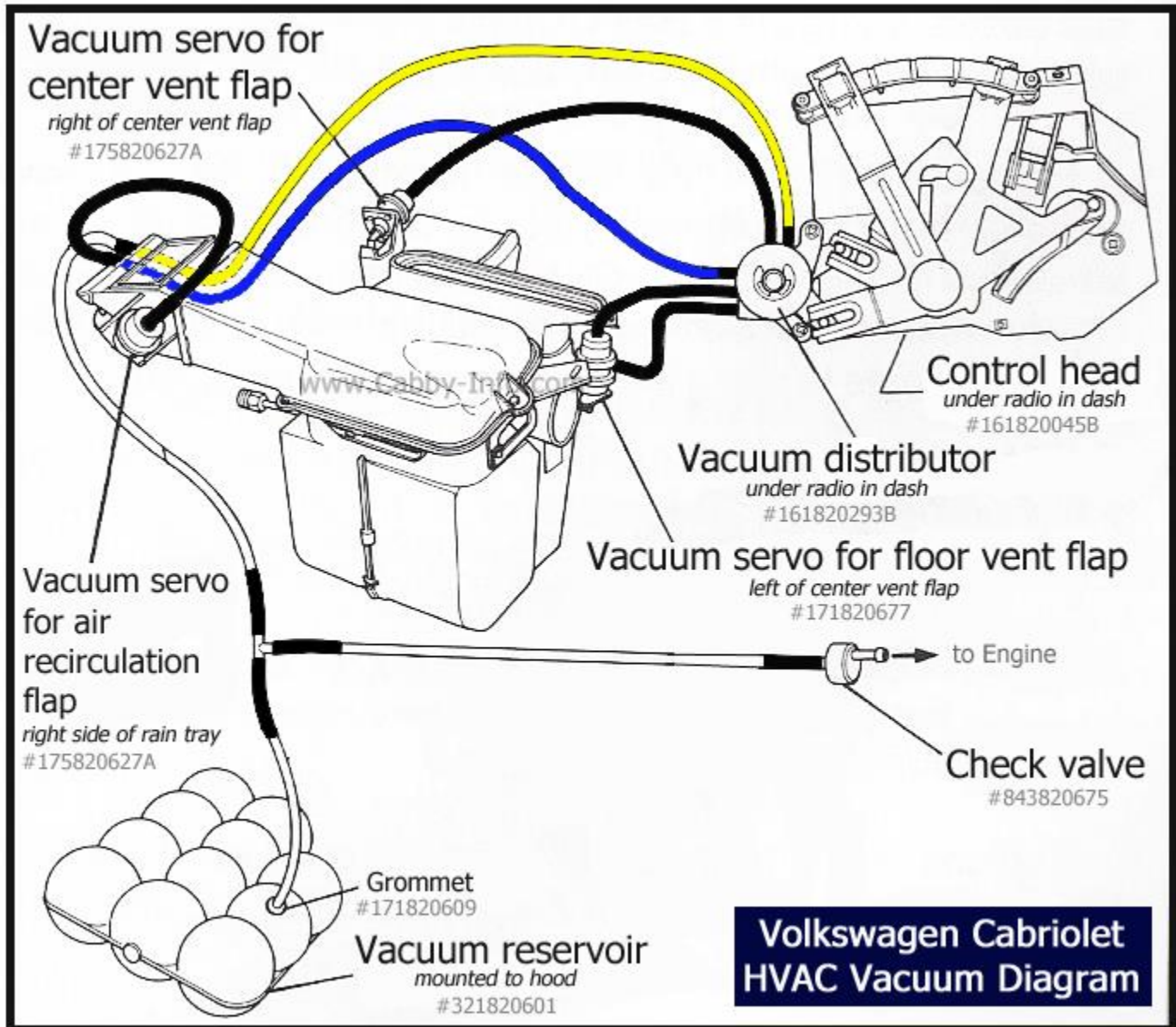


Volkswagen Cabriolet DIY Guide

HVAC System: A/C-equipped Cars













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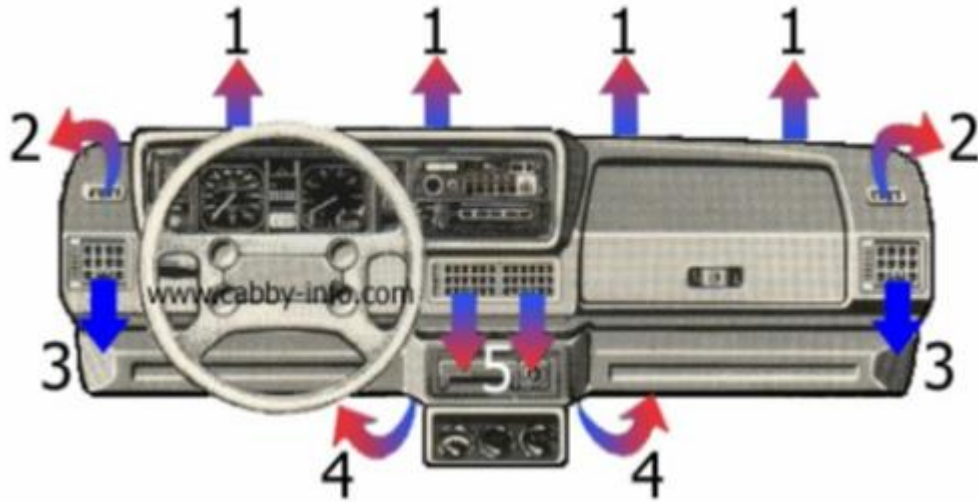
Main System Components



**Volkswagen Cabriolet
HVAC Vacuum Diagram**

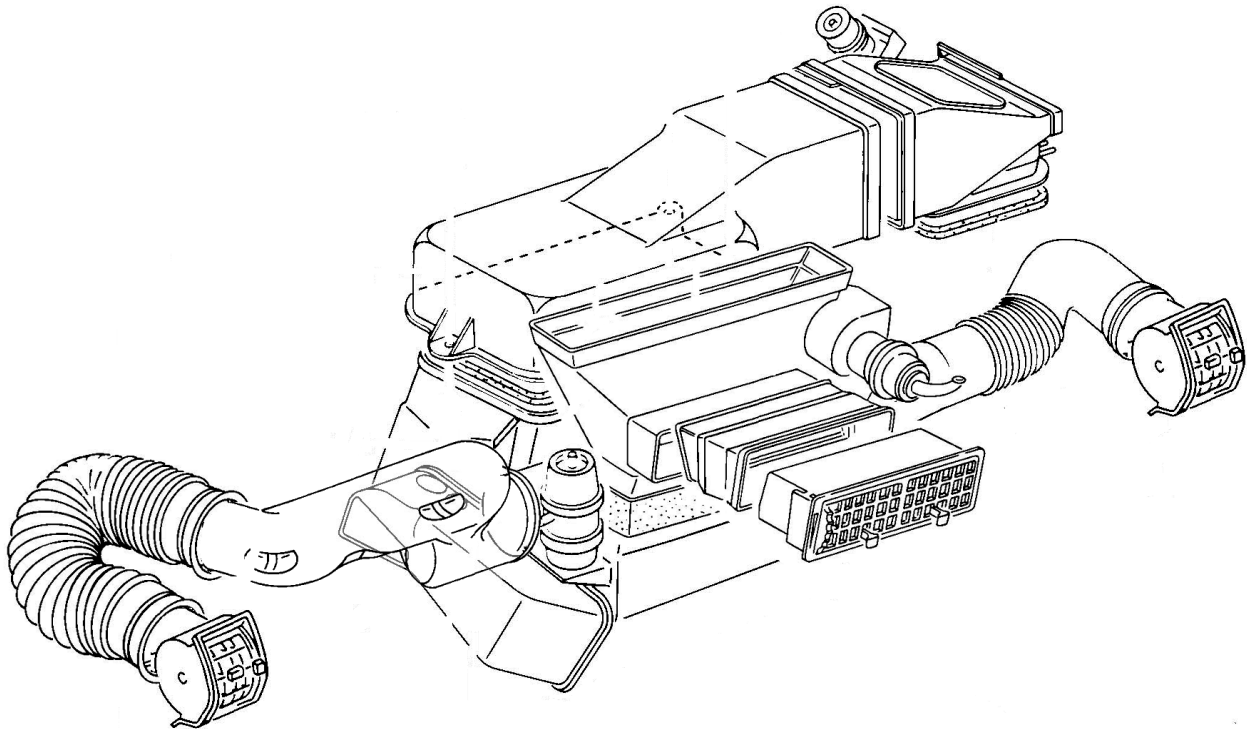
Control Panel Symbols & Functions

	Maximum Cooling	Normal Cooling	Comfort Cooling	Vent – Dash	Vent – Footwell	Defrost
1979-1984						
1985-1993						
Footwell vent flap:	Open	Open	Partially Open	Open	Closed	Open
Center vent flap:	Open	Open	Open	Open	Closed	Closed
Recirculation vent flap:	Closed	Open	Open	Open	Open	Open
Compressor:	On	On	On	Off	Off	On
Air description:	Cabin air is cooled	Outside air is cooled	Outside air is cooled	Outside air is distributed; air is heated if desired	Outside air is distributed; air is heated if desired	Outside air is distributed to windows; air is heated if desired
Vents active:	3, 5	3, 5	3, 4, 5	3, 5	3, 4	1, 3



Note: The side dash vents (#3) have outside air routed to them at all times. This outside air is ambient, or cooled if A/C is on. When the outside air temp is colder than desired (particularly in cold, winter months), you will need to close these vents individually with their on/off dials. You can also [modify the system](#) so that heated air can be routed out of these vents.

Vacuum Servos & Vent Flaps



Servo	Location	Vent Flap Operation	Default (engine off) Flap Position
Footwell	Left of heater box, behind kneebar	<ul style="list-style-type: none"> : Vacuum distributor routes full vacuum to the top servo port. The servo's main diaphragm is retracted, forcing the main system vent flap to fully close for air distribution through the footwell vents. : Vacuum distributor routes full vacuum to the side servo port. The servo's secondary diaphragm is retracted, forcing the main system vent flap to partially close for air distribution through the footwell and dash vents. : Vacuum distributor routes no vacuum to the servo. The servo's diaphragms are extended, forcing the main system vent flap fully open for air distribution through the dash vents. 	Open
Center	Right side of center dash vent	: Vacuum distributor routes full vacuum to the servo, retracting the diaphragm, forcing the center vent flap open .	Closed (aka defrost setting)
Recirculation	Right side of rain tray, under plastic A/C water diverter (if still installed)	: Vacuum distributor routes full vacuum to the servo, retracting the diaphragm, forcing the recirculation vent flap closed , allowing for cabin air to recirculate through the evaporator for quicker cool-down (or to block out putrid air).	Open (aka fresh air setting)

This is a sealed system. At no time does this system "bleed off" excess vacuum for controlling servos. The only time a bleed-off occurs is a couple minutes after engine shut-down. If any servos are failing to properly operate their vent distribution flaps, there is a vacuum leak somewhere in the HVAC system that needs to be addressed. Please refer to the troubleshooting section.

Note: All of these servos are no longer available new from Volkswagen and, as of this printing, there are no aftermarket versions.

Problems this section addresses:

- No air out of center vent
- No air out of footwell vents
- Air recirculation failing to work

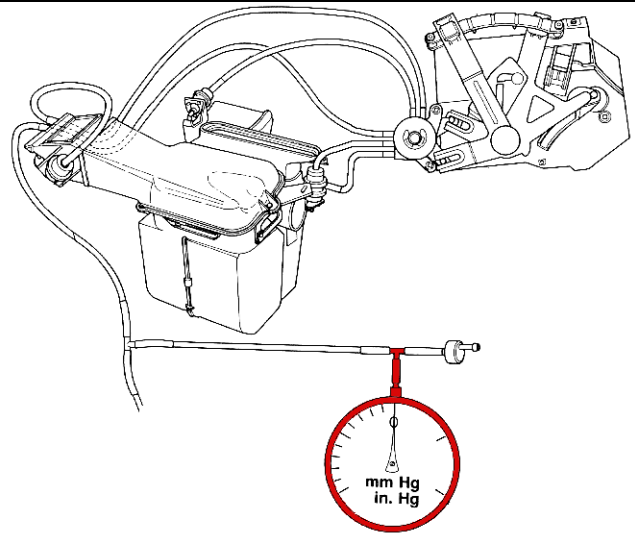
Step 1 – Test system vacuum

Install a vacuum gauge between the check valve and main HVAC hose connection.

Run the engine until the gauge reads at least 15 in. Hg. Move the air distribution lever on the HVAC panel all the way to the left and shut the engine off.

Gauge falls within 1 minute: Leak(s) present in the distribution components. Proceed to Step 2.

Gauge holds steady, but center vent and/or recirculation vent flap has closed: Faulty servo(s). Proceed to appropriate Step 3.



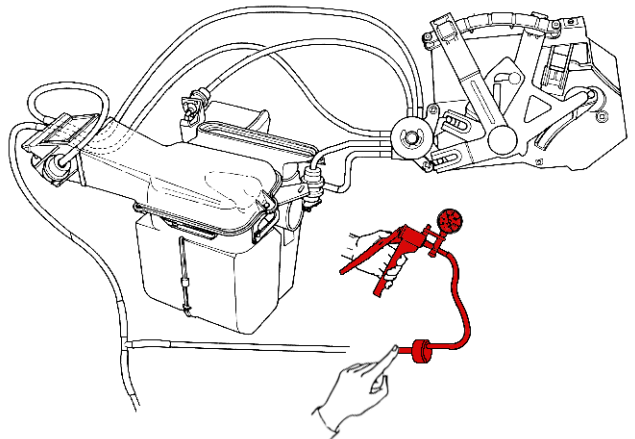
Step 2 – Test check valve

Carefully remove check valve. Attach vacuum pump to "motor" side of the valve and plug the other side with a finger. Apply vacuum (up to 15 in. Hg).

Does the gauge hold steady?

Yes: Check valve is good. Check (and/or replace) vacuum reservoir (including rubber grommet), rubber hoses, plastic tubes, and vacuum distributor (see Step #4).

No: Check valve is faulty and should be replaced.



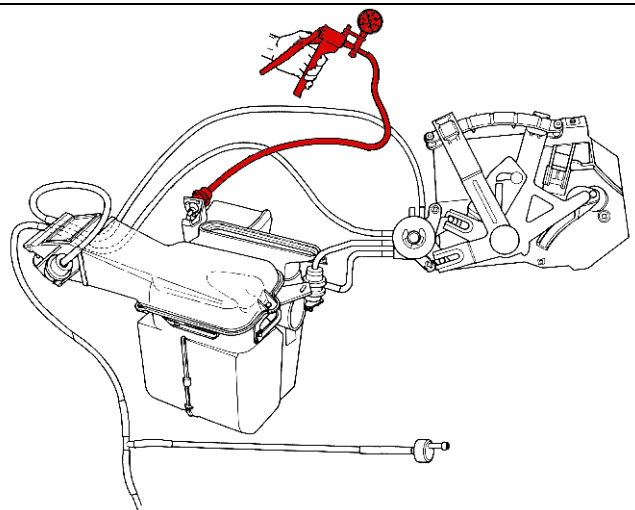
Step 3A – Test the center vent servo

Remove the radio. Carefully remove proper rubber hose connection for center vent from distributor. Connect loose end to your vacuum tester and apply vacuum (up to 15 in. Hg).

Does the gauge hold steady?

Yes: Servo is good.

No: Servo is faulty. Connecting hose could also be faulty; replace hose with new and try test again (2nd test failure: servo is faulty).



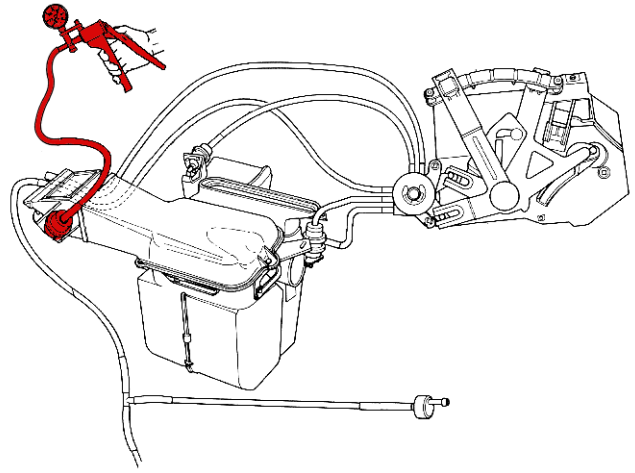
Step 3B – Test recirculation servo

Carefully remove proper rubber hose connection for recirculation flap from distributor. Connect loose end to your vacuum tester and apply vacuum (up to 15 in. Hg).

Does the gauge hold steady?

Yes: Servo is good.

No: Servo is faulty. Connecting hoses could also be faulty; remove water diverter under the hood and test directly at the servo (2nd test failure: servo is faulty; 2nd test passed: hose connection fault).



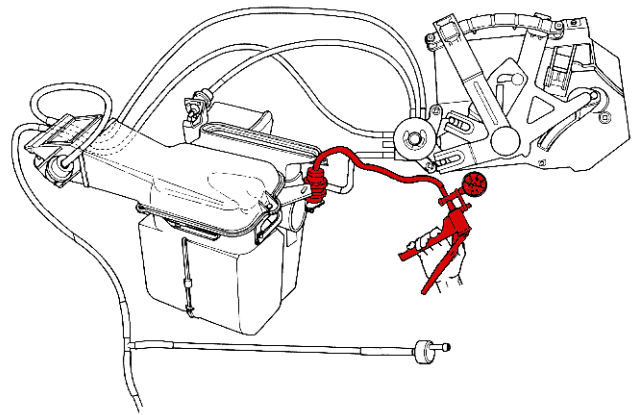
Step 3C – Test footwell servo, main

Carefully remove proper rubber hose connection for top port of footwell servo from distributor. Connect loose end to your vacuum tester and apply vacuum (up to 15 in. Hg).

Does the gauge hold steady?

Yes: Servo is good.

No: Servo is faulty. Connecting hose could also be faulty; replace hose with new and try test again (2nd test failure: servo is faulty).



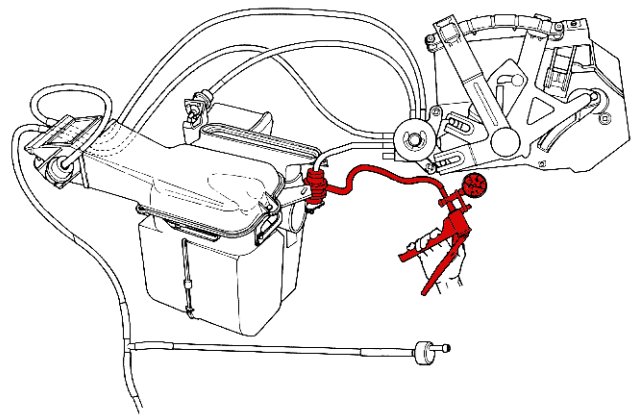
Step 3D – Test footwell servo, secondary

Carefully remove proper rubber hose connection for side port of footwell servo from distributor. Connect loose end to your vacuum tester and apply vacuum (up to 15 in. Hg).

Does the gauge hold steady?

Yes: Servo is good.

No: Servo is faulty. Connecting hose could also be faulty; replace hose with new and try test again (2nd test failure: servo is faulty).



Step 4 – Test vacuum distributor

Carefully disconnect all hose connections from vacuum distributor. Carefully cap/plug all servo ports. Carefully connect your vacuum tester to the main vacuum port. Apply vacuum (up to 15 in. Hg). Slide the upper HVAC control lever, slowly, to all settings.

Does the gauge hold steady?

Yes: Distributor is good.

No: Distributor is most likely faulty.

