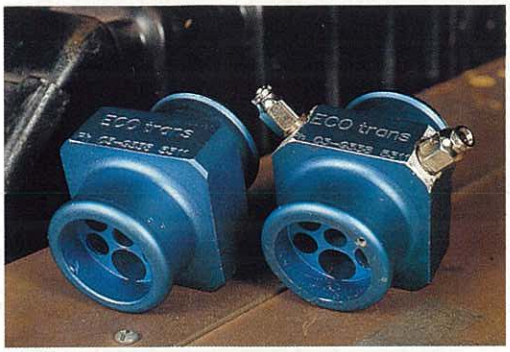
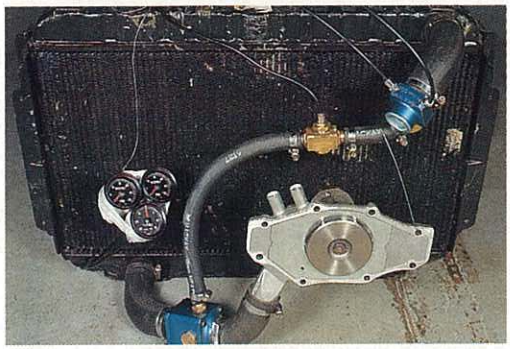
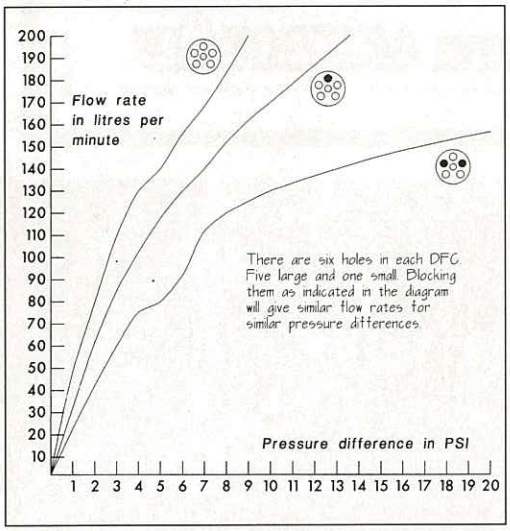




TOP LEFT: Two DFCs. The one at left is standard while the unit on the right has been drilled to provide pressure measuring points. The pinhole in the edge at the end of the hose-clamping section leads to the pressure connector. There is also one on the other side. BOTTOM LEFT: An engine's eye view of the modified cooling system components. You can see the pressure measuring points on the DFC and the lower gauge with the vacuum-reading section is connected to the brass junction block in the external bypass hose. This point effectively leads to the pump inlet.

RIGHT: A de-aeration canister. The large connection at left is attached to the engine outlet. It has a nozzle inside it and its offset entry causes the coolant to swirl around the inside of the canister. The outlet at right is curved downward inside the canister so draws only fresh bubble-free coolant from the bottom of the unit. The small outlet at the bottom is the feed point for the external bypass hose.



This rate must be slowed by restricting the flow. With an EcoTrans system, this is done by plugging a number of holes in the DFC. John calls this 'tuning the cooling system'. The DFC fitted to the 460 shown has six holes which have a total area of 0.794 square inches. As we mentioned, a healthy pump creating a pressure drop of 15psi across such a DFC creates a flow of 200 litres per minute (see graph). In the end, Wayne found that blocking two of the holes created the most effective flow rate.

The cooling system is often ignored during a build but you can see there's more to it than just fitting the biggest radiator you can find and hoping for the best. You can fiddle with and tune your system and your whole engine installation will benefit from your efforts. Really, getting your cooling system right should be the first step towards creating a stable engine that will then respond accurately to your other tuning efforts. You can reach EcoTrans for prices and further information on (03) 9338 5311.

RIGHT: Two vastly different flow rates. Note the pressure difference on the two upper gauges in each photograph. Where there isn't much difference, the flow is considerably less and we had to stick on a much smaller nozzle to get the water to shoot as far. The lower gauge would normally be connected to the inlet side of the pump, but in this case it's attached to the bottom of the DFC, so it's showing the same pressure as the gauge at upper left. It's the same story in your car: the greater the pressure drop, the greater the flow through your cooling system.