

LP-Gas Engine for 55 and 95 Combines



JOHN DEERE

OPERATORS MANUAL

LP-Gas Engine for
55 and 95 Combines

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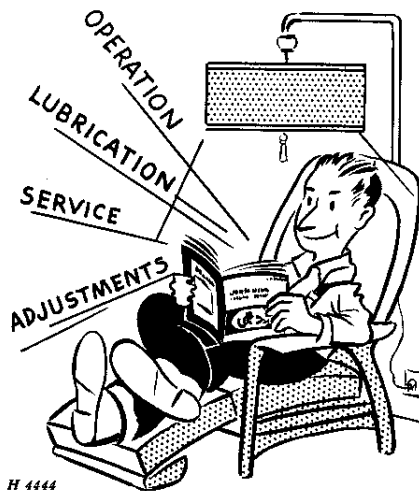




TO THE PURCHASER

The instructions in this manual supplement those in your regular combine operator's manual. This manual contains only the information for your LP-Gas engine and related parts which is different from information for the regular gasoline engine.

If you should find that you require information not covered in this manual or your regular combine operator's manual, consult your John Deere dealer. He will be glad to answer any question that may arise regarding the operation and handling of the combine or engine. He has trained mechanics who are kept informed on the best methods of John Deere combine and engine servicing and can give you prompt know-how service in the field or in his shop.



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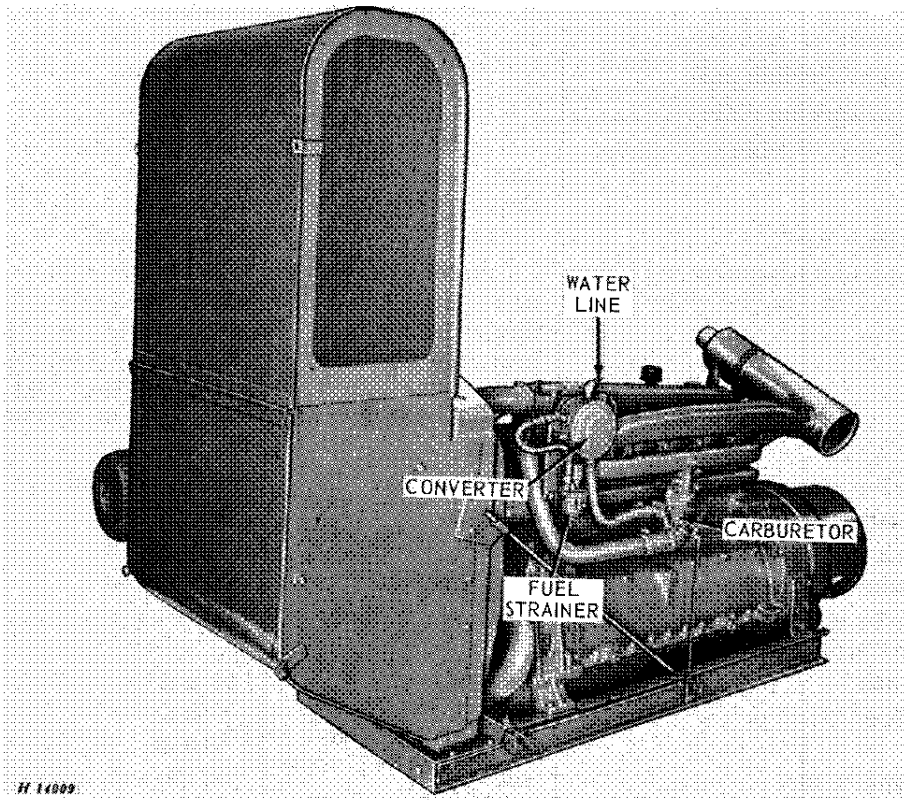
Study this manual carefully, keep it handy with your regular combine operator's manual, in a safe place, for future reference.

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SPECIFICATIONS



11 14009

HA303L Engine

(Specifications and design subject to change without notice.)

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2 Specifications

	55 Combine	95 Combine
Make of engine	John Deere HB303L	John Deere HA303L
Bore	3.86 in.	3.86 in.
Stroke	4.33 in.	4.33 in.
Brake horsepower	72* 78* (hydraulic drive)	90*
Number of cylinders. . .	6	6
Piston displacement. . .	303 cu. in.	303 cu. in.
Compression ratio. . . .	7.6 to 1	7.6 to 1
Speed at full load.	1900 rpm 2200 rpm (hydraulic drive)	2500 rpm
Firing order.	1-5-3-6-2-4	1-5-3-6-2-4
Type of lubrication. . . .	Force feed by gear pump to all connecting rods, main bearings, and oil pump drive, oil strainer in bottom of pan	Force feed by gear pump to all connecting rods, main bearings, and oil pump drive, oil strainer in bottom of pan
Valve arrangement. . . .	Valve in head	Valve in head
Intake valve clearance .	.014 in.	.014 in.
Exhaust valve clearance	.018 in.	.018 in.
Make of governor.	John Deere	John Deere
Make of carburetor	Century	Century
Spark plug		
Size	14 mm	14 mm
Gap015 to .018 in.	.015 to .018 in.
Type of fuel	LP-Gas	LP-Gas
Capacities (Approx.)		
Fuel tank	56 gal.	66 gal.
Cooling system (radiator).	6 U.S. gal.	6 U.S. gal.
Engine crankcase.	10 U.S. quarts	10 U.S. quarts
Air cleaner	Dry-type	Dry-type

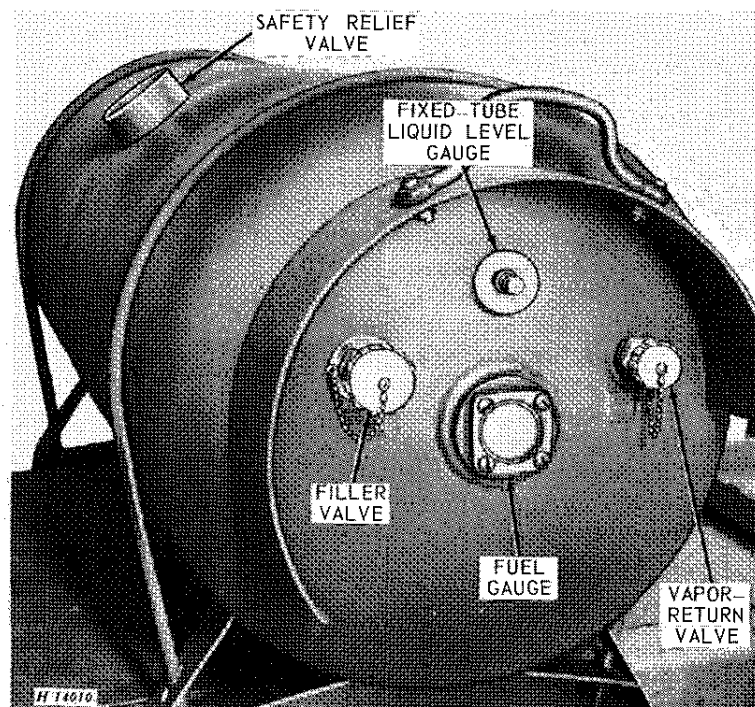
**Factory observed at 85° F. and 29.38 inches Hg. at 500 ft. above sea level.*



EQUIPMENT AND CONTROLS

The LP-Gas fuel equipment, and controls illustrated and described on the following pages, has been

granted the approval of the Underwriters' Laboratories.



Fuel tank with valves and gauges (55 Combine illustrated)

FUEL TANK

The fuel tank is of heavy welded steel construction with a fuel capacity of 56 gallons on the 55 combine and 66 gallons on the 95 combine.

NOTE: Capacities listed are based on 85% fill of the total volume of the tanks. The tanks should not be filled more than 85% of total volume because LP-Gas expands as temperature rises.

4 *Equipment and Controls*

FILLER VALVE

The filler valve, located at the end of the fuel tank, is used for filling the tank. A double check valve, built into the filler valve, automatically prevents any fuel withdrawal or escape.

VAPOR-RETURN VALVE

The vapor-return valve, located beside the filler valve, is also used when filling the tank. This valve permits vapor to return through the vapor return line to the storage tank as the combine fuel tank is being filled with liquid. This equalizes the pressure between the two tanks to permit easier filling. A built-in excess-flow valve automatically closes if flow through the vapor-return valve becomes excessive. This is a safety device designed to stop flow of vapor if the vapor-return line is broken or disconnected.

FIXED-TUBE LIQUID-LEVEL GAUGE

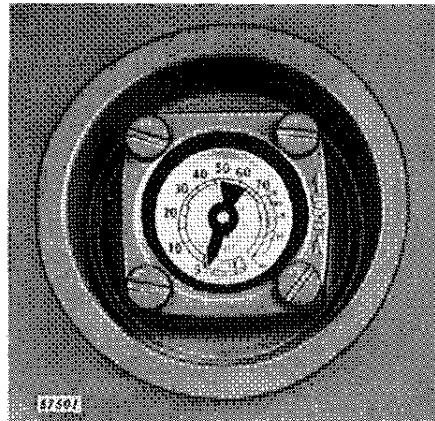
This gauge, also located at the end of the fuel tank, is used when the tank is being filled. Opening the gauge, when the tank is partially full, releases a fog or mist of fuel from the outlet. When the tank is 85% full, the fog or mist will change to a spray of liquid fuel. During the filling process the gauge should be opened only momentarily at frequent intervals. It should never be left open to let vapor escape while liquid is being pumped

into the tank. To do so is extremely hazardous and violates all fire and safety codes. Use the vapor-return valve to assure proper transfer of fuel to combine fuel tank.

SAFETY RELIEF VALVE

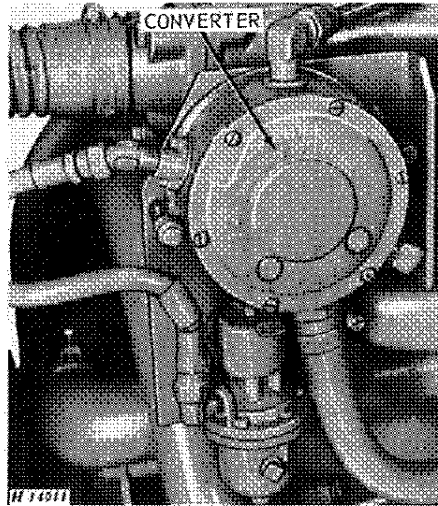
The safety relief valve will open and permit vapor to escape if the pressure in the tank becomes too great. The valve is set to open at 312 pounds per square inch pressure. If the safety relief valve continually opens in hot weather, consult your fuel dealer. He may be able to supply a different blend of fuel, especially prepared for use in hot weather.

FUEL GAUGE



The fuel gauge, located at the end of the fuel tank, indicates the liquid level in the fuel tank. It is calibrated to show the percentage of liquid fuel in the tank.

CONVERTER



Converter (95 Combine illustrated)

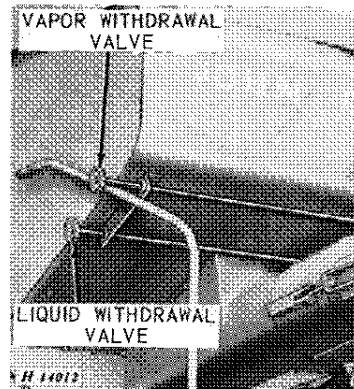
From the fuel strainer the fuel passes through the automatic shut-off valve and enters a converter which converts the liquid fuel into a gas and reduces the pressure until it is just right for efficient operation in the engine.

Heat must be applied to vaporize the fuel and to prevent freezing of the converter parts which get extremely cold due to heat being absorbed by the fuel as it expands from a liquid into a gas. This heat for vaporizing the fuel is supplied from the engine cooling system. Coolant is taken from the water outlet manifold and flows through passages in the converter. The outgoing coolant is piped to the water pump for recirculation.

Because the engine is started on vapor from the top of the fuel tank, no initial heat is required.

CAUTION: Do not attempt to repair or adjust the converter. Service work should be performed only by qualified servicemen. See your John Deere dealer.

LIQUID AND VAPOR WITHDRAWAL VALVES



Liquid and vapor withdrawal valves on 55 Grain Tank Combine

These valves control the flow of fuel to the engine. The vapor valve, when opened, supplies vapor from the top of the fuel tank for starting the engine.

The liquid valve permits withdrawal of liquid fuel from the tank for normal operation.

Both valves are equipped with excess-flow valves which automatically close whenever the flow exceeds the normal amount used to operate the engine. These valves must be opened slowly to prevent closing the excess-flow valves. If a fuel line is accidentally broken, the



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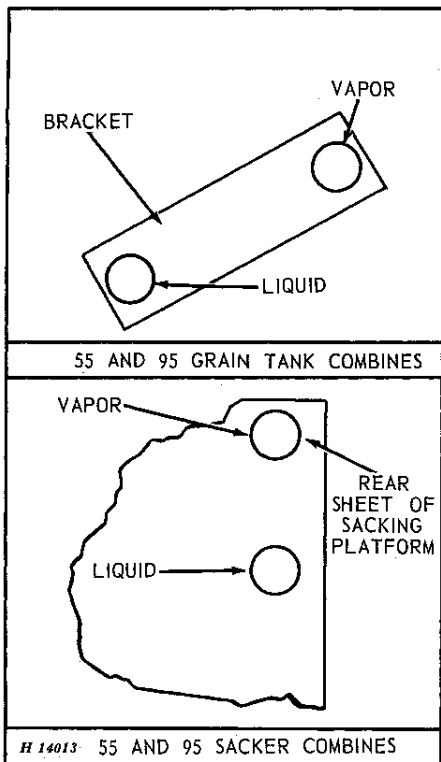
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6 Equipment and Controls

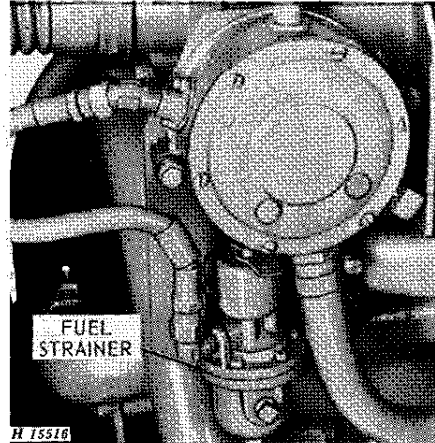
excess-flow valve instantly trips and permits only a small amount of gas to flow; the excess-flow valves do not shut off the flow completely. If one of the excess-flow valves closes, it can be reset by closing the withdrawal valve manually.



Location of liquid and vapor withdrawal valves

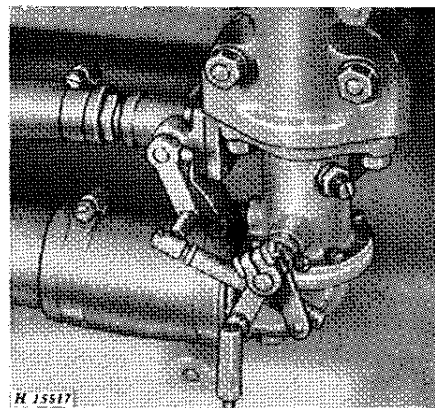
FUEL STRAINER

The fuel strainer removes particles of dirt or other foreign matter from the fuel after it leaves the tank. An automatic electrically-operated fuellock (fuel shut-off) valve is built into the strainer as an additional safety factor. When the ignition switch is turned on, the fuellock valve opens. When the switch is turned off, the valve automatically closes



to prevent the fuel from entering the engine or other parts of the system. If, for any reason, the electrical system fails to operate, the fuellock valve will close.

CARBURETOR



Vaporized fuel is drawn from the converter into the carburetor where it is mixed with air in the proper quantity to create a combustible mixture.

NOTE: No choke control is needed because the fuel mixture valve, connected to the throttle, provides proper mixture for starting the engine.

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