


**PI 1938**

For technical personnel only!

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# PRODUCT INFORMATION

## LESS FRICTION, LESS WEAR

### PISTON RINGS WITH DLC COATING

It is becoming more and more common for piston rings to be coated with a DLC (Diamond Like Carbon) coating during series production. Motorservice has now launched its first piston ring sets with this innovative feature for the aftermarket.

#### CHARACTERISTICS

A DLC coating is a diamond-like carbon layer with an extremely hard surface. DLC coatings are also very elastic and can reversibly absorb deforming stresses. The layer thickness is around 2 µm with an extremely low sliding friction coefficient. Depending on the interacting sliding parts, it can reach a value of up to 0.1. The maximum permissible component temperature is around 450 °C.



Fig. 2: Example ring set for Opel/Vauxhall/GM/Chevrolet (item no.: 80 01167 1 0 000): upper compression ring with DLC coating

#### PROCESS

The DLC coating is applied with a PVD (Physical Vapour Deposition) process. This involves condensing a carrier material (target), which settles on the parts that are to be coated. This makes it possible to create extremely thin layers. In engine manufacturing, the PVD process has been used for more than 20 years for coating sputter bearings.

#### ADVANTAGE

The high wear resistance and chemical resistance of the DLC coating can help to increase mileage considerably. The low friction coefficient of the DLC layer minimizes frictional loss on the piston rings and cylinder sliding surfaces.

Another advantage of DLC-coated piston rings is that they can be used on all manner of sliding surfaces, such as grey cast iron, chromium and ALUSIL®.



Fig. 1: DLC coating on the sliding surface