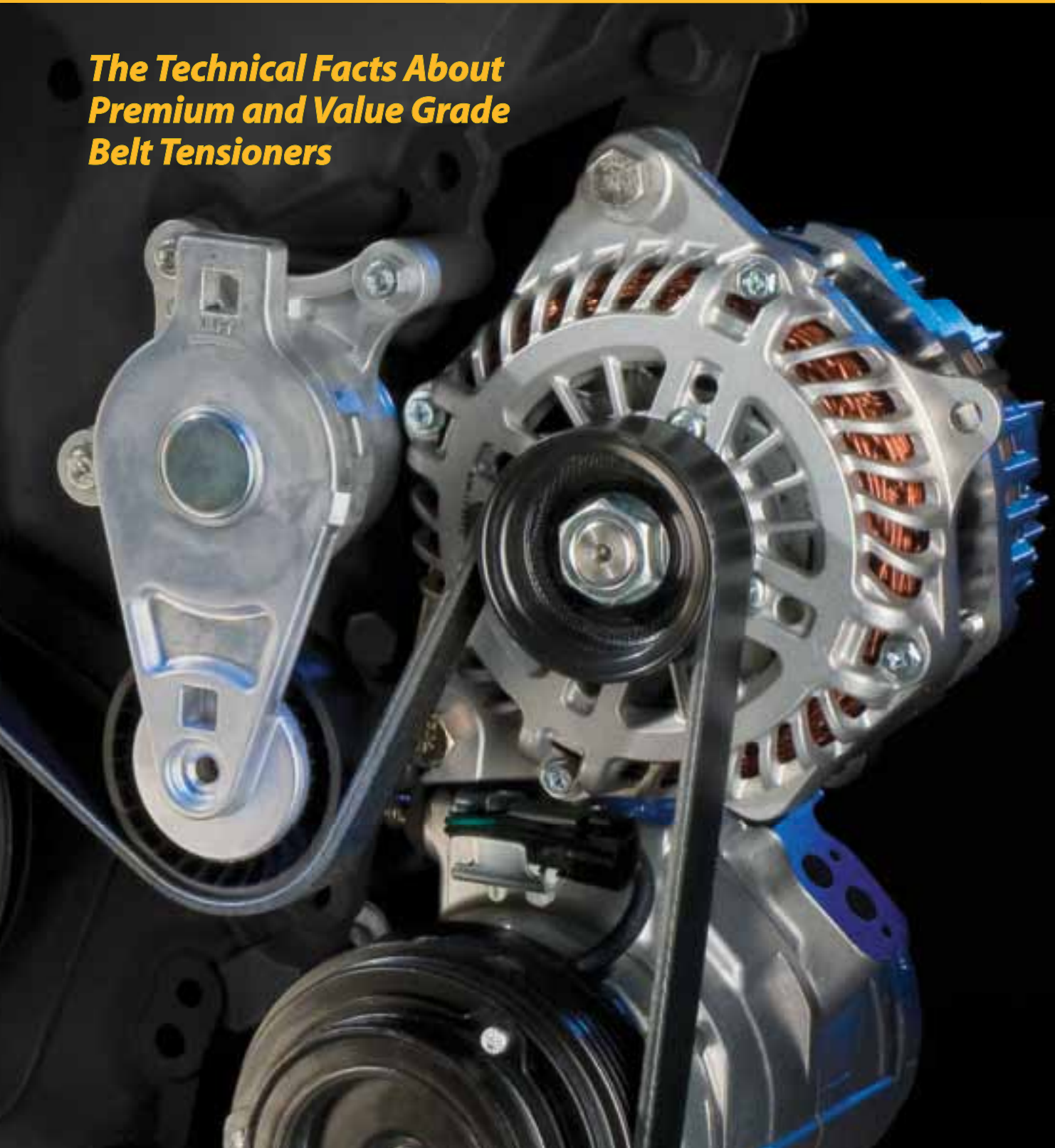




belts/hose

***The Technical Facts About
Premium and Value Grade
Belt Tensioners***



Premium vs. Value Grade

NAPA DriveAlign® Tensioners

- *NAPA supplier OE specification knowledge ensures proper belt tension, alignment and damping of the Accessory Belt Drive System*
- *Precise machined surfaces and assembly tolerances means no customer returns due to belt noise or belts jumping off the drive*
- *Patented damping system increases tensioner, belt and accessory component life reducing customer returns due to vibration complaints*
- *High quality casting process means durability that meets or exceeds OE requirements even under extreme conditions*
- *Patented labyrinth seal protects internal components to meet or exceed OE life expectancy requirements*
- *Full line coverage for Domestic, Import and Heavy-Duty applications*

Value Grade Tensioners

- *No OE experience means parts are reverse engineered with no system knowledge*
- *Imprecise and inconsistent assembly tolerance leads to customer complaints of noise, vibration or belt jump*
- *Inferior damping control results in potential for system malfunction or angry customers with vibration complaints*
- *Inferior casting quality could lead to housing cracking and premature failure*
- *Poor sealing with multiple paths for contaminants to enter internal components, drastically reducing life*
- *Short line with Domestic only coverage*

Quality is Remembered Long After Price is Forgotten.

27 Years of OE Partnership = Quality Parts You Can Trust

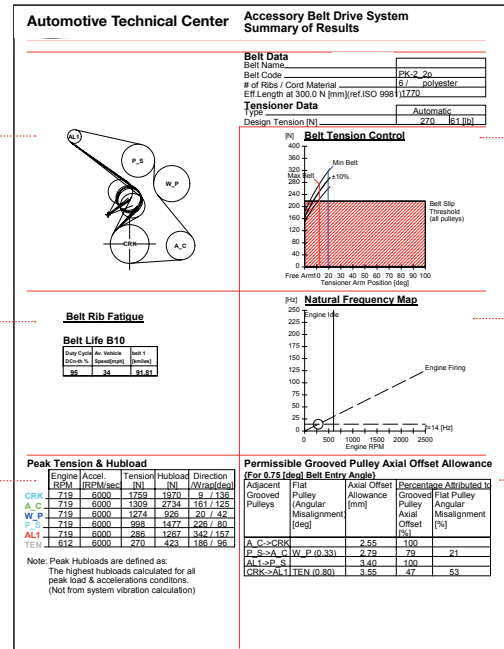
There are six Original Equipment (OE) suppliers in the world that make automatic belt tensioners for new vehicles. These companies benefit from working directly with the OE's and have firsthand knowledge of specific Accessory Belt Drive Systems (ABDS). This results in access to fundamental system design information when manufacturing a tensioner for the aftermarket. With over 3,000 engines in the market today, this knowledge is critical to producing tensioners that fit and function like the OE part.

OE System Design Experience is Critical

System Geometry & Layout

System Performance Prediction

System Loads & Duty Cycles Analysis



Critical Role of a Belt Tensioner

An ABDS tensioner's primary job is to automatically adjust the tension in the serpentine belt to ensure proper function and output of accessory components. The tensioner also has the important job of damping peak loads during engine acceleration and deceleration as well as damping vibrations caused by the engine firing.

Premium vs. Value Grade Tensioners — Where is the “Value?”

From the quality of the casting to the design of internal components, every aspect of a tensioner is critical to long service life. Inaccurate specifications will cause shortened life, belt noise and vibration, and can compromise system performance.

The supplier to NAPA tested several “Value” grade tensioners. We found “Value” grade tensioners did not meet OE requirements for alignment, tension and damping. Dynamic testing also revealed premature wear of critical internal components resulting in potential customer returns and driver safety issues. **Value Grade = Low Quality and Performance**

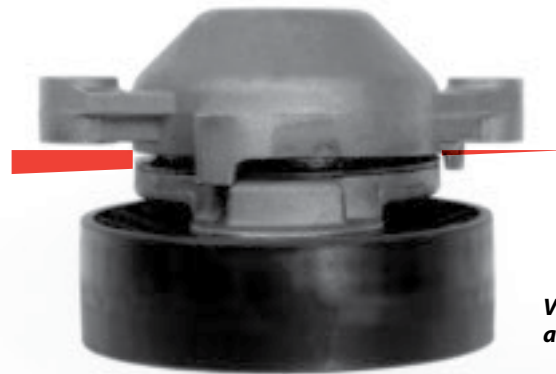
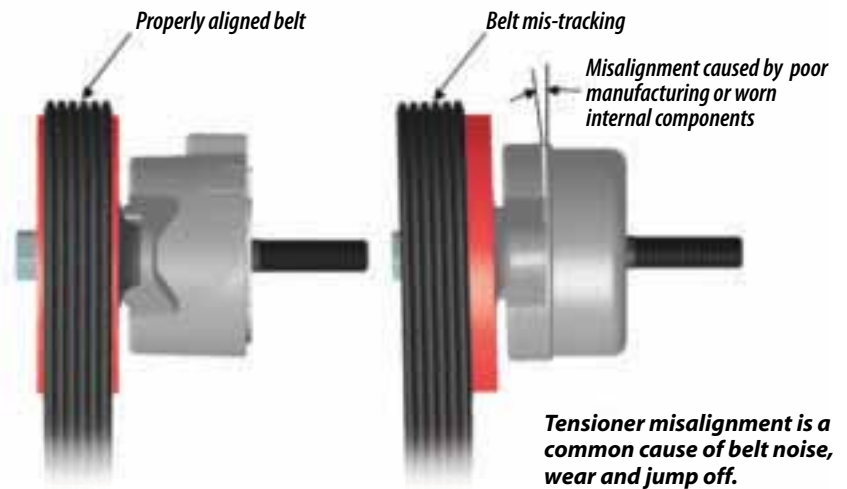
Critical Tensioner Attributes

Alignment

Tensioner pulleys must operate within the same plane as the belt. Any tilt or offset can cause accelerated belt wear, noise and in extreme cases, the belt can jump off the drive.

Premium grade tensioners hold tight alignment tolerances using precision assembly and machining practices to ensure reliable service.

Value grade parts are reverse engineered and reveal poor alignment right out of the box.



Tension

Belt tension is determined by power requirements of each accessory and drive geometry.

Premium tensioners ensure correct belt tension as a result of OE knowledge.

Value grade tensioners designed by reverse engineering have a low chance of meeting system tension requirements.

Samples tested revealed improper tension. High tension will cause premature wear and failure of component bearings. Low tension will result in belt noise, slip and false engine codes.



Improper tension caused by Value grade tensioners can lead to accelerated belt and component wear.



Damping

Damping is a critical attribute of any belt tensioner — smoothing peak loads and system vibration.

Premium grade tensioners use patented damping systems developed with the OE knowledge.

Value grade tensioners attempt to mimic complex damping systems with no understanding of system requirements.

Without proper damping, belt noise, vibration and accelerated wear are likely resulting in customer comebacks.



Improper damping can result in belt noise and vibration which can cause an angry customer return.

Casting

The body of a tensioner must withstand the forces and vibrations encountered during operation. There is a large difference between premium and value grade casting quality.

Premium grade parts have very consistent grain structures with no discontinuities or porosity.

Value grade parts exhibit inconsistent grain structure resulting in inferior strength.

Even the slightest mishandling of a value grade part during installation can lead to failure. Worse yet, because of location, a broken or cracked casting may be hard to detect, leading to potential safety issues.

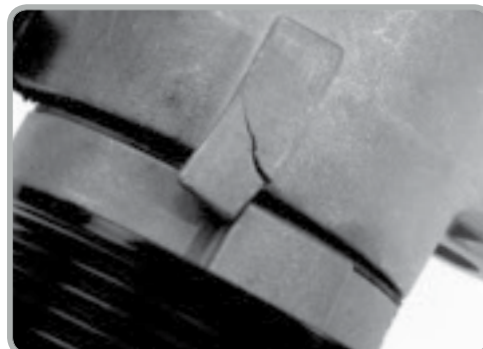
Casting Grain Structure



Premium grade = Consistent



Value grade = Inconsistent



Poor casting quality of value grade tensioners can lead to catastrophic failure.

NAPA's Supplier is a Global Leader in OE System Design

NAPA's supplier offers over 550 tensioners globally. With 27 years of experience working directly with the OE's wherever they build vehicles, NAPA's supplier understands all of the complexities of tensioners. The tensioner supplier to NAPA has earned the right to call NAPA tensioners "Premium" based on the thousands of test hours and extensive OE requirements that are behind every aftermarket tensioner. We worry about tensioner performance so you don't have to.

For more information about NAPA DriveAlign® Automatic Belt Tensioners, talk to your NAPA Heating/Cooling Group Representative or visit: www.napabeltshose.com

www.napabeltshose.com