Tractor Flail Mower Heavy Duty

Operation and Maintenance Manual

403735,403740, 403750

SATISFACTION BLUE DIAMOND® GUARANTEED

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BD-092

Introduction: *Owner Information*

Thank you for your decision to purchase a Blue Diamond® Heavy Duty Tractor Flail Mower. 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.

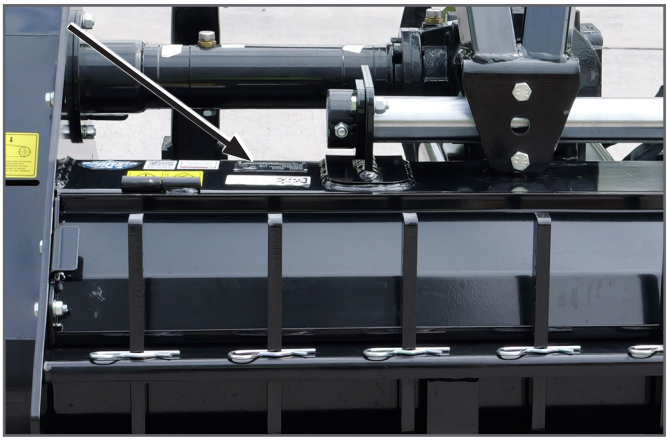
Blue Diamond® is continually working to improve its products. Blue Diamond® reserves the right to make any improvements or changes as deemed practical and possible without incurring any responsibility or obligation to make any changes or additions to equipment sold previously.

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 top of the frame on the right side of where the guide bar is mounted 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.

Revision Date: 02.11.2026

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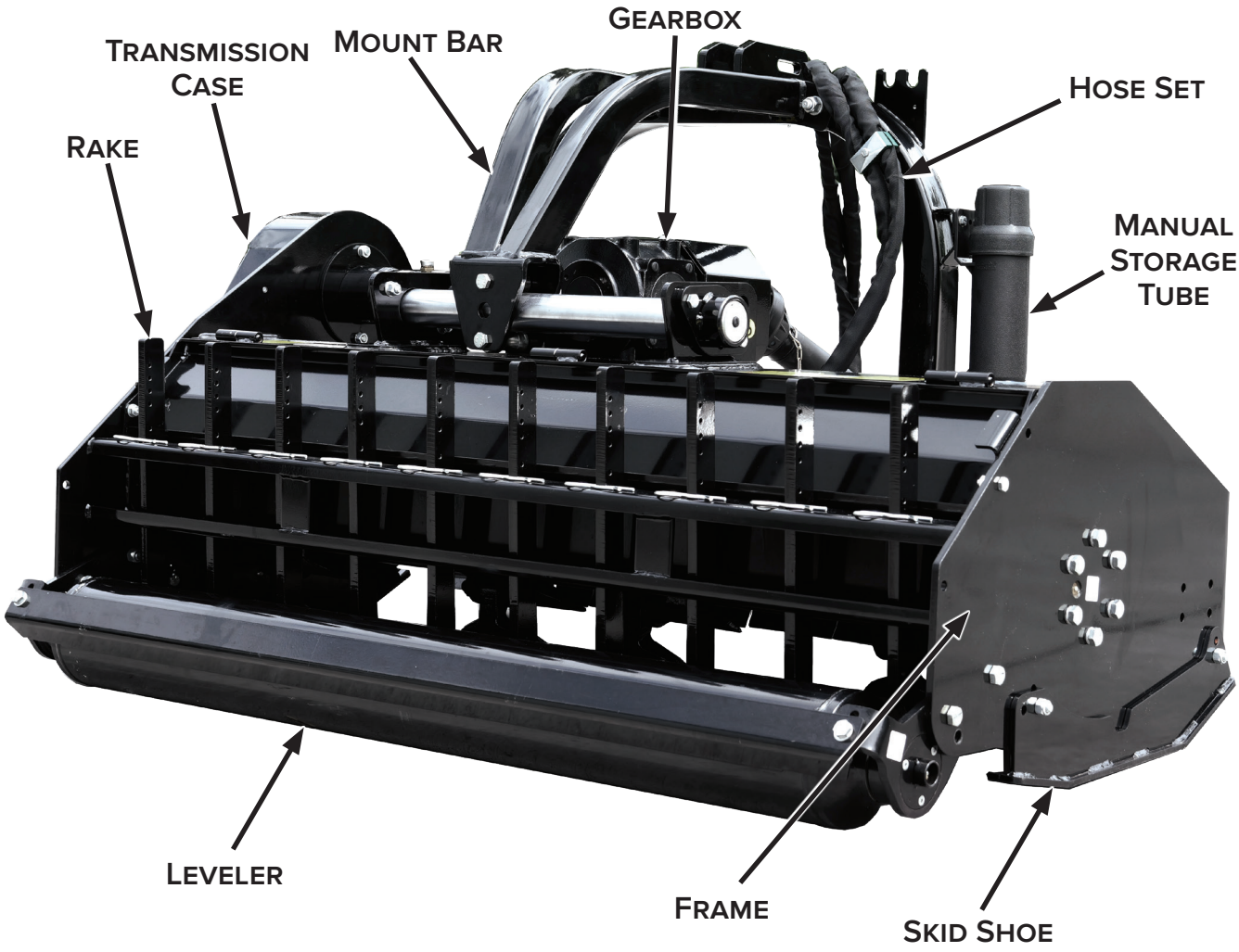
1. Introduction

1.1 *Attachment Identification*



1. Introduction

1.2 *About this Attachment*

The entire Blue Diamond® line of PTO Flail Mower is built for 35–100 HP tractors with Category 1 or 2 hitches and offer cutting widths from 69” to 98” to suit a wide range of applications. Designed for durability and precision, standard features include hydraulic side shift, rear levelers and rakes, and forged hammer blades. Its rugged gearbox and electronically balanced rotor ensure smooth, reliable performance in demanding conditions. Ideal for mowing thick grass, roadside shoulders, orchards, pastures, and light brush up to 3”.

1.3 *Attachment Model Numbers*

Model Number	Working Width	Recommended Horsepower
403735*	62”	50 – 75
403740	87”	75 – 100
403750	98”	75 – 100

*Discontinued model

2. Safety

2.1 *General Safety Information*

SAFETY ALERT SYMBOL

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.

IMPORTANT

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

DANGER

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.

WARNING

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.

CAUTION

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 Tractor Flail Mower 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 Tractor Flail Mower 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.

2.2 *Operators*

Qualified Operators

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

The operator is to follow the given instructions in this manual and the machine operator's manual in order to obtain maximum performance, 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.
- 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.

2.3 *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 (if applicable).
- In addition to the design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence, and proper training of personnel involved in the operation, transport, maintenance, and storage of equipment.
- Check that the attachment is securely fastened to the machine.
- Make sure all the machine controls are in the NEUTRAL before starting the machine.
- Operate the equipment only from the operator's position.
- Operate the equipment according to the Operator's Manual.
- When learning to operate the equipment, do it at a slow rate in an area clear of bystanders.
- The attachment must be slightly lifted off the ground before making changes in direction.
- Disengage the PTO before raising the attachment, and never engage the PTO with the attachment raised as objects might be thrown.
- Do not permit personnel to be in the work area when operating the equipment.
- Do not leave the operator's position when the tractor is in operation. Before leaving the tractor, lower the attachment to the ground, disengage the PTO, engage the parking brake, stop the engine, and remove the key from the ignition.
- 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 mower 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.
- Immediately stop operating the attachment if the hammer blade strikes a foreign object. Repair all damage and make certain that the rotor and hammer blades are in good condition before resuming operation.
- Wear safety glasses, gloves, hearing protection, and other protective clothing when required.
- Do not engage the tractor's PTO if people are close to the driveshaft.

2.3 Safety Guidelines Cont'd

Operating Safety Cont'd

- Before engaging the tractor's PTO, always make sure that the driveshaft is mounted in the correct direction and that its clamping elements are properly connected both to the tractor side and the implement side.
- Do not use the attachment with missing bolts, screws, pins, or other hardware. Always disengage the tractor PTO when the driveshaft exceeds an angle of 10° up or down while operating. An excessive angle with the driveshaft rotating can break the driveshaft and cause flying objects.
- All adjustment operations on the attachment must be performed by a qualified and trained technician with the tractor engine off, the PTO disengaged, and attachment set on a flat, level surface, ignition key removed, and the parking brake set.
- PTO shields, both on the machine and implement, and the driveshaft's retaining chains and shielding must be properly installed and in good condition to avoid risk of serious injury or death.

Machine Requirements and Capabilities

- Keep bystanders clear of moving parts and work area. Keep children away.
- See "6.1 Attachment Specifications" on page 49 for potential operating restrictions.
- Use caution on slopes and near banks and ditches to prevent overturn.
- Do not operate the machine on too muddy, sandy, or rocky soil.
- Keep the machine and attachment clean from debris and foreign objects.
- Do not use the attachment if the category of the connecting pins does not match that of the tractor hitch system.
- Make certain, by adding the front ballast that is at least 20% of the total weight (tractor, implement, and ballast) is on the front axle of the tractor to ensure stability.
- Before engaging the tractor PTO, make sure the tractor PTO speed is set as required for the attachment (540 rpm). Overspeeding the PTO shaft will result in damage to the attachment.
- Before engaging the PTO, always make sure that the driveshaft is mounted in the correct direction and that its clamping elements are properly connected both to the tractor side and implement side.
- Do not operate the attachment if the driveshaft is damaged. The driveshaft could be subjected to breakage during operation, causing serious injury or death. Remove and replace the driveshaft.
- Avoid overheating the clutch, which can be caused by too long or frequent slipping of the clutch.
- Avoid prolonged use of the attachment, which can cause overheating of the gearbox. Do not touch the gearbox during use and immediately after as it will be extremely hot.
- When the attachment is disconnected from the tractor, rest the driveline on the provided support.

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 gearbox 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.

2.3 *Safety Guidelines Cont'd*

Hydraulic System

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

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.
- Do not transport people, animals, or objects using either machine or equipments.
- If transporting the equipment on a truck or trailer, make sure the equipment is properly secured to the transport vehicle.
- Before transporting, determine the stopping characteristics of the tractor and implement.
- Transport only at speeds where control of the machine and implement can be maintained.
- When driving on roads, the attachment must be in a transport position where it is adequately raised with the lifting hydraulics locked.
- The implement may be wider than the host machine. During transport, pay attention to potential obstacles, such as people, animals, objects, etc.
- Do not operate the tractor with weak or faulty brakes or worn tires.
- When turning, use extreme care and reduce tractor speed.
- If lifting of the attachment is required, make sure that the lifting device chosen is suitable to safely perform the operation. Only use lift points that are properly identified.

Maintenance Safety

- All maintenance and repairing operations must be performed by qualified and trained operators with the tractor engine off, the PTO disengaged, the attachment lowered on a flat, level surface, the ignition key removed, and the parking brake set.
- Only use spare parts provided by Blue Diamond® Product Support.
- Before any maintenance operation, make sure that the parts which may become hot during use (clutch, gearbox, etc.) have cooled.
- Contact Blue Diamond® Product Support if the technician needs assistance.

Storage Safety

- Never leave the tractor unattended with the attachment in the lifted position. Accidental operation of the lifting lever or a hydraulic failure may cause a sudden drop of the unit.
- Make sure all parked machines are on a firm, level surface, and all safety devices are engaged.
- Store the unit away from human activities. See "4.8 Storage" on page 27 for more information.

2.3 *Safety Guidelines Cont'd*

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. Operation

3.1 *Pre–Operation Inspection*

Before operating the Tractor Flail Mower 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.**

- Lubricate the attachment per the schedule outlined in the Maintenance section. See "4.1 Service Schedule" on page 22 for more information.
- Check the attachment mounting frame for damage or cracks.
- Check that the attachment mounting frame is compatible with the host machine.
- Check that all shields and guards are in place and have no damage. Replace them if necessary.
- Check for loose bolts and tighten them if necessary.
- Check all welds on the attachment for wear and damage each time the attachment is removed from the machine.
- Check for damaged or missing safety decals. Replace if necessary.
- Inspect the machine's mounting frame. (See the machine's Operator's Manual for inspecting the mounting frame.) Replace any parts that are damaged, bent, or missing. Keep all fasteners tight. Look for cracked welds.
- 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 that the attachment itself is in good condition. Repair or replace damaged parts if necessary.
- Check that the attachment has no missing parts. Replace if necessary.
- Verify that the PTO driveshaft is properly installed (see"Installing the Driveline" on page 15).
- Check for oil leaks from the gearbox or the transmission side cover. Repair if necessary.
- Check that the hammer blades are not excessively worn and its hardware is properly torqued. See "6.2 Torque Specifications – Metric" on page 50.
- Check that there are no constraints that may prevent the movement of the attachment. Remove any constraint if necessary.
- Clear the work area of foreign objects (rocks, branches, debris, etc.). Remove any obstacle, and flag each obstacle that cannot be removed.
- Make sure no people or animals are in the work area.

3. Operation

3.2 *Entering & Exiting the Prime Mover*

IMPORTANT

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

WARNING

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.

3.3 *Attachment Installation*

Connecting Attachment to the Machine

WARNING

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 13.

Drive the tractor in reverse, aligning the rear lifting arms to the lower hitches of the attachment. See Figure 1.

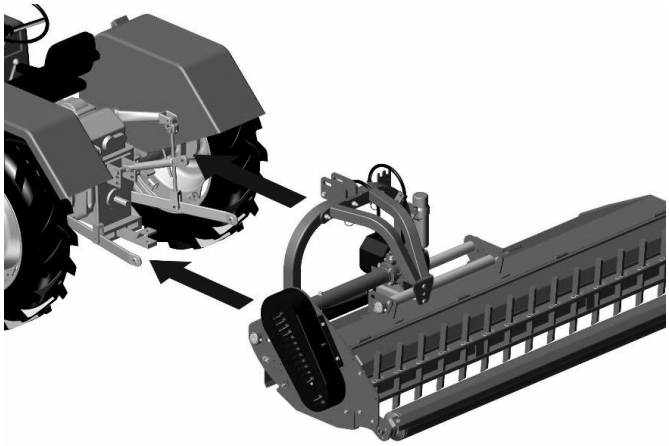


Figure 1

Set the parking brake, turn off the engine, remove the ignition key, and exit the prime mover (see "Leaving the Operator's Position" on page 13).

3.3 *Attachment Installation Cont'd*

Connecting Attachment to the Machine Cont'd

Connect the lifting arms of the host machine to the lower hitches of the attachment. Install pins and the relative safety split pins.

Raise the attachment until both the tractor's PTO and the attachment's PTO are at the same height. Adjust the 3–point top link so that the front of the attachment is level to the back (the axis of the attachment's PTO must be parallel to the ground) to limit stress on the attachment caused by the driveshaft.

Make sure the left side of the attachment is level with the right by adjusting the tractor's lifting arms, then lock the arms to prevent swinging, which could compromise the stability of the tractor and attachment.

Once the attachment is secured to the machine, retract the parking stand, and place the snap pin through the bottom hole.

Installing the Driveline

IMPORTANT

Prior to installing the driveline, the operator must read the manual for the driveshaft and the manual for the tractor to make sure that the rotations per minute (rpm) and direction of rotation of the tractor PTO match that of the Flail Mower.

If the direction of rotation of the PTO tractor does not match that of the attachment, contact your local dealer or Blue Diamond® Product Support.

The gearbox unit for the Flail Mower is equipped with a free wheel inside, which is able to absorb the rotor inertia during stopping. This prevents possible damage to the transmission system from the tractor to the attachment that would be caused by an instantaneous stop of the rotor. Because of this, the use of a cardan shaft with a free wheel is not required.

1. Park the tractor and attachment on a flat, level surface, set the parking brake, turn off the engine, and remove the key from the ignition. Exit the tractor (see "Leaving the Operator's Position" on page 13).
2. Check that the safety devices of the driveshaft, Flail Mower, and tractor are in good condition. Repair or replace if necessary.
3. Remove the attachment's PTO shield by removing its bolts.
4. Position the driveshaft with the clutch turned towards the attachment side.
5. Insert the clutch hub on the attachment's PTO, then tighten it onto the shaft using its fastener.
6. Place the PTO shield back onto the Flail Mower securing it with the previously removed bolts.
7. Insert the driveshaft yoke on the tractor's PTO, then tighten it onto the shaft using its fastener.
8. Hook the two (2) retaining chains of the driveline shielding to the tractor and the attachment. This is to prevent shielding rotation during operation of the machine.

Checking Driveline Length

Before operating the attachment, ensure that the size of the driveshaft is accurate. The driveshaft supplied with the machine has a standard length, but it does not apply to all host machines. To fit your machine, the length may need adjusted.

How to know if the driveline is the correct length:

- Avoids bottom out of the transmission tubes when the driveshaft is in the compressed position (when the attachment is raised).
- Ensures an overlapping of the transmission tubes enough to transmit the torque required when the driveshaft is fully extended (when the attachment is lowered)
- When the driveshaft is at its minimum length (maximum compressed position), there must be at least 3/4" (20 mm) of distance between the ends of each transmission tube and the yokes side.

3.3 *Attachment Installation Cont'd*

Installing the Driveline

Checking Driveline Length

- When the driveshaft is at its maximum operational extension, there must be an overlap between the tube's profiles of at least 6" (150 mm). See Figure 2.

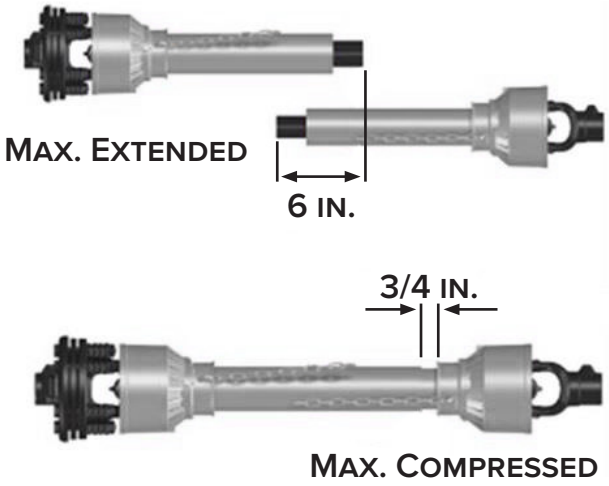


Figure 2

A driveshaft that is too long may cause structural damage to the tractor and attachment. If the driveshaft is too long, remove it and shorten the tubes according to the instructions provided by its operation and maintenance manual.

A driveshaft that is too short can cause the tubes to disengage during operation. This is a huge hazard for the operator and can cause structural damage to the tractor and attachment. If the driveshaft is too short, it must be replaced with a longer driveshaft. If this is the case, contact your local dealer or Blue Diamond® Product Support.

IMPORTANT

- **Before operating the attachment for the first time, make sure that the driveshaft is lubricated in accordance to the manufacturer manual.**
- **Before operating the attachment for the first time and after long periods of inactivity, make sure that the driveline clutch has run a short "run in" in accordance to the manufacturer manual, removing the possible oxidation of the components that may compromise the correct slipping during the usage (see "4.7 Driveshaft" on page 26).**
- **Always engage the tractor PTO at low rpm to minimize the effect of the peak torque on the driveline and on the attachment.**

Connecting Hydraulic Hoses

Make sure the tractor and attachment are turned off before connecting the hoses.

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: return hose then 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.

3.3 *Attachment Installation Cont'd*

Disconnecting the Attachment

Never leave the tractor unattended with the attachment in the lifted position.

To disconnect the Flail Mower from the tractor, perform the following steps:

- Adjust the skids to their lowest position (see "Skid Shoes" on page 19 under 3.7 Adjustments).
- Adjust the parking stand to the lowest position by using the retaining pin.
- Park the tractor on a firm, level, and dry surface.
- Reduce the engine speed.
- Disengage the PTO.
- Wait for all rotating parts to stop before lowering the attachment to the ground.
- Set the parking brake.
- Turn off the engine, and remove the key before leaving the operator's position (see "Leaving the Operator's Position" on page 13).
- Place the safety blocks under the Flail Mower to prevent the attachment from tipping over, which could result in injury or death.
- Disconnect the driveline from the tractor PTO and rest it on the support plate of the Flail Mower.
- Disconnect the top hitch and rear lifting arms of the tractor from the lower hitches.
- Check the attachment's stability. If needed, place additional safety blocks.
- Enter the operator's position (see "Entering the Operator's Position" on page 13), start the engine, and slowly move away from the Flail Mower.
- See "4.8 Storage" on page 27 for how to properly store the attachment for long periods of inactivity.

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 then return hose.

The pressure hose must be disconnected before the return hose.

After disconnecting, cap the hydraulic ports to prevent contamination. Store the hoses in a clean, dry place to protect them from damage and dirt.

After disconnecting, check the hydraulic system for any leaks around the hoses or connections. If leaks are found, repair or replace the affected hoses.

3.4 *Tractor–Attachment Stability*

The weight of the machine modifies the stability of the tractor, which could result in loss of control and braking.

CAUTION

Check the lifting capacity and stability of the tractor. If necessary, apply a front ballast. To determine the appropriate characteristics of the ballast, refer to the tractor's manual.

The front axle of the tractor should always load with at least 20% of the overall weight of the tractor and attachment.

Check the lifting capacity and stability of the tractor, making sure the following relations are complied with (see table below for definitions). See Figure 3.

- M x (S1 + S2) ≤ 0.2 x T x i + Z x (d + i)
- M ≤ 0.3T

Key for Figure 3

- i = tractor wheelbase (cm)
- d = distance between front axle and ballast center of mass (cm)
- T = weight of tractor + operator (kg)
- Z = ballast weight (kg)
- M = attachment weight (kg)
- S1 = distance between rear axle and lower hitch points (cm)
- S2 = distance between lower hitch points and implement center of mass (cm)

3.5 *Operating the Attachment*

DANGER

- **Before operating the attachment, the operator should have read and understood the operator's manuals for the attachment, tractor, and PTO shaft.**
- **During operation, adjustment, maintenance, repairing or transportation of the machine, the operator must always use appropriate personal protective equipment (PPE).**
- **Before operating, ensure that all machine guards are in good condition and fully functional. Repair or replace if necessary.**
- **During operation, the machine can throw material from the back. Be sure the work area is clear prior to beginning operation.**

Starting the Attachment

1. Start the tractor and engage the PTO at a low rpm, make sure that the Flail Mower is NOT in the raised position but close to the ground. Then increase the engine speed until it reaches 540 rpm.

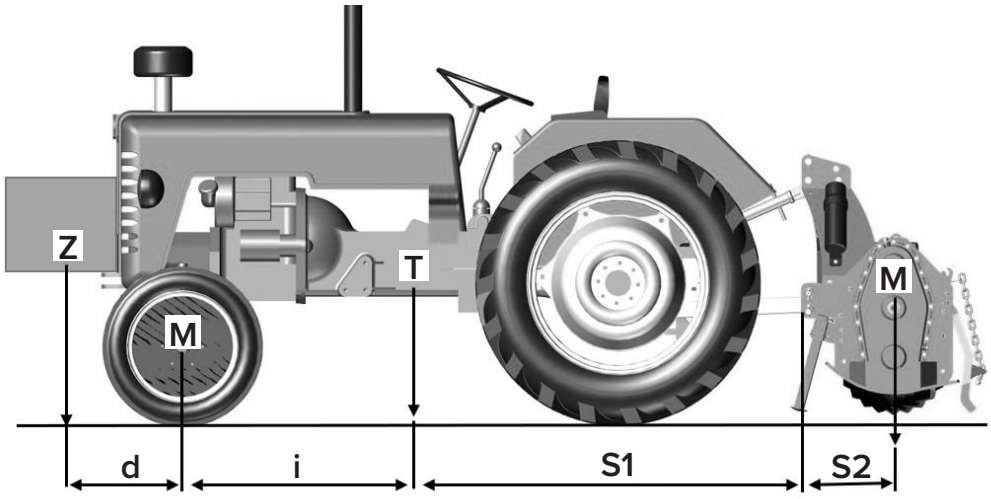


Figure 3

3.5 *Operating the Attachment Cont'd*

Starting the Attachment Cont'd

2. Lower the Flail Mower onto the ground and simultaneously start driving the tractor at a low speed. Then increase the ground speed, depending on ground conditions.

   If the outside temperature is extremely cold, Blue Diamond® recommends to continue running the tractor PTO at a low rpm before lowering the attachment completely onto the ground.

3. Drive the tractor forward with the PTO running. Be sure to intermittently check the quality of the work performed.

   If the operator needs to exit the machine, lift the attachment so that it is slightly above the ground, reduce engine speed, disengage the PTO, set the parking brake, stop the engine, and remove the key from the ignition. See "Leaving the Operator's Position" on page 13.

   If the cutting height and/or quality of the cutting are not as desired, this can be corrected by adjusting the leveler. See "Cutting Height" on page 19 under 3.7 Adjustments.

Stopping the Attachment

1. Bring the tractor to a complete stop.
2. Place the transmission in park or neutral.
3. Reduce the engine speed.
4. Disengage the PTO.
5. Wait for all rotating parts to stop before lowering the Flail Mower to the ground.
6. Set the parking brake.
7. Turn off the tractor's engine, and remove the key before leaving the operator's position (see "Leaving the Operator's Position" on page 13.
8. Perform the cleaning the maintenance required to make the attachment ready for later use (see "4.8 Storage" on page 27). These steps can be followed for proper care of the attachment without storing it due to inactivity.

3.6 *Operating Tips*

- Always keep the tractor engine speed at the appropriate rpm rate, ensuring that the Flail Mower is using the right amount of power required for use.
- Always keep the tractor speed adequate to conditions of the grass to be cut, ranging from approximately 1 to 6 miles per hour (2 to 10 km per hour). If the ground is hard and/or stony, reduce speed.
- When working on hills, "climb" the slope. Do not work parallel to hillsides if possible. Instead, move from the bottom of the hill to the top in one pass, moving perpendicular to the hillside. If possible, always try to work up the slope.
- Always perform changes and reverse the direction with the PTO disengaged and the attachment slightly lifted from the ground to avoid damage to the machine.
- Periodically check for foreign objects wrapped around the rotor shaft and remove them after disengaging the PTO, turning off the engine, removing the ignition key, and waiting for all moving parts to stop.
- If the hammer blades strike a foreign object or in the case of prolonged intervention of the clutch due to an object wedged into the rotor, stop operating immediately, idle the engine speed, and disengage the PTO. Wait for all rotating parts to stop, then raise the implement, set the parking brake, turn off the engine, and remove the ignition key. Remove the object, and repair any damage immediately. Make sure the rotor and hammer blades are in good condition before continuing.
- Avoid overheating the gearbox caused my materials being too thick to cut. Cutting materials larger than the cutting capacity stated in "6.1 Attachment Specifications" on page 49 will result in damage to the gearbox.

3.7 *Adjustments*

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.

Cutting Height

The cutting height of the Flail Mower is determined by the vertical position of the rear leveler.

Lifting up the leveler allows the hammer blades to get closer to the ground, thus reducing cutting height. Lowering the leveler increases the space between the ground and the hammer blades, increasing cutting height.

After changing the working height, make sure that the hammer blades on the rotor are not interfering with the soil. Hammer blades coming in direct contact with the ground cause them to quickly dull, drastically reducing their lifetime.

Perform the following steps to adjust the leveler, and therefore the cutting height:

1. Lift the attachment, put it on safety blocks, turn off the tractor engine, disengage the PTO, set the parking brake, and remove the key from the ignition.
2. Remove the bolts [Figure 4, Item 1] that secure the leveler supports to the frame on both sides.
3. Position the leveler according to the height required.
4. Replace and tighten the bolts. For correct torque value, refer to "6.2 Torque Specifications – Metric" on page 50.

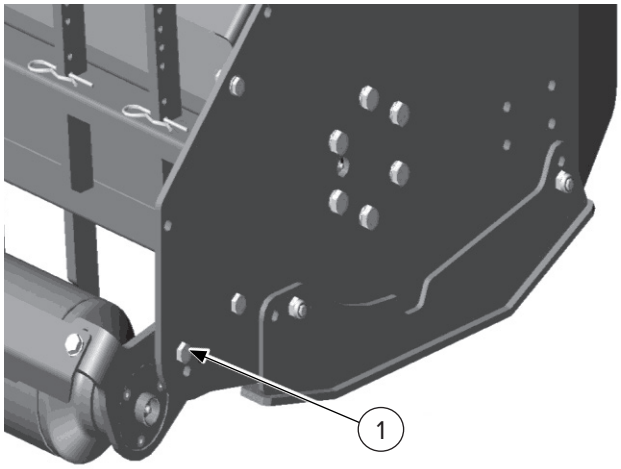


Figure 4

5. After tightening the bolts, make sure that the leveler supports are positioned at the same height. With the Flail Mower resting on the ground, check that the front of the attachment is level with the back. If necessary, adjust the level through the 3–point top hitch of the tractor.

Skid Shoes

Perform the following steps to adjust the skid shoes:

1. Loosen and remove the bolts [Figure 5, Item 1] that holds the skid shoes to the side plates of the Flail Mower.
2. Reposition the skid shoes to the desired height.
3. Retighten the bolts [Item 1].

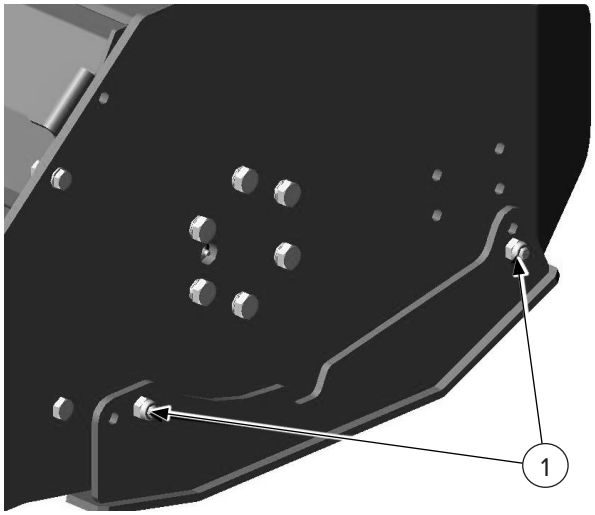


Figure 5

3.7 *Adjustments Cont'd*

Skid Shoes Cont'd

The skid shoes can be placed in three (3) different positions. The skid shoes protect the side plates from coming into direct contact with the ground, thus preventing potential damage.

Because of this purpose, make sure the skid shoes are not positioned below the leveler. The leveler should be the device holding the Flail Mower off the ground.

Rakes

The function of the rear rakes is to obtain a more fine crushing by holding the material within the frame, allowing a finer finish to be accomplished.

It is recommended to adjust the rakes after setting the cutting height. To adjust the rakes, perform the following:

1. Remove the cotter pin [Figure 6, Item 1] from a rake.
2. Push the rake [Item 2] downwards to retain more material inside the frame, resulting in a finer mulch. Pull the rake upwards to allow more material to pass through the frame to obtain a coarser mulch.
3. Insert the cotter pin through the hole of the rake that is closest to the top of the rear bar after setting the rake to the desired height.
4. Repeat steps 1 – 3 until all rakes are set at the same, desired height.

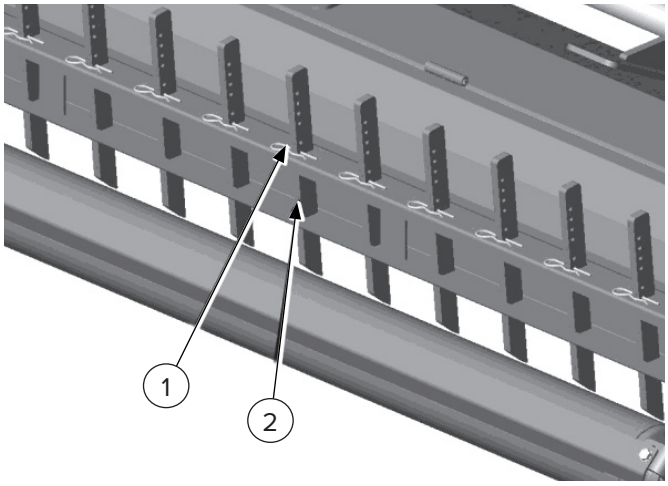


Figure 6

Belt Tension

To check the correct belt tension of the side transmission, perform the following:

1. Remove the safety cover of the belts by loosening the four (4) bolts [Figure 7, Item 1] that secure it to the frame.

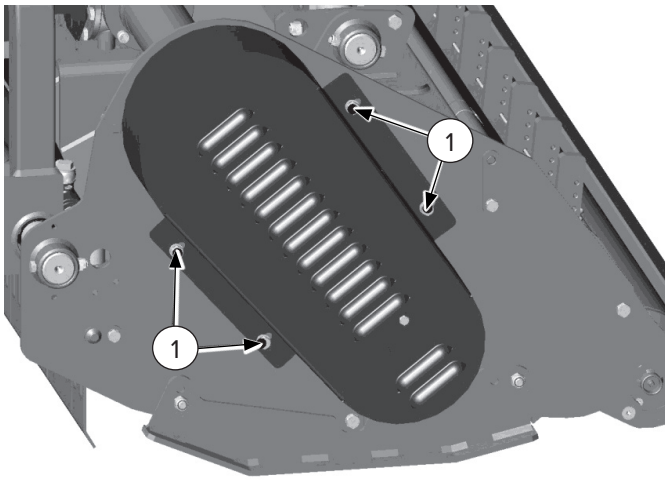


Figure 7

2. Check for correct belt tension. Apply about 22 – 33 lbs (10 – 15 kg) of force in the middle of the belts set. Measure the deflection of the belts (see Figure 8).

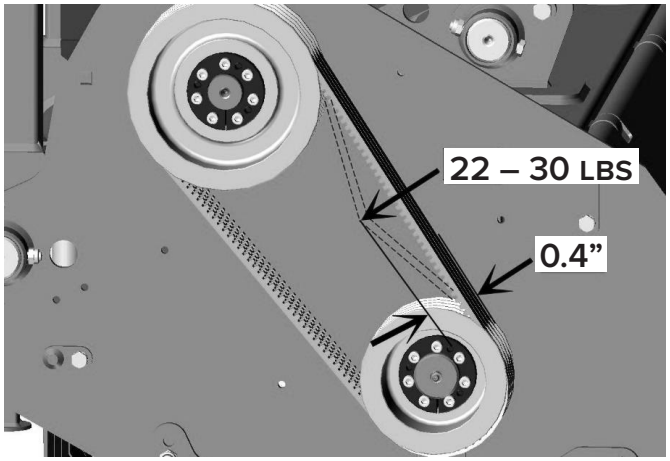


Figure 8

If the deflection is about 0.4” (10 mm), the tension is correct.

3.7 *Adjustments Cont'd*

Belt Tension Cont'd

If the deflection is not approximately 0.4" (10 mm), the belt needs adjusted. To adjust the belt, perform the following:

1. Loosen the four (4) bolts [Figure 9, Item 1] under the gearbox, which hold it onto the frame.
2. Loosen the two (2) nuts [Item 2] that fix the extension tube to the side plate of the frame.
3. While holding the bolt [Item 3], loosen the locknuts [Item 4].
4. If the tension is too low where the deflection is greater than 0.4" (10 mm), tighten the tension nut [Item 5].

   If the tension is too high where the deflection is lower than 0.4" (10 mm), loosen the tension nut [Item 5].
5. Retighten the locknuts [Item 4] and the two (2) bolts [Item 2] that attach the extension tube to the side plate of the frame.
6. Move the gearbox to restore the position of the extension tube perpendicular to the side plate of the Flail Mower.
7. Retighten the four nuts [Item 1} under the gearbox.
8. Reposition the safety cover in its original place.

3.8 *Transporting the Attachment*

To prepare the Flail Mower for transportation, perform the following steps:

1. Idle the tractor engine, disengage the tractor PTO, and wait for all rotating parts to come to a complete stop.
2. Lift the Flail Mower, making sure the driveline transmission tubes do not come in contact with the tractor and attachment. A minimum gap of 3/4" (20 mm) should be left between the tubes, tractor, and attachment (see "Installing the Driveline" on page 15).
3. Lock the tractor's lifting hydraulics, turn off the engine, set the parking brake, remove the ignition key, and exit the tractor (see "Leaving the Operator's Position" on page 13).
4. Remove the parking stand's retaining pin, adjust the parking stand so it is at its highest point to prevent damage, and reinsert the retaining pin through the lowest retaining hole.

WARNING

When driving on public roads, reduce speed, be aware of surrounding traffic, and allow vehicles moving faster than the tractor to safely pass.

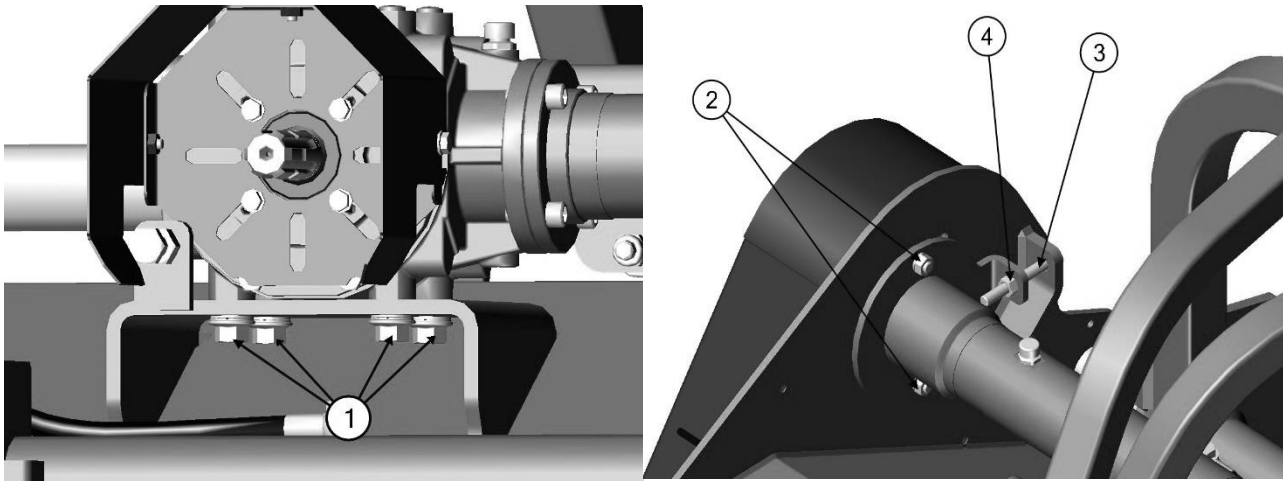


Figure 9

4. Maintenance

4.1 *Service Schedule*

DESCRIPTION	SERVICE PROCEDURES					
	Check	Clean	Lube	Change	Adjust	Drain
Daily Maintenance (or every 8 hours)						
Hydraulic Fittings	•					
Hydraulic Hoses	•					
Hammer Blades (wear, damage, and loosening)	•					
Rotor	•					
All Hardware	•					
Frame	•	•				
Drive Belt	•					
Biweekly Maintenance (or every 20 hours)						
Rotor Bearings	•					
Leveler Bearings	•		•			
Driveshaft (crosses, protective shielding, and transmission tubes)	•		•			
All Hardware	•					
Every 50 Hours						
Gearbox Oil	•					
Every 500 Hours						
Gearbox Oil*				•		
Skid Shoes	•					
All Hardware	•					

*Gearbox oil must be changed after the first 50 hours, and then every 500 hours after. See "4.3 Gearbox Lubrication" on page 24 for more information.

4. Maintenance

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

Periodic inspections and maintenance operations described in this section must be performed by an operator 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.

4.2 *Blade Replacement*

Every eight (8) hours of operation, check the wear condition of the hammer blades through visual inspection. The wear of the hammer blades is variable, depending on the condition of the soil. The blades must be replaced when the operator notices an increase of power absorption during operation or when the blades' dimensions are significantly reduced compared to the original. The use of the attachment with the blades in bad condition compromises the quality of the work.

IMPORTANT

Remove and install one blade at a time to ensure the blades are correctly positioned when installed.

To replace the hammer blades, perform the following:

1. Remove the nut and bolt holding the tooth onto the rotor flange.
2. Remove the old tooth, and replace it with a new tooth.
3. Tighten the hardware to the proper torque (see "6.2 Torque Specifications – Metric" on page 50).
4. Repeat steps 1 – 3 until all blades have been replaced.

IMPORTANT

When the blades are worn out, it is necessary to replace the full set of blades. Replacement of only some of the blades will cause an unbalance of the rotor, which will result in machine vibrations. This can compromise the reliability, performance, and stability of the attachment.

4.3 *Gearbox Lubrication*

CAUTION

Wait until the gearbox has sufficiently cooled before touching the gearbox.

IMPORTANT

Frequently check for possible oil leaks from the attachment.

How to Check the Oil

Check the oil level every 50 hours of operation.

To check the oil, perform the following:

1. Remove the level plug [Figure 10, Item 1].
2. Check the plug, making sure the oil mark is aligned with the level plug.

   If the oil level is below the line of the level plug, the gearbox must be filled with oil to the correct level

   HP 85W140 (API GL4) gear oil is the lubricant that must be used.

How to Change the Oil

The oil must be changed after the first 50 hours of operations and thereafter, every 500 hours of operation.

To change the oil, perform the following:

1. Remove the level plug [Figure 10, Item 1].
2. Place a waste bucket under the oil drain plug [Item 2].
3. Remove the oil drain plug [Item 2] and drain the oil into the waste bucket.
4. Reinsert and tighten the oil drain plug [Item 2].
5. Remove the oil filling plug [Item 3] on the top of the gearbox.
6. Fill with oil until the level reaches the hole of the level plug [Item 1].
7. Reinsert and tighten the level plug [Item 1] and the filling plug [Item 3].
8. Properly dispose of the used oil, following all local, state, and federal laws.

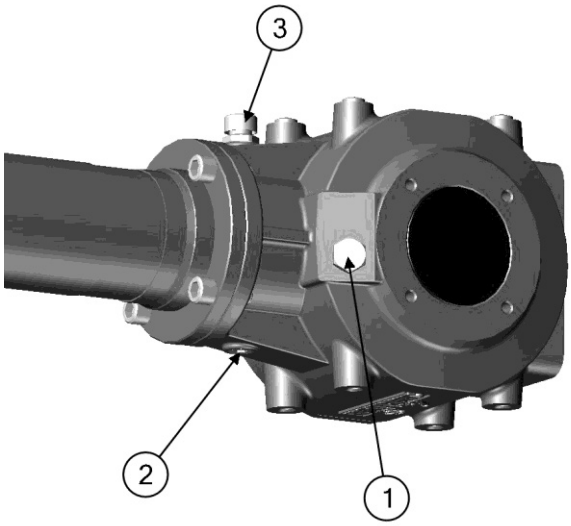


Figure 10

4.4 *Rotor Bearings Lubrication*

The rotor bearings must be greased every 20 hours of operation with AGIP GREASE MU EP 2 lithium–type grease or equivalent.

To grease the rotor bearings, perform the following:

1. On the left side of the attachment on the transmission case, turn the cover [Figure 11, Item 1], and thoroughly clean the grease zerk [Item 2].
2. Inject the grease through the grease zerk [Item 2].
3. On the right side of the attachment, thoroughly clean the grease zerk [Item 3].
4. Inject the grease through the grease zerk [Item 3].

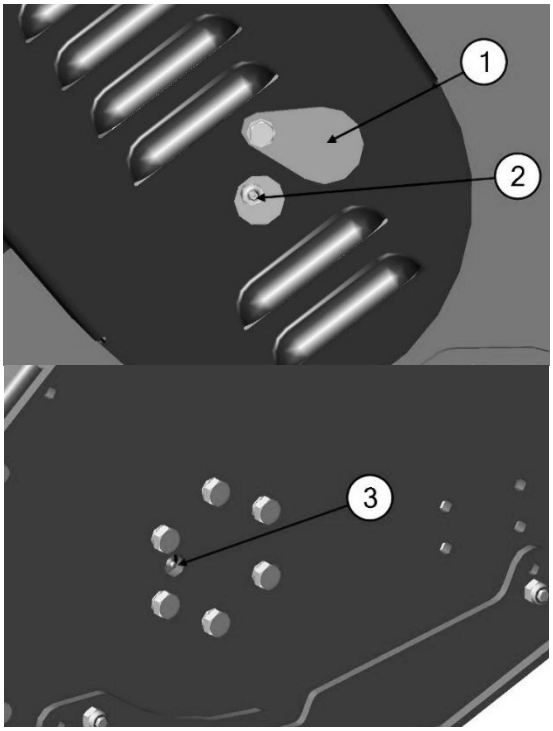


Figure 11

4.5 *Leveler Bearings Lubrication*

The leveler bearings must be greased every 20 hours of operation with AGIP GREASE MU EP 2 lithium–type grease or equivalent.

To grease the leveler bearings, perform the following:

1. Thoroughly clean the grease zerks on each side of the leveler.
2. Inject grease into both grease zerks [Figure 12, Items 1 & 2).

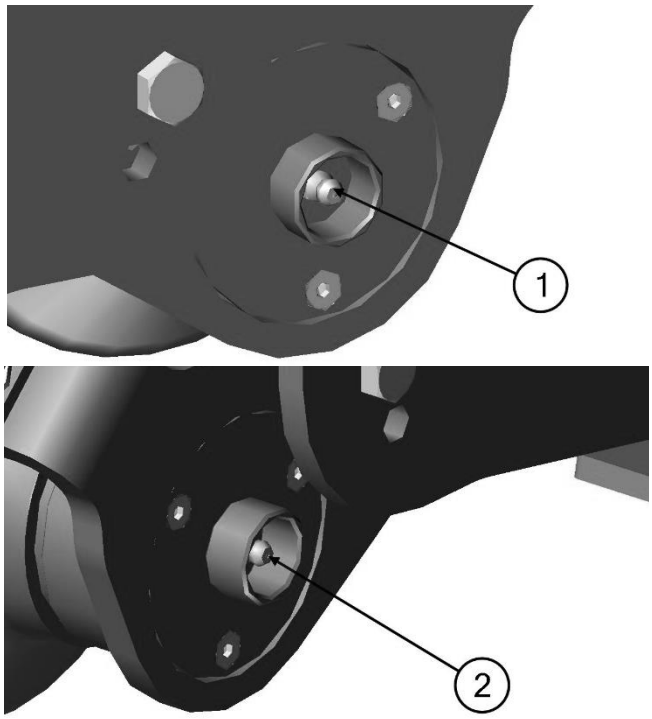


Figure 12

4.6 *Drive Belt Replacement*

Check the condition of the belts every eight (8) working hours.

See"Belt Tension" on page 20 under 3.7 Adjustments on how to perform this check.

If one or more of the belts appear damaged or worn, replace the entire set.

Belt Replacement

To replace the belt, perform the following:

1. Remove the safety cover by loosening the four (4) bolts that connect it to the frame ["Figure 7" on page 20, Item 1].
2. Loosen the four (4) bolts under the gearbox ["Figure 9" on page 21, Item 1].
3. Loosen the two (2) nuts [Item 2] fixing the extension tube to the side plate of the frame.
4. Loosen the tension nut [Item 4] until there is enough space for the belts to be removed from the pulleys. Remove the outermost belt first before continuing to the next belt, working the way inwards.
5. Reinsert the new belts, inserting the one closest to the frame first and working the way outwards.
6. Adjust the belt tension (see "Belt Tension" on page 20).
7. Retighten the two (2) nuts [Item 2] fixing the extension tube to the side plate of the frame.
8. Move the gearbox to restore the position of the extension tube perpendicular to the side plate of the attachment.
9. Retighten the four (4) nuts [Item 1] under the gearbox.
10. Replace the safety cover in its original position.

4.7 *Driveshaft*

IMPORTANT

For details about maintenance and lubrication of the driveshaft, refer to the manufacturer's manual.

Grease the crosses, sliding parts of protective shielding, and driveshaft transmission tubes every 20 hours of operation. AGIP GREASE MU EP 2 lithium–type grease or equivalent is the lubricant that must be used to grease the components of the driveshaft.

Driveshaft Clutch

If the Flail Mower and the driveshaft are exposed to the elements for a long period of inactivity, oxidation of some clutch components may occur, creating a "sticking" effect on the clutch.

Consequently, the torque required to the slippage of the clutch increases considerably in respect to the value set at the factory. This may cause the driveshaft to break during operation or damage the implement or tractor.

To avoid damage, the operator must perform the following:

1. Check the height of the compressed springs.
2. Loosen the bolts that compress the springs.
3. Connect the Flail Mower to the tractor (see "Connecting Attachment to the Machine" on page 13).
4. Connect to the driveshaft (see "Installing the Driveline" on page 15).
5. Start the tractor and engage the PTO for a few seconds to cause slippage and separation of the clutch parts that are "sticking".
6. Turn off the tractor, remove the key, and wait for all components are stopped before exiting the tractor.
7. Retighten the bolts, restoring the original springs' position on the driveshaft.

4. Maintenance

4.8 *Storage*

Storage

Sometimes it may be necessary to store your Flail Mower for an extended period of time. Below is a list of items to perform before storage.

- Thoroughly wash the attachment before storing it for long periods of time.
- Lubricate the attachment, and fill with oil to the proper level.
- Coat the exposed portion of mechanical components to protect them against rust.
- 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.
- If the driveshaft is equipped with a friction clutch, it is suggested to take note of the height of the compressed springs and loosen the bolts that compress the springs to prevent the discs from “sticking” due to moisture.

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 Flail Mower 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 the driveshaft clutch for possible oxidation.
- Check for leaks. Repair as needed.

4. Maintenance

4.9 *Troubleshooting*

PROBLEM	CAUSE	SOLUTION
Gearbox overheating	Low lubricant	Fill to proper level.
	Improper lubricant	Replace with proper lubricant.
Noisy gearbox	New and worn–out gear	Run in or change gear.
	Worn bearings	Replace bearings.
	Low oil in gearbox	Check level and add oil.
Leaking gearbox	Damaged oil seal	Replace seal.
	Bent shaft	Replace shaft.
	Oil level too high	Drain oil to proper level.
	Damaged gasket	Replace gasket.
PTO vibrates	Worn universal joint	Replace universal joint.
	Attachment lifts too high	Lower Flail Mower.
	Bent PTO driveline	Replace PTO driveline.
Soil is clogging in hammer blades/rotor	Improper hammer blade installation	Install hammer blades correctly.
	Tractor speed too fast	Reduce ground speed.
	Soil too wet	Wait for soil to dry.
Rotor not rotating	PTO not engaged	Engage PTO.
	Broken drive chain	Repair drive chain.
	Driveline shear bolt sheared	Replace with proper Shear bolt.
Not properly leveling material cut	Leveler not in proper position	Keep with horizontal and check that it is properly aligned.
Material cut not uniform	Worn or damaged hammer blades	Replace hammer blades.
	Leveler improperly set	Properly set leveler.
	Debris wrapped around rotor	Remove debris, and reduce ground speed.
	Dirty shredding room inside frame	Clean shredding room.
Frequent wear of hammer blades	Hard soil	Check the soil prior to operation.
	Cutting height too low	Increase cutting height.
Shredder noise and vibration noticeable and constant	Unbalanced leveler	Contact an authorized technician to balance the leveler.
	Worn bearings	Replace bearings.
	Hammer blades worn, damaged, or missing	Replace hammer blades.

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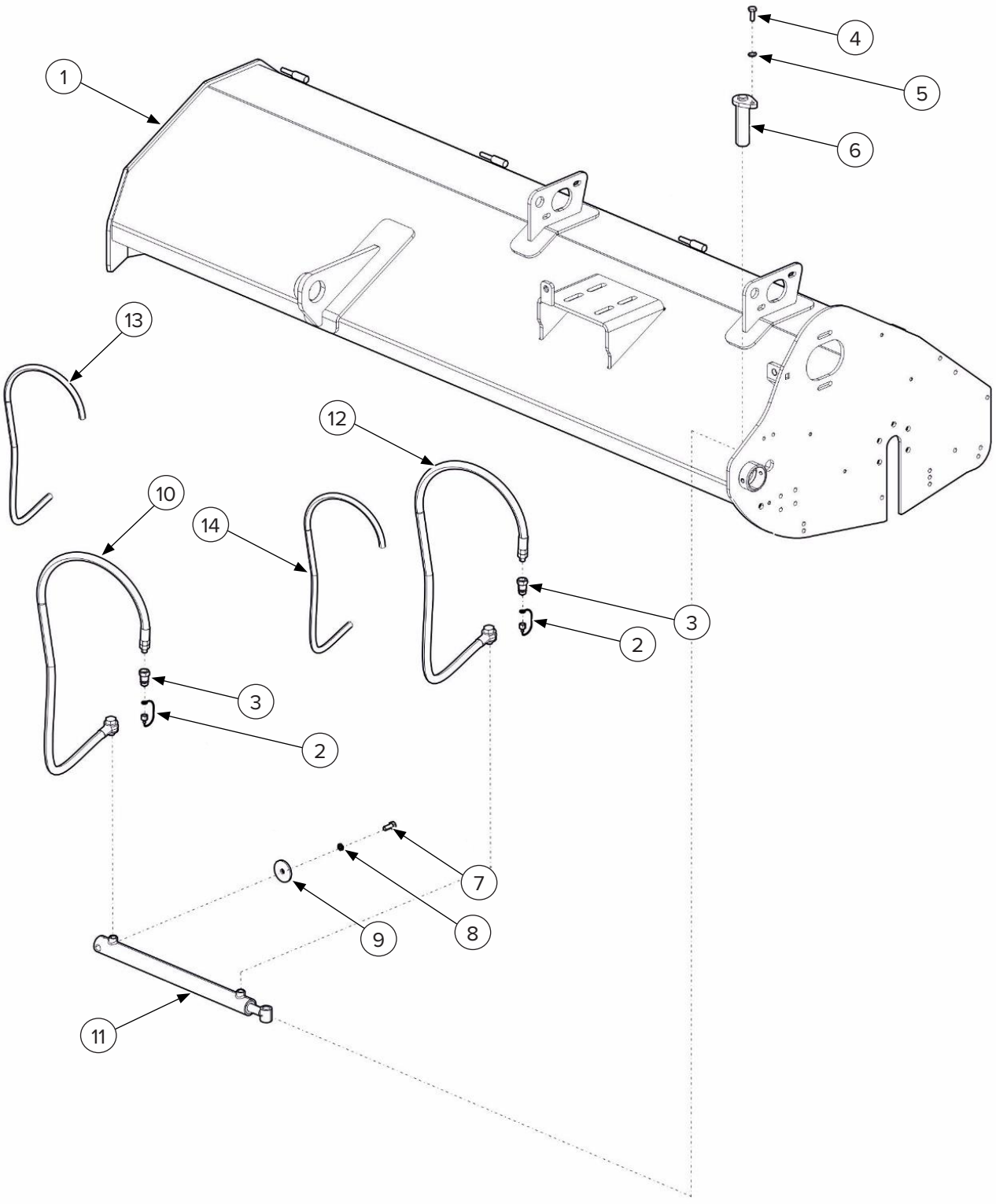
5. Parts

5.1 *Frame & Hydraulic Sideshift Components*



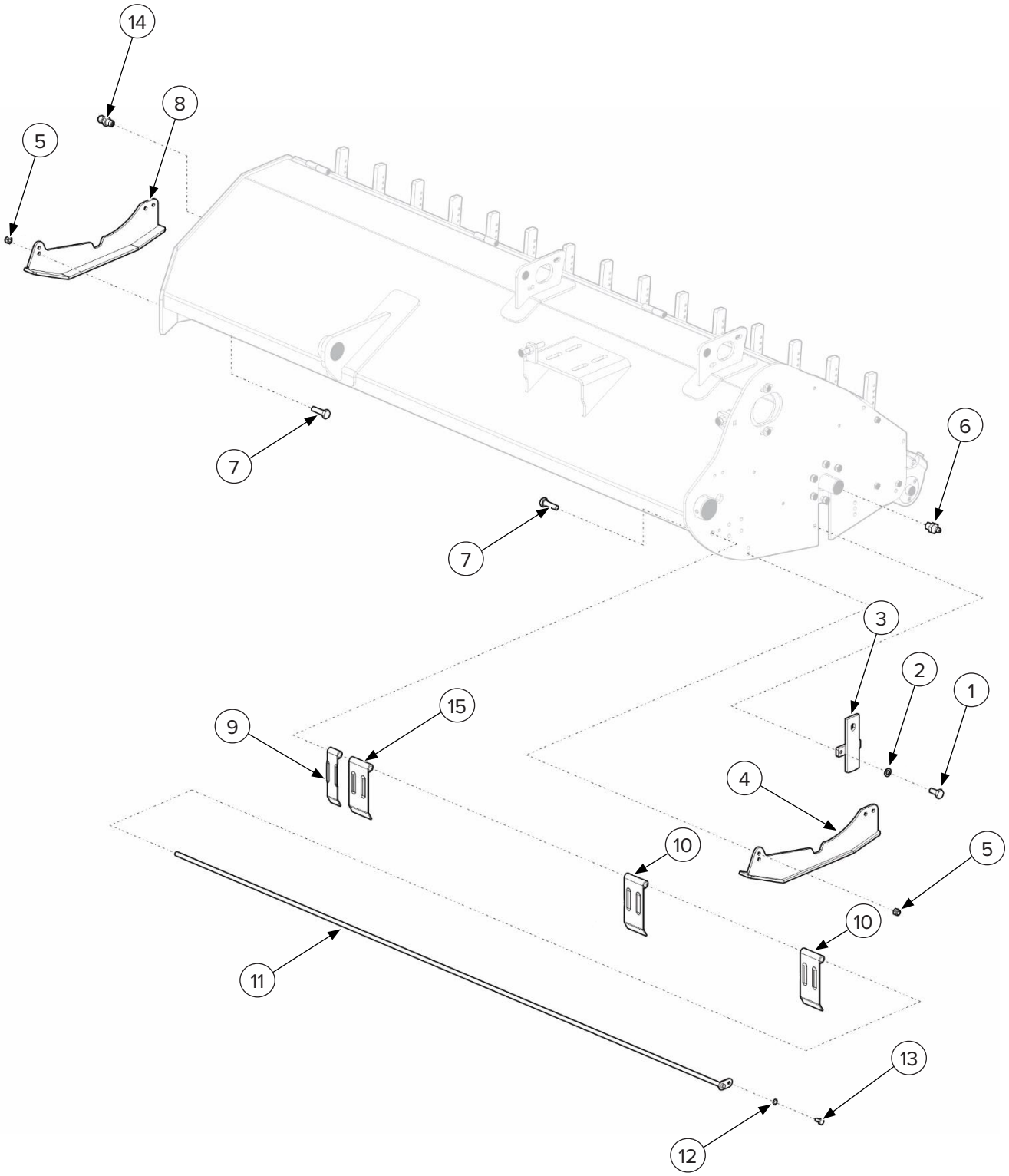
5. Parts

5.1 *Frame & Hydraulic Sideshift Components Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
1	—	Main Weldment for 62"	1
	—	Main Weldment for 87"	
	—	Main Weldment for 98"	
2	503187	Quick Release Connector Plastic Cap 1/2" BSP Female	2
3	503186	Quick Coupling 1/2" BSP Male	2
4	299075	M6 x 1 mm x 16 mm Hex Head Bolt	1
5	299076	M6 Spring Washer	1
6	503305	Locking Pin	1
7	503466	M8 x 1.25 mm x 20 mm Hex Head Bolt	1
8	529399	M8 Spring Washer	1
9	503170	44 mm OD x 10.5 mm ID x 4 mm Thick Washer	1
10	503184	Hydraulic Hose 78 3/4" OAL 3/8" Inner Diameter, 3/8" Banjo Fitting to 1/2" BSP Male	1
11	—	Hydraulic Jack for 62" 50 mm Bore x 25 mm Rod x 570 mm Retracted Length x 400 mm Stroke Length	1
	—	Hydraulic Jack for 87" & 98" 50 mm Bore x 25 mm Rod x 670 mm Retracted Length x 500 Stroke Length	
12	503185	Hydraulic Hose 94 1/2" OAL 3/8" Inner Diameter, 3/8" Banjo Fitting to 1/2" BSP Male	1
13	—	Hose Sleeve, 6 1/2' Long	1
14	—	Hose Sleeve, 7 3/4' Long	1

5. Parts

5.2 *Front Guard & Skid Shoe Components*



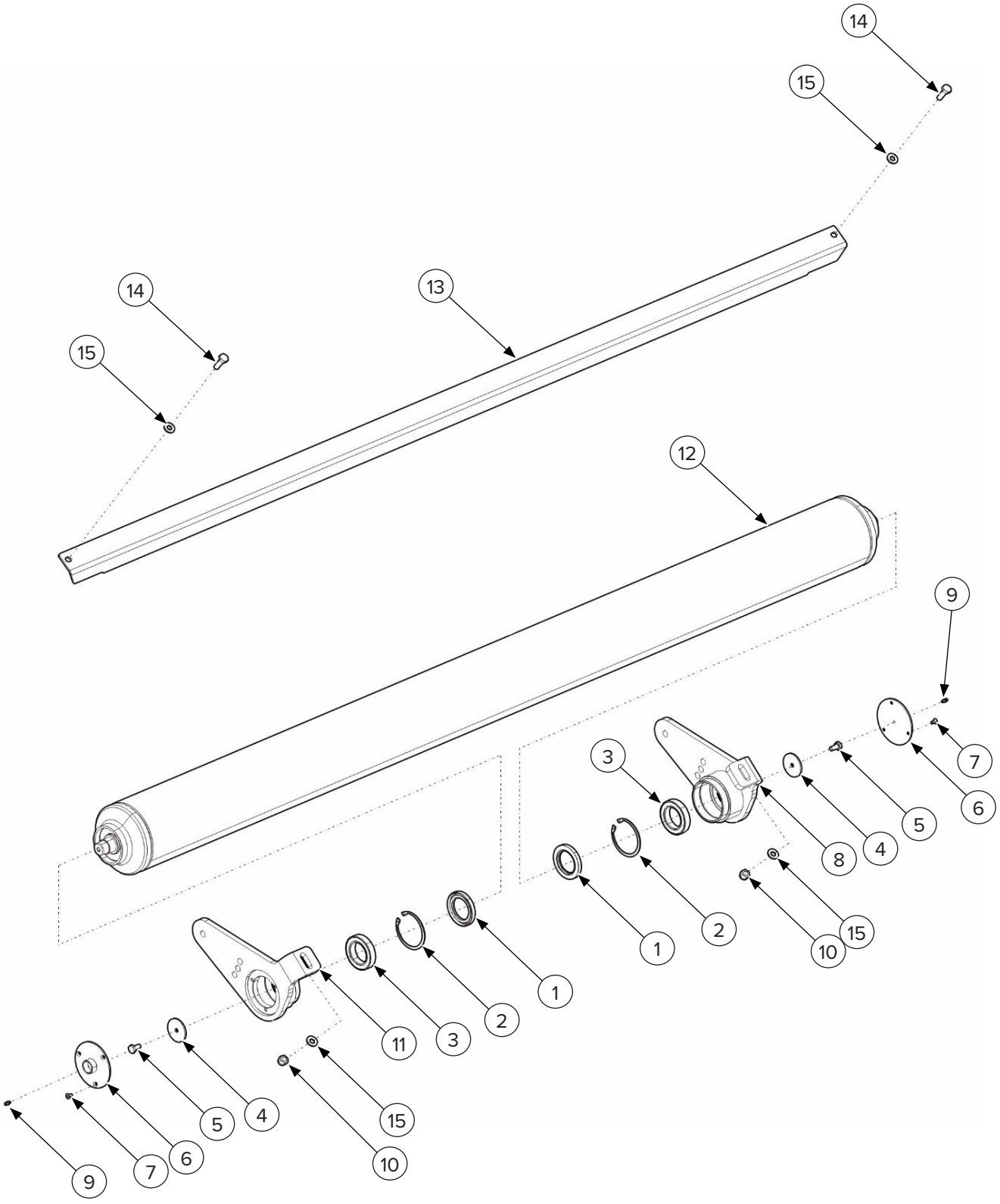
5. Parts

5.2 *Front Guard & Skid Shoe Components Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
1	529325	M12 x 1.75 mm x 25 mm Hex Head Bolt	1
2	529326	M12 Spring Washer	1
3	503193	Rotor Support Plate	1
4	503294	Left Skid Shoe	1
5	529214	M12 x 1.75 mm Nylock Nut	4
6	297006	M10 x 1.5 mm Grease Zerk Straight Fitting 15 mm Overall Length	1
7	299060	M12 x 1.75 mm x 35 mm Hex Head Bolt	4
8	503295	Right Skid Shoe	1
9	503259	43 mm Outside Front Plate	1
10	503264	83 mm Front Center Plate	AR
11	—	1533 mm Plate Rod for 62"	1
	503265	2183 mm Plate Rod for 87"	
	503266	2433 mm Plate Rod for 98"	
12	—	M10 Spring Washer	1
13	299034	M10 x 1.5 mm x 20 mm Hex Head Bolt	1
14	297007	M6 x 1 mm Grease Zerk	1
15	503263	60 mm Inside Front Plate	1

5. Parts

5.3 *Leveler Assembly Components*



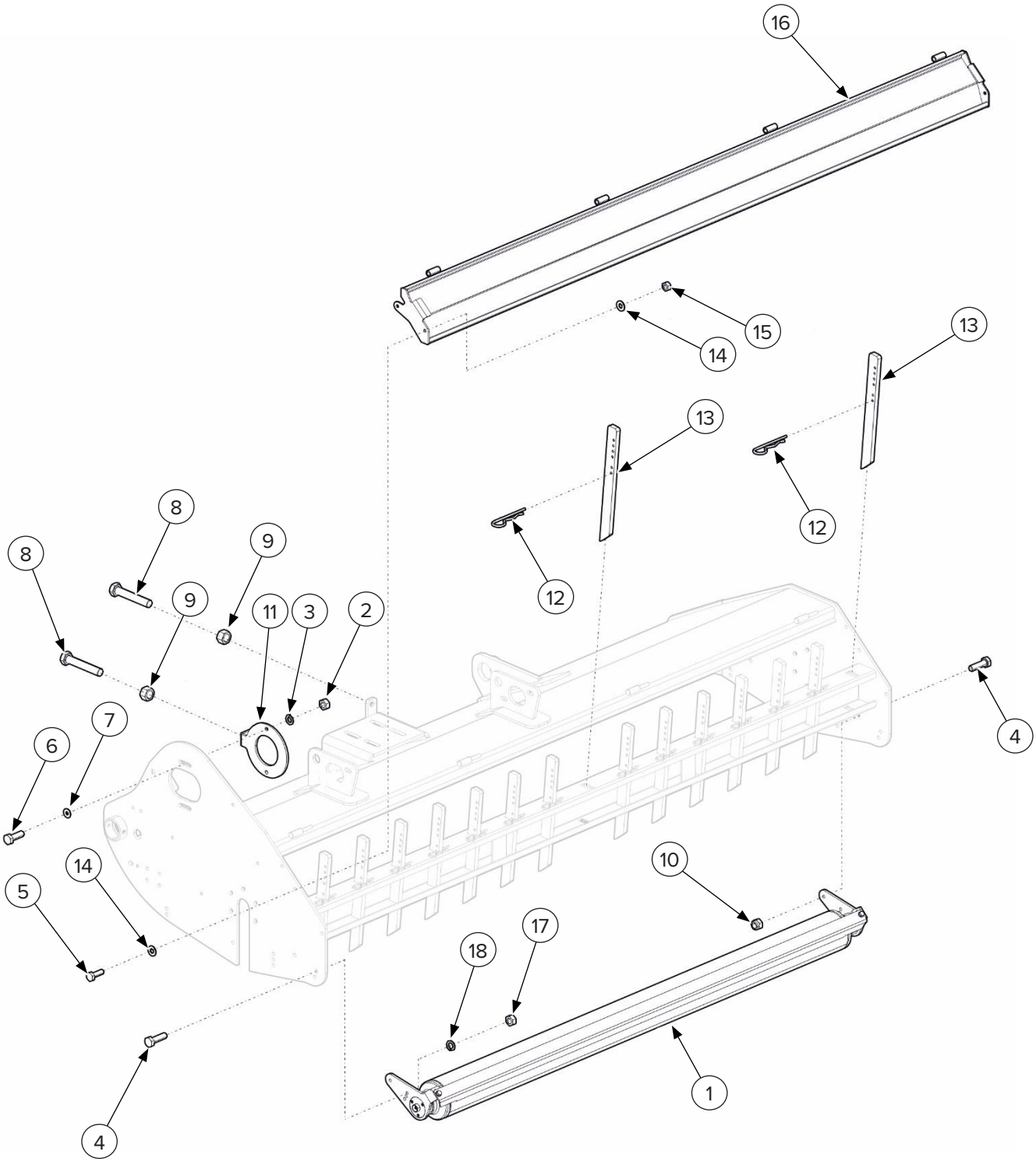
5. Parts

5.3 *Leveler Assembly Components Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
1	503209	35 mm x 72 mm x 10 mm Oil Seal	2
2	529321	72 mm Circlip Internal	2
3	503204	Bearing 1306	2
4	503170	44 mm OD x 10.5 mm ID x 4 mm Thick Washer	2
5	299034	M10 x 1.5 mm x 20 mm Hex Head Bolt	2
6	503211	Dust Cover Plate	2
7	503038	M6 x 1 mm x 12 mm Countersuck Allen Head Bolt	6
8	503199	Right Adjustment Plate	1
9	503462	M8 x 1.25 mm Grease Zerk	2
10	529214	M12 x 1.75 mm Nylock Nut	2
11	503198	Left Adjustment Plate	1
12	—	Leveler for 62"	1
	503194	Leveler for 87"	
	503195	Leveler for 98"	
13	—	Scraper for 62"	1
	503196	Scraper for 87"	
	503197	Scraper for 96"	
14	299019	M12 x 1.75 mm x 40 mm Hex Head Bolt	2
15	529370	12mm Lock Washer	4

5. Parts

5.4 *Leveler, Rakes, & Shutter Assembly Components*



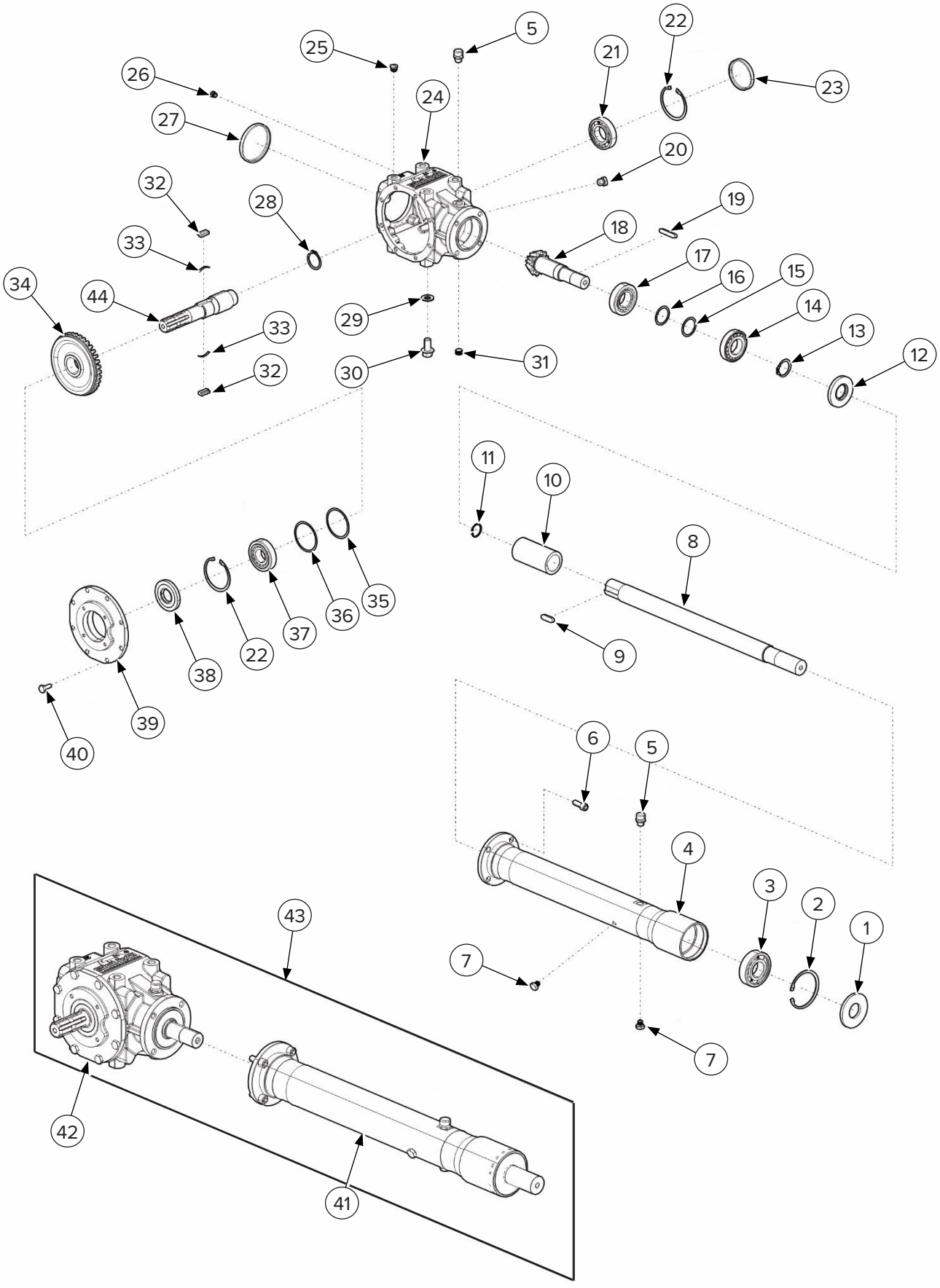
5. Parts

5.4 *Leveler, Rakes, & Shutter Assembly Components Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
1	—	Leveler Assembly for 62"	1
	—	Leveler Assembly for 87"	
	—	Leveler Assembly for 98"	
2	—	M12 x 1.75 mm Hex Nut	2
3	529326	M12 Spring Washer	2
4	—	M14 x 2 mm x 40 mm Hex Head Bolt	4
5	—	M10 x 1.5 mm x 30 mm Hex Head Bolt	2
6	299060	M12 x 1.75 mm x 35 mm Hex Head Bolt	2
7	—	30 mm OD x 12 mm ID x 3 mm Thick Plain Washer	2
8	—	M16 x 2 mm x 90 mm Hex Head Bolt	2
9	—	M16 x 2 mm Hex Nut	2
10	—	M14 x 2 mm Hex Nut	2
11	503222	Housing Clamp	1
12	503163	5 mm Diameter x 100 mm Long Hair Pin	AR
13	503213	40 mm x 16 mm x 120 mm Rake	AR
14	—	10 mm Plain Washer	4
15	—	M10 x 1.5 mm Hex Nut	2
16	—	Shutter for 62"	1
	503212	Shutter for 87"	
	—	Shutter for 98"	
17	529360	M14 x 2 mm Nylock Nut	2
18	—	M14 Spring Washer	2

5. Parts

5.5 *Gearbox Components*



5. Parts

5.5 *Gearbox Components Cont'd*

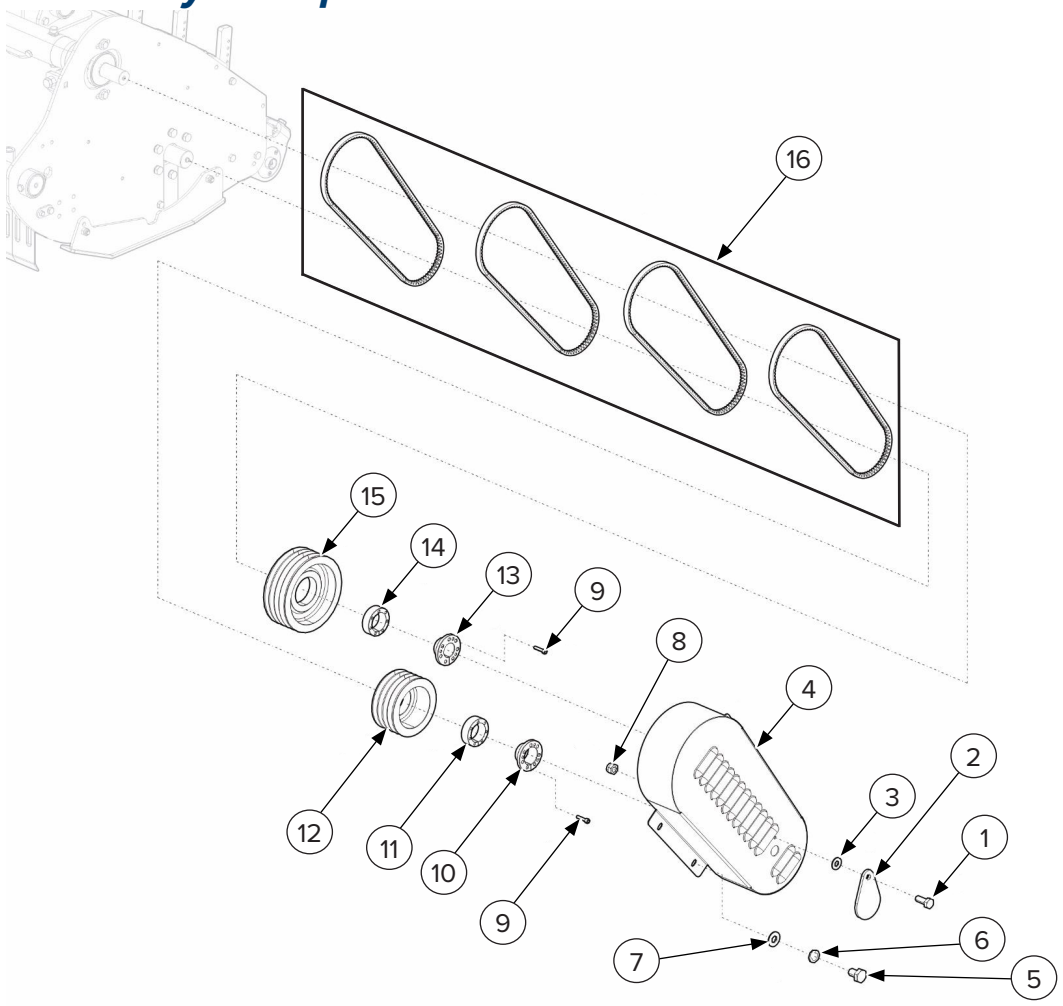
ITEM	PART NUMBER	DESCRIPTION	QTY
1	503257	90 mm x 40 mm x 8 mm Oil Seal	1
2	503167	90 mm Circlip Internal	1
3	503253	Bearing 6308	1
4	—	440 mm Jackshaft Housing Assembly for 62"	1
	—	672 mm Jackshaft Housing Assembly for 87" & 98"	
5	503236	Breather Plug 3/8" BSP	1
6	—	M12 x 1.75 mm x 30 mm Allen Bolt Fine Thread	4
7	—	M12 x 1.5 mm Bolt with O–Ring	2
8	—	440 mm Jackshaft for 62"	1
	—	672 mm Jackshaft for 87" & 98"	
9	503278	12 mm x 8 mm x 40 mm Parallel Key	1
10	503277	Shaft Connector	1
11	503276	32 mm Circlip Internal	1
12	503239	40 mm x 80 mm x 10 mm Oil Seal	1
13	529386	40 mm Circlip External	1
14	529396	Bearing 30208	1
15	503238	50 mm OD x 40.5 mm ID x 0.3 mm Thick Round Shim	1
16	503237	50 mm OD x 40.5 mm ID x 0.2 mm Thick Round Shim	1
17	529453	Bearing 32208	1
18	—	Pinion Gear 12 Teeth 4.58 Module	1
19	503279	10 mm x 8 mm x 56 mm Parallel Key	1
20	—	3/8" BSP Bolt with O–Ring	1
21	503232	Bearing 6208	1
22	503168	80 mm Circlip Internal	2
23	503234	80 mm x 10 mm Oil Seal	1
24	—	Gearbox 540 RPM	1
25	—	M16 x 2 mm Plastic Cap	4
26	503231	M12 x 1.75 mm Plastic Cap	4
27	503233	100 mm x 10 mm Oil Seal	1
28	503169	42 mm Circlip External	1
29	—	M16 Nordlock Washer Standard Pitch	4
30	—	M16 x 2 mm x 30 mm Flange Bolt	4
31	503224	Conical Special Head Bolt 3/8" BSP	1
32	503249	28 mm Ratchet	2
33	503245	Leaf Spring	2
34	—	Crown Gear 36 Teeth 4.58 Module	1

5.5 *Gearbox Components Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
35	—	79.75 mm OD x 70 mm ID x 0.2 mm Thick Round Shim	1
36	—	79.5 mm OD x 70 mm ID x 0.3 mm Thick Round Shim	1
37	529450	Bearing 30307	1
38	503227	35 mm x 80 mm x 10 mm Oil Seal	1
39	—	Gearbox Flange 540 RPM	1
40	529402	M10 x 1.5 mm x 25 mm Hex Head Bolt	8
41	—	Jackshaft Housing Assembly for 62"	1
	—	Jackshaft Housing Assembly for 87" & 98"	
42	—	Gearbox Assembly	1
43	—	440 mm Gearbox Assembly for 62"	1
	503221	672 mm Gearbox Assembly for 87" & 98"	
44	—	Input Shaft	1

5. Parts

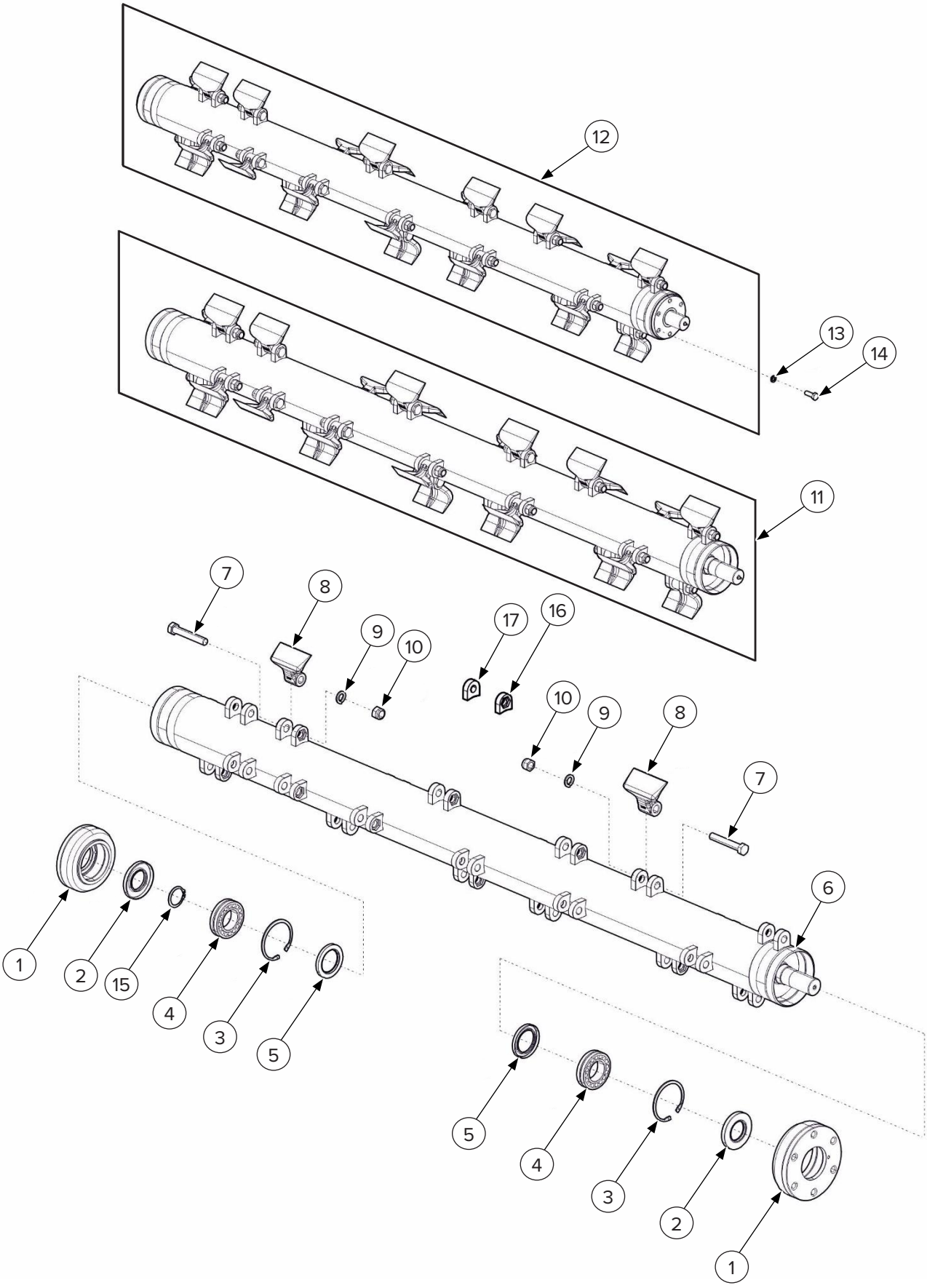
5.6 *Belt Assembly Components*



ITEM	PART NUMBER	DESCRIPTION	QTY
1	503466	M8 x 1.25 mm x 20 mm Hex Head Bolt	1
2	503216	Grease Zerk Cover	1
3	299051	1.6 mm x M8 x 16 mm Flat Washer	1
4	503214	Belt Cover	1
5	—	M10 x 1.5 mm x 15 mm Hex Head Bolt	4
6	—	M10 Spring Washer	4
7	—	10 mm Plain Washer	4
8	—	M8 x 1.25 mm Nylock Nut	1
9	503272	M8 x 1.25 mm x 35 mm Allen Bolt	14
10	503270	50 mm Lower Inner Clamp	1
11	503271	50 mm Lower Outer Clamp	1
12	503217	Lower Pulley 4–Groove 160 mm Pitch Circle Diameter	1
13	503218	Upper Inner Clamp	1
14	503306	Upper Outer Clamp	1
15	503219	Upper Pulley 4–Groove 212 mm Pitch Circle Diameter	1
16	503273	1433 mm V–Belt SE XPN1400 (Set of 4)	1

5. Parts

5.7 *Rotor Blade Assembly Components*



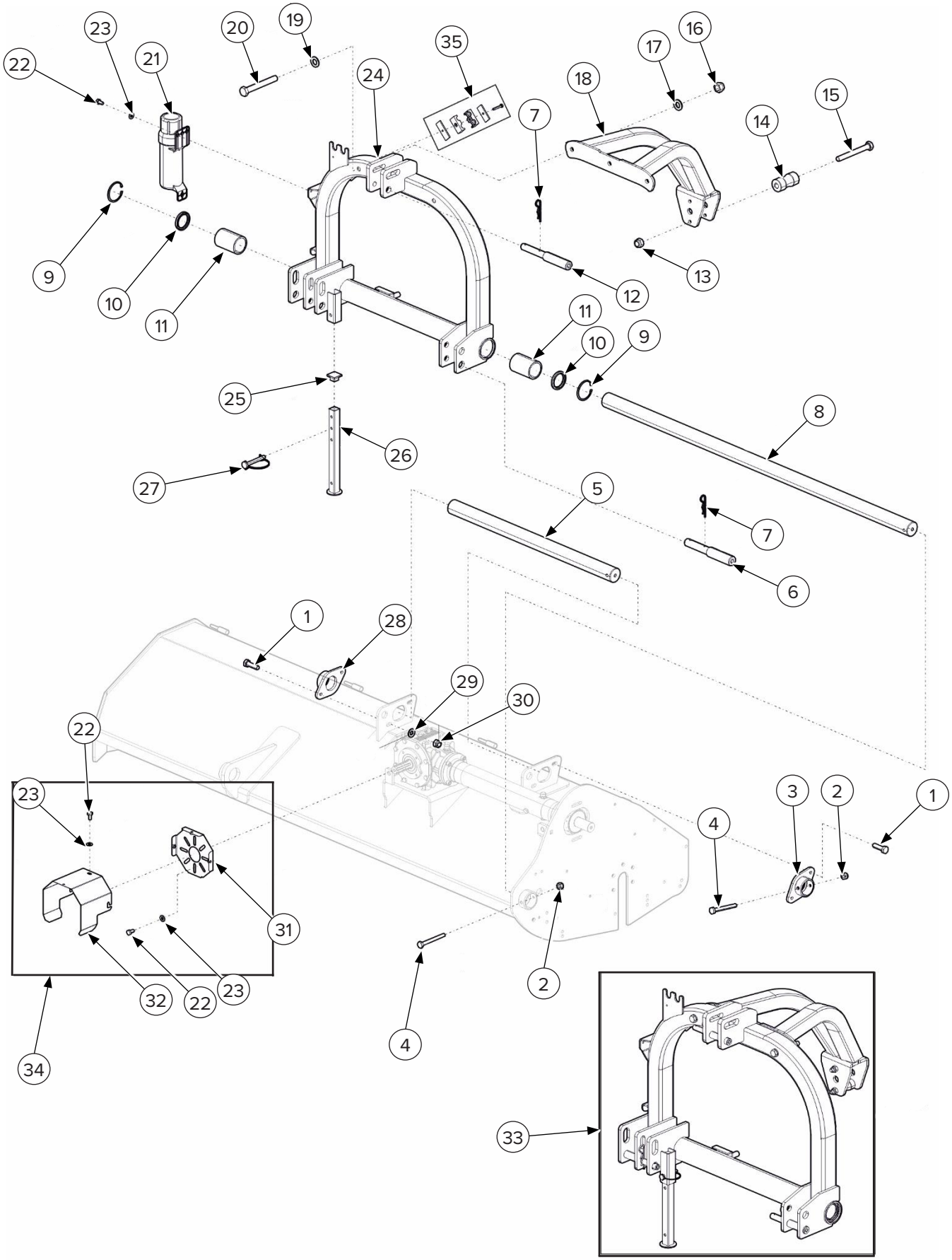
5. Parts

5.7 *Rotor Blade Assembly Components Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
1	—	Rotor Shaft Housing	2
2	503191	50 mm x 68 mm x 8 mm Oil Seal	2
3	503167	90 mm Circlip Internal	2
4	503192	Bearing 22210	2
5	529230	55 mm x 90 mm x 10 mm Oil Seal	2
6	—	Rotor for 62"	1
	503188	Rotor for 87"	
	503189	Rotor for 96"	
7	299025	M20 x 2.5 mm x 100 mm Hex Head Bolt	AR
8	503290	137 mm x 40 mm Hammer Blade	AR
9	299023	4 mm x M20 x 33.6 mm Spring Washer	AR
10	299026	M20 x 2.5 mm Nylock Nut	AR
11	—	Rotor with Blades Assembly for 62"	1
	—	Rotor with Blades Assembly for 87"	
	—	Rotor with Blades Assembly for 98"	
12	—	Rotor Assembly with Housing for 62"	1
	—	Rotor Assembly with Housing for 87"	
	—	Rotor Assembly with Housing for 98"	
13	—	M14 Nordlock Washer	12
14	299131	M14 x 2 mm x 30 mm Hex Head Bolt	12
15	503166	50 mm Circlip External	1
16	—	30 mm L x 18.5 mm H x 20.5 mm OD Hexagonal Holder	AR
17	—	20.5 mm Diameter x 18.5 mm Thick Round Holder	AR

5. Parts

5.8 *Top Mast Assembly Components*



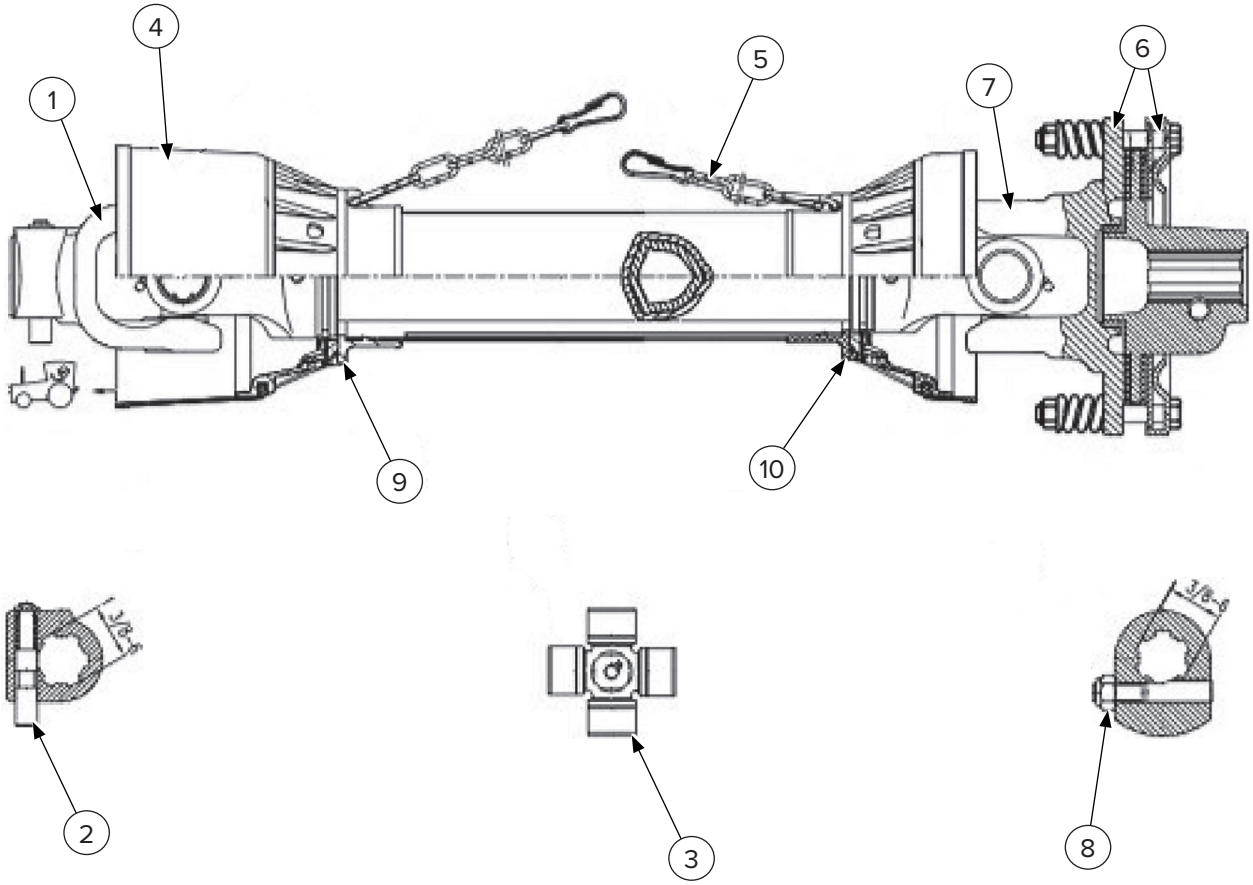
5. Parts

5.8 *Top Mast Assembly Components Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
1	—	M12 x 1.75 mm x 40 mm Hex Head Bolt	4
2	—	M10 x 1.5 mm Nylock Nut	2
3	503181	Left Guide Bar Bushing	1
4	—	M10 x 1.5 mm x 90 mm Hex Head Bolt	2
5	—	Small Guide Bar for 62"	1
	503180	Small Guide Bar for 87" & 98"	
6	503534	Lower Step Pin, CAT I / CAT II	2
7	503163	5 mm Diameter x 100 mm Length Hair Pin	2
8	—	Large Guide Bar for 62"	2
	503179	Large Guide Bar for 87" & 98"	
9	503164	75 mm x 2.5 mm Circlip Internal	2
10	503173	75 mm x 60 mm x 8 mm Oil Seal	2
11	503172	74.5 mm OD x 60.3 mm ID x 107 mm Guide Bar Bushing	2
12	503532	Top Step Pin, CAT I / CAT II	1
13	529360	M14 x 2 mm Nylock Nut	2
14	503175	72 mm Guide Bar Roller	2
15	—	M14 x 2 mm x 120 mm Hex Head Bolt	2
16	299011	M16 x 2 mm Nylock Nut	3
17	—	M16 Nordlock Washer	3
18	—	Bolt–On Guide Weldment	1
19	—	16 mm Plain Washer	3
20	—	M16 x 2 mm x 120 mm Hex Head Bolt	3
21	503174	Manual Storage Tube	1
22	299053	M8 x 1.25 mm x 15 mm Hex Head Bolt	10
23	299051	1.6 mm x M8 x 16 mm Flat Washer	10
24	—	Bolt–On Top Mast	1
25	503177	32 mm Plastic Cap for Stand	1
26	503178	Stand	1
27	503176	10 mm Diameter x 70 mm Long Square Snap Pin	1
28	503182	Right Guide Bar Bushing	1
29	529370	12 mm Plain Washer	4
30	529214	M12 x 1.75 mm Nylock Nut	4
31	—	PTO Shaft Guard Mount Plate	1
32	—	PTO Shaft Guard Small	1
33	503171	Top Mast Assembly	1
34	503223	Gearbox Shield	1
35	—	Double Hydraulic Hose Clamp for 20 mm OD Hoses	1

5. Parts

5.9 *Slipclutch Driveline Components*



ITEM	PART NUMBER	DESCRIPTION	QTY
1 - 10	503434	Complete Slipclutch Driveline	1
1	503267	1 3/8” Tractor Yoke with Push Pin	1
2	529404	Push Pin Kit	1
3	503301	30.2” x 92” Cross Kit	2
4	503030	Complete Safety Shield	1
5	503730	Safety Chain	2
6	503302	6.31” OD x 3.75” ID x 125” Clutch Lining (Pack of 2)	1
7	503039	Complete Slipclutch Assembly	1
8	503159	PTO Shaft Eccentric Pin Kit	1
9	503303	Outer Plastic Shield Bearing	1
10	503304	Inner Plastic Shield Bearing	1

5. Parts

5.10 *Safety Decals*

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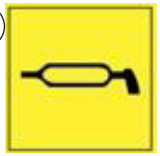

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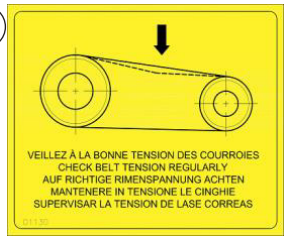

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5. Parts

5.10 *Safety Decals Cont'd*

ITEM	PART NUMBER	DESCRIPTION	QTY
1	BD-057	2.9" x 17.364" Decal, Blue Diamond	2
2	BD-111	7.75" x 6" Decal, Blue Diamond Diamond Shape	1
3	BD-112	12.18" x 9.47" Decal, Blue Diamond Diamond Shape	1
4	BD-004	2.0" x 4.0" Decal, Grease All Fitting Every 8 Hours	1
5	BD-001	3.0" x 3.0" Decal, Read Owner's Manual	1
6	BD-123	3.0" x 3.0" Decal, High Pressure Fluid Hazard	1
NS	BD-134	Decal, Tagline 2" Tall	1
7	529300	Warning: Always Read the Operator's Manual	1
8	529310	Safety Equipment	1
9	529301	Turn Off Tractor & Remove Key	1
10	529302	Hazard, Thrown or Flying Objects	2
11	529303	Hazard, Rotating Blades, Lower Limbs	1
12	529313	Oil Drain Plug	2
13	529315	Lifting Hook Joint	1
14	529312	Grease	3
15	529304	Hazard, Injury to Hands	1
16	—	Rotating Belts, Injury to Hands	1
17	529306	Crushing Hazard by Link Lifting	1
18	529307	Implement Input Driveline	1
19	529308	Tractor PTO RPM & Rotation Direction	1
20	—	Lower Limb Crush Hazard	1
21	—	Crush Hazard, Do Not Stand Rear of Machine/Attachment	1
22	—	Hydraulic Lines Under Pressure, See Manual before Performing Maintenance	1
23	—	Check Belt Tension	1
24	529314	Maintain Oil Level	2

6. Specifications

6.1 *Attachment Specifications*

DESCRIPTION	403735	403740	403750
Working Width	62 in. (1580 mm)	871 in. (2230 mm)	98 in. (2480 mm)
Overall Width	71 in. (1800 mm)	96 in. (2450 mm)	106 in. (2700 mm)
Length	47 in. (1194 mm)		
Height	39 in. (990 mm)		
Recommended Horsepower	50 – 75 HP		75 – 100 HP
Hitch Type	Category I & II		
Number of Hammers	16	20	24
Maximum Cutting Diameter	3 in. (76 mm)		
PTO Input Speed	540 rpm		
Rotor Speed	2146 rpm		
Side Transmission	4 Belt XPB Type		
Hydraulic Sideshift Maximum	16 in. (405 mm)	18 in. (467 mm)	
Rotor Diameter	6.7 in. (170 mm)		
Rotor Swing Diameter	16 in. (405 mm)		
Weight	1411 lbs (640 kg)	1763 lbs (800 kg)	1907 lbs (865 kg)

6. Specifications

6.2 *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 Tractor Flail Mower itself and sixty (60) months for the attachment's gearbox only 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

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