

Retrofit dual electric pumps to '81-'86 GM Trucks

Courtesy Tejas SteelWorks, Inc.

Before you begin, you must understand the operation of the factory dual tank controls in GM trucks from 1981-1986.

The system consists of a dash switch, tank selector valve (under the body), and twin tanks & sending units, with the single gauge in the dash. In operation, the dash switch controls **ONLY** the selector valve. The selector valve contains a stepper motor that drives a shuttle, left or right, switching both the plumbing of the fuel lines, and also the electrical connections for each sending unit. When you set the switch to the Left Tank, the stepper motor runs for a few seconds to position the plumbing, while simultaneously connecting the Left Sending Unit to the gauge. When the stepper motor reaches full travel, it shuts off. Likewise, when you set the switch to the Right Tank, the polarity to the stepper motor is reversed, and the stepper motor moves both plumbing **AND** gauge connection to the Right Tank.

The 12 volt power to run the stepper motor is supplied to the switch from a pink wire that runs to an ignition hot, in the fuse box. The ground wire for the switch runs, from the switch, to a ground bus terminal on the far left side of the dash, below the instrument cluster.

Before we can add fuel pumps to the system, we must make sure we can provide enough current to safely drive them. This requires the addition of one wire, from each pump, to the switch on the dash. Generally speaking, 14 gauge to 12 gauge wire is sufficient. **We also need to replace the switch with one for an '87-'91 R/V series truck.** The ground for the fuel pumps is provided at the tank, when the sending unit harness is secured on the frame rail.

The ground wire from the switch, to the dash, remains unchanged. It's only burden is the stepper motor. The pink wire from the switch, to the fuse box, is replaced with a larger wire (14#-12#), from the output of your new fuel pump relay. If you wish to reuse the plastic connector on the back of the switch, you will need 3-4 type 59 Packard terminals (female spade) for 10#-12# wire. Otherwise, discard the plastic connector and use individually insulated connectors. You will lose the snap-on retention, however.

Now, in connecting the fuel pump power wires to the switch, they will share power feed for the stepper motor. Put both the existing wire and the new wire for the pump into the terminal before crimping. (use quality wire crimpers that provide an OE crimp)

The light green wire should be combined with the new wire for the **RIGHT** side pump.
The dark green wire should be combined with the new wire for the **LEFT** side pump.
When viewed from the back, the switch terminals are as follows:

Top Left = Dark Green (Left Tank)

Top Right = Light Green (Right Tank)

Lower Left = Ground

Lower Right = +12v from fuel pump relay

(new wires are shown in color, below)

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