

®

GRAVELLY

READ THIS MANUAL BEFORE ATTEMPTING
TO OPERATE THE EQUIPMENT

www.oldgravelys.net

**OPERATOR'S
MANUAL**

500 SERIES

Convertible

Tractor

Form No.: 21900 (2-77)



500 SERIES
Electric Start



500 SERIES
Manual-Recoil Start



REMOTE AIR CLEANER

THANK YOU for your investment in Gravely equipment. It is a good investment, for the Gravely will save you work and worry for many years.

You will gain still greater satisfaction from your powerful Gravely Tractor if you add the tools you need for your other jobs. There are many Gravely attachments to make your lawn care, gardening, and snow removal easier. Consult your Gravely dealer for the attachments that will save you time and effort.

Numerous independent dealers and factory branches distribute Gravely equipment. All are ready to give prompt and efficient service, with parts in stock and personnel trained in factory-service methods.

Your Gravely Tractor is warranted under terms shown herein. To qualify for this Warranty, your dealer will register your equipment by completing the Registration Card and returning it.

SAFETY OPERATING PRACTICES

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 equipment without proper instructions.
3. Keep area of operation clear of all persons, especially small children and pets. Never direct the attachment discharge toward bystanders or allow any one 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 handles 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 (except where specifically recommended by the manufacturer).
8. Never operate the machine without good visibility and light.
9. Handle fuel with care, it is highly flammable.
 - (A) Do not smoke while handling fuel.
 - (B) Use approved fuel container.
 - (C) Never add fuel to a running engine or hot engine.
 - (D) Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors.
 - (E) Replace gasoline cap securely and wipe up spilled fuel.
 - (F) Always fill electric start tractors with tractor hood in the closed position.

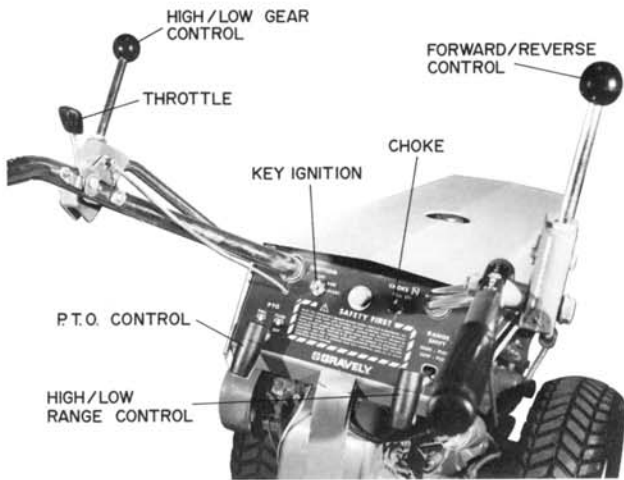
OPERATION

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.

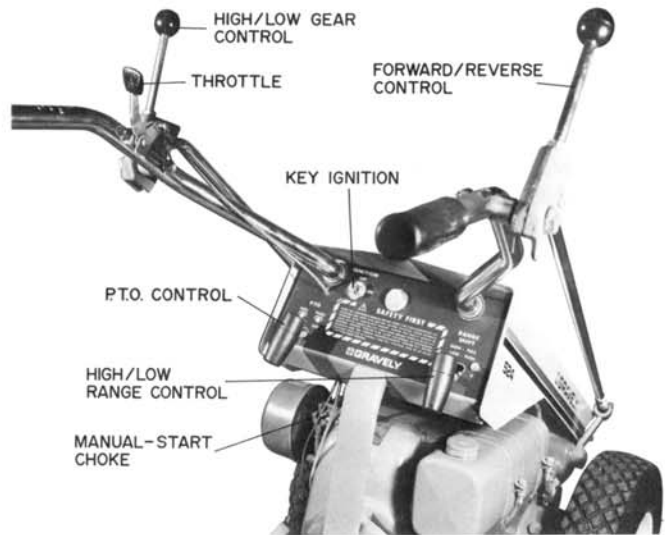
8. Before cleaning, repairing, or inspecting, make certain all moving parts have stopped. Remove the key and disconnect the spark plug wire to prevent accidental starting.
9. If the unit should start to vibrate abnormally, stop the engine, disengage the PTO, and check for the cause. Abnormal vibration 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.
14. Do not overload machine capacity by attempting to operate equipment at too fast a rate.
15. Use only attachments and accessories approved by manufacturer of the equipment.
16. When the tractor is being used without a front mounted attachment, such as for towing, the PTO cover plate should be installed to prevent the loss of oil, and to keep the PTO clutch in place, and free of dirt.

MAINTENANCE AND STORAGE

1. Keep all bolts, nuts, and screws tight to be sure equipment is in safe working condition.
2. Never store equipment with gasoline in the tank, inside a building where open flames or sparks are present. Allow the engine to cool before storing in any enclosure.
3. Keep engine free of grass, leaves, debris, or excessive grease to prevent overheating and possible fire hazard.



Electric Start



Manual-Recoil Start

INTRODUCTION

The Gravelly Convertible Tractors are available in 8 models.

- 520 — 8 HP Manual-recoil start — 2 speed standard transmission
- 521 — 8 HP Manual-recoil start — slow 2 speed transmission
- 522 — 8 HP Electric start — 2 speed standard transmission
- 524 — 8 HP Manual-recoil start — 4 speed Swiftamatic transmission
- 526 — 8 HP Electric start — 4 speed Swiftamatic transmission
- 546 — 10 HP Electric start — 4 speed Swiftamatic transmission
- 564 — 12 HP Manual-recoil start — 4 speed Swiftamatic transmission
- 566 — 12 HP Electric start — 4 speed Swiftamatic transmission

The Convertible tractors are all powered by the Kohler engine. All gear drive allows power to be transmitted directly from the engine to the power attachment by steel shafts and gears.

The Convertible tractors offer year-around, all-season versatility with many different attachments available. Out front mounting of most attachments gives you maximum visibility.

The tractor will give you highly satisfactory service if maintained and operated as outlined in this manual.

All references to Left Hand and Right Hand; front and rear are given from the operators position.

It is important that you know the Serial Numbers of your tractor for your future reference. Please fill in the numbers as soon as possible.

Tractor Serial Number _____
 Engine Model Number _____
 Engine Specification Number _____

LUBRICATION AND MAINTENANCE

TRANSMISSION

Oil capacity: 5 U.S. quarts
(4.73 liters) (all models)

Recommended oil: SAE 10W-30

Check oil level daily. Maintain at full mark, do not overfill.

Regular draining of the oil in the transmission is not necessary. The transmission oil drain is the bottom bolt in the left axle housing on all models.

ENGINE

Oil capacity 8 HP: 2½ U.S. pints (1.2 liters)

Oil capacity 10 and 12 HP: 4 U.S. pints (1.89 liters)

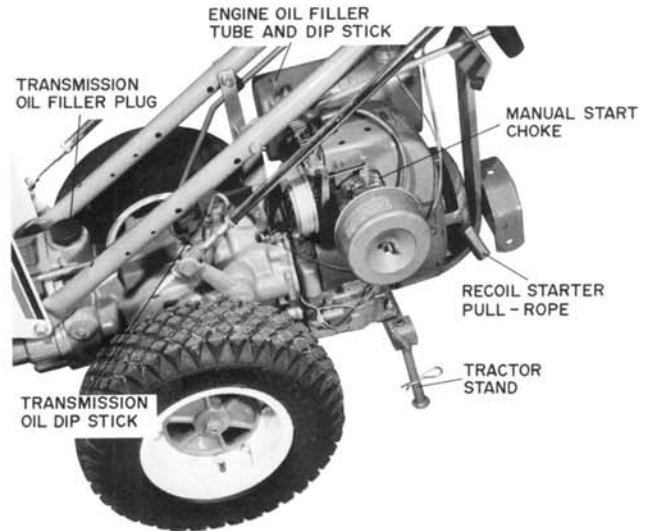
Recommended oil (all models):

Summer SAE 10W-30

Winter (0°F or below) SAE 5W-20
(-18°C)

Check oil level daily. Maintain at full mark, do not overfill.

Change oil after initial 5 hours of operation and then every 25 hours or more often under dusty conditions. Drain plug is on the right side of the engine base.



MAINTENANCE

AIR FILTER — Clean or replace when necessary. A loss of power is an indication that air filter service is required.

The air filter element should be cleaned by gently tapping on a flat surface. Replace the element if it is bent, crushed or damaged in anyway. Do not use compressed air or wash the element.

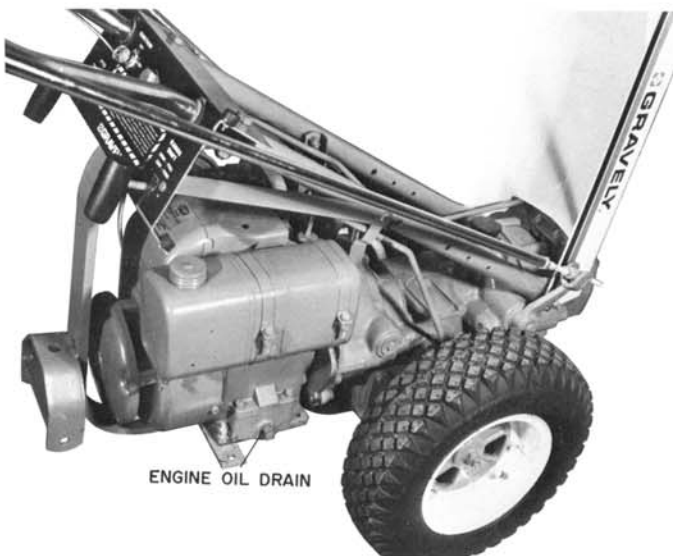
When reinstalling, be sure the element fits the adapter plate and the wing nut on the cover is finger tight. Be sure the special washer is in place under the wing nut of the air cleaner.

REMOTE AIR CLEANER 564 Standard

(Optional on other models)

1. Periodically check the automatic dust unloader. Squeeze the tube and tap lightly to remove the accumulated dust. Keep the tube clear of obstructions.
2. Service element every 50 hours, or when power loss is noted.
3. A — Clean element by tapping gently and blowing with air.
B — Or clean by washing until water runs clean. Shake off excess water and dry.
4. Install element and tighten by hand.
5. Replace element after 10 washings or one (1) years service whichever comes first. Replace element at anytime that damage is noted.

NOTE: Maintain tight, clean air hose connections.



(Lubrication and Maintenance cont'd.)

LUBRICATION

There are no grease fittings on the tractor. However, the external moving parts, such as the control levers, throttle and pivot points, should be given a light coat of oil after each use to reduce wear and prevent sticking.

TIRE PRESSURE

Regularly check and maintain tire pressure at 18 psi (1.265 Kg per cm)

BATTERY

Regular check the electrolyte level of the battery. Add distilled water as necessary to maintain proper level.

COOLING SYSTEM

Clean tractor regularly. Pay particular attention to the cooling system to where a debris build-up can cause overheating and engine damage.

ACTUATING ROD ADJUSTMENT

When clutch slippage occurs, adjust the jam nuts on the clutch Actuating Rods at the Forward/Reverse and High/Low Actuating Levers.

FORWARD/REVERSE

Loosen the jam nuts each side of the spring at the Actuating Lever. **FORWARD ADJUSTMENT** — Adjust the nut to a position so that the spring on the Actuating Shaft is almost completely compressed when the Actuating Lever (at the handle bars) goes over center. When adjustment is made, lock the nuts together. **REVERSE ADJUSTMENT** — Adjust the nut to a position so that the hand control lever is just beyond the vertical position, toward the operator. When adjustment is made, lock the nuts together.

HIGH/LOW RANGE

Loosen the jam nuts each side of the spring at the Actuating Lever. Adjust the nut to a position so that the spring on the Actuating Shaft is almost completely compressed when the Actuating Lever (at the handle bars) goes over center. When adjustment is made, lock the nuts together. This procedure applies to both High and Low positions.

ENGINE

Refer to the engine owners manual for engine adjustments and specifications.

STORAGE

For prolonged out-of-season storage, the following is recommended.

1. Clean tractor and equipment.
2. Perform all normally scheduled maintenance, including lubrication.
3. Run engine until operating temperature is reached. Drain engine oil, and add fresh oil as recommended in **ENGINE LUBRICATION**.
4. Remove spark plug. Pour 2 tablespoons engine oil through spark plug hole. Replace plug; leave wire off. Crank engine to spread oil.
6. Remove strainer from bottom of tank and clean.
7. Service and charge battery every 2 weeks.

AFTER STORAGE

1. Perform all normally scheduled maintenance.
2. Charge battery.
3. Fill fuel tank. Use fresh, regular grade gasoline.
4. Start routine service intervals again.

OPERATION

INITIAL OPERATION

For the first hour of operation, work under a light to moderate load. (Example: Take a partial swath while mowing.)

BEFORE STARTING:

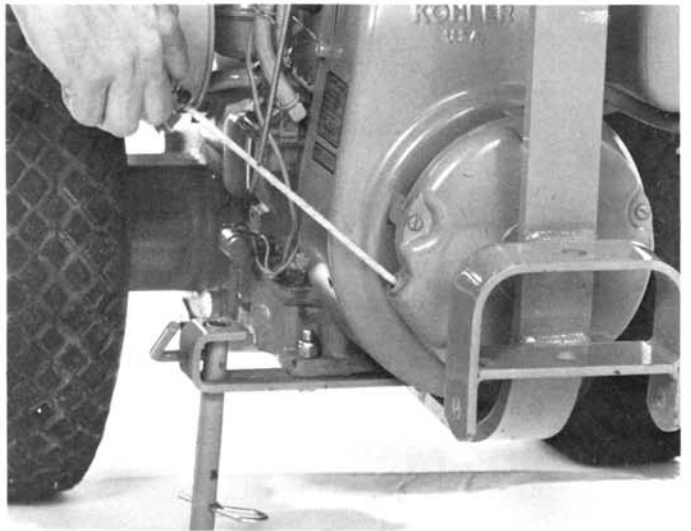
- Check oil levels in transmission and engine.
- Check fuel level. Use fresh high quality, regular grade gasoline.
- Check to see that Forward-Reverse, PTO and High/Low controls are in neutral position.

STARTING

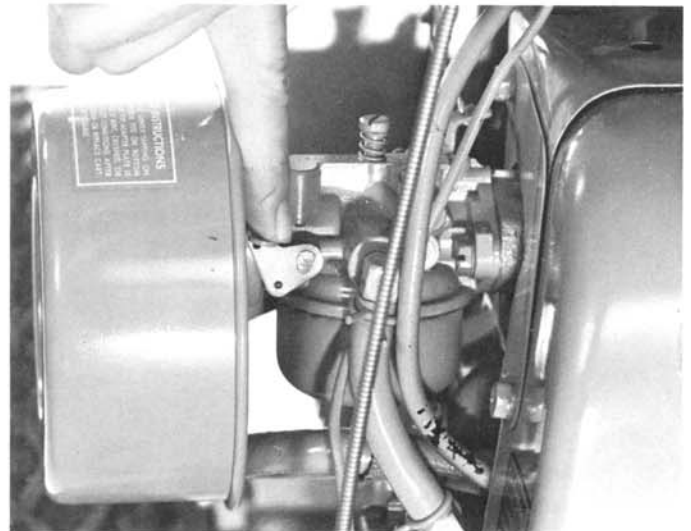
(Manual Start) 520, 521, 524, 564 — Turn key to “ON” position (approximately ¼ turn clockwise).



If engine is cold, flip the choke on by pushing the choke lever out and down, away from engine. The choke is located on the side of the carburetor. Open the throttle about ½. Down is closed, up is open.

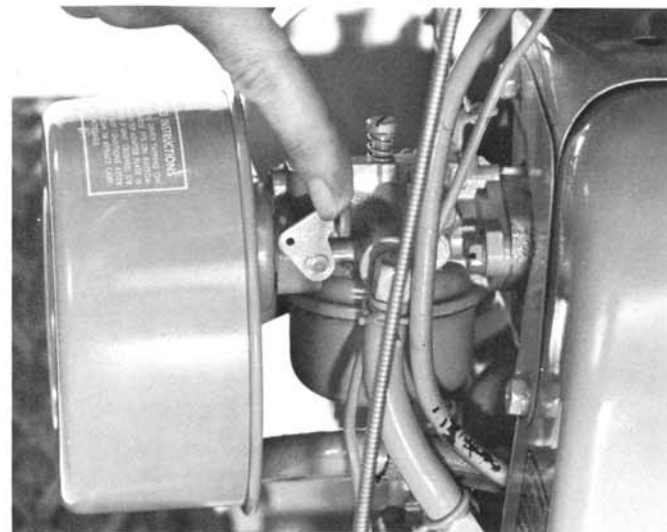


When engine starts, flip choke off, and reduce engine speed until operating temperature is reached.



STARTING

(Electric Start) 522, 526, 546, 566 — If engine is cold, pull out choke. Open the throttle about ½. Down is closed, up is open.



Grasp the starter rope handle and pull using a steady motion.

Guide the rope back in. DO NOT let the rope loose to fly in.

Turn key to "START" position, (clock-wise) to engage the starter. As engine starts, release, key will return to "RUN" position. Push choke in and reduce engine speed until operating temperature is reached.

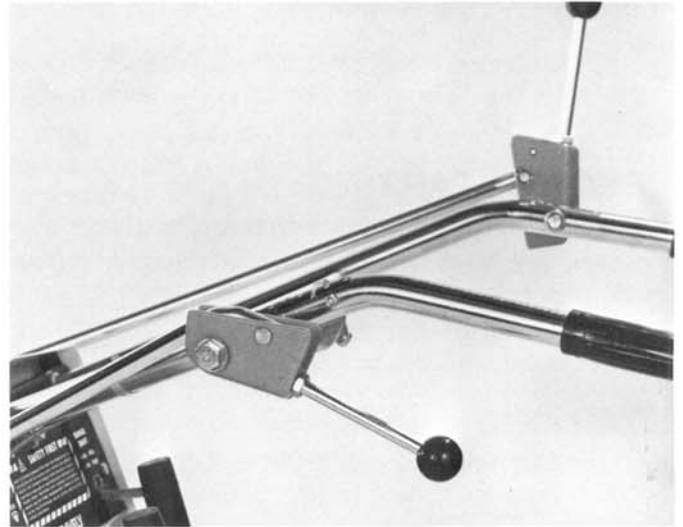
CAUTION: DO NOT hold starter engaged over 15 seconds without allowing a one minute cooling period for the starter motor.

THROTTLE

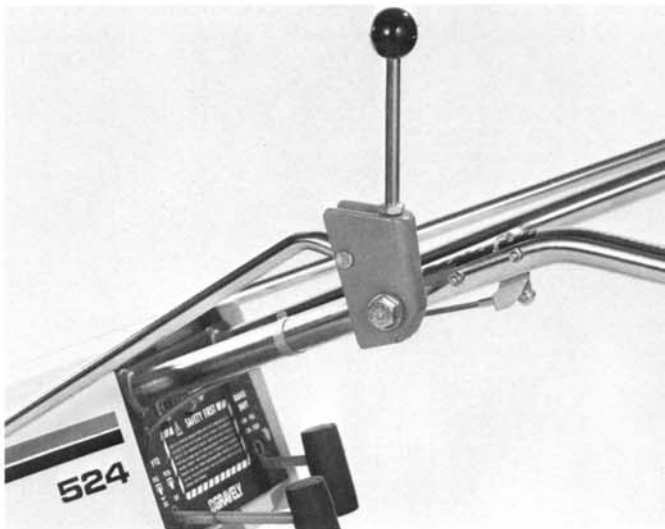
Engine speed is controlled by the internal governor at any throttle setting. Engine performance is best at full throttle. DO NOT exceed 3600 RPM.

HIGH-LOW GEAR

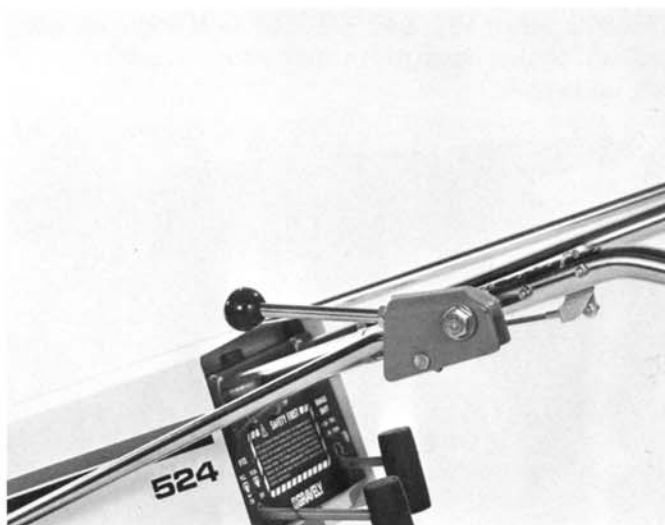
The lever on the outside of the left handle operates the high and low gear range. A near vertical position puts the High-Low Gear range in neutral.



The High-Low Gear affects both ground speed and the speed of power driven attachments. (NOTE: The Swiftamatic affects only ground speed on tractors so equipped.) To operate the PTO and Forward/Reverse, the High-Low must be in one gear or the other.



To put the tractor in high gear, push the lever forward to a fully engaged position.



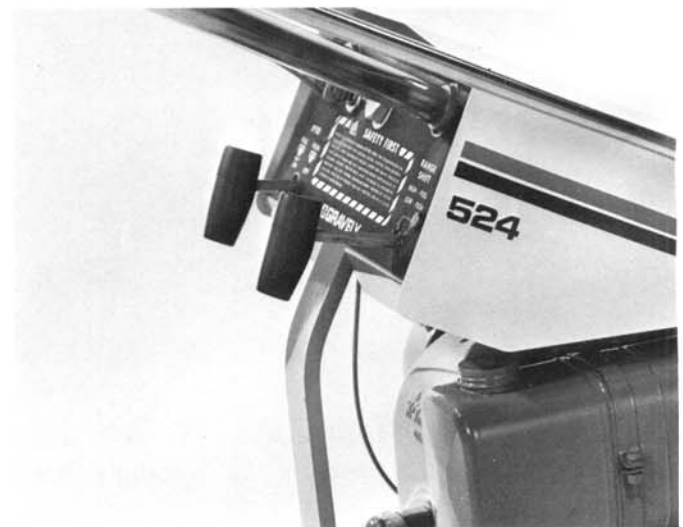
To put the tractor in low gear, pull back (toward the operator) and down to fully engaged position.

SWIFTAMATIC — 8 TRANSMISSION

The 524, 526, 546, 564, 566 tractors are equipped with the Swiftamatic-8 Transmission. This used with the High-Low Gear allows the operator to select one of four forward and reverse ground speeds.

This is accomplished by selecting either high or low range using the High-Low Gear Control and also by selecting a speed range by operating the Swiftamatic Control. The Swiftamatic Transmission when in low range, reduces the ground speed by $\frac{1}{2}$ without affecting attachment speed.

The speed range is always selected before controls are operated to move the equipment. Selection is made by moving the Swiftamatic Control in or out. "IN" is low range, "OUT" (toward the operator is high range.)



When selecting an axle range, make sure the Swiftamatic is fully engaged. That is, the lever must be all the way "IN" or "OUT".

To change axle ranges, stop the tractor and reduce engine speed to an idle. Keep the High-Low Control in neutral. Move the Forward-Reverse Control back or forth slightly until control is fully engaged.

CAUTION: Never shift the Swiftamatic control while the tractor is in motion. Always come to a complete stop prior to shifting.

Never shift the Swiftamatic control while stopped on a hill. If you must shift on an incline, stop the tractor so that it points across the hill rather than up or down the slope.

Individual jobs will dictate the combination of axle range and gear to be used. In general, low axle range should be used for plowing, cultivating, snow removal, heavy mowing where a slower ground speed is needed to give the attachment longer to do its job. High axle range is generally satisfactory for mowing and other lawn jobs.

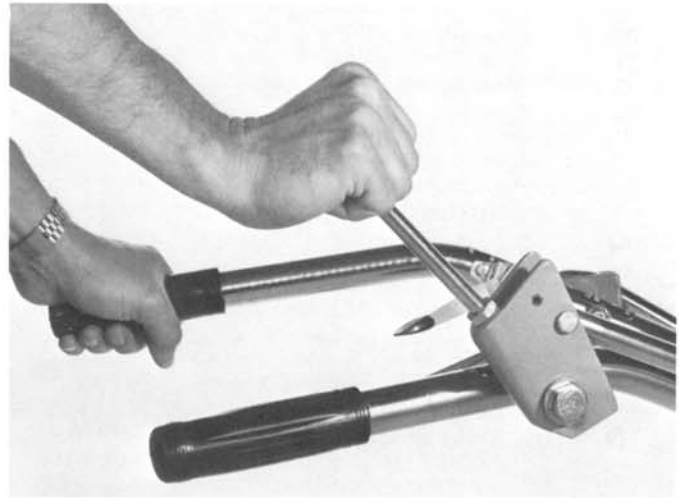
FORWARD-REVERSE

The tractor has a unique instant forward and reverse clutch that gives you instant forward to reverse control of the tractor under all conditions. The control is located on the right handle.

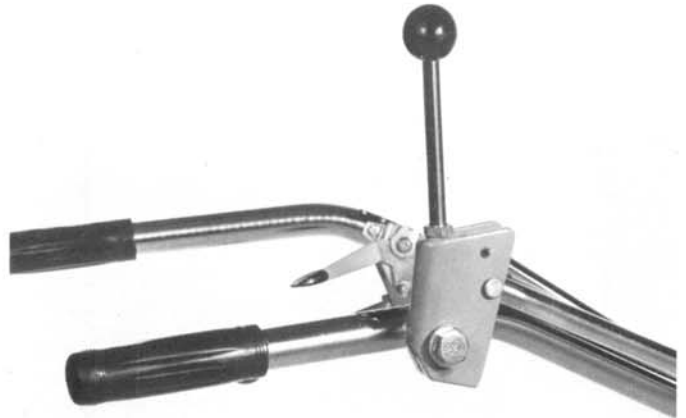
To go forward, push the control lever forward (away from operator) to a fully engaged position.



To put the tractor in reverse, put the control lever back towards the operator. The lever has to be held in the reverse position, by the operator, to keep the tractor moving in reverse.



Releasing the handle permits it to return to neutral. The Forward-Reverse neutral is a near vertical position of the control lever.



POWER TAKE-OFF (PTO) CONTROL HANDLE

To engage the PTO, the High-Low control lever must be in the neutral position, and engine speed at a fast idle. Pull the PTO handle out (toward the operator) and fully engage the PTO. Put the High-Low control in gear.



SPECIFICATIONS

380 lbs.

ENGINE	564-566	546	520-521-522- <u>524</u> -526
Type	4-cycle air cooled	4-cycle air cooled	4-cycle air cooled
Horsepower	12 @ 3600 RPM	10 @ 3600 RPM	8 @ 3600 RPM (<i>governed @ 3,300 rpm</i>)
Specifications	Refer to the Engine Owner's Manual		
Oil Sump Capacity	4 U.S. Pints (1.89 Liters)	4 U.S. Pints (1.89 Liters)	2.5 U.S. Pints (1.2 Liters)
Oil Grade	API Service SD		
Oil Viscosity	Summer — SAE 10W-30 Winter — (0° or below) SAE 5W-20 (-17° C)		

ELECTRIC START 522-526-546-566
 Battery

SAE Type 17 MI 42 Amp hr. 12 Volt, Negative Ground
 Starter

Electric

Manual Start 520-521-524-564
 Starter

Manual Recoil

TRANSMISSION (All Models)

Type	All Gear Planetary	<i>1.3 mph, 1.7 mph, 2.6 mph, 3.4 mph</i>
Transmission Oil	5 U.S. Quarts	
Capacity	(4.73 Liters)	
Grade	API Service SD	
Viscosity	10W-30	

GENERAL

Fuel
 Tank Capacity

2 U.S. Gallons	522-526-546-564-566
(7.57 Liters)	
.9 U. S. Gallons	520-521-524
(3.4 Liters)	

Fuel Type

Fresh, regular grade leaded, 86 octane or higher
--

Tire Pressure

18psi
(1.265 Kg per cm ²)

P.T.O.:

888 RPM @ 3300 RPM	(975 rpm @ 3600 RPM)
1177 RPM @ 3300 RPM	(1275 rpm @ 3600 RPM)



HOMEOWNER TRACTOR
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 tractor(s) 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; 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 tractors are not covered by the Gravely Warranty. These components are covered by the original manufacturer's warranty. They are:
 - (a) Engine - Briggs & Stratton
 - (b) Tires - Goodyear, Goodrich, Armstrong, General and Firestone
5. To obtain warranty service on Gravely tractors, including components not manufactured by Gravely, use this procedure:
 - (a) Notify the Gravely dealer from whom you purchased the tractor.
 - (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 tractor 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
Clarke-Gravely Corporation
A Studebaker-Worthington Company
One Gravely Lane
Clemmons, N. C. 27012
Attn: Manager Customer Services
 - (e) Warranty service on Gravely tractors 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 tractor(s), 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, etc.
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 registration card is supplied with each Gravely tractor. Please complete the card and return it to Gravely at the address listed on the card. The 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.



CLARKE-GRAVELY CORPORATION
A Studebaker-Worthington Company
One Gravely Lane
Clemmons, N. C. 27012

Maintenance Check List

500 SERIES CONVERTIBLE TRACTORS

RECOMMENDED ENGINE OILS (API Service SD)

AMBIENT
TEMPERATURE

MULTIPLE
VISCOSITY OIL

0° F and Above
Below 0° F

SAE 10W-30
SAE 5W-20

RECOMMENDED TRANSMISSION OIL SAE 10W-30

OIL LEVELS. Check oil levels daily before starting Engine. Fill to FULL mark on engine dip-stick and on transmission dipstick.

OIL CHANGES. Change engine oil at least every 25 hours.

AIR CLEANER. Clean as required according to directions on air cleaner decal.

BATTERY. Check liquid level regularly. Maintain at proper level.

TIRES. Check tire pressure regularly. Maintain at 18 P. S. I.

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.