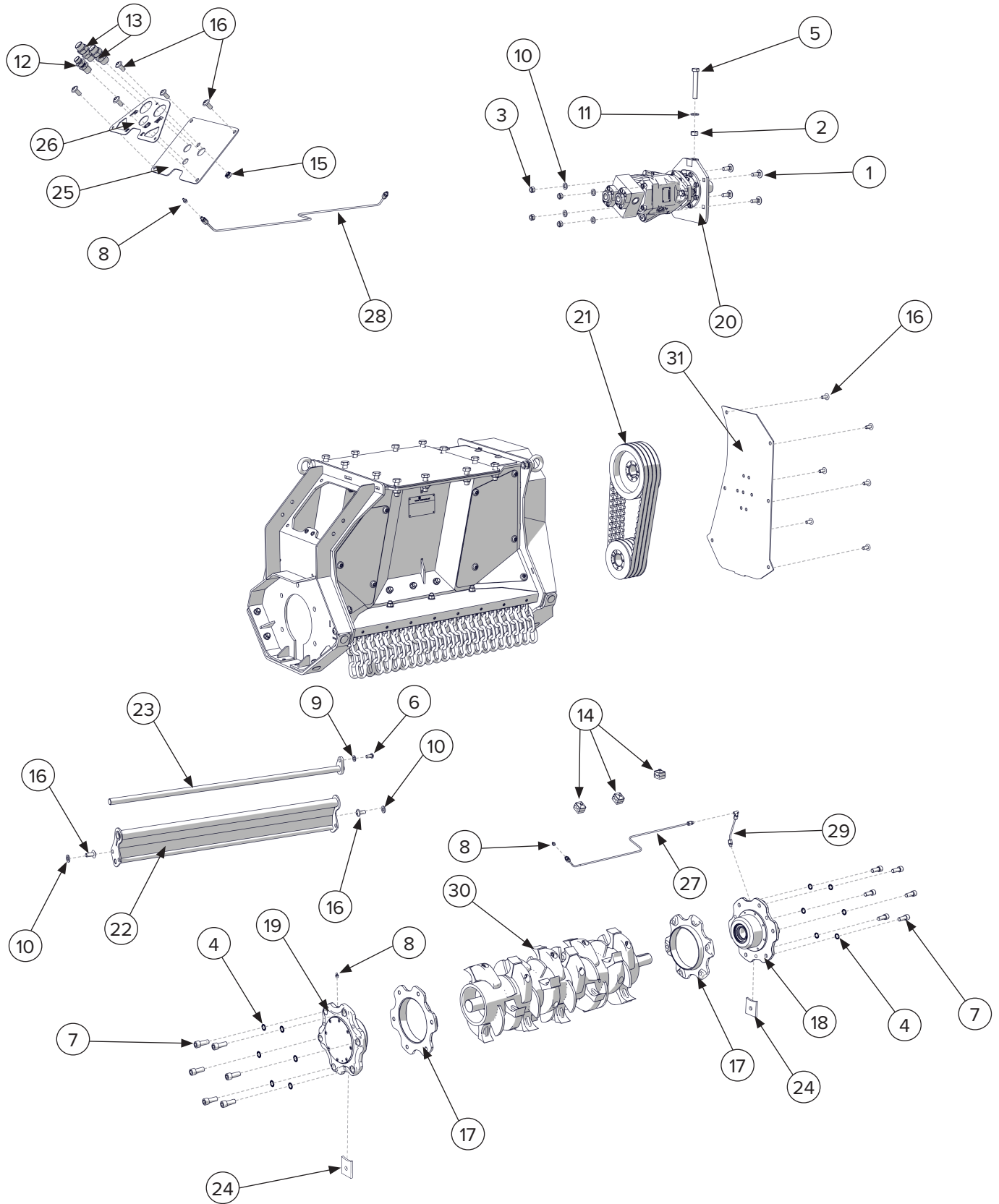
## 5. Parts

### 5.1 30-inch Main Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	299068	Carriage Bolt for Skid Shoes, Counterblade Plate	15
2	299069	Carriage Bolt for Counterblades, Top Reinforcement Plates, Motor Assembly Mount	20
3	290532	Carriage Bolt for Adjustable Intake Plate	5
4	290576	Lifting Eye	2
5	299066	Nut for Skid Shoes, Counterblade Parts, Motor Mount etc	40
6	299049	Nut for Mount Plate and Lift Eye	14
7	290598	7 Link Chain for Chain Guard	22
8	299062	Washer for Skid Shoes, Counterblade Parts, Top Reinforcement Plates, etc	41
9	299012	Washer for Mount Bolts, Lift Eyes, Belt Tensioner	26
10	299045	Mount Bolts	12
11	290643	Bolt for Access Covers, etc	24
12	290518	Counterblade - Small	8
13	290529	30" Counterblade Plate	1
14	290531	30" Adjustable Intake Plate	1
15	290533	Front Skid Shoe	1
16	290534	Top Reinforcement Plate	1
17	290539	Chain Guard Retainer Bar	1
18	290542	Left Front Access Cover	1
19	290544	Left Center Access Cover	1
20	290646	Right Front Access Cover	1
21	290647	Right Rear Access Cover	1
22	290548	Rear Skid Shoe	1
23	290571	Rotor Removal Plate	1
24	See Page 39	Top Plate Assembly	1

# 5. Parts

## 5.1 30-inch Main Breakdown Cont'd



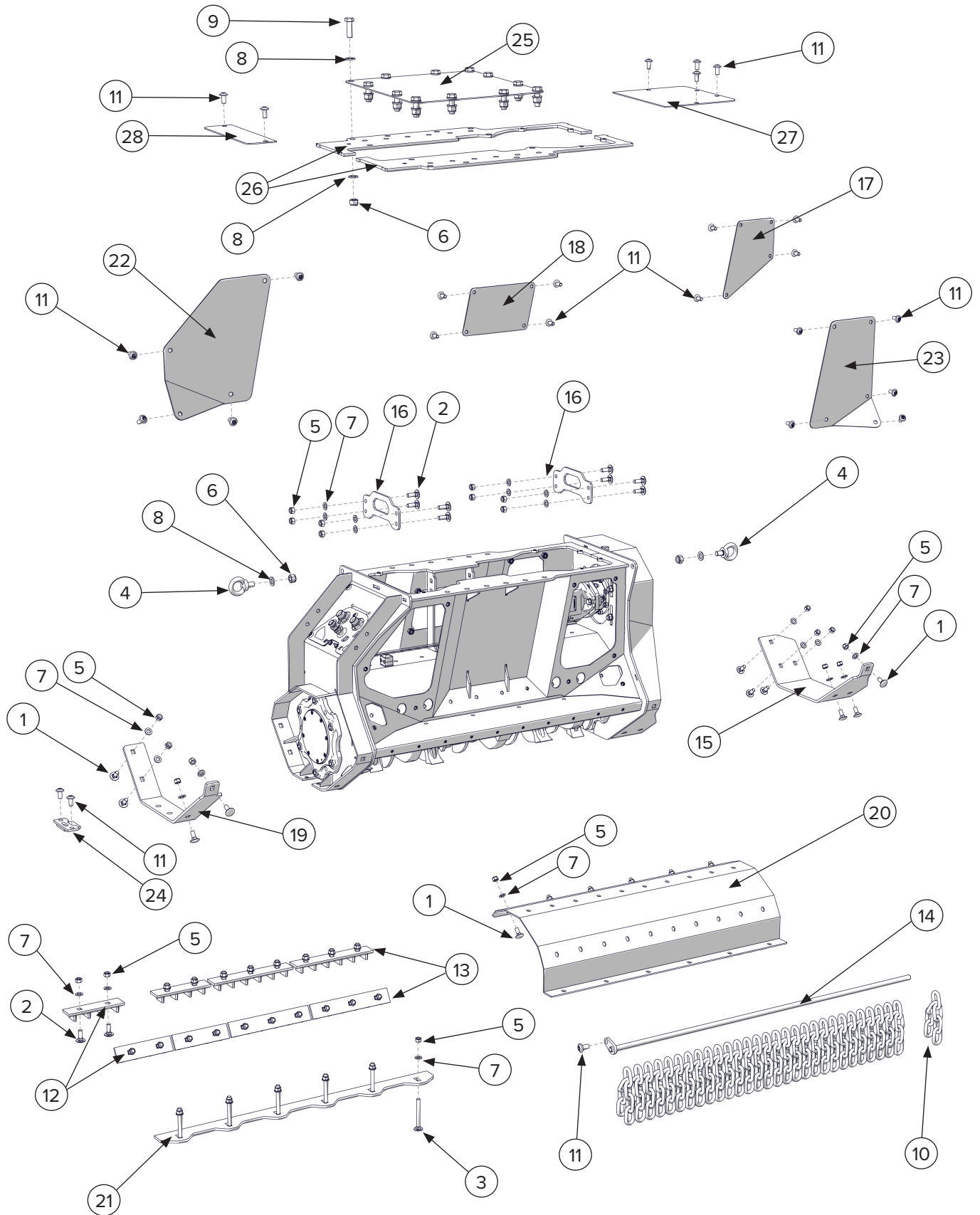
## 5. Parts

### 5.1 30-inch Main Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	299069	Carriage Bolt for Counterblades, Top Reinforcement Plates, Motor Assembly Mount	4
2	299048	Nut for Belt Tensioner	1
3	299066	Nut for Skid Shoes, Counterblade Parts, Motor Mount etc	4
4	299090	Grooved Washer for Bearing Assembly Mount	12
5	299046	Bolt for Belt Tensioner	1
6	290545	Bolt for Adjustable Discharge Cover Pivot Rod	1
7	299043	Bolt for Bearing Assembly Mount	12
8	290546	Straight Grease Zerk	3
9	299013	Washer for Adjustable Discharge Cover Pivot Rod	1
10	299062	Washer for Skid Shoes, Counterblade Parts, Top Reinforcement Plates, etc	6
11	299012	Washer for Mount Bolts, Lift Eyes, Belt Tensioner	1
12	295010-M10JIC-M10JICBH	Case Drain Bulkhead Fitting	1
13	295010-M12JIC-M12JICBH	Supply and Return Bulkhead Fitting	2
14	290599	Hose Clamp for Grease Lines	3
15	290639	Center Nut for Hydraulic Connections Plate	1
16	290643	Bolt for Access Covers, etc	13
17	290514	Outer Rotor Washer	2
18	290516	Drive Side Rotor Bearing Assembly (see page 44)	1
19	290517	Non-Drive Side Rotor Bearing Assembly (see page 45)	1
20	290526	45cc Motor and Drive Assembly (see page 40)	1
21	290528	Belt Drive Assembly (see page 42)	1
22	290537	Adjustable Discharge Cover	1
23	290538	Adjustable Discharge Cover Pivot Rod	1
24	290540	Shaft Output Cover	2
25	290549	Hydraulic Connections Outlet Cover	1
26	290550	Hydraulic Connections Identification Plate	1
27	290607	30" Drive Side Rotor Bearing Grease Line - Long Hose	1
28	290602	30" Direct Drive Grease Line	1
29	290606	Drive Side Rotor Bearing Grease Line - Short Hose	1
30	290553	Rotor Assembly with Chipping Teeth (see page 47)	1
31	290611	Belt Drive Cover Plate	1

# 5. Parts

## 5.2 40-inch Main Breakdown





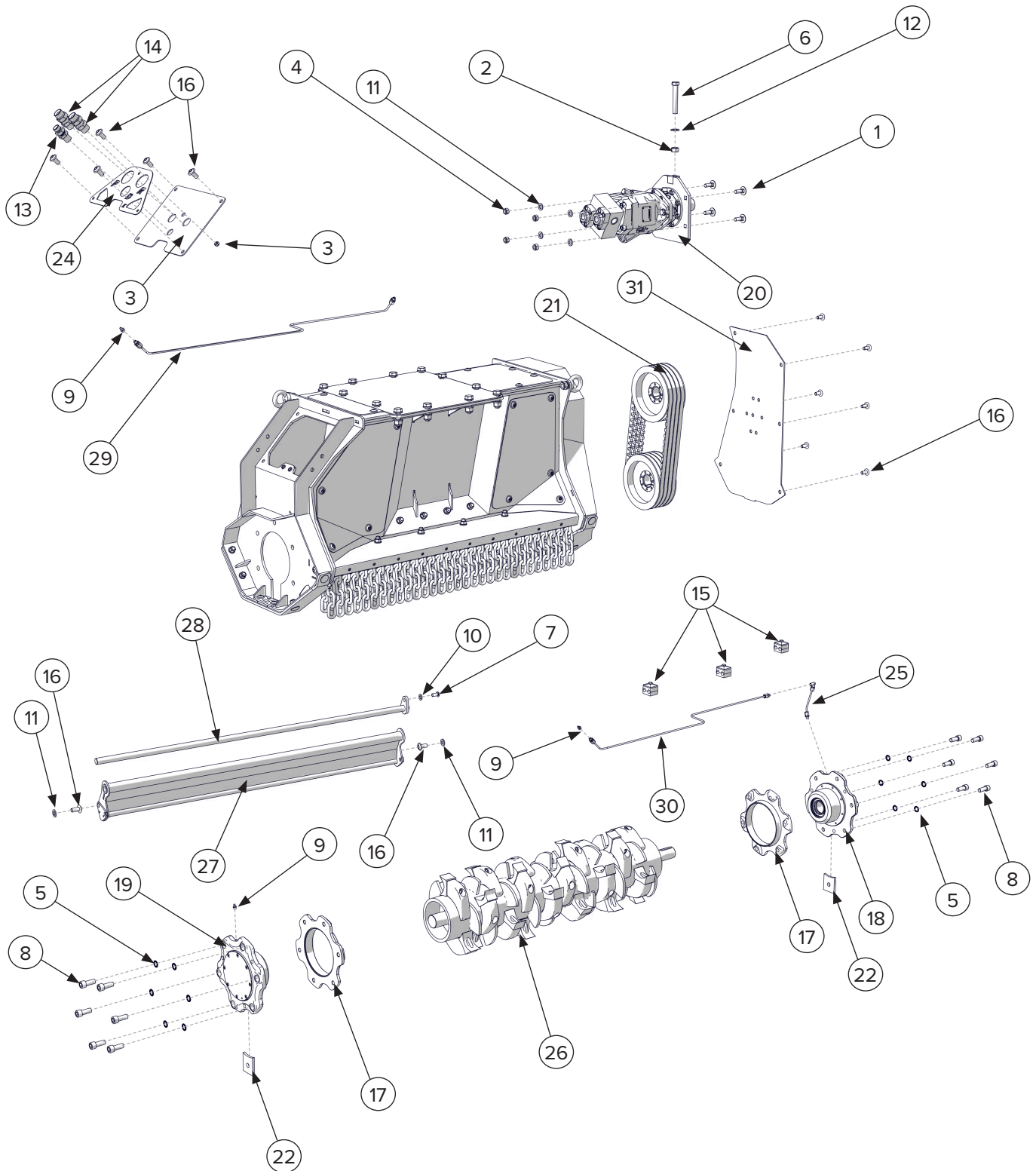
## 5. Parts

### 5.2 40-inch Main Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	299068	Carriage Bolt for Skid Shoes, Counterblade Plate	16
2	299069	Carriage Bolt for Counterblades, Top Reinforcement Plates, Motor Assembly Mount	28
3	290532	Carriage Bolt for Adjustable Intake Plate	6
4	290576	Lifting Eye	2
5	299066	Nut for Skid Shoes, Counterblade Parts, Motor Mount etc	50
6	299049	Nut for Mount Plate and Lift Eye	14
7	299062	Washer for Skid Shoes, Counterblade Parts, Top Reinforcement Plates, etc	50
8	299012	Washer for Mount Bolts, Lift Eyes, Belt Tensioner	26
9	299045	Mount Bolts	12
10	290598	7 Link Chain for Chain Guard	30
11	290643	Bolt for Access Covers, etc	26
12	290518	Counterblade - Small	4
13	290519	Counterblade - Large	4
14	290521	Chain Guard Retainer Bar	1
15	290533	Front Skid Shoe	1
16	290534	Top Reinforcement Plate	2
17	290542	Left Front Access Cover	1
18	290544	Left Center Access Cover	1
19	290548	Rear Skid Shoe	1
20	290558	40" Counterblade Plate	1
21	290559	40" Adjustable Intake Plate	1
22	290560	40" Right Rear Access Cover	1
23	290561	40" Right Front Access Cover	1
24	290571	Rotor Removal Plate	1
25	290648	Excavator mount plate	1
26	290654	Main Frame Top Plate Half	2
27	290656	Top Front Access Cover	1
28	290657	Top Rear Access Cover	1

# 5. Parts

## 5.2 40-inch Main Breakdown Cont'd



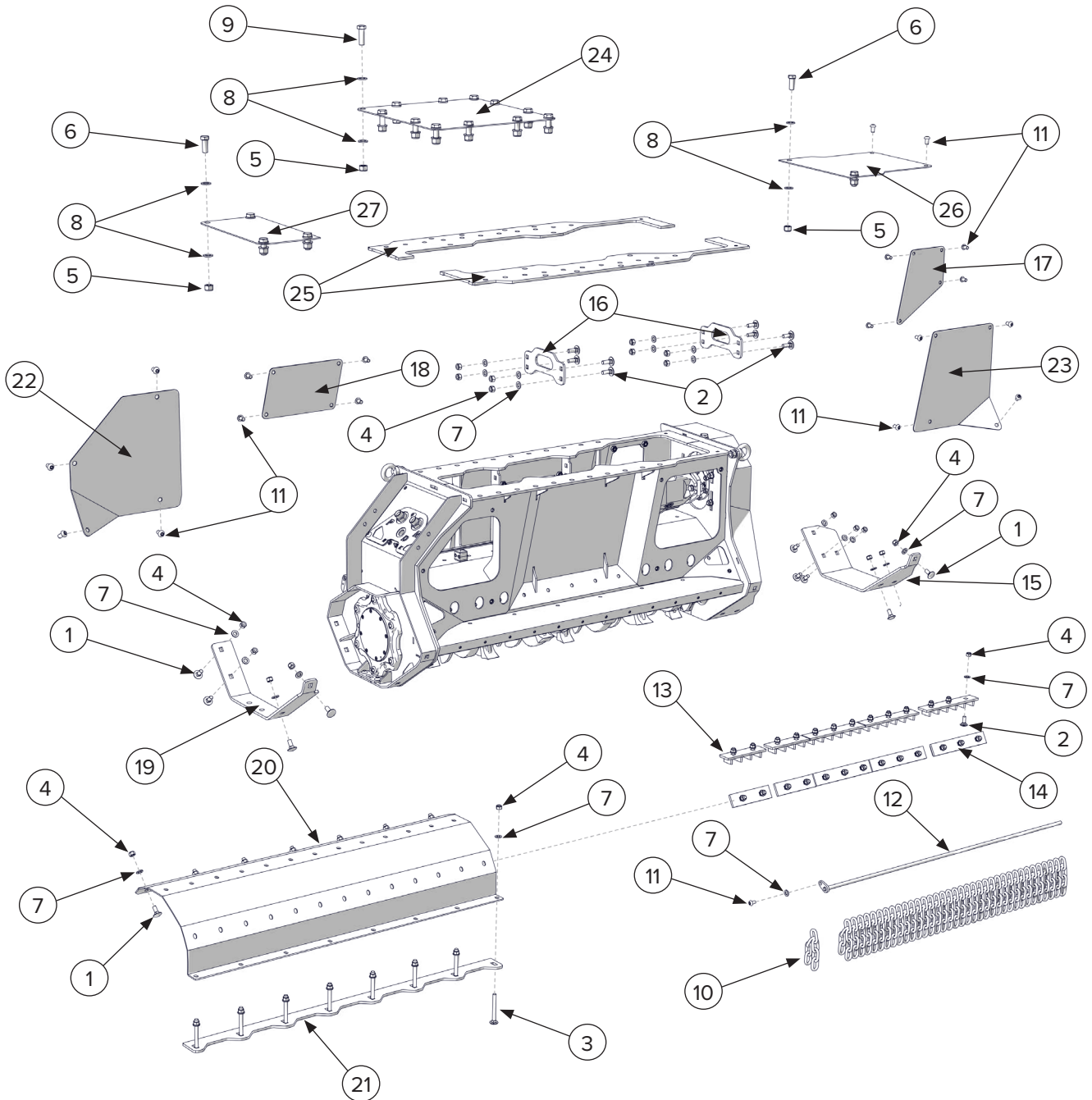
## 5. Parts

### 5.2 40-inch Main Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	299069	Carriage Bolt for Counterblades, Top Reinforcement Plates, Motor Assembly Mount	4
2	299048	Nut for Belt Tensioner	1
3	299055	Center Nut for Hydraulic Connections Plate	1
4	299066	Nut for Skid Shoes, Counterblade Parts, Motor Mount etc	4
5	299090	Grooved Washer for Bearing Assembly Mount	12
6	299046	Bolt for Belt Tensioner	1
7	290545	Bolt for Adjustable Discharge Cover Pivot Rod	1
8	299043	Bolt for Bearing Assembly Mount	12
9	290546	Straight Grease Zerk	3
10	299013	Washer for Adjustable Discharge Cover Pivot Rod	1
11	299062	Washer for Skid Shoes, Counterblade Parts, Top Reinforcement Plates, etc	6
12	299012	Washer for Mount Bolts, Lift Eyes, Belt Tensioner	1
13	295010-M10JIC-M10JICBH	Case Drain Bulkhead Fitting	1
14	295010-M12JIC-M12JICBH	Supply and Return Bulkhead Fitting	2
15	290599	Hose Clamp for Grease Lines	3
16	290643	Bolt for Access Covers, etc	13
17	290514	Outer Rotor Washer	2
18	290516	Drive Side Rotor Bearing Assembly (see page 44)	1
19	290517	Non-Drive Side Rotor Bearing Assembly (see page 45)	1
20	290526	45cc Motor and Drive Assembly (see page 40)	1
21	290644	Belt Drive Assembly (see page 43)	1
22	290540	Shaft Output Cover	2
23	290549	Hydraulic Connections Outlet Cover	1
24	290550	Hydraulic Connections Identification Plate	1
25	290606	Drive Side Rotor Bearing Grease Line - Short Hose	1
26	290554	Rotor Assembly with Chipping Teeth (see page 47)	1
27	290557	40" Adjustable Rear Discharge Cover	1
28	290569	40" Adjustable Rear Discharge Cover Pivot Rod	1
29	290603	40" Direct Drive Grease Line	1
30	290608	40" Drive Side Rotor Bearing Grease Line - Long Hose	1
31	290611	Belt Drive Cover Plate	1

# 5. Parts

## 5.3 50-inch Main Breakdown



## 5. Parts

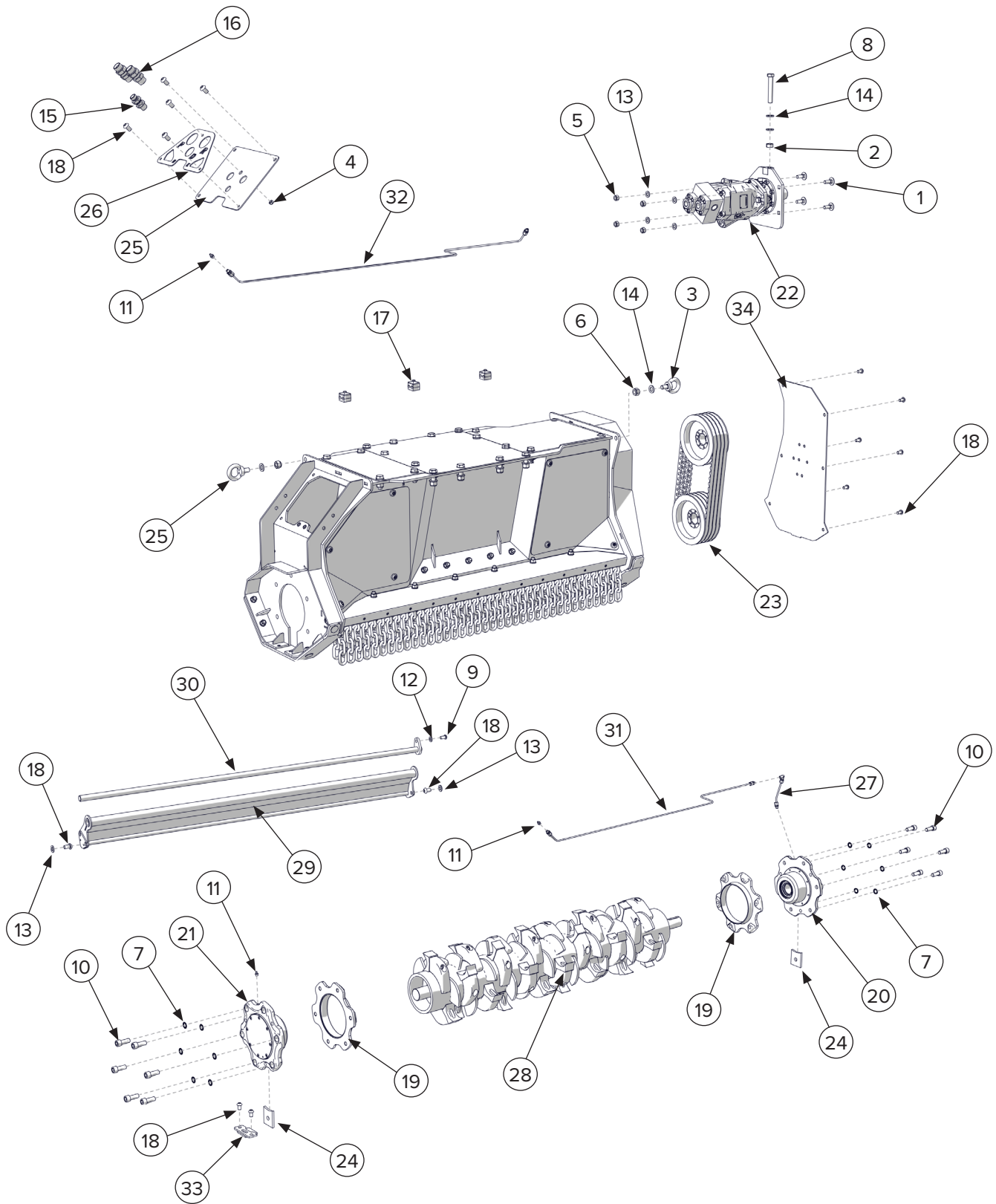
### 5.3 50-inch Main Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	299068	Carriage Bolt for Skid Shoes, Counterblade Plate	17
2	299069	Carriage Bolt for Counterblades, Top Reinforcement Plates, Motor Assembly Mount	34
3	290532	Carriage Bolt for Adjustable Intake Plate	8
4	299066	Nut for Skid Shoes, Counterblade Parts, Motor Mount etc	59
5	299049	Nut for Mount Plate and Lift Eye	18
6	299047	Bolts for Top Access Covers - Large	6
7	299062	Washer for Skid Shoes, Counterblade Parts, Top Reinforcement Plates, etc	60
8	299012	Washer for Mount Bolts, Lift Eyes, Belt Tensioner, Large Top Access Plate Bolts	36
9	299045	Mount Bolts	12
10	290598	7 Link Chain for Chain Guard	37
11	290643	Bolt for Access Covers, etc	19
12	290515	Chain Guard Retainer Bar	1
13	290518	Counterblade - Small	4
14	290519	Counterblade - Large	6
15	290533	Front Skid Shoe	1
16	290536	Top Reinforcement Plate	2
17	290542	Left Front Access Cover	1
18	290544	Left Center Access Cover	1
19	290548	Rear Skid Shoe	1
20	290563	50" Counterblade Plate	1
21	290565	50" Adjustable Intake Plate	1
22	290566	50" Right Rear Cover	1
23	290567	50" Right Front Cover	1
24	290648	Excavator mount plate	1
25	290658	Main Frame Top Plate Half	2
26	290659	Top Front Access Cover	1
27	290661	Top Rear Access Cover	1



# 5. Parts

## 5.3 50-inch Main Breakdown Cont'd



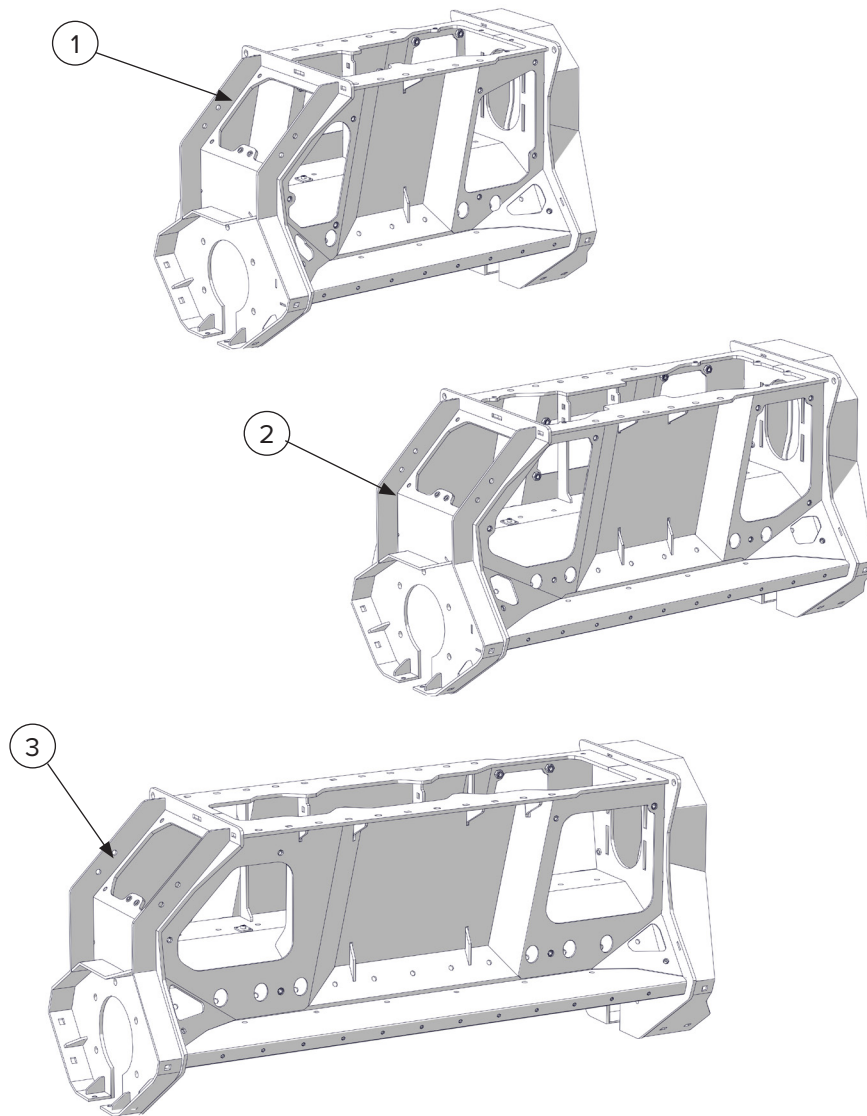
## 5. Parts

### 5.3 50-inch Main Breakdown Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
1	299069	Carriage Bolt for Counterblades, Top Reinforcement Plates, Motor Assembly Mount	4
2	299048	Nut for Belt Tensioner	1
3	290576	Lifting Eye	2
4	299055	Center Nut for Hydraulic Connections Plate	1
5	299066	Nut for Skid Shoes, Counterblade Parts, Motor Mount etc	4
6	299049	Nut for Mount Plate and Lift Eye	2
7	299090	Grooved Washer for Bearing Assembly Mount	12
8	299046	Bolt for Belt Tensioner	1
9	290545	Bolt for Adjustable Discharge Cover Pivot Rod	1
10	299043	Bolt for Bearing Assembly Mount	12
11	290546	Straight Grease Zerk	3
12	299013	Washer for Adjustable Discharge Cover Pivot Rod	1
13	299062	Washer for Skid Shoes, Counterblade Parts, Top Reinforcement Plates, etc	6
14	299012	Washer for Mount Bolts, Lift Eyes, Belt Tensioner, Large Top Access Plate Bolts	4
15	290612	Case Drain Bulkhead Fitting	1
16	290612	Supply and Return Bulkhead Fitting	2
17	290599	Hose Clamp for Grease Lines	3
18	290643	Bolt for Access Covers, etc	15
19	290514	Outer Rotor Washer	2
20	290516	Drive Side Rotor Bearing Assembly (see page 44)	1
21	290517	Non-Drive Side Rotor Bearing Assembly (see page 45)	1
22	290526	45cc Motor and Drive Assembly (see page 40)	1
23	290644	Belt Drive Assembly (see page 43)	1
24	290540	Shaft Output Cover	2
25	290549	Hydraulic Connections Outlet Cover	1
26	290550	Hydraulic Connections Identification Plate	1
27	290606	Drive Side Rotor Bearing Grease Line - Short Hose	1
28	290556	Rotor Assembly with Chipping Teeth (see page 47)	1
29	290564	50" Adjustable Rear Discharge Cover	1
30	290568	50" Adjustable Rear Discharge Cover Pivot Rod	1
31	290609	50" Drive Side Rotor Bearing Grease Line - Long Hose	1
32	290604	50" Direct Drive Grease Line	1
33	290571	Rotor Removal Plate	1
34	290611	Belt Drive Cover Plate	1

## 5. Parts

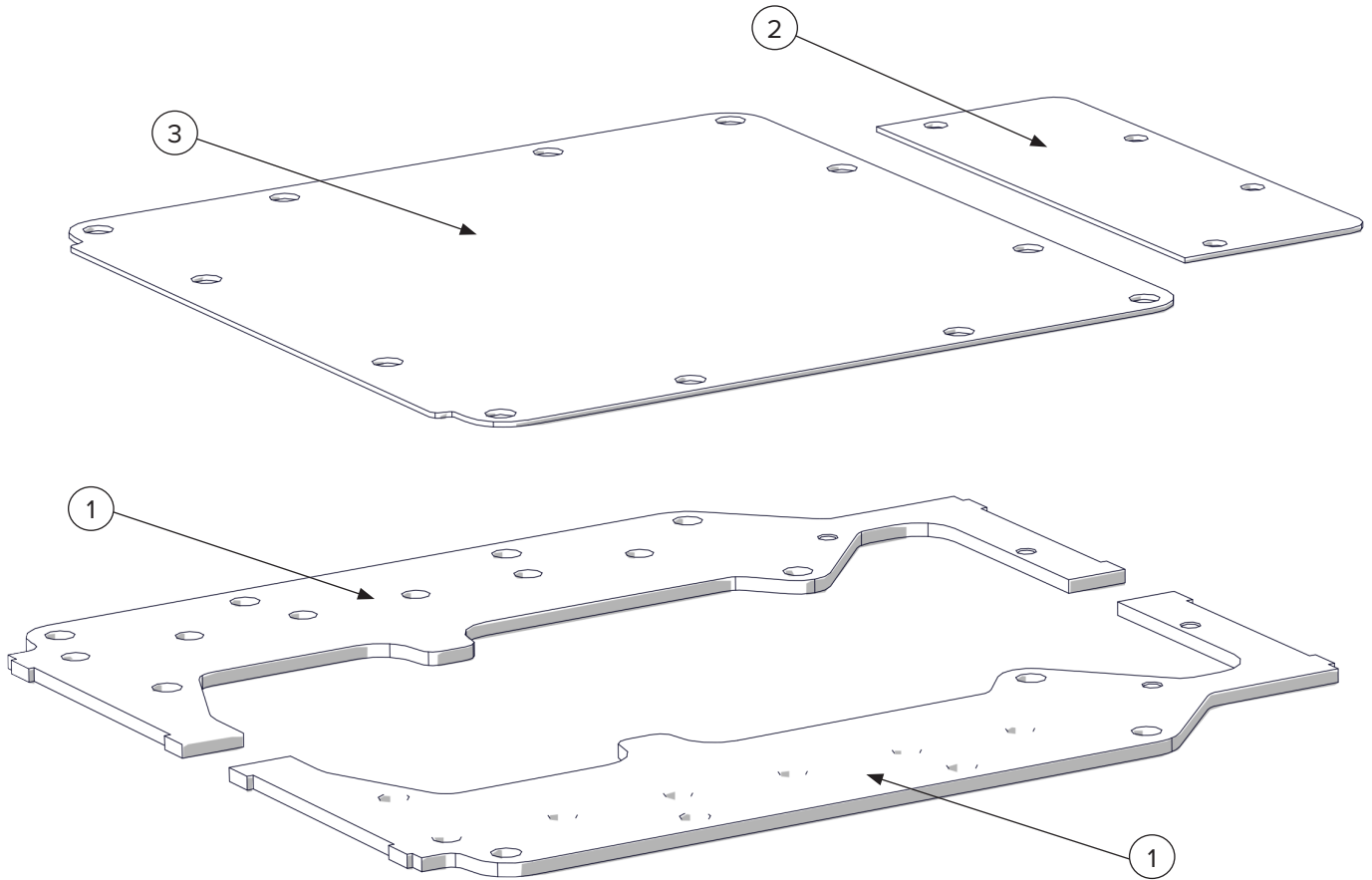
### 5.4 Main Frames



ITEM	PART NUMBER	DESCRIPTION	QTY
1	290600	Main Frame 30"	1
2	290601	Main Frame 40"	1
3	290662	Main Frame 50"	1

## 5. Parts

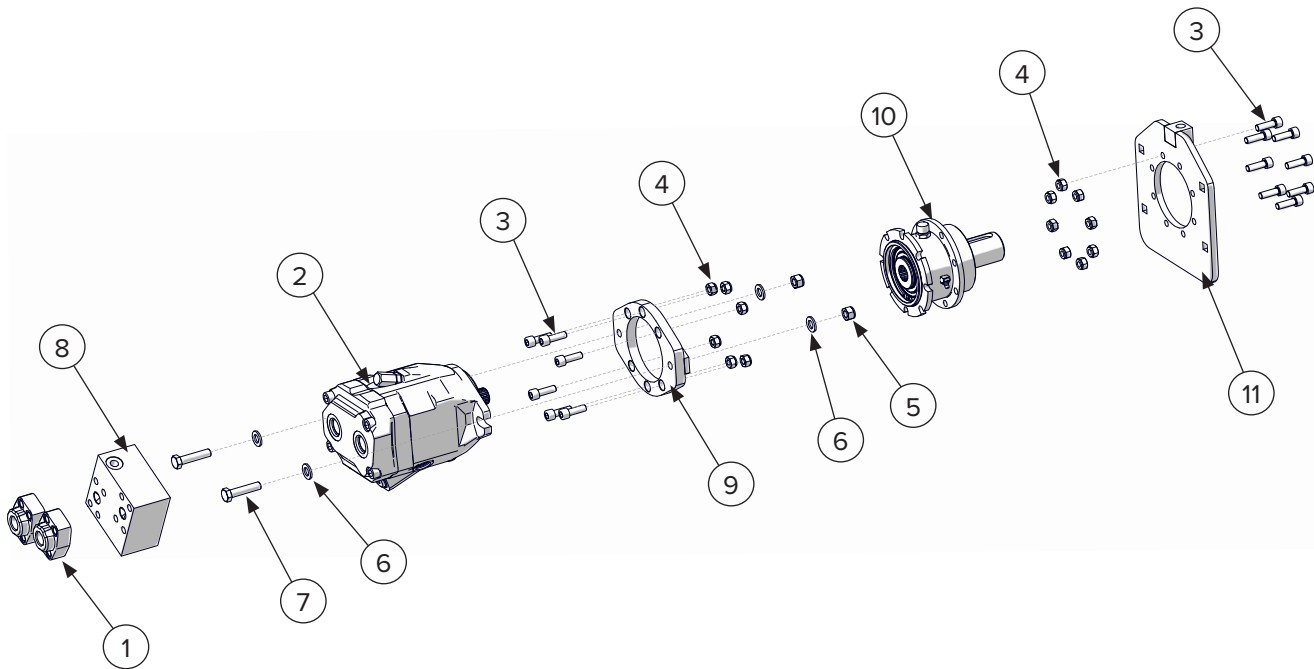
### 5.5 30-inch Top Plate Assembly



ITEM	PART NUMBER	DESCRIPTION	QTY
1	290649	Main Frame Top Plate Half	2
2	290651	Top Access Cover	1
3	290653	Excavator Mount Plate	1

## 5. Parts

### 5.6 45cc Motor and Drive Assembly Breakdown – 290526

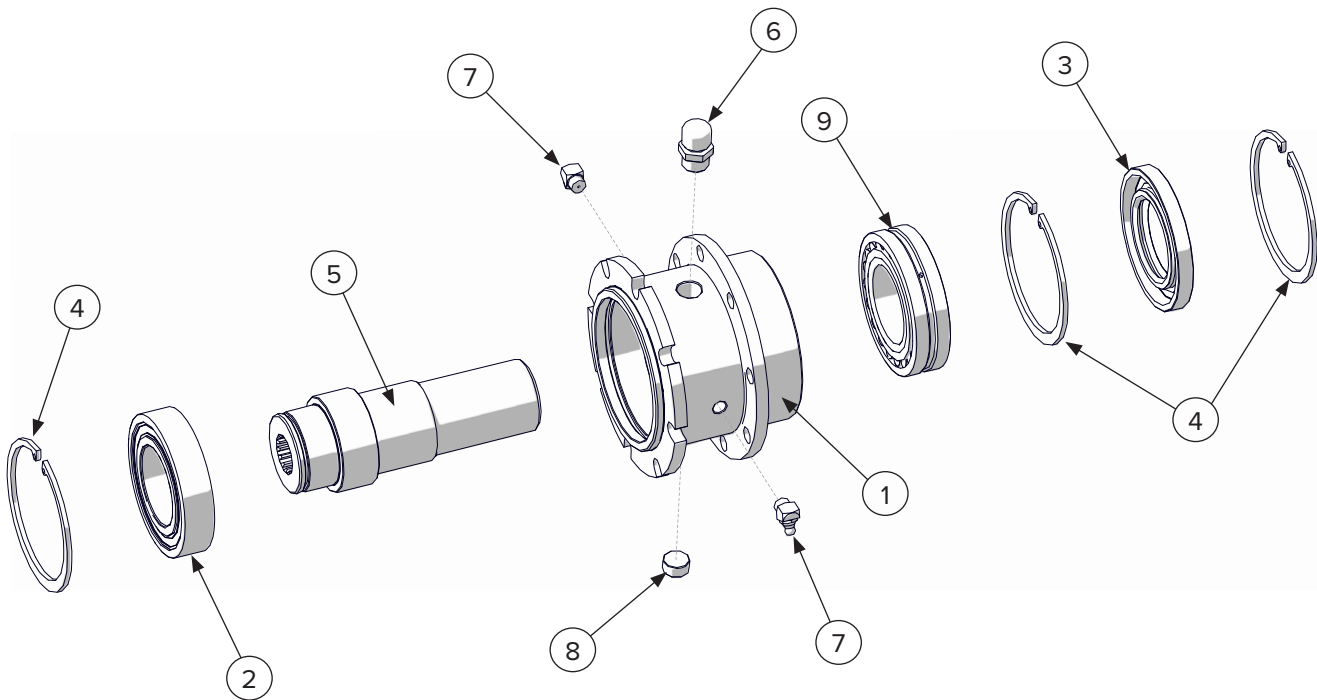


ITEM	PART NUMBER	DESCRIPTION	QTY
1	290541	Valve Block Hydraulic Flange Adapter Fittings	2
2	290596	Motor	1
3	299033	Bolt for Direct Drive Mount	14
4	299035	Nut for Adapter Flange and Direct Drive Mount	14
5	299066	Nut for Motor to Adapter Flange	2
6	299062	Washer for Motor to Adapter Flange Mount	2
7	299064	Bolt for Motor to Adapter Flange	2
8	290638	Valve Block	1
9	290527	Motor to Drive Adapter Flange	1
10	290524	Direct Drive Assembly (see page 41)	1
11	290520	Mount Plate	1



## 5. Parts

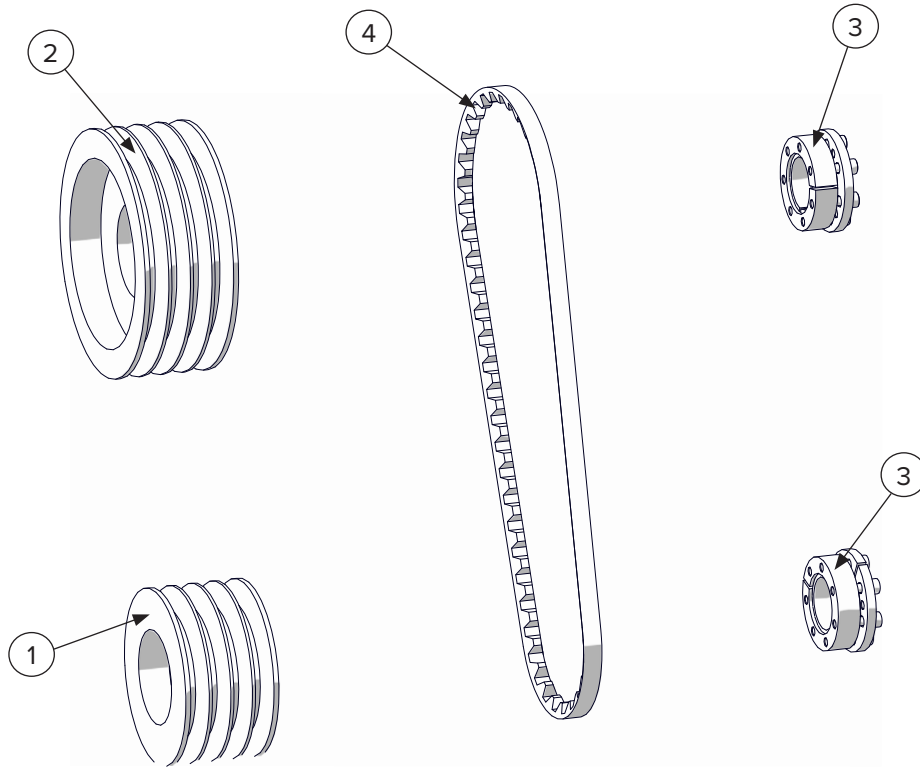
### 5.7 Direct Drive Assembly – 290524



ITEM	PART NUMBER	DESCRIPTION	QTY
1	290523	Housing	1
2	290593	Bearing - Input Side	1
3	290594	Shaft Seal	1
4	290573	Retaining Ring	3
5	290522	Spindle	1
6	290586	Oil Plug	1
7	290547	45 Deg Grease Zerk	2
8	290637	3/8" Male Plug	1
9	290592	Bearing - Output Side	1

## 5. Parts

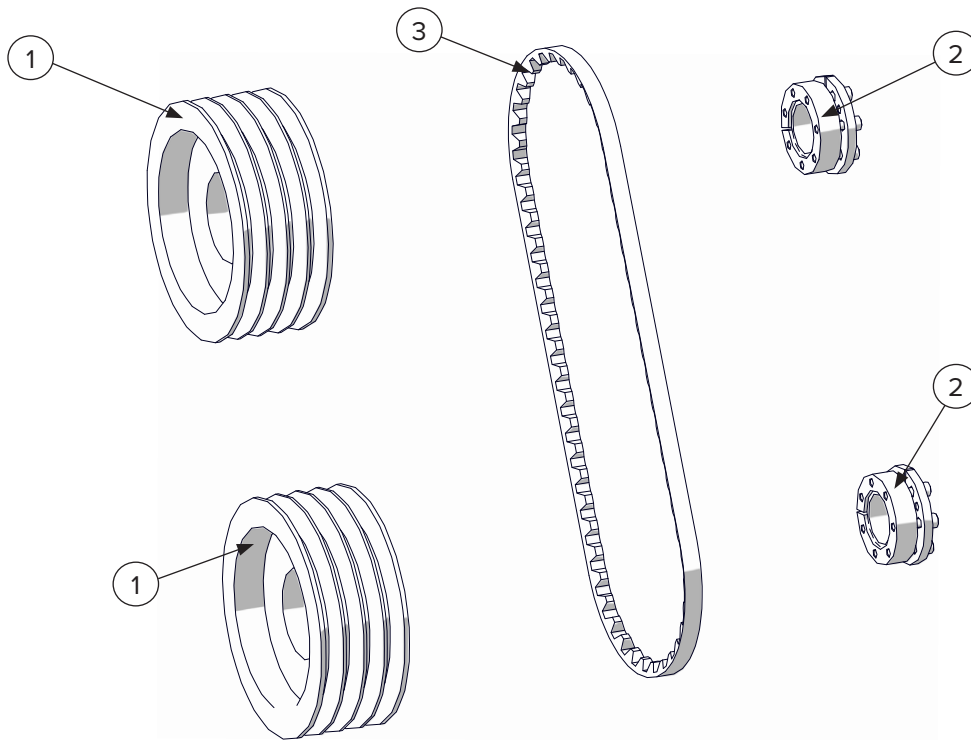
### 5.8 Belt Drive Assembly for 30-inch — 290528



ITEM	PART NUMBER	DESCRIPTION	QTY
1	290581	Lower Pulley	1
2	290582	Upper Pulley	1
3	290583	Shaft Taperlock	2
4	290597	Drive Belt	4

## 5. Parts

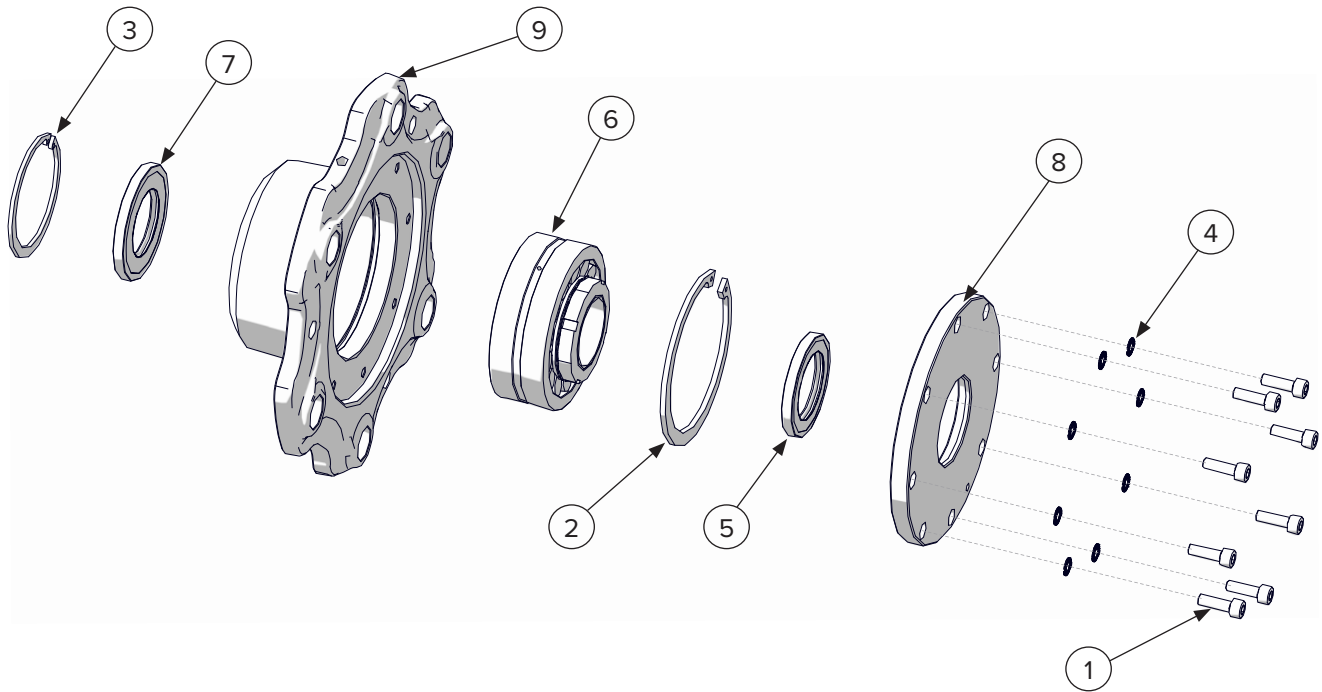
### 5.9 Belt Drive Assembly for 40 and 50-inch — 290644



ITEM	PART NUMBER	DESCRIPTION	QTY
1	290582	Pulley	2
2	290583	Shaft Taperlock	2
3	290621	Drive Belt	4

## 5. Parts

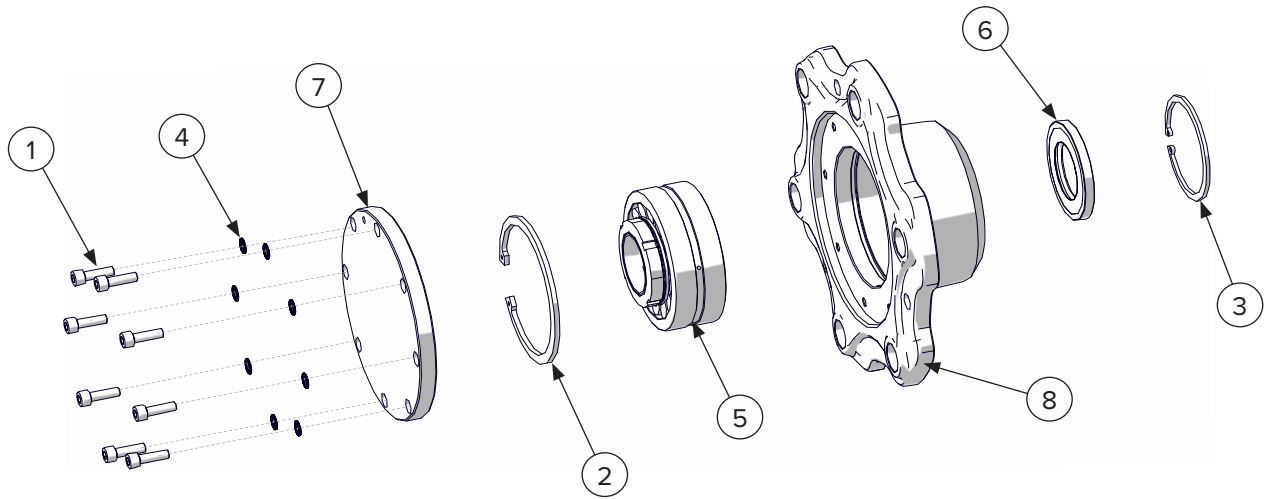
### 5.10 Drive Side Rotor Bearing Assembly — 290516



ITEM	PART NUMBER	DESCRIPTION	QTY
1	299054	Bolt for Cover Plate	8
2	290562	Retaining Ring for Rotor Bearing Housing - Outer	1
3	290572	Retaining Ring for Rotor Bearing Housing - Inner	1
4	290574	Grooved Washer for Cover Plate	8
5	290584	Shaft Seal - Outer	1
6	290587	Rotor Bearing Assembly (see page 46)	1
7	290595	Shaft Seal - Inner	1
8	290511	Cover	1
9	290513	Rotor Bearing Support Housing	1

## 5. Parts

### 5.11 Non-Drive Side Rotor Bearing Assembly – 290517

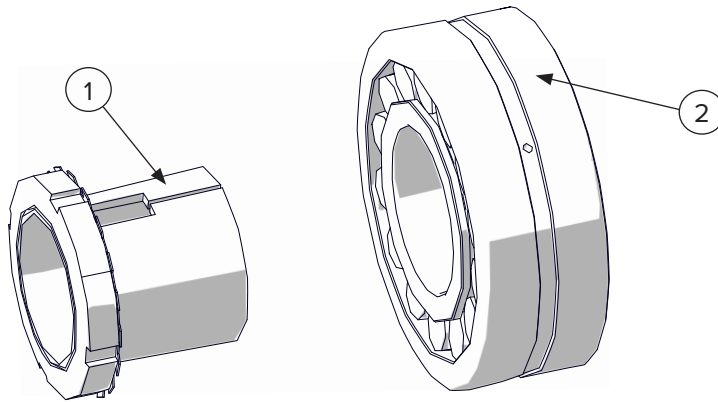


ITEM	PART NUMBER	DESCRIPTION	QTY
1	299054	Bolt for Cover Plate	8
2	290562	Retaining Ring for Rotor Bearing Housing - Outer	1
3	290572	Retaining Ring for Rotor Bearing Housing - Inner	1
4	290574	Grooved Washer for Cover Plate	8
5	290587	Rotor Bearing Assembly (see page 46)	1
6	290595	Shaft Seal	1
7	290512	Cover	1
8	290513	Rotor Bearing Support Housing	1



## 5. Parts

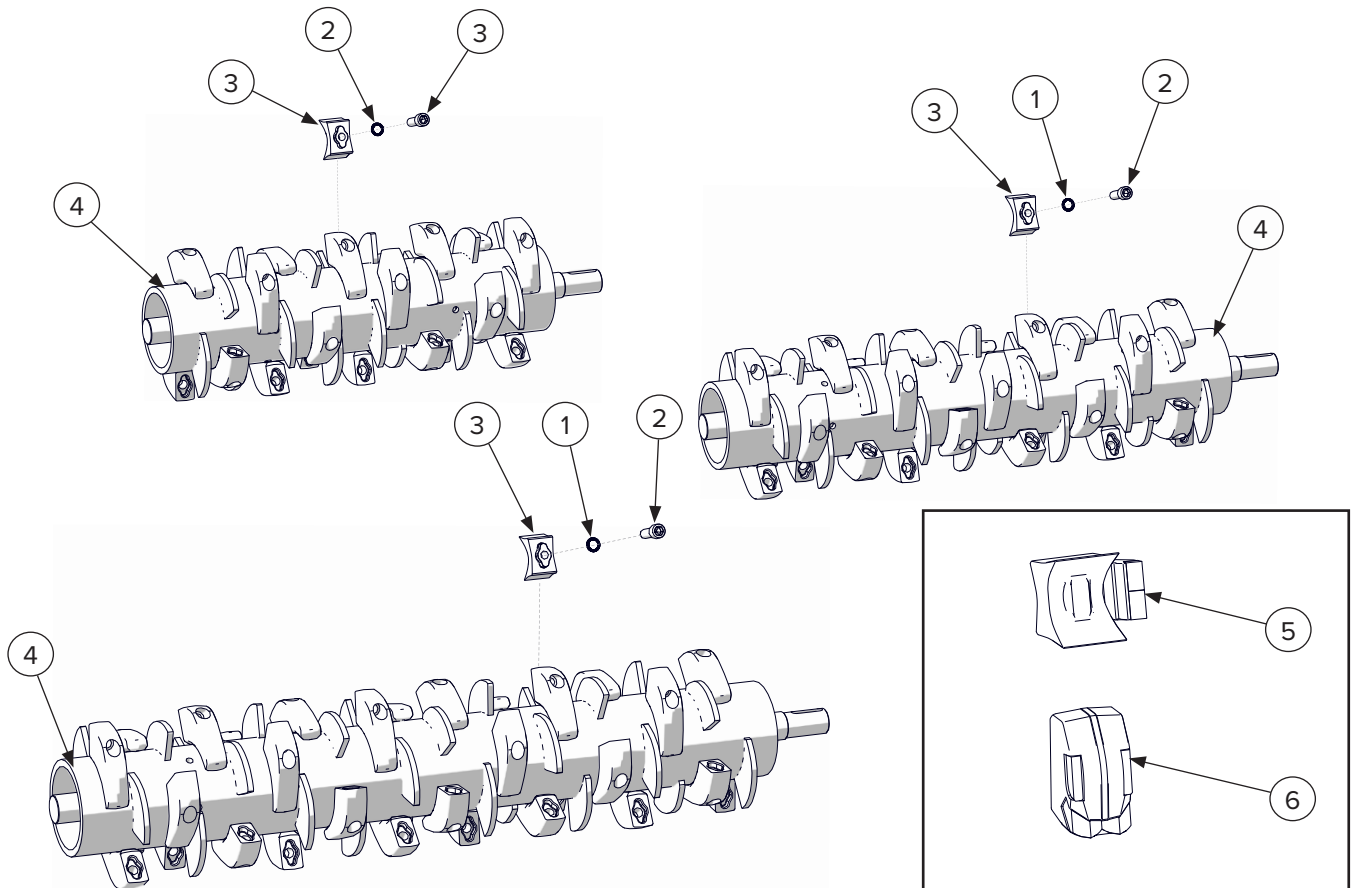
### 5.12 Rotor Bearing Assembly – 290587



ITEM	PART NUMBER	DESCRIPTION	QTY
1	290588	Rotor Bearing	1
2	290589	Sleeve	1

## 5. Parts

### 5.13 Rotor with Teeth Options

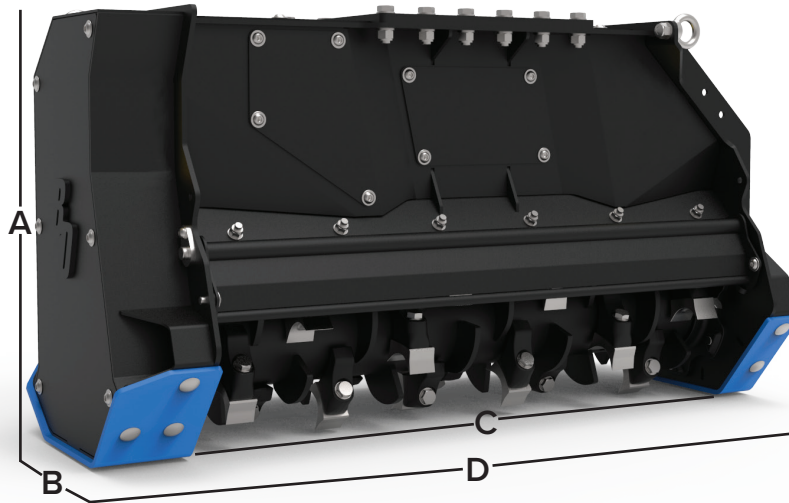


ITEM	PART NUMBER	DESCRIPTION	QTY 30"	QTY 40"	QTY 50"
1	299090	Grooved Washer	20	26	32
2	299044	Tooth Bolt	20	26	32
3	290500	Chipping Tooth	18	24	30
	290502	Carbide Tooth	18	24	30
4	290552	Rotor with Depth Limiters	1	1	1
5	290501	Chipping Side Tooth	2	2	2
6	290503	Carbide Side Tooth	2	2	2

TOOTH KIT	MULCHER MODEL	DESCRIPTION
290500-KIT-30	190510	30" Chipping Teeth
290502-KIT-30	190510	30" Carbide Teeth
290500-KIT-40	190515	40" Chipping Teeth
290502-KIT-40	190515	40" Carbide Teeth
290500-KIT-50	190520	50" Chipping Teeth
290502-KIT-50	190520	50" Carbide Teeth

## 6. Specifications

### 6.1 Attachment Specifications



DESCRIPTION	HEAVY DUTY EXCAVATOR DRUM MULCHER		
	190510	190515	190520
Excavator Size (Pounds)	9,000 - 13,000	13,000 - 24,000	18,000 - 24,000
Overall Height (No Mount) (A)	27-1/2"		
Overall Width (B)	24-1/4"		
Working Width (C)	30"	40"	50"
Overall Length (D)	40"	50"	60"
Working Pressure	2600 - 4000 PSI		
Motor Size	Adjustable 26 - 45 cc		
Recommended Flow	11 - 24 GPM	15 - 35 GPM	15 - 35 GPM
Pulley Ratio	1.43	1	1
Rotor Diameter	13"		
No. Belts	4 Groove Belts (XPB)		
Weight (without Mount)	893 lbs.	1015 lbs.	1147 lbs.
Rotor RPM	2200 - 2800 RPM		
Counter Blades	2		
Chain Guard	1 Double Curtain		
Maximum Cutting Capacity	4"		

In the table below, document the specifications of the excavator the mulcher is tuned to each time it is tuned for a new machine.

DATE	HOST MACHINE ID	AUXILIARY PRESSURE	AUXILIARY FLOW

## 6. Specifications

### 6.2 Torque Specifications

#### Standard Hardware and Lock Nuts

BOLT TYPE	CLASS 4.8		CLASS 8.8 OR 9.8		CLASS 10.9		CLASS 12.9	
	Lubricated	Dry	Lubricated	Dry	Lubricated	Dry	Lubricated	Dry
M6	4.8 N•m	6 N•m	9 N•m	11 N•m	13 N•m	17 N•m	15 N•m	19 N•m
	3.5 in / lb	4.5 in / lb	6.5 in / lb	8.5 in / lb	9.5 in / lb	12 in / lb	11.5 in / lb	14.5 in / lb
M8	12 N•m	15 N•m	22 N•m	28 N•m	32 N•m	40 N•m	37 N•m	47 N•m
	8.5 in / lb	11 in / lb	16 in / lb	20 in / lb	24 in / lb	30 in / lb	28 in / lb	35 in / lb
M10	23 N•m	29 N•m	43 N•m	55 N•m	63 N•m	80 N•m	75 N•m	95 N•m
	17 in / lb	21 in / lb	32 in / lb	40 in / lb	47 in / lb	60 in / lb	55 in / lb	70 in / lb
M12	40 N•m	50 N•m	75 N•m	95 N•m	110 N•m	140 N•m	130 N•m	165 N•m
	29 in / lb	37 in / lb	55 in / lb	70 in / lb	80 in / lb	105 in / lb	95 in / lb	120 in / lb
M14	63 N•m	80 N•m	120 N•m	150 N•m	175 N•m	225 N•m	205 N•m	260 N•m
	47 in / lb	60 in / lb	88 in / lb	110 in / lb	130 in / lb	165 in / lb	150 in / lb	190 in / lb
M16	135 N•m	175 N•m	260 N•m	330 N•m	375 N•m	475 N•m	440 N•m	560 N•m
	100 in / lb	125 in / lb	195 in / lb	250 in / lb	275 in / lb	350 in / lb	325 in / lb	410 in / lb
M18	135 N•m	175 N•m	260 N•m	330 N•m	375 N•m	475 N•m	440 N•m	560 N•m
	100 in / lb	125 in / lb	195 in / lb	250 in / lb	275 in / lb	350 in / lb	325 in / lb	410 in / lb
M20	190 N•m	240 N•m	375 N•m	475 N•m	530 N•m	675 N•m	625 N•m	800 N•m
	140 in / lb	180 in / lb	275 in / lb	350 in / lb	400 in / lb	500 in / lb	460 in / lb	580 in / lb
M22	260 N•m	330 N•m	510 N•m	650 N•m	725 N•m	925 N•m	850 N•m	1075 N•m
	190 in / lb	250 in / lb	375 in / lb	475 in / lb	540 in / lb	675 in / lb	625 in / lb	800 in / lb
M24	330 N•m	425 N•m	650 N•m	825 N•m	925 N•m	1150 N•m	1075 N•m	1350 N•m
	250 in / lb	310 in / lb	475 in / lb	600 in / lb	675 in / lb	850 in / lb	800 in / lb	1000 in / lb
M27	490 N•m	625 N•m	950 N•m	1200 N•m	1350 N•m	1700 N•m	1600 N•m	2000 N•m
	360 in / lb	450 in / lb	700 in / lb	875 in / lb	1000 in / lb	1250 in / lb	1150 in / lb	1500 in / lb
M30	675 N•m	850 N•m	1300 N•m	1650 N•m	1850 N•m	2300 N•m	2150 N•m	2700 N•m
	490 in / lb	625 in / lb	950 in / lb	1200 in / lb	1350 in / lb	1700 in / lb	1600 in / lb	2000 in / lb
M33	900 N•m	1150 N•m	1750 N•m	2200 N•m	2500 N•m	3150 N•m	2900 N•m	3700 N•m
	675 in / lb	850 in / lb	1300 in / lb	1650 in / lb	1850 in / lb	2350 in / lb	2150 in / lb	2750 in / lb
M36	1150 N•m	1450 N•m	2250 N•m	2850 N•m	3200 N•m	4050 N•m	3750 N•m	4750 N•m
	850 in / lb	1075 in / lb	1650 in / lb	2100 in / lb	2350 in / lb	3000 in / lb	2750 in / lb	3500 in / lb



## Warranty

### MANUFACTURER'S LIMITED WARRANTY

BLUE DIAMOND® ATTACHMENTS, a manufacturer of quality attachments, warrants new BLUE DIAMOND® ATTACHMENTS products and/or attachments at the time of delivery to the original purchaser, to be free from defects in material and workmanship when properly set up and operated in accordance with the recommendations set forth by BLUE DIAMOND® ATTACHMENTS, LLC.

BLUE DIAMOND® ATTACHMENTS liability for any defect with respect to accepted goods shall be limited to repairing the goods at a BLUE DIAMOND® ATTACHMENTS designated location or at an authorized dealer location, or replacing them, as BLUE DIAMOND® ATTACHMENTS shall elect. The above shall be in accordance with BLUE DIAMOND® ATTACHMENTS warranty adjustment policies. BLUE DIAMOND® ATTACHMENTS obligation shall terminate twelve (12) months for the Heavy Duty Excavator Drum Mulcher after the delivery of the goods to original purchaser.

This warranty shall not apply to any machine or attachment which shall have been repaired or altered outside the BLUE DIAMOND® ATTACHMENTS factory or authorized BLUE DIAMOND® ATTACHMENTS dealership or in any way so as in BLUE DIAMOND® ATTACHMENTS judgment, to affect its stability or reliability, nor which has been subject to misuse, negligence or accident beyond the company recommended machine rated capacity.

### WARRANTY CLAIM

To submit a warranty claim, a claim must be filed with BLUE DIAMOND® ATTACHMENTS before work is performed. The BLUE DIAMOND® PRODUCT SUPPORT TEAM will advise repairs and applicable parts exchanges. Tampering with the failed part may void the warranty. This warranty does not include freight or delivery charges incurred when returning machinery for servicing. Dealer mileage, service calls, and pickup/delivery charges are the customers' responsibility.

### EXCLUSIONS OF WARRANTY

Except as otherwise expressly stated herein, BLUE DIAMOND® ATTACHMENTS makes no representation or warranty of any kind, expressed or implied, AND MAKES NO WARRANTY OF MERCHANTABILITY IN RESPECT TO ITS MACHINERY AND/OR ATTACHMENTS ARE FIT FOR ANY PARTICULAR PURPOSE. BLUE DIAMOND® ATTACHMENTS shall not be liable for incidental or consequential damages for any breach or warranty, including but not limited to inconvenience, rental of replacement equipment, loss of profits or other commercial loss. Upon purchase, the buyer assumes all liability for all personal injury and property resulting from the handling, possession, or use of the goods by the buyer.

No agent, employee, or representative of BLUE DIAMOND® ATTACHMENTS has any authority to bind BLUE DIAMOND® ATTACHMENTS to any affirmation, representation, or warranty concerning its machinery and/or attachments except as specifically set forth herein.

This warranty policy supersedes any previous documents.

**NOTE:** Blue Diamond® Attachments is a trademark of BLUE DIAMOND® ATTACHMENTS

**This page intentionally  
left blank**





**QUALITY | DEPENDABILITY | INTEGRITY**

Blue Diamond® Attachments  
4512 Anderson Road, Knoxville, TN 37918  
888-376-7027