

TECHNICAL BULLETIN



Rattle After Start – Upper Timing Chain – Install Revised Tensioner

12-61

MODEL All AJ6

DATE 5/96

AJ16 up to engine no. given below

ISSUE:

Some vehicles with AJ6 or AJ16 engines may exhibit engine noise immediately after a cold or hot start. This noise has been identified as relaxation of the upper (secondary) timing chain tensioner resulting in temporary chain slack.

A non-return valve in the tensioner is designed to trap pressurized engine oil to maintain tension on the timing chain to prevent rattling. If the oil bleeds past the piston in the tensioner, the tension on the upper timing chain is temporarily lost. When the engine is then started, the chain will rattle until oil pressure builds up and recharges the tensioner (at which point the rattle will stop.)

A revised tensioner with an integral oil reservoir has been introduced to overcome this condition starting with the following engine numbers:

4.0L NA 9J160552

4.0L SC 9K160558

ACTION:

In case of a customer complaint of engine rattle immediately after start on vehicles with AJ6 or AJ16 engines, determine if the rattle comes from the upper (secondary) timing chain. If the upper timing chain is verified as the source of the rattle, replace the upper timing chain tensioner with the revised tensioner as described below.

REPLACING UPPER (SECONDARY) TIMING CHAIN TENSIONER

1. Remove the fuel pump relay and run the engine at idle to depressurize the fuel system.
2. Remove the longer bolt (Illustration 1), remove the valve clamp and remove the valve.

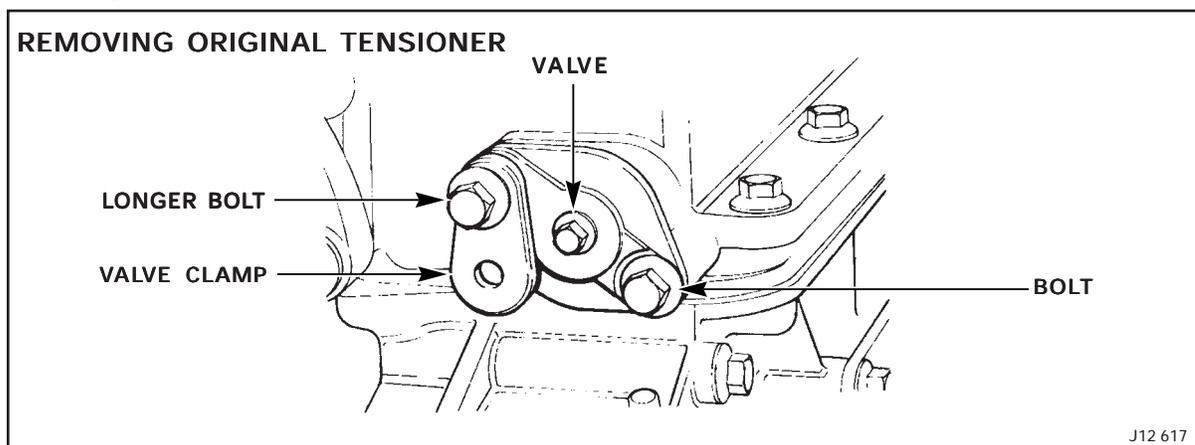


ILLUSTRATION 1

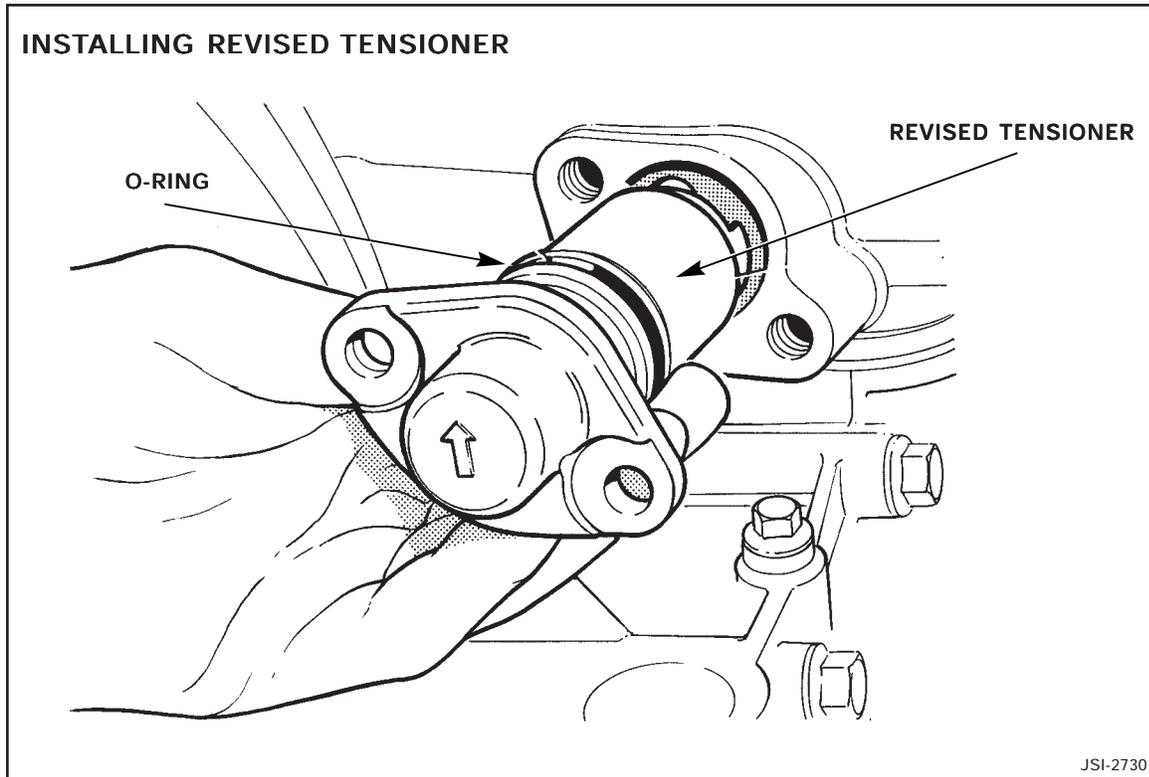


ILLUSTRATION 2

3. Use a 3 mm Allen wrench to wind back the tensioner (clockwise) until the snail engages in the park position.
4. Remove the tensioner housing securing bolt and withdraw the tensioner assembly.

NOTE: The longer bolt and the valve clamp can be discarded since they are not required with the revised tensioner.

5. Place the O-ring on the revised tensioner (Illustration 2) and lubricate it with engine oil.
6. Check that the mechanical tensioner within the piston is fully retracted (fully closed position.)
7. Install the tensioner assembly with a new gasket on the engine. Ensure that the arrow is pointing up and that the slotted head of the piston is aligned with the tensioner blade. (The bolt listed in the part information replaces the longer bolt previously discarded.) Torque the bolts to 16.2 - 20.7 lb. ft. (22 - 28 Nm.)

8. Use the starter to turn the engine - the movement of the chain against the tensioner blade and piston will release the mechanical tensioner.

NOTE: The revised tensioner does not have an external access point for retracting the mechanical tensioner. If the revised tensioner has to be removed from the engine, the camshaft cover must first be removed to allow access to the tensioner piston and blade to ensure that the piston is withdrawn with the tensioner body.

9. Reinstall the fuel pump relay and start the engine to repressurize the fuel system.
10. Verify that the chain rattle is no longer present on hot or cold restarts.

PARTS INFORMATION:

| <u>DESCRIPTION</u> | <u>PART NUMBER</u> | <u>QTY</u> |
|--------------------------------------|--------------------|------------|
| Upper (secondary) tensioner assembly | NBC 2031AA | 1 |
| O-ring | EAC 4540 | 1 |
| Housing gasket | EAC 4557 | 1 |
| Bolt | FS 108251/J | 1 |

WARRANTY INFORMATION:

| <u>FAULT CODE</u> | <u>R.O. NUMBER</u> | <u>DESCRIPTION</u> | <u>TIME ALLOWANCE</u> |
|-------------------|--------------------|--|-----------------------|
| AN DH BJ | 12.65.29 | Remove & install tensioner - Sedan Range | 0.40 hrs. |
| AN DH BJ | 12.65.29 | Remove & install tensioner - XJS | 0.60 hrs. |
| | 10.10.10 | Drive in/drive out | 0.15 hrs. |