

Last updated January 02, 2016.

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Telechron "B" Rotor Rebuilding

There is a great Web page that describes how to rebuild a rotor and that link is listed next but I'm going to dwell deeper and hopefully more clearly.

<http://www.abouttime-clockmaking.com/downloads/In%20the%20Can.pdf>

Please print the above page and study it. Here David uses one of the newer aluminum rotors (B-13) and the "plates" are made of phenolic resin. The one disagreement I have with David is that the top plate should be separated from the plate cover. This can be done by driving the arbor through the brass wheel causing the pinion to separate from the cover. Please be aware that between the wheel and the plate is a small phenolic washer that should be cleaned, lubricated and placed back.

For the very old rotors, such as the M-1 and some M-31's and M-38's, you can heat the can and separate the can because they were sealed about mid way on the larger area of the can. For more on that please see the following:

<http://clockhistory.com/telechron/products/typeb/index.html>

Just like any clock movement the plates will wear. This takes the same form as any other movement and you will see "egg" shaped bearing instead of perfectly round. If this occurs then you must replace one but usually both plates because almost always the opposite bearing is worn as well. You can use another phenolic plate or the copper plates that are found in non-aluminum rotors.

For the copper plate, you must either close the worn bearings or bush those bearing. I start with a round file that is smaller in its outside diameter than the inside diameter of the bearing, and file or cut the same amount of worn area in the directly opposite direction. This leaves me with an oval bearing that now has the exact center in the center of the bearing.

After the filing, I take a hole closing punch or a Dapping punch and close the bearing. I do this to close the bearing concentrically. Then I take a # 52 drill bit and cut the bearing back to a perfectly round shape. Then I take a 5/64" drill bit and open it to about 1.98mm because I'm going to insert a # 37 Bergeon bushing and the outside diameter of that bushing is 2.0mm. The # 37 bushing is about 1.5mm high and the Telechron rotor plate is about 1.3mm high. Since the bushing has an oil sink that allows me to hammer it flat with the excess insuring an extremely snug fit.

For the back plate, you must also drill and tap the bottom rivets and use brass screws to hold the bottom plate and plate cover together. The plate cover is an end shake limiter, much like a jewel cap, except this is made of aluminum in the aluminum rotors and copper in the non-aluminum older rotors. The potential problem is that the screw heads may prevent the rotor from seating properly in the "can", so be sure to file the screw head as close to the plate cover as possible or use a close fitting rivet.

The next area of concern are the gears themselves. Just like any other clock gear the pivots can wear and abrade. Rotor gears do not have the traditional pivot, instead their arbors

are a fixed diameter right to the end, which makes polishing much easier than the traditional pivot because you can get a hold of them with a collet without fear of breaking the pivot. This wear of the pivot is rare but it does occur.

Many times the wheels on the arbor work themselves loose, so the wheel simply spins on its arbor and that does not transmit the power to the next wheel. You can replace the wheel or you can affix the wheel to the arbor more securely. If the wheel is brass, then you can mark its original position on the arbor and then drive it off. Once off, you can use a hole closing punch or a twice the diameter rounded punch or ball bearing in order to close its center hole. Then you can drive it back on the arbor using your mark to place it exactly where it was.

If the wheel is phenolic, then you can use epoxy to secure it. This should be done after you have cleaned the gear. You can epoxy right at the point of attachment without removing or moving the wheel from its arbor. Just smooth it along both sides of the phenolic wheel right at the point where it makes contact with the arbor. You can try to close the hole or score the arbor but I find that a high quality epoxy will work just fine.

The drive gear shaft, which can be round or "D" shaped, and may or may not have a pinion attached at its base and may have a hole through the center, must be polished where it contacts the cap bushing. I've seen many of these that are scored and prevent the shaft from turning.

For cleaning, I use toothpicks and a rag in order to remove as much old grease and gunk as possible. Then everything goes into my regular clock bath and the ultrasonic.

In order to seat the movement into the can, I use a 1 1/8" dowel with a depression drilled into it to correspond with the drive pinion on the top of the movement. With the dowel on a hard surface, I place the can and movement face down onto the dowel and tap the can over each of the 3 indentations that are in the bottom of the large opening of the can. These 3 dimples secure the movement into the can. On final reassembly the end of the top of the movement should be .8 mm from the edge of the can.

I guess that's it except for the suggestion that if you don't want the time consuming challenge of all the above, then just send it to me and I'll be glad to rebuild your rotor and give you my 2-year warranty.

<http://www.atmosman.com/rotor.html>

A service from, E-mail address: Mike@atmos-man.com
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Previously published in Chapter 168's "Torsion Times" quarterly news letter

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