

## A Guide to SZ Distributor Drive Belt Replacement

"When did you last replace the drive belt in your distributor" the unwelcome RREC Forum message asked. "What belt is that" I replied suspiciously and with the feeling of an impending disaster was about due.

Known to some owners but not all, all Turbo cars from the 1987 model year 20,000-series with injection and digital ignition have a pair of 4-cylinder distributors in tandem. This applies to all naturally aspirated cars from the 1998 30,000-series too. They are located in a tandem housing in the same place as the conventional ones, and the two rotors are mechanically connected by a rubber notched drive belt, a miniature of an overhead cam drive belt on many other brands. This was news to me!

What's more, a little research revealed service bulletin M 084: it must be changed at 30,000 miles, or (sic) 48,000 kms!

Faced with the prospect that the distributor drive belt in my 1988 Bentley Turbo at 55,000 miles was possibly in urgent need of replacement, I began to look into doing the job myself. Slowly I gathered information and more importantly courage to begin opening up the inner workings of this important area. Initially the information given seemed easy to follow and the time given for the job was 3 hours. Great! A morning job and out in the car by the afternoon, **wrong!**

The first part seemed quite normal, turn the engine over and get top dead centre. I was fortunate to have a socket that fitted the bolt in the centre of the bottom pulley and could just get enough room to fit the appropriate tool to the socket and turn the engine. Now I don't think anyone had ever looked for TDC engraved on the pulley since the car was built. So with a bit of emery paper I cleaned every inch of that pulley to find TDC, time taken till now about 30 minutes.

The next step was to remove the distributor caps and leads. Now up to this point on the information given there had been no mention or use of the word **accessibility**. You cannot reach the distributors from the side of the car as they are at the rear of the engine below the rear brake pump. The only solution was that somehow I had got to get this ageing body on top of the engine area. Scouted round found a suitable box (small steps would be as useful) and old towels to cover where I was going to kneel. By now I realised another 30 minutes had now passed by, never to be retrieved and with only two hours remaining for this job. These old knees were not built for prolonged periods in a static position kneeling on the road spring housing under the bonnet of a Bentley. Therefore you may also wish to consider as I did obtaining or buying some knee protectors as the problem I encountered later made these items a necessity. Also a head torch was a useful device for lighting the area and leaving your hands free if only to assist securing your position.

Before you move to the next stage give the knees a rest, climb or fall off and get some feeling back in the joints.

It is a good idea to label the distributor leads and coil leads this will save time later. If the distributor belt is broken it would be a good idea to mark on the distributor case (belt driven distributor) where the A1 distributor lead is positioned, this should enable you later on to align the rotor arm with the A1 mark on the case when fitting the new belt. Now carefully remove the leads, one of the first problems is that they seem quite attached to the distributor cap and resist strongly, removal. I found that twisting them from side to side loosened their grip on the distributor cap that they seemed so attached to. Resist the temptation to just pull on them, frustration can get the better of you but you do run the risk of separating the cable from its socket.

With the leads removed and tucked away safely you can now look to the Phillips screw heads that hold the distributor caps to the distributor.

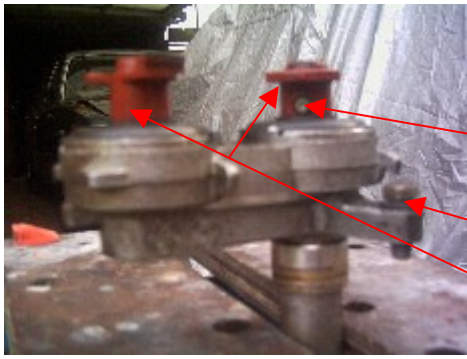


*Looking down on the direct driven distributor with two leads removed and the two Phillips screw heads can be seen. The belt driven distributor will also have two Phillips screw holding the distributor cap to the distributor body*

Phillips Screws

With the appropriate tool loosen them by pushing down slightly and twisting as they are held by springs then the distributor caps can be removed. Now with a drop of white paint or correction fluid mark the centre line position of the two rotor arms on both the covers and on the body of the distributor. This twin marking will become apparent a bit later (If the belt is broken then only mark the centre line of the rotor on the direct driven distributor as you will have already marked the position for A1 on the belt driven distributor case).

For the next step have a socket set easily at hand as you are about to undo the 1/2 AF bolt that will allow you to release distributor and pull the assembly and shaft from the engine. It is at this point that the 2 hours remaining to complete this job really went of the window for my attempt. The unit did not just pull out! The truth is that after nearly two days I eventually devised a way to release its vice like grip. It is at this stage the knee pads came into use. I placed the curved end of a small crowbar under the distributor and resting the outer edge of the curve on the rear of the engine. Then by gently tapping with a hammer on the other end, the unit gradually lifted up-hooray!! The unit seems to have been held by thick grease that had incredible adhesive properties.



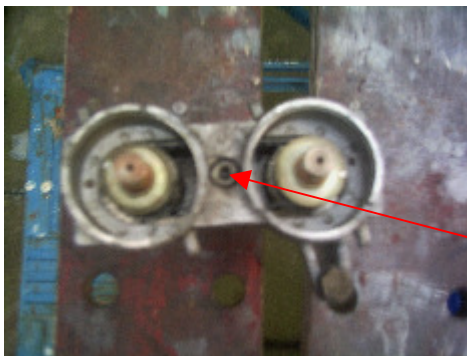
### ***Twin Distributor with rotors still attached***

Rotor holding screw

Rotors

1/2 AF Holding Bolt

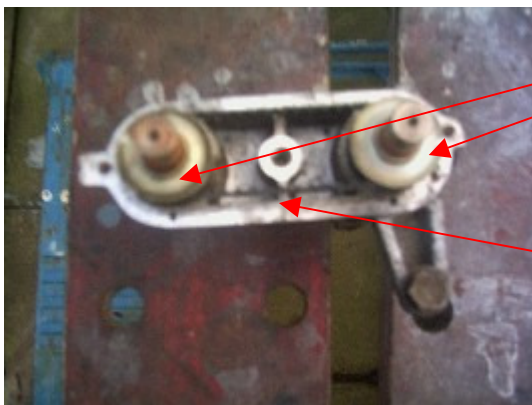
Taking the unit to a safe place prepare for the next stage, I took the precaution of holding the unit in a vice. A selection of Allen keys will be needed and in my case a short length of tube to give an extension and additional leverage. I applied considerable pressure and with an audible crack the Allen nuts on the rotor arms came loose and they can be removed along with the covers. Apply the same brute force to the larger Allen nut in the centre and the pieces separate.



### ***Distributor with Rotors and covers removed***

Allen nut holding the two halves of the Distributor together.

Now you will see the belt that is to be replaced.



Metal Covers

Belt

I removed one metal cover by tapping gently from beneath using a screwdriver and small hammer. Taking the new belt and placed it over the two shafts, I then replaced the rotors putting in the small screws and aligned the direct driven rotor with the white mark on the outside of the case. At the same time align the belt driven rotor with its white mark and position the new belt. Remove the rotors and put in position the metal cover. Now replace the top cover and tightened the Allen nut followed by the two covers, rotor arms and retaining screws.

Back on top of the engine with the aid of the small box or steps, positioned the distributor, checking again that all the white position markings align with the rotors then tighten the ½ AF holding bolt.

If you are lucky and replace the various HT leads in the correct sequence (I wasn't!!) remove yourself from the top of the engine and you will be ready to enjoy worry free motoring until you read about something else that requires attention!

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With thanks to Richard Treacy  
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