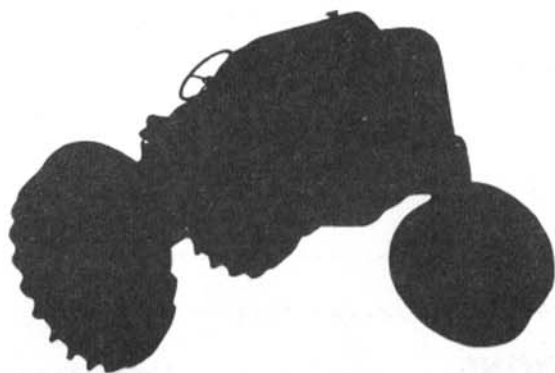


FORD
LP-GAS
TRACTOR



*Owner's Manual
Supplement*

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FOREWORD

Your new Ford LP-Gas Tractor is basically the same tractor as the gasoline models that comprise Series 4000 All Purpose and Row Crop Ford Tractors.

Information given in this manual covers only the LP-Gas portions of your tractor model and should be used as a supplement to the regular owner's manual included in your owner's envelope.

For complete operation and maintenance instructions, plus coverage of the many features included in your Ford LP-Gas Tractor, refer to both owner's manuals.

TRACTOR AND IMPLEMENT OPERATIONS (U. S.)
FORD MOTOR COMPANY
SERVICE DEPARTMENT

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LP-GAS FUEL CHARACTERISTICS

The term "LP-Gas" has become accepted in many areas as an abbreviation for liquefied petroleum gas which is principally propane or butane compounds or a mixture of both.

LP-fuel "boils" or vaporizes at very low temperatures and must be kept under pressure to keep it in liquid form. LP-fuel as a liquid under pressure, is constantly striving to return to its gaseous state. By opening a valve on the tank in which it is confined, the liquid escapes as a gas.

LP-fuels are heavier than air and tend to settle along the ground or floor; particularly where there is little or no air movement. For this reason, it is important to prevent leakage from storage tanks or tractor fuel systems and to thoroughly ventilate ground or floor areas when escaped gas is detected.



LP-Gas is no more hazardous than other engine fuels, but its characteristics require different methods of handling and storage.

CONTROLS AND INSTRUMENTS

The following LP-Gas controls and instruments are used in conjunction with the regular operating controls on your Ford Tractor.

Liquid and Vapor Withdrawal valves: These valves provide a manual control of fuel flow from the tank. The liquid valve is turned counterclockwise to open and permits the flow of liquid from the lower portion of the tank. The vapor withdrawal valve is also turned counterclockwise to open and permits the flow of vapor from the upper portion of the tank.

Fuel Gauge: The fuel gauge, mounted on the tank between the liquid and vapor valves, is calibrated to show the liquid fuel level in the fuel tank.

NOTE: *The fuel gauge does not indicate fuel pressure, it indicates level only.*

FUEL TANK AND PRESSURE REDUCTION COMPONENTS

LP-Gas fuel, as a liquid, must be vaporized before it enters the carburetor. For this reason, different devices are necessary for this type of fuel than those associated with gasoline systems.

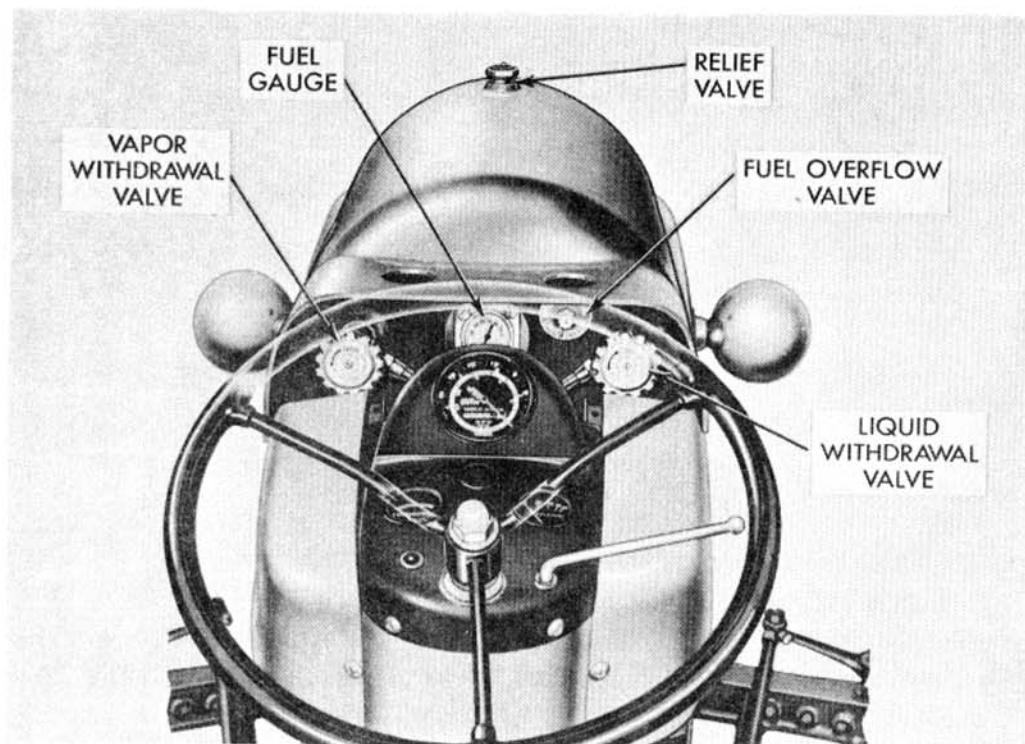


Figure 1
Operating Valves and Fuel Gauge

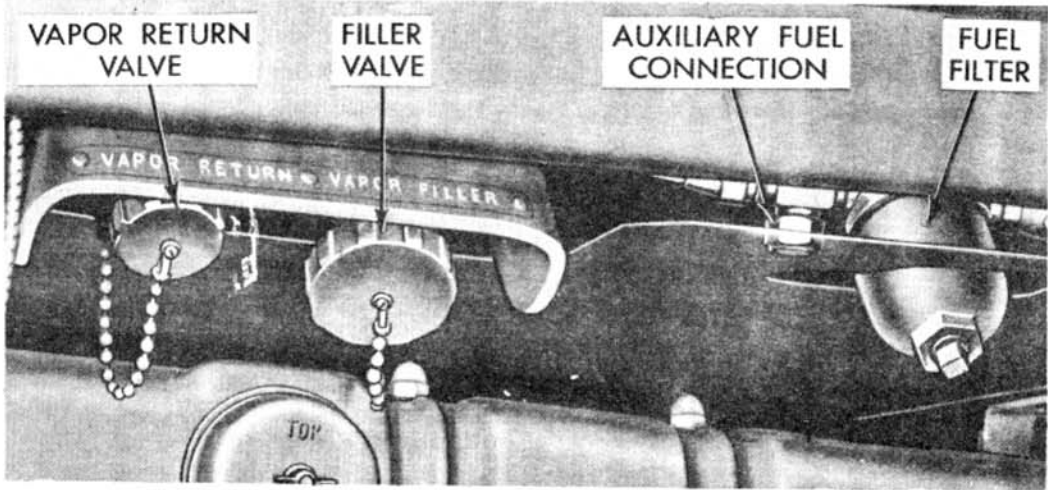


Figure 2
Filler and Vapor Return Valves

Fuel Tank: The fuel tank has a liquid capacity of 24 gallons. However, it should never be filled to more than 80% capacity (80% fill=19.2 gallons). The remaining 20% of the tank capacity is required for vaporized fuel and to insure room for expansion.



CAUTION: *Never fill your LP-fuel tank to more than 80% liquid fill.*

Filler and Vapor Return Valves: These valves are located on the lower right-hand side of the tank at the rear just under the tractor hood. The FILLER valve, with the larger diameter, is used for filling the tractor fuel tank.

The VAPOR RETURN VALVE is located next to the filler valve, and provides a vapor return to the storage tank during the liquid filling operation. The provision for vapor return equalizes the pressures between the storage tank and tractor tank for faster, easier filling.

Fuel Level Overflow Valve: This manually operated valve, located next to the liquid withdrawal valve (see Figure 1), should be opened only occasionally during tank filling operations as a check to determine when the liquid volume has reached an 80 percent level in the tank.



CAUTION: *Do not leave the fuel level overflow valve open when transferring fuel.*

Fuel Tank Relief Valve: This relief valve (see Figure 1) is located on the top of the tank, at the forward end and functions as a safety valve against excessive tank pressures. It is factory set at 312 pounds per square inch and should not be tampered with.

Auxiliary Fuel Connection: This connection (see Figure 1) located in the tank line, just behind the fuel filter, is used for attaching portable LP-Gas bottles. A portable bottle may be used when it is not convenient or desirable to fill the tractor fuel tank. The liquid and vapor withdrawal valves at the rear of the tractor fuel tank should be closed and the engine operated until the fuel is exhausted. Then, remove the auxiliary fuel connection cap. These valves should remain in the closed position when operating the tractor from a portable bottle.

Fuel Filter: The fuel filter is located in the tank line on the right side of the tractor just forward of the vapor return and filler valves. It functions to trap foreign particles in the fuel before the fuel reaches the regulator assemblies.

Regulator-Vaporizer: The Regulator-Vaporizer is a water jacketed unit which is attached to the upper front end of the cylinder head. Water from the engine passes around the unit to provide the heat required to further vaporize the liquid fuel which flows from the tank. The unit controls the amount of fuel vaporized so that a low pressure will be maintained at its outlet which connects to the Secondary Regulator on the carburetor, Figure 7.,

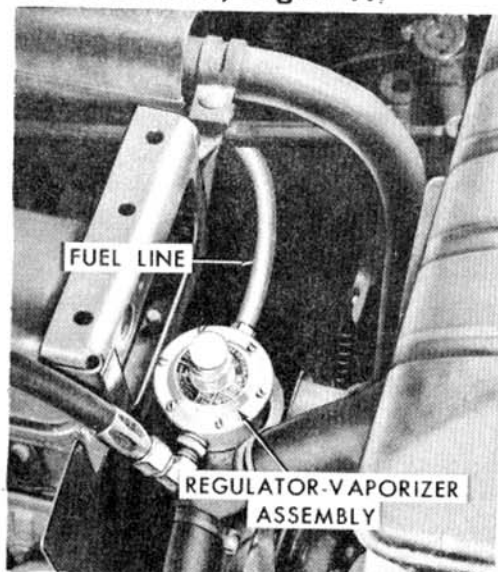


Figure 3
Regulator - Vaporizer

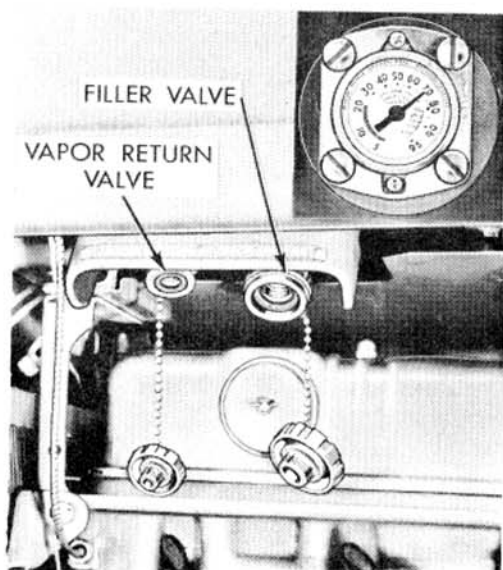


Figure 4
*Fuel Tank Liquid Fill and Vapor
Return Connections*

Secondary Regulator: The Secondary Regulator on the carburetor controls the flow of vaporized fuel through the carburetor, as required for efficient operation of the engine.

Carburetor: The LP-Gas carburetor on your Ford Tractor, Figure 7, is a pressure type carburetor. The carburetor receives fuel under pressure in a form of vapor rather than liquid; therefore, no carburetor float is required. The idle speed and idle fuel adjustments are similar to a gasoline carburetor.

FUEL

The type of fuel recommended for use in your Ford LP-Gas Tractor is mainly dependent upon climatic conditions in your area. In most areas, fuel companies supply the proper mixture of propane and butane gas. It is suggested that you discuss fuel recommendations with your local Ford Tractor and Implement Dealer or with the dealer distributing LP-Gas in your area.

Filling the Fuel Tank: When using equipment for the transfer of fuel be sure to follow existing regulations in your area for the safe handling of LP-fuel. See the LP-fuel dealer, distributor or your local Ford Tractor and Implement Dealer for this information.

Following is the recommended procedure for filling the fuel tank:

1. Remove the cover from the vapor return valve (the smaller diameter valve) and connect the vapor return line from the storage tank to this valve. This will equalize the pressure between the two tanks.
2. Remove the cover from the filler valve and connect the liquid fill line from the storage tank.
3. When the fuel gauge indicator needle (see insert, Figure 4) shows that the tank is approximately 75 percent full, open and close the fuel overflow valve, Figure 1, at intervals until liquid fuel appears. This will indicate that the tank has an 80 percent liquid fill. Close the valve as soon as liquid appears.

NOTE: *The tank should not be filled beyond this point.*



CAUTION: *Do not leave the fuel overflow valve open for tank venting purposes during fuel transfer. This is dangerous and wasteful. Use the fuel overflow valve only to determine fluid level in the tank.*

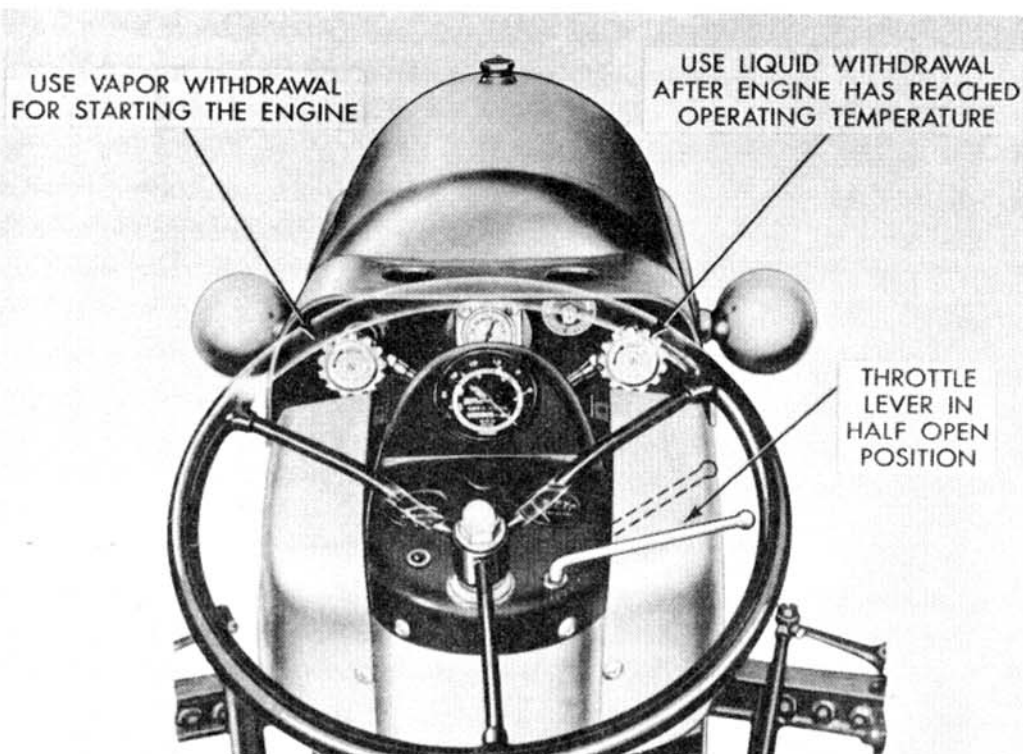


Figure 5
LP-Gas Starting Controls

STARTING THE ENGINE

1. Open the VAPOR WITHDRAWAL VALVE *slowly*. If opened too fast it will cause the built-in excess flow valve to close off vapor flow. If this happens, close the vapor withdrawal valve to reset the excess flow valve, then open the vapor withdrawal valve slowly.
2. Move the throttle lever to half open position.
3. Turn the ignition key on, pull the choke control all the way out and push the starter button. When starter has turned engine one or two turns, push the choke control in. Excessive choking cuts off the air and can result in over-rich mixture in the cylinders which will not support combustion. In gasoline engines, this is referred to as "flooding."
4. After the tractor engine has reached its normal operating temperature, slowly open the LIQUID WITHDRAWAL VALVE and close the vapor withdrawal valve.

STOPPING THE ENGINE

When stopping the engine, close the withdrawal valve that is being used and let the engine run until the fuel is exhausted in the lines and the engine stops. Then, turn off the ignition switch.



CAUTION: Always be sure that both the "Liquid" and the "Vapor" withdrawal valves are closed when stopping the engine inside of a building.

LUBRICATION

There are no lubrication points requiring service on the LP-Gas components of your tractor.

Service the crankcase every 200 hours and replace the oil filter cartridge every other engine oil change or every 400 hours. All additional lubrication instructions given in your regular Owner's Manual apply to your LP-Gas Tractor.

MECHANICAL MAINTENANCE

Basic information vital to keeping your Ford Tractor in top operating condition is given under MECHANICAL MAINTENANCE in your regular owner's manual. The following items cover the LP-Gas components of your new Ford Tractor.

FUEL SYSTEM



CAUTION: Prior to servicing any of the LP-Gas components on your tractor, always make it a practice to close the liquid and vapor withdrawal valves on the tank and run the engine until the fuel is exhausted. This will eliminate the existence of high pressures in the system.

Fuel Tank Lines: Icing or frost at fuel line connections, withdrawal valves, fuel filter, regulators and carburetor, generally indicate a leak. Check regularly, and tighten all connections where icing appears.

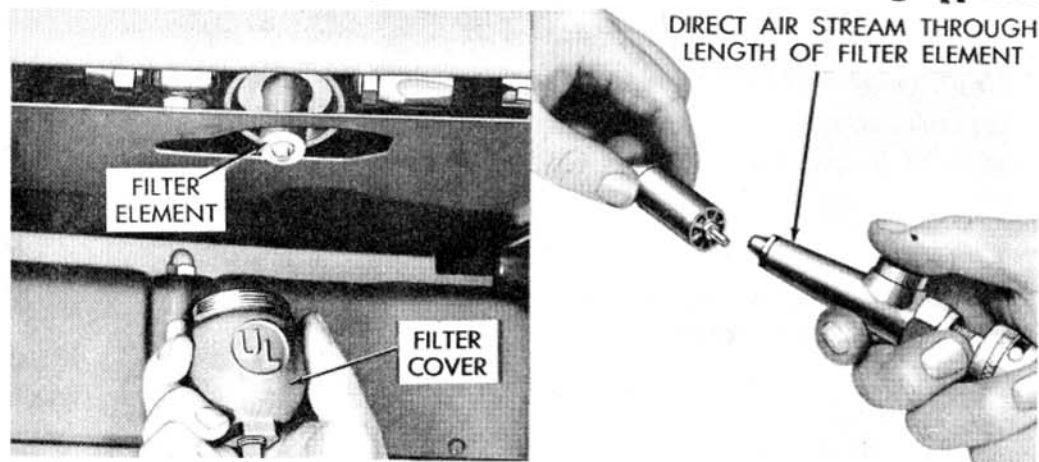


Figure 6
Servicing the Fuel Filter

Fuel Filter: The fuel filter should be serviced at approximately every 300 hours of operation. Remove the filter cover and clean out any sediment.

Remove the filter element by turning it counterclockwise. Rinse the element in a clean solvent and flush the discs with an air hose, making sure that the air stream is directed through the LENGTH of the element as shown in Figure 6. If the air stream is directed to the side of the filter element, it will reduce the effectiveness of the element.

Install the filter element FINGER TIGHT on the filter base. Excessive tightening will restrict the fuel flow. Replace the filter cover and tighten it securely.

Carburetor: The LP-Gas carburetor has the same three basic adjustments that are incorporated on Ford Tractor gasoline carburetors, Figure 7. The main adjustment screw and the idle fuel adjustment screw were set by the dealer at pre-delivery of your new Ford Tractor. However, if it becomes necessary to adjust the carburetor, first operate the engine until normal operating temperature is reached.

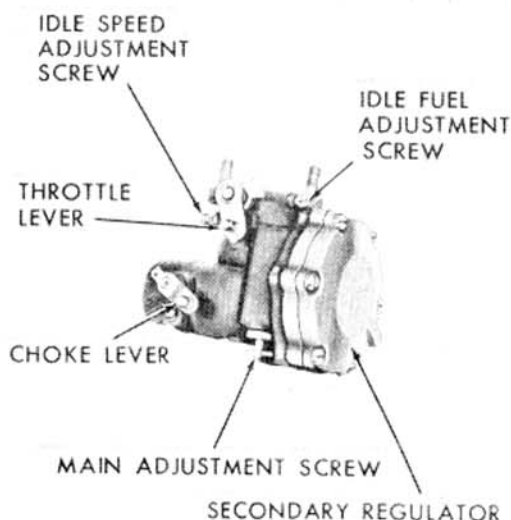


Figure 7
LP-Gas Carburetor Adjustments

Idle Speed Adjustment: With the hand throttle in the closed position, turn the idle speed adjustment screw on the left side of the carburetor, Figure 7, until the engine idle speed is 450 to 475 rpm on the Proof-Meter. On an engine that is not yet broken in, it may be necessary to set the idle speed higher to keep the engine from stalling at idle speeds.

Idle Fuel Adjustment: For the initial setting, before the engine is started, turn the idle fuel adjustment screw, Figure 7, clockwise until it just seats, then back it off approximately 2-1/2 turns. Start the engine and turn the idle fuel adjustment screw "IN" (clockwise) until the engine begins to "stall" from too lean a mixture, then back the screw off until the engine runs smoothly.

Main Adjustment: To obtain the initial setting, turn the main adjustment screw clockwise until it seats. Then, back off the screw 3 turns counterclockwise. The final adjustment should be made in the field with the engine operating at governed speed under full load, by turning the screw "IN" (clockwise) until the engine power just begins to drop off. Then, turn the screw "OUT" until maximum performance is obtained.

Regulator-Vaporizer and Secondary Regulator: These assemblies were adjusted at the factory or prior to delivery of your new tractor. Adjustments to these units should be made by trained personnel only. If trouble develops with the valves or pressure regulator on your tractor, call your Ford Tractor and Implement Dealer, who has men trained to service the LP-fuel system.

ELECTRICAL SYSTEM

Spark Plugs: Your Ford LP-Gas Tractor is equipped with 14MM spark plugs. The recommended gap setting is .028 – .031.

Distributor Points: The point spacing for Ford LP-Gas Tractor distributor is .024 – .026.

Ignition Timing: The flywheel marking for LP-Gas Tractors should be 4° B.T.D.C. at 475 engine rpm. Use the 4° mark on the LP-Gas Tractor instead of the markings given for gasoline systems in your regular owner's manual.

TRACTOR STORAGE

A number of preparations are outlined in your regular owner's manual for seasonal storage of tractors. Each of the steps given apply also to your LP-Gas Tractor. However, in various states and localities there are definite rulings regarding the storage of LP-Gas equipment and it is recommended that the fire marshal or Ford Tractor and Implement Dealer in your area be contacted for instructions governing LP-Gas Tractor storage.

SPECIFICATIONS

GENERAL

Shipping Weight: LP-Gas models weight approximately 100 lbs. more than the corresponding models with gasoline engines. See your regular owner's manual for weights.

LP-GAS SYSTEM

Type Liquid Petroleum Gas

CAPACITIES, FUEL TANK

Fuel Tank – Total Liquid Capacity 24 U.S. Gal.

Fuel Recommended Liquid Fill 19.2 U.S. Gal. (16 Imperial Gal.)

Maximum Pressure (recommended) 312 psi

Liquid Level (recommended % total capacity) 80%

IGNITION SYSTEM

Initial Timing 4° B.T.D.C. @ 475 rpm

Advance Timing @ 2000 rpm 24 degrees

Distributor Point Spacing024 – .026

Spark Plug Size 14MM

Spark Plug Gap028 – .031

NOTE: *The foregoing specifications apply to the LP-Gas system only. For general specifications covering your Ford Tractor, refer to your owner's manual.*

"Ford Motor Company, whose policy is one of continuous improvement, reserves the right to make changes in design and specifications at any time without notice and without obligation to modify units previously built."

Safety Precautions

Accidents involving operators of farm and industrial equipment are generally caused by the failure of individuals to observe fundamental safety precautions.

Your Ford LP-Gas Tractor incorporates many provisions for safe operation and it is up to you, the operator, to utilize these provisions. Because of the volatile nature of LP-fuel, and the mechanical equipment necessary to handle it under pressure, there are more "built-in" safety factors in LP systems than are normally present in handling gasoline and other similar fuels. Accidents involving the handling and usage of LP-fuels can be prevented by recognizing the causes and by systematically avoiding these causes. A listing of the more timely Safety Rules are given for your reference. Remember, a careful operator is the best insurance against accidents.



The Tractor and Implement Division of the Ford Motor Co. being a member of the National Safety Council is privileged to use the Green Cross to denote safety instructions in operator's manuals.

Safety Rules

1. Never smoke or expose open flame when transferring fuel from the storage tank to the tractor fuel tank.
2. Never add fuel to the tank with the engine running.
3. Do not fill the fuel tank beyond the 80 percent liquid level recommendations.
4. Do not leave the fuel overflow valve open during fuel transfer operations.
5. Always close the withdrawal valves and run the engine to burn off the fuel in the tank lines and regulators before turning off the ignition switch.
6. Never service any of the LP-Gas components before making certain that there is no pressurized liquid or vapor in the lines beyond the closed withdrawal valves.
7. Do not operate an LP-Gas Tractor with faulty or loose fuel line connections.
8. Never start the tractor engine after overnight storage until adequate ventilation has been provided to rid the enclosure of possible low lying gas fumes. LP-Gas is heavier than air.
9. Follow the rules governing tractor storage as prescribed by your local fire marshal.
10. Do not permit unqualified persons to operate or service your LP-Gas tractor at any time.

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