

### Overheating Corvair Engines (Don't!)

Water cooled cars will generally announce approaching overheating with lights, buzzers, puddles of coolant and clouds of steam way before they reach a 600 degree head temperature which is where Corvair engine destruction begins. A Corvair has a single warning light (turbos have a buzzer) which is in combination with oil pressure warning. The '60 model (only) also had an oil temperature switch.

The Corvair "Temp/Press" light warning system contains two switches, both of which will ground the dashboard light to turn it on while the engine is running if either detects a problem. The oil pressure switch will also be grounded anytime the engine is not running and this lights the dash bulb with the key on and engine off. The temperature switch is only grounded when the head overheats and this varies with the three different switches used over the years. The first switch grounded at 450 degrees (smooth hex body), the second at 500 (grooves in the body) and the third (turbo and 140) has fine threads and is set for 575.

If the "Temp/Press" light comes on only at a low idle the problem is either a sticky oil pressure switch or low oil pressure with thin oil. If the light comes on under a load on the highway then goes off as you slow down it is definitely an overheat issue. A Corvair will heat and cool just the opposite of a water cooled car; the faster you drive a Corvair the hotter it gets and the slower you drive the cooler it gets. They do not overheat in a parade.

If your "Gen/Fan" light comes on, pull over as soon as safely possible and check the belt – if it is working properly (check a failed balancer also) you should be able to safely drive to a location where you can check the system. If the "Temp/Press" light comes on, you need to shut off the engine as soon as safely possible and check the belt and the oil level; if both are good and the lifters are not rattling, it should be safe to drive to a location to check out the problem. If the "Gen/Fan" light came on and you keep driving until the "Temp/Press" light came on you are in very real danger of severe engine damage – shut off the engine and stop as soon as safely possible. A tow charge is always cheaper than an engine replacement which is the point I wanted to get to.

When you keep running a Corvair with the belt off and/or the temperature light on, the temperature keeps rising rapidly. Once you cross the 600 degree point some almost irreversible problems start to happen. The steel valve seats which are heat shrunk into the heads will come out and may shatter, ruining three pistons and cylinders on the side that loses a seat first. The aluminum alloy head may soften to the point the seat areas will all have to be welded and may even be unusable. The aluminum cam gear is heat shrunk onto the steel cam and will expand faster than the steel and will move out on the cam, making it also unusable. The aluminum around the upper head studs will soften, allowing some, if not all of the studs to pull out of the head. Again, the aluminum may be too soft to repair. The cooling fan bearing mounting shaft is steel and is also heat shrunk into the aluminum top cover. When overheated it will move up in the cover allowing the fan to hit the shrouding and the aluminum cover may also lose the shrink fit. Late model stock pistons will crack around the oil ring groove and any piston may have holes burned in the tops or down the side from severe detonation. In the final analysis, an overheated Corvair engine may be a junk engine; only the sheet metal is safe to reuse.

Test your warning system every time you drive your Corvair by simply turning the key to the “On” position for a moment before starting and observe that both dashboard warning lights are bright red and then go out after the engine starts.