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ENGINE

CRANKSHAFT PULLEY [G222789]

IN-VEHICLE REPAIR

12.21.09	CRANKSHAFT DAMPER - RENEW	ALL DERIVATIVES	0.80	USED WITHINS	

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SPECIAL TOOL(S)

18G 1437

Crankshaft locking, main tool

18G 1437-2

Adaptor

JD 234

Crankshaft front seal remover

JD 235

Crankshaft front seal replacer

303-588

Crankshaft pulley/damper remover

REMOVAL

1. Open the engine compartment and fit paintwork protection sheets.

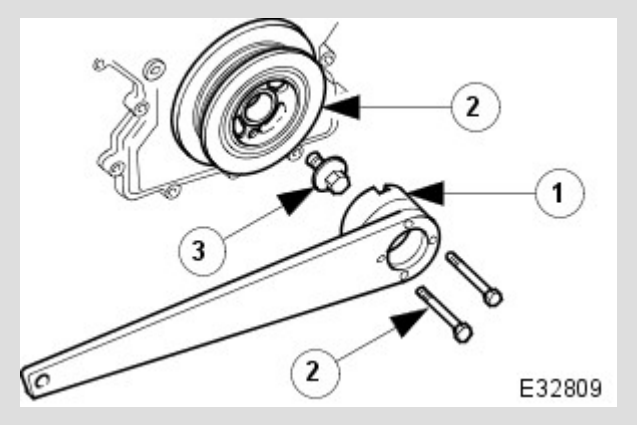
2. Set the bonnet to the service access position.

3. Remove the drive belt from the front accessory drive. Refer to Operation 12.10.40.

4. Remove the twin fan and motor assembly for access. Refer to Operation 26.25.12

5. **CAUTION:**

   Under no circumstances should the crankshaft setting peg JD-216 be used in the following operations, to lock the crankshaft.



Fit the crankshaft locking tool to the damper.

1. Fit adaptor 18G1437-2 to the main locking tool 18G 1437.

2. Reposition the crankshaft/damper to align the mounting holes and fit the locking tool to the damper using the bolts provided with the tool.

3. **NOTE:**

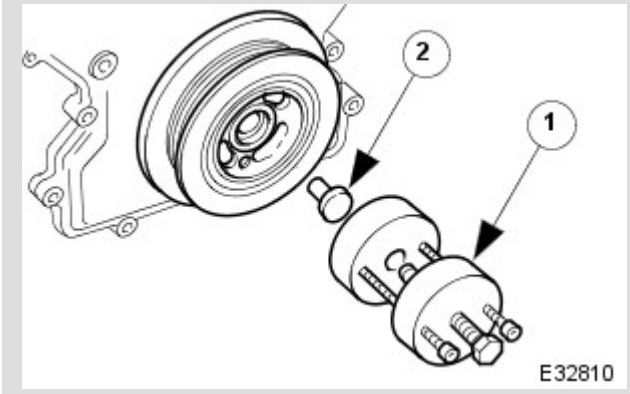
   If extra locking of the crankshaft is required, use a lever against one torque converter boss. Remove the plastic mesh cover from the torque converter housing for access.

   Loosen, but do not remove the damper securing bolt from the crankshaft.

6. Remove the locking tool from the damper.

   Remove the damper securing bolt.

7.



Remove the damper from the crankshaft.

1. Transfer the adaptor 18G 1437-2 from the crankshaft locking tool to the damper extractor tool 303 - 588 (it is not secured to this puller by the bolts).
2. Locate the thrust button into the end of the crankshaft; the O-ring holds it in place.

Assemble the puller to the damper.

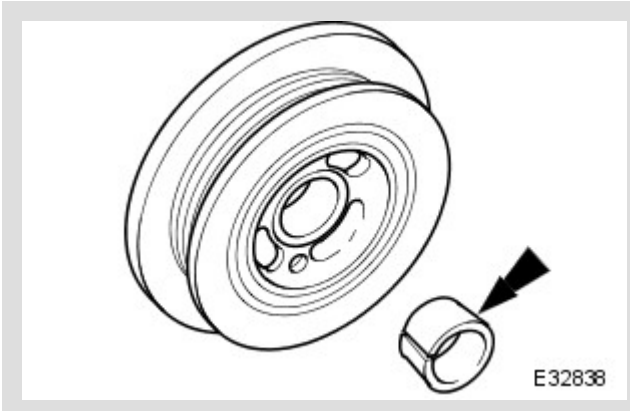
> **NOTE:**
>
> If extra locking of the crankshaft is required, use a lever against one torque converter boss.
> Remove the plastic mesh cover from the torque converter housing for access.

Extract the damper from the crankshaft.

8. Remove the puller components from the damper.

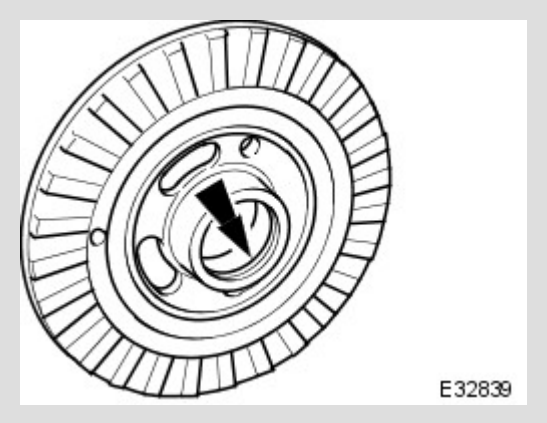
Remove the thrust button from the end of the crankshaft.

9.



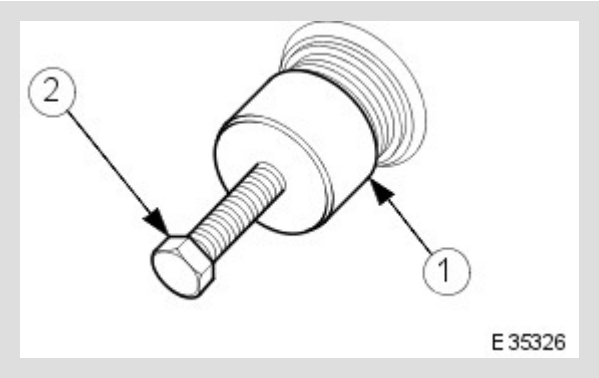
Where fitted, remove the split locking ring from the damper.

10.



On dampers which use the split locking ring, remove the internal O-ring seal.

11.



Remove the crankshaft front seal.

1. Fit and tighten the removal tool JD-234 to the crankshaft front seal.
2. Tighten the centre bolt of the tool to extract the seal.

   Remove the tool and seal assembly.

   Separate the seal from the tool.

12. Very carefully clean the threads of the crankshaft, using a plug tap M16x2, to remove all old cured sealant.

    Keep the tap horizontal. Do not enlarge the crankshaft thread - remove sealant only.

13. Wrap a clean piece of cloth around the front seal area to prevent the ingress of old sealant.

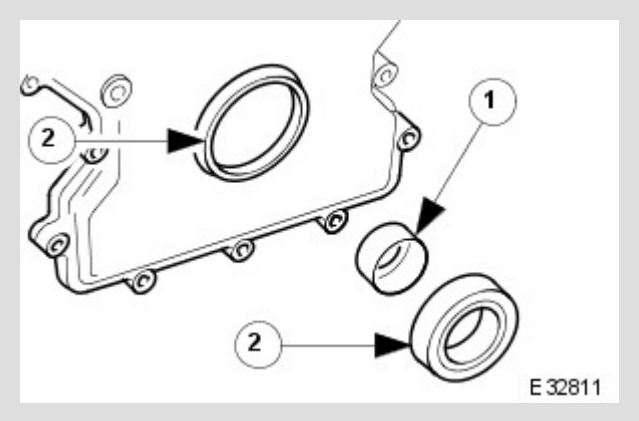
    Use a soft scraper and compressed air to remove old sealant from the crankshaft.

    Remove the cloth.

14. Clean all relevant parts and faces.

INSTALLATION

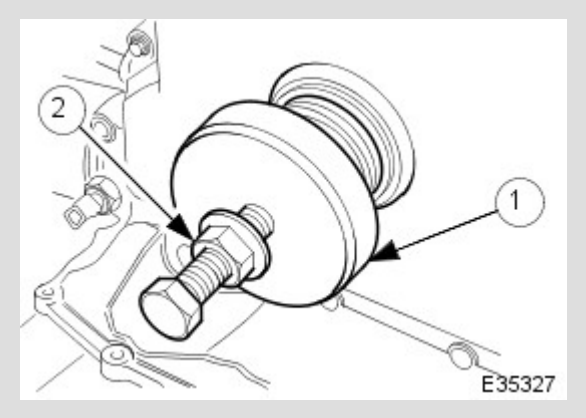
1.



Locate the new oil seal into the timing cover.

1. Remove the transit ring from the oil seal.
2. Position the seal to the timing cover.

2.



Fit the new oil seal to the timing cover.

1. Fit oil seal replacer tool JD-235 to the oil seal.
2. Use the nut and bolt provided with the tool, to fully seat the seal to the timing cover. Only tighten the nut sufficiently to locate the seal and no more, or the seal could become distorted.

   Allow the tool to stay in position against the seal for at least five seconds.

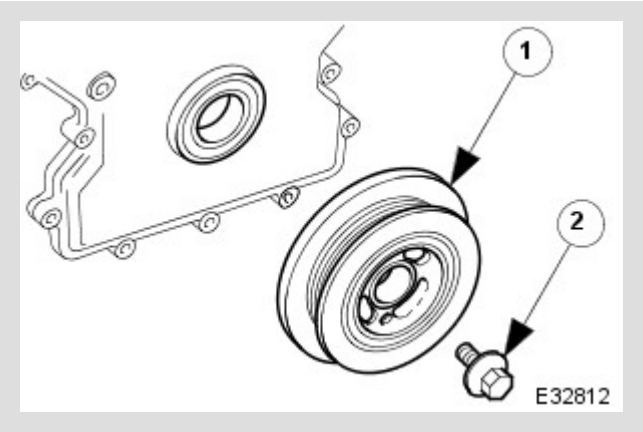
   Remove the special tool from the seal.

3. If the damper is not to be fitted immediately, the transit ring should be refitted temporarily to the seal.

4. The following instructions (until stated otherwise) refer to fitting a damper which DOES NOT utilise a spit locking ring.

5. Apply a thin, even coating of Loctite 648 to the damper bore. Do not apply it to the end faces or to the crankshaft.

6.



Fit the crankshaft damper.

1. Fit the damper onto the crankshaft.

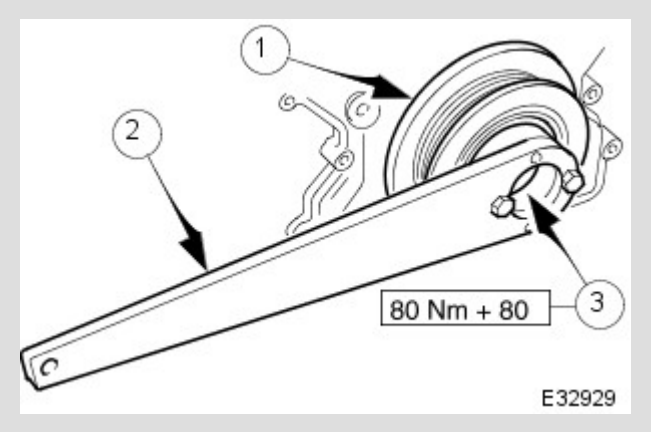
   Wipe off any Loctite which has squeezed out from the front of the damper.

2. Fit, but do not tighten, a new damper securing bolt. It must be fully tightened within seven minutes of the Loctite being applied.

7.

CAUTION:

Under no circumstances should the crankshaft setting peg JD-216 be used in the following operations, to lock the crankshaft.



Tighten the damper securing bolt.

1. Reposition the damper to allow access to the bolt holes for fitting the locking tool.

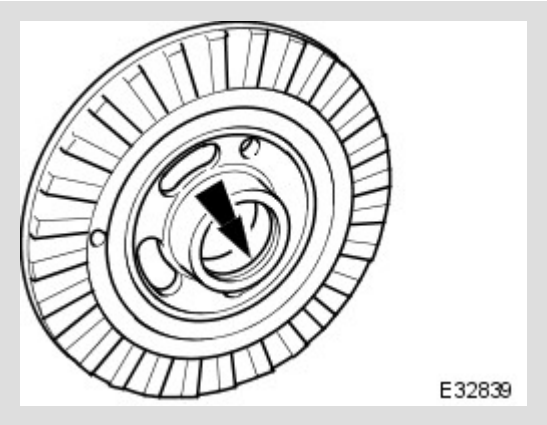
2. Fit the locking tool to the damper using the bolts provided.

3. Fully tighten the damper securing bolt to the threshold torque value of 80 Nm, then tighten a further 80°.

   A suitable angle gauge is Snap On TA-360.

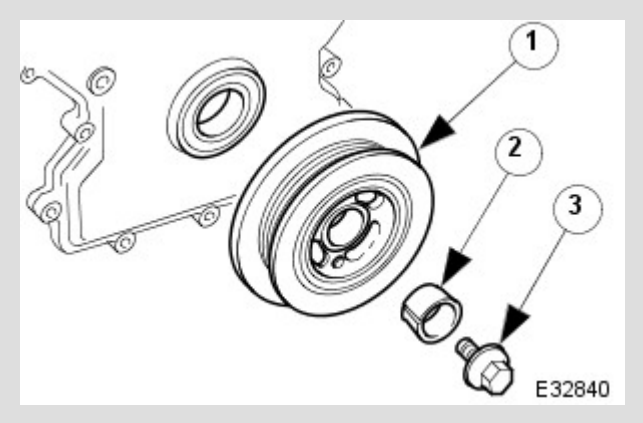
8. The following instructions (until stated otherwise) refer to fitting a damper which utilises a spit locking ring.

9.



Fit a new O-ring seal to the damper.

10.



Fit the crankshaft damper.

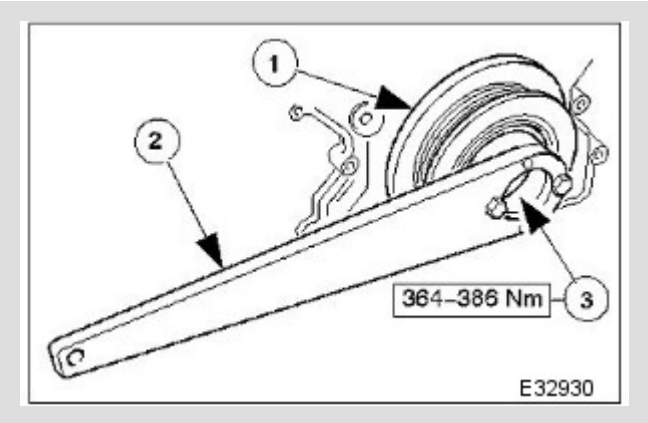
Apply petroleum jelly to the damper bore and O-ring seal.

1. Fit the damper onto the crankshaft.
2. Fit the split locking ring onto the crankshaft, inside the centre bore of the damper.
3. Fit, but do not tighten, a new damper securing bolt.

11.

CAUTION:

Under no circumstances should the crankshaft setting peg JD-216 be used in the following operations, to lock the crankshaft.



Tighten the damper securing bolt.

1. Reposition the damper to allow access to the bolt holes for fitting the locking tool.
2. Fit the locking tool to the damper using the bolts provided.
3. Fully tighten the damper securing bolt to 364 - 386 Nm.

12. The instructions which follow are relevant to both conditions of damper.

13. Remove the locking tool from the damper.

14. Refit the drive belt to the front accessory drive. Refer to Section 303-05.

15. Refit the twin fan and motor assembly. Refer to Section 303-03.

16. Refit the plastic mesh cover to the torque converter housing; if removed for access to lock the crankshaft.

17. Reset the bonnet to the normal position and connect the gas struts.

18. Remove the paintwork protection sheets and close the engine compartment.

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