



## Front Cover Options for Chrysler 10-3/4" Units



When Chrysler introduced the 360-cubic-inch (5.9L) engine in 1972, it offered two versions: a high performance, heavy-duty version that came with a forged crankshaft and one with a cast crankshaft.

Engines equipped with the forged crankshafts are all internally balanced, and internally balanced engines do not require any external balance weights on the harmonic balancer, converter or flex plate. The engines with the cast crankshaft are always externally balanced and require a specific harmonic balancer. They also require either an externally balanced converter on early models, or an externally balanced flex plate on later units.

There are two ways to tell the difference between the two crankshafts by looking at them from the back (transmission end). The forged crankshaft has a circumference profile that is a perfect circle just outside of the bolt circle. The cast crankshaft, on the other hand, has a hump or raised area that extends outward from the rest of the circumference. The second visual difference is the bolt circle itself. The forged crankshaft has an evenly spaced bolt circle. Since there are no

added weights to either the torque converter or the flex plate on an engine with a forged crankshaft, the flex plate can be bolted to the crankshaft in any position. On the cast crankshaft, one bolt hole on the bolt circle is offset so that the flex plate can be bolted on in only one position.



**Figure 1**  
The flex plate at left has even bolt patterns, while the one at right has an offset bolt pattern.

For the same reason, the bolt pattern on the flex plate that mates to the converter is also offset. The offset crankshaft bolt pattern is still used today, and can be found on both internally and externally balanced late-model engines.

Sonnax billet front cover **CH-CC-4** is



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available not only for high performance heavy-duty applications, it may also be used to replace that hard-to-find core. However, **CH-CC-4** is not a direct replacement for 5.9L engine applications – for which we offer other options.

On early-model applications, adding a counter balance weight or Sonnax Part No. **CH-WT-103** to the converter is the only option. This is not very difficult and can be done with simple hand tools. The weight can be made from 1/4" x 1-1/2" flat stock, 2.580" long. The width and thickness are a standard size, so the length is the only critical dimension. Take care

to get the length as close to 2.580" as possible. The weight must be bent to conform to the outside diameter of the cover. (The weight shown in Figure 6 was formed using a large ball peen hammer against a large vise.) Positioning the weight on the cover is also no problem. The offset bolthole is identified by an "O" stamped into the cover just below the step that positions the ring gear. Place the offset bolthole in the 6 o'clock position. (See Figures 2 and 3.) The weight will be located just below the ring gear step aligned with the bolt hole at the 1:30 o'clock position. Use a "V" square to find the center of the bolt hole (see Figure 4) and use a combination square to transfer the centerline of the bolt hole down the side of the cover (see Figure 5).

Measure the length of the weight and mark the center. Align the center mark of the weight with

the line on the cover (see Figure 6) and you are ready to weld. The horizontal line on the cover is the ring gear step and the weight is positioned just below this line. When you have finished welding the weight onto the cover, you can check the results on your balancer. If the weight on the cover is correct, it will show an out-of-balance condition of 120 grams.

On the late-model engines the weight is on the flex plate. The flex plate with Chrysler Part No. 04863841, Sonnax Part No. **CH-FP-1**, has an offset crankshaft bolt pattern, an even converter bolt pattern and a counter weight.

This flex plate is specific to the 360-cubic-inch 5.9L engine. The counter weight on this flex plate will interfere with the mounting ring of the **CH-CC-4** cover.

Sonnax offers the **CH-CC-6** cover, (see Figure 7) a modified

version of the **CH-CC-4** where material has been removed to both clear the weight on the flex plate and remain balanced. The flex plate with Chrysler Part No. 78118255, Sonnax Part No. **CH-FP-2**, has the same offset crankshaft bolt pattern and the same even converter bolt pattern but has no counter weight. This flex plate is used on all internally balanced engines. This flex plate could be used on a 5.9L engine if it was used with a converter with a counterweight. Of course, the spot welds could be drilled out and the weight removed from the 04863841 (**CH-FP-2**) flex plate to give you the same results.



Figure 2  
Place the offset bolt hole in the 6 o'clock position. (See Figure 3).

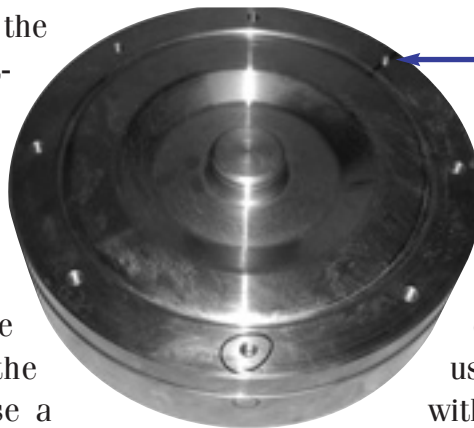


Figure 3  
Weight goes at the location of the arrow.

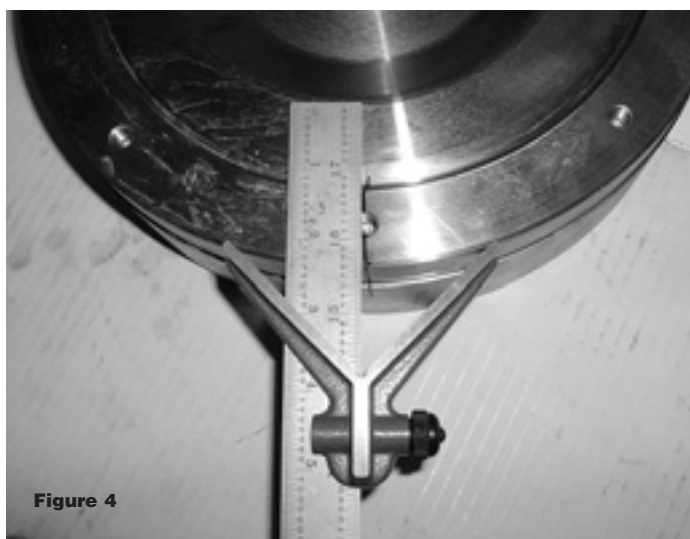


Figure 4

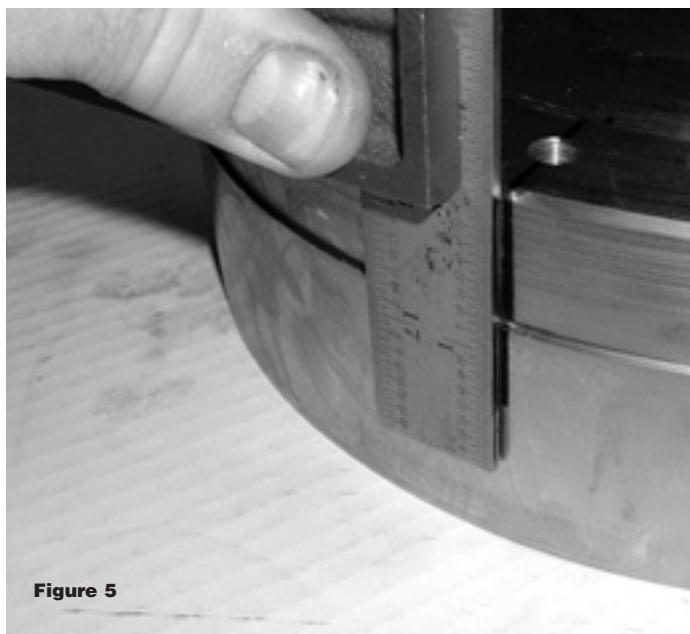


Figure 5

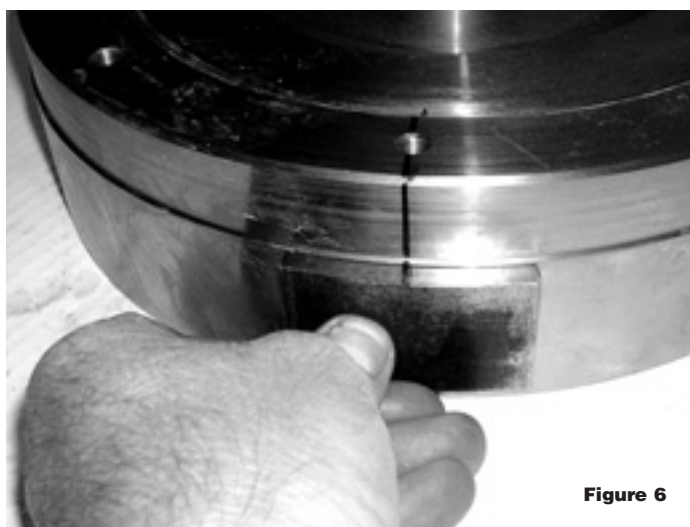


Figure 6

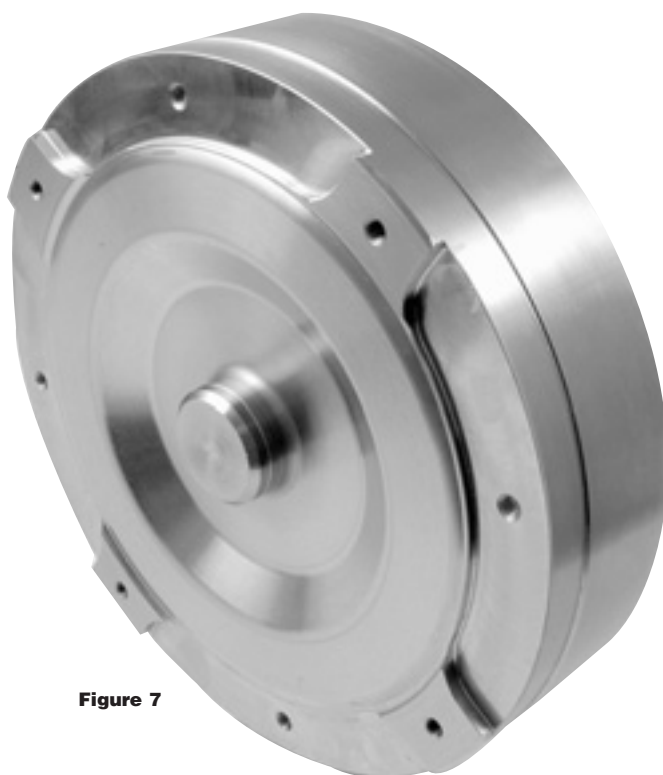


Figure 7

### Reference:

New Torque Converter Parts Catalog, Volume 6

**CH-CC-4:** Front Cover, Fully Machined Forging, 5.2L & 3.9L Applications Only  
Item Number 26 of Reference Figure 3.06 & 3.07 on pages 124 & 128.

**CH-WT-103:** Balance Weight, Early 5.9L Applications, use with **CH-CC-4**

**CH-CC-6:** Front Cover, Fully Machined Forging, Late 5.9L Applications  
Item Number 26 of Reference Figure 3.06 & 3.07 on pages 124 & 128.