Harmonic Damper Notes

Small block Chevy - These engines have used three different timing pointer locations. Pre '69 engines have the TDC mark 2° to the left of the keyway centerline. The '69 to '85 dampers have the TDC mark 10° to the left of the keyway centerline. The 1986 to 1991/1992 have the TDC mark 40° to the left of the timing mark. All of our SB Chevy dampers, as well as all other aftermarket dampers, use the 10° TDC position. Our 6.75" diameter models have two TDC marks, one that is 10° and one that is 40° to the left of the timing mark. If you have a pre '69 vehicle you can use one of the aftermarket bolt-on timing pointers to align correctly with the timing marks on our dampers.

Small & Big Block Chevy - Both of these styles of engines utilize both internal and external balance dampers. All of our external dampers have bolt-in counterweights. Other than that, the dampers are identical for each style engine except for 80001 and 90001. So it is possible to have an internally balanced damper and convert it to external simply by adding one of our optional counterweights. Some big blocks may require an aftermarket timing pointer to align with the TDC mark on all our dampers.

Small Block Ford - Small block Ford (260/289/302/351/5.0L) dampers were made in five different lengths, two different accessory bolt patterns and with two different external counterweights. They also had at least three different timing pointer locations. We make two models; the 80006/90006 has the 28.4 oz. in. counterweight and the 80007/90007 has the 50 oz. in. counterweight. Both of these dampers are made to the early style shortest length. This will allow users to install '81 & later 5.0L engines (w/50 oz. in. dampers) in early Mustangs or street rods and have more clearance in the front than if they had the stock longer damper. Our dampers also have both 3 and 4-bolt pulley patterns so either early or late pulleys can be used. For later applications with longer dampers, we offer a series of three inexpensive aluminum spacers (see page 37) that accommodate these various applications. Because some of the early three-bolt accessory pulleys piloted on a male boss and some piloted into a female bore, we also provide (with every damper) a special pilot adapter to accommodate either style. Both our Ford small block dampers have three sets of timing marks on them to accommodate the various timing pointer locations Ford used. To the best of our knowledge, between our two dampers and three spacers, we can fit nearly every SB Ford engine ever made. Will not fit 1970-'77 Mercruiser.

How to Determine Which Ford Spacer To Use - Measure the overall length of your damper from the end of the snout to the front pulley face. If it is 3" long, no spacers are required. If it is 3.187" long, you can modify spacer #81006 to work. (See instructions that come with the damper) If it is 3.375" long, use spacer #81006. If it's 3.875" long, use spacer #81008. If it's 4.0" long, use spacer #81007. For additional information, see chart on page 37.

Pontiac V8 - Our Pontiac dampers can be used on 1961 through 1979 V8 engines. However, in order to fit 1961 through 1968, you must use a '69 or later front timing cover, water pump and related accessories. This damper has the stock accessory pulley bolt holes as well as a big block Chevy bolt pattern.

Small Block Chrysler - We provide one damper model that can be used without a counterweight for internally balanced engines, or use one of three supplied counterweights for other engines. The 80012 and 90012 Dampers will fit the following applications:

a. All internally balanced 318 V8 standard and Magnum, all internally balanced 273 and 340 engines w/forged cranks. No counterweight is used with any of these applications.

b. 340 externally balanced 1972-'73 engines w/cast crank. Use supplied 91014 counterweight.

c. 360 externally balanced 1993-'97 engines w/cast crank. Use supplied 91013 counterweight. Will not work with '93-'97 5.9L Magnum engine.

d. 360 externally balanced 1971-'92 engines w/cast crank. Use supplied 91012 counterweight.

Big Block Chrysler - Our one part number (80013/90013) damper fits all 351, 361, 383, 400, 413, 426, and 440 engines including Street and Race 426 Hemi models. (426 Hemi requires #81013 pulley spacer.) Will not fit early 331/354/392 Hemi. These dampers are neutral balanced and include two counterweights to fit externally balanced models. Damper includes two extra TDC marks to suit the Street and Race models of 426 Hemi. our 81013 Hemi Spacer is required to ensure proper pulley alignment. To our knowledge, this damper should fit all big block Chrysler engines.

Big Block FE Ford - Our damper is identical in fit and function to the original big block high performance 427 FE Ford damper. It is supplied with a matching bolt-on single v-groove accessory pulley which may or may not be required in all applications. This pulley can be removed and, using a supplied adapter, you can bolt on any multiple groove FE pulley. This damper is classed as an internally balanced damper, although the 428 FE is externally balanced. On that engine all of the external weight is on the flexplate or flywheel. The damper is still a neutral balance damper and has no weight attached to it. All other FE engines (except 428) are internally balanced.

Big Block 429-460 Ford - This damper utilizes a separate counterweight that is a spacer that goes over the crank and behind the damper. These weights are available from your Ford dealer (#M-6359-D460) and must be used unless the engine assembly has been converted to an internally balanced engine by incorporating heavy metal in the crankshaft. These engines have used different timing pointer locations. Looking at the front, most of these engines have a timing pointer in the "10 o'clock" position. Using the 1/4" keyway in our damper correctly positions the damper on a production crank (or aftermarket crank machined to stock specs) so a "10 o'clock" pointer lines up with the damper TDC mark. Use the 3/16" keyway with Ford Racing cranks #M63030-A600 and B600 to again align a "10 o'clock" pointer to the damper's TDC mark.

AMC - We supply a damper and three counterweights with each of our two AMC part numbers. The basic damper is neutral balance and can be used "as is" for neutral balance engines. One supplied counterweight is for the 304 engine, one for the 360 and one for the 401. These are all four-bolt pulley style dampers. They will work on certain three-bolt pulley applications if you use four bolt pulleys with our damper.

What is a neutral balance damper? An externally balanced damper? An internally balanced damper? - Some engines are designed in such a way that they cannot get enough weight on the counterweights on the crank to bring the engine into proper balance. To solve this problem, the engine designers added counterweights onto the damper and the flexplate or flywheel. This type of damper is called an externally balanced damper. That's because some of the counterweight for the crank is external to the engine,since it is on the damper. Engines without counterweights on the damper or flywheel are called internally balanced. The type of damper that is used on internally balanced engines is commonly called a "neutral balance damper" or an "internally balanced damper." These two terms are interchangeable. Engine builders can convert an externally balanced engine to internally balanced by adding an extremely heavy material called mallory metal to the counterweights of the crank. When this is done, a neutral balance damper must be used on what was previously an externally balanced engine. With our bolt-in counterweights, any of our externally balanced dampers can quickly and easily be converted to neutral balance by simply removing the weight. This is a very valuable feature and provides for great flexibility in engine building.