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## GM LSX Supplemental Install Instructions

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### Installation Notes:

The supplied crank bolt is a non-torque to yield bolt. Make sure to apply some red Loctite to the supplied crank bolt prior to tightening to **130 ft-lbs**. The crankshaft washer that is supplied has a machined in raised lip that should be installed against the head of the bolt.

**Use the supplied Extreme Pressure lube on the inside of the damper hub, outside of the crank snout and under the head of the bolt. This lube will help the damper install and remove easier. Additional lube can be purchased from Innovators West if needed.**

Standard diameter and overdrive dampers retain the stock sized a/c pulley.

Underdrive dampers have the a/c pulley underdriven as well and may require a shorter a/c belt as a result.

**DO NOT** remove the hub from the damper case. Install as a complete assembly!

Innovators West Damper Install Video:  
[https://www.youtube.com/watch?v=S0swLZ3Q\\_sA](https://www.youtube.com/watch?v=S0swLZ3Q_sA)

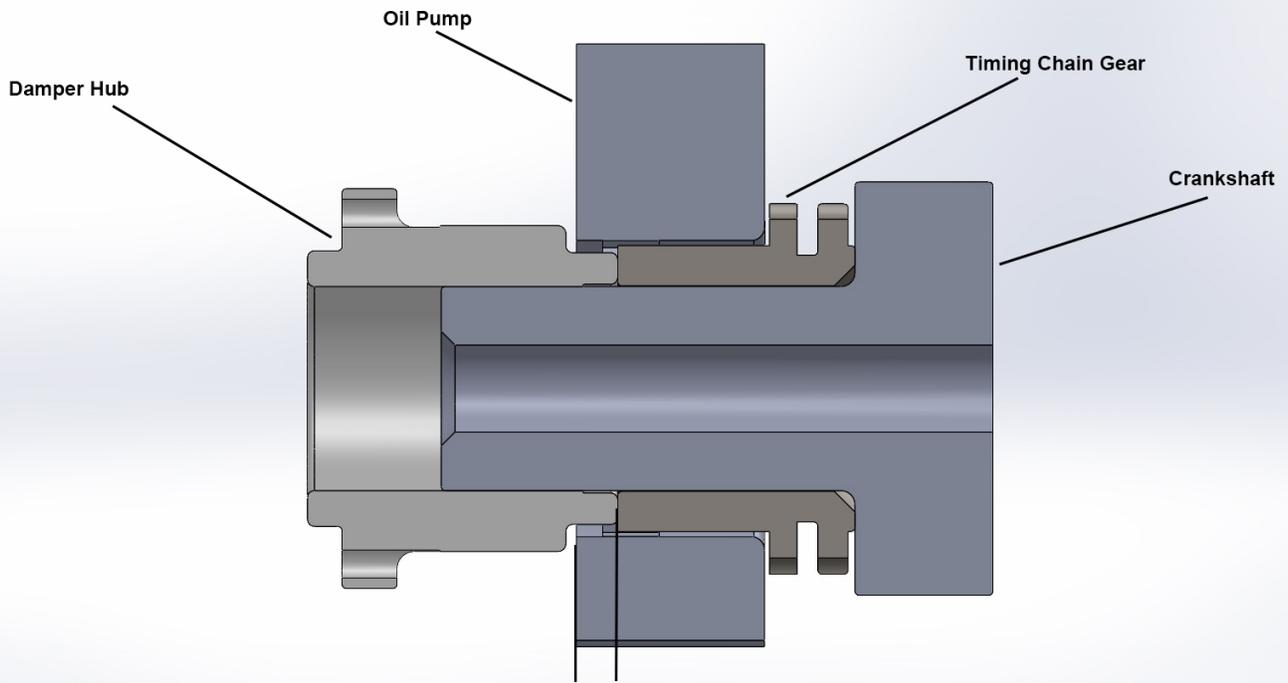
The Innovators West damper comes broached for a 3/16" crankshaft key. This keyway should match up to most aftermarket crankshafts with a 3/16" key or any stock crankshaft that has been cut for a key. This keyway can also be used with the aftermarket pinning kits that install the pin perpendicular to the crankshaft snout. Crankshaft pinning kits that install the pin parallel to the crank snout can also be used with our dampers. **Crankshaft pinning kits are available separately from Innovators West.** If using a pinning kit from another manufacturer, modifications to the pinning fixture may be needed to fit the fixture inside the counter bore of the damper. If not using the supplied keyway, fill the keyway with silicone during damper installation to avoid an oil leak. **DO NOT use the provided 3/16" square cut keyway with any pinning kit other than the ones that put the pin perpendicular to the crankshaft snout. It is not recommended that pins or keys larger than 3/16" be used on the LS series engines due to the thin hubs required to fit the stock timing cover seals. Use of larger pins or keys may result in the failure/splitting of the damper hub.**



Innovators West Pin Kit (#966 Shown)

Innovators West Pin Kit Video :  
<https://www.youtube.com/watch?v=7hrFYigTU6c>

**Super Duty Blower Hub - Caution:** For any engine using a double roller timing set or any other modification that requires the oil pump to be spaced out from the motor, addition clearance may need to be machined into the back of the **super duty blower hub**. Always measure from the lower timing chain gear to the front face of the oil pump. Take that measurement, add .050" for clearance and compare it to the machined in step on the back of the hub (.375" for most SD hubs). In certain situations, the provided oil pump relief step will need to be machined further back to accommodate the modified oil pump location.



Measure from the end of the oil pump gear to the front face of the oil pump body. If the measurement is greater than .325" the hub relief will need to be modified for greater clearance.

**Super Duty Diameter Hub - Double Roller Timing Chain with relocated Oil Pump**

## Removal Notes:

To attach damper puller (see pictures below), remove 3 of the 6 - 5/16" – 18 **COUNTERSUNK** socket cap screws that secure the damper hub to the case. This will allow the puller to be secured into the steel hub at the back of the damper for removal as a complete unit.



## Bolt Torque Specs:

During installation or when reinstalling after removal, it may be necessary to torque fasteners on the damper. The following chart can be used for bolt torques with the Innovators West dampers.

- 5/16-18 Hub Bolts – 20 ft-lbs
- 3/8-16 Hub Bolts (Steel threads) – 30 ft-lbs.
- 3/8-16 Pulley bolts (Aluminum threads) – 25 ft-lbs.

For any other fastener torque specs, please call Innovators West at 785-825-6166.