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SPORTSMAN AND PRO SERIES DAMPER INSTALLATION

COMPONENTS	QTY
HARMONIC DAMPER	1
SFI 18.1 CERTIFICATION STICKER (STEEL PRO SERIES DAMPERS ONLY)	1

REMOVAL AND INSTALLATION

- Step 1: If using a different diameter damper than the original, it may be necessary to remove the OEM timing tab and replace with an aftermarket timing tab.
- Step 3: Using a damper removal tool, remove the original damper.
- Step 4: Apply anti-seize compound to the crankshaft snout. Line the damper up with the keyway in the crankshaft.
- Step 5: Install the damper using the proper installation tool. Do not hammer the damper on, or attempt to draw the damper on with a damper bolt.

GENERAL GUIDELINES for TORQUE SPECIFICATIONS

Install damper bolt and washer to OEM or aftermarket fastener manufacturers torque specs.

SMALL BLOCK FORD DAMPERS

The following instructions apply to part numbers: 2328941, 2328951, 2330251, 2428941, 2428951, 2430241, 2430251

PRW small block Ford dampers are manufactured to the length of 1963-69 manufacture years. Early and late model dampers can be used in early chassis due to this. For example, late model 5.0 dampers can be used with early 3-bolt pulleys and accessories. All of PRW's Sportsman and Pro Series small block Ford dampers include both the 3-Bolt and 4-Bolt pulley patterns and a removable nylon ring.

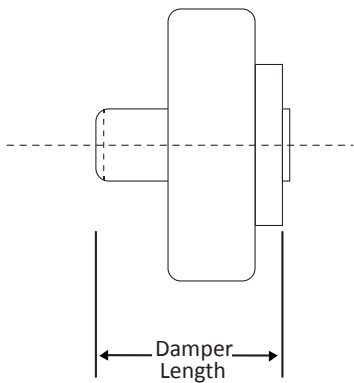
If your small block is a 3-bolt, you can remove the nylon ring before installation(see removed nylon ring below). If your damper is a 4-bolt, please keep the nylon ring in place when installing (see damper with nylon ring below). If your stock damper length is longer than three inches, a spacer is required for installation. Please see the chart and illustration below to determine what spacer will suit your application.



Nylon Ring removed for 3-bolt applications



Nylon Ring for 4-bolt applications



2381006 (0.350") 2381007 (0.950") 2381008 (0.875")

2381009 (0.950")



Ford Pulley Spacers



302/351W Supercharged

Ford Engine	Damper Length	Year	Spacer Part Number and Thickness	3 or 4 Bolt Pulley
289/302/351W	3.050"	1963-69	None Required	3-Bolt
351W/351C/400M	3.400"	1969-80	2381006 (0.350")	4-Bolt
351 HO (351W)	3.875"	1991 & Up	2381008 (0.875")	4-Bolt
351W/302	3.875"	1980 & Up	2381008 (0.875")	4-Bolt
302/5.0L	3.950"	1970-96	2381007 (0.950")	4-Bolt
351W	3.950"	1980-96	2381007 (0.950")	4-Bolt
302/351W (Supercharged)	3.950"	1980-96	2381009 (0.950")	4-Bolt

Big Block Ford - All 429/460 V8s and all 352/390/406/410/427/428 FE V8s 429-460 V8 -

These engines have utilized various timing pointer locations. Most engines place the pointer at the "10 o'clock" position when viewed from the front. Our damper features two keyways, one 1/4" and the other 3/16". Using the 1/4" keyway will correctly position the damper on a production crank (or a custom crank machined to factory specifications), aligning the "10 o'clock" pointer with the 0° top dead center mark on the damper. The 3/16" keyway should be used with Ford Racing M6303-A600 and B600 crankshafts or an M-6011-A600 or B600 short block kit. In these configurations, the "10 o'clock" pointer will align with the 0° top dead center mark on the damper.

NOTE: When using this damper with a Ford M-6303-A600/B600 crank, use a Ford Racing spacer M-6359-C460 over the crank snout before installing the damper. This spacer is used with internally balanced engines only. The stock spacer is Ford part number M-6359-D460 which is used with stock cranks. This damper has the stock four bolt pulley pattern and also the BB Chevy three bolt pattern which allows use of most crank trigger ignition systems or other aftermarket pulley combinations designed for BB Chevy. Adjust pulley alignment by machining the crank spacer as required.

FORD FE V8 - These dampers are all neutral balance (no counterweight) although the 428 does use a counterweight on the flexplate, so technically that engine is an externally balanced model. Our FE damper is a duplicate of the stock 427 high performance damper. It is 7.5" in diameter while all other FE dampers are 7" in diameter. Our 7.5" diameter damper can be used on all FE engines. We supply a new timing pointer for the larger diameter. Our timing pointer will fit both early and late FE engines. If your engine uses one v-belt pulley this damper can be used as is. If your engine uses more than one v-belt pulley, unbolt the supplied pulley, and using our supplied aluminum adapter spacer, bolt your stock pulleys in place using the stock bolts. These dampers have both early and late pulley bolt patterns tapped in them so all the stock pulleys will fit.

SMALL BLOCK CHRYSLER V8 ENGINES - How to Determine Which Counterweight to Use:

1. For all internally balanced 1967 and later 318 V8 standard and Magnum, and all internally balanced 273 and 340 engines with forged cranks:
Do not use any counterweights.
2. For 340 externally balanced 1972-73 engines with cast crank:
Use counterweight #91014 (part number is stamped on the weight).
3. For 360 externally balanced 1993-97 engines with cast crank:
Use counterweight #91013 (part number is stamped on the weight).
4. For 360 externally balanced 1971-92 engines with cast crank:
Use counterweight #91012 (part number is stamped on the weight).

BIG BLOCK CHRYSLER V8 ENGINES - How to Determine Which Counterweight to Use:

1. For 1972-'78 383 & 400, '71 383 2-bbl, and '74-'78 440 engines (cast crank only):
Use counterweight #91015 (part number is stamped on the weight).
If you're unsure whether your engine has a cast crank with an externally balanced damper, check your old damper. Look for a portion of the back that is carved out, indicating an area with less weight than the rest of the damper. This signifies it is externally balanced.
2. For 1970-'71 440 6-bbl and the 1971 High Performance 440 engines:
Use counterweight #91016 (part number is stamped on the weight).

Pontiac V8 Engines - All 1961 - '79 engines - 326, 350, 389, 400, 421, 428, 455

Note that for this damper to fit '61 to '68 engines, you must use a '69 or later model timing chain cover, water pump, pulleys, and related components. These parts can be sourced from a wrecking yard or from Year One (800-932-7663, www.yearone.com). Kauffman Racing Equipment (www.MR-1.com) offers a high-quality '69 and later front aluminum timing cover at a reasonable price, and a similar cover is available from Performance Years (performanc-years.com). These dampers, unlike some competitors, retain the original Pontiac accessory pulley bolt pattern, allowing you to use your original stock pulleys if desired. The Pontiac damper is a neutral balance model, essentially the same as those used on all various-sized Pontiac engines from 1961 through 1979. Additionally, this damper includes a big block Chevy accessory pulley bolt pattern. Some modifications to the pulley or damper hub may be required to use BB Chevy pulleys.

Olds V8 Engines - 350, 400, 403, 425, 455

The Oldsmobile harmonic damper is compatible with a wide range of Oldsmobile engines. It is an externally balanced damper featuring a bolt-in counterweight. If you choose to convert your crank to an internally balanced engine, you can easily use this damper by removing the counterweight. Our Olds damper matches the dimensions of the stock OEM model but is constructed from superior materials. It includes a removable bolt-in counterweight for neutral balance and retains the stock accessory pulley bolt pattern, as well as a big block Chevy bolt pattern. The Olds bolt pattern consists of four 5/16-18 tapped holes, while the big block Chevy bolt pattern includes three 3/8-16 tapped holes.

Chevrolet V8 Engines - Small Block and Big Block V8s (Except late LT-1, LS-1 and LS-6.)

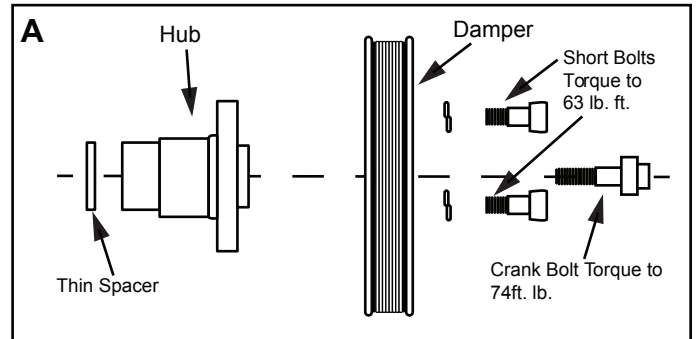
Our Chevrolet dampers for both small and big block engines are available in internally and externally balanced models. The basic damper design remains the same, with the difference being the addition of a bolt-in counterweight. If you have an internally balanced model and want to use it on an externally balanced engine, you can add the appropriate bolt-in counterweight, which is also sold separately. Conversely, you can convert an externally balanced damper to internal balance by removing the weight. However, our 6-3/4" S.B. Chevy 350 (#80000 and #90000) and 400 dampers (#80001 and #90001) are too small to incorporate a bolt-in counterweight and cannot be modified in this way. While the #80010 damper is suitable for racing applications, it is not an SFI-spec damper.

Note: Small block Chevys have used three different TDC timing tab pointer locations. If yours doesn't line up, any aftermarket bolt-on timing tab will provide the correct pointer positioning. Refer to the note on the first page. We have updated our 6-3/4" SB Chevy 350 dampers (#80000 and #90000) to include an additional TDC mark labeled "Vertical TDC." This mark is for engines produced from 1984 to 1995, which have the TDC mark at the top of the balancer and are timed by looking down behind the water pump to view the timing pointer. You may use aftermarket timing tape if desired.

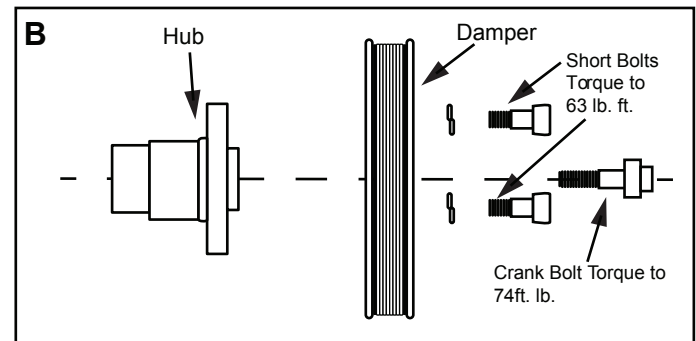
Chevrolet LT-1, LS-1 and LS-6

The following applies to part numbers: Sportsman 2335040 and Pro Series 2435040 Dampers.

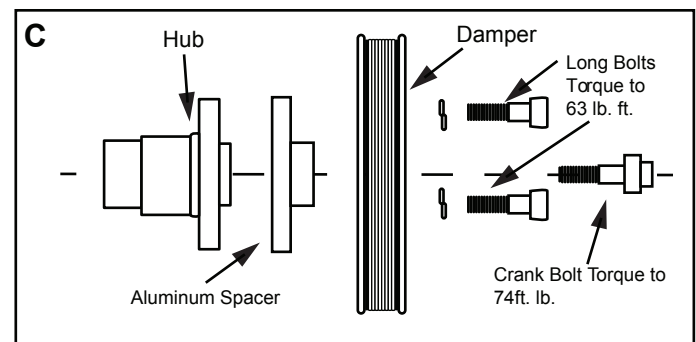
A LT1 1993 -'95 Camaro & Firebird: Install the thin steel spacer onto the crank. Install supplied hub onto crank. Install damper onto hub. Do not use aluminum spacer. Use short set of bolts to secure damper onto hub. See Illustration A.



B LT1 1996 -'97 Camaro & Firebird: Install supplied hub onto crank. Do not use steel spacer. Install damper onto hub. Do not use aluminum spacer. Use short set of bolts to secure damper onto hub. This is the stock configuration right out of the box. See Illustration B.



C LT1 1994 - '95 Caprice, Impala, & Roadmaster*: Install supplied hub onto the crank. Install aluminum spacer onto the hub and damper onto the aluminum spacer. Use long set of bolts to secure damper to spacer and hub. Torque bolts to figures given. See Illustration C.



**Note: This damper can be used on 1996 models of these vehicles but the belts will be misaligned by about .080" which should still work ok.*

NEUTRAL BALANCE ENGINES

All Sportsman and Pro Series Dampers will be neutral balance with the counterweight removed, with the exception of 2338341 and 2438341.

AMC V8 Engines

The following applies to part numbers: Sportsman 2330441 and Pro Series 2440141 Dampers.

Please note that the following instructions are very important and must be followed carefully to avoid engine damage. This damper will work on the AMC 304, 360, and 401 engines. These three engines use different counterweights. Make certain that the correct counter-balance weight is used. Three counter-weights are included and identified with part numbers engraved on them. When the packaged damper is received, it will have two weights bolted on the back and one located in the foam tray.

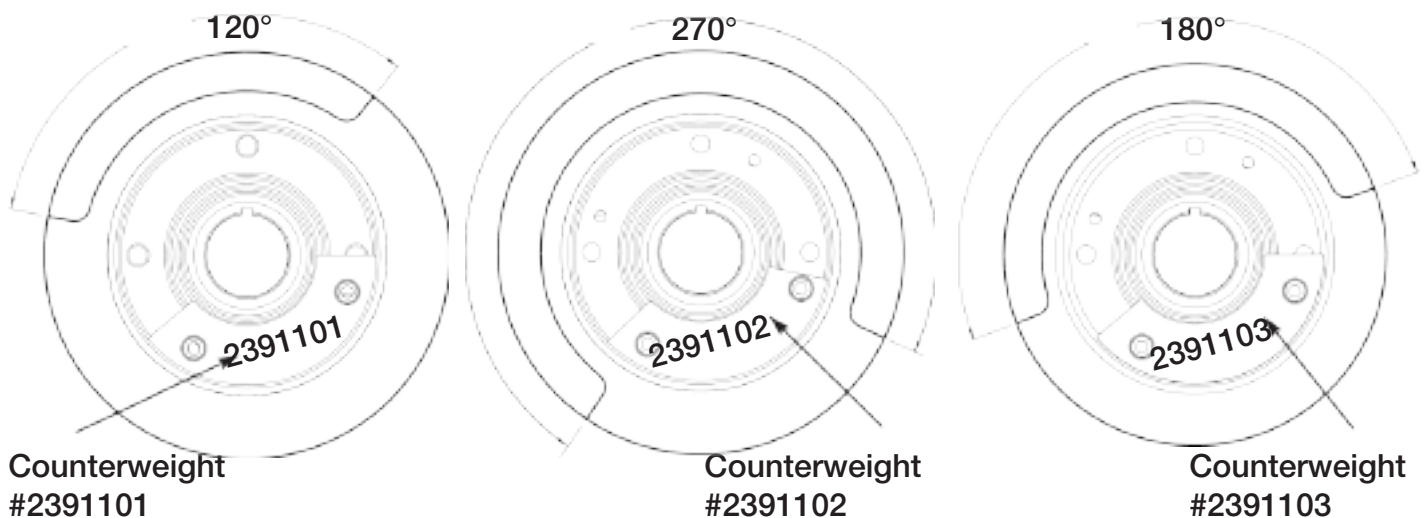
Remove both weights from the backside of the damper. Look at illustrations below and use correct weight for your engine. Apply PRW Threadlocker to the two bolts and fasten the weight to 10 lbs foot with the hex key.

Application Information for this Damper: 1972-'79 304 cid V8, 1972-'92 360 cid V8 and 1972-'79 401 cid V8

Special Note: A small number of late model 401 V-8's (1978- '79) will match the illustration in Figure 1 and uses the 91101 counterweight.

Note that AMC also manufactured a 343 and a 390 CID engine. These dampers used a three bolt pulley. If you wish to convert a 390 to use this damper, you must use a four bolt pulley. Compare the original 390 damper to the drawings below to determine which weight to use for your application.

For illustration purpose, the graphics below show relief and counter-weight on same side of damper. The OEM damper relief is on the front side of the damper. Weights are installed on the back; with the fasteners provided.



Damper relief as above 120°, it is a 360 CID. Use counter-weight #2391101

Damper relief as above 270°, it is a 304 CID. Use counter-weight #2391102

Damper relief as above 180°, it is a 401 CID. Use counter-weight #2391103