Visctronic 12 Volt 732/842/882 Fan Drives

Troubleshooting Guide

Start

1. Check All Cooling System Components
   - Radiator, water pump, thermostat, temperature gauge, fault codes, etc.

2. Check Mechanical Integrity of Clutch
   - With engine off, rotate fan by hand. It should turn smoothly with some drag. If it feels rough or does not turn then replace the drive. Also verify no indication of viscous fluid leakage.

3. Check All Electrical Connections
   - With engine off, check proper connections of fan clutch and all related sensors per vehicle wiring diagram.

Perform Electrical Checks on Clutch
See page 2

How to Measure Fan Speed
A. Engine must be cold (thermostat closed).
   - Connect a frequency measuring multimeter to the fan speed signal (refer to section 3 on page 2).

B. Disengaged Check: Run engine at 1500 rpm with the A/C turned off. Wait until fan speed settles and then measure frequency.
   - Verify frequency is between 10 and 130 Hz (indicates 100-1300 Fan rpm).

C. Engaged Check: Disconnect the fan clutch connector.
   - Set engine speed at 1800 rpm. Verify fan engages and frequency is greater than 150 Hz (1500 fan rpm).

If problem persists, measure “On” and “Off” fan speed.

Confirm if clutch meets specifications.
If problem persists, refer to OEM diagnostics manual.

YES
Contact OEM.

NO
Resume operation.

YES
Remove jumper wire. Re-check control sensors and vehicle harness wiring.
   - Check wire connections and continuity. Repair if necessary.

Clutch disengages?
(May need to wait up to 2 minutes.)

Clutch engages?
(May need to wait up to 1 minute.)

YES
Check wire connections sensor contacts, harness continuity, etc.

Re-check operation.
   - Does problem persist?

YES
Repeat troubleshooting. If problem persists, refer to OEM diagnostics manual.

NO
Resume operation.

YES
Replace clutch.

NO
Replace clutch.

YES
Unplug connector to vehicle harness. Set engine speed to 1800 rpm.

NO
Resume operation.

YES
Add jumper wire from coil low (blue wire) to vehicle ground. (See page 2)
   - Set engine speed to 1800 rpm.

NO
Replace clutch.

YES
Check for intermittent control sensors

NO
Resume operation.

YES
Clutch disengages?

NO
Replace clutch.

Excessive On-Off or Noisy Cycling

Clutch Does Not Disengage
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Required Tools:

**Multimeter** capable of measuring resistance, voltage and frequency.

**Power Supply** with Amp usage display. Alternatively, a multimeter set to measure current may be used in series with any 12Vdc supply.

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**Fan Clutch Visual Wire Color Check**

Note: Connector style and pin-out may vary.

**USE WIRE COLORS TO IDENTIFY CONNECTIONS**

Engine must be off and fan not turning.

Disconnect fan clutch connector from vehicle harness connector.

Apply 12 Vdc across RED wire (+) and BLUE wire (-) and verify that the current draw is reading 1.0 - 2.0 Amps.

If a power supply with Amp usage display is not available, this can be done by probing or connecting to the fan drive connector pins or wires and placing a multi-meter in series with either connection between the power source and fan drive connections.

Set the multi-meter to measure at least 2 Amps.

Note: If reading is zero, make sure that
1) the polarity is correct at the fan drive connections
2) the multi-meter is configured to read at least 2 Amps and that any protective fuses in the meter are not blown.
3) A shorted fan drive could cause current draw to exceed 2.0 Amps and blow a fuse in a meter.

If available, use a power supply that limits available current to within the Amp measuring capability of the meter.

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**Fan Clutch Valve Solenoid**

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**Fan Speed Signal Check**

Turn key on but DO NOT start engine.

Connect fan clutch to vehicle harness.

Using a multimeter, measure Voltage across the fan speed sensor output (YELLOW wire) and fan speed sensor ground (PINK/BLACK wire) while manually rotating the fan. Make the connections by back-probing the fan drive or vehicle-side connector or removing insulation as needed to access the wires.

Verify voltage alternates from <0.5 V to ≈5 V (6 times per revolution)

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For additional BorgWarner Thermal Systems information, contact:

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