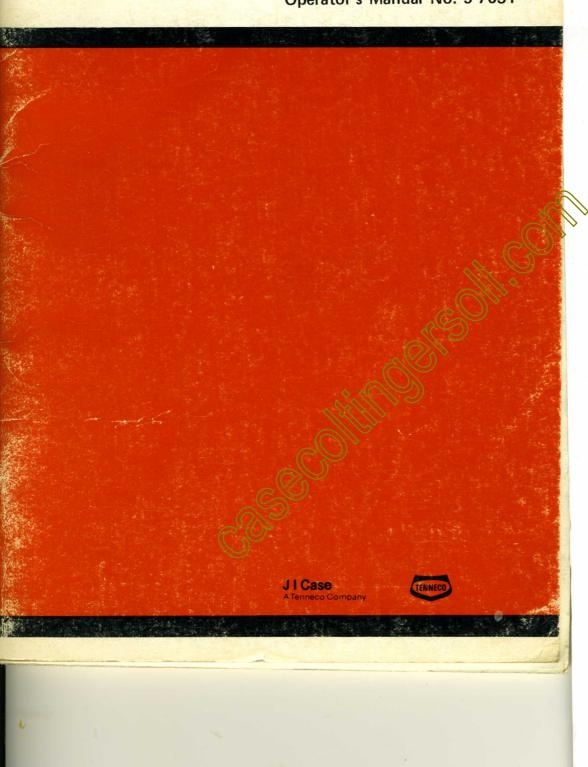


108 - 110 TRACTOR P.I.N 9747008 and after Operator's Manual No. 9-7051





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



# 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.

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## SAFETY MESSAGES

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

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

\* Message 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 grownar hitch point.
- b. Limit loads to those you can safely control.
- c. Do notificationally. Use care when backing.
- d. Use counterweight(s) or wheel weights when suggested in the owner's manual.

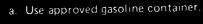


CAUTION: Watch out for traffic when crossing or near roadways.



**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.





- 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 furnes 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:





- (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 leaving operator's position:

Shift transmission to neutral.

Set parking brake.

Disengage attachment drive clutch.

Shut off engine.

Remove ignition key.

Wait for all movement to stop before servicing machine.

Keep people and pets a safe distance away from 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 dive 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: 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.



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. Rein, show, 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 fread and study them. The examples provided are not all inclusive but will give you a time understanding of the requirements for avoiding accidents while operating you tractor.

A tractor, the same as your model, passed a stability test at angles prescribed by ANSI B71.1 - 1972 and B71.1a - 1974 (American National Standards Institute). This test was made with a stationary tractor without mounted equipment and on a perfectly smooth and hard surface. This may not be representative of the conditions on which your tractor will operate.

THE OPERATOR IS THE SOLE LUDGE 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 <u>must</u> be <u>understood</u> by the <u>tractor operator</u> 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 gear shift 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 hard ation 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 show enough to insure complete control at all times.

Place the transmission in low great and regulate the throttle control lever slowly and smoothly to maintain this safe speed. Do not stop on a hill or slope to change gears.

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 - <u>STAY OFF THE SLOPE</u>.

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 coveled 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 out 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 SLORE

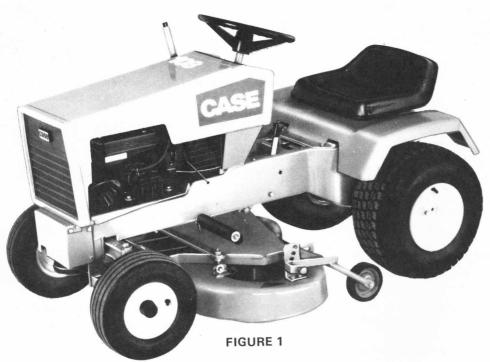




FIGURE 2

- 2 -

# 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 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 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 to not remove or destroy this label.

Printed in U.S.A.

3-81-SL-1000

#### PRODUCT IDENTIFICATION NUMBER

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

# TRACTOR MODEL AND PRODUCT IDENTIFICATION NUMBER



ENGINE MODEL
SERIAL & SPECIFICATION
NUMBERS



FIGURE 3

For reference, write the numbers on the lines below

Tractor Model Number

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

Engine Model Number

Engine Serial Number

Engine Specification Number

FIGURE 4

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.

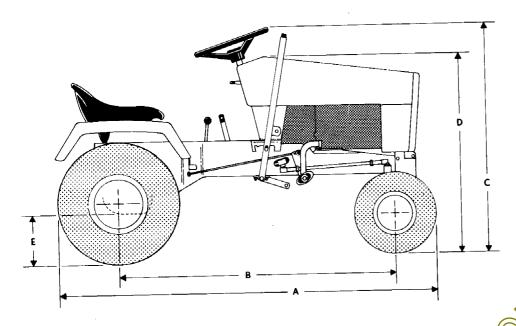


FIGURE 5

110

Α	Total Length
В	Wheel Base
С	Total Height(960 mm)
D	Hood Height - Rear (800 mm)
E	Minimum Ground Clearance at Gear Case 5-3/4" (150 mm)
	Rear Wheel Tread
	Front Wheel Tread
<u> </u>	Total Width
<b></b>	Weight

108 110

#### **GENERAL**

Type	0135 - Briggs & Stratton Vertical Crankshaft
Model	220707
Cylinder Bore 3 in. (80 mm)	3-7/16" (87mm)
Stroke 2-3/4" (70 mm)	2-3/8" (60mm)
Piston Displacement 19.44 cu, in. (320 cc)	22 cu. in. (360cc)
Horsepower @ 3600 R.P.M., 8 H.P. (5.9 kw)	10 H.P. (7,5 kw)
Cycle	4
Cylinders	
Compression Ratio	6.2 to 1
Full Load Speed	
No Load Speed	
Idle Speed	
Valve Clearance-Cold (Intake)	006 (0.15 mm)
Valve Clearance-Cold (Exhaust)	(0.25 mm) Rotator Keeper
Torque (Ft. Lbs.)	(17.2 Nm) @ 2500 R.P.M.

#### **PISTON AND CONNECTING ROD**

#### **FUEL SYSTEM**

#### **IGNITION SYSTEM**

#### **COOLING SYSTEM**

# **GENERAL SPECIFICATIONS**

#### **ELECTRICAL SYSTEM**

Type of System
COMBINATION BRAKE AND CLUTCH
Brake Mechanically Operated Disc.
Clutch
TRANSMISSION
Type
Mechanical Ranges
SPEED RANGE (Maximum - 3600 Engine RPM)
FIRST 2.25 MPH (3.62 km/h) SECOND 4.40 MPH (7.08 km/h) THIRD 6.18 MPH (9.95 km/h) REVERSE 3.06 MPH (4.92 km/h)
WHEELS & TIRES
PSI PSI Tire Size Ply Type Recommended Max
FRONT 5.00-6 2 High Flotation 12 (85 kPa) *20 (140 kPa)
REAR 8.50-8 2 High Flotation (6 40 kPa) 8 (55 kPa)
* WHEN USING SNOW BLOWER OR UTILITY BLADE



FIGURE 6



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



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.

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 mum octane ratings as follows:

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

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

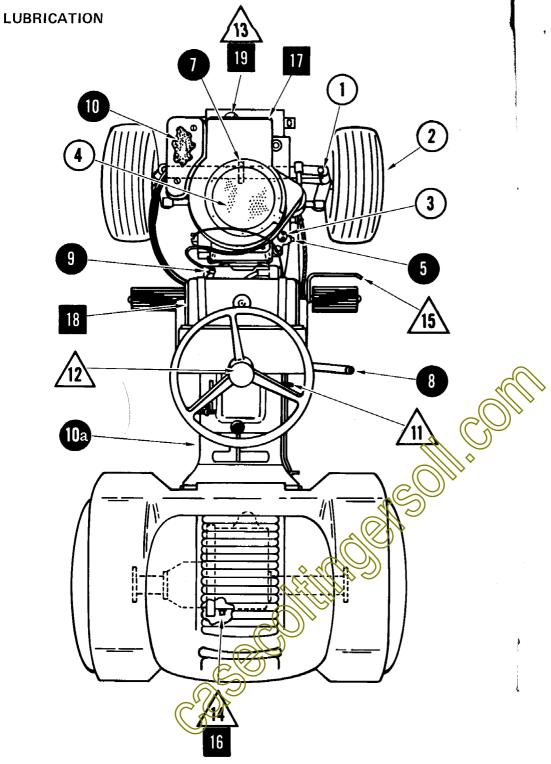


FIGURE 7

- 10 -

LUB	RICATION CHART		,	POTO SASS	<u>/</u>	//	//	//	
<u> </u>	SERVICE POINTS		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	REPS			FLAN CO	ARION ON	FREQUENCY
1	Front Spindles	$\frac{2}{2}$		$\rightarrow$		$\dashv$		ᅱ	HOURS
2	Front Wheel Bearings				****			ᅥ	OR DAILY
3	Engine Oil *	1				******			DAILY
4	Blower Air Intake Screen	1				******	*****	$\dashv$	
5	Engine Oil	2			-+		<b></b>		
6	Air Leaks **	**	00000000						HOURS
7	Front Axle Pivot Pin	1						*****	25 OR WEEKLY
8	Implement Lever Pivot Points	6	<u> </u>	$\vdash$					WEEKLY
9	Battery	1		$\Box$		*******			n.
10	Air Cleaner ***	1				****			
10a	Drive Belts		<u> </u>					00000000	
11	Throttle and Choke Control	2						<b>****</b>	·
12	Steering Gear	. 3							∧ hours
13	Spark Plug <sup>c</sup>	1	Ī				<u> </u>	L	Z N OR
14	Transmission Oil +	1						*******	50 MONTHLY
15	Clutch and Brake Linkage	5		<u> </u>	L	L			
$\vdash$					<u> </u>	<u> </u>			
16	Transmission Oil +	2			L	ļ		<u> </u>	
17	Engine Cooling Fins ***	1	L.	<u> </u>			L	<u> </u>	HOURS
18	Fuel Filter - In Tank Outlet Fitting	1				l			200 OR YEARLY
19	Spark Plug	1				_		1	
1						<u> </u>	<u>L</u> _		

\* Always check the oil level of the engine before you use the tractor Keep the oil level at the top of the filler neck. See page 12 for engine lubrication recommendations.

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

\*\*\* More often during severe operating conditions. Remove the front engine shroud for access to the cooling fins.

o Clean and set the gap.

+ Keep the level at the check thus to ated at the rear of the transmission. Capacity: 2 pints (0.951) of SAE 5790 (car lubricant.

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

#### **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 "SD" or "SC". Case "HDM" oil has this classification.

Always check engine oil level daily or every 5 hours of operation, whichever comes first.

#### OIL SAE VISCOSITY RATING

**SAE 30** 

Air Temperatures 40°F (2°C) or more

SAE 5W-20 or 5W-30

Air Temperatures between 40°F (2°C) and 0°F (-18°C)

SAE 10W or 10W-30

Air Temperatures 0°F (-18°C) or less

diluted 10% with Kerosene

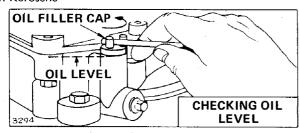


FIGURE 8

#### **OIL CHANGE**

Change the engine oil after the first 5 hours of operation. Make additional changes to the engine oil after 25 hours of operation.

Change the engine oil more often if the operating conditions are severe.

Run the engine before you change the oil. Hot oil will flow more freely and remove more foreign material.



CAUTION: Oil, grease and adjust the tractor only when the engine is shut off.

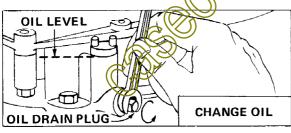


FIGURE 9

#### **OPERATING INSTRUCTIONS**

### OPERATING CONTROLS AND INSTRUMENTS



FIGURE 10.



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.

# 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" dosition.

#### 2. CHOKE AND THROTTLE

TO CLOSE THE CHOKE: Push the level up. Close the choke to start a cold engine.

TO OPEN THE CHOKE: Full the ever down. Open the choke slowly after the engine starts.

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

ENGINE LOW IDLE: Pull the lever down, Put the lever in the "SLOW" position when you start and stop the engine. This permits a warming and cooling period.

TO INCREASE ENGINE SPEED: Push the lever up 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 overspeed the engine.

#### 3. GEAR SHIFT LEVER

TO SELECT GEAR: Push the clutch/brake pedal fully down. Stop the tractor completely.

Move the gear shift lever to the needed gear. (The gear shift pattern is on the decal on the control tower.) /

Slowly release the clutch/brake pedal.

First gear is for the slowest speed and the most power. The speed increases and the power decreases with higher gears.

IMPORTANT: You must stop the tractor completely before you move the gear shift lever. Fully engage the gear shift lever to prevent gear damage.

#### 4. CLUTCH/BRAKE PEDAL

TO DISENGAGE: Push the clutch/brake pedal approximately half of full travel. This movement will actuate the clutch and permit you to change the shift ever position.

TO ENGAGE: After the gear shift is fully engaged, slowly release the clutch/brake pedal.

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

#### 5. PARKING BRAKE LOCK (NOT SHOWN)

TO ENGAGE: Push the clutch/brake pedal from down.

Lift the parking brake lock. Engage one of the notches with the top of the slot.

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

A spring will disengage the parking brake lock.

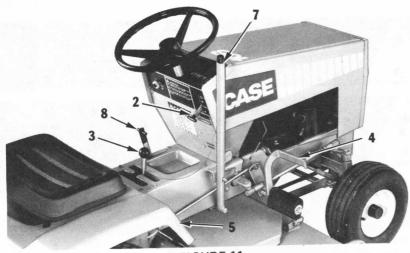


FIGURE 11

## 6. HEADLIGHTS (OPTIONAL EQUIPMENT)

TO ILLUMINATE: Pull the switch out to illuminate the headlights. The headlights will work only while the engine is running.

TO TURN OFF: Push the switch in to turn off the headlights.

# 7. MANUAL ATTACHMENT LIFT LEVER

TO LIFT: Pull the lever rearward until the lever engages the latch.

TO LOWER: Pull the lever rearward a small amount to decrease the tension on the latch. Push the button on top of the lever to disengage the latch.

Push the lever forward.

## 8. ATTACHMENT DRIVE LEVER

TO ENGAGE: Pull the lever to the rear, move towards the right and release. A spring will move the lever forward.

TO DISENGAGE: Pull the lever to the year, move towards the left and release.

The attachment drive lever ectuales a neutral start switch. This lever must be in the rear position (disengaged) before the engine will start.

#### PRESTARTING CHECK LIST



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.
- 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 than maple



- a. Use approved gasoline container
- b. Never remove the cap of the fuel tank acadd gasoline to a running or hot engine, or fill the fuel tank indoors. Wipe up spilled gasoline.
- c. Open doors if the engine is con 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.

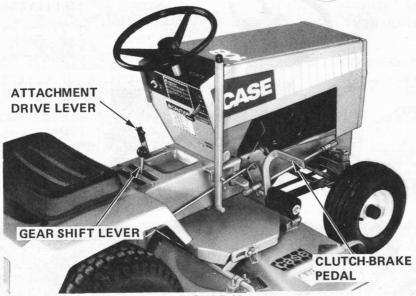


FIGURE 12



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



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. Push the clutch/brake pedal fully own.
- 2. Put the gear shift lever in the "NEUTRAL" position.
- 3. Pull the attachment drive lever rearward.



FIGURE 13



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

4. Push the choke/throttle lever up to close the choke.

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

5. Turn the 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 receive Release the key after 30 seconds if the engine does not start running that the inutes before you try again.

- 6. Push the choke/throttle lever down slowly after the engine starts running.
- 7. Permit the engine to warm before applying a load.
- 8. Set the choke/throttle lever approximatel (3) 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 TOW-ING. SERIOUS DAMAGE WILL HAPPEN TO THE DRIVE SYSTEM.

#### STOPPING PROCEDURE

- 1. Push the clutch/brake pedal fully down to stop the tractor.
- 2. Put the gear shift lever in the "NEUTRAL" position.
- 3. Engage the parking brake lock.
- 4. Push the choke/throttle lever down 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 stor quickly. READ THE OWNER'S MANUAL.

#### OPERATING PROCEDURE

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

1. Select the correct gear for the job. Speed increases and power decreases as you use higher gears.

IMPORTANT:

You must stop the tractor completely before you move the gear shift lever. Fully engage the gear shift lever to prevent gear damage.

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.

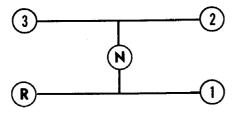


FIGURE 14 Gear Shift Pattern

- 2. Use first gear for snow removal, cutting heavy grass pulling heavy loads, and operating the tractor in small areas.
- 3. Use second gear for cutting normal grass, and operating the tractor in larger areas.
- 4. Use third gear to pull light loads.
- 5. Reverse gear speed is between tirst and second gear speed. Be careful and look rearward while you use reverse gear. Never use reverse gear to move down a slope.
- 6. The maximum travel speed of each gear is shown in the general specifications section of this manual.

- 7. After you select the correct gear, slowly release the clutch/brake pedal.
- 8. Control travel speed and engine power with the choke/throttle lever.
- 9. Decrease the throttle setting for safe operation. Use a lower gear if the decreased throttle setting causes the engine to lug. Lugging the engine will cause more than normal heat and damge to the engine.
- 10. Use a low gear for operation on hills or slopes. Select this gear before you are on the hill or slope. Do not stop on hills or slopes to change gears. Use reverse gear to move up a hill or slope. Use a forward gear to move down a hill or slope.



**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.

11. Decrease your travel speed before you make a turn. Either decrease the throttle setting or select a lower gear.



**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.

- 12. Engage the attachment drive before you put a load on the attachment.
- 13. Actuate the lawnmower over an area of thin grass or an area that has been cut.



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

- 14. Actuate the snowcaster before you make contact with the snow.
- 15. Read your attachment manual for complete attachment operation information.



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



FIGURE 15

You are the owner of a Case tractor. You have a machine the list nade 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.

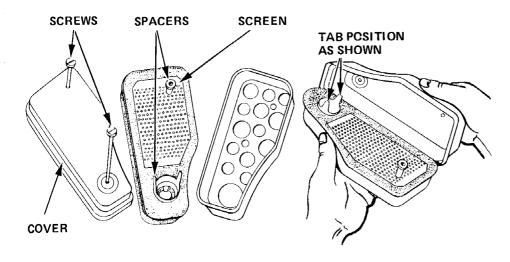


FIGURE 16

Clean and add oil to the air cleaner element at 25 hour intervals of normal operation.

- 1. Remove two screws and lift off complete air cleaner.
- 2. Remove the screen and the spacers from the element.
- 3. Remove the element from the air cleaner body.
- 4. A. Wash the element. Use kerosene or liquid detergent and water.
  - B. Put cloth around the element. Apply pressure to dry. Do not twist
  - C. Fill the element with engine oil. Apply pressure to the element to remove extra oil.
  - D. Assemble the air cleaner. Make sure the lip of the alement extends over the edge of the air cleaner body.
  - E. Use the two screws and install the air cleaner on the carburetor.

IMPORTANT: Always replace an air cleaner element if:

- a. the element is damaged
- b. the element liver not fully extend over the edge of the air cleaner body.

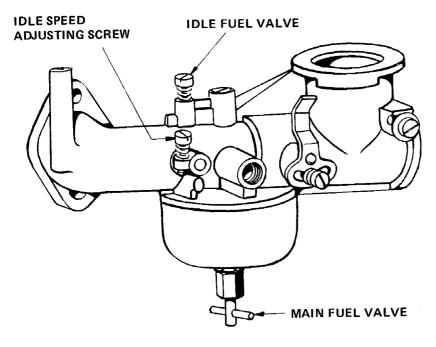


FIGURE 17

Changes in fuel, temperature, altitudes and load can require carburetor adjustments.

#### FIRST ADJUSTMENT

1. Turn the main fuel valve clockwise until closed. Do not use force.

2. Open the main fuel valve 1-1/8 turns counterclockwise.

3. Turn the idle fuel valve clockwise until closed. Do notuse force

4. Open the idle fuel valve 1-1/8 turns counterclockwise

This will permit you to start the engine. Let the engine become warm before you make the final adjustment.

## FINAL ADJUSTMENT

- 1. a. Turn the main fuel valve in (clockwise) until the engine runs bad.
  - b. Turn the main fuel valve out (counterclockwise) until the engine runs bad.
  - c. Turn the main fuel valve to a point half way between step a and b.
- Hold the throttle at the idle position. Turn the adjusting screw for idle speed until you reach 1750 RPM.
- 3. Hold the throttle in the idle position. Turn the idle fuel valve either in or out until the engine runs smoothly.
- 4. Turn the adjusting screw for idle speed until you reach 1750 RPM.

## **CORRECT OPERATION**

- The engine speed must increase smoothly. If the engine speed does not increase smoothly, turn the main fuel valve out (counterclockwise) a small amount.
- The engine must run smoothly with a load applied. If the engine does not run smoothly, turn the main adjusting screw out (counterclockwise) a small amount. Repeat this procedure until the engine runs smoothly.

If the carburetor is not adjusted correctly you can have the following problems:

- 1. loss of power
- 2. more than normal exhaust heat
- 3, more than normal fuel consumption.

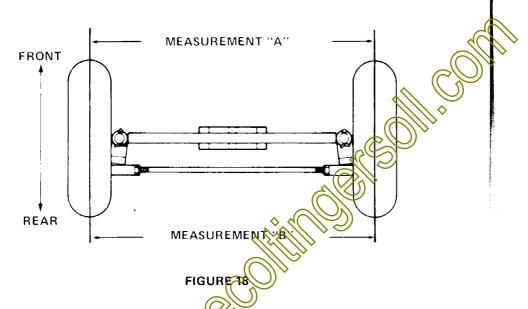
NOTE: Bad engine operation can be caused by dirt or other foreign material in the carburetor. In small gasoline engines, clean gasoline is important. Always use a clean funnel with a filter. Always use clean gasoline. Periodically check and clean the filter screen in the outlet fitting of the fuel tank

#### 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.



6. Loosen both lock nuts on the tie rod

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

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

# CLUTCH/BRAKE ADJUSTMENT

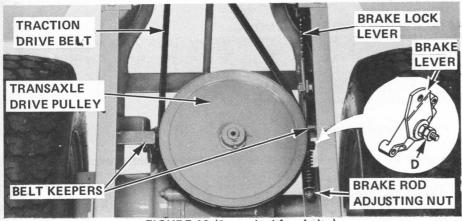


FIGURE 19 (Seat raised for clarity)

The clutch/brake is adjusted correctly when:

- 1. the first part of pedal travel disengages the clutch
- 2. the remainder of pedal travel actuates the brake.

Use the following prodecure for correct adjustment of the clutch/brake.

Stop the engine. Remove the key from the ignition.

- 1. Release the clutch/brake pedal.
- 2. Manually check the brake lever for free movement. Correct free movement can be from a small amount to 1/2" (12mm).
- 3. If adjustment is necessary use the following procedure:
  - a. Tighten the brake lever locknut (ref. D) to decrease free movement, or loosen to increase free movement.
  - b. Lift the seat.
  - c. Slowly push the clutch/brake pedal. Visually check the main drive belt at the transaxle drive pulley. The main drive belt transate become loose before the brake is actuated.
- 4. Put the transmission in gear. Push the tractor while you push the clutch/brake pedal. The main drive belt must become loose before the brake is actuated.
  - a. If the brake actuates before the clutch, turn the adjusting nut on the brake rod to the rear.
  - If you have too much pedal travel before the brake is actuated, turn the adjusting nut forward.

## **BELT SERVICE**

# ATTACHMENT DRIVE BELT REMOVAL

NOTE: The main drive belt must be removed from the engine pulley before the attachment drive belt.

- 1. Put the attachment drive lever in the "OFF" position.
- 2. Remove the belt keeper.
- 3. Remove the belt from the engine pulley. Remove the belt from the attachment drive pulley.

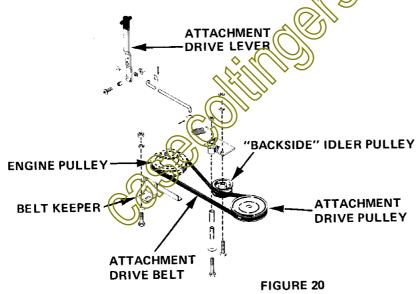
# ATTACHMENT DRIVE BELT INSTALLATION

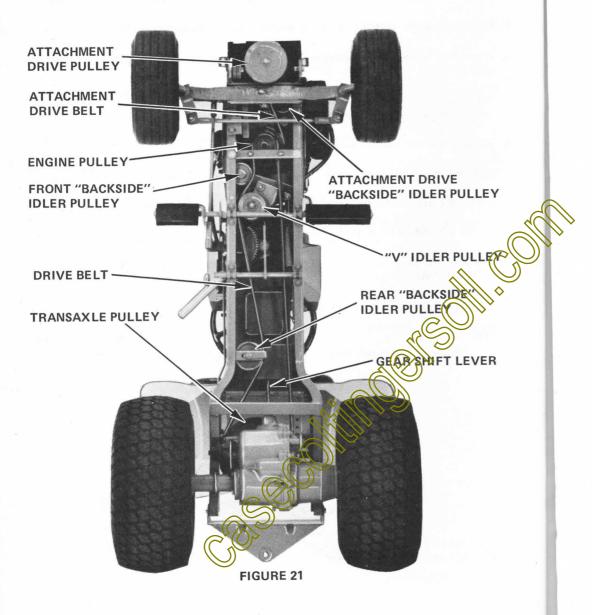
NOTE: The attachment drive belt must be installed on the engine pulley before the main drive belt.

- 1. Put the attachment drive belt lever in the "OFF" position.
- 2. Install the belt on the upper attachment drive pulley.
- 3. Install the other end of the belt on the upper engine pulley (larger pulley).
- 4. Put the belt in position in front of the idler pulley. The flat side of the belt must make contact with the idler pulley.
- 5. Put the attachment drive lever in the "ON" position. Install the belt keeper 106" (2mm) from and parallel with the belt.

NOTE: When you service a belt, always check the set screws in the engine pulley.

Tighten as required. Also make sure the engine pulley is aligned with the belts.





- 1. To move the belt around the gear shift lever:
  - a. Stand at the rear of the tractor. Raise the seat a small amount.
  - b. Push the gear shift lever forward into the "NEUTRAL" position.
  - c. Push the belt through the forward slot of the gear shift and to the rear of the gear shift lever.
  - d. When the belt is almost through, pull the gear shift lever rearward into the neutral position.
  - e. Pull the belt completely through.
- 2. The correct position for the belt before installation:
  - a. Temporarily put the belt above the rear "backside" idler pulley.
  - b. Between the clutch/brake shaft and "V" idler pulley.
  - c. Around engine drive pulley.
- 3. Put the belt in position between the "V" idler pulley and the front "backside" idler pulley.

NOTE: Make sure the "V" side of the belt fits in the "V" idler pulley. The flat side of belt must fit in the "back side" idler pulley.

4. Put the belt around the transaxle pulley. Install the belt keepers 1/16 (2mm to 3mm) from the belt.

5. Put the right strand of the belt between the rear "back side" idler pulley and belt keeper. This belt keeper is not adjustable.

- 6. Release the clutch/brake pedal.
- 7. Adjust the rear "back side" idler pulley as follows:
  - a. Use one hand and medium force to move the pulley as far as possible to the left.

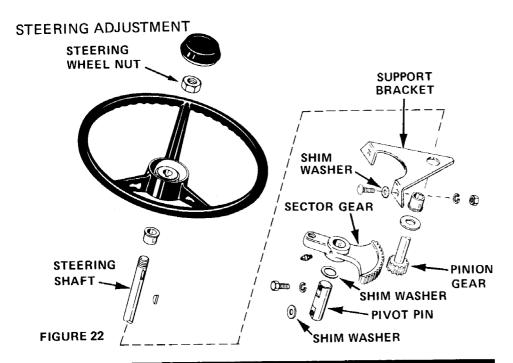
NOTE: Do not move the idler pulley too far to the left. Correct clutch action will not occur. Be careful the first time you start the tractor after belt adjustment.

Adjust the belt again if necessary



CAUTION: Improper idler adjustment may cause loss of declutching and uncontrollable tractor movement may occur. When first starting the tractor after belt replacement or idler adjustment always make certain that tractor motion stops when the clutch is depressed. Readjust if necessary.

8. Install the belt keeper for the engine pulley on the tractor frame. Align the belt keeper to permit a minimum of 1/8" (3mm) clearance with the belt.





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.

Free movement of steering wheel rotation must not be more than 2-1/2" (60mm

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

- 1. Loose or worn ball joints, drag link and tie rods. Aighten 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. This will permit the steering wheel to turn freely.

# SECTOR GEAR ADJUSTMENT

Vertical free movement between the sector gear and the frame cutout must not be more than 1/16" (2mm). If adjustment is necessary, add shims to the pivot pin. Add shims either above or below the sector gear to align with the pinion gear.

To tighten the mesh between the sector and pinion gears follow this procedure:

- 1. Equally remove shim washers from between the support bracket and tractor frame or:
- 2. Equally add shim washers between the pivot pin and the tractor frame.

#### SPARK PLUG

The original spark plug in your engine has a medium heat range. For replacement, use a Prestolite 14-7N or equivalent. (Prestolite 14 RL7 or equivalent in Canada.)

Tip length

7/16" (11.1 mm)

Thread size

14 mm

Gap setting

.030 (0.76 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.

# INSTALLING THE SPARK PLUG

1. Put a new gasket on the spark

2. Turn the spark plug into the engine.

THIS TYPE OF CRACK IS

- 1. DROPPING PLUG
- 2. STRICING PLUG WITH WHENCH DURING



ROUND FEELER GAUGE WILL GIVE A MORE ACCURATE READING

FIGURE 23

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.

- Add distilled water, as required, to keep the water level above the cert separators. Check at 25 hour intervals of operation or every week. Norma (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 eplace 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°F (-18°C).

#### ADDING WATER

Always use mineral free or distilled water in your battery. When the temperature is  $32^{\circ}$ F ( $0^{\circ}$ 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.

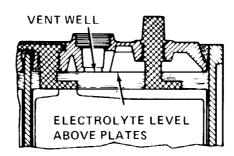


FIGURE 24

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.

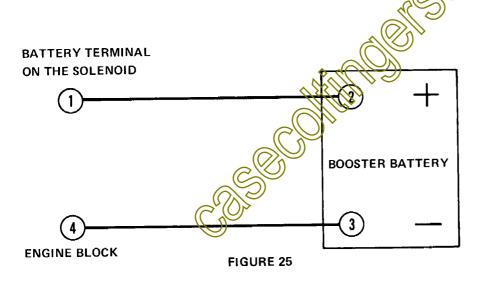
To remove the jumper cables, reverse the sequence.

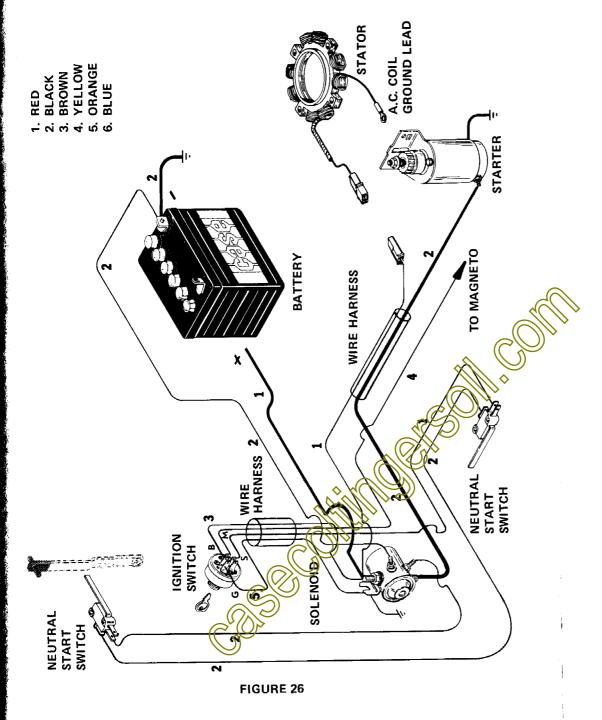
To prevent any possible sparks near the battery:

- 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.



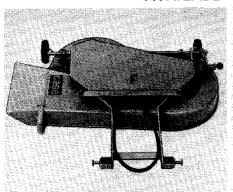
WARNING: To jump start this machine, connect positive jumper cable to battery terminal on starter solenoid and connect negative jumper cable to good engine ground. Start engine only when seated in operator's seat. Stop engine before leaving machine. Disconnect jumper cables. Any other method could result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

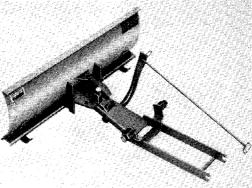




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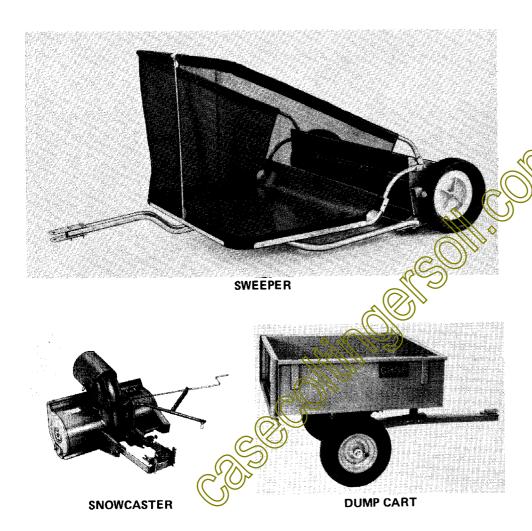
# **AVAILABLE ATTACHMENTS**





**ROTARY MOWER** 

UTILITY AND SNOW BLADE



MANY OTHER USEFUL ATTACHMENTS AND ACCESSORIES ARE AVAILABLE THROUGH YOUR JI CASE DEALER - 38 -

**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 CHECK

Your Authorized Case Dealer will make the "After Delivery Check" on you 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" on the following page.

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

# AFTER DELIVERY CHECK

(Owner's Name)	(Date)
(Owner's Address)	-
(Dealer)  Tractor has been operated da	(City)  ays.  (Tractor Model and Serial Number)
TR	ACTOR
Operator's Manual included with machine.	Check high governed speed with no load and low idle speed.  Check and clean air cleaner.
Check attachment drive clutch operation. Adjust if necessary.	Check and clean engine air cooling fins.
Check clutch brake operation. Adjust if necessary	Check crankcase oil level. Change if necessary.
Check gear shift operation for correct engagement.	Check transmission oil level. Add oil if necessary.
Check operation of all instruments and controls. Adjust if necessary.	Apply grease to steering gears.
Check steering wheel free movement. Adjust if necessary. Check tension and alignment of all belts and adjust if necessary. Check position of all belt guides and adjust if necessary. Check the torque of the cylinder head bolts. Inspect spark plug, clean and set the gap if necessary. Check carburetor operation and adjust if necessary. DEALER: Check carefully with the owner and operation. Give instruction	Lubricate all lubrication fittings.  Check tire air pressure. Adjust it necessary.  Check front wheel too in. Adjust if necessary.  Check battery Add water or charge if necessary.  Inspect wiring and headlights.  Trighter all nuts and bolts, including wheel rims.  The find what he knows about maintenance is on the procedures that are not clear to him.
irst copy - Dealer econd copy - Owner	Dealer
• •	Owner

# LUBRICATION AND PREVENTIVE MAINTENANCE RECORDS

**HOURS (DATE)** DESCRIPTION