# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>Safety</td>
<td>3</td>
</tr>
<tr>
<td>How To Set Your Tractor</td>
<td>8</td>
</tr>
<tr>
<td>How To Hook-Up Your Cutter</td>
<td>9</td>
</tr>
<tr>
<td>Cutter Preparation</td>
<td>11</td>
</tr>
<tr>
<td>How To Set Your Cutter</td>
<td>12</td>
</tr>
<tr>
<td>How To Operate Your Cutter</td>
<td>15</td>
</tr>
<tr>
<td>Transporting</td>
<td>17</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>19</td>
</tr>
<tr>
<td>Maintenance &amp; Service</td>
<td>23</td>
</tr>
<tr>
<td>How To Store Your Cutter</td>
<td>30</td>
</tr>
<tr>
<td>Parts</td>
<td>32</td>
</tr>
<tr>
<td>Index</td>
<td>66</td>
</tr>
<tr>
<td>Warranty</td>
<td>67</td>
</tr>
</tbody>
</table>
Introduction

Welcome
Degelman is proud to welcome you to our rapidly increasing family of high quality and dependable product owners. This product was designed and built specifically for you, the customer. Through our research and with your input and feedback, we present to you our REV1500/1000 Rotary Cutters.

Designed with durability, safety, and performance in mind, this rotary cutter is ready for years of quality service. In order to help you keep your rotary cutter in top operating condition we have provided you with this manual.

About This Manual
This manual has been designed to help you with three extremely important issues: Operation, Safety, and Maintenance. It is strongly recommended that you read through the entire manual and review it annually for:

- your own personal safety.
- the safety of others.
- helpful and effective operation techniques.
- maintenance procedures.
- preventative maintenance.

Your authorized Degelman dealer can be contacted for ordering any replacement parts, decals, or manuals. Since many of our parts are specially designed specifically for this Rotary Cutter we strongly recommend you always replace them with genuine Degelman parts only.

This manual and its contents were current at the time of its first printing. To increase product performance and operation, some part modifications and changes may occur that are not reflected in this manual.

Note: The description “Right” or “Left” as used in this manual is determined by the direction the tractor will travel while in use (unless otherwise stated).

Proof of Ownership

Serial Number Plate

Your serial number is found on the serial number plate attached to the cutter on the front left side of the cutter near the driveline shield (shown in the photo above).

It is important to record the serial and model number of your cutter for proof of ownership and for any required service or maintenance assistance.

Serial Number ____________________________
Owner _________________________________
Model _________________________________

PTO Speed: ☐ 540 RPM ☐ 1000 RPM

Description

The REV1500 Rotary Cutter consists of one center assembly and two wing sections. The overall cutting width is 15 feet. (REV1000 width is 10 feet)

Wing angle and machine cutting height are independently controlled with hydraulic cylinders. The cutter maintains a level cut at all cutting heights with our self-leveling system and unique double acting suspension.
Specifications and Options

**REV1500 ROTARY CUTTER**
1000 model specs shown in ()'s

**Field Position:**
- **Cutting Height:** 1" to 16"
- **Cutting Width:** 180" (123-1/2")
- **Overall Width:** 189" (138-1/2")
- **Overall Length:** 198"
- **Side Depth:** 13"

**Transport Position:**
- **Overall Height:** 84"
- **Overall Width (no wheels):** 96" (92")
- **Overall Width (with wheels):** 122" (105")
- **Overall Length:** 198"

**Ground Clearance:**
- 15"

**Weight:**
- **Field Position:** 1975 lbs (1970 lbs)
- **Transport Position:** 1925 lbs (1920 lbs)

**Wing Flex:**
- 22° down, 88° up

**Deck Thickness:**
- 3/16" High Impact Resistant Steel

**Skid Shoes:**
- **Wing:** 1/2" x 3" AR400
- **Center Section:** 1/2" x 5-1/2" AR400

**Deck Rings:**
- Standard

**Side Skirt Thickness:**
- Laminated up to 7/16" thick

**Chain Shield:**
- Standard Double Row
- 5/16" GR 30
- Optional Cable through Chain
- 1/4" Cable

**Minimum Tractor PTO Power:**
- 80 hp

**Recommended Tractor PTO Power:**
- 100 hp

**Drivelines:**

**540 RPM Machine Gearcases**
- Tractor to Transfer: CAT 6 with 80° CV
- Transfer to Center/Wing: CAT 5

**1000 RPM Machine Gearcases**
- Tractor to Transfer: CAT 6 with 80° CV
- Transfer to Center/Wing: CAT 5

**Driveline Protection:**
- Preset Friction Torque Limiters

**Gearcase Power Rating:**
- **Transfer Gearcase:**
  - 200 hp - continuous
  - 250 hp - peak
- **Center and Wing Gearcase:**
  - 175 hp - continuous
  - 200 hp - peak

**Brush Cutting Capacity:**
- 4"

**Blade Holder:**
- Standard 3/4" Blade Carrier

**Blades:**
- Milled, 7-1/2" Overlap
  - Standard: 1/2" x 5"

**Blade Tip Speed:**

**540 PTO**
- Center: 17,300 ft/minute
- Wing: 16,575 ft/minute

**1000 PTO**
- Center: 17,500 ft/minute
- Wing: 15,950 ft/minute

**Wing Lift Hydraulics:**
- **Standard:** Single acting individual circuits
- **Optional:** Double acting individual circuits

**Hitch:**
- Self-leveling
  - Standard: 1-1/4" Precision Clamping System
  - Optional: 1-1/8" Clevis Hitch

**Suspension:**
- Center: Walking Axle and Rubber Spring
- Wings: Standard Single Wheel and Rubber Spring
- Optional: Walking Axle and Rubber Spring

**Wheels/Tires:**
- Standard: 5 Bolt 21x5.5 Laminated
- Optional: 5 Bolt 22x6.6 Aircraft (foam filled)

**Optional Accessories:**
- Light Kit, Toolbox, Wing Guide Wheel
Why is SAFETY important to YOU?

3 BIG Reasons:

• Accidents Can Disable and Kill
• Accidents Are Costly
• Accidents Can Be Avoided

Safety Alert Symbol

The Safety Alert Symbol identifies important safety messages applied to the Rotary Cutter mower and in this manual. When you see this symbol, be alert to the possibility of injury or death. Follow the instructions provided on the safety messages.

The Safety Alert Symbol means:

ATTENTION!
BECOME ALERT!
YOUR SAFETY IS INVOLVED!

Signal Words

Note the use of the Signal Words: DANGER, WARNING, and CAUTION with the safety messages. The appropriate Signal Word has been selected using the following guidelines:

DANGER: Indicates an imminently hazardous situation that, if not avoided, WILL result in death or serious injury if proper precautions are not taken.

WARNING: Indicates a potentially hazardous situation that, if not avoided, COULD result in death or serious injury if proper precautions are not taken.

CAUTION: Indicates a potentially hazardous situation that, if not avoided, MAY result in minor or moderate injury if proper practices are not taken, or, serves as a reminder to follow appropriate safety practices.
Safety

General Safety

Peligro: Si no lee Ingles, pida ayuda a alguien que si lo lea para que le traduzca las medidas de seguridad.

Danger: Si vous ne compreniez pas l'anglais, demanderiez à quelqu’un qui comprend l’anglais pour traduire tous les messages de sécurité qui se trouve dans ce manuel.

Danger: Do not operate the tractor or rotary cutter until you have fully read and completely understand this operators manual, your tractor's operators manual, and all the safety messages found within these manuals, on the products, or other included materials.

Prepare for Emergencies

• Be prepared if a fire starts.
• Keep a first aid kit and fire extinguisher handy.
• Keep emergency numbers for doctor, hospital, ambulance, and fire department near your phone.

Doctor ______________________
Ambulance __________________
Hospital ____________________
Fire Department ________________

Wear Protective Equipment

• Wear proper safety equipment such as safety glasses and shoes, hearing protection, hard hats, or any other appropriate items to prevent injury.
• Wear close fitting clothing to help prevent accidental entanglement.

Note: Always stop tractor engine and wait for all moving parts to stop before approaching equipment.

• Loss of hearing or hearing impairment may result from prolonged exposure to loud noise. Wear suitable hearing protective devices such as earmuffs or earplugs to protect your hearing.
• Safely operating this equipment requires the full attention of the operator. Do not wear radio or music headphones, or talk on your phone while operating this machine. Never operate while under the influence of alcohol or drugs or allow anyone under the influence to operate the tractor or rotary cutter.
Read and Understand all Safety Decals BEFORE Operating

Safety Decals

Important:
- Understanding and following the information found on these safety decals can save your life and extend the life expectancy of your cutter.
- Keep safety signs and decals clean and legible at all times.
- If safety signs or decals are missing or illegible they must be replaced.
- If repair work causes any decals to be damaged or removed they must be replaced.
- Safety decals for replacement are available by request. Call toll free: 1.800.667.3545

WARNING
- Roll Over Hazard. Causes serious injury or death.
- Do not operate your cutter near steep or unstable terrain.
- Operate on a hard, flat surface.
- Keep hands and feet out of cutting area.
- Do not operate with raised wings.

WARNING
- Crushing Hazard. Causes severe injury or death.
- Keep objects away from the cutting area.
- Do not operate near power lines or other hazards.
- Keep hands and feet out of cutting area.

AVERTISSEMENT
- Risque de renversement. Peut causer des blessures graves ou la mort.
- Gardez toutes les pièces de vos engins à distance.
- Gardez les mains et les pieds à l’écart du champ de coupe.

PELIGRO
- Peligro de derriber. Puede causar lesiones graves o la muerte.
- Mantenga las manos y los pies alejados del área de corte.
- Use guantes y equipo de protección personal.

Decal Part # - 143124
- Safety Information

Decal Part # - 143126
- Rotating Drive Line. Causes serious injury or death.
- Keep objects away from the cutting area.
- Do not operate near power lines or other hazards.
- Keep hands and feet out of cutting area.

WARNING
- High Pressure Fluid. Causes severe injury or death.
- Do not operate near power lines or other hazards.
- Keep hands and feet out of cutting area.

Important:
• Understanding and following the information found on these safety decals can save your life and extend the life expectancy of your cutter.
• Keep safety signs and decals clean and legible at all times.
• If safety signs or decals are missing or illegible they must be replaced.
• If repair work causes any decals to be damaged or removed they must be replaced.
• Safety decals for replacement are available by request. Call toll free: 1.800.667.3545

Decal Part # - 142279 - Amber Reflector 2" x 9"
Decal Part # - 142256 - Red Reflector 2" x 9"
Decal Part # - 142280 - Red Reflector 2" x 6-1/4"
Decal Part # - 143146
- Only
- Caution

Decal Part # - 143147
- Only
- Attention

Decal Part # - 143148
- Safety Information

143292 - REV1500/1000 Rotary Cutter (14-January-2011)
Safety - Decal Locations

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<th>Item</th>
<th>Part#</th>
<th>Quantity</th>
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</thead>
<tbody>
<tr>
<td>1</td>
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</tr>
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<td>1</td>
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</tr>
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<td>2</td>
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<td>16</td>
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</tr>
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<td>4</td>
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</tr>
<tr>
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<td>Danger - Damaged Blades</td>
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<td>1</td>
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</tr>
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</tr>
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<td>21</td>
<td>143261</td>
<td>3</td>
<td>Important - Gearbox Lube</td>
</tr>
<tr>
<td>9</td>
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<td>22</td>
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<td>Important - Slip Clutch</td>
</tr>
<tr>
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<td>23</td>
<td>143265</td>
<td>4</td>
<td>Important - Torque Gearbox</td>
</tr>
<tr>
<td>11</td>
<td>143131</td>
<td>1</td>
<td>Important - Before Transporting</td>
<td>24</td>
<td>143136</td>
<td>2</td>
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</tr>
<tr>
<td>12</td>
<td>143148</td>
<td>1</td>
<td>Mower Safety Instructions</td>
<td>25</td>
<td>143167</td>
<td>2</td>
<td>Direction Arrow - Clockwise</td>
</tr>
<tr>
<td>13</td>
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<td>3</td>
<td>Degelman Decal - 6&quot; x 25-3/4&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Counterweight decals for REV1000 models (left-hand shown)

Not shown-located on lower face.

Counterweight decals for REV1000 models (left-hand shown)
How To Set Your Tractor

**Tractor Requirements**

We recommend a tractor with all of the following requirements:

- A full cab or at least one with ROPS (Rollover Protective System).
- A working seat belt.
- At least 65 PTO HP.
- A minimum static vertical load rating of drawbar of 2100 lbs or greater.

**Correct PTO Speed**

The rotary cutter is available in either a 540 rpm PTO speed or a 1000 rpm PTO speed. Many tractors are equipped with both 540 and 1000 rpm PTO modes. Be sure that the PTO speed of the tractor matches the rotary cutter’s gearbox speed.

**Caution:** Under no circumstances should you try to operate a 540 rpm PTO cutter with a 1000 rpm PTO tractor, and likewise do not operate a 1000 rpm PTO cutter with a 540 rpm PTO tractor. Do not use PTO adapters. PTO adapters will cause driveline failure and possible tractor damage, it will also invalidate your warranty.

**Positioning Tractor Drawbar**

1. Remove drawbar side locking pins and move drawbar into center position.
2. Install drawbar locking pins.
3. Remove clevis or hammer strap assembly, if equipped.

**Correct Drawbar Length**

The rotary cutter’s driveline is equipped with a constant velocity joint enabling the cutter to operate at difficult angles. For this reason we recommend the drawbar length for all PTO modes to be set at **16 inches** (tractors with an overall narrow outside rear wheel width may reduce this length). This shorter distance will reduce the hitch loading and stress on your drawbar. Do not use a distance shorter than **14 inches or slider damage may result**.

(Please consult your tractor’s operator manual for correct drawbar adjustment procedures.)

**Caution:** To prevent damage to the tractor drawbar, avoid travelling at high speeds and over rough terrain. Heavy drawn equipment such as this cutter can place excessive strain on the drawbar.

**3 Point Quick Coupler Hitch Removal**

**Caution:** To prevent machine damage during turns, the 3 point quick coupler hitch must be removed and the draft link height be adjusted.

1. Remove quick coupler hitch from tractor.
2. To clear driveline during turns, adjust draft link to provide highest lift possible.

**Wheel Tread Width Settings**

It is important to increase the tractor rear wheel tread width to maintain tractor stability when working on inclines or rough ground.

(Please consult your tractor’s operator manual for correct adjustment procedures.)

**Caution:** Rear tires may be damaged if hitch is contacted during turns. Check for tire clearance at hitch uprights when making tight turns.
How To Hook-Up Your Cutter

**Attaching Cutter to Tractor Drawbar**

**CLEVIS HITCH HOOK-UP**

1. Ensure the settings in the “How To Set Your Tractor” section have been completed.

2. Pin cutter clevis into the supported position for hook-up using the clevis support pin.

3. Adjust cutter height with jack to allow enough height for tractor drawbar.

4. Remove hitch pin from tractor drawbar or cutter hitch.

5. Clear the area of bystanders, back up tractor to cutter, aligning tractor drawbar with cutter hitch.

6. Engage tractor parking brake and/or place transmission in “Park”, shut off tractor engine, and remove key.

7. Remove hitch clevis support pin and place into its storage position.

8. Install and secure drawbar pin. Lower cutter onto drawbar.

9. Remove jack and place in proper storage position.

10. Install Safety Chain, refer to the “Installing Safety Chain” section (pg.10).

**PRECISION HITCH HOOK-UP**

1. Ensure the settings in the “How To Set Your Tractor” section have been completed.

2. Pin hitch into the supported position for hook-up using the hitch support pin.

3. Adjust cutter height with jack to allow enough height for tractor drawbar.

4. Remove hitch pin from tractor drawbar and/or cutter hitch.

5. Clear the area of bystanders, back up tractor to cutter, aligning tractor drawbar with cutter hitch.

6. Engage tractor parking brake and/or place transmission in “Park”, shut off tractor engine, and remove key.

7. Remove cutter hitch support pin and place into its storage position.

8. Lower cutter onto drawbar. Install and secure hitch bolt. (refer to “Precision Hitch Installation” diagram below)

9. Remove jack and place in proper storage position.

10. Install Safety Chain, refer to the “Installing Safety Chain” section (pg.10).

**PRECISION HITCH INSTALLATION**

- BOLT
- PLATED WASHER
- HARDENED WASHER
- NUT
- DRAWBAR
- TORQUE 600 lb-ft (814 N-m)
Installing Safety Chain

Attach the safety chain to the tractor drawbar support or other specified anchor locations. (Refer to your tractor’s operator manual). Provide only enough slack in chain to permit turning. Fasten chain back to itself with hook latch and ensure chain is properly and securely attached.

Caution: Do not use safety chain by itself for towing. Replace entire chain if any link or end fitting is broken, stretched or otherwise deformed. If replacing, use a chain with the strength rating greater than the gross weight of the cutter.

Attaching Driveline to PTO

Danger: Shut off tractor engine before attaching PTO driveline. Entanglement in rotating driveline can cause serious injury or death.

1. Shut off tractor engine and remove key.
2. Check that the driveline telescopes easily and that the shield rotates freely.
3. Lift tractor PTO shield.
4. Support driveline, pull back on collar, align splines by rotating cutter driveline, and push driveline onto tractor PTO shaft until collar snaps into place.
5. Push and pull yoke several times to ensure driveline is locked. Do not pull collar, as this will release the lock.
6. Lower tractor PTO shield back into place.

Attaching Hydraulics

1. Clean off dust covers and ends of hoses.
2. Firmly push in appropriate hoses into tractor receptacles according to user preference.
3. Secure hoses as to not interfere with or contact moving parts.

Connecting Lights (optional)

1. Connect cutter light plug into appropriate tractor receptacle.
2. Ensure light cable does not interfere with or contact moving parts.

Detaching Cutter From Tractor

1. Park cutter on a level, hard surface.
2. Raise cutter to full height. Wings may be in either the raised or lowered position.
3. Engage tractor parking brake and/or place transmission into “Park”.
4. Shut off tractor engine and remove key.
5. Make sure transport locks are engaged. (refer to pg.17)

Note: If wings are lowered only center transport lock can be engaged.
6. Block wheels to prevent machine from rolling after detaching from tractor.
7. Take cutter’s jack from storage position on cutter and secure it onto the jack mount bracket located on the cutter hitch.

Note: If parking tractor on soft ground, place a board under the base of the jack to prevent it from sinking.
8. Raise cutter using jack to transfer the weight from the tractor drawbar to the jack.
9. Lift tractor PTO shield.
10. Support driveline, pull back collar, and slide driveline off tractor PTO shaft. Set driveline down onto the support block located on the cutter hitch.
11. Lower tractor PTO shield back into place.
12. Disconnect safety chain from tractor.
13. Remove hitch pin or bolt.
14. Start tractor engine and retract lift cylinder carefully to place weight of cutter on transport lock.
15. Relieve hydraulic pressure in the system according to your tractor’s operator manual.
16. Disconnect hydraulic hoses and light plug (if equipped) from tractor receptacles.
17. Carefully drive tractor away.
18. If cutter will not be used for awhile, perform procedures as listed in the Cutter Storage section. (refer to pg.30)
Cutter Preparation

Preparation Checklist

☐ Read and understand the Rotary Cutter Operator’s Manual and all safety decals.
☐ Check that all safety locks, guards and shields are in place and secure.
☐ Lubricate all grease fittings and check the fluid level in all gear cases.
☐ Check that all hardware is in place and properly tightened.
☐ Inspect all tires and check that they are in proper working condition.
☐ Inspect all blades and blade hardware for wear or damage.
☐ Check that the cutter is properly levelled and the cutting depth is set. (Refer to the “How to Set Your Cutter” section - pg.13-14)
☐ Make sure the driveline clutches and have been run-in and are properly adjusted. (Refer to the “Run-In of the Friction Clutch” section - pg.29)

(Refer to the “Maintenance” section - pg.23-29)

Important: Before proceeding, complete the procedures under the sections “How to Set Your Tractor”- pg.8, “How to Hook up Your Cutter”- pg.9-10, and the cutter “Preparation Checklist”.

Removing Transport Locks & Lowering Wings

Note: If the “Restricted Transport Width” procedure was used, follow the reverse instructions described in that section before proceeding.

1. Park cutter and tractor on level ground.
2. Raise cutter center section by extending lift cylinder. Retract the wing cylinders to take pressure off transport locks.
3. Engage tractor parking brake and/or place transmission into “Park”.
4. Shut off tractor engine and remove ignition key.
5. Disengage center and wing transport locks. Place lock pins into proper storage locations.

Caution: Falling wings can cause serious injury or death. Stay clear of wings when raised with transport locks disengaged.

6. Start tractor engine and move control lever(s) to lower wing(s) without entering the float position.
7. When wings are fully lowered, move control lever(s) into float position.
8. Retract lift cylinder to lower cutter to the ground.
9. Adjust cutter as required. Refer to the “How to Set Your Cutter” section - pg.12-14.

Setting Hydraulic Flow Speed

Important: Excessive operating speed may result in machine damage. Be sure hydraulic flow indicators are adjusted properly.

Note: Before adjusting hydraulic flow speed ensure all transport locks are removed and area is clear of bystanders.

• Dual selective control valves are required.
• Set hydraulic flow control for center section until cutter fully raises or lowers in two seconds.
• Set hydraulic flow control for wings to the slowest possible speed.

Note: Refer to your tractor’s operator’s manual for proper hydraulic flow control adjustment.

Run-In of the Friction Clutch

Necessary for all new clutches and clutches that have not been operated for (1) season or approximately 60 days. Refer to the “Run-In of the Friction Clutch” on pg.29 of the “Maintenance” section in this manual.

Danger: If the wings of the rotary cutter are banded together, ensure wing transport locks are in place and secured and the area is clear of bystanders before cutting banding strap. Serious injury or death could result from a falling wing.
How To Set Your Cutter

Important Setting Information

This Rotary Cutter is designed and built to handle a wide variety of cutting conditions. You may wish to adjust your cutter specifically to the conditions you are dealing with. With this in mind, some adjustments can be extremely sensitive and greatly affect your cutting performance. In order to achieve a proper cut, it is important to understand all the following cutter adjustment procedures:

- Setting Cutting Depth
- Phasing Cylinders
- Wheel Tread Width Settings
- Levelling Front to Back
- Levelling Side to Side

Phasing Cylinders

In order to synchronize the raising and lowering of the cutter, a hydraulic phasing system has been implemented to provide uniform and level lifting.

In order to achieve this, a re-phasing groove has been added to the internal cylinder walls. When the cylinders are fully extended, this re-phasing groove allows oil to slowly transfer over the piston’s main seal to the next cylinder in the series.

During normal operation small amounts of oil may leak past piston seals causing cylinders to fall out of synchronization.

Note: In order to restore synchronization, fully extend lift cylinders and hold the circuit open for a short period of time.

Setting Cutting Depth

1. Park cutter and tractor on level ground.
2. Raise cutter to desired cutting height by extending or retracting lift cylinders.
3. Install correct number of depth stops on lift cylinder rods to set cutting height.

Notes:
- It is recommended that the 2” depth stop remain on the lift cylinder rods at all times. This does not affect minimum cutting depth.
- By adding depth stops you are raising the cutting height.
- Store extra Depth Stops on wing cylinder rods.

Wheel Tread Width Settings

For increased stability in the center section the proper setting of the wheels should be at position “A”.

The recommended spacing for the wing section wheels is at position “B”. This prevents the wheel from following in the same path as the skid shoes and also to improve contouring.
How To Set Your Cutter

Recommended Deck Height

- The rotary cutter must be adjusted every time a different tractor is used due to varying drawbar heights.
- The cutter usually performs best when set level front to back.

Deck Height Adjustment

Setting Front to Back Deck Angle:

1. Follow steps 1-7 under “Removing Transport Locks and Lowering Wings” (pg. 11).
2. Fully raise the cutter by extending the lift cylinders and hold lever for a few seconds to ensure phasing cylinders are synchronized. (Refer to “Phasing Cylinders” section - pg. 12).
3. On a level surface, lower the cutter to preferred cutting height.
4. Measure and compare the height from the top of the tube on the center section to the level ground on the front and back of the cutter.
5. If the cutter needs to be adjusted: Raise the deck, place a block under the center section skid shoes and lower the deck to remove all tension from the tie-bars.

Important: The tie-bars must be loose in order to properly adjust the deck angle, or possible damage to the threads on the tie-bars could result.

6. Loosen the jam nut (A) on the tie-bars. Lengthen tie-bar (Loosen nut B) if the front of the cutter deck needs to be lowered. Shorten tie-bar (Tighten nut B) if the front of the cutter needs to be raised. (For every ¼ inch the tie-bar length is adjusted, the hitch height changes by approximately 1-1/2 inch).
7. Raise the cutter deck, remove the block and lower to preferred cutting height.
8. Measure and compare front to back height again. If further adjustment is required repeat the procedure until desired height is achieved.
9. Check that the tie-bars are adjusted equally and the tension in the tie-bars is the same. Re-adjust and repeat until tension is uniform. Note: It is important to adjust the tie-bars evenly to prevent overloading or damaging a single tie-bar.
10. Tighten jam nuts (A).
How To Set Your Cutter

Wing Height Adjustment

The rotary cutter is designed to cut either "With Traffic" or "Against Traffic". Check the rotation of the center section arrow decal on the top of the center section deck, near the gearbox. If the arrow is clockwise, and the center blades rotate clockwise, the cutter is designed to cut best with traffic. If the arrow is counterclockwise, and the center blades rotate counterclockwise, the cutter is designed to cut best against traffic.

**Against Traffic Wing Settings:**

Using the wing adjustment system below, raise the left (ditch side) wing ½ inch up from level, and lower the right (road side) wing ½ inch down from level.

**With Traffic Wing Settings:**

Using the wing adjustment system below, lower the left (road side) wing ½ inch down from level, and raise the right (ditch side) wing ½ inch up from level.

**Important:** It is important to level front to back before levelling side to side.

1. Follow steps 1-7 under “Removing Transport locks and Lowering Wings”. (Refer to pg.11)
2. Fully raise the cutter by extending the lift cylinders and hold lever for a few seconds to ensure phasing cylinders are synchronized. (Refer to “Phasing Cylinders” section - pg.12)
3. On a level surface, lower the cutter to preferred cutting height.
4. Measure and compare the height from the bottom of the safety chain channel to level ground on the center section of the mower (1) and a location on the outer wing section (2).
5. Refer to the above section on recommended wing adjustment settings. If this needs to be adjusted, loosen the jam nut (A) on each wing adjustment support.
6. Adjust the wing adjustment nut (B) to raise or lower the wing. Measure and compare height, adjust until required height is reached.
7. Tighten jam nut (A).
8. Repeat same procedure for the other wing.
How To Operate Your Cutter

Safe Operating Procedures

⚠️ Danger:

- Never allow untrained or inexperienced persons to operate this equipment. The operator should wear a hard hat, safety glasses, hearing protection, and safety shoes.
- Before leaving seat: Set brake, stop engine, remove key and wait until all moving parts have stopped.
- Perform routine inspections and corrective/preventative maintenance. Keep all shields and guards in place.
- Never allow persons to ride on the tractor or rotary cutter. Never allow children to operate tractor or rotary cutter.
- Never attempt to operate controls unless properly seated in the tractor seat with seat belt fastened.
- Never dismount a tractor that is moving, or attempt to mount a moving tractor.
- Never adjust machine while in motion.
- Operate only with tractor equipped with ROPS (Roll Over Protective System) and seat belts.
- Ensure tractor PTO speed (540 or 1000 rpm) matches the rotary cutter gearbox speed or drive components can be damaged.

- Operate tractor at rated PTO speed. Machine may not perform properly if engine speed is too fast or too slow. Excessive PTO speeds may cause driveline or blade failures that may result in serious injury or death.
- Lower machine to ground before starting.
- Engage tractor PTO and slowly increase speed.
- Familiarize yourself with stopping the tractor and equipment quickly in case of a sudden emergency.
- Normal ground speed range is 0 to 5 mph (8 km/h). Use slower speeds when operating on or near steep slopes, ditches, drop-offs, rough terrain, overhead obstructions, power lines, or when avoiding obstacles and other foreign debris.

- Never drive into or out of a ditch or on a steep incline with wings in raised position.
- Decrease speed when turning, be careful on slopes or uneven terrain with wings in raised position.
- Never operate cutter in conditions of poor visibility such as fog, darkness, or any conditions that limit your clear visibility to less than 300ft (100m) in front of and to the sides of the mower.
- When conditions make it necessary to slow ground speed, shift to a lower gear rather than reducing engine speed. The engine will maintain rated speed and keep cutter running at optimum cutting speed.
- Only operate cutter in reverse direction when necessary. Use extreme care and only operate at a speed where you can safely control and operate the equipment.
- Never cut an area that has not been inspected for foreign debris and obstacles. Remove any foreign objects and clearly mark any objects that cannot be removed.

- Stay clear of rotating or moving parts! Contact or entanglement with moving/rotating parts may result in serious injury or death.

- Never operate mower with co-workers or bystanders in the area. It is possible for objects to be thrown great distances from the cutter. Thrown objects have the potential to cause serious injury or death. Always keep a minimum operating distance of 300ft. (100m) away from any bystanders.
How To Operate Your Cutter

Wing Flotation

Whenever possible, it is recommended to run both wings (if applicable) in the float position. This allows the cylinder to be free to extend or retract enabling the cutter to follow the ground contour.

Cutting Angles

The cutter wings can be operated at angles of up to 22 degrees down (A) and 45 degrees up (B). It is not recommended to operate wings at an angle greater than 45 degrees (B) to prevent damage to the drivelines and to help prevent personal injury from thrown objects or debris.

Blade Rotation

The recommended blade rotations for roadway cutting are illustrated in the diagram below. The blade rotation of both wings at the front of the cutter is always directed towards the center of the machine. The blade rotation for the center section at the front of the cutter is always directed towards the ditch (as shown below).

Making Turns

Important:

- Do not exceed 80 degrees on driveline while turning. Damage will result to the constant velocity driveline joint.
- To avoid tractor and cutter damage, do not turn too tight and be sure that tractor tires do not contact cutter hitch.

Raising Wings

Danger:

- Shut off tractor PTO before raising wings to help prevent bodily injury or death from thrown objects or rotating blades.
- You must be on level ground before attempting to raise wings. Machine instability may be caused by weight shifting from one side to the other while raising wings.

Falling wings can cause serious injury or death. Clear area of bystanders when raising wings. Wings are held up by hydraulic pressure only, never walk under wings until wing transport locks are in place and secured.
Transporting

Safe Transport Procedures

⚠️ Danger: To prevent serious injury or death to you and others, always follow recommended safe transport procedures:

- The cutter is wider than the tractor. Beware of oncoming traffic and roadside obstructions.
- When transporting cutter, always raise wings and install transport locks.
- Use flashing warning lights when travelling on public roads day or night, unless prohibited by law.
- Travel at a reasonable and safe speed. Never travel at a speed which does not allow adequate control of steering and stopping. Do not travel at speeds greater than 20 mph (32 km/h).
- Stop slowly.
- Sound tractor horn before backing cutter up.
- Reduce speed considerably when travelling over rough terrain.

- Stay clear of any large bumps or deep depressions.
- Reduce ground speed when turning. Be sure tractor wheel does not contact cutter during turns.
- Avoid possible loss of control or tractor overturn. Tow only with correctly ballasted tractor.
- Ensure Safety Chain and all components are properly and securely attached. (Refer to the “Installing Safety Chain” section - pg.10)

**(Note:** Do not use safety chain by itself for towing.**)

⚠️ Danger: Keep riders off machine at all times. Riders are subject to injury such as being struck by foreign objects and being thrown off the machine.

Preparing Cutter for Transport

1. Disengage PTO and wait for all moving parts to stop.
2. Fully raise wings.
3. Raise cutter as high as possible.
4. Engage tractor parking brake and/or place transmission into “Park”.
5. Shut off tractor engine and remove ignition key.

⚠️ Danger: Falling wings can cause serious injury or death. Stay clear of wings until transport locks are in place and secured.

6. Engage and properly secure all center and wing section transport locks.

7. Ensure jack is secured in its storage position.
8. Ensure all components are properly and securely attached. Inspect safety chain and hitch. (Refer to the “Installing Safety Chain” section - pg.10)
9. Ensure all reflectors and SMV signs are clean and visible. Ensure all lights are working and visible as required by federal, provincial/state, and local laws.
10. Start tractor engine and retract lift cylinder carefully to place weight of cutter on lock.
Transporting

Restricted Transport Width

Retracting Wing Wheels

1. Follow steps 1-5 under “Preparing Cutter for Transport”.

2. Engage center and wing transport locks.

3. Place a depth control spacer of at least 3/4” wide between the center transport lock and the end of the hydraulic cylinder. (see diagram)

Note: This procedure must be completed quickly, before center cylinder creeps down.

4. Start tractor engine and retract lift cylinder to place weight of cutter on lock.

5. Continue to retract the lift cylinder for several minutes to allow wing cylinders to eventually retract. This will bring the wheels in as far as possible.

Note: In order to prepare the cutter for operation again, the reverse of this procedure must be fully completed.
Troubleshooting

General Operation - Poor Cutting

This section of the troubleshooting deals with some of the more frequently asked questions relating to the general operation or performance of the Rotary Cutter. We have found that most problems are related to overlooked or neglected cutter adjustments. You may wish to review the section on “How To Set Your Cutter” (pg. 12-14) after reading this troubleshooting section.

1. Is the Rotary Cutter the correct PTO speed for your tractor?

   Check the decal on the hitch of the cutter.
   - 540 RPM
   - 1000 RPM

2. Are you cutting in the direction the Rotary Cutter was designed to cut?

   This is a directional cutter. Check the center section arrow to verify:
   - Against Traffic: Counter-clockwise rotation (drive on the left hand side facing oncoming traffic).
   - With Traffic: Clockwise rotation (drive on the right hand side in the same direction as traffic).

3. Are the blades rotating the right direction?

   Check the decals on the top of the deck for each section, and verify rotation. (There are clockwise and counterclockwise blades, match the blade to the rotation).

4. How fast are you cutting?

   Try slowing down. (In tall, wet or dense conditions, ground speed must be reduced due to the volume of material in the cutting chamber).

5. How high are you cutting?

   - For short, dry or sparse vegetation: The lower you cut, the more suction there is and the closer you are to the stiffer base of the plant stalk. (Avoid cutting too low in rocky or uneven terrain).
   - For tall, lush or dense vegetation: Cut slightly higher or reduce ground speed to avoid overloading the cutting chamber.

6. Are the blades bent?

   Compare to a new blade. (Bent blades will cause loss of suction and uneven cutting height).

7. Are the blades badly worn or damaged?

   Check or compare to a new blade.

8. Are the clutches (torque limiters) slipping?

   Although these clutches are non-adjustable they should be checked periodically to ensure they are set properly. The clutches will slip at a pre-determined torque setting if they are properly maintained.

   Refer also to the “Run-In of the Friction Clutch” on page 29 in the Maintenance Section.

9. Is the cutter leaving one or two uncut strips visible the next day?

   This is usually caused by the tractor wheels bending over the stalks of vegetation. The cutter cannot pull them back up again soon enough to completely cut them. Cut debris is distributed on top of the bent over stalk to appear as though it is cut. By the next day the stalk stands back up again.

   To minimize this:
   - Reduce ground speed. (Slowing down allows more time for the material to lift and more blade passes).
   - Lower the cutting height to increase suction and pick up more of the wheel tracks.
   - Check that blades are not bent. Compare to a new blade. (Bent blades will cause loss of suction).
## Troubleshooting

### Operation

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uneven Cut</strong></td>
<td>Excessive ground speed.</td>
<td>Reduce ground speed.</td>
</tr>
<tr>
<td>Blades worn, dull, or bent.</td>
<td>Replace blades. (Refer to “Maintenance” section)</td>
<td></td>
</tr>
<tr>
<td>Cutter not level side to side.</td>
<td>Adjust. (Refer to “Cutter Adjustments” section)</td>
<td></td>
</tr>
<tr>
<td>Improper height adjustment.</td>
<td>Adjust cutter height.</td>
<td>(Refer to “Cutter Adjustments” section)</td>
</tr>
<tr>
<td>Low tractor tire pressure on one side.</td>
<td>Adjust tire pressure.</td>
<td>(Refer to your tractor operator’s manual)</td>
</tr>
<tr>
<td>Turning too fast.</td>
<td>Reduce ground speed when turning.</td>
<td></td>
</tr>
<tr>
<td>Tractor tires push grass down.</td>
<td>Adjust your tractor wheel spacing.</td>
<td>(Refer to your tractor operator’s manual)</td>
</tr>
<tr>
<td>Conditions too wet.</td>
<td>Wait for conditions to dry.</td>
<td></td>
</tr>
<tr>
<td>Damaged cutter pan.</td>
<td>Repair or replace as necessary.</td>
<td></td>
</tr>
</tbody>
</table>

| **Uncut Material**            | Excessive ground speed.                  | Reduce ground speed.                                                    |
| RPM too low.                  | Use full PTO speed.                      | (Refer to your tractor operator’s manual)                               |
| Improper blade for direction of cut. | Install blades so rotation is correct. |                                                                          |

| **Poor Shredding**            | Excessive ground speed.                  | Raise the front of cutter relative to the rear to hold and circulate material longer. (Refer to the “How to Set Your Cutter” section - Levelling Front to Back) |
| Cutting too high.             | Lower cutting height.                    | (Refer to the “How to Set Your Cutter” section - Setting Cutting Depth) |
|                              | Reduce ground speed.                     |                                                                          |

| **Windrowing or Uneven Material Distribution** | Material heavy and lush. | Level the cutter deck. (Refer to the “How to Set Your Cutter” section - Levelling Front to Back) | Increase ground speed. |

| **Cutter Vibration**          | Loose blades.                           | Tighten blade bolts.                                                    |
| One new and one old blade on same blade mount. | Replace blades in pairs. |                                                                          |
| One broken blade.             | Replace blades in pairs.                |                                                                          |
| Broken or defective U-joint cross bearing. | Repair or replace as necessary. |                                                                          |
| Driveline bent or damaged.    | Repair or replace as necessary.         |                                                                          |
| Bent or damaged PTO shaft or CV. | Repair or replace as necessary. |                                                                          |
| Bent or damaged Gearbox output shaft. | Repair or replace as necessary. |                                                                          |
| Blade mount bent or damaged.  | Repair or replace as necessary.         |                                                                          |
## Troubleshooting

### Blades

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive Wear</td>
<td>Cutting too low in abrasive conditions. (ex. sandy or rocky)</td>
<td>Increase cutting height.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bolt Loosening</td>
<td>Inadequate torque on blade bolts.</td>
<td>Tighten blade bolts. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td></td>
<td>Lock nut worn out.</td>
<td>Replace lock nut.</td>
</tr>
<tr>
<td></td>
<td>Cutting in very wet conditions.</td>
<td>Do not operate in these conditions.</td>
</tr>
<tr>
<td></td>
<td>Cutting too low, scalping ground.</td>
<td>Increase cutting height.</td>
</tr>
<tr>
<td></td>
<td>Cutting too low in rocky conditions.</td>
<td>Increase cutting height.</td>
</tr>
<tr>
<td>Breakage</td>
<td>Cutting too low in rocky conditions.</td>
<td>Increase cutting height.</td>
</tr>
<tr>
<td></td>
<td>Cutting with damaged or extremely worn blades.</td>
<td>Replace blades. (Refer to “Maintenance” section)</td>
</tr>
</tbody>
</table>

### Gear Boxes

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shafts and Gears Break</td>
<td>Slip clutch seized caused driveline to receive high shock loads.</td>
<td>Inspect clutch lining and repair or replace as necessary. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td></td>
<td>Cutting in extremely rocky conditions.</td>
<td>Increase cutting height.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Avoid hitting large, solid objects.</td>
</tr>
<tr>
<td>Gearbox Output</td>
<td>Operating with grass or wire wrapped on shaft in seal area.</td>
<td>Check seal areas regularly and clean off material.</td>
</tr>
<tr>
<td>Shaft Seal Leaks</td>
<td>Worn seal.</td>
<td>Replace seal.</td>
</tr>
<tr>
<td></td>
<td>Bent or damaged output shaft and/or bearings.</td>
<td>Repair or replace as necessary.</td>
</tr>
<tr>
<td></td>
<td>Removing blade mount using heat can damage seal.</td>
<td>Replace seal. Suggest use of puller at next removal of blade holder.</td>
</tr>
<tr>
<td>Oil Seal Leaks</td>
<td>Worn seal.</td>
<td>Replace seal.</td>
</tr>
<tr>
<td></td>
<td>Gear case overfilled.</td>
<td>Check fluid level.</td>
</tr>
<tr>
<td></td>
<td>Gear case not vented.</td>
<td>Check that the vent on the dipstick plug is clear.</td>
</tr>
</tbody>
</table>
## Troubleshooting

### Driveline Clutches

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overheated</td>
<td>Clutch slipping.</td>
<td>Check for jammed blade or foreign object.</td>
</tr>
<tr>
<td></td>
<td>Friction plates worn.</td>
<td>Replace plates. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td></td>
<td>Excessive ground speed in heavy conditions.</td>
<td>Reduce ground speed.</td>
</tr>
<tr>
<td></td>
<td>Excessive scalping.</td>
<td>Adjust cutting height. (Refer to “Cutter Adjustments” section)</td>
</tr>
<tr>
<td>Seized</td>
<td>Prolonged storage in damp conditions.</td>
<td>Free up slip clutch. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Inspect clutch lining and repair or replace as necessary. (Refer to “Maintenance” section)</td>
</tr>
</tbody>
</table>

### Drivelines

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Telescoping tube fails</td>
<td>Shock load.</td>
<td>Avoid solid objects.</td>
</tr>
<tr>
<td>Telescoping tube wears.</td>
<td>Lack of lubrication.</td>
<td>Apply grease daily. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td>Yoke or cross fails</td>
<td>Lack of lubrication.</td>
<td>Apply grease daily. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td></td>
<td>Shock load.</td>
<td>Avoid solid objects.</td>
</tr>
<tr>
<td></td>
<td>Slip clutch seized caused driveline to</td>
<td>Inspect clutch lining and repair or replace as necessary. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td></td>
<td>receive high shock loads.</td>
<td></td>
</tr>
<tr>
<td>Twisted</td>
<td>Slip clutch seized caused driveline to</td>
<td>Inspect clutch lining and repair or replace as necessary. (Refer to “Maintenance” section)</td>
</tr>
<tr>
<td></td>
<td>receive high shock loads.</td>
<td></td>
</tr>
<tr>
<td>Constant Velocity Joint</td>
<td>Lack of lubrication.</td>
<td>Apply grease as described in the “Maintenance” Section.</td>
</tr>
<tr>
<td>Fails</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Turning too sharp.</td>
<td>Avoid extremely sharp turns and jackknifing.</td>
</tr>
<tr>
<td>PTO Driveline Bent</td>
<td>Contact with drawbar.</td>
<td>Reposition drawbar. (Refer to “How to Set Your Tractor” Section)</td>
</tr>
<tr>
<td></td>
<td>Driveline too long, bottoms outs when</td>
<td>Avoid these conditions.</td>
</tr>
<tr>
<td></td>
<td>operating through deep gullies.</td>
<td></td>
</tr>
</tbody>
</table>
Maintenance & Service

Safe Maintenance Procedures

Before adjusting or servicing a cutter connected to a tractor:

1. Park cutter and tractor on level ground.
2. Engage tractor parking brake and/or place transmission into “Park”.
3. Disengage PTO.

**Wings Up**
4. Raise cutter and wing(s).
5. Engage center and wing transport locks.

**Wings Down**
4. Raise cutter and engage center transport lock.
5. Lower wings completely.

6. Shut off tractor engine and remove ignition key.
7. Place safety stands in secure locations under center body and wing sections, NOT under axles or wheel supports.
8. Start tractor engine and raise cutter.
9. Disengage center transport lock and lower cutter onto stands.
10. Engage tractor parking brake and/or place transmission into “Park”.
12. Shut off tractor engine and remove ignition key.
13. Ensure all moving parts have stopped, then remove PTO driveline from tractor.

**Danger:** To prevent serious injury or death to you or others, and to prevent damage to your equipment, always follow these safety messages:

- To prevent personal injury from unexpected movement, ensure cutter is properly supported and on a level surface before performing any service work.
- Do not make or allow any alterations or modifications to this rotary cutter, its components, or its functions.
- Never lubricate, adjust, or service machine while it is moving. Ensure tractor engine is off, all moving parts have stopped, and the PTO driveline has been disconnected before servicing.
- The blades and cutter pan may rotate for several minutes after PTO is shut off. Before working on cutter, look and listen for rotating driveline to stop completely.
- Always secure wing transport locks before servicing, parking, or transporting cutter. Always keep people a safe distance from the cutter when raising or lowering wings.
- Ensure all guards, shielding, and their components are maintained and in proper working condition. Replace or repair any damaged components.
- Ensure all guards, shielding, and their components are replaced and secured after service is complete.
- Maintain the product safety decals and replace any decals that are damaged, missing or unreadable.
**Maintenance & Service**

### 4 Hour

⚠️ **Important:** It is very important to grease the constant velocity body of the PTO driveline with a minimum of 15 shots of grease every 4 hrs.

⚠️ **Caution:** The CV body serves as a reservoir for the lubrication of the centering mechanism. Failure to lubricate may result in machine damage.

- Visually inspect machine for damage. Repair or replace damaged parts as required.
- Visually inspect all cutter blades for damage. Repair or replace damaged blades or blade hardware as required.

### 8 Hour (Daily)

- Fully inspect all cutter blades for chips, cracks, wear, and abnormal bends. Damaged blades can cause serious injury or death.

   💡 **DANGER**
   - DAMAGED BLADES
     - One blade: serious injury or death.
     - Two blades: serious injury or death.
     - Three or more blades: serious injury or death.

- Fully inspect all blade hardware and ensure they are all properly tightened and secured.
- Check the tightness of all newly replaced nuts and bolts after the first 8 hours of operation, then weekly.
- Grease all driveline components.
- Check all hardware to ensure they are tight and secure.

- Grease all hitch components, tiebar pins, and walking axle suspension bolts.

- Clean off deck and gearboxes of debris at the end of every day.

**Note:** Build up of debris may interfere with driveline and cause gearboxes to overheat resulting in damaged components. Also a build of wet debris may result in corrosion.
Maintenance & Service

20 Hour

Caution: A consistent loss of fluid can indicate damaged seals. Damaged seals should be replaced immediately to prevent ruining the gearbox.

• Check fluid levels on all gearboxes (on level ground).

When Checking/Filling:
Output (Wing & Center) Gearboxes
• A sight glass is located on middle of the output gearboxes. Fill until fluid reaches the center of the sight glass.
• Use SAE 80w/90 Gear Oil.

• Check the condition of lock pins, cotter pins, and all other fasteners weekly. Replace if necessary.
• Grease all cylinder pins, walking axle bushings, rockshaft pins, and wing strut pins.

50 Hour

• Replace the fluid in new gearboxes after the initial 50 hours of use. Then continue to replace the fluid annually.

Note: Before checking level on dipstick Wait approximately 15-20 min. after filling right angle gearboxes to allow oil to settle into the bottom cavity before checking level on dipstick.

• Check hubs for bearing play and condition of seal.
• Check gearbox bolts. Re-torque if necessary.
• Re-torque driveline yoke and torque limiter bolts:
  Yoke Bolts: 225 lb-ft (300 N-m)
  Torque Limiter: 80 lb-ft (110 N-m)
• Re-torque precision hitch bolt to 600 lb-ft (814 N-m).

100 Hour

• Grease all axle hub bearings.
• Check tire pressures if using aircraft tires.
• Check skid shoes for excessive wear.

• Pull apart the driveline universal slider shafts and apply grease to all sides.
• Re-torque suspension pivot bolts to 180-200 lb-ft. If too tight or too loose it could cause excessive wear.

Note: Wing skid shoes can be switched from corner to corner. (1530 Model)

• Retorque hitch tongue pivot bolt to 75 lb-ft. If too tight or too loose it could cause excessive wear.
**Maintenance & Service**

**Annually**

- It is recommended that hubs are dismantled, cleaned, inspected, and repacked every year. Whenever a worn or damaged seal is replaced it is also recommended that the bearing assembly be cleaned and repacked with wheel grease.

- Check all gearbox seals for leaks. Replace as required.

- Replace fluid in all gearboxes.

**Caution:** If the universal joint sliding members are allowed to dry out to the point where the two halves cannot slip freely, damage to the rotary cutter or tractor may result.

- Pull apart the driveline universal slider shafts and apply grease to all sides.

- The shielding on the drivelines should be removed and the old grease should be removed with a solvent.

**Note:** Follow the above procedure more frequently in dirty or dusty conditions.

**Warning:** High pressure fluid can pierce skin causing serious injury or death. Relieve pressure on system before repairing or adjusting. Wear proper hand and eye protection when searching for leaks. Use wood or cardboard instead of hands. Keep all components in good repair.

- Inspect all hydraulic hoses for cracks, wear, and leaks.

- Remove hitch tongue pivot bolt, clean & inspect, turn 180 degrees to change wear surface, and re-insert. Replace if worn. Torque to 75 lb-ft.

- Disassemble precision hitch components (if applicable), clean, inspect, and reassemble.

- Inspect suspension and walking axle pivot bolts. Replace if worn.

Remove, turn (to change wear surface), and replace.

Torque to 180-200 lb-ft.

**Typical Suspension Detail**

Pre-loading of rubber spring is required on all strut assemblies. Exposed thread length when using correct hardware should be approximately:

- 3/8" on wing strut assemblies
- 1/2" on the center section rockshaft strut assemblies.

- Inspect suspension springs and bolts. Replace if damaged.

**Warning:** If the universal joint sliding members are allowed to dry out to the point where the two halves cannot slip freely, damage to the rotary cutter or tractor may result.
Danger: The blades and cutter pan may rotate for several minutes after PTO is shut off. Before working on cutter, look and listen for rotating driveline to stop completely.

- Blades should be inspected daily for chips, cracks, wear, and abnormal bends. Damaged blades can cause serious injury or death.

Do not try to modify blades in any way such as sharpening, welding, or straightening. Modifying the blades may reduce the strength of the blade, increasing the risk of broken pieces being thrown from the machine.

- If the blades are dull, bent, worn, chipped, or cracked, replace them in pairs with genuine Degelman blades only.

Always replace damaged blades in pairs. Unbalanced blades are dangerous and machine damage may result.

Blade Hardware

- Retighten blade mounting hardware daily. Blade hardware should be torqued to 725 lb-ft.

- It is recommended to change blade bolts and locknuts every time the blades are replaced.

- Seat bolt flush against pan with hammer before tightening nut.

- When changing blades with only one person you may wish to support the blade and hex bolt from below to make it easier to tighten the blade locknut from above.

Blade Carrier

- Blade Carriers are secured with castle nuts and cotter pins to the splined shaft on the gearboxes. A coned washer is located between the castle nut and the gearbox shaft. The coned part of the washer should be positioned against the nut.

- It is important to periodically check and retighten the retaining (castle) nut.

- It is important to torque the nut to 800 lb-ft.

Caution: To prevent personal injury from falling pan, it is important to put blocks under cutter pan when removing retaining nuts.

- Blade carriers should be removed from the top side by hitting the carrier through the nut access hole on the top deck. When hitting carrier you should rotate it 180 degrees between hits.
Caution: Torque values listed below are for general use only. If a different torque value or tightening procedure is specified for a specific application, do not use these values.

- Refer to the “Parts” section for proper grade and length of bolts for replacement parts.
- Do not replace locknuts with nuts and lock washers. Replace with all parts with original, specified parts only.
- Dry values shown mean the bolt/nut is plain or zinc plated without any lubrication.

### Metric Torque Values
(based on “Dry” values)

<table>
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<tr>
<th>Size</th>
<th>Class 8.8</th>
<th>Class 10.9</th>
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### Unified Inch Torque Values
(based on “Dry” values)

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TORQUE

all hardware
Maintenance & Service

Torque Limiter

Torque Limiter Run In & Repair
Tools Required: 1/2” or M13 box wrench or socket

Run-In of the Friction Clutch
(Necessary for all new clutches and clutches that have not been operated for (1) season or approximately 60 days.)

1. Make sure the tractor is off and the PTO is disengaged.
2. Disconnect the driveline from the tractor.
3. Locate the long bolts on the O.D. of the clutch pak. Loosen the bolts until all are finger tight, then tighten each one half a turn.
4. Attach the implement to the tractor and the driveline to the tractor PTO. Stand clear.
5. Turn the tractor on. Engage the PTO clutch and run for a few seconds, or until the clutch visibly smokes, then disengage the PTO.
6. Make sure the tractor is off and the PTO is disengaged.
7. Disconnect the driveline from the tractor.
8. Tighten the long bolts on the O.D. of the clutch pak until the compression plate is in full contact with the housing.
9. Grease the fitting on the yoke using Shell Super Duty or an equivalent lithium grease.

Repair And Rebuilding

Disassembly
1. Place the clutch and universal joint assembly on a bench, with the end of the clutch accessible.
2. Remove the long bolts on the outside of the housing that hold the friction pack together.
3. Remove the plate(s) and all internal components, leaving the yoke/hub intact.
4. Discard the friction discs if worn below 1/16”.

Inspection
6. Inspect the steel and iron parts for wear, warpage or cracking and replace if necessary.
7. Inspect the yoke/hub for looseness. If there is more than .03 end play, replace.
8. Clean any, rust or dust from the plate surfaces with a wire brush or steel wool.

Assembly
9. Place one new friction disc inside the housing, then the separator plate, then the other friction disc.
10. Add the pressure plate so that the flat surface rests on the friction disc (the tangs on the plate must fall into the reliefs in the housing).
11. Add the disc spring so that the spring inside diameter contacts the fins of the pressure plate.
12. Assemble the compression plate and all long bolts, making sure that all nuts are in their pockets. Tighten all long bolts to 30 ft-lbs.

*IMPORTANT* Assemble small diameter (I.D.) of spring against fins of pressure plate.
How To Store Your Cutter

Preparing for Storage

When storing the cutter for the season or an extended period of time it is important to follow the following procedures in order to extend the life of your cutter.

Note: The cutter can be stored in either the wings raised or wings lowered position. If storing with the wings raised position, make sure the wing lock pins are engaged.

1. Thoroughly clean off cutter of all debris and dirt buildup. Clean any accumulated cuttings off of the underside of the deck. Debris and dirt will draw moisture and may cause corrosion.

2. Paint all parts where necessary.
   Note: Degelman Yellow Aerosol paint (#133044) is available, ask your dealer.

3. Put cutter in a dry place.

4. Follow procedures in the Maintenance section to fully lubricate the machine.

5. Check the condition of all blades and blade hardware. Replace if necessary.

6. Inspect the safety shields, guards, transport locks, and other components for damage, wear, or missing hardware. Replace if required.

7. Inspect hydraulic hoses and connections. Repair or replace as necessary.

8. Inspect the condition of safety labels and decals. Replace any missing or illegible decals.

9. If cutter is equipped with used aircraft tires, support cutter with safety stands to take weight off tires. Do not deflate tires. If exposed, put covers over tires to protect them from sunlight, oil, and grease.

10. Place PTO on top of hitch in the PTO cradle. Remove front half and store indoors. Keep PTO off ground.

11. Fully tighten socket head screws on the driveline clutches to relieve pressure on the linings. For best performance, keep the clutch in a dry place to help prevent sticking.

12. Apply grease to any exposed hydraulic cylinder rods and any threaded adjustment screws to prevent rusting.

Removing from Storage


2. Follow procedures in the Maintenance section to check gearbox oil levels and to fully lubricate the machine.

3. Inspect hydraulic hoses and connections. Repair or replace as necessary.

4. If using aircraft tires, check the air pressure (42 PSI).

5. Check all hardware for tightness.

6. Perform “Run-In of the Friction Clutch” as described in the maintenance section.

7. If any major components have been replaced, make sure they run properly.
Part Assembly Overview

**General Assembly - REV1500**

- Center Shield Assembly (pg. 33)
- Hitch Assembly (pg. 33)
- Main Driveline (pg. 46-49)
- Center Section Assembly (pg. 35-36)
- Wing Driveline (pg. 50)
- Left Wing Assembly (pg. 34)
- Left Guide Wheel (Optional) (pg. 63)
- Right Wing Assembly (pg. 34)
- Rockshaft Assembly (pg. 38)
- Wheels, Hubs & Spindles (pg. 39)
- Pan, Blades, & Hardware (pg. 40)
- Rephasing Cylinder, 3-1/2" x 8" (pg. 42)
- Rephasing Cylinder, 3-1/4" x 8" (pg. 42)
- Wing Lift Cylinder, 3" x 12" (pg. 41)
- Right Wheel Strut (Single Axle also available) (pg. 37)
- Toolbox Assembly (Optional) (pg. 63)
- Right Guide Wheel (Optional) (pg. 63)
- Light Kit (Optional) (pg. 64)
- Detailed Gearbox Information found on pages 53-62.

**Counterweight - REV1000**

General Assembly information above is identical for both the REV1500 and the REV1000 with the exception of the counterweight that replaces either the left or right wing.

- 503570 - Counterweight Wing
- 503580 - Counterweight Assembly [1]
- 503577 - Link Bar, 3/4" PL [1]
- 118456 - Lock Nut, 1" [2]
- 131020 - Flat Washer, 1" F436 [2]
- 118134 - Bolt, 1" x 3" UNC GR8 [2]

**Link Bar Components**

- Replaces Wing Lift Cylinder on the counterweight side of the 10ft REV1000 models.

**Hinge Components**

- Same as the wing assembly shown on (pg. 34)
Hitch Assembly & Center Shield

**Center Shield Assembly**
503310 - Center Shield Assembly (1)

- includes -
- 133093 - Capscrew, M8 x 1.25 x 30mm (2)
- 133092 - Plastic Handle (1)
- 133094 - Nut, M8 x 1.25mm (2)

**Precision Hitch Assembly**
500340 - Precision Hitch Assembly

- includes -
- 118965 - Bolt, 1-1/4" x 5-1/2" UNF GR8 (1)
- 500325 - Washer, 4" OD (1)
- 118951 - Retaining Ring, 2" Ext. (1)
- 500318 - Hitch Tongue (1)

- includes -
- 118950 - Bushing, 2-1/2" OD (1)
- 118336 - Grease Fitting, 1/4" (1)
- 500324 - Bushing, 4" OD (1)
- 500327 - Washer, 3" OD (1)
- 118962 - Lock Nut, 1-1/4" UNF GR8 (1)

**Clevis Hitch Assembly**
500335 - Clevis Hitch

**Front Hitch Assembly**
503320 - Hitch Frame Assembly (1)

- 132051 - Sidewind Jack (1)
- 500330 - Bolt, 1-1/4" x 7-1/2" UNF (1)
- 116244 - Safety Chain, -10,100 lbs (1)
- 500315 - Swivel Hitch (1)
- 118929 - Lock Pin, 3/8" x 1-1/2" (1)
- 131206 - Flat Washer, 1-1/4" SAE (1)
- 118962 - Lock Nut, 1-1/4" UNF GR8 (1)
- 118061 - Bolt, 3/4" x 5" UNC (1)
- 502088 - Collar, 4" OD (1)
- 118336 - Grease Fitting, 1/4" (1)
- 117414 - Lock Nut, 3/4" UNC Unitorque (1)
- 118024 - Bolt, 5/8" x 1-1/2" UNC (1)
- 118514 - Washer, 5/8" (1)
- 143111 - Hose Holder (1)
- 118447 - Lock Nut, 5/8" UNC Unitorque (1)
- 117129 - Bushing, 1-1/2"OD x 3/4" (2)

See Detail Above

133093 - Capscrew, M8 x 1.25 x 30mm (2)
133092 - Plastic Handle (1)
133094 - Nut, M8 x 1.25mm (2)
503315 - Swivel Hitch (1)
118929 - Lock Pin, 3/8" x 1-1/2" (1)
131206 - Flat Washer, 1-1/4" SAE (1)
118962 - Lock Nut, 1-1/4" UNF GR8 (1)
118061 - Bolt, 3/4" x 5" UNC (1)
502088 - Collar, 4" OD (1)
118336 - Grease Fitting, 1/4" (1)
117414 - Lock Nut, 3/4" UNC Unitorque (1)
118024 - Bolt, 5/8" x 1-1/2" UNC (1)
118514 - Washer, 5/8" (1)
143111 - Hose Holder (1)
118447 - Lock Nut, 5/8" UNC Unitorque (1)
117129 - Bushing, 1-1/2"OD x 3/4" (2)
Center Frame Assembly

118483 - Lock Nut, 1/4" - Unitorque (2)
118555 - Flat Washer, 1/4" (2)
118983 - Bolt, 1/4" x 3/4" (2)
118136 - Bolt, 3/8" x 1-1/2" UNC (2)
500137 - Bracket (1)
303285 - Shaft Cover (1)

142135 - SMV Sign (1)
501390 - Tiebar Assembly (2)

118136 - Bolt, 3/8" x 1-1/2" UNC UNC GR5 (2)
118775 - Flat Washer, 3/4" F436 (2)
117414 - Lock Nut 3/4" UNC GR5 (2)

118040 - Bolt, 3/4" x 1-1/2" UNC GR5 (2)
118966 - Roll Pin, 5/16" x 1-3/4" (2)
131260 - Flat Washer, 1-1/4" SAE (2)
503562 - Pin, 1-1/4" x 4-7/16" (2) (c/w Grease Fitting)
118011 - Bolt, 1/2" x 1-1/2" UNC (2)
118587 - Flat Washer, 1/2" SAE (2)
118729 - Lock Nut, 1/2" UNC GRC Unitorque (2)

503300 - Center Skid Shoe - (2)

503193 - Machined Pin, 1-1/4" x 2-7/16" (2)
118336 - Grease Fitting, 1/4" (2)
810280 - Retaining Ring, 1-1/4" (4)
117442 - Bushing, 1-1/4" x 14 ga. (4)

Center Gearbox
Clockwise
170253 - 1000 RPM
170261 - 540 RPM

Counter Clockwise
170251 - 1000 RPM
170259 - 540 RPM

118447 - Lock Nut, 5/8" GRC-Unitorque (2)
118901 - Lynch Pin, 3/16" x 1-1/2" (2)
503308 - Bumper Plate - 1/4" (1)
501005 - Urethane Bumper, 60D (2)
118537 - Flat Washer, 5/8" SAE (2)
118024 - Bolt, 5/8" x 1-1/2" (2)
117463 - Bolt, M10 x .15 x 20 P8.8 (2)
117464 - Lock Washer, M10 (2)
118511 - Flat Washer, 3/8" (2)
118048 - Bolt, 3/4" x 2-1/2" UNC GR8 (6)
503184 - Hose Bracket - 4H (1)
780278 - Hose Clamp Block (2)
780279 - Top Plate (2)
118144 - Bolt, 5/16" x 1-1/2" UNC (2)
117414 - Lock Nut, 3/4" UNC GR6 (6)
118775 - Flat Washer, 3/4" F436 (6)

160004 - Cone Shield, 9" Diameter (1)
500300 - Center Skid Shoe - (2)
118661 - Lock Nut, 1/4" UNC GRC (2)
118966 - Roll Pin, 5/16" x 1-3/4" (2)
131260 - Flat Washer, 1-1/4" SAE (2)
503562 - Pin, 1-1/4" x 4-7/16" (2) (c/w Grease Fitting)
118011 - Bolt, 1/2" x 1-1/2" UNC (2)
118587 - Flat Washer, 1/2" SAE (2)
118729 - Lock Nut, 1/2" UNC GRC Unitorque (2)

118483 - Lock Nut, 1/4" - Unitorque (4)
118555 - Flat Washer, 1/4" (8)
118983 - Bolt, 1/4" x 3/4" (4)
118966 - Roll Pin, 5/16" x 1-3/4" (2)
131260 - Flat Washer, 1-1/4" SAE (2)
503562 - Pin, 1-1/4" x 4-7/16" (2) (c/w Grease Fitting)
118011 - Bolt, 1/2" x 1-1/2" UNC (2)
118587 - Flat Washer, 1/2" SAE (2)
118729 - Lock Nut, 1/2" UNC GRC Unitorque (2)

118901 - Lynch Pin, 3/16" x 1-1/2" (2)
503308 - Bumper Plate - 1/4" (1)
501005 - Urethane Bumper, 60D (2)
118537 - Flat Washer, 5/8" SAE (2)
118024 - Bolt, 5/8" x 1-1/2" (2)
117463 - Bolt, M10 x .15 x 20 P8.8 (2)
117464 - Lock Washer, M10 (2)
118511 - Flat Washer, 3/8" (2)
118048 - Bolt, 3/4" x 2-1/2" UNC GR8 (6)
503184 - Hose Bracket - 4H (1)
780278 - Hose Clamp Block (2)
780279 - Top Plate (2)
118144 - Bolt, 5/16" x 1-1/2" UNC (2)
117414 - Lock Nut, 3/4" UNC GR6 (6)
118775 - Flat Washer, 3/4" F436 (6)

160004 - Cone Shield, 9" Diameter (1)
Wing Wheel Strut Assemblies

**Strut Assembly Single Axle**

- 503420 - Upper Strut, Right Side (503421 - Left Side, not shown)
- 118962 - Lock Nut, 1-1/4" UNF GR8
- 131206 - Flat Washer, 1-1/4" SAE
- 117461 - Bolt, 5/8" x 6" UNC GR8
- 503415 - Lower Strut (single axle)

**Suspension Components**

- 500330 - Bolt, 1-1/4" x 7-1/2" UNF (c/w Grease Fitting)

**Wing Suspension Detail**

Pre-loading of rubber spring required on all strut assemblies. Exposed thread length should be approximately 3/8" when using correct hardware.

**Strut Assembly Walking Axle**

- 503421 - Upper Strut, Left Side (503420 - Right Side, not shown)
- 500330 - Bolt, 1-1/4" x 7-1/2" UNF (c/w Grease Fitting)
- 117461 - Bolt, 5/8" x 6" UNC GR8
- 503410 - Lower Strut (walking axle)

Note: The wing wheel strut assemblies are either single or walking axle configurations depending on the option you chose when purchasing your rotary cutter. The LH/RH upper strut assemblies are identical for both.

**Single Axle**

- 118417 - Lock Nut, 3/8" UNC GR5
- 118644 - Bolt, 3/8" x 3" UNC GR5
- 118962 - Lock Nut, 1-1/4" UNF GR8
- 131206 - Flat Washer, 1-1/4" SAE

**Walking Axle**

- 118336 - Grease Fitting, 1/4" (1)
  (Fitting faces forward for ease of maintenance)
- 118644 - Bolt, 3/8" x 3" UNC GR5 (2)
- 118417 - Lock Nut, 3/8" UNC GR5 (2)
- 118447 - Lock Nut, 5/8" UNC GRC -Unitorque

Hub & Spindle Assembly (1) (see detail on page 39)
Rockshaft Assembly

Rockshaft Suspension Detail

Pre-loading of rubber spring required on all strut assemblies. Exposed thread length should be approximately 1/2" when using correct hardware.

Note: The Rockshaft assembly consists of an upper assembly and two lower strut assemblies. The lower strut assemblies are identical with the exception of the opposite configuration of the walking axle assemblies.

The lower strut and walking axle assemblies use some common components shown in the wing strut assemblies on the previous page.

Walking Axle

503557 - Walking Axle (as shown)
503554 - Walking Axle (opposite configuration)

118336 - Grease Fitting, 1/4" (1)
(Fitting faces forward for ease of maintenance)

503559 - Dust Seal (2)
503558 - Retaining Ring, Internal 3.5" (2)
503557 - Bushing, 2-1/2 OD x 2 (2)
503556 - Bearing, Tapered - Cup & Cone (2)
118447 - Lock Nut, 5/8" UNC GRC - Unitorque

Lower Strut Assembly

117461 - Bolt, 5/8" x 6" UNC GR8
503410 - Lower Strut (walking axle)
501006 - Rubber Spring
501003 - Bumper, 2" x 5/8"
117462 - Flat Washer, 5/8"
118447 - Lock Nut, 5/8" UNC GRC - Unitorque

Note: The hardware for the transport lock assembly is used to connect the rod end of the center height control cylinder (refer to cylinder section).

Hub & Spindle Assembly (2)
(see detail on page 39)

118644 - Bolt, 3/8" x 3" UNC GRS (5) (2)
118417 - Lock Nut, 3/8" UNC GRS (5) (2)
503400 - Rockshaft Upper Assembly
503204 - Bolt, 1" x 4-3/4" UNC (2)
(c/w Grease Fitting)
503200 - Transport Lock Assembly (2)
118456 - Lock Nut, 1" UNC (2)
500330 - Bolt, 1-1/4" x 7-1/2" UNF (2)
(c/w Grease Fitting)
118962 - Lock Nut, 1-1/4" UNF GR8 (2)
131206 - Flat Washer, 1-1/4" SAE (2)
117110 - Bushing, 1-1/4" OD x 1" (2)
Hub & Spindle

131390 - Hub & Spindle Assembly
This model comes with a three piece seal and different hub. All other components common with 131380 Hub/Spindle Assembly.

131380 - Hub & Spindle Assembly
This model comes with a one piece seal and different hub. All other components common with 131390 Hub/Spindle Assembly.

131386 - Bolt, Stud - 1/2 x 1-13/16 UNF GR5 (5)
131105 - Cup, Bearing - LM67010 (1)
131108 - Cone, Bearing - LM67048 (1)
118774 - Washer, Flat - 7/8 SAE (1)
118836 - Pin, Cotter (1)
118498 - Nut, Castle - 7/8 UNF GR5 (1)
131383 - Cap, Dust (1)
131395 - Dust Cap Protector (1)
131190 - Nut, Wheel - 1/2 UNF GR5 (5)

Wheels

131384 - Recapped Foam Filled Aircraft Tire
131385 - Recapped Air Filled Aircraft Tire (Pneumatic)
131315 - Laminated Tire
Blades, Pan, & Hardware

Blade Carrier Assemblies

Wing Section Components

- 500545 - Blade Carrier (wing section)
- 117417 - Blade Lock Nut (Tapered)
- 117415 - Blade Bolt - Square Shoulder (Tapered)

Note: Refer to gearbox section of manual for hardware that mounts blade carriers to gearboxes (i.e., castle nuts and cotter pins.)

Center Section Components

- 500550 - Blade Carrier (center section)
- 117417 - Blade Lock Nut (Tapered)
- 117415 - Blade Bolt - Square Shoulder (Tapered)

Note: Refer to gearbox section of manual for hardware that mounts blade carriers to gearboxes (i.e., castle nuts and cotter pins.)

Blade Options

Blades - 5” High Suction - Twist

- Clockwise: 501027 - Blade, 5” High Suction - Twist
- Counter Clockwise: 501028 - Blade, 5” High Suction - Twist

501012 - 4” Brush Blade

Bidirectional: 501012 - Brush Blade

501541 - Shredder Blade Kit

- 501013 - Shredder Blade (2)
- 117417 - Blade Lock Nut (Tapered) (2)
- 117475 - Shredder Bolt (2)
122714 - **Wing Lift Cylinder** - 3” x 12” x 1-1/2”

122214 - Rod/Pin Eye - 1-1/2” x 12”

122563 - Piston, 3”

118441 - Lock Nut, 7/8”

UNF Unitorque

118930 - Pin, 1” x 2-13/16”

118924 - Flat Washer - .591” ID x .905” OD

118796 - Bolt, Shoulder - 1/2” UNC

122556 - Cap, Open - 3” x 1-1/2”

122558 - Lock Ring, 3”

122202 - Barrel, 3” x 12”

122523 - Seal Kit

122850 - Center Height Cylinder (2)

(3-1/2” x 8” x 1-1/4”)

122836 - Wing Height Cylinder (2)

(3-1/4” x 8” x 1-1/4”)

122714 - Wing Lift Cylinder (2)

(3” x 12” x 1-1/2”)

122836 - Wing Height Cylinder (2)

(3-1/4” x 8” x 1-1/4”)

122850 - Center Height Cylinder (2)

(3-1/2” x 8” x 1-1/4”)

122202 - Barrel, 3” x 12”
122836 - **Wing Height Control Cylinder** (with Rephasing Grooves) - 3-1/4" x 8" x 1-1/4"
(1530 Model - Left Wing, 1030 Model - Right Wing)

122836 - Rod/Clevis - 1-1/4" x 10"
122843 - Piston, 3-1/4"
118441 - Lock Nut, 7/8 UNF
118930 - Pin, - 1" x 2-13/16"
118924 - Flat Washer, .591" ID x .905" OD
118796 - Bolt, Shoulder 1/2" UNC

122840 - Cap, Open - 3-1/4" x 1-1/4"
122842 - Lock Ring, 3-1/4"
122838 - Barrel, 3-1/4" x 8"
122849 - Seal Kit

122850 - **Center Height Control Cylinder** (with Rephasing Grooves) - 3-1/2" x 8" x 1-1/4"

122834 - Rod/Clevis - 1-1/4" x 8"
122663 - Piston, 3-1/2"
118441 - Lock Nut, 7/8 UNF
118930 - Pin, - 1" x 2-13/16"
118924 - Flat Washer .591" ID x .905" OD
118796 - Bolt, Shoulder 1/2" UNC

122860 - Cylinder Stop Block Kit

122856 - Cap, Open - 3-1/2" x 1-1/4"
122658 - Lock Ring, 3-1/2"
122852 - Barrel, 3-1/2" x 8"
122857 - Seal Kit
Hydraulic Schematics - REV1500

**Height Control Cylinders**
(Note: Cylinder details are shown on pages 41-42)

- 141581 - Coupler, Tip (2)
- 141515 - Nipple, (2)
- 126574 - Hose, 3/8 x 174" (2)

- 141501 - Tee (2)
- 126548 - Hose, 3/8 x 50" (2)

- 141515 - Nipple, (2)
- 141504 - Elbow, 90° (2)

- 126674 - Hose, 3/8 x 102" (2)

- 122836 - Wing Height Cylinder (2)
(3-1/4" x 8" x 1-1/4")

- 122850 - Center Height Cylinder (2)
(3-1/2" x 8" x 1-1/4")

**Wing Lift Cylinders**
(Note: Cylinder details are shown on pages 41-42)

- 141581 - Coupler, Tip (2)
- 141515 - Nipple, (2)
- 141609 - Orifice Adaptor (2)

- 126574 - Hose, 3/8 x 174" (2)

- 126514 - Hose, 3/8 x 21" (2)

- 122859 - Vent, Filter (2)

- 141504 - Elbow, 90° (2)

- 141501 - Tee (1)

- 141615 - Cap
- 122859 - Vent, Filter
(3/4 ORB M)

**Hydraulic Fitting Guide**

- 141581 - Coupler, Tip - 3/4 ORB F
- 141609 - Orifice Adaptor - 3/4 JIC F x 3/4 JIC M
- 141515 - Nipple - 3/4 JIC M x 3/4 ORB M
- 141513 - Elbow, 90° - 3/4 JIC M x M
- 141501 - Tee - 3/4 JIC M x M
- 141504 - Elbow, 90° - 3/4 JIC M x 3/4 ORB M
- 141615 - Cap - 3/4 JIC F
- 122859 - Vent, Filter - 3/4 ORB M

**Hose Routing Options**
- Standard hose routing for independent wing lift is shown in the diagram to the left.
- An alternate hose routing for combined wing lift is shown in diagram below.

**503443 - Optional Double Acting Wing Lift Kit**
- 141581 - Coupler, Tip
- 141515 - Nipple
- 141609 - Orifice

- 126508 - Hose, 3/8 x 183"

(Replaces Filter Vent)
Driveline Overview

-45-
Drivelines

160247 - 540/1000 PTO Driveline - Wing
Universal Joint Telescoping Assembly with Non-Adjusting Friction Clutch

- 160267 - Driveline Guard Set - Inner & Outer - (1)
  - 160270 - Driveline Outer Guard - (1)
  - 160263 - Driveline Slider Outer, with Guard - (1)
  - 160272 - Driveline Yoke & Shaft - (1)
  - 160269 - Driveline Yoke & Shaft - (1)
  - 160235 - Clutch Assembly, Non-Adjusting - (1) (Detail - pg. 51)
  - 160264 - Driveline Slider Assembly Outer, without Guard - (1)

- 160266 - Driveline Slider Assembly Inner, without Guard - (1)
  - 160265 - Driveline Slider Inner, with Guard - (1)
  - 160271 - Driveline Inner Guard - (1)

- 118729 - Lock nut, 1/2 UNC - (2)
- 118082 - Bolt, 1/2 x 3-1/2 UNC GR8 - (2)
- 119883 - Nylon Repair Kit - (1)
- 119295 - Safety Sign (not shown) - (1)
- 119900 - Cross Kit & Bearing - (1)
- 119489 - Yoke 1-3/4 - 20 Spline - (1)
- 119900 - Cross Kit & Bearing - (1)
- 119883 - Nylon Repair Kit - (1)
- 119295 - Safety Sign (not shown) - (1)
- 118447 - Lock nut, 5/8 UNC - (1)

- 118729 - Lock nut, 1/2 UNC - (2)
- 118082 - Bolt, 1/2 x 3-1/2 UNC GR8 - (2)
- 119883 - Nylon Repair Kit - (1)
- 119295 - Safety Sign (not shown) - (1)
- 119900 - Cross Kit & Bearing - (1)
- 119489 - Yoke 1-3/4 - 20 Spline - (1)
- 119900 - Cross Kit & Bearing - (1)
- 119883 - Nylon Repair Kit - (1)
- 119295 - Safety Sign (not shown) - (1)
- 118447 - Lock nut, 5/8 UNC - (1)

160247 - 540/1000 PTO Driveline - Wing
Universal Joint Telescoping Assembly with Non-Adjusting Friction Clutch

- 160267 - Driveline Guard Set - Inner & Outer - (1)
  - 160270 - Driveline Outer Guard - (1)
  - 160263 - Driveline Slider Outer, with Guard - (1)
  - 160272 - Driveline Yoke & Shaft - (1)
  - 160269 - Driveline Yoke & Shaft - (1)
  - 160235 - Clutch Assembly, Non-Adjusting - (1) (Detail - pg. 51)
  - 160264 - Driveline Slider Assembly Outer, without Guard - (1)

- 160266 - Driveline Slider Assembly Inner, without Guard - (1)
  - 160265 - Driveline Slider Inner, with Guard - (1)
  - 160271 - Driveline Inner Guard - (1)

- 118729 - Lock nut, 1/2 UNC - (2)
- 118082 - Bolt, 1/2 x 3-1/2 UNC GR8 - (2)
- 119883 - Nylon Repair Kit - (1)
- 119295 - Safety Sign (not shown) - (1)
- 119900 - Cross Kit & Bearing - (1)
- 119489 - Yoke 1-3/4 - 20 Spline - (1)
- 119900 - Cross Kit & Bearing - (1)
- 119883 - Nylon Repair Kit - (1)
- 119295 - Safety Sign (not shown) - (1)
- 118447 - Lock nut, 5/8 UNC - (1)
Drivelines

**WING 540/1000 PTO**

1700 NM (15000 IN LBS)
Non-Adjusting Friction Clutch - Weasler

---

**WING - 160235 - 540/1000 PTO**

- **119491 - Clamp - (1)**
- **119391 - Spring Disc .185 - (1)**
- **119379 - Compression Plate - (1)**
- **119377 - Pressure Plate - (1)**
- **119376 - Separator Plate - (1)**
- **119375 - Friction Disc - (2)**
- **119376 - Friction Disc - (2)**
- **119377 - Separator Plate - (1)**
- **119378 - Bolt, 5/16 x 2 1/2 GR8 - (6)**
- **118427 - Nut, 5/16 - (6)**
- **160239 - Clutch Housing - (1)**
- **160281 - Friction Pack - (1)**
- **160238 - Bolt, M10 x 1.5 x 25 CL10.9 - (4)**
- **160236 - Yoke & Hub - (1)**
- **160235 - Wing 540/1000 PTO**
**160248 - 540/1000 PTO Driveline - Center**
Double Center Universal Joint with Non-Adjusting Friction Clutch

**160273 - Center 540 PTO - 1300 NM (12000 IN LBS)**
Non-Adjusting Friction Clutch - Weasler

---

**160248 - 540 PTO**

- 118129 - Bolt, 3/8 x 1-1/4 UNC - (8)
- 118417 - Lock nut, 3/8 UNC - (8)
- 118031 - Bolt, 5/8 x 3 UNC GR8 - (1)
- 119489 - Yoke 1-3/4 20 Spline - (1)
- 118447 - Lock nut, 5/8 UNC - (1)
- 160275 - Yoke, Double Center -M- (1)
- 160274 - Yoke, Double Center -F- (1)
- 119900 - Cross Kit & Bearing - (2)
- 160273 - Clutch Assembly, Non-Adjusting - (1)

---

**CENTER - 160273 - 540/1000 PTO**

- 160237 - Friction Pack - (1)
- 118783 - Bolt, 5/16 x 2 1/2 GR8 - (6)
- 119379 - Compression Plate - (1)
- 119383 - Spring Disc .16 - (1)
- 119377 - Pressure Plate - (1)
- 119375 - Friction Disc - (2)
- 119376 - Separator Plate - (1)
- 118335 - Grease Fitting - (1)
- 160241 - Yoke & Free Motion Hub - (1)
- 160239 - Clutch Housing - (1)
- 118427 - Nut, 5/16 - (6)
- 160238 - Bolt, M10 x 1.5 x 25 C110.9 - (4)
Gearbox Overview

**Splitter Gearbox**

- **1000 RPM PTO**
  - 170201 - Gearbox (1.3:1) [pg.54]

- **540 RPM PTO**
  - 170263 - Gearbox (1:1) [pg.54]

---

**Center Gearbox**

- **Against Traffic**
  - 1000 RPM PTO
    - 170251 - Gearbox (1:1) [pg.62]
    - 540 RPM PTO
    - 170259 - Gearbox (1:1.833) [pg.61]

- **With Traffic**
  - 1000 RPM PTO
    - 170253 - Gearbox (1:1) [pg.60]
    - 540 RPM PTO
    - 170261 - Gearbox (1:1.833) [pg.59]

---

**Left Wing Gearbox**

- **1000 RPM PTO**
  - 170255 - Gearbox (1:1.238) [pg.58]

- **540 RPM PTO**
  - 170259 - Gearbox (1:1.833) [pg.57]

---

**Right Wing Gearbox**

- **1000 RPM PTO**
  - 170257 - Gearbox (1:1.238) [pg.56]

- **540 RPM PTO**
  - 170261 - Gearbox (1:1.833) [pg.55]

---

Note: The direction of rotation on the outer output shafts (B) is opposite to the front input and middle output shafts (A).
<table>
<thead>
<tr>
<th>Part #</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>170277</td>
<td>Input Shaft, 1.75-20 SPL</td>
<td>01</td>
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<tr>
<td>170282</td>
<td>Key, 12 x 8 x 38</td>
<td>02</td>
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<tr>
<td>170284</td>
<td>Bearing Cup, JM205110</td>
<td>01</td>
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<tr>
<td>170303</td>
<td>Input Shim - (A/R)</td>
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<tr>
<td>170285</td>
<td>Bearing Cone, JM205149</td>
<td>01</td>
</tr>
<tr>
<td>170725</td>
<td>Input Seal, 19662</td>
<td>01</td>
</tr>
<tr>
<td>170280</td>
<td>Spacer Shaft</td>
<td>01</td>
</tr>
<tr>
<td>170297</td>
<td>Spiral Gear &amp; Pinion Set</td>
<td>01</td>
</tr>
<tr>
<td>170298</td>
<td>Output Shim - (A/R)</td>
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<td>170294</td>
<td>Bearing Cone, 30212</td>
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<tr>
<td>170293</td>
<td>Bearing Cup, 30212</td>
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<td>170299</td>
<td>Output Shaft, SPL 18T</td>
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<tr>
<td>170300</td>
<td>Housing, RC-145L</td>
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<tr>
<td>170270</td>
<td>O-Ring, 112</td>
<td>01</td>
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<tr>
<td>170286</td>
<td>Bearing Cup, 33212</td>
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<tr>
<td>170287</td>
<td>Bearing Cone, 33212</td>
<td>01</td>
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<tr>
<td>170274</td>
<td>Spacer, Output Seal</td>
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<tr>
<td>170273</td>
<td>Output Seal</td>
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<td>Retaining Ring</td>
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<td>Output Shield</td>
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<tr>
<td>170266</td>
<td>Slotted Nut, M36 x 6</td>
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<tr>
<td>170224</td>
<td>Cotter Pin, 6.3 x 60</td>
<td>01</td>
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</tbody>
</table>

170267 - a Sight Glass - 01
170268 - O-Ring, 119 - 02
170269 - Pressure Relief Plug - 01
# Gearboxes

## 1000 RPM PTO Gearbox

(1:1.238)

<table>
<thead>
<tr>
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<th>Description</th>
<th>(Qty)</th>
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<tr>
<td>170266</td>
<td>Slotted Nut, M36 x 6</td>
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<td>Cotter Pin, 6.3 x 60</td>
<td>(01)</td>
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<td>170271</td>
<td>Output Shield</td>
<td>(01)</td>
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<td>170272</td>
<td>Retaining Ring</td>
<td>(01)</td>
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<td>170273</td>
<td>Output Seal</td>
<td>(01)</td>
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<tr>
<td>170274</td>
<td>Spacer, Output Seal</td>
<td>(01)</td>
</tr>
<tr>
<td>170277</td>
<td>Input Shaft, 1.75-20 SPL</td>
<td>(01)</td>
</tr>
<tr>
<td>170278</td>
<td>Lock Nut</td>
<td>(01)</td>
</tr>
<tr>
<td>170279</td>
<td>Lock Washer</td>
<td>(01)</td>
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<tr>
<td>170280</td>
<td>Spacer Shaft</td>
<td>(01)</td>
</tr>
<tr>
<td>170281</td>
<td>Spiral Gear &amp; Pinion Set</td>
<td>(01)</td>
</tr>
<tr>
<td>170282</td>
<td>Key, 12 x 8 x 38</td>
<td>(02)</td>
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<tr>
<td>170283</td>
<td>Output Shim (A/R)</td>
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<tr>
<td>170284</td>
<td>Bearing Cup, JM205110</td>
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<tr>
<td>170285</td>
<td>Bearing Cone, JM205149</td>
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<tr>
<td>170286</td>
<td>Bearing Cup, 33212</td>
<td>(01)</td>
</tr>
<tr>
<td>170287</td>
<td>Bearing Cone, 33212</td>
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<td>170288</td>
<td>Output Shaft, SPL 18T</td>
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<tr>
<td>170289</td>
<td>Housing, RC-145L</td>
<td>(01)</td>
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<tr>
<td>170290</td>
<td>Oil Sight Glass</td>
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<td>170291</td>
<td>Pressure Relief Plug</td>
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<tr>
<td>170270</td>
<td>O-Ring, 112</td>
<td>(01)</td>
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<td>170269</td>
<td>O-Ring, 119</td>
<td>(02)</td>
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<td>170270</td>
<td>O-Ring, 112</td>
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<tr>
<td>170270</td>
<td>O-Ring, 112</td>
<td>(01)</td>
</tr>
</tbody>
</table>
170261 - 540 RPM PTO Gearbox
(1:1.833) With Traffic

Part # - Description - (Qty)

170284 - Bearing Cup, JM205110 - (01)
170299 - Output Shaft, SPL 18T - (01)
170300 - Housing, RC-145L (01)
170270 - O-Ring, 112 - (02)
170279 - Spiral Gear & Pinion Set - (01)
170297 - Output Shim - (A/R)
170274 - Spacer, Output Seal - (01)
170273 - Output Seal - (01)
170272 - Retaining Ring - (01)
170271 - Output Shield - (01)
170282 - Key, 12 x 8 x 38 - (02)
170280 - Spacer Shaft - (01)
170285 - Bearing Cone, JM205149 - (01)
170298 - Output Shim - (A/R)
170290 - Input Shaft, 1.75-20 SPL - (01)
170281 - Key, 10 x 8 x 38 - (02)
170296 - Lock Washer - (01)
170287 - Bearing Cup, JM205110 - (01)
170286 - Bearing Cup, 33212 - (01)
170276 - Input Seal, 19662 - (01)
170284 - Bearing Cup, JM205110 - (01)
170267 - Oil Sight Glass - (01)
170269 - Pressure Relief Plug - (01)
170266 - Slotted Nut, M36 x 6 - (01)
170268 - O-Ring, 119 - (02)
170224 - Cotter Pin, 6.3 x 60 - (01)
170229 - Key, 10 x 8 x 38 - (02)
170277 - Input Shaft, 1.75-20 SPL - (01)
170280 - Spacer Shaft - (01)
170282 - Key, 12 x 8 x 38 - (02)
170284 - Bearing Cup, JM205110 - (01)
170303 - Input Shim - (A/R)
170285 - Bearing Cone, JM205149 - (01)
170275 - Input Seal, 19662 - (01)
170281 - Spiral Gear & Pinion Set - (01)
170283 - Output Shim - (A/R)
170285 - Bearing Cone, JM205149 - (01)
170284 - Bearing Cup, JM205110 - (01)
170288 - Output Shaft, SPL 18T - (01)
170289 - Housing, RC-145L (01)
170270 - O-Ring, 112 - (01)
170286 - Bearing Cup, 33212 - (01)
170287 - Bearing Cone, 33212 - (01)
170274 - Spacer, Output Seal - (01)
170273 - Output Seal - (01)
170272 - Retaining Ring - (01)
170271 - Output Shield - (01)
170266 - Slotted Nut, M36 x 6 - (01)
170224 - Cotter Pin, 6.3 x 60 - (01)
170280 - Spacer Shaft - (01)
170278 - Lock Nut - (01)
170279 - Lock Washer - (01)
170280 - Spacer Shaft - (01)
170275 - Input Seal, 19662 - (01)
170284 - Bearing Cup, JM205110 - (01)
170303 - Input Shim - (A/R)
170285 - Bearing Cone, JM205149 - (01)
170275 - Input Seal, 19662 - (01)
170284 - Bearing Cup, JM205110 - (01)
170275 - Input Seal, 19662 - (01)
170284 - Bearing Cup, JM205110 - (01)
170285 - Bearing Cone, JM205149 - (01)
170282 - Key, 12 x 8 x 38 - (02)
170227 - Oil Sight Glass - (01)
170267 - Oil Sight Glass - (01)
170269 - Pressure Relief Plug - (01)
Options - Light Kit

503435 - Light Kit
Includes:
- Lights (Left & Right)
- 7 Pole Plug Connector
- 16 Gauge Wiring
- Mounting Brackets
- All Required Hardware

129066 - Wire, 4 x 16 ga. - 25'
129058 - LH Light, 4 Wire
118756 - Bolt, 1/4” x 1-1/4” GR5 (4)
118483 - Lock Nut, 1/4” GR5 - Unitorque (4)
129059 - RH Light, 4 Wire
129065 - Wire, 4 x 16 ga. - 24'
129027 - 7 Pin Plug
129060 - Plug, 4 Wire (2)
129067 - 16 ga. Crimp (8)
3/8” Split Loom 12-15” (2)

Note: All spliced ends should be soldered.

503186 - Light Mounting Bracket (1)
118731 - Flat Washer, 5/16” SAE (2)
118756 - Bolt, 1/4” x 1-1/4” GR5 (4)
118718 - Lock Nut, 5/16” GRC (2)
118710 - Bolt, 5/16” x 1” GR5 (2)
118483 - Lock Nut, 1/4” GR5 - Unitorque (4)
118110 - Bolt, 5/16” x 1” GR5 (2)

Common Bracket and Hardware
Right wing Shown Below

Note: Install lights with amber light to outside, covered lens facing forward.
### Index

1. Introduction and Specifications ..........01-02

2. Safety
   - Important Safety Information ..........03
   - General Safety .................................04
   - Safety Decals .................................05
   - Decal Placement ...............................06

3. How To Set Your Tractor
   - Tractor Requirements ......................08
   - Correct PTO Speed ..........................08
   - Positioning Tractor Drawbar ..............08
   - Correct Drawbar Length ....................08
   - 3 Point Quick Coupler Hitch Removal ....08
   - Wheel Tread Width Settings ..............08

4. How to Hook-Up Your Cutter
   - Attaching Cutter to Tractor Drawbar ......09
   - Installing Safety Chain ....................10
   - Attaching Driveline to PTO ...............10
   - Attaching Hydraulics .......................10
   - Connecting Lights (optional) .............10
   - Detaching Cutter from Tractor ..........10

5. Cutter Preparation
   - Preparation Checklist .....................11
   - Cutting Banding Strap ......................11
   - Removing Transport Locks & Lowering Wings...........11
   - Setting Hydraulic Flow Speed ............11

6. How to Set Your Cutter
   - Important Setting Information ..........12
   - Setting Cutting Depth .....................12
   - Phasing Cylinders ...........................12
   - Wheel Tread Width Settings ..............12
   - Deck Height Adjustment
     Levelling Front to Back ..................13
   - Wing Height Adjustment
     Levelling Side to Side ..................14

7. How to Operate Your Cutter
   - Safe Operating Procedures ...............15
   - Raising Wings .................................16
   - Wing Flotation ...............................16
   - Cutting Angles ...............................16
   - Blade Rotation ...............................16
   - Making Turns ..................................16

8. Transporting
   - Safe Transport Procedures ...............17
   - Preparing Cutter for Transport ..........17
   - Restricted Transport Width ..............18

9. Troubleshooting
   - General Operation .........................19

10. Troubleshooting - Components
    - Operation ....................................20
    - Blades .......................................21
    - Gear Boxes ..................................21
    - Driveline Clutches .........................22
    - Drivelines ..................................22

11. Maintenance & Service
    - Safe Maintenance Procedures ..........23
    - 4 Hour ........................................24
    - 8 Hour (Daily) ...............................24
    - 20 Hour .......................................25
    - 50 Hour .......................................25
    - 100 Hour ......................................25
    - Annually ......................................26
    - Blades .......................................27
    - Blade Hardware ..............................27
    - Blade Carriers ...............................27
    - Torque Specifications .....................28
    - Run-In of the Friction Clutch ..........29
    - Torque Limiter Disassembly .............29
    - Torque Limiter Assembly .................29

12. How to Store Your Cutter
    - Preparing for Storage ....................30
    - Removing from Storage ...................30

13. Parts .......................................32
    - General Assembly ..........................32
    - Counterweight Assembly ..................32
    - Front Hitch Assembly ......................33
    - Center Shield ...............................33
    - Right & Left Wing Frame .................34
    - Center Frame ..............................35-36
    - Wheel Strut Assembly .....................37
    - Rockshaft Assembly .......................38
    - Wheels, Hubs, & Spindles ...............39
    - Blades, Pan, & Hardware .................40
    - Hydraulic Cylinders .......................41-42
    - Hydraulic Schematics .....................43-44
    - Driveline Overview .......................45
    - Drivelines ..................................46-52
    - Gearbox Overview ..........................53
    - Gearboxes ...................................54-62
    - Optional Toolbox or Tow Hitch ........63
    - Optional Lighting Kit .....................64

14. Index .......................................66

15. Warranty .....................................67

143292 - REV1500/1000 Rotary Cutter (14-January-2011)
Degelman Industries Ltd. ("Degelman") warrants to the original purchaser of a new REV 1500 Degelman Rotary Cutter, purchased from an authorized Degelman dealer, that the equipment will be free from defects in material and workmanship for a period of two (2) years from the date of delivery, for non-commercial use (including farm, institutional, government, and municipality) and (1) year from the date of delivery for commercial use. The obligation of Degelman to the purchaser under this warranty is limited to the repair or replacement of defective parts in the first year and to the provision, but not the installation of replacement parts in the second year. Degelman reserves the right to inspect any equipment or parts which are claimed to have been defective in material or workmanship.

Replacement or repair parts installed in the equipment covered by this limited warranty are warranted for ninety (90) days from the date of delivery of such part or the expiration of the applicable new equipment warranty period, which ever occurs later. Warranted parts shall be provided at no cost to the user at an authorized Degelman dealer during regular working hours. Warranted replacement parts will either be replaced or rebuilt at Degelman's discretion.

Disclaimer of implied warranties & consequential damages

This warranty shall not be interpreted to render Degelman Industries Ltd. liable for injury, death, property damage or damages of any kind, whether direct, consequential, or contingent to property. Without limiting the generality of the foregoing, Degelman shall not be liable for damages resulting from any cause beyond its reasonable control, including, without limitation, loss of crops, any expense or loss of labour, supplies, rental machinery or loss of use.

No other warranty of any kind whatsoever, express or implied is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale. This exclusion shall not apply in any jurisdiction where it is not permitted by law.

This limited warranty shall not apply:

1. If, in the sole opinion of Degelman, the unit has been subjected to misapplication, abuse, misuse, negligence or accident.
2. To any goods that have sustained damage or deterioration attributable to contact with foreign objects (eg. stones, iron, and other material other than grass and brush.)
3. If parts not made or supplied by Degelman have been used in the connection with the unit, if, in the sole judgement of Degelman such use affects its performance, safety, stability or reliability.
4. If the unit has been altered or repaired outside of an authorized Degelman dealership in a manner which, in the sole judgement of Degelman, affects its performance, safety, stability or reliability.
5. To normal maintenance service and normal replacement items such as gearbox lubricant, hydraulic fluids, and seals.
6. To expendable or wear items such as blades, blade bolts, skid pans, skid shoes and any other items that in the company's sole judgement is a wear item.

No employee or representative of Degelman Industries Ltd. is authorized to change this limited warranty in any way or grant any other warranty unless such change is made in writing and signed by the Degelman Service Manager.

This limited warranty is subject to any future availability of supply, which may directly affect Degelman’s ability to obtain materials or manufacture replacement parts.

Degelman reserves the right to make improvements in design or changes in specifications at any time, without incurring obligations to owners of equipment previously delivered.

This limited warranty is subject to compliance by the customer to the enclosed Retail Customer’s Responsibility Under Degelman Warranty.

Make certain the warranty registration card has been forwarded to:
Degelman Industries Ltd.
Box 830
272 Industrial Dr.
Regina, SK, Canada
S4P 3B1