

Step 1 – Tools & Procedures

- EQUIPMENT: Damper Installation Tool
- Anti-seize Compound
- The Proper Size Key
- Whenever it's necessary to remove a vibration damper, only a proper puller tool should be used.
- Do not use hammers or pry bars to install or remove Fluidampr, this will void your warranty.
- Honing or machining Fluidampr bore is not recommended. A diametrical press fit of .0005" to .0015" is recommended for proper damper function. (Aluminum Fluidampr p/n 720102, requires a diametrical press fit of .001" to .0025".) Using a micrometer, make sure to measure the crank snout and the inner bore of Fluidampr to assure proper fit.

Step 2 - Balancing

EXTERNALLY BALANCED ENGINES

PART NUMBERS: 650211, 650221, 650501, 720111, 800111, 800121, 800181

REPLACING THE DAMPER -Fluidampr counterweights have been designed to OEM specifications. If the damper being replaced has never been altered, Fluidampr can be installed with no additional balancing.

BALANCING OR MATCH BALANCING -Fluidamprs designed for externally balanced engines include the damper ring (A) bolted to a counter-weighted hub (B). See photo below.



Damper Ring (A)

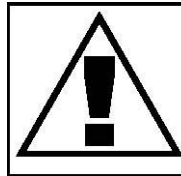
Counterweighted Hub (B)

- During the balancing or match balancing procedure, it is necessary to separate the hub (B) from the damper ring (A) by removing the 6 or 8 bolts. **DO NOT ATTEMPT TO BALANCE THE CRANKSHAFT WITH THE DAMPER RING (A) INSTALLED** -The inertia mass inside the damper ring is balanced to a close tolerance at the factory and it rotates inside the damper ring.
- **DO NOT DRILL IN THE DAMPER RING (A)**-drilling can cause silicone to leak and result in damper failure and will void warranty.
- Balance Fluidampr counterweighted hub (B only) with the crankshaft or match balance it to the original damper.
- After balancing is complete, the damper ring (A) can be re-installed on the counterweighted hub (B) using the bolts provided. Be sure to tighten all bolts to the recommended torque value. See the BOLT TORQUES chart in the right column of this page.

BOLT TORQUES -TWO PIECE FLUIDAMPRS

Part Number	No. of Bolts	Torque
800101, 800121, 800131, 800111, 800151, 800181	6 SOC. HEAD	50 FT-LBS.
720111	6 SOC. HEAD	38 FT-LBS.
650211, 650221, 650501, 650231, 650241	8 SOC. HEAD	28 FT. LBS.

FOR ALL PART NUMBERS WITH MULTIPLE COMPONENTS BOLTED TOGETHER



WARNING: IF YOU DISASSEMBLE THE FLUIDAMPR, FAILURE TO CORRECTLY REASSEMBLE FLUIDAMPR USING ALL THE BOLTS TORQUED PROPERLY WILL VOID THE WARRANTY, AND COULD RESULT IN DAMPER SEPARATION DURING ENGINE OPERATION

INTERNALLY BALANCED ENGINES

530601***	610901	640901	720121	740111
550203	610911	650201	720151	740121
551201	620101	650231	720201	740201
551211	620103	650241	720301	790102
551221***	620111	650401	720311	800101*
570601***	620121	660201	720321	800131*
590601***	620131	720101	730602	800151*
600203	620601	720102	740101	840801
610701***	630701***			

* NOTE: It is not necessary to remove the bolts or disassemble the Fluidampr during installation. The 6 socket head bolts should be torqued to 50 ft-lbs.

***OEM applications may be a slip fit.

- Each Fluidampr component is precision balanced during manufacturing, so NO additional balancing is required.
- **DO NOT ATTEMPT TO BALANCE THE CRANKSHAFT WITH FLUIDAMPR INSTALLED** -The inertia ring inside Fluidampr is balanced to a close tolerance at the factory and it rotates inside the Fluidampr.
- **DO NOT DRILL FLUIDAMPR** -drilling can cause silicone to leak and result in damper failure and will void warranty.

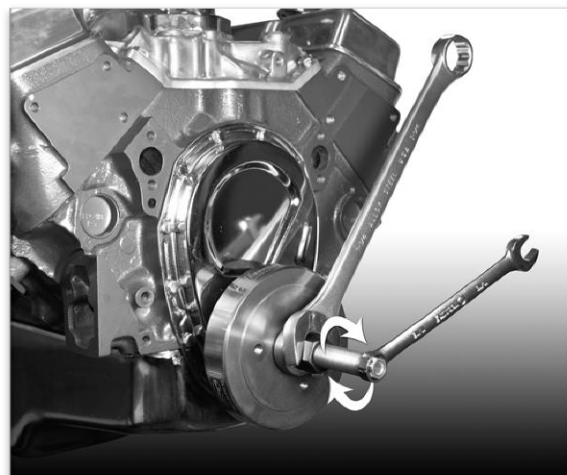
Step 3 – Fluidampr Installation

NOTE For LT1 ONLY (P/N 740101): FOR ENGINES NOT USING A RELUCTOR WHEEL, USE THE .093" THICK SPACER, BEHIND THE DAMPER HUB. FOR ENGINES RUNNING A RELUCTOR WHEEL, DO NOT USE THE SPACER. KEYWAYS ARE CUT IN FLUIDAMPR TO INDEX TIMING MARKS.

- Carefully remove burrs, scratches, or nicks on the crank snout by filing and polishing the snout so that it's smooth and free of surface irregularities. Remove any sharp keyway corners. The key should fit snugly in the keyway. A heavy press fit creates high stress on the slot and should be avoided. If you have to use a hammer for anything other than a light tap, the key is too wide. Replace the key if it is too tight or too loose, or if its condition is questionable.
- Coat the crankshaft snout and damper inside diameter with an anti-seize compound or moly grease to prevent galling during installation.
- Place the damper on the crank snout, and thread the installation tool into place. It will take a little effort to tighten the installation tool nut.
- As you tighten the nut on the installation tool, you should meet smooth steady resistance until the damper is fully seated against the timing gear or spacer.

Engine	Torque
Chevy Small Block	70 ft-lbs
Chevy Big Block	110 ft-lbs
Chevy LSX	37 ft-lbs + 140°
Ford	110 ft-lbs
Ford 4.6	36 ft-lbs + 90°
Pontiac	160 ft-lbs
Oldsmobile	160 ft-lbs
Chrysler	150 ft-lbs
Honda B Series	148 ft-lbs
Honda F22C/F20C	181 ft-lbs
Nissan 350Z	30 ft-lbs + 60°
Nissan RB26	329-344 ft-lbs
Toyota 2JZ	239 ft-lbs
VW, Audi VR6	74 ft-lbs + 90°
WARNING: Failure to use a properly torqued crank bolt will void warranty and could result in damper inner bore, key or crank snout damage.	
NOTE: Torque crank bolt using original manufactures' torque to yield procedures.	

- If resistance increases dramatically, (aside from when the damper seats fully), something is wrong. Find out what it is before proceeding.
- BE SURE FLUIDAMPR IS ALL THE WAY ON! When the damper is fully seated, remove the installation tool and install a Grade 8 crankshaft bolt and washer. Tighten the bolt to the engine manufacturer's recommended torque specification:



Step 4 – Timing Check

- Check the ignition timing marks. Some engines have been equipped with different timing tabs over the years. The engine's tab may not be positioned the same as the one for which Fluidampr is designed.
- Use the positive stop method to locate true Top Dead Center (TDC). Remark or relocate the timing tab as required.
- Finding TDC -Top Dead Center may be found by installing a positive stop on top of the block (if the heads haven't been installed) or by threading a positive stop into the number one spark plug hole. Adjust the stop so that it contacts the piston at 15 to 30 before TDC. Mount a degree wheel to the damper and install a pointer on the block. Carefully rotate the crankshaft by hand_clockwise until the piston contacts the stop. Be careful as the position approaches TDC-what you want is positive stop, not a hole in the piston. Note the reading on the degree wheel. Then rotate the crankshaft counterclockwise until the piston once again contacts the stop and note the reading again. TDC is located exactly halfway between the two readings (within the area the engine did not rotate). Adjust the pointer as required. If you don't have a degree wheel, mark the damper next to the timing pointer "0" mark at each positive stop. Then divide the distance in half. That is TDC.

Step 5 – Pulley Installation

- Accessory drive pulleys should be piloted on the damper or pulley mandrel. Otherwise, they will run out of round, causing side loads on the crankshaft.
- PONTIAC -The pulley bolt pattern on Pontiac does not match the stock set up. Rotate the pulley 45° and redrill the Pontiac pulley bolt holes to fit Fluidampr. A custom pulley may be required in some applications.
- FORD -The pulley bolt pattern on some Fords does not match the stock set up. Contact Fluidampr for customer print with bolt pattern.

Warranty

- **WARRANTY:** All warranty claims must be made with your point of purchase. **LIMITED WARRANTY:** Fluidampr warranty extends to the original purchaser only and a copy of sales receipt must be provided. Keep your receipt. Fluidampr recommends to our customers that they have their Fluidampr products installed by a certified technician or engine builder as warranty does not cover installation errors. Fluidampr offers a 1 year warranty for defects in material and workmanship. Repair or replacement will be at Fluidampr's discretion. If purchased from Fluidampr: To obtain warranty service, call customer service to receive a return authorization number. Returns must include the RMA#, description of the problem and a copy of the purchase invoice/receipt. Returns without an RMA# will not be processed. Customers are responsible for freight charges to Fluidampr. If product is found to be faulty, Fluidampr will pay UPS Ground Freight when returning the product to customer. **THIS WARRANTY DOES NOT INCLUDE AND IS NOT LIMITED TO THE FOLLOWING:** • Failure due to improper installation or maintenance. Loss or injury incurred from use or operation of Horschel Motorsports products. • Misuse, abuse, modifications, or unauthorized repairs. • Removal or replacement cost. • Cost incurred due to downtime of vehicle. • Damage to other engine or vehicle components. • Normal wear and tear. • Use in racing applications or competitive purposes. Fluidampr limited warranty coverage is subject to change due to uncontrolled circumstances with or without notice.

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