case

446 TRACTOR
448 TRACTOR

Operator's Manual 9-7081

Written In *Clear And Simple English*

OCT 2010

[redacted]

HAMMOND, ON.

J I Case
A Tenneco Company

TENNECO

This Safety Alert Symbol Indicates Important Safety Messages In This Manual When You See This Symbol Carefully Read The Message That Follows and Be Alert To The Possibility Of Personal Injury Or Death

IF THIS MACHINE IS USED BY AN EMPLOYEE OR IS LOANED OR RENTED, MAKE ABSOLUTELY CERTAIN THAT THE OPERATOR(S), PRIOR TO OPERATING:

1. IS INSTRUCTED IN SAFE AND PROPER USE.

2. REVIEWS AND UNDERSTANDS THE MANUAL(S) PERTAINING TO THE MACHINE.

751253

WARNING

BEFORE STARTING ENGINE

STUDY OPERATOR'S MANUAL SAFETY MESSAGES
READ ALL SAFETY SIGNS ON MACHINE
CLEAR THE AREA OF OTHER PERSONS

LEARN & PRACTICE SAFE USE OF CONTROLS BEFORE OPERATING

IT IS YOUR RESPONSIBILITY TO UNDERSTAND AND FOLLOW MANUFACTURER'S INSTRUCTIONS ON MACHINE OPERATION, SERVICE, AND TO OBSERVE PERTINENT LAWS AND REGULATIONS. OPERATOR AND SERVICE MANUALS MAY BE OBTAINED FROM YOUR EQUIPMENT DEALER.

TABLE OF CONTENTS

SAFETY MESSAGES

The first twenty-three safety messages which follow are provided by the American National Standards Institute * (ANSI). Safety rules to supplement those provided by ANSI also appear on the following pages.

Study these rules carefully before starting and operating your Case Lawn and Garden Tractor.

* Rule Number 24, which does not apply to this product, has been omitted.

Separate Operator's Manuals are provided with the attachments purchased with your tractor. Refer to the appropriate attachment operators manual for specific operating instructions and safety messages that apply to the attachment.

CAUTION: Know the controls and how to stop quickly. READ THE OWNER'S MANUAL.

CAUTION: Do not allow children to operate the vehicle. Do not allow adults to operate it without proper instruction.

CAUTION: Do not carry passengers. Keep children and pets a safe distance away.

CAUTION: Clear the work area of objects which might be picked up and thrown.

CAUTION: Disengage all attachment clutches and shift into neutral before attempting to start the engine (motor).

CAUTION: Disengage power to attachment(s) and stop the engine (motor) before leaving the operator's position.

CAUTION: Disengage power to attachment(s) and stop the engine (motor) before making any repairs or adjustments.

CAUTION: Disengage power to attachment(s) when transporting or not in use.

CAUTION: Take all possible precautions when leaving the vehicle unattended, such as disengaging the power take-off, lowering the attachment(s), shifting into neutral, setting the parking brake, stopping the engine, and removing the key.

CAUTION: Do not stop or start suddenly when going uphill or downhill. Mow down the face of steep slopes; never across or up the face. (This ANSI rule modified)

CAUTION: Reduce speed on the slopes and in sharp turns to prevent tipping or loss of control. Exercise extreme caution when changing direction on slopes.

CAUTION: Stay alert for holes in the terrain and other hidden hazards.

CAUTION: Use care when pulling loads or using heavy equipment.

a. Use only approved drawbar hitch point.

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 the owner's manual.

CAUTION: Watch out for traffic when crossing or near roadways.

CAUTION: When using any attachments, never direct discharge of material toward bystanders nor allow anyone near the vehicle while in operation.

CAUTION: Handle gasoline with care – it is highly flammable.

a. Use approved gasoline container.

b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.

c. Open doors if the engine is run in the garage – exhaust fumes are dangerous. Do not run the engine (motor) indoors.

CAUTION: Keep the vehicle and attachments in good operating condition, and keep safety devices in place.

CAUTION: Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.

CAUTION: Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

CAUTION: To reduce fire hazard, keep the engine free of grass, leaves, or excessive grease.

CAUTION: The 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.

CAUTION: Do not change the engine governor settings or overspeed the engine.

CAUTION: When using the vehicle with mower, proceed as follows:

(1) Mow only in daylight or in good artificial light.

(2) Never make a cutting height adjustment while the engine (motor) is running if the operator must dismount to do so.

(3) Shut the engine (motor) off when removing the grass catcher or unclogging chute.

(4) Check the blade mounting bolts for proper tightness at frequent intervals.

Remember, a careful operator is always the best insurance against an accident. Give complete and undivided attention to the job at hand.

CAUTION: Always shut off engine, remove key, set parking brake, and wait until all engine and attachment motion has stopped before dismounting from the operator's seat.

CAUTION: Only operate controls from the operator's seat to prevent injury.

CAUTION: Do not wear loose clothing which may catch in moving parts.

CAUTION: Do not smoke when working near fuel.

CAUTION: Drive at a speed slow enough to insure safety and complete control at all times.

CAUTION: Highway travel should be avoided. If necessary, use SMV safety emblem and lights for adequate warning to the operators of other vehicles. Check local government regulations.

CAUTION: Keep all shields in place.
Before starting engine: Disengage attachment drive and place travel control lever into neutral.
To park tractor: Place travel control lever into neutral, set parking brake, disengage attachment drive, shut off engine and remove ignition key.

When operating on incline, place transmission in low range.

Stop engine and wait for all movement to stop before dismounting tractor, before servicing or making adjustments to tractor and/or attachments.
Keep people and pets a safe distance away from the machine.

CAUTION: Place the transmission in neutral, set the parking brake and stop the engine before standing between the tractor and attachment when hitching.

CAUTION: If necessary to move tractor on a trailer, always back up onto the trailer and drive off of trailer.

DANGER: Batteries produce explosive charges. Keep sparks, flame and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.

CAUTION: Never wear rings or metal watch bands when working with the tractor electrical system or battery as you may ground a live circuit.

CAUTION: When working around storage batteries, remember that all of the exposed metal parts are "live". Never lay a metal object across the terminals as a spark or short circuit may result. Sparks, lighted matches and exposed flames must be kept away from the battery due to the presence of explosive gas in the battery. The liquid in the batteries is acid. Use care not to spill it on hands or clothing.

POISON: Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes or clothing. Antidote: EXTERNAL, flush with water; INTERNAL, drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately; EYES, flush with water for 15 minutes and get prompt medical attention. Keep out of reach of children.

WARNING: To jump start this machine, connect positive jumper cable to battery terminal on starter solenoid and connect negative jumper cable to good engine ground. Start engine only when seated in operator's seat. Stop engine before leaving machine. Disconnect jumper cables. Any other method could result in uncontrolled machine movement.

IMPORTANT: Always install new decals whenever the old decals are destroyed, lost, painted over or illegible. When individual parts are replaced that have decals attached, be sure to install a new decal with the new part. Replacement decals are available from your Case dealer.

HILLSIDE (SLOPE) OPERATION

WARNING: Improper operation of your tractor on hillsides and slopes can be dangerous. Avoid improper operation! Read and follow the instructions given in the section titled "Hillside Operation" in this manual before operating your tractor.

Avoid operating tractor on hillsides and slopes. To minimize the possibility of accidents while operating on hills and/or rough terrain, obey a combination of rules, practices and good common sense.

These include:

1. Reading, understanding, and obeying all written safety messages appearing on decals on the machine and in operator's manuals.

2. Learning from your operator's manual and carefully from EXPERIENCE how to operate your tractor correctly. Know your tractor's limitations.

3. Knowing the terrain on which you are operating your tractor. There are terrain conditions on which your tractor cannot be operated!

4. Learning to expect changes in operating conditions. Adding or removing attachments or weight to your tractor will make your tractor perform differently. Rain, snow, loose gravel, wet grass, etc., change the tractive conditions of the terrain requiring changes in your operating technique or not to operate on that terrain.

The following paragraphs will cover these practices one at a time. Read and study them. The examples provided are not all inclusive but will give you a firm understanding of the requirements for avoiding accidents while operating your tractor.

Case Lawn and Garden Tractors are designed and built to comply with the Voluntary Standard ANSI B71.1 - 1972 and B71.1a - 1974 (American National Standards Institute).

THE OPERATOR IS THE SOLE JUDGE AS TO THE DEGREE OF SLOPE ON WHICH THIS TRACTOR CAN BE SAFELY OPERATED. IF IN DOUBT THAT THIS TRACTOR CAN BE SAFELY OPERATED ON A PARTICULAR SLOPE, DO NOT OPERATE ON THAT SLOPE! COMMON SENSE MUST PREVAIL.

Read, Understand, Obey:

Safety messages are found on the tractor and in the operator's manuals. These must be understood by the tractor operator to be of value. Be sure that these messages are studied before starting and/or operating the tractor by an operator not familar with this particular tractor.

Learn to Operate:

Learn your tractors controls from decals on the tractor and from instructions in the operator's manual. Practice how to properly manipulate these controls. Practice must be done in a flat area, clear of obstacles and bystanders. Learn your tractors operating characteristics and limitations. These include:

a. amount of engine power available

b. engine governor response

c. tractive ability

d. steering characteristics

e. braking characteristics

f. movement of travel lever

g. forward and reverse ground speeds

h. speed of attachment lift

i. and others

Attempting any operation which approaches or exceeds the tractor's limitation is risking an accident.

Know the Terrain:

Know the terrain on which you are working. Find hidden obstacles by walking through and inspecting the area prior to operating your tractor on it. Mark obstacles, such as, rocks, ruts or holes with a 6 ft long pole and red flag and stay well clear of these obstacles when operating.

Operate your tractor at a ground speed slow enough to insure complete control at all times.

Place the transmission in low range and regulate the travel control lever slowly and smoothly to maintain this safe speed.

Always drive in a forward direction when proceeding downhill. Never drive up a hill. If necessary, back up a hill to the desired position. Always back up loading ramps and tilt bed trailers. If necessary to turn while on a hill, always turn downward.

Your judgement, based on operating experience is the final word in deciding if you should negotiate any given hill or slope. If you are in doubt about safety - STAY OFF THE SLOPE.

Under no circumstances should an inexperienced operator attempt to use your tractor on slopes or hillsides.

You may encounter some terrain on which your tractor cannot be operated even if a different piece of equipment has operated there in the past.

Learn to Compensate for Changes in Operating Conditions:

Adding or removing attachments or ballast (such as wheel weights or fluid) change the weight and weight distribution of your tractor and, therefore, change your tractors operating characteristics.

Be alert to these changes. Practice, operating the tractor after each change has been made.

Adding an attachment (weight) to the rear of the tractor reduces the weight on the front axle. Adding an attachment (weight) to the front of the tractor reduces weight on the rear of the tractor. You must add counterweight to the front if a rear mounted attachment is installed. You must add counterweight to the rear if a front mounted attachment is installed.

Tractive conditions will vary with weather and terrain and equipment.

Areas wet with dew, rain or snow will be more slippery than when dry. Areas covered with loose gravel are more slippery than firm dry ground. Greater stopping distances are required in these slippery areas.

Spinning rear wheels tend to move the tractor sideways. The addition of tire chains will provide more traction to the rear wheels in the forward-reverse direction but less stability in the sideways direction. Chains will cause more abrupt starting and stopping.

The final word in safe tractor operation rests on your judgement.

If in doubt of your safety - STAY OFF THE SLOPE.

TO THE OWNER OF A CASE TRACTOR

The Maintenance you give your new Case tractor is important. Use this manual as your guide. Follow these instructions and tips to make sure your Case tractor operates efficiently for many years.

We are an authorized Case dealer. We have Case replacement parts which are the same as the original equipment.

If you need additional aid or information, contact us.

Your Authorized Case Dealer

NOTICE

A spark arrester or spark arrester muffler must be used on some machines. Check the laws in your area.

Some states have regulations for the use of this machine in agriculture, forestry and construction. These laws control the maintenance of spark arrester equipment. These laws also control the installation of spark arrester equipment on the exhaust system of naturally aspirated engines (engines without a turbocharger).

RADIO INTERFERENCE REGULATIONS OF CANADA

Case tractors taken into Canada after September 1, 1976 must have resistor spark plugs.

Resistor spark plugs and resistor wires for the spark plug must be used for replacement.

The regulation label is applied to the engine. Do not remove or destroy this label.

Printed in U.S.A. U.S. Price $2.00 9-80-SL-3500

FIGURE 1 Left Hand View of Case 446 Compact Tractor

FIGURE 2 Right Hand View of Case 448 Compact Tractor

SERIAL NUMBERS

When you need parts or information, or when you write to your authorized Case dealer, always give the:

1. Tractor Model Number
2. Product Identification Number (P.I.N.)
3. Engine Serial Number
4. Engine Model Number
5. Engine Specification Number

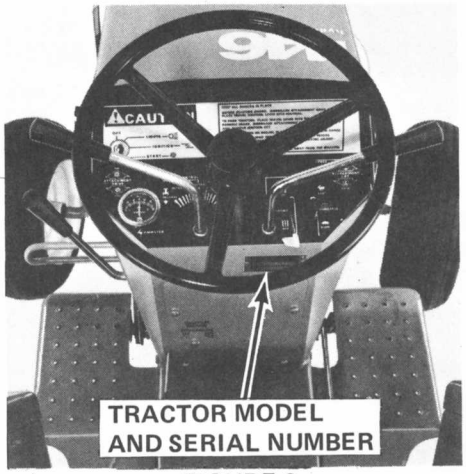


FIGURE 3

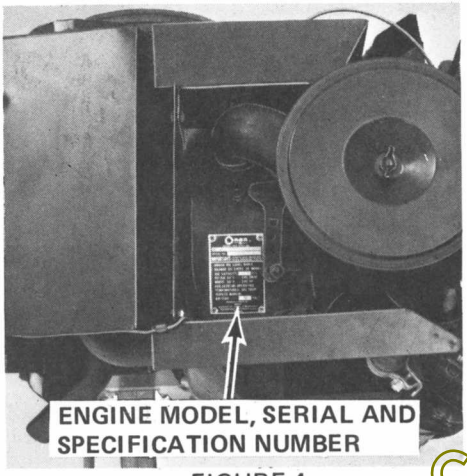


FIGURE 4

For reference, write the numbers on the lines below

Tractor Model Number 448 (1981)

Tractor Product Identification Number (P.I.N.) 14013967

Engine Model Number B48M

Engine Serial Number

Engine Specification Number

This book is for the following compact tractors:

MODEL	P.I.N.
446	9770165 and after
448	9774000 and after

The words "Right, Left, Front and Rear" as used in this manual indicate directions when you are in the operator's seat in the normal operating position.

GENERAL SPECIFICATIONS

HYDRAULIC SYSTEM

Independent 5 quart (4.7 l) system including a reservoir, pump, control valve, hydraulic motor and heat exchanger.

Control Valve (Dual spool)	
Travel (Relief valve setting)	2000 psi (13 800 kPa)
Lift (Relief valve setting)	575 psi (3 970 kPa)
Pump	approximately 8 gpm (36 l/min.) at 3600 RPM

ELECTRICAL SYSTEM

Type of System	12 Volt, Negative Ground
Battery	Case, 24 Ampere Hour at 20 Hour Rate
Headlights	12 Volt
Starter	12 Volt, Gear Drive
Flywheel Alternator	12 Volt, 15 Ampere

BRAKE

Type . . . . . Double acting, self energizing, mechanical compression band. The brake drum is driven by the transmission differential. Includes a parking brake lock.

TRANSAXLE

Type . . . . . Hydraulic Driven, Dual Gear Range
Differential . . . . . Standard Bevel Gear
Oil Capacity . . . . . 3 Quarts (2.8 l)

SPEED RANGE	FORWARD	REVERSE
Low	0 to 3.2 MPH (5.15 km/h)	0 to 3.2 MPH (5.15 km/h)
High	0 to 7.8 MPH (12.55 km/h)	0 to 7.8 MPH (12.55 km/h)

WHEELS AND TIRES

Tire Size	PLY	TYPE	Recommended Air Pressure PSI	(kilopascal)	Max. Air Pressure PSI	(kilopascal)
6.50-8	2	Front High Flotation	8	(55)	14	(97)
8.00-16	2	Rear High Flotation	8	(55)	14	(96)

ENGINE SPECIFICATIONS

GENERAL

	446	448
Type	ONAN	ONAN
Model	B43M/GAO16	B48M/GAO18
Cycle	4	4
Cylinders	2	2
Cylinder Bore	3.25 in. (82.5 mm)	3.25 in. (82.5 mm)
Stroke	2-5/8 in. (66.6 mm)	2-7/8 in. (73 mm)
Piston Displacement	43.3 cu. in.(710 cm^3)	47.7 cu. in. (780 cm^3)
Horsepower	16 at 3600 RPM	18 at 3600 RPM
Compression Ratio	7 to 1	6.6 to 1
Full Load Speed	3500 RPM	3500 RPM
No Load Speed	3600 RPM	3600 RPM
Idle Speed	1200 RPM	1200 RPM
Valve Clearance Cold (Intake)	.007 - .009 in (0.17 mm - 0.22 mm)	.007 - .008 in (0.17 mm - 0.20 mm)
Valve Clearance Cold (Exhaust)	.012 - .014 in. (0.30 mm - 0.35 mm)	.012 - .013 in. (0.30 mm - 0.33 mm)

PISTON AND CONNECTING ROD

Piston	Aluminum
Compression Rings	2
Oil Rings	1
Connecting Rod	Aluminum

FUEL SYSTEM

Filter Screen	In fuel tank outlet fitting
Fuel Tank Capacity	3 Gallons (11.4 l)

IGNITION SYSTEM

Contact Point Gap	.021 in. (0.53 mm)
Ignition Timing	21° before TDC
Spark Plug	Prestolite 14 L4 or equivalent Prestolite 14RL4 or equivalent in Canada
Thread	14MM
Gap	.025" (0.64 mm)

COOLING SYSTEM

Flywheel Blower ..... Air cooled with baffles that send the air around fins on the cylinder and cylinder head area.

OVERALL MEASUREMENTS

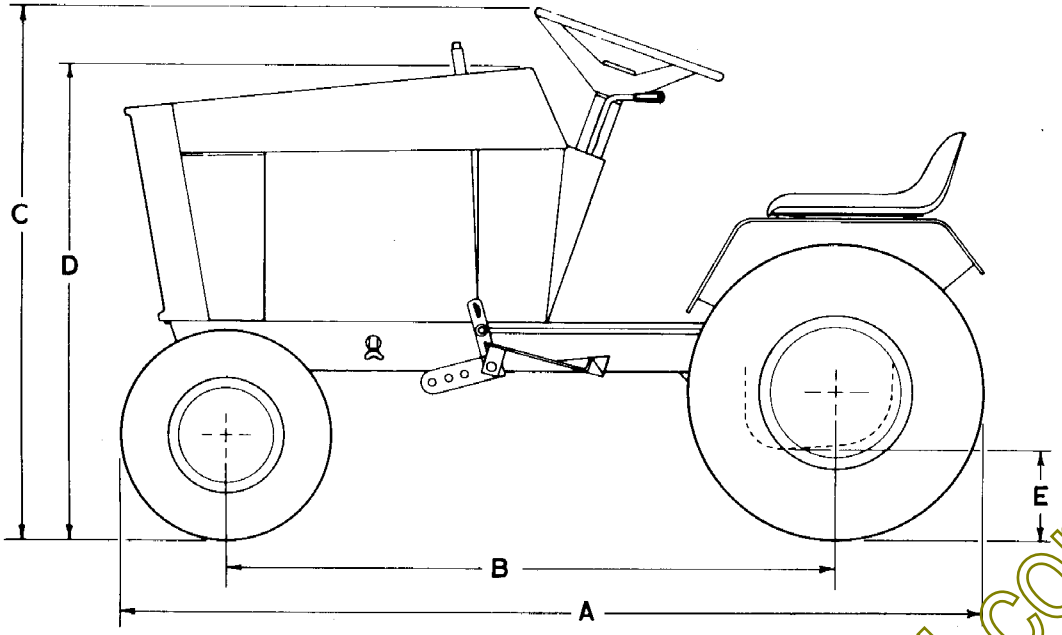


FIGURE 7.

	446	448
A Overall Length	72" (1830 mm)	72" (1830 mm)
B Wheel Base	48" (1220 mm)	48" (1220 mm)
C Overall Height	43-1/2" (1110 mm)	43-1/2" (1110 mm)
D Hood Height - Rear	38-1/2" (980 mm)	38-1/2" (980 mm)
E Minimum Ground Clearance at Gear Case	11" (280 mm)	11" (280 mm)
Rear Wheel Tread	31-1/2" (800 mm)	31-1/2" (800 mm)
Front Wheel Tread	33-1/2" (850 mm)	33-1/2" (850 mm)
Overall Width	41" (1050 mm)	41" (1050 mm)
Shipping Weight	770 lbs. (350 kg.)	785 lbs. (355 kg.)

LUBRICATION

ENGINE LUBRICATION

SELECTION OF OIL

It is important that you use a detergent oil with high quality. Use oil with an API service classification of "SE" or "CC". Case "HDM" oil has this classification.

OIL SAE VISCOSITY RATING

SAE 30* _____ Air temperature 30°F (-1°C) or more
SAE 10W30 _____ Air temperature 0°F (-18°C) to 30°F (-1°C)
SAE 5W20 _____ Air temperature 0°F (-18°C) or less

*Use SAE 20W-40 if SAE 30 is not available.

OIL CHANGE

Change the engine oil at every 25 hour interval of operation. Run the engine before you change the oil. Hot oil will flow more freely and carry away more foreign material. Change the oil filter at every 50 hour interval of operation.
Change the engine oil more frequently if you:

1. Start and stop many times during operation.

2. Operate during severe temperatures (high or low).

Foreign material will occur faster in the engine crankcase during the above conditions.

IMPORTANT

1. When you drain all the old oil from the engine crankcase. Fill with 4 pints (1.9 l) of recommended oil.

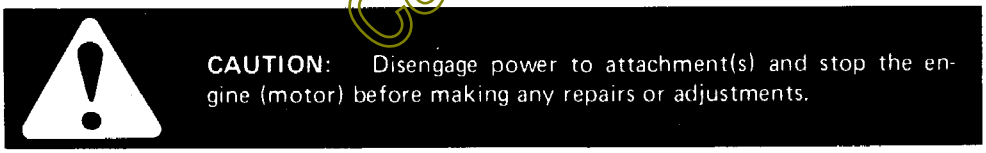
2. Run the engine for five minutes.

3. Stop the engine.

4. After the oil has run off the internal engine parts, check the oil with the dipstick. This will prevent too much or too little oil in the crankcase. Too much or too little oil can cause:

   a. engine damage

   b. wrong records of the use of oil



LUBRICATION CHART

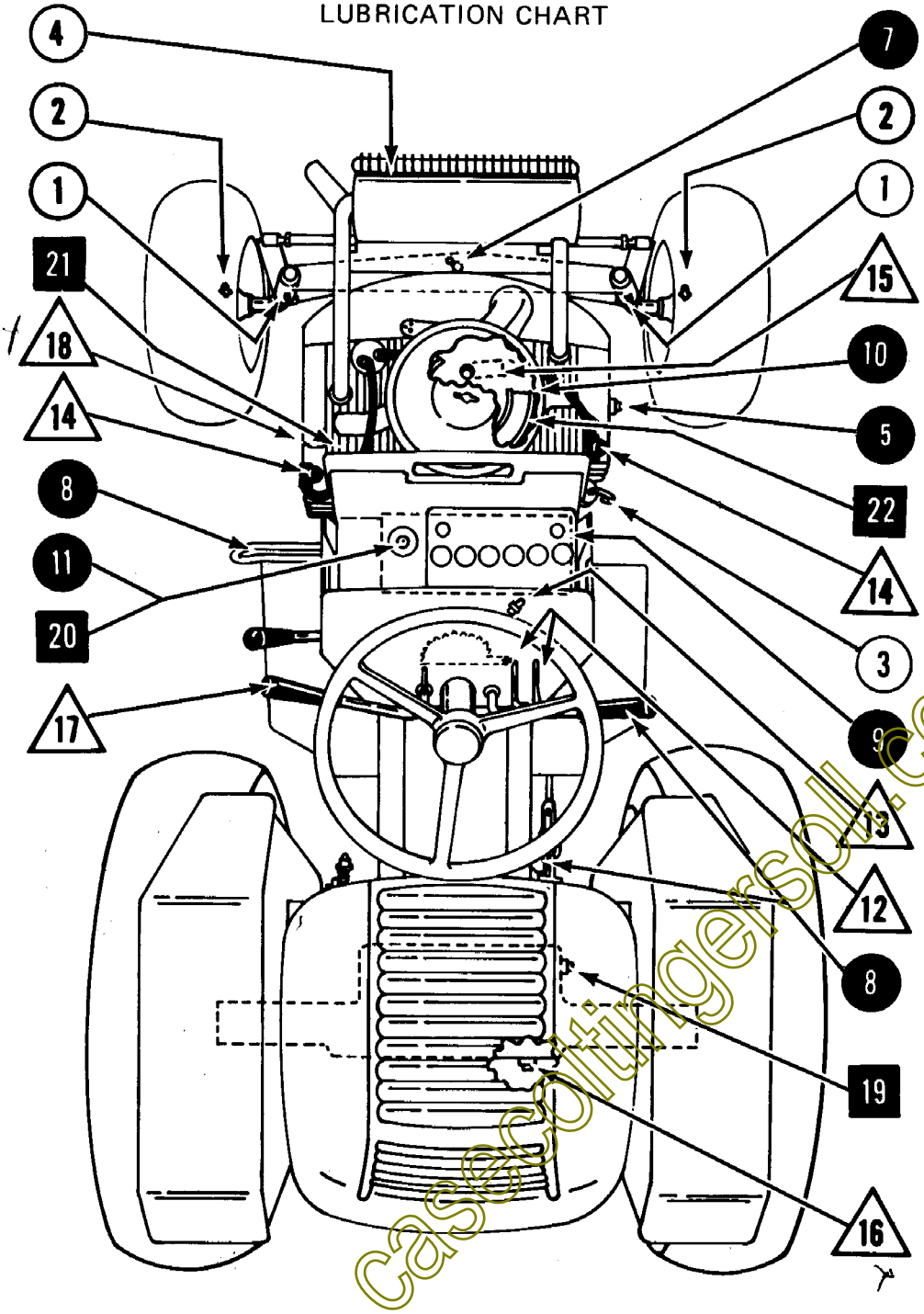


FIGURE 6

REF. NO.	SERVICE POINTS	NO. OF POINTS	GREASE	DRAIN	CHECK	CLEAN	CHANGE	OIL (Some Drops)	FREQUENCY
1	Front Spindles (king pins)	2	▒						5 HOURS OR DAILY
2	Front Wheel Bearings	2	▒						
3	Engine Oil*	1			▒				
4	Blower Screen & Heat Exchanger	1			▒	▒			
5	Engine Oil	2		▒			▒		25 HOURS OR WEEKLY
6	Air Leaks**	**							
7	Front Axle Pivot Pin	1	▒						
8	Implement Lever & Brake Linkage	6						▒	
9	Battery	1			▒				
10	Air Cleaner***	1			▒	▒			
11	Hydraulic Oil +	1			▒				
12	Throttle & Choke Controls	2						▒	50 HOURS OR MONTHLY
13	Steering Gear	3	▒						
14	Spark Plug°	1			▒				
15	Crankcase Breather ***	1				▒		▒	
16	Transmission Oil	1			▒				
17	Travel and Lift Lever and Linkage	3						▒	
18	Transmission Oil	2		▒			▒		500 HOURS OR YEARLY
19	Hydraulic Oil +	1		▒			▒		
20	Engine Cooling Fins ***	1				▒			
21	Air Cleaner Element ***	1					▒		

*Keep oil level between marks on dipstick. See page 7 for engine lubrication recommendations. Capacity 3 pts. (1.4 l)

**Make sure there are no leaks between gaskets, joints at carburetor, air cleaner and cylinder.

***More often in severe conditions.

°Clean and set the gap.

+Hydraulic System: Use SAE 5W 20 motor oil in winter (below 32°F (0°C)). Use SAE 20W 40 motor oil in summer. Use API Service Classification SE or CC motor oil. The location of the filler cap for the hydraulic reservoir is just to the left of the battery. The oil level must be kept at 5" to 6" (120 mm to 150 mm) down from the filler. Too much oil will result in oil leakage from the fill cap, too little oil will result in bad operation. The oil drain plug is a 1/4" Allen plug on the bottom of the travel valve inlet port.

Transmission: Use SAE 20W40 motor oil or SAE 80 EP gear lubrication in the transmission all year.

Grease Fittings: Use number 1 grease (Lithium Base) for all lubrication fittings (as many strokes as required).

FUEL SPECIFICATIONS

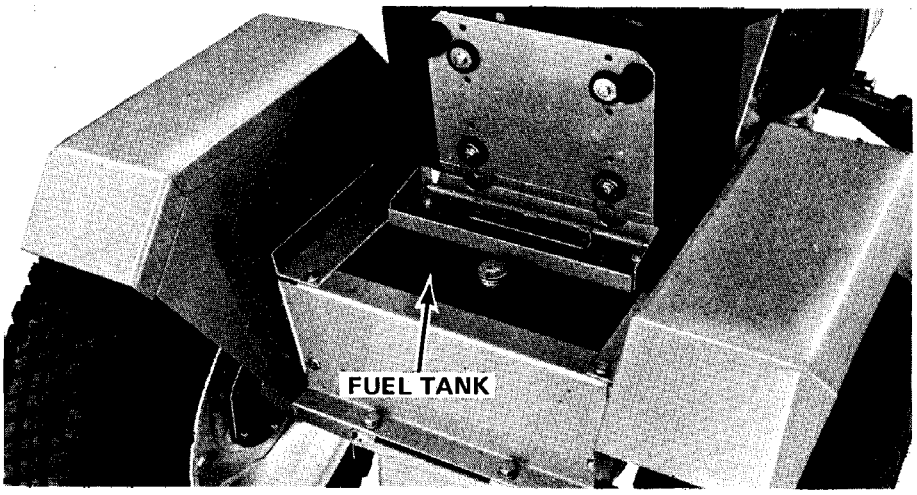


FIGURE 7

CAUTION: Handle gasoline with care – it is highly flammable.

a. Use approved gasoline container.

b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.

c. Open doors if the engine is run in the garage – exhaust fumes are dangerous. Do not run the engine (motor) indoors.

CAUTION: Never store the equipment with gasoline in the tank inside a building where fumes may reach an open flame or spark. Allow the engine to cool before storing in any enclosure.

CAUTION: Do not smoke when working near fuel.

GASOLINE

Regular Gas.

Clean gasoline is important for correct carburetion in small engines. Always use clean gasoline and a funnel with a filter.

If a restriction of fuel occurs, clean the filter in the outlet of the fuel tank.

Do not use a mixture of oil and gasoline in this engine.

Engines used in Case tractors can operate on Regular or Unleaded gasoline with the minimum octane ratings as follows:

Research Method	90.7	Octane Number
Motor Method	82	Octane Number
Average Method	86	Octane Number

In the United States the average octane rating is shown on gasoline pumps. In other countries, if the method is not given it is the Research Method.

OPERATING CONTROLS AND INSTRUMENTS

CAUTION: Know the controls and how to stop quickly. READ THE OWNER'S MANUAL.

CAUTION: Only operate controls from the operator's seat to prevent injury.

Become thoroughly familiar with all tractor and attachment controls before operating.

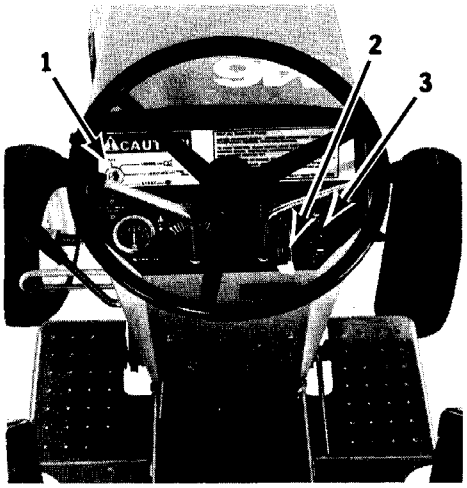


FIGURE 8

FIGURE 9

1. IGNITION KEY AND STARTER SWITCH

TO START: Turn the key to the right and hold in the "START" position.

TO RUN: Release the key to the "RUN" position when the engine starts.

TO STOP: Turn the key to the left to the "OFF" position.

2. CHOKE

TO CLOSE THE CHOKE: Push the choke lever forward. Close the choke to start a cold engine.

TO OPEN THE CHOKE: Pull the choke lever rearward. Open the choke slowly after the engine starts.

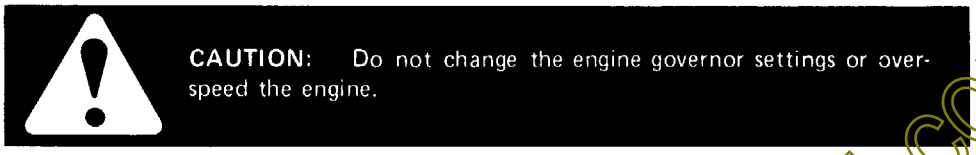
The choke must be open during normal operation or when you start a warm engine.

3. THROTTLE

ENGINE LOW IDLE: Pull the throttle lever rearward. Put the throttle in the "SLOW" position when starting and when stopping the engine. This permits a warming and and cooling period.

TO INCREASE ENGINE SPEED: Push the throttle lever foreward until the needed engine speed is reached.

Decrease the engine speed during operation for maximum fuel efficiency. Do not cause engine lugging. Lugging will cause too much heat and damage to the engine.



CAUTION: Do not change the engine governor settings or over-speed the engine.

4. DUAL RANGE TRANSAXLE

TO SELECT LOW RANGE: Put the travel control lever in the "NEUTRAL" position.

Stop the tractor.

Pull the lever forward a small amount to go over the neutral locating pin.

Pull the lever up beyond the neutral locating pin and release.

TO SELECT NEUTRAL: Put the travel control lever in the "NEUTRAL" position.

Stop the tractor.

Pull the lever forward a small amount to go over the neutral locating pin.

Align the hole in the lever with the neutral locating pin and release the lever.

TO SELECT HIGH RANGE: Put the travel control lever in the "NEUTRAL" position.

Stop the tractor.

Pull the lever forward a small amount to go over the neutral locating pin.

Push the lever down beyond the neutral locating pin and release.

If the range shift does not move easily, rotate the gears.

To rotate the gears:

1. move the travel control lever a small amount into the "FORWARD" position.

2. return the travel control lever to the "NEUTRAL" position.

IMPORTANT: The range shift lever must be beyond the neutral locating pin while in "LOW" or "HIGH" range. If the lever is not in the correct position, damage to the gears will result.

5. TRAVEL CONTROL LEVER

TO STOP TRAVEL: Put the travel control lever in the "NEUTRAL" position.

TO START FORWARD TRAVEL: Slowly and in small amounts move the travel control lever forward.

Speed and power will increase as the lever is moved toward the full "FORWARD" position.

TO START REVERSE TRAVEL: Slowly and in small amounts move the travel control lever rearward.

Speed and power will increase as the lever is moved toward the full reverse position.

DO NOT USE FULL SPEED IN REVERSE.

TO USE "RETARD" IN FORWARD OR REVERSE TRAVEL: "RETARD" is the hydraulic braking position for the travel control lever.

Put the travel control lever in the "RETARD" position when you go down a hill or incline.

See the Operating Procedure Section of this manual for a more complete description of "RETARD" use.

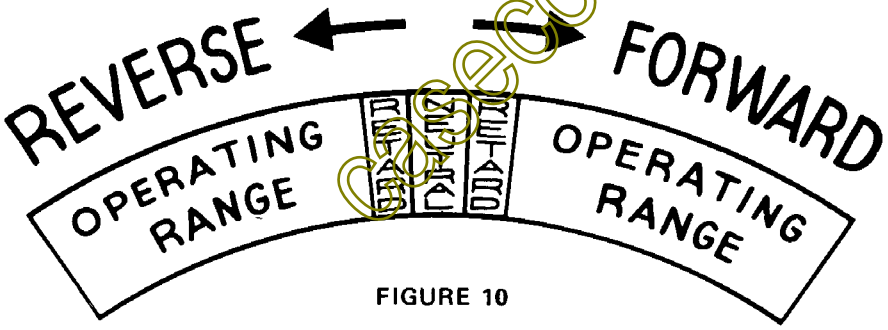


FIGURE 10

Push the travel control lever in as you change the lever position, this will give you smoother operation and control.

The travel control lever automatically returns to the "NEUTRAL" position when the brake is actuated. The travel control lever can be moved from the "NEUTRAL" position with the brake actuated.

A neutral start switch is actuated by the travel control lever. The lever must be in the "NEUTRAL" position before you can start the engine.

6. BRAKE PEDAL

TO ACTUATE THE BRAKE: Push the brake pedal fully down.

This action will return the travel control lever to the "NEUTRAL" position.

The tractor will come to a quick stop.

NOTE: Do not use the above method if possible.

Stop the tractor with the travel control lever.

The tractor can be stopped smoothly by slowly returning the travel control lever to "NEUTRAL" position.

Actuate the brake fully if you can not stop the tractor with the travel control lever.

See the Operating Procedure Section of this manual for a more complete description of stopping travel.

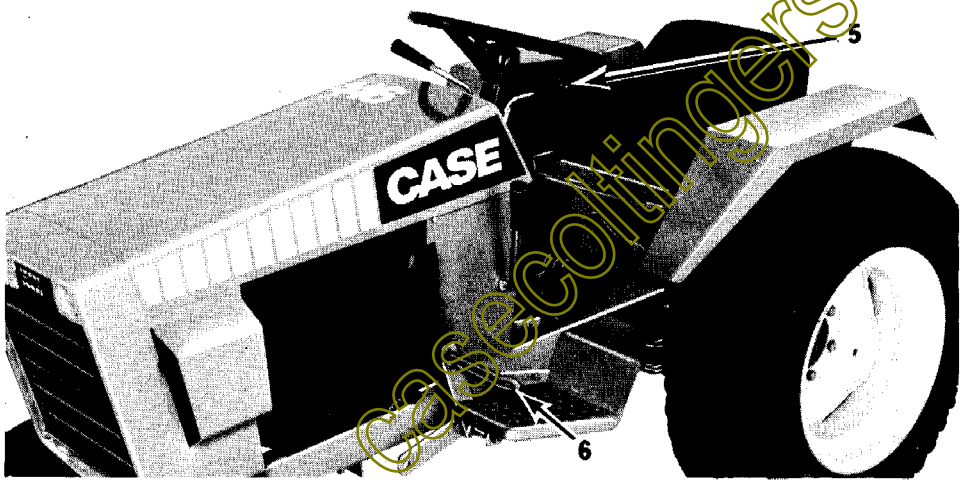


FIGURE 11

7. PARKING BRAKE LOCK

TO ENGAGE: Push the brake pedal fully down.

Push down on the parking brake lock. Engage one of the notches with the bottom of the slot.

TO DISENGAGE: Push the brake pedal a small amount and release.

A spring will disengage the parking brake lock.

8. HEADLIGHTS

TO ILLUMINATE: Turn the key to the "LIGHTS" position after the engine is started.

If you use the lights while the engine is off or at low idle, the battery will discharge.

TO TURN OFF: Turn the key from the "LIGHTS" position.

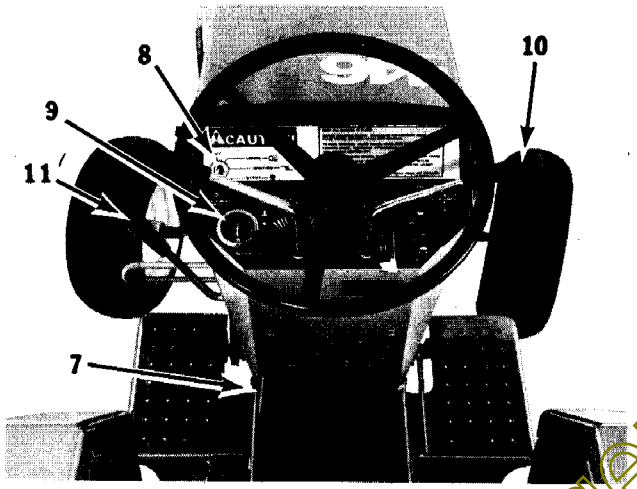


FIGURE 12

9. AMMETER

The ammeter indicates the rate of current flowing to the battery. The ammeter reading will be high when the battery voltage is low. When the engine is started the reading will also be high.

The ammeter reading will gradually go back to zero as the battery voltage increases.

Stop the tractor and have the cause corrected if:

a. The ammeter remains at "0" when the battery voltage is low.

b. If the ammeter continues to give a high reading.

10. HYDRAULIC ATTACHMENT LIFT LEVER

TO LIFT: Run the engine

Pull the lever rearward.

Release the lever when the needed height is reached.

TO LOWER: Run the engine.

Push the lever forward a small amount.

Release the lever when the needed height is reached.

When you release this lever, a spring will automatically return the lever to the "NEUTRAL" position.

THE "FLOAT" POSITION: Push the lever fully forward.

A detent holds the lever in the "FLOAT" position. The lever must be manually returned to the "NEUTRAL" position from the "FLOAT" position.

The "FLOAT" position prevents hydraulic down pressure on the attachment.

See the instructions included with each attachment for correct attachment lift lever use.

11. ATTACHMENT DRIVE LEVER

TO ENGAGE: Push the lever forward until it is fully engaged.

TO DISENGAGE: Pull the lever rearward.

A neutral start switch is actuated by the attachment drive lever. The lever must be in the rear position (disengaged) before you can start the engine.

PRESTARTING CHECK LIST

CAUTION: Keep all shields in place.
Before starting engine: Disengage attachment drive and place travel control lever into neutral.
To park tractor: Place travel control lever into neutral, set parking brake, disengage attachment drive, shut off engine and remove ignition key.

When operating on incline, place transmission in low range.

Stop engine and wait for all movement to stop before dismounting tractor, before servicing or making adjustments to tractor and/or attachments.
Keep people and pets a safe distance away from the machine.

CAUTION: Do not wear loose clothing which may catch in moving parts.

CAUTION: Disengage power to attachment(s) and stop the engine (motor) before making any repairs or adjustments.

1. Use only clean fuel, oil, container and funnel.
2. Apply oil or grease to all the specified points shown in the Lubrication Chart.
3. Check the oil level in the engine and add oil as required.
4. Check the engine air cleaner and air intake screen, for dirt or obstructions. Clean as required.
5. Fill the fuel tank with clean fuel. The requirements are listed in the Fuel Specifications Section of this manual.

Clean the area around the fuel cap before you remove the cap.

Check the ventilation hole in fuel tank cap and clean as required.

CAUTION: Handle gasoline with care -- it is highly flammable.

a. Use approved gasoline container.

b. Never remove the cap of the fuel tank or add gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.

c. Open doors if the engine is run in the garage -- exhaust fumes are dangerous. Do not run the engine (motor) indoors.

6. Check all operating controls and instruments for correct function before using the tractor.

CAUTION: Do not smoke when working near fuel.

STARTING PROCEDURE (Operating the Tractor)

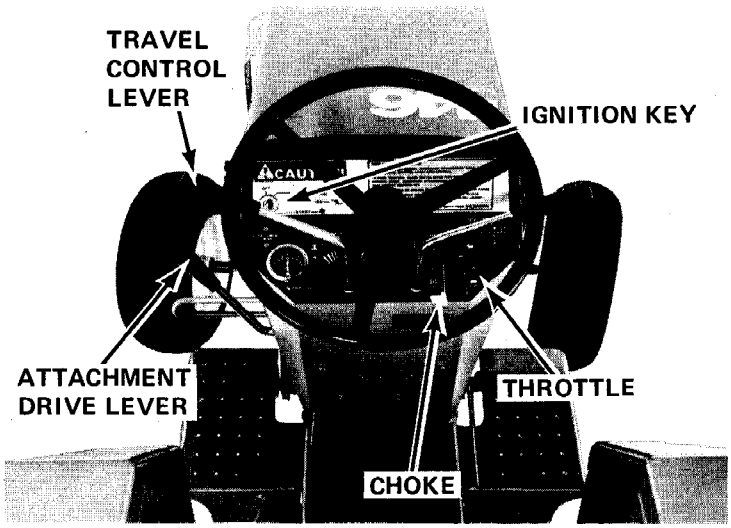


FIGURE 13

CAUTION: Only operate controls from the operator's seat to prevent injury.

CAUTION: Do not allow children to operate the vehicle. Do not allow adults to operate it without proper instruction.

CAUTION: Do not carry passengers. Keep children and pets a safe distance away.

1. Put the travel control lever in the "NEUTRAL" position.

NOTE: Do not actuate the brake. This can cause the travel lever to move down preventing contact with the neutral start switch. If this condition occurs, pull up on the travel lever handle. At the same time, turn the ignition key to the "START" position.

2. Pull the attachment drive lever rearward.

CAUTION: Disengage all attachment clutches and shift into neutral before attempting to start the engine (motor).

3. Push the choke lever forward to close the choke.

   The choke setting will change according to the air temperature, engine temperature, and grade of fuel.

4. Push the throttle lever forward approximately 1/3 of the way between the "SLOW" and "FAST" positions.

5. Turn the ignition key to the right and hold in the "START" position. Release the key to the "RUN" position when the engine starts running.

NOTE: Release the key immediately when the engine starts. If you hold the key in the "START" position after the engine is running damage can occur. Release the key after 30 seconds if the engine does not start running. Wait 3 minutes before you try again.

6. Pull the choke lever rearward slowly after the engine starts running.

7. Permit the engine to warm before applying a load.

NOTE: The hydraulic system must be warm before you use the tractor when air temperatures are less than 32°F (0°C). Use the following procedure:

   a. Set the throttle 1/3 of the way between the "SLOW" and "FAST" position.

   b. Select the "NEUTRAL" position of the dual range transaxle.

   c. Move the travel control lever to the full "FORWARD" position.

   d. Run for several minutes before operating the tractor. A noise can occur when the hydraulic system is cold.

8. Set the throttle lever approximately 3/4 of the way between the "SLOW" and "FAST" positions for normal operation.

   Decrease the engine speed during most operations for maximum fuel efficiency.

   Do not permit engine lugging. Lugging will cause more than normal heat and damage to the engine.

IMPORTANT: DO NOT TRY TO START THE TRACTOR BY PUSHING OR TOWING. SERIOUS DAMAGE WILL HAPPEN TO THE DRIVE SYSTEM.

STOPPING PROCEDURE (OPERATING THE TRACTOR)

1. Move the travel control lever to the "NEUTRAL" position.
2. Completely stop the tractor. Actuate the brake pedal if necessary.
3. Engage the parking brake lock.
4. Pull the throttle lever rearward to the "SLOW" position.
5. Permit the engine to cool. Run the engine at idle for several minutes if the work load was severe.
6. Turn the key to the left to the "OFF" position.
7. Remove the ignition key.

CAUTION: Always shut off engine, remove key, set parking brake, and wait until all engine and attachment motion has stopped before dismounting from the operator's seat.

CAUTION: Take all possible precautions when leaving the vehicle unattended, such as disengaging the power take-off, lowering the attachment(s), shifting into neutral, setting the parking brake, stopping the engine, and removing the key.

CAUTION: Know the controls and how to stop quickly. READ THE OWNER'S MANUAL.

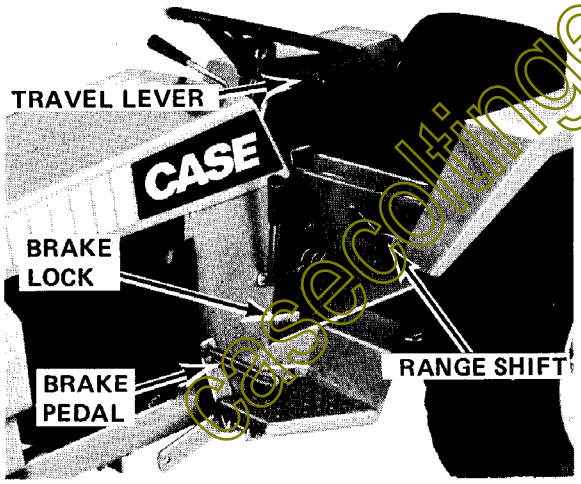


FIGURE 14

OPERATING PROCEDURE (OPERATING THE TRACTOR)

Operate the tractor for the first time on a flat area clear of obstructions and persons. Learn the operating characteristics of your tractor before trying the first job.

1. Select the correct gear range for the job.

2. "LOW" range is for all working operations and hillside use. Only use "LOW" range on hillsides or inclines.

CAUTION: Use care when pulling loads or using heavy equipment.

a. Use only approved drawbar hitch point.

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 the owner's manual.

3. "HIGH" range is for transport only. "HIGH" range must not be used for hillside operation.

4. If the range shift does not move easily, rotate the gears.

   To rotate the gears:

   a. Move the travel control lever a small amount into the "FORWARD" position.

   b. Return the travel control lever to the "NEUTRAL" position.

IMPORTANT: Completely stop the tractor motion before changing the range. The range shift lever must be beyond the "NEUTRAL" locating pin when in the "LOW" or "HIGH" range. Gear damage will occur if the lever is not in the correct position.

5. Push the throttle lever forward until you get the needed engine speed.

Decrease engine speed during operation for maximum fuel efficiency. Do not cause engine lugging. Lugging will cause more than normal heat and damage to the engine.

6. TO USE FORWARD TRAVEL:

   a. Move the travel control lever slowly and in small amounts from the "NEUTRAL" position toward the full "FORWARD" position.

   b. When you reach the correct speed, release the lever.

   c. Return the travel control lever to the "NEUTRAL" position to stop.

   d. Actuate the brake pedal if the "NEUTRAL" position does not stop the tractor.

7. TO USE REVERSE TRAVEL:

   a. Move the travel control lever slowly and in small amounts from the "NEUTRAL" position toward the full "REVERSE" position. Do not travel at full speed in reverse.

   b. Always keep your hand on the travel control lever when moving in reverse.

   c. Return the travel control lever to the "NEUTRAL" position to stop.

   d. Actuate the brake pedal if the "NEUTRAL" position does not stop the tractor.

   Always be careful and look behind when you drive in reverse.

   Do not travel in reverse down a hill. Use reverse travel to move up a hill. Always use forward travel when you come down a hill.

8. The travel control lever controls both speed and power available to the rear wheels of the tractor.

   During operation, the load on the tractor will change. Adjust the position of the travel control lever as required.

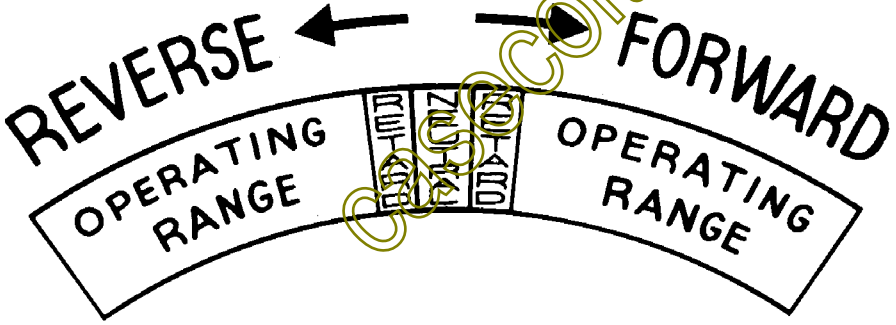


FIGURE 15

9. TO USE RETARD TRAVEL - Hillside Operation

The "RETARD" position on the travel control lever must be used when the tractor moves down a hill.

This position puts a restriction in the hydraulic drive system and helps control the tractor.

For correct retard action, follow the operation procedure below.

a. Run the engine at full throttle (3600 RPM).

b. Select the "LOW" range in the dual range transaxle.

"LOW" range must be used for all hillside operation.

c. Put the travel control lever in the "RETARD" position before the tractor moves down the hill.

d. Select the full speed position in the optional flow control valve (if equipped).

CAUTION: Do not stop or start suddenly when going uphill or downhill. Mow down the face of steep slopes; never across or up the face. (This ANSI rule modified)

WARNING: Improper operation of your tractor on hillsides and slopes can be dangerous. Avoid improper operation! Read and follow the instructions given in the section titled "Hillside Operation" in this manual before operating your tractor.

10. TO ACTUATE BRAKES - Hillside Operation

Hold the travel control lever in the retard position then push on the brake pedal.

When you actuate the brake the travel control lever will return to the "NEUTRAL" position unless you hold the lever in the "RETARD" position.

The travel control lever can be moved (but the lever must be held) while the brake is actuated.

Keep the brakes in good repair and correctly adjusted at all times. See the preventive maintenance section of this manual or see your dealer for brake repair.

11. While you move in the forward direction, the "REVERSE" position of the travel control lever can be used for a brake. Use this procedure carefully to prevent an accident.

    a. The tractor engine must be running.

    b. You must be in forward travel.

    c. Move the travel control lever a small amount into the "REVERSE" position. Do not move the lever too far or too fast. An accident can occur if the lever is moved too far or too fast.

    This procedure can be of help for hillside travel.

12. Do not move the travel control lever from "REVERSE" to "FORWARD" while the tractor is moving. This can cause the front of the tractor to raise off the ground. Stop reverse travel completely before you start forward travel. This is especially important while on a hill or slope.

13. The rear wheels can slip or spin and an engine overload can occur while you go up a small slope. Turn the front wheels toward the bottom of the hill before the loss of all traction or power.

    Do not permit the tractor to move rearward down any slope or hillside.

    a. A return to forward travel will cause too much torque at the rear wheels. The front wheels can raise off the ground and cause severe injury to the operator.

    b. Turning the front wheels can cause too much thrust to the side. The tractor can roll over and cause severe injury to the operator.

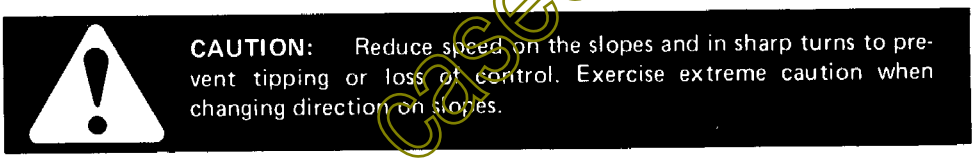
    Always use reverse travel to move up a hill or slope. Always use forward travel to move down a hill or slope.

14. Decrease the travel speed before you turn the tractor.

    a. Move the travel control lever nearer to the "NEUTRAL" position.

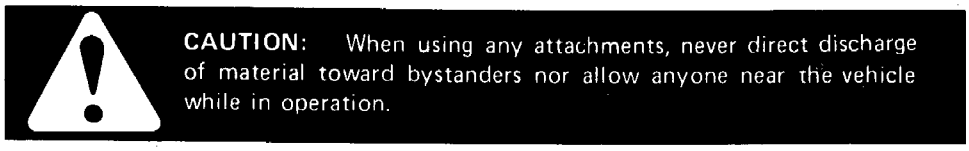
    b. Decrease the throttle setting.

    c. Select "LOW" range in the dual range transaxle.



15. Engage the attachment drive before you put a load on the attachment.

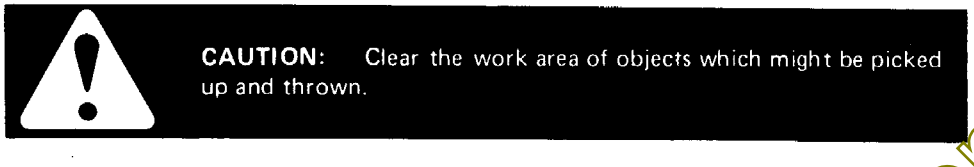
16. Actuate the lawnmower over an area of thin grass or an area that has been cut.



17. Actuate the tiller while in the transport position. Then lower the tiller into the soil to the needed depth.

18. Actuate the snowcaster before you make contact with the snow.

19. Read your attachment manual for complete attachment operation information.



NOTICE: A special holding valve kit is available for your tractor as an optional attachment. This valve gives positive brake action through the full range of operation of your tractor. If your dealer has not told you about this valve, see him immediately for information.

If you use your tractor for hillside operation or tilling, this holding valve will improve the performance of your machine.

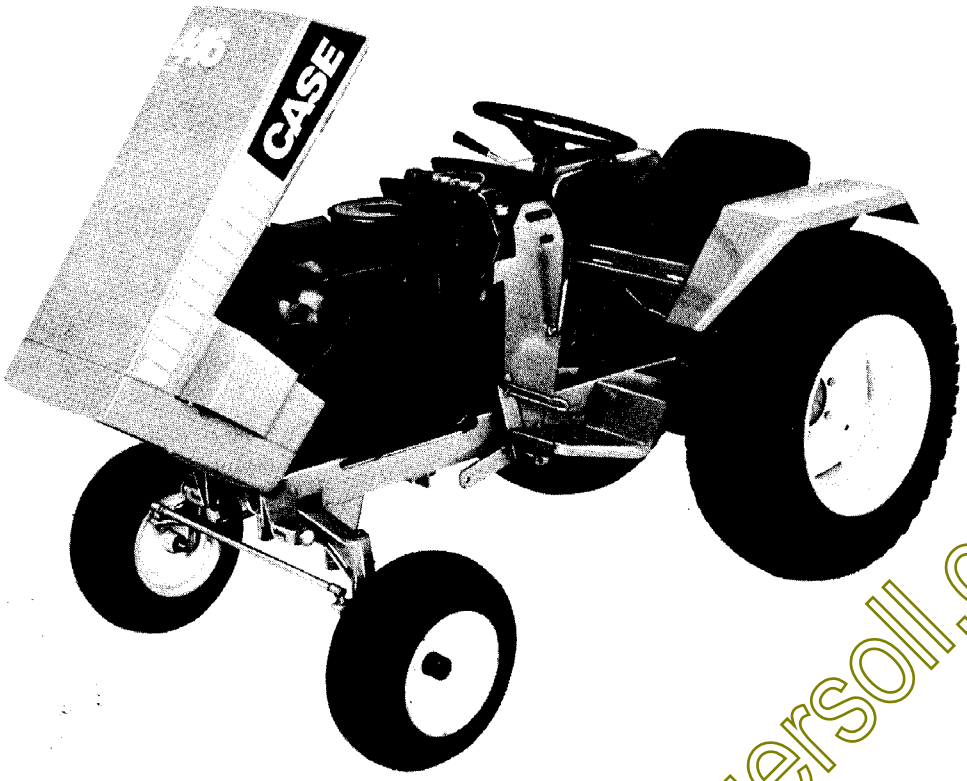


FIGURE 15

You are the owner of a Case tractor. You have a machine that is made to high standards.

Preventive maintenance is important to you.

Preventive maintenance is the easiest and most efficient way to keep your tractor working good for many hours of operation.

The first part of this manual covers instructions needed for daily operation. The following instructions will help you in maintenance and adjustment of your tractor.

BRAKE

The brake is correctly adjusted when:

1. a push of the pedal brings the tractor to a quick stop

2. the travel control lever returns automatically to the "NEUTRAL" position from both "FORWARD" and "REVERSE".

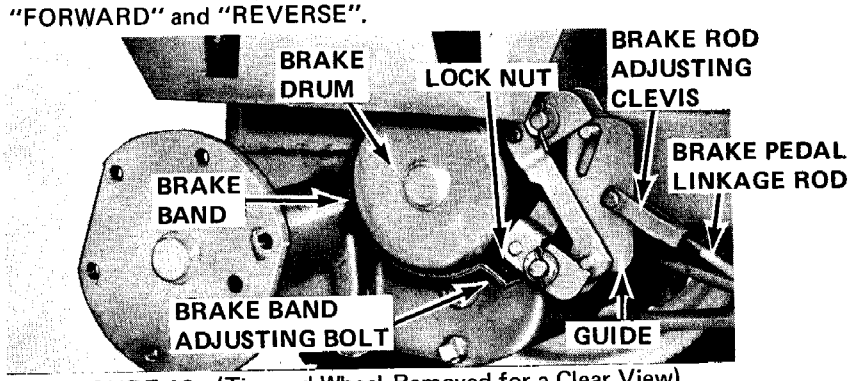


FIGURE 16 (Tire and Wheel Removed for a Clear View)

BRAKE ADJUSTMENT

Check and adjust the brakes if needed. Use the procedure below:

1. Put the tractor on a hard, level surface, a concrete floor for example.

2. Put the dual range lever in the "NEUTRAL" position.

3. Release the brakes.

4. Remove the cotter pin, clevis pin and clevis from the guide.

5. Loosen the lock nut.

6. Push the guide rearward. Make contact between the dowel pins and arms.

7. Tighten the adjusting bolt one half turn at a time. Push the tractor with medium force after each adjustment.

8. When the tractor can not be pushed with medium force, loosen the adjusting bolt one turn. Make sure the brake drum moves freely.

NOTE: Do not permit the adjusting bolt to become too tight. This will cause distortion of the brake band.

9. Tighten the lock nut.

10. Pull the guide forward until free movement stops.

11. Turn the clevis. Align the hole in the clevis with the hole in the guide. Install the clevis, clevis pin and a new cotter pin.

TRAVEL VALVE SPOOL ADJUSTMENT

The travel valve spool is correctly adjusted when:

1. The tractor does not move while the travel lever is in the "NEUTRAL" position.
2. A restriction of motion occurs while the travel lever is in the "RETARD" position.

If the travel valve spool needs adjustment, take the tractor to your authorized dealer.

RETURN TO "NEUTRAL" POSITION ADJUSTMENT

1. Make sure the travel valve spool is adjusted according to the above procedure.
2. Make sure the brake adjustment is correct. See the Brake Adjustment procedure section in this manual.
3. Follow the chart below:

PROBLEM	SOLUTION
a. The travel lever returns to the "NEUTRAL" position from only the "FORWARD" position	a. Turn the tab adjusting nuts to move the spring to the right.
b. The travel lever returns to the "NEUTRAL" position from only the "REVERSE" position.	b. Turn the tab adjusting nuts to move the spring to the left.

4. Make sure the tab points forward when the adjusting nuts are tightened. See Figure 17.

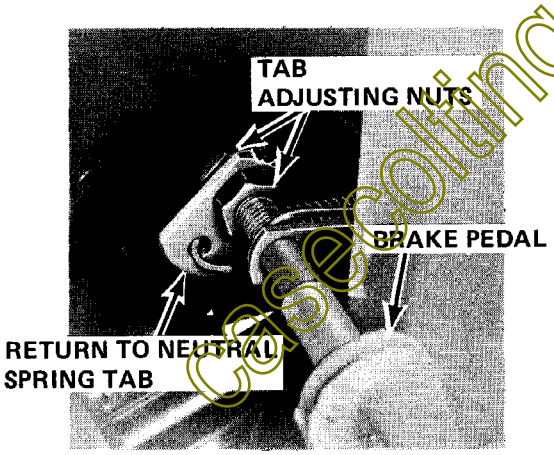


FIGURE 17

Remove and clean the element after each 25 hours of operation or at weekly intervals.

Lightly hit the element on a flat surface until the dirt falls off. Carefully handle the element to prevent damage.

Replace the element if:

1. the element is damaged
2. the dirt can not be easily removed

Make sure the new element fits tightly around the inside edge of the air cleaner base. Install the cover. Install the wing nut.

An optional precleaner is available from your J I Case dealer. The precleaner can be washed. The precleaner will extend the life of the air cleaner element.

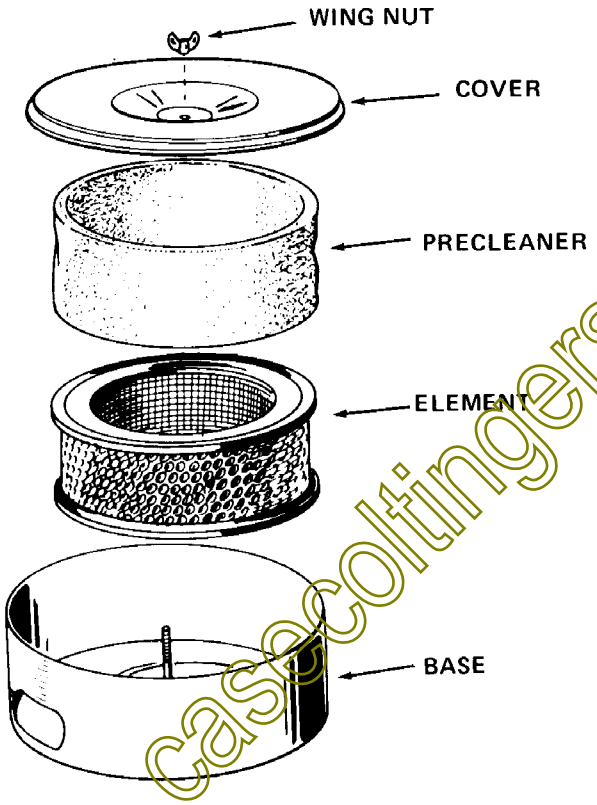


FIGURE 18

MAIN FUEL AND LOW IDLE FUEL ADJUSTMENT

IMPORTANT: Needle valves can be damaged. Do not turn the needle valves in too far. Do not apply force against the valve seats with the needle valves.

1. Open the screw for the main fuel adjustment (1-3/8 to 1-1/2 turns).
2. Open the screw for the low idle fuel adjustment (1 turn).
3. Start and run the engine until the operating temperature is reached.
4. Adjust the throttle lever to 3,000 RPM. Put a load on the engine until you reach 2,800 RPM.
5. Turn the screw for the main fuel adjustment until the maximum RPM is reached.
6. Remove the load from the engine. Adjust the throttle lever until 1,200 RPM is reached Adjust the screw for low idle until you reach the maximum RPM at this throttle setting.

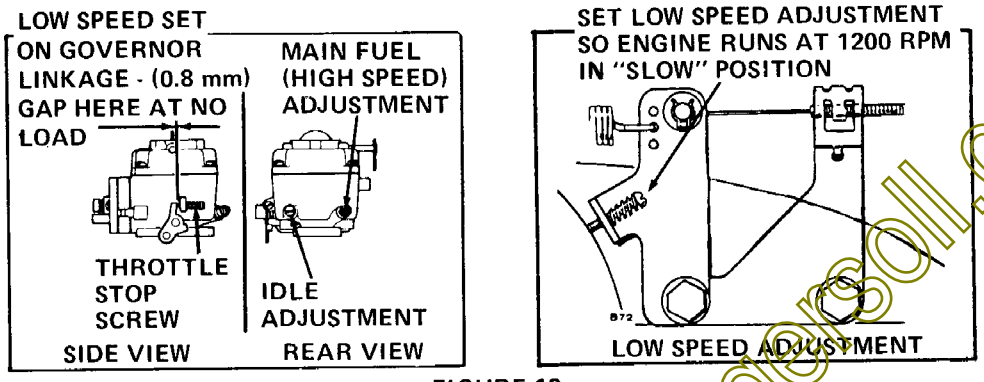


FIGURE 19

CAUTION: Do not change the engine governor settings or over-speed the engine.

LOW IDLE SPEED ADJUSTMENT

1. Put the throttle lever in the "SLOW" position.
2. Turn the adjustment screw for the low idle speed in or out until 1,200 RPM is reached.
3. Adjust the throttle stop screw while the engine is running at 1,200 RPM. Make sure there is no load applied to the engine. Set the gap at approximately 1/32" (0.8 mm).

STEERING ADJUSTMENT

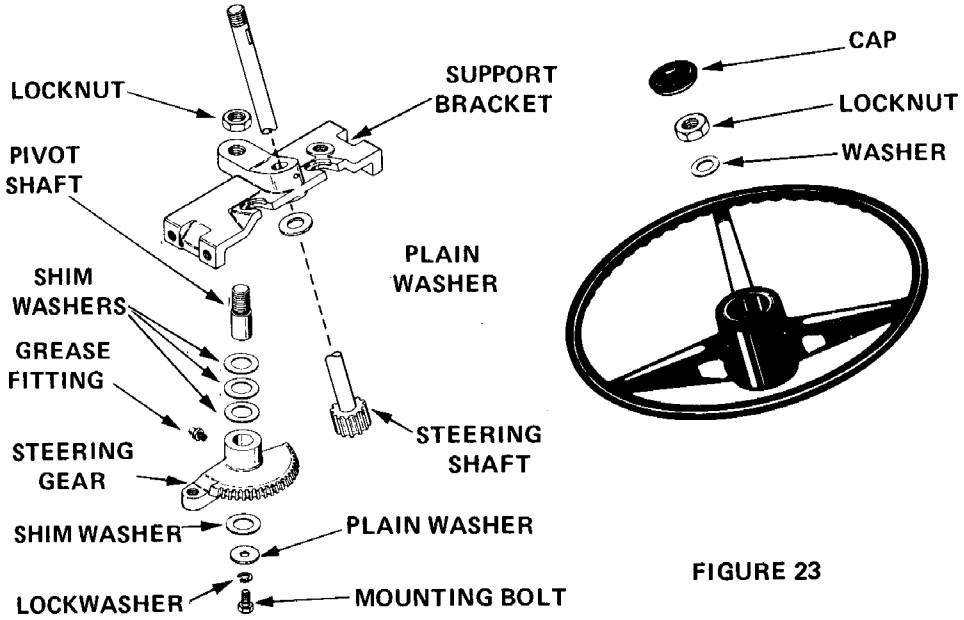


FIGURE 23

CAUTION: When adjusting steering wheel free play; make certain that some free play remains between the sector gear and pinion gear, since a tight fit with no clearance between the two gears may cause binding and tooth failure.

IMPORTANT: Check for the following before you adjust the steering gears.

1. Loose or worn ball joints, drag links and tie rods. Tighten or replace as required.
2. Tighten the lock nut on the steering wheel if needed. A small amount of free movement up and down is necessary to allow the steering wheel to turn freely.

The tractor is assembled with shim washers between the steering gear and the support bracket. See the illustration. When the gear teeth wear, more free movement occurs. If too much free movement occurs adjust the steering gear.

1. Disconnect the drag link from the steering gear.
2. Remove the bolt and washers from the pivot shaft.
3. Remove the steering gear.
4. Remove one or more shim washers from the pivot shaft.
5. Put the steering gear in place on the pivot shaft.
6. Put the shim washers, washers and the bolt on the pivot shaft. The total number of the shim washers must always be the same.

Apply grease to the teeth of the steering gear after each 50 hours of operation.

TOE-IN ADJUSTMENT

1. Put the tractor on a hard and level surface like a concrete floor.
2. Make sure the front tires have equal air pressure.
3. Find the centerline of the front tires. See the figure below.
4. If you can not find the centerline:
   a. raise the front wheels off the ground
   b. spin each wheel and put a mark at the centerline with chalk
5. Measure the distance between each centerline or chalk mark.

   Measurement "A" must be 1/8 to 3/8" (3.2 mm to 9.5 mm) less than measurement "B".
   Both measurements, front and rear, must be taken at spindle height above the floor.

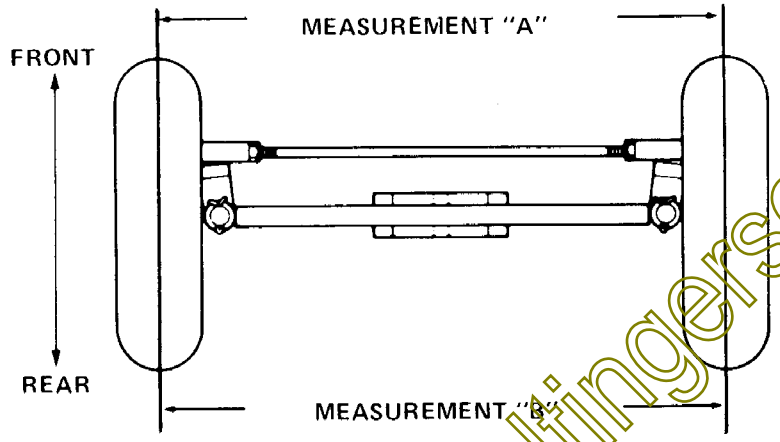


FIGURE 21

6. Loosen both lock nuts on the tie rod.

NOTES: Do not remove the ball joints from the king pins. Turn the tie rod to change the toe-in.

7. Turn the ball joints off of the tie rod to decrease the toe-in.
8. Turn the ball joints onto the tie rod to increase the toe-in.

SEAT

ADJUSTMENT

1. Remove the four bolts that hold the seat to the seat hinge.
2. Move the seat either forward or rearward to get the correct position on the seat hinge.
3. Install the bolts.

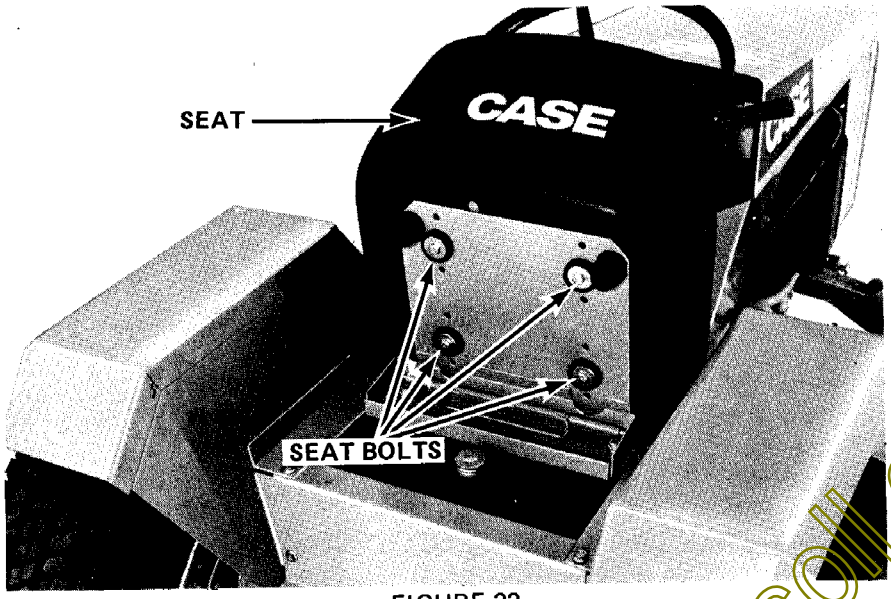


FIGURE 22

MAINTENANCE

1. Clean the seat regularly. Use a special vinyl cleaner. Do not use a solvent as this will damage the seat.
2. Severe heat or cold can damage the seat. Protection from these conditions is important. Put a cover on the seat for protection against weather conditions and water. It is best to put the tractor in a building when not in use.
3. During operation in severe weather conditions, you can easily damage the seat. Be careful not to damage the seat when you get on and off of the tractor.
4. If your seat gets a small tear, apply a vinyl repair tape over the damaged area. Black vinyl repair tape can be purchased locally.

HEADLIGHTS

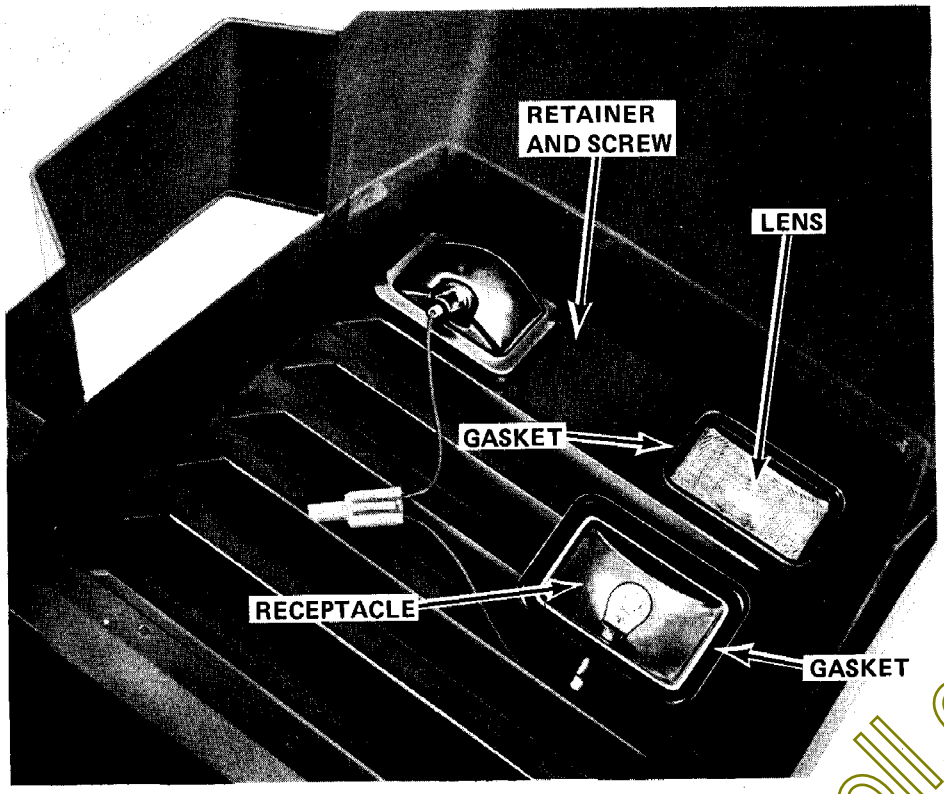


FIGURE 23

To replace the headlight bulb:

1. Remove the two screws and retainers
2. Remove the headlight receptacle
3. Push in and turn counterclockwise to remove the bulb.
4. Push in and turn clockwise to install the new bulb.
5. Install the receptacle. Put one gasket between the lens and grille. Put the other gasket in the groove between the lens and the receptacle.
6. Install the retainers with the mounting screws.

NOTE: The new bulb will not illuminate until the receptacle has a ground connection.

SPARK PLUG

The original spark plug in your engine has a medium heat range. For replacement, use a Prestolite 14L4 or equivalent. (Prestolite 14 RL4 or equivalent in Canada).

Tip length	7/16" (11.1 mm)
Thread size	14 mm
Gap setting	.025" (0.64 mm)

NOTE: During severe conditions of operation, the heat range of the spark plug is important. See your authorized dealer for the correct spark plug.

Frequently clean the outside of the spark plug to prevent a short circuit of the spark. Check, clean and gap the spark plug at 100 hour intervals of operation.

REMOVING THE SPARK PLUG

It is important to use the exact size wrench. The wrong size or type of wrench can cause distortion or break the spark plug.

Use a spark plug wrench or deep socket wrench with a thin wall. Make sure it is the correct size.

CLEANING AND SETTING THE GAP

Do not use a machine that cleans the spark plugs with grit.

1. Use a small knife or wire brush to clean the tip and threads.
2. Wash with a solvent to remove loose carbon and oil.
3. Dry with a clean cloth.
4. Set the gap. You will feel a small amount of pressure on the feeler gauge when the gap is correct.

IMPORTANT: Do not bend the center tip.

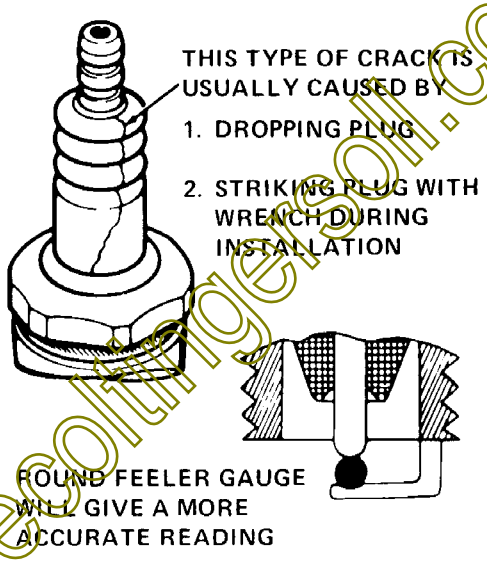


FIGURE 24

INSTALLING THE SPARK PLUG

1. Put a new gasket on the spark plug.
2. Turn the spark plug into the engine.
3. After the spark plug is seated, tighten 3/4 of a turn with a wrench. Use a torque specification of 27 foot pounds (36.6 newton metre) with a torque wrench. This will make sure that the spark plug seats and seals correctly.

STORAGE BATTERY

BATTERY MAINTENANCE

DANGER: Batteries produce explosive charges. Keep sparks, flame and cigarettes away. Ventilate when charging or using in enclosed space. Always shield eyes when working near batteries.

CAUTION: Never wear rings or metal watch bands when working with the tractor electrical system or battery as you may ground a live circuit.

CAUTION: When working around storage batteries, remember that all of the exposed metal parts are "live". Never lay a metal object across the terminals as a spark or short circuit may result. Sparks, lighted matches and exposed flames must be kept away from the battery due to the presence of explosive gas in the battery. The liquid in the batteries is acid. Use care not to spill it on hands or clothing.

POISON: Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes or clothing. Antidote: EXTERNAL, flush with water; INTERNAL, drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetable oil. Call physician immediately; EYES, flush with water for 15 minutes and get prompt medical attention. Keep out of reach of children.

1. Add distilled water, as required, to keep the water level above the cell separators. Check at 25 hour intervals of operation or every week. Normal water consumption is 1 ounce (30 ml) every 25 hours of operation. More than normal water consumption indicates:

   a. a battery with a leak

   b. a regulator rectifier that is charging too much

2. Make sure the battery is fastened in position. The battery cables must not contact the battery surface except at the connection.

3. Keep the battery in a clean and dry condition.

4. Use a hydrometer to check the specific gravity of the battery. If your battery will not keep the correct specific gravity, replace it. For the correct replacement battery see the specification section of this manual.

IMPORTANT: A battery having a specific gravity reading of 1.175 will become frozen at approximately $0^{o}F$ ($-18^{o}C$).

ADDING WATER

Always use mineral free or distilled water in your battery. When the temperature is 32°F (0°C) or less, immediately charge the battery after adding water. This will mix the water and electrolyte. If the water is not mixed, it will stay on top and become frozen.

Make a weekly check of the electrolyte level.

1. Remove the battery caps
2. Visually check each cell.
3. Add water before you see the separators.

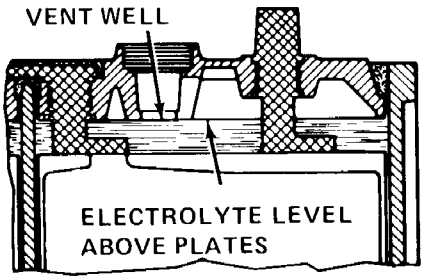


FIGURE 25

NOTE: Do not fill too much. Keep the electrolyte level below the base of the filler tubes.

BATTERY CAPS

Always keep the battery caps in place and tight. Make sure the holes in the caps are open. Ventilation must occur to prevent pressure in the cells.

CABLE TERMINALS AND BATTERY POSTS

Keep the battery terminals clean and tight.

1. Remove all corrosion with a wire brush.
2. Wash with a neutral solution.
3. Apply a thin layer of light grease to decrease additional corrosion.

CAUTION: When removing a battery, always disconnect the (-) negative ground cable first. When installing the battery, always connect the (-) negative ground cable last.

IDLE BATTERY

When the tractor is not used regularly, the storage battery will slowly lose voltage. Charge the battery at regular intervals to keep the hydrometer reading at 1.250 or more.

HOW TO USE JUMPER CABLES AND A BOOSTER BATTERY

Always wear protective goggles and clothing when you work near batteries. Prevent acid from coming in contact with your skin or clothing.

Connect the jumper cables as shown below. Follow the numbers for the correct sequence of installation.

To remove the jumper cables, reverse the sequence.

To prevent any possible sparks near the battery:

1. Make the last connection as far as possible from the battery.
2. Do not let the ends of the cables make contact with each other.
3. If the booster battery is on another machine, make sure machines do not make contact.

WARNING: To jump start this machine, connect positive jumper cable to battery terminal on starter solenoid and connect negative jumper cable to good engine ground. Start engine only when seated in operator's seat. Stop engine before leaving machine. Disconnect jumper cables. Any other method could result in uncontrolled machine movement.

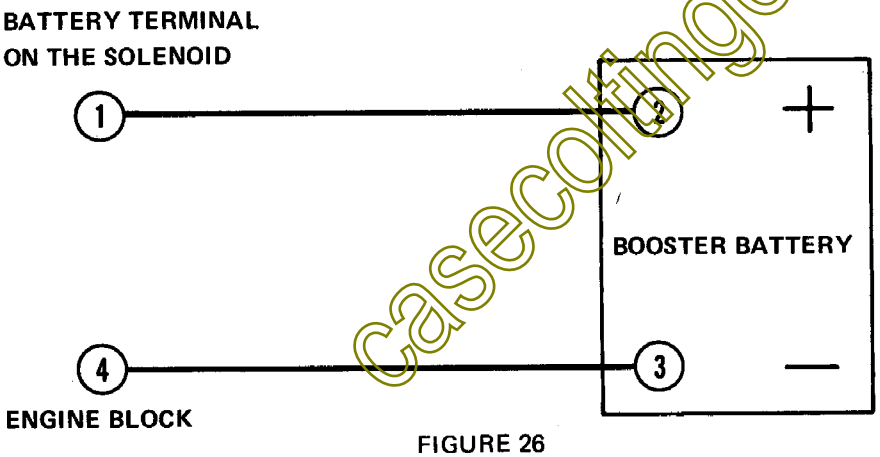


FIGURE 26

WIRING DIAGRAM

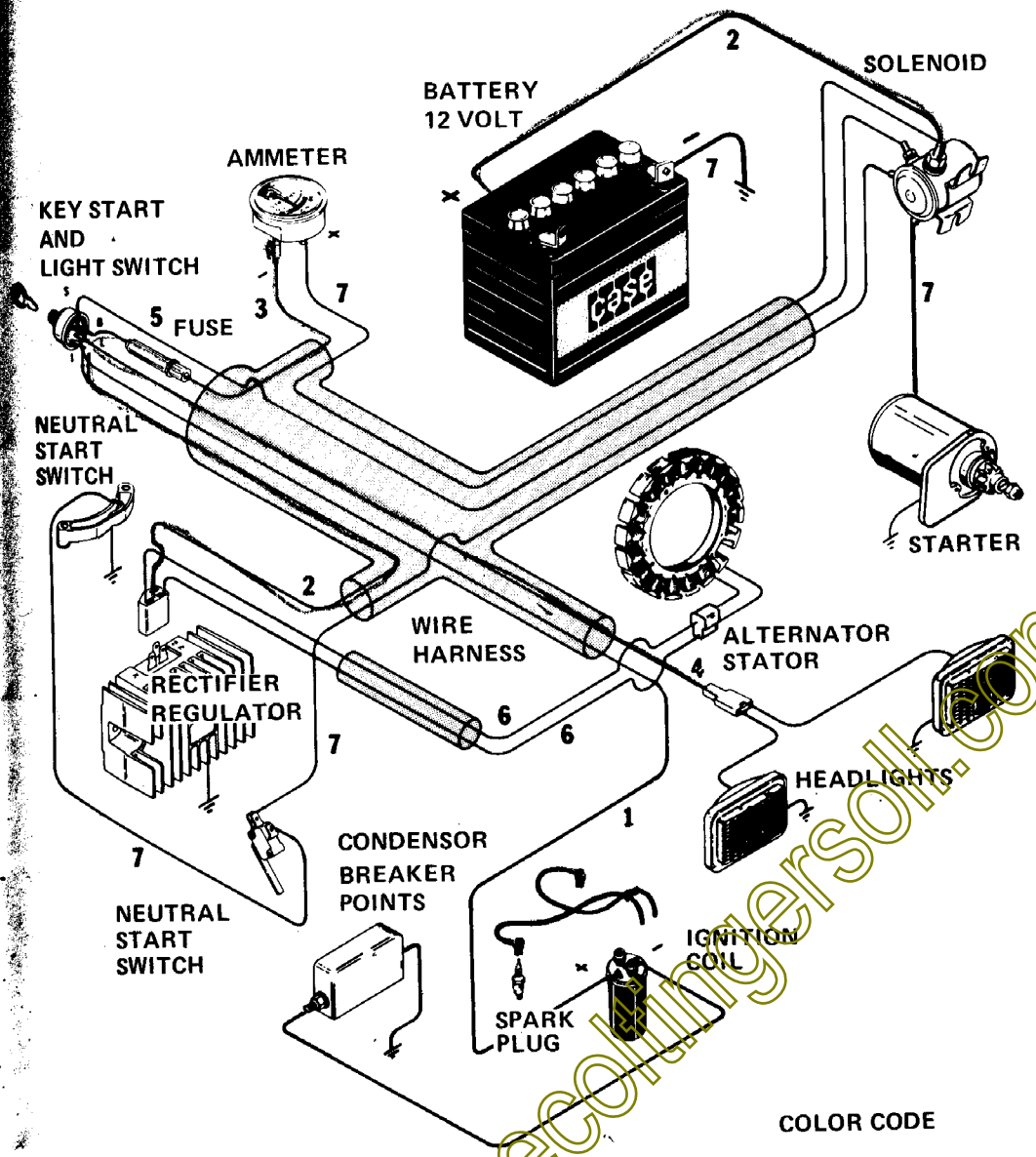
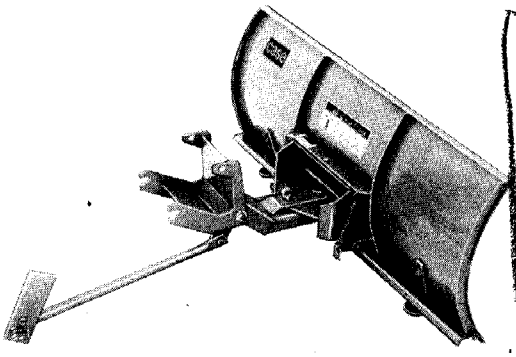


FIGURE 27

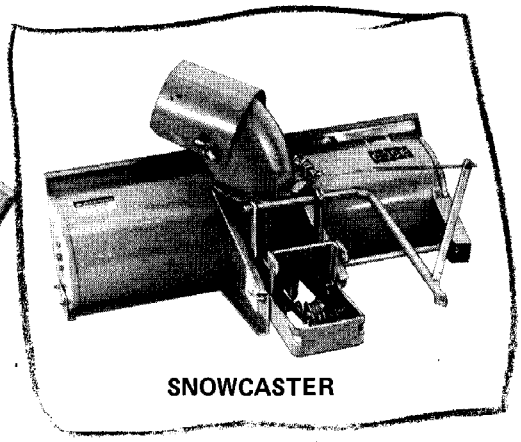
COLOR CODE

1. Black/White
2. Red
3. Orange
4. Pink
5. Yellow
6. White
7. Black

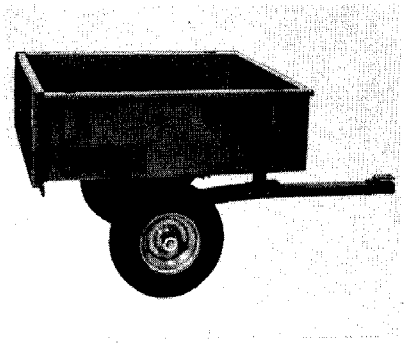
AVAILABLE ATTACHMENTS



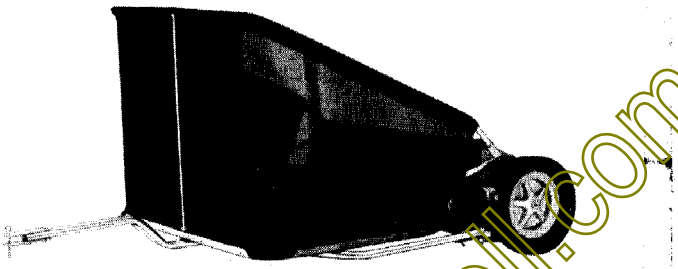
UTILITY AND SNOW BLADE
WITH SPRING TRIP



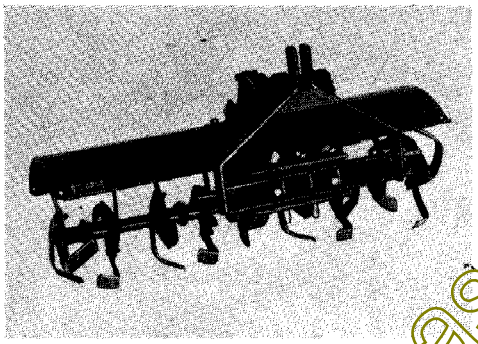
SNOWCASTER



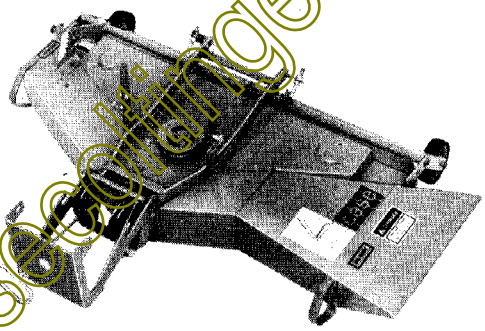
1000 POUND CAPACITY
DUMP CART



LAWN SWEEPER



HYDRAULIC DRIVE TILLER



THREE SPINDLE
ROTARY MOWER

MANY OTHER USEFUL ATTACHMENTS ARE
AVAILABLE THROUGH YOUR J I CASE DEALER.

CAUTION: Use care when pulling loads or using heavy equipment.

a. Use only approved drawbar hitch point.

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 the owner's manual.

NOTICE

With the delivery of your new tractor, your Case dealer will show you operation and maintenance instructions. The description of these instructions is in the "Owner Warranty Registration and Delivery Report". After these instructions you will sign this report and get a copy.

AFTER DELIVERY CHECKS

Your Authorized Case Dealer will make the "After Delivery Check" on your new Case tractor if:

1. He sold you the tractor.

2. It is 60 days or 100 hours of operation, after delivery (whichever comes first).

3. You make arrangements to bring your tractor to the dealer.

The "AFTER DELIVERY CHECK" is shown on the following page.

NOTE: Your dealer will only charge you for oil, filter or other accessories.

AFTER DELIVERY CHECK

(Owner's Name) (Date)

(Owner's Address)

(Dealer) (City)

Tractor has been operated___days

(Tractor Model and Serial Number)

TRACTOR

- ☐ Operator's Manual included with machine.
- ☐ Check attachment drive clutch operation and adjustment.
- ☐ Check operation of brake.
- ☐ Check Travel Control linkage for correct adjustment and full valve spool travel.
- ☐ Check tire air pressures.
- ☐ Tighten cylinder head and adjust tappets.
- ☐ Check spark plug(s).
- ☐ Check high governed speed with no load and low idle speed.
- ☐ Tighten all hydraulic line connections.
- ☐ Tighten all bolts (including rims).
- ☐ Cooling system, engine and heat exchanger fins.
- ☐ Crankcase oil (change oil if necessary).
- ☐ Oil level in hydraulic system reservoir.
- ☐ Oil level in transmission.
- ☐ Lubricate all grease fittings.
- ☐ Check air cleaner.
- ☐ Check tension of all belts.
- ☐ Lubricate steering gears. Check "free" movement. Adjust if necessary.
- ☐ Check front wheel toe-in.
- ☐ Battery, wiring and lights.
- ☐ Check operation of all instruments and controls.

DEALER: Check carefully with the owner to find what he knows about maintenance and operation. Give instructions on the procedures that are not clear to him.

Checked by

Dealer

Owner

First copy - Dealer
Second copy - Owner

PRINTED IN U.S.A.