

*Handwritten scribbles and numbers, possibly "453" and "9742953".*



**446 Tractor**

**S/N 9742953 and after**

**Operator's Manual No. 9-6422**

**J I Case**  
A Tenneco Company





**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.

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# **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 RULES .....	I - X
INTRODUCTION.....	1
SERIAL NUMBER.....	3
GENERAL SPECIFICATIONS.....	4
Hydraulic System.....	4
Electrical System.....	4
Brake.....	4
Transaxle.....	4
Speed Range.....	4
Wheels and Tires.....	4
ENGINE SPECIFICATIONS.....	5
OVERALL MEASUREMENTS.....	6
LUBRICATION.....	7
Engine Lubrication.....	7
Lubrication Chart.....	8 - 9
FUEL SPECIFICATIONS.....	10 - 11
OPERATING INSTRUCTIONS.....	12 - 27
Operating Controls & Instruments.....	12 - 17
Pre-Starting Check List.....	18 - 19
Starting Procedure.....	20 - 21
Stopping the Engine.....	22
Operating Procedure.....	23 - 27
PREVENTIVE MAINTENANCE.....	28 - 40
Brake Adjustment.....	29 - 30
Air Cleaner.....	31
Carburetor Adjustments.....	32
Steering Adjustments.....	33
Toe-In Adjustments.....	34
Electrical System.....	35 - 40
Headlights.....	35
Spark Plugs.....	36
Storage Battery.....	37 - 38
Jump Start With Booster Battery.....	39
Wiring Diagram.....	40
ATTACHMENTS.....	41

## 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 over-speed 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.



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



**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.



**CAUTION:** Hydraulic systems are highly pressurized. Escaping hydraulic oil, even an invisible pinhole leak, can penetrate body tissues causing serious injury. Use a piece of wood or cardboard when looking for leaks - never use the hands or other parts of the body

Relieve hydraulic pressure before disconnecting circuits. When re-assembling, make absolutely certain that all connections are tight

If injured by hydraulic oil escaping under pressure see a doctor immediately. Serious complications may arise if medical attention is not given at once.



**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



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



**CAUTION:** Storage areas for batteries must be well ventilated to prevent accumulation of hydrogen gas from newly recharged batteries.



**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 diagram depicts the maximum angles that the stationary tractor, less mounted equipment, was subjected to without tipping, measured on a perfectly flat, smooth, and hard surface. This illustration does not recommend safe operating limits as the slope, type of terrain and all applicable factors as discussed in this manual must be taken into consideration by any person whenever operating the tractor.

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 familiar 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 PURCHASER OF A CASE TRACTOR

The care you give your new Case Tractor will greatly determine the satisfaction and service life you will obtain from it. Use this manual as your guide. By observing the instructions and suggestions in this manual, your Case Tractor will serve you well for many years.

As an Authorized Case Dealer, we stock Genuine Case Parts, which are manufactured with the same precision and skills as the original equipment. Our factory trained staff is kept well informed on the best methods of servicing Case equipment and is ready and able to help you.

Should you require additional aid or information, contact us.

*Your Authorized Case Dealer*

### NOTICE

Laws of some states or provinces may require that this unit be equipped with a SPARK ARRESTOR OR SPARK ARRESTING MUFFLER. The State of California, as an example, is one state which has such regulations for agricultural and forestry applications, plus a regulation for construction applications in forest-covered, brush-covered, or grass-covered lands.

Typically such laws and regulations require spark arresting devices to be maintained in good working order and typically to be attached to the exhaust system of naturally aspirated engines (engines without a turbo charger)

### CANADIAN RADIO INTERFERENCE REGULATIONS

The Canadian Government, under authority granted by the Radio Act, has promulgated regulations covering this gasoline powered Case Compact Tractor if imported into Canada on or after September 1, 1976.

The spark plug(s) and spark plug wire(s) in this machine when replaced must be resistor type.

The certification label applied to the engine must not be removed or obliterated.



**FIGURE 1. Left Hand View of Case 446 Compact Tractor**



**FIGURE 2. Right Hand View of Case 446 Compact Tractor**

## SERIAL NUMBER

When ordering parts from your Authorized Case Dealer and in all contacts or correspondence with your dealer relative to the tractor, always specify the Product Identification, Model and Engine Numbers of your tractor.

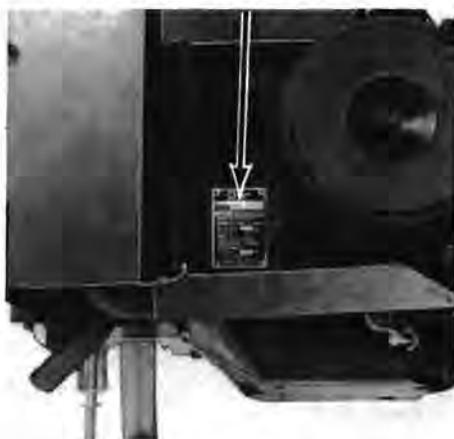
The Tractor Model and Product Identification Numbers are stamped on the number plate located on the instrument panel, Figure 3. The Engine, Model, Serial and Engine Specification Numbers are stamped on a plate fastened to the top left hand side of blower housing, Figure 4.

**TRACTOR MODEL  
AND SERIAL NUMBER**



**FIGURE 3**

**ENGINE MODEL, SERIAL AND  
SPECIFICATION NUMBER**



**FIGURE 4**

**NOTE:** The terms "Right Hand", "Left Hand", "Front" and "Rear" whenever used in this manual apply to the tractor when facing in the direction the tractor will move in forward operation.

For reference, fill in the Product Identification Number, Model Number and Engine Numbers of your tractor in the spaces provided below:

Tractor Model Number 446

Tractor Product  
Identification Number \_\_\_\_\_

Engine Model Number B43M/GAO 16

Engine Serial Number \_\_\_\_\_

Engine Specification Number \_\_\_\_\_

This Manual applies to the following tractor:

Model                      Product Identification Number

446                        9742953 and After

## GENERAL SPECIFICATIONS

### HYDRAULIC SYSTEM

Independent 5 quart (4.7 l) reservoir, pump, control valve, hydraulic motor and heat exchanger. Pump delivers approximately 8 gallons per minute (36 l/min) at 3600 RPM. Maximum drive system operating pressure (relief valve) setting: 2000 psi. (13 800 kPa) Maximum attachment lift system operating pressure setting: 575 psi. (3970 kPa).

### ELECTRICAL SYSTEM

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

### BRAKE

Type	Double acting, self energizing, mechanical contracting band, with the drum shaft driven from transmission differential. Includes parking lock.
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### TRANSAXLE

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

### SPEED RANGE

#### FORWARD

#### REVERSE

446	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 Pressure		Max. Pressure	
			PSI	(kilopascal)	PSI	(kilopascal)
6.50-8	2	Front	8	(55)	14	(97)
		High Flotation				
8.00-16	2	Rear	8	(55)	14	(96)
		High Flotation				

## ENGINE SPECIFICATIONS

### GENERAL

446

Type	ONAN
Model	B43M/GAO16
Cycle	4
Cylinders	2
Cylinder Bore	3.25 in. (82.5 mm)
Stroke	2-5/8 in. (66.6 mm)
Piston Displacement	43.3 cu. in. (713 cc)
Horsepower	16 @ 3600 RPM
Compression Ratio	7 to 1
Full Load Speed	3500 RPM
No Load Speed	3600 RPM
Idle Speed	1200 RPM
Valve Clearance Cold (Intake)	.007 - .009 in (0.17 mm - 0.22 mm)
Valve Clearance Cold (Exhaust)	.012 - .014 in. (0.30 mm - 0.35 mm)

### PISTON AND CONNECTING ROD

Piston	Aluminum
Compression Rings	2
Oil Rings	1
Connecting Rod	Aluminum

### FUEL SYSTEM

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

### IGNITION SYSTEM

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

### COOLING SYSTEM

Flywheel Blower	Forced air with baffles directing air around finned cylinder and head area.
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## OVERALL MEASUREMENTS

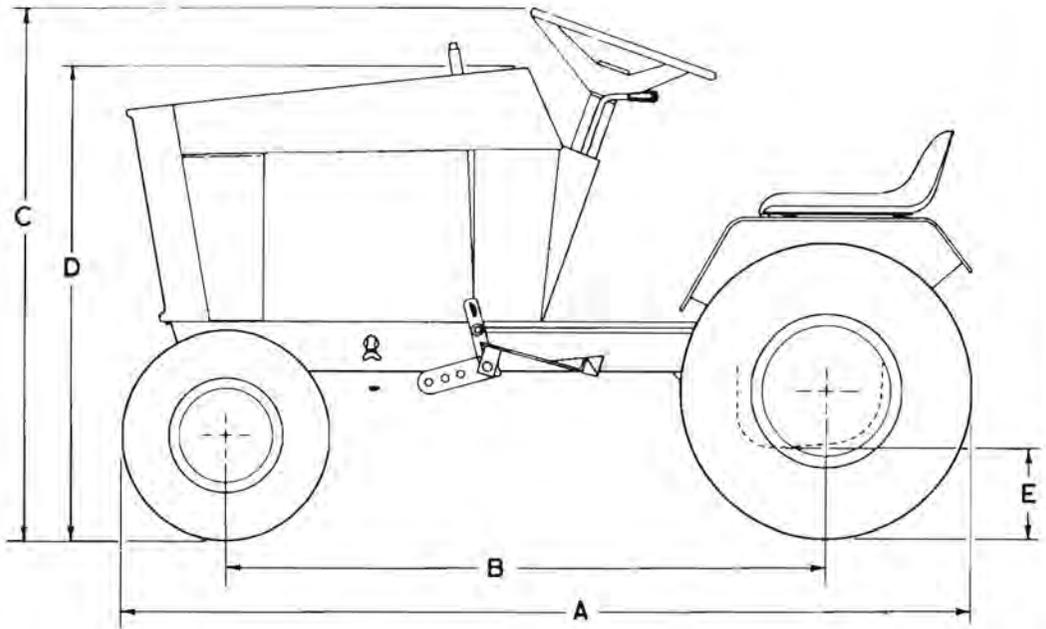


FIGURE 5

446

A Overall Length	70" (1780 mm)
B Wheel Base	46" (1170 mm)
C Overall Height	43-1/2" (1110 mm)
D Hood Height - Rear	38-1/2" (980 mm)
E Minimum Ground Clearance at Gear Case	11" (280 mm)
Rear Wheel Tread	31-1/2" (800 mm)
Front Wheel Tread	33-1/2" (850 mm)
Overall Width	41" (1050 mm)
Shipping Weight	770 lbs. (350 kg.)

## LUBRICATION

### ENGINE LUBRICATION

#### SELECTION OF OIL

It is extremely important that you select and use a detergent type, high quality, SE or CC, API Service Classification Oil such as Case HDM.

#### OIL SAE VISCOSITY RATING

SAE 30 or 20W-40 . . . . . Air Temperatures 30<sup>o</sup> F (-1<sup>o</sup> C) and Above

SAE 10W-30 . . . . . Air Temperatures 0<sup>o</sup> F (-18<sup>o</sup> C) to 30<sup>o</sup> F (-1<sup>o</sup> C)

SAE 5W-20 . . . . . Air Temperatures 0<sup>o</sup> F (-18<sup>o</sup> C) or Below

#### OIL CHANGE

Drain and refill the crankcase at least every 25 hours of operation.

If possible, run engine just prior to changing oil--the oil will flow more freely and carry away a greater amount of contaminant when hot.

If the engine service is severe - (frequent stopping and starting, high or low operating temperature) - the crankcase should be drained more often to prevent the formation of sludge or harmful deposits in the engine.



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

#### IMPORTANT

1. When the crankcase is drained, refill with 4 measured pints (1.9 l) of oil.
2. Operate the engine for a few minutes, allow sufficient time for the oil to run down off the engine parts, then check the oil level with the dipstick.
3. This will prevent overfilling or underfilling the crankcase, either of which can be detrimental to the engine service life and will give you false oil consumption records.

# LUBRICATION CHART

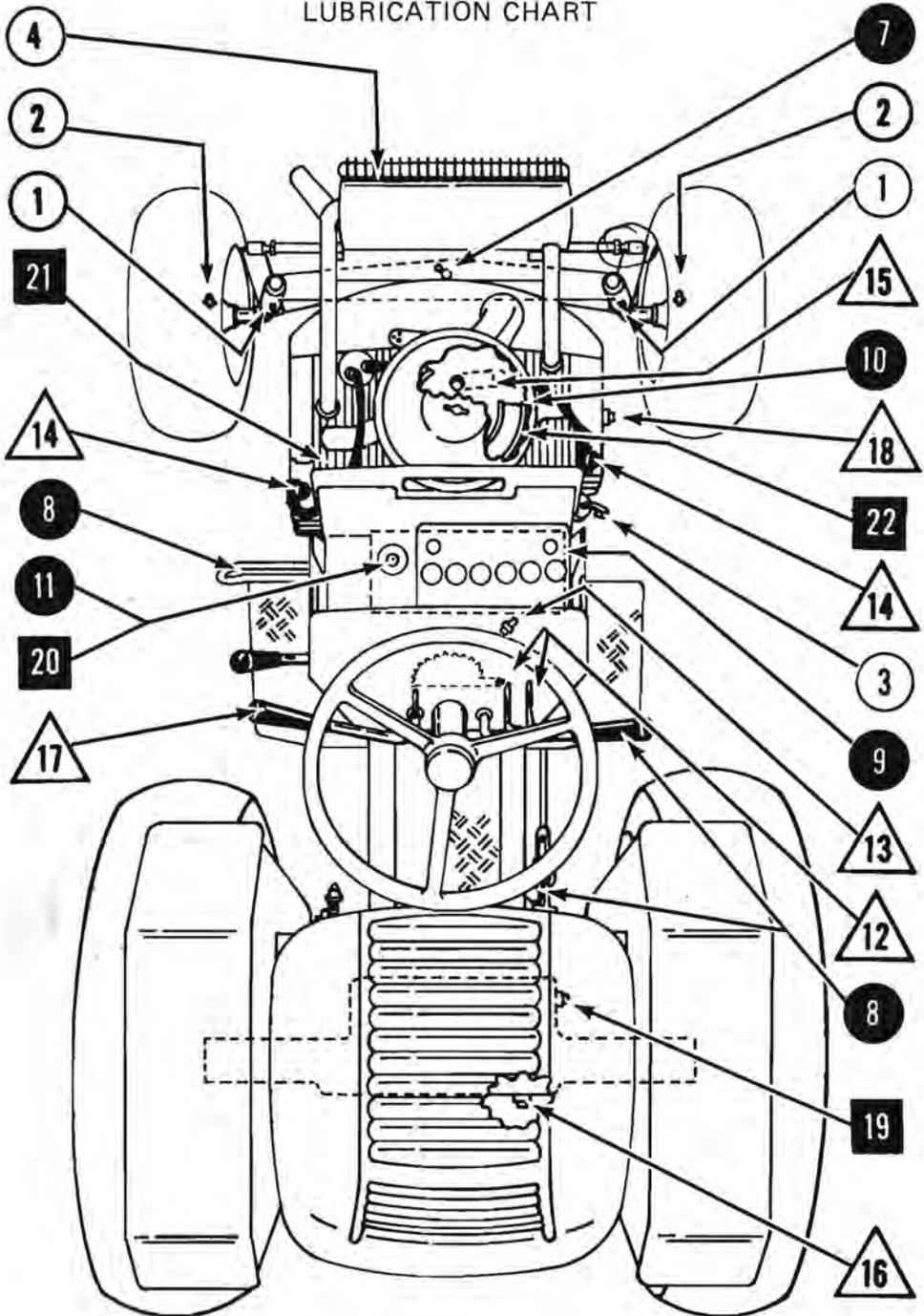


FIGURE 6

REF. NO.	SERVICE POINTS	NO. OF POINTS	GREASE	DRAIN	CHECK	CLEAN	CHANGE	OIL (Few Drops)	FREQUENCY
1	Front Spindles (king pins)	2	■						<b>5</b> HOURS OR DAILY
2	Front Wheel Bearings	2	■						
3	Engine Oil*	1		■					
4	Blower Air Intake Screen	1		■	■				
6	Air Leaks**	**							<b>25</b> HOURS OR WEEKLY
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					■		<b>50</b> HOURS OR MONTHLY
13	Steering Gear	3	■						
14	Spark Plug <sup>o</sup>	1		■					
15	Crankcase Breather***	1			■		■		
16	Transmission Oil	1		■					
17	Travel and Lift Lever and Linkage	3					■		
18	Engine Oil	2	■				■		<b>500</b> HOURS OR YEARLY
19	Transmission Oil	2	■				■		
20	Hydraulic Oil +	1	■				■		
21	Engine Cooling Fins***	1			■				
22	Air Cleaner Element***	1				■			

\*Keep oil level between marks on dipstick. See page 14 for engine lubrication recommendations. Capacity 4 pts. (1.9 l)

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

\*\*\*More often in dusty conditions.

<sup>o</sup>Clean and regap

+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 hydraulic reservoir filler cap is located just to the left of the battery. The oil level must be maintained at 5" to 6" (120 mm to 150 mm) down from the filler. Overfilling will result in oil leakage from the fill cap, underfilling will result in erratic operation. The oil drain plug is a 1/4" allen plug on the underside of the travel valve inlet port.

Transmission: Use SAE 20-W-40 motor oil or SAE 80 EP gear lube in the transmission the year round.

Grease Fittings: Use number 1 gun grease (Lithium Base) for all pressure 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

CARBURETION ON SMALL GASOLINE ENGINES IS ALWAYS CRITICAL OF DIRT. IT IS RECOMMENDED THAT A FILTERING FUEL FUNNEL ALWAYS BE USED ALONG WITH CLEAN GASOLINE.

AT ANY EVIDENCE OF FUEL STARVATION, CLEAN THE FILTER IN THE TANK OUTLET FITTING.

DO NOT MIX OIL WITH GASOLINE FOR THIS ENGINE.

Engines used in Case Tractors are designed to operate on REGULAR or UNLEADED GRADE gasoline having a minimum research method rating of 90.7 Octane. This will give full power and economy together with long engine life and low maintenance cost.

The typical Octane number ratings for regular grade gasoline (March 1967).

Motor Method	86.2 Octane Number
Research Method	<u>94.2</u> Octane Number
Average	90.2 Octane Number

These two Octane ratings are used to define the anti-knock quality of gasoline. It has become common practice in the Petroleum Industry to refer only to the RESEARCH METHOD RATING although in the United States the average of the two figures is posted on gasoline pumps.

When only one Octane rating is given for gasoline and the rating method is not specified, it can be assumed to be the average rating in the United States or the Research Method Rating elsewhere in the World.

## OPERATING INSTRUCTIONS

### 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 key to right and hold ("START" position)

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

TO STOP: Turn key to left ("OFF" position)

## 2. CHOKE

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

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

Choke should be open during normal operation or when starting a warm engine.

## 3. THROTTLE

TO IDLE ENGINE: Pull throttle lever rearward. Idle engine when starting and when cooling engine before stopping.

TO INCREASE ENGINE SPEED: Push throttle lever forward until desired engine speed is obtained.

Reduce engine speed during operation to obtain maximum fuel economy but not low enough to cause engine lug-down (or labor) which will result in overheating.



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

## 4. TWO SPEED TRANSAXLE

TO SELECT LOW RANGE: Place travel control lever in neutral.

Bring tractor to a complete stop.

Pry lever forward slightly to clear neutral locating pin.

Pull lever up past the neutral locating pin and release.

TO SELECT NEUTRAL: Place travel control lever in neutral.

Bring tractor to a complete stop.

Pry lever forward slightly to clear neutral locating pin.

Engage hole in lever over neutral locating pin and release.

TO SELECT HIGH RANGE: Place travel control lever in neutral.

Bring tractor to a complete stop.

Pry lever forward slightly to clear neutral locating pin.

Push lever down past the neutral locating pin and release.

Range gears may not shift readily when selecting.

Rotate the gears to allow them to shift.

To rotate gears:

1. move travel control lever partway into forward.
2. return travel control lever to neutral.

**IMPORTANT:** Range shift lever must be positioned past the neutral locating pin when in Low or High range. Gear damage will result if lever is not positioned properly.

## 5. TRAVEL CONTROL LEVER

**TO STOP TRAVEL:** Position travel control lever in neutral.

**TO TRAVEL FORWARD:** Slowly and in small increments move travel control lever forward.

Speed and power will increase as the lever is moved from the neutral position toward the full forward position.

**TO TRAVEL REVERSE:** Slowly and in small increments move travel control lever rearward.

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

**DO NOT TRAVEL FULL SPEED IN REVERSE.**

**TO "RETARD" TRAVEL IN FORWARD OR REVERSE:** "Retard" is the hill holding or dynamic braking position for the travel control lever.

Position travel control lever in "Retard" when descending a hill or incline.

See Operating Procedure Section of this manual for more complete description of "Retard" usage.

Depress the travel control lever slightly when moving to either direction for smoother motion and control.

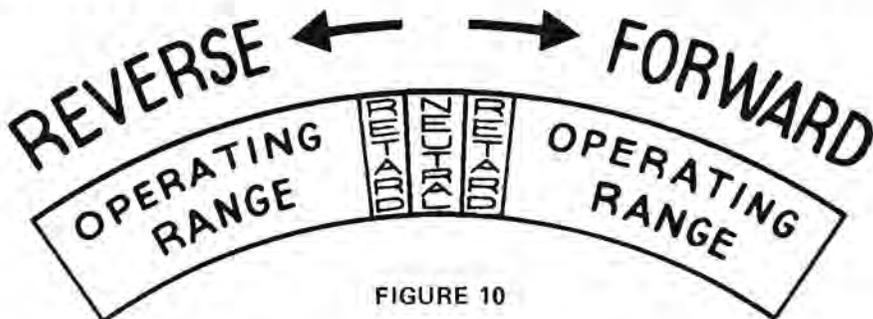


FIGURE 10

The travel control lever automatically returns to neutral when the brake is applied. The travel control lever can be moved from the neutral position with the brake applied.

A neutral start switch is actuated by the travel control lever. The lever must be in the neutral position to start the engine.

## 6. BRAKE PEDAL

**TO BRAKE:** Depress brake pedal fully.

This action will return the travel control lever to neutral and bring tractor to an abrupt stop.

**NOTE:** This method of stopping should be avoided.

Use this method for emergency stopping only.

The tractor should be brought to a smooth stop by slowly returning the travel control lever to neutral.

Depress brake pedal fully if positioning the travel control lever in neutral does not bring the tractor to a stop.

See Operating Procedure Section of this manual for more complete discussion of stopping travel.



**FIGURE 11**

## 7. PARKING BRAKE LOCK

TO SET: Depress brake pedal fully.

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

TO RELEASE: Depress brake pedal slightly and release.

A spring will disengage the parking brake lock.

## 8. HEADLIGHTS

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

Using lights with engine off or at low idle will result in a discharged battery.

TO EXTINGUISH: Turn key from the "LIGHTS" position.

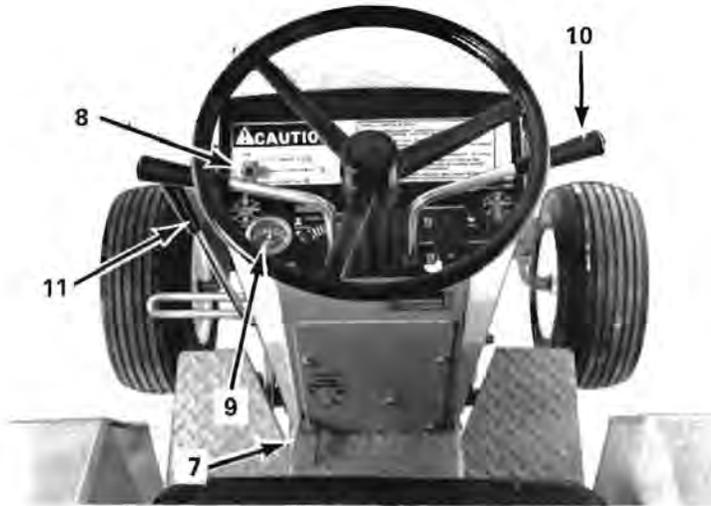


FIGURE 12

## 9. AMMETER

The ammeter indicates rate of charge to the battery. The ammeter reading will be relatively high when the battery is discharged or when the engine is first started.

The ammeter reading will gradually fall back to zero as the battery charges.

Stop tractor and have cause corrected if:

- a. Ammeter remains at "0" when battery is discharged or
- b. if ammeter continuously reads high.

## 10. HYDRAULIC ATTACHMENT LIFT LEVER

TO LIFT: Operate engine

Pull lever rearward

Release lever when desired height is reached

TO LOWER: Operate engine

Push lever partway forward

Release lever when desired height is reached.

The lever is spring centered and will automatically return to the neutral position from "Lift" and "Lower" when released.

TO FLOAT: Push lever fully forward

The lever will be held in this position by a detent and must be manually returned to neutral.

Float position prevents hydraulic down pressure and may be used to advantage when down pressure is not wanted.

See instructions furnished with each attachment for proper attachment lift lever usage.

## 11. ATTACHMENT DRIVE LEVER

TO ENGAGE: Push lever forward until firmly engaged.

TO DISENGAGE: Pull lever rearward

A neutral start switch is actuated by the attachment drive lever. The lever must be pulled rearward (disengaged) to 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, containers and funnels.
2. Apply oil or grease to all points specified in Lubrication Chart.
3. Check engine oil level and add if necessary.
4. Inspect engine air cleaner and cooling air intake screen and clean if necessary.
5. Fill fuel tank with clean fuel meeting requirements listed in Fuel Specifications Section of this manual.

Wipe fuel tank cap area before removing cap.

Inspect vent hole in fuel tank cap and clean if necessary.



**CAUTION:** Do not smoke when working near fuel.

**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 proper function before placing tractor in service.

## STARTING PROCEDURE (Operating The Tractor)



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

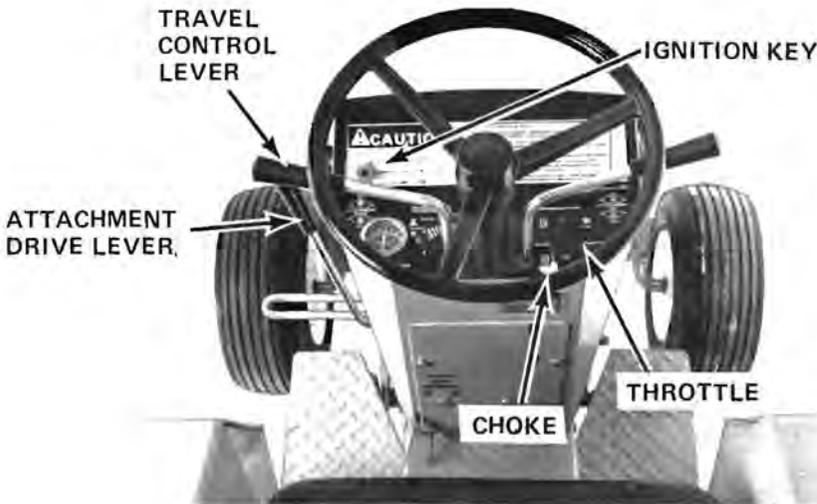


FIGURE 13



**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. Place the travel control lever in neutral.

**NOTE:** Applying the brake pedal may cause the travel lever to move downward preventing contact with the neutral start switch. If this condition should occur, pull up slightly on the travel lever handle while turning 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 choke lever forward to close choke.

Air temperature, engine temperature and grade of fuel will determine how far choke must be closed.

4. Push throttle lever forward about 1/3 of the way between idle and full speed.
5. Turn ignition key to right and hold ("START" position). Release key to "RUN" position when engine starts.

**NOTE:** Release key immediately when engine fires. Holding key in the "START" position after engine fires will cause damage to ring gear and starter pinion gear. Release key after 30 seconds if engine does not start. Wait 3 minutes for starter to cool before attempting to restart.

6. Pull choke lever rearward slowly after engine starts.
7. Allow engine to warm up before applying load.

**NOTE:** The hydraulic system must be warmed when starting with air temperatures below 32°F (0°C). Warm the hydraulic system according to the following procedure.

1. Set throttle 1/3 of the way between idle and full speed.
  2. Select Two-Speed Transaxle Neutral position.
  3. Move travel control lever to full forward position;
  4. Run for several minutes before placing tractor under load. When cold, the hydraulic system will be noisy at high engine speed.
8. Set throttle lever approximately 3/4 of the way between idle and full speed for most jobs.

For maximum economy, operate with a throttle setting which will perform the job without lugging or laboring and overheating of the engine.

**IMPORTANT:** DO NOT ATTEMPT TO START TRACTOR BY PUSHING TO TOWING AS SERIOUS DAMAGE TO THE DRIVE SYSTEM MAY RESULT.

## STOPPING PROCEDURE (Operating The Tractor)

1. Move the travel control lever to the neutral position.
2. Bring the tractor to a complete stop. Apply the brake pedal if necessary.
3. Set parking brake lock.
4. Pull throttle rearward to the idle position.
5. Allow engine to cool at idle for several minutes if it has been working under load.
6. Turn key to left ("OFF") position.
7. Remove ignition key.



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



**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.

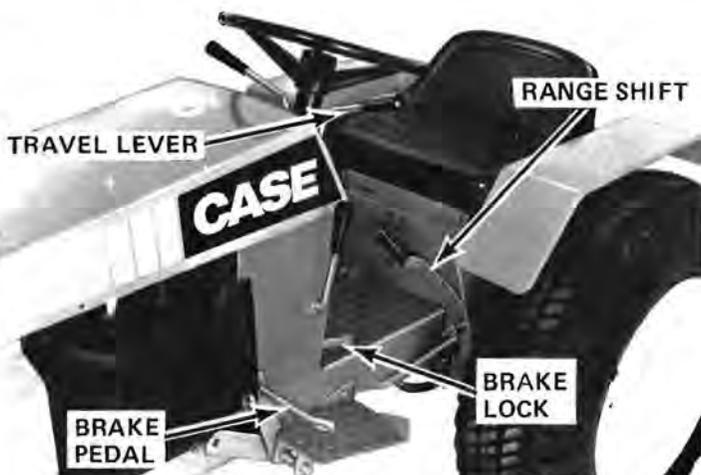


FIGURE 14

## OPERATING PROCEDURE (Operating The Tractor)

Select a flat area, clear of obstacles and bystanders to operate tractor for the first time. Learn the operating characteristics of your tractor before placing your tractor into service.

1. Select the correct range for the job at hand.
2. Low Range is for all working operations and hillside use. Use Low Range only on hill-sides 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. Range gears may not shift readily when selecting.

Rotate gears to allow them to shift.

To rotate gears:

1. Move travel control lever partway into forward.
2. Return travel control lever to neutral.

**IMPORTANT:** Bring tractor to a complete stop before attempting to change ranges. The range shift lever must be positioned past the neutral locating pin when in low or high range. Gear damage will result if lever is not positioned properly.

5. Push throttle lever forward until desired engine speed is obtained.

Reduce engine speed during operation to obtain maximum fuel economy but not low enough to cause engine lug down (or labor) which will result in overheating.

## 6. TO TRAVEL FORWARD

- a. Move travel control lever slowly and in small increments from the neutral position toward the full forward position.
- b. Release the travel control lever when the desired speed is reached.
- c. Return travel control lever to the neutral position to stop.
- d. Depress brake pedal fully if positioning the travel control lever in neutral does not bring the tractor to a stop.

## 7. TO TRAVEL REVERSE:

- a. Move travel control lever slowly and in small increments from the neutral position toward the full reverse position. Do not travel at full speed in reverse.
- b. Always keep hand on travel control lever when moving in reverse.
- c. Return travel control lever to the neutral position to stop.
- d. Depress brake pedal fully if positioning the travel control lever in neutral does not bring the tractor to a stop.

Always use extra care and look behind you when driving in reverse.

Do not travel at full speed in reverse.

Do not travel in reverse down a hill or incline. If necessary, back up to the desired position and drive down.

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

In positions other than full speed, the travel control lever position will have to be adjusted during operation to compensate for changes in tractive load on the tractor.

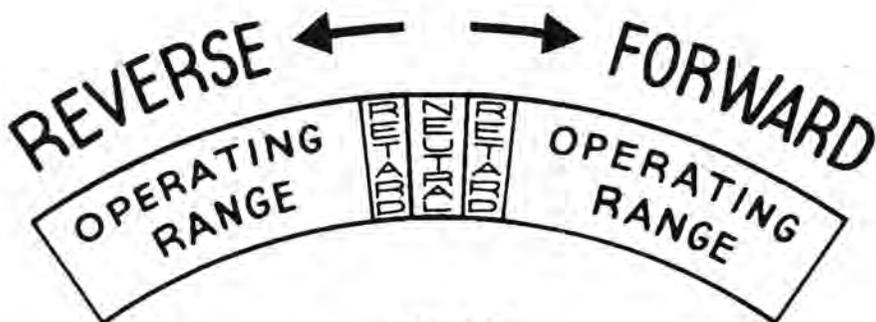


FIGURE 15

## 9. TO RETARD TRAVEL -- Hillside Operation

The "Retard" position on the travel control lever **MUST** be used when descending a hill or incline.

This position creates a restriction in the hydraulic drive system and prevents the tractor from rolling down a hill or incline.

To insure proper retarding action, the following operating procedure must be followed:

- a. Run engine at full throttle (3600 RPM).
- b. Select Low Range in the two-speed transaxle.

### LOW RANGE MUST BE USED FOR ALL HILLSIDE OPERATION

- c. Place the travel control lever in the "RETARD" position **BEFORE** beginning to descend the hill or incline.
- d. Select full speed position in the optional flow control valve (if so 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 APPLY BRAKES -- Hillside Operation

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

Applying the brake pedal will return the travel control lever to neutral. Therefore, the travel control lever must be held in the retard position if the brake is applied when descending a hill or incline.

The travel control lever may be moved (but it must be held) throughout its full range of travel with the brake pedal applied.

Keep brakes in good repair and properly adjusted at all times. Refer to the preventive maintenance section of this manual or see your dealer if brakes need adjustment or service.

11. When driving in the forward direction down a hill or incline, the travel control lever can be moved from the forward position partway into the reverse position while the tractor is in motion and the engine running. Moving the travel control lever from forward partway into reverse provides a braking action at the drive wheels.

Great care must be used, however, to avoid abrupt changes in direction which can cause loss of traction, loss of control or tractor upset.

12. It is mechanically possible to move the travel control lever from reverse into forward while the tractor is in motion and the engine running.

This action should be avoided during operation on level terrain. This action must not be done during operation on hillside or incline. This action can cause front end tip-up of the tractor.

Bring tractor to a complete stop from reverse before beginning forward travel.

Depress brake pedal fully if positioning the travel control lever in neutral does not bring the tractor to a stop.

If rear wheels begin to slip or spin or if engine becomes overloaded when ascending a permissible slope, turn the front wheels down-hill before losing all traction or power.

Do Not allow tractor to roll rearward - -

- A. Rolling rearward and then trying to resume forward travel will cause excessive torque at the rear wheels and may cause the front end to tip-up and over resulting in severe injury to the operator.
- B. Rolling rear-ward and then steering the front wheels will cause excessive thrust sideways on the tractor. This may cause the tractor to roll over sideways resulting in severe injury to the operator.

Always back up a slope to the desired position and drive down.

13. Reduce ground speed when making turns. Either position the travel control lever closer to the neutral position or reduce the throttle setting. Select Low Range in the two speed transaxle.



**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.

14. Engage the attachment drive lever before placing a load on the attachment.



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

15. Engage the mower over an area of light grass or an area that has been previously mowed.
16. Engage the snowcaster just before entering the path of snow to be cleared.
17. Engage the tiller in the raised position. Then lower the tiller into the soil to the desired depth.
18. Consult your attachment operator's manual for more detailed attachment operation information.



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

## PREVENTIVE MAINTENANCE



FIGURE 15

PREVENTIVE MAINTENANCE IS IMPORTANT TO YOU!

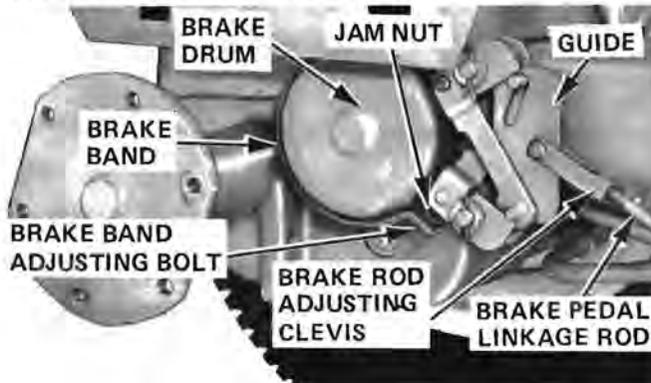
AS THE OWNER OF A CASE TRACTOR, YOU POSSESS A MACHINE THAT IS MADE TO HIGH STANDARDS.

PREVENTIVE MAINTENANCE BY YOU OR YOUR OPERATOR IS THE EASIEST AND MOST ECONOMICAL MEANS OF ASSURING MANY SATISFACTORY PRODUCTIVE HOURS OF OPERATION.

The preceding sections of this operator's manual have dealt with instructions necessary for daily operation of your Tractor. The following subjects present detailed instructions concerning the care and adjustments of the Tractor.

## BRAKE

The brake is properly adjusted when depressing the pedal brings the tractor to a prompt stop and when there is sufficient pedal travel to allow the spring to return the speed control lever from both the forward and reverse travel positions. Check and adjust brakes as required according to the procedure below.



**FIGURE 16**  
(Tire and Wheel Removed For Clarity)  
**BRAKE ADJUSTMENT**

1. Position tractor on hard, level surface, such as, a concrete garage floor.
  2. Place the high-low range shift lever in neutral.
  3. Release the brake pedal.
  4. Remove cotter pin, clevis pin and clevis from the guide.
  5. Loosen jam nut.
  6. Push guide rearward until contact is made between dowels and arms (as illustrated). This position must be maintained throughout the adjustment procedure.
  7. Tighten bolt one half turn at a time. Push tractor with moderate force after each one half turn of adjustment.
  8. When tractor cannot be pushed (with moderate force), loosen bolt about one turn or until band does not drag on drum.
- NOTE:** Do not overtighten bolt. This will cause distortion of band.
9. Tighten jam nut.
  10. Pull guide forward lightly to remove free play.
  11. Turn clevis until hole in clevis lines up with hole in guide.
  12. Reinstall clevis, clevis pin and new cotter pin.

## TRAVEL VALVE SPOOL ADJUSTMENT

The travel spool is in proper adjustment when the tractor is stationary with the travel lever in neutral position and retards properly when going downhill with the travel lever in retard position.

If the spool becomes out of adjustment, the tractor should be taken to your dealer to be adjusted.

### RETURN TO NEUTRAL ADJUSTMENT PROCEDURE

1. Be sure travel spool linkage is adjusted according to procedure above.
2. Be sure brake linkage is adjusted according to procedure on page 29.
3. If travel lever returns all the way from forward but not from reverse, turn adjusting nuts to move spring to right.
4. If the travel lever returns all the way from reverse, but not from forward, turn adjusting nuts to move spring to left.
5. Be sure tab points forward as shown when nuts are tightened to prevent spring from dropping out.

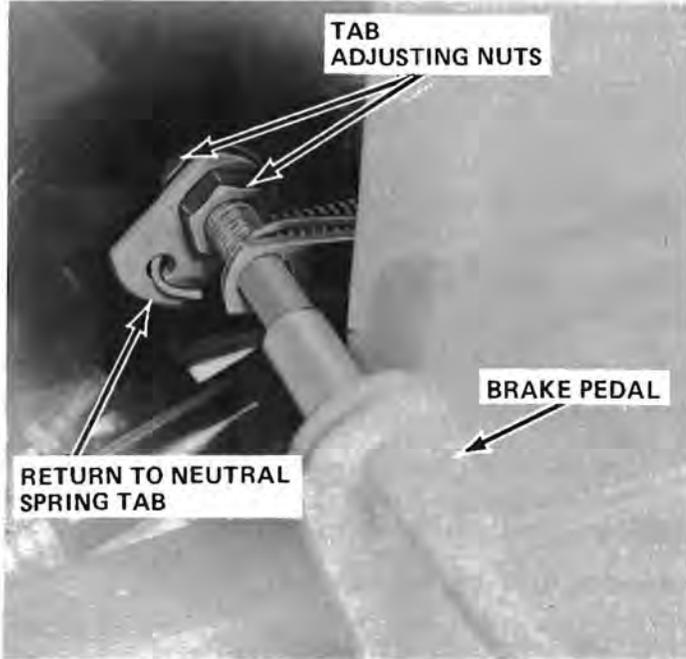


FIGURE 17

## AIR CLEANER

Remove and clean element after each 25 hours or weekly. Install a new element every 500 hours or yearly or when loss of power is noticeable.

Tap element lightly on a flat surface to cause the loose dirt to fall off. Handle the element with care to avoid damage.

Replace the element with a new one if dirt does not drop off easily or if it is damaged. When replacing the element, be sure it fits snugly around the inside edge of the air cleaner base. Then replace the cover and tighten the wing nut finger tight.

An optional, washable, precleaner is available from your J I Case dealer and will extend the life of the air cleaner element.

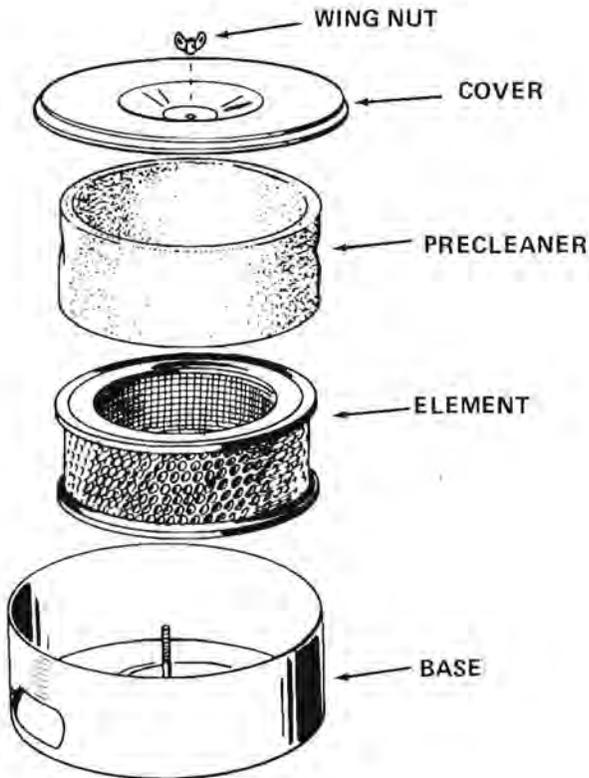


FIGURE 18

## CARBURETOR

The carburetor has three simple adjustments:

1. Main fuel adjustment
2. Idle fuel adjustment
3. Idle speed adjustment

### MAIN FUEL AND IDLE FUEL ADJUSTMENT

**IMPORTANT:** Needle valves may be damaged by turning them in too far or forcing them against their seats.

1. Before starting the engine, adjust main fuel adjustment screw on carburetor 1-3/8 to 1-1/2 turns open from seat.
2. Adjust idle fuel adjustment screw on carburetor 1 turn open from seat.
3. Run engine to warm up to operating temperature.
4. Adjust throttle to 3,000 RPM, Load to 2800 RPM.
5. Adjust main fuel adjustment screw to achieve maximum RPM at this throttle setting.
6. Reduce load and adjust throttle setting to 1200 RPM.
7. Adjust the idle fuel adjustment screw to achieve the maximum RPM at this throttle setting.

DO NOT readjust main fuel adjustment at this time. This sequence must be followed because in middle speed ranges there is interaction between the main and idle fuel adjustments.

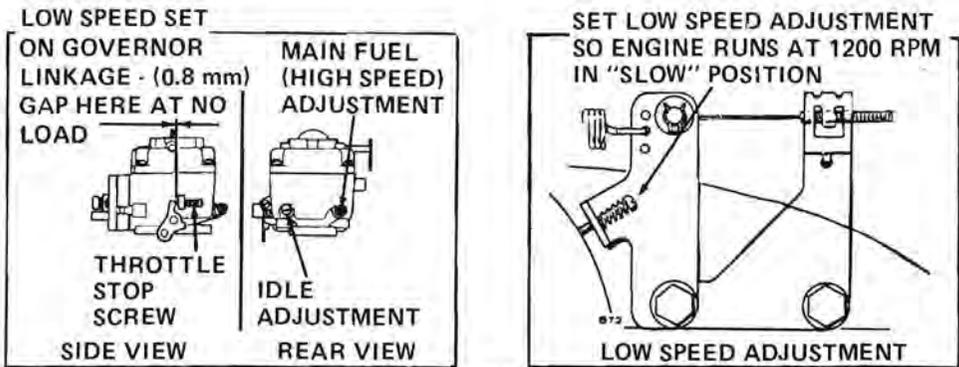


FIGURE 19



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

### IDLE SPEED ADJUSTMENT

Put the throttle lever in the "Slow" position. Turn the slow speed adjustment screw in to increase idling speed and out to decrease idling speed until 1200 RPM is obtained.

Set the throttle stop screw (located on carburetor throttle lever) with no load connected and while running at low speed setting. Turn the screw to give approximately 1/32 inch (0.8 mm) clearance between the screw and pin.

## STEERING ADJUSTMENT

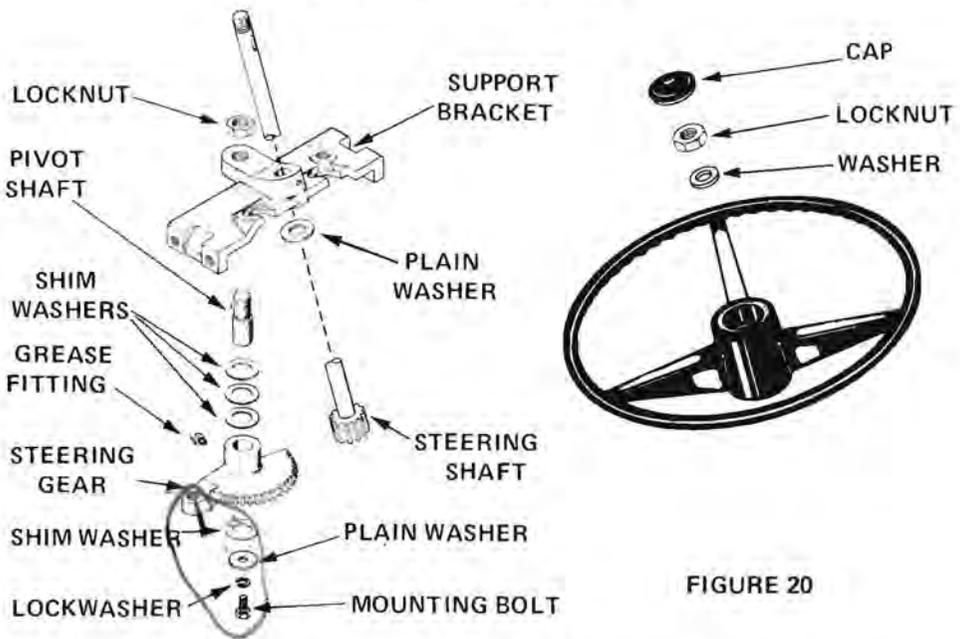


FIGURE 20

**IMPORTANT:** Excessive steering wheel free play may not require gear adjustment as covered below. Excessive steering wheel free play may be the result of:

1. Ball joints, drag links and/or tie rods loose. If necessary, tighten.
2. Steering wheel locknut requires tightening. If necessary to tighten the steering wheel locknut, to remove excessive end play, be sure to tighten without causing binding.

The tractor is designed with two or more shim washers between the steering gear and support bracket as illustrated in Figure 20. As the gear teeth wear in, additional steering wheel free play may occur. If the free play becomes excessive, one (more if necessary) of the shims can be relocated to the bottom side of the steering gear.

Disconnect the drag link from the steering gear. Remove the mounting bolt, lockwasher and plain washer (shims also if present) from the base of the pivot shaft. Slip the steering gear and one of the shim washers off the pivot shaft. Place the gear back on the pivot shaft and secure with the original mounting bolt, lockwasher, plain washer, shim(s) plus the shim removed from the upper side. The total number of shim washers must remain the same.



**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.

Always coat all gear teeth with grease each time the two steering fittings are lubricated or at least each 50 hours of operation.

## TOE-IN ADJUSTMENT

1. Locate the tractor on a hard level surface preferably concrete. Place front wheels in a straight ahead position.
2. Make sure the front tire pressures are equal.
3. The front tires should show a mold part-line which coincides with the centerline of the tire. If the centerline of the tire is not readily visible, then the wheel can be raised off the ground, spun and marked at the approximate centerline location.
4. Measure the distance between the tire center lines or the chalk marks.

MEASUREMENT "A" MUST BE 1/8 TO 3/8-INCH (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.

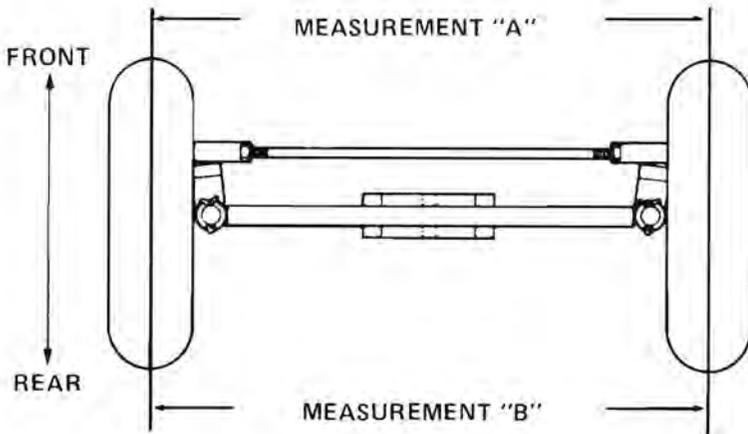
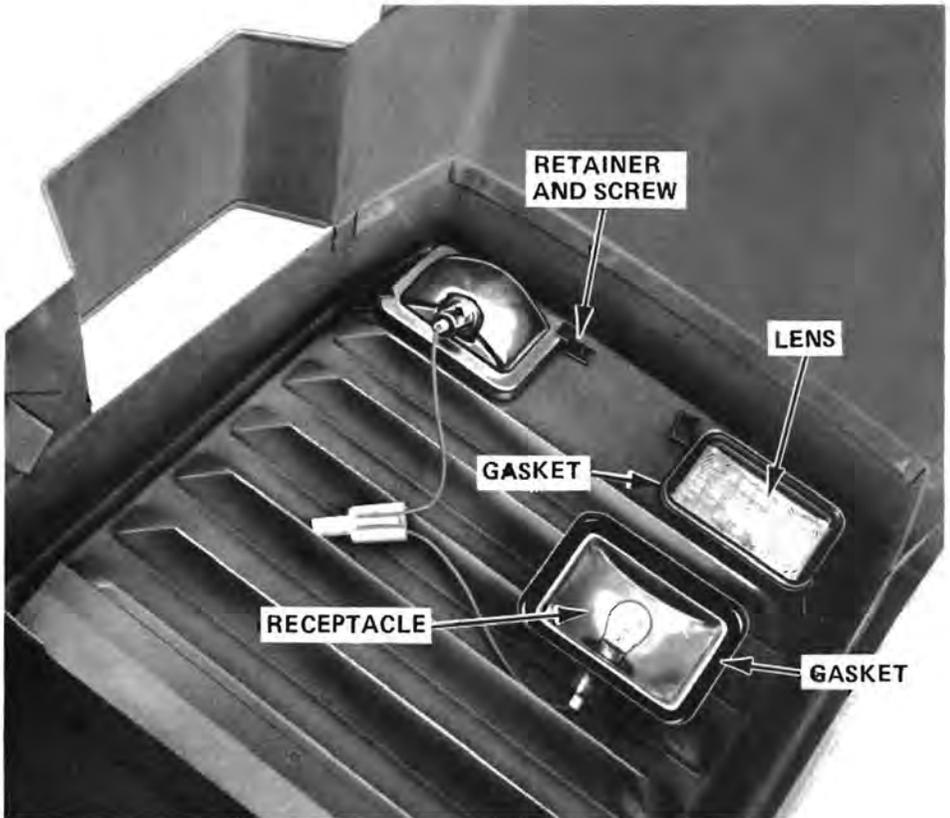


FIGURE 21

1. Loosen both tie rod jam nuts.
2. Turn the tie rod in or out of the ball joints as required. Retighten the jam nuts when correct toe in is obtained. One ball joint has left hand threads and the other right hand so it is unnecessary to disconnect it from the king pin lugs. Turning the joints off the tie rod decreases the toe in. Turning the joints on the tie rod increases the toe in.

## ELECTRICAL SYSTEM

### HEADLIGHTS



**FIGURE 22**

To install a new Case 12 volt replacement headlight bulb, remove the two screws and retainers which attach the headlight to the inside of the headlight panel. Lift out the headlight and disconnect the wire at the connector.

Remove the old bulb by pushing inward and turning it counterclockwise. Install the new Case bulb and replace the receptacle making certain one gasket is located between the lens and grille and the other is properly seated between the lens and receptacle.

The new bulb will not light unless the receptacle is reinstalled or manually grounded to a metal part on the tractor. After installing, make sure all the connections and mounting screws are tight.

## SPARK PLUG

The type spark plug provided in your engine is listed as medium in the spark plug heat range chart - Prestolite 14 L4 or equivalent. (Prestolite 14RL4 or equivalent in Canada)

Shank Length	7/16" (11.11 mm)
Thread Size	14 MM
Gap Setting	.025 Inch (0.64 mm)

**NOTE:** It is possible that under unusual conditions, "colder" type spark plug may be required. Consult your Authorized Case Dealer regarding the proper type spark plug to use for your particular condition.

The spark plug plays a very important part in the power, fuel economy and general performance of your engine. The outside of the plug should be cleaned frequently to prevent shorting of the plug.

The spark plug should be removed, checked, cleaned and gapped at the end of every 100 hours of operation.

### REMOVING

It is important to select the exact size spark plug wrench. The wrong size or type wrench may cause distortion and insulator breakage. Always use a spark plug wrench or a thin wall deep socket wrench of the recommended size.

Thoroughly clean the spark plug, including the threads, with a pen knife or wire brush and solvent. A very slight drag should be felt when the gauge wire passes between the electrodes.

Reset the gaps by bending the side electrode only. Never bend the center electrode.

### INSTALLING

Install the spark plug in the engine, with a new gasket, and seat the plug finger tight on the gasket. Tighten the plug about 3/4 of a turn after the plug is seated firmly on its gasket. If a torque wrench is available, tighten the plug to 27 foot-pounds (36.6 Newton-metre). This will assure proper seating and sealing of the spark plug.

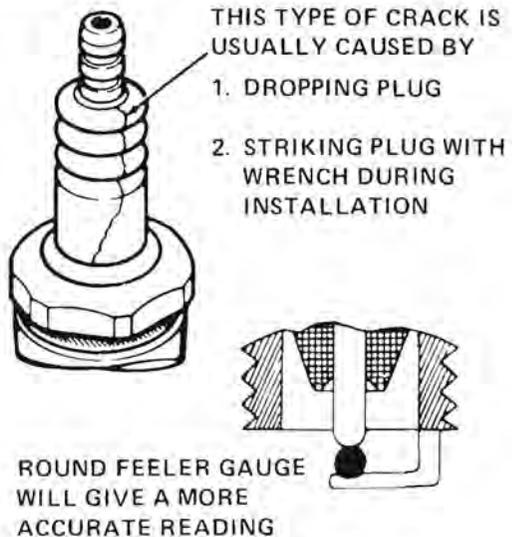


FIGURE 23

Do not use abrasive cleaning machines.

## STORAGE BATTERY



**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.



**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.

## RULES FOR BATTERY CARE

1. Add pure or distilled water, as needed, to keep the separators covered. Check every 25 hours or weekly depending on air temperature. Normal water consumption would be approximately 1 ounce every 25 hours of operation. If it is greater, either the case is leaking or the rectifier regulator is overcharging and must be replaced.
2. Keep the battery in a healthy state of charge as shown by hydrometer readings.
3. Make sure the battery is securely fastened in position. Cable leading from the battery should not touch cell connectors or lay on the battery container.
4. Keep the battery clean and dry.

If a battery will not hold a charge, replace it with a new one meeting the specifications as listed in the specification section.

**IMPORTANT:** The full charge gravity reading will usually be specified on the battery. A battery having a reading of 1.175 will freeze at approximately 0° Fahrenheit (-18° C) temperature.

## ADDING WATER

Unless the tap water in your area is "approved" (water free of scale-forming minerals), always add distilled water to the battery.

When water is added during freezing weather, the battery must receive a charge immediately to mix the water and electrolyte. If it is not mixed, the water will remain at the top and freeze.

Check the liquid level in each cell weekly by removing the vent plugs. Add water before the tops of the separators become exposed. **DO NOT OVERFILL.**

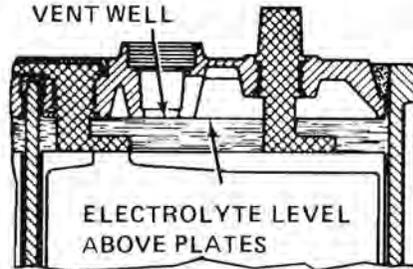


FIGURE 24

## VENT PLUGS

Always keep the vent plugs in place and tight. Be sure the vent holes are free of dirt to prevent gas pressure in cells from breaking the seal of the container.

## CABLE TERMINALS AND BATTERY POSTS

The battery terminals must be kept clean and tight. A good method of cleaning terminals is to remove all excess corrosion with a wire brush, then wash with a weak baking soda solution or ammonia. After cleaning, a thin coating of vaseline or light cup grease will retard further 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 in active use, the battery will require a charge at sufficient intervals to keep the hydrometer reading at or above 1.250. An idle storage battery will slowly discharge.

## HOW TO JUMP START WITH BOOSTER CABLES AND BOOSTER BATTERY

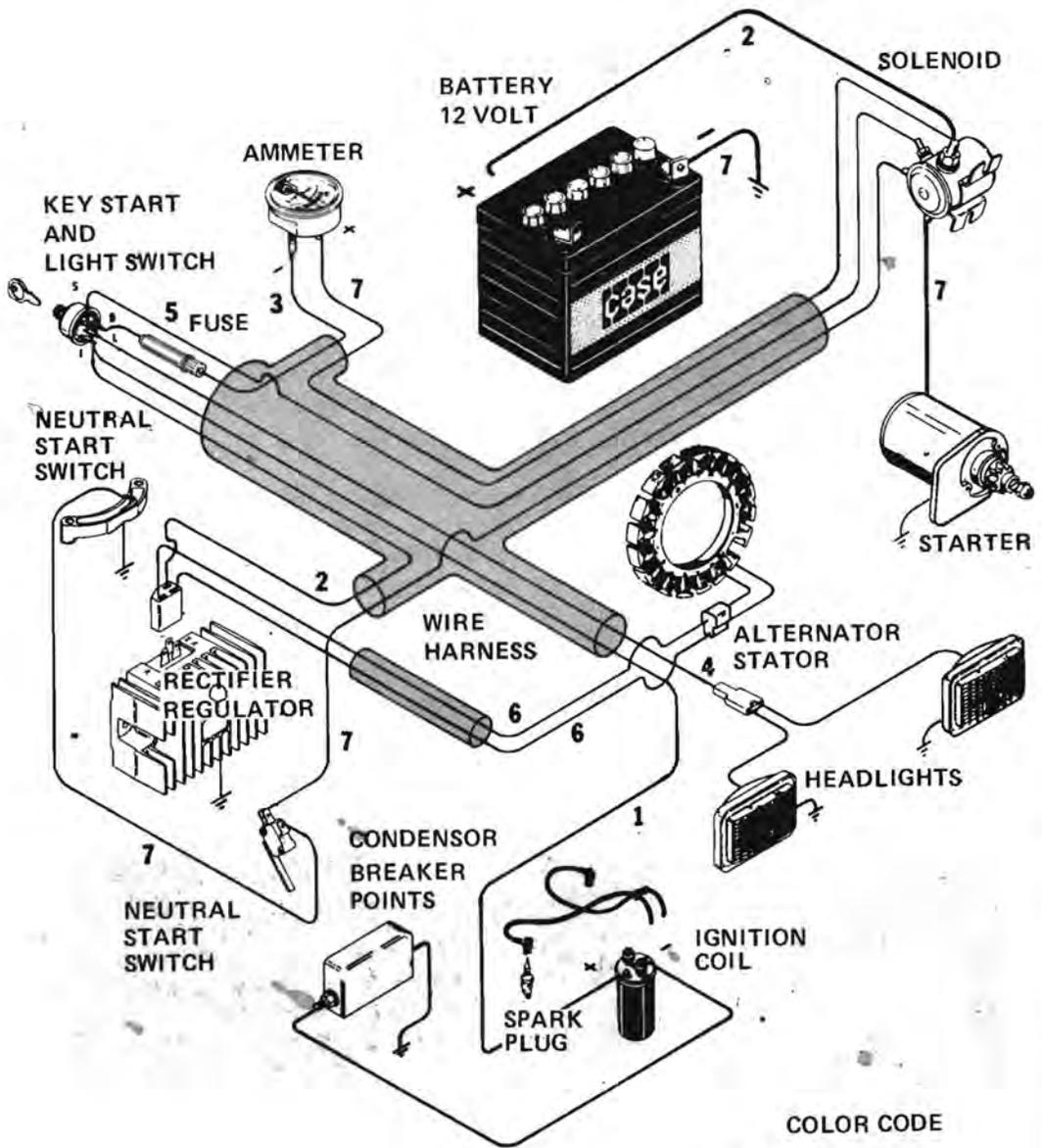
ALWAYS SHIELD EYES WITH GOGGLES, ETC. WHEN WORKING NEAR BATTERIES. PROTECT SKIN AND CLOTHING AGAINST ACID.

1. Connect one end of first booster cable to battery terminal on starter solinoid.
2. Connect other end of first booster cable to the positive terminal post of the booster battery.  
That is: Positive to Positive.
3. Connect the first end of second booster cable to the negative terminal of the booster battery. With the last end of the second booster cable make the final connection to the ENGINE BLOCK of the machine with the discharged battery. Connect as far away as possible from battery to prevent any possible sparks near the battery. Make certain machines do not touch.
4. TO REMOVE BOOSTER CABLES: Remove last connection at the engine block FIRST, then remove all other connections in reverse order. Keep booster cable ends from touching to prevent sparks.



**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.

# WIRING DIAGRAM



## COLOR CODE

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

FIGURE 25

## AVAILABLE ATTACHMENTS



**UTILITY AND SNOW BLADE  
WITH SPRING TRIP**



**SNOWCASTER**



**1000 POUND  
CAPACITY  
DUMP CART**



**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 —

At the time your Case Dealer delivers your new tractor, he will acquaint you with its operation and maintenance as outlined in the "Owner Warranty Registration and Delivery Report". When your Dealer has completed these instructions, he will ask you to sign the report and will then hand you a copy for your records.

### AFTER DELIVERY CHECKUP

The Authorized Case Dealer from whom you purchased your new tractor will perform the "After Delivery Checkup" outlined on the following page, if you will arrange to bring your tractor to his Service Shop within --

60 days after date of delivery Or 100 hours of operation (whichever occurs first).

**NOTE:** The only charge your dealer will make for this inspection will be for oil, filter, or other accessories.

## AFTER DELIVERY CHECKUP

Owner's Name _____	Date Checkup Performed _____
Owner's Address _____	
Dealership _____	Town _____
Tractor has been operated _____ days	(Tractor Model and Serial Number)

### TRACTOR

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

DEALER Question purchaser carefully concerning his experience with tractor and answer any questions concerning maintenance or operation that are not clear to him.

Checkup \_\_\_\_\_  
Performed by

Signed \_\_\_\_\_  
Dealer

Original—Dealer

Duplicate—Leave in Operator's Manual  
 for Purchaser

Signed \_\_\_\_\_  
Customer

## AFTER DELIVERY CHECKUP

Owner's Name _____	Date Checkup Performed: _____
Owner's Address: _____	
Dealership: _____	Town: _____
Tractor has been operated _____ days	(Tractor Model and Serial Number)

### TRACTOR

- |  |  |
|--|--|
| <input type="checkbox"/> Operator's Manual supplied with machine.  | <input type="checkbox"/> Cooling system engine and heat exchanger fins.                    |
| <input type="checkbox"/> Check attachment drive clutch operation and adjustment.                         | <input type="checkbox"/> Crankcase oil (change oil if necessary).                          |
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DEALER Question purchaser carefully concerning his experience with tractor and answer any questions concerning maintenance or operation that are not clear to him.

Checkup \_\_\_\_\_  
Performed by \_\_\_\_\_

Signed \_\_\_\_\_  
Dealer

Original Dealer  
Duplicate - Leave in Operator's Manual  
for Purchaser

Signed \_\_\_\_\_  
Customer

## LUBRICATION AND PREVENTIVE MAINTENANCE RECORDS

DESCRIPTION	HOURS (DATE)

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