

© D. Jensen 2006	<b>REPLACEMENT OF TRANSMISSION EXTENSION-CASE GASKET AND OUTPUT-SHAFT SEAL ON '95 XJ6</b>	V. 1.0 June 2006
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*The Fine Print: The following is a summary of my experience replacing the transmission extension-case gasket and output-flange seal on my California-based '95 XJ6, VIN 750537, with 100,025 miles. Some of the steps described may not be applicable to your X300 due to its year of manufacture or other details. In addition, I have worked on cars for many years so I have a reasonable understanding of their operation and safety issues that must be addressed. I accept no responsibility or liability for potential misstatements in neither this write-up nor the manner in which the write-up is used. Please follow all normal safety precautions when performing this work.*

The transmission extension-case gasket and/or output-flange seal on my '95 XJ6 began to leak at about 98,000 miles, to the point that fluid was visible on the garage floor. I replaced the gasket and seal since Jaguar recommends both be changed at the same time and there is very little difference in the amount of work versus replacing only the output-flange seal. In fact, in my case, I think more fluid was leaking via the gasket than the seal. Before starting, I reviewed the JDHT CD for the X300 and the Jag-lovers archives. I found useful information from each source, but did not find specific details for a number of steps for the '95 model year. Following are the steps I used.

1. Purchase the required replacement parts: JLM 699, tab washer, \$2.90; JLM 10723, output-flange seal, \$19.87; and JLM 698, extension-case gasket, \$3.25 (see Fig. 1).



Fig. 1 Replacement parts

2. Raise the car with a floor jack (or a hoist if you are lucky enough to have one, which I don't) starting at the front, installing tall jack stands under the lower-control-arm front pivots, and then raise the rear and installing jack stands near the axles. It is not

necessary to go extremely high to perform this work, but higher is better. Spray rust remover on the exhaust clamps and joints at the front and rear of the rear catalyst.

3. Drain transmission. I'm not sure this step was necessary, but it was easy to do and avoided any potential leakage of fluid that might be above the level of the extension-case lower lip.
4. Remove Rear Catalyst
  - a. Remove rear-muffler supports from both hangers using a 13-mm open-end wrench (see Fig. 2). Removing the brackets allowed more twisting and turning of the rear-catalyst outlet pipes during their removal, which was needed since the pipes had not been removed since the car was manufactured.

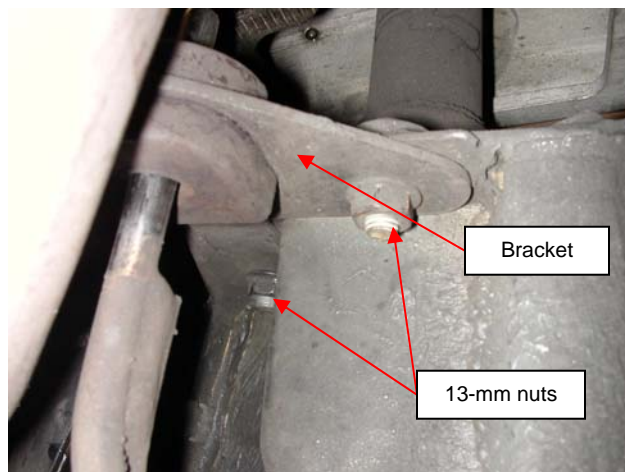


Fig. 2 Tail pipe support bracket (left side)

Loosen the lap-joint exhaust clamp (e.g., Torca TorcTite) securing the rear-catalyst inlet pipe to the front-catalysts down pipe using a 15-mm wrench (see Fig. 3).

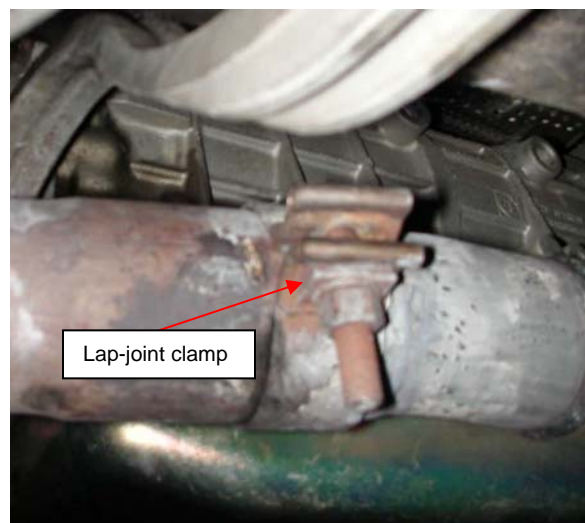


Fig. 3 Clamp between front and rear catalyysts

- b. Loosen both clamps securing the catalyst outlet pipes to the front mufflers using a 15-mm wrench (see Figs. 4 and 5). [Note: several of the photos were taken after the job was complete. The abundant use of anti-seize lubricant is thus evident on most fittings.]

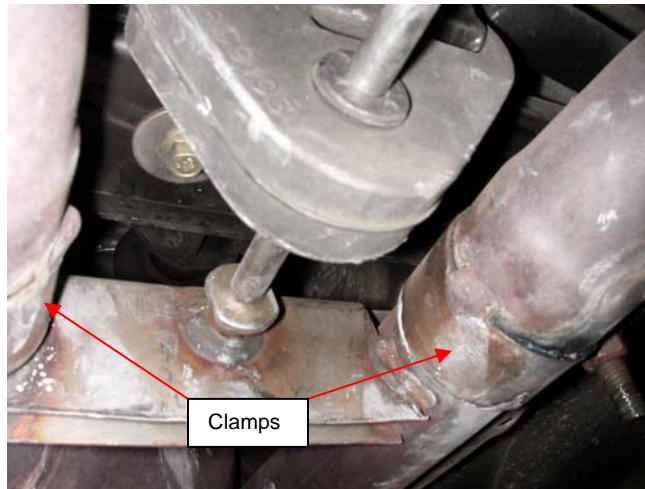


Fig. 4 Upward view of rear-catalyst outlet pipes and clamps



Fig. 5 Side view of rear-catalyst outlet pipes and clamps

- c. Push the rear catalyst forward while twisting the exhaust pipes and pushing them rearward. It took me about 10 minutes, but things came loose following intermittent sprays of rust remover.
- d. Examine the rear catalyst for damage and set it aside. Mine still looked good. I had replaced the front one earlier in the year so I knew it was good.

5. Remove the transmission support bracket and shift/electrical cables
  - a. Locate the floor jack under the transmission bell housing and lift the transmission and motor slightly to take the weight off of the support bracket and transmission mount.
  - b. Photograph and mark the location of the transmission support bracket as it attaches to the frame. This is necessary to ensure that the bracket does not contact the transmission housing during reinstallation, leading to very loud gear and engine noises and elevated blood pressure (guess how I found out). Remove the four star-headed (Torx) bolts securing the mounting bracket to the body using a T40 driver. The bracket will then be free to swing about from the center bolt holding it to the transmission mount (see Fig. 6).

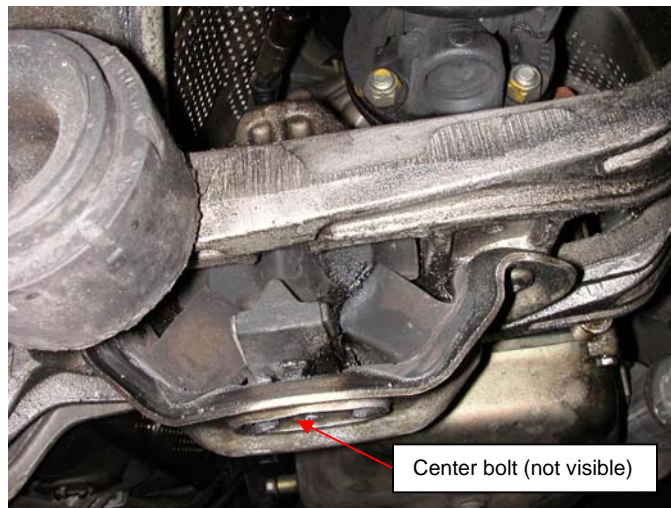


Fig. 6 Transmission support bracket

- c. Remove the transmission bracket and rubber mount as a unit by removing the bolt in the center of the bracket/mount using a T50 driver. Place the bracket/mount aside (see Fig. 7)



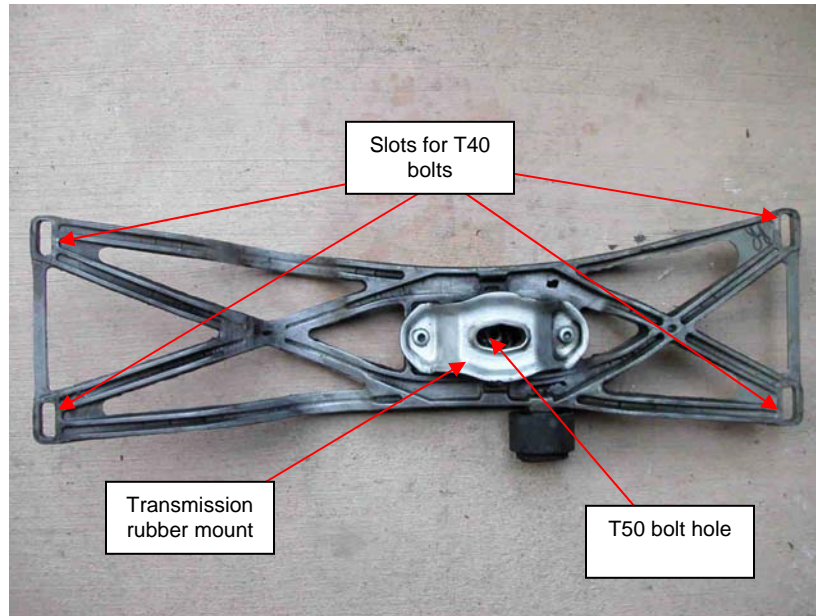


Fig. 7 Bottom view of transmission support bracket

6. Disconnect the prop shaft
  - a. Mark the radial location of the transmission output-shaft flange and the prop-shaft flange using a center punch (see Fig. 8).

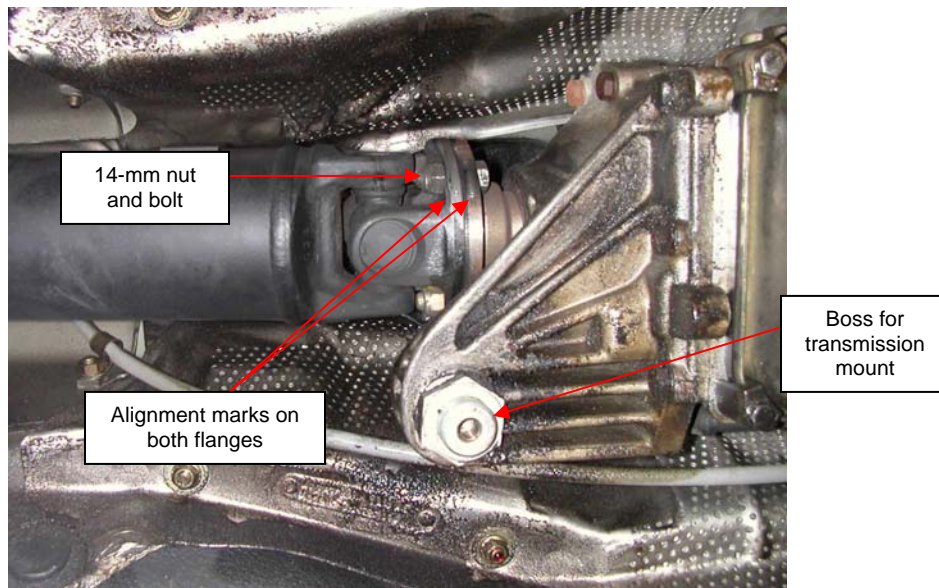


Fig. 8 Connection of prop-shaft flange to output flange

- b. Remove the four 14-mm nuts and bolts securing the prop shaft to the output flange and allow the prop shaft to rest at its low point. All four of the bolts on my car were loose, allowing for some free play between the two flanges.

7. Remove the output flange

- a. Pry the tab washer, used to lock the output-flange nut, from the flange using a screwdriver (see Fig. 9).

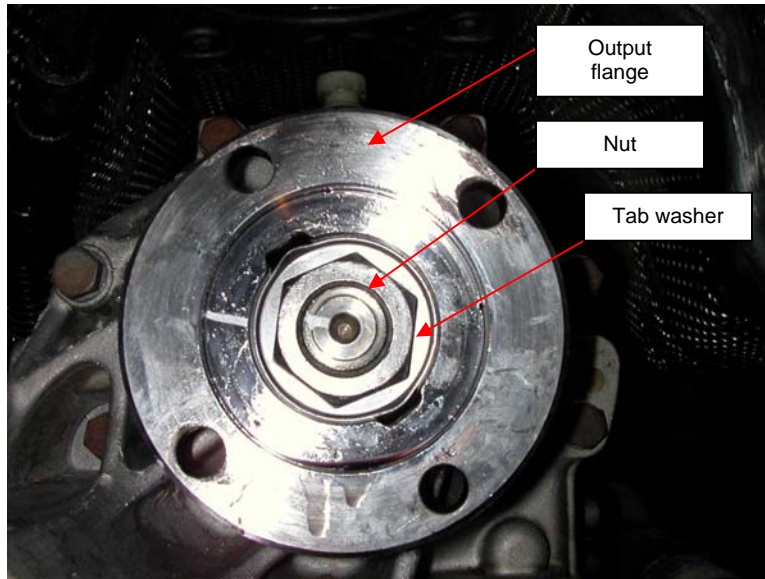


Fig. 9 Output flange nut and tab washer

- b. Place a normal 30-mm socket on the nut (I think the walls of an impact socket may be too thick to fit in the gap between the nut and flange i.d. wall, but I did not verify this) (see Fig. 10) and position a bolt slipped through one of the flange bolt

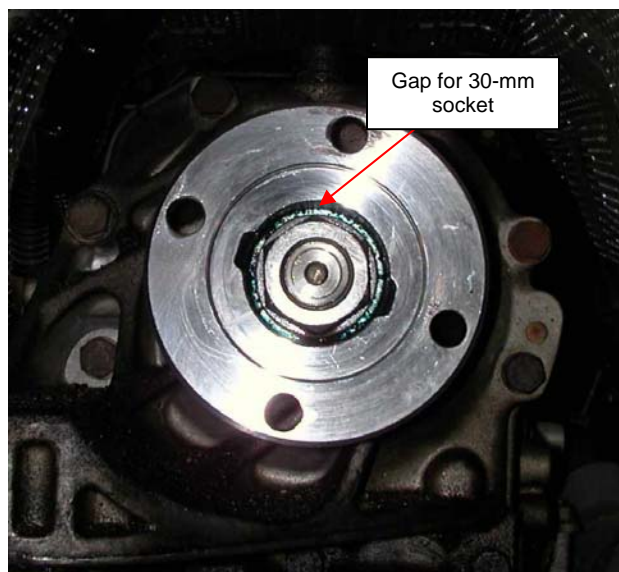


Fig. 10 Output flange with tab washer removed

holes to keep the flange from rotating. Remove the retaining nut. The nut on my car was not much more than finger tight.

- c. Pull the flange from the transmission output shaft. Mine came off very easily by hand.
8. Remove the extension case
    - a. Remove the 8-mm bolt securing the transmission shift and electrical cables to the extension case after noting the location of the two cables (see Fig. 11).

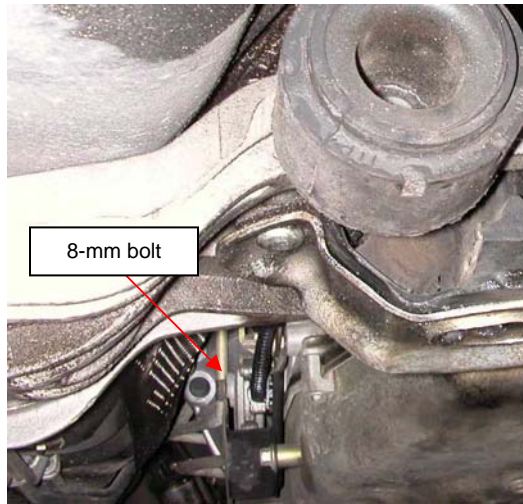


Fig. 11 Location of shifter cable and electrical connections

- b. Remove the nine 13-mm bolts holding the extension case to the transmission housing (see Fig. 12).

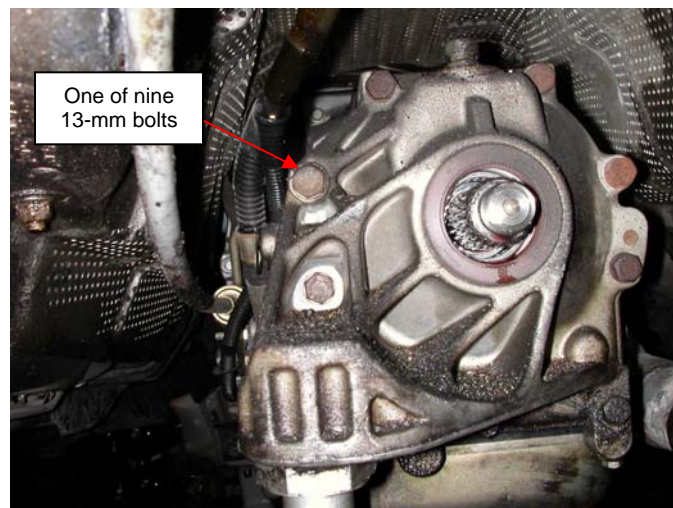


Fig. 12 Bolts holding extension case to transmission housing

9. Replace output shaft seal
  - a. Remove the old gasket material from the transmission and output housing. Mine came off easily with a painter's putty knife (Fig. 13). No gasket sealer was used.



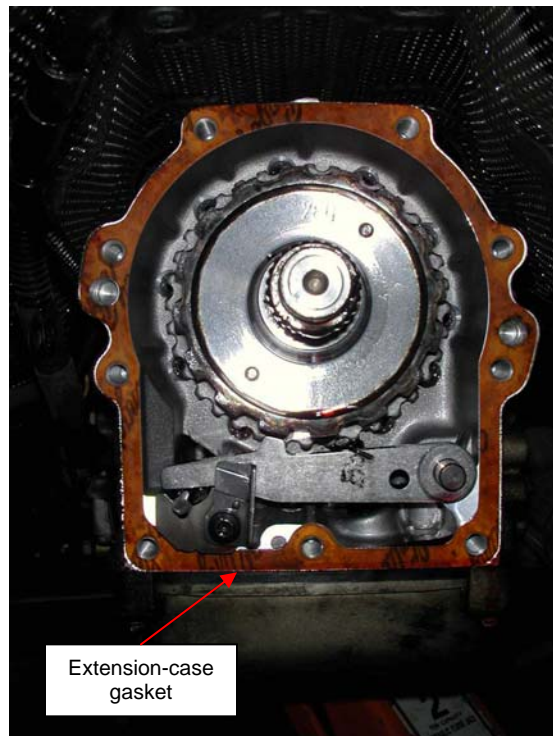


Fig. 13 Extension case gasket

- b. Pry the old seal out (see Fig. 14) using a screwdriver or small pry bar. Tap new one in place using an appropriately sized socket.

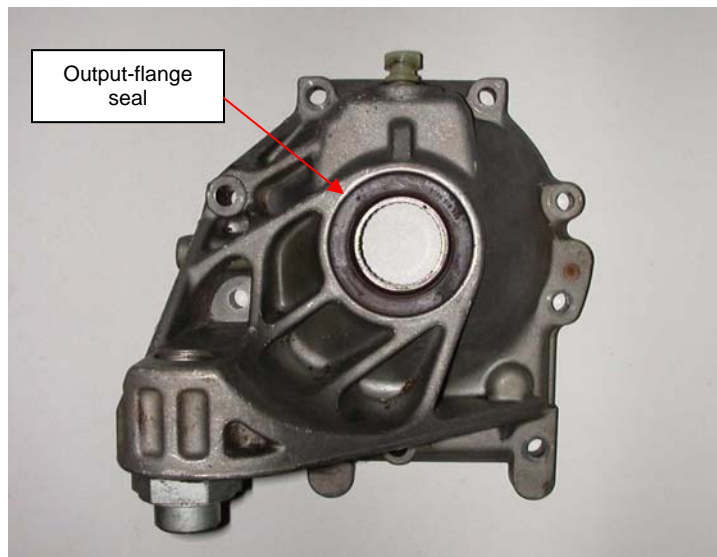


Fig. 14 External view of extension case showing flange seal



Figure 15 shows the inner view of the extension case.



Fig. 15 Internal view of extension case

## 10. Reassemble components

- a. As the Jag manuals say, "Assembly is the reverse of removal". In this case, it's true. Note that when the output-shaft-nut tab washer is pressed into place over the nut, it naturally "buckles" to fit into the slots in the output flange. No special bending or tapping is required.
- b. I could not find the recommended torque for the output-housing bolts so I torqued to ~30 ft-lb.
- c. As noted earlier, I used lots of anti-seize lubricant on the exhaust flanges, nuts and bolts to ease their removal at a later date if required.