

WATER SYSTEM

The water-raising system used is the standard air pressure type, furnishing hot or cold water to desired locations. Drinking water is cooled by means of a mechanical refrigerator. Various items of water system are explained herein.

WATER TANK: All cars have a single water tank of alloy steel. Each tank is cylindrical type with a capacity of 300 gallons. Tank casing is Armco zinc grip steel lined with 2" Stonefelt insulation. All piping in the tank casing is either brass pipe or copper tubing.

All cars are equipped with piping to permit application of a special drain valve, (Walworth 1" 3-way, 3 port, lubricated bronze plug valve) to facilitate draining of the water system. This valve will be lubricated whenever dis-assembled for repairs with Walworth Company's No. 580 insoluble, white, sterile lubricant. For details of the valve, see Figure 115 and valve hook-up in piping system Figure 116. When flushing water tank the regular practice of removing the tank end drain cap will be followed.

WATER FILLING VALVE: All cars are equipped with pressure water filling valves, Catalog No. W-2745 one on each side of car. Valves are mounted in an insulated box and protected against freezing by the steam protection loop. Steam for this loop passes through a cored opening in the valve body.

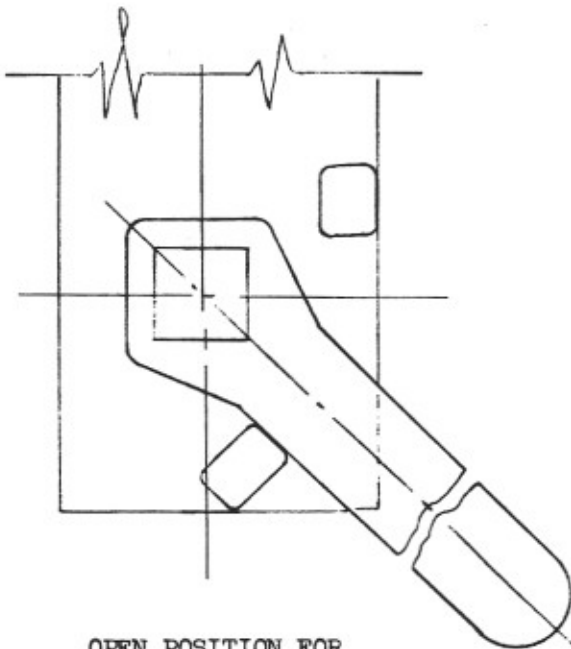
The filling valve consists of an upper filling portion and a lower 3-way valve portion. For details, see Figure 117.

The filling portion consists of a cast body in which is mounted an inner check valve and a cover which forms an outer check valve. Inner check valve is held closed with a spring and retains pressure in the system, it opens inward when water hose is forced into the valve body. The outer cover is flapper type and is held in place by the handle of the three-way valve.

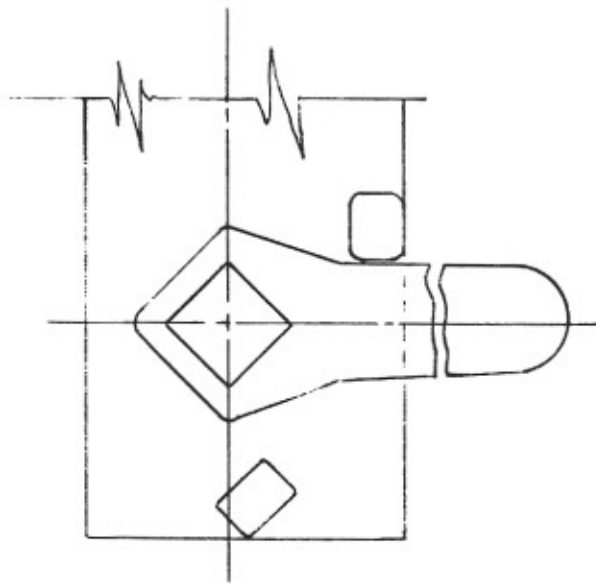
The lower valve portion has a 3-way valve operated manually with a short handle at the valve. In the raised position the handle is over the water filler cover and opens air supply to water tank. In the open position the handle swings down to permit opening in water filler cover for filling tank, also exhausting air from the water tank. The inlet side of 3-way valve is connected to the reducing valve portion of combined governor and reducing valve and the outlet side is connected to the water tank. The exhaust port is open to the atmosphere. The 3-way valve assembly is removable for repairs by breaking the unions in air line and removing bolts holding it to filling valve.

GOVERNOR AND REDUCING VALVE: Type A-1-A, Cat. No. W 4452, combined governor and reducing valves are used on all cars to regulate air pressure in the water system. Valves are located in the end compartment of the water tank casing and are set to regulate at 25 lbs. For details see Figure 118. Operation of this valve is as follows:

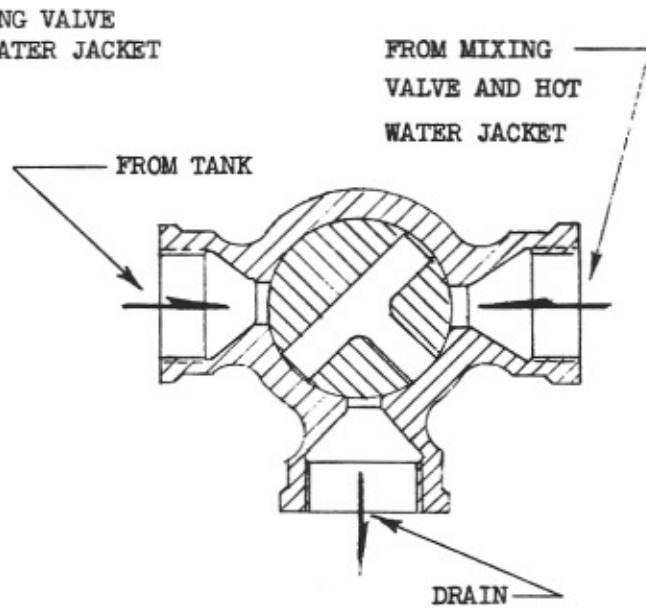
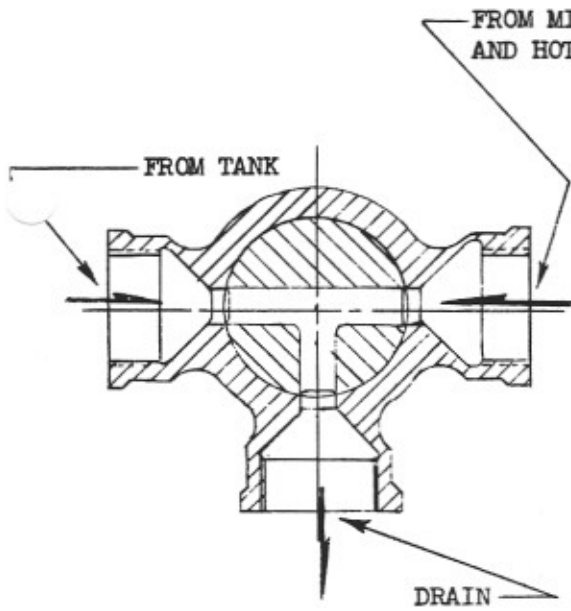
1. Air from brake system supply reservoir flows through cut-out cock 1, strainer 2 and passage A to chamber under diaphragm 3. Diaphragm spring 4 prevents diaphragm from lifting until there is 60 lbs. or more pressure in the supply reservoir.
2. When the supply pressure reaches 60 lbs., the pressure of diaphragm spring 4 will be overcome, and diaphragm 3 is lifted off its seat.
3. Lifting of diaphragm 3 allows air to flow through choked passage B and cut-out cock 1 A to the air pressure storage reservoir which will build up to supply pressure.
4. Air will also flow through passage C and strainer 5 to chamber in reducing valve portion. Diaphragm 6 is held down by springs 7 and 8 to unseat valve 9.
5. With valve 9 open, air will flow through passage D and piping through water filling valve to water tank.
6. When pressure in water tank reaches 25 lbs. the pressure of springs 7 and 8 will be overcome and diaphragm 6 will rise. Spring 10 will now close valve 9 to cut off supply pressure and limit pressure at water tank to 25 lbs.
7. In case supply pressure drops below the pressure in air storage reservoir, check valve 11 will be seated by spring 12 and prevent draining air storage reservoir.



OPEN POSITION FOR DRAINING



CLOSED POSITION



DETAILS OF WALWORTH 3 WAY, 3 PORT DRAIN VALVE

Figure 115

WATER RAISING SYSTEM

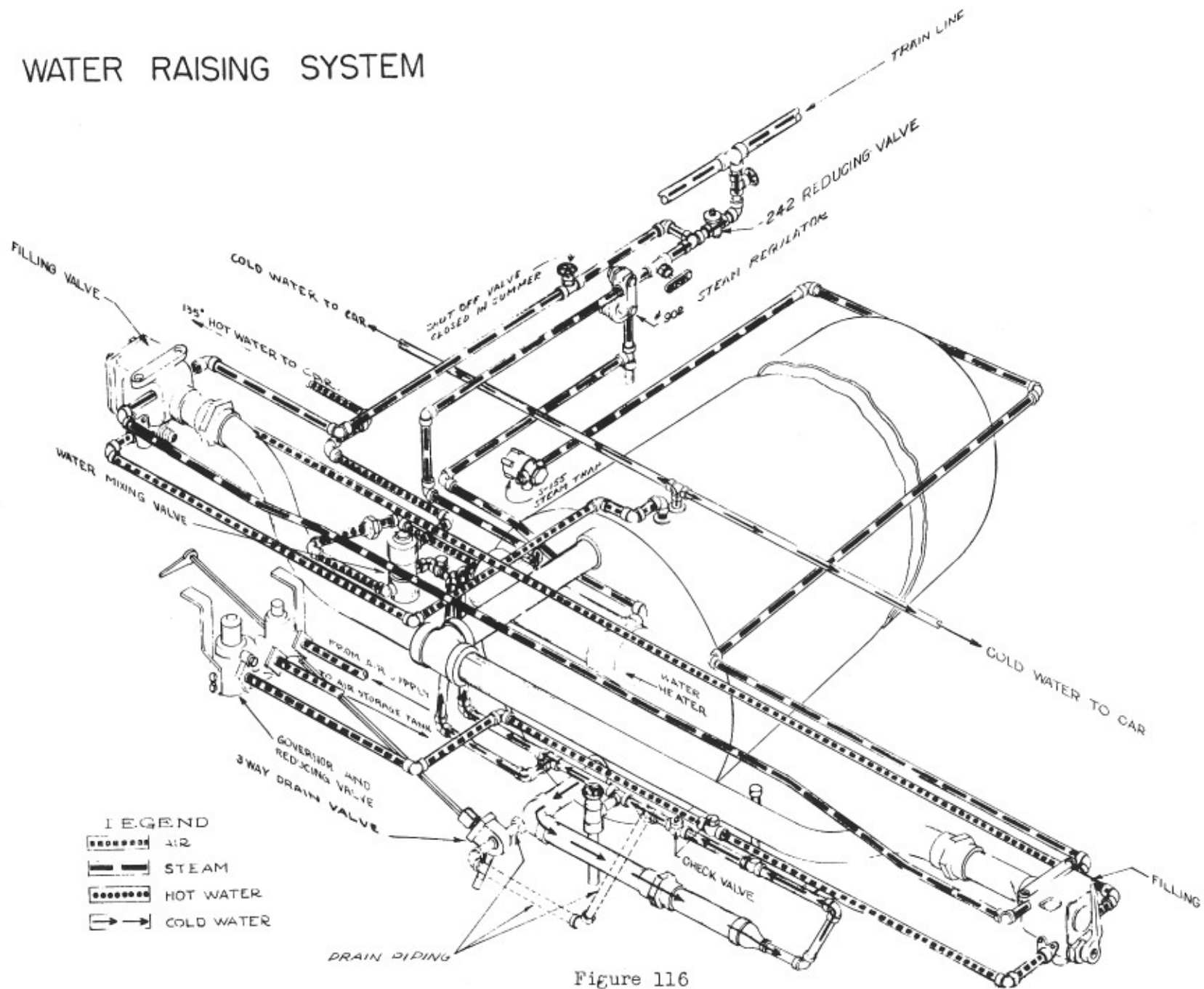


Figure 116

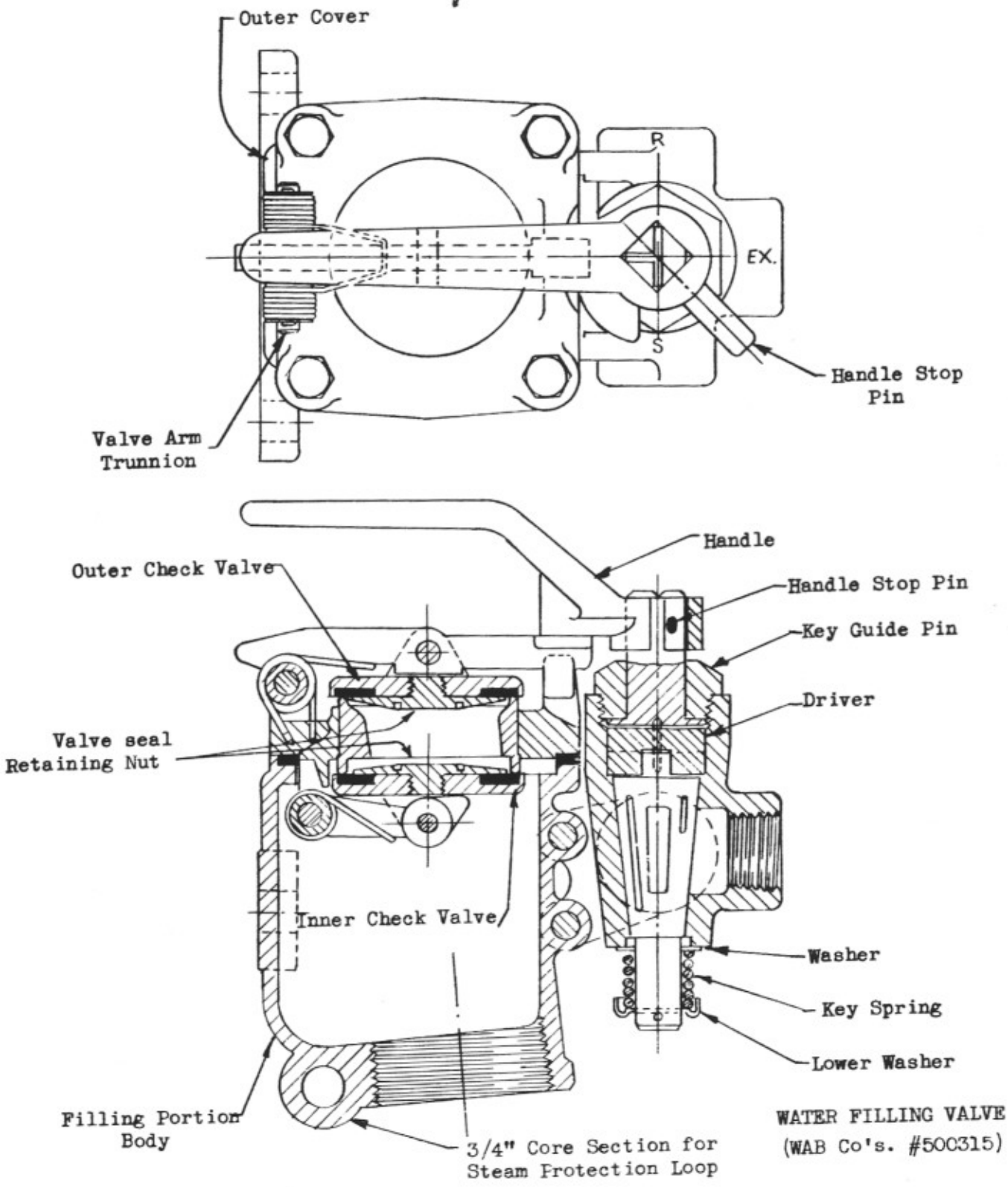
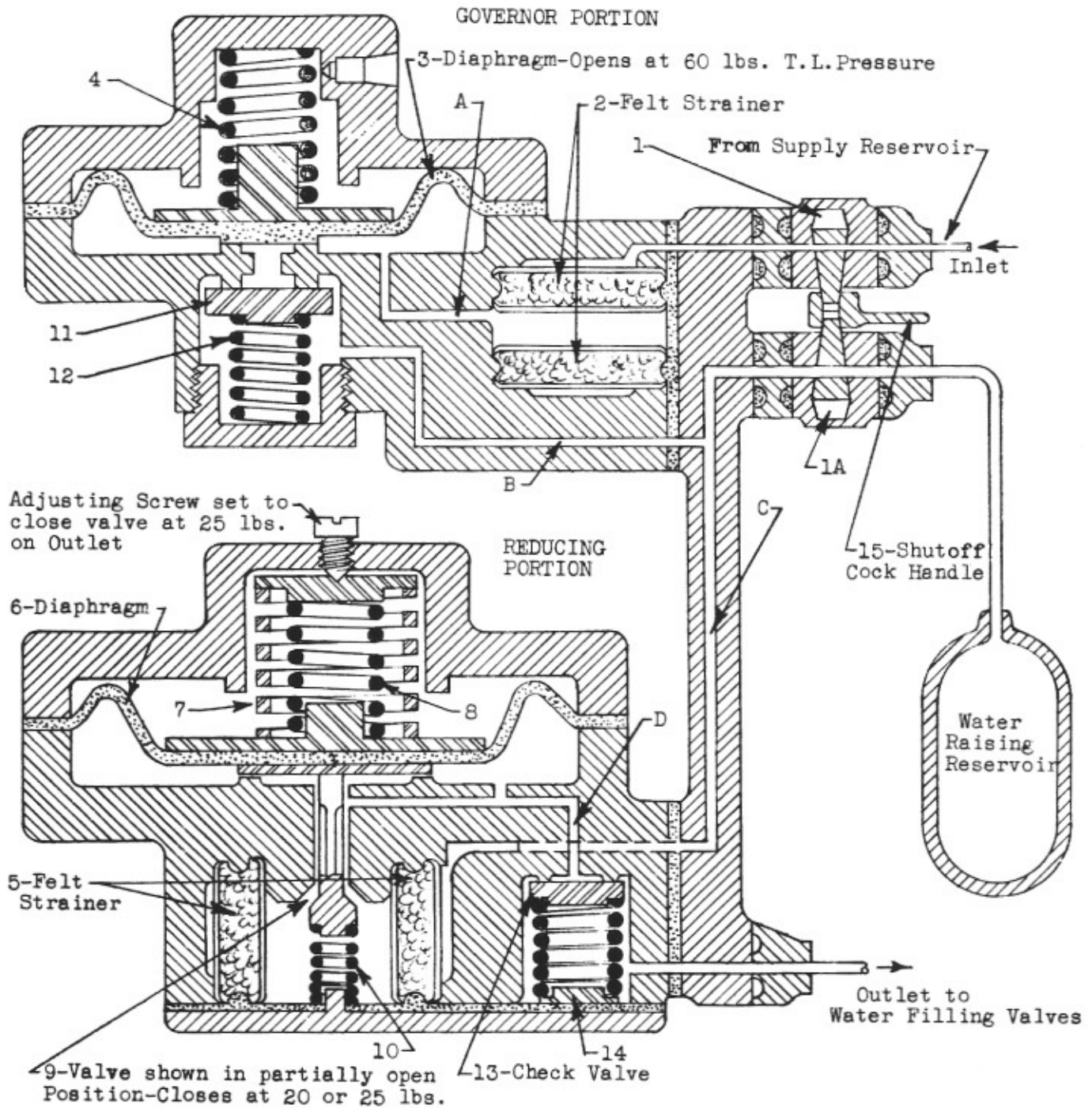


Figure 117



COMBINED GOVERNOR & REDUCING VALVE
PULLMAN CATALOG NO. W-4412

Figure 118