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*ENGINEERED INDUSTRIAL LUBRICANTS*

**TECHNICAL PAPER:**  
**Gear Run-In Compound 391**

**TASK:**

Petron Gear Run-In Compound 391 is designed to improve the mating surfaces of gear teeth as they roll through mesh. This process is highly recommended when non-matching gear faces are put into service on moderate to high load gear sets.

These non-matching gear faces can occur when a new pinion is matched against a used bull gear; a bull gear is flipped against a used pinion; a pinion is flipped against a bull gear; or two used gears are put into service on an existing piece of machinery.

Today's gear manufacturing processes are extremely precise and new gears are at their optimum contact limits when correctly aligned. Inevitably, the gear set should run with the highest temperature in the middle of the gear and with lower temperatures trailing off equally to each side of the higher, center reading.

When finished, a gradient of no more than 15°F should be observed between the left hand of the gear tooth and the right hand of the gear tooth. If vibration readings are also a part of the pre run-in data, then lower vibration readings should also be observed after the run-in is complete.

**Due to the high viscosity of Petron Gearshield NC and NCW, the use of Gear Run In Compound 391 is not needed to run in new gear sets, however, under certain circumstances where very poor surface finish or alignments are evident due to the manufacturing process, Gear Run In Compound 391 can be used under the supervision of an approved Petron service engineer.**

**THEORY:**

Gear Run-In Compound 391 is a lubricating oil. It is blended with chemical additives and designed to remove asperities on gear tooth surfaces.

These high-pressure asperity zones are removed in ultra thin layers that can only be measured to four decimal places. One pail of gear run-in should be used over an eight hour period on medium to large diameter gear sets with moderate (normal) gear wear.

On gear sets with severe damage the application rate of gear run-in should be double or about ten gallons over an eight hour period. Measure the depth of the 391 in the pail and calculate how many inches of run-in must be sprayed each hour to get the pail to last eight hours. Double the rate if two pails are needed.