

## Advantages of OEM Litens OAD

Applications that take advantage of the OEM Litens OAD have lower belt tension as well as reduced noise, vibration and harshness (NVH) concerns. This helps extend the life and improve the performance of all the FEAD components, including the water pump, power steering pump and AC compressor.

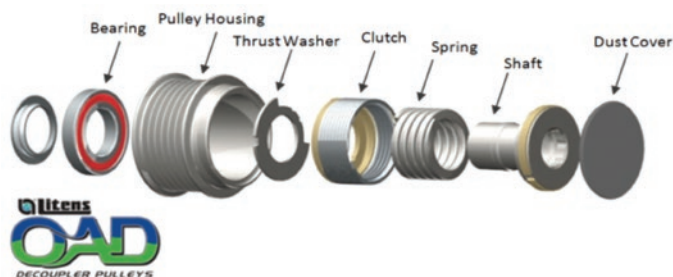
## Remy Exclusive OEM & Aftermarket Pulley Validation

### Remy® Alternators + Litens® OAD

Remy's new and remanufactured alternators for vehicles with an overrunning alternator decoupler (OAD) are always equipped with either a brand-new Litens OAD or a remanufactured Litens OAD. Remy is the only Litens authorized remanufacturer equipped with a Litens End-of-the-Line tester that validates products to meet OE specifications.

### Litens OAD: What You Need to Know

- Similar in appearance to other clutch pulley designs, an OAD ensures an extremely smooth, efficient belt drive. The Litens OAD is designed to reduce or eliminate unwanted torsional vibrations generated by the crankshaft by absorbing vibrations before reaching other components on the front end accessory drive (FEAD).
- Never substitute a solid pulley or any other "knock off" pulley design in place of the Litens OAD. Using lower-quality replacements will adversely affect other components and create NVH concerns.



### How It Works

- The crankshaft drives the belt and, in turn, the belt drives the OAD pulley housing.
- The pulley turns the thrust washer and the clutch assembly.
- The clutch housing grips the end of the torsional spring to rotate it.
- The opposite end of the spring then contacts the shaft (the rotor inside the alternator).
- The weight of the rotor provides resistance to the spring, causing it to wind up and expand until it contacts the clutch.
- The resistance between the clutch and spring causes the clutch to drive the shaft through the spring.
- Every firing of the engine causes the spring to wind and unwind, absorbing the pulses from the crankshaft.
- During transmission shifts, and when the engine is shut off, the clutch unwinds and the shaft freewheels, providing a one-way effect and preventing belt chirp.



## Diagnosing a Failed OAD

Typically, a failed OAD makes objectionable noises.

**Step 1:** With the engine at 2,500 RPM, shut off the engine.

**Step 2:** Listen—a buzz from the pulley indicates a worn bearing.

**Step 3:** Remove the dust cap from the pulley.

**Step 4:** Use the proper tool to turn the pulley in both directions:

- One direction will have a spring feel.
- One direction (overrun) will turn smoothly.

## Calculating Torsional Vibrations

Every time a cylinder fires, the crankshaft speeds up. Then it slows back down until the next cylinder fires. These pulses are referred to as the firing frequency.

**Torsional Vibrations = Half the number of cylinders X engine RPM / 60**

Example:

A 4-cylinder engine at an idle speed of 600 RPM would have a firing frequency of 20 Hz

$$2 \times 600 / 60 = 20$$

The spring inside the Litens OAD is tuned specifically to the firing frequency of the application.

## Recommendations

Generally, OE manufacturers recommend replacing the entire alternator if the pulley fails. Likewise, if an alternator fails, do not transfer the pulley to the new unit. Never substitute a solid pulley or any other “knock off” pulley design in place of the Litens OAD. The entire FEAD is designed around the OE-equipped system. Using lower-quality replacements will adversely affect other components and create NVH concerns.