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## Renew Timing Belt

By Andy Gaze



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Ensure engine is cold.

Disconnect Battery, (you can leave it on if you are brave. I did)

Loosen drivers wheel. Jack up car and place axle stand in, remove jack for later use and remove wheel

Take off bottom cover



Remove air filter assembly and alternator belt

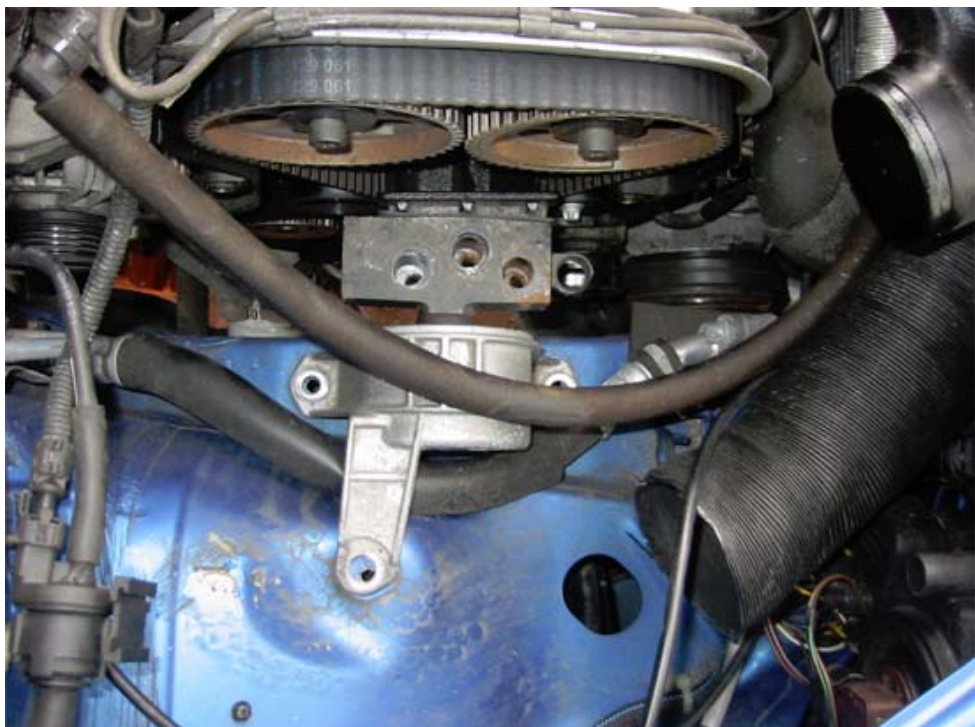




Remove bottom pulley.

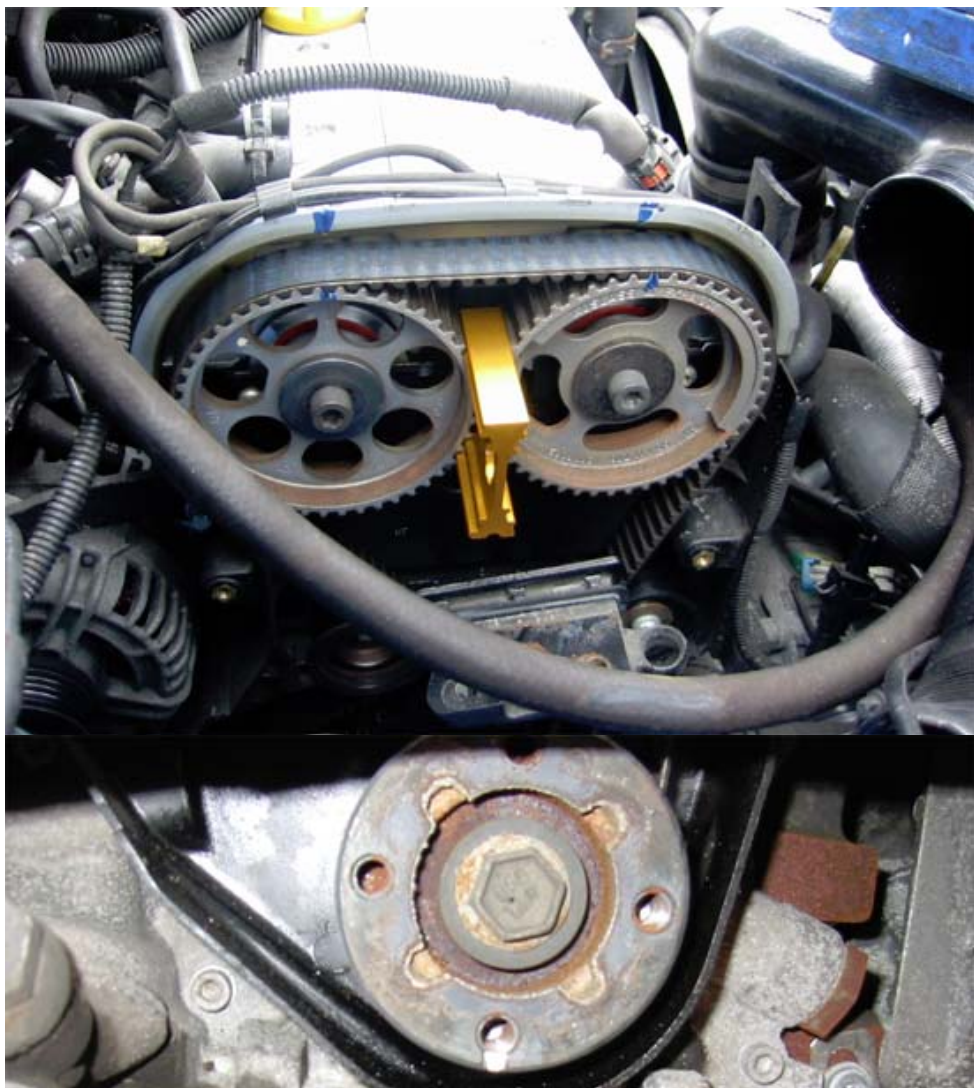


Remove cam covers top slides upwards don't break the clips on it. Place a piece of wood on the jack and place under the sump, take the load of the engine. Remove engine mounting





Check existing timing marks and record them - Engine on Top Dead Centre TDC. To do this turn the bottom pulley clockwise NEVER EVER TURN THE PULLEY ACW IF YOU GO TOO FAR GO ROUND CW ANOTHER TWO TURNS TILL YOU GET IT RIGHT/ The timing marks are a depression in the bottom pulley (shown with white paint on at 6 o'clock) which lines up with a notch on the oil pump housing. The cam pulleys have notches in (painted in arden blue on the pic at 12 o'clock) and notches in the housing behind. If the cam pulleys are 180 deg out turn the crank one whole revolution. Insert the cam locking tool (not absolutely necessary you can do it without it is just a little easier with the tool. £8.48 from all Camberley auto factors)





Slacken tensioner turn the adjuster clockwise to slacken, remove old belt.  
Check for oil & water leaks, repair as necessary.

Ensure crankshaft has not moved if so gently reposition.  
Check the two idler pulleys for looseness and see if they spin freely. They should be tight with no play and if they spin freely and make a whirring noise change them. Mine were tight and would not spin freely they had a slight tension in them (perfect)

It is maybe an idea to renew the water-pump whilst doing this operation, if the pump starts to fail you may need to replace the belt and pulleys again. Once pump is fitted top up coolant as necessary.

Put new belt on

Ensure crankshaft has not moved if so remove belt reposition and refit belt  
Turn tensioner until marks align - IMPORTANT always tighten the tensioner anticlockwise.



REMOVE camshaft locking tool

Turn engine 2 complete turns clockwise to TDC - if you go too far do not wind back anticlockwise, go on another 2 turns until you are at TDC. Check all timing marks line up.



Check tensioner reading. If incorrect adjust, then turn engine clockwise two turns, check again, if incorrect keep adjusting and returning till it is correct.

Tip: Use a long bar and extension bars to turn the crank, it's easier and more accurate this way, no over turn or cut knuckles.







Recheck tensioner for tightness, put covers on ensure gasket at engine mount is in correct place. Now I did have a problem here the lower bolts were slightly corroded so a bit of grease was applied and I swapped the bolts top to bottom. Also the lower cover forward side didn't fit very well so I had to insert this bolt about 2 threads before the rear bolt. Next put the top cover on and catch the bolts ensuring you have got the top clipped in correctly. Then tighten all 4 bolts.

Put crankshaft pulley back on.

Put the alternator belt back on.

Put the engine mount back on and remove jack.

Put the airfilter assy back on.

Reconnect Battery

Start engine, listen for covers rubbing on any belts. If any rubbing investigate and repair.

Replace wheel, axle stand, tighten wheel then spin tyres out of driveway and down the bypass as fast as you can

Tools used for the job

1/2" drive pull bar

pointed pliers

2 x 1/2" drive extension bars

1/2" drive clutch drive (or a ratchet)

3/8" drive clutch drive (or a ratchet)

2 x 3/8" drive extension bars

17mm spanner

15mm spanner

13mm spanner

13mm short 3/8" drive socket

17mm socket

1/2" to 3/8" converter

E14 torx socket

6mm allen key

E10 torx socket

6mm allen key socket

00000000 KEY SOCKET

3/8" wobble drive

No.2 philips screwdriver

large flat screwdriver

25 torx socket or screwdriver

paint stick

cam locking tool

10 mm socket and spanner for standard airbox is also required.



Additional info provided By Dean Smith

### Removal:

1. Remove Airfilter Housing
2. Raise and support front of vehicle
3. Remove: RH Front Wheel & RH Front Inner Splash Guard
4. Mark direction of rotation of auxiliary drive belt with chalk
5. Turn Auxiliary drive belt tensioner anti-clockwise to release tension on belt.
6. Remove Auxiliary drive belt & timing belt cover [1]
7. Support engine
8. Remove auxiliary drive belt tensioner & right hand engine mounting bracket
9. Turn crankshaft clockwise until timing marks are aligned [2]
10. Remove: Crankshaft pulley bolts [3] , Crankshaft pulley [4], Timing belt lower cover [5].
11. Ensure crankshaft timing marks are aligned [6]
12. Timing marks on camshaft sprockets must be aligned with notches in timing belt rear cover [7]
13. Lock camshaft sprockets with locking tool [8]
14. Slacken tensioner bolt [11]
15. Turn tensioner clockwise until pointer at LH stop (use allen key) [10]  
(Type One [9] and Type two [17])
16. Lightly tighten tensioner bolt [11]
17. Remove timing belt

### Fitment:

1. Ensure lug on water pump aligned with corresponding lug on cylinder block [19]
2. Ensure timing marks aligned [6] & [7]  
(If cambelt sprockets removed . Ensure correct dowel location of sprockets)

3. Fit timing belt in anti-clockwise direction, starting at the crankshaft sprocket, ensure belt is taught between sprockets.
4. Slacken tensioner bolt [11]
5. Turn tensioner anti-clockwise until pointer is on the RH stop, Use allen key [10] (Type One [12] and Type two [18])
6. Lightly tighten tensioner bolt [11]
7. Remove locking tool [8]
8. Turn crankshaft two turns clockwise, Ensure timing marks align [6] & [7]
9. Lock camshaft sprockets using locking tool
10. Slacken tensioner bolt [11]
11. Turn tensioner clockwise until pointer as follows:  
Type One:  
New belt - V notch in bracket [13]  
Type Two:  
New belt - NEW notch in bracket [14]
12. Tighten tensioner bolt to 20 Nm [11]
13. Remove locking tool [8]
14. Turn crankshaft two turns clockwise. Ensure timing marks align [6] & [7]
15. Check pointer aligned as follows:  
Type One:  
New belt - V notch in bracket [13]  
Type Two:  
New belt - NEW notch in bracket [14]
16. If not repeat tensioner procedure
17. Install component in reverse order of removal
18. Observe direction of rotation marks on auxiliary drive belt
19. Tighten crankshaft pulley bolts to 20 Nm [3]