# Service Slants

#### Mazda

Rattle from roof while driving. Mazda reports that some owners of 2007-12 Miata models with the retractable hardtop may complain of an irritating rattle from the roof panel while driving on the open road. One likely cause of the noise, says the Japanese carmaker, is insufficient latching force between the roof's top lock and striker. Furthermore, the condition will only get worse as the rubber gasket deteriorates. Readjusting the lock's adjustment nut so that it provides less clearance between the roof panel and windshield header is the simple fix.

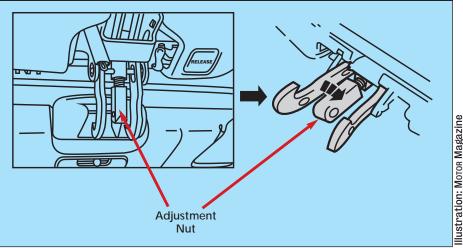
Start the job by removing the top lock's spring from the retaining pin. Now remove the snap ring, followed by the retaining pin itself. Remove the lock cover's two screws, then the cover. Using the illustration at right as a reference, turn the top lock's adjustment nut one complete turn clockwise to increase the latching force.

Continue the fix by reinstalling the lock cover. Coat the screw threads with Locktite, then install the two retaining screws to secure the cover. Insert the retaining pin into the lock, then secure it in place with the snap ring. When properly installed, there shouldn't be any play between the snap ring and the pin. To complete the repair, reinstall the spring onto the retaining pin, lock the roof panel, then make sure the clearance between the roof and windshield header is .160 to .312 in.

# Ford/Lincoln

Drive belt noise on start-up. Owners of some 2007-08 Ford and Lincoln models with the 4.6 and 5.4L engines built prior to 1/28/08 may complain of a high-pitched hoot or whistle from the accessory drive belt at idle. Ford says the noise is most obvious on cold start-up in temperatures below 40°F, usually stops after about 10 minutes of driving and is due to grooves forming in the nylon belt idler pulley. Installing an upgraded, new-design idler pulley (Part No. 6L3Z-6C348-A) should eliminate

# Miata Retractable Hardtop Top Lock Assembly



Turning the adjustment nut clockwise one full turn should reduce the clearance between the roof panel and windshield just enough to eliminate the rattling sound that plagues some 2007-12 Miatas.

the noise in short order.

Vehicles that are prone to the noise and can benefit from the updated idler pulley are 2007-08 F-150s and Mustangs with the 4.6 and 5.4L engines, 2007-08 Lincoln Mark LTs/Navigators and Ford Expeditions with the 5.4L engine and 2007-08 Ford Explorer and Explorer Sport Trac models and Mercury Mountaineers with the 4.6L engine.

# **GM**

Unnecessary turbocharger replacement. Some owners of 2007-09 Pontiac Solstice GXP and 2008-09 Chevy Cobalt SS and HHR models with the turbocharged 4-cylinder engine may come into your shop with several driveability complaints, chief among them that the engine is down on power. When you hook up your scan tool to the DLC, you may find turbo-related DTCs P0299 and/or P0234 in PCM memory.

Being a diligent tech, you decide to yank the turbo and have a look around. You find cracks in the partition wall of the inlet flange. So you order a new turbo and install it, confident that the driveability issues are a thing of the past. But on a road test the symptoms reoccur, and the turbo code(s) resets.

Don't feel embarrassed. Techs at Pontiac and Chevy dealerships across the country are also being duped. Fact is, the cracks in the inlet flange are benign, says GM, the result of minor flaws in the casting process. Think about this the next time one of these cars comes into your shop with driveability issues and turbo codes stored.

# **Dodge Truck**

MIL on, fuel trim system DTCs logged. Some 2009 Durango SUVs with the 5.7L engine and two-mode hybrid system may turn on the MIL and log fuel trim system DTCs P2096 and/or P2098 in computer memory.

According to Dodge, the condition usually surfaces during periods of extended idling and is due to inaccurate goal voltages in the upstream and downstream oxygen sensors. Reprogramming the PCM with updated software will reset the goal voltages to acceptable levels and turn off the MIL. To do the flash, you'll need a wiTECH scanner operating at software release 11.02 or higher.

#### Lexus

MIL on, misfire DTC(s) stored, engine noise. The owner of a 2011-13 CT 200h hybrid model may come into your shop with the MIL illuminated and a complaint that his engine runs rough and makes a rattling or knocking noise on start-up following a prolonged soak. Once you hook up your scan tool to the car, you'll likely find misfire DTCs P0300 through P0304 (separately or in combination) stored in PCM memory.

According to Lexus, all of these symptoms usually occur in temperatures below 40°F and are due to design flaws in the intake manifold. Installing a new and improved manifold (Part No. 17120-37054) should eliminate the trouble in no time.

# **Ford Truck**

Repeated drive belt failure. Owners of 2003-05 F-Super Duty pickups and Excursions and 2004-05 E-series vans (all with the 6.0L diesel engine) may complain that their drive belt frays, shreds or breaks, usually more than once. Ford says the problem is limited to trucks built before 1/1/05, and is due to a damaged or bent water pump pulley. Installing a new-design, beefier pump pulley (Part No. 5C3Z-8509-A) should fix the problem.

#### Nissan

# Chirping noise from transmission.

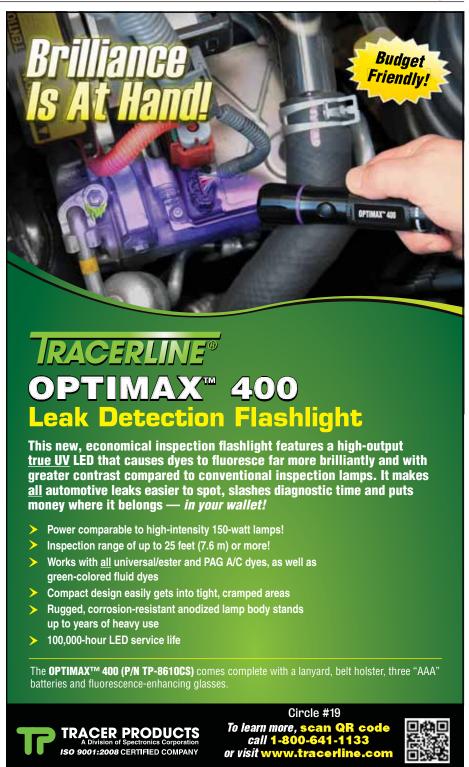
Some owners of 2002-06 Sentra models with the 1.8L engine and RE4F03B automatic may complain of a chirping sound from the transmission during a 2-3 upshift. According to Nissan, the noise is most obvious under light-throttle acceleration and is likely due to a shudder in the transmission's high clutch assembly.

Adding two bottles of a newly formulated ATF treatment (Part No. 31003-31X61P) should help eliminate the annoyance. Before adding the special friction modifier, bring the transmission to operating temperature and check the fluid level on the dipstick. If

it's in the HOT range, drain about a pint of fluid from the transmission pan to prevent overfilling.

#### Scion

**Growl or rattle from transmission.** Some 2011-13 tC models equipped with continued on page 50



the manual gearbox may produce an annoying growling or rattling sound from the transmission. According to Scion, the noise is most obvious when the clutch is engaged, will usually cease if the clutch pedal is depressed and is due to a prematurely worn rear bearing on the transmission's input shaft. Disassembling the transmission and replacing the original bearing with a new-design radial ball bearing (Part No. 90363-35068) should eliminate the condition immediately.

Chrysler

Knock or rattle from bellhousing. Some 2011 Town & Country and Grand Caravan minivans with the 3.6L engine may develop a knocking or rattling sound from the bellhousing when the engine is running. Chrysler says the noise is most prominent on vehicles built prior to 12/22/10 and is most likely due to improperly tightened crankshaft-to-flexplate retaining bolts.

To make a proper diagnosis, remove the transmission and measure the torque on the flexplate bolts with a torque wrench. If the bolts read 70 ft.lbs., this information doesn't apply, and you should reinstall the transmission and continue troubleshooting until the noise issue is found. If the torque on the bolts is significantly less than 70 ft.lbs., remove and discard the flexplate. Then install a revised flexplate (Part No. 04752463AB), a new spacer (Part No. 04752465AA) and eight new retaining bolts (Part No. 06503465). To complete the fix, tighten the bolts by hand, torque diagonally to 70 ft.-lbs., then reinstall the transmission.

# Toyota

**Front window noise.** Toyota reports that the front windows on 2009-12 Matrix and 2009-13 Corolla models may produce a rattle, pop or clicking sound when moved up and down. In

some cases, the windows may not move at all. The Japanese carmaker attributes the problems to loose or missing window regulator bolts. Pulling the door panel, removing or replacing the regulator bolts, coating them with Loctite Threadlocker Blue 242, then reinstalling them is the permanent fix. Torque the bolts to 71 in.-lbs.

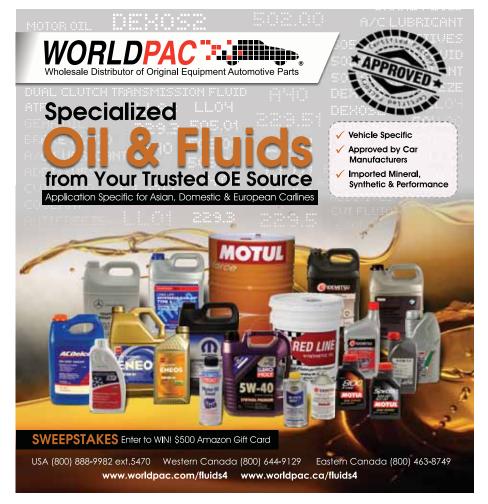
# **Pontiac**

Rattling noise when driving over **bumps.** Pontiac reports that some 2003-08 Vibe models may produce a rattling sound from the front wheels while being driven over bumps or depressions in the road. One likely cause of the noise, says the now-defunct carmaker, is too much clearance between the front brake pads and the caliper mountings. Installing new-design caliper mounts (Part No. 88975879) and antisqueal shims (Part No. 19204384) should eliminate the irritation immediately.

#### Saab

MIL illuminated, cooling fan DTC **logged.** Some owners of 2005 9-7X models may arrive at your shop with an illuminated MIL and DTC P0526 (cooling fan speed sensor circuit malfunction) logged in the PCM. One probable reason for the trouble, reports Saab, is damaged wiring in the cooling fan harness. The harness pulls out of its plastic protective sleeve, exposing the insulation to the sharp edges of the sleeve. Replacing the harness with an improved design (Part No. 89024920) and taping the wires to prevent movement within the sleeve should help fix the problem.

Begin the job by removing the cooling fan assembly and placing it on a workbench. Disconnect the connector from the fan clutch and remove the harness from the plastic sleeve while feeding the wires out of the slot. Before installing the new harness, wrap the area of the wires that will go into the sleeve with electrical tape. Make sure the tape is positioned at least 1 in. from the connector so the wires can be fed completely into the slot in the sleeve. Next, push the wires through the slot and install the harness completely into the plastic sleeve. To complete the fix, reconnect the fan clutch electrical connector, in-



Circle #20

stall the fan assembly, clear the code and check for proper fan operation.

# **Dodge Truck/Jeep**

Rattling noise from a/c compressor. Drivers of some 2007 Dodge Caliber and Jeep Compass and Patriot crossover models may complain of a loud rattling sound from the a/c compressor when driving aggressively after the air conditioning system is first turned on following a long soak. In some cases, the noise may be accompanied by physical damage to the compressor, which manifests itself by a trail of oil on the outside of the compressor housing. One likely cause of the troubles is the refrigerant slugging the compressor before it has a chance to flow through the system.

The fix depends on the symptoms encountered. If all you're getting is the rattling noise, flush the discharge and liquid/suction lines, then install a newdesign compressor assembly (Part No. 55111555AA), a matching condenser (68004052AB) and a longer drive belt (04891721AB). If the noise is accompanied by physical damage to the compressor, replace the liquid/suction line (Part No. 05058152AF) and accumulator (5189376AA), along with the compressor, condenser and belt.

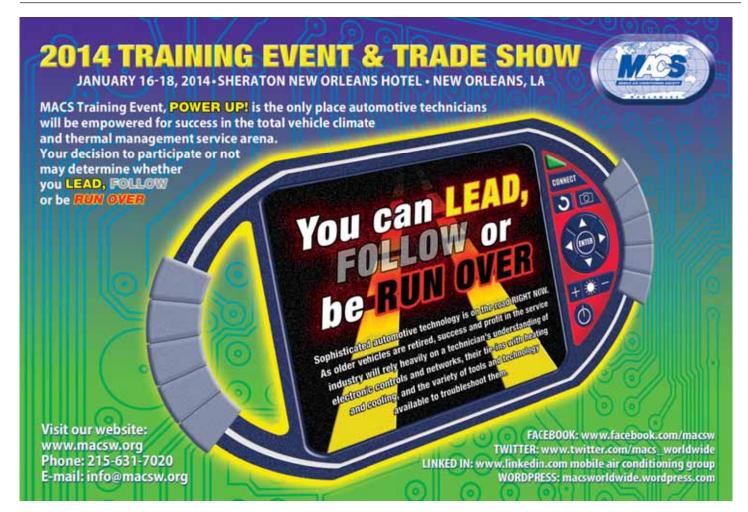
### Acura

Brake system warning lamp illuminated, DTC logged. Acura reports that all 2007-08 RDX SUVs, as well as 2009 models built from VIN 5J8TB1...9A000001 through VIN 5J8TB1...9A007865, are prone to illuminating the amber brake system warning lamp and storing DTC P16D9 in computer memory. The Japanese luxury carmaker attributes the condition to the PCM misinterpreting the feedback signals from the electric vacuum pump. Updating the module with new software is the only remedy.

To do the flash, you'll need an HDS operating at software version 2.018.016 or later. The actual calibration files are in application version V6.17.08 or later. The program ID for the software upgrade is WCA570; the part number is 37805-RWC-A57.

# Jeep

MIL illuminated, DTC(s) stored, possible inoperative cruise control system. Some 2008-11 Wranglers with the 3.8L engine built before 3/27/11 may turn on the MIL and store one or more of the following DTCs in PCM memory: P0139, P0159, P2181. Furthermore, on 2011 models only, the cruise control system may be inoperative or become inoperative with no input from the driver, while logging DTC P0591, or the owner could experience a thumping or buffeting sound while the engine is idling.



What do all of these seemingly unrelated symptoms have in common? According to Jeep, they're all caused by software anomalies in the PCM. Reprogramming the module with updated calibration files is the only reliable fix. To do the flash, you'll need a wiTECH scanner operating at software release 11.03 or higher.

# Volkswagen

Damaged oil filler cap. Volkswagen says that the upper and lower halves of the oil filler cap on 2005-07 Jettas and 2006 Beetles with the 2.5L engine can separate if the engine cover is removed in a rough manner. The good news is that the cap can be reassembled with a little TLC. Here's how to go about it:

Begin by holding the upper portion of the cap so that the funnel end of the oil can symbol on top of the handle is positioned to the left. Now turn the cap 90° and look at the threads. There should be a small index mark at a right angle to the threads and in alignment with the handle. Once you see the mark, position the lower cap half so the molded parallel lines on top of it align with the handle of the upper cap. Make sure the index mark rests between the lines. Finally, press the upper cap firmly into the lower cap. When you hear a snap, the repair is complete.

# **Ford Truck**

**ABS or Advanced Trac warning lamp** on, DTC(s) stored. Some 2011-12 Ford Explorer and 2011-13 Ford Edge and Lincoln MKX SUVs may illuminate the ABS or Advanced Trac warning lamp on the dash and log DTCs P193C and/or U0401 in computer memory.

According to Ford, the condition occurs only on vehicles built on or before 1/23/13, surfaces most often when the transmission is shifting or the engine is idling with the air conditioning system on and is due to software anomalies in the PCM. Reprogramming the module with an IDS operating at software release 83.01 or higher is the only reliable way to fix the problem. If you have a subscription, you can also download the new calibration files off the internet at www.motorcraft.com.

#### **Porsche**

Unnecessary water pump replace**ment.** Porsche reports that lots of water pumps on 2005 and later Boxster, Boxster S, Cayman, Cayman S and 911 models are being replaced needlessly by its dealers. The typical scenario is that a dealer tech notices a trace of coolant on the water pump housing, thinks the coolant is coming out of the pump's weep hole, then tears into the pump as a preemptive strike to keep the ultra-expensive motor from overheating. On inspection back at Porsche headquarters, however, the pump checks out fine.

The thing to keep in mind about coolant traces on water pumps, says Porsche, is how the trace actually presents itself. If it's dry or chalky, it's probably due to nothing more than a little coolant expansion from the weep hole as the system builds pressure. If the trace is wet or there are obvious droplets of coolant on the pump housing, that's cause for concern. A common paper towel makes the ideal diagnostic tool. Although this information comes from Porsche, it obviously applies to any modern water pump. Forewarned is forearmed!

### Infiniti

Rear axle noise on acceleration. Some 2004-10 QX56 full-size SUVs may produce a clicking sound from one or both rear axles when accelerating from a stop. One probable reasson for the noise, reports Infiniti, is rust or corrosion building up between the outer CV joints and axle hubs.

Loosening the rear axle nuts, sliding the axles inward, cleaning the joint flanges and applying Molykote 77 grease (Part No. 44003-7S000) to the flange areas should eliminate the clicking noise immediately. After the grease is applied, torque the axle nuts to the revised lower torque setting of 135 ft.-lbs., then install new adjusting caps and cotter pins.

#### Mazda

Crank, no-start in cold temperatures. Mazda reports that some 2010-13 Mazda3 models with the 2.0L engine may have difficulty starting when the ambient temperature is at or below freezing. Furthermore, no DTCs are likely to log when the starting difficulties occur. According to the Japanese carmaker, the problem is limited to vehicles built before 12/17/12 and is due to poor control logic in the PCM. Reprogramming the module with updated software is the only remedy.

Before flashing the PCM, however, try to start the vehicle by putting the fuel system into clear flood mode (Mazda calls it "de-choke mode"). To do that, press the accelerator to the floor and crank the engine for 4 or 5 seconds. Now turn the ignition off, release the throttle and crank the engine over once again. If the engine still won't start or there are DTC(s) logged, this information doesn't apply, and you should continue troubleshooting until the cause of the nostart is found. If the engine roars to life, that verifies that a logic problem exists and the PCM needs some updated software. To do the job, you'll need an IDS scanner operating at software release 82.01 or later. Here's the info on the new calibrations:

Veen Trenewicelen	File Ne
Year, Transmission	File No.
2010, Manual	
2010, Automatic	. LF8M-188K2-G
2011, Manual	. LFGT-188K2-E
2011, Automatic	. LFGV-188K2-D
2012, Manual	. LFJD-188K2-B
2012, Automatic	LFJE-188K2-C
2013, Manual	. LFNC-188K2-A
2013, Automatic	. LFND-188K2-A

# Acura

Noise from passenger-side B-pillar **area.** Acura says that some 2013 RDX midsize SUVs may produce a ticking, buzzing or rattling sound near the passenger-side B-pillar area or right rear door. According to the Japanese luxury carmaker, the noise is most pronounced while on the open road at speeds of 60 mph and greater and is due to a loose front floor undercover. Installing six new-design retaining clips and washers should keep the undercover nice and snug and eliminate the racket. Order Part No. 91505-TM8-002 for the new clips, 94109-14000 for the upgraded washers.