All Professional Products PowerForce Dampers (this is all dampers in the #80000 series except the #80010) are made of tough nodular cast iron. This material is stronger than gray iron which is usually used for all production harmonic dampers and many aftermarket dampers. The PowerForce dampers can safely be revved to higher rpm than a stock damper. However, with safety in mind, please adhere to the listed safe rev limits. The #8000 Series PowerForce+Plus and the #80010 are made of tough 1045 steel and can safely be revved to 10,000 rpm. As part of the SFI testing procedure, our #8000 Series dampers are revved to 12,000 rpm for one hour. However, a static test such as this does not duplicate the loads that are put on the damper in racing applications.

**SAFE REV LIMITS**

**#80000 Series Dampers = 10,000 rpm**

**#80010 Damper = 10,000 rpm**

**All other #80000 Series Dampers = 6,500 rpm**

*Note: These are safe rev limits for the listed dampers. Your engine may not be capable of safely revving to these limits due to other considerations.*

**NOTES REGARDING THE FIT OF THE DAMPER ON THE CRANKSHAFT**

All Professional Products dampers are machined to original equipment diameters and tolerances. If your crank is the correct diameter, your Professional Products damper should fit on the crank with the proper amount of press fit. Unfortunately, some aftermarket cranks are not made to original equipment specifications. If your crank is too small, the damper will not have the correct amount of press fit. If your crank is too large, it may be difficult to press the damper onto the crankshaft, and in extreme cases, it is possible to split the hub on the damper if the crank is too large. Another problem that may occur at times, is a crankshaft key that is too high, or a key that is too tall. If the key sits too high in the crank, this can cause serious problems....again the possibility of splitting the hub can occur, which can be an expensive problem.

Because our dampers are designed to the highest standards, it is highly unlikely for the bore or the keyways on our dampers to be out of tolerance. We have not found this to be a problem, but anything can happen. So we are providing you with the factory specifications for crank diameters and damper bore diameters along with the maximum recommended installed key height. It is always a good idea to check all these dimensions before attempting installation. Or, if you run into problems of the damper fitting too loose or too tight, these dimensions will let you know where the problem is. If the installed key height is too low, you may grind the key up to the correct amount of press fit. If the installed key height is too high, you can grind the top face of the key down. Some aftermarket cranks may not have the keyway machined deep enough.

![Crankshaft Diameters](#)

<table>
<thead>
<tr>
<th>Diameter</th>
<th>LS1 GM</th>
<th>SB Chevy</th>
<th>BB Chevy</th>
<th>SB Ford</th>
<th>BB Ford</th>
<th>Mopar</th>
<th>Pontiac</th>
<th>Olds</th>
<th>AMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.480/1.491</td>
<td>1.246/1.247</td>
<td>1.595/1.600</td>
<td>1.376/1.379</td>
<td></td>
<td>1.375/1.374</td>
<td>1.531/1.532</td>
<td>1.374/1.373</td>
<td>1.499/1.500</td>
<td></td>
</tr>
<tr>
<td>Dampner Bore Dia.</td>
<td>1.480/1.481</td>
<td>1.244/1.244</td>
<td>1.588/1.599</td>
<td>1.374/1.375</td>
<td></td>
<td>1.374/1.375</td>
<td>1.530/1.531</td>
<td>1.373/1.374</td>
<td>1.490/1.498</td>
</tr>
<tr>
<td>Max. Installed Key</td>
<td>1.654</td>
<td>1.351</td>
<td>1.706</td>
<td>1.511</td>
<td>1.640</td>
<td>1.469</td>
<td>1.577</td>
<td>1.465</td>
<td></td>
</tr>
<tr>
<td>Dampner Keyway Depth</td>
<td>1.656/1.650</td>
<td>1.356/1.361</td>
<td>1.711/1.715</td>
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<td></td>
<td>1.516/1.526</td>
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*Note: All above dimensions are in inches.*

**IMPORTANT NOTE** - If you measure the inside diameter of the damper bore, be sure you get far enough inside the bore to get an accurate measurement. Several dampers have a larger diameter bore for the first part to make it easier to start the damper onto the crank. Small block Ford dampers have a particularly long lead bore so make sure you are measuring the actual bore that press fits onto the crank. Typically you will not be able to measure this with a telescoping inside micrometer. Our dampers do have lead bores that are the same as the factory specifications with the exception of the small block Ford. These dampers have slightly less than the factory spec in order to provide more contact area between the damper and the calipers and will need a telescoping inside micrometer. Our dampers do have lead bores that are the same as the factory specifications with the exception of the particularly long lead bore so make sure you are measuring the actual bore that press fits onto the crank. Typically you will not be able to measure this with a telescoping inside micrometer. Several dampers have a larger diameter bore for the first part to make it easier to start the damper onto the crank. Small block Fords have a particular problem with the small bolt. The dimensions given above in the chart should be measured at the halfway point of the snout. Applies to O.E. cranks only.

**Harmonic Damper Keyway Depth**

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Big Block Ford 429/460 Damper - This damper has two keyways and as a result, there is no practical way to measure the dimensions given in the keyway dimension in the damper relative to the bore of the damper. As a result, the dimensions given above for the BB Ford, while correct for the 429/460 Ford 1-inch keyway, cannot be measured accurately with the other dimenions that are provided.

**Crankshaft Diameters** - The dimensions given are in inches, most instances original O.E. factory specs. However, the Pontiac and Olds dimensions were developed through engine specialists who work only with these engines and are accurate to the best of our knowledge.

**Procedure for Damper Crankshaft Bolts & Counterweight Attachment Bolts**

1. **Crankshaft Bolt:**
   - SB Chevy - 60 lb. ft. • LT1 & LS1 - Chevy - 74 lb. ft.
   - Big Block Chevy - 85 lb. ft.
   - Small Block & Big Block Ford - 70 - 90 lb. ft.
   - Mopar - 15 lb. ft.
   - Pontiac - 51 lb. ft.
   - Olds - 90 lb. ft. • 91 - 95 lb. ft.
   - AMC - 390/401 - 70 lb. ft. • 304/343/360 - 63-68 lb. ft.

2. **Counterweight Bolt:**
   - SB Chevy - 60 lb. ft.
   - BB Chevy - 60 lb. ft.
   - SB Ford - 18 lb. ft.
   - BB Ford - 18 lb. ft.
   - Mopar - 6 lb. ft.
   - Olds - 9 lb. ft.
   - AMC - 9 lb. ft.

**E-mail for sales:** sales@professional-products.com
How to Determine Which Timing Marks to Use - Ford has used three different types of timing marks on its engines over the years. Our small block Ford dampers have three sets of timing marks on them, and one set should align with your pointer. To check this, rotate the crank until the keyway is straight up in the 12 o’clock position and look at the damper in the crank and observe which set of timing marks on the damper lines up with your pointer. You have determined which model set of timing marks your engine, highlight the degree mark for your initial timing setting (see chart below) and use that mark for your engine) or paint or grease pencil. Or yellow or white will show best.

Small Block Ford V8 Engines - ‘80 & earlier 289/302/351W/351C/360 and ‘81 & later 5.0L V8

How to Determine Which Timing Counterweight to use: If your engine is an internally balanced model and Magnum and all internally balanced 273 and 340 engines with forged cranks: Do not use any of the internal balance weights. If your engine is an externally balanced model and a 1964-1973 engine with cast crank, use weight #91014. (Pt. No. is stamped on weight.)

2. 4.0L V8 - Early 1980’s - This damper incorporates a big block Chevy accessory pulley bolt pattern as well as a big block Chevy bolt pattern. The Olds bolt pattern is four tapped holes.

Small Block Chrysler V8 Engines - All 351, 361, 383, 400, 413, 426, 440 including 426 Hemi. (Will not fit early Hemis)

Neutral Balance Engines - Neutral balance means the same as internally balanced. Our damper incorporates a big block Chevy accessory pulley bolt pattern and a matching weight on the flywheel or flexplate. Internally balanced engines have no offset weight on the damper or flywheel/flexplate. Some engine builders convert externally balanced engines to internally balanced by adding Matoly metal to the crank counterweights which eliminates the weights. If you are not sure if you want to do this with your engine, simply use our balance without any of the bolt-in weights. This includes the water pump, timing cover, timing pointer, or any other part of the vehicle.

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