

SUPPLEMENT TO
OPERATOR'S INSTRUCTION MANUAL

**430-530-630
SERIES
DIESEL
WHEEL
TRACTORS**

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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 Serial, Model and Engine Number of your Tractor.

The Model and Serial Numbers are stamped on the number plate located on the right hand side of the instrument panel. The Engine Number is stamped on a plate fastened to the right hand side of the engine below the starting motor, Figure 1.

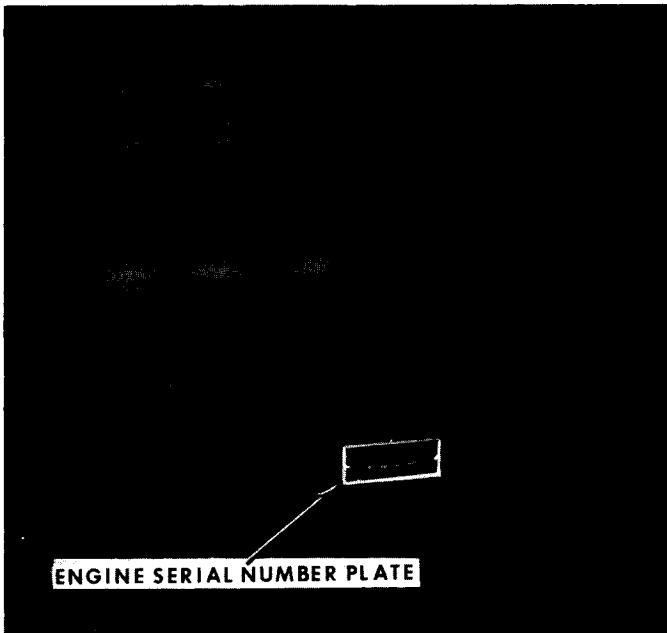


Figure 1

NOTE The terms "Right Hand" and "Left Hand" 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 Serial Number, Model Number and Engine Number of your Case Tractor in the spaces provided below.

Model Number _____

Engine Number _____

Serial Number _____

SPECIFICATIONS

Type ----- "Case" Open Chamber Com-
 bustion - 4 Cyl. - Valve in Head.
 Firing Order ----- 1-3-4-2
 Cylinder Bore ----- 3-13/16"
 Stroke ----- 4-1/8"
 Piston Displacement ----- 188 Cu. In.
 Compression Ratio ----- 17.5 to 1
 Valve Clearance ----- .014 (Cold)
 Cylinder Sleeves ----- Wet Type Replaceable
 Air Cleaner ----- Oil Bath Type
 Cold Weather Starting Aid ----- Electric Manifold Type
 Fuel Recommendation ----- No. 2 Diesel Fuel

Engine Speed (RPM)

	430	530	630
Full Load Speed (Standard Clutch)	1750	1900	2000
Full Load Speed (Case-O-Matic)		2100	2250
No Load Speed (Standard Clutch)	1900	2050	2150
No Load Speed (Case-O-Matic)		2250	2400
Engine Idle Speed	600	600	600

Pistons and Rods

Compression Rings ----- 2
 Oil Control Rings ----- 1
 Piston Pins ----- Full Floating Type
 Piston Material ----- Aluminum Alloy
 Connecting Rod Bearings ----- Replaceable Precision Steel
 Back Copper - Lead Alloy Liners.

Main Bearings

Number of Main Bearings ----- 5
 Type Bearings ----- Replaceable Precision Steel
 Back Copper - Lead Alloy Liners.

Engine Lubricating System

Oil Pressure ----- 50 to 60 Lbs. at 2000 RPM
 Type System ----- Gear Type Pump With Float-
 Intake Screen.
 Oil Filter ----- Full Flow Replaceable

FUEL SYSTEM

Fuel Injection Pump ----- Roosa - Master
Fuel Injectors ----- (Long Stem Multi-Hole) C.A.V.
Fuel Injectors Opening Pressure ----- 2250 PSI
Fuel Transfer Pump ----- Vane Type (Integral Part of In-
jection Pump).
Governor ----- Mechanical, Flyweight, (Integral
Part of Injection Pump.)
Primary Fuel Filter ----- Replaceable Element Type
Final Filter ----- Replaceable Filter Type
Fuel Gauge ----- Electrical Located on Instrument
Panel.
Fuel Tank Water Trap and Drain ----- Bottom of Fuel Tank

COOLING SYSTEM

Type of System ----- Pressurized, Thermostat Controlled
Radiator Pressure Cap ----- Open at 4 lbs.
Pump ----- Impeller Type - Sealed Pre-Lubri-
cated Bearing.
Radiator ----- Heavy Duty Tube and Fin Construction
Thermostat ----- Starts to Open at 177° Full Open at 202° F.

STARTING AND LIGHTING SYSTEM

Type of System ----- 12 Volt - Positive Ground
Batteries - Diesel ----- (2) 6 Volt, Type 1M-105R, 45 Plates
Connected in Series.
Generator ----- 12V - 2 Brush With Full Ventilation
Voltage Regulator ----- 12 V - Automatic Type
Starting Motor ----- 12 V With Solenoid Switch
Manifold Heater ----- 12 Volt
Headlights ----- 12 V - 35 Watt Sealed Beam
Rear Light ----- 12 V Sealed Beam Combination
Tail and Flood Lamp.
Fuse ----- 20 AMP - Light Circuit - in Panel
Electrical Socket ----- 12 V - For Auxiliary Tail Light

STANDARD MECHANICAL DRIVE

Clutch Type ----- Foot Operated, Spring Loaded,
Single Disc.
Throwout Bearing ----- Ball Thrust w/grease Fitting

CASE-O-MATIC DRIVE

Main Powr-Clutch ----- Multiple Disc, Hydraulically Actuated, Engages Engine and Torque Converter.
 Direct Drive Powr-Clutch ----- Single Disc, Hydraulically Actuated Engages Engine Direct With Main Powr-Clutch and Transmission.
 Converter Size and Type ----- 11" Single Stage

TRANSMISSION

Standard ----- 4 Speed Transmission
 Dual Range (Case-O-Matic Only) ----- 8 Speed Transmission
 Triple Range (Standard Clutch Only) ----- 12 Speed Transmission
 Dual Range Shuttle ----- 8 Speed Forward and Reverse

BRAKES

Type ----- Heavy Duty, Disc and Band Differential Brakes.
 Brake Pedals ----- Can Be Locked Together for Road Travel or Operated Independently for Steering Assistance.

POWER TAKE-OFF

Rotation ----- Clockwise (from rear of tractor)
 Output Shaft ----- Standard 1-3/8" ASAE Spline
 Speed (430, 530 Series) ----- 533 RPM at 1750 Engine RPM
 Speed (530C, 630C and 630 Series) - 541 RPM at 1970 Engine RPM

CAPACITIES

	430	530 and 630
Engine Crankcase	4 Quarts	4 Quarts
With Filter	5 Quarts	5 Quarts
Air Cleaner	2 Pints	2-3/4 Pints
Cooling System	13-1/2 Quarts	16-1/2 Quarts
Fuel Tank	13 Gallons	22 Gallons

FUEL SPECIFICATIONS

CASE DIESEL ENGINES ARE DESIGNED TO OPERATE MOST EFFICIENTLY WHEN USING A NUMBER 2 DIESEL FUEL. MOST WELL KNOWN REFINERS AND DISTRIBUTORS MARKET A GOOD GRADE OF DIESEL FUEL AND THERE SHOULD BE NO DIFFICULTY IN OBTAINING IT.

DO NOT CONFUSE NUMBER 2 DIESEL FUEL WITH NUMBER 2 FURNACE OIL, AS THIS DOES NOT ALWAYS MEET THE FUEL SPECIFICATIONS FOR DIESEL ENGINES.

THESE ARE SPECIFICATIONS FOR A SUITABLE NUMBER 2 DIESEL FUEL.

A.P.I. GRAVITY ----- 32 - 39
POUR POINT ----- A RATING 10 DEGREES LOWER THAN THE LOWEST EXPECTED TEMPERATURE.

VOLATILITY

INITIAL BOILING POINT (MINIMUM) ----- 320° FAHRENHEIT
50% CONDENSED ----- 475° - 550° FAHRENHEIT
FINAL BOILING POINT (MAXIMUM)----- 675° FAHRENHEIT
DISTILLATION RECOVERY (MINIMUM) ----- 97%
FLASH POINT ----- LEGAL MINIMUM LIMIT OR HIGHER.

S.U. VISCOSITY AT 100° FAHRENHEIT --- 34-39 SECONDS
CETANE (MINIMUM) ----- 45 (45 - 55 FOR WINTER USE)
DIESEL INDEX ----- 43
WATER AND SEDIMENT (MAXIMUM) ----- .05%
ASH (MAXIMUM) ----- .02%
TOTAL SULPHUR (MAXIMUM) ----- .5%
CONRADSON CARBON ----- .2%
COPPER STRIP CORROSION ----- PASS
ALKALI AND MINERAL ACID ----- NEUTRAL

THE USE OF NUMBER 1 DIESEL FUEL, WHICH IS A LIGHTER FUEL, MAY RESULT IN A LOSS OF ENGINE POWER AND ALSO INCREASED FUEL CONSUMPTION BECAUSE IT HAS LESS HEAT CONTENT AND A LOWER VISCOSITY THAN NUMBER 2 DIESEL FUEL.

THE LIFE OF THE INJECTION PUMP MAY ALSO BE AFFECTED BECAUSE OF THE LACK OF LUBRICANT IN THE LIGHTER NUMBER 1 DIESEL FUEL.

FUEL CONDITIONER

The following "Fuel Conditioner" recommendations are made for areas troubled with gum and varnish in the fuel:

1. Obtain a "Case Diesel Fuel Conditioner" and use it as follows:
 - A. Add it to the fuel in the main storage tank.
 - B. Add a small quantity to the Tractor fuel tank daily.
 - C. Use the "Conditioner" periodically, or when any symptoms develop in the engine that indicate gum and varnish deposits in the Fuel Injection System.

NOTE Refer to the instructions furnished with the "Conditioner" as to the amount that should be used.



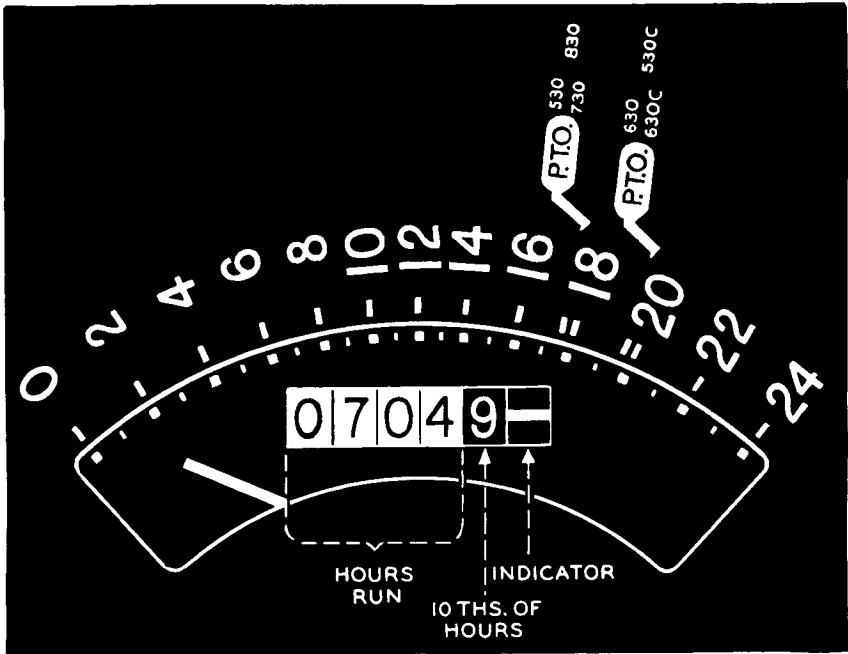
Figure 2

IMPORTANT

1. Buy Diesel Fuel in quantities that will be used up in 90 days or less.
2. Protect main storage tank with a shelter so the fuel can be kept as cool as possible.
3. When a Tractor is to remain idle for a month or longer, follow the Engine storage recommendations.

LUBRICATION

Lubricating your Case Tractor will require only a few minutes of regular daily attention. Whenever possible, automatic lubrication or prepacked bearings have been provided to reduce the demand made on the operator's time.



530 and 630 Series Engine Hour Meter

To assure maximum engine service and complete satisfaction, two factors must be observed:

1. Have a regular schedule of inspection and lubrication. All time intervals in the Lubrication Section and the Preventive Maintenance Section of this manual are based on Hour Meter readings. Reading the Hour Meter provided on your Case Tractor will tell you when to service it.
2. Use only high quality oils and greases of unvarying specifications. Always buy from a reliable dealer who handles reputable, well-known brand lubricants. Use only oil and grease of the specifications recommended in this manual.

ENGINE LUBRICATION



Selection of Lubricating Oil

It is extremely important that you select and use in your Case Tractor a stable, high quality, engine lubricating oil that has the proper body (SAE Viscosity Rating) for the prevailing air temperatures and proper Service designation.

Engine Oil SAE Viscosity Rating

- SAE 30 ----- Air Temperatures above 80° F.
SAE 20-W ----- Air Temperatures from 80° F. to 32° F.
SAE 10-W ----- Air Temperatures from 32° F. to -20° F.
SAE 5-W ----- Air Temperatures below -20° F.

Engine Lubricating Oil Service Designation

Service "DS" (Series|3) - Severe Diesel Engine Operation

ENGINE CRANKCASE OIL CHANGE

Run-In Oil

Drain the special "run-in" oil after the first 20 hours of operation and replace with fresh oil. Drain and refill the crankcase at least every 120 hours of operation thereafter.

Regular Oil Change

Drain and refill the crankcase at least every 120 hours of operation.

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.

Crankcase Oil Refill

IMPORTANT

1. When just the crankcase is drained, always refill with 4 measured quarts of oil. Do not refill using the dipstick as a guide.
2. If you have drained the crankcase and replaced the oil filter element, pour in 5 measured quarts, operate the engine for a few minutes to fill the filter body; then check the oil level with the dipstick.

Be sure to allow sufficient time for the oil to run down off the engine parts.

3. By following the above procedure, you 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.

ENGINE OIL FILTER

Change Interval ----- Each 240 Hours
(two oil changes).

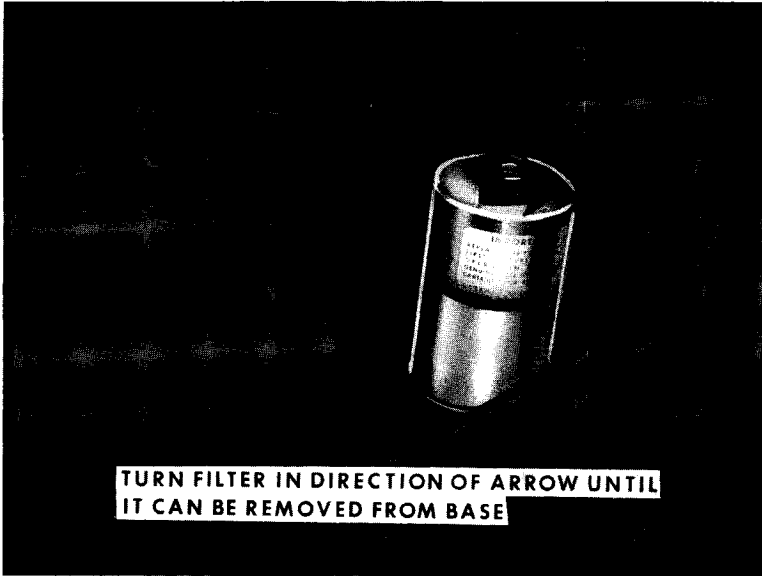


Figure 3

After the first 120 hours of operation and each 240 hours of operation (two oil changes) thereafter, install a new Genuine Case Filter. To remove the filter, unscrew it as shown in Figure 3, and pull it straight back from the base.

Be sure the replacement element and gasket are tightened securely to prevent oil leakage.

CAUTION

NEVER ATTEMPT TO CHANGE AN OIL FILTER WHEN THE ENGINE IS RUNNING.

IMPORTANT

CHANGE THE OIL FILTER AT THE RECOMMENDED TIME INTERVALS.

PRE-STARTING CHECK LIST

Before starting your new Case Tractor for the first time and before each operating period thereafter, check the following:

1. MAKE SURE EVERYONE RESPONSIBLE FOR THE TRACTOR'S OPERATING AND MAINTENANCE UNDERSTANDS THE IMPORTANCE OF CLEAN FUEL. Refer to "Fuel Specifications.
2. Check that all lubrication fittings are serviced.
3. Check that crankcase, transmission and hydraulic housings are filled to their proper levels.
4. Be sure air cleaner oil cup is clean and filled exactly to level mark on the cup with clean free flowing oil.
5. Check that radiator is filled. Use only soft water that is free as possible of scale forming minerals - or a reputable nationally recognized brand of "High Boiling Point" type anti-freeze.
6. Check that the tractor fuel tank is filled with clean, water free fuel that meets requirements listed on Page 7..Always wipe fuel tank cap clean before removing it.
7. Visually check fuel system for leakage. Check the engine for coolant or crankcase oil leakage.
8. Check that the fan belt is just tight enough to eliminate slippage.
9. Drain any accumulated water or sediment from the fuel tank water trap daily.
10. If your tractor is equipped with a power take-off, make sure the power take-off guard is installed.
11. Check the hydraulic power steering reservoir; make sure the fluid reservoir is filled to proper level.

RUN-IN PROCEDURE

IMPORTANT

AT ALL TIMES, MAINTAIN THE CORRECT OPERATING TEMPERATURE.

ALWAYS OPERATE ENGINE AT FULL THROTTLE DURING RUN-IN PERIOD. DO NOT IDLE THE ENGINE.

Careful attention must be given to proper "Run-In" procedure piston rings and cylinder sleeves can be seriously damaged in a new engine if "run-in" instructions are not followed. The following procedure is recommended.

1. Load

For the 1st 50 hours maintain a normal load. Do not "baby" the engine, but do not "lug" it. (Engine must not be "lugged" down below its full load governed engine speed).

2. Engine Speed

During "run-in" period, always operate the tractor at full governed RPM (throttle wide open). Avoid idling at reduced engine speed.

3. Operating Temperature

Maintain the correct coolant temperature .

Low operating temperatures contribute to the formation of destructive acids and harmful deposits in the engine.

4. Crankcase Oil

Case Tractors are shipped from the factory with a special "run-in" oil in the crankcase. After the first 20 hours of operation, drain this oil while the engine is hot and replace it with fresh oil. Install new engine oil filter element.

DO NOT DRAIN SPECIAL RUN-IN OIL UNTIL THE ENGINE HAS BEEN OPERATED 20 HOURS.

5. Clutch Adjustments

During the first 50 to 150 hours of operation, it may be necessary to adjust both traction and PTO clutches several times until the drive plate facings have "run-in". Failure to do so can cause serious clutch damage.

STARTING PROCEDURE

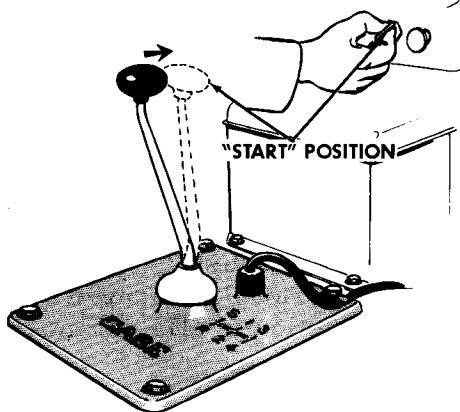


Figure 4

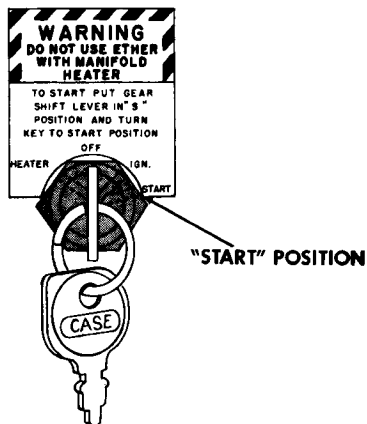


Figure 5

1. Move throttle control lever to 1/2 open position.
2. Move gear shift lever to "Start" position, Figure 4.
3. Turn starter key clockwise until engine starts - then release key, Figure 5.

CAUTION

1. Immediately check that the oil pressure gauge is registering proper pressure and the ammeter for generator charging rate. If not, stop engine and investigate.
2. If engine fires and stops, wait for starting motor to stop spinning before again turning key switch to start.
3. Do not use starting motor longer than 30 seconds without interruption. Wait at least 3 minutes so batteries can recuperate and starting motor can cool.

NOTE While the engine is being turned over with the key switch, white or black exhaust smoke should be observed. If none is observed and engine will not start, it is an indication that no fuel is being delivered to the cylinders. See Pages 16 and 17 for cold weather starting procedures.

STOPPING PROCEDURE

Diesel ----- Pull fuel stop button out all the way and turn key switch to "OFF" position.

COLD WEATHER STARTING PROCEDURE

Intake Manifold Heater

To start the diesel engine at temperatures near freezing or below it may be necessary to use the manifold heater. Normally the manifold heater will aid cold weather starting to 10° F.

NOTE For temperatures below 10° F. Refer to Page 17.

The manifold heater is located in the air intake manifold and heats the air before it enters the combustion chamber. The heater is operated with the starter key switch.

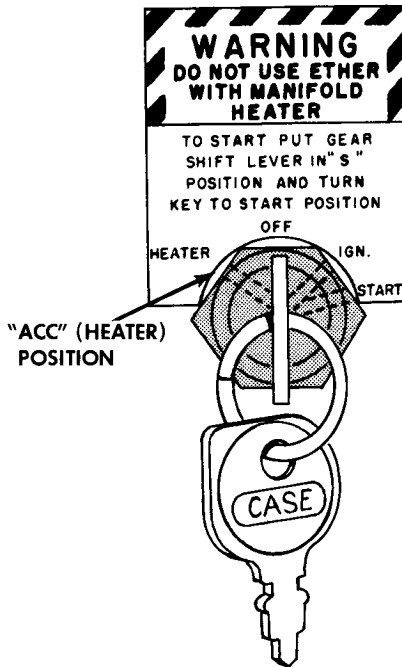


Figure 6

To operate the manifold heater, proceed as follows:

1. Turn and hold the starter key in the manifold heater (extreme left) ACC position for 30 seconds, Figure 6.
2. Release starter key and turn clockwise until engine starts.
3. If engine does not start after starting motor has cranked for 15 seconds, repeat above procedure.

COLD WEATHER STARTING FLUID

For freezing temperatures or below it may be necessary to use starting fluid. Genuine Case Starting Fluid is available through your Authorized Case Dealer.

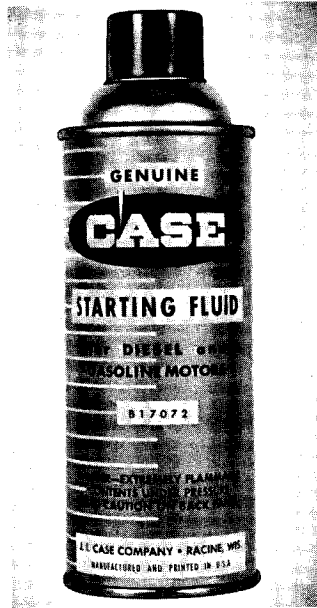


Figure 7

To use starting fluid proceed as follows:

1. Be sure traction clutch is disengaged.
2. Spray starting fluid into the top of the air cleaner.
3. At the same time turn starter key clockwise to start engine then release key when engine starts.

NOTE Complete instructions are given on the container.

WARNING

WAIT 10 MINUTES BEFORE USING STARTING FLUID IF YOU HAVE ATTEMPTED TO USE THE MANIFOLD HEATER. CRANK ENGINE 5 SECONDS BEFORE ATTEMPTING TO USE MANIFOLD HEATER IF YOU HAVE USED STARTING FLUID.

COOLANT HEATER

The engine cylinder block on your tractor is provided with one 3/8 inch diameter passage, located on the Left hand side of the engine, Figure 8. This 3/8 inch diameter passage will accommodate most types of Cylinder Block Coolant Heating Elements. The MAXIMUM Depth the Coolant Heater can be submerged in cylinder block is 2-3/4 inches.

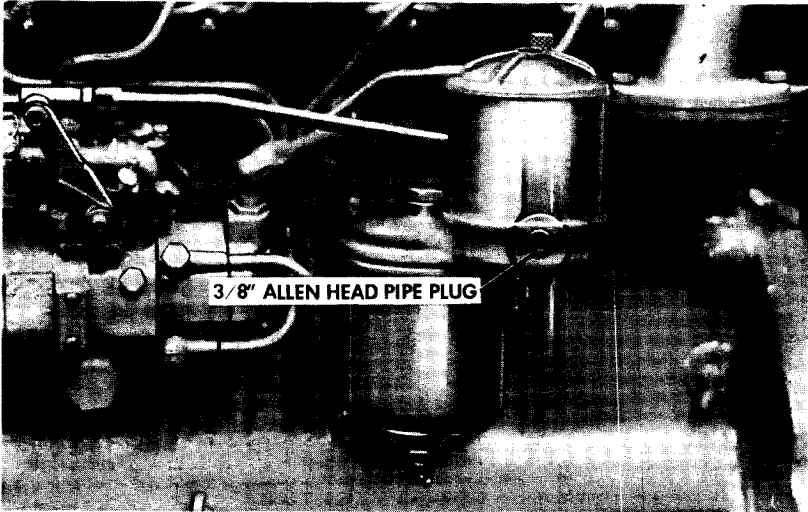


Figure 8

To install the Coolant Heater, remove the 3/8 inch Allen Head pipe plug from the cylinder block, Figure 8, and follow the Heating Element Manufacturer's instructions for installation.

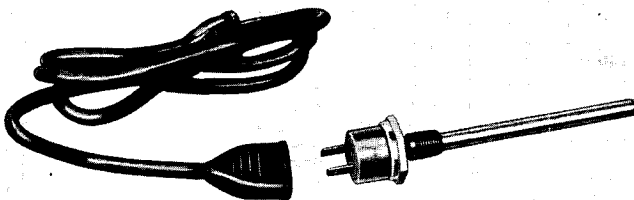


Figure 9. Typical Coolant Block Heater

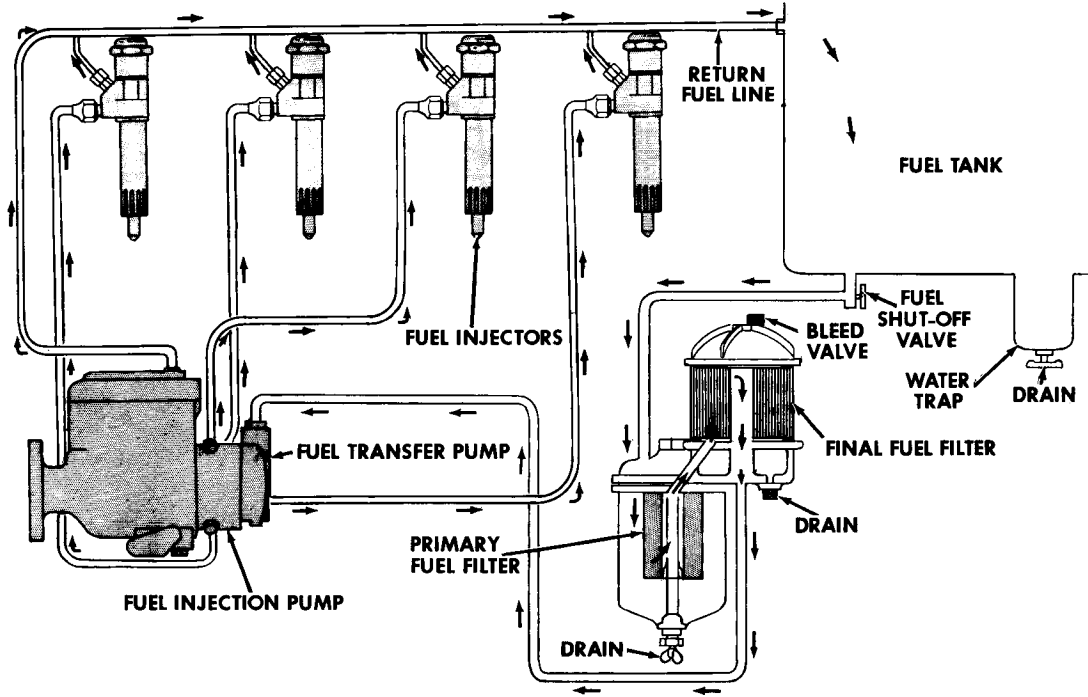


Figure 10. Fuel System -- Schematic Drawing

The fuel system of your Case Tractor consists of the following units.

1. Fuel tank containing a fuel gauge sending unit.
2. Two fuel filters and a water trap attached to the bottom of the fuel tank.
3. Fuel injection pump with built-in governor and transfer pump.
4. Injectors with long-stem nozzles for direct injection into engine combustion chambers.
5. Fuel lines—short and compact installation for simple easy servicing.

REPLACING FUEL FILTERS

Clean the filter side of the engine thoroughly. Be sure no dirt is left on the filter bodies.

Close the fuel shut-off valve on the fuel tank. Open the drain valves on the primary filter shell and final filter base.

PRIMARY FILTER

1. Loosen the filter shell retaining nut until the filter shell can be removed.
2. Lift the contaminated element out of the filter shell and discard it.
3. Wash the filter shell in clean diesel fuel.
4. Install a new Genuine Case Filter Element in the shell and new shell to body gasket. Check the filter shell retaining nut gasket. Replace if necessary.
5. Install shell with new element to body gasket and tighten the retaining nut.
6. Close the drain valve.

FINAL FILTER

1. Unscrew the filter cap until the element and cap can be removed.
2. Install new Genuine Case Filter with gaskets in place with the 3/4" hole in the filter down on to the filter base.
3. Install and tighten cap.
4. Close the drain valve and open the fuel tank valve.
5. Bleed the system. Check filters for leaks.

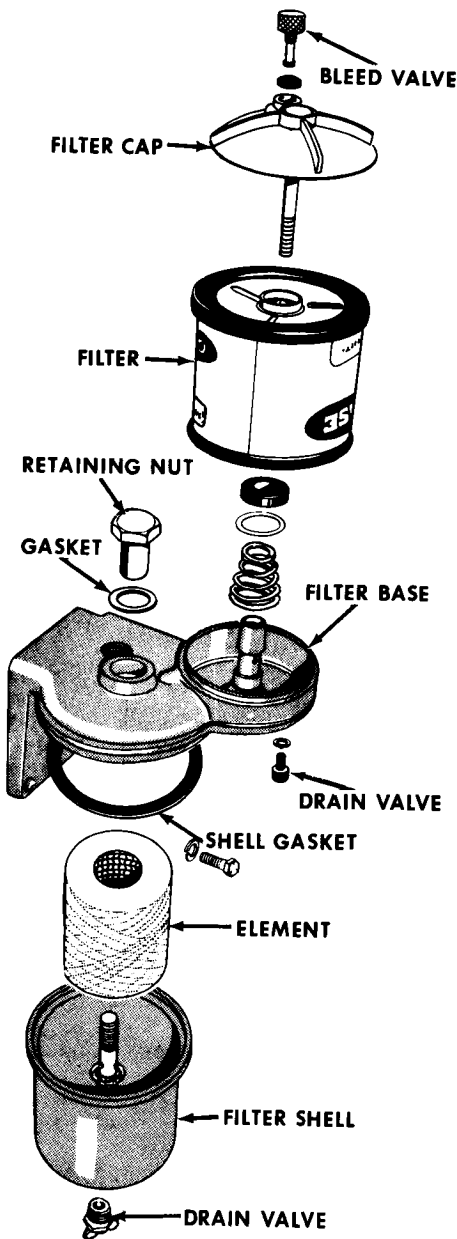


Figure 11

FUEL TANK WATER TRAP AND SHUT-OFF VALVE

During cold weather be sure to drain the fuel tank water trap daily, Figure 12. If a large quantity of water is allowed to accumulate and freeze in the water trap, it will result in damage to the fuel tank.

Turn fuel tank shut-off valve, Figure 12, fully in to shut off fuel from fuel tank.

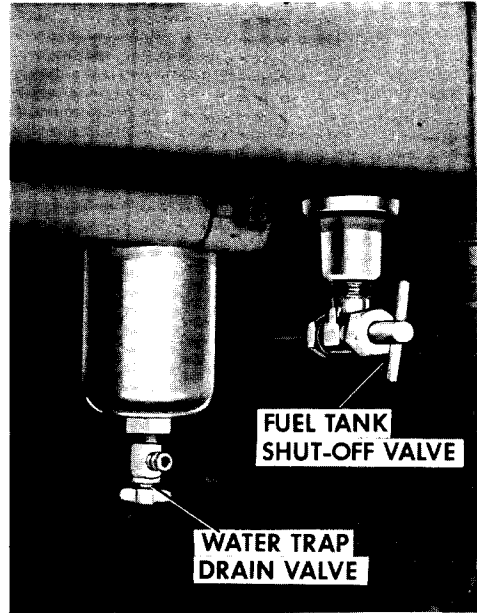


Figure 12

THERMOSTAT REPLACEMENT

Remove the hood, drain the cooling system and loosen the two bolts that hold the housing to the timing gear cover. Loosen the hose clamps on the upper hose and the housing can be removed. The thermostat can be lifted out of the timing gear cover upper water outlet. Install new gasket when the thermostat is reinstalled.

Be sure the new thermostat has the same heat range as the original thermostat. Be sure hose clamps and flange bolts are tight before adding coolant to radiator.



Figure 13

Air Cleaner Service Instructions

1. Loosen the two knurled nuts on the left hand grille screen and swing screen out just enough so the screen can be lifted off the tractor.

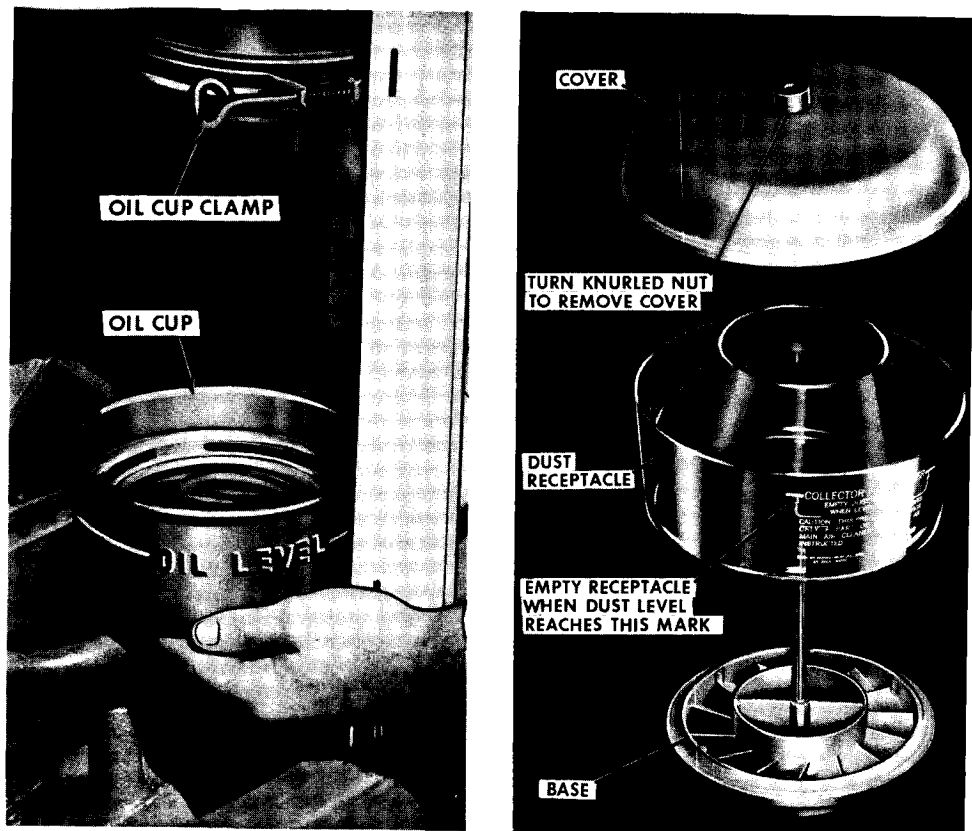


Figure 14

2. Loosen the oil cup retainer clamp so oil cup can be lowered and removed from air cleaner, Figure 14.
3. Drain the contaminated oil, remove the baffle from the oil cup. Wash the baffle and oil cup in clean fuel.
4. Reinstall baffle in oil cup. Refill oil cup exactly to the oil level mark with clean oil of the same viscosity as used in the engine crankcase. **DO NOT OVERFILL.**
5. Reinstall the oil cup on to the air cleaner and tighten clamp. Be sure oil cup is not tilted or clamp will not seal properly.

At least once a season (more often in dusty conditions), remove the entire air cleaner from the tractor. Remove the oil cup, then submerge the entire cleaner body in clean diesel fuel. Refer to steps 3, 4 and 5.

ELECTRICAL SYSTEM (430 Series)

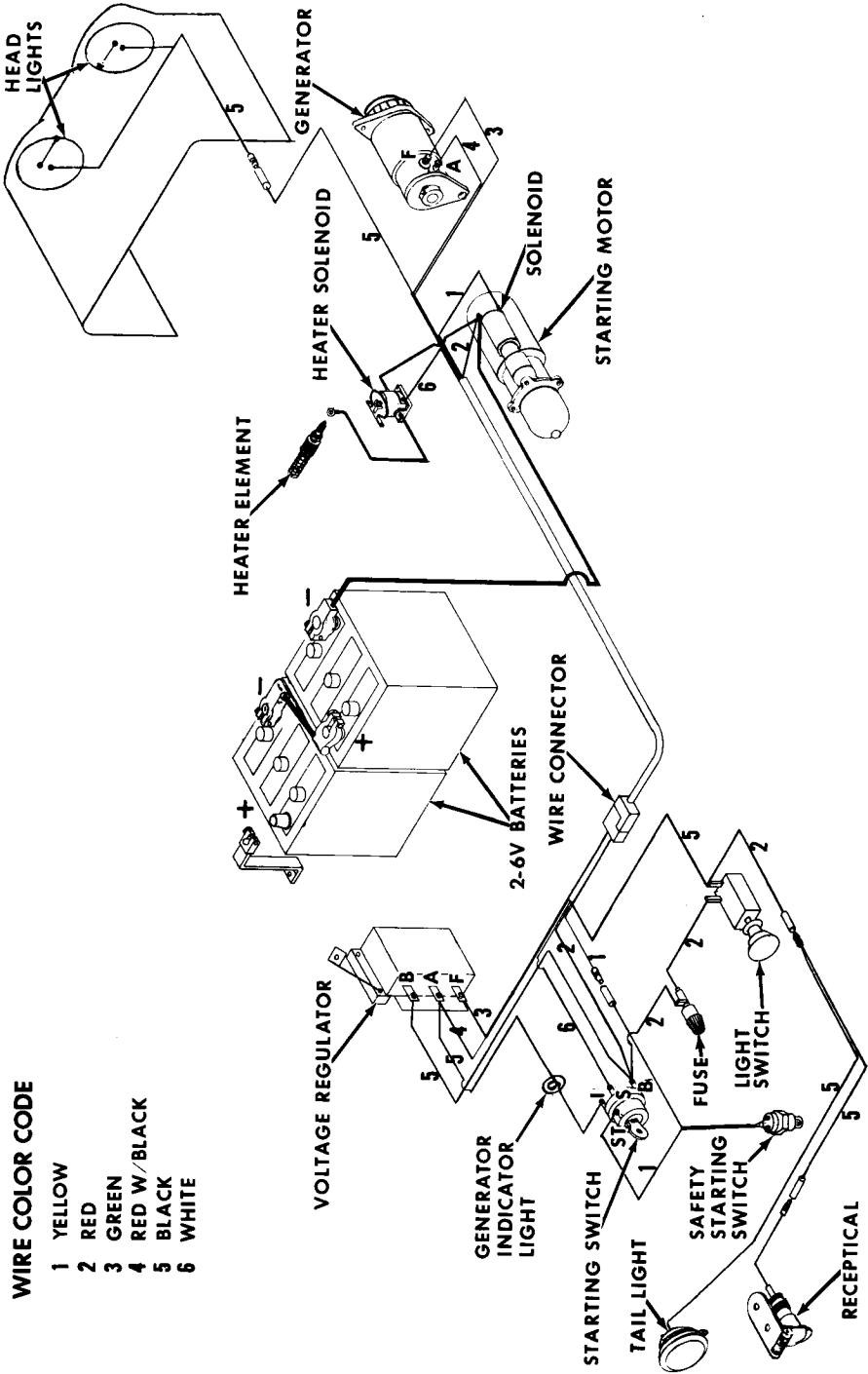
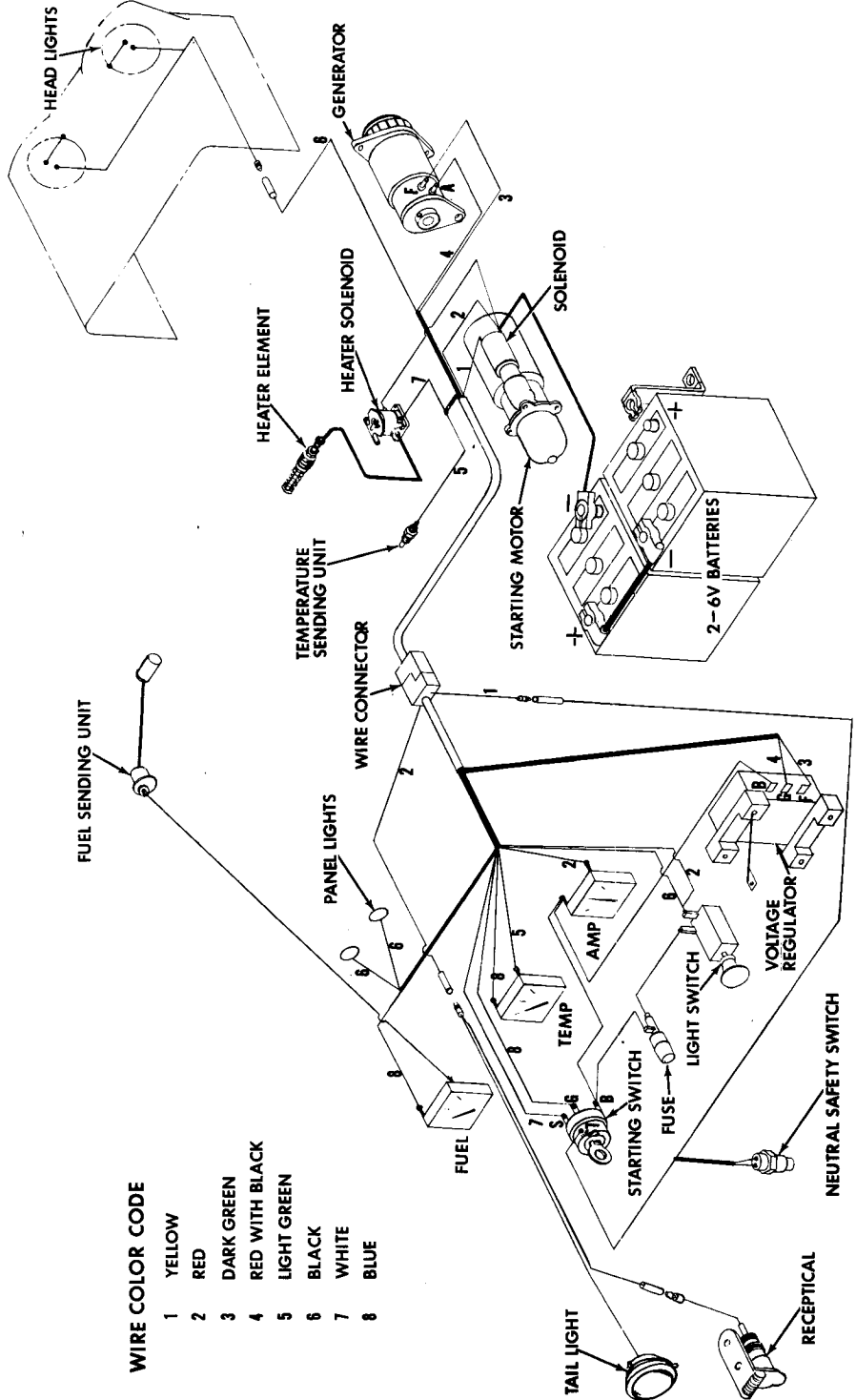


Figure 15

ELECTRICAL SYSTEM (530 and 630 Series)



WIRE COLOR CODE

- 1 YELLOW
- 2 RED
- 3 DARK GREEN
- 4 RED WITH BLACK
- 5 LIGHT GREEN
- 6 BLACK
- 7 WHITE
- 8 BLUE

Figure 16