
TEMP

E30 Heating

The electronic heater valve in the E30 3-Series is a complex system but it's simple to fix.

Having heater problems with your 3-Series? Join the club. Like the other models whose electronic heater valve we covered in the December 2000 issue, the E30 uses an electronic heater valve to regulate the air temperature in the cabin but it's a slightly more complex system and not quite so easy to sort out.

Basically, the E30 uses a heater valve bolted directly to the heater matrix under the dash which gives very fast response to the heater control. It's a simple valve which sits between the heater matrix and the engine and with the application of a full 12 volts, closes the solenoid valve and thus shuts off the warm water supply and therefore the heat.

The temperature switch on the dash is a rheostat which alters the voltage going to this valve. When set to cold, there's a full 12 volts on the valve, when set half-way about 6 volts meaning a half-open valve and when set to full heat, no volts at all.

The trouble starts when the engine anti-freeze isn't changed often enough and both iron and alloy corrosion is floating around the cooling system. Unlike the E28 heater valve, the E30 item doesn't have a filter so the gunge collects in the valve and stops it from working properly

Now, the symptoms are going to be either too much heat, or no heat at all. The main electronic 'shuttle' presses a pin down on the diaphragm with 12 volts and shuts off the hot water supply — with no volts it's wide open, letting hot water in and with, say, 7 volts it's partially open.

When it goes wrong you're faced with severe discomfort — either heat all the time or no heat at all — and you'll often be told by self-proclaimed experts that the only cure is a brand new heater matrix but it's much simpler than that.

Follow our step-by-step guide to fixing the system and you'll be both basking in wallpaper-stripping heat in the winter and enjoying a cool cabin come the better weather. Whenever that might be.

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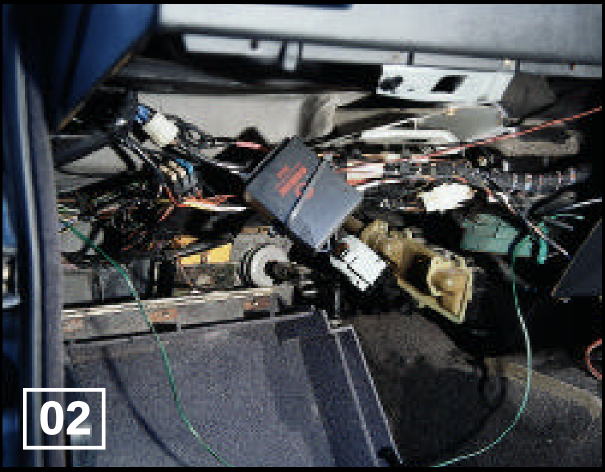
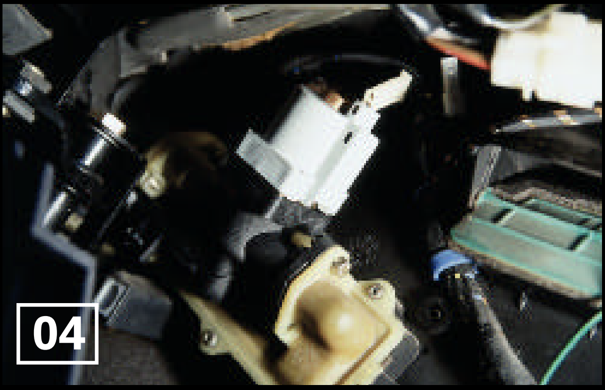
Whatever the fault, the first thing to do is remove the valve and test it. Firstly, remove the centre console. There's a plastic nut at the rear behind the handbrake lever under a cover and with that removed, the rear console pulls backwards and off. The main console is held on with another plastic nut under the gearlever gaiter and two 8 mm bolts going up into the main facia. Remove the console after disconnecting the wires for the cigarette lighter.



Now drop the glovebox down and disconnect the two straps after removing the top plastic cover above the glovebox. Do this by twisting the top plastic lugs through 90 degrees, pushing them up and then out. It's tricky. With the glovebox dropped right down, remove the plastic cover to the side of the glovebox, followed by the plastic trunking. This can be a real pain to get out, but once removed you can see the heater valve easily.

From under the bonnet, locate the two pipes for the heater and remove the lower rubber coolant pipe.



If your heater is stone cold and won't heat up, there's a quick trick you can try before you remove this pipe. With the engine hot, remove the wire going into the top of the heater valve. This will remove any voltage and cause the heater valve to open. If the heater suddenly starts to pump out hot air, that means that there is a fault with the heater switch which is giving the valve a constant 12 volts. Fitting a second-hand switch is the cheapest answer, although cleaning the contacts can work wonders — see step 10.

If nothing happens, the valve is jammed shut and is knackered so carry on. Continue with removing that bottom coolant pipe and back inside the car, remove the two 8 mm bolts holding the valve to the heater matrix. There's a single cross-head screw holding the valve to the matrix and it's a pig to get out. If you're fitting a new valve, just use a pair of cutters to 'butcher' the valve but leave the screw intact. Put a big towel under the valve to catch any coolant and with a screwdriver, lever the heater valve away from the matrix and out. Now we can test it.

06

Mount the unit in a vice with the main pipe pointing upwards. Fill the pipe with water and it should come straight out — if it doesn't, it's finished, causing no hot air. Now carefully make up a couple of wires for the positive and earth feeds on the valve but insulate the two with tape. Connect these wires to a battery and you should hear a loud click as the solenoid opens. With 12 volts on the valve, add water to the long pipe. It should stay there and not run out. Pull the wire from the battery and the solenoid will click and the water should drain out. If it runs out instantly even with 12 volts, the unit is scrap and causing constant hot air. Remember the simple rule — 12 volts and water should stay in the pipe. No voltage and it runs straight through.

07

New valves are available for about £40 from suppliers like German & Swedish and Euro Car Parts. When fitting a new one, grease the O-ring where the valve fits on to the matrix and don't forget to make sure the grommet where the valve pokes out into the engine bay is intact.

08

To bleed the system, run the engine with the radiator cap removed and heater on the hot setting, open the bleed valve on the thermostat housing and wait for the heater to blow hot air and the air bubbles to cease coming from the bleed screw. Be very careful with the bleed screw though and soak it in WD40 or similar before you start, to avoid shearing it off.

09

As a temporary 'bodge' to cure a cold heater, you can drill a large hole in the matrix flange end of the valve. This will bypass the valve completely and although it will give you plenty of heat, the only way to cool the interior will be with the centre heater slide to the right, letting in cool air from outside. Come summer, this will be a total pain but as an emergency measure in the winter it works well enough. A blocked heater valve that doesn't allow warm water through the matrix can also cause air locks and overheating problems. Flushing the matrix out is a good idea too. Simply remove both pipes into the heater and attach a hose to one end. With the ignition off, flush the matrix until only clean water comes though.

10

As a final check, ensure the switch connector is still connected to the heater valve. The switch on the E30 operates both the heater valve and the hot air flap in the heater box via a cable. To access the switch, remove the two screws hiding behind the clock and switches above the heater controls and two (sometimes three) from under the dash. Pull the unit forward and make sure the wiring connector is still attached, Clean the contacts with electrical cleaner while you're at it and your heater should be working like new.