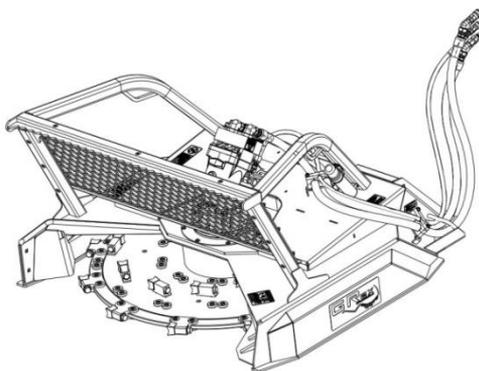




# 60" Mulcher Operator's Manual



Models:

DMC60 - 160

DMC60 - 150

DMC60 - 125

A blue circular icon containing a white silhouette of a person holding and reading a document, representing the instruction to read the manual.	<p><b>WARNING</b></p> <p>Rear and fully understand operator's manual before using this machine.</p> <p>Failure to follow operating instructions could result in serious injury or death.</p>
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**G.R.**  
MANUFACTURING, INC.

## Introduction

Thank you and congratulations for choosing a G.R. Manufacturing, Inc. disc mulcher. These mulchers are designed and manufactured to provide years of productive and reliable service. The DMC60 series is intended to couple and be used with a large frame Compact Track Loader offered with various hydraulic flow ranges. Contact GR Manufacturing for the specific model for the flow that is best for the intended machine. The CTL must be equipped with a “Forestry Protection Package” meeting OSHA Logging Safety Standards, 29 CFR 1910.266.

The mulcher is designed to mulch woody vegetation. The woody vegetation can be oriented vertically or horizontally. If properly maintained the mulcher can handle a steady diet of hardwood stems up to 4 inches at DBH and softwood stems up to 5 inches at DBH.

Be sure to read and understand all safety precautions contained within this manual to ensure safe and reliable operation. Following the recommended operating techniques and maintenance practices will ensure that the disc mulcher operates at the most productive and efficient levels.

Sincerely,

**G.R. Manufacturing, Inc.**

4800 Commerce Circle

Trussville, AL 35173

Ofc: (800) 841-8001 or (205) 655-8001

Fax: (205) 655-8005

**GRtractors.com**

# G.R. Manufacturing, Inc.

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## Contents

Introduction .....	1
Warranty .....	3
Registration .....	6
Safety .....	7
Safety Alert Symbol .....	7
Follow Safety Instructions .....	8
Operate Only If Qualified .....	9
Machine .....	9
Wear Protective Equipment .....	10
Inspect Mulcher .....	11
Stay Clear of Moving Parts .....	12
Avoid High Pressures .....	14
High Debris Application .....	14
Prevent Fires .....	15
Features & Specifications .....	17
Getting Started .....	18
Installing Mulcher .....	18
Removing the Mulcher .....	18
Operation .....	19
Check Mulcher .....	19
Clean Debris from Machine and Mulcher .....	19
Cutting Tools / Teeth .....	20
Cutting and Processing .....	21
Service and Maintenance .....	23
Mulcher Housing .....	23
Bearing Housing .....	23
Hydraulic Motor .....	24
Disc .....	25
Torque Values .....	27
Troubleshooting .....	28
Vibration .....	28
Disc will not Rotate .....	28
Recommend Spare Parts List .....	28
Parts Diagram .....	29
Disc Assembly .....	29
Motor, Bearing Housing and Deck .....	30
Seal Kits .....	32
Fixed Teeth .....	32
Deck Cover .....	33
Hoses and Fence .....	34
Decals .....	35

## Warranty

### **PRODUCT WARRANTY AND RETURN POLICIES**

#### **Warranty**

The mulchers are warranted to be free of defects in materials or workmanship for a period of 1000 hours of operation or twelve (12) months from the date of shipment. Any other manufacturer's product sold as a component of our products is subject to that manufacturer's warranty, which may be different from this warranty. This warranty does not cover any abuse, misuse or modification of products. Operating the head with dull teeth is considered abuse and it will accelerate wear on other parts which will not be covered under warranty.

**G.R. MANUFACTURING, INC. DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES WITH RESPECT TO THE PRODUCTS, WHETHER EXPRESSED, IMPLIED OR STATUTORY, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.**

If our product fails to meet the above warranty, you should contact us at **1.800.841.8001** for remedy. We reserve the right to repair or replace the defective product under warranty, as we consider appropriate. Product that we request you to return to us under warranty should be sent freight prepaid. The return must have RGA number (see below). Product that is returned to you under warranty is shipped freight prepaid via appropriate carrier, at our discretion.

We will not be responsible for any incidental or consequential damages resulting from the use of our products. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you.

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## **Extra Work Authorization**

If there is a problem with the fit or installation of the product that you purchased, you must contact us immediately at **1.800.841.8001** prior to any modifications being made. Failure to do so may result in non-payment of claim. Together we will determine the necessity for you to make modifications to our product. Dealers must provide photos of problem area when requested by G.R. If deemed necessary, an Extra Work Authorization (EWA) will be issued, authorizing you to receive a credit from us for the agreed upon amount (Labor rate not to exceed \$95/hr). The amount of this credit is intended to compensate you for the labor and materials reasonably expected to correct the problem. You must have received the EWA prior to requesting a credit from us. Scuffs and scratches incurred during shipping will not qualify for EWA.

## **Returned Goods**

Before returning any product, a Return Goods Authorization (RGA) number must be obtained by contacting us. RGA numbers are valid for 30 days after issuance. The RGA number should be prominently displayed on the shipping label and packing list of the return shipment. A copy of your original packing list or invoice must accompany all returned products. Any products returned without an RGA number, incomplete or with a RGA number over 30 days old, may be refused. Returned goods must be shipped freight prepaid and insured by you.

A 15% restocking charge will be made on all authorized returns that are not due to an error on our part, provided the goods are received in resalable condition. No credit will be given if the goods cannot be reused. Special orders and some specific products as noted are not returnable.

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## **Shipping**

Our terms of sale are F.O.B. shipping point - Trussville, AL. We take normal precautions to insure safe arrival of our product but the responsibility for damage in transit is the carrier's whether it is visible or concealed damage. It is the dealer's responsibility to contact the carrier for reimbursement for parts damaged or lost during shipping. Damage should be noted on the Bill of Lading upon receipt of shipment. Replacement parts may be obtained from G.R. at our normal parts price. Freight charges are normally charged to your account with the carrier of your choice. We can ship freight prepaid and add a 15% service charge if you choose.

***We value your business and appreciate your cooperation with us on these conditions.***

This statement of Warranty and Policies dated **September 26, 2018** supersedes all previous statements of Warranty and Policies issued by G.R. Manufacturing.

# G.R. Manufacturing, Inc.

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## Registration

Record your mulcher's information for future reference:

Date Purchased:

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Model Number:

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Serial Number:

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Dealership Name:

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Dealer Location:

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Contact Number:

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Salesman:

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Application:

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## Safety

### Safety Alert Symbol



**This symbol identifies important safety messages to regarding the operation and installation of the disc mulcher. When this symbol is used, be aware of the possibility of serious injury or death. Follow all recommendations carefully.**

### Danger

- Identifies the most serious hazards.
- Are red in color
- Located near specific hazards.

### Warning

- Are orange in color.
- Located near specific hazards.

### Caution

- General precautions or information.
- Are yellow in color.

## Follow Safety Instructions



- Keep safety signs in good condition. Replace missing or damaged safety signs. Use this operator's manual for correct safety sign placement on mulcher. Be sure that new equipment components and repair parts include the current safety signs. Replacement safety signs are available from your G.R. Manufacturing dealer.
- Learn how to operate the machine and mulcher safely. Do not let anyone operate without instructions.
- Keep your machine and mulcher in proper working condition.
- If you do not understand any part of this manual and need assistance, contact your G.R. Manufacturing dealer.

## Operate Only If Qualified

- Do not operate this mulcher unless the operator's manual has been read carefully and you have been qualified by supervised training and instructions. Operators should be familiar with the job site and surroundings areas before operating.
- Try all of the machine's controls and functions with the machine in an open area before starting to work.
- Know and observe all safety rules that may apply to each work situation and work site.

## Machine

- Must be properly guarded to protect the operator meeting OSHA Logging Safety Standards, CFR 1910.266.
- Operator's compartment door must be closed when operating mulcher.
- Do not use on or near electrical power lines, telephone poles or fences. Electrocutation can occur even without actual contact with electric power source.

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## Wear Protective Equipment



- Guard against injury from flying pieces of metal or debris; wear goggles or safety glasses.
- Protect hands from sharp edges and teeth; wear protective gloves.
- Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear certified hearing protection such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.
- Avoid distractions. Operating equipment safely requires the full attention of the operator.
- Wear close fitting clothing and safety equipment appropriate to the job.

## Inspect Mulcher



- Inspect machine and mulcher carefully each day by walking around it and making the proper checks before starting.
- Use only genuine replacement parts to ensure mulcher's performance. Never substitute genuine parts with alternate parts not intended for the application as these can create hazardous situations or hazardous performance. Damage or malfunction caused by non-genuine parts is not covered by warranty.
- Do not perform modifications. Modifications to this mulcher may affect mulcher's reliability and may create a hazard for the operator or others near the unit.
- Keep all guards and shields in good condition and properly installed. Repair or replace damaged, worn or broken parts immediately. Pay special attention to loose hardware, hydraulic hoses and cutting teeth.
- The disc, flange and guard assemblies are heavy. Use extreme caution. Use suitable lifting device when removing components.

Stay Clear of Moving Parts

 **DANGER**



Rotating disc and thrown objects can cause serious injury, death or cause serious machine damage. Be aware of mulcher angle to prevent damage or injury.

 **DANGER**

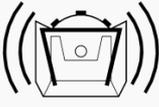
 **KEEP HANDS AND FEET CLEAR**

 **KEEP CLEAR OF DISCHARGE**

Rotating blade and thrown objects can cause serious injury or death. Exit machine only after disc stops. Operate away from people.



 **WARNING**



Excessive vibration can be hazardous or cause damage. If unbalanced or vibrating, shut down mulcher. Inspect and correct for imbalance before resuming operation.

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- Entanglements in moving parts can cause serious injury.
- The disc's teeth are sharp and can cause injury, even when not rotating.
- Stop machine's engine and disc rotation before examining, adjusting or maintaining any part of mulcher.
- The operator should never leave the machine, and other ground personnel should never approach the mulcher until the disc has come to a complete stop and the mulcher is lowered to the ground.
- Mulcher should never be operated at an angle where debris can be directed at the operator door or machine. Serious injury or damage may occur.
- Debris, rocks, gravel, chunks of wood, any tool, parts, etc... left on the disc during inspection or maintenance can all become deadly projectiles. Debris can fly off the disc at speeds over 180 mph. Stay clear of the disc at all times when the engine is running. Be sure that no one is in the chip path when it is turning. If anyone gets within 300 feet (90 meters) of the machine when operating shut down the machine until they leave.
- Bystanders must maintain a distance of 300 feet from the unit when it is operating.
- Never exceed the rpm limits of a disc (1200 rpm), serious damage or bodily injury may occur.
- **Shut the saw down immediately if an imbalance (shaking or vibration) occurs. Inspect and correct issue before restarting mulcher.**

## Avoid High Pressures



- Escaping fluid under pressure can penetrate the skin causing serious injury.
- Avoid the hazard by relieving pressure before disconnecting hydraulic lines or fittings.
- Secure and check all connections before applying pressure.
- Search for leaks with a piece of cardboard. Protect hands and body from high-pressure fluids.
- If accident occurs, see a doctor immediately. Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

## High Debris Application

- Mulching operations create large amounts of airborne debris. Operating in such environments requires frequent cleaning of the machine and mulcher. Frequency of cleaning will vary depending on a number of factors, including operating conditions, green or dried materials, moisture levels, etc.

## Prevent Fires



- Handle Fluids Safely - All fuels, most lubricants and some coolant mixtures are flammable. Store flammable fluids away from fire hazards.
- Clean Machine Regularly - Keep flammable debris (trash, leaves, twigs, straw, etc.), grease, and oil from accumulating in engine compartment, around fuel lines, hydraulic lines, exhaust components, and electrical wiring. Never store oily rags or flammable materials inside machine compartments.
- Maintain Hoses, Tubes and Wiring – Replace hydraulic hoses and tubes immediately if they begin to leak, and clean up any oil spills. Examine electrical wiring and connectors frequently for damage.
- Keep a Fire Extinguisher Available – Always keep a multipurpose fire extinguisher on or near the machine. Know how to use extinguisher properly.
- Be Aware of the Operating Environment – Airborne debris may contain sparks or embers. Do not operate near any flame.



## Features & Specifications

### **Disc:**

- 60 Inch Cutting Width
- 1000 Pounds
- 12 Perimeter Teeth
- 18 Bottom Teeth
- 12 Top Teeth
- Max 1100 RPM

### **Bearing Housing:**

- Large heavy duty spindle
- Oil filled

### **Hydraulic Motor:**

- Bent-axis piston or radial piston motor
- Secured Hydraulic Plumbing
- Optional Motor Sizes: 160cc, 150cc or 125cc
- Hydraulic Flow Required: 32 to 45 GPM depending on motor size

### **Deck:**

- Smooth Deck for Easy Cleaning
- Superior Line of Site to Disc
- Helical Processing Chamber
- Four (4) Fixed Teeth
- Discharge Deflector

### **Weight:**

- 2,700 lbs.

### **For Compact Track Loader:**

- John Deere 331G & 333G

## Getting Started

### Installing Mulcher

- Make sure that the mulcher attachment surfaces are clear of debris and hydraulic hoses are clear.
- Connect machine to Disc Mulcher following instructions of machine manufacturer for using attachments. Be sure to follow all safety instructions recommended by the manufacturer.
- Once installed and making sure hydraulic system is not engaged; clean hydraulic connectors and connect hydraulic hoses to couplers.
- With hoses connected, manipulate boom with mulcher to make sure hoses stay clear of tracks and pinch points.
- When area is clear, start disc to check for proper disc rotation at low idle and flow.

### Removing the Mulcher

- To disconnect, follow instructions from machine manufacturer.
- Disconnect the three hydraulic hoses from quick couplers.
- Secure hoses to protect from damage as disc mulcher is stored and out of operation.

## Operation

### Check Mulcher



- Check for loose or missing hardware. Tighten loose hardware and replace any missing hardware before operating. Proper fastener torque is extremely important. Use of a torque wrench is required.
- Check to make sure all guards are in place. Do not operate if guards are missing.
- Remove any loose objects lying on disc.
- Check spindle box for oil leaks and repair if needed.
- Inspect and replace any worn, torn or missing safety decals.
- Check to make sure all cutting teeth are sharp.

### Clean Debris from Machine and Mulcher

- Daily cleaning of machine and mulcher is recommended. This is best accomplished by using a backpack leaf blower (600 cfm recommended).

## Cutting Tools / Teeth

- **Keep Cutting Teeth Sharp.** It is recommended that the operator sharpens the teeth daily to maintain maximum cutting efficiency.
  - Teeth can be sharpened with a 4.5” disc grinder.
  - Teeth can be rotated if needed.
  - Teeth can be replaced if needed.
- Always inspect the disc assembly every shift **BEFORE** start-up. Disc should be inspected throughout each day, and immediately after contact with rocks or other foreign materials.
- Never operate the mulcher with the disc partially assembled, in an unbalanced condition, or with any parts missing. Serious bodily injury may result from spinning an improperly, or incomplete assembled disc. All teeth must be properly secured in place. (see torque specs in maintenance section)

## Cutting and Processing



**WARNING! Do not spin disc until everyone is a minimum of 300 feet (91 meters) from unit.**

- Cutting – Stems can be cut off with any portion of the exposed disc. Stems cut with the left side of the exposed disc are pushed away from the mulcher. Stems cut with the right side of the exposed disc will get pulled towards the processing chamber for processing.
- Stems can be cut at ground level or above ground level. If a stem is cut off above ground level it is recommended that you recut the stem at ground level.
- Processing – Stems cut with the right front half of the exposed disc can / will be pulled into the processing chamber. When a stem is cut and vertical on top of disc, back up and tilt head up to assist the stem into the processing chamber.
- If a stem is leaning towards or to the side of the mulcher it's best to cut the stem above ground level (3-5 feet) by tilting the front of the mulcher up to help overcome the lean and assist the stem into the processing chamber.
- Stems can be cut several feet above ground level. It is, however, recommended you tilt the front of the head up to minimize materials being thrown back on machine. Once the stem is cut (4 to 5 feet) above the ground, you can use

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the bottom of the disc to grind the stem by slowly lowering the disc onto the stem.

- Horizontal stems that are 4 inches or less at the base can be processed by tilting the front of the head down and using the right side of the disc to scoop up the stem, assisting it into the processing chamber.
- Use the bottom left side of the disc to process large stems (4" and above) that are lying on the ground. It will take multiple passes on large stems to slowly shave the stems before it is completely processed.
- Shut the mulcher down immediately if an imbalance (shaking or vibration) occurs. Inspect all parts on disc, hub, flange and shaft assemblies before restarting. An imbalanced condition can suggest serious problems such as loose bolts, missing parts, etc., and should not be taken lightly.

## Service and Maintenance

### Mulcher Housing

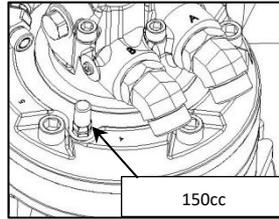
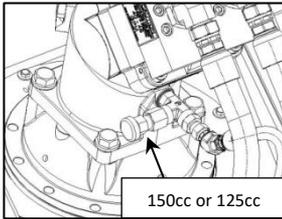
- It is recommended that the deck be cleaned daily and inspected.
- Check for structure damage and repair if located. Do not operate mulcher if housing is damaged.
- Check for loose or missing hardware. If any hardware is missing replace it with the proper hardware before operating. If any hardware is loose, torque it to the correct torque before operating.

### Bearing Housing

- Check oil level weekly. Remove the ½” pipe plug and oil should be visible. If not add gear oil until it is within ¼ inch of hole. Recommend using 90 weight gear oil.
- Change gear oil every 500 hours or yearly.

## Hydraulic Motor

- Check to make sure motor is secured to bearing housing.
- Check for leaks around the hydraulic fitting and hoses.
- Check for leaks between motor and bearing housing and replace O-ring if needed.
- If 150cc is removed for service, fill case with hydraulic fluid prior to putting back in service. Remove relief plug and fill case as needed.
- Check condition of relief valve on case drain. Should oil be present during operation or inspection, the case drain hoses fittings should be checked for proper connection or obstruction.



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## Disc

- Disassembly – Major rebuilds should be done with the disc removed. Disc should be disassembled and inspected every 1000 operating hours, or sooner, if rocks or other objects are contacted. Whenever a disc is torn down for inspection, inspect each part as it is disassembled for irregularities not obvious in the assembled disc. Pay particular attention to the thread quality of the bolts. Check previously hidden areas for cracks, gouges, movement, corrosion, improper fit or any other nonconformity or irregularity.
- The teeth holders will need to be removed. The cap screws threads and sleeves in the holders have Loctite on them and heat maybe required to break the bond. Be sure to heat only the screw and sleeves if needed.
- When all parts are disassembled and inspected as is, use a wire brush to clean disc and re-inspect before reassembly. Inspect the outer perimeter of the disc for cracks or wear.
- Assembly – Major assembling of the disc is best done with the disc removed.
- Reference part illustration for assembly.
- Sleeves should be coated with Loctite 680 or Permabond A134 (Green) and inserted into the holes of the tooth holders and disc. The sleeves should not protrude above

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either surface of the tooth holder. Secure sleeves with cap screws. **Always use new cap screws and sleeves at installation.**

- Use Loctite 262 (red) on 9/16 inch and 5/8 inch socket headed cap screws. All hardware must be torqued per the torque values below.
- Install disc onto spindle. Use Loctite 242 (Blue) on thread and torque to torque values below.
- Install teeth onto teeth holders. Apply anti seize to bolt threads and torque bolts to specs below. Make sure the teeth shoulders butt snugly up against the tooth holder as bolts are tightened.
- Rotate disk by hand and inspect for proper clearances inside processing chamber.
- Balance – Check balance of disc by slowly spinning the disc up to speed. It is very important that the disc remain balanced. **Whatever is done to one side must be done to the opposite side.** (ex: If you replace a tooth holder on one side it must be replaced on the opposite side).
- Check tooth holders periodically for signs of wear. It is extremely dangerous to run a disc with tooth holders worn. The potential for damage or harm is very high when neglected.

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## Torque Values

Sleeve with 9/16 NF Screw, Lubricated.....	110 ft-lbs
Sleeve with 5/8 NF Screw, Lubricated.....	125 ft-lbs
Beaver Teeth, 3/4 NF Bolt, Lubricated .....	200 ft-lbs
Hydraulic Motor to Bearing Housing, 3/4"-10 Bolt, Dry .....	375 ft-lbs
Motor to Adapter (Radial piston only), M12 x 1.75 Hex Bolt .....	93 ft-lbs
Bearing Housing to Deck, 5/8"-11 Hex Bolt, Dry.....	212 ft-lbs
Blade Cap, 3/4"-10 Hex Bolt, Lubricated .....	270 ft-lbs



Thank you for purchasing this product from G.R. Manufacturing, Inc. If you have any suggestions regarding its design, installation, or performance, please contact us at (205) 655-8001. We will be glad to hear from you.