



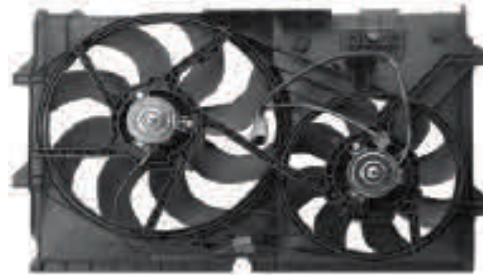
Subject: COOLING FAN ACTIVATION – GM VEHICLES	TSB #: 20 1-09					
	Date: 23/1/09					
Initial Once Read:						

As part of the A/C system diagnosis you may need to understand why a compressor clutch is fast cycling and your high side pressure is higher. What a pain it is to find out the information on what pressure the high or low pressure switch or transducer will disengage the compressor clutch when a problem exists. Likewise, at what A/C pressure or coolant temperature should the condenser or A/C related cooling fans engage and disengage in the case of an excessive high side pressure, should the fans come on with compressor engagement?

With this in mind, we have put together a matrix of pressure and temperature information which at this stage is only suitable for Holden vehicles VL through to VE. At a later date we will look at this type of information for other vehicles as well.



VY, WK V8



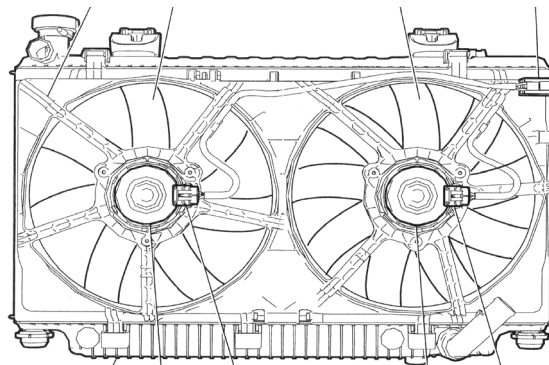
VY, WK V6



VT S2, VX, V6 / V8



VZ, WL V6 / V8



VE, WM V6/V8



TECHNICAL SERVICE BULLETIN



Auto Air Products

Vehicle Model	Low Pressure Compressor Cut-Off	High Pressure Compressor Cut-Off	Cooling Fan(s) "On" With A/C Activation	Separate Cond Fan Activation	Cooling Fan(s) Operation Via A/C Pressure or Coolant Temperature
VL 6 Cyl / V8				On - 1700 kPa Off - 1500 kPa	
VN / VP /VQ V6 / V8 -	Off - 62 kPa	Off - 2648 kPa		V8 Only - Fan comes On with A/C	N/A
VR V6 / V8 Electrical radiator fan and cond fan	Off - 196 kPa On - 205 kPa	Off - 3136 kPa On - 2548 kPa	Yes - V6 / V8 Condenser fan	Fan comes on with A/C "ON"	N/A
VS V6 / V8 - Electrical radiator fan	Off - 196 kPa On - 225 kPa	Off - 3140 kPa On - 2540 kPa	Yes - V8 Only Condensor Fan	V8 Only On - 1770 kPa Off - 1370 kPa	
VT Series 1 8/1997 to 5/1998 V6 / V8 - White relay - Low speed Green relay - High speed	Off - 180 kPa On - 240 kPa	Off - 2900 kPa On - 2400 kPa	Both Engine Cooling Fans Operating on Low Speed. Vehicle Speed Below 64 km/h or with A/C off, coolant temp greater than 104C.	N/A	On - 1770 kPa or A/C Off, coolant temp 104C Off - 1370 kPa
VT Series 2 / VX VU / VY / V2 / WH WK - V6 / V8 1998 to 2004 VT, VX Cooling fans same diameter VY, V2, WH Cooling fans large and small diameter White relay - Low speed Green relay - High speed	Off - 180 kPa On - 240 kPa	V6 - Off - 2900 kPa On - 2400 kPa V6 S/C and Gen 3, V8 Off - 2900 kPa On - 2000 kPa	Drivers Side Engine Fan Only on High Speed.	N/A	V6 charged On - 2000 kPa 2900 kPa Off - 1500 kPa 2300 kPa Gen 3, V8 On - 2400 kPa Off - 1900 kPa



TECHNICAL SERVICE BULLETIN

Vehicle Model	Low Pressure Compressor Cut-Off	High Pressure Compressor Cut-Off	Cooling Fan(s) "On" With A/C Activation	Separate Cond Fan Activation	Cooling Fan(s) Operation Via A/C Pressure or Coolant Temperature
VZ / WL V6 / V8 - 2004 to 2007 Cooling Fans - V6 Small diameter - Pass Stage 1 Large diameter - Driver Stage 2 Cooling fans - V8 400W and 430W Fan Motors Used On Gen 3, V8 only. 400W Fan motor Standard 2 Relays 430W Fan Motors H/Duty 3 Relays	Off - 180 kPa On - 240 kPa	Off - 2900 kPa On - 2000 kPa	No	N/A	<p>V6 - Large Fan Stage 1 On - 1500 kPa or coolant temp more than 108 C Off - 1170 kPa or coolant temp less than 99 C Large / Small Stage 2 On - 2000 kPa or coolant temp more than 111 C Off - 1500 kPa or coolant temp less than 103 C</p> <p>V8 Gen 3 - 400 W Motors Sedan, Ute, Wagon, Coupe Large / Small Fan Stage 1 On - 1500 kPa or coolant temp more than 108 C Off - 1170 kPa or coolant temp less than 104 C Large / Small Fan Stage 2 On - 2400 kPa or coolant temp more than 113 C Off - 1900 kPa or coolant temp less than 95 C</p> <p>V8 Gen 3 - 430 W Motors AWD Wagon, Crew cab ute Small Fan Stage 1 On - 1500 kPa or coolant temp more than 108 C Off - 1170 kPa Large / Small Fan Stage 2 On - 2400 kPa or coolant temp more than 113 C Off - 1900 kPa or coolant temp less than 95 C</p>



Vehicle Model	Low Pressure Compressor Cut-Off	High Pressure Compressor Cut-Off	Cooling Fan(s) "On" With A/C Activation	Separate Cond Fan Activation	Cooling Fan(s) Operation Via A/C Pressure or Coolant Temperature
VE/MM 2007 V6 / V8 - V6 - 3 Stage Cooling fans on high speed 1. Low. Both fans on low speed in series. Relay - FL17 2. Mid speed. 1 fan on high and other on low. Relay - FL19 3. High speed. fans on high speed in parallel. Relay - R20 V8 - 2 Stage Cooling Fans 1. Both fans on low speed in series. 2. Both fans at high speed in parallel.	Off - 180 kPa On - 240 kPa	Off - 2900 kPa On - 2000 kPa	No	N/A	V6 - Low speed. Both cooling fans connected in series On - Greater than 1517 kPa or coolant temp more than 109C or vehicle speed less than 30 kmh or coolant temp sensor DTC set. Off - Less than 1214 kPa or coolant temp - 105C, A/C request vehicle speed greater than 50 kmh. V6 (only) - Mid speed. One fan on High speed the other on low speed. On - A/C on, coolant temp more than 110C. Off - Coolant temp less 108C Reverts to Low fan speed. V8 - Low speed. Both cooling fans connected in series. On - Greater than 1517 kPa, coolant temp - 104C vehicle speed less than 30 kmh or coolant temp sensor DTC set. Off - Less than 1214 kPa, coolant temp - 100C. V8 - High speed. Both cooling fans connected in parallel. On - Greater than 1758 kPa, coolant temp - 109C, coolant temp sensor DTC set. Off (reverts to low speed)- Less than 1517 kPa, Coolant temp 102C or vehicle speed greater than 104 kmh.



Vehicle Model	Low Pressure Compressor Cut-Off	High Pressure Compressor Cut-Off	Cooling Fan(s) "On" With A/C Activation	Separate Cond Fan Activation	Cooling Fan(s) Operation Via A/C Pressure or Coolant Temperature
SB Barina, Combo 1994 - 1998 2 Radiator fans 1 Cond fan	Off - 200 kPa	Off - 3140 kPa 115 Degrees C Coolant Temp	Both Fans Engaged on Low Speed	Greater than 1770 kPa	On - Greater than 1770 kPa or A/C Off 105C both radiator fans operating on high speed
TF Rodeo 1996 - 2002 Fan coupling No cond fan	Off - 205 kPa	Off - 2940 +/- 196 Kpa	N/A	N/A	N/A
RA Rodeo 2003- 2005 Fan coupling and cond fan	On - 186 +/- 30 kPa	Off - 2750 +/- 196 kPa	N/A	Greater than 1520 kPa	N/A
RA Rodeo 2006 V6 Alloy Tech Engine Radiator fan, No cond fan	On - 235 kPa Off - 173 kPa	On - 2400 kPa Off - 3000 kPa	N/A	N/A	N/A