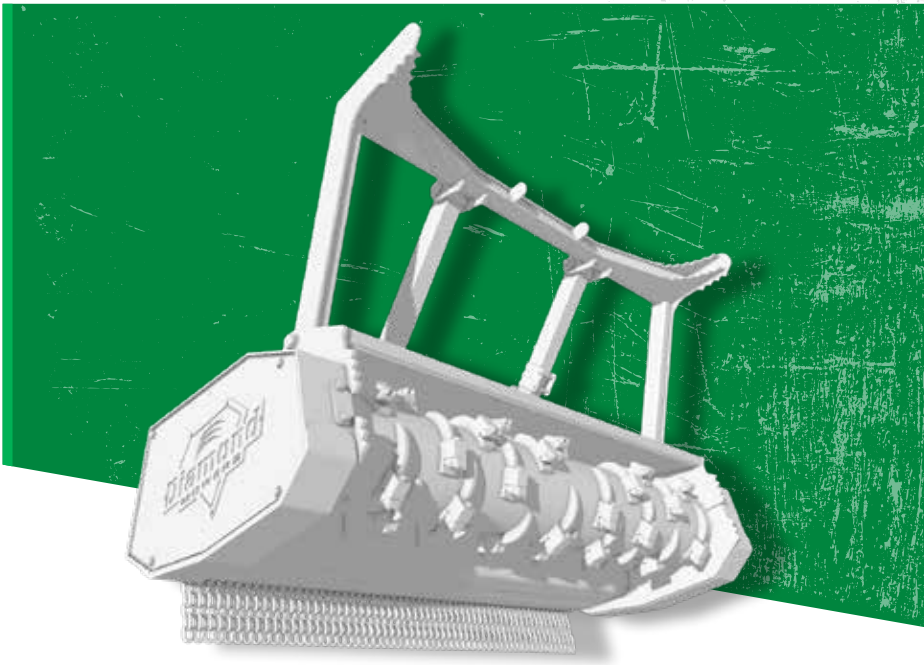
SK DRUM MULCHER OD PRO X

OPERATOR'S MANUAL



Diamond MOWERS™

DIAMONDMOWERS.COM

PRODUCT INFORMATION

Record the model and serial number of your unit here. When calling for warranty, service or parts, you may be asked to provide this information, in order to ensure fast, accurate service.

MODEL: Drum Mulcher OD Pro X **SIZE:** 60"(1524mm) 72"(1829mm)
(circle one)

SERIAL NUMBER: _____

Any failure to read, understand and follow the instructions found in this operator's manual could lead to serious injury. Operators who choose to operate this equipment without following instructions, or who choose to operate this equipment in a manner inconsistent with the recommendations set forth in this manual, do so at their own risk and assume the risk of injury. Diamond Mowers will not be liable for an owner or operator's loss, damage, or injury due to the misuse of the equipment, failure to understand the inherent risks, or inability to properly operate the equipment.

WELCOME!

Thank you for choosing Diamond Mowers®, and welcome to your Drum Mulcher OD Pro X. Before you begin operating, we encourage you to look through this manual to review the proper maintenance and operating techniques that will keep you, and your equipment, safe – while ensuring you the most productive Drum Mulcher in the market.

We have nothing but respect and admiration for you. Our job at Diamond® is to provide you with the toughest, most reliable and safest equipment that will allow you to do your job better. That also means being there when you need us.

CONTACT US:

Parts: 888.960.0361 | parts@diamondmowers.com
Warranty / Service: 888.960.0364 | warranty@diamondmowers.com
Main Office: 800.658.5561 | 605.977.3300
Website: www.diamondmowers.com | **Email**: info@diamondmowers.com

Your time is important to us.
We guarantee that Genuine Diamond Parts will ship within 72-hours of the order being placed or the parts and shipping are free.

Thanks again for choosing Diamond.
If at any time your needs are not being met, please feel free to contact anyone in our executive team.

PRODUCT REGISTRATION

OWNER REGISTRATION

In your welcome packet you should have received a warranty registration form. Complete and return this form to our main office. It's a self-mailer, so no postage is required.

If you'd rather complete this info online, go to:
http://info.diamondmowers.com/register-my-product

Returning your registration information to Diamond will help us process any warranty claims quickly and efficiently – so you can get back to work, fast.

TRANSFERRED OWNERSHIP

If you have acquired this Drum Mulcher OD Pro X from a previous owner, we encourage you to register your equipment online. By registering your Diamond Mowers unit, you'll stay informed on product advancements, offers and service alerts.

Register by going to: http://info.diamondmowers.com/register-my-product

We honor our equipment's warranty from the date it was put into service, no matter who's in charge of running it.

For any questions, contact our Warranty / Service team at:
888.960.0364 or 605.977.3300
warranty@diamondmowers.com

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INTENDED USE

This attachment is designed to be used for mowing and brush management applications.

This includes:

- Mulching brush.
- Cutting small trees up to 9" (229mm) in diameter to ground level.

This attachment should only be used in an area free of obstructions and bystanders. Any use on non-vegetative material, or in an area that is not clear of persons and property, is strictly prohibited. Any use outside of the aforementioned application is considered contrary to its intended use. Any damage that may occur as a result of misuse will void warranty as stated in Diamond Mowers' warranty policy.

NOTICE

Do not operate this unit without first reading the safety precautions and operating instructions in this manual.

TAKE A LOOK AROUND

SKID SHOES
Skid shoes provide extra frame protection, and are easily replaced.

CHAIN GUARD
A chain curtain is provided to catch debris and assist in protection of the carrier vehicle.

DRUM LINER
Replaceable drum liner to protect the frame from premature wear, extending the life of the machine.

TEETH
Multiple tooth options are offered, allowing the operator to tailor the attachment for optimum cutting efficiency and tooth life.

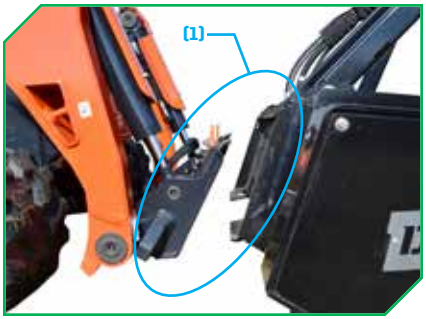
PUSH BAR
The two-position push bar helps to guide material away from the loader.

HOSES
Shipped with quick couplers and a case drain line with both male and female ends.

INSTALLATION

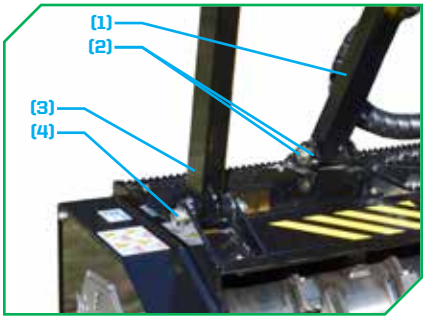
SAFETY POLYCARBONATE

A minimum ½" (13mm) safety door is **REQUIRED!** This product must not be used without a minimum ½" (13mm) safety door. Debris can fly back at the cab and cause injury.



QUICK ATTACH

The Drum Mulcher OD Pro X will mount(1) onto the front of the skid-steer / compact track loader quick attach plate in place of a bucket or other implements.



PUSH BAR

The push bar has two positions(2) to allow the operator to adjust the attachment to the conditions.

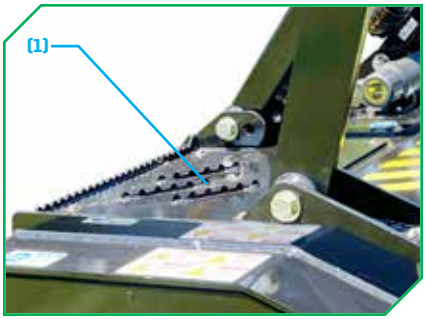
- Loosen the hardware(4) on the push bar front and rear supports(1)(3).
- Unbolt the push bar rear supports(1) and reposition them in the adjacent mounting location(2) on the rear support brackets and secure them in place.
- Tighten down all hardware(4) on the rear and front / outer push bar supports(1)(3).

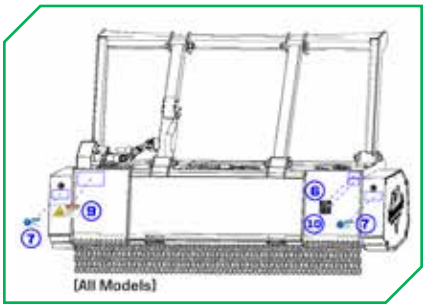
QD COUPLERS

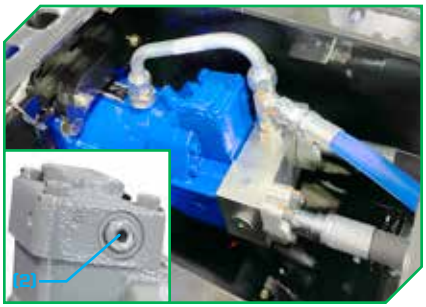
The case drain line must be properly connected or you will damage your hydraulic motor. The case drain line will come equipped with both male and female QD couplers.

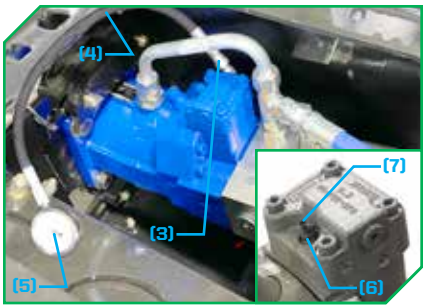
- Install the QD coupler(s) that matches the machine.
  - **NOTE:** The pressure hose will have a red ID band attached.
- Attachment is shipped with ½" flat face connectors, which are a common size for most skid-steer / compact track loaders.
  - Larger couplers are available to purchase at DiamondMowers.com.
- Clean connections before attaching(1) to prevent contamination.
  - **NOTE:** The pressure(1) hose will have a red ID band attached.
- Make sure hoses are positioned so they do not pinch between the mulcher and the carrier.
- Start machine at low idle and verify that the drum is spinning in the correct direction - teeth are cutting.
  - If the pressure and return hoses are reversed, the drum will NOT spin.
- If this reversal occurs, either inverse the flow from your machine, or switch the QD couplers on the pressure and return hoses.

INSTALLATION









MACHINE REQUIREMENTS

The carrier must be equipped with a case drain and be rated for the hydraulic flow and lift capacity listed below.

DECK	GPM (LPM)	LBS (KG)
60" (1524mm)	27-31 (102-118)	2300 (1044)
60" (1524mm)	32-45 (122-171)	2300 (1044)
72" (1829mm)	32-45 (122-171)	3190 (1447)

The motor has been factory tuned to match the GPM and PSI settings on the tag (#10) at left. To maintain warranty coverage, your Diamond Dealer can fine-tune or adjust these settings and update the GPM and PSI tag. For attachments that are outside of the warranty period, follow the **Motor Calibration** instructions below:

Motor Calibration:

- Remove the motor side top access cover(1).
- Temporarily remove the plug(2) marked "G" from the motor and install the adapter(3), hose(4), and 5000PSI (345Bar) rated gauge(5).
  - Use teflon tape on pipe threads.
  - Adapter(3), hose(4), and 5000PSI (345Bar) rated gauge(5) are from Diamond kit part #44-0949.
- Place the gauge(5) in a location so the dial and markings are clearly visible to the operator.

⚠WARNING

Keep away from the spinning drum when operating the unit; serious injury or death can result from contact with the drum.

CONTINUED ON NEXT PAGE

- Start the carrier and set the throttle to full speed.
  - DO NOT stand near the rotating drum when it is running.
- While observing the gauge[5], start the drum mulcher (engage the carrier's auxiliary hydraulics); The gauge[5] will spike to a high pressure reading then drop with readings oscillating slightly up and down. The gauge[5] will eventually **STEADY** for a short periord of time (This is the motor **SHIFT POINT**), after which the pressure readings will drop off.
  - Note the pressure reading when the gauge is **STEADY** with minimal oscillation (the motor **SHIFT POINT**).
  - NOTE: If the test must be repeated, the drum mulcher must be shut down and come to a complete stop before repeating the test.
  - NOTE: If the pressure setting is too high, the motor displacement will not change, resulting in low torque and slow recovery; if too low, it will shift into high displacement too early, resulting in slow drum speed and low pressure / performance.
- The pressure reading (motor **SHIFT POINT**) noted when the gauge[5] was **STEADY** should be between 6-700PSI (42-48Bar) **BELOW** the carrier's auxiliary hydraulic relief setting (refer to the carrier's operators manual).
  - **If Adjustment Is Needed:**
    - Confirm the machine and drum mulcher are shut down and not in motion.
    - Loosen the locknut[6] on the adjustment screw[7] with a 10mm combination wrench.
    - Use a 3mm Allen wrench to turn the adjustment screw[7] clockwise to lower the **SHIFT POINT**, or counter-clockwise to raise it (adjust in ⅛ turn increments).
    - Repeat these steps until the desired **SHIFT POINT** is reached, then tighten the locknut[6] to retain the adjustment screw[7] position.
- Remove the adapter[3], hose[4], and gauge[5] and replace the plug[2] into the motor port marked "G", and replace the top access cover[1].

OPERATING YOUR DRUM MULCHER

Before you operate, note that the primary responsibility for safety on this equipment falls to the operator. Only trained individuals who have read and understood this manual should operate this unit.

If any portion of this manual is not understood, contact:
Diamond Mowers' Service/Warranty at 888.960.0364 or 605.977.3300.

SAFETY TIPS

Be sure to read all warnings carefully. They are included for your safety, and for the safety of others working with you.

NOTICE

Indicates a property damage hazard *ONLY*, no *PERSONAL* injury.

⚠ CAUTION

Indicates where *MINOR* injury *COULD* result if instructions are not followed.

⚠ WARNING

Indicates where *SERIOUS* injury or death *COULD* result if instructions are not followed.

⚠ DANGER

Indicates where *SERIOUS* injury or death *WILL* result if instructions are not followed.

- Always wear personal protective equipment (safety glasses, goggles, etc.), when operating.
- DO NOT operate this unit without a shatter resistant cab enclosure installed on your skid-steer / compact track loader; this unit will cause flying debris.
- Block off work area from bystanders, livestock, etc.
- Bystanders must keep a distance of 300ft/100m from the unit when operating.
- Mulcher teeth are always sharp and can cause injury, even when not in motion.

CONTINUED ON NEXT PAGE

- DO NOT use extremities to dislodge debris from teeth or disc.
- Operate only from the operator's station.
- Hydraulic fluid is hot and will heat any exposed steel, hoses, or motor in its proximity.
- Route hoses correctly to ensure a full range of motion.
- Make certain hoses are out of the way of tires, tracks or the ground.
- Be certain the drum has come to a complete stop before exiting the cab.
- Stop the drum rotation prior to using the push bar to push or drag material with the front of the machine pointing downward and exposing the cutting drum to the operator.

START-UP PROCEDURES

- Start the carrier (reference the carrier's operator manual for starting recommendations and procedures) and allow the carrier to warm up and instruments to stabilize.
- Prior to operation, ensure both engine and hydraulic oil temperature reaches the carrier's recommended operational temperature range.

STOWED POSITION

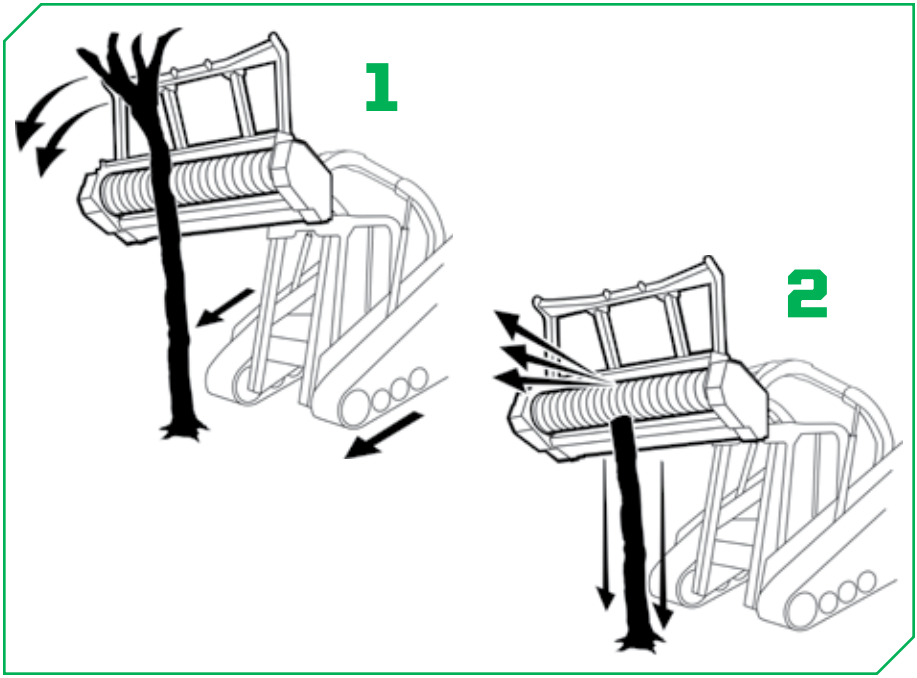
When transporting Diamond's Drum Mulcher OD Pro X between operations, make sure to protect it from collisions and accidental damages by placing it in the stowed position.
Failure to place the head in its stowed position could result in structural damage.

⚠ DANGER

Contact with the drum and teeth while the drum is in motion will cause serious injury or death. The drum spins at a very high speed and can take several minutes to stop. Be sure all personnel are clear of the machine before engaging the Drum Mulcher.

OPERATING YOUR DRUM MULCHER

VERTICAL MULCH - TREES 2”-9” (51mm-229mm)



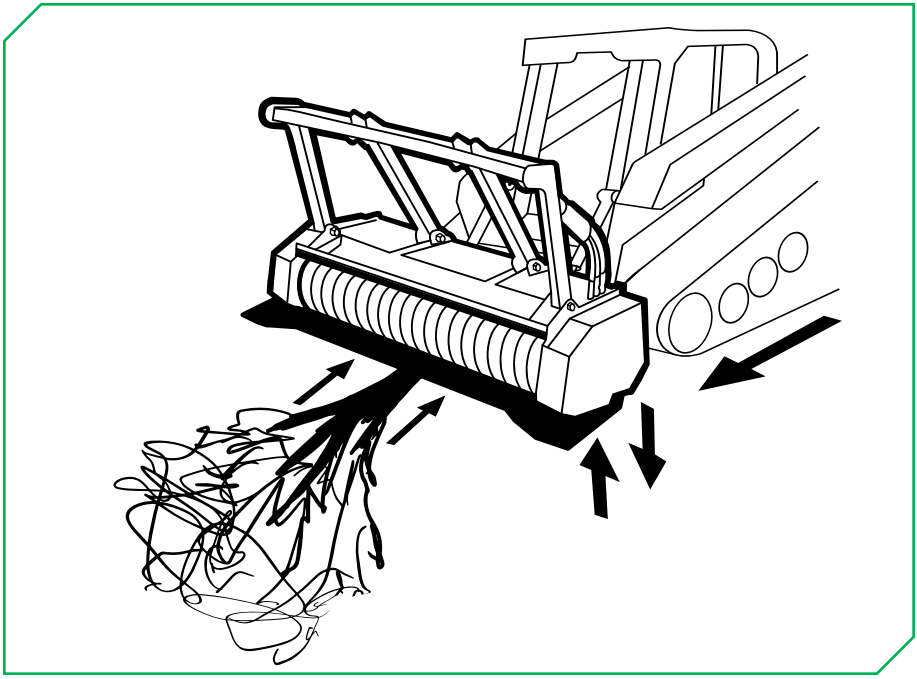
Use to mulch trees from the top down.

1. **To top the tree** - Reach as high as possible. Cut the top of the tree and push it away from the cutter head to mulch it later.
   - Make certain to allow enough recovery time for the drum to rebuild momentum.
2. **Mulch the tree** - Angle the head back 45° and move the attachment quickly but smoothly through the tree, raising the head slightly to allow the drum to recover speed as necessary.

⚠WARNING

Be aware when cutting standing trees as there is a potential for treetops to fall onto the operator’s cab.

GROUND MULCH

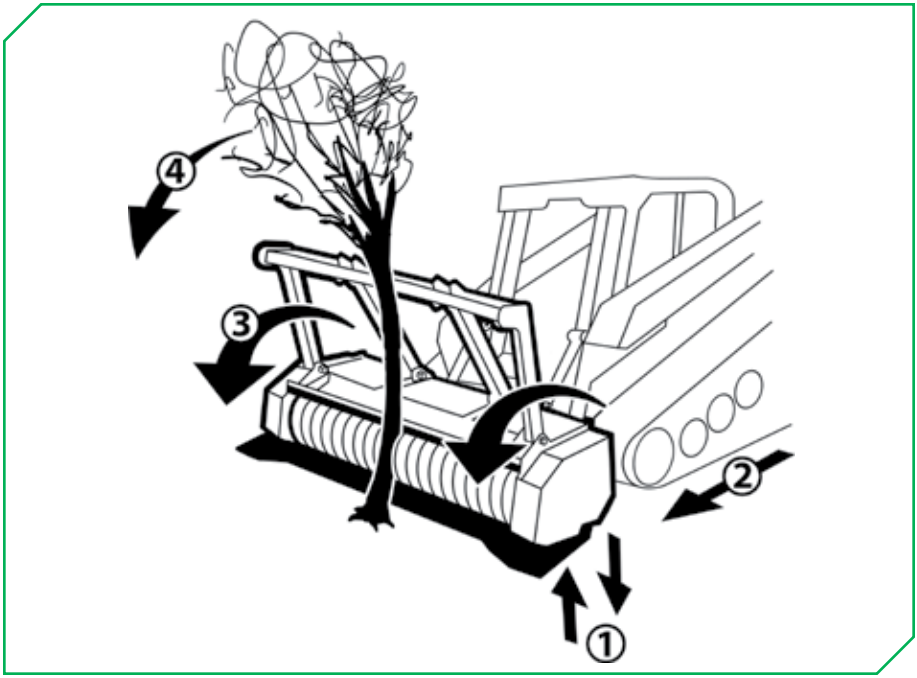


Use to pull in and mulch debris laying on the ground.

- Lift the front of the head slightly to pull in branches or tree tops underneath the drum for mulching.
- Tip the drum's nose down to re-process material on the ground for a finer finish.

OPERATING YOUR DRUM MULCHER

BASE CUT



Use to cut trees at their base, push over, and process on the ground.

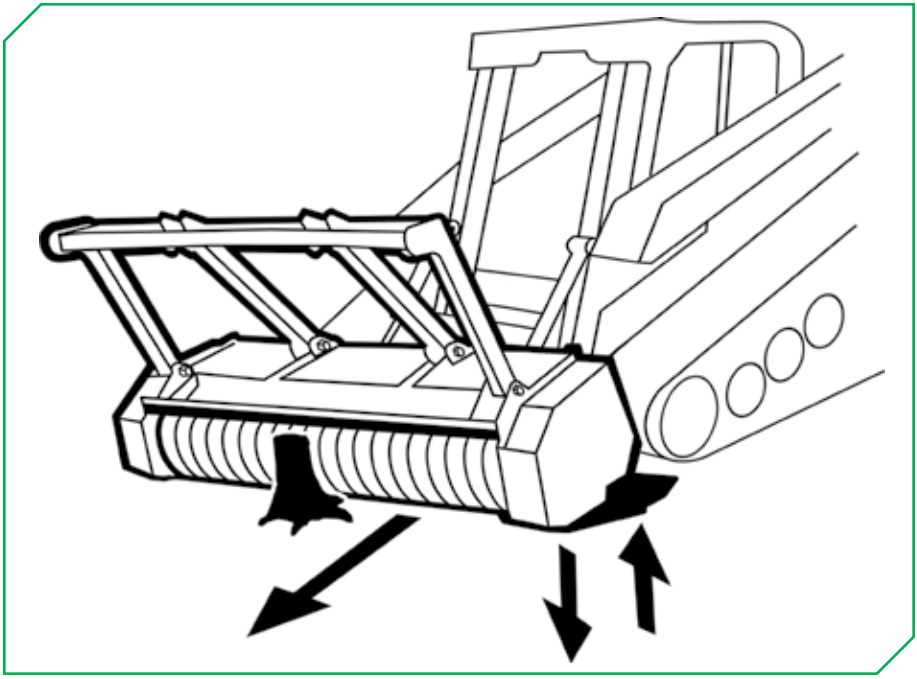
1. Pitch the mulcher back slightly to engage the drum into the tree.
2. Drive forward to engage the tree with the drum.
3. Tip forward using the push bar to guide the tree away from the carrier.
4. Tree tops should fall forward away from the carrier, ready for mulching.

- For very large trees, notch it (similar to using a chainsaw), and approach them from the other side to cut and drop the tree.

⚠WARNING

Be aware when cutting standing trees as there is a potential for treetops to fall onto the operator's cab.

STUMP CUT

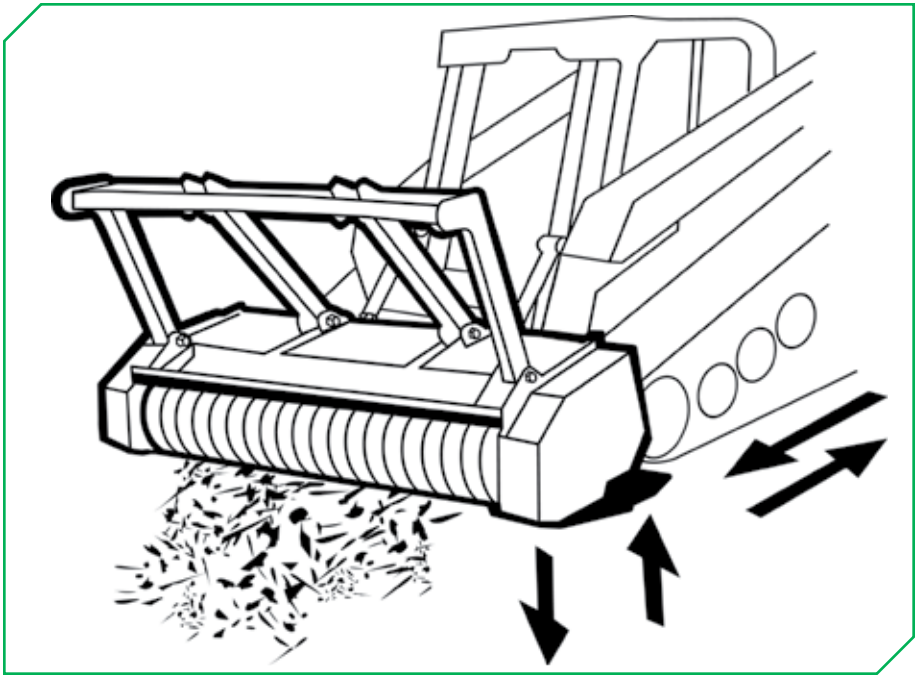


Use to cut stumps at, or below ground level.

- With the drum angled slightly down, cut the stump low to the ground.
  - Rebuild speed before proceeding with a stump cut.
- Angle the drum's nose down, cutting the stump flush to the ground.
  - NOTE: The more you use the stump cut application, the more wear your teeth will incur.

OPERATING YOUR DRUM MULCHER

CLEANING & RE-PROCESSING



Use to clean up branches and large debris. Re-processing the debris will provide a groomed finish.

- Raise lift arms about 6" (152mm) and drop the front of the drum toward the ground.
- Back over the remaining debris for a more finished look.

For more tips, visit us online at www.DiamondMowers.com

MAINTENANCE

Regular maintenance will make certain your unit stays productive and retains a long operating life. The following chart represents the minimum intervals recommended for inspection and maintenance.

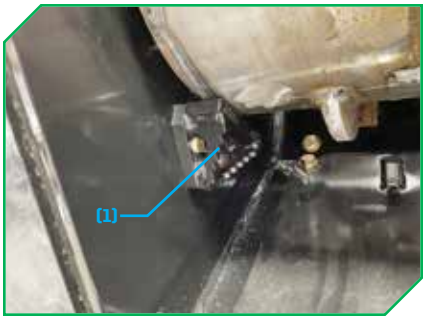
MAINTENANCE INTERVALS

PROCEDURE	10 HOURS/ DAILY	50 HOURS/ WEEKLY	150 HOURS	AS NEEDED
ANTI-WRAP GUARDS			Inspect	
BEARINGS	Grease	Inspect		
BELT & PULLEYS			Inspect	
CHAIN GUARD		Inspect		
DRUM	Inspect			
DRUM LINER			Inspect	Replace
HOSE CARRIER		Inspect		
HYDRAULIC HOSES & FITTINGS	Inspect			
MOTOR BOLTS		Inspect		
PUSH BAR				Inspect
QD COUPLERS				Inspect
SAFETY POLYCARBONATE	Inspect			Clean
SKID SHOES		Inspect		Replace
TEETH	Inspect			Replace
TOOTH HOLDERS	Inspect			Replace

When replacing parts, use Genuine Diamond Parts. Guaranteed to ship within 72-hours of your order being placed, or the parts and shipping are free.

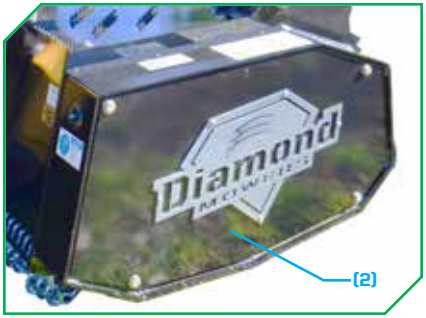
Call: 888-960-0361 or 605.977.3300 | **Email:** parts@diamondmowers.com
Order online: www.diamondmowers.com

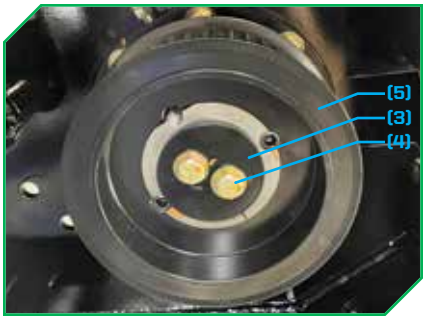
MAINTENANCE



ANTI-WRAP GUARDS

- Anti-wrap guards(1) should be inspected every 150 hours or monthly.
  - Anti-wrap guards(1) are located behind the drum in the interior of the machine.
- Replace the anti-wrap guards(1) as needed.
  - Remove the side access covers(2).
    - Anti-wrap guard(1) hardware is accessed from inside the side access covers(2).
  - Mounting bolts(3) are located in the low center of the frame for each anti-wrap guard(1).
    - Use Loctite 262.
    - Torque the mounting bolts(3) to 212ft-lbs (287Nm).





BEARINGS

Greasing the Bearings:

- Grease the bearings every 10 hours or daily when the bearings are warm.
- Grease the bearing grease zerks(1) (one on each side) with a minimum of (2) pumps of grease per 8 hours, OR up to (1) pump of grease every hour of operation.
  - Use synthetic / blend #2 lithium based grease (part #23-0015).

NOTICE

DO NOT use molybdenum (moly) grease; bearing failure will result.

Inspecting the Bearings:

- Inspect the bearings every 50 hours or weekly.
  - Rotate the drum while simultaneously pushing on it.
    - Side-to-side play, or extreme vibration when operating indicate bearing wear or loosening.
- Replace the bearings as needed to eliminate side-to-side play.

  To Replace the Bearings:
  - Remove the side access covers(2).
  - Remove the drive side belt as described in the **BELT & PULLEYS** section.
  - Remove the retention plate(3) and its hardware(4) from the drive side pulley(5).

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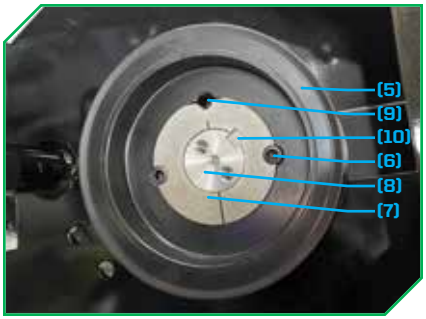
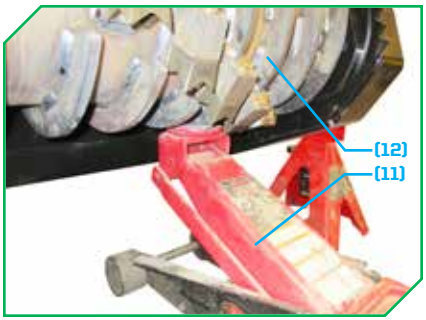
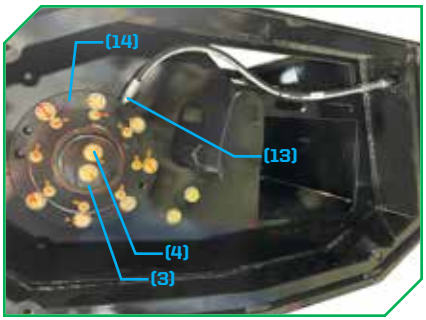
MAINTENANCE

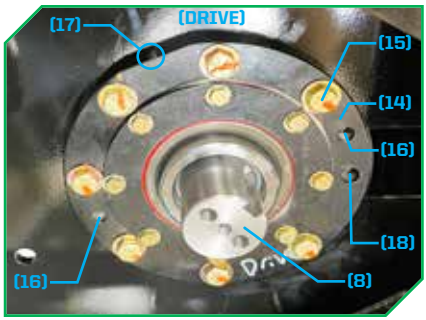


- Unthread the pulley set-screws(6) from the drive side pulley(5), and pull it along with its taper-lock(7) off of the drum stub shaft(8).
  - Thread one of the pulley set-screws(6) into the unlocking hole(9) as needed to assist in removal.
  - With the drive side pulley(5) removed, remove the key(10).
- Use floor jacks(11) to remove all weight from the drum(12) and to assist centering it in its mounts.





- Remove the remote grease hose(13) (each side) from the bearings(14).
- Remove the retention plate(3) and its hardware(4) from the idle side bearing(14).
- Unbolt the bearing hardware(15) from the bearing(14) (each side).
- Remove the bearing(14) from the drum stub shaft(8) (each side).
  - It may be necessary to thread removal bolts into the (2) removal holes(16) to force the bearing(14) off the drum stub shaft(8).
- Replace the drive side (non-floating) bearing(14) (part #10-1082) onto the drum stub shaft(8).



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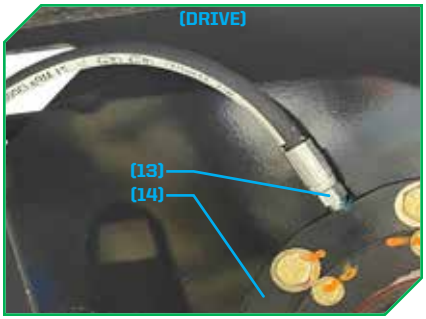

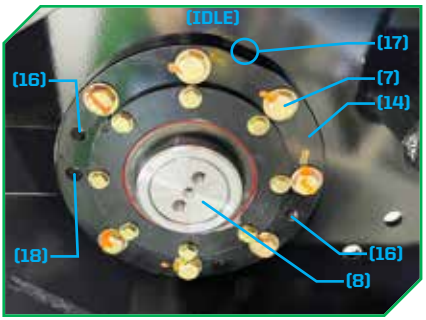

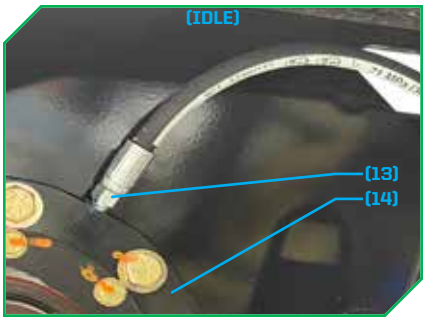

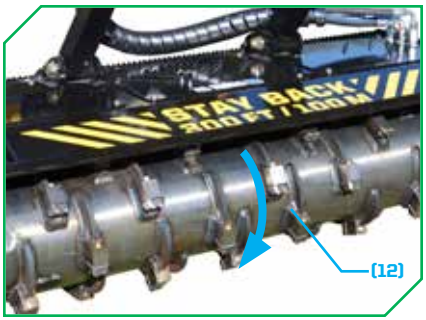

- Confirm the the threaded grease zerk hole(17) is orientated as illustrated / previous.

- Replace the bearing hardware(15).
  - Use Loctite 262.
  - Torque to 106ft-lbs (144Nm).
  - **DO NOT** place any hardware in this threaded hole(18) or removal holes(16).
- Replace the remote grease hose(13) into the drive bearing(14).
- Replace the idle side (floating) bearing(14) (part #10-1083) onto the drum stub shaft(8).
  - Confirm the the threaded grease zerk hole(17) is orientated as illustrated / previous.
- Replace the bearing hardware(15).
  - Use Loctite 262.
  - Torque to 106ft-lbs (144Nm).
  - **DO NOT** place any hardware in this threaded hole(18).
- Replace the remote grease hose(13) into the idle bearing(14).

- Grease both bearings(14) with (2) pumps of grease.
  - Use synthetic / blend #2 lithium based grease.
  - Spin the drum(12) while greasing to evenly distribute the grease in the bearings.

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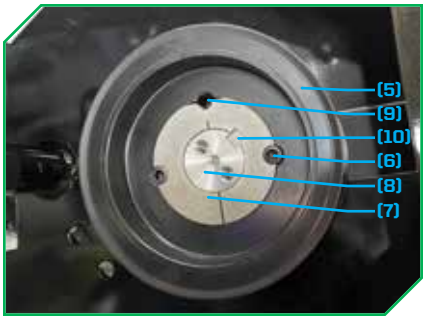
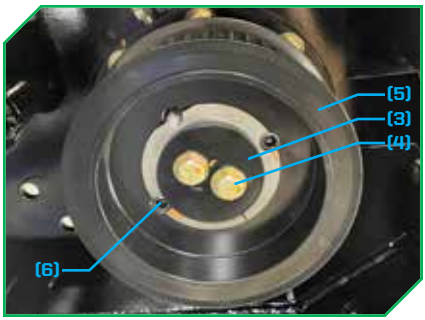
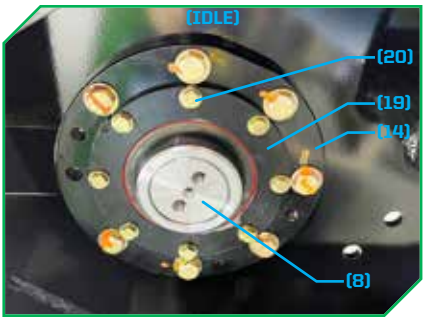
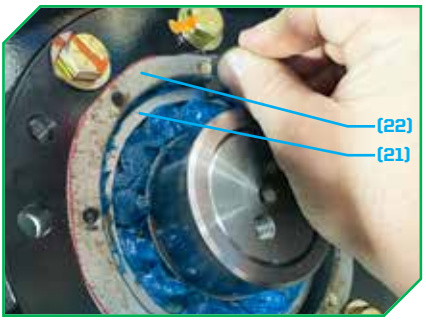
MAINTENANCE









- Place the key(10) into its slot on the stub shaft(8).
- Assemble the drive side pulley(5) with its taper-lock(7) to the stub shaft(8) and its key(10).
  - Push the drive side pulley(5) with its taper-lock(7) in fully onto the stub shaft(8) as illustrated.
  - Leave the pulley set-screws(6) loose, threaded ½ to ⅔ of the way in.
  - DO NOT put a set-screw(6) in the unlocking hole(9).
- Replace the retention plate(3) with its hardware(4) into the stub shaft(8) to retain the drive side pulley(5).
  - Use Loctite 262.
  - Torque to 106ft-lbs (144Nm).
- Tighten down the set-screws(6) on the drive side pulley(5).
  - Torque to 55ft-lbs (75Nm).
- Remove the bearing cover(19) with its hardware(20) from the idle side bearing(14) and set aside.
  - Use caution to not introduce dirt and debris into the bearing interior or the inside of the bearing cover.
- Measure the difference in height from the roller bearing raceway(21) to the bearing housing surface(22) where the bearing cover(19) is mounted.
  - The measurement **MUST** be greater than .216"; contact Customer Service if this criteria is not met.

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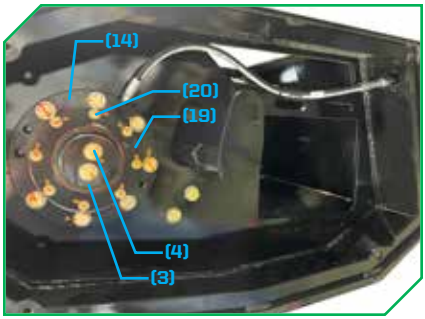
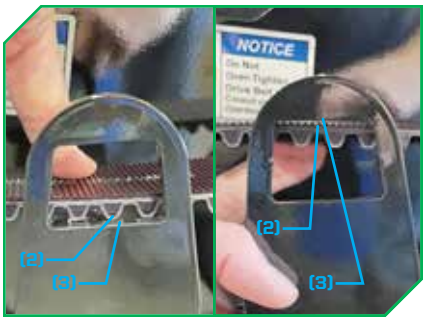
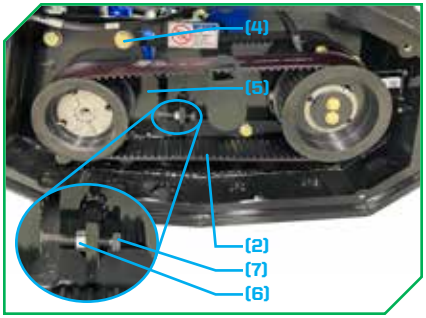


- Use precision calipers, go / no go gauge, etc.

- Replace the bearing cover(19) with its hardware(20) onto the idle side bearing(14).
  - Torque to 18ft-lbs (24Nm).
- Replace the retention plate(3) with its hardware(4) into the stub shaft(8) to retain the idle side bearing(14).
  - Use Loctite 262.
  - Torque to 106ft-lbs (144Nm).
- Replace the drive side belt as described in the **BELT & PULLEYS** section.
- Replace the side access covers(2).





BELT & PULLEYS

The belt and pulleys should be inspected every 150 hours or monthly.

- Remove the motor side access cover(1).
- Inspect belt for proper tension, wear or damage.
  - Push upward and downward on the belt(2) as illustrated.
    - Belt(2) deflection must be at least to the upper / lower edges of the tension gauge window(3) (or greater) when the belt(2) is cold (not been running).

Re-tension as needed or replace as needed for wear or damage:

- **To re-tension or replace the belt(2):**
  - Loosen the motor mount plate bolts(4).
  - Loosen the lock nut(6) on the tension adjustment bolt(7).
  - Adjust the tension of the belt(2) (as described above) by screwing the tension adjustment bolt(7) in or out to reposition the motor mount plate(5).
    - To replace the belt(2), loosen the tension adjustment bolt(7) giving the motor mount plate(5) more slack. Replace and re-tension the belt(2).
  - Tighten the motor mount plate bolts(4).
    - Re-check belt(2) deflection and correct as needed.
    - Use Loctite 262 on the motor mount plate bolts(4) and torque to 376ft-lbs (510Nm).

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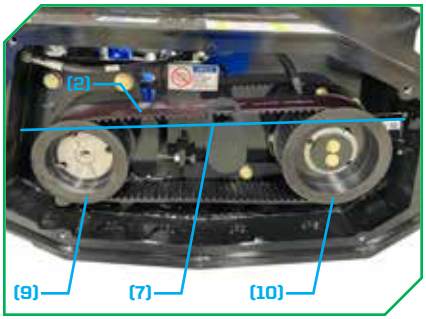
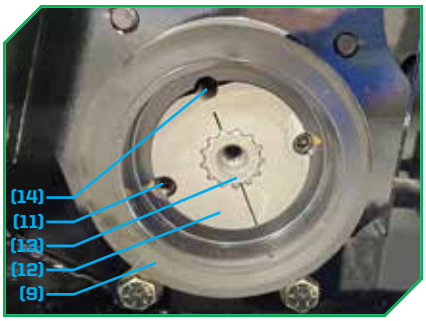
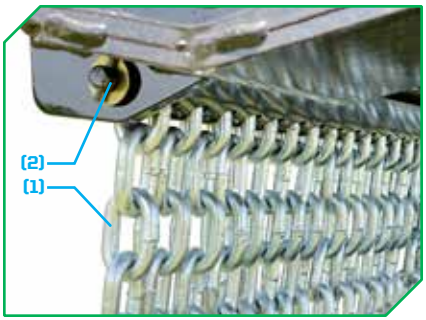




- Re-tighten the lock nut(6) on the tension adjustment bolt(7).

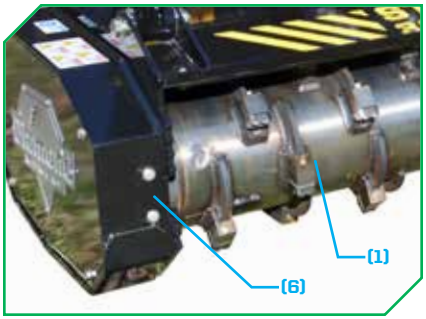
- **Pulley(9, 10) alignment:**
  - Use a straight edge(8) to confirm the motor pulley(9) is aligned with the drive pulley(10).
    Correct as needed:
    - Remove the belt(2) as detailed in the previous section.
    - Remove the motor pulley(9) set-screws(11).
    - Thread a set-screw(11) into the unlocking hole(14) to slightly open / loosen the taper-lock's clamp on the ss.
    - Lightly tap the taper-lock(12) and motor pulley(9) in the desired amount and direction on the splined motor shaft(13).
    - Without moving the motor pulley(9) and its taper-lock(12), thread in the set-screws(11) and torque to 55ft-lbs (75Nm).
    - Check alignment, and repeat as needed.
    - Replace the belt(2) as detailed in the previous section.

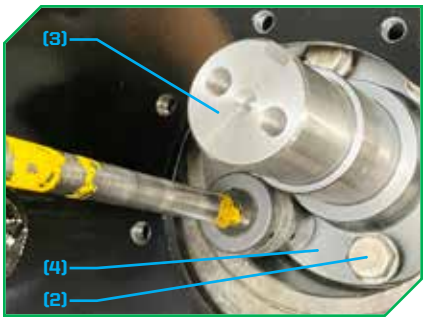


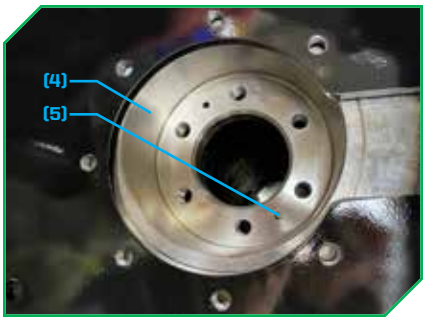
CHAIN GUARD

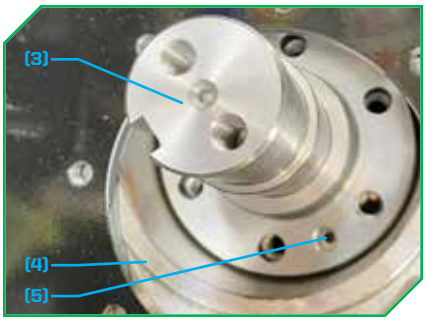
- The chain guard(1) and its mounting hardware hardware(2) should be inspected every 50 hours or weekly.
- Replace damaged / worn chains(1) and mounting hardware(2) as needed.

MAINTENANCE



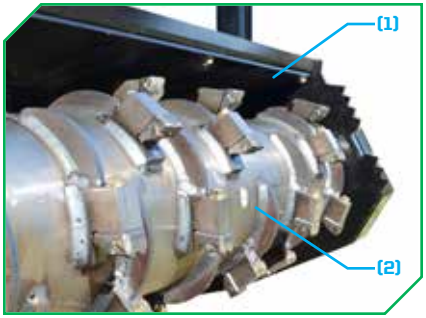


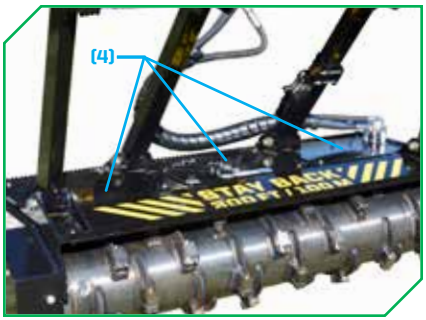




DRUM

- The drum(1) should be inspected every 10 hours or daily.
- Access covers(6) are provided on each end of the drum(1) on the front of the machine as illustrated to allow for the removal of wrapped wire and trapped debris.
- Raise the attachment to inspect the drum(1) for any cracks, damage, etc. **Replace the drum(1) as needed if damage is found:**
  - Support the weight of the drum, and remove the bearings securing the drum(1) as described in the **BEARINGS** section.
  - Remove the hardware(2) retaining the stub shafts(3) on the drum(1).
    - Remove the stub shafts(3) and set them aside with their hardware(2).
  - Replace the drum(1) and reassemble in reverse order.
    - **NOTE:** Confirm the breather holes(5) on the drum are aligned and visible through the non-threaded holes on the stub shafts(3) as illustrated.
    - Use Loctite 262.
    - Torque the stub shaft hardware(2) to 240ft-lbs (325Nm).



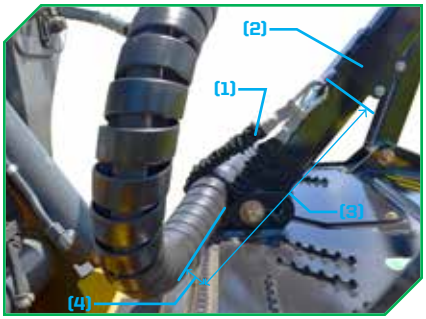


DRUM LINER

- The drum liner(1) should be inspected every 150 hours or monthly.
  - The drum liner(1) is in (2) pieces (upper and lower sections).
- Raise the attachment to inspect the drum liner(1) for excessive wear, damage, etc.

  The drum liner(1) should be replaced as needed if damage is found:
  - Remove the drum(2) as described in the **DRUM** section.
  - Back the attachment away from the drum(2) to allow access to the drum liner(1).
  - Remove the top access covers(4) to gain access to the interior drum liner hardware(5).
  - Replace the drum liner(1).
    - **NOTE:** Use C-Clamps as needed to hold the drum liner(1) sections in place when removing or replacing the drum liner hardware(5).
    - Drum liner hardware(5) is located behind the drum(2) and underside and in the interior of the machine.
    - Torque the hardware to 106ft-lbs (144Nm).
  - Reassemble the drum(2), to the machine as described in the **DRUM** section.

MAINTENANCE



HOSE CARRIER

- The hose carrier(1) should be inspected every 50 hours or weekly.
  - Replace when wear is noted.
- Adjust hose carrier bracket(2) approximately 15" (381mm)(3) from center of hole to deck edge.
  - Loosen the hardware and slide the hose carrier bracket(2) up or down the pushbar support.
  - The hose bundle should be suspended 2-3" (51-76mm)(4) from the top of the deck.

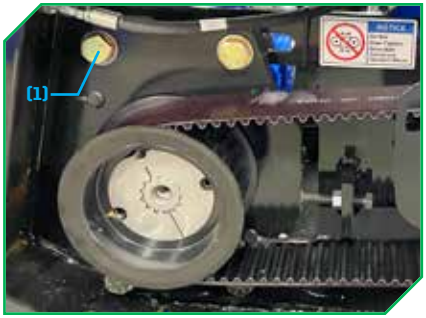
HYDRAULIC HOSES & FITTINGS

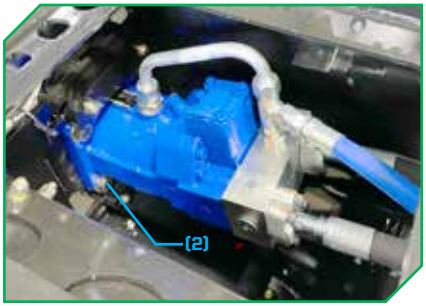
- Hydraulic hoses and fittings should be inspected every 10 hours or daily.

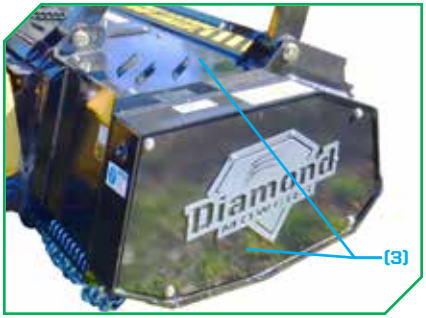
  What to look for:
  - Hydraulic fitting clamps and threaded connections for any hydraulic fluid.
    - If any leaks are observed, stop immediately to prevent damage to your machine.
  - Hoses for any abrasions or cuts. Replace damaged or worn hoses.
  - Attach hose wrap around critical points where hoses are likely pinched or rubbed.

⚠ CAUTION

DO NOT check for hydraulic leaks with your hands or any part of your body. Use a heavy piece of paper or cardboard to check areas that are not readily visible. Pressurized hydraulic fluid can penetrate the skin and lead to serious health risks.



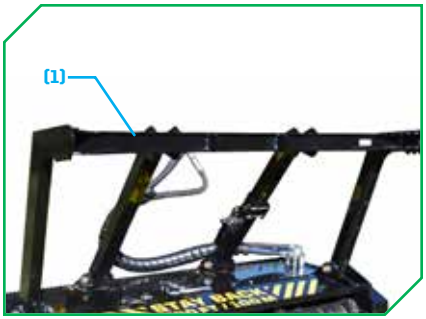




MOTOR BOLTS

- Motor mount plate(1) and motor(2) hardware and should be inspected every 50 hours or weekly.
  - Remove the motor top and side access covers(3) for access.
  - Use Loctite 262 on hardware(1)(2).
  - Torque the hardware(1)(2) to 376ft-lbs (510Nm).

MAINTENANCE



PUSH BAR

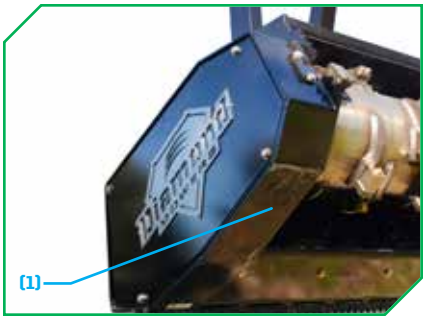
- Check the push bar(1) for cracks, excessive wear, or other damage.
- Replace as needed.

QD COUPLERS

- Inspect connections(1) for leaks, damage, etc.
- Replace as needed.

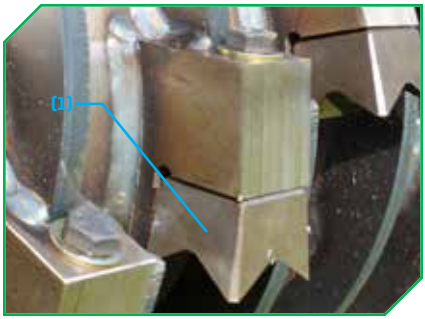
SAFETY POLYCARBONATE

- REQUIRED! Debris can be thrown unexpectedly in any direction. Do not use this unit without a minimum ½" (13mm) safety door.
- Clean only with mild soap and water using a sponge or soft cloth.
- Inspect every 10 hours or daily. Replace as needed.



SKID SHOES

- Skid shoes(1) should be inspected every 50 hours or weekly.
- Replace as needed.
  - Grind away stitch welds to free skid shoe(s)(1).
  - Use stitch welds to secure new skid shoe(s)(1).



TEETH

Four-Point Steel Teeth:

- Teeth(1) should be inspected every 10 hours or daily.
  - Inspect the teeth(1) for any chips or damage.
  - Sharpen, rotate, or replace as needed.
  - Tighten any loose teeth(1).

FOUR-POINT TEETH MAINTENANCE

LOOSE TEETH BOLTS	ROTATING TEETH	SHARPENING TEETH	REPLACING TEETH
Use a torque wrench set to torque to 120ft-lbs (163Nm). DO NOT over-torque as you could strip the threads and allow it to become loose.	The majority of cutting will be done with the tooth's two outside leading points. When these points are worn down to roughly 60% from sharpening or wear, the tooth can be rotated 180° in its tooth holder to expose the fresh points.	Lightly sharpen the inside leading edge of the tooth with a 4-½" (114mm) angle grinder, equipped with a flap style-sanding disc. DO NOT use a hard grinding disc. A hard grinding disc will rapidly wear away the hardened outer surface of the tooth. If the tooth will no longer take an edge, you will need to replace it.	Remove the bolts and flat washers. Replace the tooth. Using new hardware, hand-thread the bolts/washers or use an impact wrench set on low. DO NOT use Loctite. Use a torque wrench set to torque to 120ft-lbs (163Nm). DO NOT over-torque as your could strip the threads and allow it to become loose.

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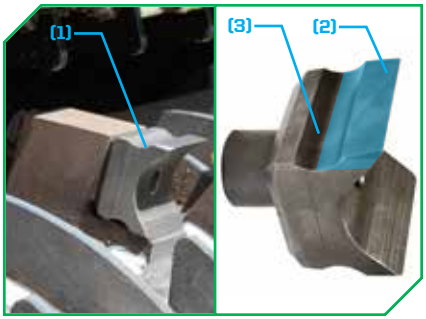
MAINTENANCE

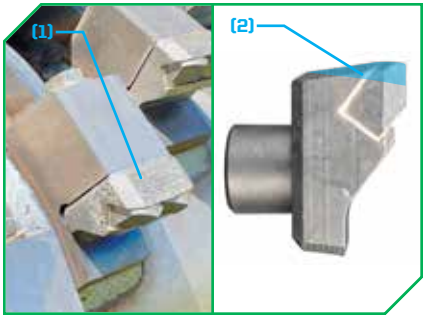


Twin Chisel® Planer Teeth:

- Teeth(1) should be inspected every 10 hours or daily.
  - Inspect the teeth(1) for any chips or damage.
  - Sharpen(2), rotate, or replace as needed.
    - **NOTE:** The tooth must be rotated or replaced when the sharpenable(2) area (shaded in blue) is completely worn away down to the bottom of the depth gauge(3).
  - Tighten any loose teeth(1).

TWIN CHISEL® TEETH MAINTENANCE

LOOSE TEETH BOLTS	ROTATING TEETH	SHARPENING TEETH	REPLACING TEETH
Use a torque wrench set to torque to 120ft-lbs (163Nm). DO NOT over-torque as you could strip the threads and allow it to become loose.	The majority of cutting will be done with the tooth's outside leading edge. When this edge has been worn down to the bottom of the depth gauge from sharpening or wear, the tooth can be rotated 180° in its tooth holder to expose the fresh edge.	Lightly sharpen the outside leading edge of the tooth with a 4-½" (114mm) angle grinder, equipped with a flap style-sanding disc. DO NOT use a hard grinding disc. A hard grinding disc will rapidly wear away the hardened outer surface of the tooth. If the bottom of the depth gauge has been reached, you will need to rotate or replace the tooth.	Remove the bolts and flat washers. Replace the tooth. Using new hardware, hand-thread the bolts/washers or use an impact wrench set on low. DO NOT use Loctite. Use a torque wrench set to torque to 120ft-lbs (163Nm). DO NOT over-torque as your could strip the threads and allow it to become loose.



Twin Maul® Carbide Teeth:

- Teeth(1) should be inspected every 10 hours or daily.
  - Inspect the teeth(1) for any cracks or damage, or excessive wear(2).
    - **NOTE:** When the wear(2) area (shaded in blue) is completely worn away, the tooth must be replaced.
  - Replace as needed.
  - Tighten any loose teeth(1).

TWIN MAUL® TEETH MAINTENANCE

LOOSE TEETH BOLTS	REPLACING TEETH
Use a torque wrench set to torque to 120ft-lbs (163Nm). DO NOT over-torque as you could strip the threads and allow it to become loose.	Remove the bolts and flat washers. Replace the tooth. Using new hardware, hand-thread the bolts/washers or use an impact wrench set on low. DO NOT use Loctite. Use a torque wrench set to torque to 120ft-lbs (163Nm). DO NOT over-torque as your could strip the threads and allow it to become loose.

MAINTENANCE

TOOTH HOLDERS

- Tooth holders(1) should be inspected every 10 hours or daily.
- Replacing/removing a tooth holder(1):
  - Grind away welds securing the tooth holder(1) to the drum(2).
  - Remove the old tooth holder(1).
  - Position new tooth holder(1) in the correct orientation (using the locating pin), and weld in place onto the drum(2) using triple pass fillet welds.
    - NOTE: DO NOT ground the welder anywhere other than the drum.

NOTICE

Failure to inspect and replace hardware at recommended intervals will cause damage to the machine and attachment.

TROUBLESHOOTING

PROBLEM	POTENTIAL CAUSE	SOLUTION
Drum Will Not Spin	No hydraulic flow from skid-steer / compact track loader	Verify hydaulic flow from power unit.
	Belt is broken or too loose	Replace broken belt. ● Remove side access cover. ● Loosen belt tension adjusment. ● Replace belt. ● Tension belt as described in the MAINTENANCE section. ● Replace side access cover. Tension loose belt. ● Remove side access cover. ● Tension belt as described in the MAINTENANCE section. ● Replace side access cover.
	Reversed flow from skid loader / compact track loader	After connecting the hoses to the machine, start machine at low idle and verify that the drum is spinning correctly - teeth are cutting.
	Hydraulic motor failure	Will require replacement. Contact Diamond Parts at 888.960.0361 or 605.977.3300.
	Seized bearings	Replace the bearings as described in the maintenance section of this manual.
	Sheared pulley key	Replace the sheared pulley key and reinstall the pulley. ● Align the pulley with the other pulley using a straight edge.
	Material jammed	Dislodge material from drum by first disengaging the implement and backing up. This will typically clear the cutting head. If the cutting head does not clear, shut down the implement and rest the head on the ground. Clear the head manually. ● DO NOT use extremities to dislodge debris from teeth or the drum.

CONTINUED ON NEXT PAGE

TROUBLESHOOTING

PROBLEM	POTENTIAL CAUSE	SOLUTION
Large Trees Won't Process	Skid-steer / compact track loader is operating on standard flow vs. high flow	Ensure skid-steer / compact track loader is on high flow. Drum running too slowly; allow sufficient time for drum to obtain full speed.
	Worn / missing teeth	Confirm all teeth are present on the drum and sufficiently sharp.
	Variable displacement motor not tuned	Ensure motor displacement has been tuned to the carrier's PSI rating.
PROBLEM	**POTENTIAL CAUSE**	**SOLUTION**
Excessive Vibration	Vegetation build up on drum or cutting teeth	Clean drum to remove debris by first disengaging the implement and backing up. This will typically clear the cutting head. If the cutting head does not clear, shut down the implement and rest the head on the ground. After the drum has come to a complete stop, clear the head manually. ● DO NOT use extremities to dislodge debris from teeth or drum.
	Missing cutting tooth	Replace tooth. ● Remove the bolts and flat washers. ○ DO NOT use Loctite. ● Replace the bolts/washers by hand-threading the bolts or use an electric impact wrench set on low. ○ DO NOT use Loctite. ● Torque to 120ft-lbs (163Nm). ○ DO NOT over-torque as you could strip the threads which could allow it to become loose.

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PROBLEM	POTENTIAL CAUSE	SOLUTION
Excessive Vibration	Missing tooth holder	Replace tooth holder. ● Grind away welds securing the tooth holder to the drum. ● Remove the old tooth holder. ● Position new tooth holder in the correct orientation (using the locating pin), and weld in place using triple pass fillet welds. – DO NOT ground to the welder anywhere other than the drum.
	Excessive play in drum	**Worn Bearings:** Replace the bearings as described in the maintenance section of this manual. **Loose Stub Shaft:** Use Loctite and torque stub shaft hardware to 240ft-lbs(325Nm)
PROBLEM	**POTENTIAL CAUSE**	**SOLUTION**
Teeth Worn	Need to sharpen teeth (Four-Point and Twin Chisel® Tooth Only)	Sharpen the tooth as described in the maintenance section for your tooth type with a 4-½" (114mm) angle grinder, equipped with a flap style-sanding disc. ● DO NOT use a hard grinding disc; A hard grinding disc will rapidly wear away the hardened outer surface of the tooth.
	Need to rotate teeth (Four-Point and Twin Chisel® Tooth Only)	The majority of cutting will be done with the teeth's two outside leading points (Four-Point) or outside leading edge (Twin Chisel®). Reference the maintenance section for each tooth type for information on when to rotate the tooth 180° to expose the fresh cutting edge(s).

CONTINUED ON NEXT PAGE

TROUBLESHOOTING

PROBLEM	POTENTIAL CAUSE	SOLUTION
Teeth Worn	Need to replace teeth (Four-Point, Twin Chisel®, and Twin Maul® Teeth)	Remove the bolts and flat washers. • DO NOT use Loctite. Replace the tooth. Using new hardware, hand-thread the bolts/washers or use an impact wrench set on low. • Use a torque wrench set to torque to 120ft-lbs (163Nm). • DO NOT over-torque as you could strip the threads and allow it to become loose.

For any questions, contact our Warranty / Service team at
888.960.0364 or 605.977.3300

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