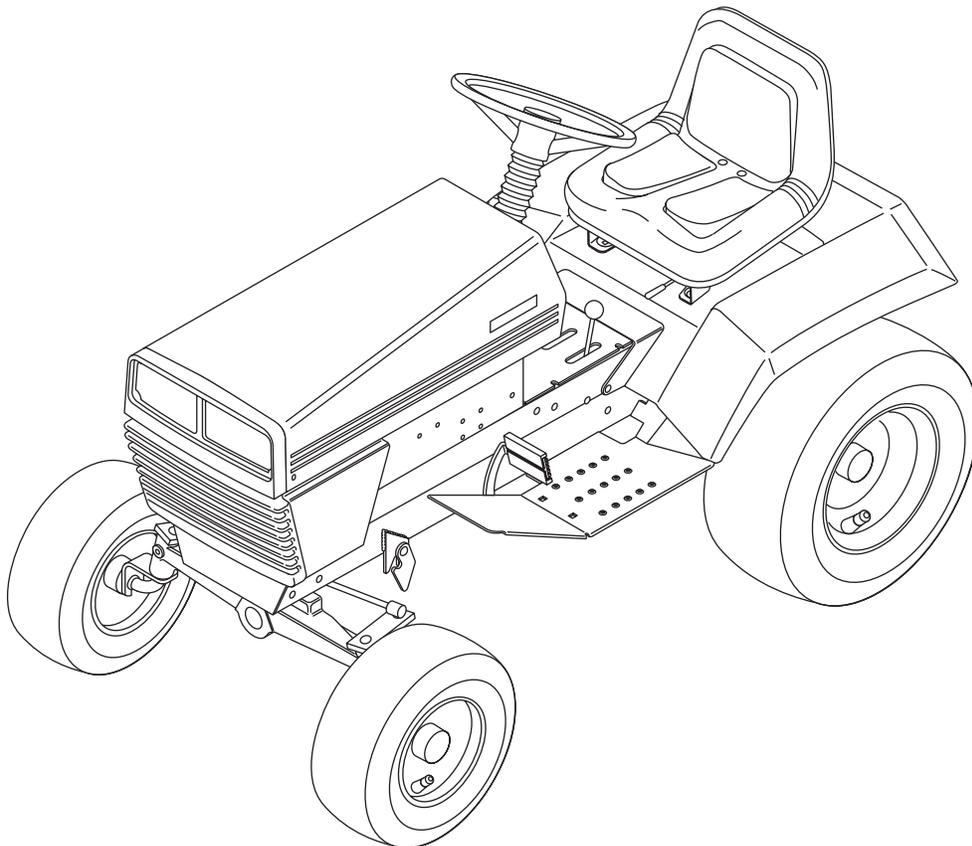




Professional G Series

Owner/Operator Manual



987
SERIES

MODELS

- 070 - Professional G
- 071 - Professional G
- 072 - Professional G

A Message to Gravelly Customers . . .

Welcome to the world of Gravelly equipment. We are pleased that you have purchased the best tractor available. The care you give your Gravelly tractor will determine the satisfaction and service life you will obtain from it. Use this manual as your guide. By observing the instructions and suggestions in this manual, your Gravelly tractor will serve you well for many years.

Your Gravelly dealer will be happy to supply any service or advice which may be required to keep your Gravelly tractor operating at peak efficiency. The Dealer stocks genuine Gravelly parts and lubricants; manufactured with the same precision and skill as the original. A factory trained staff is kept well informed on the best methods of servicing Gravelly equipment

and is ready and able to serve you. If service is required, be prepared to supply the service person with the Model and Serial Number of the tractor, as well as a full description of the problem encountered.

NOTE: The descriptions and specifications contained in this manual were in effect at the time the manual was approved for printing. Gravelly reserves the right to discontinue models without notice and without incurring obligation. The tractor described within this manual may not be identified as either standard or optional and the various illustrations may not be applicable to your particular unit. If you have questions, always check with your Gravelly dealer.

Safety Alert Symbol and Notations

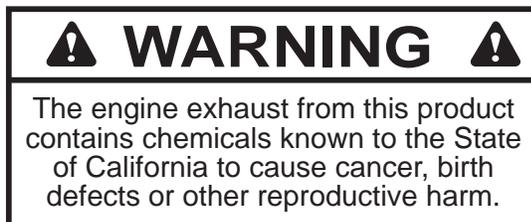
The following safety notations are used throughout this manual to call attention to special information or operating procedures. Understand the message in each notation and be alert to unsafe conditions and the possibility of personal injury.

NOTE: A **NOTE** points out general reference information regarding proper operation and maintenance practices.

IMPORTANT: An **IMPORTANT** statement indicates specific procedures or information that is required to prevent damage to the machine or its attachments.



This safety alert symbol is used to attract your attention **PERSONAL SAFETY IS INVOLVED!** When you see this symbol - **BECOME ALERT - HEED ITS MESSAGE.**



OL4030



DANGER: Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.



WARNING: Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

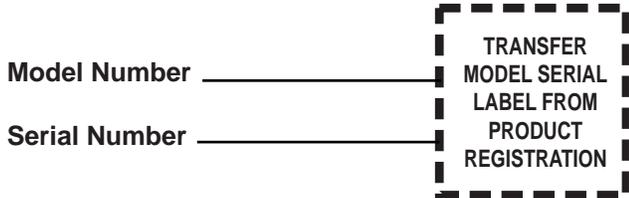


CAUTION: Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Contents

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Specific Model and Serial Numbers are on a label located on the frame of your tractor and on a label located on the product registration form. Record those numbers below and transfer the label from the product registration to place indicated below. Use these numbers whenever parts or service is required.



Models

Model 987070

16 HP Briggs & Stratton, Hydraulic Lift

Model 987071

13.5 HP Robin, Manual Lift

Model 987072

20.5 HP Robin, Hydraulic Lift

Note: All references to “Left”, “Right”, “Front” and “Rear” are given from operator’s position.

Publications and Service Parts List

Order the following parts through your Dealer:

Part No.	Qty.	Description
08471600	1	Parts Manual
00026793	1	Service Manual
04202200	1	Battery
21527400	1	Air Cleaner (Robin EH64)
21527000	1	Oil Filter (Robin EH64)
21527300	1	Air Cleaner (Robin EH41)
08811700	1	Fuel Filter
21526900	1	Spark Plug (Robin)
08904651	3	Blade-60”
08861651	3	Blade-50”
03498451	3	Blade-40”
07219600	1	V-Belt-60”
07219700	1	V-Belt-60”
07226600	1	Belt-50” Mowerdrive
07226700	1	Belt-40” Mowerdrive

Safety Precautions

Safe Operation Practices For Ride-On Mowers

Failure to observe the following safety instructions could result in serious injury or death. Your complete and unimpaired attention is required at all times. Purchaser must give these instructions to the people operating and maintaining this tractor.

General Operation

Read, understand, and follow all instructions in this owners manual, the engine manual, the attachment manual and on the machine before starting.

Only allow responsible adults, who are familiar with the instructions, to operate the machine.

Clear the area of objects such as rocks, toys, wire etc., which could be picked up and thrown by the mower or other attachment.

Be sure the area is clear of other people & pets before operating. Stop machine if anyone enters the area. The operator is responsible for the safety of bystanders.

Before starting place the PTO lever in "Off" position and the gear shift lever in the neutral "N" position.

Never carry passengers.

Operate only from operators position, on the seat.

Do not operate in reverse unless absolutely necessary. Always look down and behind before and while backing.

Be aware of the attachment discharge direction and do not point it at anyone. Do not operate without either the entire attachment or the guarding in place and functioning properly.

Slow down before turning to prevent tipping or loss of control.

Never leave a running machine unattended. Always turn off attachment, set parking brake, stop engine, move shift control to first gear position, and remove keys to prevent unauthorized use before dismounting.

Turn off power to attachment when not in use.

Disengage attachment clutch, stop engine, remove key and wait for moving parts to stop before leaving operators position for any reason such as removing, cleaning, servicing, or unclogging the attachment.

Operate only in daylight or good artificial light.

Do not operate the machine while under the influence of medication, alcohol or drugs. Safe operation of this equipment requires your complete and unimpaired attention at all times.

Watch for traffic when operating near or crossing

roadways or drives. Follow traffic laws when operating on or near a road.

Use extra care when loading or unloading the machine into a trailer or truck. When handling equipment connect the chassis to the transporting vehicle. Never connect from control levers, rods, or like items that could be damaged.

Use only attachments or accessories designed for your unit. See your Gravely Dealer.

Wear sturdy footwear. Do not operate tractor barefoot or when wearing open sandals or canvas shoes. Do not wear loose clothing that may get caught in rotating parts of unit. Wear hand, head, ear and eye protection.

Slope Operation

Slopes are a major factor related to loss-of-control and tip-over accidents, which can result in severe injury or death. All slopes require extra caution. If you cannot back up the slope of it you feel uneasy on it, do not operate on it.

Operate up and down slopes, not across. Do not operate on steep slopes.

Remove obstacles such as rocks, tree limbs, etc. from the area of operation.

Watch for holes, ruts, or bumps. Uneven terrain could overturn the machine. Tall grass or deep snow can hide obstacles.

Use slow speed. Choose a low ground speed so that you will not have to stop or shift while on the slope. Engage the directional control pedal slowly.

Follow the manufacturer's recommendations for wheel weights or counterweights to improve stability.

Use extra care with grass catchers or other attachments. These can change the stability of the machine. Use only approved hitch points.

Limit loads to those you can safely control.

Keep all movement on the slopes slow and gradual. Do not make sudden changes in speed or direction.

Avoid starting or stopping on a slope. If tires lose traction, disengage attachment power and proceed slowly straight down the slope. If you must stop when going up the slope and can not safely back down, disengage the PTO, release the direction control pedal, and depress the brake pedal. Then place the gear selector in low speed and slowly release the brake pedal, while slowly engaging the direction control pedal.

Safety Precautions (Continued)

Children

Tragic accidents can occur if the operator is not alert to the presence of children. Children are often attracted to the machine activity. Never assume that children will remain where you last saw them.

Keep children out of the area of operation and under the watchful care of another responsible adult.

Be alert and turn machine off if children enter the area.

Before and when backing, look behind and down for small children.

Never carry children. They may fall off and be seriously injured or interfere with safe machine operation.

Never allow children to operate the machine.

Use extra care when approaching blind corners, shrubs, trees, or other objects that may obscure vision.

Service

Do not change engine governor setting or over speed the engine.

Replace damaged or worn out muffler immediately. Continued use could result in fire or explosion.

Use extra care in handling gasoline and other fuels. They are flammable and vapors are explosive.

- A. Use only an approved container.
- B. Never remove gas cap or add fuel with the engine running. Allow engine to cool before refueling. Do not smoke. Wipe off any spilled gasoline and allow vapors to dissipate before starting engine.
- C. Replace fuel tank cap and container cap securely.
- D. Never refuel the machine indoors.
- E. Never store the machine or fuel container inside where there is an open flame, such as in a water heater. Allow engine to cool before storing in any enclosure.

Never run a machine inside a closed area. Exhaust fumes contain carbon monoxide, an odorless and deadly gas.

Keep nuts and bolts, especially blade attachment bolts, tight and keep equipment in good condition.

Never tamper with safety devices. Check their proper operation regularly. See page 7 for operator-presence control check. If safety interlock is not functioning properly do not operate the tractor. Have repaired prior to use.

Keep machine free of grass, leaves or other debris build up. Clean up oil or fuel spillage. Allow machine to cool before storing.

Stop and inspect the equipment if you strike an object or if there is a sudden change in the sound or vibration of the equipment. Repair any damage before restarting.

Never make adjustments or repairs with the engine running or when engine and exhaust parts are hot from operation.

Grass catcher components are subject to wear, damage, and deterioration, which could expose moving parts or allow objects to be thrown. Frequently check components and replace, with manufacturer's recommended parts, when necessary.

Mower blades are sharp and can cut. Wrap the blade(s) or wear gloves, and use extra caution when servicing them.

Check brake operation frequently. Adjust and service as required.

Refer to Storage Section of this owners manual if unit is to be stored for extended period.

Use only Gravely accessories, attachments and replacement parts. Replace parts that become damaged or lost.

Do Not

Do not turn on slopes unless necessary, and then, turn slowly and gradually downhill, if possible.

Do not operate near drop-offs, ditches, or embankments. The tractor could suddenly turn over if a wheel is over the edge of a cliff or ditch, or if an edge caves in.

Do not operate on wet grass. Reduced traction could cause sliding.

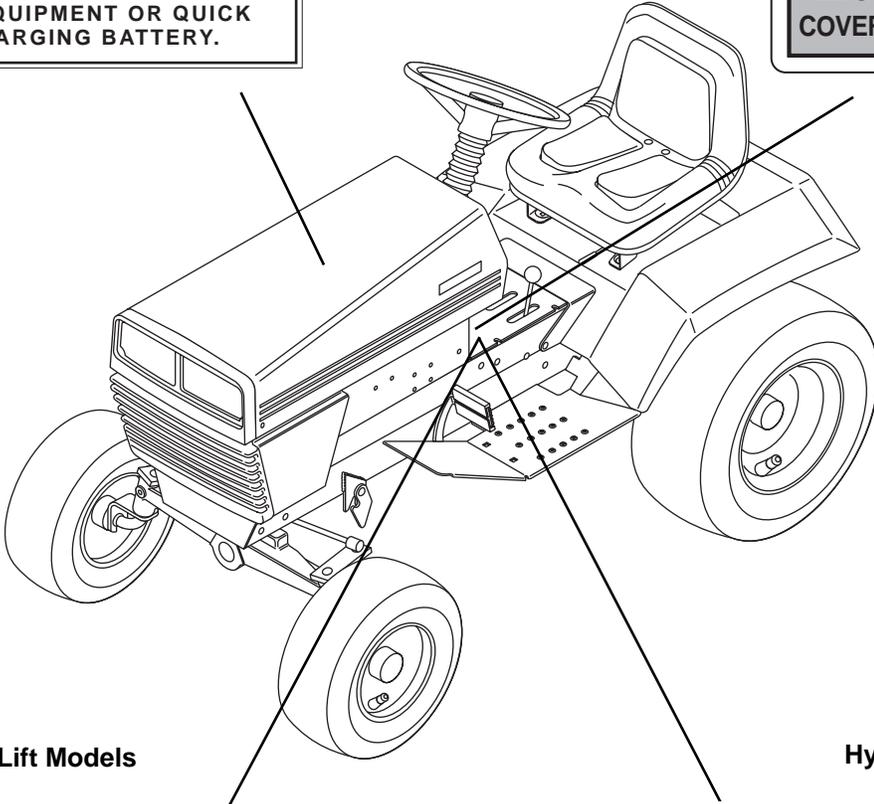
Do not try to stabilize the machine by putting your foot on the ground.

Do not use grass catcher on steep slopes.

Safety Decals

ALTERNATOR ELECTRICAL SYSTEM
12 VOLT NEGATIVE GROUND
DO NOT REVERSE BATTERY
CONNECTIONS. DISCONNECT
REGULATOR WHEN WELDING
ON EQUIPMENT OR QUICK
CHARGING BATTERY.

⚠ CAUTION
DO NOT OPERATE UNLESS
ALL GUARDS, SHIELDS AND
COVERS ARE IN PLACE



PJ0330

Manual Lift Models

Hydraulic Lift Models

CONFORMS TO ANSI B71.4 SAFETY STANDARD COMMERCIAL TURF CARE EQUIPMENT.

SAFETY FIRST

- READ THE OPERATORS MANUAL BEFORE OPERATING OR DOING MAINTENANCE ON THIS EQUIPMENT.
- KEEP ALL GUARDS AND SHIELDS IN POSITION.
- NEVER PERMIT CHILDREN TO OPERATE THIS EQUIPMENT.
- NEVER PERMIT PERSONS OTHER THAN THE OPERATOR TO RIDE ON THIS EQUIPMENT.
- LOOK FOR PERSONS AND HAZARDS.
- BEFORE LEAVING THE OPERATOR POSITION - PUT THE PTO CONTROL LEVER IN THE OFF POSITION.
 - REMOVE THE IGNITION KEY.
 - LOWER THE ATTACHMENT.
 - SET THE BRAKE LOCK FOR PARKING.

DIRECTION CONTROL

FORWARD
 ↑
 N
 ↓
 REVERSE

LIFT RANGE CONTROL

ON
 OFF

PTO CONTROL LEVER

HI 3 4
 LO 1 2

RANGE SELECTOR

GEAR SELECTOR

WARNING

DO NOT SHIFT GEAR OR RANGE SELECTOR UNLESS VEHICLE IS STOPPED AND DIRECTION CONTROL LEVER IS IN NEUTRAL (N)

TO USE THE BRAKE LOCK

1. PUSH THE BRAKE PEDAL DOWN TO STOP.
2. PUT THE BRAKE LOCK LEVER IN THE LOCK POSITION.
3. PUSH THE BRAKE PEDAL DOWN AND PUT THE BRAKE LOCK LEVER IN THE UNLOCK POSITION TO UNLOCK THE BRAKE.

THE ENGINE WILL NOT START UNLESS:

- THE PTO CONTROL IS IN THE OFF POSITION.
- THE DIRECTION CONTROL IS IN THE (N) POSITION.

BRAKE LOCK FOR PARKING

UNLOCK
 LOCK
 STOP
 GO

CONFORMS TO ANSI B71.4 SAFETY STANDARD COMMERCIAL TURF CARE EQUIPMENT.

UP
 HOLD
 DOWN

SAFETY FIRST

- READ THE OPERATORS MANUAL BEFORE OPERATING OR DOING MAINTENANCE ON THIS EQUIPMENT.
- KEEP ALL GUARDS AND SHIELDS IN POSITION.
- NEVER PERMIT CHILDREN TO OPERATE THIS EQUIPMENT.
- NEVER PERMIT PERSONS OTHER THAN THE OPERATOR TO RIDE ON THIS EQUIPMENT.
- LOOK FOR PERSONS AND HAZARDS.
- BEFORE LEAVING THE OPERATOR POSITION - PUT THE PTO CONTROL LEVER IN THE OFF POSITION.
 - REMOVE THE IGNITION KEY.
 - LOWER THE ATTACHMENT.
 - SET THE BRAKE LOCK FOR PARKING.

DIRECTION CONTROL

FORWARD
 ↑
 N
 ↓
 REVERSE

LIFT RANGE CONTROL

ON
 OFF

PTO CONTROL LEVER

HI 3 4
 LO 1 2

RANGE SELECTOR

GEAR SELECTOR

WARNING

DO NOT SHIFT GEAR OR RANGE SELECTOR UNLESS VEHICLE IS STOPPED AND DIRECTION CONTROL LEVER IS IN NEUTRAL (N)

TO USE THE BRAKE LOCK

1. PUSH THE BRAKE PEDAL DOWN TO STOP.
2. PUT THE BRAKE LOCK LEVER IN THE LOCK POSITION.
3. PUSH THE BRAKE PEDAL DOWN AND PUT THE BRAKE LOCK LEVER IN THE UNLOCK POSITION TO UNLOCK THE BRAKE.

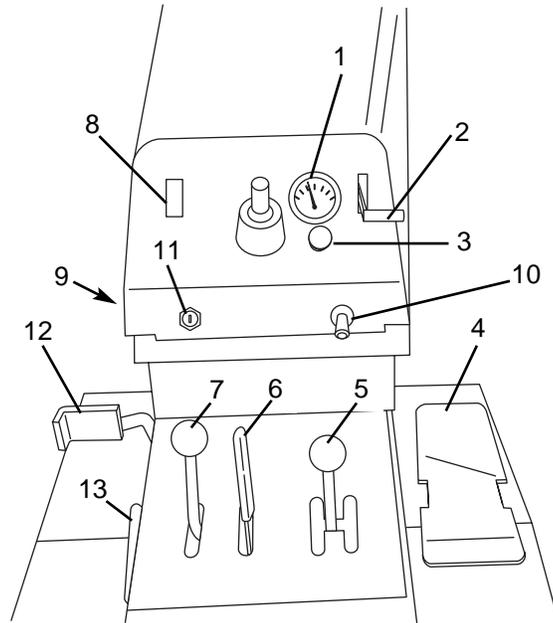
THE ENGINE WILL NOT START UNLESS:

- THE PTO CONTROL IS IN THE OFF POSITION.
- THE DIRECTION CONTROL IS IN THE (N) POSITION.

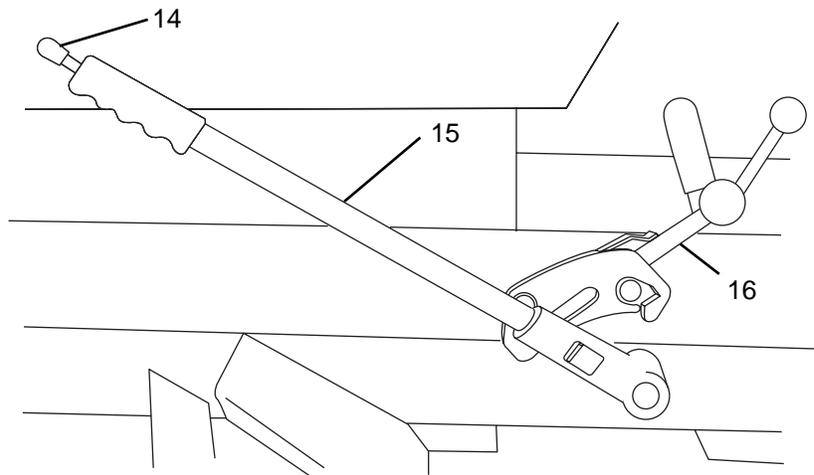
BRAKE LOCK FOR PARKING

UNLOCK
 LOCK
 STOP
 GO

Controls and Features



PJ0340



PJ0350

- | | |
|---------------------------------|------------------------------|
| 1. Ammeter | 9. Hourmeter (side of panel) |
| 2. Throttle Control | 10. Attachment Lift Switch |
| 3. Choke Control | 11. Ignition Switch |
| 4. Direction Control Pedal | 12. Brake Pedal |
| 5. Gear Selector | 13. Brake Lock Lever |
| 6. Range Selector | 14. Release Button |
| 7. PTO Control | 15. Manual Lift Lever |
| 8. Warning Light (Oil Pressure) | 16. Lift Range Control |

Figure 1: Control and Feature Locations

Operation

NOTE: Read the tractor and attachment(s) manuals before operating the equipment. Operate the tractor only from the operator's position on the seat. Service the tractor and attachment before operating.



Direction Control Pedal

The direction control pedal controls the movement of the tractor. Push the pedal forward and lock over center to go forward. Push the pedal back to move the tractor backwards (Figure 1).

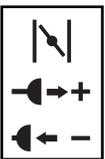
Range Selector

The range selector has two operating positions. The forward ("HIGH") position is the fast gear. The rearward ("LOW") position is the slow gear (Figure 1).



Throttle Control

The throttle lever (Figure 1) is used to control the engine speed. To increase the engine speed, move the lever up to the "FAST" position. To decrease the engine speed, move the lever down to the "SLOW" position.



Choke Control

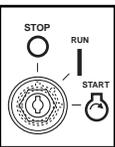
The choke control is used to choke a cold engine for starting. The choke control is located on the instrument panel (Figure 1). Pull the choke out to the "ON" position to choke the engine. When the engine is warm, move the control to the "OFF" position.

Hourmeter

The hourmeter (on some models) shows total time which the ignition switch has been in the "ON" position (Figure 1).

Fuse

All models have a fuse to protect the electrical system. The fuse is located in the wire harness.



Ignition Switch

The ignition switch is operated with a removable key. The switch has three positions: "Off", "On" and "Start".

To start the engine, the key must be in the "Start" position. Once the engine has started release the key and it will return to the run position. To stop the engine, turn the key to the "Off" position.



Gear Selector

The gear selector has four operating positions (Figure 1). See specifications for ground speeds produced in each gear.



Attachment Lift Switch (Hydraulic Model)

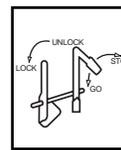
The attachment lift switch is used to raise and lower the attachment. The lift switch is located on the instrument panel. Move the switch up to raise, and down to lower the attachment.

Ammeter

The ammeter indicates the condition of the charging system. Normal operation will show the indicator needle slightly to the "Plus" side of zero.

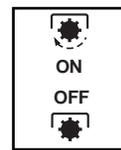
Brake Pedal

Pushing the brake pedal down will stop the tractor and return the direction control pedal to "NEUTRAL". Use the brake pedal for sudden stops and for holding the tractor on slopes.



Brake Lock Lever

To lock the brake for parking, depress the brake pedal and pull back on the brake lock lever. To release, push on the pedal and move the lock lever forward.



PTO Control

To power an attachment, push the PTO control forward to "ON". To stop an attachment, pull the PTO control rearward to "OFF". The operator must be in the tractor seat to operate the PTO. If the operator leaves the seat while the PTO control is in the "ON" position, the engine will stop.

Warning Light

The tractor is equipped with a warning light to alert the operator in the event there is a problem with the engine. The warning light is located on the upper left side of the instrument panel. See Figure 1.

Operation

NOTE: The light is activated when there is a loss of oil pressure. If the light comes on while operating the tractor, stop the tractor and engine as quickly as possible and check the engine oil level.

To check to see if the light is operating correctly, turn the ignition switch to the "ON" position. The light should glow red.

NOTE: The engine must have been off for at least five minutes prior to performing this test.

Correct Operating Speeds



WARNING: On rough and sloping ground and when mowing and trimming near buildings, trees, and other obstructions, use a slow ground speed.

NOTE: Most attachments, especially rotary mowers and snowblowers, perform best when operated at full engine speed. Proper ground speed is determined by power limitations, the type of terrain, the quality requirements of the job being performed, obstructions, hazards, etc.

Using the Attachment Lift Systems

Manual or hydraulic lift systems are used to raise and lower attachments. Either can hold an attachment in position or let it follow the ground.

Using the Manual Lift System

To hold an attachment in position:

- Lift the attachment to the raise position.
- Lift the lift range control and slide it to the desired position.
- Lower the attachment. The lift lever will stop against the lift range control. If the attachment is not in the desired position, repeat the first two steps.

To let an attachment follow the ground:

- Move the lift range control to the lowest position.
- Lower the attachment to the ground.

Using the Hydraulic Lift System

To hold an attachment in position:

- Lift the attachment by moving switch to the "up" position until the attachment is fully raised.
- Lower the attachment to the desired position by moving switch to the "down" position.
- When the attachment reaches the desired position, release the switch. The attachment will be held in that position.

To let an attachment follow the ground:

- Move the switch to the "down" position. When the attachment reaches the ground, hold the switch in the "down" position for approximately 1/2 second before releasing the switch.

Before Starting the Engine

Be sure that the tractor and engine have been properly serviced and maintained.

Operator Presence Control

The operator must be sitting in the seat to allow operation of the power take off (PTO) or traction drive.



CAUTION: The operator presence control is intended to stop the engine whenever the operator is not seated and the PTO and direction control pedal are not in the disengaged (PTO - Off, direction control pedal - Neutral) positions. Test this system each time the tractor is operated. If this system does not function as described do not operate until repairs are made. **NOTE:** Engine must not start unless PTO is disengaged and direction control pedal is in neutral.

Starting and Stopping the Engine

To start the engine:

- The direction control pedal must be in "NEUTRAL" position and the PTO control must be at "OFF" position.
- Put the key in the ignition switch.
- Move the throttle lever to a middle position.
- If the engine is cold, move the choke lever to "ON". If the engine is warm, the choke lever should be at "OFF".
- Turn the ignition key to "START". When the engine starts, move the choke lever slowly to "OFF". If the engine does not start in five seconds, release the key for a few seconds and then repeat. If the engine does not start within five tries see section 6 for instructions.



CAUTION: Do not keep starter running for over 15 seconds. Do not run the starter for more than 15 seconds in any one minute.

Operation (Continued)

To stop the engine:

- Move the throttle lever to "SLOW" and idle with the PTO control disengaged for approximately 15 seconds.
- Turn the ignition switch of "OFF".
- Remove the key before leaving the tractor.

Operating the Transmission

Use slow engine and transmission speeds until you know how to operate the tractor safely.



DO NOT SHIFT TRANSMISSION GEARS WHILE THE FORWARD OR REVERSE CLUTCHES ARE ENGAGED OR THE TRACTOR IS MOVING. This will damage the gears. Always place the direction control pedal in "NEUTRAL" and bring the tractor to a complete stop before moving the gear or range selectors.

To move in a forward direction:

- Start the engine and move the throttle to give the desired engine speed.
- Put the range and gear selectors in the positions that will produce the desired speeds. See section 7 for ground speeds produced.
- Move the direction control pedal forward. As the tractor increases speed, push the pedal until it locks into position. If the pedal is not pushed all the way forward, slippage can damage the forward clutch. **USE CAUTION WHILE LEARNING TO OPERATE THE DIRECTION CONTROL PEDAL.**

NOTE: The operator must be in the seat to operate

the direction control pedal. If the operator leaves the seat with the direction control pedal in the "Forward" position, the engine will stop.

To move in a reverse direction:

- Follow the first two steps above.
- Push down firmly on the bottom of the direction control pedal. The control pedal does not lock into a reverse position. You must continue to push down firmly to continue reverse travel. The pedal will return to "Neutral" upon release.

Lubrication and Maintenance

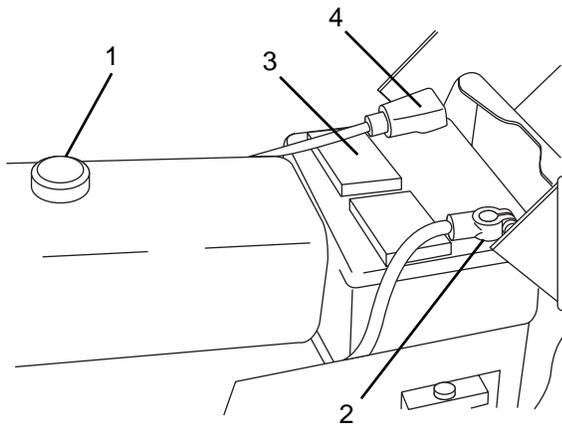
Filling The Fuel Tank



WARNING: Use caution with fuel. Fuel is very flammable. Keep fuel in a clean and tight container. Keep fuel away from fire or heat. Never put fuel in the fuel tank while the engine is running or hot. Clean up any spilled fuel before starting the engine.

Add fuel to the fuel tanks as needed. See your engine manual for the correct type and grade of fuel.

Put the unit in an open area. Stop the engine and lock the brake. Clean the fuel cap and the area around the fuel cap to prevent dirt from entering the fuel tank. See Figure 2. Remove the cap from the fuel tank. Fill the fuel tank. Be careful not to spill the fuel. Install the cap on the fuel tank and tighten. Clean up any spilled fuel before starting the engine.



PJ0360

1. Fuel Cap
2. Negative Battery Cable
3. Battery
4. Positive Battery Cable

Figure 2: Battery Connectors

Engine Maintenance

See the engine manual for maintenance instructions. Check the air cleaner and engine oil daily. Check the cooling system every 25 hours. Clean all of the grass and other material from the cooling fins and intake screen of the engine. If necessary, remove the engine shrouds to clean the engine. See the engine manual for the type of oil, oil change, etc.

Never operate the engine when the oil level is below the low mark on the dipstick. See the engine manual for the type of oil, oil change, etc. Never operate the engine when the oil level is below the low mark on the dipstick. See the engine manual for air cleaner maintenance instructions.

Control Linkage Lubrication

Every 25 hours of operation put a drop of engine oil on the pivots of the throttle lever, the direction control lever, the gear shift lever, the PTO control, and range shift handle.

Battery Service

The tractor is equipped with a low maintenance battery. Check the fluid level every 200 hours or at the end of the year (Figure 2). Keep the battery clean. If acid is on the outside of the battery or the electrical connections are corroded, clean the outside of the battery with a water and baking soda solution. Anytime the battery cables are to be disconnected, remove the negative (-) (ground) cable first. When replacing the battery cable connect the positive (+) cable first. Anytime the battery cables are disconnected, the cable clamps and the battery post or connection should be cleaned until shiny. There are brushes make to clean the clamps and battery posts.

Fastener Check

Check all fasteners after 25 hours of operation to make sure that they are tight. Replace any fastener that is missing.

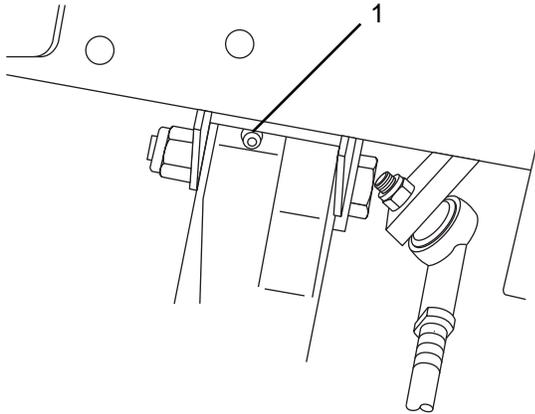
General Lubrication

There are seven grease fittings to be greased at 25-hour intervals. Clean the fittings before attaching the grease gun. Use a high quality lithium base grease. Add grease until it appears at the ends of the bearings. The locations of the seven fittings are:

- On the direction control pedal.
- On the front axle at each king pin.
- On the front axle (Figure 3).
- On the steering mechanism (Figure 4).

Apply motor oil to all pin connections, pivot points and areas where sliding occurs in the clutch, transmission, PTO, and lift control systems every 25 hours.

Lubrication and Maintenance (Continued)



PJ0370

1. Grease Fitting on the Front Axle

Figure 3: Steering Axle Pivot

Checking the Engine Oil

Check the engine oil level daily. Never operate the engine with the oil level below the low mark on the dipstick. See your engine manual for oil specifications and oil filter service instructions.

To check the oil level:

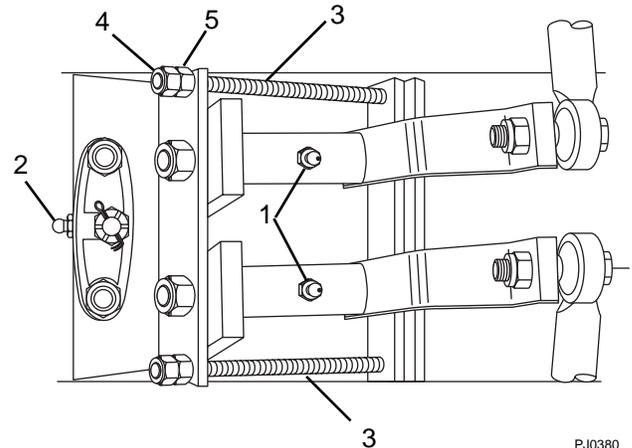
- Clean around the dipstick to prevent dirt from entering the tube.
- Remove the dipstick and wipe off the oil.
- Put the dipstick back in place. Be sure it is all the way down.
- Remove the dipstick again and note oil level.
- Add oil, if needed. Do not overfill.
- Put the dipstick back in place. Be sure it is all the way down.

Changing the Engine Oil

- Read your engine manual for recommended change schedule.
- Move the tractor to a level area. Lock the brake.
- If the engine is cold, let it run for 5 minutes.
- When the engine is warm, stop it and raise the rear fender.



WARNING: Engine muffler and other parts are hot.



PJ0380

1. Grease Fittings for the Steering Arms
2. Grease Fittings for the Steering Columns
3. Adjusting Bolt
4. Lock Nut
5. Adjusting Nut

Figure 4: Steering Arms

- Clean the areas around the dipstick and drain plug.
- Remove the dipstick.
- Put an open top container that will hold four quarts under the drain plug.
- Remove the drain plug.
- Allow the engine to drain completely.
- Clean and reinstall the drain plug.
- Remove the oil filter (some models), clean the oil filter port and install a new oil filter according to the instructions on the oil filter.
- Fill with new oil to the "Full" mark on the dipstick.
- Replace the dipstick. Lower the rear fender.
- Start the engine and check for leakage at the drain plug. Tighten the plug if leakage occurs.

Checking the Battery Fluid

Check the battery fluid every 200 hours. Use caution and wear eye protection when checking the battery. To check the battery:

- Clean the top of the battery.
- Lift the filler caps.
- If the fluid level is below the split rings in the filler tube, add distilled water. Do not fill above the split ring. Do not use a metal funnel.
- Reinstall the filler caps. Push them all the way down.

Lubrication and Maintenance (Continued)

Checking the Fasteners

Every 25 hours, or any time looseness of parts, rattles, or excess noise and vibration are noted, check all fasteners. Look for loose or missing fasteners. Make sure all bolts, screws, nuts, pins, snap rings, and cotter pins are in the correct position and replace any that are missing.

Checking the Air Intake Screen

Check the air intake screen on the engine each day. Remove any grass, dirt, or debris that may have accumulated on it. The air intake screen must be kept clean.

Checking the Cooling System

Check the cooling system for signs of the collection of grass and debris in the engine cooling fins every 25 hours or more often when operated in dirty conditions. See your engine manual for instructions.

Checking the Air Cleaner

Check the air cleaner each day. See your engine manual for instructions.

Changing the Air Cleaner Element

Replace the air cleaner element at the correct intervals. See your engine manual for instructions.

Checking the Transmission Oil

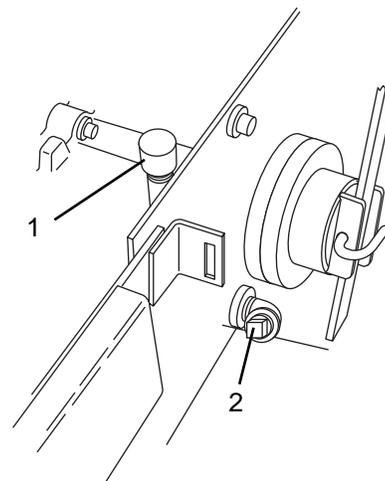
Check the transmission oil level every 200 hours or twice a year, whichever comes first. If leakage is observed, check more frequently. The fill tube and check plug are shown in Figure 5.

To check the transmission oil level:

- Move the tractor to a level area. Stop the engine and lock the brake.
- Raise the rear fender. Locate and clean the check plug on the left side of transmission and remove it.
- The oil level is correct when oil is at the bottom of the hole.
- If the level is correct, reinstall and tighten the plug. If the level is low, add oil. See Specification Section for recommended lubricant specifications.

To add oil:

- Remove the fill tube cap. Add oil until it reaches the bottom of the check plug hole.
- Reinstall and tighten the fill tube cap and check plug.



1. Fill Tube
2. Check Plug

Figure 5: Checking Transmission Oil

PJ0390

Adjustments

Adjusting the Brakes

Brake service is required if the brake does not stop and hold the tractor effectively. The brake should be effective enough to cause the rear wheels to slide if applied suddenly on a concrete or asphalt surface.



CAUTION: Replace the brake band when the lining is as thin as the ignition key. Replace the brake drum if it is visibly worn or rough.

To adjust the brake:

- Stop the tractor on a level surface.
- Stop the engine and block the wheels so the tractor cannot roll.
- Loosen the jam nut and remove the clevis pin (at the brake band)

NOTE: Do not adjust the brake rod on the left hand side which attaches to the brake pedal. This rod is for adjusting the direction control pedal only.

- Turn the clevis clockwise to tighten or counterclockwise as needed.
- To check the adjustment, reconnect the clevis and brake band with the pin.
- Push the direction control pedal all the way forward.
- Push the brake pedal by hand while watching the motion of the brake band. The brake is correctly adjusted when the band becomes tight on the drum as the direction control pedal moves to "Neutral". If the band is tight before the pedal moves to "Neutral", the brake is too tight. If too tight or too loose, repeat steps 4, 5, 6 and 7 until the correct adjustment is obtained.
- Install the cotter pin in the clevis pin and tighten the jam nut.
- Check the effectiveness of the brake while operating the tractor.

Adjusting the Forward and Reverse Clutches

The forward and reverse clutches must be checked every 100 hours. If the lining has worn to a thickness of less than 0.150 inch (3.8mm), replace the lining. The forward clutch is on the right side of the transmission and the reverse clutch is on the left side of the transmission (Figure 5).

NOTE: Damage will occur if the tractor is operated with a lining thickness of less than 0.150 inch (3.8mm).

Inspect and adjust the clutches as follows:

- Stop the engine and place the direction control pedal in the "Neutral" position.

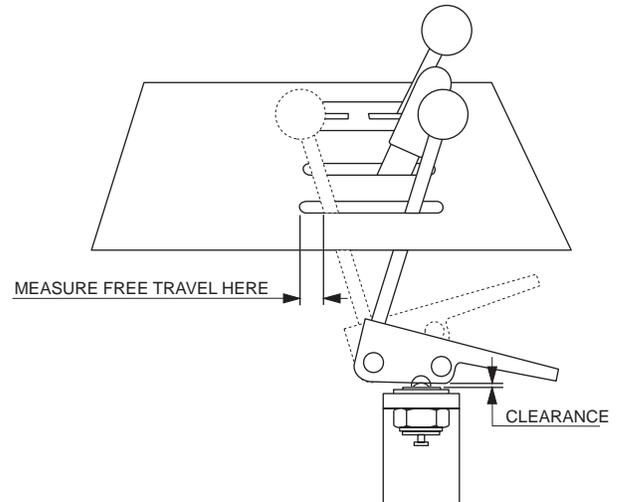


Figure 6: PTO Clutch Adjustment

- Raise the rear fender.
- Measure the clearance in the slot. The correct clearance is .030 inch (.76mm) to .060 inch (1.5mm) for the forward clutch and .010 inch (.25mm) to .030 inch (.76mm) for the reverse clutch.
- Adjust the bolts which go through the flange on the axle bearing retainer so that the forward-reverse clutch springs are straight up and down when the clutches have zero clearance. Lock the bolt in place with the jam nut. Loosen the jam nut which holds the slide rod bushing in place. Adjust the bushing on the slide rod until the clearance is correct. Lock the bushing in place with the jam nut.
- Lubricate the clutch once each season. Remove the clutch and apply a film of high quality lithium base grease to the splined clutch shaft. While the clutch is off, check the lining wear. If the lining has worn near the rivet heads, replace the lining. Readjust the clutch as described above.

Adjusting the PTO Clutch

The PTO clutch should be adjusted whenever there is less than .5 inches of free travel in the clutch lever when it is in the "On" position. See Figure 6 to see where this free travel is measured. The free travel should be between .5 inch and 1.0 inch.

- Stop the engine and lock the brake.
- Loosen the bolts holding the switch bracket and push the bracket down.
- Raise the rear fender.
- Push the PTO lever to "On".
- Disconnect the PTO control from the transmission lever.

Adjustments (Continued)

- Turn the control rod to change the free travel. Each turn will change it by about .25 inch. Turn clockwise to increase and counterclockwise to decrease the free travel.
- Reconnect the control rod to the transmission lever. Check for correct free travel. Repeat above three steps if necessary.
- Put the PTO control in the “Off” position.
- Move the switch bracket up until the switch closes (makes a circuit). Tighten the switch bracket hardware.



CAUTION: Make sure that the PTO control assembly does not rest on the switch body.

Adjusting the Steering System

Adjustment of the steering gear is usually needed whenever there is more than 2 inches of free play in the steering wheel. To adjust the steering gear:

- Loosen the lock nuts on both adjusting bolts (Figure 4).
- Turn the steering wheel to the right as far as it will go.
- Turn the adjusting nut on the left side adjusting bolt clockwise with your fingers until it is tight. Then back the nut off one fourth turn.
- Tighten the lock nut against the adjusting nut being careful not to move the adjusting nut.
- Turn the steering wheel to the left as far as it will go.
- Repeat the above two steps for the right side adjusting nut.
- Check for tightness or backlash in the steering gear through the full range of the steering wheel rotation. There should be no noticeable tightness or backlash in the rack and pinion mesh. If there is, repeat above steps as required.

Upon completion of the steering gear adjustment, recheck the steering wheel free play. If the free play is still excessive, look for loose steering arms on the king pins, loose or worn ball joints, or other signs of wear. Tighten or replace as required.

Adjust the front wheel toe-in as follows:

- Rotate the steering wheel until the two steering arm weldments are parallel to the frame side.

- On 13.5 HP and 16 HP engine units, loosen the jam nuts on the tie rods and disconnect the outside ball joint. Rotate the front tires by hand so that the distance between the front centerline of the tire is 1/8” to 1/2” less than the Distance between the rear centerline. Adjust the tie rods so that the ball joint can be connected to the tie rod arm without moving the tire and so that the tie rods are the same length. Tighten the jam nuts.
- On 20.5 HP units, loosen the jam nuts on the tie rods and rotate the tire rod tube so that the front centerline of the tire is 1/8” to 1/2” closer than the rear centerline and so that the tie rods are the same length. Tighten the jam nuts.

Servicing the Spark Plug(s)

To clean or change a spark plug:

- Stop the engine, lock the brake, and raise the seat pan weldment.
- See your engine manual for further instructions.

Servicing the Hydraulic Lift



WARNING: Keep body and hands away from pin holes or nozzles which eject hydraulic fluid under pressure. Use paper or cardboard and not hands to search for leaks.

Be sure to stop the engine and put the attachment in the down position before doing any work on hydraulic parts.



WARNING: Make sure all hydraulic fluid connections are tight and all hydraulic hoses and lines are in good condition before applying pressure to the system.

Hydraulic fluid escaping under pressure may have sufficient force to penetrate skin and cause serious injury. Foreign fluid injected into the skin must be surgically removed within a few hours by a doctor familiar with this form of injury or gangrene may result.

Check the hydraulic fluid level when the hydraulic lift will not raise the attachment or leaks are observed.

To check the hydraulic fluid level:

- Clean the area around the reservoir and cap.
- Remove the cap.
- The correct hydraulic fluid level is one inch from the top of the reservoir. Add Dextron II ATF to maintain this level.

Adjustments (Continued)

Adjusting the Range Selector

- Move the Hi-Lo shift lever as far as it will go in both directions. Measure the distance between the lever and the end of the slot. This distance should not be less than 5/16".
- Adjust the clevis so that the clearance between the Hi-Lo shift lever and the control cover plate slot is equal for both positions of the lever.

Adjusting the Seat

The seat has 4" of front-to-rear adjustment. To adjust the seat, pull the adjustment lever out and move the seat forward or backward. Release the lever and ensure that the seat is locked into position.

Storage

Storing the Unit

- Do the daily and 25-hour maintenance, but do not add gasoline.
- Clean the tractor. Paint or oil bare metal surfaces to prevent rust.

NOTE: Do not use harsh or abrasive cleaners on any painted surface. Do not allow gasoline or oil to remain on any silk screened surface.

- Refer to the engine manual and prepare the engine for storage.
- Clean and charge the battery. Charge the battery every three or four weeks while in storage.
- Place the PTO lever in "OFF" position.
- Store in a cool, dry place.

IMPORTANT: NEVER spray unit with water or store unit outdoors to aid in prevention of rust or corrosion. Water can seep into sealed bearings, which are sealed against dirt and debris only, causing reduced component life.

Taking the Unit Out of Storage

- Refer to the engine manual and prepare the engine for service.
- Charge the battery.
- Put fresh, clean gasoline in the fuel tank.

Service Manual

Service manuals are available for owners who wish to perform some of their own maintenance and service operations. Should a complete service manual be desired, order under the following part number.

**655 West Ryan Street
P.O. Box 157
Brillion, WI 54110-0157**

When ordering parts always include the Model and Serial Number of your unit to assure prompt service. A parts manual is included in your literature package to make ordering of service parts easier.

Professional G Series

Service Manual

Part No. 00026793

Tractor Model Number _____

Tractor Serial Number _____

Mail Request to: Ariens Service

Trouble Shooting

1. No sound or motion when the ignition switch is turned to the "Start" position.

PTO control in the "On" position.
Direction control pedal in the forward or reverse position.
Blown fuse.
Discharged battery.
Starting solenoid damaged.
Loose battery cable(s).
Damaged time delay module.

2. When the ignition switch is turned to "Start", the solenoid "clicks" and the engine starter motor does not operate.

Discharged battery.
Battery cable connector(s) corroded.
Starter damaged.

3. When the ignition switch is turned to "Start", the starter operates but the engine does not start.

Relay or relay connection(s)
Fuel tank empty.
Fuel valve turned off
Engine spark plug(s) fouled.
Engine failure -- see Engine Service Manual

4. Battery discharged.

Regulator-rectifier failure.
Fuse holder or battery.
Engine alternator failure.
Battery failure.

5. Engine continues to run when the ignition switch is rotated to the "Off" position.

Ground wire not connected.
Ignition switch failure.

6. Lights do not come on when the light switch is moved to the "ON" position.

Light(s) burned out.
Defective light switch
Loose wire connections
Engine light alternator failure
Ignition switch failure.

7. Engine runs rough or stops after it gets hot.

See Engine Service Manual.
Time delay failure.

8. Fuse blows when starting engine.

Defective solenoid.

9. Hydraulic lift will not lift attachment.

Hydraulic pump seals
Cylinder seals
Low fluid level
Hydraulic pump
Relief valve setting
Blown Fuse

Specifications

Model No.	987071	987072	987070
Description Name	13.5 HP Robin Manual Lift	20.5 HP Robin Hydraulic Lift	16 HP Briggs & Stratton Hydraulic Lift
Length	82" (208.3 cm)	82" (208.3 cm)	82" (208.3 cm)
Width	41.5" (105.4 cm)	43.2" (109.7 cm)	41.5" (105.4 cm)
Height	51" (129.5 cm)	51" (129.5 cm)	51" (129.5 cm)
Weight	858 lbs.	863 lbs.	860 lbs.
Wheelbase			
Battery	12 Volt BCI Group 22F, 42 AMP Hr	12 Volt BCI Group 22F, 42 AMP Hr	12 Volt BCI Group 22F, 42 AMP Hr
Brakes	External Band Brake on transmission, individual rear wheel brakes optional	External Band Brake on transmission, individual rear wheel brakes optional	External Band Brake on transmission, individual rear wheel brakes optional
Steering	Rack & Pinion	Rack & Pinion with heavy tie rods	Rack & Pinion
Turning Radius	26.5" (67.3 cm)	26.5" (67.3 cm)	26.5" (67.3 cm)
Tire Sizes			
Front	16 x 6.5 - 8	16 x 7.5 - 8	16 x 6.5 - 8
Rear	23 x 8.5 - 12	23 x 8.5 - 12	23 x 8.5 - 12
Tire Pressure			
Front	14-18 PSI (97-124 kN/m ²)	14-18 PSI (97-124 kN/m ²)	14-18 PSI (97-124 kN/m ²)
Rear	16-14 PSI (69-97 kN/m ²)	16-14 PSI (69-97 kN/m ²)	16-14 PSI (69-97 kN/m ²)
Engine			
Type	Robin	Robin	Briggs & Stratton
Model No.	EH41	EH64	303447
HP	13.5	20.5	16
RPM Hi/Low	3300/1600	3300/1600	3300/1600
Engine Oil	See Engine Manual	See Engine Manual	See Engine Manual
Engine Oil Capacity	See Engine Manual	See Engine Manual	See Engine Manual
Fuel Specifications	See Engine Manual	See Engine Manual	See Engine Manual
Fuel Tank Capacity	5.3 Gals. (20 Liters)	5.3 Gals. (20 Liters)	5.3 Gals. (20 Liters)
Fuse	25 AMP	25 AMP	25 AMP
Transmission			
Oil Capacity	6 Qt. (5.7 Liters)	6 Qt. (5.7 Liters)	6 Qt. (5.7 Liters)
Transmission Type	API Service SC10W-30 Motor Oil	API Service SC10W-30 Motor Oil	API Service SC10W-30 Motor Oil
Hydraulic Type	N/A	ATF Dextron II	ATF Dextron II
Hydraulic Capacity	N/A	1 Qt. (.9 Liter)	1 Qt. (.9 Liter)

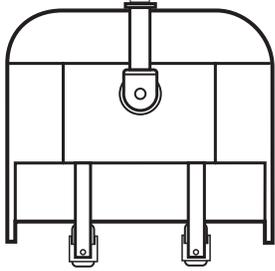
Specifications (Continued)

Ground Speeds (at 3600 rpm Engine Speed):

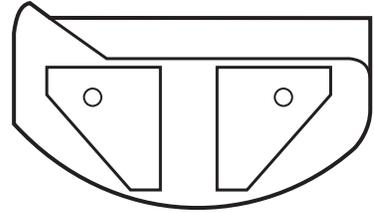
TRACTOR GROUND SPEEDS				
	FORWARD		REVERSE	
Gear	"LO" Range	"HI" Range	"LO" Range	"HI" Range
1	.5 mph (.8 km/hr)	2.5 mph (4.0 km/hr)	1.1 mph (1.8 km/hr)	Same
2	.8 mph (1.2 km/hr)	3.8 mph (6.1 km/hr)	1.7 mph (2.7 km/hr)	Same
3	1.1 mph (1.8 km/hr)	5.7 mph (9.2 km/hr)	2.5 mph (4.0 km/hr)	Same
4	1.7 mph (2.7 km/hr)	8.5 mph (13.7 km/hr)	3.8 mph (6.1 km/hr)	Same

Attachments

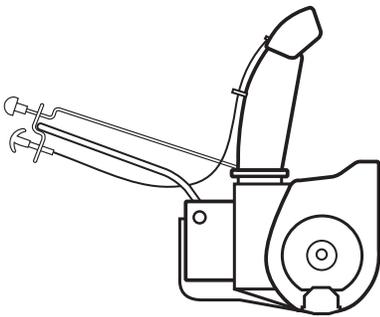
See your authorized Ariens dealer to add these additional attachments to your Tractor.



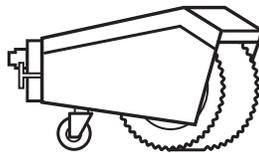
88500400 - 40" Mower Deck
78700300 - Front Adaptor Kit Required



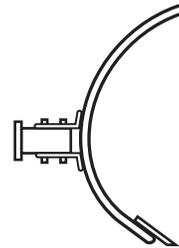
88500600 - 50" Mower
88700300 - 60" Mower



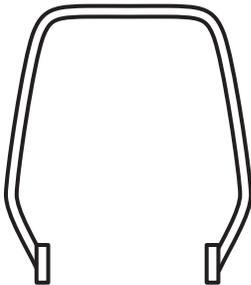
83300600 - 48" Sno Blower



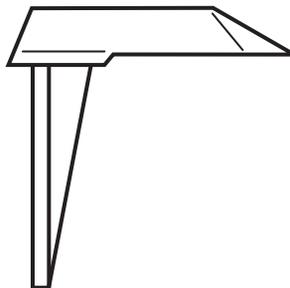
88501500 - 44" Power Brush
78700200 - Completing Kit Required



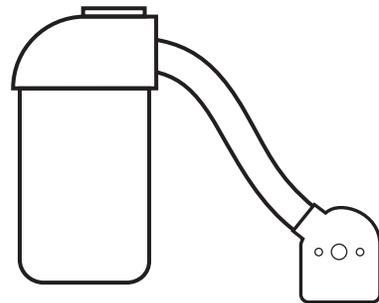
88701100 - 48" Snow Dozer Blade



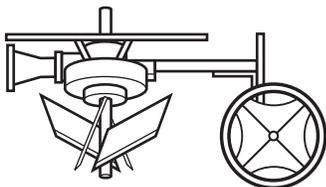
88701500 - Roll Over Protection



88703900 - Sunshade Kit



088700700 - Grass Catcher Blower
& Frame Assembly



88501000 - Rotary Plow
78700300 - Front Adaptor Kit Required

833002 - 3 - Can Grass Catcher
Assembly

Accessories

Enhance you Series G Tractor with these Gravely Accessories

Mowing Accessories

78500800	40" Mower Drive
78700200	Front Drive Kit
78700300	Front Adapter Kit
78501300	Front Anti-Scalp Roller
78501400	Rear Anti-Scalp Roller
78700400	Drive Kit For Kohler Engines
78700500	Boot Kit For 40" Mower
78700600	Boot Kit For 50" Mower
78700700	Boot Kit For 60" Mower

Garden Accessories

78701200	Liftable Rear Hitch
78700200	Front Drive Kit
78700300	Front Adapter Kit
78503000	Attachment Adapter Kit

Snow Removal Accessories

78701400	44" Power Brush Completing Kit
78700200	Front Drive Kit
73500700	Snowblower Drift Bar
78701500	Tire Chain (23 x 8:50) (Pair)
78701600	Tire Chains (23 x 10:50) (Pair)
78701700	Safety Light (Cab)
78701800	Glass Windshield (Cab)
78701900	Electric Wiper (Cab)

Miscellaneous Accessories

78700300	Front Adapter Kit
78702100	Lift Assist Kit
78702400	Front Wheel Weights (Pair)
78702500	Front Wheel Weights (Pair)
78702600	Rear Wheel Weights (Each)
78705100	Engine Guard
78705200	Tractor Cover
78707800	Arm Rest Kit
78703000	Forward/Reverse Lever Kit
78707900	Debris Basket
78506600	High Lift Blade Kit 40"
78506700	High Lift Blade Kit 50"
78705400	High Lift Blade Kit 60"
78506800	Sand Blade Kit 40"
78506900	Sand Blade Kit 50"
78707700	Electric Hydraulic Lift Kit

Be sure to always use genuine Gravely parts to keep your tractor running like new.

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- Pro Commercial Walk-Behind Mowers
- Promaster Commercial Front-Mount Riding Mowers
- Pro Zero-Turn-Radius Walk-Behind Mowers
- Promaster Zero-Turn-Radius Riding Mowers
- Professional Chippers
- Professional Vacuum