

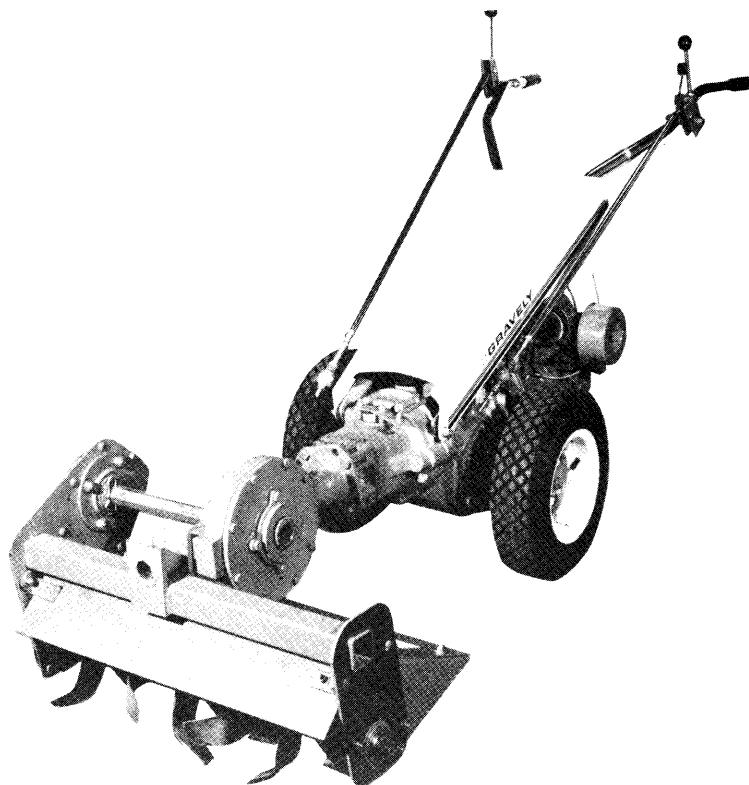


CLARKE-GRAVELY CORPORATION
A Studebaker-Worthington Company

ROTARY CULTIVATOR
Model No. 22162

PLOW/CULTIVATOR DRIVE
Model No. 22217

Form No. 22214 (9-77)
PRINTED IN USA



GENERAL

The Rotary Cultivator is a front mounted unit designed and built to give many years of excellent service. The unit has all gear and chain drive powered by the power-take-off of the tractor.

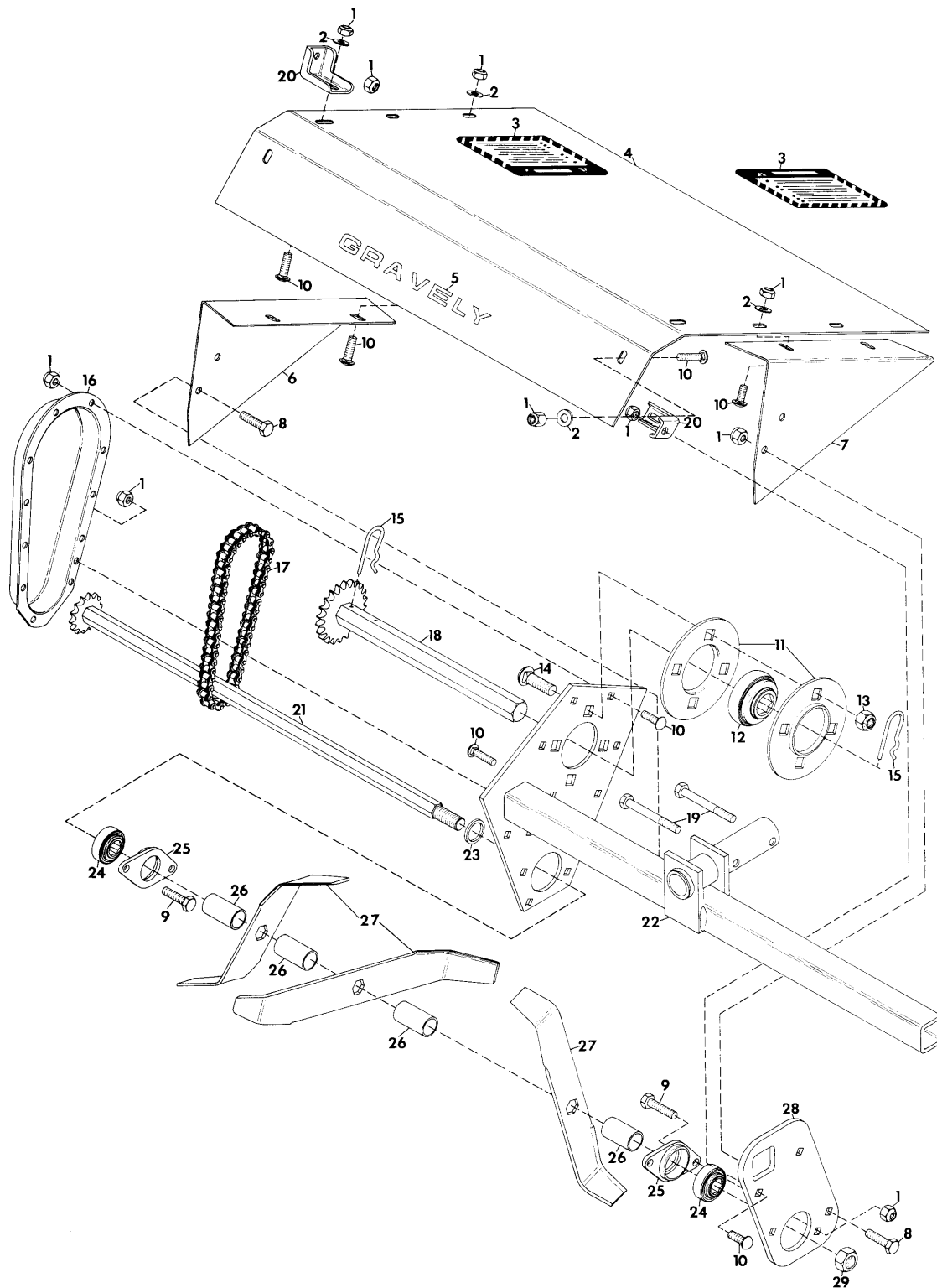
The Owner's Manual includes parts lists, set-up, operation, and maintenance instructions. Follow these instructions and use the parts list for reference to individual part numbers.

To adapt the Rotary Cultivator to a Gravelly Tractor manufactured before serial number 290130 a retrofit kit is required. See your Gravelly dealer for further information.

SPECIFICATIONS

Height: 19"
Width: 30"
Length: 22"
Weight: 135 lbs.
Number of Tines: 8
Tine Dimension: 9-3/8"
Tilling Depth: Up to 3 1/2"
Recommended Tractors: All walking tractors

TO CONTINUE ITS PROGRAM OF QUALITY AND DESIGN IMPROVEMENTS, THE MANUFACTURER RESERVES THE RIGHT TO CHANGE SPECIFICATIONS, DESIGNS AND PRICES WITHOUT NOTICE AND WITHOUT INCURRING OBLIGATION



ITEM NO.	PART NO.	DESCRIPTION	ITEM NO.	PART NO.	DESCRIPTION
1	419455	Nut, Lock; 5/16-18 Washer Insert	15	103422	Pin, Cotter; .250 x 2.00
2	120393	Washer, Flat; .344 x .688 x .065	16	22200	Cover, Sprocket
3	19479	Decal, Caution	17	22198	Chain, Roller; .625 Pitch
4	22212	Shield, Dirt	18	22187	Weldment, Drive Sprocket
5	19365	Decal, Gravely	19	180188	Bolt, Hex; 1/2-13 x 2.75
6	22201	Shield, Side R. H.	20	22199	Bracket, Shield
7	22211	Shield, Side L.H.	21	22194	Weldment, Tine Shaft
8	180078	Bolt, Hex; 5/16-18 x .875	22	22178	Weldment, Cultivator Frame
9	180081	Bolt, Hex; 5/16-18 x 1.25	23	22197	Spacer, Sprocket; 1.185 x 1.37 x .202
10	126353	Bolt, 5/16-18 x .875 RD HD SQ NK	24	22193	Bearing, Hex Bore; 1.00
11	22186	Flangette, Pressed Steel	25	22192	Housing, Bearing
12	22185	Bearing, Hex Bore	26	22202	Spacer, Tine
13	435507	Nut, Lock; 1/2-13 Washer Insert	27	22203	Tine, Hoe
14	126485	Bolt, 1/2-13 x 1.25 RD HD SQ NK	28	22205	Plate, Support
			29	426899	Nut, Jam; 1-8

Fig. 1 Illustrated Parts List

ASSEMBLY

The Rotary Cultivator is factory assembled. The Rotary Cultivator uses either the Rotary Plow Drive or Plow/Cultivator Drive. The drive will have to be installed on the Rotary Cultivator.

PREPARING ROTARY PLOW FOR MOUNTING ON ROTARY CULTIVATOR

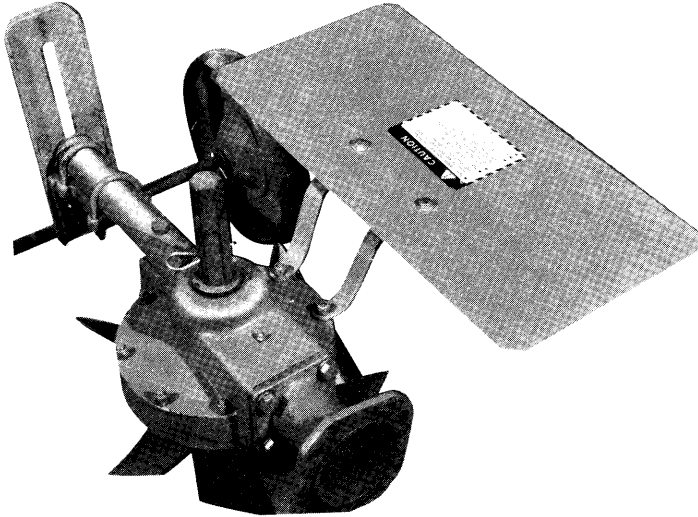


Fig. 2

1. Remove the dirt shield from the plow drive by removing the bolts holding the adjusting straps to the drive. Replace the bolts in the drive and tighten securely.
2. Remove the hairpin cotter from the rotor shaft and remove the shaft and spade assembly from drive.
3. Remove the depth wheel assembly by removing the two bolts securing wheel assembly to drive.
4. The Rotary Plow Drive will appear as shown in fig. 3 when properly prepared for attaching to the Rotary Cultivator.

ATTACHING PLOW/CULTIVATOR DRIVE TO ROTARY CULTIVATOR

1. Position drive on side with top of drive towards hex drive shaft (item 18) of Rotary Cultivator. (the lubrication fitting is in the top of the drive).
2. Slide the drive onto the hex shaft until drive is snug against the frame weldment.
3. Secure drive to frame weldment with bolts (item 19). See Fig. 4

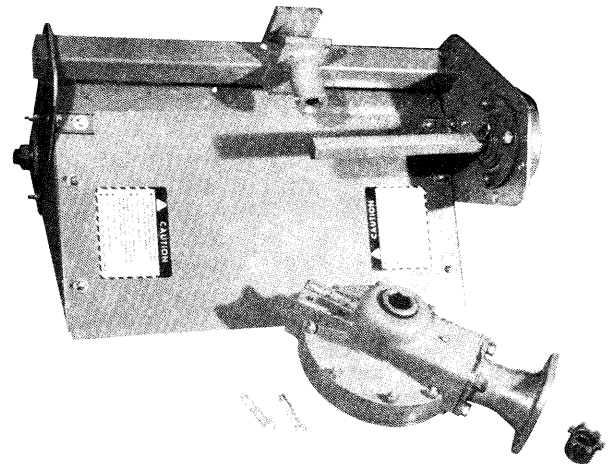


Fig. 3

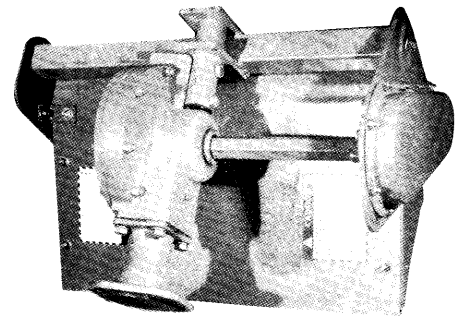


Fig. 4

MOUNTING ON TRACTOR

1. Slide the attachment dog onto the splined PTO shaft of the tractor. See Fig. 5.

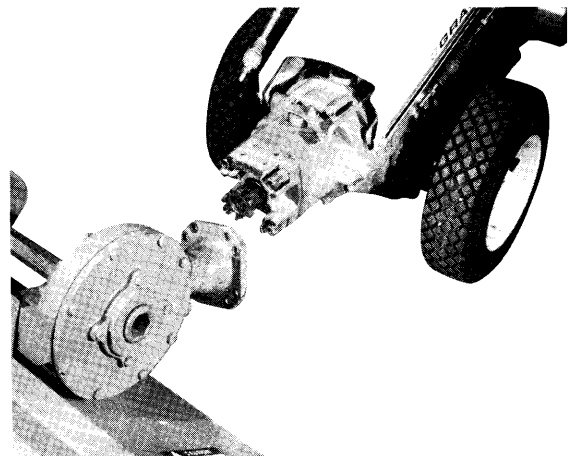


Fig. 5

2. Bolt the Cultivator Drive to the tractor with the four bolts supplied in the hardware pack. See Fig. 6.

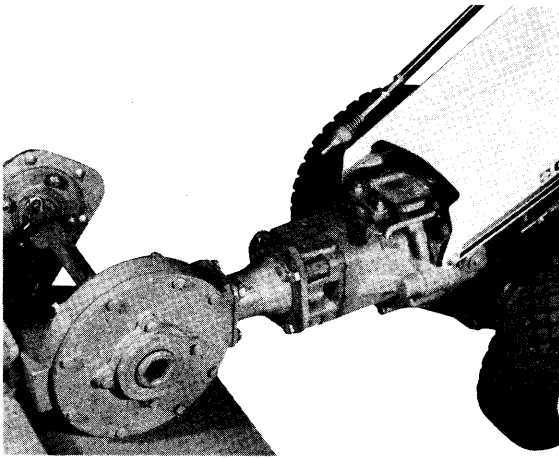


Fig. 6

DRIVE LUBRICATION

The gearbox is pre-lubricated at the factory. Lubricate the gearbox through the grease fitting on top with general purpose grease every 40 operating hours. Add grease until it comes out about the gear hub. Wipe off excess grease.

SAFETY INSTRUCTIONS

1. Refer to tractor Owner's Manual to familiarize yourself with all controls before operation.
2. Do not let anyone operate the unit without proper instructions.
3. Keep all safety shields and safety devices in place.
4. Disengage PTO before stopping tractor.
5. Disengage power to any attachment and stop engine prior to making adjustments.
6. Do not wear loose fitting clothes that might get caught in moving parts. Keep hands and feet away from moving parts.

OPERATING INSTRUCTIONS

Refer to the tractor Owner's Manual for proper operation of PTO. The Rotary Cultivator is a gear and chain driven attachment. The PTO must be engaged to operate unit.

Operate tractor at slowest ground speed with full engine throttle.

Worn hoe tines will reduce the tilling quality and affect the operation of the Rotary Cultivator. Periodically check hoe tines for wear and replace as required.

ROUTINE MAINTENANCE

1. See LUBRICATION.
2. Keep all nuts and bolts tight on cultivator.
3. Replace worn hoe tines.

REMOVAL

To remove Rotary Cultivator from the tractor, remove the four bolts and pull unit away from tractor. Remove attachment dog from PTO shaft of tractor to prevent loss.

OFF SEASON STORAGE

To prepare the Cultivator for storage clean the unit off, apply a light coat of oil to prevent rust. Check all bolts and nuts for tightness and lubricate drive. Check for worn tines and if replacement is necessary follow replacement procedure.

WORN HOE TINE REPLACEMENT

REMOVAL

1. Remove nut (item 29) from tine shaft weldment (item 21).
2. Remove nuts (item 1) and bolts (item 9) securing bearing housing (item 25) to support plate (item 28).
3. Remove nuts (item 1) and bolts (item 10 & 8) securing support plate to side shield (item 7) and dirt shield (item 4).
4. Remove nuts and bolts securing side shield (item 7) to dirt shield.

NOTE: Before removing the hoe tines note the staggered position of the tines on the shaft.

5. Remove worn hoe tine (item 27) and spacers (item 26) from tine shaft weldment (item 21). It is recommended that a complete set of tines be replaced.

INSTALLATION

1. There are 9 spacers and 8 hoe tines. When installing the tines stagger the position of the tines around the shaft by moving the tine one position more on shaft than the previous tine installed. Repeat this procedure for all 8 tines.
2. To re-assemble slide a spacer, tine, spacer, tine, spacer, etc. on shaft. Make sure the cutting edge of tine face the direction of shaft rotation. The shaft rotates counter-clockwise as viewed from the left side.
3. Re-assemble other parts removed in reverse order as described in REMOVAL. Torque the tine shaft nut (item 29) to 125 ft. lbs.

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.
- II. 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.



One Gravely Lane
Clemmons, N. C. 27012