

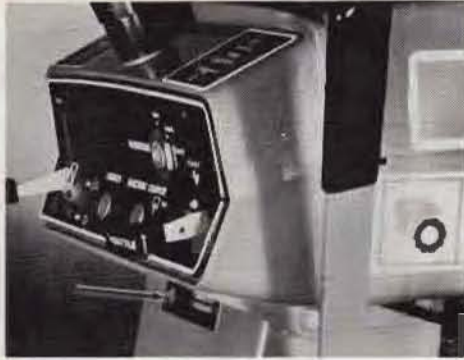
A Series Tractors

A-90 4-SPEED
A-100 4-SPEED

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VEHICLE IDENTIFICATION NUMBERS



TRACTOR VEHICLE IDENTIFICATION
NUMBER PLATE



ENGINE IDENTIFICATION
NUMBERS

FIG. 1

Vehicle Identification Numbers are necessary to correctly identify your tractor and major attachments.

The tractor number plate is attached to the panel just below the dash panel.

Major attachments have the plate bolted to the equipment. If these plates are removed during repair operations, they should always be replaced.

For your convenience and ready reference, enter these numbers in the spaces below.

VEHICLE IDENTIFICATION NUMBERS

Tractor _____

Engine _____

OWNERS REGISTRATION AND IDENTIFICATION CARD

Service and warranty assurance is as important to Wheel Horse as it is to you, the owner. TO ASSURE warranty service at ANY Authorized Wheel Horse dealer, Wheel Horse provides an "OWNERS IDENTIFICATION CARD" for each new tractor, or major attachment, registered with the factory.

To receive your "OWNERS IDENTIFICATION CARD" either you or your dealer must fill in the required information on the "NEW OWNERS FACTORY REGISTRATION CARD" and mail immediately. Your "OWNERS IDENTIFICATION CARD" will be returned by mail.



WHEEL HORSE
lawn & garden tractors

OWNER IDENTIFICATION CARD

OWNER SAMPLE

PRODUCT ID NUMBER

61-20RG01-12345

SELLING DEALER

12345678

WARRANTY EXPIRES

01/01/77

Present this card to an authorized dealer to obtain warranty service.

PARTS MANUAL

A separate parts manual is available for your Wheel Horse equipment. To obtain a parts manual see the ordering information on page 17. BE SURE TO INCLUDE THE VEHICLE IDENTIFICATION NUMBER OF THE EQUIPMENT.

INSTRUMENT AND CONTROLS

FAMILIARIZE YOURSELF WITH THE INSTRUMENTS & CONTROLS SHOWN BELOW BEFORE ATTEMPTING TO OPERATE THIS VEHICLE

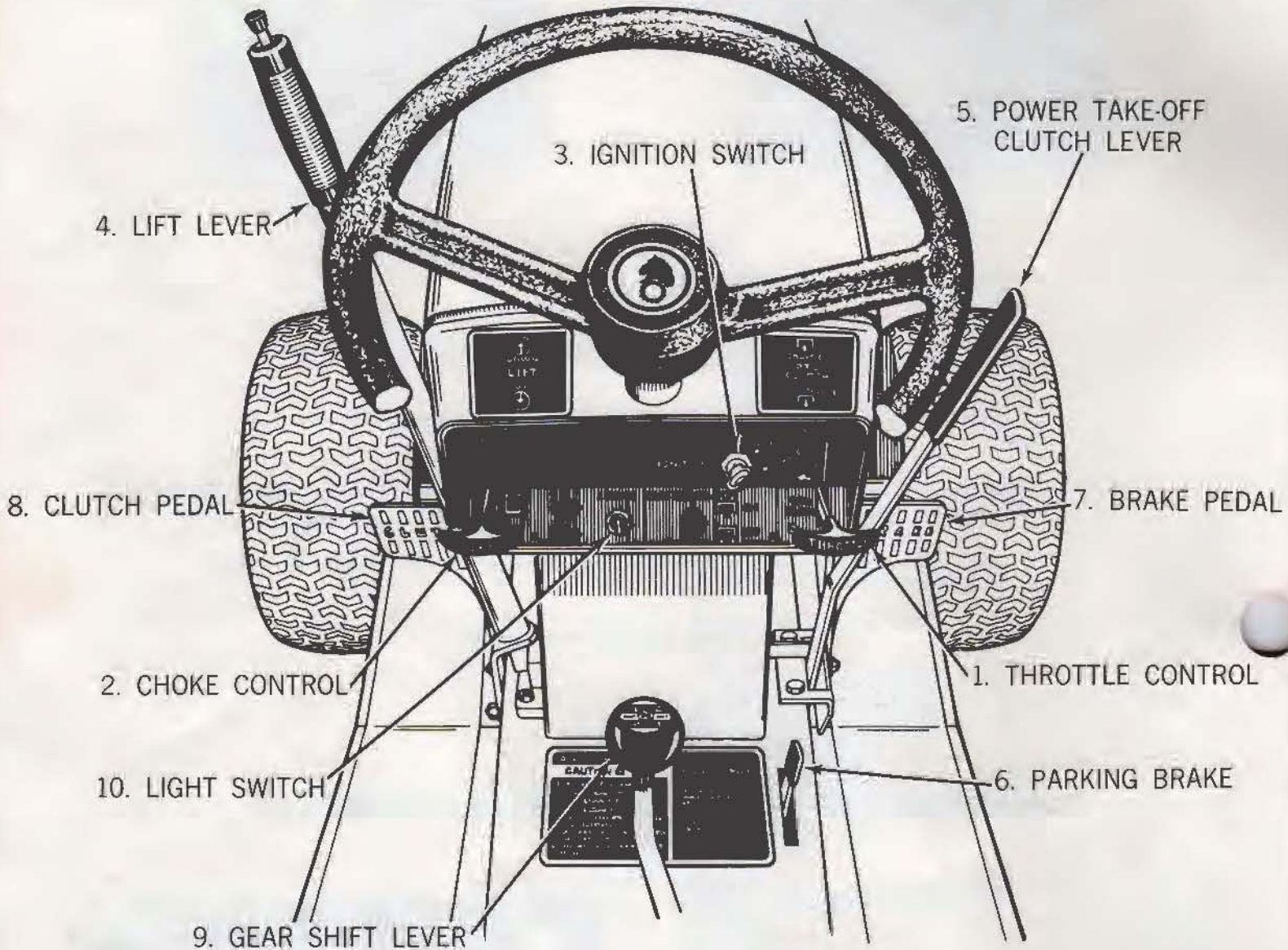


FIG. 2. Instruments and Controls



CAUTION



This symbol marks important instructions relating to your personal safety. To avoid the possibility of injury, read and follow such instructions carefully.

When the manual refers to the left or right side of the tractor, it means your left or right when sitting in the driver's seat, facing forward.

1. THROTTLE CONTROL

The throttle control is located on the right side of the dash panel. This lever controls engine speed. Raise the lever to increase engine speed; lower the lever to decrease speed.

2. CHOKE CONTROL

The choke control is located on the left side of the dash panel. Raise the choke lever to the cold start position when starting the engine. Return slowly to run position after the engine starts. If the engine is warm and has been running, choking may not be necessary to restart it.

3. IGNITION SWITCH

The ignition switch is located on the upper portion of the dash panel, just right of center. The ignition switch has three positions, off, run, and start. Turn the key all the way to the right to operate the starter. Release the key when the engine starts and it will automatically return to run position. Turn the key to the left to shut the engine off.

⚠ CAUTION ⚠

Always remove the key when leaving the tractor unattended even if for just a few minutes. Prevent accidents, don't give children or unauthorized persons an opportunity to operate this machine.

4. LIFT LEVER

The lift lever is located just left of the steering wheel. The mower may be set at five different heights provided by the quadrant on the lift lever.

Depress the release button and move the lever forward or backward to lower or raise the mower to the desired cutting height.

5. PTO CLUTCH LEVER

The PTO clutch lever is located just right of the steering wheel. The mower is engaged and disengaged with the PTO lever.

To engage the mower unhook the lever from the rear notch — push it forward and lock it into the front notch. To disengage mower, unhook the lever from the front notch — pull it back and lock it into the rear notch.

Because one of the safety interlock switches is operated by the PTO lever, it must always be in the disengaged position before the engine will start.

⚠ CAUTION ⚠

When moving the tractor from place to place always raise mower to its highest cutting height position, and disengage the PTO clutch.

6. PARKING BRAKE LEVER

The parking brake lever is located in front of the seat to the right of the transmission shift lever.

To engage the parking brake, first apply the foot brake solidly and then move the parking brake lever back to lock the brake ON.

To release the parking brake, push down on the foot brake. Since the parking lever is spring loaded it will return to the disengaged position when the foot brake is applied.

IMPORTANT! Always release the parking brake before driving tractor. Failure to do so may cause premature wear resulting in brake failure.

7. BRAKE PEDAL

The brake pedal is located on the right side. Pushing down on the pedal applies the brake.

⚠ CAUTION ⚠

When coming to a stop always depress the clutch pedal as well as the brake pedal so that the transmission will be disengaged from the engine. One pedal only will not stop the tractor.

8. CLUTCH PEDAL

The clutch pedal is located at the left side. Pushing down on the clutch pedal does two things: 1. Disconnects the tractor drive belt, disconnecting the engine from the transmission, 2. Closes the starter circuit, so the starter will operate. Engaging the clutch is done by releasing the pedal which tightens the drive belt. ALWAYS RELEASE THE PEDAL SLOWLY WHEN ENGAGING THE CLUTCH. ALWAYS DEPRESS THE PEDAL WHEN SHIFTING THE TRANSMISSION INTO OR OUT OF GEAR AND WHEN STARTING THE ENGINE.

9. GEAR SHIFT LEVER

The gear shift lever is located just in front of the seat. Select any of three forward speeds or reverse by moving the lever to the position indicated on the shift pattern decal on the gear shift knob.

10. LIGHT SWITCH

The light switch is located on the lower portion of the dash panel, just left of center. Raise the toggle switch to turn lights "on". Lower the switch to turn lights "off". The lights will work only while the engine is running.

FUEL VALVE (Not Shown)

The fuel valve is located at the left side of the hood stand. To shut off fuel turn valve clockwise. To open turn valve counterclockwise.

OPERATING YOUR TRACTOR

SAFETY INTERLOCK SYSTEM

The safety interlock system incorporates two switches, one operated by the clutch pedal and one operated by the PTO clutch lever. If the starter fails to operate check the position of the switches in relation to their respective operating levers to see that the switches are activated when the PTO clutch lever is in the disengaged position, and when the clutch is depressed. If the switches do not make contact the engine will not start.

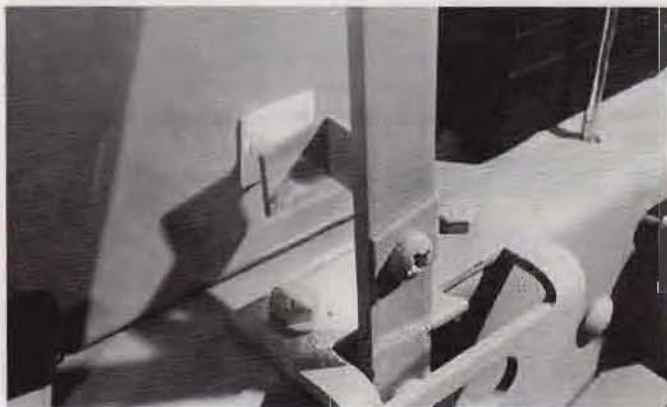


FIG. 3. Safety Interlock Switch

CORRECT ENGINE OPERATION STARTING THE ENGINE

⚠ CAUTION ⚠

Before starting the engine, become familiar with all controls. Read this owner's manual thoroughly. Always check the engine oil level before starting.

⚠ WARNING ⚠

Care should be taken to avoid inhaling exhaust gases as they contain carbon monoxide gas which is colorless and odorless. Carbon monoxide is a dangerous gas that can cause unconsciousness and is potentially lethal.

Do not run your engine in confined areas such as a garage since exhaust fumes contain deadly carbon monoxide.

Because of a built-in safety interlock system, your new Wheel Horse will not start until the clutch pedal is depressed and the PTO (power take-off) is disengaged.

To start the engine depress the clutch pedal and disengage the PTO. Raise the throttle control lever about half way up. Raise the choke control all the way up.

⚠ CAUTION ⚠

Always place the transmission in the neutral position before attempting to start the engine.

Turn the ignition key clockwise until the starter engages. When the engine starts, release the key. The switch is spring loaded and will return to the run position automatically.

If the engine fails to start after 30 seconds of continuous cranking, turn the key to the "OFF" position and allow the starter motor to cool. Check for cause of hard starting, consult "Troubleshooting Guide" found on page 14.

When the engine starts, slowly return the choke lever to the "RUN" position.

STOPPING THE ENGINE

To stop the engine, return the throttle lever to the "SLOW" position and turn the ignition key to the "OFF" position. If the engine has been working hard, or the engine is "hot", allow the engine to idle a short time before turning the key off. This practice will help to "cool" your engine before stopping.

Note: In case of emergency, the engine may be stopped by turning the ignition key to the "OFF" position.

⚠ CAUTION ⚠

Always remove the key when leaving the tractor unattended, even if for just a few minutes. Prevent accidents, don't give children or unauthorized persons an opportunity to operate this machine.

THROTTLE CONTROL

The throttle control regulates the speed of the engine as measured in RPM (Revolutions Per Minute). This control should not be used to regulate the ground speed of the tractor.

The engine in your new Wheel Horse has been designed with a special governor that limits the engine RPM. Unlike an automobile, this governor allows the engine to operate most efficiently at a set speed, and protects it from damage caused by excessive RPM. For maximum mower efficiency always run the engine with the throttle control set at full speed.

CHOKE CONTROL

The choke control activates a "butterfly" valve in the carburetor. This valve limits the amount of raw air available to the carburetor. If the choke is "OPEN" the carburetor has an unrestricted flow of raw air. If the choke is "CLOSED", the amount of raw air available is limited, thus causing the intake of the engine to draw a higher fuel-to-air mixture from the carburetor.

Choking the engine is required when the engine is started cold. Warm engines may not need choking.

FUEL SPECIFICATIONS

When the tractor requires refueling, fill the tank with a good grade (90 octane minimum) of regular or low leaded gasoline. Do not intermix regular and low leaded gasolines. DO NOT MIX OIL WITH GASOLINE

⚠ CAUTION ⚠

Handle fuel with care — it is highly flammable. Use only approved fuel container. Never add fuel while the engine is running. Fill fuel tank outdoors with extreme care. Never fill fuel tank indoors. Replace gasoline cap securely and wipe up all spilled fuel.

OIL SPECIFICATIONS

To protect your new Wheel Horse, check the engine and transmission oil levels before each use. For maximum protection under all operating conditions use API Service Classification "SC" oil. Oil carrying the former API Service Classification "MS" may also be used.

Refer to the "Maintaining Your Tractor" section of this manual for more detailed information (Page 7).

CORRECT TRANSMISSION OPERATION

TO GO FORWARD OR REVERSE

With the engine running, depress both the clutch and brake pedals. Move the Gear Shift Lever to the desired speed forward or reverse. The Gear Shift knob identifies the various speeds. Release the brake pedal. Slowly release the clutch pedal. As the clutch pedal is released, the tractor will begin to move.

⚠ CAUTION ⚠

Always release the clutch pedal slowly when starting the tractor in motion. Sudden starts can be damaging to the equipment and could cause loss of operator control.

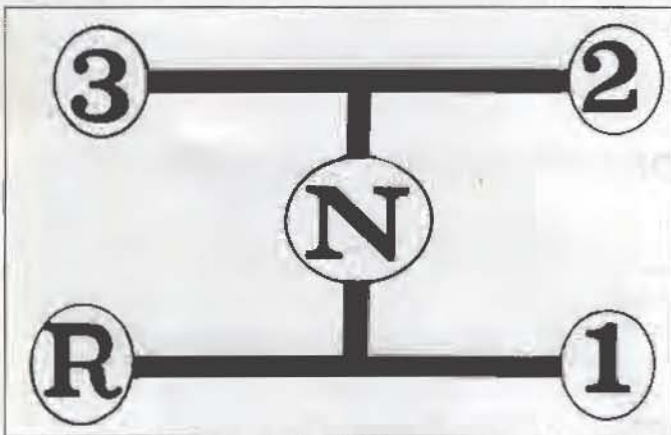


FIG. 4. Gear Pattern

TO CHANGE SPEED OR DIRECTION

When a change in transmission speed is required, always bring the tractor to a complete halt by depressing both the clutch and the brake pedal.

Never attempt to shift gears with the unit in motion. Severe internal transmission damage may result.

It is not necessary or recommended to shift "up" or "down" through the gears with the tractor in motion. The tractor has sufficient power to "move out" in any gear. If the tractor will not "move out" in a selected gear with a heavy load attached to the tractor, a lower gear should be used.

TO STOP

To stop the tractor, depress the clutch pedal then the brake pedal. The clutch pedal must be depressed fully before the brake pedal is depressed.

⚠ CAUTION ⚠

When stopping the tractor always depress the clutch pedal first, then the brake pedal. Depressing the brake pedal without the clutch may cause excessive brake lining wear and extensive internal transmission damage. Depressing the clutch pedal without depressing the brake pedal WILL NOT STOP THE TRACTOR.

USING THE MOWER LIFT LEVER

Depress the release button and pull the lever back to raise the mower; move the lever forward to lower the mower. The mower may be set at any of the 5 heights provided by the quadrant and the lift lever.

⚠ CAUTION ⚠

Always lower all attachments before leaving the tractor unattended.

ENGAGING THE PTO CLUTCH

The mower is engaged and disengaged with the PTO lever.

To engage the mower unhook the PTO lever from the rear notch — push it forward and lock it into the front notch. To disengage the mower unhook the lever from the front notch — pull it back and lock it into the rear notch.

Because one of the safety interlock switches is operated by the PTO lever, it must always be in the disengaged position before the engine will start.

PARKING BRAKE

The Parking Brake is designed to hold the tractor motionless whenever the tractor is not in use.

The parking brake lever is located in front of the seat to the right of the transmission shift levers.

To engage the parking brake, first apply the foot brake solidly and then move the parking brake lever back to lock the brake ON.

To release the parking brake, push down on the foot brake. Since the parking lever is spring loaded it will return to the disengaged position when the foot brake is applied.

⚠ CAUTION ⚠

Always engage the parking brake before leaving the tractor.

CORRECT TRACTOR USAGE

CAUTION

Read the manuals provided with the attachments before operating. The manuals give a more detailed description of operation and point out other areas of caution.

Familiarize yourself thoroughly with the equipment before attempting to use.

ROTARY MOWER

For best operation on average lawns, operate the engine at full throttle while controlling the ground speed with the 4-speed transmission. Uneven cutting is often the result of excessive ground speed. To correct, reduce the ground speed by using a lower gear. Average lawns are usually cut at a height between 2 and 3 inches. Tall grass and weeds should be cut with the mower in its highest position making a second pass cutting to the height desired.

Always keep the mower blade sharp.

MOWING SPEED

The mower is designed to operate most efficiently at maximum engine speed. The gear to use for mowing is the one which will allow the blade to maintain this speed while moving the mower across the turf. For best cutting results on average, level lawns, operate the tractor at full throttle in second gear. For cutting tall grass, or grass which is heavy with moisture; mowing up hill, or for any heavy pulling, use first gear. If ground speed is too fast or blade speed too slow, mowing will be uneven because the mower blades will not be able to lift the blades of grass into cutting position as the mower passes over them. Use low gear for trimming operations.

CAUTION

Keep all shields and mower discharge chute in place. Never attempt to clear discharge areas or mower blades without disengaging the PTO clutch and removing the ignition key.

MOWING HEIGHT

The best cutting height for your lawn has probably been established from previous experience. The first time you mow, set the mower to cut a little higher than you have cut in the past. This will enable you to find the best mowing pattern for your lawn. You will want to determine the best approach to uneven areas to be sure the wider cut does not result in scalping high spots. In general, the recommended cutting height is two to three inches.

Very tall or wet grass can be cut without difficulty by using a little care. Set the mower for its highest cut and enter the area at the lower drive speed. If necessary, in order to maintain blade speed, take a cut one-half the width of the mower, overlapping the previously cut area on each pass. Then, with the mower set to the desired cutting height, make a finish cut over the entire area.

SNOW BLADE

The front end snow blade is used for snow removal. Care should be taken and a slow ground speed should be maintained whenever the blade is used. Impact with a solid object may result in injury to the operator and/or damage to the blade.

DRAWBAR TYPE ATTACHMENTS

Many attachments simply use the tractor as a towing vehicle. They are attached or removed from the tractor by the installation or removal of a single drawbar hitch pin.

Some of these attachments are powered by a separate gasoline engine, some are "ground driven" and some are simply towed, such as the dump cart.

In any case, all these attachments should be approached with the same amount of caution given any mechanical device. Always read each "Operating Instruction Manual" carefully before attempting to use the attachment. Keep children and pets away from the vehicle when in operation. Never allow any unauthorized personnel to operate the equipment.

UNDER NO CIRCUMSTANCE SHOULD ANY OTHER WEIGHT, SUCH AS WATER, CALCIUM CHLORIDE OR WHEEL WEIGHTS BE ADDED TO THE REAR TIRES. THIS ADDITIONAL EXTRA WEIGHT CAN CAUSE EXTENSIVE TRANSMISSION DAMAGE, AND MAY AFFECT THE TRANSMISSION WARRANTY.

MAINTAINING YOUR TRACTOR

⚠ CAUTION ⚠

Before making any adjustment, turn main key switch OFF and remove the key from the switch.

MAINTENANCE CHECKLIST

	Before Each Use	After Each Use	Every 10 Hours	Every 25 Hours	Every 50 Hours
TRACTOR					
Check Engine Oil Level	X				
Check Transmission Oil Level				X	
Clean Engine Cooling Fins		X			
Lubricate Chassis (Zerks and Pivot Points)			X		
Clean Air Filter Element			X		
Change Engine Oil				X	
Check and Adjust Tire Pressure				X	
Check Battery Water Level	X				
Replace Air Filter Element					X
Replace Spark Plug					X
Check Breaker Point Condition					X
MOWER (If Applicable)					
Remove Deck Debris Build-up		X			
Lubrication (Pivot Points)			X		
Check Drive Belt Tension			X		
*Check Blade Sharpness			X		

*Dull or out of balance blades produce a poor quality cut and premature wear on engine and other components.

NOTE: These time limits are considered **Maximum** under normal operating conditions. Frequency of cleaning and lubrication should be increased under extremely dusty or dirty conditions.

ENGINE

Oil Quality

For maximum engine protection under all operating conditions use API service classification "SC" oil. Engine oils carrying the former API service classification "MS" may also be used.

ENGINE OIL

TEMPERATURE - VISCOSITY CHART

Air Temp.	Oil Viscosity Chart	Oil Type
Above 30°F	SAE 30	API Service SC
30° to 0°F	SAE 10W-30	API Service SC
Below 0°F	SAE 5W-20	API Service SC

Oil Level

Form the habit of checking the oil level regularly.

Check the oil level of the engine and transmission every time the tractor is used. Improper oil levels can cause extensive internal damage to both the engine and the transmission.

To check the engine oil level, stop the tractor where the engine is level. Shut off the engine and remove key.

Remove the oil plug from the engine by turning the cap counterclockwise.

The oil level should be to the point of overflow when the plug is removed. Add oil as necessary.

Oil Changes

The engine oil in your new Wheel Horse should be changed after the first 2 hours of operation. Thereafter, the oil should be changed at 25 hour intervals (sooner if the tractor is operated under extremely dusty conditions).

To change the engine oil, start the engine and allow the engine to warm up. Shut off the engine and remove the key.

Disconnect the high tension wires at the spark plugs to prevent accidental starting of the engine. Unscrew the oil drain plug located on the right side of the engine under the oil plug.



FIG. 5. Oil Drain Plug

Draining the oil while hot will allow the oil to flow freely and thus carry away more impurities.

After completely draining the old oil, reinstall the drain plug. Remove the oil filler cap and add 2 quarts of oil. Check oil level.

Select the proper oil weight and type in accordance with chart shown below.

**ENGINE OIL
TEMPERATURE — VISCOSITY CHART**

Air Temp.	Oil Viscosity Chart	Oil Type
Above 30°F	SAE 30	API Service SC
30° to 0°F	SAE 10W-30	API Service SC
Below 0°F	SAE 5W-20	API Service SC

When using the Temperature-Viscosity Chart, select the air temperature most likely to be encountered within the next 25 hours of tractor operation.

AIR CLEANER

Dirt induced through improperly installed, poorly serviced, or inadequate air cleaner elements, is more often the cause of a worn out engine than long hours of operation. A small amount of dirt will destroy a set of piston rings in a matter of hours. A clogged element causes a richer fuel mixture which wastes gasoline, and may lead to the formation of harmful sludge deposits.



FIG. 6. Air Cleaner

To prevent any type of dirt or other contaminants from entering the engine, always cover the air horn when the air cleaner is removed.

Clean and service the air cleaner every 25 hours of operation (sooner if the tractor is operated under extremely dusty conditions).

To service the air cleaner remove the two screws and lift off complete air cleaner assembly.

Remove the screen and spacers from the foam element, and remove foam element from the body of the air cleaner.

Wash the foam element in a solution of liquid detergent and water to remove dirt. Wrap the foam in a clean cloth and squeeze dry. Saturate foam in clean engine oil, and squeeze to remove excess oil.

Reassemble the air cleaner as shown in Fig. 6. When assembling make certain the lip of the foam element extends over the edge of the air cleaner body. The foam element lip will form a protective seal.

Reinstall the air cleaner on the carburetor.

SPARK PLUG

Engine misfire, or generally poor operation is often caused by spark plugs in poor condition or with incorrect spark gap setting. Always clean the area around the spark plug before removing to prevent dirt from getting into the engine.

Spark plug should be checked at 100 hour intervals.

Using a 1 1/16" spark plug wrench, remove the spark plug from the engine.

Check the condition of the plug. Good operating conditions are indicated by a spark plug that has a light coating of gray or tan deposit. A dead white, blistered coating could indicate engine overheating. A black coating could indicate an "overrich" fuel mixture caused by a clogged air cleaner, or improper carburetor adjustment.

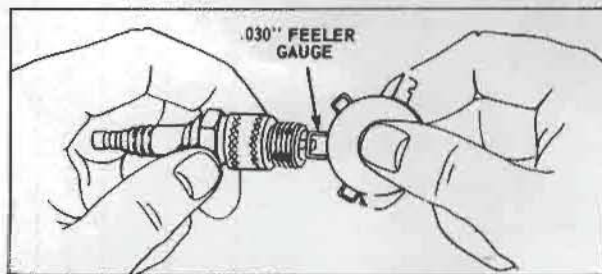


FIG. 7. Reset Spark Plug Gap

If the plug is in good condition, reset the gap at .030" and replace the plug. Torque to 22 ft. lbs.

If the plug is not in good condition, replace with similar type plug.

Never sandblast, wire brush, scrape or other wise service spark plugs in poor condition. Best results are obtained with new plugs.

Always remember to check spark plug for proper gap before installing plugs into the engine.

CARBURETOR ADJUSTMENT

Carburetors are adjusted at the factory and should not have to be reset. If, however, one of the following conditions is noted, readjust carburetor immediately as continued operation with incorrect setting can lead to fouled spark plugs, overheating, excessive valve wear or other problems. If black exhaust smoke is noted, check the air cleaner first — an "overrich" mixture is usually caused by a poorly serviced, clogged air cleaner element, not an improperly adjusted carburetor.

CONDITION	
A.	Black, sooty exhaust smoke, engine sluggish.
B.	Engine misses and backfires at high speed.
C.	Engine starts, sputters and dies under cold weather starting.
D.	Engine runs rough or stalls at idle speed.
POSSIBLE CAUSE/PROBABLE REMEDY	
A.	Mixture too rich — readjust main fuel needle.
B.	Mixture too lean — readjust main fuel needle.
C.	Mixture too lean — turn main fuel adjustment $\frac{1}{4}$ turn counterclockwise.
D.	Idle speed too low or improper idle adjustment — readjust speed then idle fuel needle, if needed.

FIG. 8. Carburetor Adjustment Chart

If readjustment becomes necessary, stop the engine, then turn the MAIN and IDLE fuel adjusting screws all the way in until they bottom **lightly** — don't force them closed as this will damage the needle valves. For preliminary setting, turn MAIN fuel screw out (counterclockwise) $1\frac{1}{8}$ turns and the IDLE $1\frac{1}{8}$ turns. For final adjustments, start engine and allow it to warm up, then operate at full throttle. Turn MAIN fuel in until engine slows down (lean side) then out until it slows down again from overrich setting — note positions of screw at both settings, then set it about half-way between the two. The IDLE fuel setting can then be adjusted in the same manner for smoothest idle. Rough idle is often due to the idle speed being set too low — Correct idle speed is 1750 RPM.

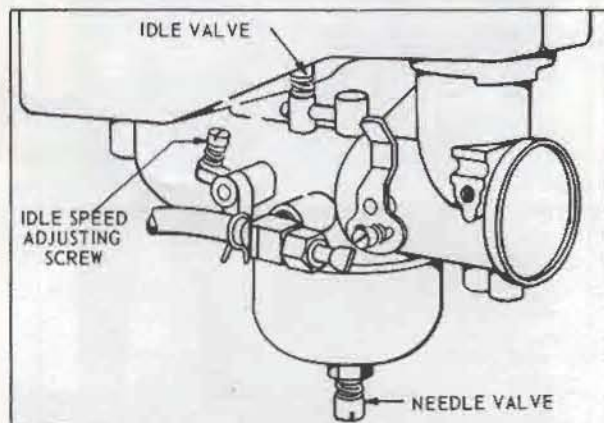


FIG. 9. Carburetor Adjustments

CHARGING SYSTEM

Your new Wheel Horse is equipped with two independent charging systems. The first system provides 12 volts A.C. (Alternating Current) to the light circuit of the tractor for this reason the lights will NOT operate without the engine running.

The second system is responsible for restoring the power (12 volts D.C.), that has been used for starting the engine, to the battery.

Never interconnect the A.C. light circuit and the D.C. battery circuit as this may result in serious damage to the charging systems.

The system responsible for charging the battery is protected by a $7\frac{1}{2}$ AMPERE fuse. If the battery is not being recharged, check the $7\frac{1}{2}$ AMPERE fuse.

Never run the engine if the battery is removed, or if the battery is not connected to the charging system. If the engine must be run with the battery disconnected, remove the $7\frac{1}{2}$ AMPERE fuse.



FIG. 10. $7\frac{1}{2}$ Amp Fuse

BATTERY

⚠ CAUTION ⚠

When servicing the battery or any other part of the electrical system, or if the battery must be removed for any reason, always disconnect the negative cable **FIRST** and reconnect it **LAST** to avoid the possibility of electrical short.

Maintain the electrolyte level above the plates in each cell by adding low mineral content water as necessary. The best time to add water is just prior to operating the tractor so the water will mix with the solution. **DO NOT OVERFILL THE BATTERY.** The electrolyte solution is corrosive and overfilling can cause it to overflow the case and damage surrounding metal parts. The battery should be maintained at 1.265 specific gravity charge. When the battery has been out of the tractor for servicing, take care to connect the wires to the battery exactly as they were before removal.

At temperatures below 32°F., the full charge state must be maintained to prevent cell electrolyte from freezing which may result in permanent damage to the battery.

BRAKE ADJUSTMENT

The brake adjustment is made at the brake caliper.

1. Loosen the lock nut and adjust the brake so that it becomes tight when the brake pedal is pushed down $1\frac{1}{2}$ ".

2. Release the brake and make sure the brake disc turns freely.

3. Lock the adjusting nut with the lock nut and recheck to make sure of the adjustment.

4. Check the operation of the parking brake.



FIG. 11. Brake Adjustment

PTO CLUTCH ADJUSTMENT

Mower belt tension is maintained automatically by spring loaded linkage when the PTO clutch lever is hooked in the engaged position. Adjustment is made by adjusting the trunnion on the threaded rod. To check adjustment, proceed as follows:

1. Set the mower height with the lift lever to the height normally used.

2. Engage the mower with the PTO clutch lever.

3. With the PTO lever in the engaged notch, the spring loaded adjustment rod at the front of the mower should be pushed back through the hole in the mower bracket so that there is about $\frac{1}{8}$ " clearance between the link rod washer and the rear face of the link rod bracket. See Fig. 12.

4. If adjustment is required, disengage the mower and remove the hairpin cotter from the trunnion and adjust the trunnion to obtain the proper $\frac{1}{8}$ " clearance between the washer and the bracket with the mower engaged as described in paragraph 3 and shown in Fig. 12.



FIG. 12. PTO Clutch (Mower Belt Adjustment)

LUBRICATION

The front wheel bearings, front axle, spindles and steering gear are equipped with fittings to facilitate lubrication with a pressure grease gun. Lubricate these points after every 25 hours of operation. Lubricate more frequently under extremely dusty conditions. Other pivoting arms and levers should be lubricated at the same intervals with either general purpose grease applied directly to wear surfaces or with oil and an oil can. Transmission oil level should be checked after every 25 hours of operation. See Fig. 13.

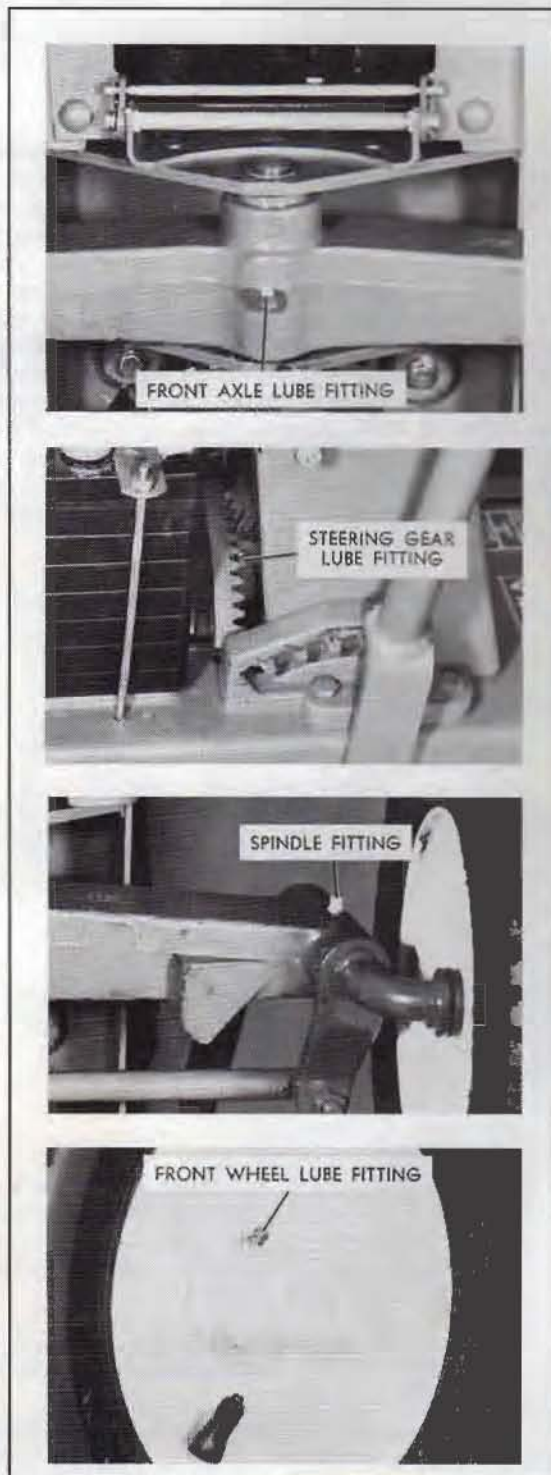


FIG. 13. Lube Fittings

LUBRICATION RECOMMENDATIONS

Engine Crankcase — SC Certified Sequence-Tested Oil
Transmission* SAE 90 Gear Lubricant
Front Wheel Bearings — Front Axle . . Chassis Grease
Steering Gear — Spindles Chassis Grease
*No drain or refill recommended except when overhauled.

TRANSMISSION OIL LEVEL

The lubricant level should be checked after every 25 hours of operation. Changing the lubricant is not required except for major service. To check lubricant level remove filler plug at the back of the transmission case. Maintain oil at the filler plug level.

CAPACITIES WHEN DRY

Engine Oil	Transmission	Fuel Tank
3 Pints	2 Pints	1½ Gallons



FIG. 14. Transmission Oil Fill and Drain

TIRES

The Turf Saver tires front and rear are designed and thoroughly tested to meet all normal operating requirements within the tractor's capacity when inflated to the pressures listed below:

TIRE PRESSURES

Front	12 p.s.i.
Rear	9 p.s.i.

DRIVE BELT REPLACEMENT

1. Cut the old belt off and discard it.
2. Place the new belt over the gear shift lever and feed a loop of it down through the opening in the fender.
3. Slip the right hand strand between the belt stop guide and the fixed flat idler pulley.
4. Place the belt strand between the belt finger and the movable V idler pulley.
5. Draw the loop forward over the top of the mower lift shaft and mower belt guide support bracket.
6. Pull the loop over the mower drive pulley and fit it into the engine pulley (top pulley) groove making sure that the two wire guides are not disturbed.
7. Push down on the clutch pedal and block it in the released position.

8. Pull the belt slack toward the rear and feed the belt into the groove of the transmission pulley.

9. Engage the clutch and check the position of the belt guides. In the engaged position the idler guides should be positioned as shown in Fig. 15.

10. Adjust the wire engine pulley guides so they just clear the belt with the belt in the engaged (tight) position.

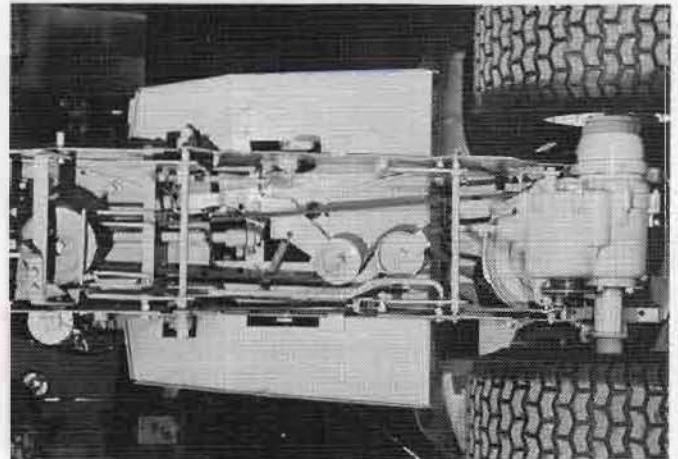


FIG. 15. Drive Belt

MOWER

MOWER INSTALLATION

⚠ CAUTION ⚠

Do not attempt any work on the mower with the engine running. Disconnect the spark plug wire to prevent the engine from being started accidentally.

Loosen Belt Guide Bracket

Loosen the two bolts holding the belt guide bracket in place — DO NOT REMOVE. These bolts are located just above the front of the foot rest.

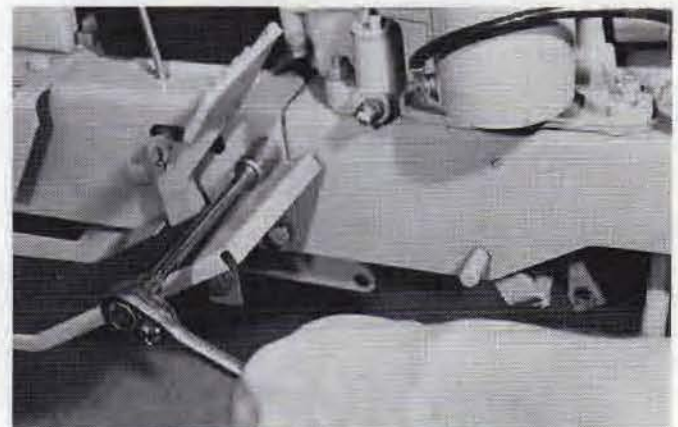


FIG. 16. Loosen Belt Guide Bracket

Install Mower Belt

Swing the belt guide bracket down away from the engine pulleys. Slip one end of the mower belt between the belt guide and the pulley. Slip the belt onto the pulley.

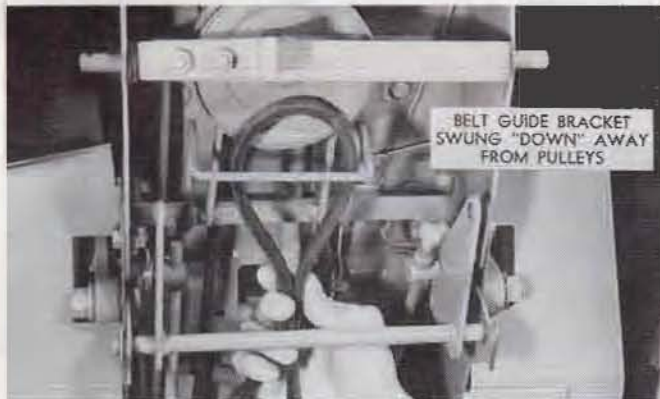


FIG. 17. Slip Belt Onto Engine Pulley

Tighten Belt Guide Bracket

Return the belt guide bracket to its original position and retighten the bolts. Make sure the clutch pedal interlock switch is actuated when the pedal is depressed. If the belt guide bracket is not returned to its original position, the clutch pedal may not activate the switch.

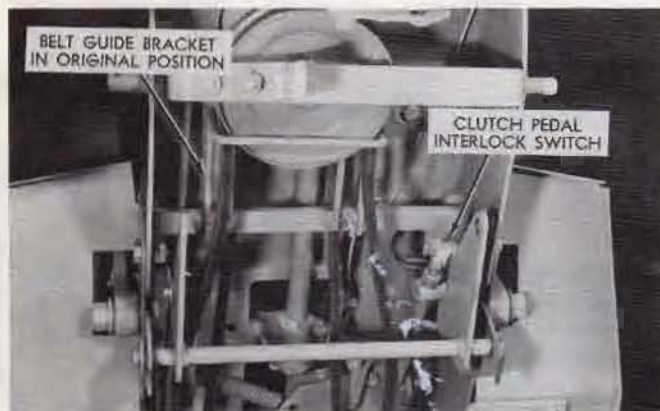


FIG. 18. Retighten Belt Guide Bracket

Position Mower Under Tractor

Raise BOTH front wheels approximately 3" from the floor. Turn the front wheels all the way to the left. Position the mower to the right side of the tractor. Slide the mower under the tractor. Lower the front wheels to floor level.



FIG. 19. Slide Mower Under Tractor

Attach Belt

Slip the mower belt over the mower drive pulley.

Attach Lift Links

Attach the two left lift links, of the mower to the tractor using the two clevis pins, washers and cotter pins provided with mower. Note that the links are installed outside of the tractor lift linkage, and the washers are installed between the mower links and the cotter pins.

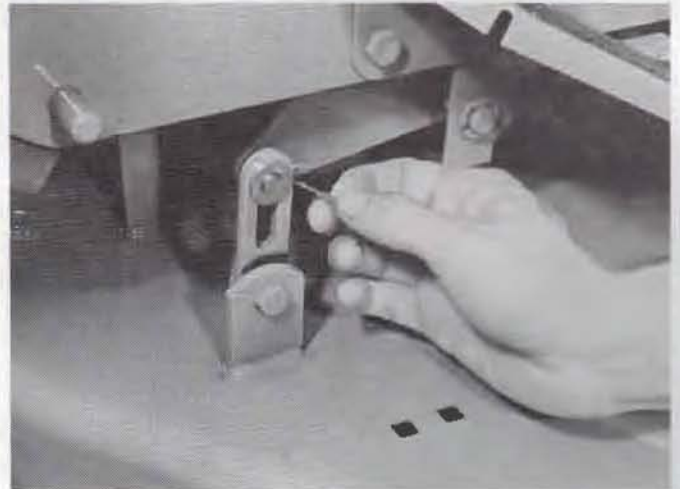


FIG. 20. Attach Left Lift Links

Attach the two right lift links of the mower to the tractor using the two washers and cotter pins provided with the mower. Note that the links are installed from the outside of the tractor lift linkage.

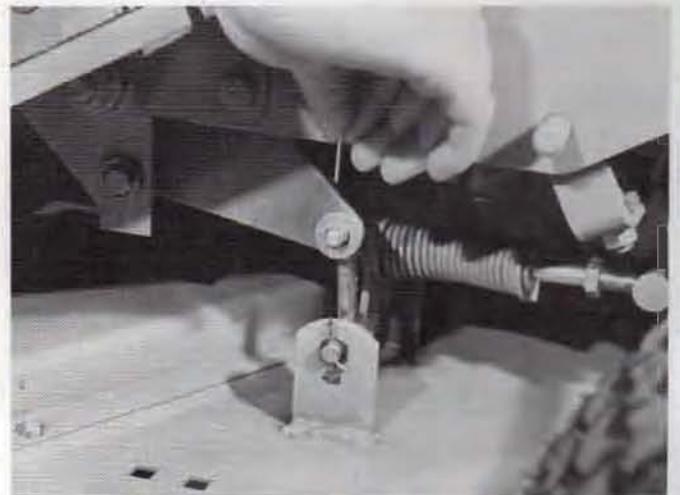


FIG. 21. Attach Right Lift Links

Adjust Lift Links

The right lift link should be adjusted so that on a level surface the left and right mower blades are equidistant from the floor.

Install PTO Linkage

Install the PTO linkage as shown and retain with a hairpin cotter.

With the PTO lever engaged, there should be approximately $\frac{1}{8}$ " between the link rod washer and the rear face of the link rod bracket.



FIG. 22. Secure PTO Linkage

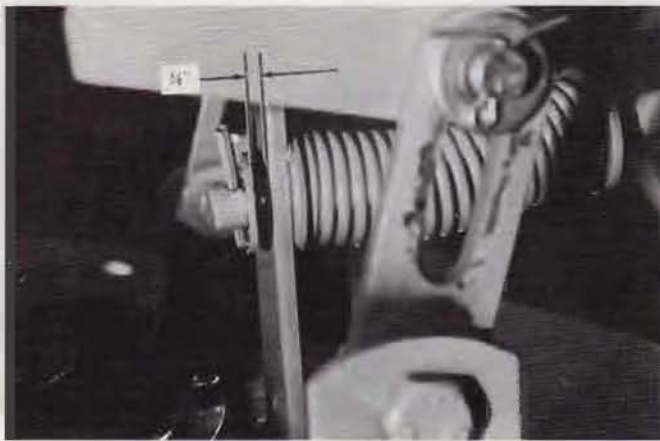


FIG. 23. PTO Clutch (Mower Belt) Adjustment

Install Mower Brake Linkage

Install the mower brake trunnion into the bracket below the left footrest. Secure with a hairpin cotter.



FIG. 24. Install Mower Brake Linkage

Adjust the brake linkage so the mower runs free of the brake in the engaged position. When the mower is moved to the disengaged position, the brake should stop it quickly and hold the mower from turning.

MOWER LEVEL ADJUSTMENT

For optimum efficiency the level of the mower should be checked periodically to see if alignment is maintained.

1. Place tractor on a level floor and set height adjustment in the center position.

2. Adjust the mower level adjustment as required so that the mower blades will be slightly lower at the front than at the rear. To check, measure the distance from the blade tip to the floor with the blade at the front, then turn the same blade tip to the back and measure again. Approximately $\frac{1}{8}$ " lower at the front is an ideal setting.

MOWER BELT REPLACEMENT

Be sure to purchase genuine Wheel Horse belts for replacement purposes as these belts are designed specifically for each application. To replace the mower belt, follow **Mower Removal** and **Mower Installation** instructions except for moving the mower out from under the tractor.

MOWER LUBRICATION

The gage wheels should be lubricated with a pressure grease gun using automotive chassis lubricant after every 8 to 10 hours of operation. All pulleys and spindle assemblies are lubricated at the factory and require no further lubrication.

IMPORTANT — Clean the underside of the mower deck frequently to prevent the accumulation of matted clippings which seriously impair the mower's ability to lift grass blades upright into cutting position and to discharge clippings evenly.

BLADE MAINTENANCE

Invert the mower. Remove the three blade attaching bolts and special washers. Lift the blades off the spindles.

File or grind the blades evenly, taking care to retain the original cutting edge angle and blade balance. Reinstall the blades, making sure the pins protruding from the spindle cups engage the blade properly. The side of the blade with the lift area (turned up section) must be installed facing the mower deck. Tighten the blade attaching screws to a torque of 22 Ft./Lbs. These screws, Part No. 908033 should be replaced after every two or three times they are removed and reinstalled.

SPINDLE BELT REPLACEMENT

Remove the mower from the tractor.

Remove the belt cover bolts and lift the cover off the mower deck.

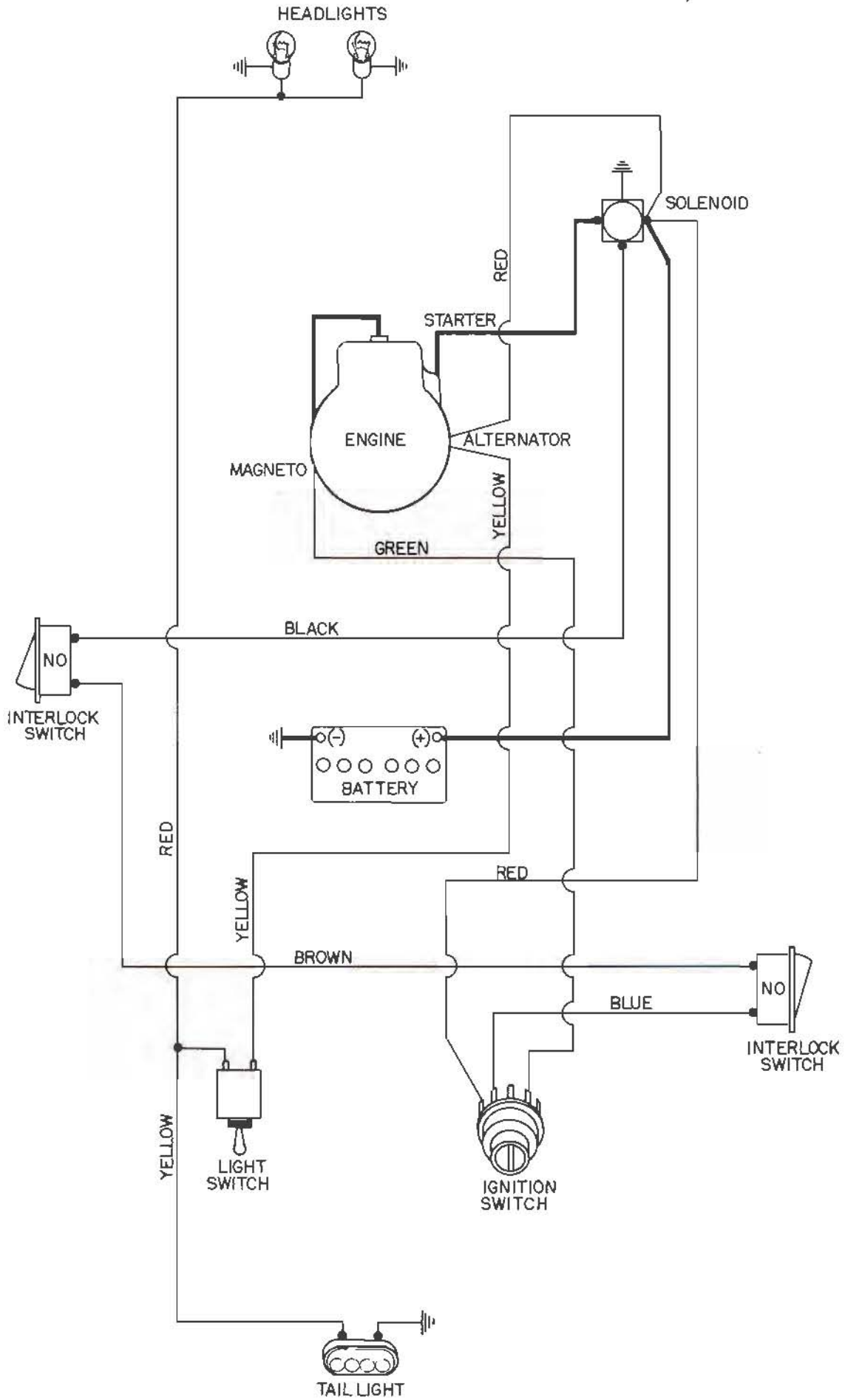
Remove the old belt and install the new belt in accordance with the belt diagram on the belt cover. Make sure the pulley area is clean and the idler slide bar is free. Examine the spring to make sure it is in good shape and in place.

Reinstall the belt cover.

TROUBLESHOOTING CHECKLIST

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>POSSIBLE REMEDY</u>
Engine will not turn over.	Dead battery. Open safety interlock switch. Starter. Solenoid. Ignition switch.	Charge or replace battery. Be sure PTO is disengaged and depress clutch pedal. Consult dealer for authorized service. Consult dealer for authorized service. Consult dealer for authorized service.
Engine turns over but will not start.	No fuel in tank. Fuel valve closed. Spark plug not firing. Improper carburetor adjustment. Ignition switch.	Refuel tractor. Open fuel valve. Check spark plug condition and reset gap. Reset carburetor adjustment. Consult dealer for authorized service.
Engine hard to start.	Spark plug faulty or improperly gapped. Carburetor dirty or improperly adjusted.	Check spark plug condition and reset gap. Readjust carburetor — consult dealer for authorized carburetor service.
Engine starts, but operates erratically.	Vent in fuel gauge plugged. Improper carburetor adjustment. Clogged fuel line. Water in fuel.	Check vent. Readjust carburetor. Check fuel line. Drain old fuel and replace with fresh supply.
Engine knocks.	Engine overheated. Fuel octane too low.	Shut-off engine and allow to cool. Drain fuel and replace with higher octane supply.
Engine occasionally "skips" at high speed.	Spark plugs fouled, faulty or gap too wide. Incorrect carburetor adjustment.	Check spark plugs condition and gap. Readjust carburetor.
Engine overheating.	Air intake screen or fins clogged. Oil level too low. Fuel mixture too lean. Engine overloaded.	Clean intake screen and fins. Adjust oil level as necessary. Readjust carburetor. Reduce load on tractor.
Engine idles poorly.	Improper carburetor adjustment. Improper spark plug gap.	Readjust carburetor. Check the condition and gap of spark plug.
Engine backfires.	Improper carburetor adjustment. Faulty breaker points.	Readjust carburetor. Consult dealer for authorized service.

WIRING DIAGRAM



GENERAL SAFETY SUGGESTIONS

Recommended by Outdoor Power Equipment Institute

SAFE OPERATION PRACTICES — RIDING VEHICLES

1. Know the controls and how to stop quickly — **READ THE OWNER'S MANUAL.**
2. Do not allow children to operate vehicle. Do not allow adults to operate it without proper instruction.
3. Do not carry passengers. **Keep children and pets a safe distance away.**
4. Clear work area of objects which might be picked up and thrown.
5. Disengage all attachment clutches and shift into neutral before attempting to start engine (motor).
6. Disengage power to attachments and stop engine (motor) before leaving operator position.
7. Disengage power to attachment(s) and stop engine (motor) before making any repairs or adjustments.
8. Disengage power to attachments when transporting or not in use.
9. Take all possible precautions when leaving vehicle unattended; such as disengaging power-take-off, lowering attachments, shifting into neutral, setting parking brake, stopping engine and removing key.
10. Do not stop or start suddenly when going uphill or downhill. Mow up and down the face of steep slopes; never across the face.
11. Reduce speed on slopes and in sharp turns to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.
12. Stay alert for holes in terrain and other hidden hazards.
13. Use care when pulling loads or using heavy equipment.
 - a. Use only approved drawbar hitch points.
 - b. Limit loads to those you can safely control.
 - c. Do not turn sharply. Use care when backing.
 - d. Use counterweight(s) or wheel weights when suggested in owner's manual.
14. Watch out for traffic when crossing or near roadways.
15. When using any attachments never direct discharge of material toward bystanders nor allow anyone near vehicle while in operation.
16. Handle gasoline with care — it is highly flammable.
 - A. Use approved gasoline container. Place container out of the reach of children.
 - B. Use gasoline only as a fuel — never as a cleaner. Never remove cap or add gasoline to a running or hot engine or fill fuel tank indoors. Wipe up spilled gasoline. And positively **NO SMOKING.**
 - C. Open doors if engine is run in garage — exhaust fumes are dangerous. Do not run engine (motor) indoors.
17. Keep vehicle and attachments in good operating condition and keep safety devices in place.
18. Keep all nuts, bolts, and screws tight to be sure equipment is in safe working condition.
19. Never store equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark.
20. Allow engine to cool before storing in any enclosure.
21. To reduce fire hazard keep engine free of grass, leaves or excessive grease.
22. Vehicle and attachments should be stopped and inspected for damage after striking a foreign object and the damage should be repaired before restarting and operating the equipment.
23. Do not change engine governor settings or over-speed engine.
24. When using vehicle with mower:
 - (1) Mow only in daylight or in good artificial light.
 - (2) Never make a cutting height adjustment while engine (motor) is running if operator must dismount to do so.
 - (3) Shut engine (motor) off when unclogging chute.
 - (4) Check blade mounting bolts for proper tightness at frequent intervals.
25. Check grass catcher bags frequently for wear or deterioration. Replace with new bags for safety protection.



CAUTION



1. **KEEP ALL SHIELDS IN PLACE.**
2. **BEFORE LEAVING OPERATOR'S POSITION:**
 - A. **SHIFT TRANSMISSION TO NEUTRAL**
 - B. **SET PARKING BRAKE**
 - C. **SHUT OFF MOTORS**
 - D. **REMOVE IGNITION KEY.**
3. **KEEP PEOPLE AND PETS A SAFE DISTANCE AWAY FROM MACHINE.**
4. **WAIT FOR ALL MOVEMENT TO STOP BEFORE SERVICING MACHINE.**

NOTES

A separate Parts Manual, for your Wheel Horse tractor, is available by completing the form below and sending it, along with a check or money order, to:

**Parts Department
WHEEL HORSE PRODUCTS, INC.
515 W. Ireland Road
South Bend, Indiana 46544**

Yes, I would like a Parts Manual for my Wheel Horse tractor.

TRACTOR MODEL	VEHICLE IDENTIFICATION NUMBER	SERIAL NUMBER

I have enclosed a check or money order for \$4.00 for each manual requested.



WHEEL HORSE lawn & garden tractors

515 West Ireland Road, South Bend, Indiana 46614