

## SUPER DAMPER



**CAUTION! DAMPER ASSEMBLY MUST NOT BE DRILLED TO BALANCE. THE ASSEMBLY IS FULLY MACHINE-BALANCED AND MUST NOT BE ALTERED.**

**Important note!** ATI dampers, in all cases, must be retained to the crank with a standard length bolt torqued to the manufacturer's specifications. Long bolts used to retain drive mandrels stretch when they get hot and should not be used. ATI manufactures special hubs for many engines to put the bolt below flush and allow drive mandrels to be located and bolted to the 3 pulley bolt holes. Mandrels are drilled and tapped to retain pulleys and dry sump drives. Mandrels, pulleys and accessory drives are available from:

ATI .....800-284-3433  
BLP Products.....800-624-1358  
CV Products .....800-448-1223

Moroso .....203-453-6571  
Peterson Fluid Systems .....800-926-7867  
Jones Belt Drives .....610-847-2028

ATI can duplicate your existing long bolt drives to bolt-on mandrel type in one week without plating.

### INSTALLATION:

**Tools needed:** Damper installation tool, Torx T-40 Plus bit, 3/8-12pt socket.

**For pt. #s 917060, 917062, 917080, 917740, 917780, 917781, 917788, 918598, 918599, DO NOT disassemble the damper for installation. Install as a complete damper!**

1. Inspect your crankshaft for burrs, nicks, etc. and file to clean up. Stone or file a slight radius on end to break sharp edge. Inspect your key and replace as necessary.
2. It is highly recommended that you use anti-seize lubricant on the crankshaft before hub installation.
3. Press fit of the hub to the crankshaft is vital to transfer harmonics to the damper assembly.

Recommended press is as follows:

1.0000" - 1.2500"-----	.0009" to .0012"	1.6010" - 2.0000"-----	.0006" to .0008"
1.2510" - 1.3750"-----	.0008" to .0011"	2.0010" - 2.5000"-----	.0005" to .0007"
1.3750" - 1.6000"-----	.0007" to .0009"		

GM cranks are typically to tolerance +/- .0001 (one ten thousandth). If you are using an OEM GM crank you can hone the damper hub as follows:

Big Block ----- hone to 1.5993" +/- .0001"  
Small Block ----- hone to 1.2460" +/- .0001"

On all other cranks, the crank must be checked with micrometers and the hub with a dial bore gauge to verify fit. Most OEM cranks are held to +/- .0002" while most aftermarket cranks are held to +/- .0005." Hub bores are tight to accommodate aftermarket cranks and most hubs -- will require honing. **Do not hone aluminum hubs. See special instructions for dampers with aluminum hubs on back.**

4. The hub may be installed onto the crankshaft first, then the damper may be bolted to the hub. Use the proper puller / installer.
5. The damper assembly is indexed to the crank hub. The indent dimple on the hub and back of damper must be aligned for proper assembly.
6. The hub to damper fit is held to an extremely close tolerance. To install the damper to the hub:
  - a.) Align the indent dimples.
  - b.) Start three (3) 12-point bolts in front of the damper in the three holes that are not countersunk. Use 242 Loctite (blue). Do not pull down tight on the damper!

- c.) Start the six (6) countersunk flathead screws in the remaining six holes. Use Loctite 242 on these six screws. Draw the damper assembly onto the hub evenly. Torque the 3 12-point screws to 28-30 ft./lbs. They must be installed and torqued even if no pulleys are used.
- d.) Torque the 6 flathead screws to 16 ft./lbs.
- e.) For 5 1/2" dampers, 1/4-20/28 bolts must be torqued to 120 in/lbs and Loctite used.

7. The zero timing mark is keyed exactly as the OEM part.

### INSTRUCTIONS FOR DAMPERS WITH ALUMINUM HUBS

All dampers with aluminum hubs have a .002" press fit between the crank and the hub. **DO NOT ALTER** the press fit of the hub in any way! The press fit on the aluminum hub is slightly tighter to compensate for the elasticity of the aluminum.

Inspect your crankshaft and the crank key as described on the first page of the instructions. Also use anti-seize lubricant on the crank snout.

Heat the crank hub in boiling water for five (5) minutes. Use gloves to handle the hub after it has been heated. This will expand the hub slightly and help it slide onto the crank. After installing the hub, allow time for it to cool.

Refer to Step 6 for damper bolt installation.



**IF USING A FRONT COVER TEFLON SEAL, YOU MUST USE A "SPEEDY SLEEVE" OR A STEEL HUB.**

#### BALANCE INFORMATION

Zero balance units have **each part** individually balanced to two-tenths of a gram. These units should not be drilled and **should not** be on the crankshaft for balancing. Install the damper at engine assembly. Since the inertia weight in the Super Damper is not bonded, it may not be on center until the engine is started. The damper may show out of balance until the engine reaches 2000 RPM the first time and the inertia weight centers itself.

#### TO TELL WHEN YOUR DAMPER NEEDS NEW RUBBER:

Drag Race Engines subject the damper to low total cycles at intermittent intervals. Elastomer in all units inspected will easily meet the ten year requirement.

Circle Track Engines subject the damper to greatly increased cycle times for an extended period of time and the damper requires more attention.

Nextel Cup - Most teams are inspecting rubber after each race or every 2 races (1.2 to 2.5 million cycles). Engines running shorter races can easily go 2.5 million cycles since the damper is not subjected to lengthy, continuous cycles under the extremely hot, tight environment of Nextel Cup.

#### RECOMMENDED MAINTENANCE SCHEDULES:

- Street/800 HP Max Drag Use: 10 years
- Pro/Fuel Drag Use VARIES: Annual
- Circle Track / Endurance: Each engine rebuild
- 5.5" Dampers depends on HP/usage:
  - ~ 400 HP - 5 years
  - ~ 400-600 HP - 2 to 3 years
  - ~ 600+ HP - yearly

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Should you need to return your Super Damper for any reason -- overhaul, repair, etc. -- please call ATI at 410-298-4343 or 800-284-3433 to receive your RGA # (Returned Goods Authorization).