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G503 WWII Jeep Exhaust Heat Control Valve Detailed

The WWII Jeep Exhaust Heat Control Valve (Heat Riser) had its purpose for the G503 military vehicle and cold weather. Here we describe its purpose.

The Heat Control Valve, or Heat Riser on a WWII jeep was designed to help heat the intake air quickly in sever cold weather areas. Many jeep owners misunderstand the purpose of this component. First, the heat riser components that sit under the intake manifold and divert warm exhaust air. Components shown here.

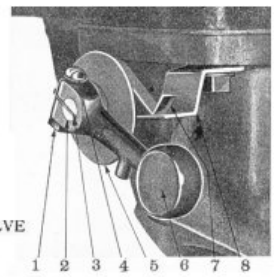
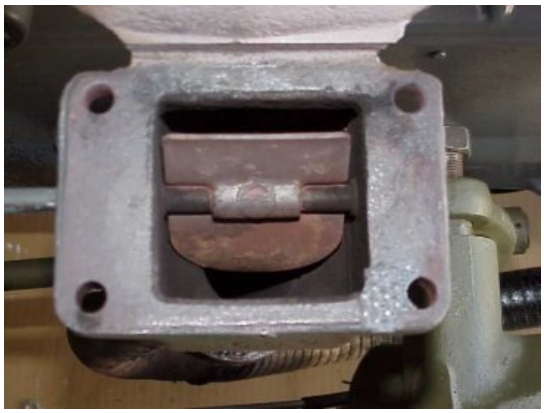


FIG. 2—HEAT CONTROL VALVE

No.	Willys Part No.	Ford Part No.	
1	6352	355836-S7	Heat Control Valve Lever Clamp Screw Nut
2	637206	GPW-9456	Heat Control Valve Shaft
3	637211	GPW-9465	Heat Control Valve Lever Key
4	5272	355160-S	Heat Control Valve Lever Clamp Screw
5	637209	GPW-9484	Heat Control Valve Bi-Metal Spring Washer
6	637210	GPW-9458	Heat Control Valve Counterweight Lever
7	637208	GPW-9467	Heat Control Valve Bi-Metal Spring
8	639743	GPW-9463	Heat Control Valve Bi-Metal Spring Stop

According to the TM's, the Heat Control valve is used to control the hot gases from the exhaust to help vaporize the fuel when the engine is cold. The counterweight arm you see here and the spring will react to the heat generated by the exhaust

When the engine is cold, the counterweight will rest the valve flapper (red) in an open position, routining the warm exhaust air around the Fuel Intake manifold. Thus, help to vaporize the fuel as it is entering the carburetor. Light blue shows the direction of the exhaust when cold.

	Here you see what the valve (flapper) looks like in the chamber.
	As the engine warms up, the circular spring will warm up and contract forcing the counterweight upward. This will close the valve and divert the exhaust straight out to the exhaust pipe.
	Here you see that the engine is cold and the counter weight is resting with the valve flapper in an open position on the inside of the manifold.
	If the engine was running and warm, you would see the heat control valve move upward and the valve flapper would close on the inside of the manifold, diverting exhaust directly out the exhaust pipe. Interesting to note, after engine is warm, and you turn the engine off, you can watch the valve start to come down as the spring retracts and the counterweight force will open the valve up.