

# Disc Mulcher

Operation and Maintenance Manual



103305, 103307, 103310, 103312

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



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



# Introduction: Owner Information

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

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

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

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

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

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

## Serial Number Location:

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



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

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

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

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

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

The serial number plate is located on the right of the motor cover 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: <b>Owner Information</b> .....	2	7. Specifications .....	44
1. Pre-Delivery Inspection Instructions .....	4	7.1 <b>Attachment Specifications</b> .....	44
1.1 Safety & Documentation .....	4	7.2 <b>Torque Specifications for Assembled Disc</b> .....	45
1.2 Visual Inspection .....	4	7.3 <b>Torque Specifications – Imperial</b> .....	46
1.3 Hydraulic System & Operational Test .....	4	7.4 <b>Torque Specifications – Metric</b> .....	47
1.4 Final Delivery .....	4	Warranty .....	49
2. Introduction .....	5		
2.1 <b>Attachment Identification</b> .....	5		
2.2 <b>About this Attachment</b> .....	5		
2.3 <b>Attachment Model Numbers</b> .....	5		
3. Safety .....	6		
3.1 <b>General Safety Information</b> .....	6		
3.2 <b>Operators</b> .....	7		
3.3 <b>Safety Guidelines</b> .....	8		
4. Operation .....	10		
4.1 <b>Unloading the Attachment</b> .....	10		
4.2 <b>Pre-Operation Inspection</b> .....	10		
4.3 <b>Entering &amp; Exiting the Prime Mover</b> .....	11		
4.4 <b>Attachment Installation</b> .....	11		
4.5 <b>Machine Requirements</b> .....	13		
4.6 <b>Clear Work Area</b> .....	14		
4.7 <b>Initial Setup</b> .....	15		
4.8 <b>Operating the Attachment</b> .....	16		
4.9 <b>Operating Tips</b> .....	18		
5. Maintenance .....	20		
5.1 <b>Service Schedule</b> .....	20		
5.2 <b>Tools &amp; Equipment Required</b> .....	21		
5.3 <b>Disc Inspection</b> .....	21		
5.4 <b>Tooth Holders &amp; Teeth</b> .....	22		
5.4 <b>Tooth Holders &amp; Teeth Cont'd</b> .....	23		
5.5 <b>Disc</b> .....	25		
5.6 <b>Motor &amp; Direct Drive</b> .....	28		
5.7 <b>Spare Parts &amp; Accessories</b> .....	31		
5.8 <b>Storage</b> .....	31		
5.9 <b>Troubleshooting</b> .....	32		
6. Parts .....	33		
6.1 <b>Differences Between Revisions</b> .....	33		
6.2 <b>Main Components</b> .....	34		
6.3 <b>44" Disc Components</b> .....	36		
6.4 <b>60" Disc Components</b> .....	38		
6.5 <b>Hydraulic Components</b> .....	40		
6.6 <b>Motor Components</b> .....	41		
6.7 <b>Safety Decals</b> .....	42		

# 1. Pre-Delivery Inspection Instructions

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

CUSTOMER: \_\_\_\_\_

DATE: \_\_\_\_\_

MAKE/MODEL: \_\_\_\_\_

SERIAL NO.: \_\_\_\_\_

SKID STEER MODEL: \_\_\_\_\_

HYDRAULIC FLOW: \_\_\_\_\_

## 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 skid steer.

## 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.

## 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.
- Smooth operation; no hydraulic leaks or excessive vibration of attachment.

Attachment has been connected to the host machine that will be used for operation and tested.

- Yes  No

## 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

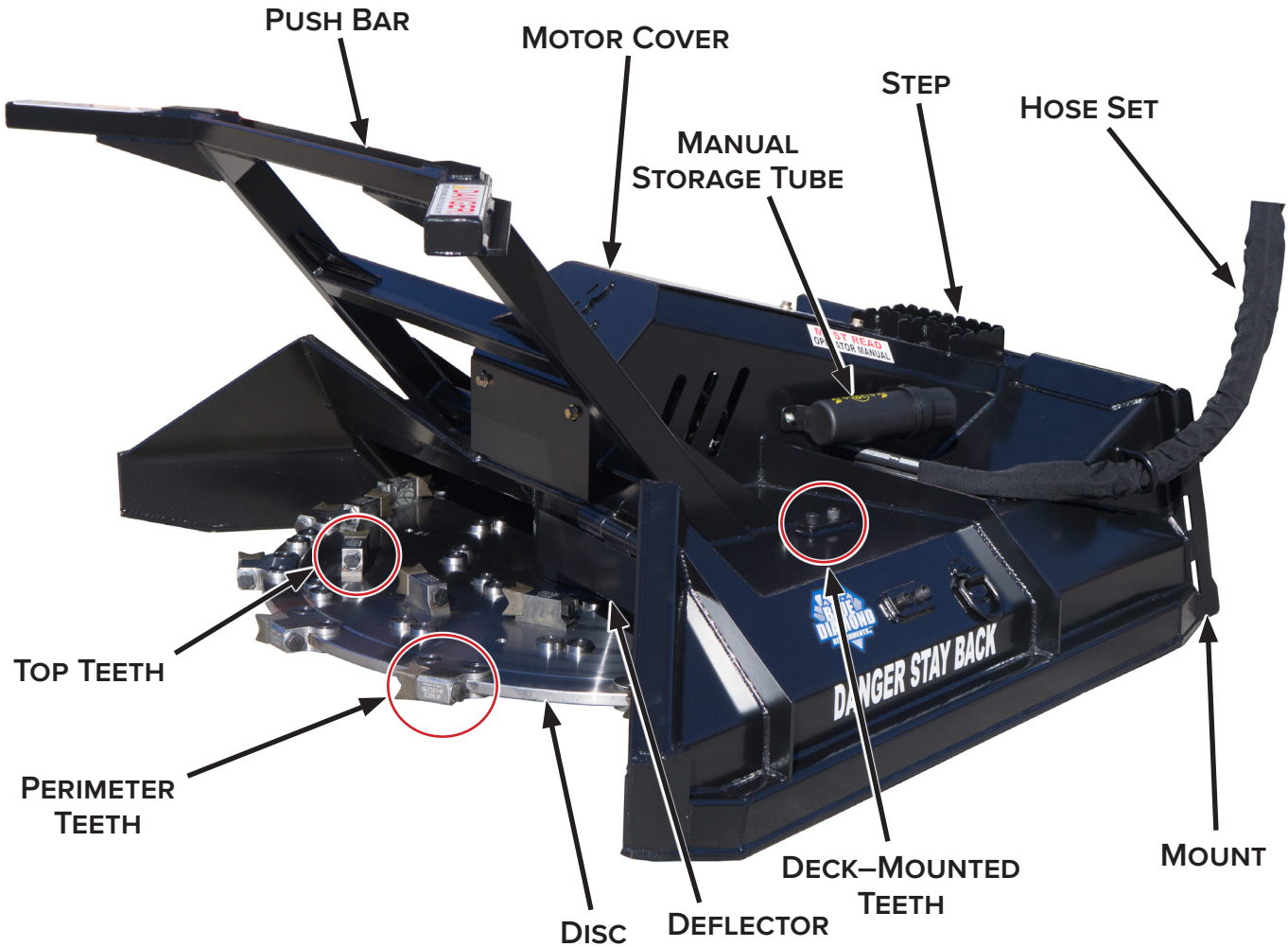
TECHNICIAN: \_\_\_\_\_

CUSTOMER: \_\_\_\_\_

DATE: \_\_\_\_\_

## 2. Introduction

### 2.1 Attachment Identification



### 2.2 About this Attachment

The Blue Diamond® Disc Mulcher is a beast when it comes to forestry equipment. Armored with teeth mounted on the top, bottom, and edge of the disc, this attachment will turn trees into mulch in no time. This robust attachment is designed to tackle rough vegetation and tough cleanup jobs with ease, saving time and money.

### 2.3 Attachment Model Numbers

MODEL NUMBER	WIDTH	REQUIRED GPM	TOOTH TYPE
103305	44"	20 – 30	Chipping
303305	44"	20 – 30	Carbide
103307	44"	30 – 44	Chipping
303307	44"	30 – 44	Carbide
103310	60"	32 – 45	Chipping
303310	60"	32 – 45	Carbide
103312*	60"	45 – 60	Chipping
303312*	60"	45 – 60	Carbide

\*Discontinued

## 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 Disc 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, tractor, or skid steer providing power to the attachment.

Attachment, Implement, Equipment:

- The Disc 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, tractor, 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 machine. In case of loss or damage, request a new copy from your dealer or from Blue Diamond®.
- Strictly follow all rules prescribed by the safety pictograms/decals applied to the machine. Ensure that all safety pictograms/decals are legible. If pictograms/decals are worn, they must be replaced with new ones obtained from Blue Diamond® and placed in the position indicated by this manual.
- Before using the machine, make sure that all safety devices are installed and in good working 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 machine.
- If the use of the machine is required at night or in conditions of reduced visibility, use the lighting system of the prime mover and an auxiliary lighting system if required.

## 3. Safety

### 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 machine 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 judgement 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 machine safely under all conditions of the work area.

#### Operator Safety

- Any use of the machine 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 machine can project material from the back 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 machine.
- Do not operate the implement when tired, not in good condition, or under the influence of alcohol or drugs.

## 3. Safety

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### 3.3 Safety Guidelines

#### Operating Safety

- 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.
- 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 the mulcher running at optimum cutting speed.
- DO NOT operate in a work area that has not been inspected for foreign debris and obstacles.
- Remove any foreign objects and clearly mark any objects that cannot be removed.
- 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.

#### 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 (276 bar) operating pressure.
- Use caution on slopes and near banks and ditches to prevent overturn.

## 3. Safety

### 3.3 Safety Guidelines Cont'd

#### 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.

#### Transporting Safety

- 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.

#### 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.

## 4. Operation

### 4.1 Unloading the Attachment

The attachment is delivered via strapped to a wood pallet and requires no final assembly.

Use a steel band cutting tool to remove the steel straps.



#### CAUTION



##### AVOID INJURY

Shipping straps are under great tension and could lash out uncontrollably when cut, causing injuries to you or bystanders. Wear safety glasses and gloves while removing the steel straps.

### 4.2 Pre-Operation Inspection

Before operating the Disc 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.

- 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. See "5.1 Service Schedule" on page 20 for more information.

- Check the attachment mounting frame 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 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.
- Check for wear and tear on the blades, and replace any damaged and/or excessively worn parts.
  - 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.
  - Always wear safety goggles or glasses when inspecting equipment.

## 4. Operation

### 4.3 Entering & Exiting the Prime Mover



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

#### 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, lower safety seat bar, start the engine, and release the parking brake.

#### Leaving the Operator's Position



##### AVOID SERIOUS INJURY OR DEATH

- 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.

**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



##### CRUSH HAZARD

- Before moving the machine, look in all directions and make sure no bystanders, especially small children are in the work area. Do not allow anyone between the machine and attachment when approaching the attachment for connecting.
- Keep fingers and hands out of pinch points when connecting and disconnecting the attachment.

Before connecting to the attachment, inspect the machine's mounting plate. (See the machine's Operator's Manual for inspecting the mounting frame.)

Enter the operator's position. See "Entering the Operator's Position" on page 11.

Drive the machine slowly forward until the top edge of the machine's mounting plate is under the top flange of the attachment mounting frame.

Slowly tilt the machine's mounting plate back until the attachment mounting frame fully contacts the front of the machine's mounting plate.

Engage attachment locking levers/wedges (See the machine's Operator's Manual for detailed information.)



##### AVOID SERIOUS INJURY OR DEATH

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

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

## 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 12.

#### Connecting Hydraulic Hoses



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.



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 11.

Disconnect attachment hydraulic hoses from the machine.

Disengage locking pins/wedges. (See the machine's Operator's Manual for correct procedure.)

Enter the operator's position. See "Entering the Operator's Position" on page 11.

Slowly tilt the machine's mounting plate forward until the attachment mounting frame is free from the machine's mounting plate.

Drive the machine slowly backward, away from the attachment.

## 4. Operation

### 4.5 Machine Requirements

#### Controls

The Disc Mulcher is designed to run off the host machine's auxiliary hydraulic system and is activated and deactivated by a control in the operator's cab. The height and tilt functions of the attachment are operated by the control joysticks or pedals, depending on your host machine. See the machine's Operator's Manual for instructions regarding these functions.

#### Hydraulic Flow Requirements

When operating the Disc Mulcher, set the host machine's engine RPM to a speed that will produce the required flow (see "7.1 Attachment Specifications" on page 44). Contact your local dealer or Blue Diamond® Product Support if you need to measure the flow available on your machine and recommend a throttle setting that is compatible with this attachment.

#### **IMPORTANT**

**DO NOT** exceed the flow rate (GPM) of your Disc Mulcher. See "7.1 Attachment Specifications" on page 44 for more information.

#### **WARNING**

##### **AVOID SERIOUS INJURY OR DEATH**

- Never operate the Disc Mulcher with the blade facing the operator's cab.
- 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.
- Never operate the Disc Mulcher with any guards removed, including the motor cover.



#### **WARNING**



##### **THROWN OBJECTS OR ROTATING BLADES CAN CAUSE SERIOUS INJURY OR DEATH**

- Clear work area of all debris; such as rope, wire, cable, or other materials that can wrap around the disc, causing entanglement and attachment damage.
- **DO NOT** operate attachment in vicinity of bystanders, animals, or damageable property. Objects can be thrown more than several hundred feet.
- Keep all chains and shields installed. Repair or replace if damaged or missing.
- Check disc, teeth, and mounting hardware. Replace if damaged. Never weld or modify.



#### **DANGER**



##### **ROTATING DISC WILL CAUSE SERIOUS INJURY OR DEATH**

- Never put hands, feet or objects into or under attachment when engine is running.
- Keep bystanders away.
- No riders.
- Stop engine before leaving the machine to service.



#### **DANGER**



##### **AVOID SERIOUS INJURY OR DEATH**

Observe **ALL** safety precautions outlined in this manual.

## 4. Operation

### 4.5 Machine Requirements Cont'd



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

- Serious injury may result from spinning an improperly or incompletely assembled disc. All teeth **MUST** be properly fastened in place.
- Mulcher disc rotates up to 1050 RPMs. Never exceed the RPM limits of the disc – serious damage, injury, or death may occur.



#### DANGER



##### AVOID SERIOUS INJURY OR DEATH

- ALWAYS keep in mind that the mulching disc at operational speed carries a tremendous amount of stored energy.
- Top speed of the teeth can be up to 200 miles per hour (mph) or 322 kilometers per hour (kmh). Flying chips, debris, rocks, gravel, chunks of wood, or any other materials; and any tools left on the disc during inspection or maintenance can cause serious injury or death.



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

The operator should always remain in the cab while the disc is in operation and should always wait for the disc to fully stop rotating before exiting the host machine.

### 4.6 Clear Work Area



#### IMPORTANT



- DO NOT operate in a work area that has not been cleared of foreign debris and obstacles.
- Rocks, metal, construction debris, and other objects can damage the blade carrier and blades.
- Clearly mark any objects that cannot be removed.



## 4. Operation

### 4.7 Initial Setup



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

- ALWAYS inspect disc assembly every shift BEFORE startup.
- The disc should be inspected throughout the day and immediately after contact with rock or other foreign material to minimize the risk of injuring the operator or bystanders.

1. Before starting the Disc Mulcher, visually inspect the attachment, making sure all mounting bolts are properly torqued and none are missing. Retighten or replace if necessary.
2. Check the direct drive for oil leaks or evidence of oil leaks. Contact Blue Diamond® Product Support if leakage is present.
3. Check the host machine's hydraulic fluid level. Add hydraulic fluid if necessary before each use. Fluid must be clean and free from debris. If damage to the attachment occurs due to debris in the host machine's hydraulic fluid, the warranty will be voided. (See the machine's Operator's Manual for recommended hydraulic fluid.)
4. Verify that all hydraulic couplers are compatible with the host machine.
5. Verify that all hydraulic couplers are properly attached to the host machine with no hoses pinched. Be sure to connect the case drain hose to the host machine.
6. Enter the operator's position. (See "Entering the Operator's Position" on page 11.)
7. Start the host machine.
8. Attach the Disc Mulcher onto the host machine. (See "Connecting Attachment to the Machine" on page 11.) Verify the attachment is properly mounted to the host machine and all locks are in place.
9. Lift the attachment 12" (305 mm) above the ground.
10. Set the machine's engine RPM to just above idle.

11. Engage the machine's auxiliary hydraulics.
12. Allow the disc to rotate for 30 seconds to purge air from the hydraulic system then switch off the auxiliary hydraulic circuit.
13. Lower the attachment until it is resting on the ground, set the parking brake, shut off the engine, and wait for the disc to stop rotating before exiting the operator's position. (See "Leaving the Operator's Position" on page 11.)



#### 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.

14. Check both the host machine's and attachment's hydraulic system for noticeable leaks. Repair if necessary.
15. Enter the operator's position. (See "Entering the Operator's Position" on page 11.)
16. Restart the machine, and set the engine RPM to slightly above idle.
17. Raise the attachment off the ground and switch on the auxiliary hydraulic circuit.
18. Once the Disc Mulcher ramps up speed, increase the machine's engine to full throttle for use.

## 4. Operation

### 4.8 Operating the Attachment



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

To avoid serious injury or death from thrown objects and flying debris, ensure no bystanders are within 300 ft (100 m) of the work area before starting the Disc Mulcher.



#### DANGER



##### AVOID SERIOUS INJURY OR DEATH

To avoid unexpected starting of the machine engine, which could cause serious injury or death to the maintenance personnel working on the disc, proceed to lockout and de-energization of the machine. Attach a warning tag, such as “DO NOT START THE ENGINE” to the controls, indicating the nature of the current maintenance.

### How to Start the Attachment

DAILY WALK AROUND INSPECTION (EVERY 8 HRS)	
BEFORE STARTING THE MULCHER	
✓	All disc mounting bolts are properly torqued and none are missing.
✓	Disc is in good condition — no cracks, gouges, or heat discoloration.
✓	All tooth holders are sitting flat with the disc.
✓	All teeth are still sharp and not worn round at the corners.
START UP	
✓	All protective devices are in place & secure.
✓	Warning sign “DANGER, STAY BACK” in place & visible.
✓	No unusual noises or vibrations.

Before starting the Disc Mulcher, visually inspect the attachment and make sure all disc mounting bolts are properly torqued and none are missing.

Verify the Disc Mulcher is properly attached to the host machine and all locks are properly in place.

Verify the hydraulic hoses and connectors are properly attached and no hoses are pinched.

The operator should enter the cab, shut the door, and remove the “DO NOT START ENGINE” sign.

After starting the machine, lift the attachment 12” (305 mm) from the ground.

Proceed to the area cordoned off for work.

Switch the auxiliary hydraulic system, and increase the machine’s RPM to the appropriate level for mulching.

### Disc Basics

The Disc Mulcher’s design uses inertia to maintain speed. When cutting into trees and other material, the disc will slow. Wait for the mulcher to regain full speed before proceeding to the next tree.

Debris is pulled into the mulcher on the right side of the disc and is discharged from the mulcher on the left side of the disc to ensure the safety of the operator.

The push bar is used to push trees and debris away from the operator to ensure safety.

### Cutting 2” – 6” (50 – 150 mm) Brush & Trees

Lift the Disc Mulcher a couple inches off the ground, and tilt the attachment backwards so the front is raised.

Drive forward and use the right side of the disc to cut the brush/tree near the base. As the tree falls, tilt the mulcher back to match the angle of the tree. When the disc and the tree are close to parallel, the top teeth will pull the tree into the mulcher and process the tree quickly.

## 4. Operation

### 4.8 Operating the Attachment Cont'd

#### Cutting 6" – 10" (150 – 250 mm) Brush & Trees

The top of the tree has to be removed prior to cutting the bottom of the tree. Lift the mulcher as high as comfortably possible with the front of the mulcher tilted higher than the rear. Drive forward and use the left side of the disc to remove the top of the tree and push it away from the machine using the push bar.



Figure 1

Once the top of the tree is removed, allow the disc to regain full speed. Then tilt the attachment to a 45° angle, and lower the attachment down the remaining trunk of the tree as fast as possible. Use the outside teeth on the left side of the disc for greatest efficiency and to discharge the debris away from the machine and operator.

#### Cutting Large Trees [Larger than 10" 254 mm)]

This procedure works best for larger trees that are too large to mulch efficiently when standing.

With the Disc Mulcher level, use the left side of the disc to cut the tree. Drive the host machine forward, using the push bar to direct the falling tree away from the operator and host machine.

Extremely large trees should be notched on one side before being cut down from the opposite side.



### CAUTION



#### AVOID INJURY

Practice caution as the tree may kick back towards the host machine while falling.

**NOTE:** Do not use the front center of the disc as it is difficult to control the direction in which the tree falls.

#### Mulching Stumps

This procedure cuts stumps at or below ground level.

With the Disc Mulcher flat and level, drive over the stump to mulch it until it is at ground level. Taller stumps may require multiple passes. Allow the disc to regain full speed between each pass.

Once the stump is at ground level, lift the mulcher and tilt the attachment forward until the front of the disc is slightly lower than the rear. Make further passes to grind the stump below ground level.

**NOTE:** Mulching stumps increases the wear on teeth and decreases their overall lifespan.

#### Mulching Debris

This procedure allows debris on the ground to be pulled in and mulched.

Lift the front of the mulcher slightly, and use the right side of the disc to pull in branches and other material to be mulched.

With the attachment level, use the bottom of the disc to reprocess debris on the ground to achieve a finer finish.

#### Reprocessing Debris

To reprocess debris into a finer mulch, lift the rear of the mulcher approximately 6" (150 mm) off the ground with the front of the disc tilted down to allow the perimeter teeth to skim across the ground. Drive backwards over the material to achieve a finer mulch finish.

## 4. Operation

### 4.8 Operating the Attachment Cont'd

#### How to Stop the Attachment



#### WARNING



##### AVOID SERIOUS INJURY OR DEATH

The operator should always remain in the cab while the disc is in operation and should always wait for the disc to stop rotating before exiting the host machine.

If the Disc Mulcher vibrates while increasing RPMs, switch off the auxiliary hydraulic circuit, wait until the disc stops rotating, turn off the motor, set the parking brake, and investigate the cause. Refer to “5.9 Troubleshooting” on page 32.

Raise the mulcher slightly, and set the machine’s engine RPM to idle.

Switch off the auxiliary hydraulic circuit.

Allow the attachment to slow down and come to a complete stop.

Lower the attachment to the ground, set the parking brake, turn off the machine’s motor, and place the warning sign “DO NOT START THE ENGINE”, and carefully exit the operator’s position (see “Leaving the Operator’s Position” on page 11).

### 4.9 Operating Tips

Learn what the Disc Mulcher looks like in a level position from the operator’s position. Knowing what a level mulcher looks like will prevent excessive wear to the disc, which can be a result from cutting too close to the ground.

Determine a safe cutting pattern before the start of the operation.

Do not cut into an area before the disc rotation is up to operating speed.

Operate at a safe, comfortable pace that will allow the operator to watch the area in front of the mulcher and the host machine.

Make sure the host machine’s engine is at an RPM that will produce the volume of oil flow required for this attachment.

Slow the machine down if the engine is bogged down or if the disc speed is too slow due to an excessive load.

When excessive vibration is present, immediately shut down both the machine and the attachment. Wait until the disc stops rotating completely and investigate the cause.



#### IMPORTANT



**DO NOT** operate the Disc Mulcher when excessive vibration is present. Serious damage can result. Check the disc, teeth, and the disc’s hardware. Replace if damaged.



Keep the mulcher away from tracks, wheels, and other machinery. If used improperly, this attachment can and will cut and/or damage any object in its path.

## 4. Operation

---

### 4.9 Operating Tips Cont'd

The operator should always be aware of their surroundings and pay attention to obstacles and nearby terrain.

DANGER

**AVOID SERIOUS INJURY OR DEATH**  
DO NOT use on or near electrical power lines, telephone poles, or fences. Electrocutation can occur even without actual contact with an electrical power source.

Keep windows and thermoplastic polycarbonate doors securely closed while operating the attachment.

Keep all guards and shields in place.

Never try to cut or mulch any material other than wood or vegetation.

Tilt the front of the deck slightly above the rear and drive into the trees near their base. As the trees are being cut, tilt the front up slightly more to allow material to be fed into the top teeth of the disc. Trees will be pulled into the center of the deck, and the chips will shoot out of the other side.

If the disc speed slows down, reduce the host machine's travel speed and allow the mulcher to reach the proper rotational speed.

Mulching too quickly into thick material could result in damaging the disc. If the disc completely stops, turn off the auxiliary hydraulics and use a tree to rotate the disc and work the jammed material out. Place the perimeter tooth on the tree, and turn the host machine opposite of the disc's cutting direction to bring the jammed material out the feed side of the attachment.

DO NOT use the forestry attachment to push, pull, lift, or move any type of object or vehicle. Do not use to push down trees without the disc properly rotating.

## 5. Maintenance

### 5.1 Service Schedule

DESCRIPTION	SERVICE PROCEDURES					
	Check	Clean	Lube	Change	Adjust	Disassemble
<b>Daily Maintenance (or every 8 hours)</b>						
Hydraulic Fittings	•					
Hydraulic Hoses	•					
Hydraulic Motor	•	•				
Teeth (wear, damage, and loosening)	•					
Disc	•					
Deck	•	•				
Tooth Holders	•					
Host's Machine Hydraulic Fluid Level	•					
All Hardware	•					
<b>Weekly Maintenance (or every 40 hours)</b>						
All Hardware	•					
Deck (cracks, bends, or damage)	•					
<b>Monthly Maintenance</b>						
Teeth (cracks, bends, or excessive wear)	•					
Skid Plates	•					
All Hardware	•					
<b>1,000 Hour Maintenance (or once a year)</b>						
Direct Drive Oil*				•		
<b>2,000 Hour Maintenance</b>						
Disc	•					•

\*Change oil after initial 50 hours, and then 1,000 hours or yearly, whichever comes first.



## 5. Maintenance

The maintenance procedures described in this manual should only be carried out by qualified technicians and/or mechanics who have been trained to repair this attachment.

Some procedures require special tools and skills to complete. DO NOT attempt to repair or perform service work on this attachment unless you have the skills and tools to do so. Contact your local dealer or Blue Diamond® Product Support for maintenance and repair services.



### WARNING



Before performing any of the actions in this section, section 3. Safety must be read in its entirety and understood fully to avoid any type of risk or accident. If you do not fully understand this manual, DO NOT connect or operate the machine or carry out any maintenance operations. Contact your local dealer or Blue Diamond® Product Support immediately to ensure your safety and that of the machine.



### WARNING



#### AVOID SERIOUS INJURY OR DEATH

DO NOT weld the disc itself in an attempt to repair. It must be replaced as a whole to ensure safety of the operator, technician, and bystanders.



### IMPORTANT



- Welding on attachments must be performed by certified welders who have requested and obtained written approval from an authorized representative of Blue Diamond® prior to the welding being performed.
- All authorized welding repairs must be performed by qualified welders in accordance to the American Welding Society (AWS) standards. Welding procedures performed by unqualified welders may deem this mulcher unsafe to operate and void the warranty.



### CAUTION



#### AVOID INJURY

- Only use replacement parts supplied or approved by Blue Diamond®. Blue Diamond® will not be liable for any damages or injuries caused by the use of aftermarket parts on this attachment.
- Improper maintenance or modifications in the design or performance of this attachment will void the warranty.

## 5.2 Tools & Equipment Required

- 1/2" drive breaker bar
- Assorted impact sockets and hex drives
- Tapping hammer
- 1/2" drive torque wrench
- Nylon pry bar set
- Safety stands
- Loctite 262 or equivalent
- Lifting device (overhead crane hoist, forklift, etc.)

## 5.3 Disc Inspection

Never weld on the disc.

Replace the disc if cracks and/or excessive damage are present.

The disc MUST be completely disassembled after every 2,000 hours of operation to allow for a complete inspection, which is impossible on an assembled unit.

For repairing and rebalancing the disc, Blue Diamond® strongly recommends to utilize the assistance of your local authorized service center.

## 5. Maintenance

### 5.4 Tooth Holders & Teeth

#### Tooth Holders & Teeth Inspection

Make sure that the mulching disc is firmly on the ground in the vertical position. Proceed to the lockout procedure of the host machine.

With safety gloves, slowly rotate the disc by hand. Thoroughly clean the visible parts of the disc, teeth, and tooth holders.

Carefully inspect each tooth holder for cracks, damage, or excessive wear; and looseness, missing, or damaged sleeve and sleeve bolt.

Carefully inspect each tooth, tooth bolt, and flat washer for looseness, cracks, damage, and excessive wear.

All damaged or loose parts must be replaced. Refer to “7.2 Torque Specifications for Assembled Disc” on page 45 for tightening torque value and tightening condition.

#### Signs of Tooth Wear that Affect Quality & Performance

- Cutting and mulching speed abnormally slowing down
- Excessive smoke
- Cloud of fine sawdust
- Excessive temperature of teeth

#### Teeth Replacement

Replace teeth under the following conditions:

- Unbalanced disc
  - Missing tooth
  - Damaged teeth (fragmented)
  - Worn cutting edges
1. Carefully inspect ALL teeth. Teeth should have sharp cutting edges for maximum productivity. Refer to “Tooth Maximum Wear Limit” on page 24.
  2. Loosen the tooth bolt and tap on the head of the bolt until the tooth pops loose. Heat may need to be applied.

**NOTE:** When removing bolts with Loctite, apply localized heat of minimum 482°F (250°C) to loosen the bolts.

3. Remove the tooth bolt, flat washer, and tooth.

**NOTE:** Flat washers are used only for perimeter teeth.

4. Ensure that the mating surfaces of the tooth and tooth holder are clean and free of obstructions (debris, bumps, etc).
5. While holding the tooth snugly against the tooth holder, install a flat washer if replacing a perimeter tooth. Then screw in and torque the tooth bolt to the specific tightening condition as specified in “7.2 Torque Specifications for Assembled Disc” on page 45.
6. Repeat this procedure on the opposite tooth and for all other teeth that have to be replaced.
7. Always replace two (2) tooth holders of equal weight [Figure 2], and install them 180° opposite to each other on the disc to prevent the disc from being unbalanced. Always use new cap screws and sleeves when replacing them.

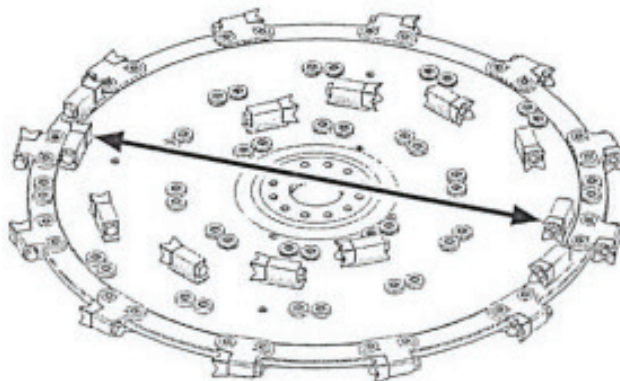


Figure 2



**IMPORTANT**



Check for tooth assembly clearance. The shoulder of the tooth must fit snugly against the shoulder of the tooth holder.

## 5. Maintenance

### 5.4 Tooth Holders & Teeth Cont'd

#### Teeth Replacement Cont'd



Damaged or worn teeth will reduce disc life and decrease operating efficiency. **ALWAYS** use sharp teeth.



Worn teeth can be rotated to extend life. It is also good usage to make a rotation of the surface and peripheral teeth as they do not wear the same way. When making the rotation from surface to peripheral teeth, try to match the tooth weight to prevent the disc from becoming unbalanced.

#### Tooth Holder Replacement



**CAUTION**



##### AVOID INJURY

All teeth should be removed from the disc before removing the disc from the mulcher.

Using adequate lifting equipment, remove the disc from the mulcher head, and install it on a free rotating arbor mounted on bearings.

With the tooth holder to be replaced at the 3 o'clock position, lock the disc in place with a straight rod.

To replace, heat the sleeve bolt to 480°F (249 °C).

Using a breaker bar, loosen both sleeve bolts.

With a hammer, tap on the sleeve bolt until the surface tooth holder or peripheral lower sleeve break free.

Always replace teeth in pairs to prevent an unbalance of the disc.



Overheating the disc and its components will cause irreversible damage to material and will greatly reduce disc assembly working life.

# 5. Maintenance

## 5.4 Tooth Holders & Teeth Cont'd

### Tooth Holder Maximum Wear Limit

See Figure 3.

DESCRIPTION	ORIGINAL	WEAR LIMIT
A – Disc Tip Thickness	22.2 mm	See below
B – Peripheral Holder Thickness	43.4 mm	40.4 mm
C & D – Holder Leg Thickness	10.6 mm	9.2 mm
E – Surface Holder Height	51.6 mm	48.5 mm
F – Surface Holder Sleeve Thickness	12.7 mm	9.7 mm
G – Disc General Thickness	25.4 mm	See below

### Tooth Maximum Wear Limit

See Figure 4.

DESCRIPTION	ORIGINAL	WEAR LIMIT
H – Tooth Tip to Tip	51.0 mm	50.8 mm
I – Tooth Tip to Holder Face (Peripheral Tooth Holder)	3.8 mm	2.5 mm
J – Tooth Tip to Holder Top Face (Tooth Holder)	5.6 mm	2.5 mm
K – Tooth Tip to Holder Face (Surface Tooth Holder)	6.5 mm	2.5 mm
L – Tip Wear Offset	0 mm	1.5 mm

Tooth Holder Maximum Wear Limit

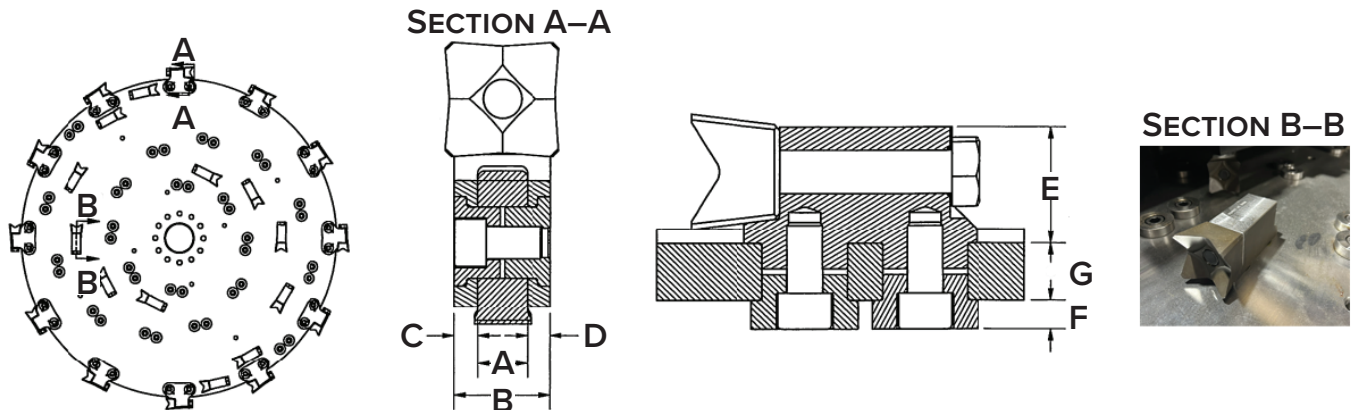


Figure 3

Tooth Maximum Wear Limit

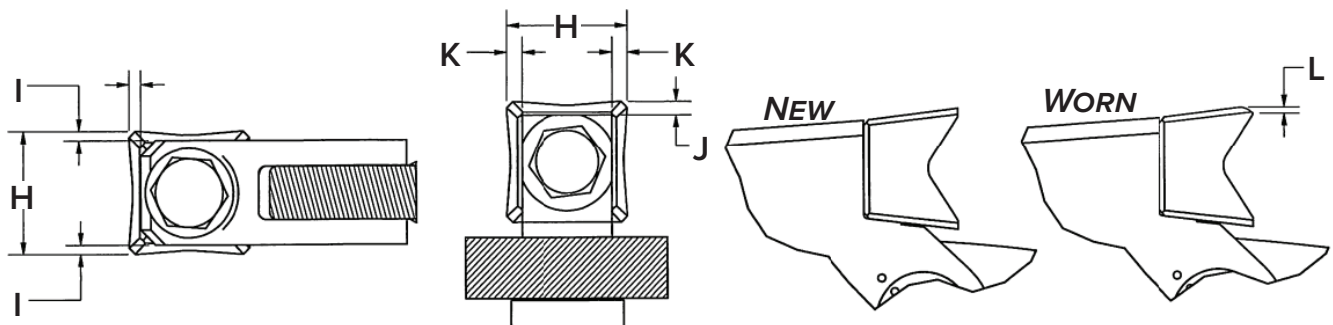


Figure 4

## 5. Maintenance

### 5.5 Disc



**DANGER**



#### **AVOID SERIOUS INJURY OR DEATH**

During the first 50 hours of operation of a new disc, the tightening torque of all fasteners must be checked and retightened if necessary, every day. Afterwards, check according to the recommended intervals stated in “5.1 Service Schedule” on page 20.

#### **How to Check Torque**

1. With the attachment placed firmly on the ground, proceed to the lockout procedure of the host machine.
2. Set the torque wrench 10% lower than the recommended torque value of the fastener to be checked.
3. Place the torque wrench on the head of the nut or bolt and pull the torque wrench arm steady until you hear the “click” of the torque wrench setting point.
  - If the nut or bolt does not turn, the torque is still good.
  - If the nut or bolt turns, replace it if necessary, and tighten to the recommended torque value specified on “7.2 Torque Specifications for Assembled Disc” on page 45.
4. Check torque of every accessible fastener, then move the mulcher to a 90° angle so the bottom of the disc is accessible.
5. Apply the lockout procedure.
6. Check the remaining fastener tightening torque.



**IMPORTANT**



Blue Diamond® recommends that if more than three (3) broken bolts are found on the disc, all of the hardware should be replaced. Fasteners should not be torqued more than twice. Replace used hardware.

#### **Complete Disc Inspection**

The disc **MUST** be disassembled every 2,000 service hours (by hour measure only) or earlier if the disc comes in contact with rocks or other hard objects.

Whenever a disc is disassembled for inspection, thoroughly check each part for irregularities as work progresses, allowing complete inspection of the disc. A complete inspection is impossible to complete on an assembled unit.

1. Make sure the Disc Mulcher is securely on the ground in an optimal position.
2. Proceed to lockout and de-energization procedure of the host machine and apply the warning tag.
3. Remove all teeth from the disc.
4. Using adequate lifting equipment, remove the disc from the mulcher head, and install it on a free rotating arbor mounted on bearings.
5. Thoroughly clean the disc and all its components.
6. Remove all holders as described “Tooth Holder Replacement” on page 23.
7. Inspect the assembly, especially the center of the disc and outer perimeter for cracks, damage, and excessive wear; looseness and for missing and damaged sleeve and sleeve bolt.
8. Inspect each holder’s hole in the disc for roundness and cracks.
9. Inspect the interior of the tooth holders for roundness and cracks.
10. Once the disc has been completely inspected and approved, it can be reassembled according to “Disc Assembly” on page 26.



**DANGER**



#### **AVOID SERIOUS INJURY OR DEATH**

Damaged discs **MUST** be replaced and should **NEVER** return to service. A damaged disc is unsafe and dangerous.

## 5. Maintenance

### 5.5 Disc Cont'd

#### Complete Disc Inspection Cont'd



### WARNING



#### AVOID SERIOUS INJURY OR DEATH

When the disc is attached to the mulcher, proceed to lockout and de-energization of the host machine to prevent unexpected starting of the machine's engine and attach a warning tag to the controls, such as "DO NOT START THIS ENGINE".

#### Disc Assembly

1. Using adequate lifting equipment, remove the disc from the mulcher head and install it on a free rotating arbor mounted on bearings.

2. When replacing a tooth holder or when reassembling a used disc, each tooth holder hole must be cleaned and any residual retaining compound removed. A wire brush can be used to remove the dry compound.

Using a fast-drying parts cleaner (ex. Loctite 30548),

wipe out any residual dust and oil from every empty tooth holder hole. Also, thoroughly clean all tooth holders, sleeves, and sleeve bolts [Figure 5].

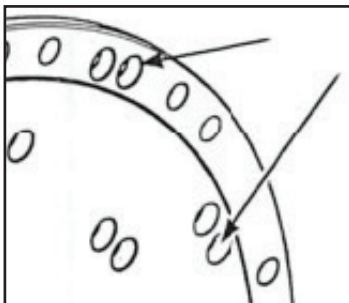


Figure 5

3. Starting with the perimeter tooth holder mounting holes, apply a retaining compound (ex. Permabond A134 or Loctite 635) into each perimeter tooth holder corresponding disc hole. Spread the components inside the hole with a

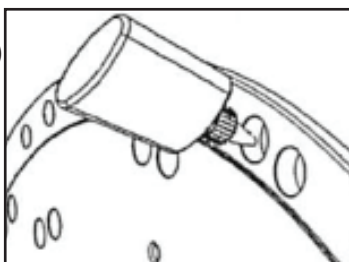


Figure 6

small brush. Then equally spread the bond all around the internal area of the hole with your finger [Figure 6].

4. Lock the disc in place using a straight rod going through one of the four matching threaded holes.
5. Install the perimeter tooth holder on the edge of the disc. Make sure to correctly install the holder with teeth surface following the direction of the disc rotation.
6. Install both perimeter upper sleeves, matching the positional holes on the sleeve and on the tooth holder.
7. Repeat this procedure for each perimeter tooth holder, and then unlock the disc.



### DANGER



#### AVOID SERIOUS INJURY OR DEATH

When removing the lock rod of a partially assembled disc, the weight will carry the disc back and forth. **DO NOT TRY TO STOP THE DISC!** Wait for it to stop on its own.

8. Place the empty half of the disc on top, then complete the second half.
9. Once all holders are in place, match the positional holes from the bottom of the disc and install each perimeter lower sleeve.
10. Apply a high-strength thread locker (ex. Loctite 635) on the threads of each perimeter lower sleeve.
11. From the top of the disc, begin with hand-tightening the first few threads of the socket head 9/16"–18 x 1" bolts. Then use an air impact gun set lower than the cap screws recommended torque.
12. Finally, torque all the 9/16"–18 x 1" bolts according to "7.2 Torque Specifications for Assembled Disc" on page 45.
13. Once all perimeter tooth holders are properly assembled in place and torqued, ensure that all sleeves do not protrude out from the top or bottom of the perimeter tooth holder.
14. Lock the disc again using a straight rod.

## 5. Maintenance

### 5.5 Disc Cont'd

#### Disc Assembly Cont'd

15. Before beginning the installation of the top and bottom tooth holders, it is important to identify the tooth spirals [Figure 7]. The bottom tooth spirals start closer to the center. Trace the spirals with a marker to identify the top and bottom spirals.

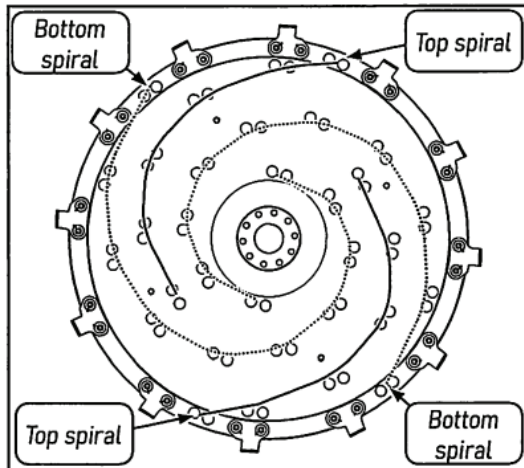


Figure 7

16. Apply a retaining compound (ex. PermaBond A134 or Loctite 635) in each top and bottom tooth holder's corresponding holes of the top spiral.
17. Install the 12 top tooth holders on the disc with the tooth mating surface toward the disc rotation direction [Figure 8, Item A].

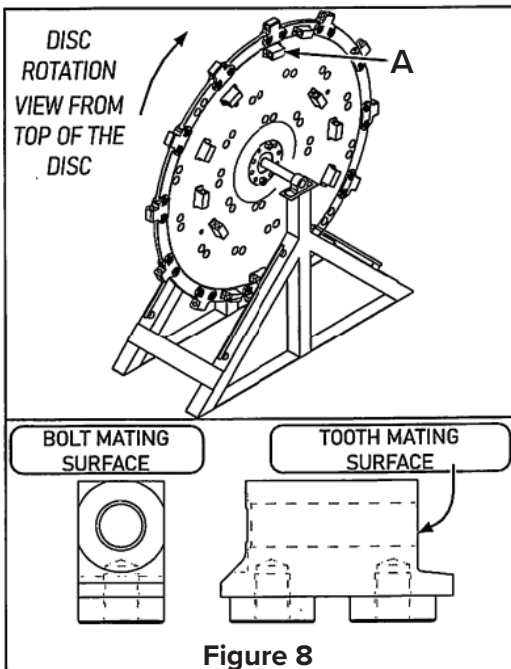


Figure 8

18. From the bottom of the disc, install all short sleeves. Then install all long sleeves on top of the disc, following the spiral pattern.

**NOTE:** Use the bottom short sleeves on the two (2) surface tooth holders located on the edge of the disc.

19. From the bottom of the disc, begin with hand-tightening the first few threads of the socket

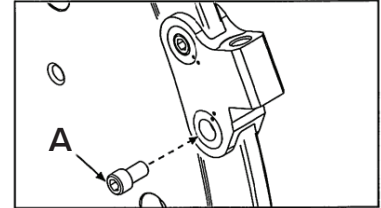


Figure 9

- head 5/8"–18 x 1 1/4" [Figure 9, Item A]. Then use an air impact gun set lower than the cap screws' recommended torque.
20. Finally, torque all 5/8"–18 x 1 1/4" bolts according to "7.2 Torque Specifications for Assembled Disc" on page 45.
21. Repeat steps 15 – 20 from the bottom of the disc for the bottom spiral tooth holders installation.

#### Partial Disc Inspection

1. The mulching head must be firmly placed on the ground in the vertical position. Proceed to the lockout procedure of the host machine.
2. Thoroughly clean the visible segment of the disc and surroundings.
3. While wearing the appropriate safety gloves, slowly rotate the disc by hand to check for mechanical interference with the housing, such as rubbing, pinching, or jamming. Perform repairs if necessary.
4. While rotating the disc, perform a meticulous inspection of the disc conditions, looking for cracks, gouges, heat discoloration, damage, and excessive wear that can be seen from the top of the disc.
5. Now, with the disc function disabled, park the mulcher firmly on the ground at a 90° angle to gain access to the bottom of the disc.
6. Stop the engine, turn off the master switch, and proceed to lockout procedure of the host machine.
7. Thoroughly clean the bottom of the disc.

## 5. Maintenance

### 5.5 Disc Cont'd

#### Partial Disc Inspection Cont'd

8. Check the bolting flanges for loose, broken, or missing mounting cap screws. Replace if necessary.
9. Thoroughly clean the threads of the disc flange mounting holes. Torque as specified in "7.2 Torque Specifications for Assembled Disc" on page 45.
10. If a bolt has been replaced, check the tightening torques of the remaining screws according to "How to Check Torque" on page 25.
11. From the bottom of the mulcher, perform a complete visual inspection of the disc's condition, looking for cracks, gouges, heat discoloration, damage, and excessive wear. If cracks and/or excessive damage are present, replace the disc.



### DANGER



#### AVOID SERIOUS INJURY OR DEATH

Damaged discs **MUST** be replaced and should **NEVER** return to service. A damaged disc is unsafe and dangerous.



### IMPORTANT



Blue Diamond® highly recommends that repairing or rebalancing of the disc is completed by a local authorized service center.

### 5.6 Motor & Direct Drive



### IMPORTANT



The Disc Mulcher comes filled with oil from Blue Diamond® and does not need checked until 50 hours. Subsequent oil changes should take place after every 1,000 hours of operation or once a year, whichever occurs first. More frequent oil changes may be necessary if operating in extremely hot conditions.

Replacement motor and direct drive do **NOT** come with oil and must be filled prior to use.



### WARNING



#### AVOID SERIOUS INJURY OR DEATH

The disc's weight is near 1,000 lbs (455 kg). **ALWAYS** use suitable lifting equipment when handling the mulcher's disc.

#### Gear Oil Statement

Blue Diamond® recommends using EP-5 85W-140 gear oil for use only with the attachment's direct drive and bearing housing, which is separate from the hydraulic fluid used to move the attachment and host machine.

#### Hydraulic Fluid Statement

Check your host machine's hydraulic fluid and add hydraulic fluid if necessary before each use. Inspect for leaks, and repair if necessary. Always use your host machine's manufacturer recommended hydraulic fluid in your machine. Fluid must be clean and free of debris. If damage occurs from debris in the hydraulic fluid flowing from your machine to the attachment, the warranty will be voided.



### IMPORTANT



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

## 5. Maintenance

### 5.6 Motor & Direct Drive Cont'd

#### Routine Direct Drive Oil Change

The direct drive oil needs to be changed after the first 50 hours of operation. After that, the oil will need to be changed after every 1,000 hours of operation or once a year, whichever comes first.

1. Unbolt the disc from the direct drive/motor. Support the disc with lifting equipment rated for the disc's weight. Set the disc aside.
2. Remove the motor cover.
3. Remove the hydraulic hoses (if applicable).
4. Unbolt the motor and direct drive from the deck of the mulcher.
5. Attach a lift chain or strap to the motor/direct drive for easier removal [Figure 10].
6. Remove the motor/direct drive and set it on a solid, clean surface.
7. Clean the outside of the direct drive to prevent any contaminants from entering the oil ports and damaging the direct drive.
8. Use a wrench to loosen the air valve on top of the motor [Figure 11].



Figure 10

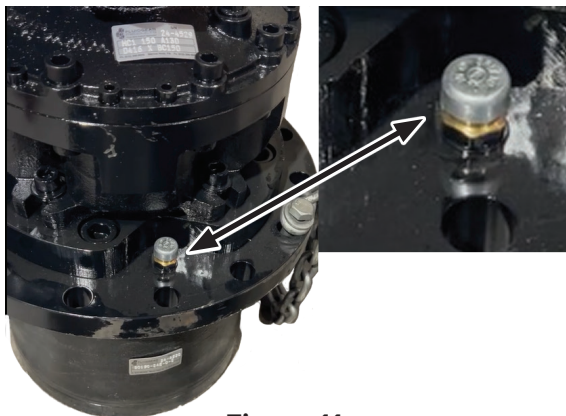


Figure 11

9. Lay the direct drive on its side with the oil ports facing up [Figure 12].

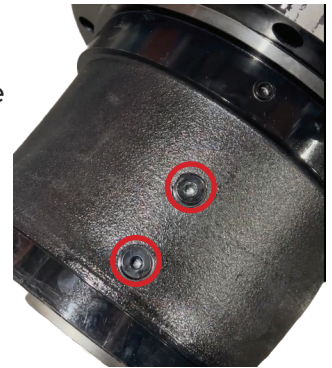


Figure 12

10. Remove both oil ports with an Allen wrench.

**NOTE:** Heat or hammer may have to be used to loosen the bolts.

11. Remove the bolt and washer. Set aside.
12. Stand the direct drive up and allow the oil to drain from the port holes. To fully empty, the direct drive may need tilted or suction pumped out.



**IMPORTANT**

Be sure used oil is properly disposed of in accordance to all local, state, and federal laws.



**IMPORTANT**

Pay attention to the appearance of the oil. If it is very dark or has excessive metal shaving, replacing both the direct drive and the motor is recommended.

13. Use a cloth to clean the oil from the outside of the direct drive.

14. To fill, use 5-EP 85W-140 gear oil. Place the oil dispenser into the top port and fill until oil begins to run out of the bottom port [Figure 13].

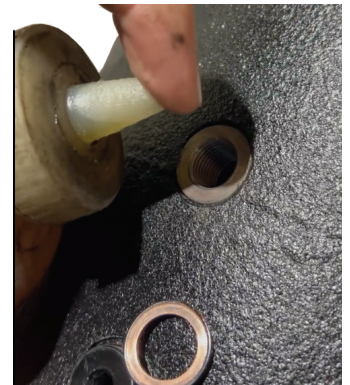


Figure 13

## 5. Maintenance

### 5.6 Motor & Direct Drive Cont'd

#### Routine Direct Drive Oil Change Cont'd

15. Place the washer and oil port bolt on the bottom port and tighten lightly with an Allen wrench [Figure 14].



16. Continue to fill the oil port with 5-EP 85W-140 gear oil until the oil begins to run out of the top port.



Figure 14

17. Place the washer and oil port bolt on the top port.
18. Tighten the oil port bolt tightly with an Allen wrench.
19. Tighten the air port on the top of the motor [Figure 11].
20. Place the motor/direct drive back in position on the deck and bolt into place.
21. Reattach the hydraulic hoses.
22. Reattach the attachment's motor cover.

#### Complete Motor Replacement



**IMPORTANT**

DO NOT disassemble the motor under any circumstance as this will void the warranty.

If the motor needs to be completely replaced, proceed with the following steps:

1. Position the mulcher deck on a flat, level surface.
2. Remove the motor cover from the deck [Figure 15].



Figure 15

3. Clean the direct drive and replacement motor to prevent contaminants from entering the direct drive during the motor replacement.
4. The direct drive is bolted to the deck, and the motor is bolted to the direct drive. Remove the motor from the direct drive only [Figure 16].



Figure 16

5. Use a wrench to loosen the air valve on the top of the direct drive [Figure 11].
6. Use a suction pump to remove the oil from the direct drive.



**IMPORTANT**

Be sure used oil is properly disposed of in accordance to all local, state, and federal laws.

## 5. Maintenance

### 5.6 Motor & Direct Drive Cont'd

#### Complete Motor Replacement Cont'd

7. Fill the gearbox with 2.5 quarts of 5-EP 85W-140 gear oil.
8. Reattach the replacement motor to the direct drive.  
**NOTE:** Make sure the O-ring is properly seated and not damaged. The O-ring may need re-oiled to achieve a proper seal.
9. Reattach the motor cover to the deck.



Pay attention to the appearance of the oil. If it is very dark or has excessive metal shaving, replacing both the direct drive and the motor is recommended.

### 5.7 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. These components include critical items, such as hydraulic motors, cylinders, and structural weldments.

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

### 5.8 Storage

#### Storage

Sometimes it may be necessary to store your Disc 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.
- Thoroughly wash the attachment before storing it for long periods.
- Lubricate the attachment.
- Check for loose hardware, missing guards, or damaged parts.
- Check for damaged or missing decals. Replace if necessary.
- Replace worn or damaged parts.
- 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 Disc 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

### 5.9 Troubleshooting

PROBLEM	CAUSE	SOLUTION
Mulcher bogs down or loses power.	Foreign material accumulating in the deck	Remove foreign material from inside the mulcher deck.
	Bearing failure (To diagnose, shut off hydraulic flow to the attachment, wait for the disc to stop spinning, exit the machine, then slowly turn the disc assembly & listen for bearing noise.)	See local authorized service technician or contact Blue Diamond® Product Support for bearing house service; replace bearing housing.
	Mulcher speed too slow or ground speed too fast	Increase RPMs, and reduce ground speed.
	Hydraulic fluid flow too slow	Look for hydraulic leaks and repair.
	Worn and/or damaged teeth	Replace worn/damaged teeth.
Excessive vibration	Missing, loose, or damaged teeth	Replace missing, loose, or damaged teeth.
	Disc damaged	Replace disc.
	Bearing failure	Repair or replace bearing housing.
Teeth dull too quickly or are breaking too easily	Teeth are receiving excessive shock loads from contacting solid objects (rocks, steel pipes, etc.)	Clear the cutting area of solid objects, flag or clear mark solid objects that cannot be removed, raise mulcher height to clear exposed rock surfaces.
Hydraulic fluid level decreases during operation	Hydraulic motor leak or leak in host machine's hydraulic system	Investigate and repair leaks.
Disc does not rotate when flow is activated	Hydraulic motor or bearing house failure	Contact local authorized service technician or contact Blue Diamond® Product Support for repair service.
	Hydraulic lines disconnected	Connect hydraulic lines to machine couplers. Ensure hoses are properly installed and locked into place.
	Problems with host machine's hydraulic controls.	Contact the host machine's local dealer for diagnosis and repair.



**DANGER**



**AVOID SERIOUS INJURY OR DEATH**

**ONLY** service the attachment on firm, level ground. **NEVER** park on sloped terrain to avoid being struck and being seriously injured or killed by the unexpected rolling or movement of the machine.

## 6. Parts

### 6.1 Differences Between Revisions

#### Revision 001

- A13D Motor Shaft
- SAE D Flange Direct Drive Bolt Pattern
- Requires Adapter Flange



This image shows a A13D motor install on a SAE D flange direct drive using the adapter flange. See left side: one motor bolt is not used

#### Revision 000

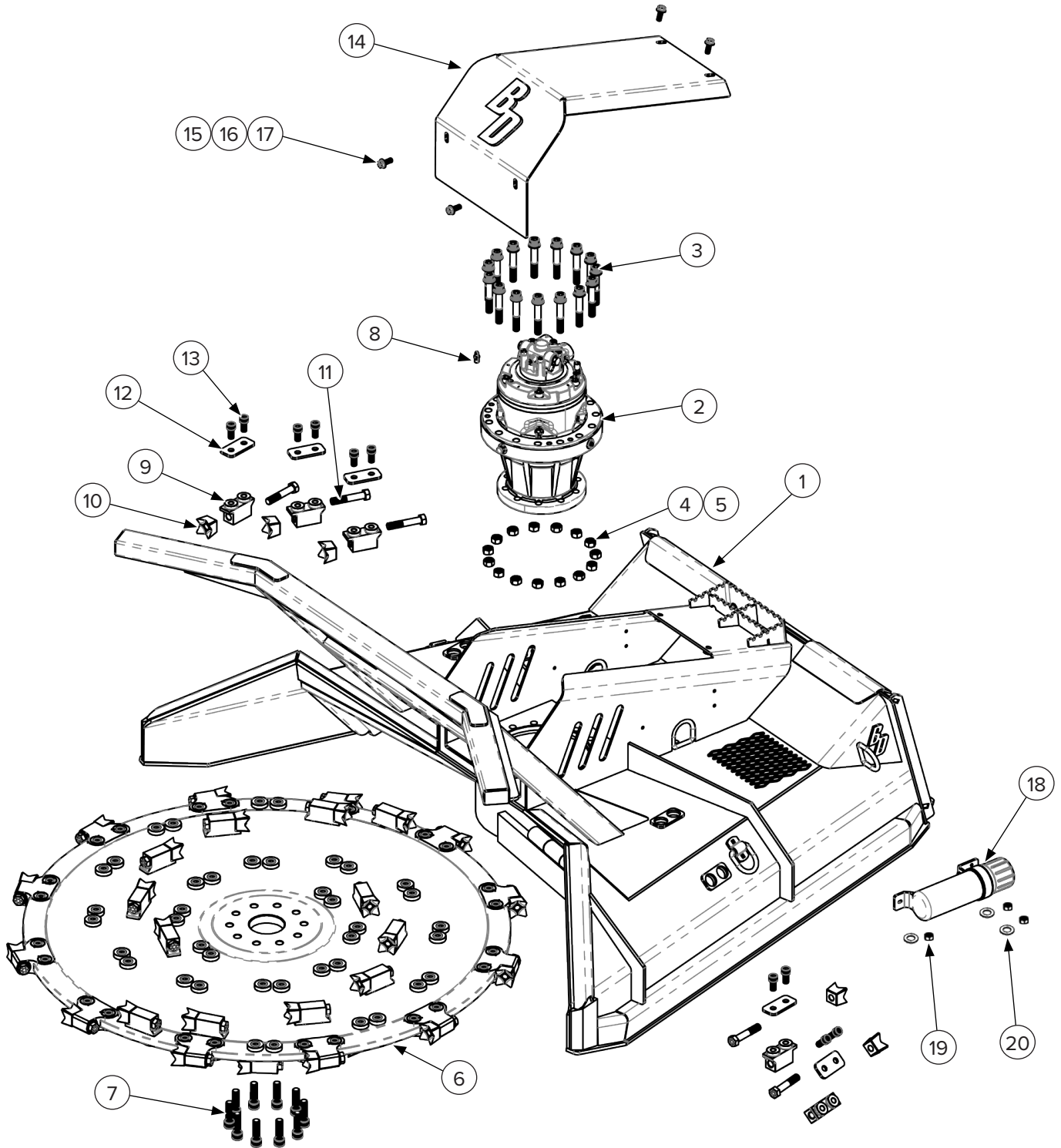
- A17D Motor Shaft
- 5-Bolt, Direct Drive Bolt Pattern



This image shows the A17D motor installed on a 5-bolt direct drive – no adapter flange needed.

## 6. Parts

### 6.2 Main Components



## 6. Parts

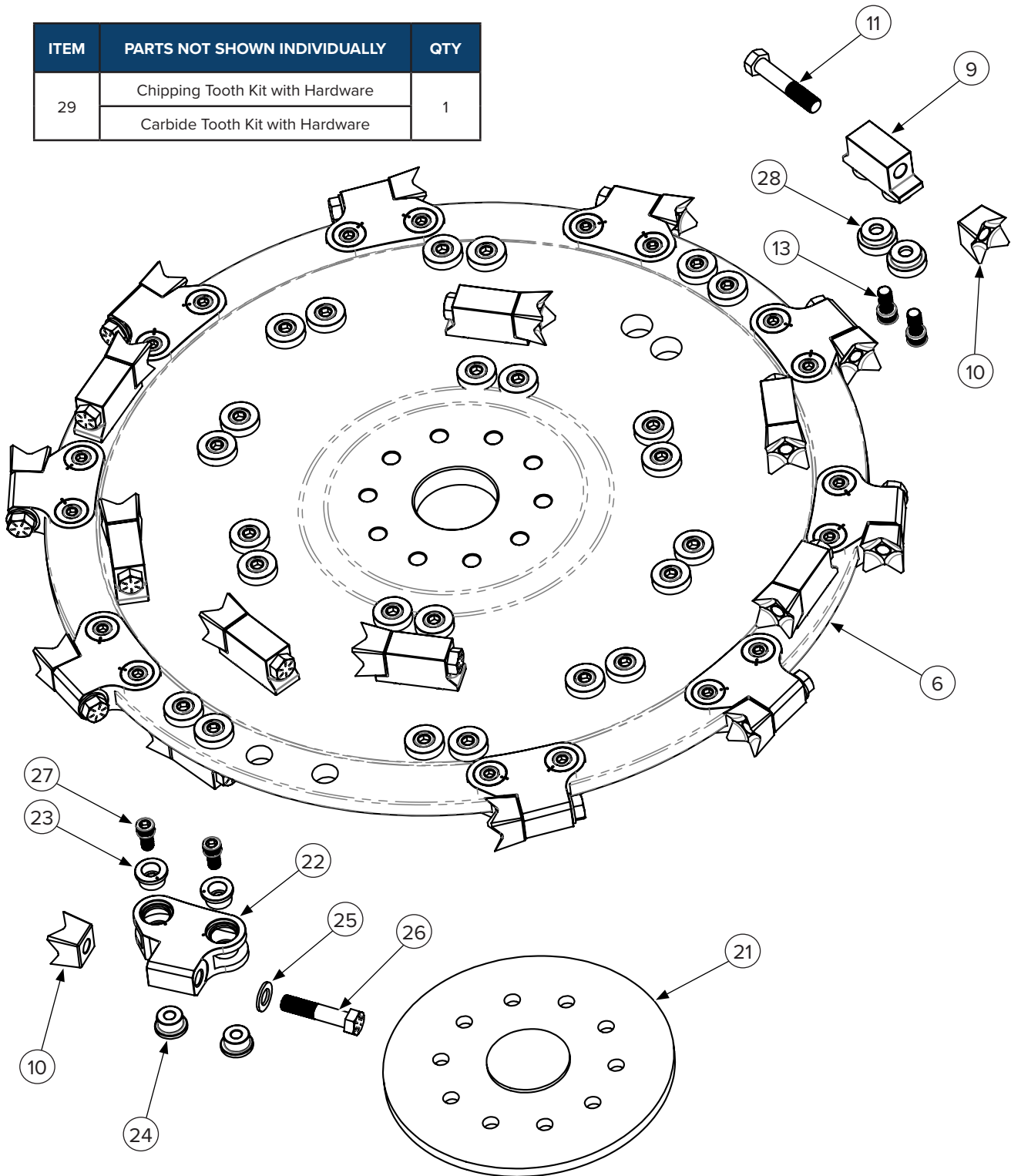
### 6.2 Main Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	44" QTY	60" QTY
1	203521	44" Main Deck Weldment	1	—
1	203522	60" Main Deck Weldment	—	1
2	See page 41	Motor & Drive Assembly	1	1
3	299120	M18 x 2.5 mm x 90 mm Socket Head Bolt Class 12.9	15	15
4	299121	M18 x 2.5 mm Hex Nut Class 8	15	15
5	299122	3 mm x M18 x 34 mm Flat Washer	15	15
6	203303	44" Disc Only (see page XX for Assembly)	1	—
6	203540	60" Disc Only (see page XX for Assembly)	—	1
7	299410	3/4"–16 x 2 1/2" Socket Head Bolt	10	10
8	295010-M04JIC-M04BSPPES	Hydraulic Straight Fitting Male #4 JIC to Male #4 British Pipe Parallel Thread Encapsulated Seal	1	1
9	203553	Tooth Holder	4	5
10	203550	Chipping Tooth	4	5
10	203551	Carbide Tooth	4	5
11	203554	3/4"–16 x 4" Hex Head Tooth Bolt	4	5
12	203535	Mounted Tooth Bolt Plate	4	5
13	203559	5/8"–18 x 1 1/4" Socket Head Tooth Holder Bolt	8	10
14	203523	44" Motor Cover	1	—
14	203524	60" Motor Cover	—	1
15	299730	1/2" Flat Wide Washer Zinc Plated	4	4
16	299830	1/2" Lock Washer Grade 8	4	4
17	299360	1/2"–13 x 1 3/8" Hex Head Bolt Grade 8	4	4
18	216402	Manual Storage Tube	1	1
19	299654	5/16"–18 Stover Nut Grade C	3	3
20	299720	5/16" Washer Zinc Plated	3	3

## 6. Parts

### 6.3 44" Disc Components

ITEM	PARTS NOT SHOWN INDIVIDUALLY	QTY
29	Chipping Tooth Kit with Hardware	1
	Carbide Tooth Kit with Hardware	



## 6. Parts

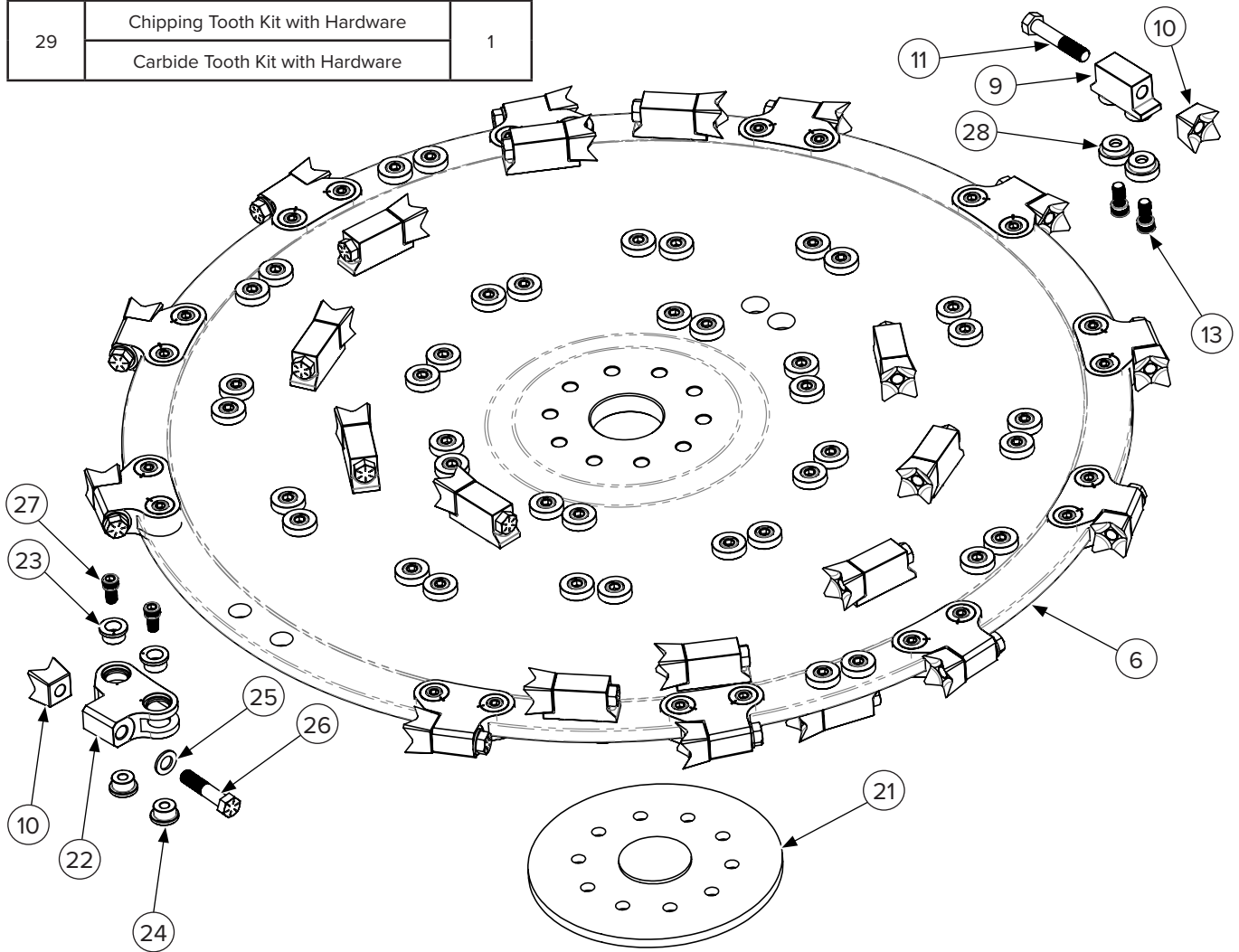
### 6.3 44" Disc Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
6	203303	44" Disc Only	1
9	203553	Tooth Holder (Top & Bottom)	20
10	203550	Chipping Tooth	30
10	203551	Carbide Tooth	30
11	203554	3/4"-16 x 4" Bolt for Chipping Tooth (Top & Bottom)	20
11	203557	3/4"- x 3 1/2" Bolt for Carbide Tooth (Top & Bottom)	20
13	203559	5/8"-18 x 1 1/4" Socket Head Bolt for Tooth Holder (Top & Bottom)	40
21	203541	Bolting Flange	1
22	203556	Perimeter Tooth Holder	10
23	203555	Perimeter Tooth Holder Sleeve Unthreaded	20
24	203552	Perimeter Tooth Holder Sleeve Threaded	20
25	203558	Washer for Perimeter Tooth	10
26	203557	3/4"-16 x 3 1/2" Bolt for Perimeter Chipping Tooth	10
26	299303	3/4"-16 x 3" Bolt for Perimeter Carbide Tooth	10
27	203562	9/16"-18 x 1" Bolt for Perimeter Tooth Holder	20
28	203543	Tooth Holder Sleeve (Top & Bottom)	40
29	203550-KIT-44	Chipping Tooth Kit with Hardware	1
29	203551-KIT-44	Carbide Tooth Kit with Hardware	1

## 6. Parts

### 6.4 60" Disc Components

ITEM	PARTS NOT SHOWN INDIVIDUALLY	QTY
29	Chipping Tooth Kit with Hardware	1
	Carbide Tooth Kit with Hardware	



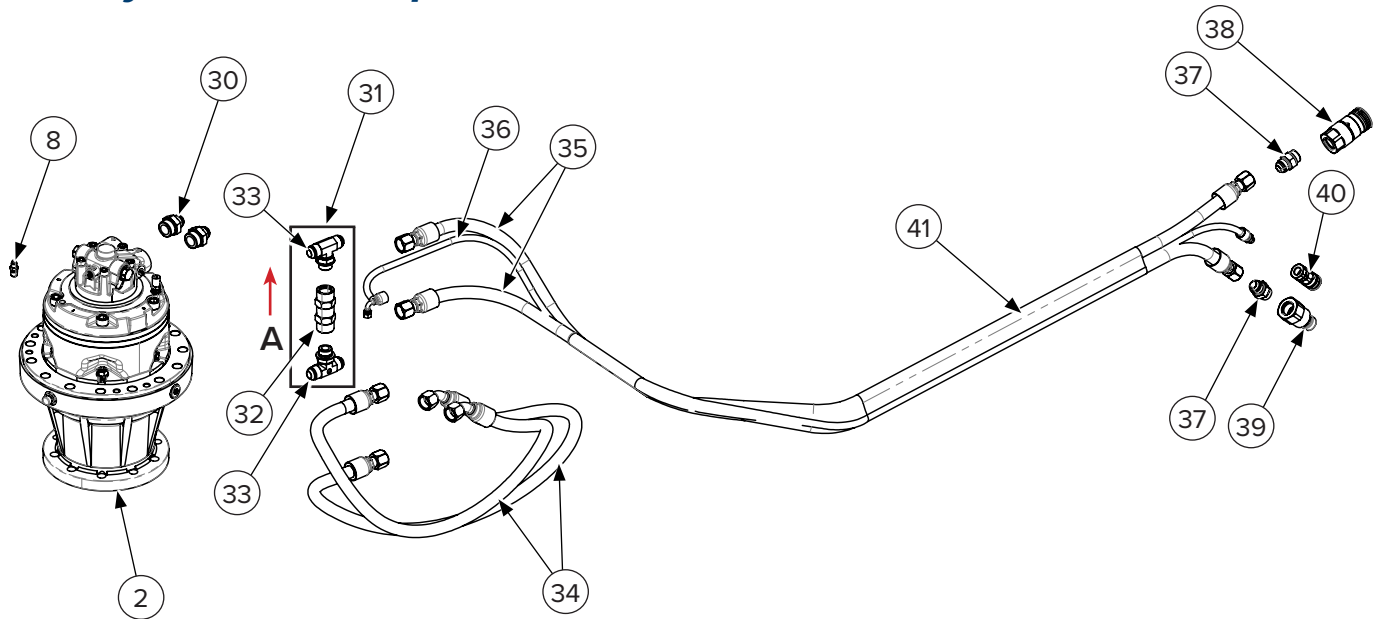
## 6. Parts

### 6.4 60" Disc Components Cont'd

ITEM	PART NUMBER	DESCRIPTION	QTY
6	203540	60" Disc Only	1
9	203553	Tooth Holder (Top & Bottom)	32
10	203550	Chipping Tooth	44
10	203551	Carbide Tooth	44
11	203554	3/4"-16 x 4" Bolt for Chipping Tooth (Top & Bottom)	32
11	203557	3/4"- x 3 1/2" Bolt for Carbide Tooth (Top & Bottom)	32
13	203559	5/8"-18 x 1 1/4" Socket Head Bolt for Tooth Holder (Top & Bottom)	64
21	203542	Bolting Flange	1
22	203556	Perimeter Tooth Holder	12
23	203555	Perimeter Tooth Holder Sleeve Unthreaded	24
24	203552	Perimeter Tooth Holder Sleeve Threaded	24
25	203558	Washer for Perimeter Tooth	12
26	203557	3/4"-16 x 3 1/2" Bolt for Perimeter Chipping Tooth	12
26	299303	3/4"-16 x 3" Bolt for Perimeter Carbide Tooth	12
27	203562	9/16"-18 x 1" Bolt for Perimeter Tooth Holder	24
28	203543	Tooth Holder Sleeve (Top & Bottom)	64
29	203550-KIT-60	Chipping Tooth Kit with Hardware	1
29	203551-KIT-60	Carbide Tooth Kit with Hardware	1

## 6. Parts

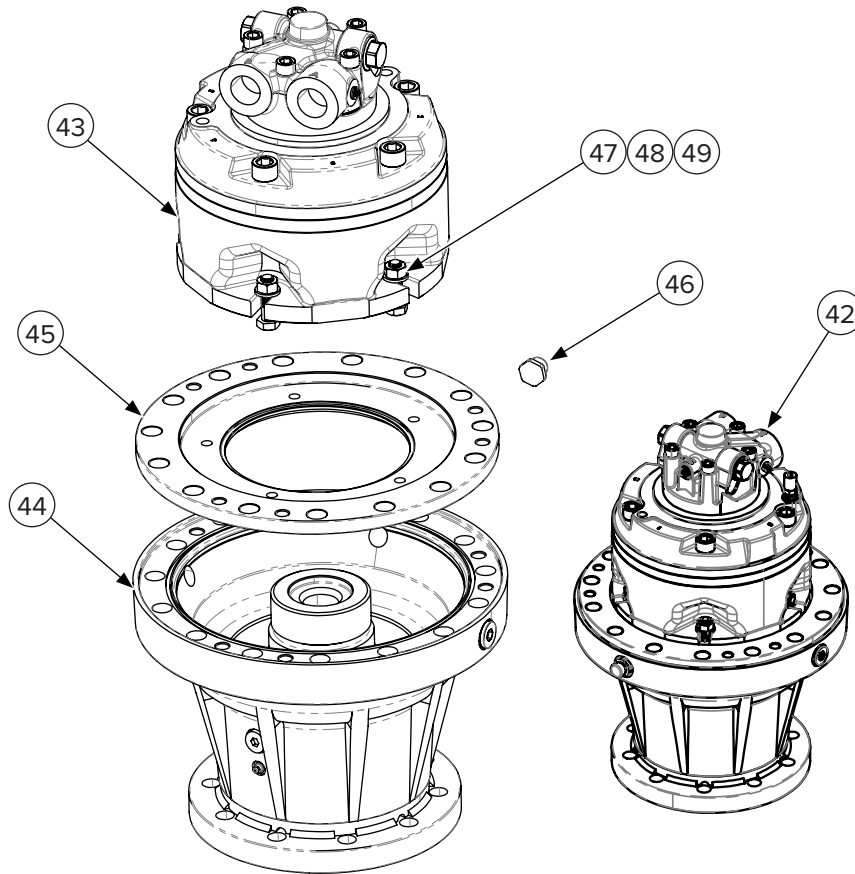
### 6.5 Hydraulic Components



ITEM	PART NUMBER	DESCRIPTION	44" QTY	60" QTY
The red arrow labeled "A" represents the direction of hydraulic flow.				
2	See page 41	Motor & Direct Drive Assembly	1	1
8	295010-M04JIC-M04BSPPEs	Hydraulic Straight Fitting Male #4 JIC to Male #4 British Pipe Parallel Thread Encapsulated Seal (Adapter for Case Drain to Case Drain Hose)	1	1
30	295010-M12JIC-M16ORB	Hydraulic Straight Fitting Male #12 JIC to Male #16 O-Ring Boss	2	2
31	203566	H-Valve Assembly (Includes Items 5 & 6)	1	1
32	203475	Check Valve	1	1
33	295050-M12JIC-M12JIC-M12ORB	H-Valve Hydraulic Tee Fitting Male #12 JIC to Male #12 JIC to Male #12 O-Ring Boss	2	2
34	203571	Motor to H-Valve Short Hose 3/4" Diameter, 59" Long	2	2
35	203576	H-Valve to Machine Long Hose 3/4" Diameter, 88" Long (Included in Item #14)	2	2
36	203561	Case Drain Hose 1/4" Diameter, 105" Long	1	1
37	295010-M12JIC-M08ORB	Hydraulic Straight Fitting Male #12 JIC to Male #8 O-Ring Boss	2	—
37	295010-M12JIC-M12ORB	Hydraulic Straight Fitting Male #12 JIC to Male #12 O-Ring Boss	—	2
38	224009	Female Coupler, Flat Face Straight 1/2" Body Female #8 O-Ring Boss	1	—
38	224011	Female Coupler, Flat Face Straight 1/2" Body Female #12 O-Ring Boss	—	1
38	224055	Female Coupler, Flat Face Straight 3/4" Body Female #12 O-Ring Boss	—	1
39	224010	Male Coupler, Flat Face Straight 1/2" Body Female #8 O-Ring Boss	1	—
39	224012	Male Coupler, Flat Face Straight 1/2" Body Female #12 O-Ring Boss	—	1
39	224057	Male Coupler, Flat Face Straight 3/4" Body Female #8 O-Ring Boss	—	1
40	224067	Case Drain Coupler, Female Flat Face Straight 3/8" Body Female #6 O-Ring Boss	1	1
40	224071	Case Drain Coupler, Male Flat Face Straight 3/8" Body Female #6 O-Ring Boss	1	1
41	203560	Machine Hose Set, 2 Hoses 3/4" ID with Sleeve	1	1

## 6. Parts

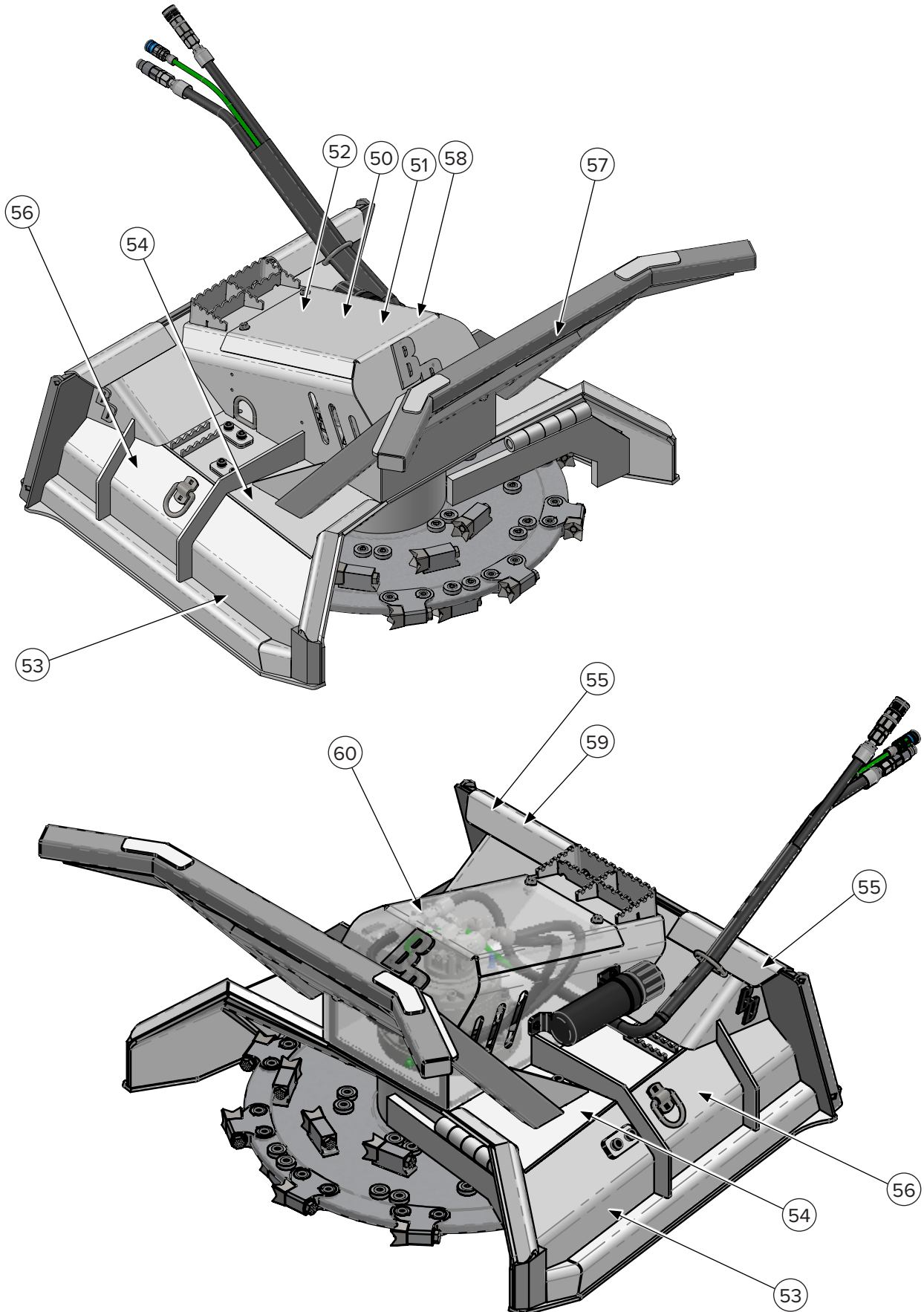
### 6.6 Motor Components



ITEM	PART NUMBER	DESCRIPTION	44" QTY REV 000	44" QTY REV 001	60" QTY REV 000	60" QTY REV 001
42	203307	100cc Motor & Direct Drive Assembly (Includes Items 2 & 3)	1	—	—	—
42	203308	150cc Motor & Direct Drive Assembly (Includes Items 2 & 3)	1	—	1	—
42	203309	200cc Motor & Direct Drive Assembly (Includes Items 2 & 3)	—	—	1	—
43	203001	100cc Motor with A17 Output Shaft	1	—	—	—
43	203301-A13D	100cc Motor with A13D Output Shaft	—	1	—	—
43	203300	150cc Motor with A17 Output Shaft	1	—	1	—
43	203300-A13D	150cc Motor with A13D Output Shaft	—	1	—	1
43	203304	200cc Motor with A17 Output Shaft	—	—	1	—
43	—	200cc Motor with A13D Output Shaft	—	—	—	1
44	203302	Direct Drive with A17 Output Shaft	1	—	1	—
44	203302-A13D	Direct Drive with A13D Output Shaft	—	1	—	1
45	—	Adapter Flange	—	1	—	1
46	—	Drive Breather	1	1	1	1
47	—	Motor to Direct Drive Bolt	5	—	5	—
47	—	Motor to Flange Bolt	—	4	—	4
48	—	Motor to Direct Drive Washer	5	—	5	—
48	—	Motor to Flange Washer	—	4	—	4
49	—	Flange to Direct Drive Bolt	—	4	—	4

## 6. Parts

### 6.7 Safety Decals



## 6. Parts

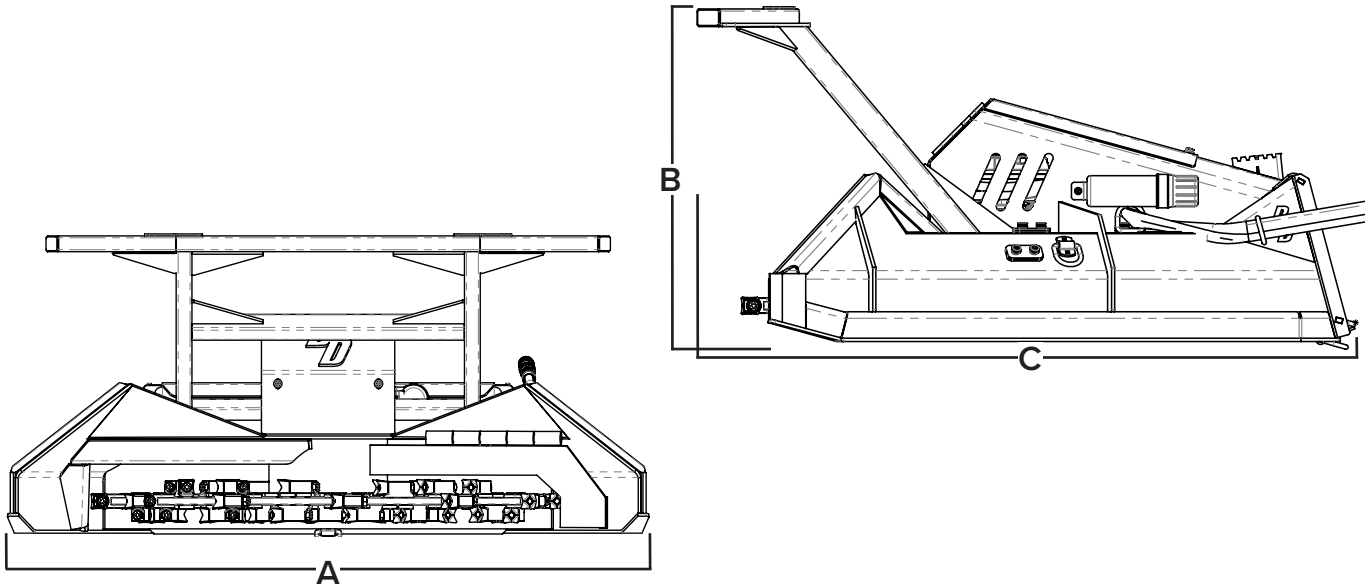
### 6.7 Safety Decals Cont'd



ITEM	PART NUMBER	DESCRIPTION	QTY
50	203531	Decal, Warning Do Not Exceed 30-45 GPM	1
50	—	Decal, Warning Do Not Exceed 32-44 GPM	1
50	—	Decal, Warning Do Not Exceed 45-60 GPM	1
51	—	Decal, Warning/Danger Combo	1
52	BD-001	3.0" x 3.0" Decal, Read Owner's Manual	1
53	203530	Decal, Danger Stay Back	2
54	BD-114	10.35" x 8.08" Decal, Blue Diamond Attachments Diamond Shape	2
55	BD-060	2.4375" x 3.375" Decal, Blue Diamond Attachments, Diamond Shape	2
56	BD-081	3" x 12" Decal, Warning Keep Hands and Feet Away	2
57	BD-056	2" x 12" Decal, Blue Diamond	1
58	BD-082	2" x 3" Decal, Attention Motor Disassembly	1
59	BD-092	1.5" x 2.0" Decal, Warranty Registration QR	1
60	BD-119	Decal, Attention Clean Motor Daily	1

## 7. Specifications

### 7.1 Attachment Specifications

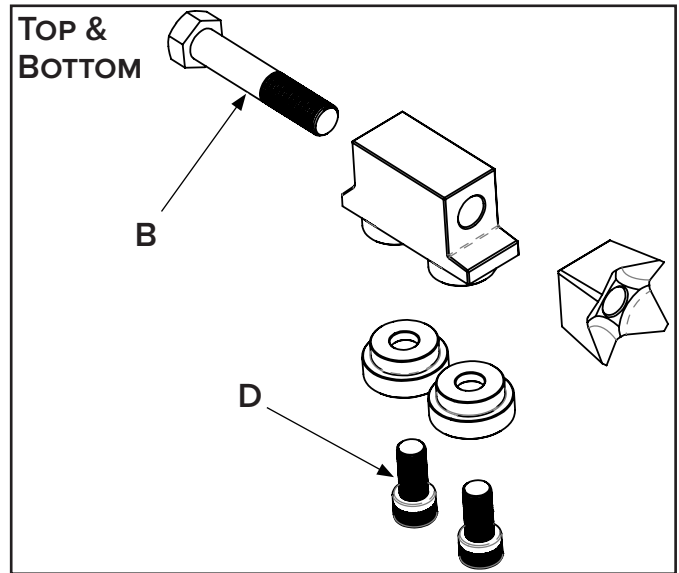
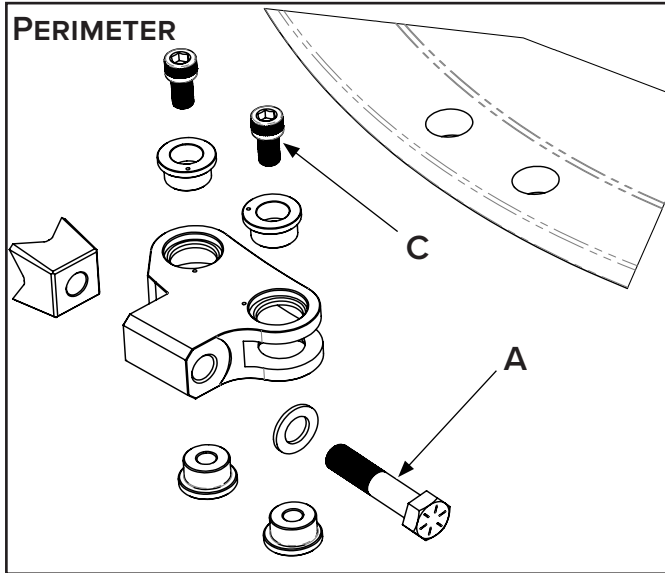


DESCRIPTION	103305 & 303305	103307 & 303307	103310 & 303310	103312* & 303312*
Cutting Width	44" (1,118 mm)		60" (1,524 mm)	
Overall Width (A)	52" (1,321 mm)		82" (2,083 mm)	
Length (B)	56" (1,422 mm)		78" (1,981 mm)	
Height (C)	37" (940 mm)			
Motor Size	100cc	150cc	150cc	200cc
Required Hydraulic Flow (GPM)	20 – 30	30 – 44	32 – 44	45 – 60
Cutting Capacity	Up to 8" Trees		Up to 14" Trees	
Total Number of Teeth	30 Teeth on Disc, 4 on Deck		44 Teeth on Disc, 5 on Deck	
Case Drain Required	Yes			
Minimum Recommended Horsepower	75 HP		90 HP	
Minimum Recommended Lift Capacity	2,200 lbs (998 kg)		3,000 lbs (1,361 kg)	
Minimum Recommended Pressure	3,000 PSI (207 bar)			
Maximum Continuous Pressure	4,000 PSI (276 bar)			
Maximum Peak/Spike Pressure	5,000 PSI (345 bar)			
Disc Weight (without teeth/with teeth)	452 lbs (205 kg) / 550 lbs (249 kg)		827 lbs (375 kg) / 925 lbs (420 kg)	
Total Weight	1,730 lbs (785 kg)		2,450 lbs (1,111 kg)	

\*Discontinued

## 7. Specifications

### 7.2 Torque Specifications for Assembled Disc



#### Torque Values For Tooth Bolts

DESCRIPTION		103305	103307	103310	103312
Perimeter Tooth Bolt (A)	Size	3/4"–16 x 3.5"			
	lbf·ft (N·m)	Dry, 200 lbf·ft (270 N·m)			
Top & Bottom Tooth Bolt (B)	Size	3/4"–16 x 4"			
	lbf·ft (N·m)	Dry, 200 lbf·ft (270 N·m)			

#### Torque Values For Tooth Holder Bolts

DESCRIPTION		103305	103307	103310	103312
Perimeter Tooth Holder Bolt (C)	Size	9/16"–18 x 1"			
	lbf·ft (N·m)	Loctite 262, 110 lbf·ft (150 N·m)			
Top & Bottom Tooth Holder Bolt (D)	Size	5/8"–18 x 1 1/4"			
	lbf·ft (N·m)	Loctite 262, 125 lbf·ft (170 N·m)			

## 7. Specifications

### 7.3 Torque Specifications – Imperial Standard Hardware and Lock Nuts

BOLT TYPE	SAE GRADE 5		SAE GRADE 8		LOCK NUTS			
	Plated or Unplated Silver	Plated W/ ZnCr Gold	Plated or Unplated Silver	Plated W/ ZnCr Gold	Plated or Unplated Silver	Plated W/ ZnCr Gold	W/ Grade 5 Bolt	W/ Grade 8 Bolt
1/4	4.6 lbf•ft	6.0 lbf•ft	7.2 lbf•ft	9.3 lbf•ft	10.0 lbf•ft	13.1 lbf•ft	5.1 lbf•ft	7.2 lbf•ft
	6.2 N•m	8.1 N•m	9.7 N•m	12.6 N•m	13.6 N•m	17.7 N•m	6.9 N•m	9.8 N•m
5/16	9.6 lbf•ft	12.5 lbf•ft	14.8 lbf•ft	19.2 lbf•ft	20.7 lbf•ft	27.3 lbf•ft	10.3 lbf•ft	14.8 lbf•ft
	13 N•m	17 N•m	20 N•m	26 N•m	28 N•m	37 N•m	14 N•m	20 N•m
3/8	17 lbf•ft	22 lbf•ft	26 lbf•ft	34 lbf•ft	37 lbf•ft	48 lbf•ft	19 lbf•ft	26 lbf•ft
	23 N•m	30 N•m	35 N•m	46 N•m	50 N•m	65 N•m	26 N•m	35 N•m
7/16	27 lbf•ft	35 lbf•ft	42 lbf•ft	54 lbf•ft	59 lbf•ft	77 lbf•ft	30 lbf•ft	42 lbf•ft
	37 N•m	47 N•m	57 N•m	73 N•m	80 N•m	104 N•m	41 N•m	57 N•m
1/2	42 lbf•ft	54 lbf•ft	64 lbf•ft	83 lbf•ft	91 lbf•ft	117 lbf•ft	45 lbf•ft	65 lbf•ft
	57 N•m	73 N•m	87 N•m	113 N•m	123 N•m	159 N•m	61 N•m	88 N•m
9/16	60 lbf•ft	77 lbf•ft	92 lbf•ft	120 lbf•ft	130 lbf•ft	169 lbf•ft	65 lbf•ft	92 lbf•ft
	81 N•m	104 N•m	125 N•m	163 N•m	176 N•m	229 N•m	88 N•m	125 N•m
5/8	83 lbf•ft	107 lbf•ft	128 lbf•ft	165 lbf•ft	180 lbf•ft	233 lbf•ft	90 lbf•ft	127 lbf•ft
	112 N•m	145 N•m	174 N•m	224 N•m	244 N•m	316 N•m	122 N•m	172 N•m
3/4	146 lbf•ft	189 lbf•ft	226 lbf•ft	293 lbf•ft	319 lbf•ft	413 lbf•ft	160 lbf•ft	226 lbf•ft
	198 N•m	256 N•m	306 N•m	397 N•m	432 N•m	560 N•m	217 N•m	306 N•m
7/8	142 lbf•ft	183 lbf•ft	365 lbf•ft	473 lbf•ft	515 lbf•ft	667 lbf•ft	258 lbf•ft	364 lbf•ft
	193 N•m	248 N•m	495 N•m	641 N•m	698 N•m	904 N•m	350 N•m	494 N•m
1	213 lbf•ft	275 lbf•ft	547 lbf•ft	708 lbf•ft	773 lbf•ft	1000 lbf•ft	386 lbf•ft	545 lbf•ft
	289 N•m	373 N•m	742 N•m	960 N•m	1048 N•m	1356 N•m	523 N•m	739 N•m

## 7. Specifications

### 7.4 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	
	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

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## 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 Disc 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](http://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**

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