

Alternator Belt Tensioner on a Citroen XM 2.5TD

The tensioner consists of a bearing trapped between two mating flanges which are riveted together to form the flat pulley on which the belt runs. The angled bracket extends from the centre part of the bearing up to the adjustment bolt.



Photo1

After having drilled out the rivets the two halves of the pulley split apart.

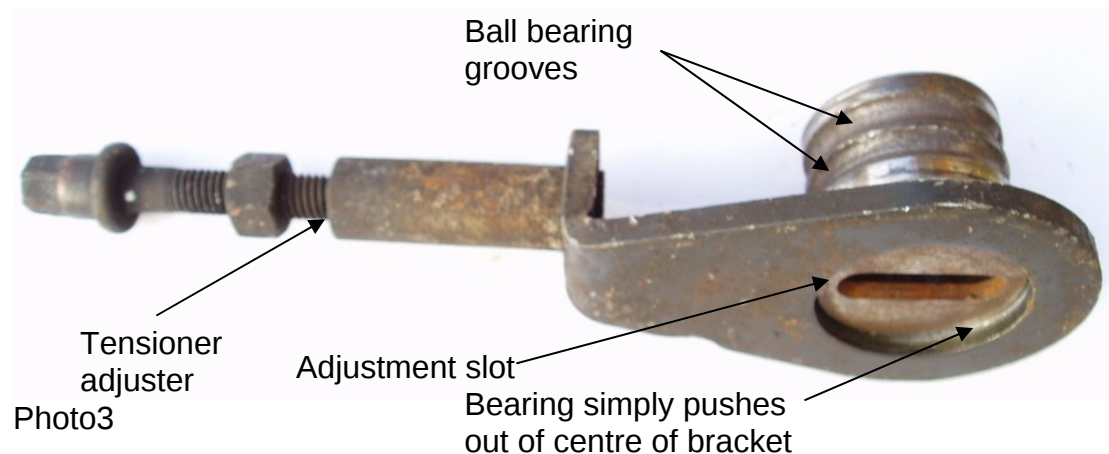


Photo2

Rivet Holes

Location of bearing

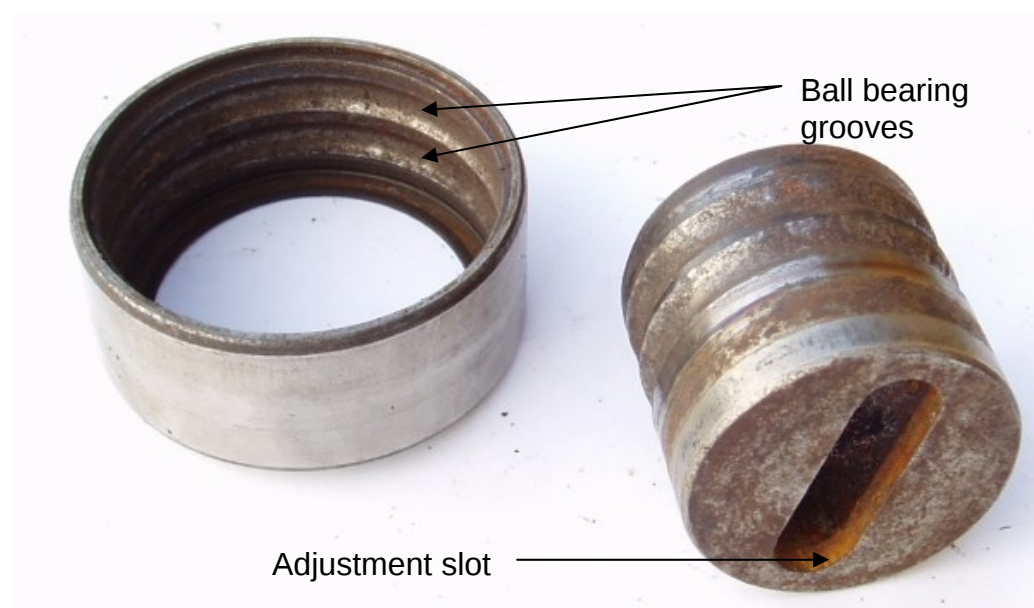
This leaves the outer race and the ball bearings still assembled onto the centre shaft.



Presumably, when the bearing is assembled in the factory, the balls are entered one at a time with the inner and outer races at an angle to each other. The balls being closer together take up less room and therefore allow the races to move away from the parallel position to allow entry of all the balls. Once the correct number of balls is entered into the groove the cage can be fitted. The cage spaces out the balls evenly. There's now no slack space which forces the two races to become parallel. Lastly the oil seals are fitted to keep the lubricant inside the bearing.

Inner and Outer races

You can see that the outer race is a more normal race for a double row ball bearing. The inner race however is a shaft with the two grooves for the balls machined into the surface. Both races will be heat treated for hardness.



As you can see the lubrication was lost and the bearing overheated. The cage which keeps the balls in position was either worn away or melted or a combination of both. Once the cage is gone the balls all move to one end and the inner and outer races are no longer parallel. This starts a catalogue of faults due to the misalignment.

Repair/Replacement

The original manufacturer of the bearing/tensioner assembly is INA. They can be found here:

<http://www.ina.co.uk/>

The original INA part number is BSRS F-121722. However you can't just buy the bearing part of the tensioner. You have to buy the whole thing. If you find out differently please inform me here:

<http://club-xm.com>

One INA agent in the UK is BRT Bearings. They can be found here:

<http://www.brt-bearings.com/1024x768/index.html>

BRT's part number for the INA tensioner is PBT8522. I paid 24.29GBP in April 2005 for the part. I ordered the part and received it the following day.