

SECTION 501-00: Body System — General Information
DIAGNOSIS AND TESTING

2014 F-150 Workshop Manual
Procedure revision date: 10/25/2013

Body System

Material

Item	Specification
Silicone Gasket and Sealant TA-30	WSE-M4G323-A4

Inspection and Verification

Dust and Water Leaks

Most dust and water leaks occur due to missing or mis-installed body sealer or components. The source of the leak is detected by:

- pressurizing the vehicle and testing with soapy water.
 - Locate and tape off the body vents.
 - Turn the blower motor on the high position.
 - Turn the air recirculation to the off mode.
 - Close the windows and doors.
 - Open the hood and spray soapy water along body seams and grommets. Make sure to test the areas around the A-pillar at the fender and the hood hinge area.
 - Check for bubbles.
- inspecting for a dust pattern or water path near and above the area in question.
- removing any trim or carpet in the general area of the leak.
- road testing or water-hose testing the vehicle.
- placing a bright light under the vehicle, removing any necessary trim or carpet and inspecting the interior of the body at joints and weld lines.

Wind Noise

Most wind noise leaks occur at the corners of the windows or in the doors. Wind noise is detected by driving the vehicle at highway speeds or at speeds as specified by the customer. The vehicle should be driven in 4 different directions, with all the windows CLOSED, the radio OFF and the A/C blower motor OFF.

Squeak and Rattle

Squeak and rattle noises are generally caused by loose parts, contact or relative movement between 2 surfaces or loose wires and connectors. The source of the noise can be detected by stopping movement of the suspect part by hand or by using dampening or low friction materials.

Symptom Chart — NVH

Symptom Chart — NVH

NOTE: NVH symptoms should be identified using the diagnostic tools that are available. For a list of these tools, an explanation of their uses and a glossary of common terms, refer to [Section 100-04](#). Since it is possible that any one of multiple systems may be the cause of a symptom, it may be necessary to use a process of elimination type of diagnostic approach to pinpoint the responsible system. If this is not the causal system for the symptom, refer back to [Section 100-04](#) for the next likely system and continue diagnosis.

Condition	Possible Sources	Action
Draft/wind noise and water leak around door perimeter	- Loose fit seal - Seal installed incorrectly - Door misaligned - Scuff plate installed incorrectly - Seal or seal pushpins damaged - Sheet metal joints in door or door opening	- PINCH seal carrier to improve retention on seal flange. - REINSTALL the seal. - REALIGN the door. CHECK door gaps and fit in door opening and ADJUST as necessary. REFER to Section 501-03. - REINSTALL the scuff plate. - INSTALL a new seal/pushpins. - SEAL leaks with silicone gasket and sealant.
Draft/wind noise and water leak around glass run	- Door glass misaligned - Glass run installed incorrectly - Leak path behind glass run - Glass run channel spread wide - Glass run damaged	- ADJUST door glass. - REINSTALL glass run. INSERT foam in glass run carrier if necessary. - INSTALL foam rope behind glass run. - PINCH glass run channel to reduce size of opening. - INSTALL a new glass run.
Draft/wind noise and water leak at inner belt line	- Belt line seal installed incorrectly on flange - No contact with side glass - No contact with glass runs at both ends of belt line seal - Belt line seal damaged	- ADJUST seal. (Do not bend the flange.) - ADJUST door glass. - ADJUST belt line seal or ADD foam at seal ends. - INSTALL a new seal.
Draft/wind noise and water leak at outer belt line	- Belt line seal installed incorrectly on flange (no glass contact) - Belt line seal does not	- ADJUST seal. - ADJUST door glass.

	- contact the glass - No contact with glass runs at both ends of belt line seal - Belt line seal damaged	- ADJUST belt line seal or ADD foam at seal ends. - INSTALL a new seal.
Draft/wind noise at inner door handle/speaker opening	- Hole in weathershield - Weathershield misaligned - Exterior door handle seal misaligned/damaged - Speaker or speaker seal missing or damaged	- SEAL hole with suitable tape. - REALIGN weathershield. INSTALL a new weathershield if pressure sensitive adhesive fails. - REALIGN or INSTALL a new seal as necessary. REFER to Section 501-14. - REPAIR speaker seal or INSTALL a new door speaker.
Draft/wind noise and water leaks at floor pan and grommets	Missing or damaged plugs/grommets	CHECK plugs/grommets for correct installation or damage. INSTALL new plugs/grommets if necessary.
Road noise	- Missing mastic insulators - Missing body insulators	- CHECK for missing mastic insulators. REFER to Section 501-35. - CHECK for missing body insulators.
Rattles in body/doors and instrument panel	- Loose wires/cables - Loose objects/components in door wells, pillars quarter trim panels - Buzz from instrument panel components	- CHECK that all wires/cables are correctly routed and inserted in correct retainers. - CHECK doors by carefully striking underside of doors with a rubber mallet while listening for rattles in doors and pillars. REMOVE or TIGHTEN loose objects/components. - IDENTIFY which components of the instrument panel are buzzing. SECURE/FASTEN components as necessary, ADD foam or felt as needed if rattle persists.
Door drain holes collecting water	Holes clogged with mud or road tar	CLEAN drain holes of foreign material with a

		punch or screwdriver. CHECK drain holes regularly.
• Wind noise from exterior rear view mirror	• Exterior mirror housing misaligned • Mirror sail gasket folded/misaligned • Mirror housing trim cap installed incorrectly • Air leak through mirror housing hinge • Inner sail trim installed incorrectly • Inner sail gasket/barrier installed incorrectly • Air path through wiring bundle/fastener access holes • Exposed fastener access hole on mirror housing/sail	• REALIGN with edges shingled to airflow, with no gaps. • REINSTALL with gasket unfolded and aligned correctly. • REINSTALL with edges shingled to airflow. • Fully ENGAGE mirror into its operating position/USE foam to block air path through hinge. • REINSTALL sail trim/ADJUST door trim. • REINSTALL trim cover with gasket/barrier aligned correctly • BLOCK air path(s) with foam/tape. • INSTALL a new cap if missing.
• Rattle/vibration from exterior rear view mirror	• Mirror glass adjustment screws loose • Mirror mounting nuts loose • Aftermarket air deflector/stone shields • If equipped with power fold mirrors, power fold mirrors folded/unfolded manually or are not synchronized	• REMOVE mirror glass and TIGHTEN mirror glass adjustment motor screws. REFER to Section 501-09. • TIGHTEN mirror mounting nuts. REFER to Section 501-09. • If possible, REMOVE aftermarket air deflector/stone shield, then ROAD TEST vehicle. If concern is no longer present, ADVISE customer that aftermarket component was causing concern. • If equipped with power fold mirrors, SYNCHRONIZE power fold mirrors. REFER to Section 501-09.
• Draft/wind noise and water leak around perimeter of all fixed glass	• Gaps in the sealant bead • Air traveling up	• APPLY approved sealant. • INSTALL foam rope full

	windshield molding along A-pillar • Gaps in sealant bead of windshield/rear glass • Windshield/rear glass misaligned or not installed correctly • Rear hood seal at base of windshield misaligned/damaged • High-mounted stoplamp	length of the A-pillar. • RESEAL windshield/rear glass. REFER to Section 501-11. • REINSTALL windshield/rear glass. REFER to Section 501-11. • REALIGN or INSTALL a new seal as necessary • CHECK high-mounted stoplamp seal. REPAIR or INSTALL as necessary.
• Draft noise at cowl	• Cowl seal misaligned/damaged	• REALIGN or INSTALL a new seal as necessary.
• Draft/water leak or noise from roof opening panel	• Roof opening panel/components	• REFER to Section 501-17 for diagnosis.
• Wind noise created by airflow over or behind body panels	• Fender splash shield misaligned • Body panel misaligned (exposed edge) • Hood misaligned (front margin) • Front grille edge noise	• REALIGN fender splash shield. • REALIGN appropriate body panel. • CHECK hood gaps and fit. ADJUST hood as necessary. • APPLY foam in hollow areas behind louvers.
• Wind noise created by grille opening panel	• Grille relationship to leading edge on hood • Sharp edges due to material imperfections	• If possible, ADJUST grille opening panel forward to eliminate wind noise. • REMOVE sharp edges (no damage to visible surface).
• Wind noise from air extractor (body vent)	• Air extractor housing seated incorrectly • Air extractor housing or flaps damaged	• REINSTALL air extractor housing. • INSTALL a new air extractor.
• Wind noise from bug shield/exterior windshield sun visor	• Turbulence created by location and shape	• Determine if an OEM part or aftermarket. If aftermarket advise customer accordingly. If OEM, verify correctly installed. If noise is abnormal repair or replace as required.
• NOTE: The sliding back glass is a "wet" system. Water is allowed to come into	• Sliding back glass drain holes are clogged	• REMOVE any foreign material from the sliding back glass drain holes.

the vehicle and collect at the bottom of the assembly in the lower rail, as long as it drains out in a timely fashion and does not overflow. Water collecting in the sliding back glass lower channel		
• Rattle from tailgate	• Loose tailgate latch • Loose or worn tailgate assist handle • Loose or worn tailgate step • Loose or broken tailgate lift assist torsion rod • Loose or worn tailgate latch striker sleeve	• If possible. ADJUST the tailgate latch. TIGHTEN the tailgate latch bolts. REFER to Section 501-14. • TIGHTEN or REPLACE the tailgate assist handle. REFER to Section 501-04. • ADJUST or REPLACE the tailgate step. REFER to Section 501-04. • RESEAL or REPLACE the tailgate lift assist torsion rod. REFER to Section 501-04. • TIGHTEN or REPLACE the tailgate striker.