

Press Release 2009/02

Energy efficient engines via thermal spray coating and new manufacturing process

New process for thermal spray coating in cylinder bores from one source

Thermal spray coating in cylinder bores of combustion engines is the stuff of the future. Energy efficient engines with lower friction, reduced overall length, and lower weight, as well as lower manufacturing costs are the substantial advantages which are achievable through the new manufacturing process for the production of cylinder bores.

Gehring Technologies, headquartered in Ostfildern near Stuttgart, has strategically consolidated the necessary manufacturing processes, and offers the entire process from one source as a system supplier. „Mechanical roughing“, „PTWA-Coating“ and „Honing“ are the individual process steps in finish machining of cylinder bores. With these, Gehring Technologies offers engine manufacturers worldwide a package solution with high innovation potential for the development and manufacture of modern, energy efficient combustion engines.

Advantages of the new process

Mechanical roughing, a variant of fine boring, prepares the cylinder bores in engines blocks for the subsequent coating. This significantly increases the bonding strength between the coating and the substrate (generally aluminium). The subsequent PTWA-Coating (**P**lasma**T**ransfer-**W**ire**A**rc) generates via an iron wire which is plasma arc melted and sprayed against the cylinder bore a hard, wear-resistant coating which is a substitute for the usual cylinder liner. The subsequent honing, a multi-step finish machining process, produces the functionally optimized surface in the cylinder bore necessary for an engine. The final result of this process is a considerable reduction in friction, which significantly contributes to a reduction in fuel and oil consumption and thereby has a share in making more energy efficient and environmentally friendly engines, with lower emissions and increased service life.

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Gehring Technologies GmbH is a leading manufacturer of specialized machine tools, so called honing machines. These machines are used worldwide in the production of engines. Machining by means of honing most notably reduces the friction between the pistons and cylinders, which significantly reduces wear and consumption.

Further information and graphic material are available from:

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