



Your cost-effective Powder Metal cam lobe solution

Providing nearest-to-net shape PM cam lobes for assembled camshaft technology

Höganäs introduces a new cost-effective powder metal material solution, engineered for sliding tappet follower assembled camshaft applications.

The unique material formulation is based on a tribo-engineered powder metal Chromium alloy, exhibiting very good hardenability, excellent wear resistance and process robustness.

Powder metal cam lobe technology brings high precision advantages and machining cost reduction opportunities, while the use of sinterhardening heat treatment technology enables shortening of the cam lobe manufacturing process.

This winning combination makes the new PM cam lobe material perfectly suited to meet today's stringent cost and performance requirements for sliding tappet follower cam shaft solutions.

For more information, please contact your local sales representative.

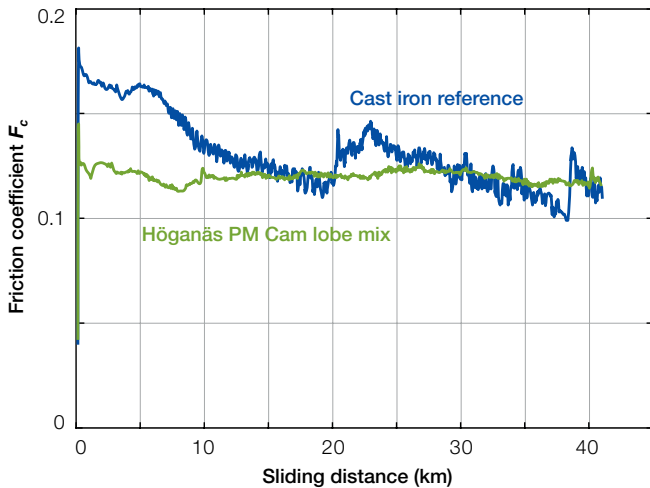
Main product features

- Cost-effective Powder Metal Cr alloy
- Excellent hardenability and wear resistance
- Sinterhardening eliminating secondary heat treatments
- High-precision, nearest-to-net-shape technology
- Reduced machining operations and investment costs
- Shortened manufacturing process chain
- Suitable for all camshaft assembly methods
- Improved surface quality
- Lower total cost per unit

Tribometric testing

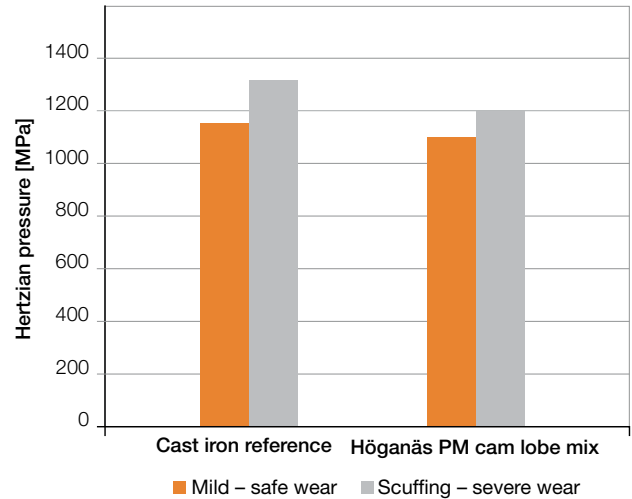
Cam lobe to tappet follower contact is simulated by tribometric crossed cylinders model setup. The diagram below gives an idea about differences in friction behavior between cam lobes made of CCI and Höganäs PM lobe mix.

Test $\varnothing 12.7$ mm cylinders made of CCI and Höganäs PM cam lobe mix are in lubricated sliding contact with $\varnothing 60$ mm EN 16MnCr5 counter discs as CQT and OD-ground.



Friction coefficient logs from crossed cylinders tribometric test setup.

At test Hertzian contact pressure of 800 MPa, sliding velocity of 0.5 m/s and total sliding distance of 40 km wear is mild, i.e. safe for both materials, but friction coefficient is different. Test cylinder made of Höganäs PM lobe mix shows very flat and smooth friction coefficient curve at level of about 0.12 for whole test sliding length. In contrast, friction coefficient curve for CCI test cylinder is hacky and shows a less smooth running in with friction coefficient above 0.15.



The tribo-engineered Höganäs PM cam lobe solution exhibited the same Hertzian pressure limit of 1100 MPa as the CCI reference lobe.