

## TIMING GEAR PULLER FOR BMW 600

Bill Rogers

www.isettaofsc.homestead.com

This tool is used to remove the timing gear from the crankshaft. Without this tool, the only way to remove the gear is to heat it cherry red with a torch and then lift it off. This will cause damage to the gear by damaging its hardness. This tool was fabricated for me by a local machine shop. If you have access to a lath, you can fabricate this tool also. The tool is made up of 5 parts, the jackscrew, the upper plate on the tube, the tube, lower plate and the split puller. I will give dimensions on each part.

The jackscrew is a 1/2" x 4" bolt with 20 threads / inch.

The split puller was fabricated from a single piece of 4" shafting material. It is 4" in diameter, 1" thick. The inside recess area has a diameter of 2-5/8". The hole has a diameter of 2". The critical measurement is the thickness of the bottom lip. It should not be more than 0.160" or less than 0.145". This part must slide under the gear and if it is too thick, it will not fit, to thin and it could break. The backside of the ring was ground down on a grinder to provide clearance. This is about a 1/4" chamfer. The (4) holes are drilled to align with the bottom plate.

The top plate is made from 1/2" steel. It is welded onto the tube and then the joint was turned down. The tube is made of 2" schedule 40 pipe X 4" long, with both ends turned in the lath to make them true. Once the top plate was welded to the tube, it was chucked into a lath to bore the threaded hole in the top plate. This provided a hole that would be truly in the center of the tube. The hole was then threaded to accept the bolt described above.

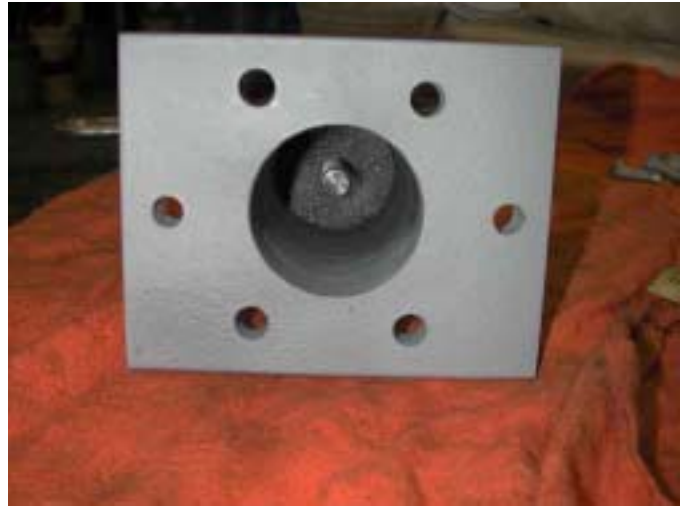


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The bottom plate measures 1/2" thick x 4" x 5". The (2) holes on the far left and right are 23/64" in diameter and are 3-15/16" apart and spaced equally from the centerline. The other (4) holes are 13/32" in diameter and are spaced 1-15/16" apart (horizontally) and 2-3/4" apart (vertically). Again, these hole spacing are equal around the centerline of the plate. After the plate was carefully centered onto the tube and welded, the bottom 2" diameter hole was cut.



**Note:** the (2) outer holes are used to remove the crankshaft main bearing support (the cast iron unit that sometimes breaks). This is accomplished by not using the split puller and attaching the bottom plate to the bearing support with the use of (2) 8mm x 40mm x 1.25 thread pitch. This should only be done after the timing gear and moon key are removed.



After the split puller was machined. The (4) holes were drilled and tapped. The bolts and tapped threads are 3/8" x 16 threads / inch. The bolts used are 1 1/4" long.

The last step to make this part was to cut the split puller in half on a band saw.

The next photo shows the puller being installed to remove the timing gear. The first step is to install a short bolt in the end of the crankshaft to protect the threads. I use a metric 10mm bolt for this purpose.



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Next, place the two halves of the gear puller under the lip of the timing gear.



When both halves are in place, the top of the gear puller is bolted to the two halves as shown below.



Once the puller top is bolted in place, use a pipe wrench to hold the "cap" and tighten the bolt until the gear is removed. Then remove the moon key from the crankshaft.

After removing the gear, the outer holes on the puller can be used to remove the bearing support. First remove the (6) securing bolts, then using (2) 8 mm bolts, insert the bolts through the outer holes of the puller into the 8mm threads in the bearing support. Using the jackscrew, remove the bearing support.

