



# OPERATOR'S MANUAL



## Wheel Horse

Part Number 810502R1

# FOR YOUR SAFETY

Two of the most potentially serious types of accidents involving power mowers are contact with the mower blade and overturning the rider/tractor. To minimize the possibility of having these types of accidents, read

and follow these instructions. Also refer to the Safe Operation Practice in this Operator's Manual for other important safety information.

## BLADE CONTACT

**! DANGER! Mower Blades are Designed to CUT: therefore,**

### ALWAYS:

- Shut off engine and set parking brake.
- Remove ignition key.
- Allow moving parts to stop before dismounting, servicing, or cleaning unit.

### NEVER:

- Perform ANY work on the mower with engine running.
- Mow with other people around, especially children.
- Leave mower unattended.



## RIDER/TRACTOR STABILITY

**Vehicle stability changes with conditions and is affected by:**

- Slope angle and length/bumps/holes, etc.
- Slippery conditions (lawn moisture and length)
- Operator size and position/how loaded/equipment used
- Speed/braking/steering changes
- Operator physical limitations/alertness

### ALWAYS:

- Use good judgement when operating the rider/tractor, especially on slopes.
- Maintain the vehicle in good operating condition.
- Be attentive to changing conditions affecting vehicle stability.

### NEVER:

- Operate vehicle on extreme slopes.
- Operate vehicle across slopes.
- Abruptly change speed or direction.



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## 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 vehicle, it means your left and right when standing in the operating position.

# TRACTOR SPECIFICATIONS:

## ENGINE

TRACTOR MODEL	ENGINE MODEL*	RATED H. P.**	DISPLACEMENT cu. in./cc	BORE in./mm	STROKE in./mm	IGNITION
208-4	B-191707	8	19.44/318.56	3/76.2	2.75/69.9	Electronic
211-4	B-252707	11	24.36/400.00	3.438/87.3	2.62/66.7	Electronic
211-5	B-253707	11	24.36/400.00	3.438/87.3	2.62/66.7	Electronic
212-6	FB-460V	12.5	28.01/460.00	3.505/89	2.90/74	Electronic

\*Letter Prefix: B = Briggs & Stratton and FB = Kawasaki. Basic engine model number shown; type and serial numbers from engine I.D. plate are required to completely identify engine.

\*\*Engine manufacturer's rating at 3600 RPM.

## TRANSMISSION: Type: Mechanical, All Gear

### APPROXIMATE GROUND SPEEDS (at Full Throttle)

4-Speed		5-Speed		6-Speed	
1st	1.1 mph (1.8 kph)	1st	1.1 mph (1.8 kph)	1st	1.1 mph (1.8 kph)
2nd	2.3 mph (3.6 kph)	2nd	1.4 mph (2.3 kph)	2nd	1.5 mph (2.4 kph)
3rd	3.5 mph (5.4 kph)	3rd	2.2 mph (3.5 kph)	3rd	2.3 mph (3.6 kph)
4th	5.3 mph (8.3 kph)	4th	3.3 mph (5.2 kph)	4th	3.5 mph (5.4 kph)
Rev.	2.5 mph (3.9 kph)	5th	5.0 mph (8.1 kph)	5th	4.5 mph (7.4 kph)
		Rev.	2.4 mph (3.8 kph)	6th	5.7 mph (8.8 kph)
				Rev.	2.5 mph (3.9 kph)

## ELECTRICAL SYSTEM:

	208-4, 211-4, 211-5	212-6
Type:	12 Volt D.C., Negative Ground	12 Volt D.C., Negative Ground
Alternator:	12 Volt, 5 Amp. Unregulated	12 Volt, 13 Amp. Regulated
Battery:	12 Volt, 24 Amp. Hr.	12 Volt, 24 Amp. Hr.

## TIRES:

	SIZES — FRONT	SIZES — REAR	PRESSURE/FRONT	PRESSURE/REAR
208-4	15 x 6.00-6	18 x 8.50-8	12 psi (.85 kg/cm <sup>2</sup> )	12 psi (.85 kg/cm <sup>2</sup> )
211-4	15 x 6.00-4	18 x 8.50-8	12 psi (.85 kg/cm <sup>2</sup> )	12 psi (.85 kg/cm <sup>2</sup> )
211-5	15 x 6.00-6	18 x 9.50-8	12 psi (.85 kg/cm <sup>2</sup> )	12 psi (.85 kg/cm <sup>2</sup> )
212-6	15 x 6.00-6	18 x 9.50-8	12 psi (.85 kg/cm <sup>2</sup> )	12 psi (.85 kg/cm <sup>2</sup> )

## TRACTOR SPECIFICATIONS (continued):

### PHYSICAL DATA:

MODEL	HEIGHT	LENGTH	WIDTH	WHEEL BASE	INSIDE TURNING RADIUS	NET WEIGHT (APPROXIMATE)
208-4	36.4 in. (92.5 cm)	61 in. (154.9 cm)	33.7 in. (85.6 cm)	44.5 in. (113.0 cm)	25 in. (63.5 cm)	345 lbs. (157 kg)
211-4	36.4 in. (92.5 cm)	61 in. (154.9 cm)	33.7 in. (85.6 cm)	44.5 in. (113.0 cm)	25 in. (63.5 cm)	292 lbs. (131 kg)
211-5	36.4 in. (92.5 cm)	61 in. (154.9 cm)	33.7 in. (85.6 cm)	44.5 in. (113.0 cm)	25 in. (63.5 cm)	295 lbs. (134 kg)
212-6	36.4 in. (92.5 cm)	61 in. (154.9 cm)	33.7 in. (85.6 cm)	44.5 in. (113.0 cm)	25 in. (63.5 cm)	295 lbs. (134 kg)

## TUNE-UP/GENERAL MAINTENANCE SPECIFICATIONS:

### ENGINE:

TRACTOR MODEL	POINT GAP in./mm	TIMING MARK LOCATION	IGNITION TIMING (BTDC)	SPARK PLUG TYPE*	SPARK PLUG GAP in./mm	DIRECTION OF ROTATION (Facing Drive Pulley)	IDLE RPM (No Load)	GOVERNED MAX. RPM (No Load)
208-4	N/A	N/A	Fixed	CJ-8	.030 / .76	Counterclockwise	1750	3500
211-4	N/A	N/A	Fixed	CJ-8	.030 / .76	Counterclockwise	1750	3500
211-5	N/A	N/A	Fixed	CJ-8	.030 / .76	Counterclockwise	1750	3500
212-6	N/A	N/A	Fixed	RCJ-8	.025 / .65	Counterclockwise	1550	3425

\*Or equivalent (Champion number shown).

### Lubricant/Fuel Capacities:

#### Crankcase:

208	1 1/8 quart (1.1 l)
211	1 1/2 quart (1.4 l)
212	1 1/2 quart (1.4 l)

#### Fuel Tank:

All Models	1.5 gallon (5.70 l)
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### Chassis:

#### Zerk Fittings:

208,	6
211, 212	6

Front Wheel End Play: 0-.015 in. (.4 mm)

## SAFE OPERATION PRACTICES — RIDING VEHICLES

### GENERAL

1. This machine is capable of amputating hands and feet and can throw objects that can cause injury and damage. **KNOW** the controls and how to stop machine quickly. **READ THIS OPERATOR'S MANUAL** and instructions furnished with attachments. Read, understand, and obey all safety messages appearing on the machine and in the operator's manual. **LEARN** from your operator's manual and from careful **EXPERIENCE** how to operate your equipment correctly. Know your machine's limitations.
2. Keep hands, feet, hair and loose clothing away from attachment discharge area, underside of mower deck or any moving parts while engine is running.
3. The use of drugs or alcohol while operating any equipment will place your safety in peril. Do not attempt operation of this machine while taking drugs or medication or while drinking alcoholic beverages.
4. Only responsible persons with mature judgment and proper physical capabilities should be allowed to operate this machine, and only after instruction in the proper use of this equipment.
5. Do not allow children to operate machine.
6. Do not carry passengers.
7. The purpose of this machine is to perform work. This equipment is not intended for sport or recreation.
8. Do not mow when people or pets are around.
9. Clear work area of objects (wire, rocks, etc.) which might be picked up and thrown.
10. 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.
11. Watch out for traffic when crossing or near roadways.
12. Machine and attachments should be stopped and inspected for damage after striking a foreign object. Damage should be repaired before restarting and operating equipment.
13. Do not change engine governor settings or over-speed engine.
14. Wear appropriate protective clothing when operating equipment. Long pants and substantial footwear, not barefoot or open sandals, are essential.
15. Do not operate equipment unless properly seated with feet on footrests or pedals.
16. Keep your eyes and mind on your machine, attachment and the working area. Do not let other interests distract you.
17. Safety switch(es) are intended to stop or prevent starting of engine to help prevent accidents. **OPERATOR SHOULD TAKE PRECAUTIONS AND NOT RELY ENTIRELY ON SAFETY SWITCH(ES).**
18. Care should be used not to touch equipment or attachment parts which may be hot from operation. Muffler and nearby areas may exceed 150° F. Allow cooling to occur before attempting to maintain, adjust or service.

19. Use of stereo headphones, ear protection or other sound altering/dampening devices may limit your ability to hear warning sounds (horns, shouts, etc.).

### FUEL/FIRE PRECAUTIONS

20. Handle gasoline with care — it is highly flammable.
21. Use approved gasoline container. Place container out of reach of children.
22. Use gasoline only as a fuel — never as a cleaner.
23. Never remove fuel cap or add gasoline to a running or hot engine, or an engine that has not been allowed to cool for several minutes after running.
24. Never fill fuel tank indoors. Wipe up spilled gasoline.
25. Open doors if engine is run in garage — exhaust fumes are dangerous. Do not run engine indoors.
26. Do not fill machine with gasoline while smoking or when near open flame or sparks.
27. Never store equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark.
28. Allow engine to cool before storing in any enclosure.
29. To reduce fire hazard, keep engine and attachments free of grass, leaves or excessive grease.
30. Battery acid is a poison and can cause burns. Avoid contact with skin, eyes and clothes and protect your face, eyes and clothing when working around the battery.
31. Battery gases can explode. Keep cigarettes, sparks and flames away from battery.

### EQUIPMENT USE AND OPERATION

32. It is recommended that first operation of equipment be done at a slow speed with attachment disengaged. Continue this practice until operator is thoroughly familiar with the controls and has developed operating skills.
33. Disengage all attachment clutches, set parking brake and shift into neutral before attempting to start engine.
34. Disengage power to attachment(s), set parking brake and stop engine before leaving operator position.
35. Disengage power to attachment(s) and stop engine before making any repairs or adjustments.
36. Disengage power to attachment(s) when transporting or not in use.
37. Disengage attachment clutch before attempting to remove the mower from a hole or other obstruction.
38. Disengage power to attachment(s) before backing. Do not mow in reverse unless absolutely necessary and then only after careful observation of the entire area behind the machine.
39. **LOOK** behind machine to make sure the area is clear before placing the transmission in reverse and continue looking behind while backing.
40. Always back up loading ramps and tilt bed trailers.

41. The parking brake is designed to hold tractor in place at rest, with engine off. Parking brake **will not** restrain tractor with engine running and transmission engaged.

#### STABILITY/TIPOVER/TRACTION

42. Know the terrain on which you are operating your equipment. There are areas on which your equipment can not be safely operated.
43. Avoid operating equipment on hillsides, slopes or rough terrain. **DO NOT** operate machine on hillsides or slopes exceeding 15° (27% grade). If safety is in doubt — **STAY OFF THE SLOPE**.
44. Reduce speed and exercise extreme caution on slopes above 10° (18% grade) to prevent tipping or loss of control. Never mow uphill on these slopes — mow downhill only. If a steep hill must be ascended, back up the hill, and drive forward down the hill, keeping tractor in gear. If necessary to turn on hill, always turn downhill.
45. Mow up and down the face of slopes greater than 5° (9% grade), never across the face. Be especially cautious when changing directions on all slopes.
46. Operate your machine smoothly and at a ground speed slow enough to insure complete control at all times. Avoid erratic operation and excessive speed.
47. Sharp turns on any terrain may cause loss of control. Reduce speed and use caution when making sharp turns.
48. Do not stop or start suddenly when going uphill or downhill. Avoid uphill starts. If machine is stopped going up a slope, turn the attachment off and back slowly down the slope keeping the machine in gear. Do not stop or change gears (speed) on slopes.
49. Know the terrain on which you are working. Find hidden obstacles by walking through and inspecting the area prior to operating your equipment in that area. Plainly mark obstacles, such as rocks, ruts or holes and **stay well clear of these obstacles** when operating.
50. While operating, stay alert for holes, rocks or roots, which may cause damage to equipment or upset. Keep at least 3 ft. away from drop-offs, ditches, creeks, culverts, washouts and public highways.
51. Exercise care when mowing around a fixed object to prevent the equipment or attachment from striking the object. When mowing never deliberately run over any foreign object.
52. Areas wet with dew, rain or snow will be more slippery than when dry. Areas covered with loose gravel are more slippery than firm dry ground. Greater stopping distances are required in these slippery areas.
53. Learn to expect changes in operating conditions. Adding or removing attachments or weight to your equipment will make your machine perform differently. Rain, snow, loose gravel, wet grass, etc., change the tractive conditions of the terrain requiring changes in your operating technique, which may include a decision not to operate on that terrain.

54. 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 operator's manual.

#### ATTACHMENT USE

55. When using attachments never direct discharge of material toward bystanders nor allow anyone near vehicle while in operation.
56. When using machine with mower:
- A. Mow only in daylight or in good artificial light.
- B. Never make a cutting height adjustment while engine is running if operator must dismount to do so.
- C. Shut engine off when unclogging chute.
- D. Check blade mounting bolts for proper tightness at frequent intervals.
57. Keep hands and feet away from rotating blade(s) underneath mower deck. Never place foot on ground when mower is engaged or when mower is in motion.
58. **DO NOT** operate mower attachment without the chute deflector or complete bagger in place.
59. Exercise care while maneuvering with grass catcher. Front to rear stability may change.
60. When using machine with snowthrower and auger becomes plugged or jammed:
- A. Declutch snowthrower and stop tractor engine immediately.
- B. Disconnect spark plug wire(s).
- C. Clear snow from discharge chute if plugged.
- D. If auger is jammed, remove foreign object and repair any damage to snowthrower before continuing.
- E. Reconnect spark plug wire(s) and resume operation.
61. Never permit anyone to stand near snowthrower auger or discharge opening. Objects may be present in snow, which when thrown, could cause injury.
62. When using snow/dozer blades:
- A. Avoid hitting solid objects. This can damage blade and injure operator.
- B. Always travel at a safe, slow speed.
63. Keep all persons a safe distance away when operating tillers. Always disengage the PTO, lower the attachment and remove the ignition key before making any adjustments.
64. If tiller starts to push tractor, disengage PTO clutch immediately.
65. Use chains, counterweight(s) or wheel weights when suggested in the operator's manual.

#### MAINTENANCE

66. Keep all nuts, bolts, fasteners and screws tight to be sure equipment is in safe working condition and check them frequently. Repair or replace worn, damaged, distorted or broken parts as needed.

67. Keep vehicle and attachments in good operating condition and keep safety devices in place and working.
68. Under normal usage, grass catcher bag material is subject to deterioration and wear. It should be checked frequently to determine need for bag replacement.
69. Use only genuine Wheel Horse replacement parts to assure that original standards are maintained.
70. Shields, deflectors, switches, blade controls and other safety devices must be in their proper position and functional.
71. Do not operate without muffler or tamper with the exhaust system. Damaged mufflers or spark arresters can create a fire hazard. Periodically inspect and replace if necessary.
72. If equipment begins to vibrate abnormally, disengage power to attachments and stop engine at once. Repair any damage before starting or continuing operation.
73. Periodically inspect all shafts, levers, friction devices and other moving parts subject to wear. Make required adjustment or replace these parts if damaged, distorted or broken, or as soon as wear affects the normal operation of the vehicle or attachment. DO NOT operate equipment that is not functioning properly.



## VEHICLE IDENTIFICATION NUMBER (VIN) LOCATIONS

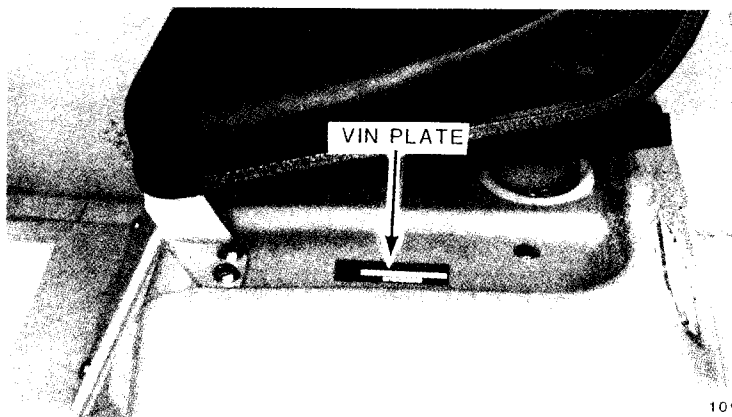
Vehicle identification numbers are used to identify your new tractor and major attachments. These numbers should always be referred to when consulting dealer or factory concerning service, parts, or other information you may require. If these plates are removed during repair operations, they should always be replaced.

Tractor vehicle identification number plate is located just below seat on rear fender.

Engine identification numbers are located on engine shrouding and indicate model, specification or type number and serial number of tractor's engine.

Major attachments also have a vehicle identification number plate attached to them.

For your convenience and ready reference, enter tractor and engine numbers below.



VIN Plate Location

Tractor Identification Number

Engine Identification Number

<b>WHEEL HORSE PRODUCTS</b>	
SOUTH BEND INDIANA 46680	
ID NUMBER	<input type="text"/>
MADE IN USA	<input type="text"/>

Model

Type or Spec. No.

Code No.

## OWNER REGISTRATION AND WARRANTY

Service and warranty assurance is as important to Wheel Horse as it is to you, the owner. To facilitate warranty service at an Authorized Wheel Horse Dealer, Wheel Horse requires factory registration. A registration card is supplied with each new tractor and attachment. **Either you or your dealer must fill in required information and mail card to Wheel Horse.**

Wheel Horse Limited Warranty Statement is on a "hang tag" attached to each product. This statement describes what items are covered by the Wheel Horse Limited Warranty, your rights and obligations, and procedure to follow to obtain warranty service. Please familiarize yourself with the warranty statement. **All of us at Wheel Horse want you to be satisfied with your Wheel Horse tractor; please don't hesitate to contact us for assistance.**

## RED BLANKET PROTECTION PLAN

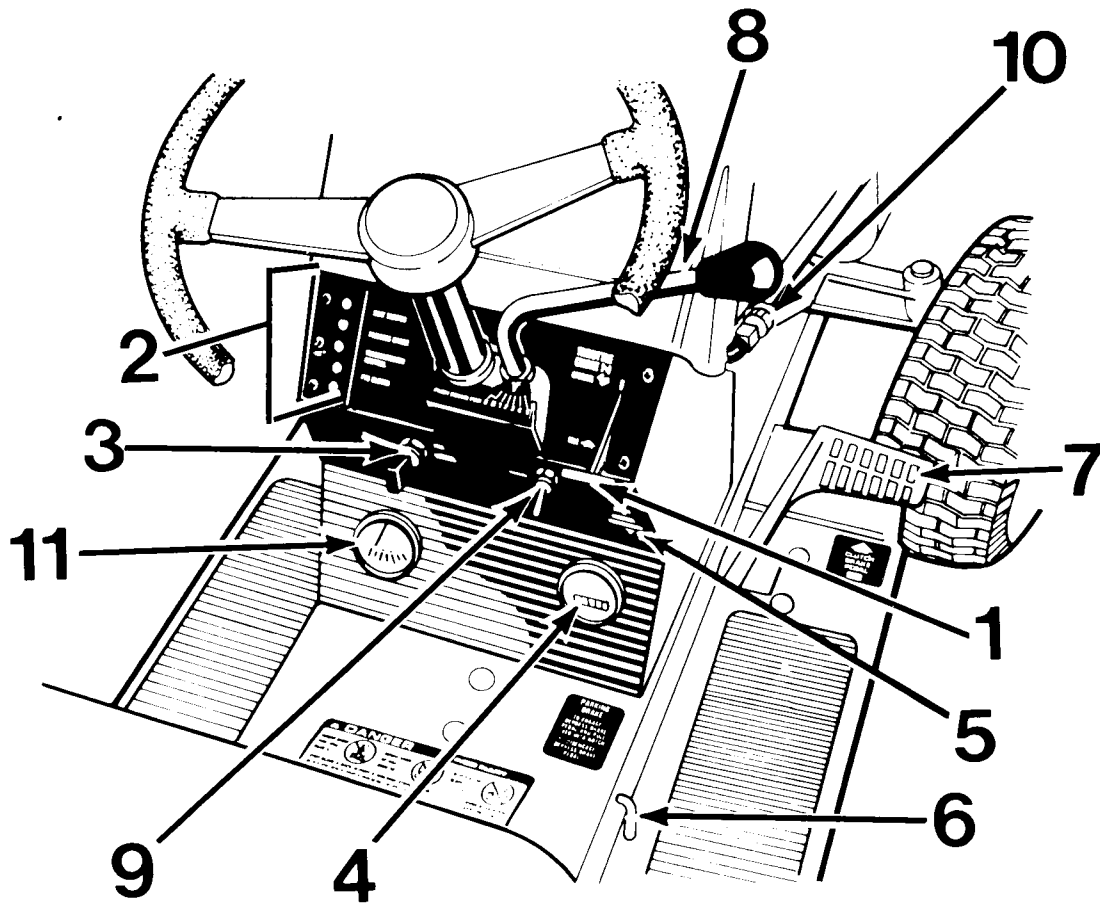
Wheel Horse offers an optional extended service contract to protect your Wheel Horse investment for a full three years. Ask your participating Wheel Horse dealer for full details.

## PARTS MANUAL

A separate parts manual is available for your Wheel Horse equipment. To obtain a parts manual, see ordering information at end of this publication.

**BE SURE TO INCLUDE VEHICLE IDENTIFICATION NUMBER OF EQUIPMENT.**

# INSTRUMENTS AND CONTROLS



## 1. COMBINED THROTTLE/CHOKE CONTROL

Combined throttle/choke control is located on upper right side of dash panel. To start engine raise lever all the way up past detent to Choke position. To operate tractor raise lever to detent position near top of slot. Lower lever before shutting engine off. If engine is warm or has been running, raising lever to Choke position may not be necessary to restart it.

## 2. INDICATOR LIGHTS (Not on all units)

Indicator lights are located on upper left side of dash panel. On tractor equipped with oil indicator light only, with engine shut off turn ignition key to "ON" position to test light bulb. On tractor equipped with test switch, actuate test switch to turn lights "On".

If one or more lights are out, check wiring and replace bulb if necessary as outlined in "Maintenance" section of this manual. If PTO Clutch or transmission light is on when attempting to start engine, check that control is in proper position for starting. All lights must be OFF during operation; if light(s) is on, a malfunction is indicated in that operation(s) and must be corrected.

## 3. IGNITION SWITCH

Ignition switch is located on left center of dash panel near steering column. Ignition switch has three positions from left to right: (1) Off, (2) Run, (3) Start. To start engine turn key all the way right to Start position. Release key when engine starts and it will automatically return to Run position. When switch is turned to Off position, engine stops and all electrical accessories are turned off.

## 4. HOUR METER (Not on all units)

Hour meter is located on dash panel below steering column. Hour meter is a gage indicating operating hours of tractor.

## 5. PTO (POWER TAKE-OFF) CLUTCH SWITCH

PTO switch is located on right side of dash panel below throttle control. Raise switch cover and pull up on toggle switch to engage PTO. Push down on switch cover to disengage PTO. PTO clutch lever actuates a safety interlock switch in starter circuit; therefore indicator light comes on (if so equipped) and tractor

will not start unless lever is in disengaged position. If operator's seat is vacated while PTO is engaged, seat switch indicator light comes on (if so equipped) and seat switch will automatically shut engine off.

## **6. PARKING BRAKE LOCK LEVER**

Parking brake lock lever is located on right side of frame next to foot platform. To engage parking brake, first apply foot clutch/brake pedal solidly and then move parking brake lock lever up and back to lock brake. To release parking brake push down on brake/clutch pedal. Parking brake lock lever is spring loaded and will return to disengaged position when foot pedal is depressed. Indicator light is on (if so equipped) when parking brake is locked with engine running.

## **7. BRAKE/CLUTCH PEDAL**

Brake/clutch pedal is located at front of tractor just right of steering console. Pushing down on pedal declutches drive belt, disconnecting engine from transmission, and applies brake. Always release pedal slowly when engaging clutch. Always depress pedal when shifting transmission into or out of gear and when starting engine.

## **8. GEAR SHIFT LEVER**

Gear shift lever is located to right side of steering wheel. Select any forward speed by moving lever right or left as indicated on shift pattern decal. Push lever down and pull back for reverse. Gear shift lever actuates a safety switch in starter circuit; therefore indicator light comes on (if so equipped) and tractor will not start until transmission is in neutral.

## **9. LIGHT SWITCH (Not on all units)**

Light switch is located on right center of dash panel near steering column. Raise switch toggle to turn lights on. Lower toggle to turn lights off. Lights will work only while engine is running.

## **10. FUEL SHUT-OFF VALVE**

Fuel shut-off valve is located at bottom of fuel tank. Fuel shut-off valve is normally left open, except when service on fuel system becomes necessary.

## **11. VOLTMETER (Not on all units)**

Voltmeter is a gage indicating electrical system battery voltage. With ignition key in Off position, gage is not actuated. When ignition key is turned to On position, gage should read 12 Volts or slightly above. When starter is engaged, gage reading should not drop below 8 Volts. After engine is started and running, gage should read between 12 and 16 Volts. If gage reads less than 12 Volts battery is discharging. If gage reads 16 Volts or higher for long periods of time, check battery water more frequently.

# OPERATING YOUR TRACTOR

## SAFETY INTERLOCK SYSTEM

Safety interlock system incorporates two switches, for safe starting.

Starting switches are actuated by gear shift lever and PTO clutch control. If tractor will not start, check that PTO clutch is disengaged and transmission is in neutral. Indicator lights will be on and engine will not start unless both switches are properly actuated.

Safety interlock system must be tested periodically. To test operation, following functions must be observed. If not, immediate repairs must be performed by an Authorized Wheel Horse Dealer for your protection.

1. Engine should NOT start if:
  - a. Transmission is in gear.
  - b. PTO is engaged.Test each of the above one at a time.
2. With engine running and PTO engaged, test operate seat switch by rising off seat. Engine should shut off.

## SEAT CONTROL

To move seat, loosen bolts under seat, slide seat to desired position and retighten bolts.



Seat Adjustment

## CORRECT ENGINE OPERATION

### ⚠ CAUTION ⚠

Before starting engine, become familiar with all controls. Read this Operator's Manual thoroughly. Always check engine oil level before starting. Always check transmission 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 engine in confined areas such as a closed garage.

## STARTING ENGINE

Because of a built-in safety interlock system, your tractor will not start until transmission is in neutral and PTO is disengaged. If so equipped, indicator light(s) will be on when controls are not in correct position for starting.

To start engine move gear shift lever to neutral position and disengage PTO.

Move throttle/choke control lever to Choke position.

Turn ignition key clockwise until starter engages. When engine starts, release key. Switch is spring loaded and will return to Run position automatically.

**If engine fails to start after 10 seconds of continuous cranking, turn key to Off position and allow starter motor to cool. Check for cause of hard starting; consult Troubleshooting Checklist.**

Once engine has started, slowly return throttle/choke control to Operate position. If engine stalls or hesitates during operation, choke should be applied as necessary until engine reaches normal operating temperature.

## STOPPING ENGINE

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

**Note:** In case of emergency, engine may be stopped by turning ignition key to Off position.

### ⚠ CAUTION ⚠

Always remove key and set parking brake when leaving 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

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

Engine in your new Wheel Horse has been designed with a special governor that limits maximum RPM. Governor allows engine to operate most efficiently at a set speed, and protects it from damage caused by excessive RPM. Always operate tractor with throttle control set at full speed.

**Engine MUST be operating at full throttle whenever tractor is in use. Using tractor while engine is operating at less than full throttle may result in poor overall tractor performance and battery may discharge.**

## CHOKE CONTROL

Choke control activates a "butterfly" valve in carburetor. When choke is partially or completely closed, less air is admitted to engine. This results in a higher fuel-to-air (richer) mixture that is easier to ignite when engine is started cold. Warmer engines may not need choking.

## FUEL SPECIFICATION

### **CAUTION**

**Handle fuel with care — it is highly flammable. Use only approved fuel container. Never add fuel while 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.**

When tractor requires refueling, fill tank with a good grade (85 octane minimum) of regular gasoline. Leaded or unleaded regular may be used. Do **not** intermix regular and unleaded gasolines. Do **not** mix oil with gasoline. Use of gasohol fuel is not recommended by engine manufacturer.

In general, use of unleaded fuel will reduce build-up of combustion deposits in engine and contributes to long valve life. It is suggested that leaded regular gasoline be used for first 25 hours of operation, while piston rings are seating, and unleaded fuel thereafter.

## OIL SPECIFICATION

To protect your tractor's engine, check oil level before each use.

Complete information concerning recommended oils and how to check oil level is given in "Maintaining Your Tractor" section of this manual.

## CORRECT TRANSMISSION OPERATION

### TO GO FORWARD OR REVERSE

Tractor is equipped with a reverse "lock out" that helps prevent shifting into reverse accidentally. To shift tractor into reverse, push lever down and pull back into reverse position.

With engine running, depress clutch/brake pedal. Move gear shift lever to desired speed forward or to reverse. Shift plate decal identifies various speeds. Slowly release pedal. As pedal is released, tractor will begin to move.

### **CAUTION**

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

### TO CHANGE SPEED OR DIRECTION

When a change in ground speed or direction is required, always bring tractor to a complete halt by depressing clutch/brake pedal.

**Never attempt to shift gears with tractor in motion. Severe internal transmission damage may result.**

Change gears as desired. Approximate ground speed for each gear is shown in specifications in front of this manual. It is not necessary or recommended to shift "up" or "down" through gears with tractor in motion. Tractor has sufficient power to move out in any gear. If tractor will not move out in a selected gear with a heavy load attached, a lower gear should be used.

### TO STOP

To stop tractor, depress clutch/brake pedal. Always engage parking brake before leaving tractor.

# CORRECT TRACTOR USAGE

## OPERATION OF TRACTOR

Because of sufficient tractor engine power no problems should be encountered using attachments under normal conditions. On rough, hilly, or wet terrain, addition of wheel weights and tire chains will minimize rear tire slippage. Front tires may be fluid filled.

## WITH A MOWER

### **WARNING**

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

### **IMPORTANT**

Each time mower is installed, check for proper operation of PTO clutch and brake.

For best operation on average lawns, operate engine at full throttle; control ground speed with transmission. Uneven cutting is often result of excessive ground speed. To correct, reduce ground speed by shifting into a lower gear. Average lawns are usually cut at a height between 2 and 3 in. (5-7.6 cm). Tall grass and weeds should be cut with mower in its highest position, making a second pass cutting to height desired. Always keep mower blade sharp.

## Mowing Speed

Mower is designed to operate most efficiently at maximum blade speed. Gear to use for mowing is one which will allow mower blade to maintain this maximum speed while mowing across turf. For best cutting results on average lawns, operate tractor in second, third or fourth gear. For cutting tall grass, grass which is heavy with moisture, or when moving uphill, use first or second gear. If ground speed is too fast, or blade speed is too slow, mowing will be uneven because mower blade will not be able to lift blades of grass into cutting position as mower passes over them. Use first gear for trimming operations.

## Mowing Height

Best cutting height for your lawn has probably been established from previous experience. First time you mow, set mower to cut a little higher than you have cut in the past. This will help you to determine best approach to uneven areas, to be sure wider cut does not result in scalping high spots. In general, recommended cutting height is 2 to 3 in. (5 to 7.6 cm).

Very tall or wet grass can be cut without difficulty by using a little care. Set the mower in its highest cutting position and enter area in first gear. If necessary, take a cut one half width of mower, overlapping previously cut area on each pass. Then, with mower set to desired height, make a finish cut over entire area. Remember, sharp blades produce cleaner cuts and use less power.

To help keep a green lawn, never mow more than one third off height of grass, or a maximum of one inch (2.5 cm), in one mowing.

For best appearance, grass should be cut in afternoon, or early evening (in daylight) when it is free of external moisture.

## Mowing Pattern

Size and type of area to be mowed determine best mowing pattern to use. Obstructions such as trees, fences and buildings must also be considered. Where possible, make one or two passes in a clockwise direction around outside of area to keep cut grass off fences and walks. Remainder of mowing should be done in a counterclockwise direction so clippings are dispersed on cut area.

Where possible, keep left side of mower toward trees, posts, or other obstacles on first pass around obstacles to keep hand trimming to a minimum.

On moderate size, frequently mowed lawns where grass is light and dry, it is sometimes practical to mow in a clockwise direction so that clippings are thrown toward the center of the lawn and concentrated for pickup and removal.

Where possible, change patterns occasionally to eliminate matting, graining or a corrugated appearance.

## WITH A SNOW BLADE

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

Tire chains and wheel weights may be used to improve rear tire traction.

## WITH OTHER ATTACHMENTS

There are numerous other special-purpose attachments available, which greatly increase tractor's versatility. Attachments are custom designed for a particular tractor model, but many others simply use tractor as a towing vehicle. They are attached or removed from tractor by installation or removal of a single drawbar hitch pin. Some of these attachments are ground driven and some are simply towed such as a dump cart.

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

Your authorized Wheel Horse dealer can assist you with selecting attachments for use with your tractor.

## DUMP CART LOAD LIMITS

Wheel Horse recommends following load limits be observed when using tractor with a dump cart. Load limits have been set to provide for safe braking on slopes.

150 lbs. (69 kg)

# MAINTAINING YOUR TRACTOR

## ⚠ CAUTION ⚠

To minimize the chance of injury, perform all maintenance and adjustments on your tractor with engine off and ignition key removed, unless instructed otherwise in this section. Use extreme care when working near operating machinery. Do not wear loose fitting clothing. Remove watch and jewelry before beginning work and observe common safety practices when using tools.

## MAINTENANCE CHECKLIST

	Before Each Use	After Each Use	Every 25 Hours	Every 50 hours	Every 100 Hours	Every 150-200 Hours
<b>SERVICE OPERATION</b>						
Check:						
PTO Clutch Adjustment						X
Safety Interlock System	X					
Engine Oil Level	X					
Battery Water Level	X					
Tire Pressures			X			
Tightness of all Attaching Hardware			X			
Clean Engine Cooling Fins		X				
Clean Air Filter			X			
Lubricate Chassis & Mower			X			
Briggs & Stratton Engine Oil <sup>(1)</sup>			X			
Kawasaki Engine Oil <sup>(1)</sup>					X	
Check Brake Adjustment				X	X	
Inspect Spark Plug				X		
Replace Spark Plug						X
Replace Air Filter						X
Replace Fuel Filter						X

(1) Refer to text for initial service interval for new tractors.

**NOTE:** These service intervals are considered **MAXIMUM** under normal operating conditions. Increase frequency under extremely dirty or dusty conditions.

## ENGINE

### Oil Quality

For maximum engine protection under all operating conditions use API Service Classification SC, SD, SE, or SF oil. These letters may appear on oil can singularly or in combination with other letters.

### Oil Level

Form a habit of checking oil level regularly.

Check oil level of engine every time tractor is used. An improper oil level can cause extensive internal damage to engine.

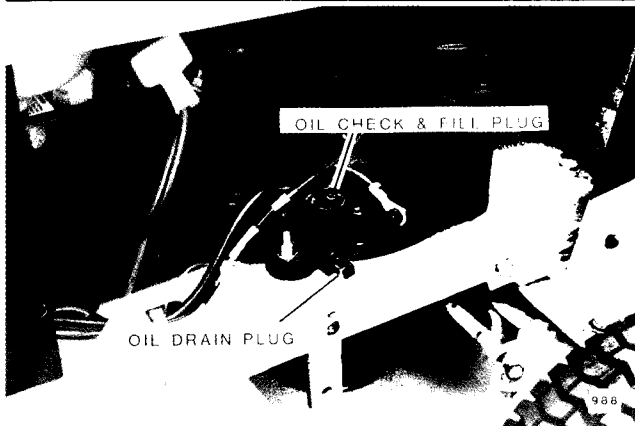
To check engine oil level, stop tractor where engine is level. Shut off engine and remove key.

Oil filler plug, dipstick and oil drain locations for all engines are illustrated in following photos and drawings. Remove dipstick or oil fill plug on engine.

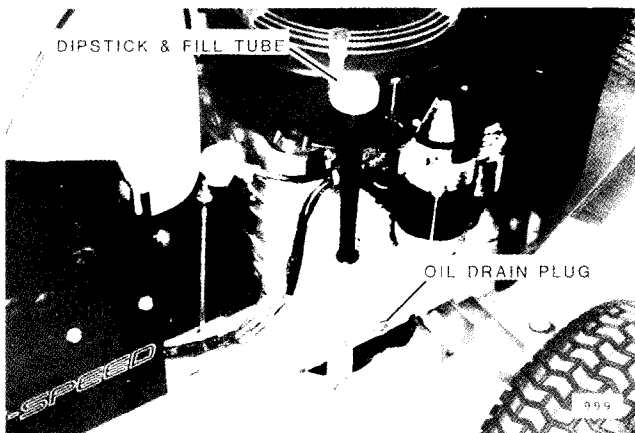
On engines with filler plugs, oil level should be at top of oil fill opening in engine block.

On engines with dipsticks, oil level should be maintained between "F" and "L" levels on dipstick. Wipe dipstick with a clean lint free rag; insert dipstick into filler tube until it rests on tube threads. Remove dipstick again and read scale on lower portion of dipstick. Add oil through dipstick tube as necessary.

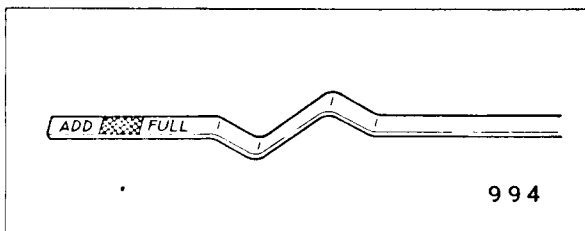
Never overfill engine crankcase with oil. Oil level must not exceed Full level.



Briggs & Stratton Engine Oil Fill and Drain Plugs



Kawasaki Engine Oil Check and Fill



### Correct Kawasaki Engine Oil Level

Be sure to add same viscosity oil as is presently in engine. New tractors are shipped with SAE 30 oil in crankcase. It may be necessary to change original oil before using tractor if tractor will be operated in cold weather.

### Oil Changes

Engine oil in a new tractor should be changed after first 2 hours of operation. Thereafter, oil should be changed at 25 (Briggs & Stratton engine) or 50 (Kawasaki engine) operating hour intervals. If operating conditions are extremely dusty or dirty, frequency of oil changes should be increased.

**Failure to change engine oil at recommended intervals can lead to serious damage to engine. This is especially true when using detergent oils which are designed to hold impurities in suspension; when saturation point is reached, oil may suddenly break down to form a gelatin-like substance which seriously impairs and can even stop flow of oil. Increase frequency of oil and oil filter changes if tractor is operated under extremely dusty conditions.**

Before changing oil, start engine and allow it to warm up. This will allow oil to flow more freely. Shut engine off and remove key.

Open oil drain. Location of oil drain plug is shown in "Oil Level" section of this manual. After oil has drained completely reinstall drain plug.

Remove oil filler plug or dipstick and add about 80% of amount of oil specified in following chart. Also shown are charts for selecting correct oil type and oil viscosity. When using temperature-viscosity chart, select air temperature most likely to be encountered within next 25 (Briggs & Stratton engine) or 50 (Kawasaki engine) hours of operation.

### ENGINE OIL CHANGE

Tractor Model	Crankcase Oil Capacity
11 & 12 H.P. ....	1½ quarts (1.4 liters)
8 H.P. ....	1¼ quarts (1.1 liters)

### ENGINE OIL TEMPERATURE — VISCOSITY CHART

#### Briggs & Stratton Engine

Air Temperature	Oil Viscosity
Above 40°F (4°C)	SAE 30
0° to 100°F (-18° to 38°C)	SAE 10W-30, 10W-40
Below 20°F (-6°C)	SAE 5W-20, 5W-30*

#### Kawasaki Engine

Above 32°F (0°C)	SAE 30
Below 32°F (0°C)	SAE 5W-20, 5W-30

\*If not available, a synthetic oil with a viscosity of 5W-20, 5W-30 or 5W-40 may be used.

### ENGINE OIL TYPE

#### Engine

Kawasaki	} API Service SC, SD, SE, or SF
Briggs & Stratton	

After adding 80% of prescribed amount of oil, check oil level. Add oil as necessary to bring oil to Full level.

### Air Filter

Dirt induced through improperly installed, poorly serviced, or inadequate air filter 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 formation of harmful sludge deposits.

Clean engine air filter after every 25 hours of operation (more often if tractor is operated under extremely dusty conditions).

On Briggs & Stratton engines with dry type filter elements, replace at 100 hour intervals or once a year whichever comes first.

On Briggs & Stratton engines with foam type elements, service intervals may be extended for more than 100 hours or one year of operation, provided element shows no sign of deterioration and can still be cleaned satisfactorily.

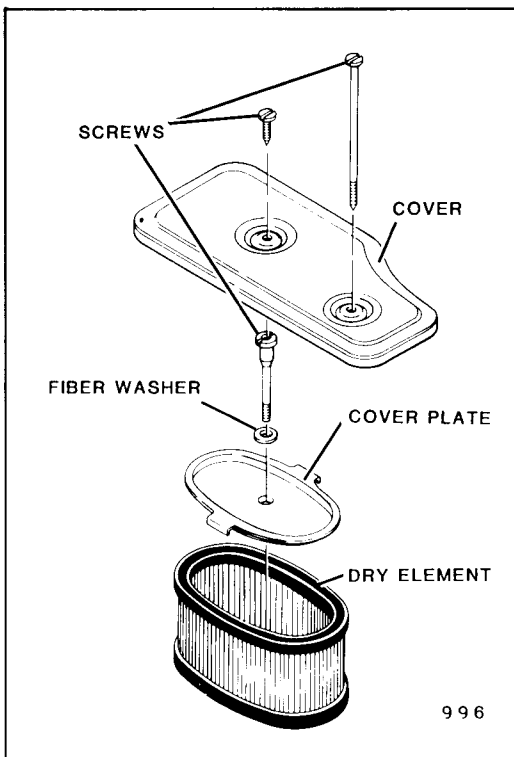
On Kawasaki engines with heavy duty air cleaner which has a precleaner and dry type element, replace precleaner and dry type element every 200 hours or once a year, whichever comes first.

Check following when installing a new or serviced element:

1. Back plate must be securely tightened to carburetor. Replace back plate if bent or cracked.
2. Gasket surfaces of element must be flat against back plate and cover to seal effectively.
3. Wing nut(s) must be finger tight — **don't over-tighten**. Tighten screws securely.
4. Be sure cover seals and gaskets, where used, are in good condition and will seal properly. Bad gaskets and seals can let unfiltered air into carburetor.

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

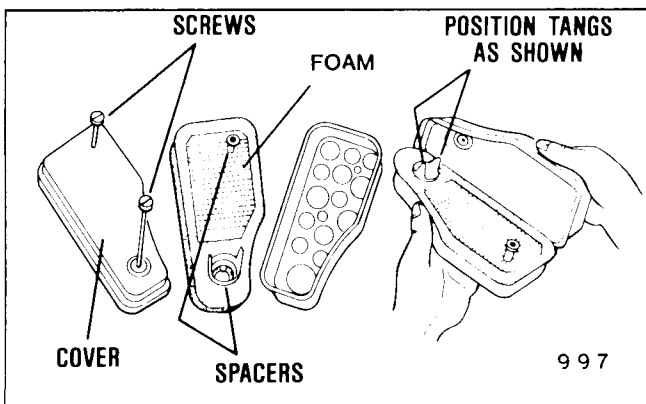




#### Briggs & Stratton Dry Type Air Cleaner

On tractors with Briggs & Stratton engines equipped with dry type air cleaner, air is drawn from inside to outside of filter element. When checking filter, be sure to inspect inside of element to determine if it needs replacement.

Wipe off air cleaner cover(s) and backing plate, taking care to prevent any dirt from entering carburetor. To service dry type air filter, remove screws and cover plate. Dry type air filter element is cleaned by tapping it lightly on a flat surface to remove loose dirt particles. Replace element if dirt does not drop off easily. DO NOT wash elements in liquid. Do not attempt to blow dirt off with compressed air as this can puncture filter element.

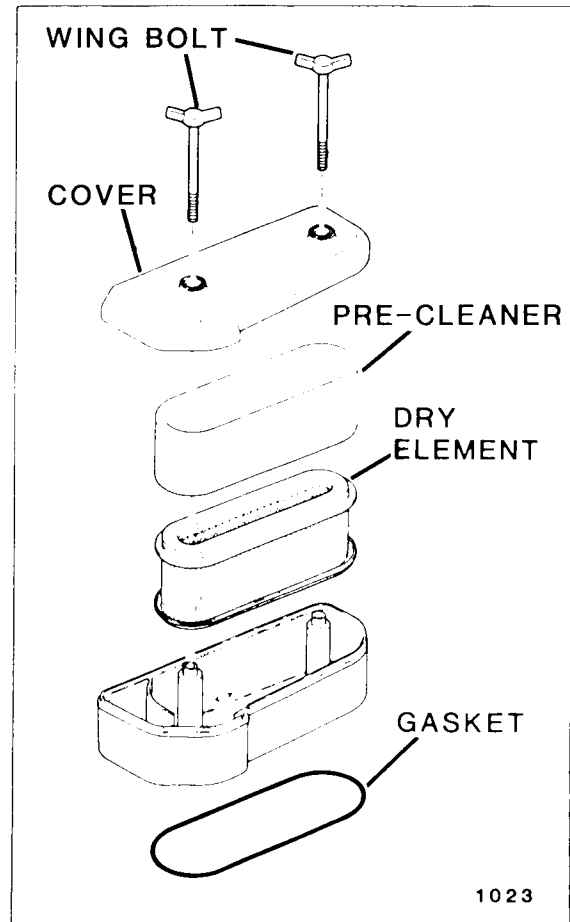


#### Briggs & Stratton Foam Air Cleaner

On tractors with Briggs & Stratton engines equipped with foam air filters, remove two screws and lift off complete air cleaner assembly. Remove screen and spacers from foam element and remove element from body of air cleaner.

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

Reassemble air cleaner and reinstall on carburetor. Be sure gaskets are in good condition and in place. When assembling, make certain lip of foam element extends over edge of air cleaner body. Foam element will form a protective seal.



#### Kawasaki Dry Type Air Cleaner

On Kawasaki engines, remove cover hardware and lift off cover, precleaner and dry type element. Dry type air filter element is cleaned by tapping it lightly on a flat surface to remove loose dirt particles. If very dirty, wash element in detergent and water and dry thoroughly. Replace element if dirt does not drop off easily. Do not attempt to blow dirt off with compressed air as this can puncture filter element.

Foam precleaners are used over filter elements. Clean when air cleaner is serviced. Wash precleaner in a solution of liquid dishwashing detergent and water. Squeeze out excess water and allow it to dry. Saturate precleaner in engine oil, then squeeze out excess oil and install precleaner on element.

#### Spark Plug

Engine misfire, or generally poor operation is often caused by a spark plug in poor condition or with in-

correct spark gap setting. Spark plug should be checked after each 100 hours of operation. Replace spark plug if inspection reveals fouling or excessive deterioration.

Always clean area around spark plug before removing it to prevent dirt from entering engine. Use a spark plug wrench to remove and install plug.

Check condition of plugs. Good operating conditions are indicated by 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.

Replace spark plug that is not in good condition. **Never sandblast, wire brush, scrape or reinstall spark plug in poor condition. Best results are obtained with a new plug.**

Always check spark plug gap before installing new plug or reinstalling original plug. Use a spark plug gap gauge to adjust electrode air gap to specification for engine.

Tractor Model	Plug Gap
Briggs & Stratton engine .....	.030 in. (.8 mm)
Kawasaki engine .....	.025 in. (.65 mm)

Tighten spark plug to:

Briggs & Stratton engine —	18 ft. lbs. (22 Nm)
Kawasaki engine —	15 ft. lbs. (20 Nm)

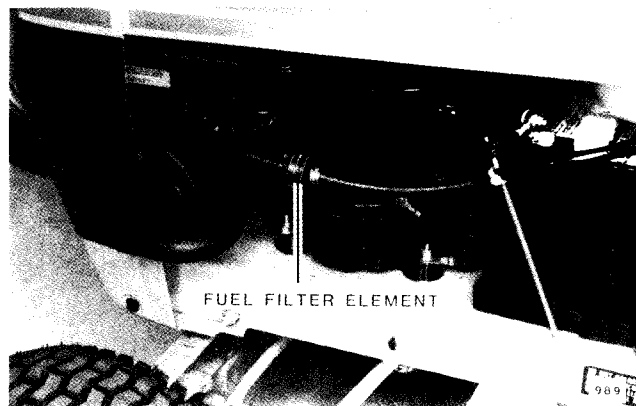
## Carburetor Adjustment

Carburetor is adjusted at factory and should not have to be reset. If a condition is noted as outlined in following "Carburetor Adjustment Chart", carburetor should be readjusted immediately. Continued operation with incorrect carburetor settings can lead to a fouled spark plug, overheating, excessive valve wear or other problems. If black exhaust smoke is noted, check air cleaner first — an "overrich" mixture is usually caused by a poorly serviced, clogged air cleaner element, not an improperly adjusted carburetor.

Correct carburetor adjustment requires a significant amount of knowledge as well as special equipment, such as a good tachometer. In addition, other adjustments, such as governor settings, may also be necessary after adjusting carburetor. For these reasons, it is suggested that carburetor adjustments be performed by an authorized dealer. Kawasaki engine does not have adjustable main fuel needle.

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 — readjust main fuel needle.
D. Idle speed too low or improper idle adjustment — readjust speed then idle fuel needle if needed.

Carburetor Adjustment Chart



Fuel Filter (Briggs & Stratton engine)

## Fuel Filter

Briggs & Stratton engines have an in-line fuel filter, located near carburetor. This filter should be replaced after each 100 hours of operation or at 1 year intervals, whichever occurs first.

Always clean area around fuel cap before removing it to prevent excessive amounts of dirt from entering fuel system. Also insure that fuel storage container you are using is clean and in good condition.

Fuel filter gives only limited protection against moisture in fuel system. Keep fuel tank full during winter operation, when cold and damp weather conditions can cause moisture to condense in tank.

On Kawasaki engines, a fine-mesh screen type strainer is incorporated into fitting at bottom of fuel tank, which filters foreign matter from gasoline before it reaches carburetor. This strainer normally requires service only if fuel supply becomes severely contaminated.

## CHARGING AND ELECTRICAL SYSTEMS

### Alternator

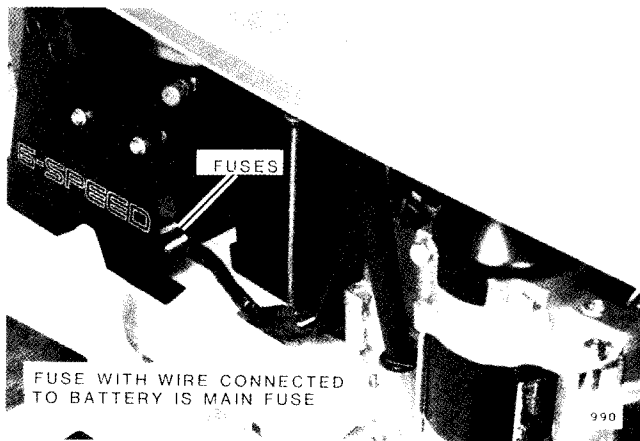
An alternator is used to charge battery. Alternator charging system normally requires no service other than periodically checking all exposed wiring and electrical connections on tractor are clean, tight and in good condition.

Proper polarity is critical with an alternator equipped charging system. Always disconnect battery ground cable (negative) before working on any part of the electrical system. Verify all components are connected correctly before re-connecting ground cable (negative) or damage to alternator system components will result.

Never run engine if battery is removed, or if battery is not connected to charging system. Serious damage to voltmeter, circuit board and charging system components may result.

### Main Fuse

A 15 amp (Briggs & Stratton engine) or 25 amp (Kawasaki engine) automotive type ATO or ATC fuse is used to protect main circuit of electrical system.



Fuse Location

## Light Circuit and Fuse

Tractors with Briggs & Stratton engines: Electrical system has a separate circuit for operating lights. Alternator output for this circuit is ALTERNATING CURRENT (A.C). For this reason lights will not operate without engine running. A fuse is not used in this light circuit. Never interconnect A.C. light circuit and D.C. battery circuit as this may result in serious damage to charging system.

Tractors with Kawasaki engines: Light circuit is powered by battery. Lights will operate when ignition switch is in Run position. A 15 amp automotive type ATO or ATC fuse is part of light circuit. Fuse holder is next to main fuse holder (See preceding "Main Fuse").

## Voltmeter and Hour Meter Fuse (Not On All Models)

Meter circuits are protected by Light fuse (See preceding "Main Fuse").

## Battery

### ⚠ CAUTION ⚠

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

Maintain electrolyte level above plates in each cell by adding distilled water as necessary. Best time to add water is just prior to operating machine so water will mix with solution. Do not overfill battery. Electrolyte solution is corrosive and overfilling can cause damage to surrounding metal parts. Battery should be maintained at 1.265 specific gravity charge. When battery has been removed for servicing, take care to connect cables to battery exactly as they were before removal.

For longest service life, battery should be kept clean by wiping it off with a paper towel. Any corrosion around battery terminals should be removed by ap-

plying a solution of one part baking soda to four parts water. A light coating of grease may be applied to all exposed terminal surfaces to prevent corrosion.

At temperatures below 32°F (0°C), full charge state must be maintained to prevent cell electrolyte from freezing and causing permanent battery damage.

## Light Bulb Replacement

Headlights are replaced as described below. Care should be taken when handling bulbs, particularly if they are broken.

Either headlamp bulb is replaced by disconnecting bulb wires, turn bulb socket counterclockwise and remove socket from hood. Turn bulb counterclockwise and remove bulb from socket. Reverse procedure to install bulb.

To replace indicator light bulb on tractor with one indicator light, remove gas tank, unplug wire and light and discard. Install new wire and light and reinstall gas tank.

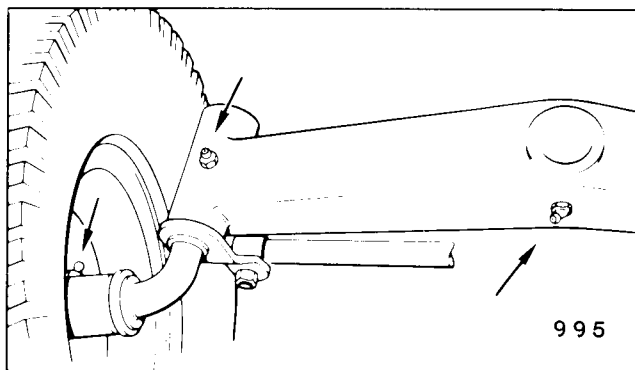
To replace indicator light bulb on tractor with more than one indicator light, remove gas tank, remove circuit board from dash panel and pull bulb off circuit board. Push new bulb on circuit board and reinstall circuit board on dash panel. Reinstall gas tank.

## TRANSMISSION

Mechanical transmission is packed with grease and is a sealed unit. No periodic lubricant checks are required; changing lubricant is not necessary except for major service. Refer to Parts and Service Manual for capacity and type of lubricant.

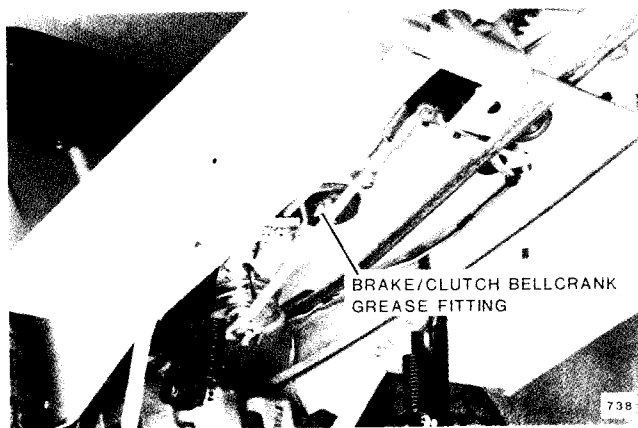
## CHASSIS LUBRICATION

Clutch mechanism, spindles, front wheel bearings and front axle pivot are equipped with fittings to facilitate lubrication with a pressure grease gun. Before applying grease gun, clean zerk fittings carefully to prevent dirt from being forced into fitting. After inserting grease, wipe off any excess grease. A general purpose grease (lithium base) is used to lubricate tractor.



Front Wheel, Spindle and Front Axle Lube Fittings

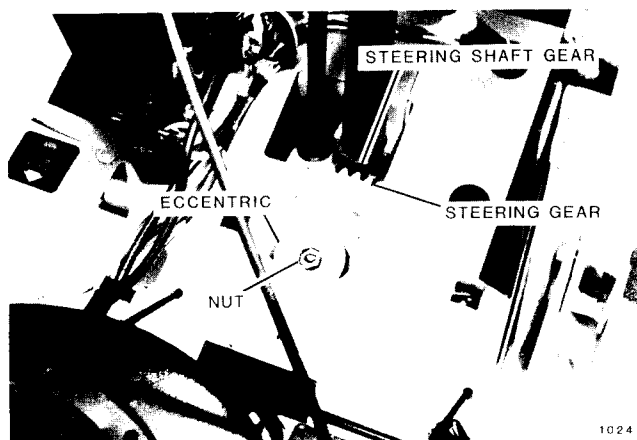
Lubricate chassis after each 25 hours of operation. All other pivoting arms and levers should be lubricated at same intervals with either general purpose grease or machine oil, applied directly to wear surfaces.



Clutch/Brake Bellcrank Grease Fitting

## STEERING GEAR TOOTH ADJUSTMENT

1. Remove battery and gas tank.

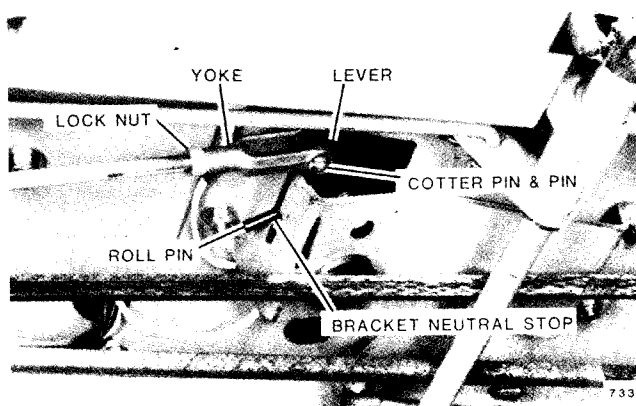


Steering Gear

2. Loosen nut and position steering wheel spokes. With wheels straight ahead, position steering wheel so spokes form a "Y" (3-spoke), or so spokes extend outward left and right (2-spoke). Tighten nut until eccentric turns with small amount of friction. Turn eccentric counterclockwise until zero clearance is obtained between end of gear tooth and groove of steering shaft pinion gear. DO NOT OVERTIGHTEN. Torque nut to 25-35 ft. lbs.
3. Turn wheels left and right and recheck for zero clearance. Reinstall battery and gas tank.

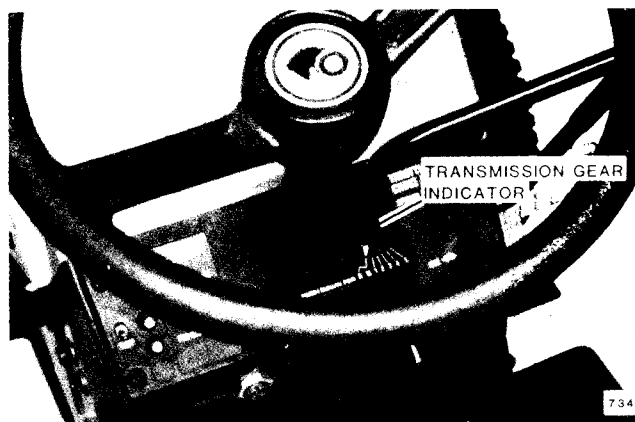
## GEAR SHIFT LEVER ADJUSTMENT

1. Position transmission in neutral.
2. Remove cotter pin and pin from adjustment yoke.



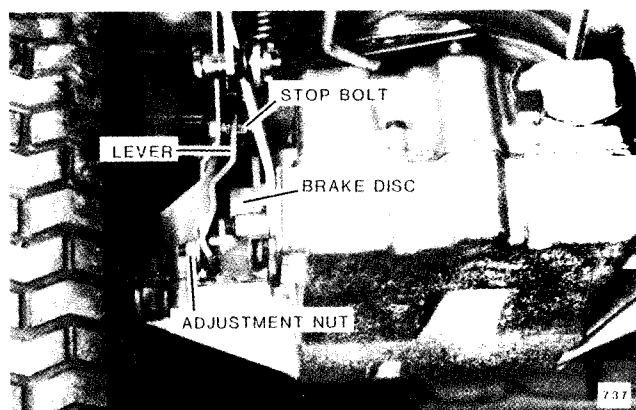
Neutral Adjustment

3. Position gear shift lever roll pin in bracket neutral stop.
4. Loosen lock nut on control rod and adjust yoke so pin can be installed into yoke and lever without force. Retighten lock nut and install cotter pin.
5. Position indicator on control handle at neutral marking. Move indicator up on control handle to clear console when handle is pushed down for reverse.



Indicator Adjustment

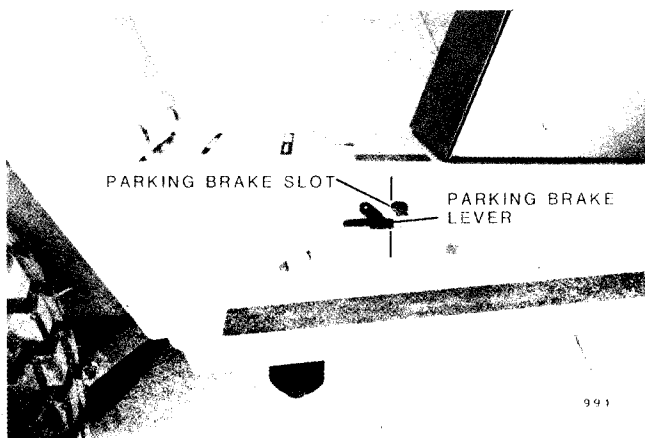
## BRAKE ADJUSTMENT



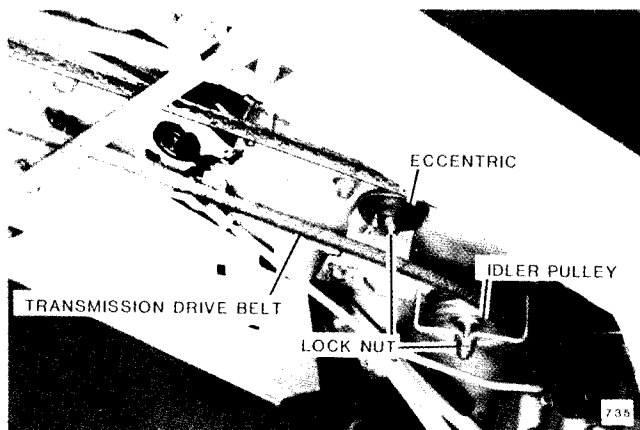
Brake Disc Adjustment

Brake adjustment is made at brake caliper. Block wheels to prevent tractor from rolling and place transmission shift lever in Neutral for brake adjustment.

1. Check that transmission brake lever is contacting bolt when brake pedal is released. If it does not, brake pads will drag on disc while tractor is being operated. If applicable, adjust clutch/brake rod.
2. With clutch/brake pedal released, loosen or tighten adjustment nut until brake disc is no longer free to turn. Back off adjustment nut just enough to permit disc to turn freely.
3. When brake pedal is depressed, brake should be locked when front edge of parking brake lever is even with rear edge of parking brake locking slot in frame. To adjust, rotate eccentric on idler arm underneath tractor.



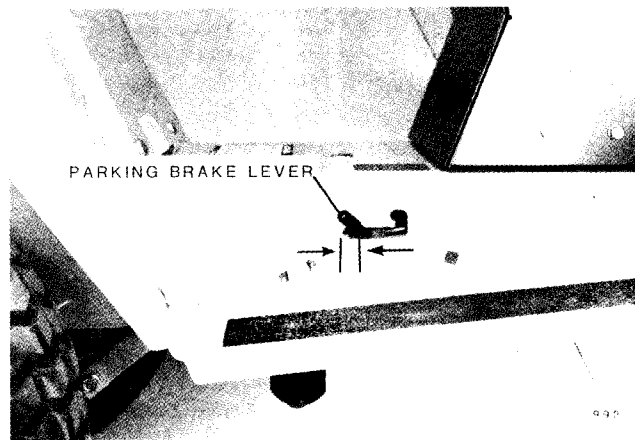
Brake Rod Adjustment



Clutch Idler Pulley and Brake Eccentric Adjustment

## CLUTCH ADJUSTMENT

1. Stop engine and remove ignition key.
2. With clutch / brake pedal released, parking brake lever should be  $\frac{3}{8}$ " from end of slot. To adjust, perform brake adjustment as outlined under "Brake Adjustment". Loosen nut on idler pulley and slide idler pulley in or out of slot on bellcrank to achieve dimension and retighten nut.



Clutch Adjustment

## DRIVE BELT TENSION ADJUSTMENT

Reposition belt tension spring in different hole until clutch engages firmly without grabbing and moves tractor without belt slipping.



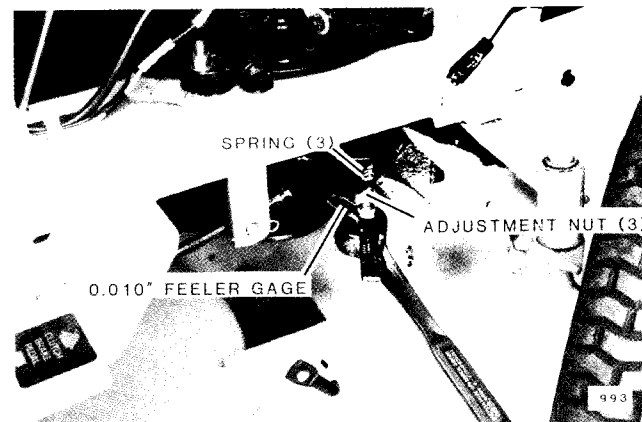
Drive Belt Adjustment

## PTO CLUTCH AND BRAKE ADJUSTMENT

PTO clutch and brake must be adjusted every 100 hours due to normal wear of friction surfaces.

To adjust PTO Clutch/Brake:

1. Stop engine and remove ignition key.
2. Clutch has three springs and adjustment nuts, all three must be adjusted at same interval. Insert a 0.010 inch feeler gage into slot located next to adjustment nut and turn nut until a small amount of resistance is felt on feeler gage.



PTO Clutch/Brake Adjustment

## CLEANING AND STORAGE

Tractor should be washed regularly with a mild automotive detergent and water. After 30 days, painted surfaces may be waxed to protect original finish.

Minor paint scratches or abrasions can be removed with an automotive cleaning and polishing compound. Rubbing compound is not recommended under normal circumstances, as it is highly abrasive. Exposed bare metal surfaces should be given a light coating of oil or grease to prevent rust until permanent repairs can be made. Aerosol cans of Wheel Horse paint are available through your Authorized Wheel Horse Dealer.

When tractor will not be used for an extended period of time, following steps will help insure minimum difficulty when unit is returned to service:

1. Perform required maintenance steps called for in "Maintenance Checklist".

2. Check tires for proper inflation.
3. Drain all fuel from fuel tank. Start tractor and let engine run out of gas. As gasoline grows old, it becomes less volatile and forms harmful gum and varnish deposits in carburetor and fuel pump. **DO NOT STORE GASOLINE FOR MORE THAN 2 MONTHS.**
4. Wash tractor and repaint all bare metal surfaces.
5. Charge battery. In temperatures lower than 40°F (4°C) a battery will maintain a charge for about 60 days. In temperatures above 40°F (4°C) water level should be checked and battery "trickle charged" every 30 days, (more often in higher temperatures). Battery must be fully charged to prevent freezing and internal damage in weather below 32°F (0°C).
6. Remove key from tractor.

# TROUBLESHOOTING CHECKLIST

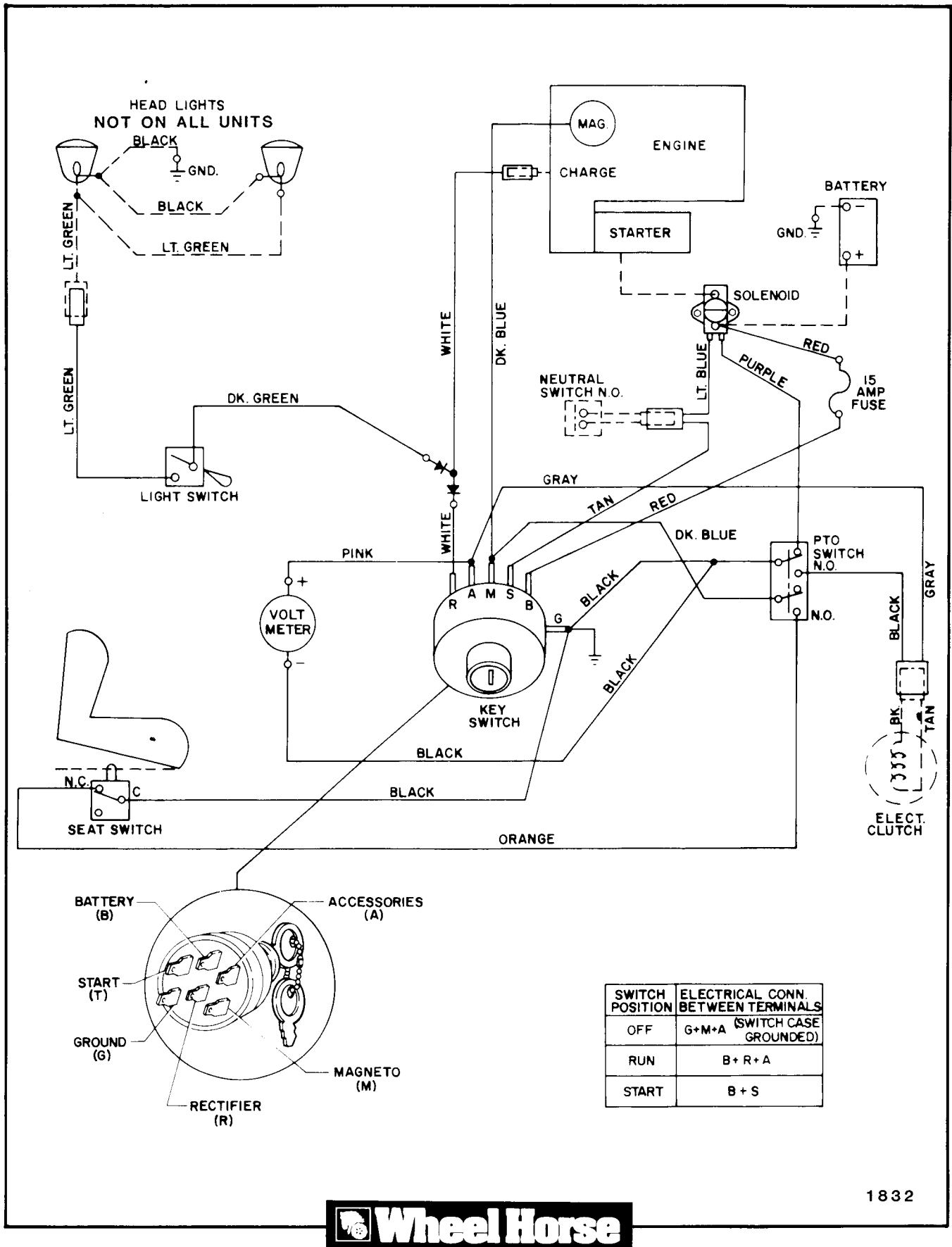
<b>SYMPTOM</b>	<b>POSSIBLE CAUSE</b>	<b>POSSIBLE REMEDY</b>
Engine will not turn over.	Dead battery. Open safety interlock switch.  Starter. Solenoid. Ignition switch.	Charge or replace battery. Be sure PTO is disengaged, brake pedal is depressed and transmission is in neutral. Consult authorized dealer. Consult authorized dealer. Consult authorized dealer.
Engine turns over but will not start.	Spark plug not firing.  No fuel in tank. Fuel valve closed. If applicable, fuel filter plugged. Improper carburetor adjustment. Ignition switch.	Check spark plug condition and reset gap. Refuel tractor. Open fuel valve. If applicable, replace fuel filter. Reset carburetor adjustment. Consult authorized dealer.
Engine hard to start.	Spark plug wire(s) grounded or loose.  Spark plug(s) faulty or improperly gapped. Magneto defective. Fuel line clogged.  Carburetor dirty or improperly adjusted.	Check spark plug wires.  Check spark plug condition and reset gap. Consult authorized dealer. Clean fuel line and if applicable, check fuel filter.  Readjust carburetor. Consult dealer for authorized carburetor service.
Engine starts, but operates erratically.	Clogged fuel line.  Water in fuel.  Vent in fuel cap plugged. Improper carburetor adjustment.	Clean fuel line and if applicable, check fuel filter.  Drain old fuel and replace with fresh supply. Check vent. Readjust carburetor.

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SYMPTOM	POSSIBLE CAUSE	POSSIBLE REMEDY
Engine knocks.	Fuel octane too low.  Faulty Ignition System. Engine overheated.	Drain fuel and replace with higher octane supply. Consult authorized dealer. Shut off engine and allow to cool.
Engine occasionally "skips" at high speed.	Spark plug fouled, faulty or gap too wide. Faulty Ignition System. Incorrect carburetor adjustment.	Check spark plug condition and gap. Consult authorized dealer. Readjust carburetor.
Engine overheating.	Air intake screen or fins clogged Oil level too high or too low. Fuel mixture too lean. Faulty Ignition System. Engine overloaded.	Clean intake screen and fins. Adjust oil level as necessary. Readjust carburetor. Consult authorized dealer. 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.	Readjust carburetor.
Engine runs fine, but tractor will not move.	Drive belt loose or broken. Faulty Transmission.	Adjust or replace drive belt. Consult authorized dealer.
Engine stalls whenever PTO is engaged.	Excessive load on PTO.  Faulty interlock system.	Check for jammed attachments. Lessen load on attachment.  Seat must be occupied to close interlock system. Consult authorized dealer.



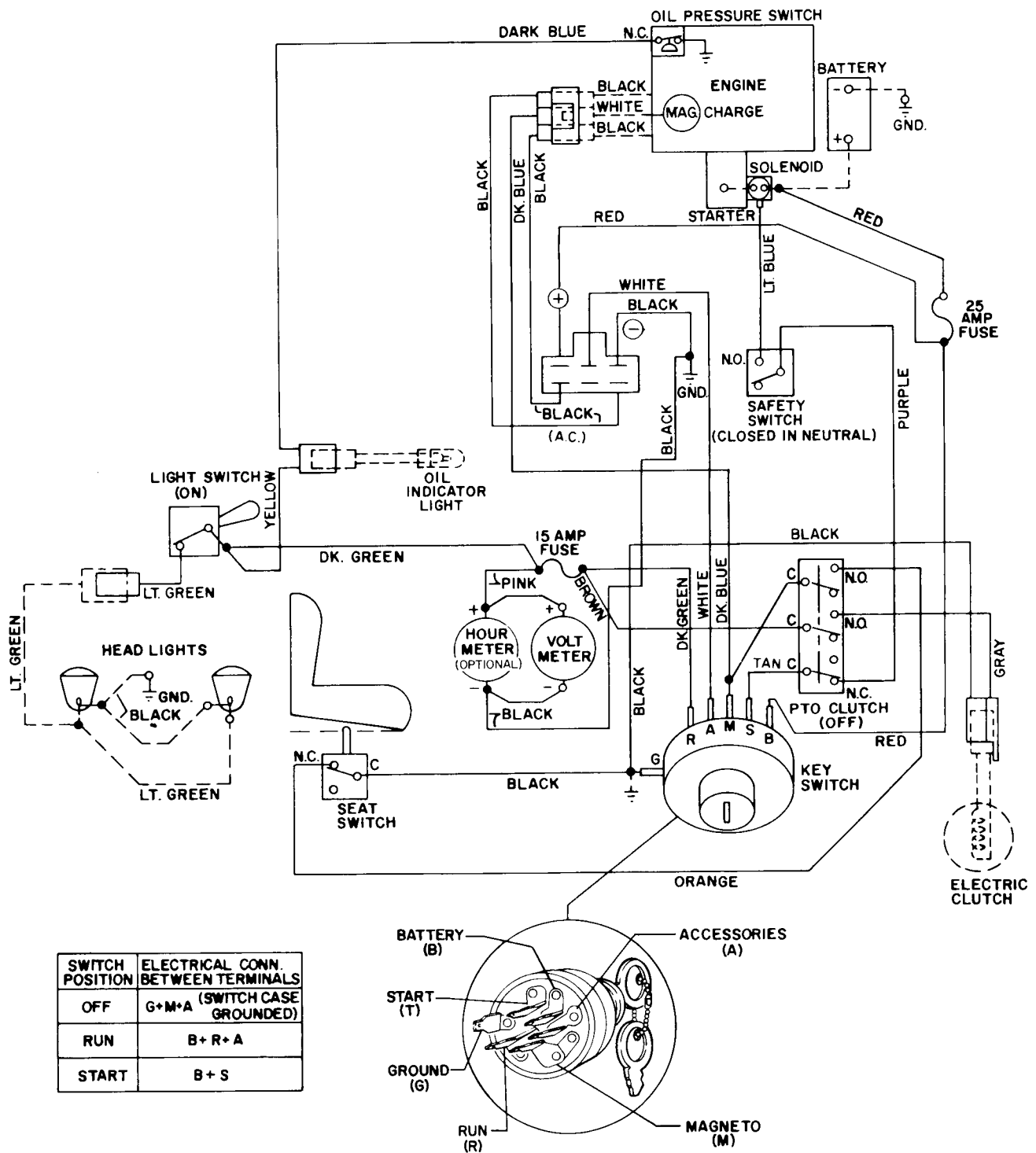
# WIRING DIAGRAM — 208 and 211 MODELS



1832



# WIRING DIAGRAM — 212 MODEL



1833



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