

Technical Tips, Modifications & Questions



Upgrading to Electric Cooling Fans

Ian Hissey

The modern trend in the automotive industry is to use high capacity electric fans, replacing the belt driven fan, thus reducing weight for the crankshaft to spin, and improving HP developed. Any driven weight saving here is an advantage. Also with the V12, it is relatively easy to mount the alternator where the air pump is situated, which reduces the belts on the V12 from 4 to 2!

The twin fan/shroud assembly is standard fitment to the Falcon 'AU', 'AU II' and later models, (available new on ebay for around \$150) and requires little modification to be fitted. It is virtually size for size for the XJ radiator core. The space between the radiator and the engine requires a little cutting or grinding off some of the plastic shroud in parts to clear some pulley shafts, but this in no way affects the performance or safety.

On my XJ-SC (and on the XJ6) I removed the fan shroud, small electric fan and clutch fan, and have fitted the Ford manufactured twin electric fan assembly, that is surprisingly very close to the dimensions of the XJ radiators.

The original outer mounting lugs (for the Falcon) are cut off. Two small aluminium retaining lugs can be made and bolted onto the panel across the top of the radiator, that just then hold the top of the fans in place.

Right angle brackets can be made and bolted to the bottom radiator cross panel, there are two ¼UNF holes on each side, for the bottom of the fan assembly to sit in. This way, if you need to remove the fans at any stage, you only need to undo the top bracket, and lift out the whole fan assembly.

The aluminium radiator in the pictures of my XJ-SC and XJ6 is a VT VX Commodore GEN3 LS1 Manual 5.7L V8 Radiator (from eBay for \$150).





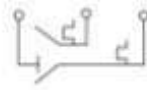
Upgrading to Electric Cooling Fans Cont'd

Air flow for belt fans are directly proportional to engine rpm, at idle slowest, at speed on highway highest. Electric fans, once turned on, are running at maximum capacity, even though the vehicle may be stationary, which is great for the engine when the A/C is running in traffic. The electric fans run only when necessary.

The electrical connections for each fan are separated in a 4- spade socket so that individual switching for each fan can be done. (eg one fan can be switched on with the air-con compressor). For really good control, 2 stage thermostat switches can be fitted, one for each fan (via a relay). For the carburetted XK and V12 engines I use a Tridon TFS 214 two-step thermo switch (available from Repco),

TRIDON TFS 214

- Thread - M22 x 1.5
- Circuit - Dual Normally Open - Normally Open
- Temp Range: 80°C to 75°C and 87°C to 82°C
- Spanner - 29mm



and for the fuel injected XK and V12 engines, I use a Tridon TFS 213 two-step switch.

TRIDON TFS 213

- Thread - M22 x 1.5
- Circuit - Dual Normally Open - Normally Open
- Temp Range: 95°C to 90°C and 102°C to 97°C
- Spanner - 29mm



(On my XJ-SC this has since been replaced with complete control by the Wolf Engine Management system)

Install an interlock on one fan from the A/C circuit, so that one fan operates when the A/C is switched on.

The control circuit shown below has the fans wired directly from the battery (thru fuses), and the thermostat switches control the negative (earth) wiring, which will then operate the fan after shutdown, to circulate air thru the radiator and engine bay, to cool down the engine and reduce heat soak into the heads.



Upgrading to Electric Cooling Fans Cont'd



JAGUAR XJ6
RELAYS & FUSES DIAGRAM
ELECTRIC WATER PUMP

