

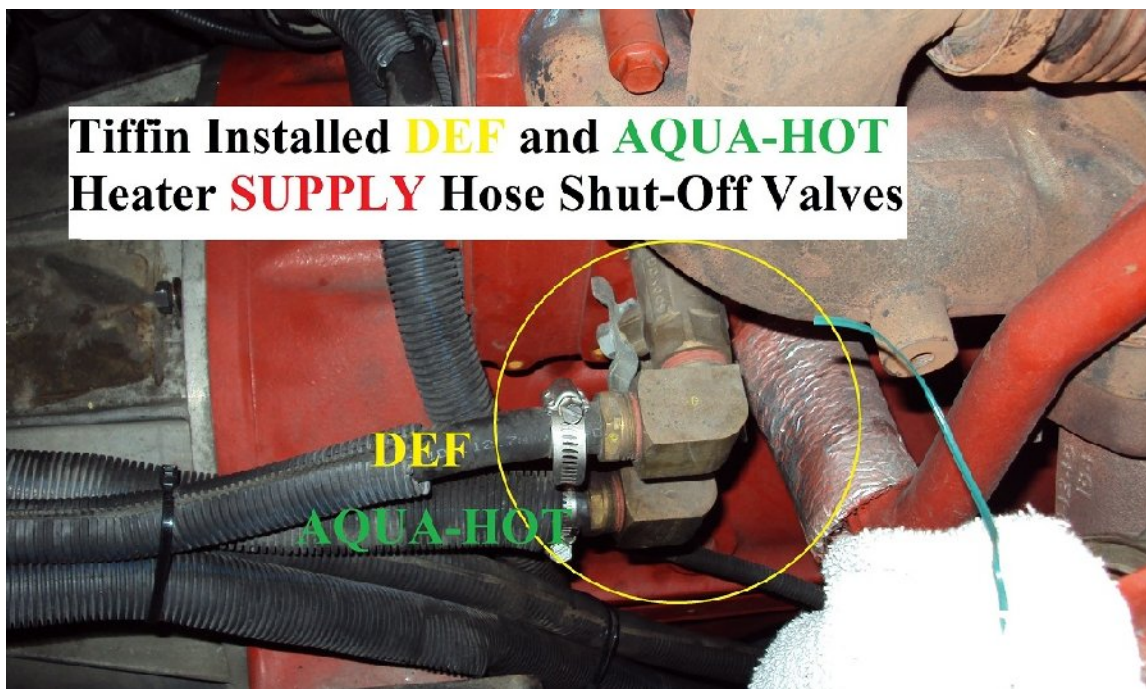


2010 43QGP Allegro Bus

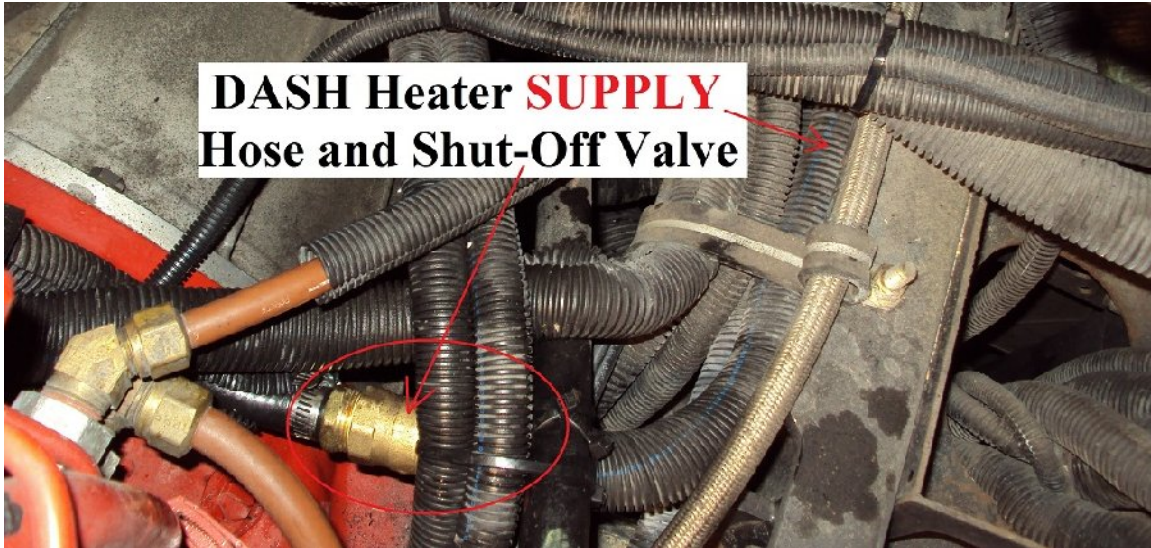
12/10/2012

SEVENTY-FIRST - coach modification – **ENGINE COOLANT SHUT OFF VALVES**. One of my conversations with Bob Tiffin regarded the problem owners faced when the heater hose leaked and there were no shut-off valves on the chassis, a split hose meant either having a hose being repaired on the side of the highway or being towed to a repair facility. Our previous chassis (Freightliner) had a pair of shut off valves used to isolate a leaking **DASH** heater hose. I asked Mr. Tiffin why his Powerglide chassis did not have shut- off valves, he thought adding them would be a good idea, during one of our later trips to Red Bay one of his Powerglide bus chassis was sitting near the guard shack (on display) that chassis had six shut-off valves used to isolate the three separate heating systems (**DEF**, **DASH**, and **AQUA-HOT**).

I am not sure what occurred after that visit maybe the brass valves were too expensive because our 2010 Allegro Bus Powerglide chassis came from the factory with only TWO shut-off valves, both were located in a **SUPPLY** hose, one for the **DEF** and the second for the **AQUA-HOT**, the locations and Shut-Off valves are shown in the below photo.

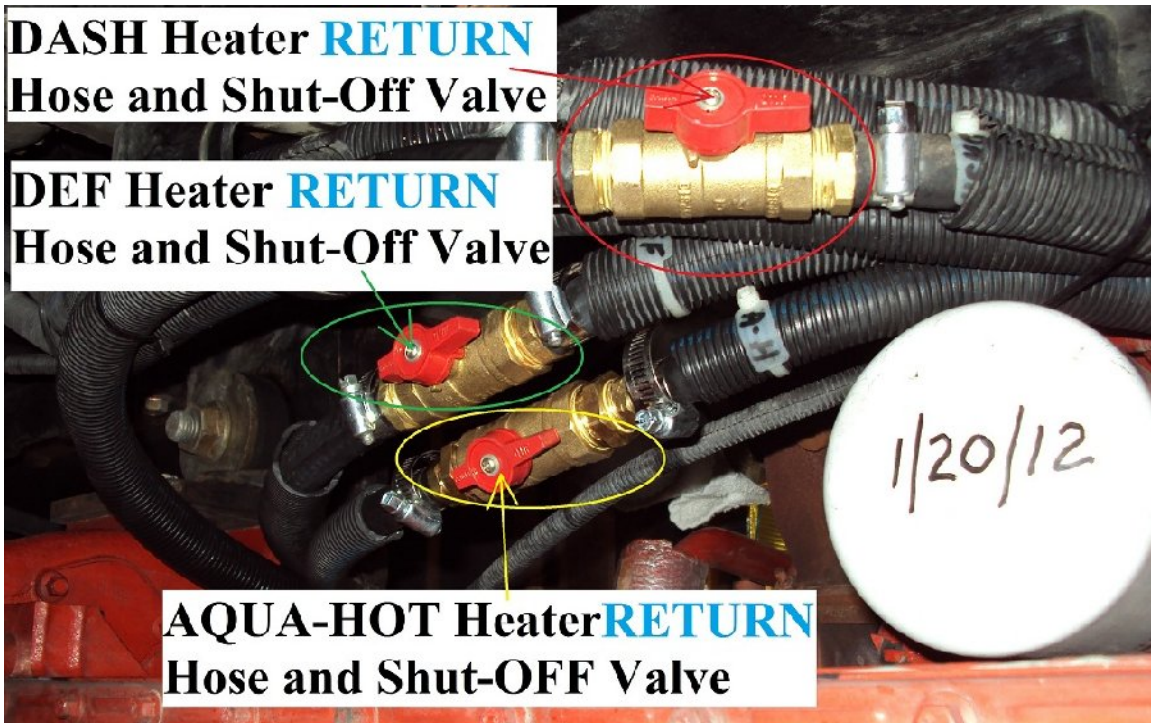


The next photo shows the location of a new brass Shut-Off Valve installed for the **DASH** heater. With the addition of this valve the three **SUPPLY** hoses have Shut-Off Valves.



**DASH Heater SUPPLY
Hose and Shut-Off Valve**

Next photo contains three new brass valves installed to provide a means to Shut-Off the coolant **RETURN** hoses at the driver side front of the engine near the water pump.



**DASH Heater RETURN
Hose and Shut-Off Valve**

**DEF Heater RETURN
Hose and Shut-Off Valve**

**AQUA-HOT Heater RETURN
Hose and Shut-OFF Valve**

The hoses used on the **DASH** and **DEF** heater coolant lines are all 5/8" ID, while the **AQUA-HOT** uses a 1/2" ID hose.

After the installation of the **FOUR** new Shut-Off valves along with the **TWO** OEM installed Shut-Off Valves for a total of **SIX** Shut-Off Valves there is **ONLY** about **FOUR FEET** of heater hose between the six valves and the engine. The six valves can be turned-off to control any heater hose leaks except in those four feet. There is not much more information that can be added to this modification. However, in my opinion to make any modification of an existing/active heater hose easy having at least a pair of vice grip hose pinch-off pliers for each hose you are working on is a must have. Descriptive tags are installed at all valves describing their function. A parts list and price of the various components used for this modification are listed below.

Engine Coolant Shut Off Valves			
Number of Parts	Part Name	Part Cost	Part Subtotal
1	Thread Sealer (1 oz. tube)	\$3.99	\$3.99
4	3/4" Brass Ball Valve	\$9.94	\$39.76
2	3/4" x 1/2" Brass Pipe Bushing	\$4.47	\$8.94
2	1/2" Brass Adapter x 1/2" MIP	\$3.95	\$7.90
6	5/8" ID Brass Barb x 3/4" MIP Adapter	\$4.90	\$29.40
4	#12 Stainless Steel Hose Clamps	\$2.49	\$9.96
			\$99.95
		Sales Tax 7%	\$7.00
		TOTAL COST	\$106.95