

GRAVELY

A DIVISION OF CLARKE-GRAVELY CORPORATION
To continue its program of quality and design improvement, the manufacturer reserves the right to change specifications, design or prices without notice and without incurring obligation.

OWNERS MANUAL

30" Rotary Mower
consisting of:
21407 30" Mower drive and
21385 30" Mower deck assembly
or
21407 30" Mower drive and
21386 30" Mower deck assembly

Form No. 21405 (9-76)



GENERAL

1. The 30" Rotary Mower is designed and built to give many years of excellent service. The mower is recommended for rough mowing conditions; has all gear drive, heavy steel deck, rugged skids, and heavy duty, adjustable blade. The mower attaches to all Gravely Two Wheel Tractors.
2. The Owner's Manual includes the parts list, set-up, safety operation, and maintenance instructions. Use the parts list for reference to individual part numbers. Contact the Gravely Dealer for further information.
3. **CUTTING WIDTH:** 30" (.762 M)
LENGTH: 36 1/2" (.927 M)
HEIGHT: 14 1/2" (.368 M)
WIDTH: 32" (.813 M)
WEIGHT: 120 lbs. (54 Kg)
DRIVE: Right angle bevel gear in cast iron housing, tapered roller bearings.
DECK: Heavy duty 1/4" (6.35 mm) welded steel.
BLADE (Single): Steel, 30" (.762 M) length, 3/8" (9.53mm) thick, hi-strength, hi-lift.
BLADE (Twin): Steel, 30" (.762 M) length, 1/4" (6.35 mm) thick, hi-strength, hi-lift.
FEATURES: All gear drive, adjustable swivel action.
USAGE: Heavy mowing conditions.
APPLICATION: All Gravely Two Wheel Tractors.

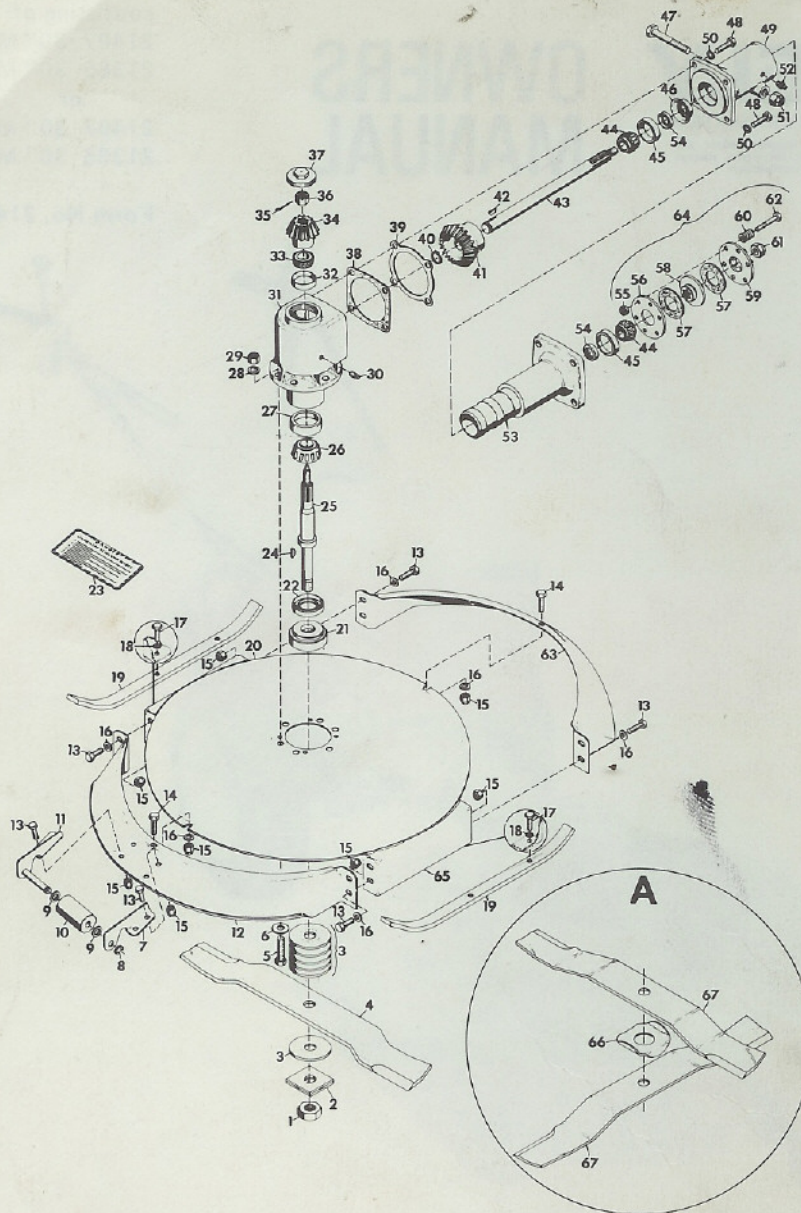


fig. 1

Illustrated Parts List

ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
1.	451543	Nut, Jam; 7/8-9 Heavy	36.	125384	Nut, Slotted; 5/8-18 Hex Thick
2.	20626A1	Weldment, Spindle Nut Washer	37.	10499P1	Plug, Pipe; 2 In
3.	12858P1	Collar, Loose; 1/4"	38.	12491P1	Gasket, Gear Housing To Swivel Casting
4.	13209P1	Blade, Rotary Mower; Heavy Duty Clockwise	39.	12490P1	Shim, Gear Housing; .005
5.	180177	Bolt, Hex; 1/2-13 x 1 1/2	40.	15187P1	Ring, Retaining
6.	120390	Washer, Flat; 9/16 x 1 3/8 x .109	41.	12862P1	Gear, Bevel; Input
7.	21399P1	Bracket, Wheel L.H.	42.	120502	Key, Woodruff; 3/16 x 7/8 Hard
8.	21396P1	E-Ring	43.	21392P1	Shaft, Drive
9.	9421879	Washer, Flat; 21/32 x 1 1/4 x .100	44.	13144P1	Cone, Roller Bearing
10.	15351P1	Roller, Gage	45.	13143P1	Race, Roller Bearing
11.	21400A1	Weldment, Bracket; Gage Wheel	46.	12550P1	Retainer, Oil Seal
12.	21388P1	Fender, Front 30" Mower	47.	180191	Bolt, Hex; 1/2-13 x 3 1/4
13.	180077	Bolt, Hex; 5/16-18 x 3/4	48.	180122	Bolt, Hex; 3/8-16 x 1
14.	180078	Bolt, Hex; 5/16-18 x 7/8	49.	12023P1	Casting, Swivel
15.	9419455	Nut, Lock; 5/16-18 Washer Insert	50.	120382	Washer, Lock; 3/8 SP
16.	120386	Washer, Flat; 5/16 x 47/64 x .065	51.	435507	Nut, Lock; 1/2-13 Washer Insert
17.	181593	Bolt, Hex; 5/16-24 x 5/8	52.	411010	Fitting, Lube; 1/8
18.	158538	Washer, Lock; 5/16 Int. Tooth	53.	21391P1	Housing, Shaft
19.	21395P1	Skid, Rotary Mower	54.	13122P1	Seal, Oil; .812 x 1.250 x .312
20.	10110A1	Weldment, Deck 30 In; with Skid Panels	55.	18277P1	Nut, Lock; 5/16-24 Washer Insert Light Thin
21.	12861P1	Collar, Fixed	56.	12868P1	Plate, Back
22.	13171P1	Seal, Oil; (Dual Lip) 1.750 x 2.441 x .312	57.	12870P1	Washer, Friction
23.	18549P1	Decal, Danger	58.	12869P1	Plate, Drive
24.	124549	Key, Woodruff; 3/16 x 3/4 Hard	59.	12867P1	Plate, Dog
25.	20676P1	Shaft, Rotor	60.	12871P1	Spring, Compression; 3/4 x 2200 Lb/In
26.	13142P1	Cone, Roller Bearing	61.	13412P1	Nut, Lock; 5/8-18 Light Thin, Washer Insert
27.	13139P1	Race, Roller Bearing	62.	181618	Bolt, Hex; 5/16-24 x 1 3/4
28.	120384	Washer, Lock; 1/2 SP	63.	21390P1	Fender, Rear 30" Mower
29.	120378	Nut, Hex; 1/2-13	64.	10102A1	Assembly, Clutch Attachment
30.	103877	Plug, Pipe; 1/8 In. Sq. HD Steel	65.	12855P1	Panel, Skid; May Be Ordered Separately
31.	12853P1	Housing, Gear	66.	12859P1	Washer, Stationary
32.	13145P1	Race, Roller Bearing	67.	20900P1	Blade, 30" Mower; Thin
33.	13146P1	Cone, Roller Bearing	NS	12852P1	Shim, Gear; .005
34.	12850P1	Gear, Bevel; Output	NS	13646P1	Shim, Gear; .010
35.	119120	Pin, Cotter; 3/32 x 1 1/4	NS	14101P1	Shim, Gear; .020

NOTE:

CIRCLE "A" PERTAINS TO 30" TWIN BLADE MOWER (21386 A1)

ASSEMBLY

1. Assemble the deck gauge roller. Install a flat washer (item 9), gauge roller (item 10), flat washer (item 9) and roller bracket (item 7) on the roller bracket weldment (item 11) and secure with "E" ring. See fig. 2.

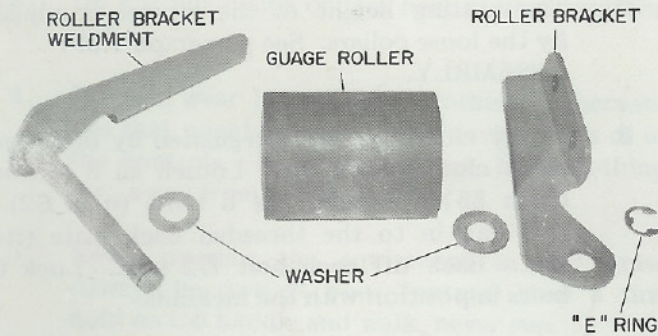


fig. 2

2. Bolt the gauge roller assembly to mower deck with four bolts (item 13) and locknuts (item 15). See fig. 3.

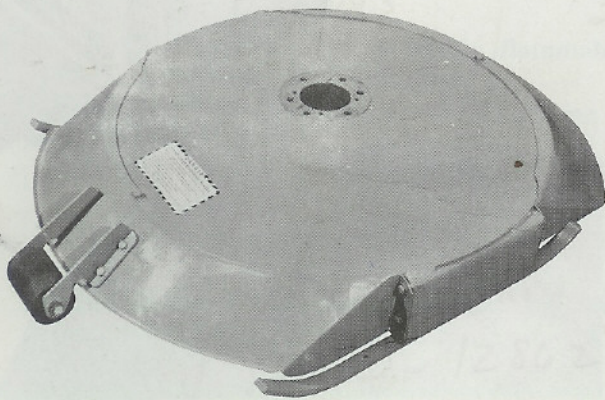


fig. 3

3. Set the drive on the deck. Bolt the drive in place using the 6 bolts (item 5), flat washers (item 6), lockwashers (item 28) and nuts (item 29). The bolts must be inserted from under the deck. See fig. 4.
4. Turn the mower deck over for blade installation, and adjustment.

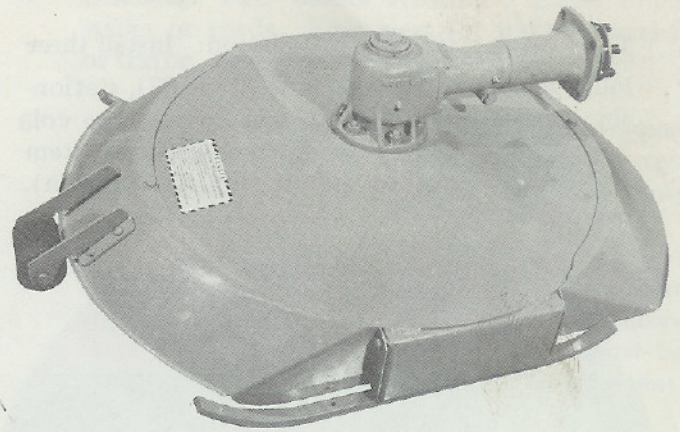


fig. 4

5. The cutting height is determined by the placement of the loose collars above or below the blade. Each loose collar changes the cutting height by 1/4" (6.35 mm). If the blade is raised, the loose collars removed from above the blade must be replaced below the blade. The spindle nut washer must be between the nut and loose collars. Unless the desired cutting height is known, it is recommended that three loose collars be used below the blade. This gives an average cutting height. Always reinstall all the loose collars either above or below the blade.
6. Single Blade Installation: Install three loose collars, (item 3), blade (item 4), the remaining loose collars, spindle nut washer (item 2) and nut (item 1). Torque nut to 100 ft. lbs. (135.6 Nm). See fig. 5.

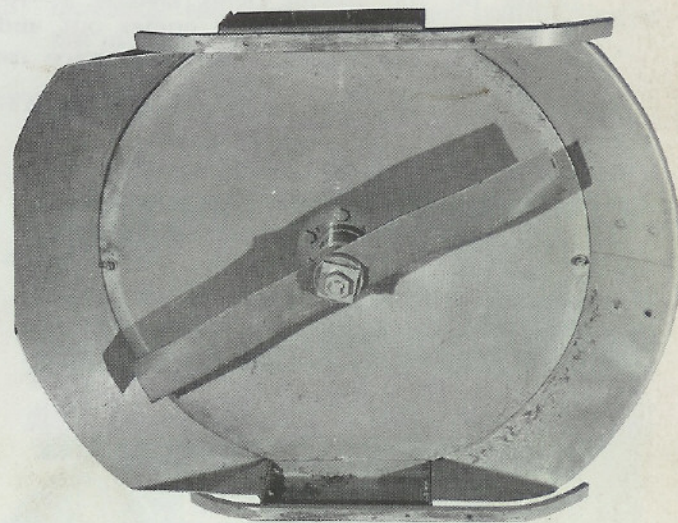


fig. 5

Twin Blade Assembly Installation: Install three loose collars (item 3), blade (item 67), stationary washer (item 66), the remaining loose collars, spindle nut washer (item 2) and nut (item 1). Torque nut to 100 ft. lbs. (135.6 Nm). See fig. 6.

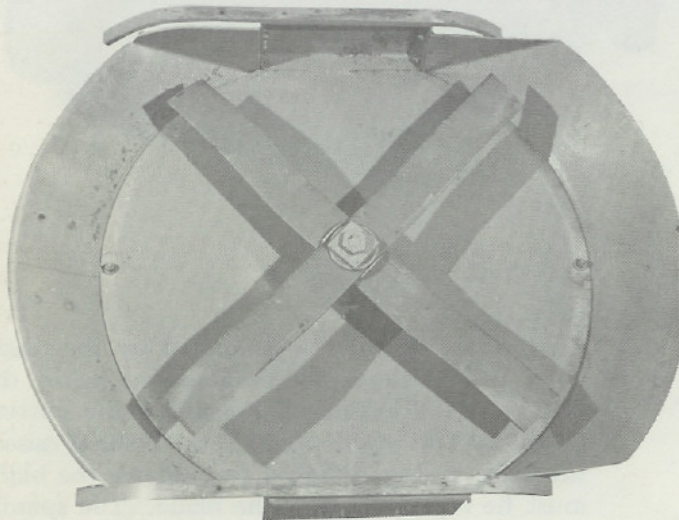


fig. 6

LUBRICATION

1. Remove the filler plug and level plug. Fill the drive housing to the oil level plug with SAE 90 gear lubricant. Replace the plugs. Check the level periodically especially if signs of leakage are present. See fig. 7.
2. Grease the swivel casting through the grease fitting on the casting with general purpose grease. Add grease until it comes out under the swivel adjustment. Regrease once each season. See fig. 7.

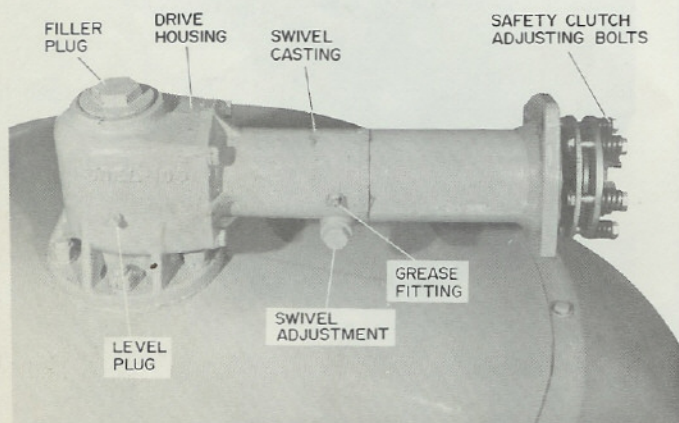


fig. 7

ADJUSTMENTS

1. Swivel action of the mower is regulated by the nut and bolt on the swivel casting. See fig. 7. Loosening allows more swivel action; tightening reduces the action. The swivel action should be only loose enough to allow the mower to follow ground contour.
2. The cutting height of the mower is adjusted by the loose collars. See paragraph 7 of ASSEMBLY.
3. Safety clutch action is regulated by the attachment clutch assembly. Loosen all 6 locknuts (item 55). Tighten the 6 bolts (item 62) all the way in to the threaded back plate (item 56). Back off each bolt 1/2 turn. Lock the bolts in position with the locknuts.

INSTALLATION

1. The mower attaches to the tractor with 2 bolts and 2 nuts as shown in fig. 8. Do not damage the threaded studs.

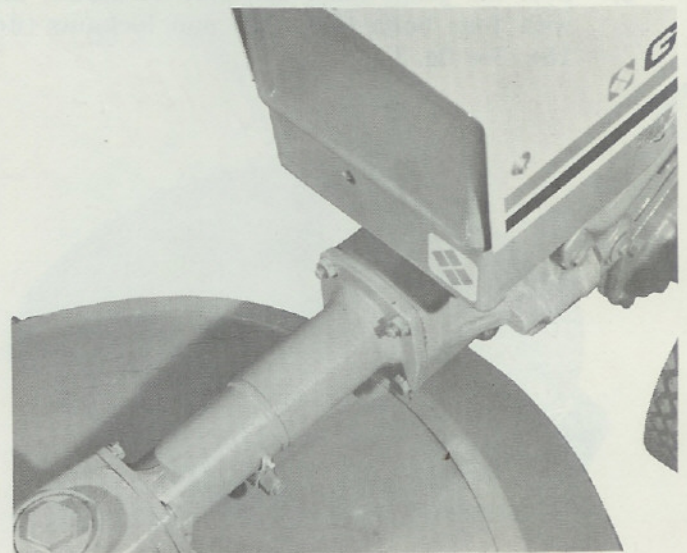


fig. 8

TRAINING

1. Read the Tractor Owner's Manual carefully. Be thoroughly familiar with the controls and proper use of the equipment. Know how to stop the unit and disengage the controls quickly.
2. Never allow children to operate the equipment. Never allow adults to operate the equipment without proper instructions.
3. Keep area of operation clear of all persons, especially small children and pets. Never direct the discharge toward bystanders or allow anyone in front of the unit.

PREPARATION

1. Thoroughly inspect the work area where the equipment is to be used and remove all stones, glass, metal, bones, sticks, wires and any other foreign objects. Stay alert for holes and other hidden hazards.
2. Disengage all clutches and shift into neutral before starting engine.
3. Do not put hands or feet near or under rotating parts.
4. Do not wear loose fitting clothing or accessories that might get caught in moving parts or on the controls. Keep hands, feet, hair, clothing, etc., away from moving parts.
5. Never operate the equipment in wet grass. Always be sure of your footing; keep a firm hold on the handle and walk, never run.
6. Do not operate the equipment when barefoot or wearing open sandals. Always wear substantial footwear and eye protection.
7. Never attempt to make any adjustments while engine is running.
8. Never operate the mower without good visibility and light.
9. Handle fuel with care, it is highly flammable.
 - (A) Use approved fuel container.
 - (B) Never add fuel to a running engine or hot engine.
 - (C) Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
 - (D) Replace gasoline cap securely and wipe up spilled fuel.
 - (E) Always fill electric start tractors with tractor hood in the closed position.

OPERATION

1. Exercise caution, especially when operating in reverse.
2. Do not operate equipment except from proper operator's position.
3. Keep safety devices and shields in place at all times.
4. Do not allow passengers to accompany the operator at any time.

5. Disengage PTO before crossing a gravel drive, walks or roads. Stay alert for hidden hazards or traffic.
6. Use extreme caution when operating on slopes. Reduce speed on all slopes and sharp turns. Mow across the face of slopes. DO NOT mow excessively steep slopes.
7. After striking a foreign object, stop the engine and put the PTO in the OUT position before inspecting for damage. Any damage must be repaired before restarting the equipment.
8. Before cleaning, repairing, or inspecting, make certain the blade and all moving parts have stopped. Remove the key and disconnect the spark plug wire to prevent accidental starting.
9. If the unit should start to vibrate abnormally, stop the engine, disengage the PTO, and check for the cause. Abnormal vibration is generally a warning of trouble. If unable to locate cause, call your service dealer.
10. Take all possible precautions when leaving the equipment unattended. Stop the engine, disengage the PTO, and remove the key.
11. Do not run engine indoors, except when starting engine and for transporting equipment in or out of building. Open outside doors as exhaust fumes are dangerous.
12. Never operate machine at high transport speeds on slippery surfaces.
13. Disengage the tractor PTO when transporting or not in use.

OPERATION

1. Refer to the Tractor Owner's Manual for safety and operating instructions to engage and disengage PTO (Power Take-Off).
2. After the PTO is engaged, run the engine at full throttle. In thick, lush growth, reduce ground speed (not engine speed) by use of the High/Low Gear Control, or the Swiftmatic, if equipped, to allow the mower enough time to cut and discharge.

ROUTINE MAINTENANCE

1. Check the rotor shaft nut (item 1) to insure tightness.
2. Check PTO attaching bolts and nuts to insure tightness.
3. Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
4. Perform the lubrication as described in LUBRICATION.
5. Keep mower blade(s) sharp and balanced. Replace blade(s) if cracked or damaged. Replace blade when width, at cutting edge, is less than 2" (5.08 cm).
6. Clear the mower of cuttings and debris.

REMOVAL FROM TRACTOR

1. Reverse procedure as described in INSTALLATION. NOTE: If another front attachment is not used on the tractor, install the PTO cover plate to prevent the loss of oil, and to keep the PTO clutch in place, and free of dirt.

STORAGE

1. Clean mower of all cuttings and dirt.
2. Perform all lubrication maintenance.
3. Apply a light coat of oil to preserve the finish and appearance.

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LIMITED WARRANTY

This Limited Warranty is issued by Clarke-Gravely Corporation, Gravely Division, and consists of the following terms:

1. Only the original purchaser of new Gravely equipment is covered by this Warranty.
 2. This Warranty covers repair or replacement of parts manufactured by Gravely which are defective in material or workmanship. Gravely will pay for parts and labor only.
 3. The Warranty starts the date of purchase and lasts for NINETY (90) DAYS for products used in commercial applications, and TWELVE (12) MONTHS for products used by the owner to maintain his personal residence. Commercial means any use other than to maintain the grounds around the personal residence of the owner of the product.
 4. Some components of Gravely equipment are not covered by the Gravely Warranty. These components are covered by the original manufacturer's warranty, they are:
 - (a) Engines - Onan and Briggs & Stratton
 - (b) Tires - Goodyear, Goodrich & Carlisle
 - (c) 34" Mower Gear Box - Peerless
 5. To obtain warranty service on Gravely equipment including components not manufactured by Gravely, use this procedure:
 - (a) Notify the Gravely dealer from whom you purchased the equipment.
 - (b) If you have moved and it is not convenient to notify the selling dealer, notify the nearest Gravely dealer. You should supply this dealer with a copy of the bill of sale as proof of the date of purchase.
 - (c) Make arrangements to have the equipment delivered to the dealer (refer to paragraph 6 (a) below).
 - (d) If you have any questions concerning the Gravely Warranty, they should be referred to:

Gravely Division
Clarke-Gravely Corporation
One Gravely Lane
Clemmons, North Carolina 27012
Attn: Manager of Customer Services
 - (e) Warranty service on Gravely equipment must be performed by an authorized Gravely dealer or Gravely factory branch.
 6. This Warranty does not cover the following:
 - (a) Transportation between owner's home or place of business and the dealership. If the dealer provides the transportation of the equipment, he will charge the owner his usual rate for such service.
 - (b) Normal maintenance services and normal replacement of items such as spark plugs, belts, oil, oil filters, air filters, and mower blades.
 7. GRAVELY MAKES NO OTHER EXPRESS WARRANTIES. ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES AS TO MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED IN DURATION TO THE PERIOD SET OUT IN PARAGRAPH 3 ABOVE. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE STATEMENT MAY NOT APPLY TO YOU.
 8. GRAVELY SHALL HAVE NO RESPONSIBILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE BREACH OF ANY WARRANTY, INCLUDING, BUT NOT LIMITED TO, INCONVENIENCE, RENTAL OR PURCHASE OF REPLACEMENT EQUIPMENT, LOSS OF PROFITS OR COMMERCIAL LOSS. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.
 9. This Warranty gives you specific legal rights, and you may have other rights which vary from state to state.
 10. A Gravely equipment registration card is supplied with each Gravely tractor or major attachment. Please complete the card and return it to Gravely at the address listed on the card. The equipment registration card will be used by Gravely for:
 - (a) Recording date of purchase.
 - (b) Notification of owners in compliance with the Consumer Product Safety Act, should any notification be necessary.
- The return of registration card is not required in order to take advantage of this Warranty.
11. This Warranty is not subject to change or modification by anyone, including Gravely dealers and no Gravely dealer is authorized to make any representations or promises on Gravely's behalf.

 **GRAVELY**

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