



TCRA

"2007" SEMINAR

Chrysler RWD
TCC Hunting
&
5R55W/S
Converter Noises
By
Mike Souza



DODGE & JEEP RWD VEHICLES

TCC CYCLING

COMPLAINT: As the vehicle reaches cruising speed, the lock-up converter clutch begins a steady release and re-application, in other words TCC cycling. Viewing this parameter on the scan tools data list, it is revealed that the computer is commanding this action.

CAUSE: Although a number of causes are shared by both gas and diesel applications, some are unique to each. The following list of causes will indicate which are for both or specific to gas or diesel equipped:

- (1) PCM too sensitive to Noise From APP Sensor (24 Valve Diesel Only) (Figure 1).
- (2) PCM too Sensitive to Noise From Alternator (Both) (Figures 2-4).
- (3) Lift Pump Interference (Diesel Only) (Figure 5).
- (4) Water In Fuel, warning lamp will be illuminated, (Diesel Only) (Figure 6).
- (5) Faulty ECM (Diesel Only) (Figure 7).
- (6) Loose or poor ECM Connector (Diesel Only) (Figure 8).
- (7) APP Sensor Relearn (24 Valve Diesel Only) (Figure 9).
- (8) TPS Cam or Bushings Worn (12 Valve Diesel Only) (Figure 10-12).
- (9) Plastic Throttle Rod Ball Joints Are Worn (12 valve Diesel Only) (Figures 13-15).
- (10) Faulty TPS or TPS Circuit Problems (Both) (Figure 16).
- (11) Low Coolant Level (Both) (Figure 17).
- (12) A Faulty or Loose Brake Switch (Both) (Figure 18).
- (13) Dirty Battery Cables, Especially at the Engine End of the Negative Battery Cable (Both) (Figure 19 & 20).
- (14) New Battery Cable Ends That are Too Loose on the Post (Both) (Figure 21).
- (15) Faulty Spark Plugs or Plug Wires (Gas Only) (Figure 22).
- (16) Erratic VSS (Both) (Figure 23).
- (17) Faulty Engine Coolant Temperature Sensor (Both) (Figure 24).
- (18) Engine Running Too Cool (Both) (Figure 25).
- (19) A Faulty Transmission Temperature Sensor (Both) (Figure 26).
- (20) A Faulty TCC Solenoid (Both) (Figure 27).
- (21) A Faulty Park/Neutral Switch (Both) (Figures 28 & 29).
- (22) Use of a Generic Scan Tool (Both) (Figure 30).
- (23) A Faulty Crankshaft Position Sensor (Gas) (Figure 31).
- (24) A restricted Fuel Filter (Both) (Figure 32).
- (25) A dirty air filter (Both) (Figure 33).
- (26) Retarded valve timing (Sloppy timing Chain) (Both) (Figure 34).

CORRECTION: Reflash PCM as Per Factory Bulletin 18-02-99 (Figure 1).

- (1) Install Noise Filter In APPS signal Wire. Wrap Alternator battery voltage supply wire in
- (2) aluminum foil, Disconnect wire as a test first (Figures 2-4).
Relocate Lift Pump farther away from ECM (Figure 5).
- (3) Replace Fuel Filter (Figure 6).
- (4) Replace Cummins ECM (Figure 7).
- (5) Repair ECM Connector, resize terminal ends (Figure 8).
- (6) APPS/ECM Relearn Procedure: KOEO, Slowly depress throttle pedal to floor and then
- (7) slowly release it once. Turn key off before restart (Figure 9).
Replace throttle lever and bushings (Figure 10-12).

continued.....



DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION: *continued.....*

- (9) Replace with steel rods, PN5011959AB (Figures 13-15).
- (10) Repair TPS circuits or replace TPS (Figure 16).
- (11) Repair coolant leaks and bring coolant to correct level (Low coolant lamp may be illuminated if so equipped) (Figure 17).
- (12) Replace Brake Switch or repair brake switch bracket (Figure 18).
- (13) Clean or replace battery cables and polish the negative cables engine attachment point regardless of how good it looks (Figure 19 & 20).
- (14) Remove the necessary material to insure cable end fits tightly (Figure 21).
- (15) Replace spark plugs and ignition wires (Figure 22).
- (16) Repair VSS in Differential or ABS computer problem (Figure 23).
- (17) Repair or replace ECT Sensor (Figure 24).
- (18) Replace faulty thermostat (Figure 25).
- (19) Repair TFT Sensor circuits or replace TFT Sensor (Figure 26).
- (20) Replace TCC Solenoid, (Has been known not to store P0743) (Figure 27).
- (21) Replace Park/Neutral Switch (Figures 28 & 29).
- (22) Disconnect scan tool and drive vehicle or try a different scan tool (Figure 30).
- (23) Replace Crank Sensor (Figure 31).
- (24) Replace fuel filter (Figure 32).
- (25) Replace air filter (Figure 33).
- (26) Replace timing chain (Figure 34).

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION



**CHRYSLER
CORPORATION**

P/N:

05019701AC

DLR CODE:

XXXXXXXX

DATE:

01/15/06

AUTHORIZED SOFTWARE UPDATE LABEL

Figure 1

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

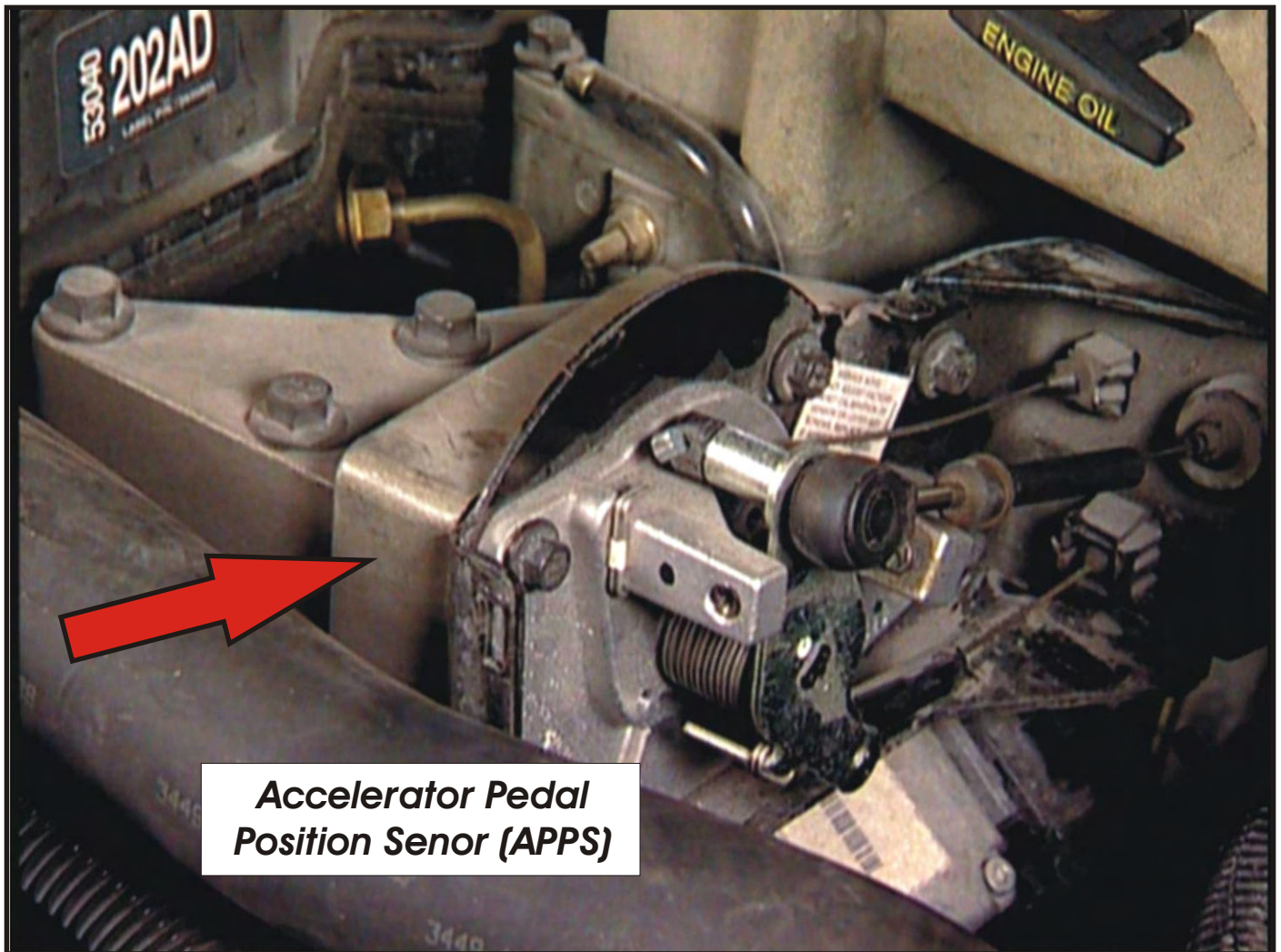


Figure 2

DODGE & JEEP RWD VEHICLES

TCC CYCLING

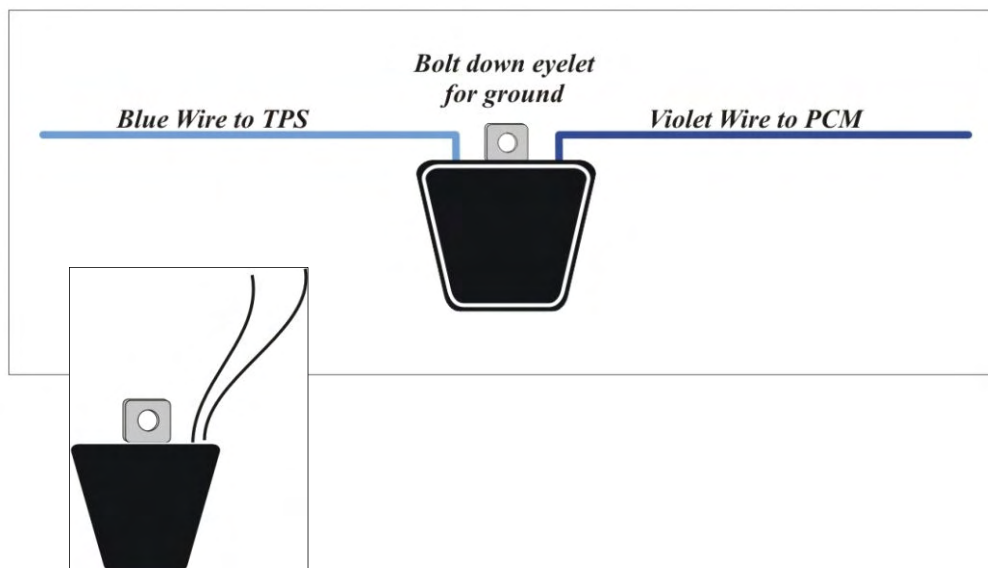
CORRECTION

NF-27 TPS Noise Filter

For Dodge/Chrysler RWD RE Units

Installation Instructions

- 1) Mount the NF 27 by attaching the metal tab to a solid grounded surface within 6 inches from the TPS signal wire. (Note 1; the metal tab of the NF-27 must be properly grounded for proper operation. Note2; The NF-27 may be placed in the TPS signal wire at any point between the TPS and the computer)
- 2) Cut the TPS signal wire within 6 inches from the NF-27.
- 3) Connect the wire going to the TPS to the blue wire of the NF-27.
- 4) Connect the wire going to the computer to the violet wire of the NF-27.



HTTP://ATSG.BIZ

Figure 3

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

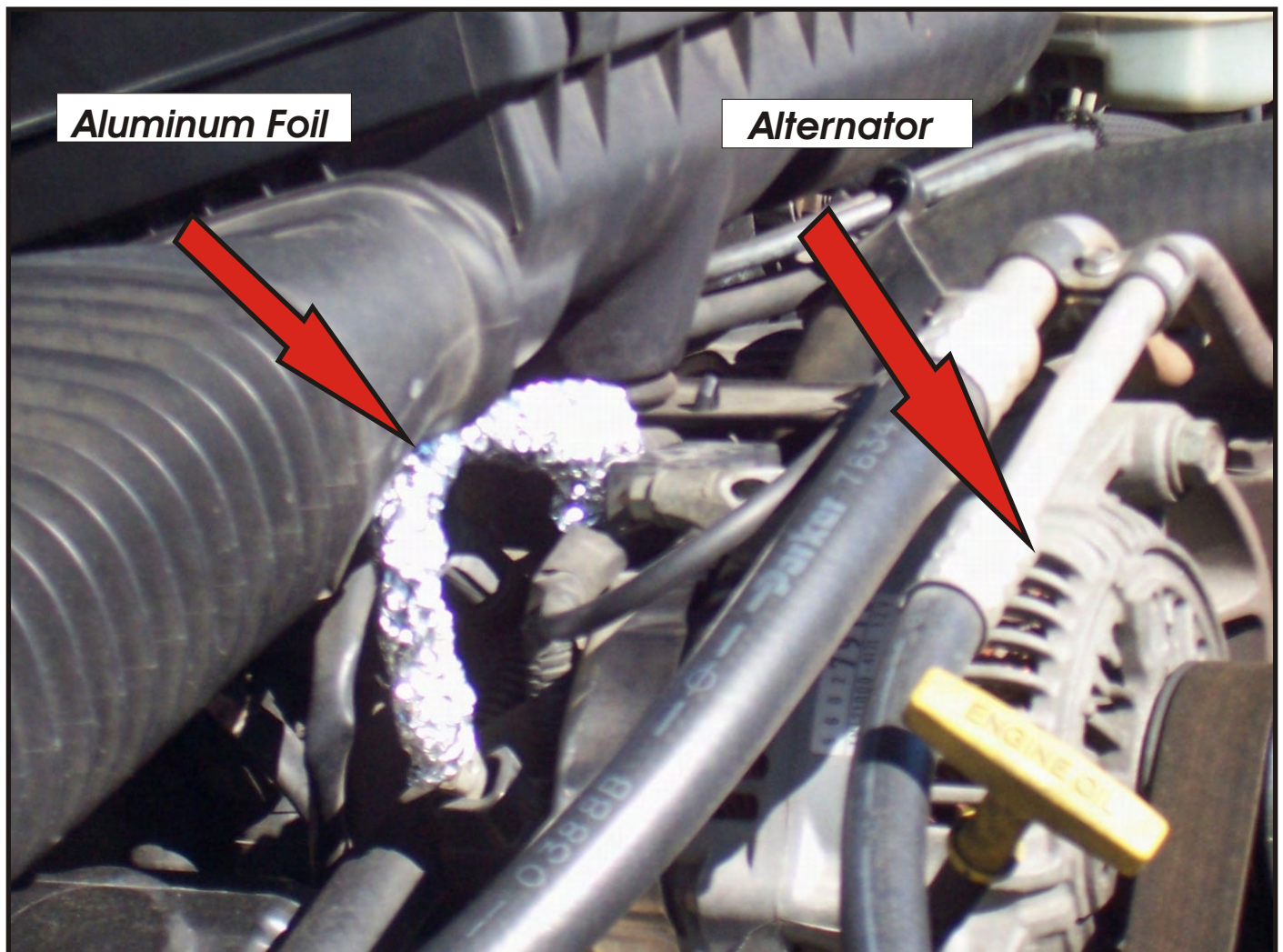


Figure 4

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

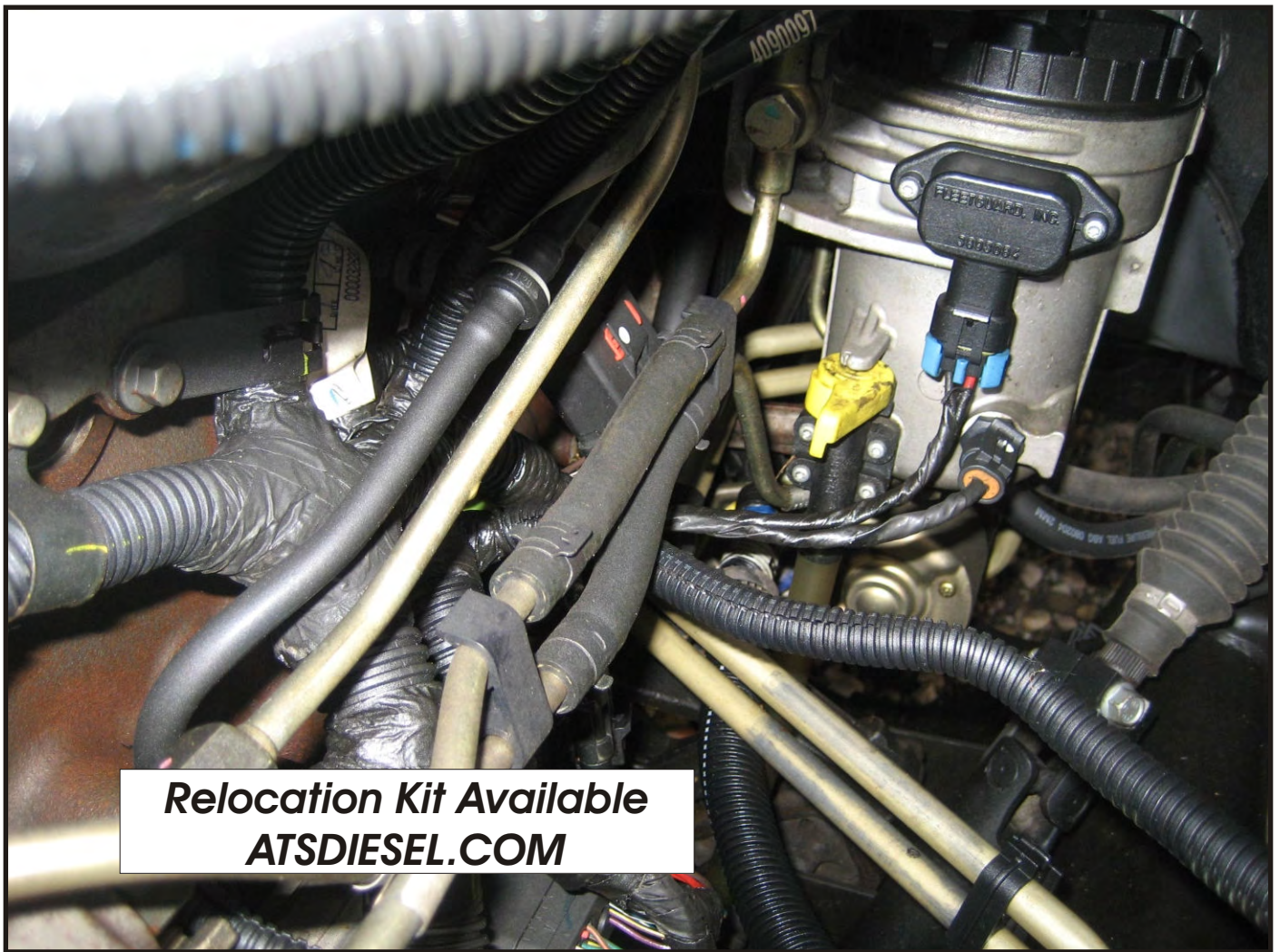


Figure 5

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

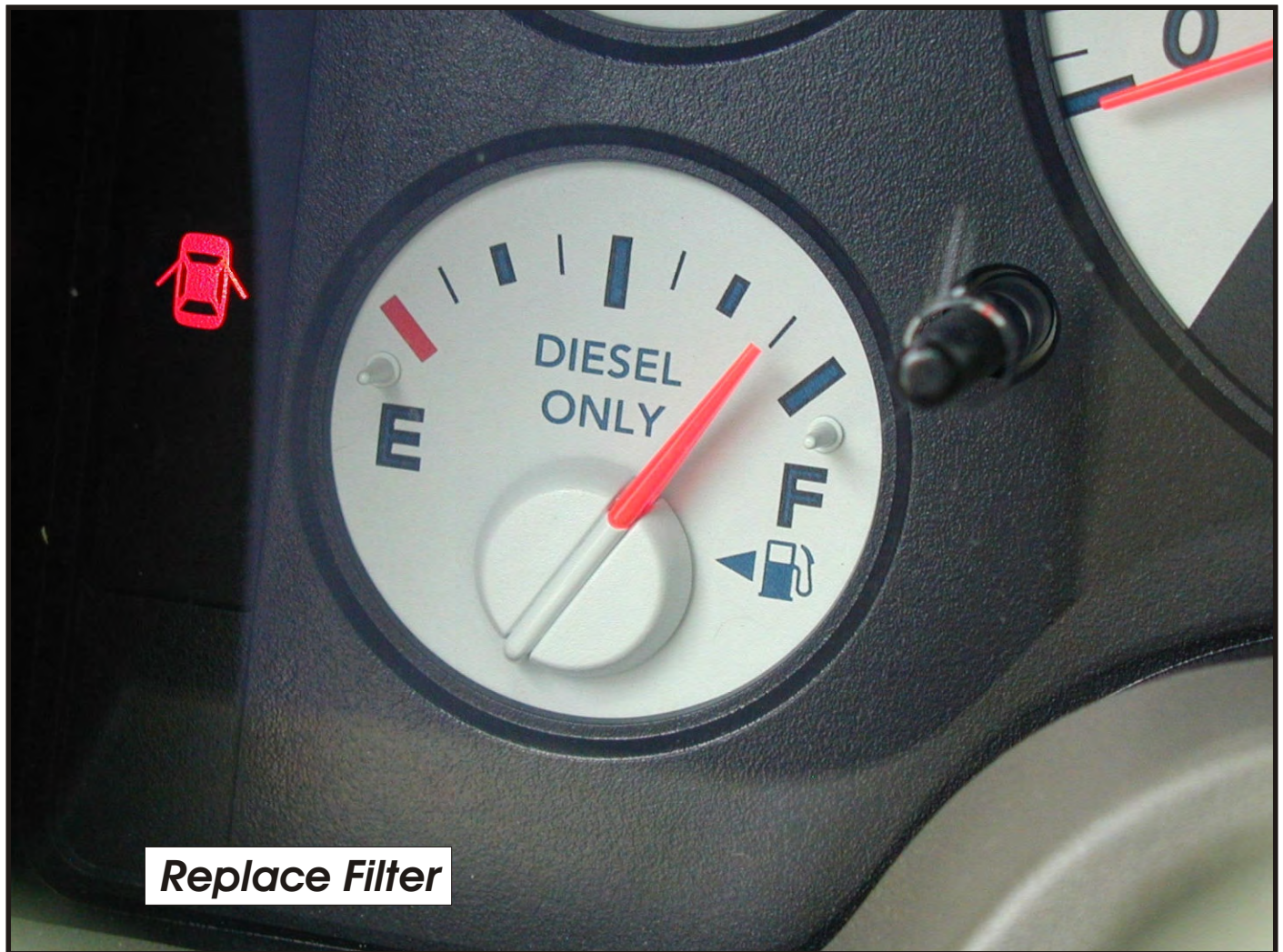


Figure 6

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

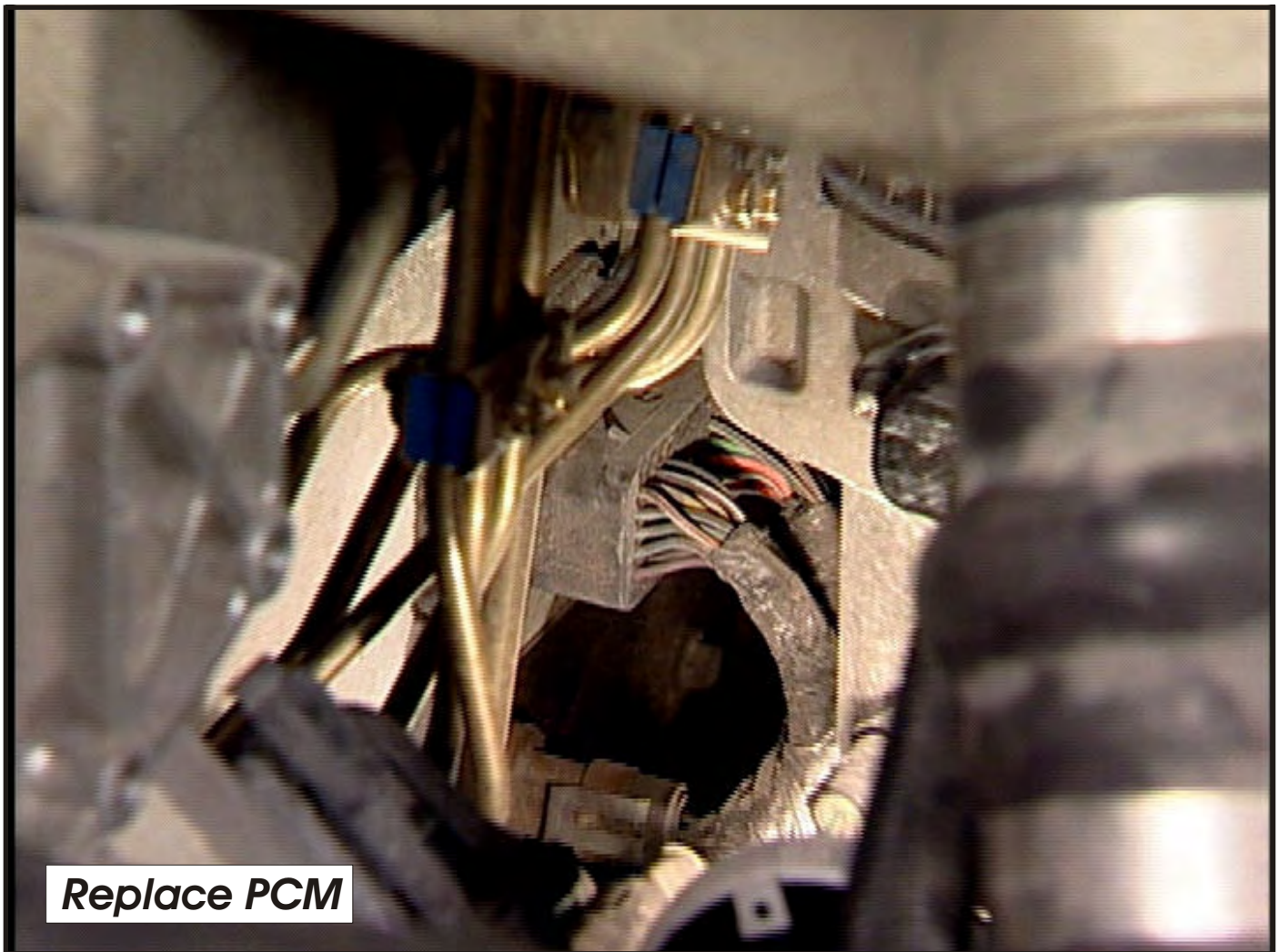


Figure 7

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

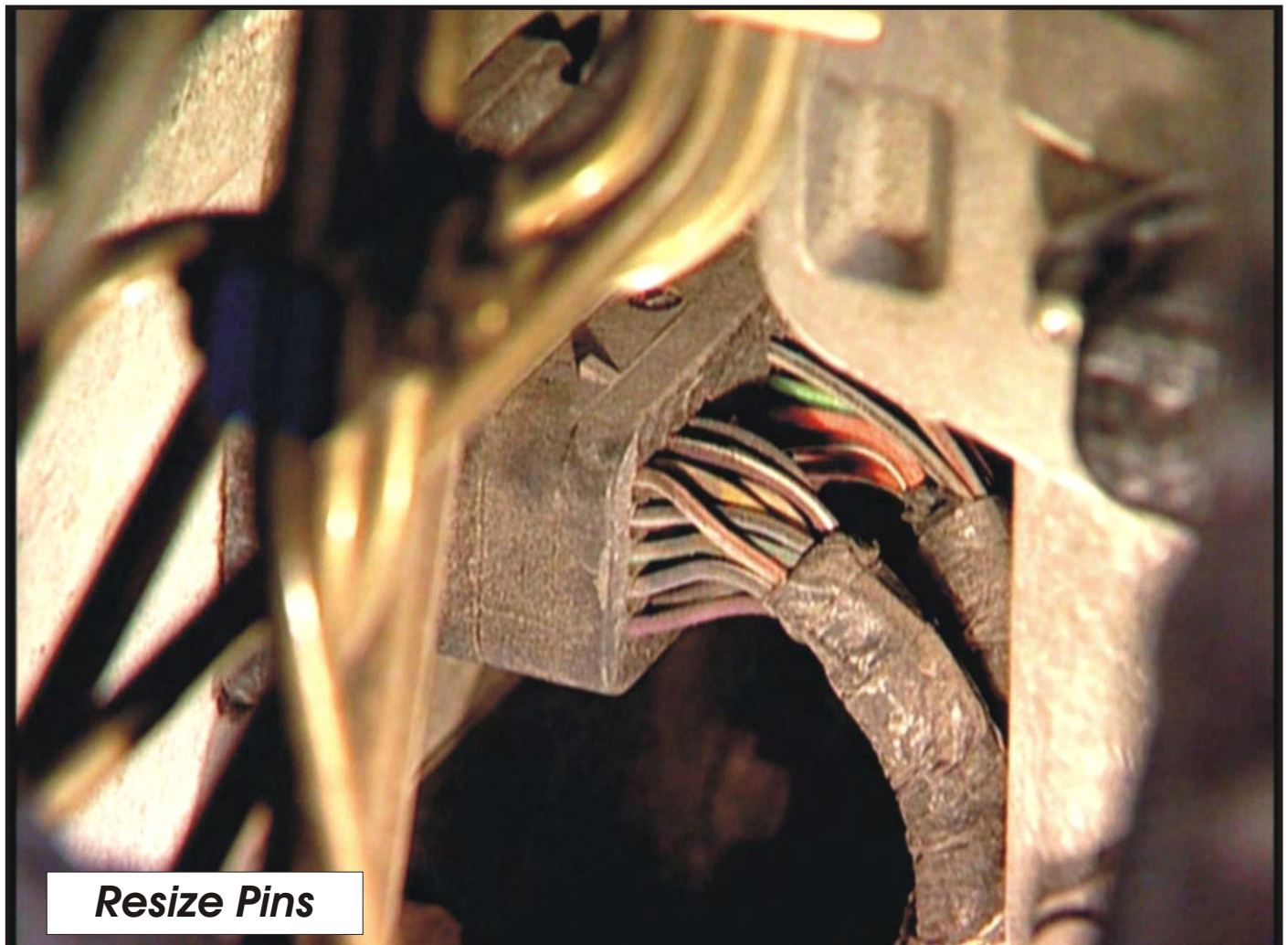


Figure 8

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

APPS RELEARN PROCEDURE
24 Valve Diesel Only

- 1. KEY ON, ENGINE OFF***
- 2. SLOWLY DEPRESS THROTTLE PEDAL TO FLOOR***
- 3. SLOWLY RELEASE THROTTLE PEDAL***

Figure 9

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

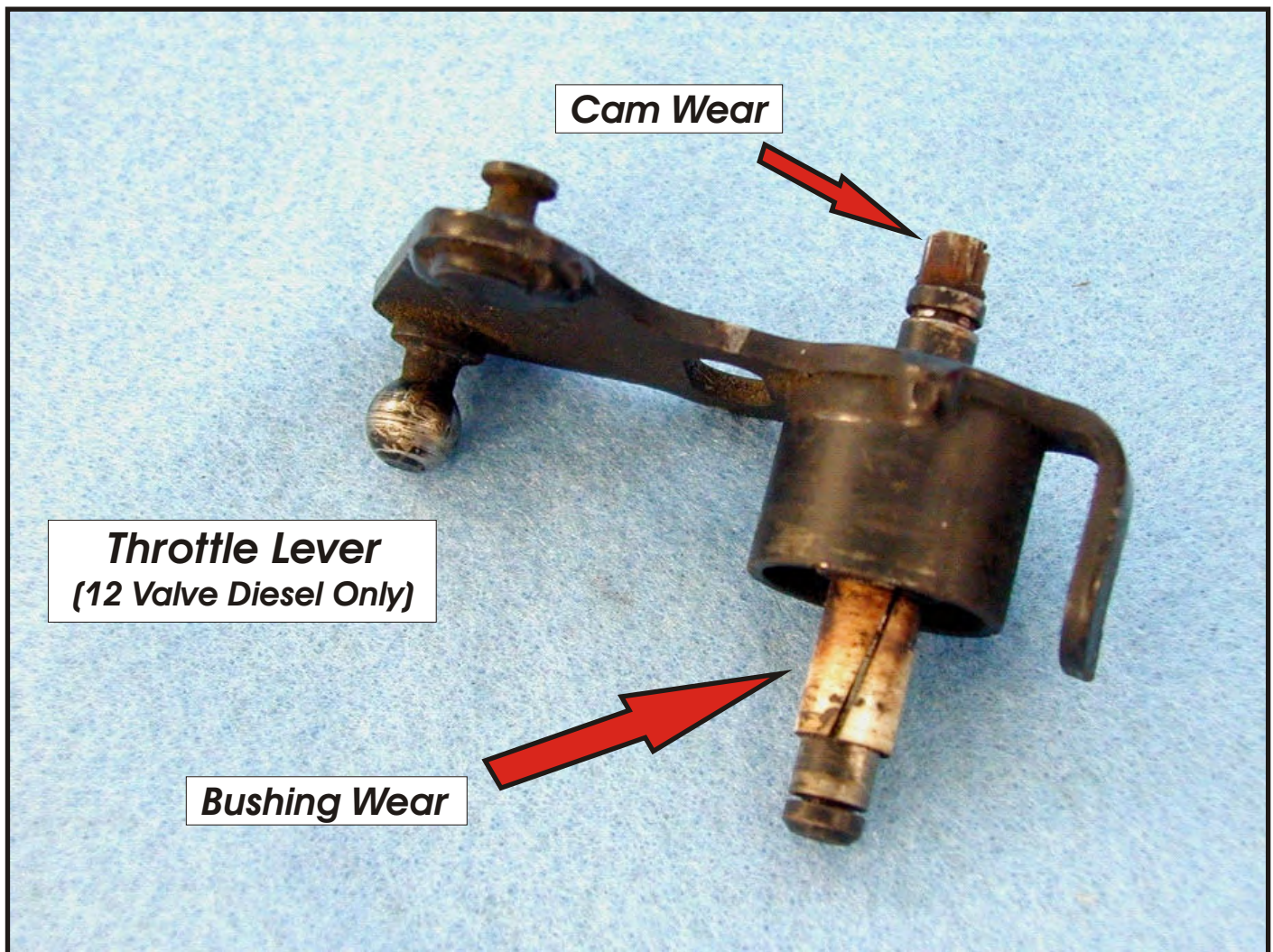


Figure 10

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

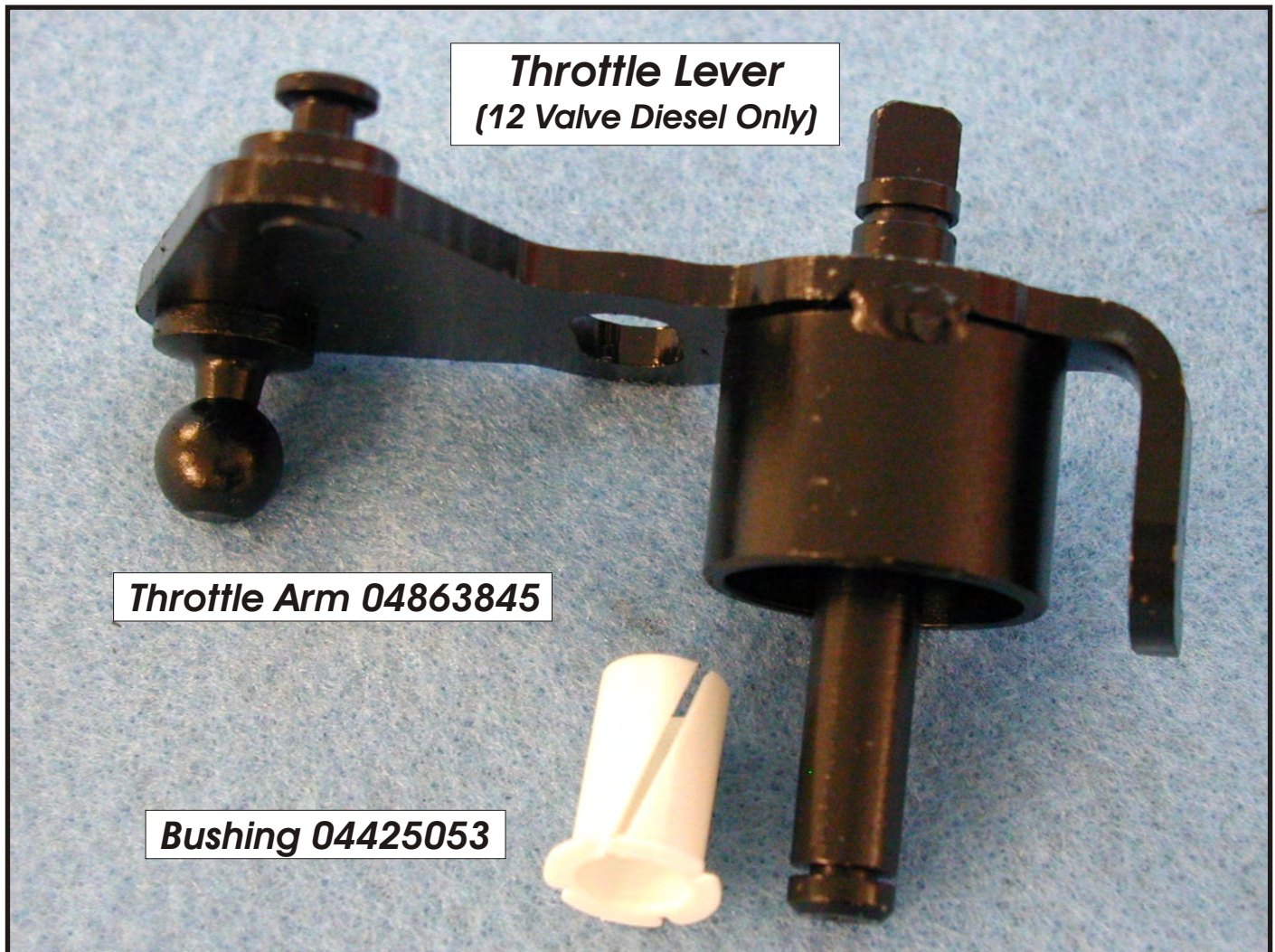


Figure 11

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION



Figure 12

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

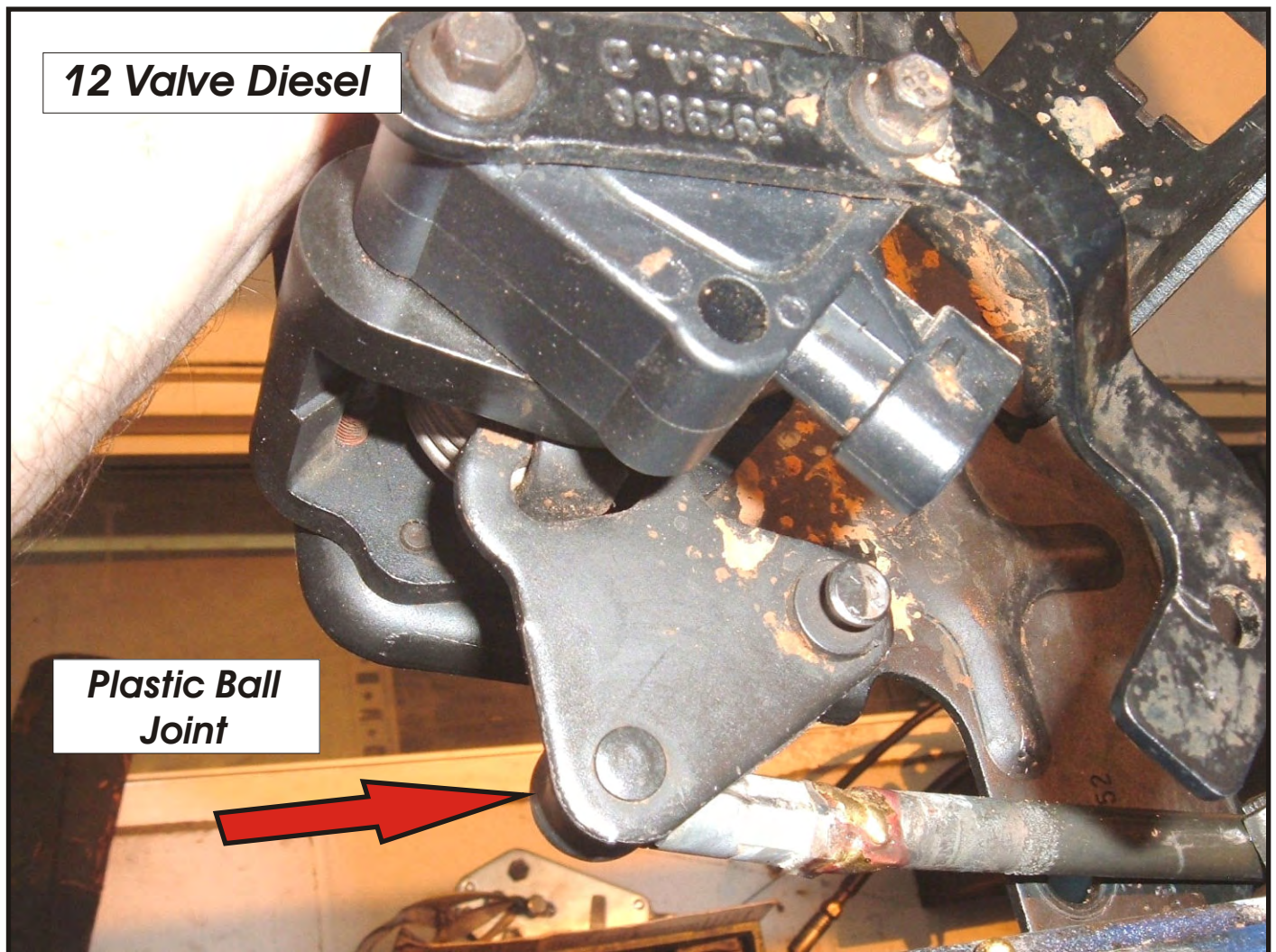


Figure 13

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

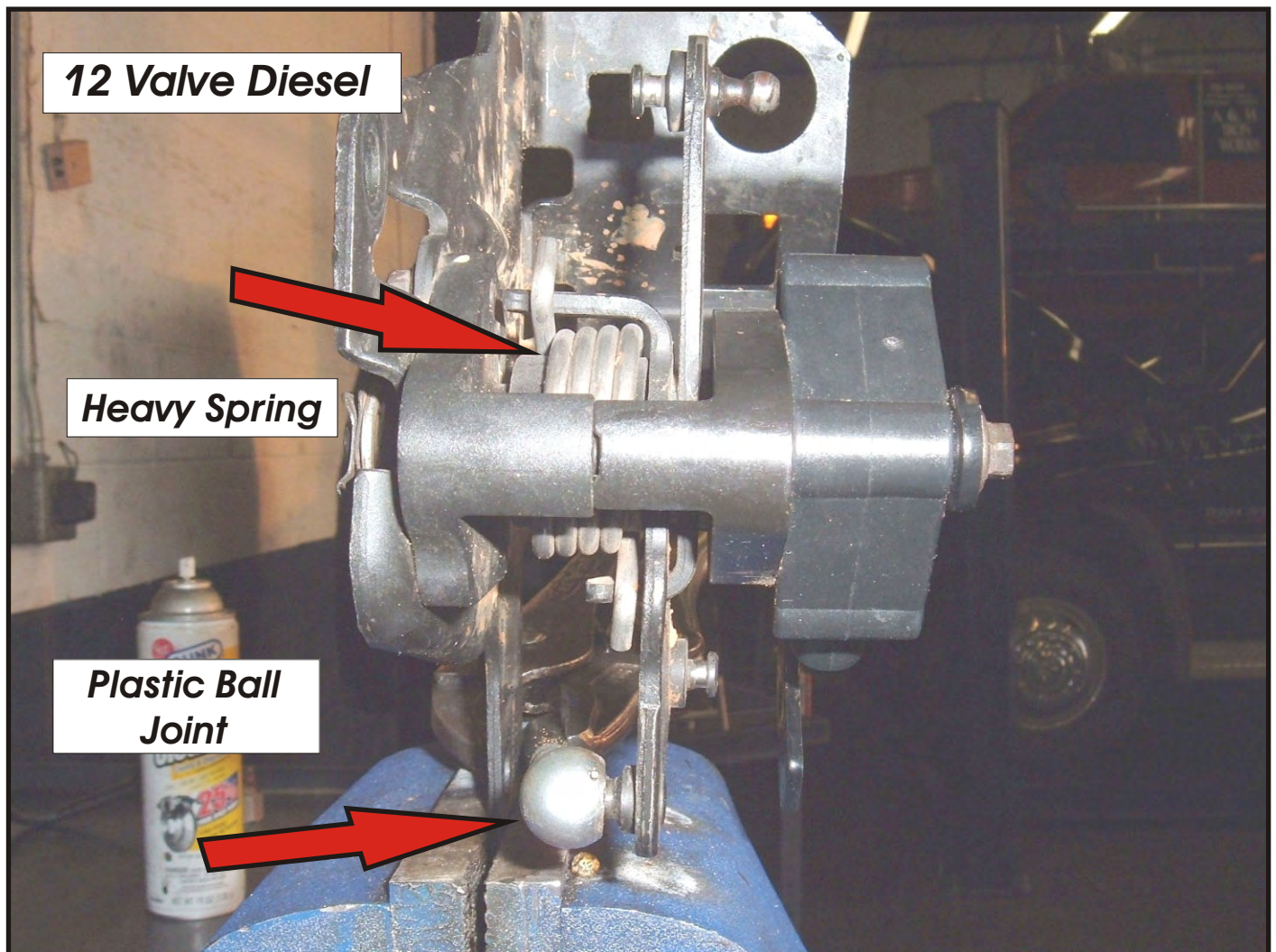


Figure 14

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

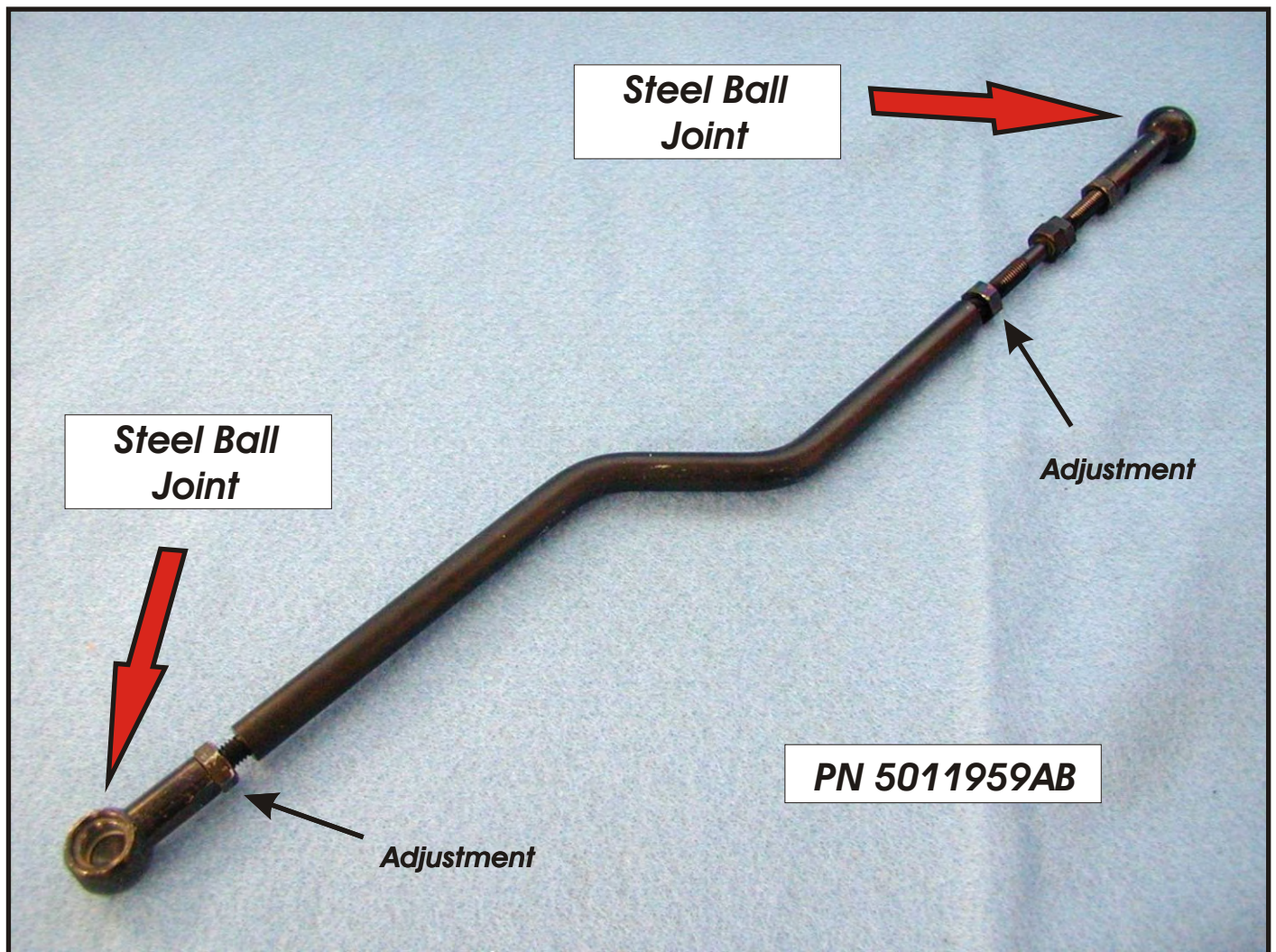


Figure 15

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

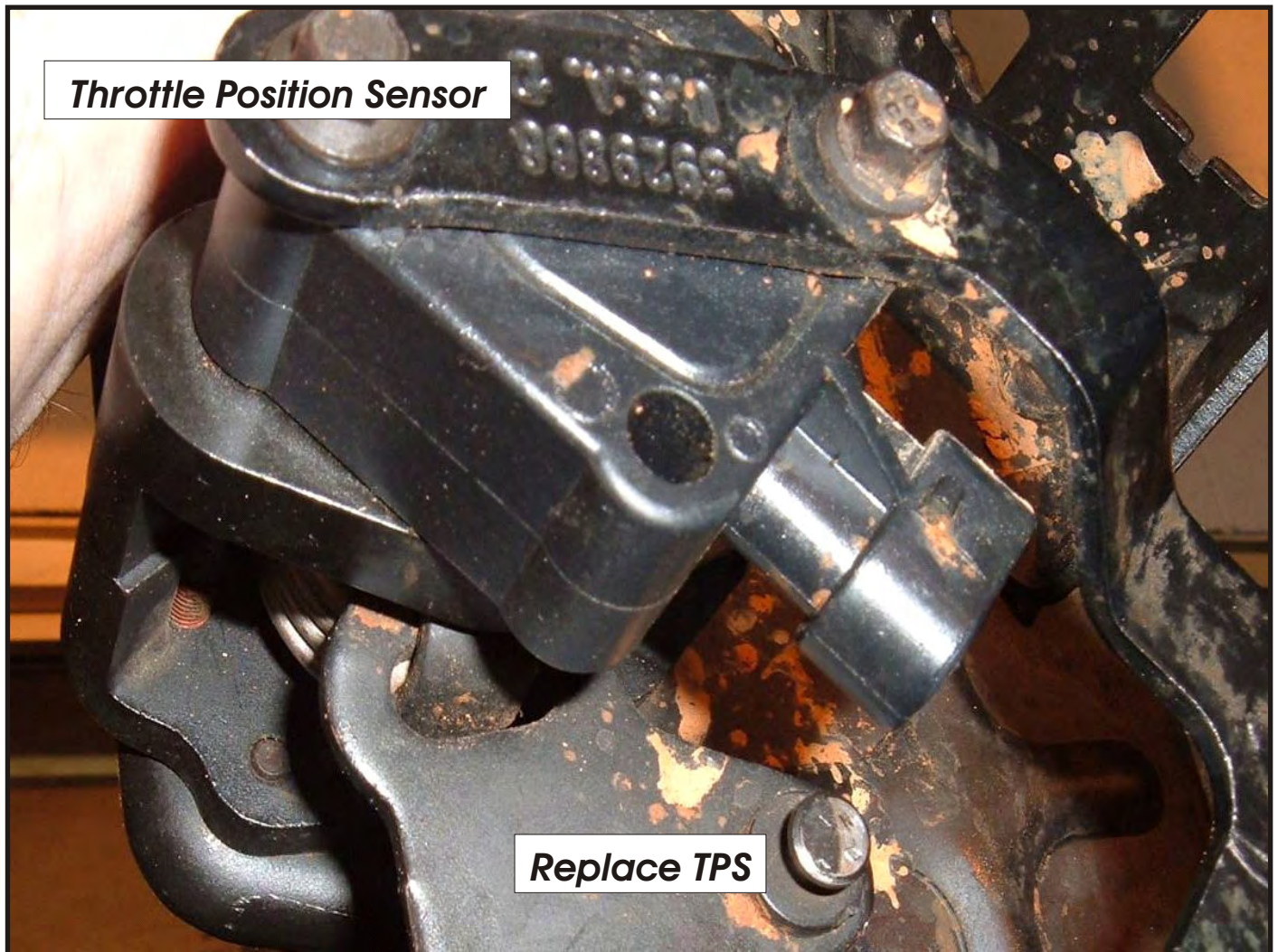


Figure 16

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION



Figure 17

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

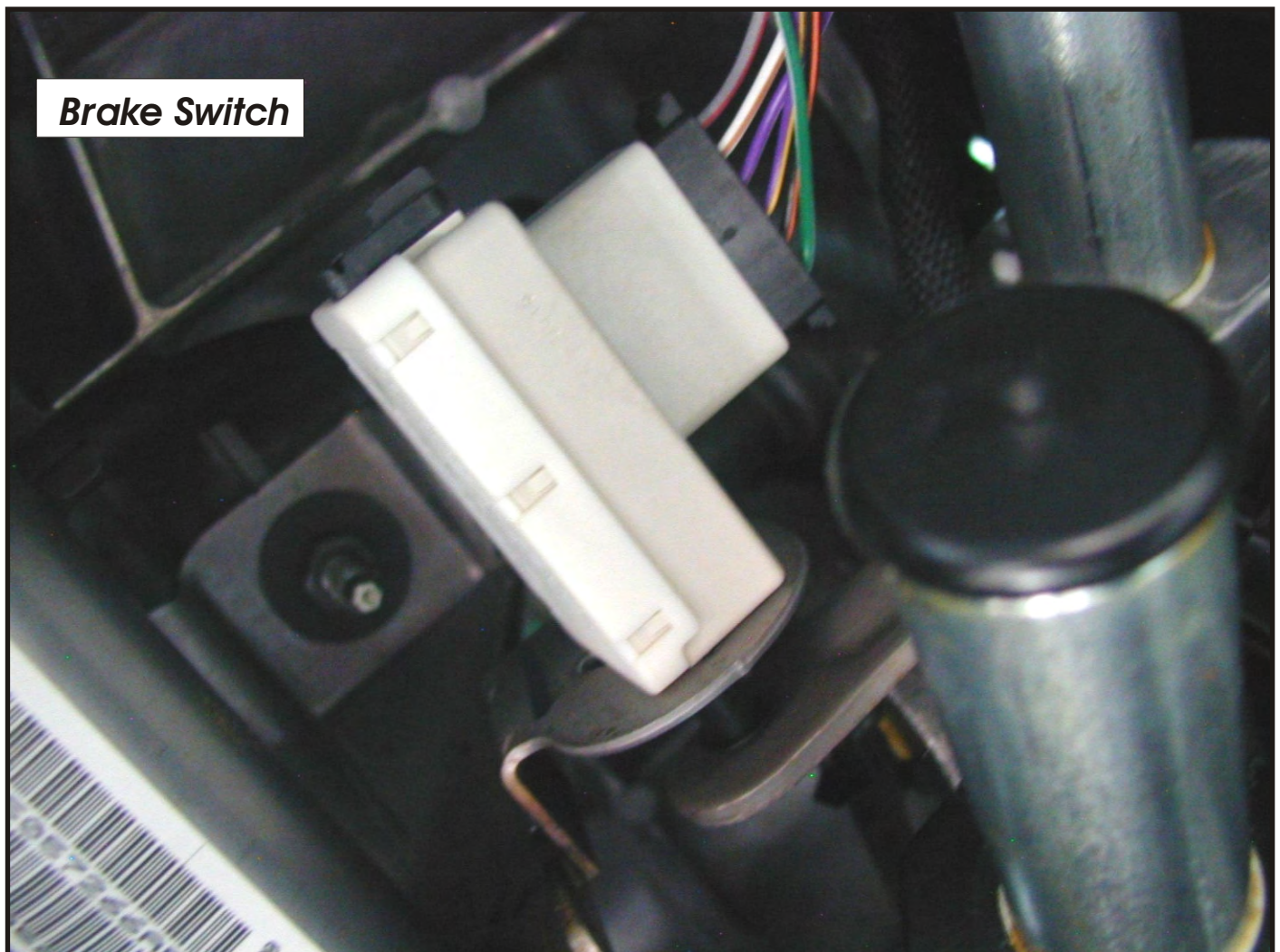


Figure 18

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

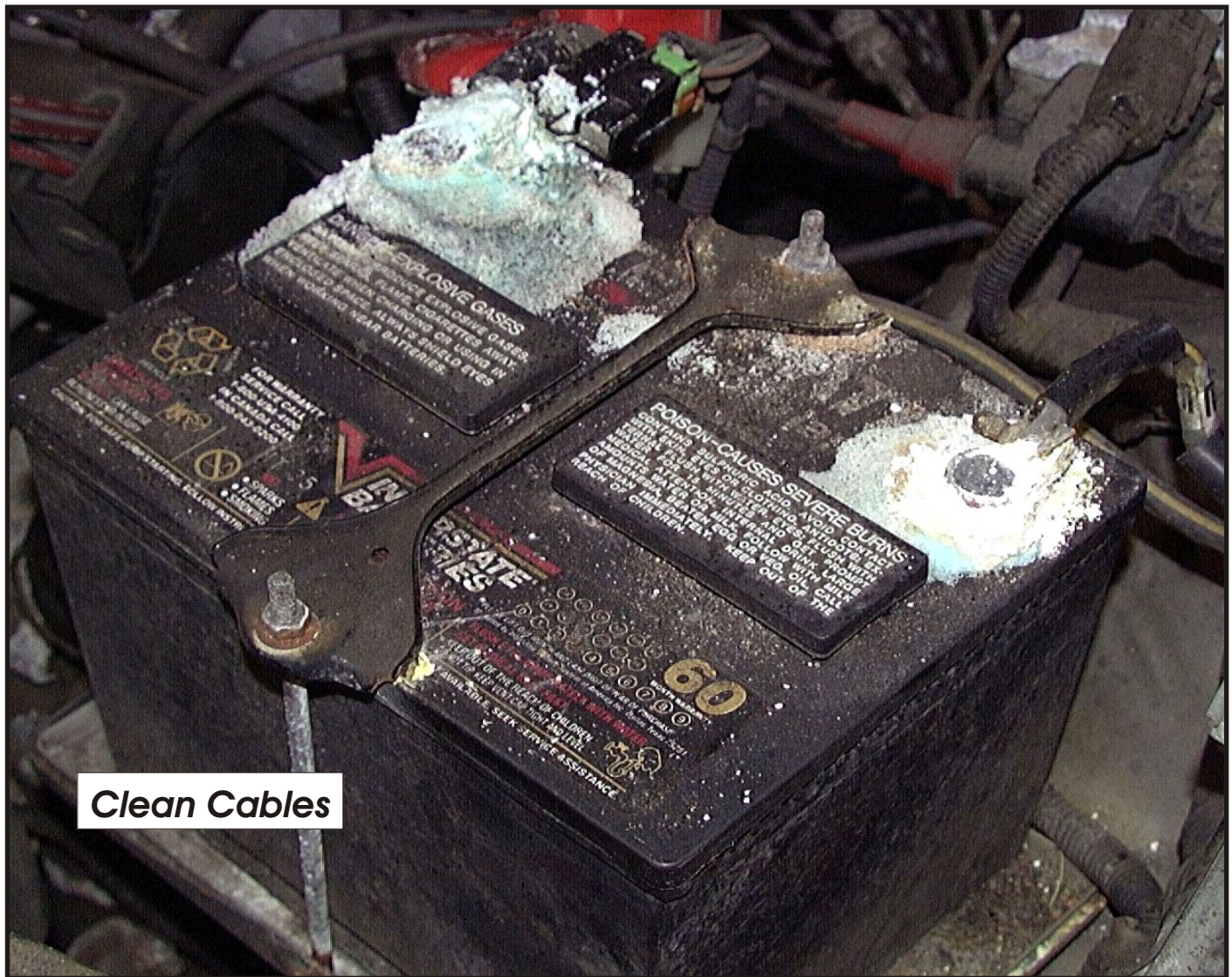


Figure 19

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

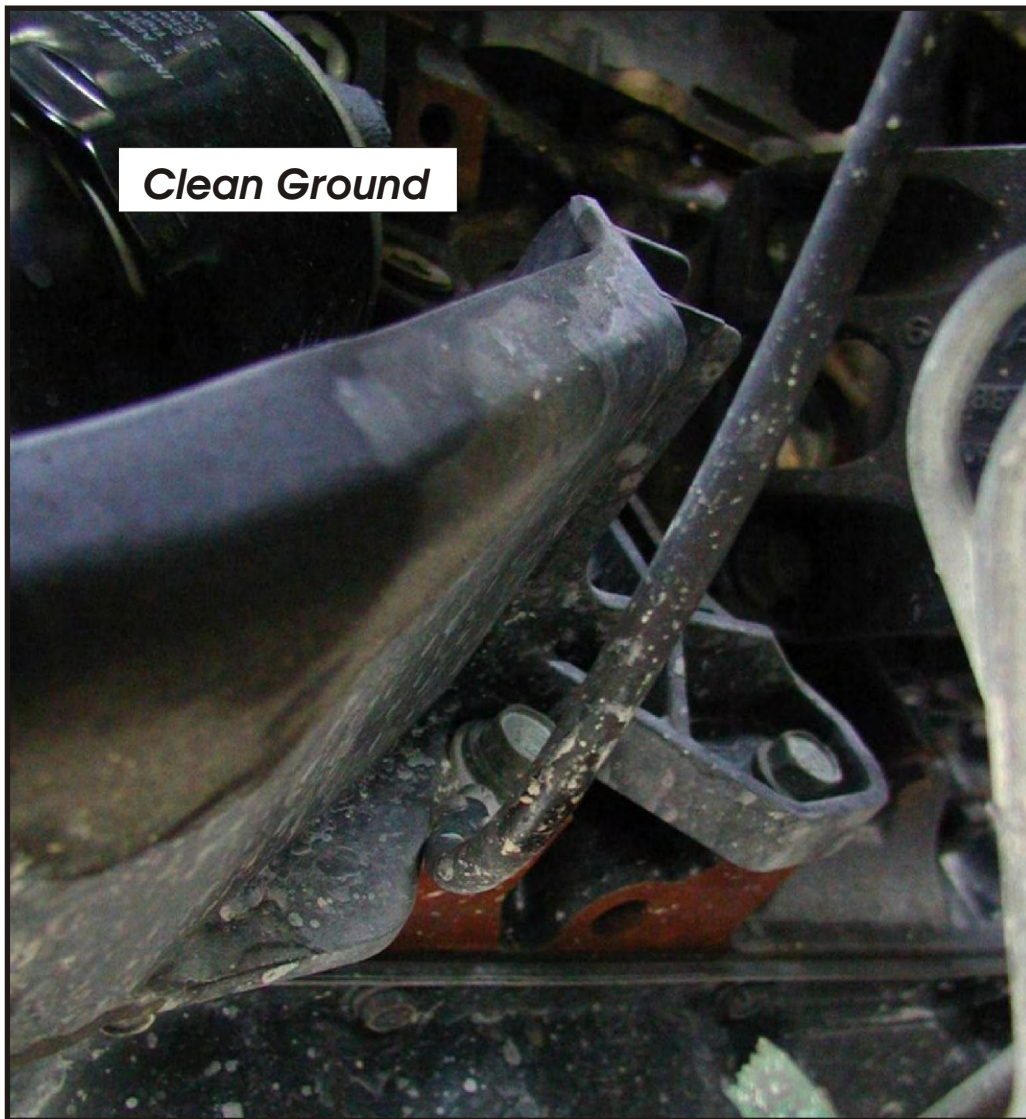


Figure 20

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION



Figure 21

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION



Figure 22

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

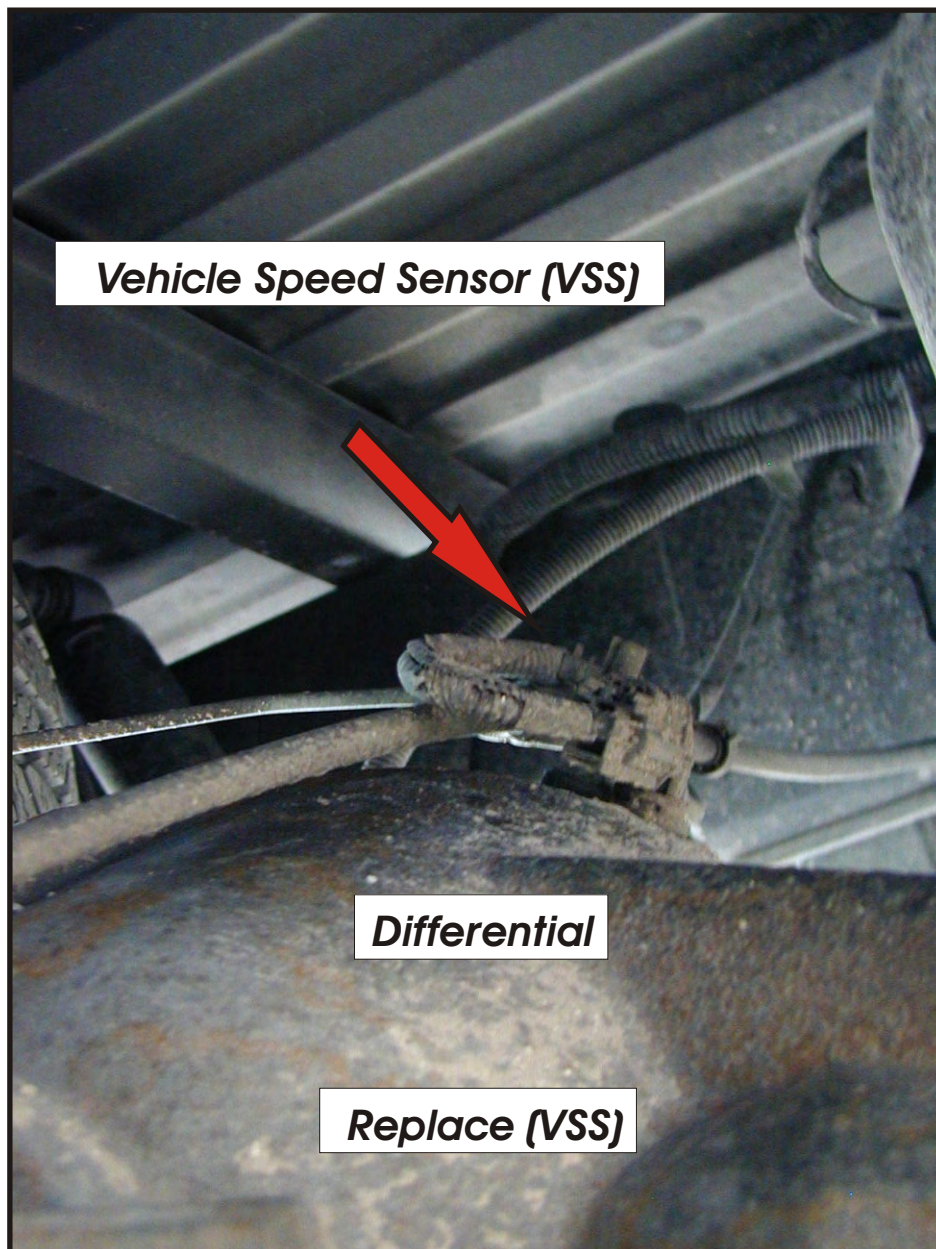


Figure 23

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

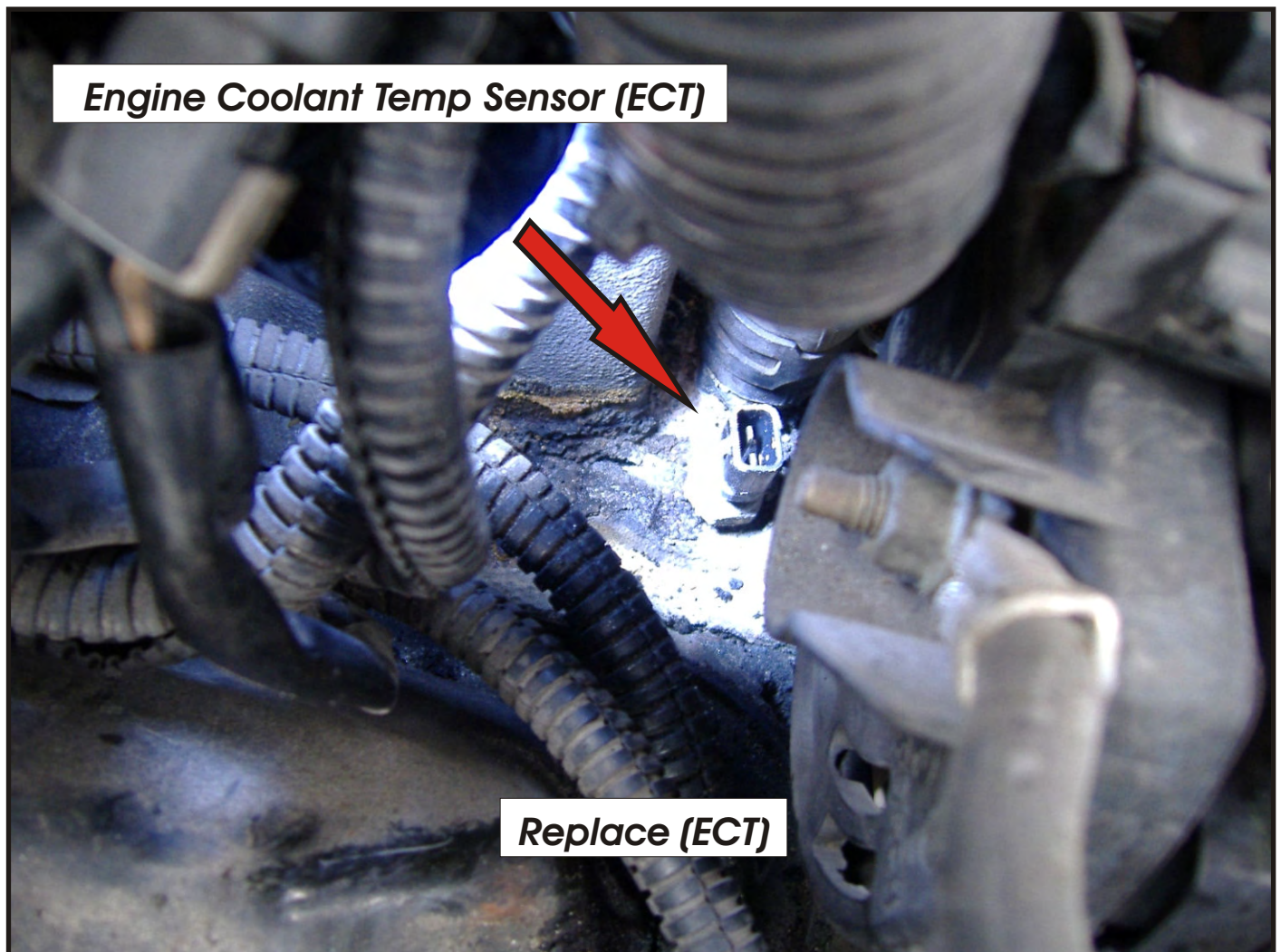


Figure 24

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

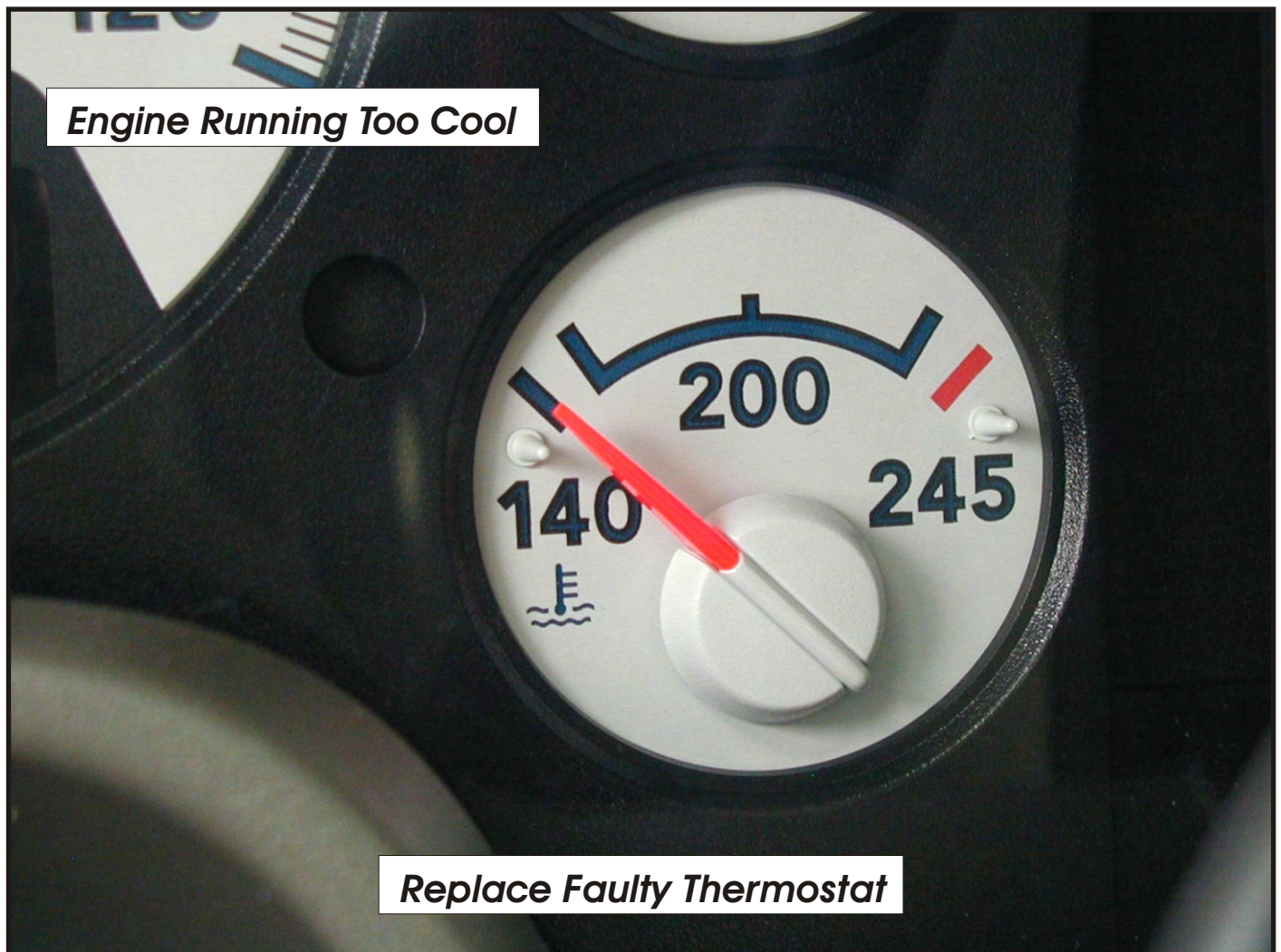


Figure 25

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

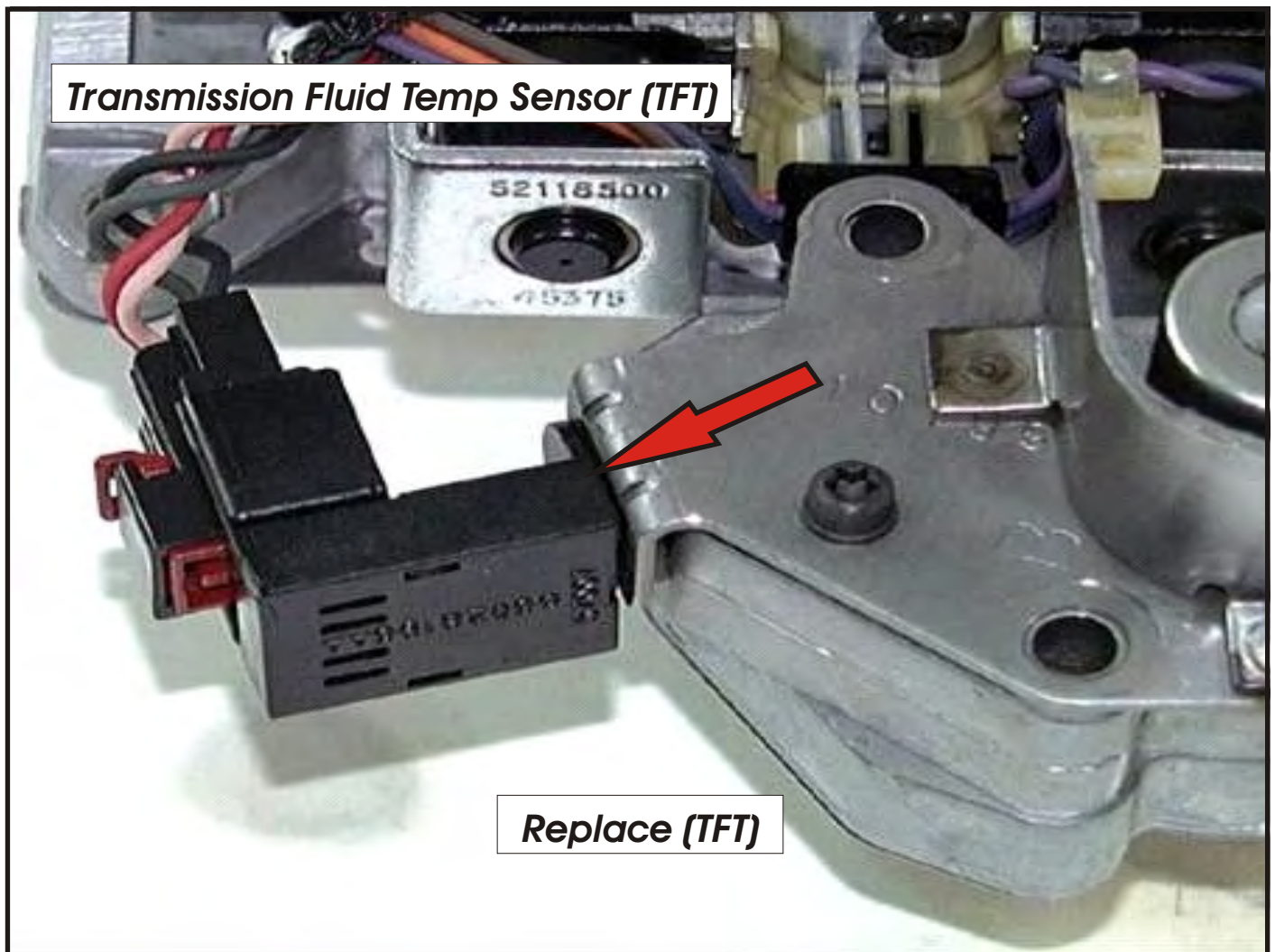


Figure 26

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

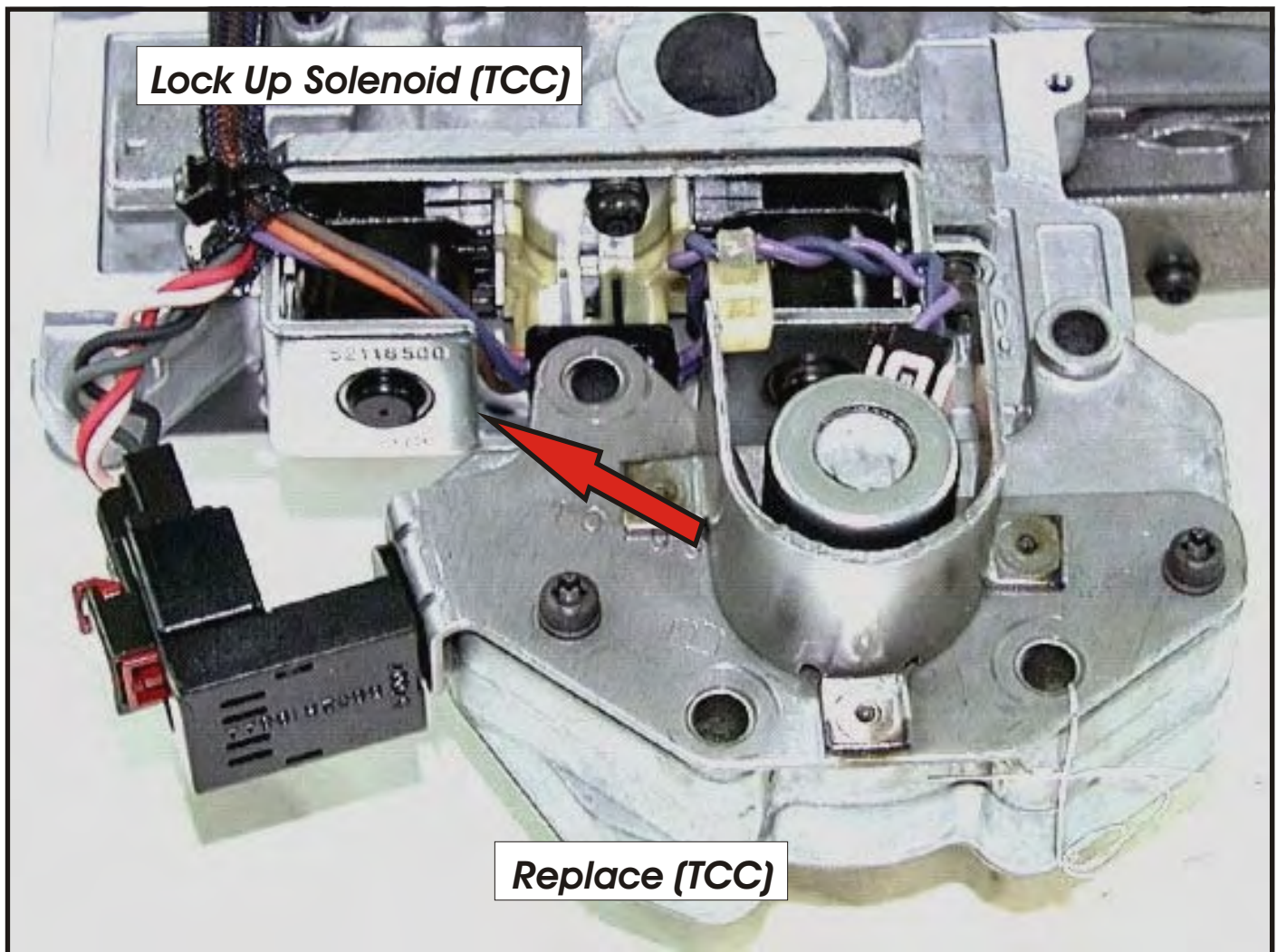


Figure 27

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

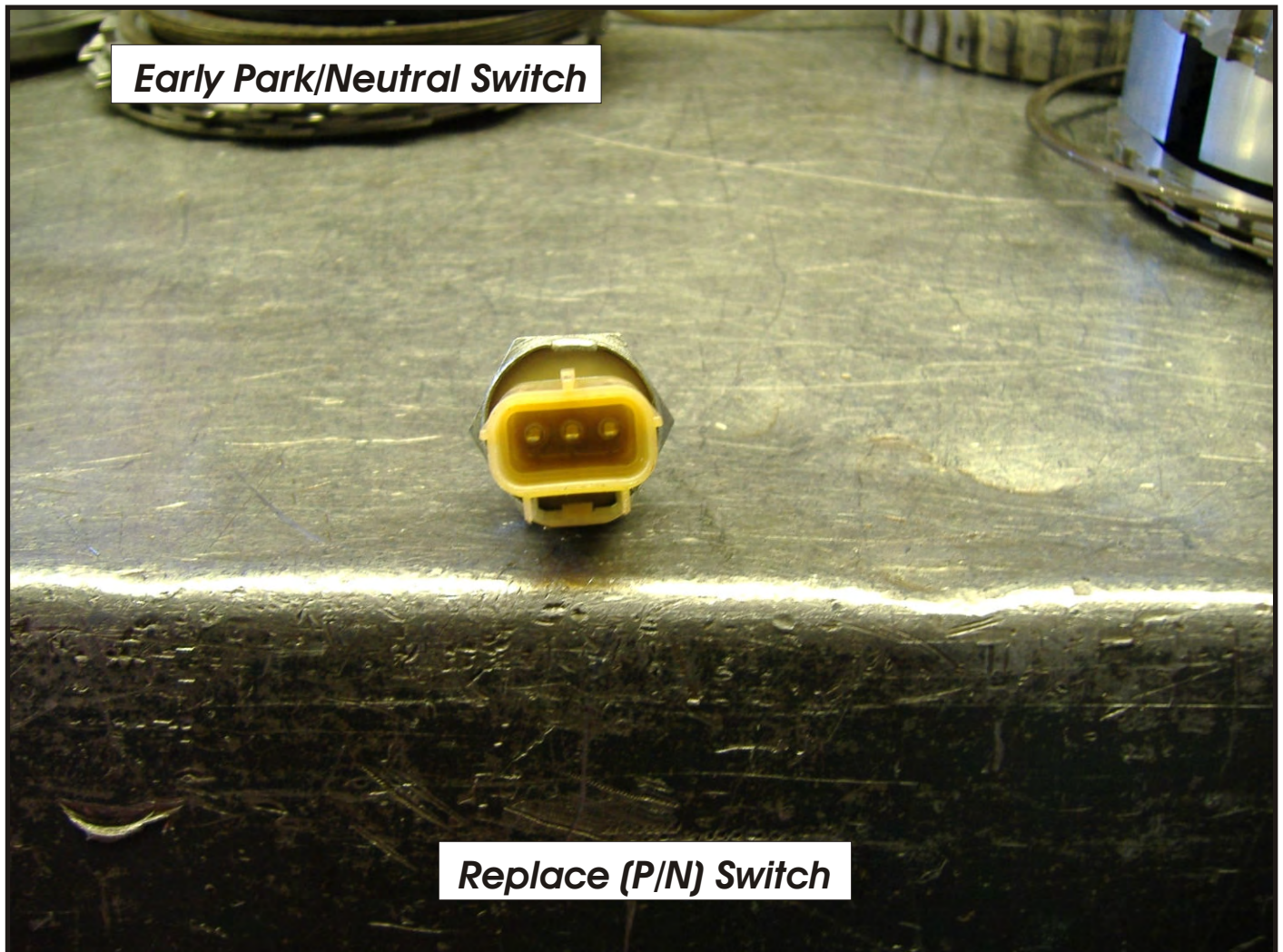


Figure 28

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

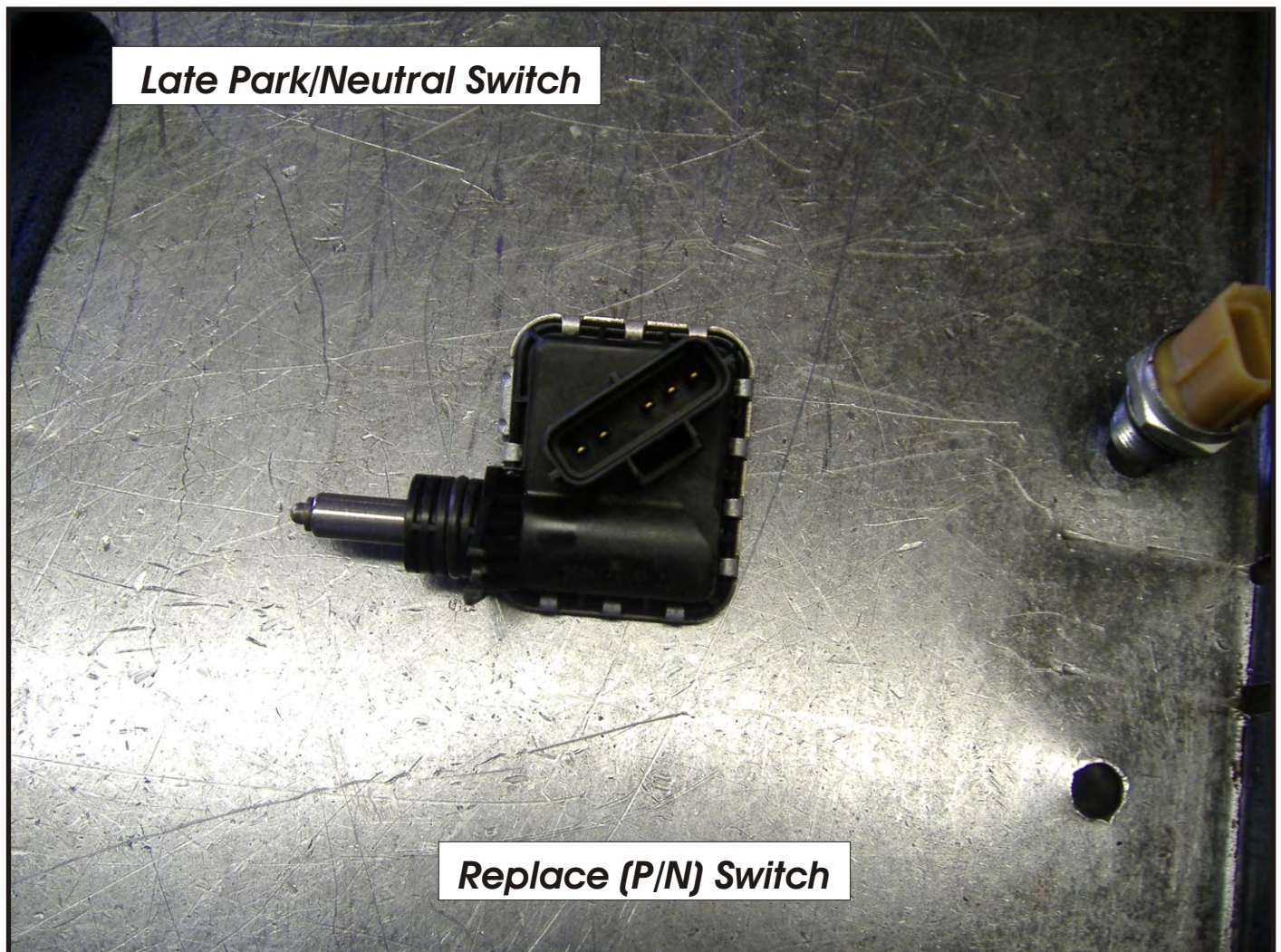


Figure 29

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION



Figure 30

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

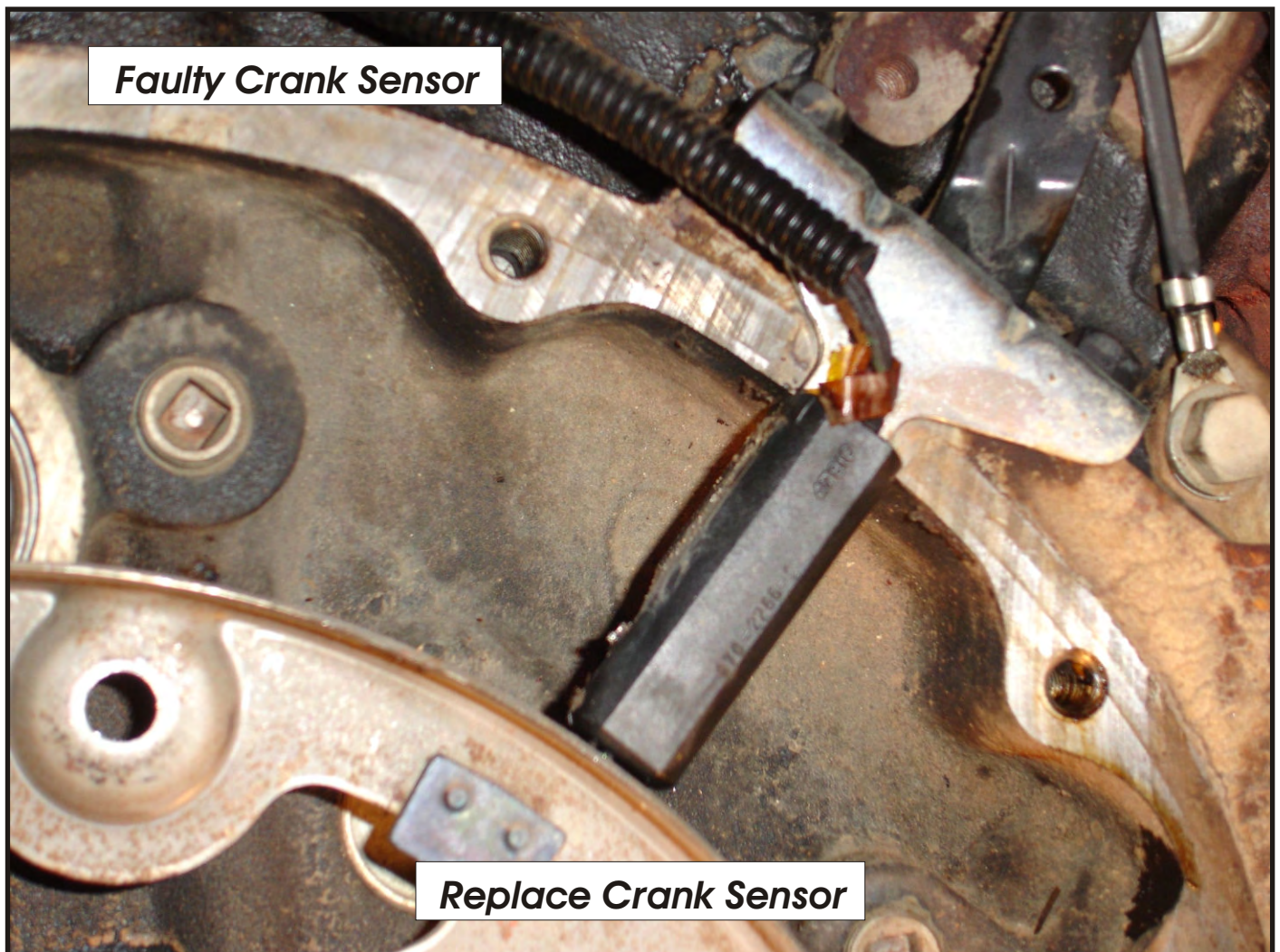


Figure 31

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

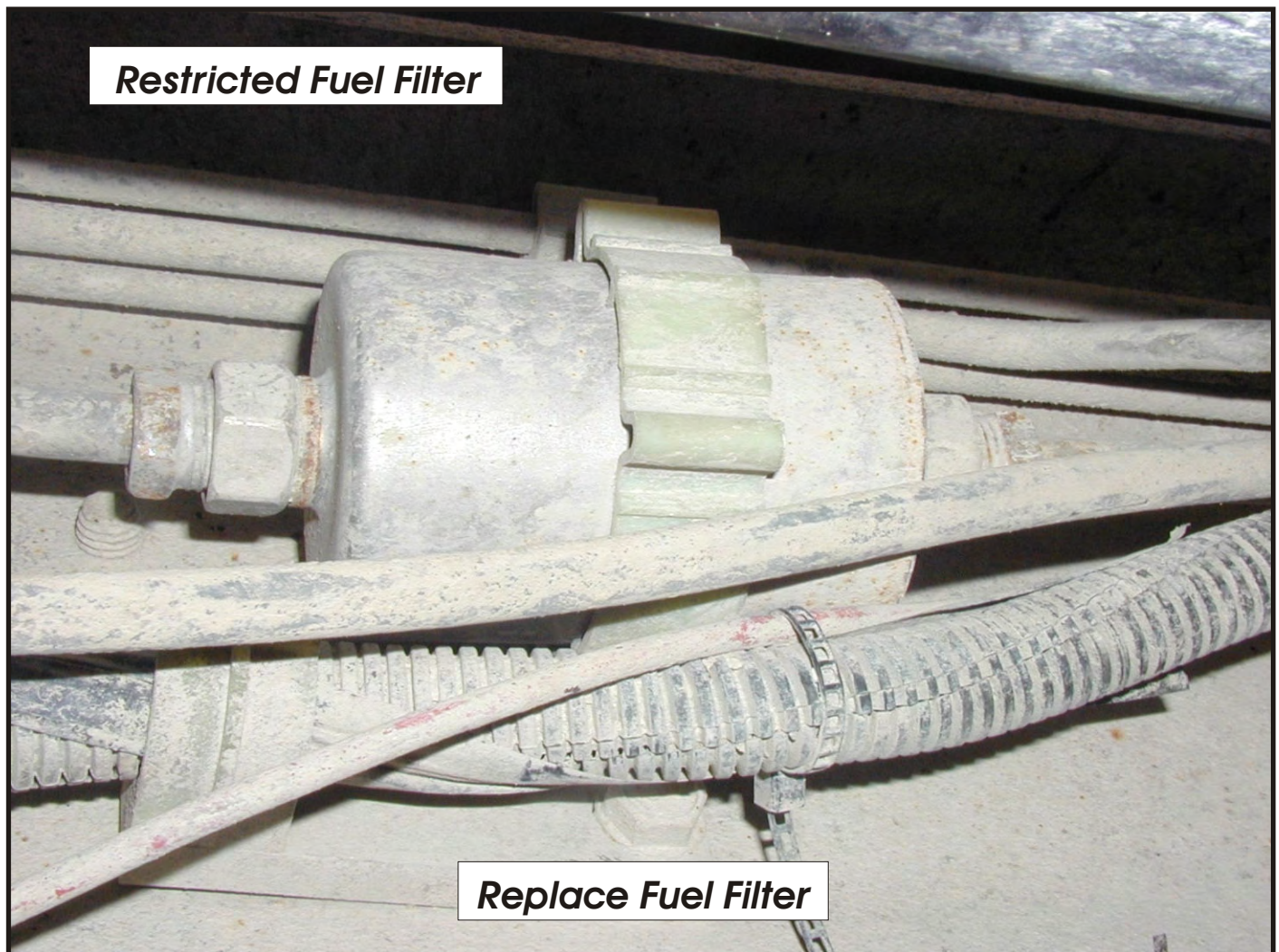


Figure 32

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION



Figure 33

DODGE & JEEP RWD VEHICLES

TCC CYCLING

CORRECTION

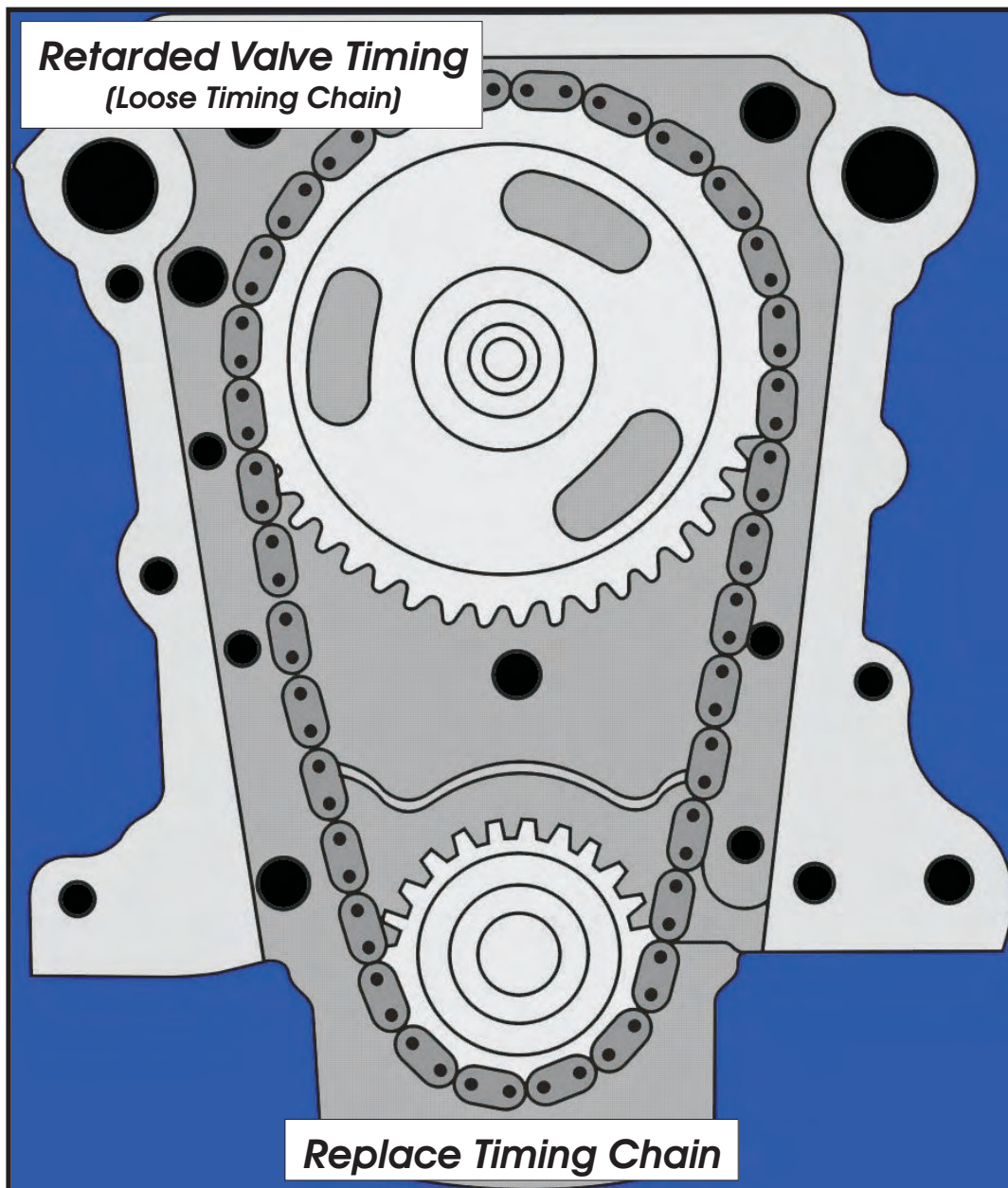


Figure 34

FORD 5R55W/S
TICKING OR RATTLING NOISE FROM BELLHOUSING

COMPLAINT: Explorer and Mountaineer models equipped with the 5R55W/S transmissions may exhibit a ticking or rattling noise coming from the bellhousing of the transmission. This noise can be commonly mistaken as a cracked flywheel or a mis-alignment of the flex-plate to the torque converter.

CAUSE: The cause may be, the plate between the engine block and the bellhousing is flexing, with increased engine rpm, causing the noise.

CORRECTION: Ford Motor Company has released a new style inspection plate, which is located at the bottom of the bellhousing, that has foam rubber to insulate the plate between the engine and transmission to keep it from flexing. Replace the inspection plate with new design as shown in Figure 1.

SERVICE INFORMATION:

INSPECTION PLATE.....2L2Z-7986-AC

INSPECTION PLATE



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Figure 1

FORD 5R55W/S
METALLIC TICKING NOISE

COMPLAINT: After Overhaul, vehicles equipped with the 5R55W/S may exhibit a metallic ticking noise coming from the bellhousing of the transmission, similar to the sound of a cracked flex plate or flywheel.

CAUSE: The cause may be, the adapter plate and the Torque Converter are not aligned correctly.

CORRECTION: Use the Factory alignment tool, Ford Flex Plate Aligner #307-403, or an alignment tool from many aftermarket distributors to align the pilot of the Torque Converter to the adapter plate before tightening the retaining nuts.
Refer to Figure 1 to see which holes, in the adapter plate and the Torque Converter Pilot, to align with the tool. Refer to Figure 2 to see the Tool installed. Figure 3 shows a view with the tool installed and the tightening of the retaining nuts.

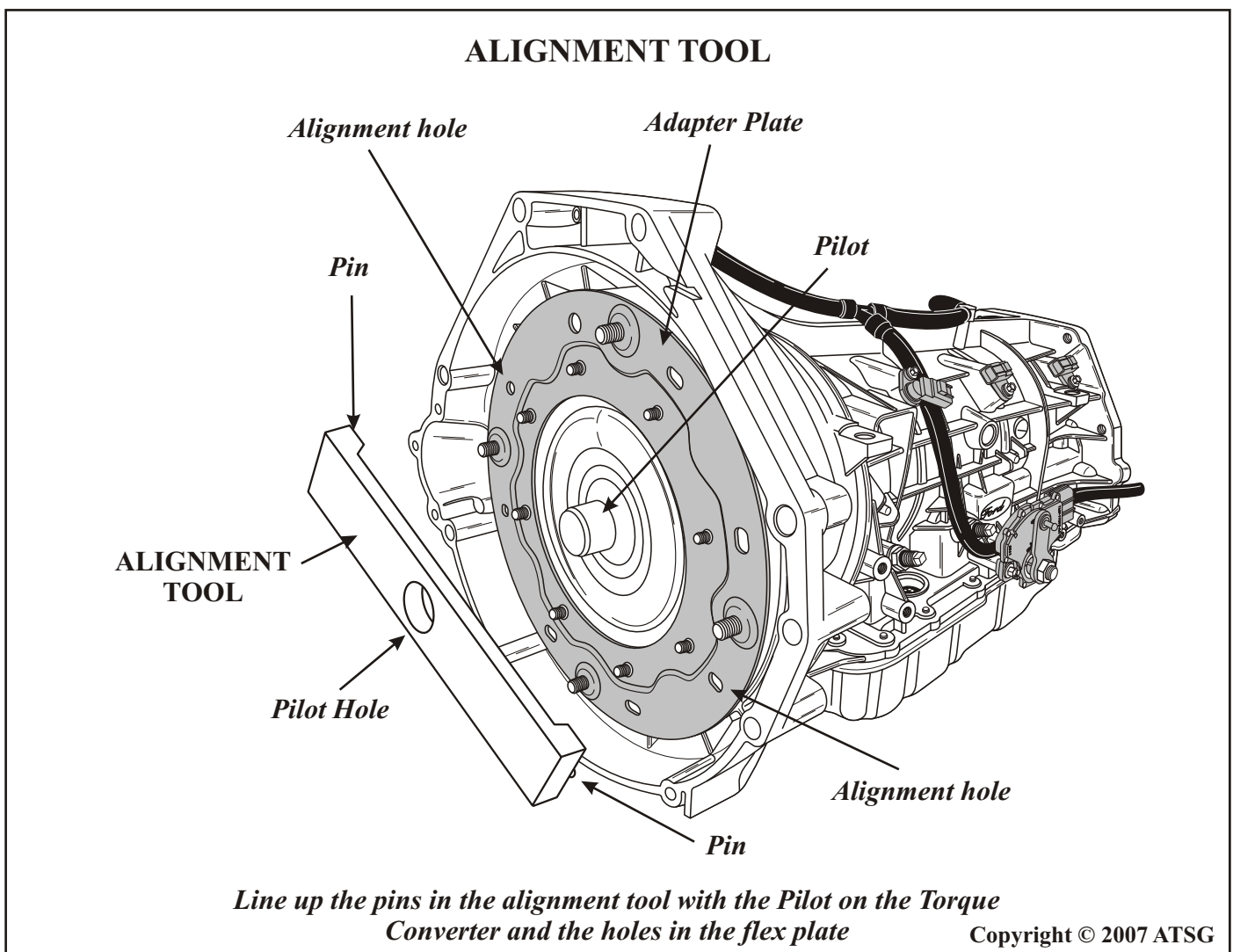
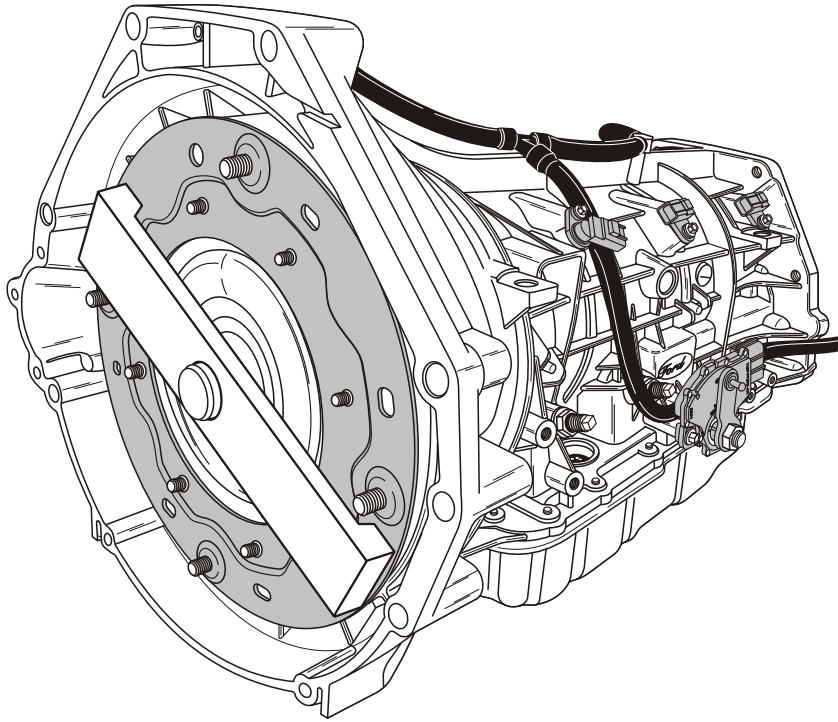


Figure 1

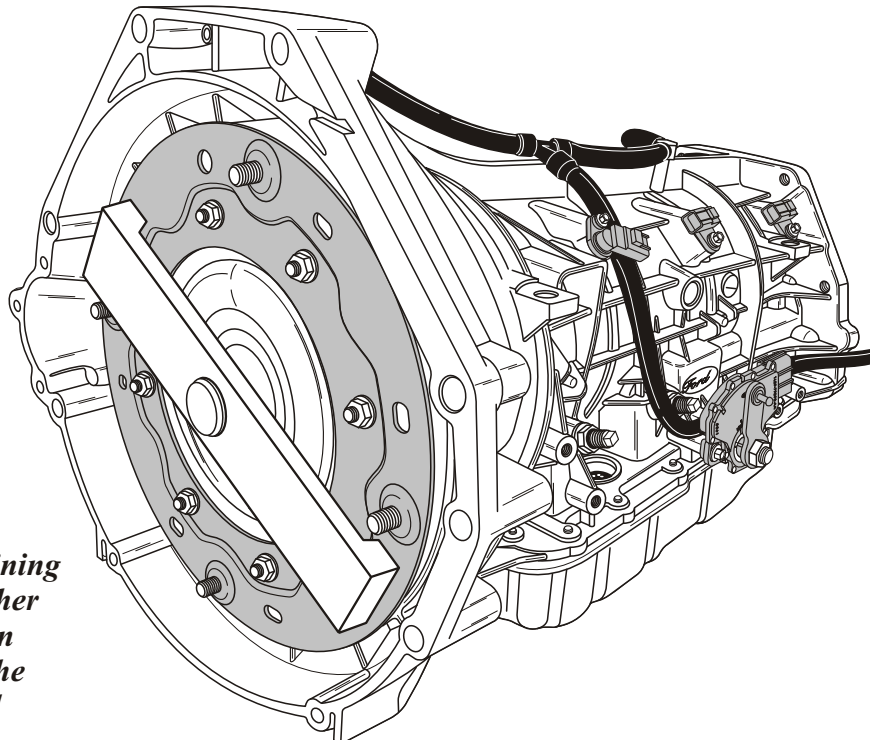
ALIGNMENT TOOL INSTALLED



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Figure 2

ALIGNMENT TOOL INSTALLED



Install and torque the remaining 2 retaining nuts after all other nuts have been installed and the tool removed

Torque adapter plate retaining nuts to 33 ft.lb.

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Figure 3

FORD EXPLORER OR MERCURY MOUNTAINEER

WHINING NOISE FROM THE TORQUE CONVERTER AREA

COMPLAINT: Buzzing or whining noise coming from bell housing or torque converter area on a Ford Explorer or Mercury Mountaineer.

CAUSE: Camshaft Position Sensor/Synchronizer assembly bearing failure due to lack of lubrication. The synchronizer assembly lube hole becomes clogged cutting off oil to the area between the synchronizer body and shaft causing it to run dry.

CORRECTION: Replace with an OE assembly from Ford Motor Co. The Camshaft Position sensor is located on top of the Camshaft Synchronizer in the back of the engine block centered just in front the of the transmission bell housing held in by two bolts (See Figure 1). The PCM uses this sensor to control Fuel Injector timing. When this sensor begins to fail it can cause a loud whining or buzzing noise. Because of its location you may think the converter is the problem on an Explorer or Mountaineer. This one has tricked several technicians into spending countless man-hours changing torque converters, EPC solenoids and pumps trying to correct the source of the noise. Line pressure should be checked before changing the EPC solenoid or pump. A steady pressure gauge needle with a reading of 60 to 75 psi will very that the solenoid and pump is working correctly. If the gauge is reading low and the needle is very erratic verify that the filter is not restricted (such as the pan hitting the filter inlet), or sucking air around a damaged filter seal. You may or may not notice any engine performance problems or find any codes stored. *A good test is to place your finger on top of the sensor with the engine running to feel if the vibration or buzz is coming from a bad sensor.* Remove the sensor/synchronizer assembly and dis-assemble it. Check for signs of rust and scoring, (Refer to Figures 2 and 3). Replacing this sensor/synchronizer assembly on an Explorer or Mountaineer is much easier with the transmission removed because of the tight area in which the sensor is located.

IMPORTANT NOTE:

The Cam Synchronizer must be installed in the correct position as it is timed to the engine much like a distributor, failure to do so will result in a poorly performing engine. Installation tools are available from Ford Motor Company or mark its position with paint.

SERVICE INFORMATION:

Main Ford Part Number for Camshaft Position Sensor.....6B288
Main Ford Part Number for Camshaft Position Synchronizer.....12A362

WHINNING NOISE FROM THE TORQUE CONVERTER AREA

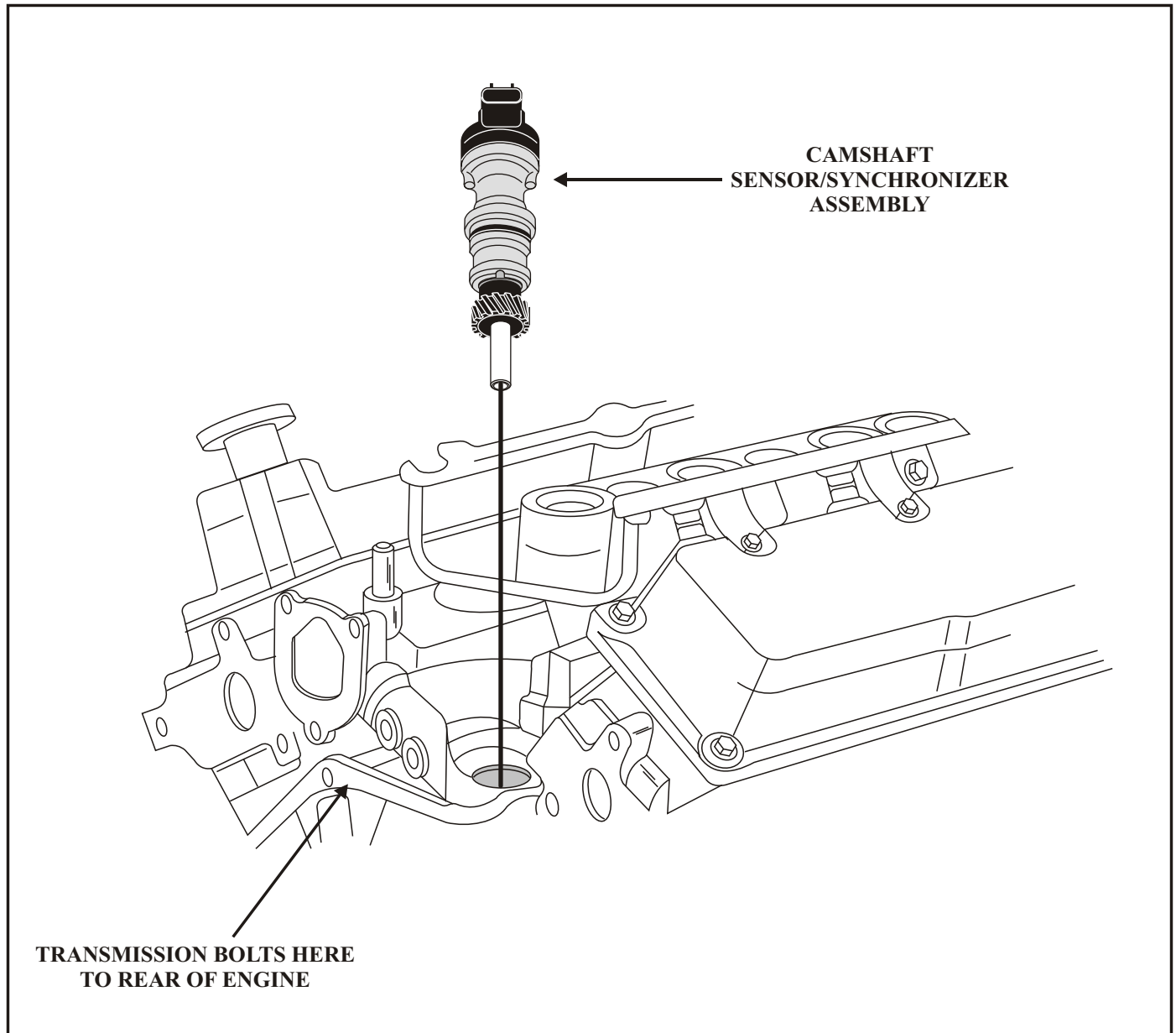


Figure 1

WHINNING NOISE FROM THE TORQUE CONVERTER AREA

CAM SENSOR & SYNCHRONIZER ASSEMBLY

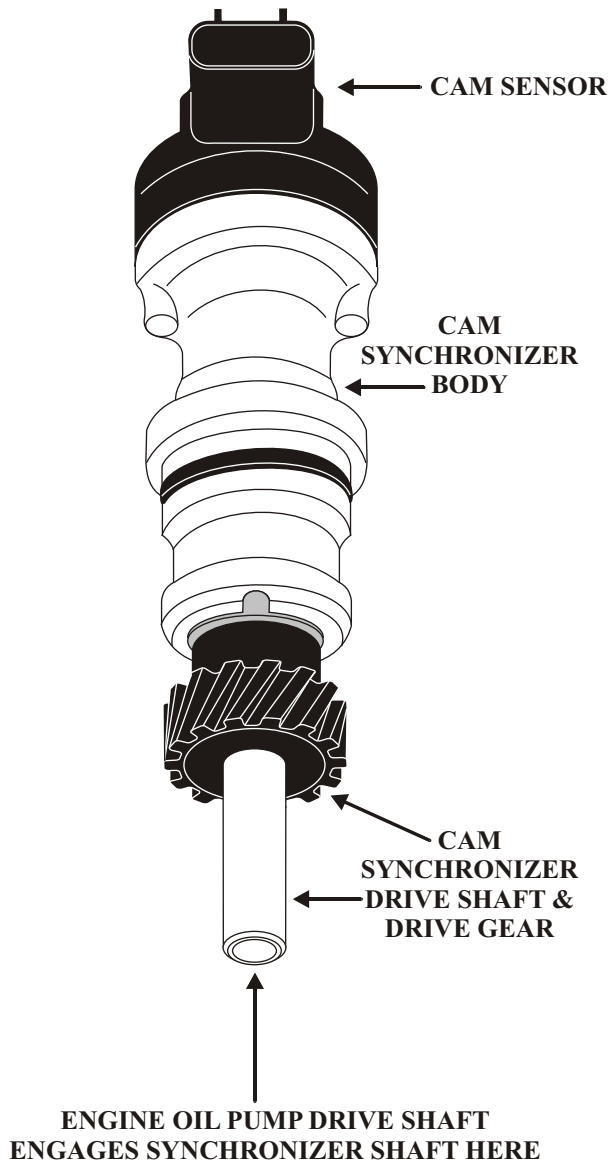


Figure 2

CAM SENSOR & SYNCHRONIZER ASSEMBLY EXPLODED VIEW

WEAR & SCORING BETWEEN THE SYNCHRONIZER BODY & SHAFT CAUSE NOISE

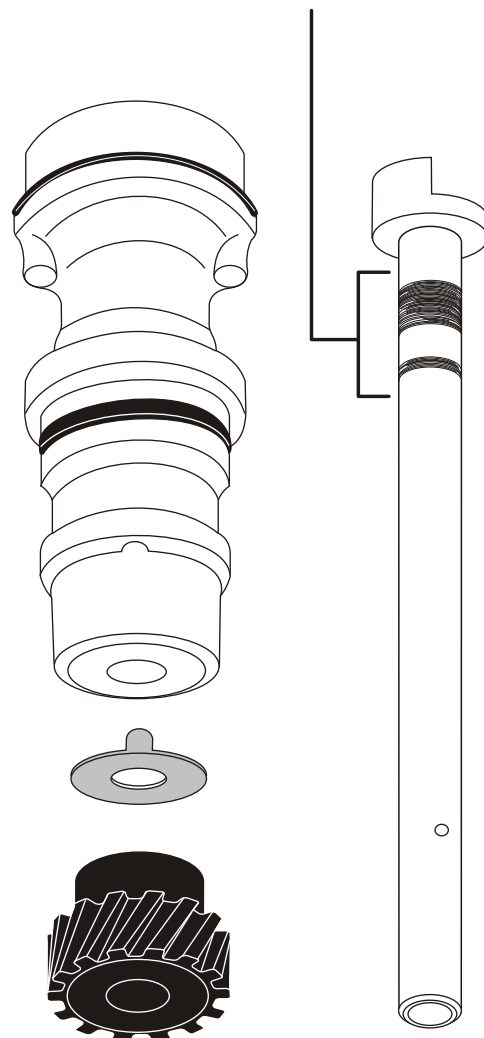


Figure 3



FORD 5R55W/S CLICKING OR TICKING NOISE (BEFORE OR AFTER OVERHAUL)

COMPLAINT: Before or after overhaul, vehicles equipped with the 5R55W/S may exhibit a clicking or ticking noise coming from the pump or bellhousing area, very similar to the sound of a cracked or loose flex plate and may become louder with engine RPM.

CAUSE: The cause may be, the Line Pressure Relief Valve Assembly (Flow Control Valve) located in the pump stator, as shown in Figure 1, slightly sticking due to premature bore wear in the relief valve sleeve. Figure 2 shows the area prone to wear causing the valve to stick in the worn bore, and may get lodged onto the ridge at the end of the worn area causing an intermittent no movement condition.

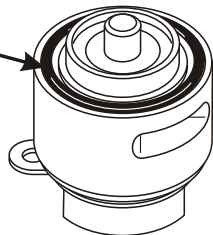
Caution: *If this valve assembly is disassembled for inspection, it "Must" be re-assembled with the tab on cap opposite the exhaust holes, as shown in Figure 2.*

CORRECTION:
Replace the Flow Control Valve. These valves are available from many aftermarket suppliers.

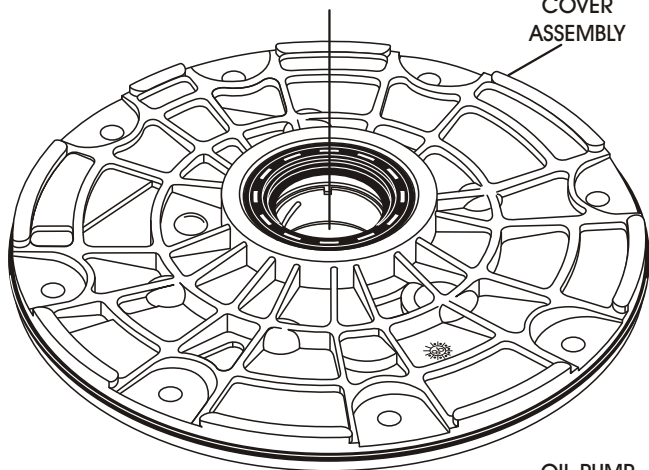
SERVICE INFORMATION:
Superior now has a replacement flow control valve assembly available for this unit under Superior part number K060. Also available from Transgo included in their pump shift kit SK 5R55W Upgrade and Sonnax replacement part number 56200-02K

CAUTION: The Pump Relief Valve Assembly "Must" Have The "O" Ring In Place As Shown Below

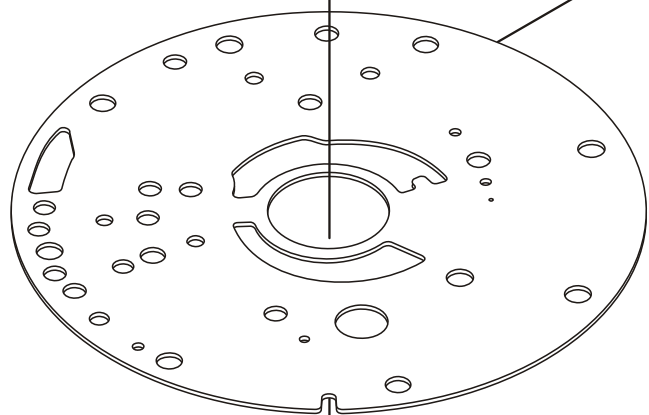
"O" RING IN PLACE ON RELIEF VALVE



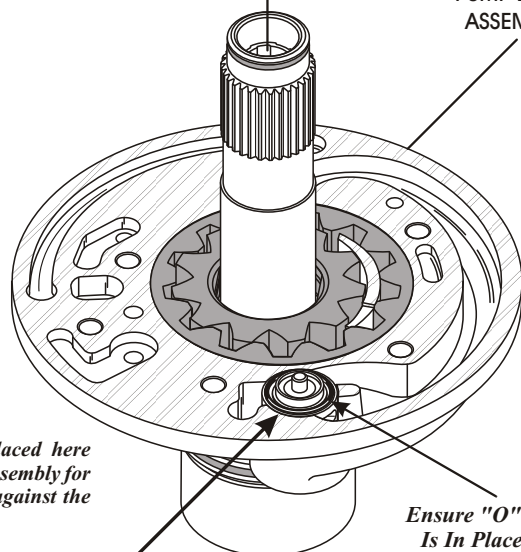
OIL PUMP COVER ASSEMBLY



OIL PUMP SPACER



PUMP BODY ASSEMBLY



Ensure "O" Ring Is In Place On Relief Valve

INNER PUMP GEAR "O" RING

INNER PUMP GEAR

OUTER PUMP GEAR

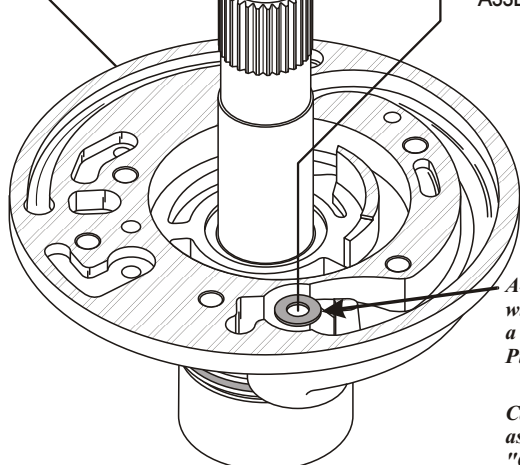
CAUTION:
Install Pump Gears With "Dots" Facing Down

RELIEF VALVE "O" RING

"SOLID" SEAL RING FOR TCC

LINE PRESSURE RELIEF VALVE ASSEMBLY

PUMP BODY



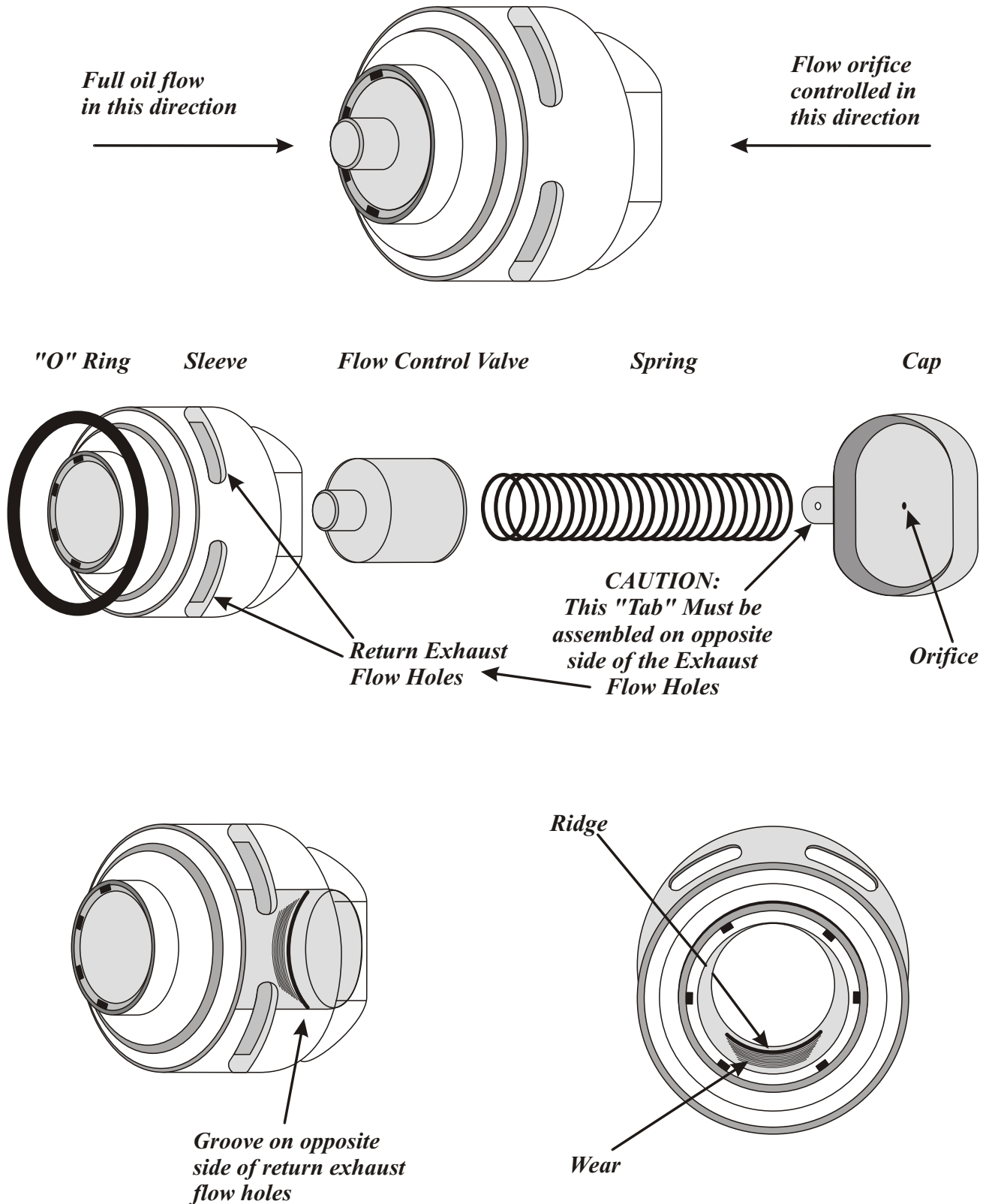
A4LD pump washer placed here will raise Relief Valve Assembly for a better "O" ring seal against the Pump Spacer Plate.

Caution: Do not raise the sleeve assembly above the pump surface, "Only" the "O" ring.

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Figure 1

LINE PRESSURE RELIEF VALVE ASSEMBLY



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Figure 2

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TCRA Proposal

ATSG website membership only for \$225.00 a year. This would allow access to the members area of our website that would display all of the ATSG bulletins from 1986 to present. These may be viewed, printed or downloaded for each shops convenience. There is also a member's technical forum.

A franchise membership is only \$325.00 a year. This would allow access to everything number 1 has to offer plus the ability to use the hotline service without a pay per call fee. This membership also includes discounts to all of our products and services. Visit our website to see a complete listing.

We offer our regular membership at quarterly prices, this is not extended to the above mentioned deals. Our online service which allow access to the member area for bulletins, seminar information, a listing of all our products, many of which may be downloaded. The Nationwide Warranty program and unlimited use of the hotline service. The yearly price is \$545.00 and quarterly is \$148.75. If you wish to have the bulletins mailed to you it would be an additional \$100.00.

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