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Installation/modification instructions for New Style V-6 timing belt tensioner

1) Access Old Tming Belt Tensioner

On Milano and GTV-6 models:
Access the old style timing belt tensioner by removing the radiator, auxiliary drive belts, and timing belt covers.

On 164 models:
a) Remove the passenger's side front wheel.
b) Remove the strut assembly (four bolts on the bottom and three nuts on top of the shock tower)
c) Remove the front inner fender panel.
d) Remove the water pump-a/c belt and the power steering pump belt. Use special tool 1822-104 to loosen the rear power steering pump-adjusting nut.
e) After draining the cooling system, remove the radiator hoses from the thermostat housing/water pump
f) Remove the two lower timing belt covers.
g) Remove the top engine "dog bone brace" and the two top timing belt covers.

2) Using a 1 5/8" socket on the crankshaft nut, turn the engine clockwise until the engine is at Top Dead Center (TDC) for cylinder number one. This is achieved when the pointer is aligned with the "P" mark on the crankshaft pulley AND the ignition rotor is aligned with the ignition wire for number one cylinder from the distributor cap.

3) Very carefully and clearly mark the relative position of the camshaft drive pulleys in relation to the cylinder heads. On Milano and GTV-6 models, you will also need to mark the auxiliary drive pulley relative to the head, as it drives the ignition distributor. Be sure to mark the cam pulleys or you will have to remove the valve covers in order to reference the factory marks. If you miss-time the cams, valves could bend when the engine is rotated so be very careful!

4) Remove the old style timing belt tensioner. Do not lose the large flat washer as you will reuse it later to mount the new style tensioner.

5) Remove the old timing belt (you must remove the Motronic crank sensor if the vehicle is a 164).

6) Remove the long hollow oil-feed stud. The stud can be easily removed if you "double nut" it and you shock it lose by striking it sharply two or three times on the end with a brass hammer. Be sure to wear eye protection and do not use a steel hammer-brass only!

7) Clean the area around the hole for the stud and clean all traces of oil from the threads in the block. Then blow air directly into the hole to dry the threads and to back flush the oil out of the oil passage.

8) Apply several drops of Wurth thread locker part number 8932423 (Centerline number SS164) to the 10mm end of the special conversion stud (Alfa part number 608-97506, Centerline part number TB308). Do not use any other type of thread lock. Use only Wurth part 8932423 no other sealant or thread lock compound is recommended.

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9) Double nut the 8mm end of the special conversion stud and thread it into the block until the 10mm portion of the stud is flush with the surface. Remove the double nuts.

10) Drill, tap, and plug the drain-back hole. Start by drilling it out with a 1/4" drill bit. Put tape on the bit 1/2" from the end so that you can gauge your drilling depth. Next, enlarge the hole using a 17/64" bit. Put tape on the bit 1/2" from the end so that you can gauge your drilling depth. You may notice that the passage you are drilling out goes into the block at angle- and is not a straight passage. This is normal. Let your drill bit follow the passage. When the hole is plugged, the thread locker will compensate for any irregularities and since the passage is not under any pressure, it will provide a positive seal. Use an 8 x 1.25 tap and thread the hole 1/2 way, remove the tap, and clear away any shavings. Then tap the hole the rest of the way. Again clear away any shavings.

11) Apply Wurth thread locker to plug (part number 608-97507) and thread it into the hole until it is flush. Clean away any excess thread locker.

12) Install the new style belt tensioner. Use a wavy washer and a new nut for the top-mounting stud. For the lower hole install the large flat washer from the oil-fed tensioner followed by either a flanged locking nut or a lock washer and a new nut. If you do not have the flat washer from the original tensioner, you will need to find a thick, 8mm flat washer with an outside diameter no greater than 19.6mm. Be sure that the washer seats properly around the lower mounting hole. Lightly tighten the two mounting nuts (approximately 3 ft.lbs), insert a 3/8" square drive into the lift square, and gently rotate the tensioner clockwise until it stops. This positions the tensioner so that more room is allowed for timing belt installation.

13) Install a new timing belt, paying close attention to the timing reference marks made earlier by double checking the alignment of all marks. Start by placing the timing belt over the crankshaft pulley. Next work the belt onto the other pulleys in a counter clockwise order, allocating all the slack in the belt for the length between the crank pulley and the auxiliary pulley. Double check that you did not disturb the top dead center position of the crankshaft and that you engaged the appropriate teeth of the cam drive pulleys. Use great care so as to maintain proper cam timing. On Milano and GTV-6 models you must properly index the auxiliary drive pulley to maintain the proper ignition timing.

Important note: new style tensioner has a temperature sensitive switching device. It is important that it is only adjusted on a cold engine and when the workshop's ambient air temperature is between 59º & 96ºF. (15º-35ºC).

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14) With engine cold and positioned at top dead center, loosen both tensioner-retaining nuts. Insert a 3/8 square drive inserted into the lift square (see **figure "a"** attached) of the tensioner and rotate the assembly counter-clockwise (into the drive belt) until the pointer aligns with the reference mark. Do not use excessive force! Too much force may damage the clutching mechanism!

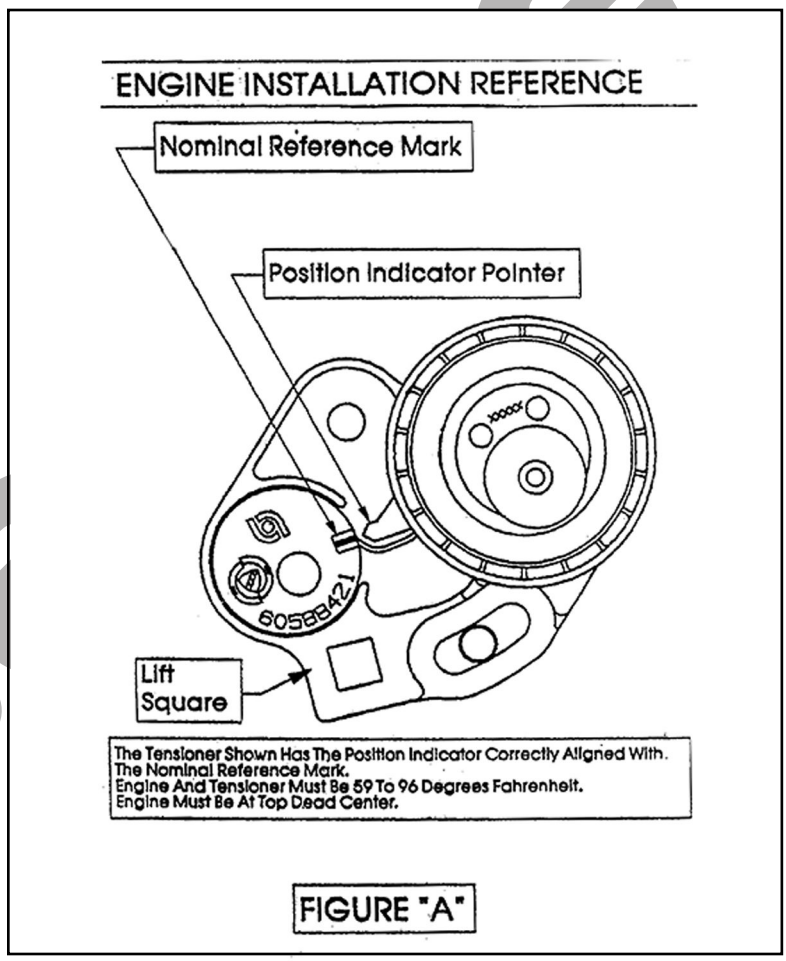

FIGURE "A"

15) Holding the tensioner in this position, lock down the tensioner by tightening the adjustment nut to approximately 15ftlbs.

16) With the tensioner set in this way, rotate the engine clockwise at least four crankshaft revolutions to seat the belt. On the last revolution, line up the TDC marks. Do not back up the engine at any time. If you accidentally pass TDC, keep going and bring it around again. Do not allow the tensioner to release tension on the belt, or you will have to go back to step 13. While rotating the engine, it is normal for the pointer to oscillate slightly to either side of the mark. What is important is that the pointer is aligned with the reference mark at TDC. . If the pointer backs off past the mark, increase the tension until it is aligned with the mark again.

17) Tighten the adjustment nut and the tensioner pivot nut to 20ft.lbs.

18) Rotate the engine several more times in a clockwise direction. Line up TDC just as in Step #4. Verify that the position indicator pointer is still aligned with the nominal reference mark.checking the alignment of all marks.

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