TRAINING 2000

Curing Noise and Vibration

By Tony Lux

Noise, vibration and harshness (better known as NVH) hits consumers like the common head cold. It's sneaky, it's annoying, and nobody ever knows quite how or why they get it. NVH has become an industrywide concern. And as consumers are getting less and less tolerant of its conditions, vehicles have gotten more and more complicated – increasing the potential for NVH bugs to attack.

Since harshness is a ride-quality issue involving the suspension system, this article will focus on noise and vibration, both of which can affect the brake system.

A Healthy Tip

When troubleshooting a noise or vibration problem, perform a thorough vehicle inspection so you don't mistakenly replace a part that isn't at fault. Many customers who complain about noise refer to their brakes. But noise and vibration can be caused by a number of complications. A squeaking brake may mean that the brake assembly needs to be lubricated, the hardware may need an adjustment or a spring may need to be replaced. So consult your shop manual and refer to current technical-service bulletins (TSBs) from the vehicle's manufacturer before replacing any parts. Assuming a squeak is caused by a brake pad without troubleshooting the problem first could leave you dealing with an unhappy customer who's still complaining of noise.

Manuals and especially TSBs serve as valuable sources of information and may help you resolve your customer's noise or vibration problem quickly and easily. Not referring to them could lead to a misdiagnosis of a vehicle's symptoms.

How to Fix a Real Drag

General Motors TSB #73-50-18 covers a rear-drag / squat issue on many '95-97 Chevrolet Cavaliers and Pontiac Sunfires, and many '96-97 Pontiac Grand Ams. And the TSB says the parking-brake-light switch actually could be the cause of the problem.

The immediate cause of a squat / drag condition on these vehicles is often an incomplete release of the parking-brake cable, and the TSB updates the cable-adjustment procedure. However, before you blame the cable, the bulletin says to be sure a misadjusted brake-light switch isn't causing brake drag.

To check adjustment of the brake-light switch, you need to remove the sound-insulator panel under the dash on the driver's side and disconnect the wiring from the brake-light switch. Then, on 1995 models, pull the pedal up toward

Refer to your shop manual and any applicable TSBs when troubleshooting a vehicle with a noise or vibration problem.

To be sure you've adjusted the brake-light switch properly, test the brake pedal while an assistant watches the brake lights.

the steering wheel with about 40 pounds of force. Any clicking you feel and/or hear is a result of the switch sliding into adjustment in its mount. If there is no clicking and the brake lights aren't illuminated when the pedal is not applied, the switch adjustment is OK. When you're finished checking the switch, remember to reconnect the wiring.

Checking/adjusting the brake-light switch is different on the newer cars. First, rotate the switch counterclockwise about 45° until it stops in its retainer. Next, pull the switch toward the rear of the car and then – while holding the brake pedal in its normal "at-rest" position – push the switch toward the front of the car. You want the switch body to bottom against the pedal arm with its actuator fully depressed. Lock in the adjustment by twisting the switch back in its retainer – about 45° clockwise – until you feel or hear it click.

Once you're sure that improper adjustment of the brake-light switch isn't causing the drag/squat condition, you can check and/or adjust the parking-brake cable as described in the TSB.

Stop Moaning and Groaning

Ford TSB #98-1-2 deals with rear-brake squeal and/or moans on full-size rear-wheel-drive vehicles. Ending this complaint may require simply installation of a new type of brake pads. The TSB applies to the '95-96 Ford Crown Victoria and Mercury Grand Marquis and '95-97 Lincoln Town Car equipped with standard brakes. (This TSB does not apply to cars equipped for police, taxi or limousine service, or to natural-gas and Gulf Coast Country models.)

The TSB was issued in response to complaints of rear-brake moans and/or squeals during light-to-medium stops. According to Ford, the original pads could vibrate at the resonant frequency of the rear rotors, causing the noise. The TSB says changing to new pads with different vibration characteristics should eliminate the noise.

Silencing the Howl

Chrysler TSB #05-08-97 addresses a howling sound generated by the rear brakes of '95-97 Neons. The noise may occur during light brake application under cold, damp conditions from speeds of 10 mph or less. After a few stops, the noise is likely to disappear.

Some TSBs recommend a simple pad swap to get rid of brake noise.

According to Chrysler, replacing the brake-shoe support plates should silence the howl. The new support plates include a damper weight to help quiet the noise. A new wheel cylinder also is attached to the plate. Chrysler warns against loosening the attaching bolts for the new wheel cylinder, noting that wheel-cylinder positioning on the plate is critical.

A Chrysler TSB says replacing the brake-shoe support plates is all you need to do to eliminate a rear-brake howl on some '95-97 Neons.

To replace the support plate, you need to bleed the hydraulic system, completely disassemble the rear service and parking brakes, and remove the wheel-bearing assemblies.

Preventive Medicine

The brake industry is far from the days when noise and vibration will no longer be customer complaints.

Most likely, installers always will be faced with noise-related complaints, but there are plenty of resources available that help eliminate these problems and keep customers happy. So, look before you leap. Take the time to examine a vehicle properly before you diagnose and treat it. And keep referring to those TSBs for added information. UD

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