NOTE: *Engine repair information is not contained within this tractor Repair Manual. For engine repair, refer to 6.7L engine repair manual 87491857.*

BOOK 1 - 84127310

BOOK 2 - 84127311

BOOK 3 - 84127312

BOOK 4 - 84127313

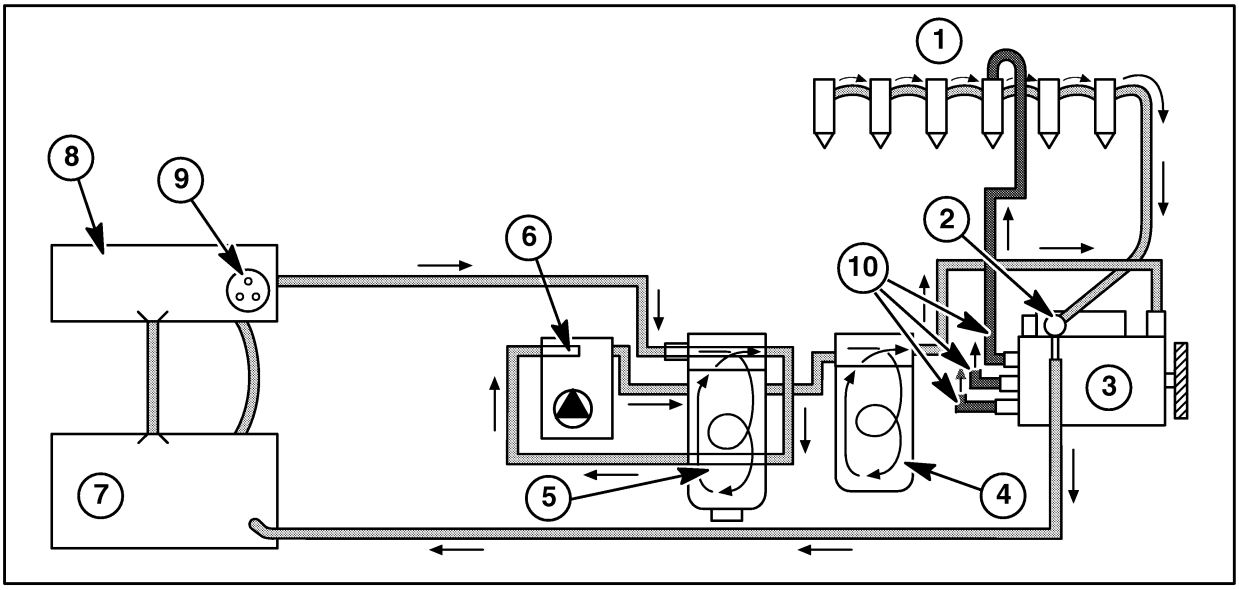
BOOK 5 - 84127314

FUEL SYSTEM – DESCRIPTION AND OPERATION

INTRODUCTION

The TV6070 fuel system consists of two fuel tanks, a fuel strainer that acts as a sedimenter and water separator, an electric lift fuel pump, a fuel filter, and a Bosch rotary fuel injection pump. The injection pump delivers fuel, in sequence, to the six fuel injectors. A check valve, located at the inlet side of the fuel filter, prevents fuel from draining back into the fuel tanks after the engine has been shut off. Other fuel system components include a cold start system and the throttle linkage.

COMPONENT DESCRIPTION OF OPERATION



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1. Injectors
2. Fuel Shutoff Solenoid
3. Fuel Injection Pump
4. Fuel Filter/separator
5. Auxiliary Fuel Filter/Separator
6. Lift Pump
7. Right Fuel Tank
8. Left Fuel Tank
9. Fuel Gauge Sender Unit
10. Injector Lines

FUEL SYSTEM

The diesel fuel system consists of fuel tanks (7) and (8) fuel sedimenter (5) electric lift pump (6) fuel filter (4) Bosch distributor-type fuel injection pump (3) fuel injectors (1) and interconnecting lines and tubes.

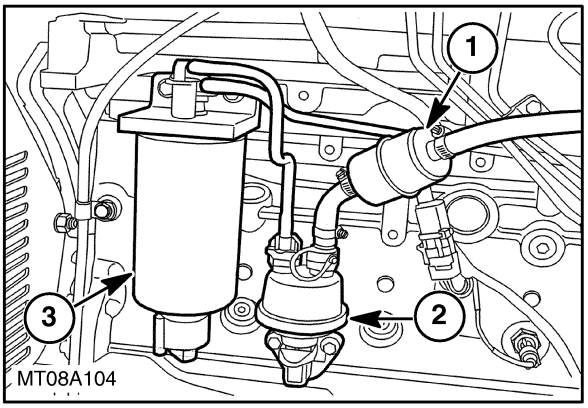
The fuel injection pump (3) is pressure fed from a mechanical lift pump (6) Fuel flows from the fuel tank (8) to the filter/separator (5) through the mechanical lift pump (6) then through the fuel filter (4) A check valve in the inlet of the fuel filter prevents the fuel from draining back to the tank. From the fuel filter, fuel passes to a vane-type fuel supply pump which is an integral part of the fuel injection pump (3).

The fuel supply pump delivers fuel to the high-pressure side of the injection pump which supplies fuel at high pressure to each injector (1) through high pressure injector lines (10). The injection pump supplies fuel to the six fuel injectors in the order which the engine fires.. The fuel supply pump also provides excess fuel which lubricates and cools the injection pump.

The extra fuel is recirculated, via an overflow restriction fitting on the fuel injection pump, back to the fuel tank by means of the fuel return line.

Excess fuel that leaks past the needle valve of the injectors is directed back into the fuel tank by means of the injection leak-off line, which is connected to the fuel return line at the injection pump.

Fuel Filter
The fuel filter (1) is located on the left side of the engine and is inline between the fuel tanks and the lift pump (2).



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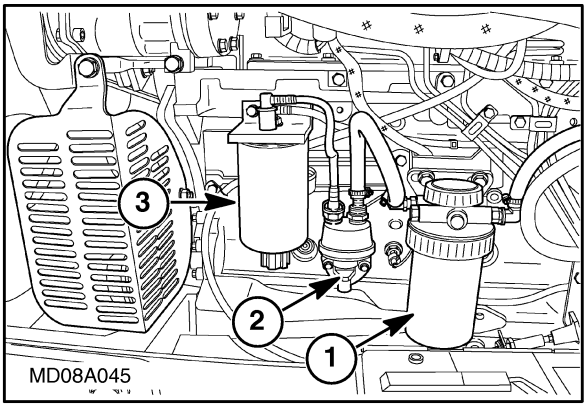
Mechanical Lift Pump
A mechanical fuel pump (2) draws fuel from the tank through the filter (1) and passes the fuel to the filter/separator (3) and on to the fuel injection pump. The injection pump can draw fuel at a rate close to the lift pump output. the lift pump must maintain a minimum pressure of –0.15 bar (–2.2 psi).

Fuel Filter/Separator
the filter/separator (3) is inline between the lift pump (2) and injection pump. Fuel enters the filter head and flows down around the outside of the filtering element in the filter housing. Any particles of dirt that get past the fuel filter and water are heavier than the fuel and sink to the bottom of the filter housing. The clean fuel is drawn through the center of the filter/separator and out the top to the injection pump. The filter/separator housing has a drain in the bottom that allows the water and dirt to be drained from the housing.

Auxiliary Fuel Filter/Separator (Optional)
The optional fuel filter/separator (1) is located on the left side of the engine and is inline between the fuel tanks and lift pump (2).

The auxiliary fuel filter/separator (1) functions the same as the main filter/separator (3).



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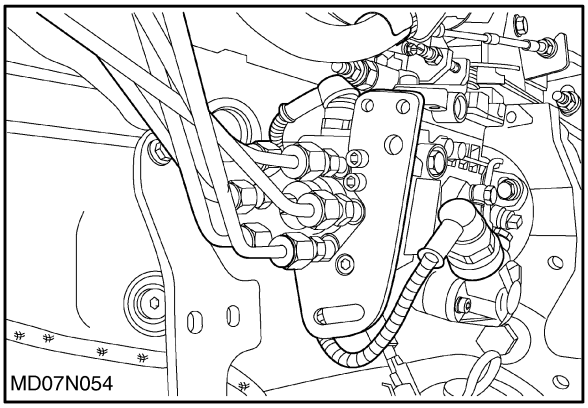
Injection Pump

The injection pump (1) is a Bosch Type rotary injection pump. The injection pump provides high-pressure fuel through the injector lines (2) to be injected into the engine by the fuel injectors (3).



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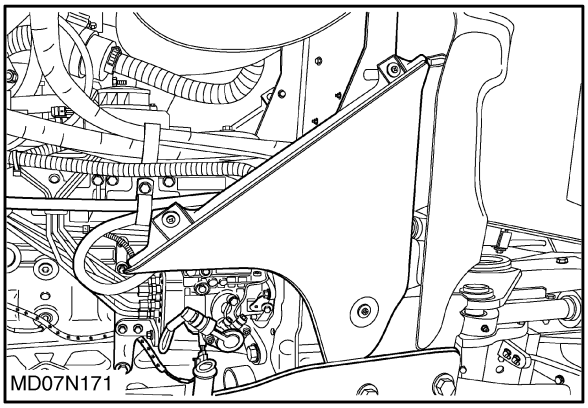
Injector Lines

The injector lines (1) are identical in length and internal capacity. This allows a precise and consistent quantity of fuel to be delivered to the injectors at all times.



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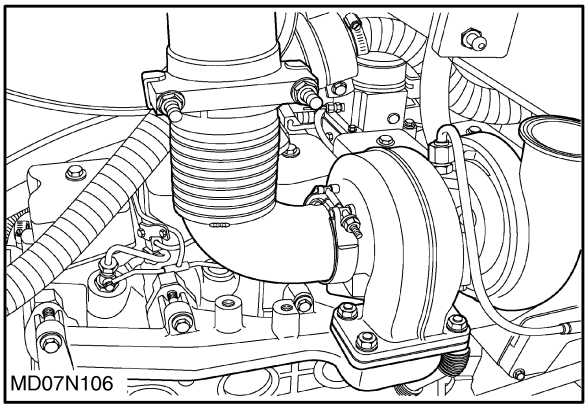
Fuel Injectors

Each fuel injector (1) contains a pressure spring that is preloaded and calibrated at the factory to allow the injector to open at a specific pressure and close completely at the end of the injection pulse. The opening pressure of all the injectors is identical and is 150 - 250 bar (2175 - 3625 psi). The nozzle is selected for the ideal spray pattern for this engine.



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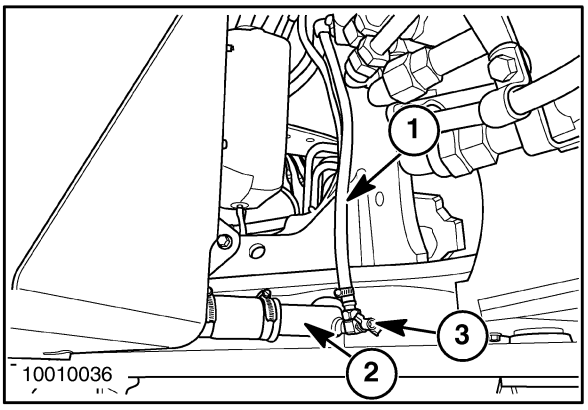
Fuel Tanks

The TV6070 utilizes a dual tank system with a total fuel capacity of 208 liters (55 gal). The tanks are connected together by a crossover tube that runs through the frame to the bottom of each fuel tank.

The fuel pick-up (supply line) (1) is located on the right side of the tractor on the crossover tube (2). A valve (3) at the pick-up allows fuel to be drained from the fuel tanks.



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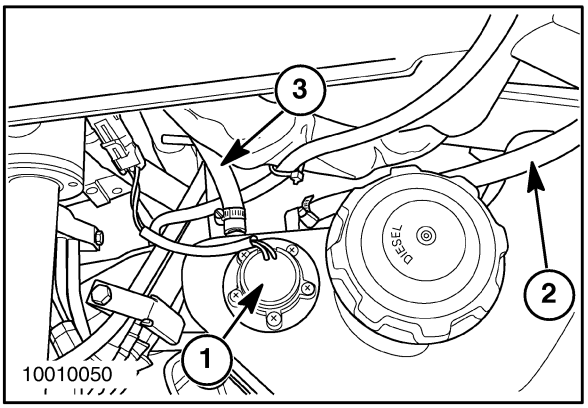
The left fuel tank houses the fuel level sending unit (1). Since the fuel tanks are connected by the crossover tube, only one sending unit is required. The fuel return line (3) directs excess fuel back to the left fuel tank.

A breather tube (2) is utilized by each tank to relieve pressure inside the tank. This tube is routed up into the front grab handle on each side of the tractor.



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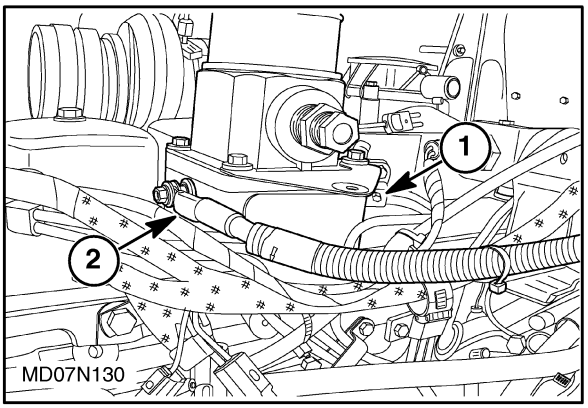
Cold Start Aid

The tractor is equipped with a thermostart system to aid the tractor in starting when temperature makes starting the engine difficult. The thermostart system is located on the left side of the engine.

The thermostart system consists of a grid heater (1) in the intake manifold. A wire (2) from the cold start controller and relay supplies current to the grid heater.

The grid heater element preheats the air as it enters the intake manifold which provides for an easier combustion of the air/fuel mixture.



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