



# **SKID-STEER FORESTRY MULCHER**

**OPERATOR'S MANUAL**



**350 EAST 60TH ST. N. • SIOUX FALLS, SD 57104**

**800.658.5561 • 605.977.3300**

**[WWW.DIAMONDMOWERS.COM](http://WWW.DIAMONDMOWERS.COM)**

**PARTS 888.960.0361**

**WARRANTY + SERVICE 888.960.0364**



## **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 NUMBER:** 60"<sup>(153cm)</sup> Forestry Mulcher

**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.

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Patents: D742,421 : D731,559 : 9,441,678  
Provisional Patents: 62/484,360

# WELCOME!

Thank you for choosing Diamond Mowers, and welcome to your skid-steer forestry mulcher. Before you begin, 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 forestry 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](mailto:parts@diamondmowers.com)

**Warranty / Service:** 888.960.0364 | [warranty@diamondmowers.com](mailto:warranty@diamondmowers.com)

**Main Office:** 800.658.5561 | 605.977.3300

**Website:** [www.diamondmowers.com](http://www.diamondmowers.com) | **Email:** [info@diamondmowers.com](mailto: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.

## Your satisfaction is guaranteed.

If you are not completely satisfied with your new Diamond in the first 30-days, we will buy it back. No questions asked.

## Thanks again for choosing Diamond.

If at any time your needs are not being met by our team, please feel free to call me direct.



Tim Kubista  
VP Sales & Marketing  
651.955.6665

## **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 forestry mulcher 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](mailto:warranty@diamondmowers.com)



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### INTENDED USE

This attachment is designed to be used on a high flow 32-45 GPM (122-171 LPM) skid-steer or track loader for mowing and brush management applications.

This includes:

- Cutting grass
- Mulching brush
- Cutting small trees up to 14" (35.5cm) 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.

### WARNING

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

# TAKE A LOOK AROUND

*Let's get started by doing a quick walk around of the skid-steer forestry mulcher.*



## TEETH

To provide the most efficient cut, we use hardened steel teeth that act like an axe to slice into material.



## PLANER KNIVES

Located in the center of the disc to eliminate any dead zone in the cutting area.



## DISC

The disc acts like a flywheel and stores energy. The energy used to cut and mulch comes from stored energy, not hydraulic power alone. It will take approximately 60 seconds to come up to full speed.



## DEFLECTOR SHIELD

Fully adjustable, you can open the deflector shield wide to distribute debris quickly, or close it for more control in where your exhaust is distributed.

CONTINUED ON NEXT PAGE

# TAKE A LOOK AROUND

(CONTINUED)



## INTAKE CHUTES

Your forestry head comes standard with two intake chute options. Pick which one is best for your terrain:



## NARROW INTAKE CHUTE

Designed for single stem, taller trees without many lower branches. This chute includes a hook to help feed trees, and a ramp to scoop material already on the ground into the head.



## WIDE INTAKE CHUTE

Designed with an open throat to feed larger, bushier trees more efficiently.

## ⚠ WARNING

Your forestry mulcher comes with both intake chutes installed. You must remove one of the two chutes before operating. Running your machine with both intake chutes attached will cause damage to the deck.



## PUSH BAR

Guides material away from the loader.



## HOSES

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



## GETTING STARTED



### HIGH FLOW MACHINE

Diamond's skid-steer forestry attachment must be used on a high flow machine capable of 32-45 GPM (122-171 LPM) and have a case drain.

### INSTALL SHATTER RESISTANT ENCLOSURE

Safety glass is mandatory. This product must not be used without a shatter resistant cab enclosure. Debris can fly back at the cab and cause injury.



### HOOK UP

The forestry mulcher will mount onto the front of the skid loader's quick detach arms in place of a bucket or other implements.



### CONNECT QUICK 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 quick coupler connectors.

- Install the coupler that matches skid loader.
- Attachment is shipped with 1/2" flat face connectors, which are a common size for most skid loaders.
- To prevent contamination, clean connections before attaching.
- Make sure the hose length outside of the bracket is long enough for the head to make a full range of motion, but not so long that the hose can pinch.



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### CONTINUED FROM PREVIOUS PAGE

- Start machine at low idle and verify that the disc is spinning in the correct direction. As you sit in the cab, it should spin left to right.
- If the pressure and return hoses are reversed, the disc will spin backwards resulting in damage.
- If this reversal occurs, either inverse the flow from your loader or switch the couplers on the pressure and return hose.

### **PICK YOUR INTAKE CHUTE**

Your forestry mulcher comes with both intake chutes installed. You must remove one of the two chutes before operating. Running your machine with both intake chutes attached will cause damage to the deck.



**Narrow Intake Chute** - Designed for taller trees without many lower branches. This chute includes a hook to help feed trees, and a ramp to scoop material already on the ground into the head.



**Wide Intake Chute** - Designed with an open throat to feed larger, bushier trees more efficiently.

## ADJUST YOUR DEFLECTOR SHIELD

This adjustable shield helps control the direction of processed material.



**Open**

**Open** – Allows material to be dispersed quickly and efficiently.

This position may restrict visibility while in position.

\*Most common position



**Middle**

**Middle** – Allows material to be dispersed evenly.



**Closed**

**Closed** – Allows material to be dispersed into piles. This position is less efficient than the open position.

**Removed** – Allows material to be dispersed quickly and efficiently and maintain fully visibility.

### **WARNING**

Do not use the deflector shield for pushing or moving material while in the closed position. Pushing material with the deflector shield will bend the piece towards the disc and incur damage to the shield.

### OPERATING YOUR FORESTRY 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 800.658.5561 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.



This signal is used where **serious** injury or death will result if instructions are not followed properly.



This signal is used where **serious** injury or death could result if instructions are not followed properly.



This signal is used where **minor** injury could result if instructions are not followed properly.

- ☐ Always wear proper safety glasses, goggles, or a face shield when operating.
- ☐ Do not operate this unit without a shatter resistant cab enclosure installed on your skid loader.
- ☐ This unit will cause flying debris.
- ☐ Block off work area from bystanders, livestock, etc.
- ☐ Bystanders must keep a distance of 300'/91.5m from the unit when it's operating.
- ☐ Teeth are always sharp and can cause injury, even when not in motion.

- ☐ 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, motor, or spindle in its proximity.
- ☐ Route hoses correctly to ensure a full range in motion.
- ☐ Make certain hoses are out of the way of tires, tracks or the ground.
- ☐ Be certain the disc has come to a complete stop before exiting the cab.

### **WARNING**

Contact with the disc, teeth, and knives while the disc is in motion can cause serious injury or death. The disc does spin at a very high speed and can take several minutes to stop. Be sure all personnel is clear of the machine before engaging the mulcher.



### **STOWED POSITION**

When transporting Diamond's forestry mulcher between operations, make sure to protect it from collisions and accidental damages by placing it in the stowed position.

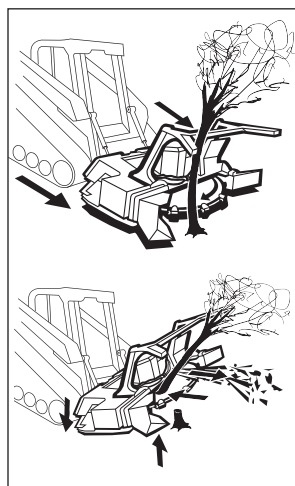
Failure to place the head in its stowed position could result in structural damage.

### OPERATING TECHNIQUES

The following techniques help get your work done quickly, safely and productively.

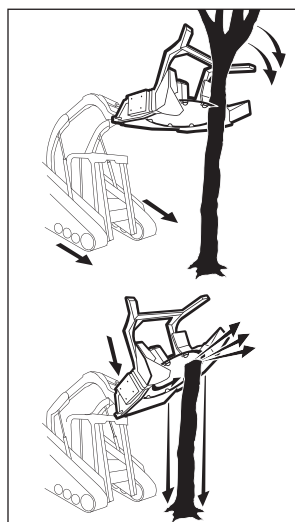
**NOTE:** When feeding and grinding material you'll want to use the right hand side of the disc.

When cutting only and pushing material away from the machine you'll want to use the left hand side of the disc.



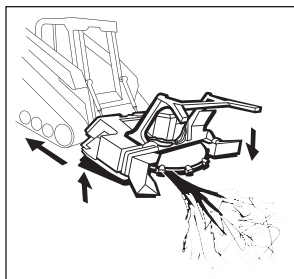
#### **CUT AND FEED** - Trees 2"-6" (5cm-15.2cm)

- Cut with the right hand side of the disc so that the disc will feed material into the head.
- Cut the tree at the bottom and scoop up the tree (like scooping a load of dirt into a bucket) while allowing the tree to fall into the hook (if using the narrow chute) located at the top.
- This hook feature will hold the tree in the right position for processing.
- The tree must be at the same angle as the disc in order to pull the tree in to grind it.



#### **BOTTOM GRIND** - Trees 6"-10" (15.2cm-25.4cm)

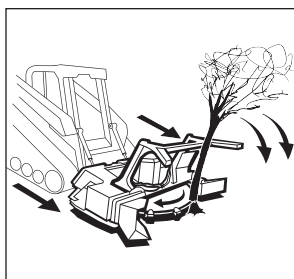
- To top the tree - reach as high as comfortably possible and cut the top of tree using the left hand side of the disc and push the top of the tree away from the cutter head to grind it later.
- Make certain to allow enough recovery time to rebuild momentum.
- To grind the tree - angle the head back 45 degrees and drop the head as fast as possible keeping the tree on the left side of the disc to throw material away from the machine.



## GROUND PULL

To pull in and grind debris laying on the ground.

- Use the right side and bottom of the disc by lifting the head slightly to suck branches or tree tops underneath the disc to grind it.
- Use the bottom of the disc to re-process material on the ground for a finer finish.

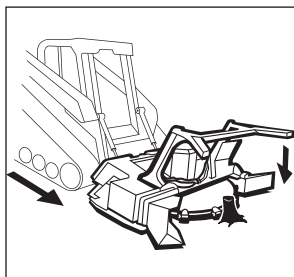


## CUT WITHOUT GRIND

- Set your disc level and use the left hand side to cut and push the tree away from skid-steer.
  - This will act like a saw to cut the tree without grinding it.
- For very large trees you will need to notch it (similar to using a chainsaw), then come to the other side to cut and drop the tree.
- Use your push bar to help direct the tree away from the machine.

## WARNING

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

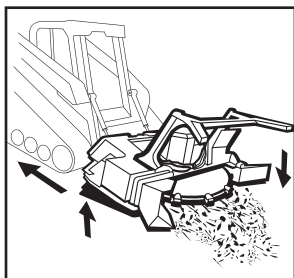


### STUMP CUT

To cut stumps at or below ground level.

- Keep the deck level and cut the stump low to the ground.
- Wait to rebuild speed before proceeding with a stump cut.
- Lift up and point the nose down to the ground to allow the head to use the bottom teeth for grinding.

**NOTE:** The more you use the stump cut application, the more wear your teeth will incur.



### CLEANING AND RE-PROCESSING

After mulching a tree for the first time, there will likely be branches and large debris around the work site. Re-processing the debris will provide a more groomed look.

- Raise lift arms about 6" (15.2cm) and drop front of head toward the ground with the disc leading edge touching the ground.
- Back over the remaining debris for a more finished look.



# MAINTENANCE INTERVALS

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.

| Procedure                  | 10 hours | 50 hours | As necessary          |
|----------------------------|----------|----------|-----------------------|
| Deflector Shield           | X        |          |                       |
| Disc                       | X        |          |                       |
| Ejection Chute             | X        |          |                       |
| Hydraulic Hoses & Fittings | X        |          |                       |
| Intake Chute (Narrow/Wide) | X        |          |                       |
| Motor Bolts                | X        |          |                       |
| Motor Shield               |          | X        |                       |
| Planer Knives              | X        |          |                       |
| Push Bars                  |          |          | X                     |
| Quick Couplers             |          |          | X                     |
| Safety Glass               |          |          | X                     |
| Skid Shoes                 |          | X        |                       |
| Spindle                    |          |          | Annually or 500 Hours |
| Spindle Bolts              | X        |          |                       |
| Teeth                      | X        |          |                       |

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

**Call:** 888.960.0361 or 605.977.3300  
**Email:** [Parts@DiamondMowers.com](mailto:Parts@DiamondMowers.com)  
**Order online:** [www.DiamondMowers.com](http://www.DiamondMowers.com)



### DEFLECTOR SHIELD

- Deflector shield should be inspected every 10 hours, or daily.
- *Replace as necessary.*



### DISC

- Disc should be inspected every 10 hours, or daily.
- Raise and secure the deck to inspect the disc for any cracks or other damage.
- *Disc should be replaced if damage is found.*

#### **If disc bolts are loose:**

- Remove the bolts
- Apply Loctite 262 (red) to the threads
- Replace the bolts and torque to 212ft-lbs (287Nm)



### EJECTION CHUTE

- Ejection chute bolts and nuts should be inspected every 10 hours, or daily.
- Torque hardware to 110ft-lbs (149Nm).
- *Replace as necessary.*



## HYDRAULIC HOSES & FITTINGS

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

### What to look for:

- Abrasions or cuts on hoses
- Replace damaged or worn hoses
- Attach wear pads around critical points where hoses are likely pinched or rubbed
- Hydraulic fitting clamps and threaded connections for any hydraulic fluid
  - If any leaks are observed, stop immediately to prevent damage to your loader

### 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 or death.



## INTAKE CHUTE (NARROW or WIDE)

- Chute bolts and nuts should be inspected every 10 hours, or daily.
- Torque hardware to 110ft-lbs (149Nm).
- *Replace as necessary.*



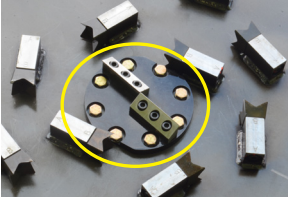
## MOTOR BOLTS

- Motor bolts should be inspected every 10 hours, or daily.
- Torque hardware to 110ft-lbs (149Nm).
- Verify that locking tabs are in place.
  - Assemble locking tabs to the u-shaped tab over the cab bolts with their hardware.



### MOTOR SHIELD

- Check for damage every 50 hours, or weekly.
- Torque hardware to 75ft-lbs (102Nm).



### PLANER KNIVES

- Planer knives should be inspected every 10 hours, depending on usage.
- Inspect the planer knives for any cracks or damage.
- No sharpening required.
- *Replace as necessary.*

#### If planer bolts are loose:

- Remove the bolts
- Apply Loctite 262 (red) to the threads
- Replace the bolts and torque to 110ft/lbs (149Nm)



### PUSH BAR

- Check for cracks.
- *Repair as necessary.*



### SHATTER RESISTANT ENCLOSURE

- **REQUIRED!** Debris can be thrown unexpectedly in any direction. Do not attempt to use this forestry head without proper protection.
- Clean only with mild soap and water using a sponge or soft cloth.
- *Replace as necessary.*



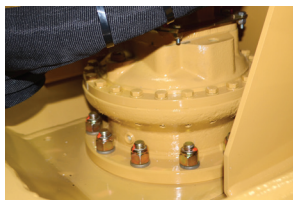
### SKID SHOES

- Skid shoes should be inspected every 50 hours, or weekly.
- *Replace as necessary.*



### SPINDLE

- Inspect topside of cutting disc for oil.
  - If oil is present, the spindle's lower bearing seal may be damaged and will require replacement.
- The disc should rotate smoothly.
  - If excessive play is found, the spindle bearings are likely worn and will require replacement.
- Drain and replace oil annually or every 500 hours with 32oz of 75w90 synthetic gear oil.



### SPINDLE BOLTS

- Spindle bolts and nuts should be inspected every 10 hours, or daily.
- If bolts come loose, remove, apply Loctite 262 (red) to threads and reinstall.
- Torque hardware to 220ft-lbs (298Nm).



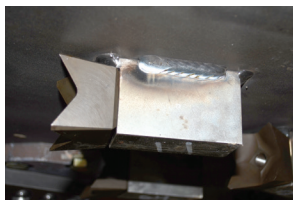
### **TEETH**

- Teeth should be inspected every 10 hours, depending on usage.
  - Sharpen, rotate or replace as necessary.
- Inspect the teeth located on the disc for any cracks or damage.



- Teeth are also located on the top of the disc and inside of the deck. These teeth can be reached via the access panel located on the top, rear of the deck.

| If teeth bolts are loose                                                                                                                                    | Replacing teeth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rotating teeth                                                                                                                                                                                                                                         | Sharpening teeth                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Use a torque wrench set to torque to 90ft-lbs (122Nm).</p> <p><b>DO NOT</b> over-torque as you could strip the threads and allow it to become loose.</p> | <p>Remove the bolts and flat washers.</p> <p>Replace the tooth.</p> <p>Using new hardware, hand-thread the bolts/washers or use an electric impact wrench set on low.</p> <p><b>DO NOT</b> use Loctite.</p> <p>Use a torque wrench set to torque to 90ft-lbs (122Nm).</p> <p><b>DO NOT</b> use a pneumatic impact wrench.</p> <p><b>DO NOT</b> over-torque as you could strip the threads and allow it to become loose.</p> <p>Make certain to replace the corresponding tooth located in the opposite position of the disc to maintain balance.</p> | <p>The majority of cutting will be done with the teeth's two outside leading points. When these two points are worn down to roughly 60% from sharpening or wear, they can be rotated 180 degrees in their tooth holder to expose the fresh points.</p> | <p>Lightly sharpen the outside leading edge of the tooth with a 4" (115mm) angle grinder, equipped with a flap style-sanding disk.</p> <p><b>DO NOT</b> use a hard grinding disk. A hard grinding disk will produce excessive heat and ruin the tooth's hardness.</p> <p>If the tooth will no longer take an edge, you will need to replace it - along with the corresponding tooth located on the opposite position of the disc to maintain balance.</p> |



### TOOTH HOLDERS (INNER)

- Tooth holders should be inspected every 10 hours, depending on usage.
- If a tooth holder is damaged, it can be replaced.
  - Cut off and grind the weld flat to the disc
  - Bolt new holder to the disc using the locating bolt holes
  - Weld the tooth holder to the disc with a similar sized weld as used on the original mounts

**NOTE:** Weight differences can create balance issues. Try to keep the weld consistent.





### TOOTH HOLDERS (OUTER)

- Tooth holders should be inspected every 10 hours, depending on usage.
- If a tooth holder is damaged, it can be replaced.
  - Cut off and grind the weld flat to the disc
  - Position the new tooth holder in the notch in the disc
  - Weld the tooth holder to the disc with a similar sized weld as used on the original mounts

**NOTE:** Weight differences can create balance issues. Try to keep the weld consistent.

### **WARNING**

Failure to inspect and replace hardware at recommended intervals may cause damage to the unit and skid loader.

TROUBLESHOOTING

| Problem            | Potential Cause                    | Solutions                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Disc Will Not Spin | No hydraulic flow from skid loader | Verify hydraulic flow from power unit                                                                                                                                                                                                                                                                                                                                           |
|                    | Failed splined insert              | <ul style="list-style-type: none"><li>• Remove motor and snap ring from spindle</li><li>• Thread a 3/4-16 by 5" bolt into the insert base, forcing it out of the shaft</li><li>• Replace spindle insert</li><li>• Replace snap ring, motor and hardware</li><li>• Torque motor bolt hardware to 110ft-lbs (149Nm)</li></ul>                                                     |
|                    | Reversed flow from skid loader     | After connecting the hoses to the machine, start machine at low idle and verify that the blades are spinning clockwise.<br>As you sit in the cab it should spin left to right.                                                                                                                                                                                                  |
|                    | Hydraulic motor shaft failure      | Will require replacement. Contact Diamond Parts at 888.960.0361 or 605.977.3300.                                                                                                                                                                                                                                                                                                |
|                    | Material jammed                    | Dislodge material from disc by first disengaging the implement and backing up. This will typically clear the cutting head.<br><br>If the cutting head does not clear, shut down the implement and rest the head on the ground. After the disc has come to a complete stop, clear the head manually.<br><br><b>DO NOT</b> use extremities to dislodge debris from teeth or disc. |

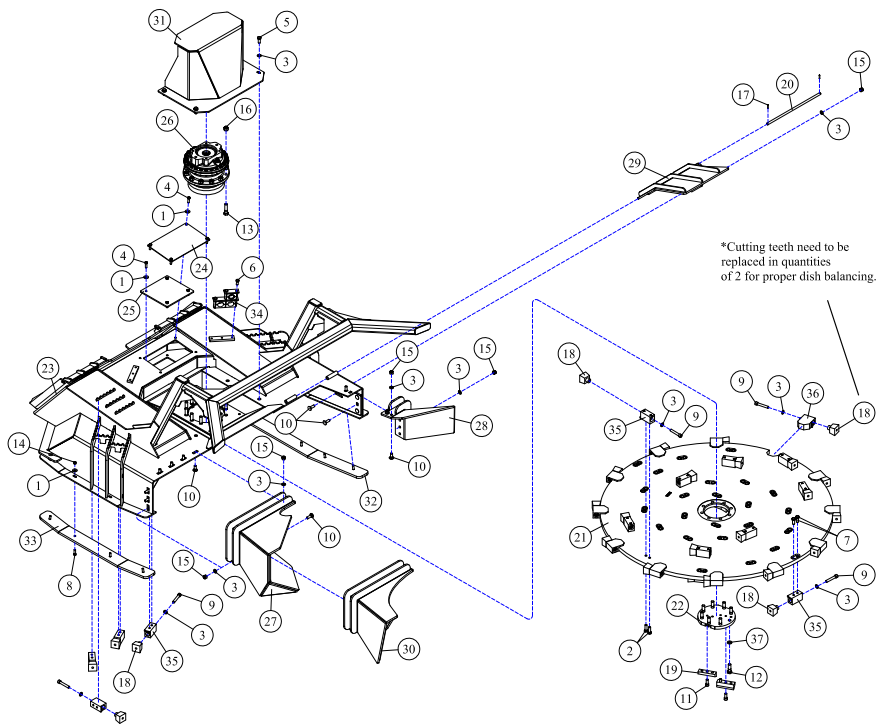
| Problem                   | Potential Cause                                         | Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Excessive Vibration       | Disc to spindle hardware is loose                       | Tighten hardware<br>• Torque hardware to 212ft-lbs (287Nm)                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                           | Vegetation build up on disc                             | Clean disc to remove debris by first disengaging the implement and backing up. This will typically clear the cutting head.<br><br>If the cutting head does not clear, shut down the implement and rest the head on the ground. After the disc has come to a complete stop, clear the head manually.<br>- <b>DO NOT</b> use extremities to dislodge debris from teeth or disc.                                                                                                                         |
|                           | Missing cutting tooth                                   | Replace Tooth<br>• Remove the bolts and flat washers<br>- <b>DO NOT</b> use Loctite<br>• Replace the bolts/washers by hand-threading the bolts or use an electric impact wrench set on low.<br>• Torque to 90ft-lbs (122Nm)<br>- <b>DO NOT</b> use a pneumatic impact wrench<br>- <b>DO NOT</b> over-torque as you could strip the threads which could allow it to become loose<br>• Make certain to replace the corresponding tooth located in the opposite position of the disc to maintain balance |
|                           | Missing tooth holder                                    | Replace Tooth Holder<br>• Cut off and grind the weld flat to the disc<br>• Bolt new holder to the disc using the locating bolt holes<br>• Weld the tooth holder to the disc with a similar sized weld as used on the original mounts<br>• Weight differences can create balance issues. Try to keep the weld consistent.                                                                                                                                                                              |
|                           | Excessive play in spindle                               | The disc should rotate smoothly<br>• If excessive play is found, the spindle bearings are likely worn and will require replacement. Contact Diamond Parts at 888.960.0361 or 605.977.3300.                                                                                                                                                                                                                                                                                                            |
| Large Trees Won't Process | Skid loader is operating on standard flow vs. high flow | Ensure skid loader on high flow                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Problem    | Potential Cause       | Solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Teeth Worn | Need to rotate teeth  | <p>The majority of cutting will be done with the teeth's two outside leading points.</p> <p>When these two points are worn down to roughly 60% from sharpening or wear, they can be rotated 180 degrees in their tooth holder to expose the fresh points.</p>                                                                                                                                                                                                                                                                                                                                                                                                                             |
|            | Need to sharpen teeth | <p>Lightly sharpen the outside leading edge of the tooth with a 4" (115 mm) angle grinder, equipped with a flap style-sanding disk.</p> <ul style="list-style-type: none"> <li>- <b>DO NOT</b> use a hard grinding disk, as it will emit too much heat onto the tooth and ruin it's hardness.</li> </ul> <p>If the tooth will no longer take an edge, you will need to replace it - along with the corresponding tooth located on the opposite position of the disc to maintain balance.</p>                                                                                                                                                                                              |
|            | Need to replace teeth | <p>Remove the bolts and flat washers</p> <ul style="list-style-type: none"> <li>- <b>DO NOT</b> use Loctite</li> </ul> <p>Replace the tooth.</p> <p>Using new hardware, hand-thread the bolts/ washers or use an electric impact wrench set on low.</p> <ul style="list-style-type: none"> <li>- <b>DO NOT</b> use a pneumatic impact wrench</li> </ul> <p>Use a torque wrench set to torque to 90ft-lbs (122Nm).</p> <ul style="list-style-type: none"> <li>- <b>DO NOT</b> cover-torque as you could strip the threads and allow it to become loose</li> </ul> <p>Make certain to replace the corresponding tooth located in the opposite position of the disc to maintain balance.</p> |

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

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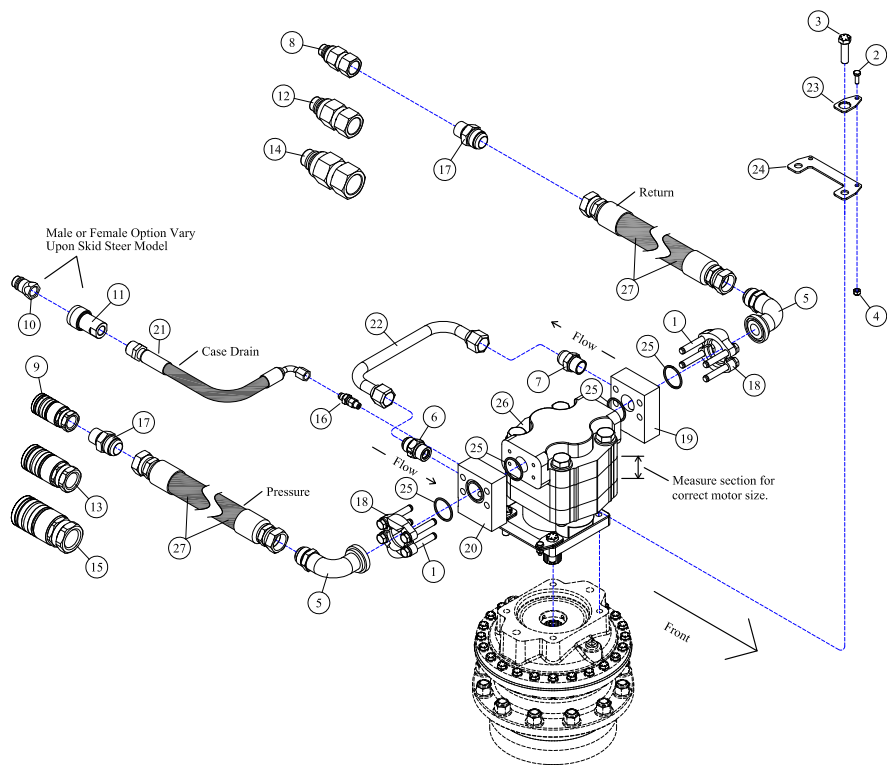
Forestry Mulcher - 60"(153cm) Deck, Direct Drive



| REF# | PARTS DESCRIPTION                 | REQ | PART #  |
|------|-----------------------------------|-----|---------|
| 1    | 3/8 FLAT WASHER GR 5 CLEAR        | 18  | 11-0009 |
| 2    | 1/2 X 1-1/2 H.S.NF HEX CAP        | 16  | 11-0704 |
| 3    | 1/2 SAE FLAT WASHER GR 8 YELLOW   | 65  | 11-0042 |
| 4    | 3/8 X 1 NC HEX CAPSCREW           | 8   | 11-0532 |
| 5    | 1/2 X 1-1/4 NC HEX CAP            | 4   | 11-0570 |
| 6    | 7/16 X 1 NC HEX CAPSCREW          | 3   | 11-0584 |
| 7    | 1/2 X 1 NF HEX CAP GR 5           | 48  | 11-0639 |
| 8    | 3/8 X 1-1/2 PLOW BOLT             | 9   | 11-0795 |
| 9    | 1/2 X 3 NF SHCS                   | 48  | 11-0929 |
| 10   | 1/2 X 1-3/4 NC CARRIAGE BOLT GR 8 | 13  | 11-0961 |
| 11   | 1/2 X 1-1/4 NC SHCS               | 6   | 11-0965 |
| 12   | 5/8 X 2 NC HEX CAPSCREW, GR 8     | 8   | 11-0970 |
| 13   | 5/8 X 2-1/2 NC HEX CAPSCREW, GR 8 | 12  | 11-0971 |
| 14   | 3/8 NC NYLOCK NUT GR 5            | 9   | 11-1024 |
| 15   | 1/2 NC NYLOCK NUT GR 8            | 13  | 11-1072 |
| 16   | 5/8 NC NYLOCK NUT GR 8            | 12  | 11-1073 |
| 17   | ROLL PIN, 5/32 X 1                | 2   | 11-2054 |
| 18   | *STEEL CUTTING TOOTH              | 48  | 22-0019 |
| 19   | FBC, CENTER PLANNER               | 2   | 24-0192 |
| 20   | DEFLECTOR HINGE ROD               | 1   | 24-0213 |
| 21   | 60 FBS DISH, COMPLETE             | 1   | 24-0223 |
| 22   | FBS, BOLT PROTECTOR               | 1   | 24-0224 |

| REF# | PARTS DESCRIPTION                               | REQ | PART #  |
|------|-------------------------------------------------|-----|---------|
| 23   | SKID DECK                                       | 1   | 25-0204 |
| 24   | UPPER ACCESS PORT COVER                         | 1   | 31-0537 |
| 25   | LOWER ACCESS PORT COVER                         | 1   | 31-0455 |
| 26   | SPINDLE ASSEMBLY                                | 1   | 35-0093 |
| 27   | NARROW CHUTE                                    | 1   | 41-1302 |
| 28   | LEFT CHUTE                                      | 1   | 41-1303 |
| 29   | DEBRIS DEFLECTOR                                | 1   | 41-1305 |
| 30   | WIDE CHUTE                                      | 1   | 41-1307 |
| 31   | MOTOR GUARD                                     | 1   | 41-1461 |
| 32   | LEFT SKID SHOE                                  | 1   | 42-0048 |
| 33   | RIGHT SKID SHOE                                 | 1   | 42-0049 |
| 34   | HOSE CLAMP                                      | 1   | 44-0351 |
| 35   | TOOTH HOLDER, INSIDE                            | 36  | 90-7035 |
| 36   | TOOTH HOLDER, OUTSIDE                           | 12  | 90-7036 |
| 37   | 5/8 LOCK WASHER GR 8                            | 8   | 11-0043 |
| 38   | <b>TOOTH KIT</b>                                |     |         |
|      | Kit 44-0342 includes 20 each of parts 3, 9, 18. | 1   |         |
|      | Kit 44-0341 includes 50 each of parts 3, 9, 18. | 1   |         |
| 39   | <b>COMPLETE TOOTH KIT</b>                       |     |         |
|      | Kit 44-0330 includes 47 each of parts 3, 9, 18, | 1   |         |
|      | 6 each of part 11, and 2 each of part 19.       |     |         |

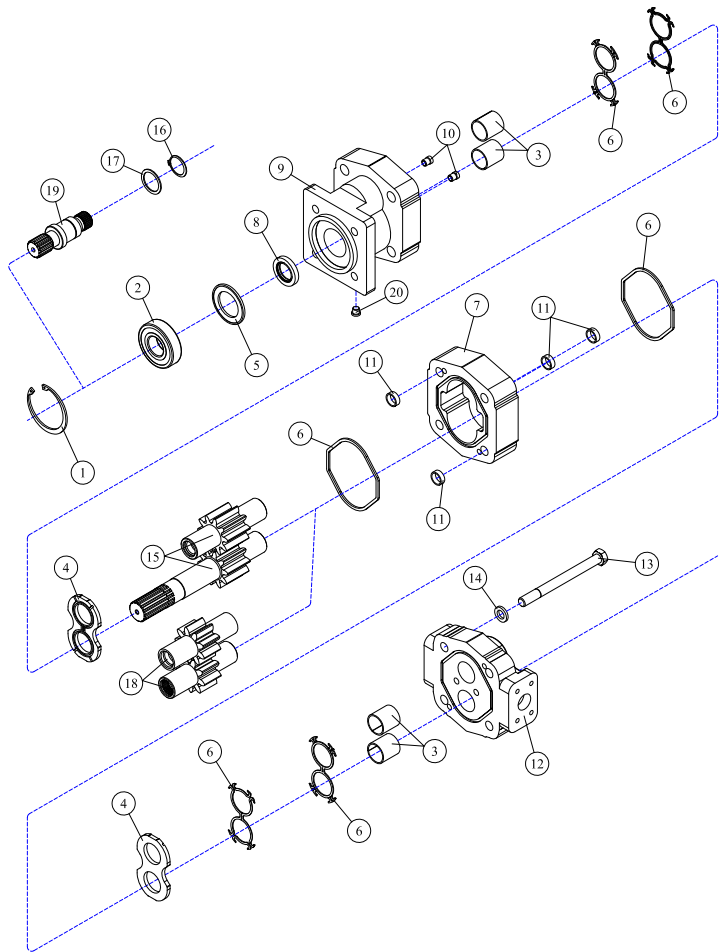
Drive Assembly - 60"(153cm), 32-45 GPM (122-171 LPM)



| REF# | PARTS DESCRIPTION                                 | REQ | PART #  |
|------|---------------------------------------------------|-----|---------|
| 1    | 7/16 X 3 NC HEX CAPSCREW (included with #19 & 20) | 8   | 11-0587 |
| 2    | 1/4 X 3/4 NC HEX CAP                              | 4   | 11-0588 |
| 3    | 1/2 X 1-1/2 NC HEX CAP, GR 8                      | 4   | 11-0972 |
| 4    | 1/4 NC NYLOCK NUT                                 | 4   | 11-1022 |
| 5    | #20FLG X 1MJC-90DEG ADAPTER                       | 2   | 21-1267 |
| 6    | CHECK VALVE                                       | 1   | 21-1474 |
| 7    | 3/4 MORB X 3/4 MJC ADAPTER                        | 1   | 21-1475 |
| 8    | 1/2 MALE QUICK COUPLER, FLAT FACE                 | 1   | 21-1559 |
| 9    | 1/2 FEMALE QUICK COUPLER, FLAT FACE               | 1   | 21-1560 |
| 10   | 3/8 MALE QUICK COUPLER, FLAT FACE                 | 1   | 21-1561 |
| 11   | 3/8 FEMALE QUICK COUPLER, FLAT FACE               | 1   | 21-1562 |
| 12   | 5/8 MALE QUICK COUPLER, FLAT FACE                 | 1   | 21-1574 |
| 13   | 5/8 FEMALE QUICK COUPLER, FLAT FACE               | 1   | 21-1575 |
| 14   | 3/4 MALE QUICK COUPLER, FLAT FACE                 | 1   | 21-1576 |
| 15   | 3/4 FEMALE QUICK COUPLER, FLAT FACE               | 1   | 21-1577 |
| 16   | ADAPTER, 1/4MOR X 3/8MJC                          | 1   | 21-1597 |

| REF# | PARTS DESCRIPTION                                | REQ | PART #  |
|------|--------------------------------------------------|-----|---------|
| 17   | ADAPTER, 1MJC X 3/4MORB                          | 2   | 21-1602 |
| 18   | #20 FLANGE KIT (included with #19 & 20)          | 2   | 21-2105 |
| 19   | CROSS OVER MANIFOLD KIT (includes #1, 18 & 25)   | 1   | 21-2180 |
| 20   | TEE MANIFOLD KIT (includes #1, 18 & 25)          | 1   | 21-2181 |
| 21   | HOSE 3/8 X 106 (3/8FJC 90DEG X 1/2MP)            | 1   | 21-4290 |
| 22   | RUN-AROUND TUBE                                  | 1   | 28-0051 |
| 23   | MOTOR BOLT LOCK TAB                              | 4   | 31-0503 |
| 24   | MOTOR BOLT LOCK BASE                             | 2   | 31-0504 |
| 25   | O-RING (included with #18, 19 & 20)              | 4   | 33-0013 |
| 26   | MOTOR                                            |     |         |
|      | M365 2-1/4" GEAR SET, 2-3/4" SECT, 32-45 GAL/MIN | 1   | 30-0524 |
| 27   | HOSE 1" (FJC X FJC)                              |     |         |
|      | "STANDARD" PRESSURE & RETURN 103"                | 2   | 21-4345 |
|      | "OPTIONAL UPGRADE" 4000 psi, PRESSURE 103"       | 1   | 21-4346 |
|      | "OPTIONAL UPGRADE" 4000 psi, RETURN 90"          | 1   | 21-4365 |

30-0524 - Motor Assembly



| REF# | PARTS DESCRIPTION                   | REQ   | PART #  |
|------|-------------------------------------|-------|---------|
| 1    | SNAP RING                           | 1     | 30-1009 |
| 2    | OUTBOARD BEARING                    | 1     | 30-1010 |
| 3    | BUSHING                             | 4     | 30-1011 |
| 4    | THRUST PLATE                        | 2     | 30-1012 |
| 5    | SEAL RETAINER                       | 1     | 30-1017 |
| 6    | M365 SEAL KIT                       | Avail | 30-1021 |
| 7    | 2-1/4" M365 GEAR HOUSING            | 1     | 30-1026 |
| 8    | <b>SHAFT SEAL</b>                   |       |         |
|      | 150 PSI (included in M365 seal kit) | 1     | 30-1210 |
|      | 500 PSI                             | 1     | 30-1156 |
| 9    | SHAFT END COVER                     | 1     | 30-1086 |
| 10   | CHECK ASSEMBLY                      | 2     | 30-1087 |
| 11   | ALIGNMENT BUSHING                   | 4     | 30-1090 |

| REF# | PARTS DESCRIPTION                            | REQ   | PART #  |
|------|----------------------------------------------|-------|---------|
| 12   | PORT END COVER                               | 1     | 30-1091 |
| 13   | STUD                                         | 4     | Call    |
| 14   | WASHER                                       | 4     | 30-1093 |
| 15   | <b>GEAR SET OPTION A:</b><br>2-1/4" GEAR SET | 1     | 30-1165 |
|      | <b>GEAR SET OPTION B:</b>                    |       |         |
| 16   | RETAINING RING                               | 1     | 30-1019 |
| 17   | WASHER                                       | 1     | 30-1020 |
| 18   | 2-1/4" GEAR SET                              | 1     | 30-1025 |
| 19   | CONTINENTAL SHAFT, SPLINED                   | 1     | 30-1144 |
| 20   | PLUG                                         | 1     | 30-1096 |
| *    | SEAL APPLICATOR TOOL (not shown)             | Avail | 30-1048 |



## 35-0093 - Direct Drive Spindle

| REF# | PARTS DESCRIPTION                   | REQ | PART #  |
|------|-------------------------------------|-----|---------|
| 1    | BEARING-CONE (TOP)                  | 1   | 10-0094 |
| 2    | BEARING-CUP (TOP)                   | 1   | 10-0095 |
| 3    | BEARING-CONE (BOTTOM)               | 1   | 10-0096 |
| 4    | BEARING-CUP (BOTTOM)                | 1   | 10-0097 |
| 5    | BOLT-HEX HEAD                       | 24  | 11-1611 |
| 6    | WASHER-FLAT                         | 24  | 11-1612 |
| 7    | RING-RETAINING                      | 1   | 11-1613 |
| 8    | NUT-LOCK                            | 1   | 11-1614 |
| 9    | WASHER-LOCK                         | 1   | 11-1615 |
| 10   | SCREW-SKT HD CAP                    | 6   | 11-1616 |
| 11   | PIPE PLUG (TO COVER) (MAGNETIC)     | 1   | 21-1609 |
| 12   | PIPE PLUG (TO COVER) (NON-MAGNETIC) | 1   | 21-1610 |
| 13   | PIPE PLUG (TO HUB) (MAGNETIC)       | 2   | 21-1611 |
| 14   | WASHER-THRUST (TOP)                 | 1   | 35-0096 |
| 15   | COUPLING                            | 1   | 35-0097 |
| 16   | PLATE-KEEPER                        | 1   | 35-0098 |
| 17   | WASHER-THRUST (BOTTOM)              | 1   | 35-0099 |
| **18 | HUB                                 | 1   | 35-0100 |
| 19   | SEAL-OIL                            | 1   | 35-0101 |
| *20  | GUARD                               | 1   | 35-0102 |
| **21 | SHAFT-OUTPUT                        | 1   | 35-0103 |
| 22   | <b>COVER</b>                        |     |         |
|      | C BASE (STANDARD)                   | 1   | 35-0094 |
|      | D BASE (OPTIONAL)                   | 1   | 35-0095 |

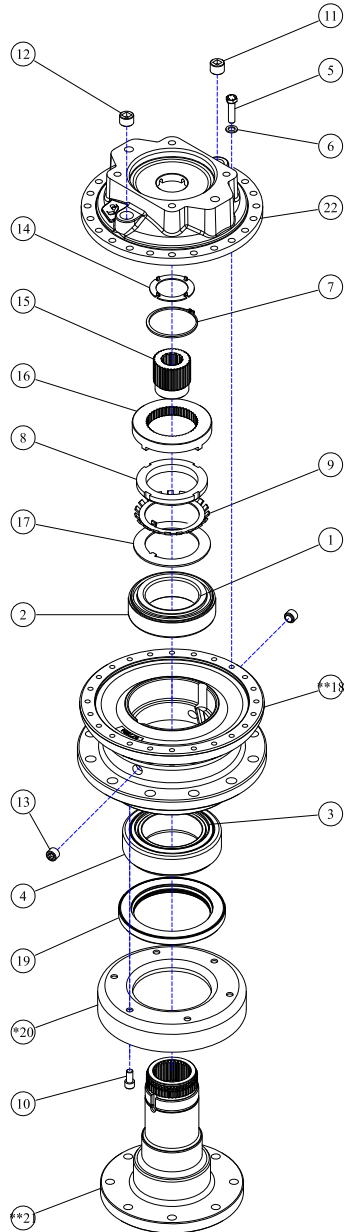
NOTE: WHEN ORDERING ANY ITEMS MARKED \* ABOVE,  
ALSO ORDER SERVICE KIT 33-0078

NOTE: WHEN ORDERING ANY ITEMS MARKED \*\* ABOVE,  
ALSO ORDER SERVICE KIT 33-0079

### SERVICE KITS

| PART #  | DESCRIPTION        | INCLUDED ITEMS    |
|---------|--------------------|-------------------|
| 33-0078 | SEAL KIT           | 9, 19             |
| 33-0079 | BEARING & SEAL KIT | 1, 2, 3, 4, 9, 19 |
| 33-0080 | COUPLER KIT        | 14, 15            |

KITS ALSO INCLUDE A TUBE OF SEALANT PART NO. 35-0104



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**100% SATISFACTION  
GUARANTEE**

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**72-HOUR PARTS**

**SHIPPING GUARANTEE**