

OPERATOR'S MANUAL



B SERIES **Compact Tractors**

5 Speed & Automatic

C SERIES **Garden Tractors**

8 Speed & Automatic

Specifications
Operating Instructions
Maintenance Information

 **Wheel Horse**

PART NO. 810502K1

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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 sitting in the driver's seat.

TRACTOR SPECIFICATIONS:

ENGINE:

TRACTOR MODEL	ENGINE MODEL*	RATED H. P.**	DISPLACEMENT cu. in./cc	BORE in./mm	STROKE in./mm	IGNITION
B-115	B-253707	11	24.36/399.19	3.438/87.3	2.625/66.7	Electronic
B-165	B-402707	16	40/655.7	3.438/87.3	2.156/54.8	Electronic
C-85	K181S	8	18.6/304.8	2.94/74.7	2.75/69.8	Battery
C-105	K241AS	10	23.9/391.6	3.25/82.6	2.88/72.9	Battery
C-125	K301AS	12	29.07/476.4	3.38/85.7	3.25/82.6	Battery
C-145	K321AS	14	31.27/512.4	3.5/88.9	3.25/82.6	Battery
C-175	KT17	17	42.18/691.4	3.125/79.4	2.75/69.8	Battery
C-195	KT19	19	47/770	3.125/79.4	3.063/78	Battery

*Letter Prefix: B = Briggs & Stratton, K = Kohler. Basic engine model number shown; specification and serial numbers from engine I. D. plate are required to completely identify engine.

**Engine manufacturer's rating at 3600 RPM.

TRANSMISSION:

B-Series 5-Speed Models

Type: Mechanical
All Gear

Approximate Ground Speeds (at full throttle):

5-Speed

1st	1.0 mph (1.6 kph)
2nd	2.1 mph (3.4 kph)
3rd	3.2 mph (5.1 kph)
4th	4.1 mph (6.6 kph)
5th	4.8 mph (7.7 kph)
Rev.	2.2 mph (3.5 kph)

B-Series Automatic Models

Type: Hydrostatic

Approximate Ground Speeds (at full throttle):

Variable 0-5.2 mph
(8.4 kph) Forward
Variable 0-3.2 mph
(5.2 kph) Reverse

C-Series 8-Speed Models

Type: Mechanical
All Gear

Approximate Ground Speeds (at full throttle):

Gear	Low Range	High Range
1st	.5 mph (.8 kph)	2 mph (3.2 kph)
2nd	.8 mph (1.3 kph)	3.2 mph (5.2 kph)
3rd	1.4 mph (2.2 kph)	5.5 mph (8.8 kph)
Rev.	.6 mph (1.0 kph)	2.6 mph (4.2 kph)

C-Series Automatic Models

Type: Hydrostatic

Approximate Ground Speeds (at full throttle):

C-145, C-175

Variable 0-7 mph
(11.5 kph) Forward
Variable 0-4.2 mph
(6.8 kph) Reverse

C-195

Variable 0-6.3 mph
(10 kph) Forward
Variable 0-4.2 mph
(6.8 kph) Reverse

ELECTRICAL SYSTEM:

Type:	12 Volt D.C., Negative Ground
Alternator:	Briggs & Stratton — Dual Circuit, 12 Volt, 3 Amp. (Charging Circuit) Kohler — 12 Volt, 15 Amp.
Battery:	B-Series, C-85, C-105 — 12 Volt, 24 Amp. Hr. C-125, C-145, C-175, C-195 — 12 Volt, 32 Amp. Hr.

TIRES:

Sizes:	Front	Rear
B-Series	13 x 6.50-6	20 x 10.00-10
C-85, C-105, C-125	16 x 6.50-8	23 x 8.50-12
C-145, C-175	16 x 6.50-8	23 x 9.50-12
C-195	18 x 6.50-8	27 x 9.50-15

Pressure:

PSI	12	12
kg/cm ²	.85	.85

TRACTOR SPECIFICATIONS (continued):

PHYSICAL DATA:

TRACTOR MODEL	HEIGHT	LENGTH	WIDTH	WHEEL BASE	INSIDE TURNING RADIUS	DRY WEIGHT (APPROXIMATE)
B-115	37 in. (94 cm)	67 in. (170 cm)	36 in. (92 cm)	45.5 in. (116 cm)	51 in. (130 cm)	350 lbs.* (159 kg)
B-165	37 in. (94 cm)	67 in. (170 cm)	36 in. (92 cm)	45.5 in. (116 cm)	47 in. (119 cm)	380 lbs.* (172 kg)
C-85	41 in. (104 cm)	69 in. (175 cm.)	36 in. (92 cm)	45.5 in. (116 cm)	45 in. (114 cm)	540 lbs. (243 kg)
C-105	41 in. (104 cm)	69 in. (175 cm.)	36 in. (92 cm)	45.5 in. (116 cm)	45 in. (114 cm)	590 lbs. (266 kg)
C-125	41 in. (104 cm)	69 in. (175 cm.)	36 in. (92 cm)	45.5 in. (116 cm)	45 in. (114 cm)	600 lbs. (270 kg)
C-145	41 in. (104 cm)	69 in. (175 cm.)	37 in. (94 cm)	45.5 in. (116 cm)	45 in. (114 cm)	640 lbs. (288 kg)
C-175	41 in. (104 cm)	69 in. (175 cm.)	37 in. (94 cm)	45.5 in. (116 cm)	45 in. (114 cm)	600 lbs. (270 kg)
8-Speed						
C-175 Automatic	41 in. (104 cm)	69 in. (175 cm.)	37 in. (94 cm)	45.5 in. (116 cm)	45 in. (114 cm)	570 lbs. (259 kg)
C-195	43.5 in. (111 cm)	75 in. (191 cm)	39.5 in. (100 cm)	52.5 in. (133 cm)	35 in. (89 cm)	740 lbs. (336 kg)

*Add 25 lbs. (11kg) for Automatic Model.

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 PTO)	IDLE RPM (No Load)	GOVERNED MAX. RPM (No Load)
B-115	N/A	N/A	Fixed	CJ-8	.030/.76	Counterclockwise	1750	3300
B-165	N/A	N/A	Fixed	RJ-12	.030/.76	Counterclockwise	1400	3300
C-85	.020/.5	N/A	Fixed	J-8	.025/.64	Counterclockwise	1900	3500
C-105, C-125	.020/.5	N/A	Fixed	H-10	.035/.9	Counterclockwise	2100	3400
C-145	.020/.5	N/A	Fixed	H-10	.035/.9	Counterclockwise	2100	3400
C-175	.020/.5	N/A	Fixed	BL-15Y	.025/.64	Counterclockwise	2100	3400
C-195	.020/.5	N/A	Fixed	BL-15Y	.025/.64	Counterclockwise	1200	3400

*Or equivalent (Champion number shown).

LIQUID CAPACITIES:

Crankcase:	B-115 — 1½ qt. (1.4 l) B-165 — 1½ qt. (1.4 l) C-85 — 1¼ qt. (1.2 l) C-105, C-125, C-145 — 1½ qt. (1.4 l) C-175, C-195 — 1¾ qt. (1.6 l)
Transmission:	B-Series 5-Speed — N/A B-Series Automatic Hydrostatic Unit — ¾ qt. (.7 l) Transaxle — 1⅜ qt. (1.3 l) C-Series 8-Speed — 2 qt. (1.9 l) C-Series Automatic — 5 qt. (4.7 l)
Fuel Tank:	B-Series — 1½ gal. (5.7 l) C-Series, 8-17HP — 3 gal. (11.4 l) C-195 — 4½ gal. (17 l)

CHASSIS:

Zerk Fittings:	B-Series — 6 C-Series — 6
PTO Brake Adjustment (PTO engaged):	B-Series — .010 (.25 mm) Gap between brake pad and pulley C-Series, 8-17 HP — .012 (.3 mm) Gap between brake pad and pulley C-195 — Refer to Text
Front Wheel End Play:	0-.015 in. (.4 mm) All Models

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. If a steep hill must be ascended, **back** up the hill; drive forward when descending.
11. Reduce speed and exercise extreme caution on slopes and in sharp turns to prevent tipping or loss of control. Be especially cautious when changing directions on slopes.
12. Stay alert for holes, rocks and roots in the terrain which may cause the vehicle to upset.
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.
26. Disengage power to mower before backing up. Do not mow in reverse unless absolutely necessary and then only after careful observation of the entire area behind the mower.



CAUTION



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

VEHICLE IDENTIFICATION NUMBER (VIN) LOCATIONS

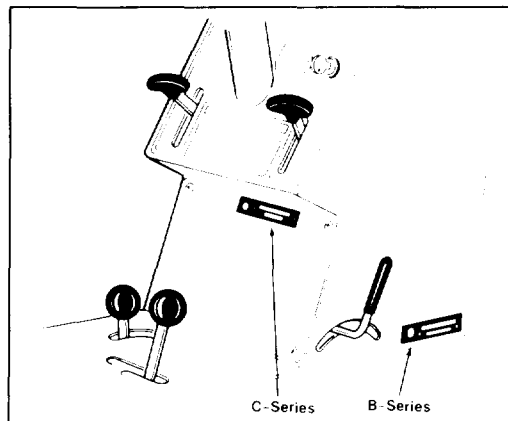
Vehicle identification numbers are used to identify your new tractor and major attachments. These numbers should always be referred to when consulting your dealer or the factory concerning service, parts, or other information you may require. If these plates are removed during repair operations, they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

The tractor vehicle identification number plate is located just below the dash panel on C-Series tractors, and just ahead of the PTO lever on B-Series tractors.

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

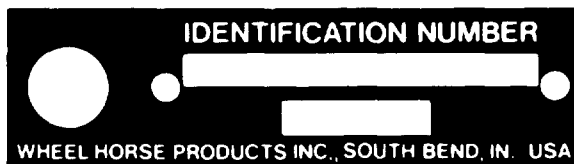
Major attachments also have a vehicle identification number plate attached to them.

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



VIN Plate Location

Tractor Identification Number



Engine Identification Number

Model

Type or Spec No.

Serial No.

OWNER REGISTRATION AND IDENTIFICATION CARD

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 provides an "OWNER IDENTIFICATION CARD" for each new tractor, or major attachment, registered with the factory.

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

WHEEL HORSE

lawn & garden tractors

OWNER IDENTIFICATION CARD

PRODUCT ID NUMBER _____

SELLING DEALER _____ WARRANTY EXPIRES _____

Present this card to an authorized dealer to obtain warranty service

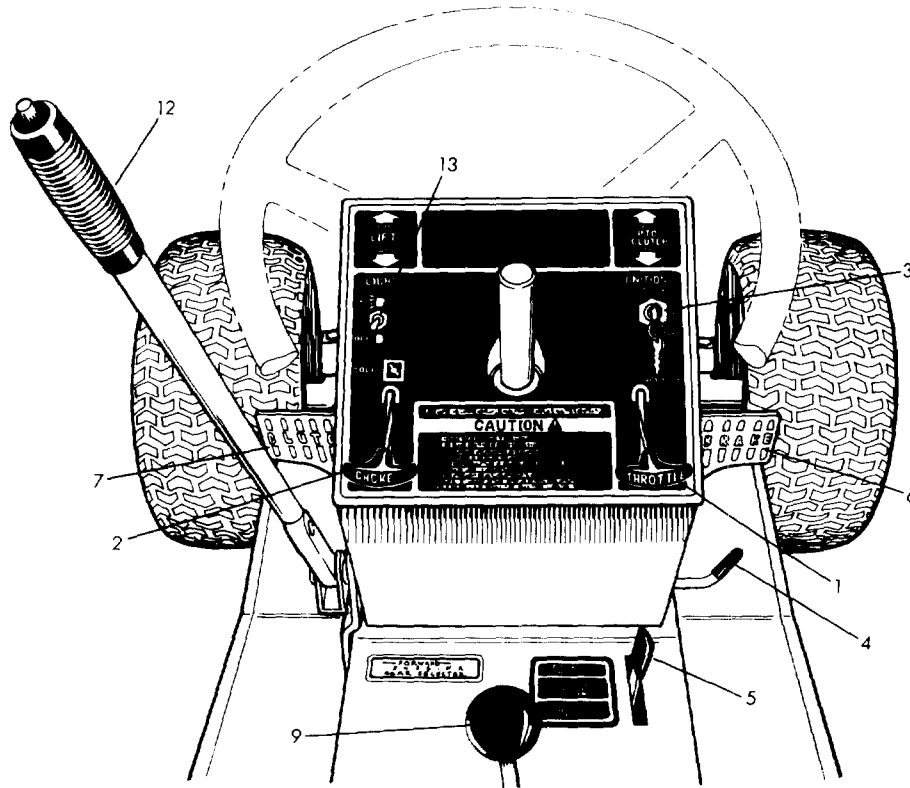
PARTS MANUAL

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

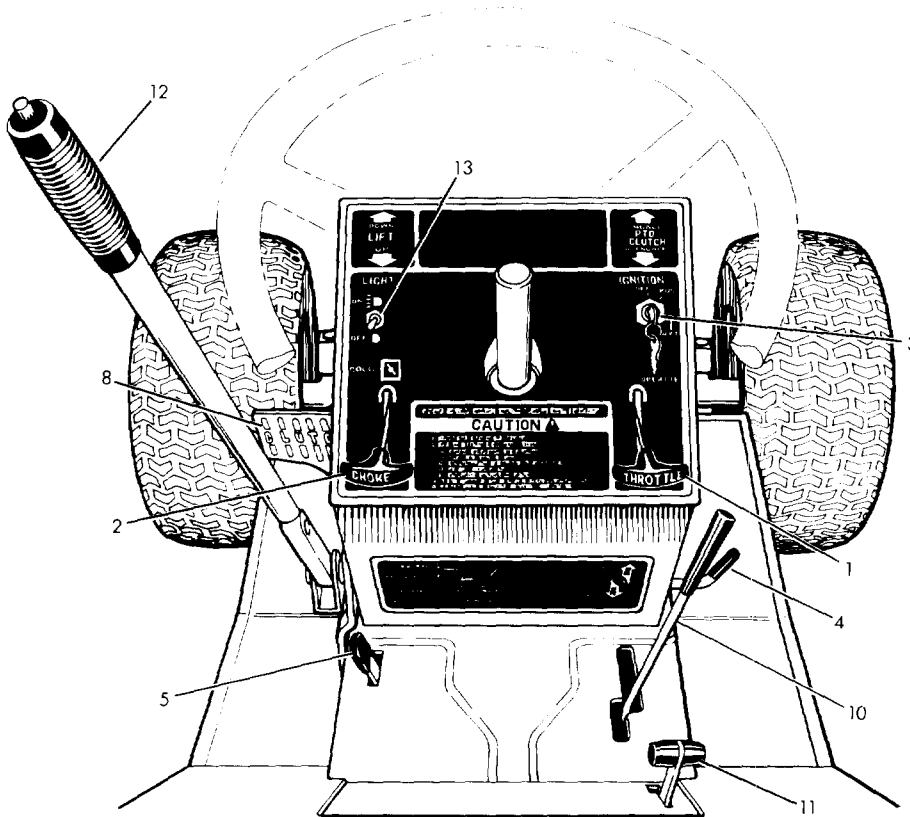
BE SURE TO INCLUDE THE VEHICLE IDENTIFICATION NUMBER OF THE EQUIPMENT.

INSTRUMENTS AND CONTROLS

B-SERIES TRACTORS



5-SPEED MODELS



AUTOMATIC MODELS

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 operate the tractor; lower the lever to start the engine.

2. CHOKE CONTROL

The choke control is located on the left side of the dash panel. Raise the choke lever to the Cold position when starting the engine. Slowly lower the lever 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 right side of the dash panel, above the throttle control. The ignition switch has three positions from left to right: (1) Off, (2) Run, (3) Start. To start the engine, turn the key all the way to the right. Release the key when the engine starts and it will automatically return to the Run position. When the switch is turned off, the engine stops and all electrical accessories are turned off.

4. PTO (POWER TAKE-OFF) CLUTCH LEVER

The PTO clutch lever is located on the right side of the tractor, between the parking brake lever and the brake pedal. Power driven attachments are engaged and disengaged with the PTO lever.

To engage the PTO, push lever forward. To disengage, pull the lever back.

The PTO lever actuates a safety interlock switch; therefore, the PTO lever must be in the disengaged position before the engine will start. If the operator's seat is vacated while the PTO is engaged, a seat switch will automatically shut off the engine.

5. PARKING BRAKE LEVER

The parking brake lever is located in front of the seat, to the right on manual transmission tractors, and to the left on automatic transmission tractors.

To engage the parking brake, first apply the foot brake solidly and then move the parking brake lever back (Automatic) or forward (5-Speed) to lock the brake On.

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

6. BRAKE PEDAL (5-Speed Models)

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

Note: When coming to a stop always depress the clutch pedal as well as the brake pedal so that the transmission will be disconnected from the engine.

7. CLUTCH PEDAL (5-Speed Models)

The clutch pedal is located at the left side of the tractor. Pushing down on the clutch pedal does two things: (1) Declutches the tractor drive belt, disconnecting the engine from the transmission; (2) Actuates a safety interlock switch, 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.**

8. BRAKE/RETURN TO NEUTRAL PEDAL (Automatic Models)

The brake pedal, located at the left side of the tractor, provides dynamic braking to both rear wheels through the automatic transmission. As the brake pedal is depressed, the transmission is shifted to neutral. When the brake pedal is fully depressed, a mechanical brake is also applied for additional braking action. The pedal must be depressed when starting the engine, as the pedal actuates a safety interlock switch, allowing the starter to operate.

9. GEAR SHIFT LEVER (5-Speed Models)

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

10. MOTION CONTROL LEVER (Automatic Models)

The motion control lever is located just below the steering wheel. The motion control lever may be moved left and right in the neutral slot. Push the lever right and ahead to go forward. Move the lever left and pull back to reverse. The brake pedal moves the control lever to neutral for dynamic braking. The control lever varies ground speed and pulling power independent of engine speed. To increase ground speed, move lever away from neutral. Increase pulling power by moving lever toward neutral.

11. TRANSMISSION CLUTCH LEVER (Automatic Models)

The transmission clutch lever is located just in front of the seat to the right. The transmission clutch lever disconnects the engine from the transmission. Push the lever down and to the left to disconnect the transmission. Push the lever to the right to engage the transmission.

Always disengage the transmission clutch when starting the engine in cold weather.

12. LIFT LEVER

The manual lift lever is located just left of the steering wheel. Depress the release button and move the lever forward or backward to lower or raise attachments used with the tractor. Always lower attachments before leaving the tractor unattended.

13. LIGHT SWITCH

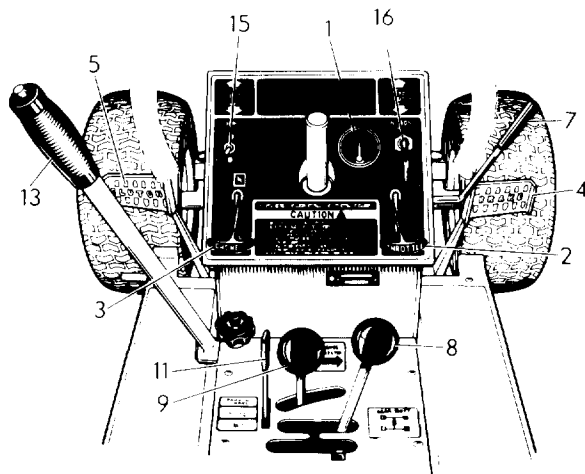
The light switch is located on the left side of the dash panel, above the choke control. Raise the switch toggle to turn lights on. Lower the toggle to turn lights off. The lights will work only while the engine is running.

14. FUEL SHUT-OFF VALVE (Not Shown)

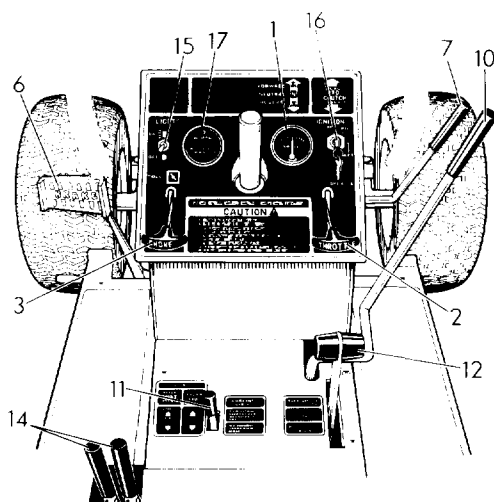
The fuel shut-off valve is located at the bottom of the fuel tank. The fuel shut-off valve is normally left open, except when service on the fuel system becomes necessary.

INSTRUMENTS AND CONTROLS

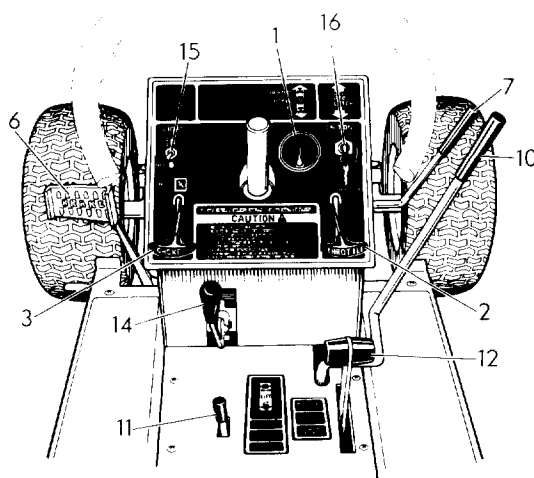
C-SERIES TRACTORS



8-SPEED MODELS



C-195 AUTOMATIC MODEL



C-145, C-175 AUTOMATIC MODELS

1. AMMETER

The ammeter is located on the dash panel, just to the right of the steering column. The ammeter is a gauge indicating the rate at which the battery is being charged (+) or discharged (-).

2. THROTTLE CONTROL

The throttle control is located on the right side of the dash panel. This lever controls engine speed. Raise the lever fully to operate the tractor; lower the lever to start the engine.

3. CHOKE CONTROL

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

4. BRAKE PEDAL (8-Speed Models)

The brake pedal is located at the right side of the tractor. Pushing down on the pedal applies the brake. **Note:** When coming to a stop always depress the clutch pedal as well as the brake pedal so that the transmission will be disconnected from the engine.

5. CLUTCH PEDAL (8-Speed Models)

The clutch pedal is located at the left side of the tractor. Pushing down on the clutch pedal does two things: (1) Declutches the tractor drive belt, disconnecting the engine from the transmission; (2) Actuates a safety interlock switch, 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.**

6. BRAKE/RETURN TO NEUTRAL PEDAL (Automatic Models)

The brake pedal, located at the left side of the tractor, provides dynamic braking to both rear wheels through the automatic transmission. As the brake pedal is depressed, the transmission is shifted to neutral. When the brake pedal is fully depressed, a mechanical brake is also applied for additional braking action. The pedal must be depressed when starting the engine, as the pedal linkage actuates a safety interlock switch, allowing the starter to operate.

7. PTO (POWER TAKE-OFF) CLUTCH LEVER

The PTO clutch lever is located on the right side of the tractor. Power driven attachments are engaged and disengaged with the PTO lever. Push the lever forward to engage the attachment. Pull the lever back to disengage the attachment. The PTO clutch lever actuates a safety interlock switch in the starter circuit; therefore, the tractor will not start unless this lever is in the disengaged position. If the operator's seat is vacated while the PTO is engaged, a seat switch will automatically shut off the engine.

8. GEAR SHIFT LEVER (8-Speed Models)

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.

9. RANGE SELECTOR (8-Speed Models)

The range selector is located in front of the seat, just forward of the gear shift lever. Select either high or low range by moving the lever right or left to the position indicated on the range selector decal. Low range provides a 4 to 1 speed reduction and greater pulling power for moving heavy loads in each of the three forward speeds and reverse. **Do not use a mid-point position for neutral**; neutral must be selected with the gear shift lever.

10. MOTION CONTROL LEVER (Automatic Models)

The motion control lever is located just right of the steering wheel. Push the lever ahead to drive the tractor forward. Pull the lever back for reverse. Move the lever to the neutral (center) position to stop. The brake pedal moves the lever to the neutral position for dynamic braking. The control lever varies ground speed and pulling power of the tractor independent of engine speed. To increase ground speed, move lever away from neutral. Increase pulling power by moving lever toward neutral. The neutral position is provided with a detent type stop to give a 'perceptible feel' as the control lever passes through neutral.

11. PARKING BRAKE LEVER

The parking brake lever is located in front of the seat to the left.

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. The parking lever is spring loaded and will return to the disengaged position when the foot brake is applied.

12. TRANSMISSION CLUTCH LEVER (Automatic Models)

The transmission clutch lever is located between the seat and the motion control lever. The transmission clutch lever disconnects the engine from the trans-

mission. Pull the lever up and to the rear to disconnect the transmission.

Push the lever forward and down to engage the transmission.

Always disengage the transmission when starting the engine in cold weather.

13. MANUAL LIFT (8-Speed Models)

The manual lift lever is located just left of the steering wheel. Depress the release button and move the lever forward or backward to lower or raise attachments used with the tractor. When it is desired to hold an attachment at a certain height above the ground, the forward (down) travel of the lever can be limited by the Dial-A-Hite selector. Turn the hand knob right or left until the lift lever is held in the desired position. Always lower attachments before leaving the tractor unattended.

14. HYDRAULIC LIFT (Automatic Models)

On C-195 models, the hydraulic lift lever is located just below the left front corner of the seat. On C-145 and C-175 models the hydraulic lift lever is located on the lower dash panel, below the choke control. Pull the lever back to lift attachment. Release lever to hold attachment in position. Push lever forward to lower attachment. The neutral position will hold an attachment at any position from full up to full down. Always lower attachments before leaving the tractor unattended.

The C-195 is also equipped with a lever for controlling the optional 3-point hitch. Beside the lift/lower operation described above, if the lever is pushed all the way forward it will lock in a "float" position. This permits a rear mounted attachment to move up and down freely during use.

15. LIGHT SWITCH

The light switch is located on the left side of the dash panel, just above the choke control. Raise toggle to turn on lights. Lower toggle to turn lights off. Lights work only when the ignition switch is in the Run position.

16. IGNITION SWITCH

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

17. HOUR METER (C-195 Only)

The hour meter is located to the left of the steering column and is a convenient way to determine operating time between maintenance periods.

18. FUEL SHUT-OFF VALVE (Not Shown)

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

OPERATING YOUR TRACTOR

SAFETY INTERLOCK SYSTEM

The safety interlock system incorporates two switches, for safe starting.

The two starting switches are actuated by the left foot pedal and the PTO clutch control. If the tractor will not start, check that the PTO clutch is disengaged, and the left foot pedal is depressed. The engine will not start unless both switches are properly actuated. The tractor is also equipped with a seat switch. This switch shuts off the engine if the driver rises off the seat while the PTO is engaged.

CORRECT ENGINE OPERATION

⚠ CAUTION ⚠

Before starting the engine, become familiar with all controls. Read this owner's manual thoroughly. Always check the engine oil level before starting. Always check the transmission oil level (automatic transmission models) 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 the engine in confined areas such as a closed garage.

STARTING THE ENGINE

Automatic Transmission Models

Because of a built-in safety interlock system, your new Wheel Horse will not start until the brake pedal is depressed and the PTO is disengaged.

To start the engine depress the brake pedal and disengage the PTO. Move the throttle control lever about half way to the Operate position. Move the choke control all the way to the Cold Start position.

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 10 seconds of continuous cranking, turn the key to the Off position and allow the starter motor to cool for one minute. Check for cause of hard starting; consult the Troubleshooting Checklist.

Once the engine has started, slowly return the choke control to its normal position. If the engine stalls at low speeds, or hesitates during acceleration, the choke should be applied as necessary until the engine reaches normal operating temperature.

When starting the engine during cold weather, be sure to follow the special procedures for warming up the engine and the transmission as described under "Correct Automatic Transmission Operation", before placing the tractor into operation.

STARTING THE ENGINE

Mechanical Transmission Models

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

To start the engine depress the clutch pedal and disengage the PTO. Move the throttle control lever about half way to the Operate position. Move the choke control all the way to the Cold position.

⚠ CAUTION ⚠

Always place the transmission gear shift lever 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 10 seconds of continuous cranking, turn the key to the Off position and allow the starter motor to cool for one minute. Check for cause of hard starting; consult the Troubleshooting Checklist.

Once the engine has started, slowly return the choke control to its normal position. If the engine stalls at low speeds, or hesitates during acceleration, the choke should be applied as necessary until the engine reaches normal operating temperature.

STOPPING THE ENGINE

To stop the engine, return the throttle lever to the Idle 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 the 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 and set the parking brake 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 maximum 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. Always operate the tractor with the throttle control set at $\frac{3}{4}$ to full speed.

The engine **MUST** be operating at a minimum of $\frac{3}{4}$ throttle whenever the tractor is in use. Using the tractor while the engine is operating at less than $\frac{3}{4}$ throttle may result in extensive transmission damage on automatic models, as well as poor overall tractor performance on all models.

CHOKE CONTROL

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

WINTER OPERATION, TWIN CYLINDER MODELS

A special air intake system is used on twin cylinder tractors. A decal on the engine gives instructions on how to set up the air intake for winter use.

The purpose of this system is to help prevent the chance of carburetor icing when the tractor is operated in near-freezing, high humidity weather.

In the Summer position outside air is drawn directly into the air cleaner. In the Winter position heated outside air is drawn in from around the muffler.

Place the air intake in the Winter position at the start of the snow season. Return it to the Summer position in the Spring.

FUEL SPECIFICATION

⚠ 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.

For convenience and to minimize the chance of fuel spills, it is recommended that a large plastic funnel be used when refueling tractors with under-seat fuel tanks.

When the tractor requires refueling, fill the tank with a good grade (85 octane minimum) of regular gasoline. Use only leaded or low-lead regular in tractors with Briggs & Stratton engines. Leaded or unleaded regular may be used in tractors with Kohler engines. Do **not** intermix regular and unleaded gasolines. Do **not** mix oil with gasoline. The use of gasohol fuel is not recommended by either of these engine manufacturers.

In general, the use of unleaded fuel will reduce the buildup of combustion deposits in the engine and contributes to long valve life. Except for tractors with Briggs & Stratton engines, it is suggested that leaded regular gasoline be used for the first 25 hours of operation, while the piston rings are seating, and unleaded fuel thereafter.

OIL SPECIFICATION

To protect your new Wheel Horse, check the engine oil level before each use. Complete information concerning recommended oils and how to check the oil level is given in the "Maintaining Your Tractor" section of this manual.

CORRECT AUTOMATIC TRANSMISSION OPERATION

During cold weather, start the engine with the parking brake engaged and the transmission clutch lever disengaged. Run the engine for at least two minutes to allow the engine to warm-up; engage the transmission clutch with the engine at full throttle. For temperatures between 0° and 30°F (18° and -2°C) allow the transmission to run in neutral for 5 minutes before attempting to set the unit into motion. For temperatures below 0°F (-18°C) allow the transmission to run in neutral for 10 minutes before attempting to set the unit into motion. Failure to do so may result in extensive internal transmission damage.

TO GO FORWARD

⚠ CAUTION ⚠

Before the tractor will move either forward or backward, the parking brake must be disengaged. **ALWAYS** depress the brake/return to neutral pedal when disengaging the parking brake.

The motion of your tractor is controlled by a single "Motion Control Lever". To go forward, simply push the lever forward. The farther forward the lever is pushed, the faster the tractor will go.

⚠ CAUTION ⚠

For safe operation, never move the motion control lever too rapidly, especially on grades.

By adjusting the motion control lever, the forward speed of the tractor can be regulated **without** adjusting the engine throttle control. For heavy pulling, moving the control lever toward neutral reduces tractor ground speed and increases pulling power much the same as shifting to a lower gear with a mechanical transmission.

TO GO BACKWARD

To reverse the motion of the tractor, return the motion control lever to the neutral position, and pull the lever back. The farther back the lever is the faster the tractor will go in reverse.

⚠ CAUTION ⚠

For safe operation, never move the motion control lever too rapidly, especially on grades.

By adjusting the motion control lever, the reverse speed of the tractor can be regulated **without** adjusting the engine throttle control.

TO STOP

Stopping the tractor from either the forward or reverse direction can be achieved by one of two methods:

1. Return the motion control lever to its neutral position.
2. Depress the brake pedal.

Activating the brake pedal automatically returns the motion control lever to its neutral position and applies a mechanical brake. The brake pedal will hold the motion control lever in the neutral position. The pedal must be released before the motion control lever can be moved either forward or back.

The tractor is stopped by a "dynamic braking" action inside the hydrostatic transmission and a mechanical brake. C-Series tractors are **free to roll** (at a very slow speed) when the transmission is in neutral. Therefore, always depress the brake pedal when the tractor is stopped on unlevel terrain. Although B-Series tractors will tend to remain stationary in neutral even when the brake is released, use of the brake is recommended to avoid accidental starts when stopped on unlevel terrain.

HAND PUSHING TRACTOR

Hand push tractor only. Do not tow. Towing can cause severe damage to the hydrostatic transmission.

C-Series automatic transmission tractors can be pushed at slightly less than walking speed; if pushed faster, the rear wheels will lock. If this occurs, wait for a moment, then resume pushing the tractor at a slower speed.

B-Series automatic transmission tractors can be pushed at slow speeds. To do this, disengage the transmission clutch lever and move the motion control lever fully forward; the tractor will then move when pushed.

CORRECT MECHANICAL TRANSMISSION OPERATION

TO GO FORWARD OR REVERSE

With the engine running, depress both the clutch and the brake pedals. Move the range selector (C-Series Only) to either the High or the Low position. Move the gear shift lever to the desired speed forward, or to reverse. The gear shift decal 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.

TO CHANGE SPEEDS OR DIRECTION

When a change in ground speed or direction is required, always bring the tractor to a complete halt by depressing both the clutch and the brake pedals.

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

Change the gear shift lever or range selector (C-Series) as desired. The approximate ground speed for each gear is shown in the specifications in the front of this manual.

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, 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 without the clutch may cause excessive brake lining wear, or extensive internal transmission damage. Depressing the clutch pedal without depressing the brake pedal **WILL NOT STOP THE TRACTOR.**

CORRECT TRACTOR USAGE

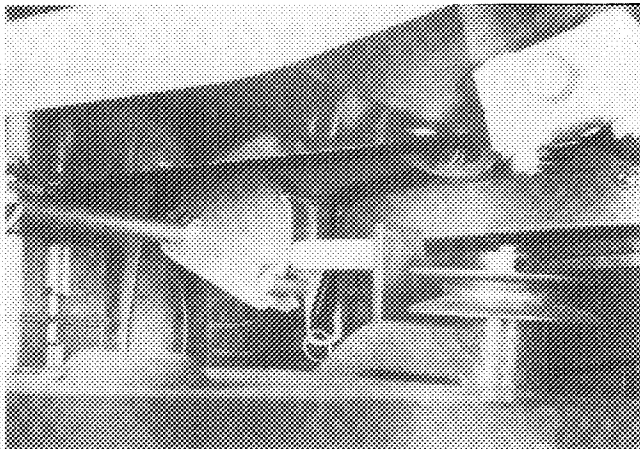
⚠ CAUTION ⚠

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.

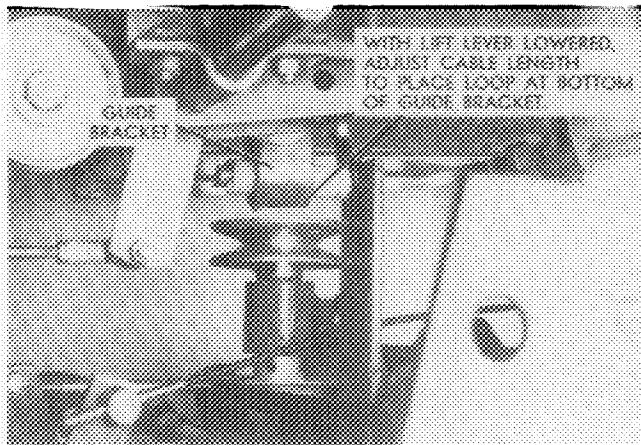
Familiarize yourself thoroughly with the equipment before attempting to use it.

B-SERIES ATTACHMENT MOUNTING

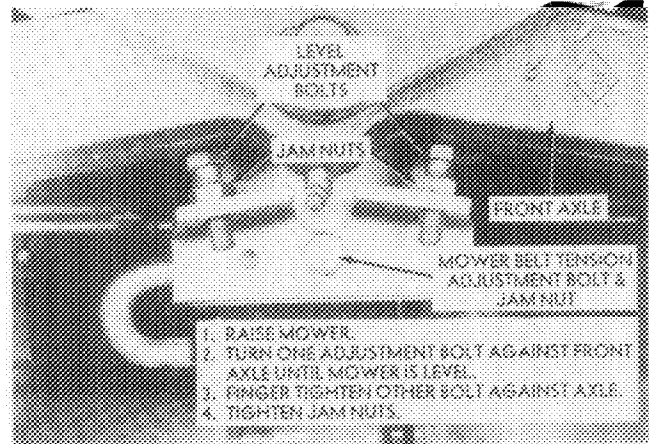
B-Series attachments are designed for easy installation and removal. The rear guide pin on the mower is connected to the tractor and is leveled in the transport position as shown in the photos below. (The Owner's Manual supplied with the mower may show an earlier mounting method, which should be disregarded.) Refer to the manual supplied with each attachment for complete mounting and adjustment instructions.



Mower Guide Pin Installation — 3-Speed Models



Mower Guide Pin Installation — Automatic Models



Mower — Transport Level Adjustment

C-SERIES ATTACHMENT MOUNTING

HITCHES

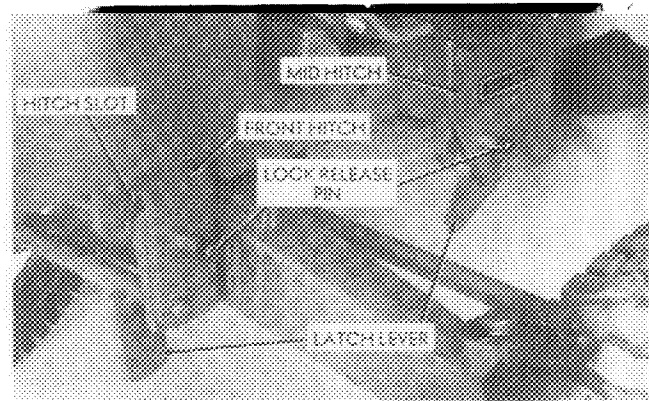
Tach-a-matic front and mid hitches are provided for easy installation and removal of attachments without tools.

Rear mounted attachments are secured to the tractor's rear drawbar hitch, or to a special hitch supplied with the attachment or available as optional equipment.

To install attachments make sure the hitch latch is in the released position — to do this, push in on the lock release pin; move the latch lever so the latch is open and release the lock pin to hold the latch in the open position. Insert and center the attachment shaft in the hitch slots and move the latch toward the closed position until the release pin snaps outward.

Removal of the attachment is done by pushing in on the lock release pin, which allows the latch to be moved to the open position.

Note: For specific installation and removal instructions refer to the attachment instructions.



Front and Mid Attachment Hitches (C-Series)

ATTACHMENT BELTS

Front & Mid Mount Attachments

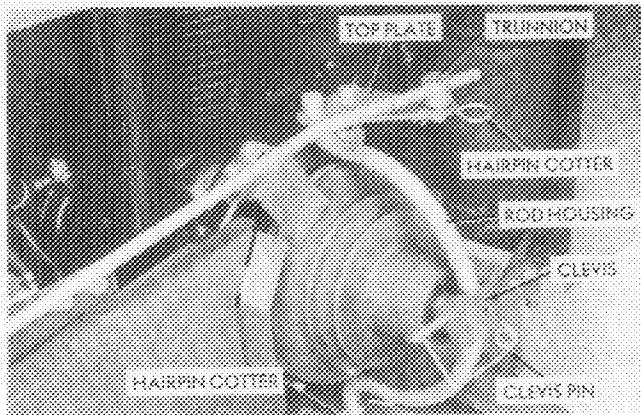
1. Remove hairpin cotter from the trunnion and lift the trunnion out of the top plate; this step is usually necessary only when the tractor is new.
2. Remove clevis pin from the clutch shaft and clevis.
3. Move the top plate forward to move the rod housing away from the engine, enabling the clevis to clear the clutch shaft; swing clutch rod housing (yoke) to the front or rear.
4. Install attachment belt.
5. Line the clutch rod housing (yoke) up with the clutch shaft. Move the top plate to the rear.

Line up the clevis with the hole in the clutch shaft and install clevis pin.

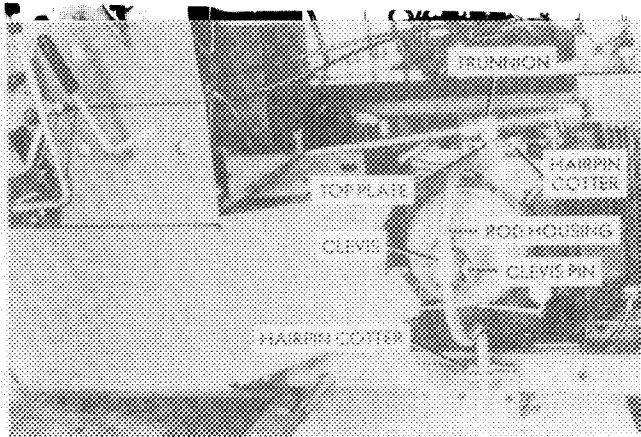
6. Insert trunnion in the top plate and secure with the hairpin cotter.

Rear Mount Attachments

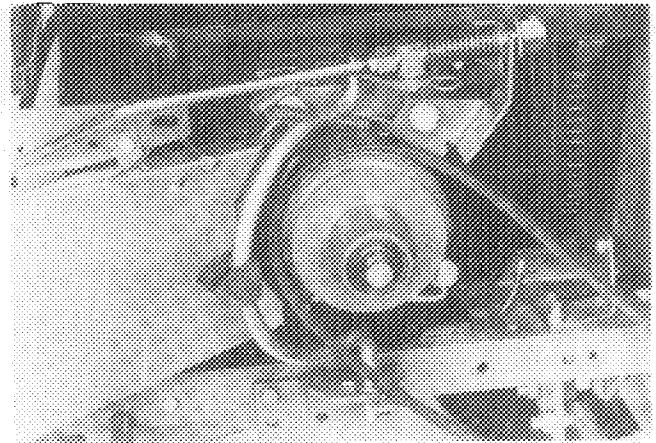
Rear mounted power driven attachments may require that one strand of the drive belt run OUTSIDE the rod housing. To install this belt on the PTO, follow steps 1-3 above. Next, remove the large hairpin cotter at the bottom of the rod housing which will permit it to slide down and out of the top plate. The attachment belt can then be installed over the top end of the housing. Reassemble the PTO.



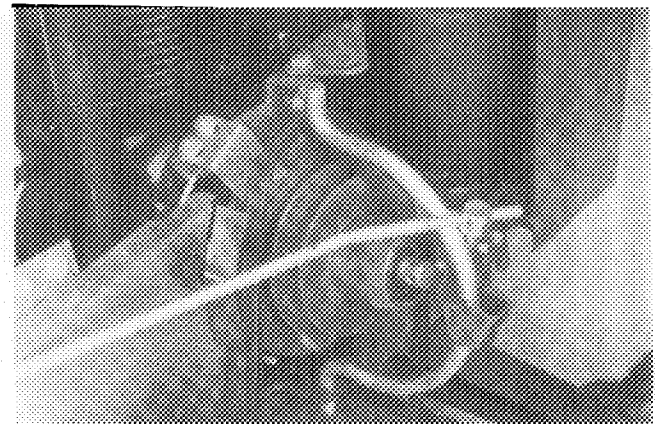
5-17 HP C-Series Power Take-Off (PTO)



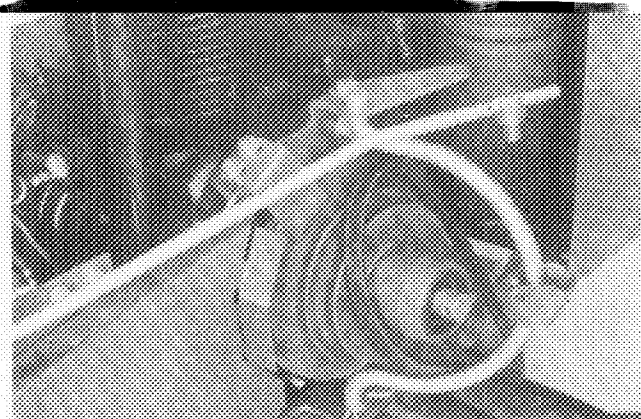
5-17 HP C-Series Power Take-Off (PTO)



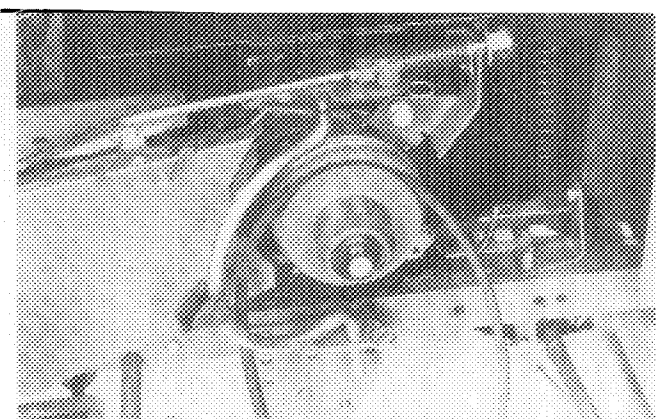
C-195 Front/Mid Attachment Belt Installation



5-17 HP C-Series Rear Attachment Belt Installation



Front/Mid Attachment Belt Installation



C-195 Rear Attachment Belt Installation

OPERATION OF THE TRACTOR:

Because of the power of the tractor, no problem should be encountered using these attachments under normal conditions. On rough, hilly, or wet terrain, the addition of wheel weights and tire chains will minimize rear tire slippage. A rear weight box is also available for use on B-Series tractors.

WHEEL HORSE DOES NOT RECOMMEND ADDING ANY OTHER WEIGHT, SUCH AS WATER OR CALCIUM CHLORIDE, TO THE REAR TIRES. THIS ADDITIONAL EXTRA WEIGHT CAN CAUSE EXTENSIVE TRANSMISSION DAMAGE.

WITH A MOWER (All Models)

⚠ WARNING ⚠
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.

For best operation on average lawns, operate the engine at full throttle while controlling the ground speed with the transmission. The tractor should be operated at 2 to 3.5 MPH (3.2 to 5.6 KPH)* while mowing grass. Uneven cutting is often the result of excessive ground speed. To correct, reduce the ground speed with the transmission. 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 the mower in its highest position, making a second pass cutting to the height desired.

Always keep the mower blades sharp.

WITH A SNOWTHROWER (All Models)

⚠ CAUTION ⚠
Thoroughly inspect the area where the snowthrower is to be used. Remove all door mats, sleds, boards and other foreign objects. Never make any adjustments while the engine is running. Never try to clear the chute while the engine is running.

Snow removal will vary greatly with the condition of each snowfall. Light fluffy snow will be cleared with ease. Heavy wet snow will be more difficult. It is advisable to coat the auger and chute with a light coat of wax or paraffin to keep snow from sticking. Best results are usually attained when the tractor ground speed is set at 1 to 2 MPH (1.6 to 3.2 KPH).*

Experience will teach you not to throw snow into the wind.

Care should be exercised whenever the snowthrower is engaged. The auger is capable of picking up sticks, stones and other foreign objects and expelling them with great velocity. Always aim the discharge chute away from persons or objects subject to harm.

Tire chains and wheel weights, plus the rear weight box on B-Series tractors, are recommended when using a snowthrower.

WITH A SNOW BLADE (B-Series)

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.

Tire chains, wheel weights and the rear weight box may be added to improve rear tire traction.

WITH A DOZER OR GRADER BLADE (C-Series)

Although the front end dozer blade is generally used for snow removal, it can also be used for moving dirt, sand or gravel. 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.

Grader blades are generally preferred for leveling sand, dirt or gravel. The operation of these blades is similar to that of a dozer blade. Rear mount grader blades may require special rear hitches; consult your dealer for the proper hitch(es) required for your tractor.

When using any of these attachments with the tractor, front wheel weights should be used to increase front wheel traction. Rear wheel weights and tire chains may also be used to increase rear wheel traction.

WITH A TILLER (All Models)

The Wheel Horse tiller does an excellent job of preparing gardens for planting.

Caution should be exercised when tilling virgin ground or clay as the tiller may have a tendency to push the tractor. This can be corrected by raising the tiller with the attachment lift so the tiller penetrates only the very top of the soil. The tiller can be lowered to its full depth on following passes.

⚠ CAUTION ⚠
If the tiller starts to push the tractor, shut the tiller off immediately by disengaging the PTO clutch.

Rear wheel weights and cleat tires (C-Series) or tire chains will reduce the pushing effect of the tiller. Front weights may be used on C-Series tractors to help improve steering control.

The slower the tractor's ground speed, the more aggressive the action of the tiller. Best results are usually attained when the tractor ground speed is set at less than 1.0 MPH (1.6 KPH).*

Do not over-till the soil. Soil tilled excessively will not hold water, and will compact easily.

WITH A PLOW, DISC, CULTIVATOR, OR HARROW (C-Series)

Plows and disc require maximum tractor efficiency. Cleat tires, or tire chains, as well as wheel weights increase rear tire traction. Front wheel weights add to the steering control of the tractor.

Some of these attachments require special rear hitches. Consult your dealer for the proper hitch(es) required for your tractor.

*Average walking speed is 2.5 MPH (4 KPH).

There are two methods of preparing a seed bed for planting.

1. Use a tiller, which will prepare the soil in one operation.
2. Use a plow to turn the ground, a disc to break up large clumps, and a harrow to pulverize and smooth the soil.

Plows are classified by the width of the furrow they will turn. Generally, plows are set to cut 4 to 6 in. (10-15.2 cm) deep.

A disc is used immediately after plowing. The disc will break the large clumps of soil.

After discing, generally, a spike tooth harrow is dragged over the soil. The spike tooth harrow helps pulverize the soil and levels the seed bed. The soil should now be ready for planting.

The cultivator is used during the growing season to help remove unwanted weeds, and to help aerate plant roots. Generally, the width of the cultivator is taken into consideration before planting the seed bed to insure the cultivator fitting between the rows without damaging the crop roots.

WITH OTHER ATTACHMENTS (All Models)

There are numerous other special-purpose attachments available, which greatly increase the tractor's versatility. The attachment can be a completely self-contained system (front bucket loader), one that is used along with another attachment (lawn vacuum), or one intended for operator comfort (snow cab). These attachments are custom designed for a particular tractor model, but many others 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.

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

MAINTAINING YOUR TRACTOR

⚠ CAUTION ⚠

To minimize the chance of injury, perform all maintenance and adjustments on your tractor with the 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

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

	Before Each Use	After Each Use	Every 25 Hours	Every 50 Hours	Every 100 Hours	Every 100 Hours/One Year (2)
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SERVICE OPERATION

Check:	Before Each Use	After Each Use	Every 25 Hours	Every 50 Hours	Every 100 Hours	Every 100 Hours/One Year (2)
Engine Oil Level	X					
Battery Water Level	X					
Auto. Trans. Oil Level	X					
General Condition of Tractor	X					
8-Speed Trans. Oil Level			X			
Transaxle Oil Level ⁽⁴⁾			X			
Tire Pressures			X			
All Fasteners in Place & Tight			X			
Clean:						
Engine Cooling Fins		X				
Air Filter			X			
Lubricate Chassis			X			
Change Engine Oil ⁽¹⁾			X			
Inspect Spark Plug(s)						X
Replace Air Filter						X
Change Auto. Trans. Oil ⁽⁵⁾						X
Replace Auto. Trans. Oil Filter ⁽⁵⁾						X
Replace Fuel Filter ⁽³⁾						X

Inspect/Replace Breaker Points

B-Series — Not Applicable

C-Series Every 500 Hours

Refer to Engine Owner's Manual for Applicable Information Concerning:

- Adjustments
- Special Cleaning Instructions
- Recommended Dealer Maintenance

- (1) Refer to text for initial service interval for new tractors.
- (2) Whichever occurs first.
- (3) As applicable.
- (4) B-Series Only.
- (5) C-Series Only.

ENGINE

Oil Quality

For maximum engine protection under all operating conditions use API Service Classification SC, SD, SE, or SF oil in tractors equipped with Briggs & Stratton or Kohler engines. These letters may appear on the oil can singularly or in combination with other letters.

Oil Level

Form the habit of checking the oil level regularly.

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

Oil filler plug/dipstick and oil drain locations for all engines are illustrated in the following photos and drawings.

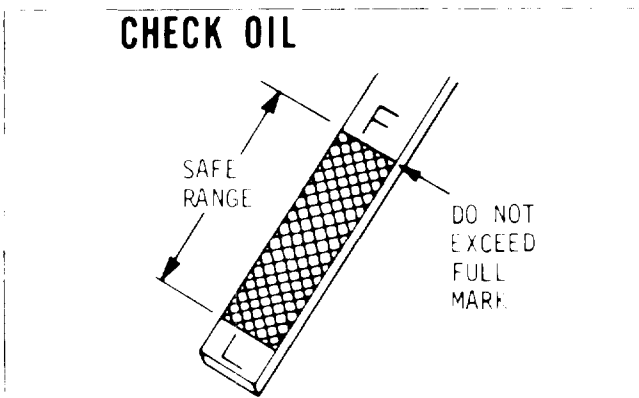
To check engine oil level, stop the tractor where the engine is level. Shut off the engine, set the parking brake, and remove the ignition key.

ENGINES WITH OIL CHECK AND FILL PLUGS

Remove the oil check and fill plug from the right side of the engine block by turning it counterclockwise. Add oil to bring the oil level to the top of the fill tube, if necessary.

ENGINES WITH OIL DIPSTICKS

Remove the oil dipstick from the engine; a wrench will be needed on C-Series engines having a combination filler plug/dipstick.



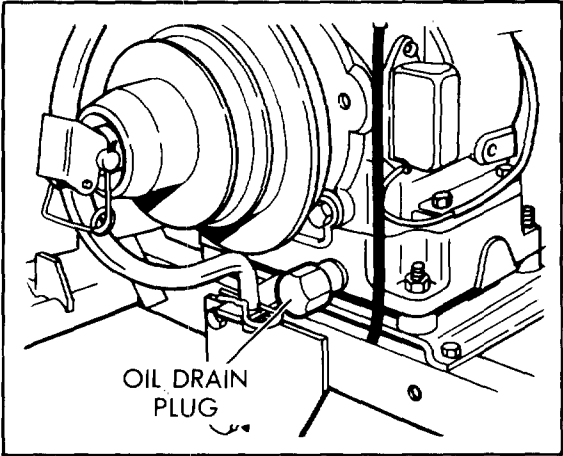
Correct Oil Level — Engines with Dipsticks

Wipe the dipstick with a clean lint free rag; insert it into the filler tube or engine block as far as it will go (dipsticks with threaded plugs should **not** be screwed back in when checking oil level). Remove the dipstick again and read the scale on the lower portion of the stick.

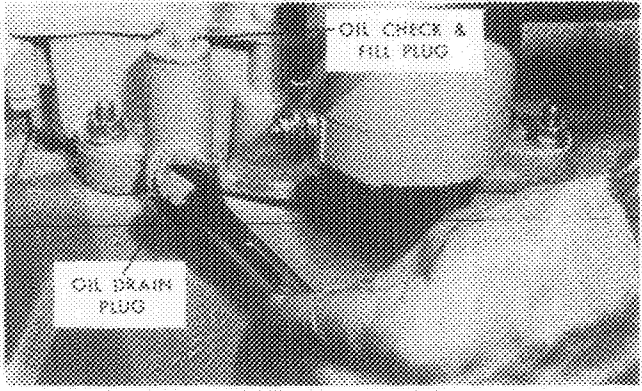
Add oil through the dipstick opening (except C-175 & C-195 models), if necessary. A separate oil fill plug is used on C-175 & C-195 engines, located just forward of the oil dipstick tube. Turn the plug counterclockwise with a wrench to remove it.

Never overfill the engine crankcase with oil. The oil level must not exceed the "F" level on the dipstick.

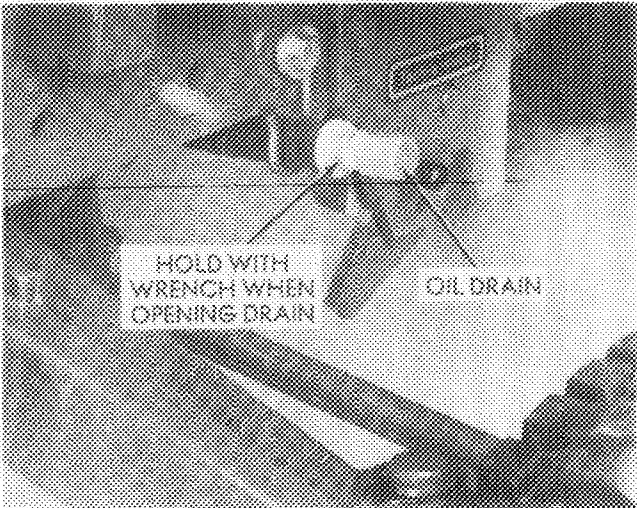
Be sure to add the same viscosity oil as is presently in the engine. New tractors are shipped with SAE 30 oil in the crankcase. It may be necessary to change the original oil before using the tractor if the tractor will be operated in cold weather.



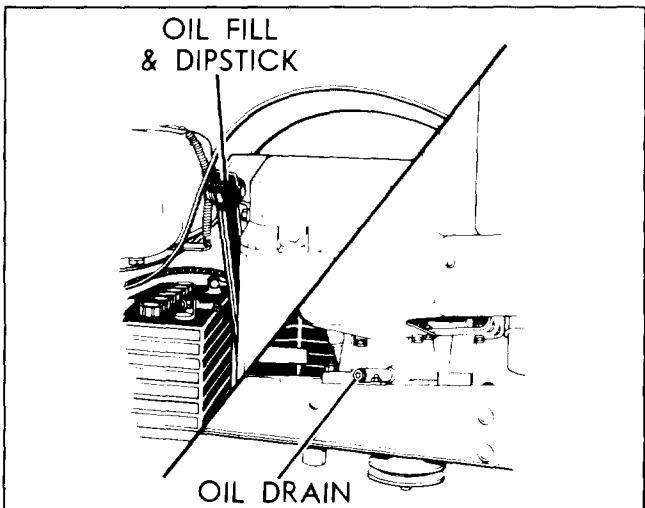
C-85 Oil Drain



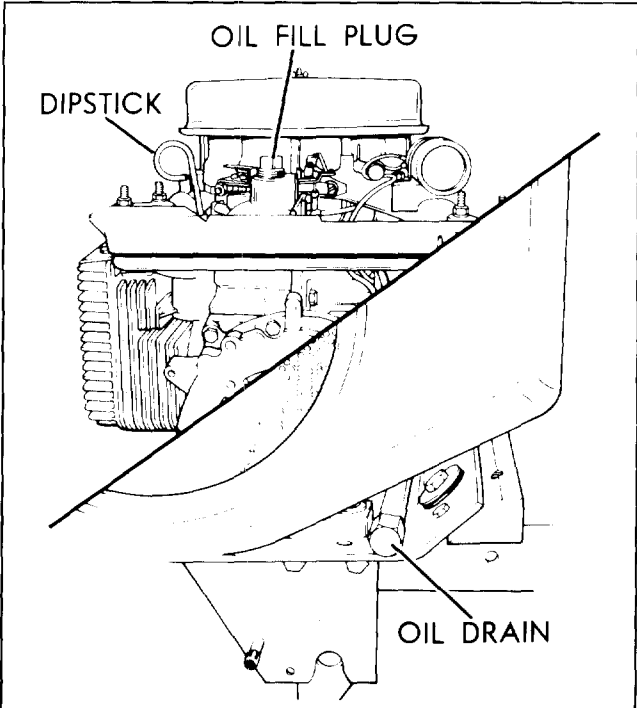
B-115 Oil Fill and Drain Plugs



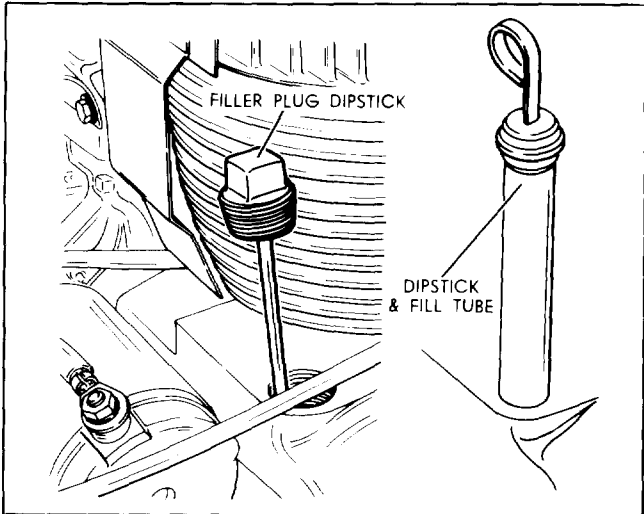
C-105, C-125, C-145 Oil Drain



B-165 Oil Fill and Drain



C-175 & C-195 Dipstick, Filler Plug and Oil Drain



Single Cylinder C-Series Oil Check and Fill

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 operating hour intervals. If operating conditions are extremely dusty or dirty the frequency of oil changes should be increased.

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

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

Open the oil drain. Locations of oil drain plugs are shown in the "Oil Level" section of this manual. After the oil has drained completely, reinstall the drain plug or cap as applicable.

Remove the oil filler plug or dipstick and add the proper amount of oil for your engine according to the following chart. Also shown are charts for selecting the correct oil type and oil viscosity. When using the temperature — viscosity chart, select the air temperature most likely to be encountered within the next 25 hours of operation.

ENGINE OIL CHANGE

Tractor Model	Crankcase Oil Capacity
B-115	1½ quarts (1.4 liters)
B-165	1½ quarts (1.4 liters)
C-85	1¼ quarts (1.2 liters)
C-105, C-125, C-145	1½ quarts (1.4 liters)
C-175, C-195	1¾ quarts (1.6 liters)

ENGINE OIL TEMPERATURE — VISCOSITY CHART

Briggs & Stratton Engine

Air Temperature	Oil Viscosity
Above 40°F (4°C)	SAE 30, 10W-30, 10W-40
60° to 0°F (16° to -18°C)	SAE 10W-30, 10W-40
Below 20°F (-6°C)	SAE 5W-20, 5W-30*

Kohler 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

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

After adding the prescribed amount of oil, check the oil level. Add oil as necessary to bring the oil to the "Full" level in single cylinder B-Series engines or into the "Safe" range on the dipstick.

NEVER overfill the engine crankcase with oil. The oil level must not exceed the "F" level on the dipstick.

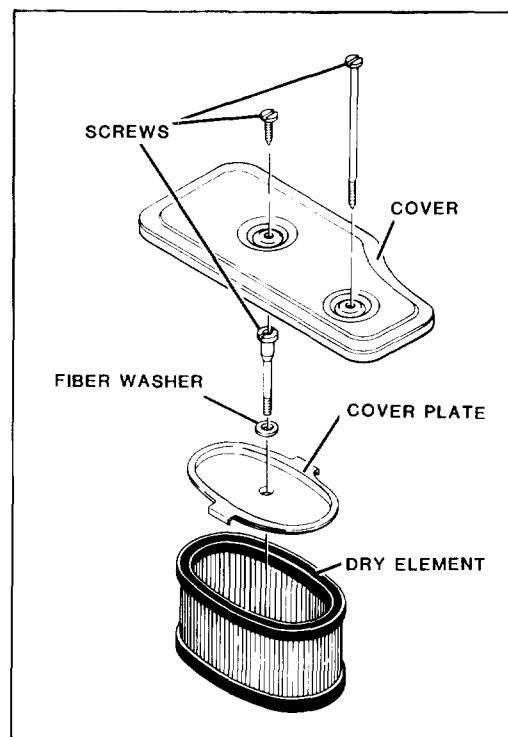
Air Filter

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 the formation of harmful sludge deposits.

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

Replace dry type filter elements at 100 hour intervals, or once a year, whichever comes first. As with cleaning the filter, replacement intervals must be shortened when operating under extremely dusty conditions. To protect your engine, use only the manufacturer's replacement filter, or replacement filters with equivalent specifications.

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



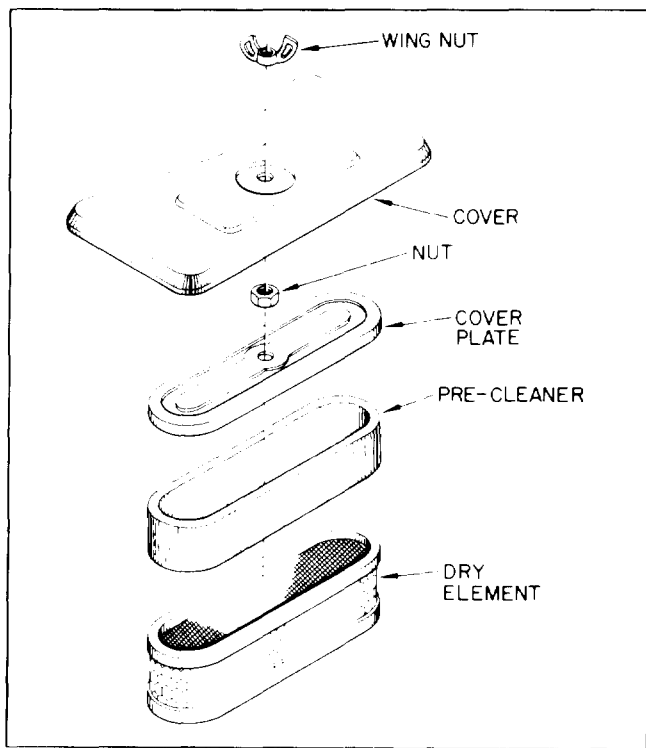
B-115 Air Cleaner

The dry type air filter element used on B & C-Series engines is cleaned by tapping it lightly on a flat surface to remove loose dirt particles. Replace the element if dirt does not drop off easily. DO NOT wash elements in any liquid. Do not attempt to blow dirt off with compressed air as this can puncture the filter element.

B-115: On the 11 HP engine, air is drawn from the inside to the outside of the filter element. When checking the filter, be sure to inspect the inside of the element to determine if it needs replacement.

Wipe off the air cleaner cover(s) and backing plate, taking care to prevent any dirt from entering the carburetor

Foam precleaners are used over the filter elements on some engines. Clean the precleaner at 25 hour intervals, when the air cleaner is serviced. Wash the precleaner in a solution of liquid dishwashing detergent and water. Squeeze out excess water and allow it to dry. Saturate the precleaner in engine oil, then squeeze out the excess oil and install the precleaner on the element.

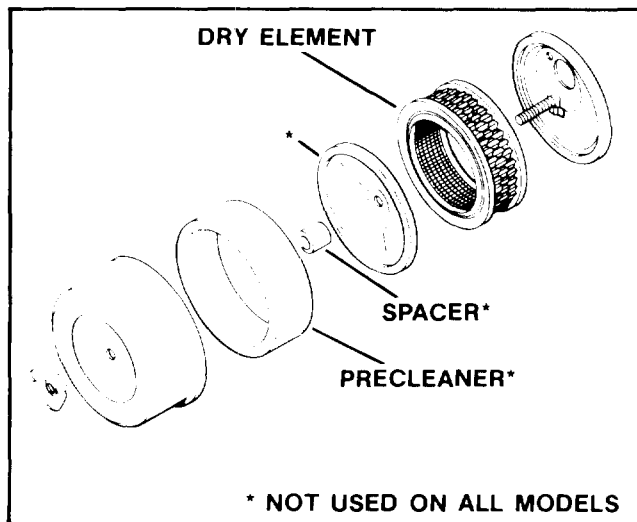


B-165 Air Cleaner

Check the 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 or seals can let unfiltered air into the carburetor.



C-Series Air Cleaner

Spark Plug(s)

Engine misfire, or generally poor operation, is often caused by spark plug(s) in poor condition or with incorrect spark gap setting. The spark plug(s) should be checked after each 100 hours of operation. Replace a spark plug if inspection reveals fouling or excessive deterioration.

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

Check the condition of the plug(s). 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 plugs that are not in good condition. **Never sandblast, wire brush, scrape or otherwise service spark plugs in poor condition. Best results are obtained with new plugs.**

Always check the spark plug gap before installing new plug(s) or reinstalling the original plug(s). Use a spark plug gap gauge to adjust the electrode air gap to the specification for your engine:

Tractor Model	Plug Gap
B-Series	.030 in. (.8 mm)
C-85, C-175, C-195	.025 in. (.6 mm)
C-105, C-125, C-145	.035 in. (.9 mm)

Tighten spark plug(s) to:

- B-Series, C-175, C-195 — 15 ft. lbs. (20 Nm)
- C-85, C-105, C-125, C-145 — 22 ft. lbs. (30 Nm)

Breaker Points and Condenser

The following information does not apply to B-Series tractors, which have an engine with breakerless electronic ignition. This system requires no maintenance.

The condition and adjustment of the breaker points greatly affects engine operation. If the point surfaces are burned or badly oxidized, little or no current will pass; as a result, the engine may not operate at all, or if it does run, it is likely to "miss", particularly at full throttle. An improper engine breaker point gap can also result in erratic engine operation, since an incorrect gap changes ignition timing.

The engine breaker points should be inspected, cleaned, and the gap reset at the intervals shown in the Maintenance Checklist. Points that are in poor condition due to excessive pitting or burning should be replaced.

The primary function of the condenser is to minimize arcing across the breaker points. Under normal operating conditions, a small amount of metal transfer (pitting) will occur between the point surfaces. If the condenser fails, excessive pitting or burning of the points will occur over a short period of time. A shorted condenser grounds the ignition system and results in no output voltage to fire the spark plug(s). The condenser is usually replaced each time the breaker points are changed.

Access to the breaker points requires a significant amount of disassembly on some engines and, in some cases, special tools. In addition, other adjustments affecting engine timing may be necessary after replacing or adjusting the breaker points. For these reasons, it is suggested that ignition system service be performed by an authorized dealer.

Carburetor Adjustment

Carburetors are adjusted in the factory and should not have to be reset. If, however, one of the following conditions is noted, the carburetor should be readjusted 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.

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 the carburetor. For these reasons, it is suggested that carburetor adjustments be performed by an authorized dealer.

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

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

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

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

Some tractor engines may also have an in-line fuel filter, located near the carburetor. This filter should be replaced after each 100 hours of operation or at 1 year intervals, whichever occurs first.

CHARGING AND ELECTRICAL SYSTEMS

Alternator

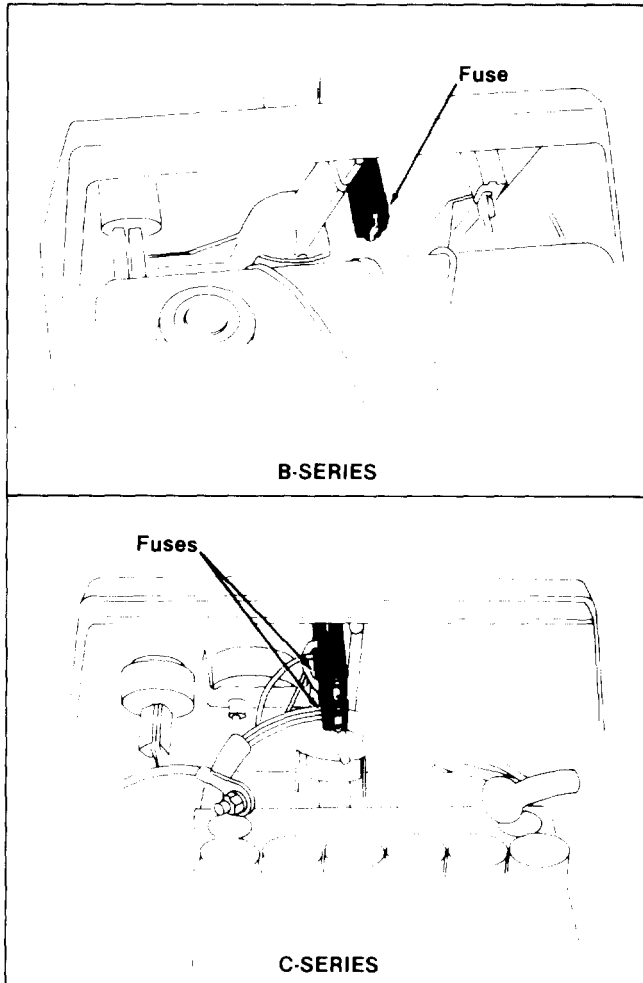
An alternator is used to charge the battery. The alternator charging system normally requires no service other than periodically checking that all exposed wiring and electrical connections on the tractor are clean, tight and in good condition.

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

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

Main Fuse

A 25 amp (C-Series) or 15 amp (B-Series) automotive type ATO or ATC fuse is used to protect the control circuit of the electrical system. The fuse holder is attached to the center "rib" inside the control console, just behind the battery (C-Series) or fuel tank (B-Series).



B & C-Series Fuse Locations

Light Circuit and Fuse

B-SERIES:

The alternator on B-Series tractors has a separate circuit for operating the lights. The alternator output for this circuit is ALTERNATING CURRENT (A.C.). For this reason the lights will not operate without the engine running.

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

C-SERIES:

The light circuit on C-Series tractors is powered by the battery. The lights will operate when the ignition switch is in the Run position. A 15 amp automotive type ATO or ATC fuse is part of the light circuit. The fuse holder is attached to the center rib of the control console (see Main Fuse, preceding).

Hour Meter Fuse (C-195 Only)

The C-195 hour meter is protected by a 6 amp SFE fuse. The fuse holder is connected between the ignition switch and the hour meter and is located behind the battery.

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 (ground) cable FIRST and reconnect it LAST to avoid the possibility of electrical shorts.

Maintain the electrolyte level above the plates in each cell by adding distilled 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 damage to surrounding metal parts. The battery should be maintained at 1.260 specific gravity charge. When the battery has been out of the tractor for servicing, take care to connect the cables to the battery exactly as they were before removal.

The electrolyte level on B-Series tractors can be inspected if a mirror and light are used. To add water, disconnect the battery ground cable and remove the battery hold down. The battery can then be slid out enough to permit adding water.

For longest service life, the battery should be kept clean by wiping it off with a paper towel. Any corrosion around the battery terminals should be removed by applying 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), the full charge state must be maintained to prevent cell electrolyte from freezing and causing permanent battery damage.

Light Bulb Replacement

Headlight and tail light bulbs (on models so equipped) are replaced as described below. Care should be taken when handling the bulbs, particularly if they are broken.

Either sealed beam headlamp unit is replaced by first disconnecting both terminal wires. Note the way the headlamp is installed, then turn the retaining clips 90° to release the headlamp.

To replace a tail light bulb, pry the lens off with a screwdriver. A slot is located at each end of the lens for this purpose. If the bulb has a metal socket, push the bulb down and turn counterclockwise to remove it. If the bulb has a plastic socket, simply pull the bulb straight out. Tail light bulbs are automotive #1895 (metal base) or #194 (all glass).

AUTOMATIC TRANSMISSION

Oil Quality

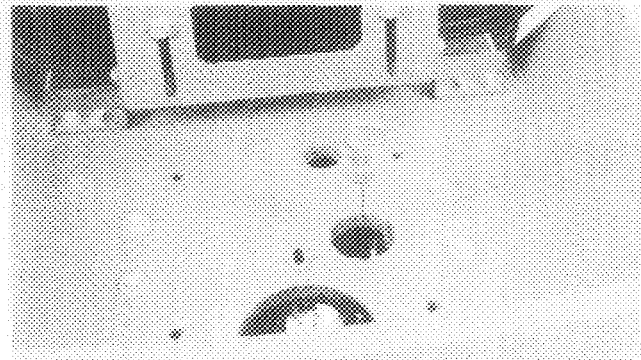
C-SERIES:

The hydrostatic transmission in your Wheel Horse requires premium quality motor oil, with a viscosity of 10W-30 or 10W-40. Use only premium quality oil.

B-SERIES:

The hydrostatic transmission in your Wheel Horse requires a straight SAE 20 weight premium quality motor oil, API Service Classification SC, SD, SE, or SF. The transaxle requires SAE 90 EP gear oil.

Oil Level



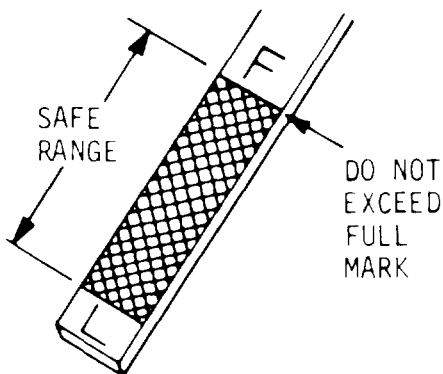
C-Series Automatic Transmission Dipstick
(C-145/C-175 Shown)

C-SERIES:

The lubricant level should be checked before each use. The dipstick is located in a filler tube coming up from the transmission. Remove the dipstick and wipe clean with a clean lint free rag. Replace the dipstick and remove again. The oil level should be maintained between the "F" and "L" levels on the dipstick. Never operate the tractor with the oil BELOW or ABOVE the marks on the dipstick. Add oil as necessary. Replace the dipstick, making sure it is fully seated in the filler tube.

Use care to prevent dirt, clippings or other foreign material from entering transmission during oil level checks, oil fillings, or oil changes.

CHECK OIL



C-Series — Correct Transmission Oil Level

B-SERIES:

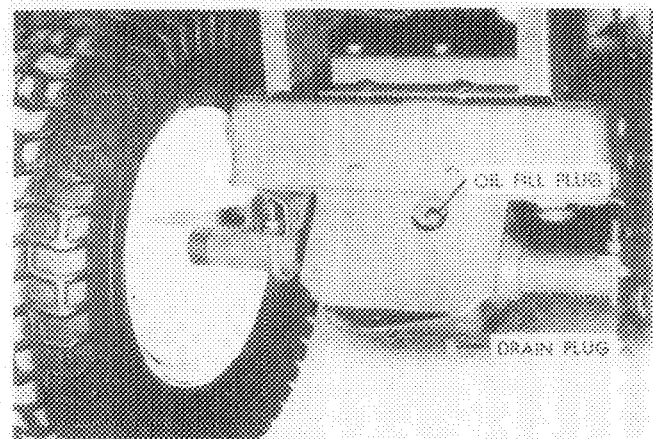
The lubricant level should be checked before each use. The oil reservoir can be observed from the rear of the tractor. The most accurate reading is obtained when the oil is cold; if the oil is below the cold fill line, add oil as required. If the oil level is not visible by looking through the reservoir or if oil must be added, unscrew the cap from the reservoir and observe/add oil through the hole in the fender under the seat. DO NOT OVERFILL the transmission. Overheating and transmission damage can result.

Use care to prevent dirt, clippings or other foreign material from entering transmission during oil level checks, oil fillings, or oil changes.



B-Series Transmission Oil Level

The transaxle oil level should be checked every 25 hours. Check the oil level when the oil is cold. To check the oil level, remove the filler plug from the transaxle case. The oil should be maintained at the bottom of filler plug hole.



B-Series Transaxle Oil Level

Oil Changes

C-SERIES:

Drain and refill the transmission oil once per year, or after 100 hours of operation, whichever occurs first.

The oil is drained by removing the pipe plug at the bottom of the transaxle. The plug is located near the left rear end of the transaxle.

Because the transmission will not drain completely, check the transmission oil level while refilling, to prevent overfilling the system. The approximate refill capacity is 5 quarts (4.7 liters).

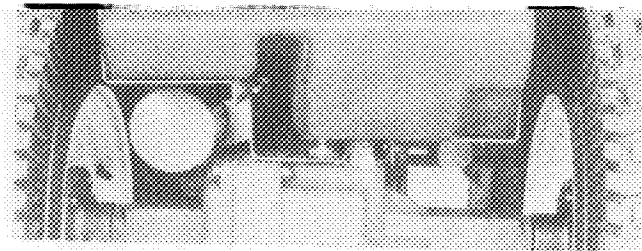
B-SERIES:

Changing the lubricant in either the hydrostatic transmission or the transaxle is not required except for major service. If oil must frequently be added to the transmission or transaxle, a leak is indicated, which should be corrected immediately.

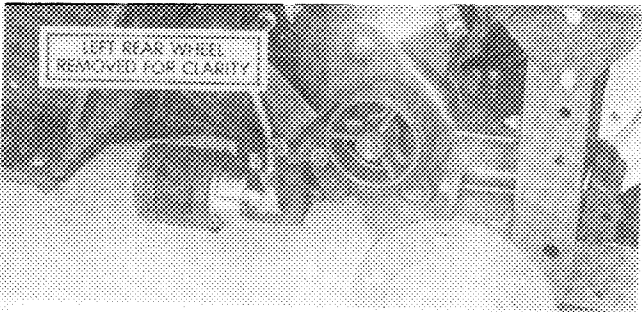
For information purposes, oil capacities are:
 Hydrostatic Transmission . . . ¾ qt. (.7 l) SAE 20
 Transaxle 1¾ qt. (1.3 l) SAE 90 EP

Oil Filter (C-Series Only)

Replace the oil filter after the first 10 hours of operation. Thereafter, replace the filter with each transmission oil change (100 hours or one year, whichever occurs first).



C-145/C-175 Transmission Oil Filter



C-195 Transmission Oil Filter

Cooling Fan

A cooling fan is bolted to the transmission input shaft (located just behind the right footrest). The fan forces air over the transmission cooling fins to cool the transmission oil. Replace the cooling fan if it becomes cracked or broken. Be sure to install it so that maximum airflow is directed across the transmission. On C-Series tractors the side of the fan with the manufacturer's name faces out; on B-Series tractors, the side with the manufacturer's name faces in. A significant amount of disassembly is required to replace the fan on B-Series tractors. For this reason, it is suggested that fan replacement be performed by an authorized dealer.

The cooling fins on the transmission should also be kept clean for best cooling efficiency. Periodically inspect for dirt buildup, and brush or wash out any accumulated dirt or clippings. If pressure washing equipment is used, avoid directing the spray at joints and seal areas, to prevent forcing water into the system.

8-SPEED TRANSMISSION

Oil Quality

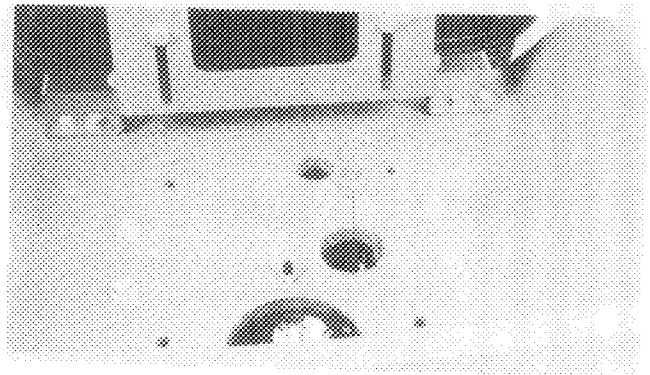
The mechanical transmission in your new Wheel Horse is filled with gear oil. The same type oil must be used whenever the transmission needs filling:

Transmission	Oil	Capacity
8-Speed	SAE 140 API Service GL-5	2 qt. (1.9 l)

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 the dipstick from the transmission case. Maintain oil at the "full" level on the dipstick.

Use care to prevent dirt, clippings or other foreign material from entering transmission during oil level checks, oil fillings, or oil changes.



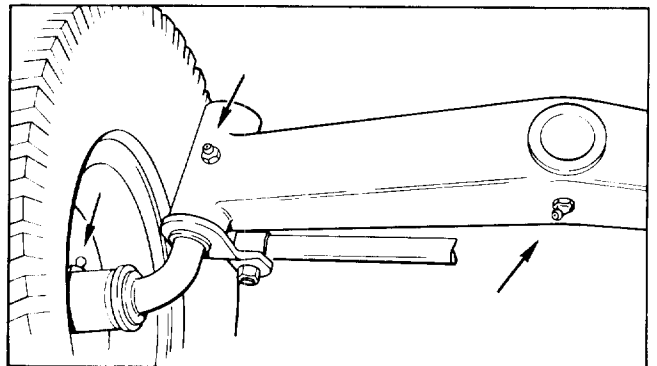
8-Speed Transmission Dipstick

5-SPEED TRANSMISSION

The 5-Speed transmission is packed with grease at the factory; checking the transmission lubricant is not required.

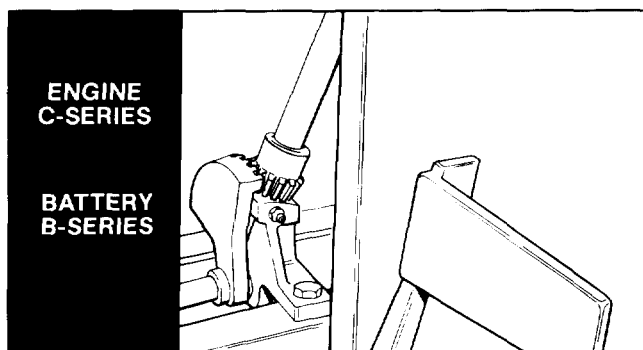
CHASSIS LUBRICATION

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



Front Wheel, Spindle and Front Axle Lube Fittings

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



Steering Gear Lube Fitting

FOOT BRAKE ADJUSTMENT

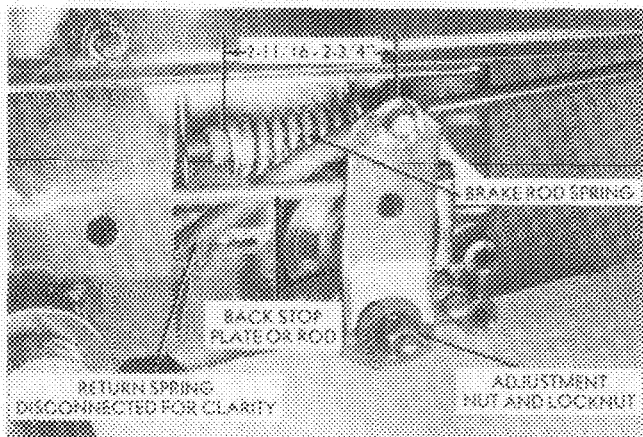
5-Speed Models

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

1. Check that the transmission brake lever is contacting the back stop plate (or rod) when the brake pedal is released. If it does not, the brake pads will drag on the disc while the tractor is being operated, causing premature brake wear.
2. With the brake pedal released, loosen the lock nut and tighten the adjustment nut until the brake disc is no longer free to turn. Next, back off the adjustment nut just enough to permit the disc to turn freely. Tighten the lock nut and check that the brake disc is still free to turn.

The brake rod spring adjustment should be checked after adjusting the brake. This determines the amount of force applied to the brake lever.

1. The distance between the inside of the nut and washer on the brake rod should be $2\frac{1}{16}$ - $2\frac{3}{4}$ in. (6.8 - 7 cm). Turn the adjustment nut as required to obtain this dimension.



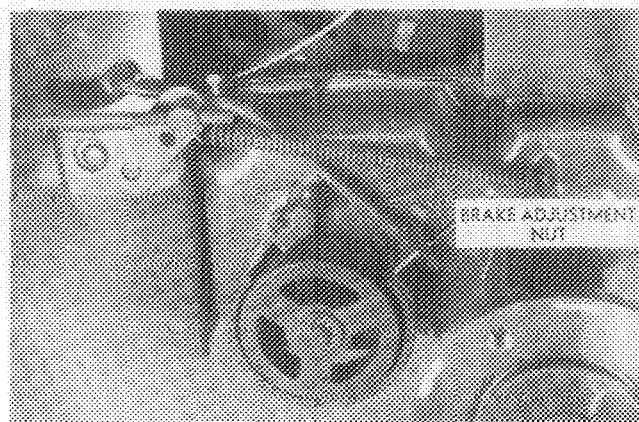
5-Speed Brake Adjustment

8-Speed Models

The brake band, located on the left side of the transmission, brakes the transmission shafts and, in turn, brakes the rear wheels.

To adjust the brake push down on the brake pedal and pull back on the parking brake lever. With the

parking brake engaged, adjust the nut on the end of the rod until the brake band is tight enough to skid both rear wheels when the tractor is pushed. Then tighten the nut another $\frac{1}{2}$ turn. After adjustment, the parking brake lever should not travel to the rear end of the lever's slot when the parking brake is engaged. With the brake released, the brake band should not "drag" on the brake drum.



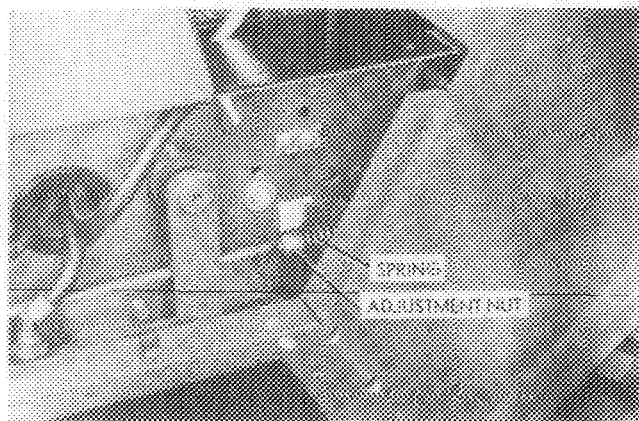
8-Speed Brake Adjustment

C-Series Automatic Models

The brake band, located on the left side of the transmission, brakes the transmission shafts and, in turn, brakes the rear wheels. As the brake pedal is depressed, linkage returns the transmission to neutral, dynamically braking the tractor. The brake band is actuated after the transmission reaches neutral, providing additional braking action. The brake band also serves as the parking brake.

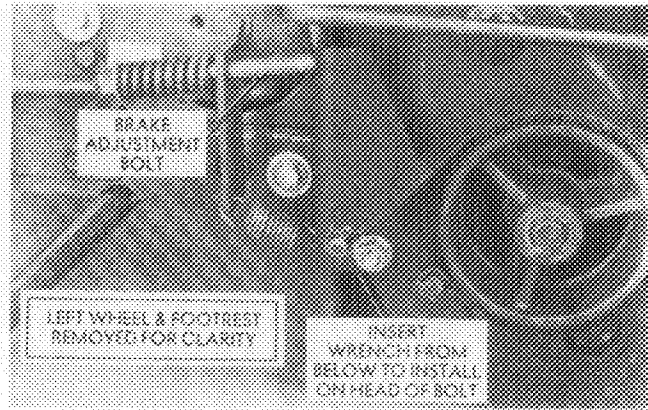
To adjust the brake, remove the left hand side cover, which is secured by two screws at the top, one screw at the bottom and a bolt at the front.

1. Set the parking brake so that the lever is latched in the first notch in the control cam. This is done by pulling back on the parking brake lever as the brake pedal is slowly depressed. You will feel the lever move back slightly as it drops into the first notch of the control cam.
2. Tighten the nut on the brake linkage bolt until the coils of the heavy spring are fully compressed, then back off the nut $\frac{1}{2}$ turn.
3. Release the parking brake and check that the brake band is not dragging on the brake drum.



C-Series Automatic — Brake Adjustment
(C-145/C-175 Shown)

If the tractor creeps after the brake pedal is depressed and then released, the linkage that returns the tractor to neutral requires adjustment. Your authorized dealer should make this adjustment.



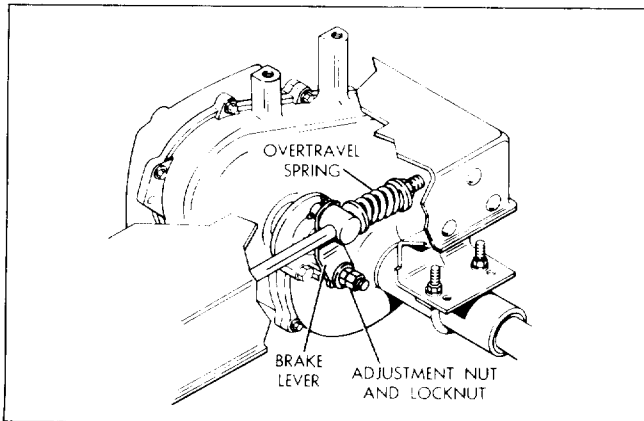
**C-Series Automatic Brake Band & Drum
(C-145/C-175 Shown)**

B-Series Automatic Models

The brake adjustment is made at the brake caliper.

1. With the brake pedal released, loosen the lock nut and tighten the adjustment nut until the brake disc is no longer free to turn. Next, back off the adjustment nut just enough to permit the disc to turn freely.
2. Slowly depress the brake pedal and note the distance the brake lever moves before the overtravel spring starts to compress. This should be between $\frac{3}{8}$ and $\frac{3}{4}$ in. (9.5 - 19mm). Turn the adjustment nut as required to obtain this distance, and tighten the lock nut.

If the position of the nut on the brake rod is changed for some reason, it should be readjusted so that the distance between the spring side (front) of the nut and the end of the rod is $\frac{7}{8}$ in. (22mm).



B-Series Automatic – Brake Adjustment

If the tractor creeps after the brake pedal is depressed and then released, the linkage that returns the tractor to neutral requires adjustment. Your authorized dealer should make this adjustment.

PTO CLUTCH AND BRAKE ADJUSTMENT

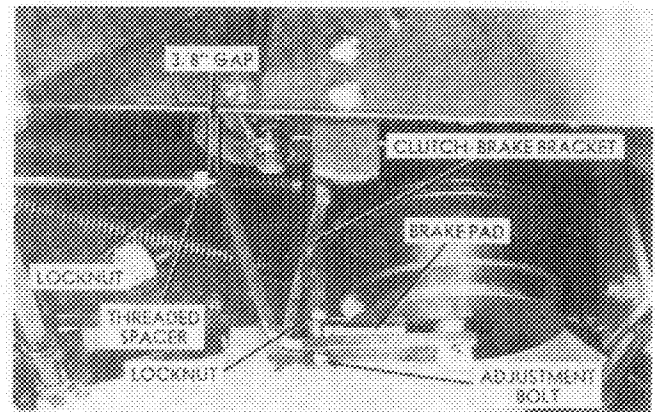
The PTO clutch and brake may require periodic adjustment due to normal wear of friction surfaces. Adjustments are made as follows:

B-Series

To adjust the PTO clutch and brake:

1. Engage the PTO clutch.
2. Loosen the locknut on the PTO brake adjustment bolt.
3. Turn the adjustment bolt so there is a .010 in. (.25 mm) gap between the brake pad and the clutch pulley face, then tighten the locknut.
4. Check the gap between the hex head of the threaded spacer, on the PTO rod, and the clutch/brake bracket, which should be $\frac{3}{8}$ in. (9.5 mm). If adjustment becomes necessary, proceed as follows:

Loosen the locknut behind the threaded spacer on the PTO rod; turn the hex end of the threaded spacer clockwise or counterclockwise, as required, to attain the proper gap. Retighten the locknut and recheck the gap between the brake pad and the clutch pulley face.



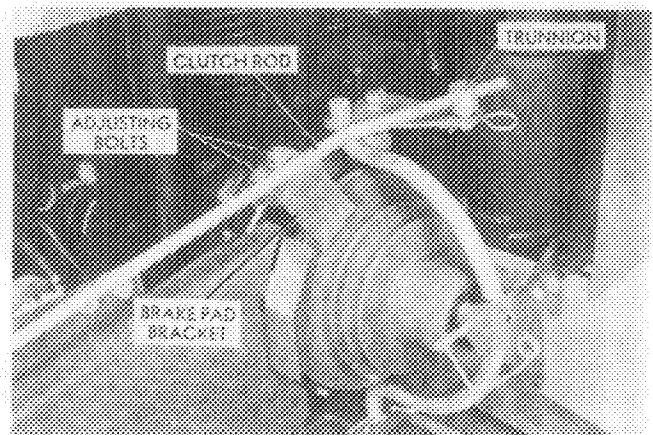
B-Series PTO Adjustments

C-Series (Except C-195)

The PTO clutch and brake may require periodic adjustment due to normal wear of friction surfaces. If clutch slippage is apparent, turn the trunnion farther onto the clutch rod in one turn intervals until the slippage is eliminated.

To adjust the PTO brake:

1. Engage the PTO clutch.
2. Loosen the two bolts that hold the brake pad bracket to the support bracket.



C-Series (Except C-195) PTO Adjustments

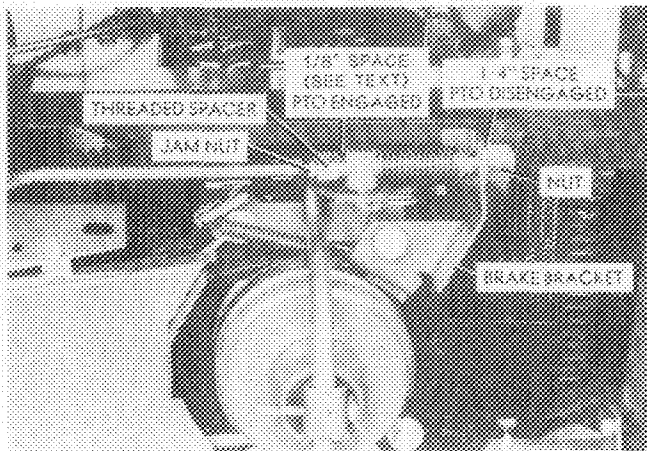
3. Place a .012 in. (.3 mm) feeler gauge between the brake pad and the clutch pulley.
4. While holding the brake pad against the feeler gauge and pulley, tighten the two brake bracket bolts.

C-195

The PTO clutch and brake may require periodic adjustment due to normal wear of friction surfaces.

If clutch or brake slippage is apparent:

1. Engage the PTO clutch.
2. Loosen the locknut on the clutch rod and turn the threaded spacer until there is a $\frac{1}{8}$ in. (3.2 mm) gap between the hex head of the threaded spacer and the trunnion. This gap may be increased up to $\frac{1}{4}$ in. (6.4 mm) if the clutch slips under high load applications (tilling, snowthrowing, etc.).
3. Disengage the PTO clutch and check that there is a $\frac{1}{4}$ in. (6.4 mm) space between the nut on the clutch rod and the brake bracket. Adjust the position of the nut on the rod, if necessary.



C-195 PTO Adjustments

CLEANING AND STORAGE

The tractor should be washed regularly with a mild automotive detergent and water. After 30 days, painted surfaces may be waxed to protect the 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 Red, Satin Black and Linen Beige are available through your Authorized Wheel Horse Dealer.

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

1. Perform required maintenance steps called for in the "Maintenance Checklist".
2. Check tires for proper inflation.
3. Drain all fuel from the fuel tank. Start the tractor and let the engine run out of gas. As gasoline grows old, it becomes less volatile and forms harmful gum and varnish deposits in the carburetor and fuel pump. **DO NOT STORE GASOLINE FOR MORE THAN 2 MONTHS.**
4. Wash the tractor and repaint all bare metal surfaces.
5. Charge the 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) the water level should be checked and the battery "trickle charged" every 30 days, (more often in higher temperatures). The battery must be fully charged to prevent freezing and internal damage in weather below 32 F (0 C).
6. Remove the key from the tractor.

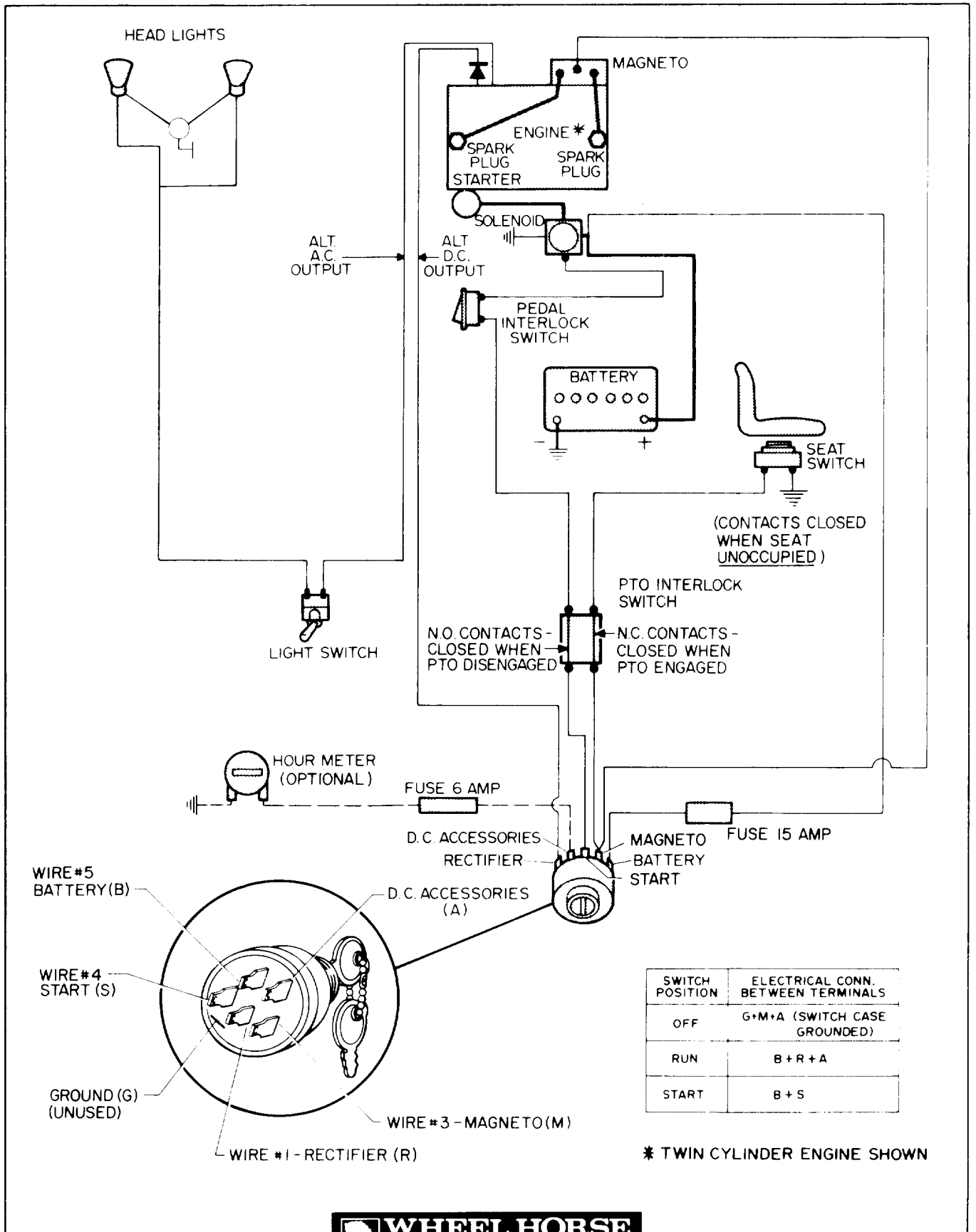
TROUBLESHOOTING CHECKLIST

<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 left pedal. Consult authorized dealer. Consult authorized dealer. Consult authorized dealer.
Engine turns over but will not start.	Spark plug(s) not firing. Breaker points faulty (N/A, B-Series). No fuel in tank. Fuel valve closed. Improper carburetor adjustment. Ignition switch.	Check spark plug condition and reset gap. Check breaker points condition. Consult authorized dealer. Refuel tractor. Open fuel valve. Reset carburetor adjustment. Consult authorized dealer.
Engine hard to start.	Spark plug wire(s) grounded or loose. Breaker points faulty or improperly gapped (N/A, B-Series). Spark plug(s) faulty or improperly gapped. Coil, condenser or magneto defective. Fuel line clogged. Fuel pump faulty (B-165, C-Series). Carburetor dirty or improperly adjusted.	Check spark plug wires. Consult authorized dealer. Check spark plug condition and reset gap. Consult authorized dealer. Clean fuel line; check strainer in fuel tank. Consult authorized dealer. Readjust carburetor. Consult dealer for authorized carburetor service.
Engine starts, but operates erratically.	Clogged fuel line. Water in fuel. Vent in fuel cap plugged. Faulty fuel pump (B-165, C-Series). Improper carburetor adjustment.	Clean fuel line; check strainer in fuel tank. Drain old fuel and replace with fresh supply. Check vent. Consult authorized dealer. Readjust carburetor.

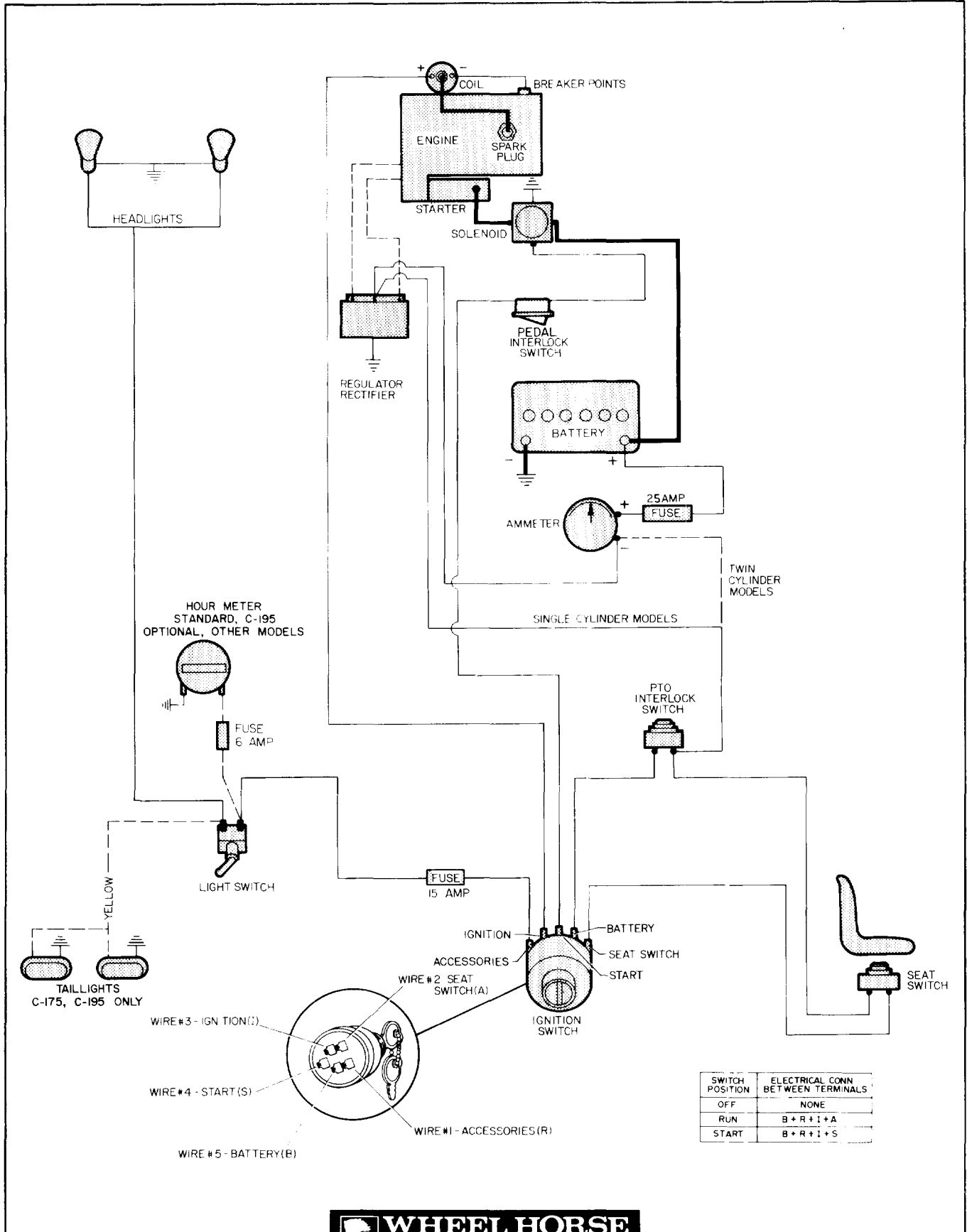
TROUBLESHOOTING CHECKLIST (Continued)

<u>SYMPTOM</u>	<u>POSSIBLE CAUSE</u>	<u>POSSIBLE REMEDY</u>
Engine knocks.	Fuel octane too low. Incorrect ignition timing. 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(s) fouled, faulty or gap too wide. Incorrect ignition timing. 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. Improper ignition timing. 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(s).
Engine backfires.	Improper carburetor adjustment. Faulty breaker points (N/A, B-Series).	Readjust carburetor. Consult authorized dealer.
Engine runs fine, but tractor will not move.	Transmission clutch disengaged. Faulty transmission.	Engage clutch. Consult authorized dealer.
Tractor loses power or transmission overheats. (Automatic models)	Transmission oil level too high or too low. Transmission damage has resulted from operating engine at low RPM or contamination of oil.	Adjust oil level as necessary. Consult dealer for authorized service.
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 – B-SERIES



WIRING DIAGRAM – C-SERIES



SWITCH POSITION	ELECTRICAL CONN BETWEEN TERMINALS
OFF	NONE
RUN	B + R + I + A
START	B + R + I + S



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