

## BELT IN OIL TECHNOLOGY



## BELT IN OIL TENSIONER



Gates Belt in Oil drive system technology has been recognised and awarded by various OE manufacturers. Not only do we develop highly advanced belts for operation inside the engine in a wet environment but we also design and engineer Belt in Oil tensioner concepts with a unique proprietary design.

### BELT IN OIL TENSIONER CONCEPT

Gates timing belt tensioners are based on mechanical, friction damping technologies. Their primary functions are to provide dynamic and static belt tension, more accurate alignment for the belt routing and precise, consistent damping to control the system vibration over life-time.

Gates Belt in Oil tensioner design focuses on fundamental load balancing to minimise wear over the life of the product, packaging restrictions and eliminating contamination or corrosion in harsh environments by using proven tensioner concepts.

- > Controls severe system dynamics
- > Meets life time requirement of engine life (300,000 km)
- > Similar cost to dry belt tensioner
- > Meets chain engine packaging



# BELT IN OIL TENSIONER



## WHY BELT IN OIL TECHNOLOGY

By using Belt in Oil drive systems engineers can further reduce friction within engines contributing to a cleaner and more sustainable mobility.

### Benefits of this technology include

- > Improved fuel economy and lower CO<sub>2</sub> emissions
- > Reduced system noise
- > Timing accuracy over life of engine

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## BELT IN OIL TENSIONER ENVIRONMENT

The wet belt drive system has to withstand a continuous assault by all the different types of oils and additives that can be used in engines in a wide range of operating conditions, temperatures and different environments all over the world.

- > Ensures functionality from -40°C up to 150°C operation temperature
- > Dimensional stability of tensioner sub-components
- > Ensures consistent frictional damping characteristics
- > Meets wear characteristic

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## BELT IN OIL TENSIONER VALIDATION

The Gates Belt in Oil drive system has been tested on the Ford 1.0L ECO Boost engine which has been rewarded 3 times as engine of the year. The Gates Belt in Oil tensioner and belt have successfully completed the Key Life Test which represents 300,000km.

### For more information:

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