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Technical Bulletin

PowerGrip® belt/kit installation on Ford Puma 1.7

GATES REFERENCE :	5433XS/K035433XS/T43167
MAKE :	FORD
MODEL :	Puma
ENGINE :	1.7 Petrol 16V
ENGINE CODE :	17HDEY



We would like to make you aware of a potential installation issue with the tensioner (Fig. 1) on the synchronous drive (Fig. 2) of this engine. Although this tensioner is automatic, it is not an eccentric tensioner, and it needs a precise setup procedure, which is different to the one known for a common pin loaded tensioner.



Fig. 1

Slotted hole

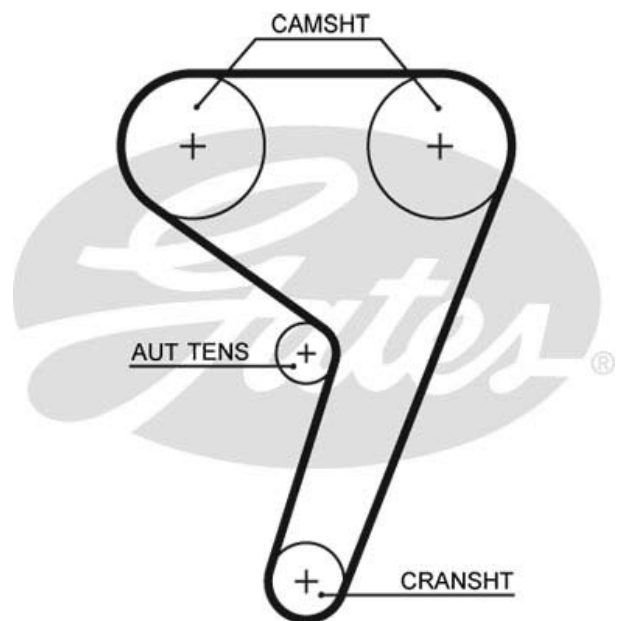


Fig. 2

Frequently made error

Some mechanics will install the tensioner, torque up the bolts and then pull the pin out.

In doing so, the spring of the tensioner cannot do its job properly. This is because the bottom tensioner bolt has been torqued before the setting pin has been partly drawn out. This way, the spring cannot push up the front plate to the correct position.

Evidence of this can be found with the bottom tensioner bolt sitting on the left hand side of the slotted hole (Fig. 3)





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Fig. 3

An incorrect front plate position will allow the engine, when switched off, to “kick back” and compress the spring too far, leading to very low belt tension, causing tooth jump and/or belt damage.

Procedure

- engine has to be cold and at TDC position
- insert crankshaft pin and camshaft setting bar (use Gates tool kit GAT4404C)



- loosen camshaft sprocket bolts while holding camshafts in place with open spanner. Loosen sprockets from tapers
- move the tensioner out of the belt (12 mm open spanner) till a 5 mm pin can be inserted up to the back plate (Fig. 4)
- remove bottom bolt
- remove belt retainer (at right hand side of the crankshaft sprocket)
- remove belt and tensioner
- install new tensioner (torque top bolt only, leave bottom bolt loose)
- install new belt





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- install belt retainer (9 Nm)
- withdraw tensioner pin 2-3 mm (free from back plate) (Fig. 5)
- spring pushes pulley into belt and moves front plate, leaving the bottom bolt towards the right of the slotted hole (Fig. 6)
- tighten bottom tensioner bolt (20 Nm)
- withdraw pin completely
- install crankshaft pulley (use Gates tool GAT4629, Ford OE tool 303-510 or 21-214)
- install new crankshaft pulley bolt (40 Nm + 90°) (Critical!)
- ensure engine is still at TDC
- tighten camshaft sprocket bolts (exhaust (left) 60 Nm, inlet (right) 105 Nm), while holding the camshafts in place with open spanner
- remove locking tools
- turn engine 2 revolutions, check it is at TDC and pin and camshaft setting bar can be inserted

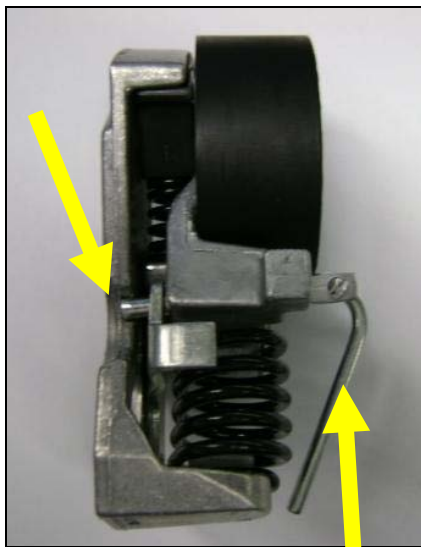


Fig. 4

Tensioner pin

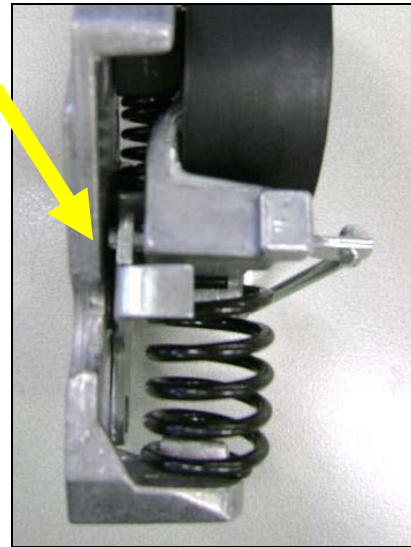


Fig. 5



Fig. 6

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