

Heavy Duty Excavator Drum Mulcher

Operation and Maintenance Manual



190510, 190515, 190520

Register your
WARRANTY
within 30 days
of purchase



888-376-7027 | BlueDiamondAttachments.com



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 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 as shown above.

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

Introduction: Owner Information	2	6.10 Motor & Direct Drive Assembly Components	50
1. Pre-Delivery Inspection Instructions	4	6.11 Direct Drive Assembly Components	51
1.1 Safety & Documentation	4	6.12 30" Belt Drive Components	52
1.2 Visual Inspection	4	6.13 40" & 50" Belt Drive Components	53
1.3 Hydraulic System & Operational Test	4	6.14 Non-Drive Side Rotor Assembly Components	54
1.4 Final Delivery	4	6.15 Drive Side Rotor Assembly Components	55
2. Introduction	5	6.16 30" Rotor Assembly Components	56
2.1 Attachment Identification	5	6.17 40" Rotor Assembly Components	57
2.2 About this Attachment	6	6.18 50" Rotor Assembly Components	58
2.3 Attachment Model Numbers	6	6.19 Internal Hose Components	59
2.4 Key Parts of the Drum Mulcher	6	6.20 Safety Decals	61
3. Safety	9	7. Specifications	63
3.1 General Safety Information	9	7.1 Attachment Specifications	63
3.2 Operators	10	7.2 Torque Specifications – Metric	64
3.3 Safety Guidelines	11	Warranty	65
3.4 Safety Regulations	14		
4. Operation	16		
4.1 General Information	16		
4.2 Pre-Operation Inspection	16		
4.3 Entering & Exiting the Prime Mover	17		
4.4 Attachment Installation	17		
4.5 Initial Set Up Instructions	19		
4.6 Operating the Attachment	21		
5. Maintenance	22		
5.1 Service Schedule	22		
5.2 Precautions During Maintenance	23		
5.3 Cleaning	23		
5.4 Greasing & Lubrication	24		
5.5 Hoses	25		
5.6 Belts	25		
5.7 Teeth	25		
5.8 Spare Parts & Accessories	26		
5.9 Storage	27		
5.10 Troubleshooting	28		
6. Parts	31		
6.1 Wear Parts	31		
6.2 30" Main Frame Components	32		
6.3 30" Hydraulic & Gate Components	34		
6.4 40" Main Frame Components	37		
6.5 40" Hydraulic & Gate Components	40		
6.6 50" Main Frame Components	43		
6.7 50" Hydraulic & Gate Components	46		
6.8 Hydraulic Manifold Block Assembly Components	49		
6.9 Hydraulic Manifold Block Only Components	49		

1. Pre-Delivery Inspection Instructions

Use this checklist to verify safety, function, and readiness prior to delivery.

END USER'S NAME: _____

DATE: _____

ITEM NUMBER & DESCRIPTION: _____

SERIAL NO.: _____

HOST MACHINE MAKE/MODEL: _____

1.1 Safety & Documentation

- Operation and Maintenance Manual is included.
- Safety decals are present and legible.
- Model and serial number plate is present and intact.
- Verify required hydraulic flow range for customer's host machine.
- Smooth operation; no hydraulic leaks or excessive vibration of attachment.
- Verify that the rotor speed has been measured within 2200 – 2800 rpms.
- Verify attachment has been connected to the host machine that will be used for operation and tested.
- Verify the host machine's hydraulic flow with a flow meter.

1.2 Visual Inspection

- Unit is free of shipping damage, dents, cracked welds, etc.
- Verify motor and safety covers are in place and secure.
- Ensure drive system is correctly lubricated.
- Fasteners are properly torqued.
- Verify excavator mount matches that of the host machine.

1.3 Hydraulic System & Operational Test

- Hydraulic hose routing is appropriate for application.
- Fittings are properly tightened; verify no leakage.
- Quick couplers are correct and clean.
- Case drain line is installed.

1.4 Final Delivery

- Maintenance schedule located in Operation and Maintenance Manual has been reviewed.
- Grease type and intervals were provided.
- Teeth change procedure and maintenance safety have been explained.
- Register the attachment for warranty by following the instructions below:
 - Scan the QR code to fill out the form online.
 - Fill out this form and email it to warranty@bdattachments.com

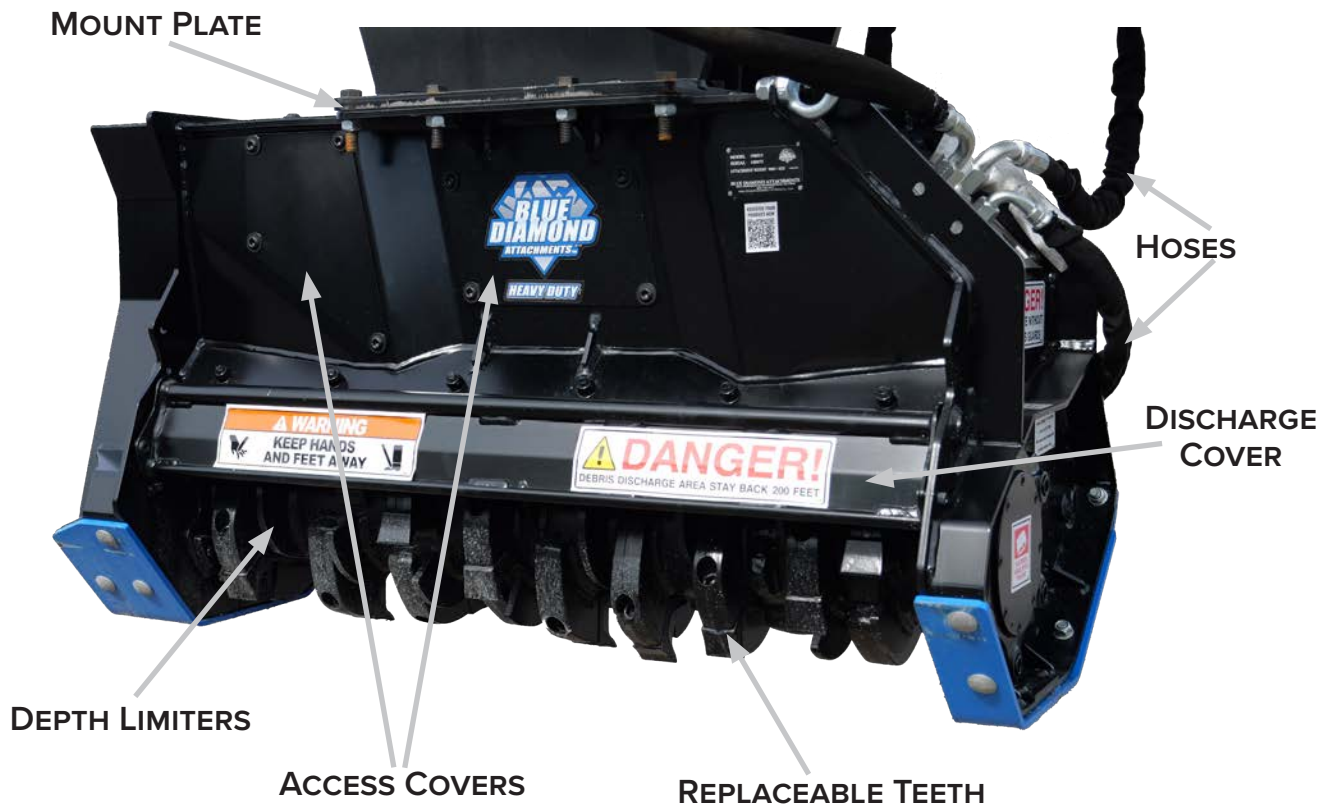
TECHNICIAN: _____

CUSTOMER: _____

DATE: _____

2. Introduction

2.1 Attachment Identification



2. Introduction

2.2 About this Attachment

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

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 specifically 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 mulchers 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 attachment. Immediately contact Blue Diamond® for your own safety and that of the attachment.

Sound Pressure Level Indication

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

2.3 Attachment Model Numbers



IMPORTANT



DO NOT exceed maximum flow.

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

2.4 Key Parts of the Drum Mulcher

Discharge Cover with Manual Adjustment

The mulcher is fitted with a manually adjusted discharge cover [Figure 1]. If the gate is open, it mulches more efficiently, and if the gate is closed, it results in a finer finish.



Figure 1

2. Introduction

2.4 Key Parts of the Drum Mulcher Cont'd

Rotor

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



CAUTION



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



Figure 2

Replaceable Liner

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

Counterblades

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

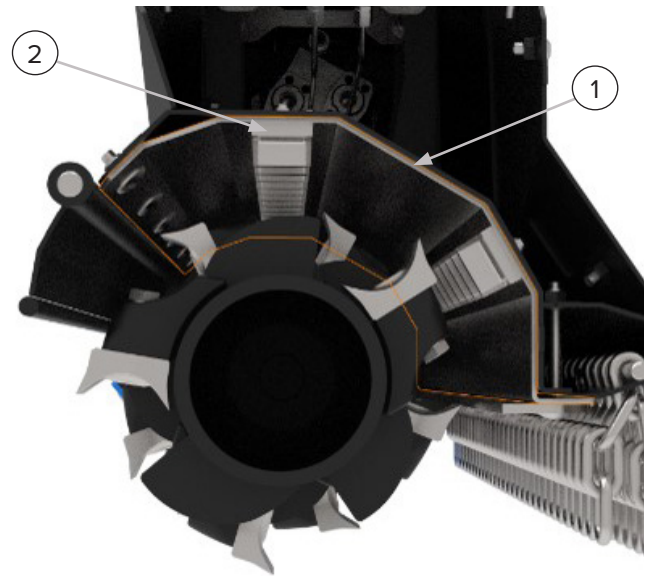


Figure 3

Belt Drive

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

The belt tension is manually adjusted [Figure 4].

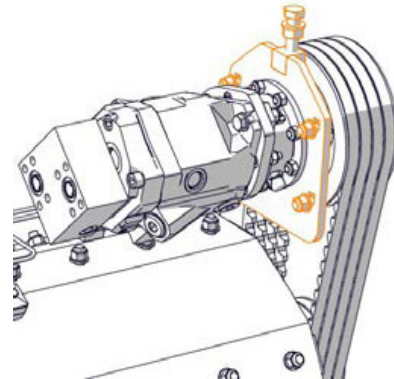


Figure 4

2. Introduction

2.4 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.

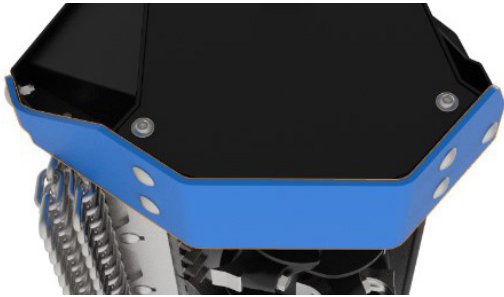


Figure 5

Hydraulic Motor

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

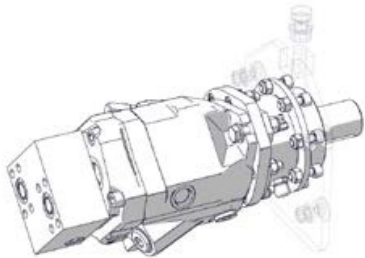


Figure 6

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 18" x 19" 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.

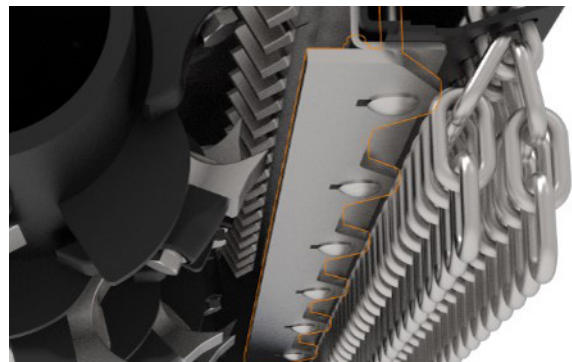


Figure 9

3. Safety

3.1 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.

Terminology

Host Machine, Machine, Prime Mover:

- The Heavy Duty Excavator Drum Mulcher can be attached to many different pieces of equipment; therefore, the terms “host machine”, “machine”, and “prime mover” will be used. Host machine, machine, and prime mover mean any vehicle, excavator, or skid steer providing power to the attachment.

Attachment, Implement, Equipment:

- The Heavy Duty Excavator Drum Mulcher is the tool that is being attached to the host machine; therefore, the terms “attachment”, “implement”, and “equipment” will be used. The attachment, implement, and equipment mean any tool that is being used on any vehicle, excavator, or skid steer being used for different applications.

Operating Safety

- Read and follow instructions in this manual and the machine's Operator's Manual before operating.
- The manual must always remain with the attachment. 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 attachment. 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 attachment, make sure that all safety devices are installed and in good working condition. In case of damaged or missing shields, replace them immediately.
- It is absolutely forbidden to remove or alter safety devices and/or safety precautions
- Pay maximum attention to avoid any accidental contact with rotating parts of the attachment.
- If the use of the attachment is required at night or in conditions of reduced visibility, use the lighting system of the prime mover and an auxiliary lighting system if required.

3. Safety

3.1 General Safety Information Cont'd

Operating Safety Cont'd



DANGER



AVOID SERIOUS INJURY OR DEATH

- The attachment 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 host 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 flat, level, 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 attachment.

3.2 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, minimal fuel consumption, and maximum safety for himself and for others.

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



DANGER



AVOID SERIOUS INJURY OR DEATH

Operators must receive instructions before operating the machine. Untrained operators can cause serious injury or death.

For an operator to be qualified, he or she must not use drugs or alcoholic drinks which impair alertness or coordination while working. An operator who is taking prescription drugs must get medical advice to determine if he or she can safely operate a machine and the equipment. For an operator to be qualified, he or she must have read and understood the instructions of this manual, he or she must make adequate preparation for the proper use of the machine, and he or she must hold a driving license.

In case of doubt regarding the use of the equipment and/or the interpretation of this manual, the operator must contact either their dealer or Blue Diamond®.

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.
- It is the skill, care, common sense, and good judgment of the operator that will determine how efficiently and safely the job is performed.
- The new operator must start in an area without bystanders and use all the controls until he or she can operate the attachment safely under all conditions of the work area.

3. Safety

3.2 Operators Cont'd

Operator Safety

- Any use of the attachment other than the intended use is a non-intended use and is considered to be unauthorized and dangerous. Blue Diamond® is not liable for any damage or injury resulting from non-intended use.
- Before starting, and during operation of the attachment, make sure there are no people or animals in the operation area; the attachment can project material from the any direction with risks of 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 entangled or caught in parts of the equipment.
- Do not operate the implement when tired, not in good condition, or under the influence of alcohol or drugs.
- Prolonged use of the attachment causes components to become hot, and there is a burn hazard from direct contact with them. Avoid direct contact with the attachment until these components have cooled down.
- At all times, the operator must ensure that there are no persons, animals, or obstacles within 200 feet (60 m) of the attachment/machine's location while in operation.
- Make sure that the attachment and host machine are in a proper state of repair (cleaning), maintenance (lubrication), and components.
- If the attachment vibrates, behaves strangely, or makes unusual noises, stop operation and contact your local dealer or Blue Diamond® Product Support immediately.
- When operating on sloped terrain, check that work is being safely performed and that there is no risk of tilting over.
- The movement of the excavator arm must be as near to the ground as possible to avoid the risk of overturning.

3.3 Safety Guidelines

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 Operation and Maintenance manual and all warning signs indicated on the attachment and/or machine.
- Correct use of the attachment implies compliance with all maintenance and operating instructions described in this manual and the use of original Blue Diamond® spare parts.
- The attachment must be stopped and inspected for damage after striking an object. In the event of damage, it must be repaired before continuing operation.
- Read and follow instructions in this manual and the machine's Operator's 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 lines before operating equipment.

3. Safety

3.3 Safety Guidelines Cont'd

Operating Safety Cont'd

- 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.
- 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.
- DO NOT operate equipment in poor visibility conditions such as fog, darkness, or any conditions that limit clear visibility less than 300 feet (100 m) 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 mulcher running at optimum mulching 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.
- Know the capabilities of your equipment and practice its operation to become familiar with the controls, emergency shut down procedures, and the way it handles your machine.
- 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's 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 4,000 psi (275 bar) operating pressure.
- See "7.1 Attachment Specifications" on page 63 for more information.
- 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.

3. Safety

3.3 Safety Guidelines Cont'd

Fire Prevention Safety

- 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 near the work area.

Transporting Safety

- Blue Diamond® cannot be held responsible for any damage due to transport that was carried out by the customer and/or operator by carriers chosen by the customer and/or operator.
- Comply with state and local laws governing highway safety and movement of machinery 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 equipment on a truck or trailer, make sure the equipment is properly secured to the transport vehicle.

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.

- Do not handle hydraulic components until the pressure in the hydraulic circuit has been relieved. Avoid direct contact with the attachment/machine until these components have cooled down.

Personal Protective Equipment



Proper Work Clothes: To help ensure your safety as a designated operator wear proper work clothes including tight fitting clothes, protective gloves, and shoes.



Hand Protection: To help ensure your safety as a designated operator wear protective gloves.



Protective Shoes: To help ensure your safety as a designated operator wear protective shoes.



Safety Helmet: To help ensure your safety as a designated operator wear a safety helmet.



Safety Helmet and Eye/Ear Protection: To help ensure your safety as a designated operator wear a safety helmet and eye/ear protection.

3. Safety

3.4 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 m) away from the outer contour of the attachment.
- Keep away from crushing or shearing zones between moving parts driven by mechanical, hydraulic, or pneumatic power.
- Do not operate the attachment without its safety devices and guards in place.
- Do not operate the attachment if the safety devices and guards are not in perfect condition. Replace them before continuing to operate the attachment.
- Do not climb onto the attachment while it is in operation or when it is off.
- Do not start the mulcher rotor without first raising the attachment off the ground.
- Do not transport persons or animals or to load or transport goods on the attachment/host machine.
- Do not exceed the host 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 near the work area.
- Do not exit the machine unless the rotor of the mulcher is stopped, there is no excessive pressure being applied to the excavator arm, the machine is parked 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.



DANGER



- Before any maneuver, the operator must ensure that there are no persons, animals, or obstacles within 200 ft (60 m) of the attachment/machine location.
- Do not work with the attachment at a distance of less than 300 ft (100 m) from roads on which motor vehicles, semi trucks, or horse-drawn vehicles may travel if the operator does not comply with all safety procedures in this manual.
- Do not work with the attachment at a distance less than 300 ft (100 m) from public areas (parks, gardens, etc.), 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/attachment is running, as there is a high risk of penetration into the skin and eyes due to oil pressure.



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.

- Use Blue Diamond® approved spare parts for better performance and increased safety.

3. Safety

3.4 Safety Regulations Cont'd

Precautions During Maintenance

- Refer to the machine's Operator's Manual.
- A qualified operator must carefully read the entirety of this Operation and Maintenance Manual and fully understand and follow the information before connecting or disconnecting the attachment.
- Use appropriate personal protective equipment (PPE), including but not limited to eye and ear protection, work gloves, work boots, safety hat, dust mask, and work clothes.
- The attachment 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 following all safety precautions.
- Do not stand between the excavator and the attachment.
- Before carrying out any maintenance, all fastener components (fittings, screws, nuts, bolts, pins, etc.) must be checked for tightness to prevent moving parts from coming loose on the operators.
- There is a risk of leaks in hoses and/or other hydraulic components.

Storage of the Attachment

- When the attachment is not in operation and must be stored. See "5.9 Storage" on page 27 for further information.

4. Operation

4.1 General Information

Before starting the attachment, the operator must carefully read and understand the installation and operating instructions of this attachment.



WARNING



Before performing any of the actions in this section, section 3. 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 attachment or carry out any maintenance operations. Contact Blue Diamond® Product Support immediately to ensure your safety and that of the attachment.

4.2 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 moving parts are completely stopped before connecting, disconnecting, adjusting, or cleaning equipment.
- Always keep shields and guards in place when using the equipment.
- Disengage machine's auxiliary hydraulics for road travel.
- Keep hands, feet, and clothing away from rotating parts.

- Always wear safety goggles or glasses when inspecting equipment.
- Clean the attachment (see "5.3 Cleaning" on page 23).

- Inspect the attachment for shipping damage. If damage does exist, do not operate until the damaged parts have been replaced or repaired.
- Lubricate the attachment per the schedule outlined in the Maintenance section. "5.1 Service Schedule" on page 22.
- Check the excavator mount for damage or cracks.
- Check that all shields and guards are in place.
- Check for loose hardware (i.e. nuts, bolts, screws, etc.), and tighten them if necessary.
- Check all welds on the attachment for wear and damage each time the attachment is removed from the host 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.
- Verify that the attachment is properly connected to the machine.



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 the condition of all hydraulic components for leaks. Repair as required.

NOTE: Do not operate with hydraulic leaks.

- Use only Blue Diamond® recommended replacement parts. Other parts may be substandard in fit and quality.
- Ensure any damage or excessively worn parts are replaced.

4. Operation

4.3 Entering & Exiting the Prime Mover

IMPORTANT



See the machine's Operator's Manual for detailed information on operating the excavator.

Entering the Operator's Position

Use the safety treads, handles, and steps on the attachment and machine to enter the operator's position. Always maintain three (3) points of contact.

When in the operator's position, secure the seatbelt, start the engine, and release the parking brake.

Leaving the Operator's Position

WARNING

AVOID SERIOUS INJURY OR DEATH

- Always park on a flat, level surface.
- Lower boom arm and place attachment flat on the ground.
- Place all controls in **NEUTRAL**.
- Engage the parking brake.
- Stop the engine, and remove the key.
- Wait for all moving parts to stop.

SEE MACHINE'S OPERATOR'S MANUAL FOR ADDITIONAL INFORMATION.

Park the machine/attachment on a flat, level surface.

Place all controls in neutral, engage the parking brake, stop the engine, and wait for all moving parts to stop. Leave the operator's position.

4.4 Attachment Installation

Connecting Attachment to the Machine

WARNING

AVOID SERIOUS INJURY OR DEATH

The locking pins must extend through the holes in the attachment mounting frame. Failure to secure locking pins can allow attachment to come off.

SEE MACHINE'S OPERATOR'S MANUAL FOR ADDITIONAL INFORMATION.

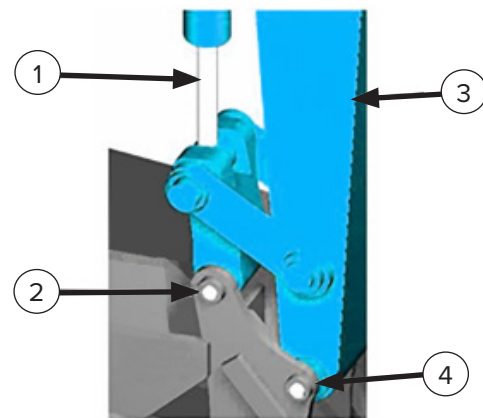


Figure 10

Order the appropriate bracket interchange from your local Blue Diamond® Attachments dealer by supplying the brand and model information of your machine.

Make sure mount matches that of the host machine before attaching it to the mulcher.

The bracket interchange is secured to the attachment with bolts.

Use an appropriate lifting device and slings to place the bracket interchange onto the attachment.

Align the holes between the bracket interchange and deck and install the appropriate hardware.

Torque hardware to the specification detailed in the "7.2 Torque Specifications – Metric" on page 64.

Position the excavator at the rear of the attachment.

Extend the tool cylinder [Figure 10, Item 1] and paddle until the pin position is aligned.

4. Operation

4.4 Attachment Installation Cont'd

Connecting Attachment to the Machine Cont'd

Leave the operator's position. See "Leaving the Operator's Position" on page 17.

Make sure that the rotor is not touching the ground.

Enter the operator's position. See "Entering the Operator's Position" on page 17.

Adjust the height of the dipperstick [Figure 10, Item 3] to align with the pin position [Item 4].

Leave the operator's position. See "Leaving the Operator's Position" on page 17.

Install the pin through the attachment and paddle and secure with appropriate hardware.

NOTE: Some excavators are equipped with hydraulic locking systems, which are operated from the cab of the machine.

Connecting Hydraulic Hoses



IMPORTANT

Thoroughly clean the quick couplers before making connections. Dirt can quickly damage the hydraulic system.

Verify that all hydraulic couplings are compatible with the host machine.

Remove dirt or debris from the male and female couplers. Visually inspect the couplers for corroding, cracking, damage, or excessive wear. Replace as needed.

Connect the attachment hydraulic hoses to the machine. The hydraulic hoses must be connected in the following order: case drain, return hose, and pressure hose.

For the hydraulic hoses, the return hose must be connected before the pressure hose.

Pull on each hose to verify full connection is made.



IMPORTANT

The case drain **MUST** be connected to the machine; otherwise, it will result in damage to the attachment.

Disconnecting Hydraulic Hoses



WARNING



AVOID SERIOUS INJURY OR DEATH

Hydraulic fluid, tubes, fittings, and quick couplers can get hot during operation. Be careful when connecting and disconnecting hydraulic hoses.

Relieve auxiliary hydraulic pressure. (See the machine's Operator's Manual for correct procedure.)

Disconnect attachment hydraulic hoses from the machine. The hoses must be disconnected in the following order: pressure hose, return hose, and case drain.

The pressure hose must be disconnected before the return hose.

Disconnecting Attachment From the Machine

Relieve auxiliary hydraulic pressure. (See the machine's Operator's Manual for correct procedure.)

Park the machine and attachment on a flat level surface. Lower the attachment flat on the ground.

Leave the operator's position. See "Leaving the Operator's Position" on page 17.

Disconnect attachment hydraulic hoses from the machine. See "Disconnecting Hydraulic Hoses" on page 18.

Remove hardware securing the pins and remove the pins from the paddle and attachment.

Enter the operator's position. See "Entering the Operator's Position" on page 17.

Raise the dipperstick to clear the attachment.

4. Operation

4.4 Attachment Installation Cont'd

Disconnecting Attachment From the Machine Cont'd

Drive the machine slowly backward, away from the attachment.

4.5 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 & Reflective Tape	Speed Measurement
19mm Deep Socket	Motor Adjustment
5mm Allen Key	
8mm Allen Key	Access Plates

Hydraulic Connection Panel

The hydraulic connection panel [Figure 11] 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 11

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 host machine.

The motor displacement is adjustable from 26cc to 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 12

2. Apply reflective tape to the rotor pulley [Figure 12, Item 1].

4. Operation

4.5 Initial Set Up Instructions Cont'd

Adjust Rotor Speed Cont'd

Measure Rotor Speed Cont'd

- Engage the rotor. Use a tachometer to measure the speed. The rotor speed should be between 2,200 – 2,800 rpm. If the rotor speed is not within the stated range, adjust the displacement.

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.

- Remove the access cover [Figure 13, Item 1] to access the motor.



Figure 13

- Remove the hex cap [Figure 14, Item 1] on the bottom of the motor to access the adjustment screw [Figure 14, Item 2].
- Loosen the jam nut.
- Turn the screw to adjust the displacement.

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

- When the rotor speed is within 2200 – 2800 rpm, tighten the jam nut, reinstall the hex cap, and replace the access cover.
- Record the host machine information in this manual in the table on page 21.

Relief Valve Pressure

The relief valve [Figure 14, Item 3] pressure is preset at 4,050 psi (280 bar).

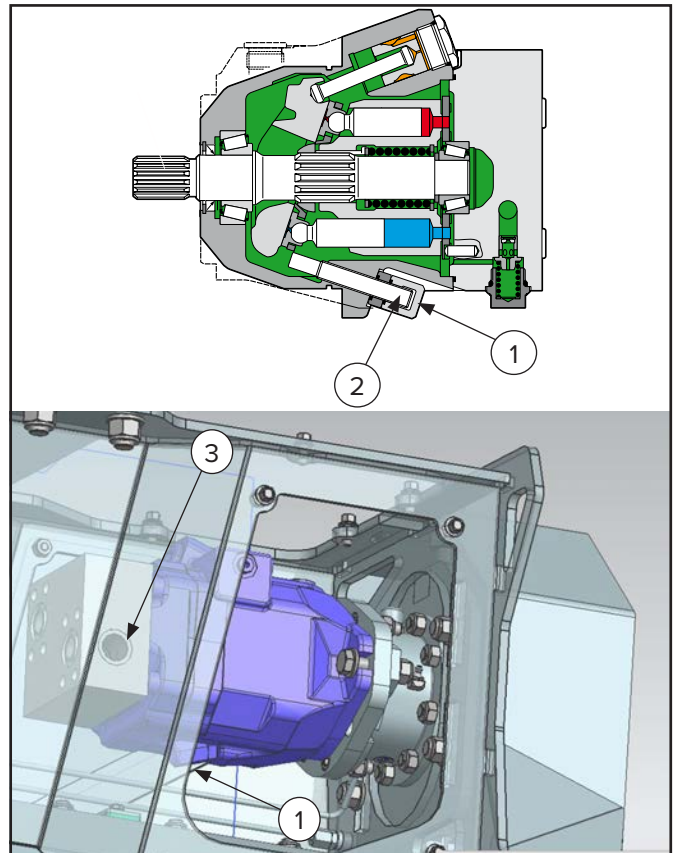


Figure 14

4. Operation

4.5 Initial Set Up Instructions Cont'd

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

DATE	HOST MACHINE ID	AUXILIARY PRESSURE	AUXILIARY FLOW

4.6 Operating the Attachment



WARNING



- Do not start the mulcher rotor without first raising the attachment 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 Attachment

- Check that the mount, hydraulic connections, and adjustment operations have been performed 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 attachment off the ground.

Mulching Procedure

- When first using the attachment, 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 attachment.
- For best results, find the balance between speed, power, and material mulched.

Alignment of the Attachment 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 Attachment

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

Switching Off the Attachment

Once all moving parts of the attachment have come to a complete stop, perform the following:

1. Disconnect the hydraulic system.
2. Disconnect the fittings from the hydraulic components. Be sure to release hydraulic pressure before disconnecting hoses.
3. Disconnect the mulcher from the excavator arm.

NOTE: See "4.4 Attachment Installation" on page 17 for more detailed information.

5. Maintenance

5.1 Service Schedule

DESCRIPTION	SERVICE PROCEDURES			
	Check	Clean	Lube	Adjust
Initial 5 Hours				
*Belts	•			•
*Teeth				•
*All Hardware				•
Every 4 Hours				
Condition of Teeth	•			
*Seals	•			
Every 8 Hours				
*Teeth	•	•		
*Rotor Bearings Housings			*•	
Every 20 Hours				
Main Frame		•		
Fittings	•			
Hoses	•			
*Seals	•			
*Teeth				•
*Tooth Holders & Hardware		•		•
*Direct Drive			*•	
Every 50 Hours				
Skid plates	•			
All Hardware				•
*Belts	•			•

*These tasks must be performed by qualified personnel or authorized service technicians.

5. Maintenance

Proper and regular maintenance ensures a long life of the attachment, avoids failures, and saves time and repair costs.

Periodic inspections and maintenance operations described in this section must be performed by an operator or authorized technician in times and terms prescribed. Failure to comply with maintenance prescriptions can compromise the function and lifetime of the attachment, which will result in the warranty becoming void.

Repairs, maintenance, and modifications other than those mentioned in this manual should NOT be performed without consulting Blue Diamond® Product Support.

Wrong or inappropriate repairs or maintenance may generate abnormal operating conditions, equipment damage, and generate risks for the operator.



WARNING



AVOID SERIOUS INJURY OR DEATH

The following must always be performed prior to any adjustment being made:

- Always park on a flat, level surface.
- Lower lift arms, and place attachment flat on the ground.
- Place all controls in NEUTRAL.
- Engage the parking brake.
- Stop the engine, and remove the key.
- Wait for all moving parts to stop.
- Set the parking stand.

SEE MACHINE'S OPERATOR'S MANUAL FOR ADDITIONAL INFORMATION.



WARNING



Before performing any of the actions in this section, section 3. 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 Blue Diamond® Product Support immediately to ensure your safety and that of the attachment.

5.2 Precautions During Maintenance

- If a safety device is removed during maintenance of the attachment, it must be replaced and checked for correct operation of the attachment.
- Check that the safety decals are in perfect conditions. If not, replace them before operating the attachment.
- Before and after all maintenance work on the attachment, 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 attachment, the mulcher must be disconnected from the host machine.
- Cleaning of the mulcher and its parts must be done with the attachment 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 grease and lubricants recommended by Blue Diamond®.

5.3 Cleaning

- Before conducting any maintenance work on the attachment, a general cleaning of the work area must be performed.
- Remove material, such as branches, twigs, rope, wires, cable, etc., from the rotor.
- Remove brush, wood chips, or mulched material from the top of the attachment.
- Clean the inside walls of the attachment and its cutting components every twenty (20) hours according to "5.1 Service Schedule" on page 22.

5. Maintenance

5.3 Cleaning Cont'd

- Before greasing, remove dirt and debris from the grease zerks.
- Use the lubricants suggested in this manual.

5.4 Greasing & 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 parts.
- Excessive lubrication and greasing can be harmful, so the times and quantities specified in this manual must be followed.
- 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.



IMPORTANT



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

Lubrication

- Follow “5.1 Service Schedule” on page 22 for greasing intervals.
- The lubrication points are shown in Figure 15.



Figure 15

- The grease zerks for the rotor bearing housings should be lubricated every four (4) hours by applying ten (10) pumps OR every eight (8) hours by applying twenty (20) pumps from a grease pump.
 - The drive side grease zerk is labeled “R” [Figure 15, Item 1] on the hydraulic connections panel.
 - The non–drive side grease zerk is below the hydraulic connections panel on the bearing housing [Item 3].
- The direct drive grease zerk should be lubricated every twenty (20) hours by applying ten (10) pumps of grease.
 - The direct drive grease zerk is labeled “E” [Item 2] on the hydraulic connections panel.
- After greasing, remove any grease residue from the surface of the machine.

5. Maintenance

5.5 Hoses

- Check all hoses every twenty (20) hours for leaks.
- Verify that the hoses do not have cracks that could cause future leaks.

NOTE: Use parts recommended or sold by Blue Diamond® for better performance and increased safety.

5.6 Belts

The Heavy Duty Excavator Drum Mulchers use a toothed V-belt [Figure 16] with a manual tensioning system.

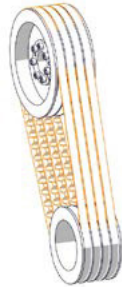


Figure 16

Manual Tensioning System

- After the first five (5) hours of operation, check the tension and condition of the belts.
- Every fifty (50) hours, check the tension and condition of the belts.
- Check tension with a tensiometer.
- The tension is correct when the deflection is between five (5) and ten (10) millimeters at Figure 17, Item A, taking into account the data given in the table below and Figure 17.

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

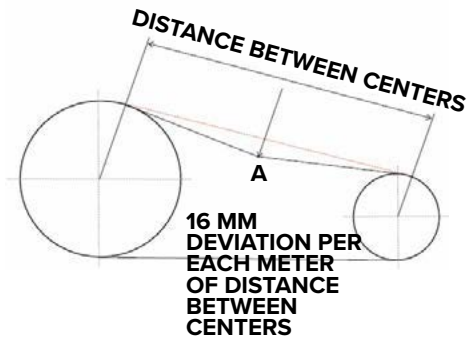


Figure 17

- 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.

5.7 Teeth

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

Chipping Teeth [Figure 18]

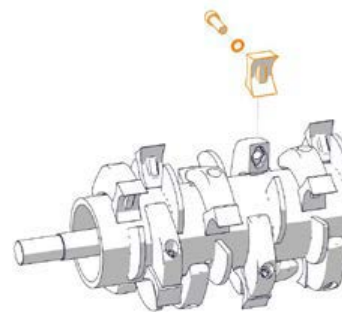


Figure 18

5. Maintenance

5.7 Teeth Cont'd

Carbide Teeth [Figure 19]

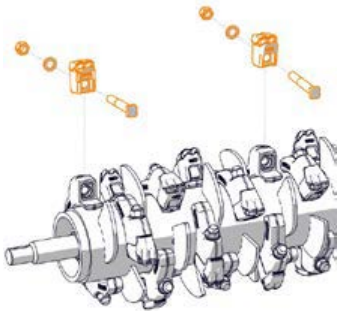


Figure 19

- See “7.2 Torque Specifications – Metric” on page 64 for proper tightening torques that must be applied to the bolts that secure the teeth, tooth holders, and other cutting elements to the attachment.
- After the first five (5) hours of operation, check the torque of the teeth. If the teeth are not properly torqued according to the values stated in 7.2 Torque Specifications – Metric, tighten to the proper torque.
 - Repeat for every twenty (20) hours of operation.
- Clean the teeth every eight (8) hours.
- Do not operate the attachment with worn teeth as this may cause damage to the rotor.
- All teeth must be replaced at the same time to maintain balance on the rotor.
- Stop operating the attachment immediately if any abnormal vibration of the rotor or mulcher is present. Contact Blue Diamond® Product Support or an authorized technician immediately.



DANGER



The replacement of cutting elements (teeth, tooth holders, etc.) and tightening cutting elements to the proper torque must be performed by qualified personnel or an authorized service technician.

5.8 Spare Parts & Accessories

To maintain safety, performance, and product reliability, Blue Diamond® recommends the use of genuine Blue Diamond® replacement parts for all repairs and service.

Genuine Blue Diamond® parts are specifically designed and tested for your attachment.

Use of non-genuine parts for components identified as Blue Diamond® OEM may affect product performance and could void applicable warranty coverage.

To obtain replacement parts, contact Blue Diamond® Product Support with the following information:

- Type of attachment
- Serial number
- Part number and/or description of part(s) needed
- Quantity of part(s) needed

5. Maintenance

5.9 Storage

Storage

Sometimes it may be necessary to store your Heavy Duty Excavator Drum Mulcher for an extended period of time. Below is a list of items to perform before storage.

- Make sure the hydraulic hose couplers are capped, plugged, or connected to each other.
- Ensure no hydraulic components are leaking.
- Thoroughly wash the attachment before storing it for long periods.
- Lubricate the attachment.
- Always use grease and lubricant recommended by Blue Diamond®.
- Check for loose hardware, missing guards, or damaged parts.
- Check for damaged or missing decals. Replace if necessary.
- Replace worn or damaged parts.
- Properly torque all hardware.
- Place the attachment flat on the ground in a dry, protected shelter.

NOTE: In muddy conditions or to prevent the attachment from freezing to the ground, put the attachment on planks or blocks before removing the attachment from the machine.

Return to Service

After the Heavy Duty Excavator Drum Mulcher has been in storage, it is necessary to follow a list of items to return the attachment to service.

- Lubricate the attachment.
- Connect and operate the attachment and check for correct function.
- Check for leaks. Repair as needed.

5. Maintenance

5.10 Troubleshooting

PROBLEM	CAUSE	SOLUTION
Abnormal vibrations of the attachment	Unevenly worn teeth	Replace all teeth with new ones.
	Unbalanced rotor	Have a service technician balance the rotor.
	Debris accumulated or components rolled-up on the rotor	Check the rotor for debris or other elements that could be causing an imbalance.
	Loss of one or more teeth	Replace all teeth with new ones.
	Rotor bearings damaged or broken	Replace rotor bearings with new ones.
Poorly mulched material or poor finish	Rotor not reaching intended speed	Have a service technician check the tension of the belts.
	Attachment not properly adjusted	Adjust attachment to match host machine's recommended power take-off RPM
	High ground speed	Reduce working speed to match that of the working conditions.
	Worn teeth	Replace all teeth with new ones.
High power consumption	Too much material	Reduce speed.
	High ground speed	Reduce working speed to match that of the working conditions.
Loud & continuous noise while operating the attachment	Low oil level in excavator's tank	Check hydraulic oil level, and check for leaks. Fill oil if necessary.
Broken seals	Lack of or excess of lubrication	Lubricate correctly, following amount and service intervals stated in this manual.
	Wear and tear	Replace broken seals with new ones.
	Problems originating from bearings or shafts near the seal	Replace damaged components.
Frequent bearing breakage	Bent frame with excessive axial loads	Contact authorized service center.
	Lack of lubrication	Lubricate correctly, following amount and service intervals stated in this manual.
	Attachment overloaded	Respect the working limits indicated in this manual. In case of doubt, contact Blue Diamond® Product Support.
	Incorrect rotor mounting or adjustment	Check assembly and adjustments.
	Excessive vibrations due to rotor imbalance	Contact authorized service center.

5. Maintenance

5.10 Troubleshooting Cont'd

PROBLEM	CAUSE	SOLUTION
Blocked rotor	Jamming caused by presence of a foreign body	Reverse the direction of the rotor.
	Lack of lubrication	Lubricate correctly, following amount and service intervals stated in this manual.
	Belt wear or breakage	Replace belts with new ones.
	Broken hydraulic motor bearing or drive shaft	Check the hydraulic motor drive shaft and have it repaired by an authorized service technician if necessary.
	Oil leakage from hydraulic motor shaft	Check hydraulic motor drive shaft for leaks.
Hydraulic motor drive shaft rotates but rotor is stationary	Broken hydraulic motor drive shaft	Replace or repair hydraulic motor drive shaft.
	Broken belts	Replace the belts with new ones.
	Rotor blocked by external material that prevents rotation	Check and clean rotor and cutting elements according to the intervals stated in this manual.
Cutting elements and hardware breaking	Stones or other material (metals, foreign bodies, etc.)	Avoid working conditions that have stones, metal, foreign bodies, etc.
	Low rotor RPM, low power, and low excavator	Consult authorized technician service.
Premature belt wear	Rotation rate too slow	Adjust rotation speed according to instructions stated in this manual.
	Starting mulcher with rotor touching ground	Lift the attachment slightly off the ground before starting the mulcher. Replace belts if necessary.
	Rotor does not start and belts slip	Check that the rotor is not jammed.
	Slack belts	Have an authorized service technician tighten the belts.
Hydraulic motor half shaft leaking oil	Rotary shaft in bad condition	Replace rotary shaft oil. Contact authorized technician.
High-pitched noise during operation with the equipment working harder when overloaded	Slack belts	Have an authorized service technician tighten the belts.
Excavator in motion and rotor does not turn or turns without power	Hydraulic circuit components leaking	Replace the components that are in bad condition.
	Excavator pump in bad condition	Contact authorized technician service.
	Mulcher hydraulic motor malfunctioning	

**This page intentionally
left blank**

6. Parts

6.1 Wear Parts

Tooth Kits

MULCHER MODEL	REVISION	TOOTH KIT	DESCRIPTION
190510	000	290500-KIT-30	30" Chipping Tooth Kit
190515	000	290500-KIT-40	40" Chipping Tooth Kit
190520	000	290500-KIT-50	50" Chipping Tooth Kit
190510	000	290502-KIT-30	30" Carbide Tooth Kit
190515	000	290502-KIT-40	40" Carbide Tooth Kit
190520	000	290502-KIT-50	50" Carbide Tooth Kit
Revision 001 & 002 Tooth Kits Unavailable at Time of Publication			

Attachment to Host Machine Hose Kits

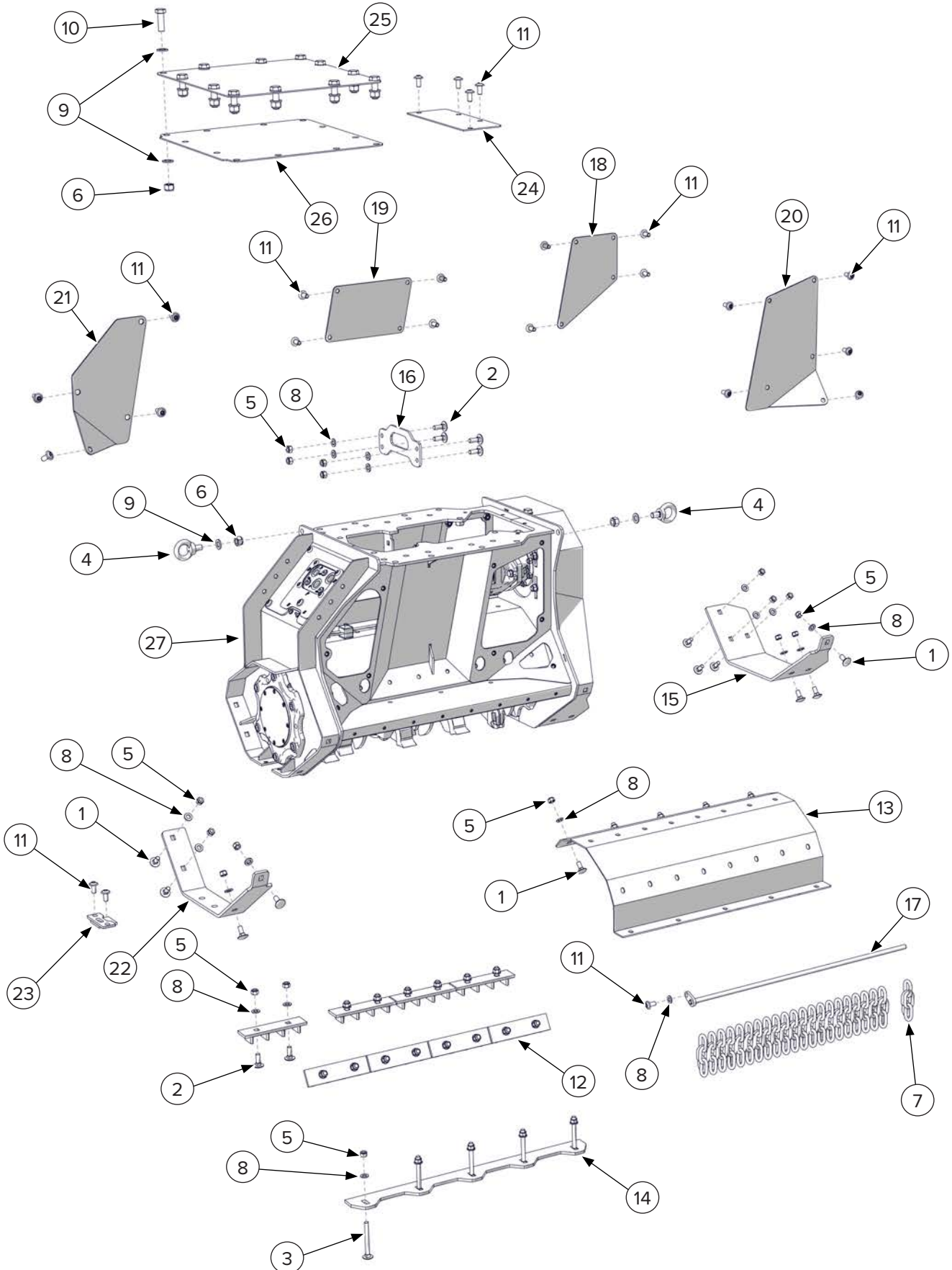
MULCHER MODEL	HOSE KIT	DESCRIPTION
Hose length is dependent upon the requirements of the host machine.	290612-KIT	72" OAL Machine Hose Set with Case Drain Hose & Couplers
	290613-KIT	96" OAL Machine Hose Set with Case Drain Hose & Couplers
	290614-KIT	120" OAL Machine Hose Set with Case Drain Hose & Couplers
	290663-KIT	Hose Protection Cover Kit with Hardware

Skid Shoes

MULCHER MODEL	HOSE KIT	DESCRIPTION
All Models, All Revisions	290533	Front Skid Shoe (Hardware Not Included)
	290548	Rear Skid Shoe (Hardware Not Included)

6. Parts

6.2 30" Main Frame Components



6. Parts

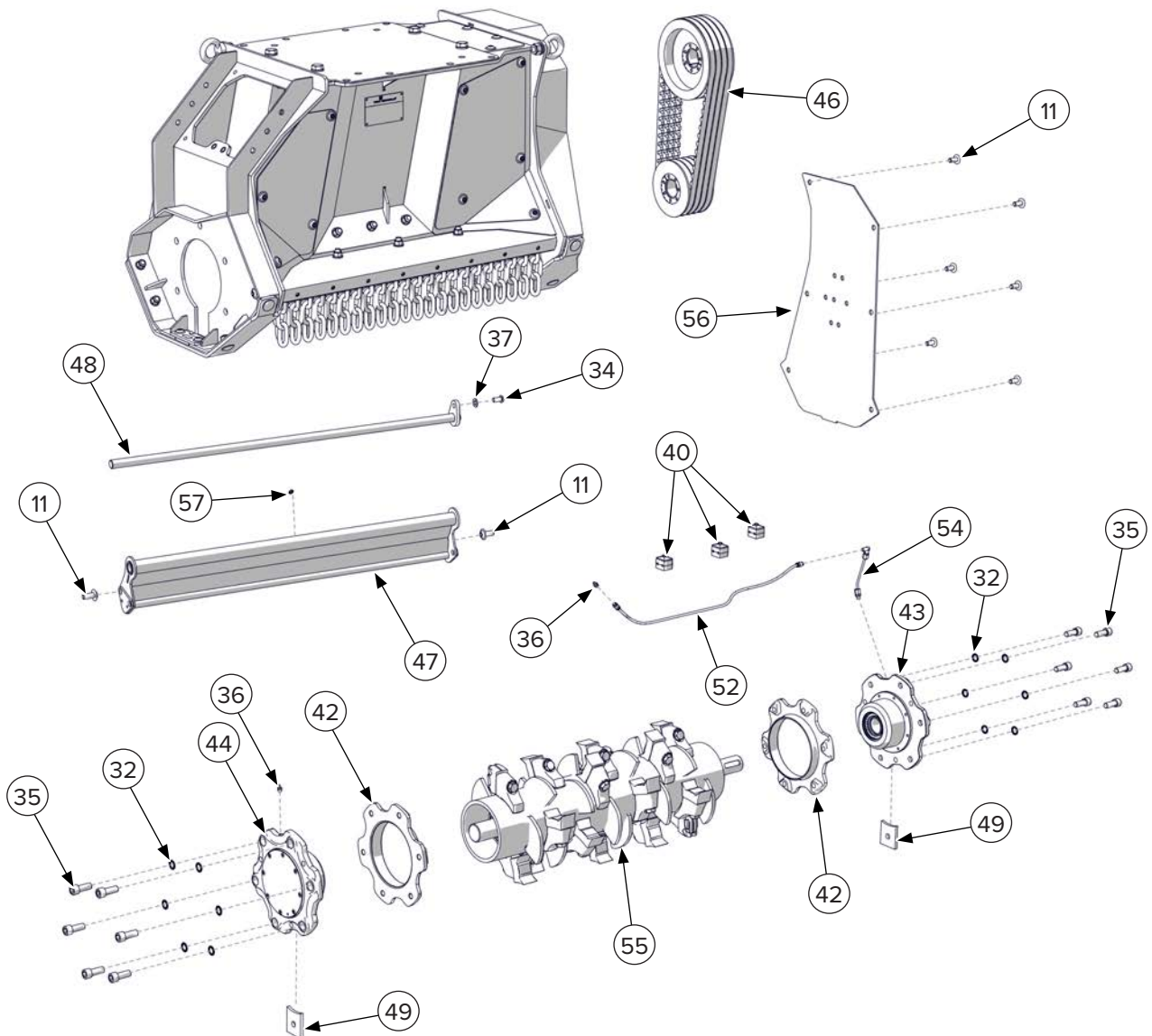
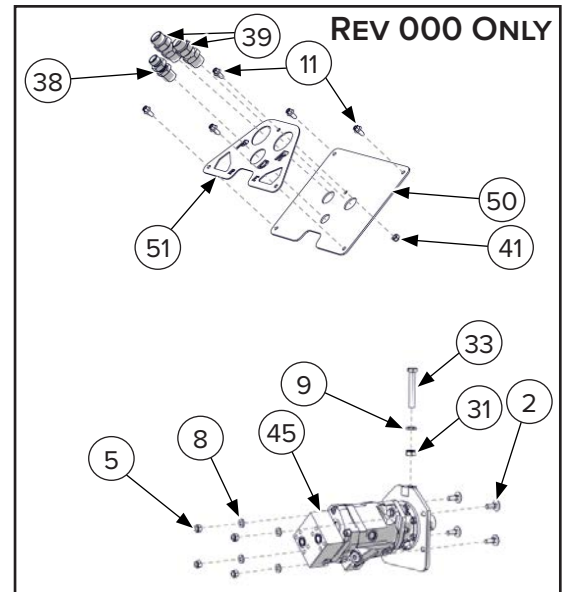
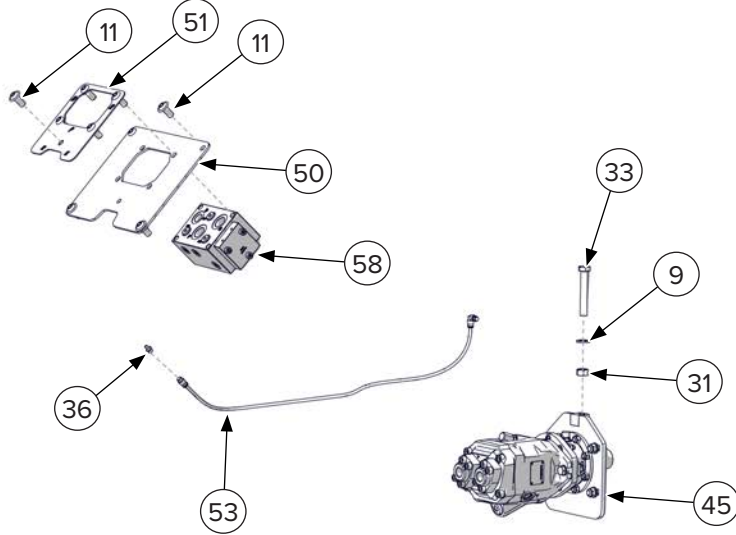
6.2 30" Main Frame Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
1	299068	M12 x 30 mm Carriage Bolt Class 8.8	15	15
2	299069	M12 x 35 mm Carriage Bolt Class 8.8	20	20
3	290532	Counterblade Plate Carriage Bolt	5	5
4	290576	M16 Elevation Eyebolt	2	2
5	299066	M12 x 1.75 mm Nut Grade 8	40	40
6	299049	M16 x 2 mm Nut Grade 8	14	14
7	290598	7-Link Chain for Revision 000	22	—
	—	5-Link Chain for Revision 002	—	22
8	299062	2.5 mm x M12 x 24 mm Washer Class 8.8	41	41
9	299012	M16 Flat Washer	26	26
10	299045	M16 x 2 mm x 50 mm Hex Head Bolt Class 10.9	12	12
11	290643	Allen Head Rounded Cap Bolt	24	24
12	290518	200 mm Small Counterblade	8	8
13	290529	Counterblade Plate for Revision 000	1	—
	—	Counterblade Plate for Revision 002	—	1
14	290531	Adjustable Intake Plate for Revision 000	1	—
	—	Adjustable Intake Plate for Revision 002	—	1
15	290533	Front Skid Shoe	1	1
16	290534	Top Reinforcement Plate	1	1
17	290539	Chain Guard Retainer Bar for Revision 000	1	—
	—	Chain Guard Retainer Bar for Revision 002	—	1
18	290542	Left Front Access Cover	1	1
19	290544	Left Center Access Cover	1	1
20	290646	Right Front Access Cover	1	1
21	290647	Right Rear Access Cover for Revision 000	1	—
	—	Right Rear Access Cover for Revision 002	—	1
22	290548	Rear Skid Shoe	1	1
23	290571	Rotor Removal Plate	1	1
24	290651	Top Front Access Plate for Revision 000	1	—
	—	Top Front Access Plate for Revision 002	—	1
25	290648	Top Excavator Mount Plate	1	—
26	290653	Bottom Excavator Mount Plate for Revision 000	1	—
	—	Bottom Excavator Mount Plate for Revision 002	—	1
27	290600	Main Frame for Revision 000	1	—
	—	Main Frame for Revision 002	—	1

NOTE: Revision 001 does not exist for 30" Models.

6. Parts

6.3 30" Hydraulic & Gate Components



6. Parts

6.3 30” Hydraulic & Gate Components Cont’d

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
2	299069	M12 x 35 mm Carriage Bolt Class 8.8	4	—
5	299066	M12 x 1.75 mm Nut Class 10	4	—
8	299062	M12 x 2.5 mm x 24 mm Washer Class 8.8	4	—
9	299012	M16 Flat Washer	1	1
11	290643	Allen Head Rounded Cap Bolt	13	17
31	299048	M16 x 2 mm Hex Nut Class 10	1	1
32	299090	M16 Grooved Washer	12	12
33	299046	M16 x 2 mm x 100 mm Hex Head Bolt Fully Threaded Class 8.8	1	1
34	290545	Adjustable Cover Pivot Rod Bolt	1	1
35	299043	M16 x 2 mm x 40 mm Socket Head Bolt	12	12
36	290546	M10 Straight Grease Zerk for Revision 000	3	—
	—	M10 Grease Zerk for Revision 002	—	3
37	299013	M10 x 2 mm x 20 mm Washer Class 8.8	1	1
38	295010-M10JIC-M10JICBH	Hydraulic Straight Fitting Male #10 JIC to Male #10 JIC Bulkhead	1	—
39	295010-M12JIC-M12JICBH	Hydraulic Straight Fitting Male #12 JIC to Male #12 JIC Bulkhead	2	—
40	290599	Double Ø12 Hose Clamp	3	—
	—	Double Ø6 Hose Clamp	—	3
41	290639	Center Nut	1	—
42	290514	Outer Rotor Washer	2	2
43	290516	Drive Side Rotor Housing Assembly	1	1
44	290517	Non–Drive Side Rotor Housing Assembly	1	1
45	290526	45cc Motor & Direct Drive Assembly for Revision 000	1	—
	—	45cc Motor & Direct Drive Assembly for Revision 002	—	1
46	290528	Belt Drive Assembly	1	1
47	290537	Adjustable Discharge Cover for Revision 000	1	—
	—	Adjustable Discharge Cover for Revision 002	—	1
48	290538	Adjustable Discharge Cover Pivot Rod for Revision 000	1	—
	—	Adjustable Discharge Cover Pivot Rod for Revision 002	—	1

NOTE: Revision 001 does not exist for 30” Models.

6. Parts

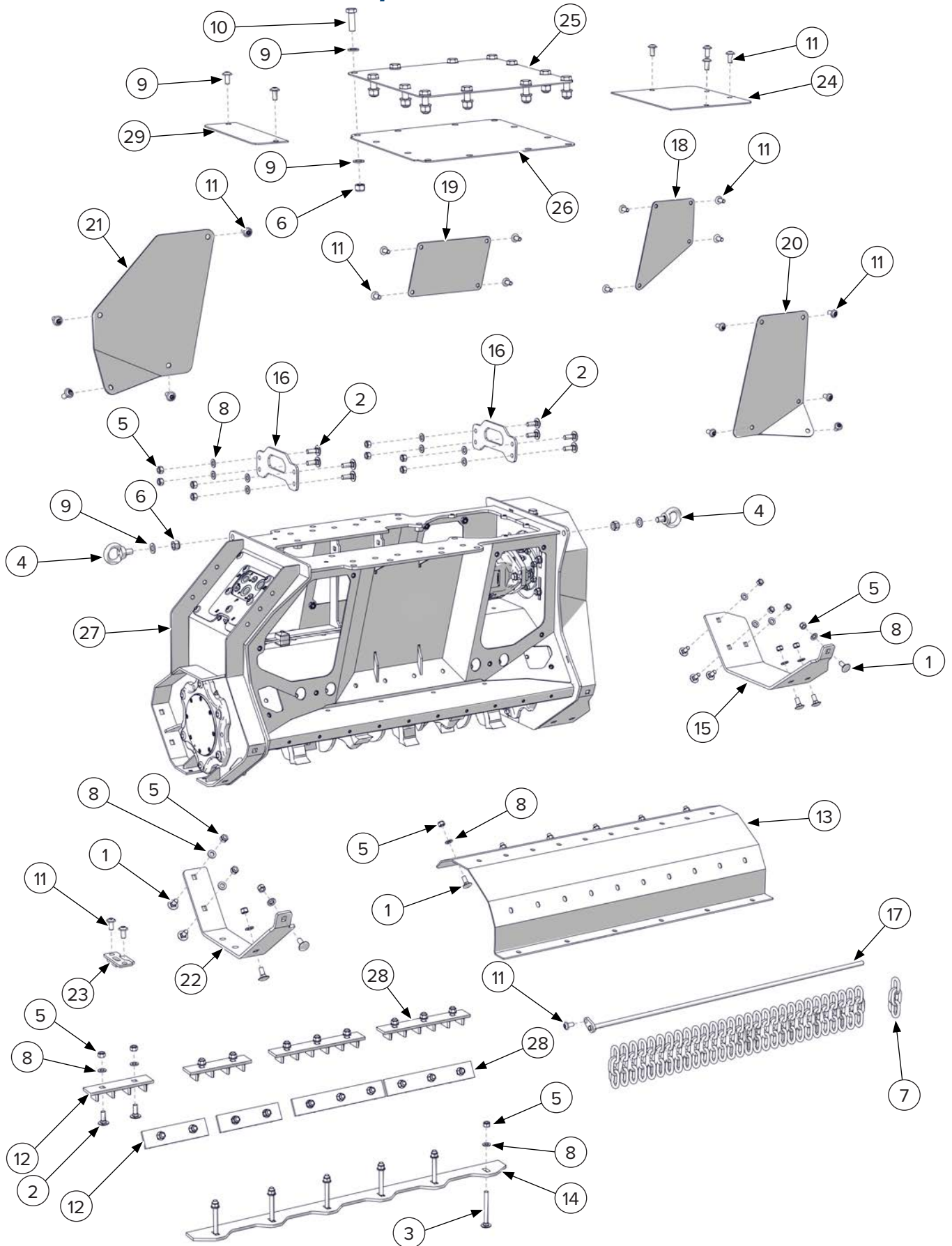
6.3 30” Hydraulic & Gate Components Cont’d

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
49	290540	Shaft Output Cover	2	2
50	290549	Hydraulic Connections Outlet Cover for Revision 000	1	—
	—	Hydraulic Manifold Bracket for Revision 002	—	1
51	290550	Hydraulic Connection Identification Plate for Revision 000	1	—
	—	Hydraulic Connection Panel for Revision 002	—	1
52	290607	Drive Side Rotor Bearing Grease Line – Long Hose for Revision 000	1	—
	—	Drive Side Rotor Bearing Grease Line – Long Hose for Revision 002	—	1
53	290602	Direct Drive Grease Line for Revision 000	1	—
	—	Direct Drive Grease Line for Revision 002	—	1
54	290606	Drive Side Rotor Bearing Grease Line – Short Hose for Revision 000	1	—
	—	Drive Side Rotor Bearing Grease Line – Short Hose for Revision 002	—	1
55	290553	Rotor Assembly with Chipping Teeth for Revision 000	1	—
	—	Rotor Assembly with Chipping Teeth for Revision 002	—	1
56	290611	Pulley Cover Plate	1	1
57	—	M6 Grease Zerk for Revision 002	—	1
58	—	Hydraulic Manifold Block for Revision 002	—	1

NOTE: Revision 001 does not exist for 30” Models.

6. Parts

6.4 40" Main Frame Components



6. Parts

6.4 40" Main Frame Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
1	299068	M12 x 30 mm Carriage Bolt Class 8.8	16	16
2	299069	M12 x 35 mm Carriage Bolt Class 8.8	28	28
3	290532	Counterblade Plate Carriage Bolt	6	6
4	290576	M16 Elevation Eyebolt	2	2
5	299066	M12 x 1.75 mm Nut Grade 8	50	50
6	299049	M16 x 2 mm Nut Grade 8	14	14
7	290598	7-Link Chain for Revision 000	30	—
	—	5-Link Chain for Revision 002	—	30
8	299062	2.5 mm x M12 x 24 mm Washer Class 8.8	41	41
9	299012	M16 Flat Washer	26	26
10	299045	M16 x 2 mm x 50 mm Hex Head Bolt Class 10.9	12	12
11	290643	Allen Head Rounded Cap Bolt	26	26
12	290518	200 mm Small Counterblade	4	4
13	290558	Counterblade Plate for Revision 000	1	—
	—	Counterblade Plate for Revision 002	—	1
14	290559	Adjustable Intake Plate for Revision 000	1	—
	—	Adjustable Intake Plate for Revision 002	—	1
15	290533	Front Skid Shoe	1	1
16	290534	Top Reinforcement Plate	2	2
17	290521	Chain Guard Retainer Bar for Revision 000	1	—
	—	Chain Guard Retainer Bar for Revision 002	—	1
18	290542	Left Front Access Cover	1	1
19	290544	Left Center Access Cover	1	1
20	290561	Right Front Access Cover for Revision 000	1	—
	—	Right Front Access Cover for Revision 002	—	1
21	290560	Right Rear Access Cover for Revision 000	1	—
	—	Right Rear Access Cover for Revision 002	—	1
22	290548	Rear Skid Shoe	1	1

NOTE: Revision 001 does not exist for 40" Models.

6. Parts

6.4 40" Main Frame Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
23	290571	Rotor Removal Plate	1	1
24	290656	Top Front Access Cover for Revision 000	1	—
	—	Top Front Access Cover for Revision 002	—	1
25	290648	Excavator Mount Plate for Revision 000	1	—
	—	Excavator Mount Plate for Revision 002	—	1
26	290653	Bottom Excavator Mount Plate for Revision 000	1	—
	—	Bottom Excavator Mount Plate for Revision 002	—	1
27	290601	Main Frame for Revision 000	1	—
	—	Main Frame for Revision 002	—	1
28	290519	300 mm Large Counterblade	4	4
29	290657	Top Rear Access Cover for Revision 000	1	—
	—	Top Rear Access Cover for Revision 002	—	1

6. Parts

6.5 40" Hydraulic & Gate Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
2	299069	M12 x 35 mm Carriage Bolt Class 8.8	4	—
5	299066	M12 x 1.75 mm Nut Class 10	4	—
8	299062	M12 x 2.5 mm x 24 mm Washer Class 8.8	4	—
9	299012	M16 Flat Washer	1	1
11	290643	Allen Head Rounded Cap Bolt	13	17
31	299048	M16 x 2 mm Hex Nut Class 10	1	1
32	299090	M16 Grooved Washer	12	12
33	299046	M16 x 2 mm x 100 mm Hex Head Bolt Fully Threaded Class 8.8	1	1
34	290545	Adjustable Cover Pivot Rod Bolt	1	1
35	299043	M16 x 2 mm x 40 mm Socket Head Bolt	12	12
36	290546	M10 Straight Grease Zerk for Revision 000	3	—
	—	M10 Grease Zerk for Revision 002	—	3
37	299013	M10 x 2 mm x 20 mm Washer Class 8.8	1	1
38	295010-M10JIC-M10JICBH	Hydraulic Straight Fitting Male #10 JIC to Male #10 JIC Bulkhead	1	—
39	295010-M12JIC-M12JICBH	Hydraulic Straight Fitting Male #12 JIC to Male #12 JIC Bulkhead	2	—
40	290599	Double Ø12 Hose Clamp	3	—
	—	Double Ø6 Hose Clamp	—	3
41	299055	M8 x 1.25 mm Nut Class 10	1	—
42	290514	Outer Rotor Washer	2	2
43	290516	Drive Side Rotor Housing Assembly	1	1
44	290517	Non-Drive Side Rotor Housing Assembly	1	1
45	290526	45cc Motor & Direct Drive Assembly for Revision 000	1	—
45	—	45cc Motor & Direct Drive Assembly for Revision 002	—	1
46	290644	Belt Drive Assembly	1	1
47	290557	Adjustable Discharge Cover for Revision 000	1	—
	—	Adjustable Discharge Cover for Revision 002	—	1
48	290569	Adjustable Discharge Cover Pivot Rod for Revision 000	1	—
	—	Adjustable Discharge Cover Pivot Rod for Revision 002	—	1

NOTE: Revision 001 does not exist for 40" Models.

6. Parts

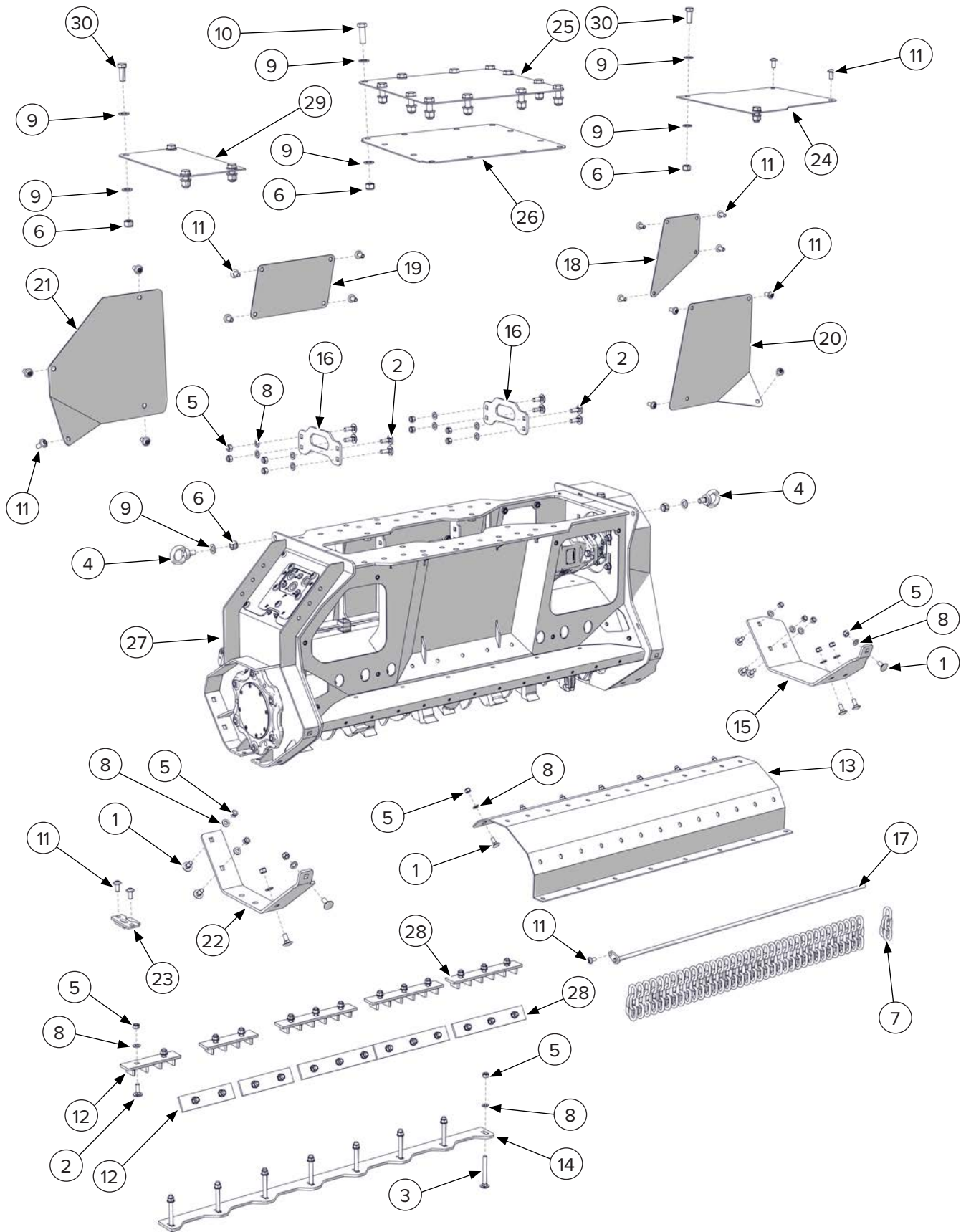
6.5 40” Hydraulic & Gate Components Cont’d

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
49	290540	Shaft Output Cover	2	2
50	290549	Hydraulic Connections Outlet Cover for Revision 000	1	—
	—	Hydraulic Manifold Bracket for Revision 002	—	1
51	290550	Hydraulic Connection Identification Plate for Revision 000	1	—
	—	Hydraulic Connection Panel for Revision 002	—	1
52	290608	Drive Side Rotor Bearing Grease Line – Long Hose for Revision 000	1	—
	—	Drive Side Rotor Bearing Grease Line – Long Hose for Revision 002	—	1
53	290603	Direct Drive Grease Line for Revision 000	1	—
	—	Direct Drive Grease Line for Revision 002	—	1
54	290606	Drive Side Rotor Bearing Grease Line – Short Hose for Revision 000	1	—
	—	Drive Side Rotor Bearing Grease Line – Short Hose for Revision 002	—	1
55	290554	Rotor Assembly with Chipping Teeth for Revision 000	1	—
	—	Rotor Assembly with Chipping Teeth for Revision 002	—	1
56	290611	Pulley Cover Plate	1	1
57	—	M6 Grease Zerk for Revision 002	—	1
58	—	Hydraulic Manifold Block for Revision 002	—	1

NOTE: Revision 001 does not exist for 40” Models.

6. Parts

6.6 50" Main Frame Components



6. Parts

6.6 50" Main Frame Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 001 QTY	REV 002 QTY
1	299068	M12 x 30 mm Carriage Bolt Class 8.8	17	17	17
2	299069	M12 x 35 mm Carriage Bolt Class 8.8	34	34	34
3	290532	Counterblade Plate Carriage Bolt	8	8	8
4	290576	M16 Elevation Eyebolt	2	2	2
5	299066	M12 x 1.75 mm Nut Grade 8	59	59	59
6	299049	M16 x 2 mm Nut Grade 8	20	20	20
7	290598	7-Link Chain for Revision 000 & 001	37	37	—
	—	5-Link Chain for Revision 002	—	—	37
8	299062	2.5 mm x M12 x 24 mm Washer Class 8.8	60	59	59
9	299012	M16 Flat Washer	36	36	42
10	299045	M16 x 2 mm x 50 mm Hex Head Bolt Class 10.9	12	12	4
11	290643	Allen Head Rounded Cap Bolt	21	21	21
12	290518	200 mm Small Counterblade	4	4	4
13	290563	Counterblade Plate for Revision 000 & 001	1	1	—
	—	Counterblade Plate for Revision 002	—	—	1
14	290565	Adjustable Intake Plate for Revision 000 & 001	1	1	—
	—	Adjustable Intake Plate for Revision 002	—	—	1
15	290533	Front Skid Shoe	1	1	1
16	290536	Top Reinforcement Plate	2	2	2
17	290515	Chain Guard Retainer Bar for Revision 000 & 001	1	1	—
	—	Chain Guard Retainer Bar for Revision 002	—	—	1
18	290542	Left Front Access Cover	1	1	1
19	290544	Left Center Access Cover	1	1	1
20	290567	Right Front Access Cover	1	1	1
21	290566	Right Rear Access Cover	1	1	1
22	290548	Rear Skid Shoe	1	1	1
23	290571	Rotor Removal Plate	1	1	1

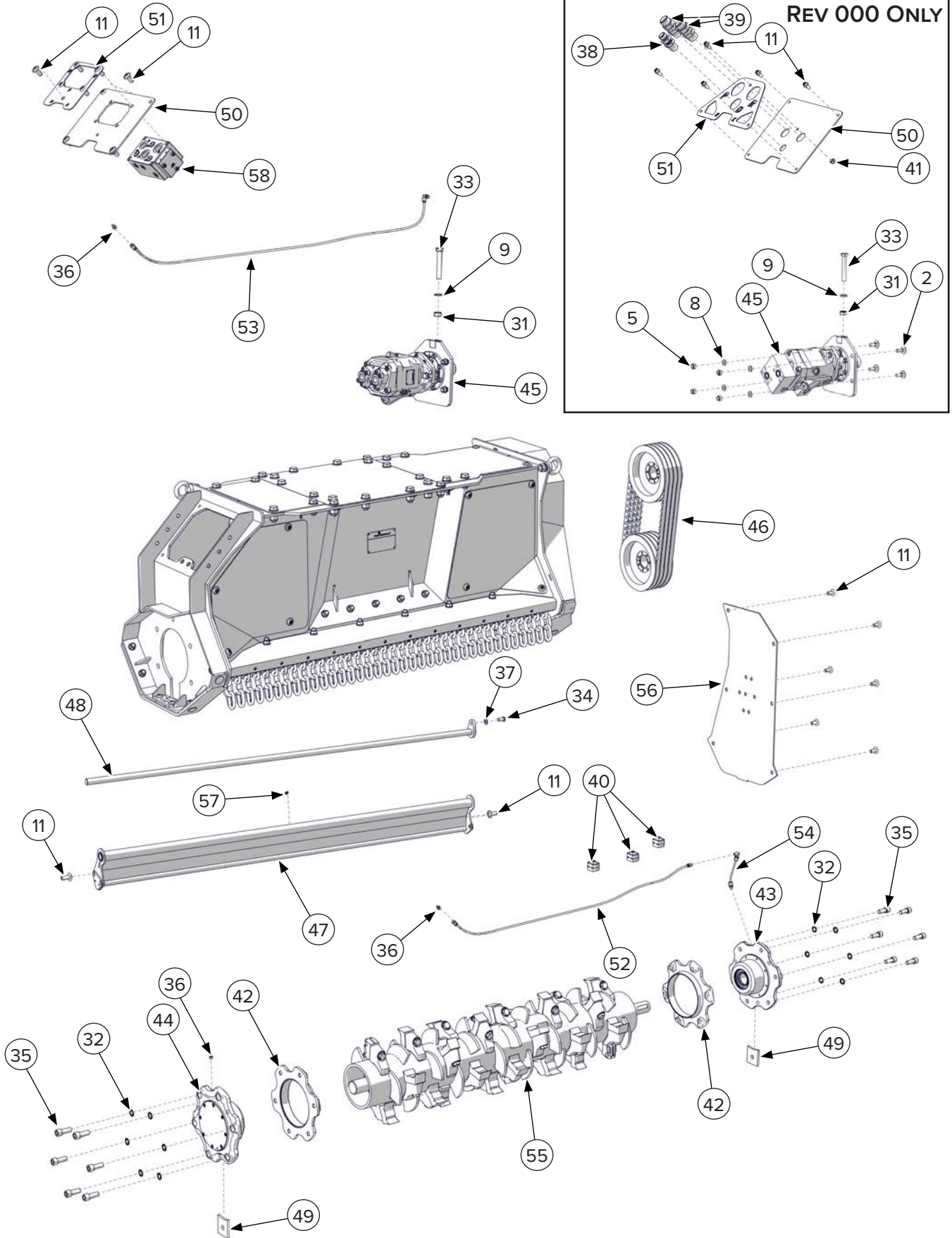
6. Parts

6.6 50” Main Frame Components Cont’d

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 001 QTY	REV 002 QTY
24	290659	Top Front Access Cover for Revision 000 & 001	1	1	—
	—	Top Front Access Cover for Revision 002	—	—	1
25	290648	Excavator Mount Plate for Revision 000 & 001	1	1	—
	—	Excavator Mount Plate for Revision 002	—	—	1
26	290653	Bottom Excavator Mount Plate for Revision 000 & 001	1	1	—
	—	Bottom Excavator Mount Plate for Revision 002	—	—	1
27	290662	Main Frame for Revision 000 & 001	1	1	—
	—	Main Frame for Revision 002			
28	290519	300 mm Large Counterblade	6	6	6
29	290661	Top Rear Access Cover for Revision 000 & 001	1	1	—
	—	Top Rear Access Cover for Revision 002	—	—	1
30	299047	M16 x 2 mm x 40mm Hex Head Bolt Fully Threaded Class 10.9	6	6	18

6. Parts

6.7 50" Hydraulic & Gate Components



6. Parts

6.7 50" Hydraulic & Gate Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 001 QTY	REV 002 QTY
2	299069	M12 x 35 mm Carriage Bolt Class 8.8	4	—	—
5	299066	M12 x 1.75 mm Nut Class 10	4	—	—
8	299062	M12 x 2.5 mm x 24 mm Washer Class 8.8	4	—	—
9	299012	M16 Flat Washer	1	1	1
11	290643	Allen Head Rounded Cap Bolt	13	19	17
31	299048	M16 x 2 mm Hex Nut Class 10	1	1	1
32	299090	M16 Grooved Washer	12	12	12
33	299046	M16 x 2 mm x 100 mm Hex Head Bolt Fully Threaded Class 8.8	1	1	1
34	290545	Adjustable Cover Pivot Rod Bolt	1	1	1
35	299043	M16 x 2 mm x 40 mm Socket Head Bolt	12	12	12
36	290546	M10 Straight Grease Zerk for Revision 000 & 001	3	3	—
	—	M10 Grease Zerk for Revision 002	—	—	3
37	299013	M10 x 2 mm x 20 mm Washer Class 8.8	1	1	1
38	—	Case Drain Bulkhead Fitting	1	—	—
39	—	Supply & Return Bulkhead Fitting	2	—	—
40	290599	Double Ø12 Hose Clamp	3	3	—
	—	Double Ø6 Hose Clamp	—	—	3
41	299055	M8 x 1.25 mm Nut Class 10	1	—	—
42	290514	Outer Rotor Washer	2	2	2
43	290516	Drive Side Rotor Housing Assembly	1	1	1
44	290517	Non-Drive Side Rotor Housing Assembly	1	1	1
45	290526	45cc Motor & Direct Drive Assembly for Revision 000	1	—	—
	—	45cc Motor & Direct Drive Assembly for Revision 001 & 002	—	1	1
46	290644	Belt Drive Assembly	1	1	1
47	290564	Adjustable Discharge Cover for Revision 000 & 001	1	1	—
	—	Adjustable Discharge Cover for Revision 002	—	—	1
48	290568	Adjustable Discharge Cover Pivot Rod for Revision 000 & 001	1	1	—
	—	Adjustable Discharge Cover Pivot Rod for Revision 002	—	—	1

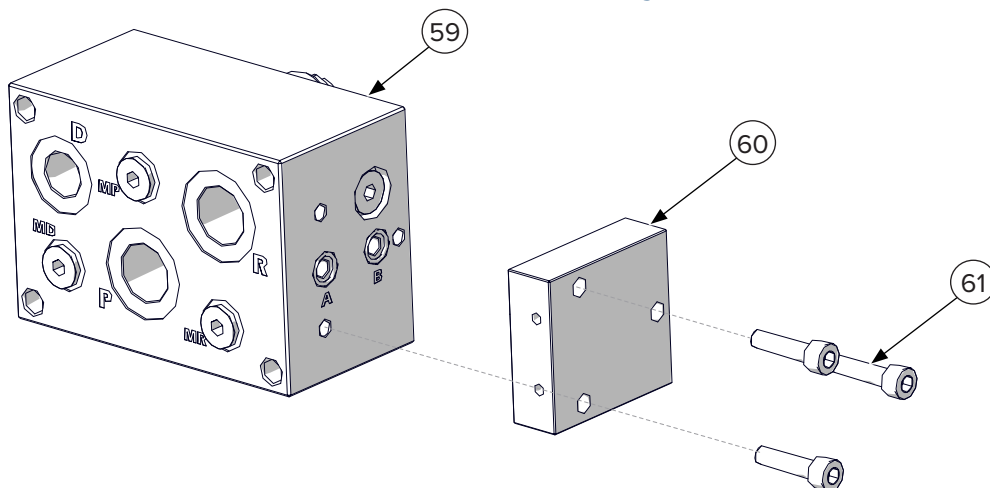
6. Parts

6.7 50” Hydraulic & Gate Components Cont’d

ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 001 QTY	REV 002 QTY
49	290540	Shaft Output Cover	2	2	2
50	290549	Hydraulic Connections Outlet Cover for Revision 000	1	—	—
	—	Hydraulic Manifold Bracket for Revision 001 & 002	—	1	1
51	290550	Hydraulic Connection Identification Plate for Revision 000	1	—	—
	—	Hydraulic Connection Panel for Revision 001 & 002	—	1	1
52	290609	Drive Side Rotor Bearing Grease Line – Long Hose for Revision 000 & 001	1	1	—
	—	Drive Side Rotor Bearing Grease Line – Long Hose for Revision 002	—	—	1
53	290604	Direct Drive Grease Line for Revision 000 & 001	1	1	—
	—	Direct Drive Grease Line for Revision 002	—	—	1
54	290606	Drive Side Rotor Bearing Grease Line – Short Hose for Revision 000 & 001	1	1	—
	—	Drive Side Rotor Bearing Grease Line – Short Hose for Revision 002	—	—	1
55	290556	Rotor Assembly with Chipping Teeth for Revision 000	1	—	—
	—	Rotor Assembly with Chipping Teeth for Revision 001	—	1	—
	—	Rotor Assembly with Chipping Teeth for Revision 002	—	—	1
56	290611	Pulley Cover Plate	1	1	1
57	—	M6 Grease Zerk for Revision 002	—	—	1
58	—	Hydraulic Manifold Block for Revision 001 & 002	—	1	1

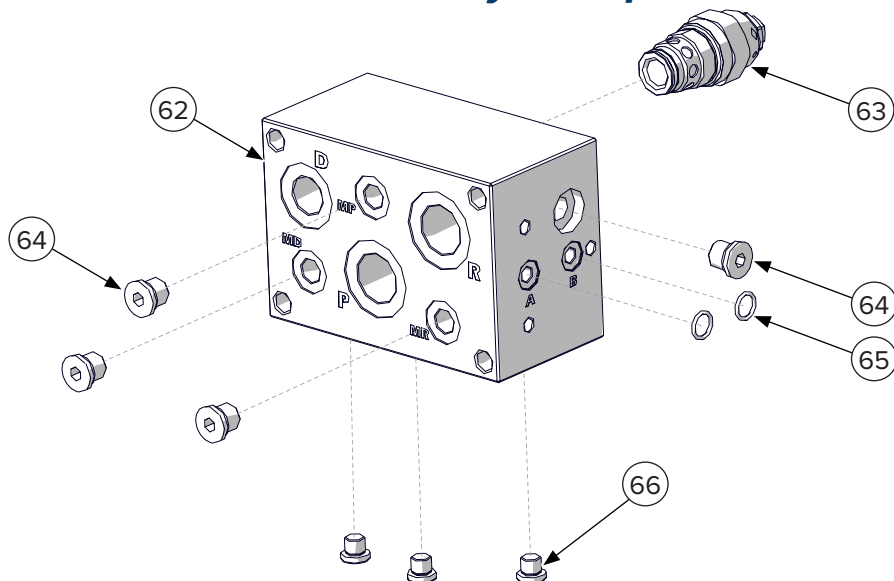
6. Parts

6.8 Hydraulic Manifold Block Assembly Components



ITEM	PART NUMBER	DESCRIPTION	QTY
REVISION 001 & 002 ONLY, ALL MODELS			
59	—	Hydraulic Manifold Block	1
60	—	Hydraulic Manifold Block Cover	1
61	—	M8 x 30 mm Allen Socket Head Bolt	3

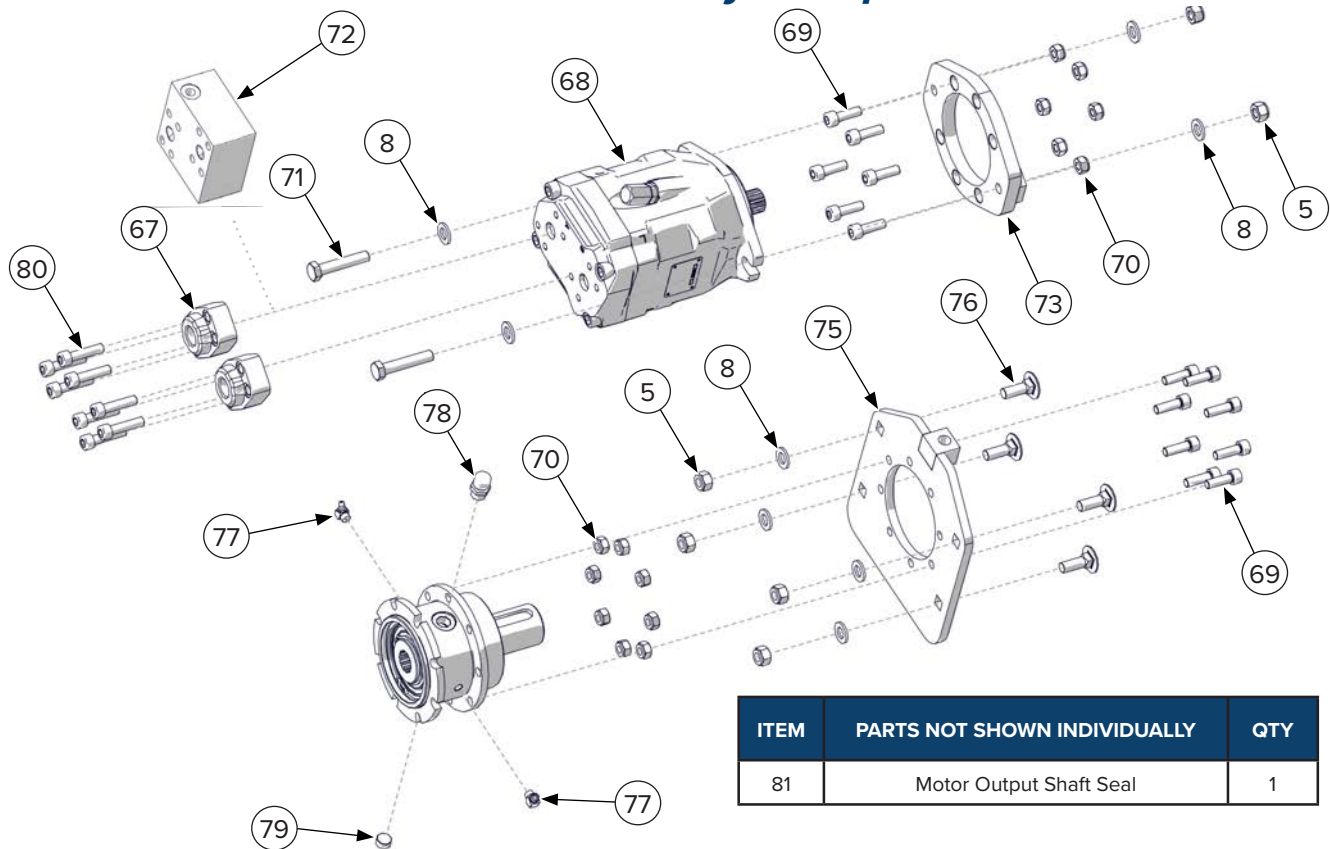
6.9 Hydraulic Manifold Block Only Components



ITEM	PART NUMBER	DESCRIPTION	QTY
REVISION 001 & 002 ONLY, ALL MODELS			
62	—	Hydraulic Manifold Block Only	1
63	—	Relief Valve Cartridge	1
64	—	Threaded Plug with 1/4" BSPP	4
65	—	10.82 mm ID x 1.78 mm O-Ring	2
66	—	Threaded Plug with 1/8" BSPP	3

6. Parts

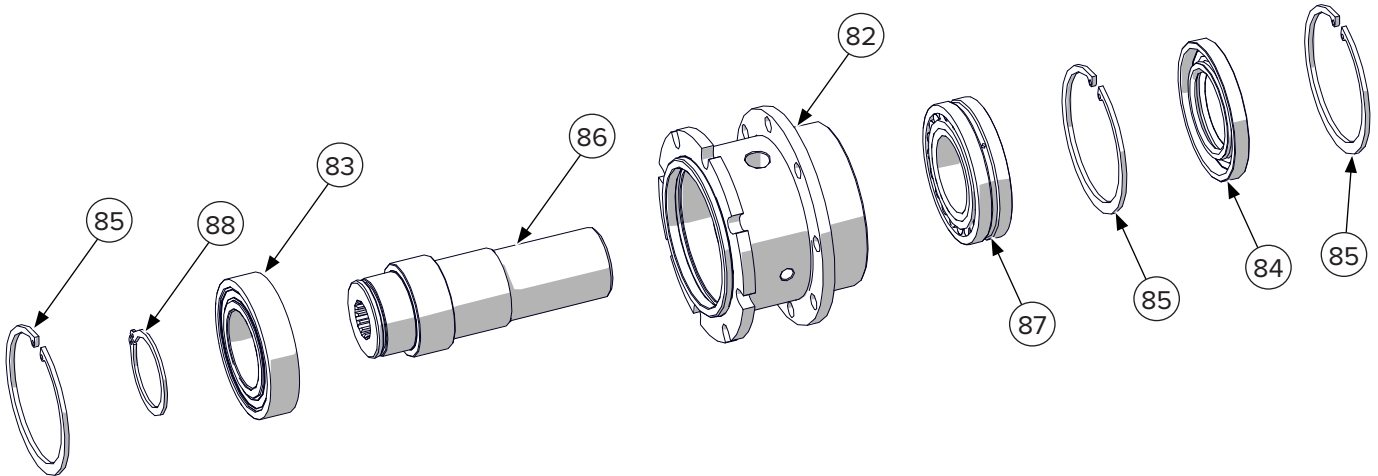
6.10 Motor & Direct Drive Assembly Components



ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 001 QTY	REV 002 QTY
ALL MODELS					
5	299066	M12 Nylock Nut Class 8	6	6	6
8	299062	M12 Washer	8	8	8
67	290541	Valve Block Hydraulic Flange Adapter Fittings	2	2	2
68	290596	Hydraulic Motor	1	1	1
69	299033	M10 x 30 mm Hex Socket Head Cap Screw Class 8.8	14	14	14
70	299035	M10 Nylock Nut Class 8	14	14	14
71	299064	Bolt for Motor to Adapter Flange	2	—	—
	—	M12 x 60 mm Hex Head Bolt Class 8.8	—	2	2
72	290638	Valve Block	1	—	—
73	290527	Motor to Drive Adapter Flange	1	1	1
74	290524	Direct Drive Assembly	1	1	1
75	290520	Mount Plate	1	1	1
76	—	M12 x 35 mm Carriage Bolt Class 10.9	4	4	4
77	—	45 Degree Grease Zerk	2	2	2
78	290586	Oil Plug	1	1	1
79	290637	3/8" Male Plug	1	1	1
80	—	M10 x 40 mm Hex Socket Head Cap Screw Class 8.8	8	8	8
81	290619	Motor Output Shaft Seal	1	1	1

6. Parts

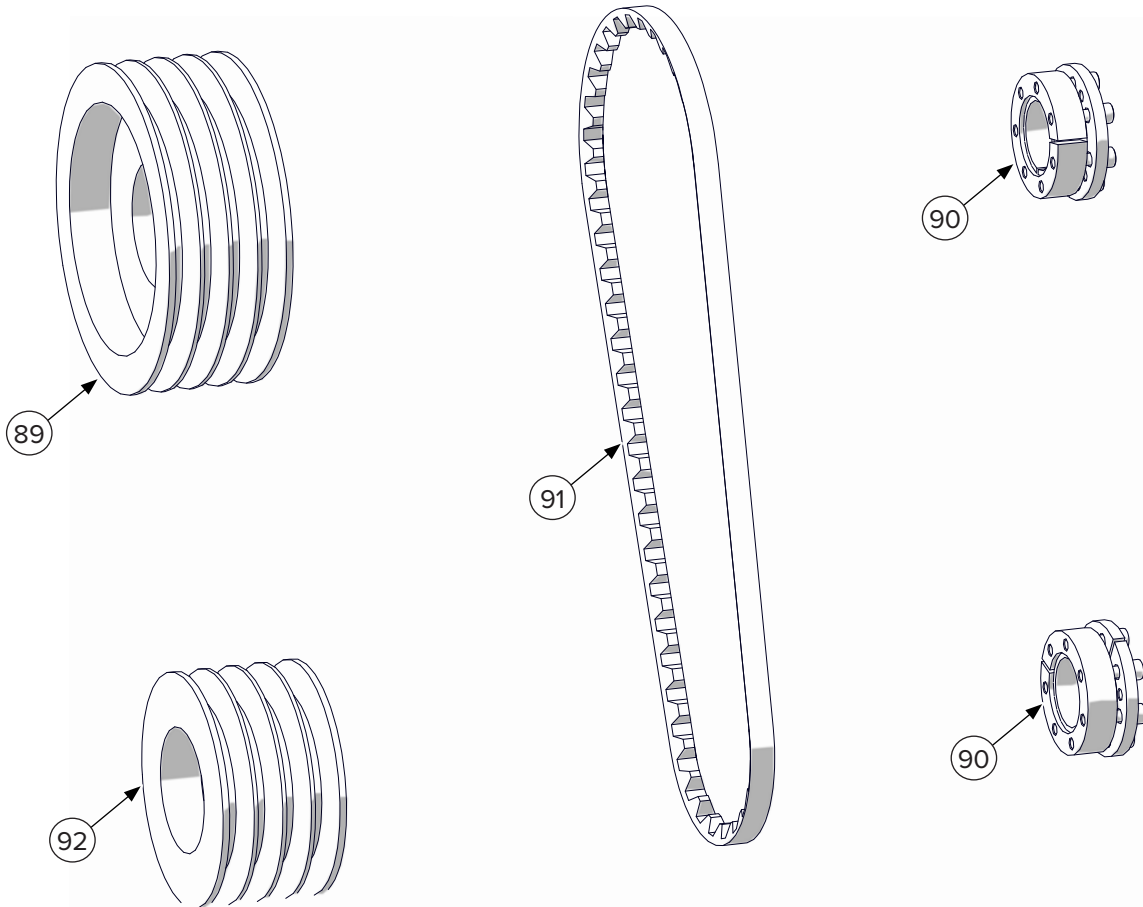
6.11 Direct Drive Assembly Components



ITEM	PART NUMBER	DESCRIPTION	QTY
ALL REVISIONS, ALL MODELS			
82	290523	Direct Drive Housing	1
83	290593	Bearing – Input Side	1
84	290594	50 mm x 90 mm x 10 mm Shaft Seal	1
85	290573	90 mm x 3 mm Thick Retaining Ring	3
86	290522	Spindle	1
87	290592	Bearing – Output Side	1
88	—	50 mm x 2 mm Thick Retaining Ring	1

6. Parts

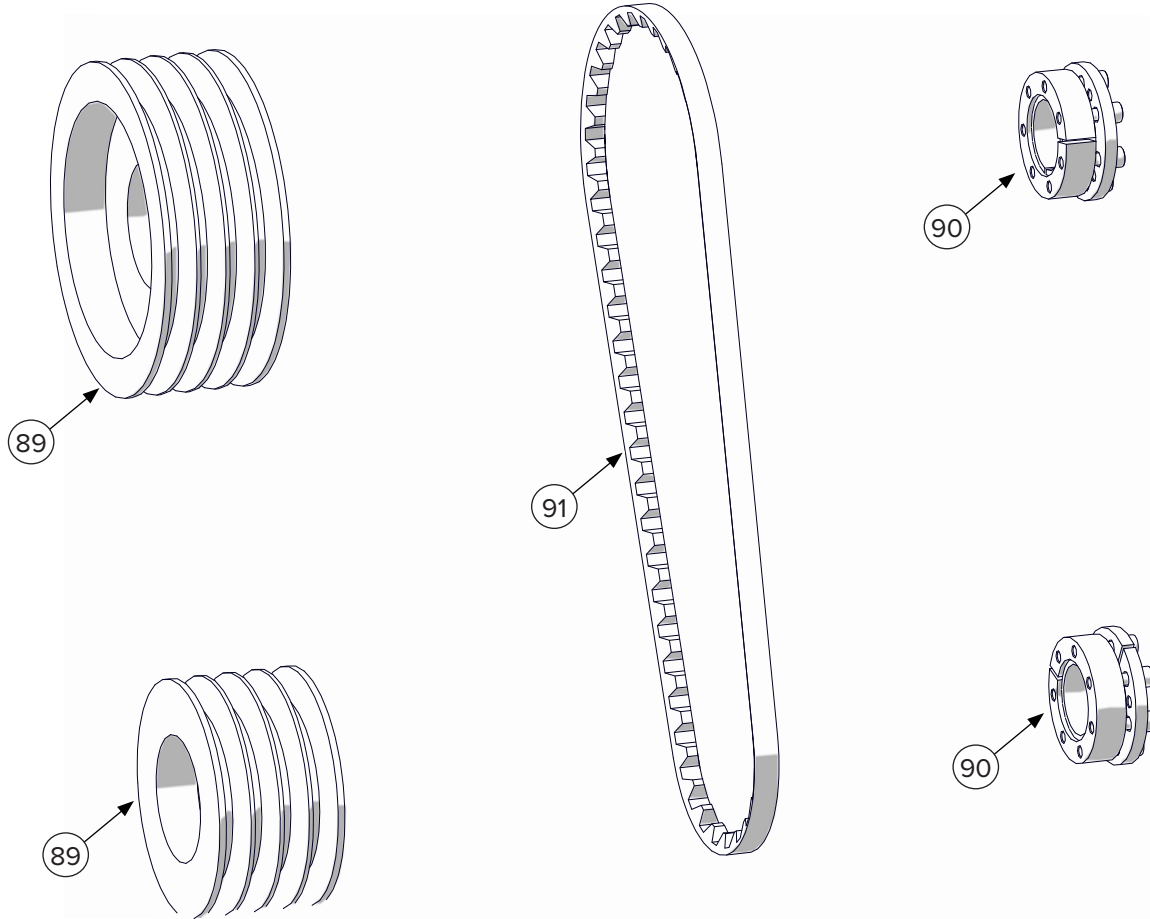
6.12 30" Belt Drive Components



ITEM	PART NUMBER	DESCRIPTION	QTY
ALL REVISIONS			
89	290582	Upper Pulley	1
90	290583	Shaft Taperlock	2
91	290597	Drive Belt	4
92	290581	Lower Pulley	1

6. Parts

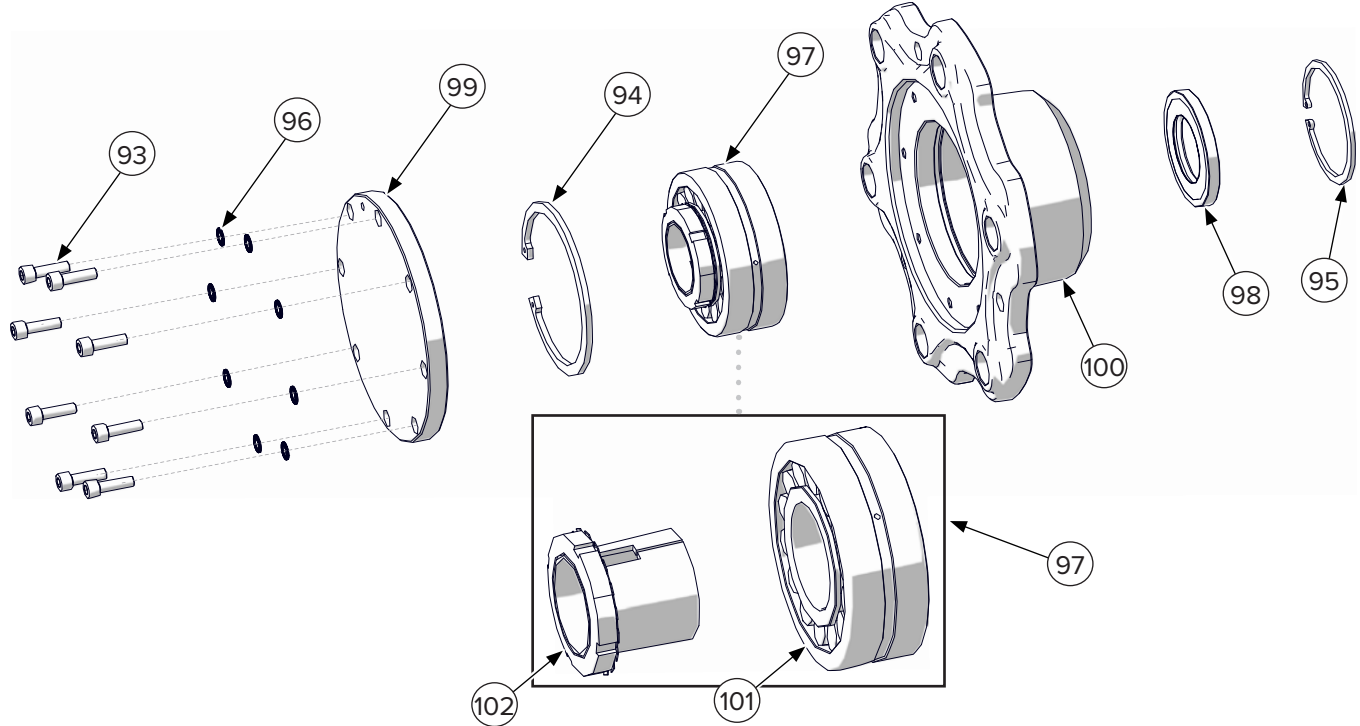
6.13 40" & 50" Belt Drive Components



ITEM	PART NUMBER	DESCRIPTION	QTY
ALL REVISIONS			
89	290582	Upper Pulley	1
90	290583	Shaft Taperlock	2
91	290597	Drive Belt	4

6. Parts

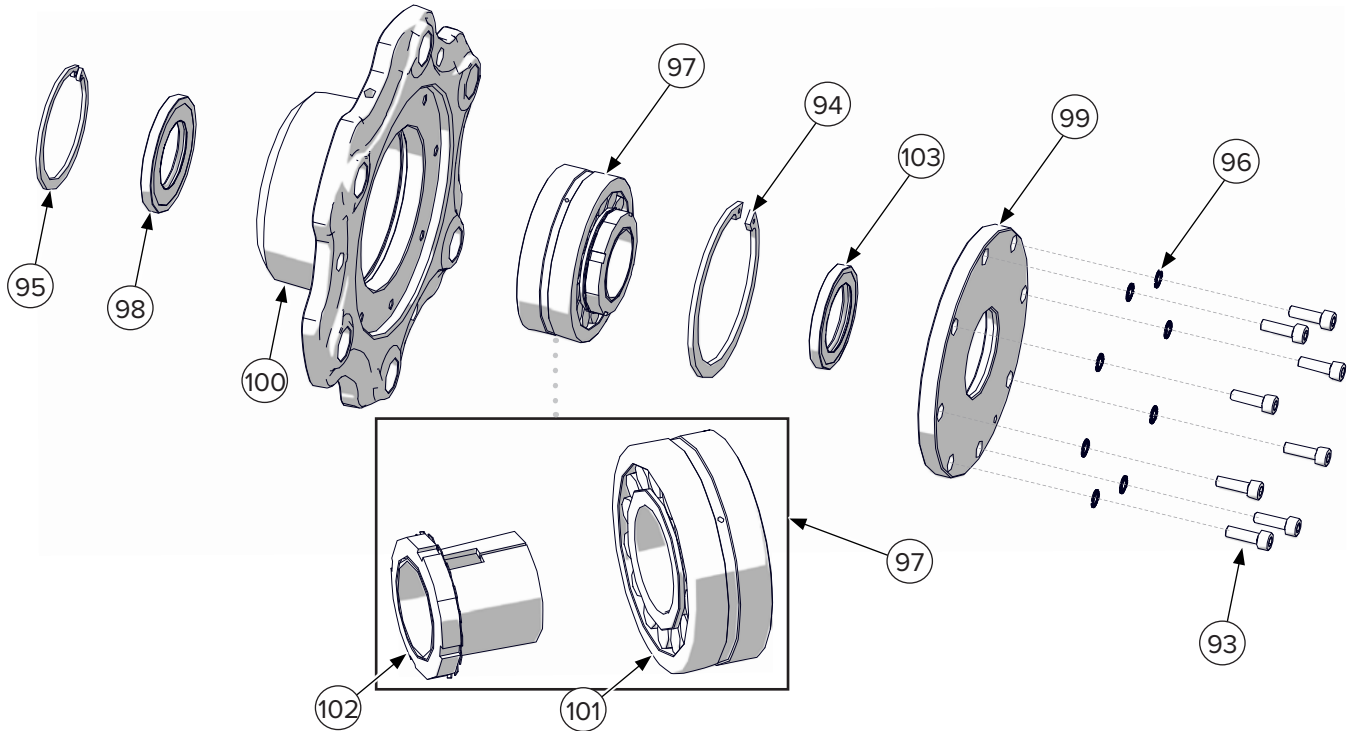
6.14 Non-Drive Side Rotor Assembly Components



ITEM	PART NUMBER	DESCRIPTION	QTY
ALL REVISIONS, ALL MODELS			
93	299054	Bolt for Cover Plate	8
94	290562	Retaining Ring for Rotor Bearing Housing — Outer	1
95	290572	Retaining Ring for Rotor Bearing Housing — Inner	1
96	290574	Grooved Washer for Cover Plate	8
97	290587	Rotor Bearing Assembly	1
98	290595	Shaft Seal	1
99	290512	Cover	1
100	290513	Rotor Bearing Support Housing	1
101	290588	Rotor Bearing	1
102	290589	Sleeve	1

6. Parts

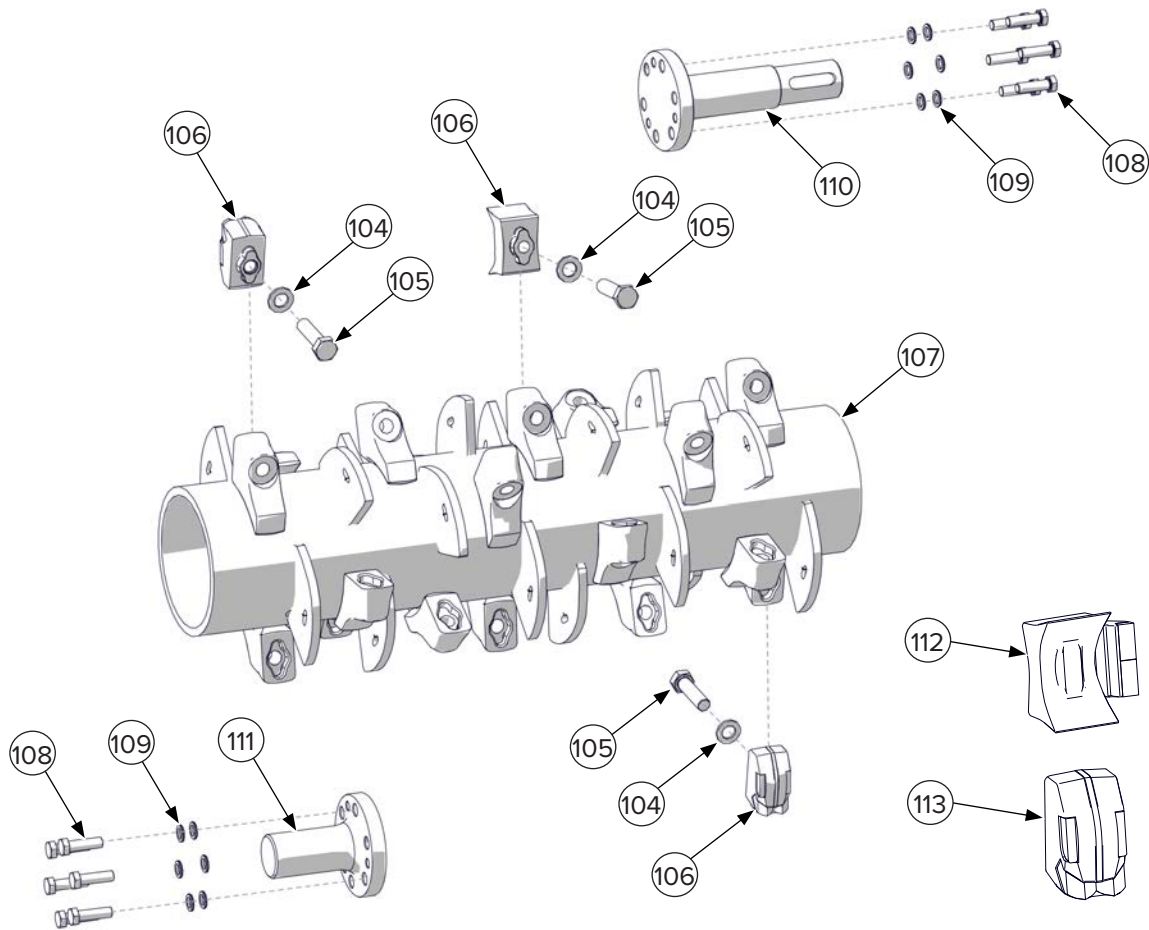
6.15 Drive Side Rotor Assembly Components



ITEM	PART NUMBER	DESCRIPTION	QTY
ALL REVISIONS, ALL MODELS			
93	299054	Bolt for Cover Plate	8
94	290562	Retaining Ring for Rotor Bearing Housing — Outer	1
95	290572	Retaining Ring for Rotor Bearing Housing — Inner	1
96	290574	Grooved Washer for Cover Plate	8
97	290587	Rotor Bearing Assembly	1
98	290595	Shaft Seal	1
99	290512	Cover	1
100	290513	Rotor Bearing Support Housing	1
101	290588	Rotor Bearing	1
102	290589	Sleeve	1
103	290584	Shaft Seal — Outer	1

6. Parts

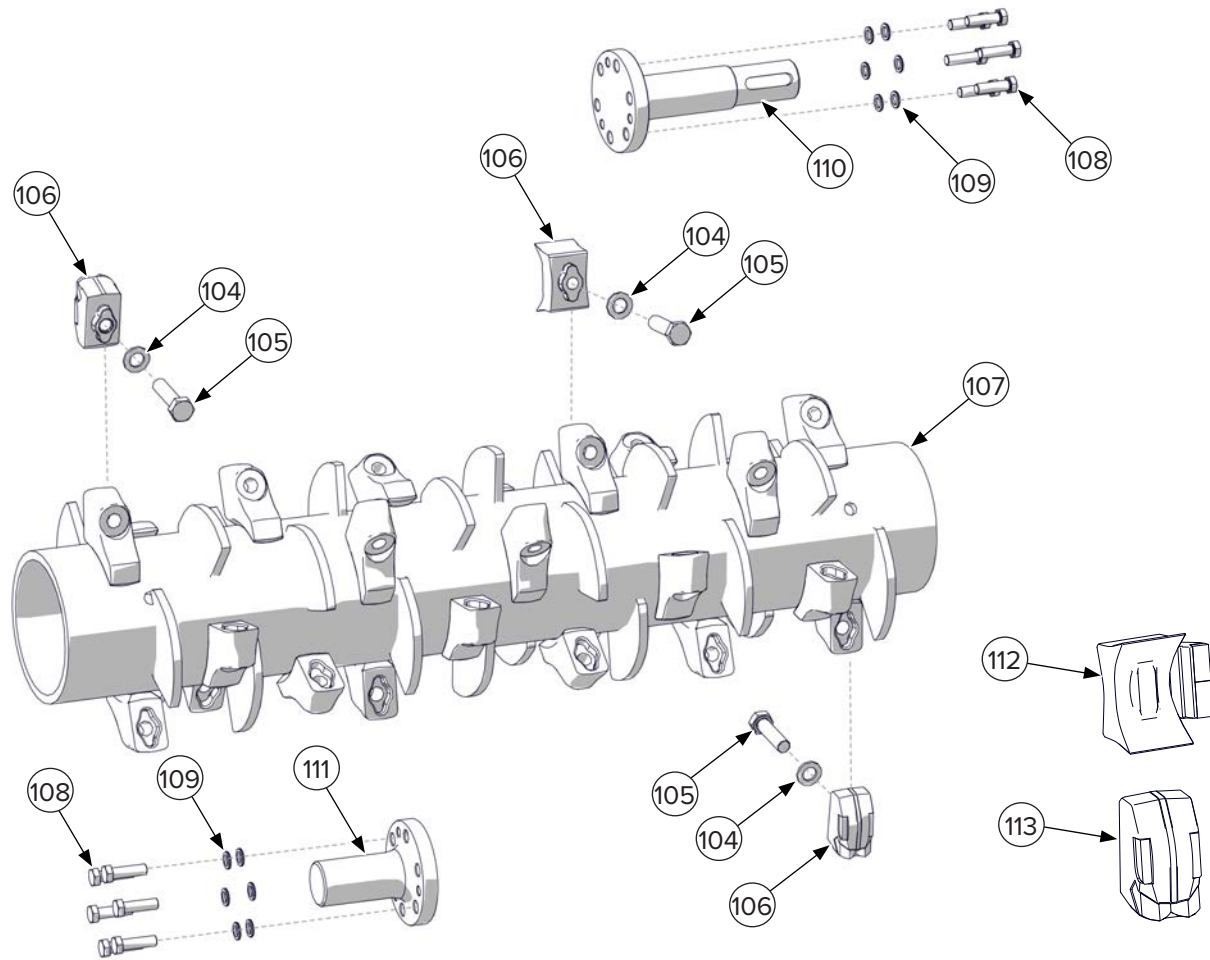
6.16 30" Rotor Assembly Components



ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
104	299090	M16 Grooved Washer for Revision 000	20	—
	—	M16 Flat Washer for Revision 002	—	20
105	299044	Tooth Bolt for Revision 000	20	—
	299091	M16 x 1.5 mm x 60 mm Hex Head Bolt Class 10.9 for Revision 002	—	20
106	290500	Chipping Tooth	18	20
	290502	Carbide Tooth	18	20
107	290552	Rotor with Depth Limiters for Revision 000	1	—
	—	Rotor with Depth Limiters for Revision 002	—	1
108	—	M12 x 40 mm Hex Head Bolt Class 12.9 for Revision 002	—	12
109	—	M12 Lock Washer for Revision 002	—	12
110	—	Long Rotor Shaft for Revision 002	—	1
111	—	Short Rotor Shaft for Revision 002	—	1
112	290501	Chipping Side Tooth for Revision 000 (Discontinued)	2	—
113	290503	Carbide Side Tooth for Revision 000 (Discontinued)	2	—

6. Parts

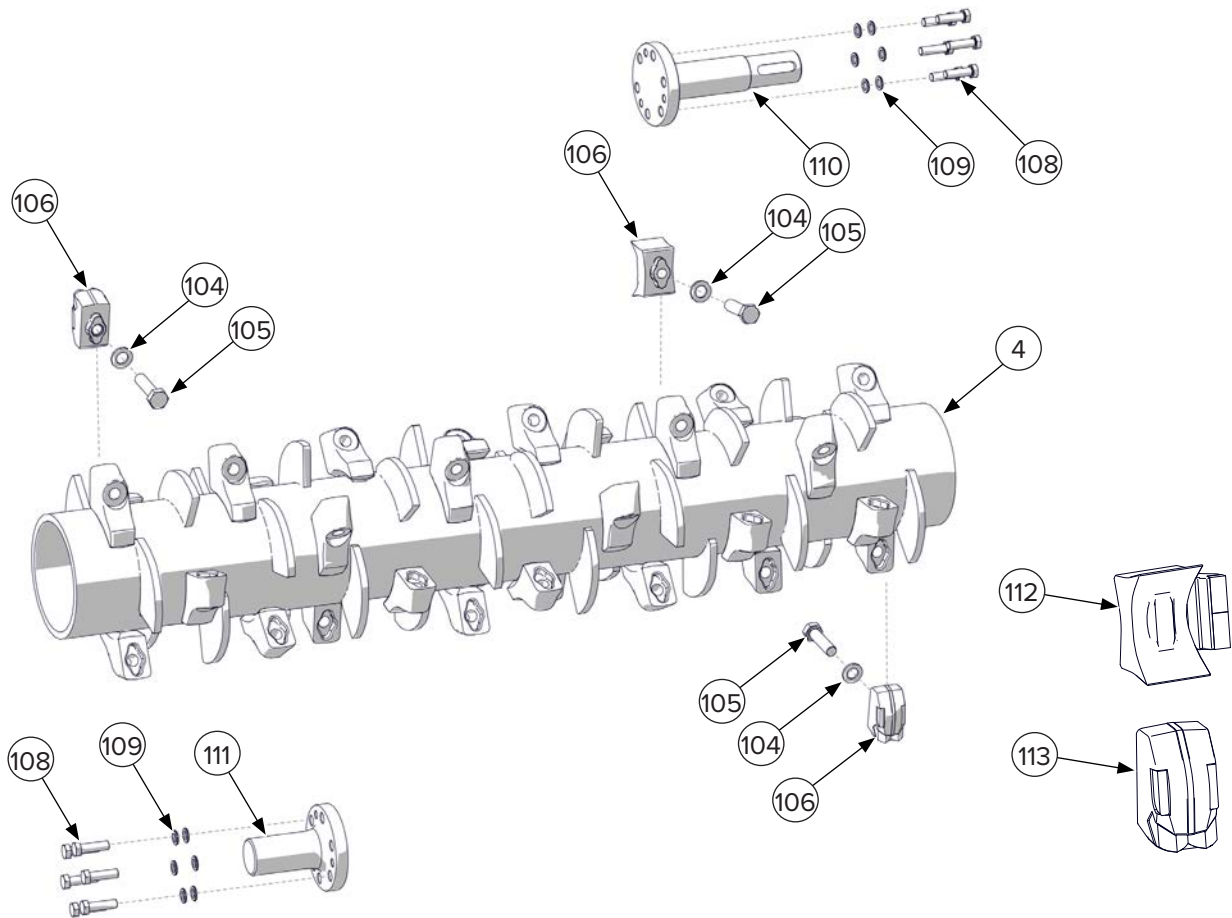
6.17 40" Rotor Assembly Components



ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 002 QTY
104	299090	M16 Grooved Washer for Revision 000	26	—
	—	M16 Flat Washer for Revision 002	—	26
105	299044	Tooth Bolt for Revision 000	26	—
	299091	M16 x 1.5 mm x 60 mm Hex Head Bolt Class 10.9 Revision 002	—	26
106	290500	Chipping Tooth	24	26
	290502	Carbide Tooth	24	26
107	290551	Rotor with Depth Limiters for Revision 000	1	—
	—	Rotor with Depth Limiters for Revision 002	—	1
108	—	M12 x 40 mm Hex Head Bolt Class 12.9 for Revision 002	—	12
109	—	M12 Lock Washer for Revision 002	—	12
110	—	Long Rotor Shaft for Revision 002	—	1
111	—	Short Rotor Shaft for Revision 002	—	1
112	290501	Chipping Side Tooth for Revision 000 (Discontinued)	2	—
113	290503	Carbide Side Tooth for Revision 000 (Discontinued)	2	—

6. Parts

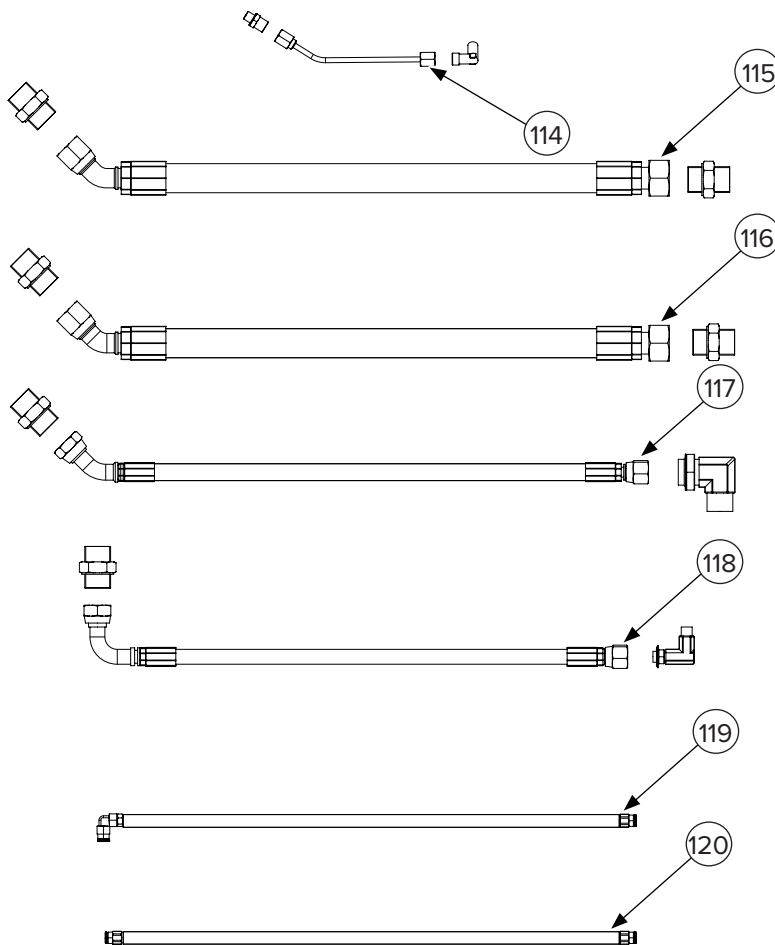
6.18 50" Rotor Assembly Components



ITEM	PART NUMBER	DESCRIPTION	REV 000 QTY	REV 001 QTY	REV 002 QTY
104	299090	M16 Grooved Washer for Revision 000	32	—	—
	—	M16 Flat Washer for Revision 001 & 002	—	32	32
105	299044	Tooth Bolt for Revision 000	32	—	—
	299091	M16 x 1.5 mm x 60 mm Hex Head Bolt Class 10.9 for Revision 001 & 002	—	32	32
106	290500	Chipping Tooth	30	30	32
	290502	Carbide Tooth	30	30	32
107	290555	Rotor with Depth Limiters for Revision 000	1	—	—
	—	Rotor with Depth Limiters for Revision 001	—	1	—
	—	Rotor with Depth Limiters for Revision 002	—	—	1
108	—	M12 x 40 mm Hex Head Bolt Class 12.9 for Revision 002	—	—	12
109	—	M12 Lock Washer for Revision 002	—	—	12
110	—	Long Rotor Shaft for Revision 002	—	—	1
111	—	Short Rotor Shaft for Revision 002	—	—	1
112	290501	Chipping Side Tooth for Revision 000 & 001 (Discontinued)	2	2	—
113	290503	Carbide Side Tooth for Revision 000 & 001 (Discontinued)	2	2	—

6. Parts

6.19 Internal Hose Components



30" Models

ITEM	PART	DESCRIPTION	REV 000 QTY	REV 002 QTY
114	Grease Hose	Drive Side Rotor Bearing Grease Line – Short Hose 350 mm OAL	1	1
115	Pressure Hose	315 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	1	–
		310 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	–	1
116	Return Hose	315 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	1	–
		285 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	–	1
117	Case Drain Hose	620 mm OAL 1/2" ID 45 Degree Female #10 JIC Swivel to Straight Female #10 JIC Swivel	1	–
		450 mm OAL 1/2" ID 45 Degree Female #10 JIC Swivel to Straight Female #10 JIC Swivel	–	1
118	Plate Positioning Hose	430 mm OAL 1/4" ID	1	–
		640 mm OAL 1/4" ID	–	1
119	Grease Hose	Overhung Load Adapter Grease Line 850 mm OAL	1	–
		Overhung Load Adapter Grease Line 810 mm OAL	–	1
120	Grease Hose	Drive Side Rotor Bearing Grease Line – Long Hose 770 mm	1	–
		Drive Side Rotor Bearing Grease Line – Long Hose 910 mm	–	1

6. Parts

6.19 Internal Hose Components Cont'd

40" Models

ITEM	PART	DESCRIPTION	REV 000 QTY	REV 002 QTY
114	Grease Hose	Drive Side Rotor Bearing Grease Line – Short Hose 350 mm OAL	1	1
115	Pressure Hose	570 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	1	—
		580 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	—	1
116	Return Hose	315 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	1	—
		555 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	—	1
117	Case Drain Hose	810 mm OAL 1/2" ID 45 Degree Female #10 JIC Swivel to Straight Female #10 JIC Swivel	1	—
		700 mm OAL 1/2" ID 45 Degree Female #10 JIC Swivel to Straight Female #10 JIC Swivel	—	1
118	Plate Positioning Hose	420 mm OAL 1/4" ID	1	—
		900 mm OAL 1/4" ID	—	1
119	Grease Hose	Overhung Load Adapter Grease Line 1190 mm OAL	1	—
		Overhung Load Adapter Grease Line 1050 mm OAL	—	1
120	Grease Hose	Drive Side Rotor Bearing Grease Line – Long Hose 1090 mm	1	—
		Drive Side Rotor Bearing Grease Line – Long Hose 1150 mm	—	1

50" Models

ITEM	PART	DESCRIPTION	REV 000 QTY	REV 001 QTY	REV 002 QTY
114	Grease Hose	Drive Side Rotor Bearing Grease Line – Short Hose 350 mm OAL	1	1	1
115	Pressure Hose	830 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	1	1	1
116	Return Hose	830 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	1	—	—
		805 mm OAL 3/4" ID 45 Degree Female #12 JIC Swivel to Straight Female #12 JIC Swivel	—	1	1
117	Case Drain Hose	1100 mm OAL 1/2" ID 45 Degree Female #10 JIC Swivel to Straight Female #10 JIC Swivel	1	—	—
		930 mm OAL 1/2" ID 45 Degree Female #10 JIC Swivel to Straight Female #10 JIC Swivel	—	1	1
118	Plate Positioning Hose	420 mm OAL 1/4" ID	1	—	—
		1140 mm OAL 1/4" ID	—	1	1
119	Grease Hose	Overhung Load Adapter Grease Line 1400 mm OAL	1	—	—
		Overhung Load Adapter Grease Line 1250 mm OAL	—	1	1
120	Grease Hose	Drive Side Rotor Bearing Grease Line – Long Hose 1300 mm	1	—	—
		Drive Side Rotor Bearing Grease Line – Long Hose 1350 mm	—	1	1

6. Parts

6.20 Safety Decals



6. Parts

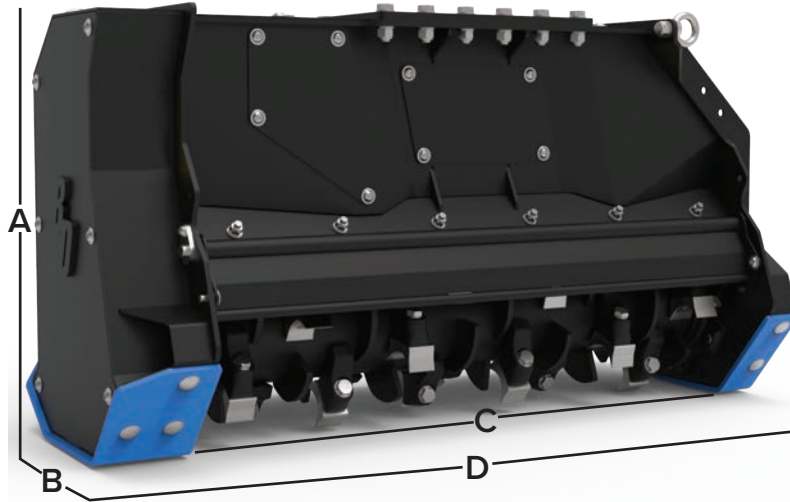
6.20 Safety Decals Cont'd



ITEM	PART NUMBER	DESCRIPTION	QTY
ALL REVISIONS, ALL MODELS			
121	BD-114	10.35" x 8.08" Decal, Blue Diamond Attachments Diamond Shape	2
122	BD-117	1.5" x 7.74" Decal, Heavy Duty	1
123	BD-081	3" x 12" Decal, Warning Keep Hands and Feet Away	1
124	BD-123	3.0" x 3.0" Decal, High Pressure Fluid Hazard	1
125	BD-055	3.0" x 11.9" Decal, Danger Debris Discharge Area Stay Back 200 Feet	2
126	BD-001	3.0" x 3.0" Decal, Read Owner's Manual	1
127	BD-053	3.0" x 8.0" Decal, Danger Do Not Operate without Cab and Glass Guards	1
128	BD-008	Decal, Important See Owner's Manual for Lubrication Instructions	1
129	BD-092	1.5" x 2.0" Decal, Warranty Registration QR Code	1
130	BD-133	1.0" Tall Decal, Tag Line Single Line	1

7. Specifications

7.1 Attachment Specifications



DESCRIPTION	190510	190515	190520
Excavator Size	9,000 – 13,000 lb (4,082 – 5,897 kg)	13,000 – 24,000 lb (5,897 – 10,886 kg)	18,000 – 24,000 lb (8,165 – 10,886 kg)
Overall Height (No Mount) (A)	27.5 in. (698.5 mm)		
Overall Length (B)	24.25 in. (615.95 mm)		
Working Width (C)	30 in. (762 mm)	40 in. (1,016 mm)	50 in. (1,270 mm)
Overall Width (D)	40 in. (1,016 mm)	50 in. (1,270 mm)	60 in. (1,524 mm)
Working Pressure	2600 – 4500 PSI (179 – 310 bar)		
Motor Size	Adjustable 26 – 45 cc		
Recommended Hydraulic Flow	11 – 24 GPM (42 – 91 LPM)	15 – 35 GPM (57 – 132 LPM)	
Pulley Ratio	1.43	1	
Rotor Diameter	13 in. (330 mm)		
No. Belts	4 Groove Belts (XPB)		
Weight (without Mount)	815 lb (370 kg)	960 lb (435 kg)	1,080 lb (490 kg)
Rotor RPM	2200 – 2800 RPM		
Counterblades	2		
Chain Guard	2 Rows (7 Links Total – Revision 000 & 001 / 5 Links Total – Revision 002)		
Maximum Cutting Capacity	4 in. (102 mm)		

7. Specifications

7.2 Torque Specifications – Metric

Standard Hardware and Lock Nuts

BOLT TYPE	CLASS 4.8		CLASS 8.8 OR 9.8		CLASS 10.9		CLASS 12.9		
	Size	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 lbf•ft	4.5 lbf•ft	6.5 lbf•ft	8.5 lbf•ft	9.5 lbf•ft	12 lbf•ft	11.5 lbf•ft	14.5 lbf•ft
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 lbf•ft	11 lbf•ft	16 lbf•ft	20 lbf•ft	24 lbf•ft	30 lbf•ft	28 lbf•ft	35 lbf•ft
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 lbf•ft	21 lbf•ft	32 lbf•ft	40 lbf•ft	47 lbf•ft	60 lbf•ft	55 lbf•ft	70 lbf•ft
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 lbf•ft	37 lbf•ft	55 lbf•ft	70 lbf•ft	80 lbf•ft	105 lbf•ft	95 lbf•ft	120 lbf•ft
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 lbf•ft	60 lbf•ft	88 lbf•ft	110 lbf•ft	130 lbf•ft	165 lbf•ft	150 lbf•ft	190 lbf•ft
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 lbf•ft	125 lbf•ft	195 lbf•ft	250 lbf•ft	275 lbf•ft	350 lbf•ft	325 lbf•ft	410 lbf•ft
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 lbf•ft	125 lbf•ft	195 lbf•ft	250 lbf•ft	275 lbf•ft	350 lbf•ft	325 lbf•ft	410 lbf•ft
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 lbf•ft	180 lbf•ft	275 lbf•ft	350 lbf•ft	400 lbf•ft	500 lbf•ft	460 lbf•ft	580 lbf•ft
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 lbf•ft	250 lbf•ft	375 lbf•ft	475 lbf•ft	540 lbf•ft	675 lbf•ft	625 lbf•ft	800 lbf•ft
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 lbf•ft	310 lbf•ft	475 lbf•ft	600 lbf•ft	675 lbf•ft	850 lbf•ft	800 lbf•ft	1000 lbf•ft
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 lbf•ft	450 lbf•ft	700 lbf•ft	875 lbf•ft	1000 lbf•ft	1250 lbf•ft	1150 lbf•ft	1500 lbf•ft
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 lbf•ft	625 lbf•ft	950 lbf•ft	1200 lbf•ft	1350 lbf•ft	1700 lbf•ft	1600 lbf•ft	2000 lbf•ft
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 lbf•ft	850 lbf•ft	1300 lbf•ft	1650 lbf•ft	1850 lbf•ft	2350 lbf•ft	2150 lbf•ft	2750 lbf•ft
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 lbf•ft	1075 lbf•ft	1650 lbf•ft	2100 lbf•ft	2350 lbf•ft	3000 lbf•ft	2750 lbf•ft	3500 lbf•ft



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. Please see bluediamondattachments.com/warranty-policies for the most up to date warranty information.

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



QUALITY | DEPENDABILITY | INTEGRITY

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