Technical Bulletin

Model	Group
928 S4	3

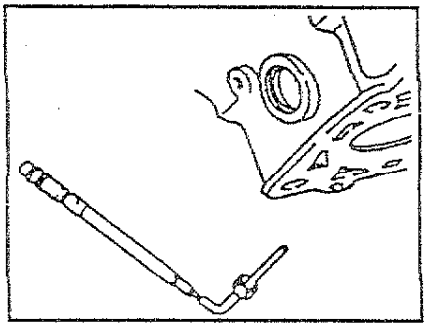
Subject: Broken Central Tube Shaft
Vehicles with Automatic Transmission

Part Identifier	Number
3903	9206

ATTENTION: Service Manager/Service Technician

Models Affected: ***928 S4***
Model Year 1989 to 1991

Concern: Activation of the ignition monitoring system (injection circuit switched off fault codes 1131 or 1231) can lead to breakage of the central tube drive shaft.



General Information: Oscillations in the central tube system that occur when the ignition monitoring system has switched (flywheel effect) can lead to breakage of the central tube drive shaft. This can occur only in vehicles with automatic transmission where the vehicle is operated at an engine speed of approximately 1000 RPM. Possible causes are:

— Damaged or defective exhaust gas temperature sensors.

— Possible damage to the ignition coil wire left side (in driving direction) between the ignition coil and distributor cap.

— Poor grounding of the mounting plate for the ignition final stages.

— Poor physical connection of the electrical plugs on the ignition final stages.

Parts Information: A new version temperature sensor, central tube and coil wire are installed in production.

Temperature sensor	Part Number 928 606 155 02
Central tube with changed material for drive shaft	Part Number 960 421 012 07
New coil wire with hose covering (for left side)	Part Number 928 602 040 01

Repair Information:

1. If the central tube drive shaft is broken, replace the central tube with the new version part (see parts information). Refer to Technical Bulletin Group 3, Number 9203, dated May 5, 1992 for hints on central tube installation.

SERVICE

Repair Information (cont.):

2. Replace the left side ignition coil wire with the part number listed in this bulletin. Be certain the coil wire is routed freely and not under tension.
3. Check all ignition components and connectors for corrosion, tightness, correct connection and damage. Repair or replace as necessary. If an ignition circuit has malfunctioned, an LED indication will be given by the ignition monitor relay located on the L-H control unit mounting plate (Figure 1).

   Ignition circuit I (cyl. 1-7-6-4) Red diode
   Ignition circuit II (cyl. 3-2-5-8) Green diode

Figure 1

4. Replace both temperature sensors (Figure 2) located in the exhaust ports:

   Model '89-'90, cyl. 4 and 8
   Model '91 cyl. 3 and 7

   Use the new version temperature sensors listed in this bulletin.

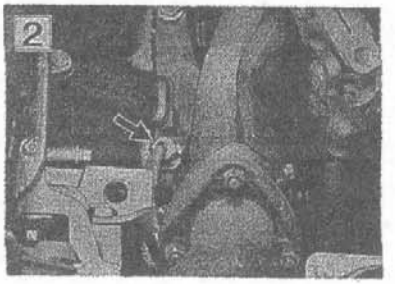


Figure 2

The function of the ignition circuits and light diodes located in the ignition monitor relay remains unchanged. It is not possible to determine from the LED display of the ignition monitor relay if one or both temperature sensors are defective or which temperature sensor has failed.

Repair Information (cont.):

When installing temperature sensors, coat the sensor adapter threads with molykote paste HTP (white) and torque sensors to 10Nm.

5. After the temperature sensors are installed, the voltage difference of the sensors must be checked in order to ensure proper operation of the ignition monitor system.

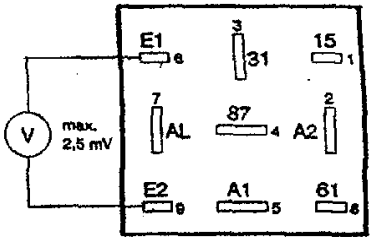


Figure 3

Checking sensor voltage difference:

— Start engine and bring to operating temperature.

— Loosen the mounting bolt for the ignition monitor relay and pivot the relay up to gain access to the plug terminals (Figure 1). **Do not** disconnect the relay plug.

— Set volt meter to the millivolt range and connect leads between E1 and E2 of ignition monitor relay (Figure 3, white wires). A digital volt meter must be used. Polarity is not important.

— Measure voltage with the engine idling and again at approximately 2000 RPM. A maximum difference of +2.5 mV or -2.5 mV (depending on polarity) is permitted. If the voltage difference is above 2.5 mV, stop the engine, loosen and rotate one temperature sensor. Retighten sensor and check voltage difference. If the difference is above 2.5 mV, stop the engine and rotate the other sensor. If after rotating the sensors to different positions, the voltage difference is too high (above 2.5 mV) the temperature sensors are defective and must be replaced.