

# Porsche Cayenne rocker panel sectioning change

Porsche has revised a sectioning procedure on the Cayenne SUV. For those who have the occasion to work on these vehicles, the change is worthy of note.

**U**p until recently, there was only one procedure to replace the Cayenne outer rocker panel, regardless of the extent of the damage. That procedure involved replacing the entire outer rocker panel (see Figure 1). Damage that was confined to the dogleg area of the C-pillar became a major operation that extended into the A- and B-pillars.

The new procedure adds two possible sectioning locations in the outer rocker panel, at either of the two shaded areas shown in Figure 2. This allows replacement of only small portions of the outer rocker panel. What does not change, is that no matter how much of the outer rocker panel is replaced, the replacement portion must be cut out of the front outer aperture shown in Figure 3. In addition to the complete outer rocker panel, the front aperture service part includes the entire outer A-pillar, B-pillar, and the front portion of the roof rail. The outer quarter panel, which makes up the rest of the side aperture, is also available as a service part.

The inner panels and reinforcements are available as separate parts (see Figure 4). This includes an ultra-high-strength steel (UHSS) tubular rocker panel reinforcement that spans the entire length of the aperture. This part cannot be sectioned, so if the damage extends to this inner structure the entire outer rocker panel would have to be replaced to access the reinforcement. The new sectioning instructions are significant, since before if an outer quarter panel required replacement for dogleg damage, or an outer/inner A- or B-pillar required replacement, the entire outer rocker panel had to be replaced as well.

The Cayenne SUV was introduced in 2003, and this procedure is applicable to every

existing version of the Cayenne, in every model year. (see Figure 5).

## Procedure Highlights

Most of the outer rocker panel partial replacement procedure uses traditional collision repair processes, drilling out spot welds and separating the damaged outer panel, without damaging the reinforcements. There are some steps in the procedure worth noting.

All of the sectioning joints are open butt joints, and Porsche recommends the cut-and-join method to make the matching cut lines. The method is never called cut-and-join in the service information, but that is the procedure shown. The replacement part is first cut to leave a 50 mm (2 in) overlap at each joint location. The cut is then made across both the replacement and existing outer panel at the same time at the joint line. A root gap, about the width of the saw blade, is recommended.

The flanges are spot welded, though there are some GMA (MIG) plug welds in areas where the spot welder electrode tips do not reach. Weld bonding, or the combination of spot welds and adhesive, is used on the wheelhouse flange and is a required part of the repairs. The required adhesive is Teromix 6700, available from Porsche.

There are foam inserts in the pillars and wheelhouse areas, used for sound-deadening purposes, which must be replaced during the repair. This is usually done with cartridge foam or foam blocks. With Porsche, the replacement foam inserts are the same part that is installed during the original build (see Figure 6), although the installation of the inserts is different. The parts catalog calls these inserts "sound absorbers." The inserts are mostly flat profiles, usually plastic, with a

small strip of expandable foam around the outer perimeter. During vehicle assembly, the foam expands when the body shell is in the bake oven, locking the inserts in place. During replacement, there isn't enough heat buildup, even when baking in a spraybooth, to expand the foam. So butyl tape and a heavy body seam sealer take the place of the expanding foam. A strip of butyl tape is applied to the edge of the insert, which is pressed into position. The heavy body seam sealer is applied along the remaining edge to seal the insert into position between the panels.

## Cayenne Construction

The Cayenne body is a study in advanced high-strength steels (see Figure 7). The body is primarily high-strength steel, though the outer quarter panel and rear floor pan are mild steel and the hood and door window frames are aluminum. UHSS is used on the tubular reinforcement in the rocker panels, upper A-pillar reinforcements, inner B-pillar reinforcements, door intrusion beams, a floor pan crossmember between the B-pillars, and the floor pan tunnel. The UHSS inner B-pillar reinforcements and the upper A-pillar reinforcements are transformation induced plasticity (TRIP) 700 steel. The complete lower rails and rocker panel reinforcement tubes are dual-phase (DP) 600 steel. Tailored blanks are used on the outer front and rear rails, roof rails, and the door shells to vary the strength of the steels within the same part. Porsche uses boron-alloyed steel on several vehicles, especially on the door intrusion beams, though there is none on the Cayenne.

All photos and illustrations courtesy of Porsche Cars North America.



Figure 1 - Before earlier in March, the only procedure in the service information for replacing the outer rocker panel was the entire outer rocker panel.



Figure 2 - The outer rocker panel may be sectioned in either of these two shaded areas.



Figure 3 - This is the service part that the outer rocker panel must be cut from, no matter which procedure is used.

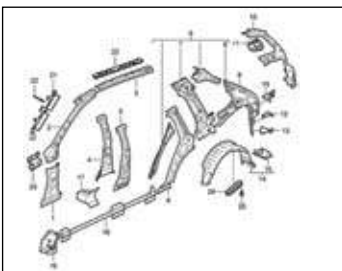


Figure 5 - This is the 2008 Porsche Cayenne SUV.



Figure 4 -Inner panels and reinforcements are available separately.

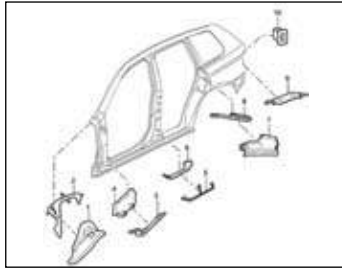


Figure 6 - These inserts are the same part as used during the original build.



Figure 7 - Advanced high-strength steel is used throughout the Cayenne body.

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