LOW SPEED PRE-IGNITION (LSPI) – THE ENGINE KNOCK RETURNS

THE ENGINE KNOCK RETURNS. What exactly is LSPI? How does LSPI occur? How to prevent LSPI?

How to prevent LSPI? Use the right motor oil!

Right engine oil against engine knock

BERLIN, 14163, GERMANY, January 31, 2021 /EINPresswire.com/ -- Older drivers, as well as those involved in motorsports, are well familiar with the phenomenon of engine knocking. However, due to continuous improvements in engine design and on-board control equipment, the risk of knock has been effectively eliminated; therefore many may have never heard of it. Unfortunately, old lessons seem to have been forgotten and the quest for fuel economy has spurred the engine downsizing and boosting craze. As a result, the engine knock has returned with a new scientific name: LSPI or Low-Speed Pre-ignition.

What exactly is LSPI?

Low-Speed Pre-ignition is an unplanned and unpredictable premature combustion of the fuel-air mixture in the combustion chamber, which occurs especially at low speeds, high load, and at the beginning of acceleration. The characteristic noise of LSPI is a strong and loud knocking sound, similar to the engine knock, only much stronger. It occurs stochastically and is difficult to

reproduce. LSPI is not good for the engine and the outcome can be completely devastating: cracked pistons and spark plugs, damaged rings and ring lands, buckled connecting rods, failed rod bearings – just to name a few.

How does LSPI occur?

In a spark-ignited internal combustion engine, the fuel-air mixture must ignite at a precise moment in the 4-stroke cycle in order for the engine to operate properly. The combustion is started by a spark plug. This ignition advance can be controlled and allows time for the combustion process to develop peak pressure at the right moment for achieving maximum engine efficiency. The knock occurs when the mixture ignites when it shouldn´t or when it stochastically explodes instead of burning normally. A drastic spike in cylinder pressure during the knock creates a characteristic detonation sound.
How to prevent LSPI? Use the right motor oil!

In recent years scientists have done a lot of progress in monitoring and understanding the LSPI phenomenon. Today it can be said that there are many factors causing LSPI. In addition to engine design, high pressure in the cylinder with increased engine power, low-quality gasoline, and lean air-fuel mixtures, as well as poor-quality motor oils have influence on causing LSPI. Therefore, oil manufacturers monitor current advances in understanding LSPI and timely adapt best practices in their product formulations which explicitly state that they help prevent LSPI. Choosing the right engine oil is therefore the key. But, what kind? An oil which offers the highest engine cleanliness – not only that – which ideally protects against wear granting an exceptionally strong lubrication film and ensures excellent fuel savings – only then it has the capacity to withstand LSPI. For instance, BIZOL Green Oil+ is one of the first LSPI-proof products on the market. The innovative additive technology of Green Oil + products has noticeably proven to reduce the risk of LSPI.

About BIZOL
BIZOL is a German lubricant company manufacturing innovative and effective engine oils and aftermarket car care products. BIZOL was founded in 1998 and is currently operating in more than 65 countries. BIZOL is an example of a company using an effective business model serving partners with 100% support from its headquarters in Berlin, Germany.

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