

# **GRAVELLY** OPERATOR'S MANUAL

**NAME: STEERING SULKY**

**PART NUMBER(S): 15590**



The Steering Sulky is for use with the Two Wheel tractor.

The Dual Wheel Kit (part number 18886) is needed.

All reference to left side, right side, front and rear are given from the operator's position.

To continue its program of quality and design improvement, the manufacturer reserves the right to change specifications, designs and prices without notice and incurring obligation.

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## 1.0 WARNINGS - FOR YOUR SAFETY

**NOTE:** This warning symbol  indicates that there is danger to persons or equipment. Read these warnings carefully and follow them.

This section gives warnings for you about operating and doing maintenance on this equipment.

Using this equipment the wrong way can cause injury to persons and damage to the equipment. Persons operating or doing maintenance on this equipment must read this Operator's Manual and follow the instructions.

It is important to understand that this Operator's Manual and other Gravely instruction books do not list every possible danger. It is not possible for Gravely to know and tell all the dangers in operating and doing maintenance on the equipment.

The purchaser must give these instructions to the person operating and doing maintenance on this equipment. The purchaser must get the operator and person doing maintenance on this equipment to use eye and foot protection.

### 1.1 INSTRUCTIONS BEFORE OPERATION

1. Read the Operator's Manual for the tractor and this Operator's Manual carefully before operating or doing maintenance.
2. Learn the location and the function of all the tractor and the attachment controls.
3. Know how to use the controls to stop the tractor and the steering sulky quickly.
4. Never permit children to operate or ride on the tractor or the steering sulky.
5. Use caution with gasoline. Gasoline is very flammable. Keep gasoline in a clean and tight container. Keep gasoline away from fire or hot items. Never put gasoline in the fuel tank while the engine is running or hot. Clean any leakage of gasoline from the tractor before starting the engine.

6. The tractor must be equipped with dual wheels before operating with a steering sulky.

## 1.2 PREPARATION FOR OPERATION

1. Check the area of operation and remove all material that will be hit by the tractor.
2. Make sure all shields and guards are in the correct position before operating.
3. Wear strong shoes. Wear clothing that is not loose. Wear eye protection.
4. Before starting the engine, put the direction control lever in the "NEUTRAL" position and the power take off (PTO) control in the "OUT" position.
5. Keep the tractor and the steering sulky in good operating condition. Do the maintenance as shown in the Operator's Manual.
6. Do not operate the tractor and the steering sulky where the area of operation is too dark for the operator to see.
7. Never operate the tractor or the steering sulky when there is damage to any part or when any part is not in the correct position.

## 1.3 OPERATION

1. Keep away from moving parts.
2. Keep all persons and animals away from the area of operation.
3. Do not let persons ride on the tractor or the steering sulky.
4. When operating on slopes, disconnect the steering sulky.
5. Never operate the steering sulky on slopes or rough ground.
6. Always look for and keep away from holes and other hazards.
7. Use caution when moving backwards. Look for persons and hazards in the way.

8. After hitting an object, stop the tractor and the engine.

9. Operate the equipment only when in the operator's position.

10. Put the PTO control in the "OUT" position before leaving the tractor. Turn the ignition switch to the "OFF" position and remove the key from the ignition switch.

11. If there is a sudden change in the sound or vibration of the tractor or the steering sulky stop the tractor and check for damage. Make repairs before operating.

12. Never start and run the engine inside a building except to move the equipment outside. Exhaust fumes are dangerous.

13. Always follow traffic laws while going on or near a road.

14. Go slow on surfaces where the tractor can slide.

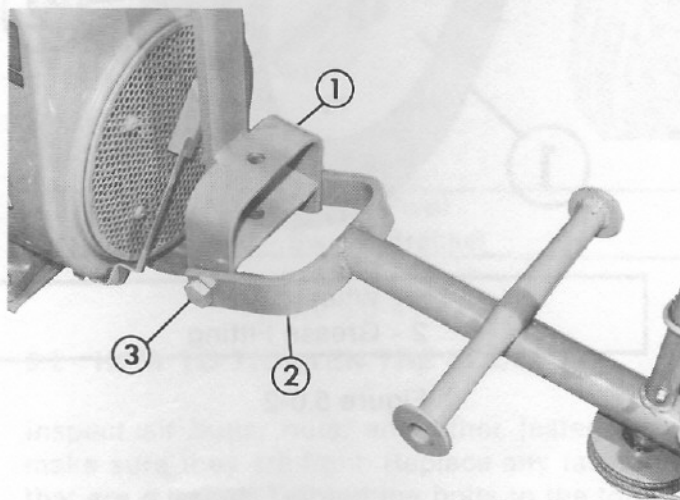
15. Put the PTO control lever in the "OFF" position before leaving the operator's position to make adjustments or to do maintenance. Turn the ignition switch to the "OFF" position. Wait until the engine and moving parts have stopped.



## 2.0 HOW TO CONNECT THE STEERING SULKY TO THE TRACTOR

**⚠ WARNING:** Stop the engine before connecting the steering sulky to the tractor.

1. Align the hole in the steering sulky hitch with the hole in the tractor hitch. See figure 2.0-1.



- |   |
|---|
| 1 - Tractor Hitch<br>2 - Steering Sulky Hitch<br>3 - Hitch Bolt |
|---|

Figure 2.0-1

2. Put the hitch bolt through the hole in the steering sulky hitch and the hole in the tractor hitch. See figure 2.0-1.
3. Put a flat washer and a lock washer on the hitch bolt and install the 1/2" nut. See figure 2.0-1.
4. Repeat steps 1, 2, 3, and 4 for the other hitch bolt.

## 3.0 HOW TO DISCONNECT THE STEERING SULKY

1. Remove the 1/2" nut, the lock washer, the flat washer, and the hitch bolt from the steering sulky hitch and from the tractor hitch.
2. Remove the steering sulky from the tractor.
3. Fasten the hitch bolt, the flat washer, the lock washer, and the 1/2" nut on the steering sulky hitch.

## 4.0 HOW TO OPERATE THE STEERING SULKY

**⚠ WARNING:** Disconnect the steering sulky before operating on slopes or rough ground.

Read this Operator's Manual and the Operator's Manual for the tractor before operating the equipment.

**⚠ WARNING:** Use a slow speed the first time you operate the tractor and the steering sulky.

1. Start the engine. Wait until the engine is running smoothly before operating the equipment.
2. Operate in the open, without the PTO "ON", until the operator becomes familiar with the equipment.
3. Move the throttle to the "FAST" position.
4. Put the "GEARSHIFT" in "LOW" and the "RANGESHIFT" in "LOW".
5. Put the direction control lever in "FORWARD".

6. Rotate the steering wheel clockwise to steer the tractor to the right.
7. Rotate the steering wheel counterclockwise to steer the tractor to the left.

**⚠ WARNING: Make all sharp turns at a slow speed.**

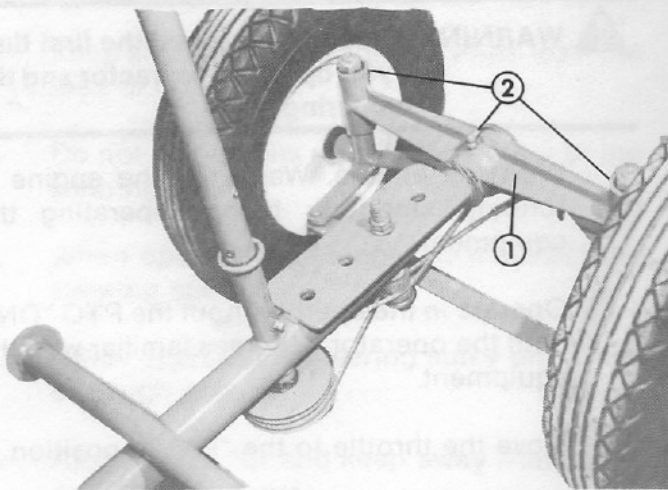
## 5.0 HOW TO DO MAINTENANCE ON THE STEERING SULKY

### 5.1 HOW TO LUBRICATE THE STEERING SULKY

**NOTE: Add multi-purpose grease to the grease fittings after every eight hours of operation.**

**⚠ WARNING: Stop the engine of the tractor before lubricating the steering sulky.**

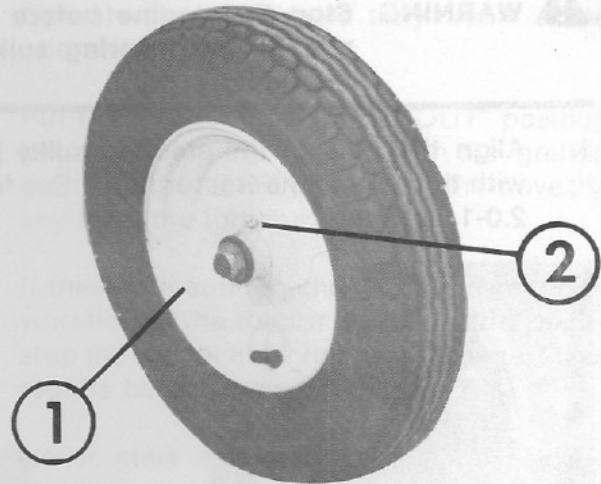
1. Clean the grease fittings and the area around the grease fittings.
2. Put multi-purpose grease in the grease fitting until it shows at the ends of the bearings.
3. The grease fitting locations are:
  - A. The crossbar - three. See figure 5.0-1.



1 - Crossbar  
2 - Grease Fitting

Figure 5.0-1

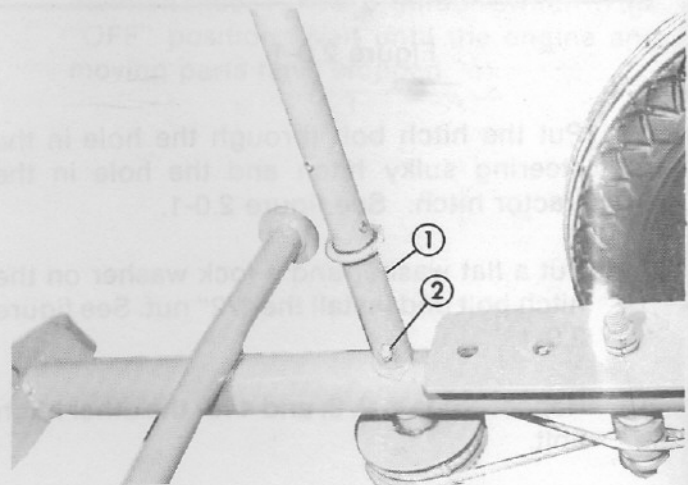
- B. The wheels - two. See figure 5.0-2.



1 - Wheel  
2 - Grease Fitting

Figure 5.0-2

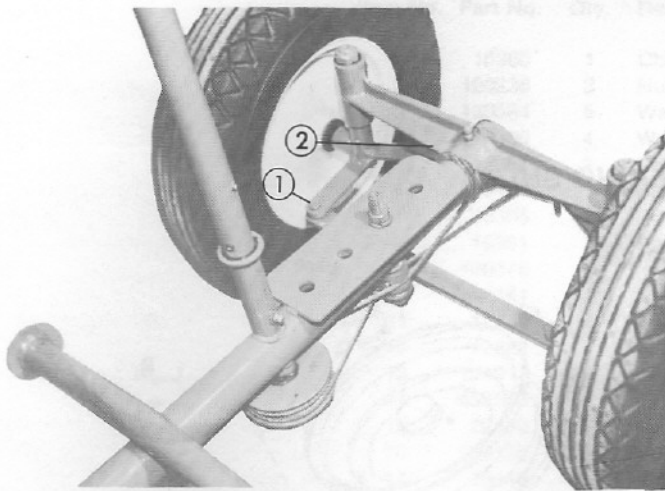
- C. Steering Column - one. See figure 5.0-3.



1 - Steering Column  
2 - Grease Fitting

Figure 5.0-3

4. Put oil on the tiebar pivot and the swivel bracket. See figure 5.0-4.



- |                    |
|--------------------|
| 1 - Tiebar Pivot   |
| 2 - Swivel Bracket |

Figure 5.0-4

## 5.2 HOW TO TIGHTEN THE BOLTS

Inspect all bolts, nuts, and other fasteners to make sure they are tight. Replace any fasteners that are missing. Tighten the bolts to the torque given in figure 5.0-5, unless shown differently.

BOLT TORQUE SPECIFICATIONS		
BOLT SIZE	FOOT POUNDS (ft. lbs.)	NEWTON METERS (N.m)
1/4"	7	9.5
5/16"	14	19
3/8"	25	34
7/16"	40	54
1/2"	60	82
9/16"	83	113
5/8"	120	163
3/4"	200	271

Figure 5.0-5

## 5.3 HOW TO CHECK THE AIR PRESSURE IN THE TIRES

**NOTE:** Use a low pressure air gauge when checking the air pressure.

Put air in the tires to a pressure of 10 psi (.70 kg/cm<sup>2</sup>).

## 6.0 HOW TO PUT THE STEERING SULKY IN STORAGE

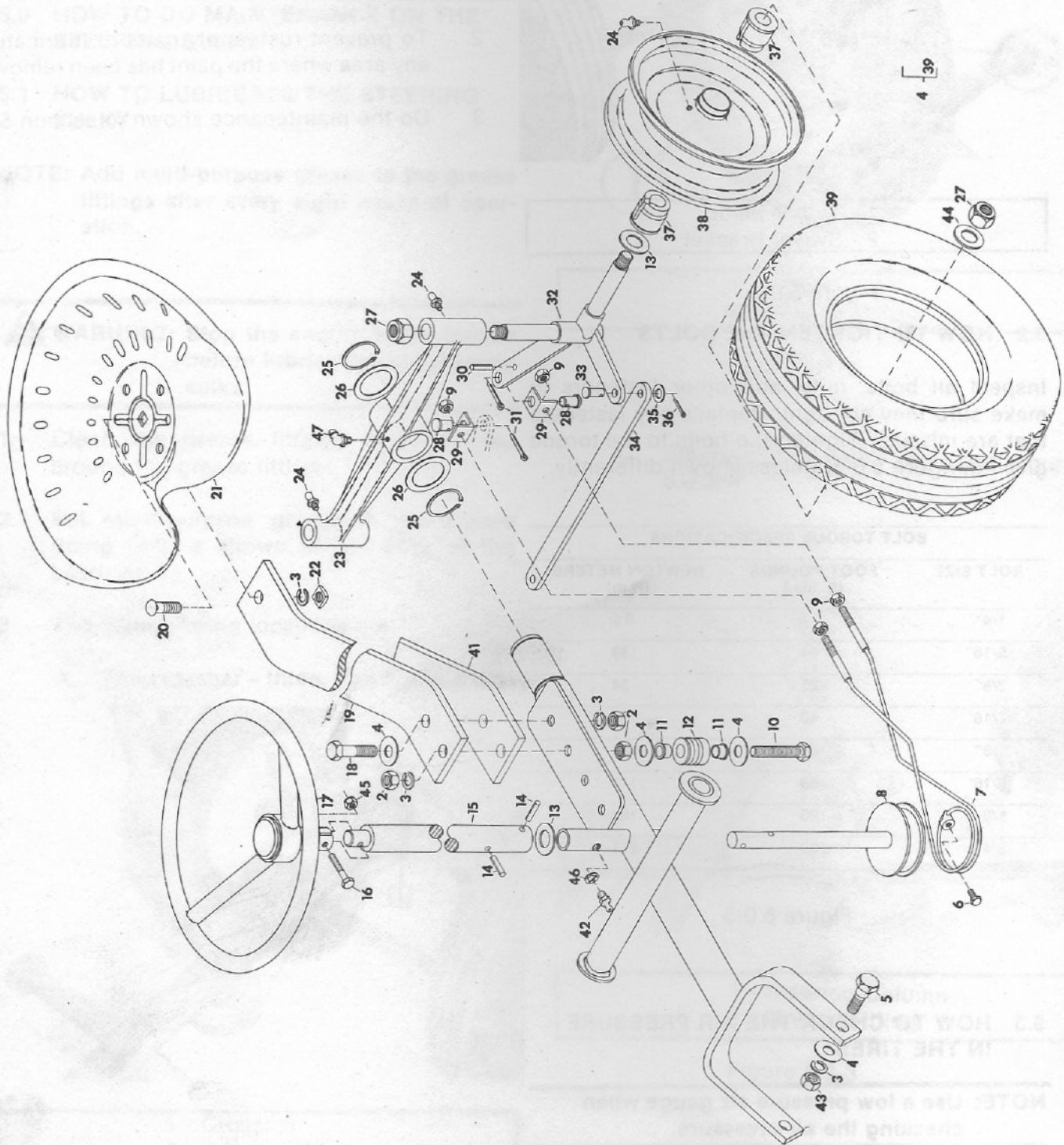
If the steering sulky is not to be used for three months or more do the following:

1. Clean all debris and dirt from the steering sulky.
2. To prevent rust, apply paint or lubricate to any area where the paint has been removed.
3. Do the maintenance shown in section 5.0.



# 7.0 ILLUSTRATED PARTS AND PARTS LIST

## STEERING SULKY



Item No.	Part No.	Qty.	Description
1	10360	1	Chassis, Sulky Weldment
2	120238	3	Nut, Jam; 1/2-13 Hex
3	120384	5	Washer, Lock 1/2 Reg.
4	120390	4	Washer, Flat; 9/16 x 1-3/8 x .109
5	12887	2	Bolt, Hitch
6	18156	1	Support, Rear Frame
7	10365	1	Cable, Steering
8	10361	1	Reel Assembly
9	120376	4	Nut, Hex; 5/16-18
10	14181	1	Bolt, 1/2-13 x 5 1/3-1/2 Thread
11	12889	2	Bushing
12	12888	1	Pulley, Cable Guide
13	131017	2	Washer, Flat; .812 x 1.496 x .134
14	453670	2	Pin Spring; 1/4 x 1-1/8
15	20430	1	Column, Steering
16	180125	1	Bolt, Hex; 3/8-16 x 1-3/8
17	19448	1	Wheel, Steering
18	180192	1	Bolt Hex; 1/2-13 x 3-1/2
19	12520	1	Assembly, Seat Spring
20	120917	2	Bolt; 1/2-13 x 1-1/2 RD HD SQ NK
21	12521	1	Seat
22	125536	1	Nut Square; 1/2-13
23	12878	1	Bar, Cross
24	411027	2	Fitting, Lube; 1/4-28
25	14085	2	Ring, Retaining
26	13470	2	Washer
27	13412	2	Nut, Lock; 5/8-18 L.T.
28	12886	1	Pin, Swivel
29	12885	1	Bracket, Swivel
30	273757	1	Pin, Spring; 1/4 x 1-7/8
31	187988	2	Pin, Cotter; 3/16 x 1-1/4
32	10362	1	Axle, Left Asm.
NS	10363	1	Axle, Right Asm.
33	431780	2	Pin, Clevis; 3/8 x .750
34	12883	1	Bar, Tie
35	120394	2	Washer, Flat; .406 x .812 x .065
36	121222	2	Pin, Cotter 3/32 x 5/8
37	12345	4	Bushing, Wheel
38	10450	2	Wheel, Asm less Tire Lube
39	12356	2	Tire
NS	13573	2	Tube, Tractor Tire
NS	11191	2	Valve, Stem Asm
40	10141	2	Assembly, Super Grip Wheel (Includes Items No. 38 & 39)
41	17839	1	Plate, Reinforcement
42	14406	1	Fitting, Lube; 1/4-28
43	120378	2	Nut, Hex; 1/2-13
44	131016	2	Washer, Flat; .656 x 1.312 x .095
45	456004	1	Nut, Lock; 3/8-16 Washer Insert Hex
46	120423	1	Washer, Lock; 1/4 Int Tooth Type A
47	411032	1	Fitting, Grease 90 Deg.



## LIMITED FIVE-YEAR WARRANTY

1. This Limited Five-Year Warranty is issued by Gravely International, Inc., only to the original purchaser. If Gravely equipment is leased by Gravely, this Warranty shall extend also to the original lessee as if such lessee were the original purchaser.
2. Gravely warrants that all new equipment manufactured by Gravely ("Gravely Products") shall be free of defects in material and workmanship for the term described in paragraph 4, below. Except as hereinafter provided, this Warranty does not cover any engine, tires or battery forming a part of the Gravely Product. Engine and tires are covered by and subject to separate warranties of the manufacturers thereof.
3. In the event that any Gravely Product warranted hereunder shall be defective or fail to conform with this Warranty, Gravely shall, subject to the provisions hereof, pay for, or provide labor and materials for, the repair or replacement of such defective Gravely Product.
4. This Warranty is for five years (60 months) from purchase date for Gravely Products used exclusively for personal, family or household purposes, and two years (24 months) for products used for other purposes (commercial use), excluding rental firms. Gravely products used for rental purposes will be warranted for 90 days. Repair of Gravely Products after the second year (24 months from date of purchase) shall be subject to a \$50.00 deductible for each repair. (After two years, Gravely agrees to repair or replace defective Gravely Products used exclusively for personal, family or household purposes only to the extent that the cost of such warranty covered repair or replacement exceeds \$50.00.)

Batteries are warranted by Gravely for a period of twelve (12) months only. If a battery shall fail within twelve (12) months of purchase, the replacement cost thereof shall be prorated over a twelve-month term based upon the number of months since purchase.
5. To obtain Warranty Service on a Gravely Product (including any battery or other component 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 Limited Warranty, they should be referred to:

Gravely International, Inc.  
One Gravely Lane  
Clemmons, NC 27012  
Attn: Customer Service Department
  - e. Warranty service on Gravely Products must be performed by an authorized Gravely dealer.
6. This Warranty does not cover the following:
  - a. Transportation to the Gravely dealership. (If the Gravely dealer provides transportation, he will charge for such service.)
  - b. Normal maintenance services and normal replacement of items such as spark plugs, belts, oil, oil filters, air filters, and mower, plow or cultivator blades, gauge wheels, skids and other wear items.
  - c. Any Gravely Product which has been altered or modified in any way.
  - d. Any repair or replacement occasioned by customer neglect or lack of proper maintenance. (The purchaser is responsible for making sure that Gravely Products are operated and serviced as directed in the applicable manual or service instruction. Incorrect use or maintenance will void this Warranty.)
  - e. Any repair occasioned by the use of any attachment not approved by Gravely. (The use of any such unapproved attachment will void this Warranty.)
7. GRAVELY MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES, OR WARRANTIES AS TO THE MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. ALL WARRANTIES ARE LIMITED IN DURATION TO THE TERMS SET OUT IN PARAGRAPH 4, ABOVE. GRAVELY SHALL HAVE NO LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE BREACH OF ANY WARRANTY, INCLUDING, BUT NOT LIMITED TO, LIABILITY FOR INCONVENIENCE, RENTAL OR PURCHASE OF REPLACEMENT EQUIPMENT, OR FOR LOSS OF PROFITS OR OTHER COMMERCIAL LOSS.
8. Some states do not allow limitations on how long an implied warranty lasts, so the above statement may not apply to you. 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 product registration card is supplied with each Gravely Product. 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 such card is necessary for your warranty to be effective.
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**

One Gravely Lane, Clemmons, NC 27012