

Overhauling Distributor

Background:

I have known of my bouncing timing mark for sometimes and have learned one of the root causes is ignition distributor shaft axial and/or rotational play. So I called Jeff at Advanced Distributor and told me rebuild time is approximately 5 weeks including shipping both ways. I would have package it and ship it to him if it was Winter season here in Ohio, but to do it now means I won't be driving my Ultimate Driving Machine for 5 weeks. So I decided to take on the task and repair it myself.

I knew the distributor shaft has 0.040" axial play. The distributor is original to my 1976 BMW 2002 and part numbers stamped on distributor housing are: 0 213 170 164 // JFU 4

So, I proceeded with setting the engine at TDC (distributor cam aligned to distributor notch) then removed the distributor.

Here are steps for disassembly:

1. Remove contact breaker, capacitor, vacuum regulator and tabs holds distributor cap



2. Next, locate indents on distributor body where contact breaker resting on (3 places)



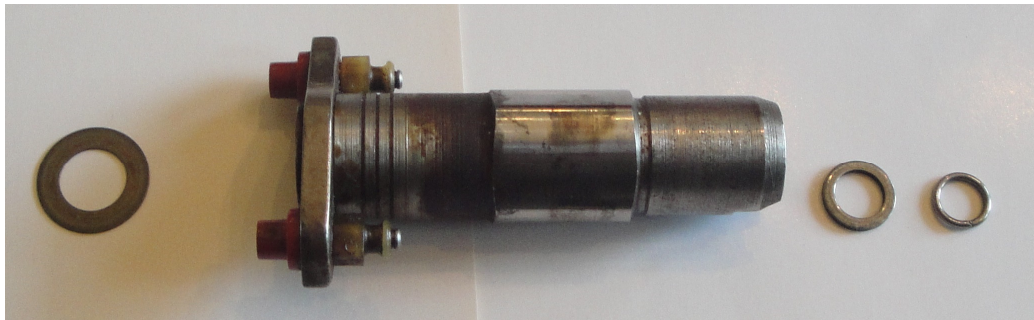
3. From vacuum regulator opening, insert screw driver and pry contact breaker plate up at each indent locations.



4. Disengage two springs from cam base posts and rotate springs outward. Force cam upward with two screwdriver until retaining clip is out of groove (do not remove felt inside cam before cam disengagement)



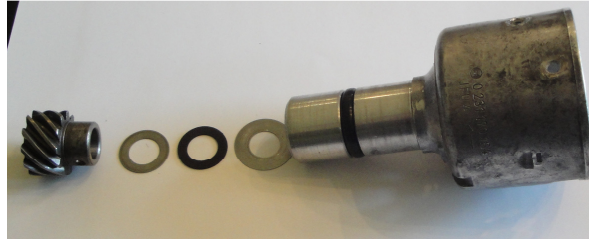
5. Remove cam upward. There should one trust washer under cam. Note a washer and O-ring clip under top felt pad



6. Clamp up helical gear wheel in a vise (use piece of leather to protect gear surface) and drill out pin with 3mm drill.



7. Remove helical gear, trust washer(S) and fiber washer (make note of trust washers stack up)



8. Pull out shaft with counter weights. Again make note of trust washer(s) and fiber washer located underneath counter weight shaft plate. On mine fiber washer was absent under main plate, which explained excess axial play.



9. Clean all the parts with your favorite cleaner. Remember to take a lot of pictures at each dis-assembly stages. Measure trust washer(s) and fiber washer for each group and make notes.

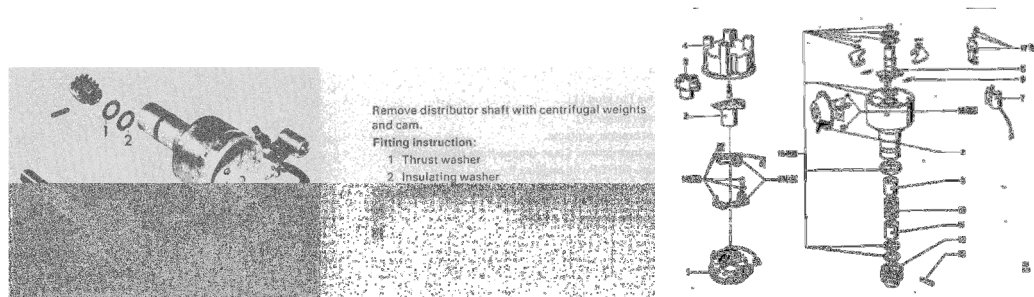


10. Replacement parts:

12111350261, 07119943082, 12111351440, 12118630239 & 12118630245



11. For assembly I used following instructions:



Remember, post assembly completion axial play should be less than 0.005". Use engine oil and Bosch distributor lube grease for assembly,.

12. Soak lubricating felt in engine oil, roll it and slid it inside housing. (on mine felt pad was also missing)



13. Lubricate shaft assembly, counter weights, springs and with predetermined trust washer and fiber ring sizes slide shaft assembly onto the housing. Slide cam with trust washer over shaft and then secure cam with washer and ring.



14. Set bottom trust washer(s) and fiber washer and slide helical gear onto the shaft. Check axial play while holding helical gear against distributor housing bottom. Adjust washers as needed to obtain 0.005" or less axial play before securing helical gear to distributor shaft with cone grooved pin.
15. Lubricate contact breaker plate with Bosch grease and set it inside housing. Make sure its mounting holes are lined up with housing clearance holes.



16. Set contact breaker to specs , install the distributor and last set engine timing