

Report

Automotive Industry



Water as a tool
for a clean environment

The manufacture of a motor vehicle already starts with the steel making. From that point up to the final product there is a sequence of numerous operations where high-pressure water jetting also plays an important role. The WOMA high-pressure water jet technique is suitable for the following applications in the automotive industry:

- ▶ Enamel stripping from gridirons and body skirts.
- ▶ Deburring of castings and light-metal parts.

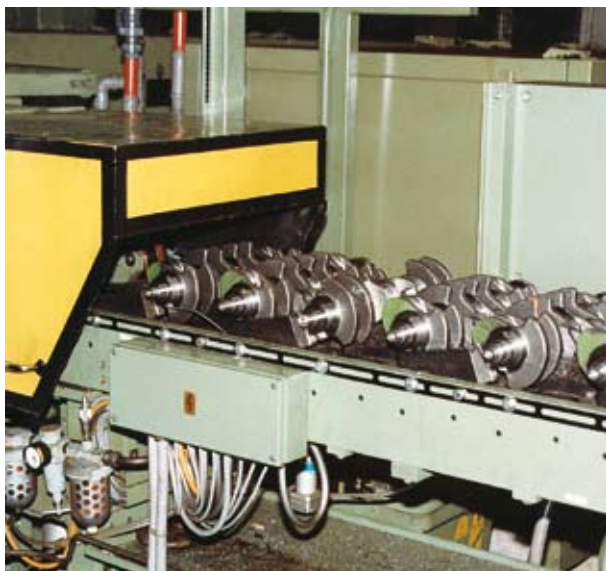
- ▶ Removal of moulding sand, graphite, and cast particles.
- ▶ Cutting out of panel boards, carpeting, rear shelves, and sealing materials.
- ▶ Removal of tailings from small-sized parts.
- ▶ Cleaning of oil ducts.
- ▶ Reconditioning of engine blocks and cylinder heads.
- ▶ Rinsing and cleaning of hydraulic oil lines and brake lines.
- ▶ Cleaning of plant components and special vessels.
- ▶ Maintenance of buildings and

installations.

- ▶ Cleaning of channels and pipes.

Why High-Pressure Water Jets?

- ▶ There is a wide range of tools available.
- ▶ Small reaction forces. Therefore, the technique can easily be mechanized and automatized.
- ▶ No gas, vapour or slag formation.
- ▶ The cleaning processes are performed without the addition of chemicals or solid grit.
- ▶ High efficiency.



Deburring of oil ducts



Cleaning of castings in a jetting cell



Cutting out of carpets with jet cutting unit



Cleaning of gridirons in enamelling cells

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- ▶ Careful removal of coatings, deposits, and contaminants.
- ▶ No damage to the actual material.
- ▶ Low tool weight and small tool dimensions.
- ▶ Uncomplicated integration into production cells, lines, or installations, if required.
- ▶ Possible combination with manipulators and industrial robots.

Range of Materials

Using high-pressure water jets, the following materials can reliably and efficiently be removed: Cakes and incrustations, linings, drilling fluid, emulsions, paint, fats, moulding sand and core sand, ceramic masses, contaminants, lacquer systems (non-hardened and hardened), oils, chips and burrs, dirt, tenacious residues. Using jet cutting systems, the fol-

lowing materials can reliably and efficiently be cut or separated: Linings, insulation materials, fibre-reinforced plastics, felts, glass, rubber, ceramics, metals, foams, carpets, textiles.

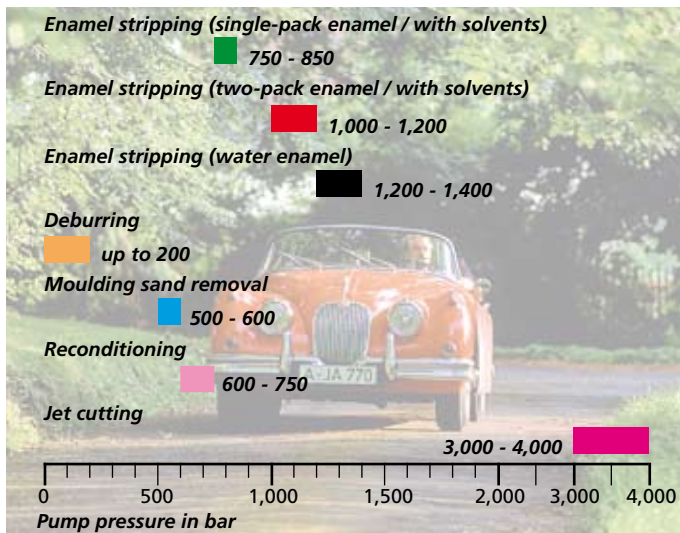
The Technique

WOMA offers the complete range of the high-pressure water jet technique. WOMA's horizontal plunger pumps, equipped with central valve heads, generate water pressures up to 3,000 bar and deliver water flow rates up to 1,679 l/min. For complex maintenance tasks, WOMA has developed complete ultra-high pressure systems. Furthermore, WOMA designs and manufactures compact cleaning cells for castings, as well as enamel stripping units and hot-water treatment systems for the cleaning of oiled-up parts. Pipe cleaning units and

vessel cleaning systems are also available.

The WOMA high-pressure water jet programme for applications in the automotive industry comprises the following tools:

- ▶ Hand-held guns for treating sensitive surfaces.
- ▶ Tools, run on spherical bearings, for use in jetting cells.
- ▶ Self-driving and externally driven rotating nozzle heads.
- ▶ Rotating nozzle beams.
- ▶ Rotary transmission leadthroughs for all pressure ranges.
- ▶ Rotating nozzles for internal vessel cleaning.
- ▶ Positioning devices for washing heads and rotating nozzles.
- ▶ Pipe cleaning heads and nozzles.
- ▶ Special rotating tools for application with axis-controlled equipment (manipulators, robots).



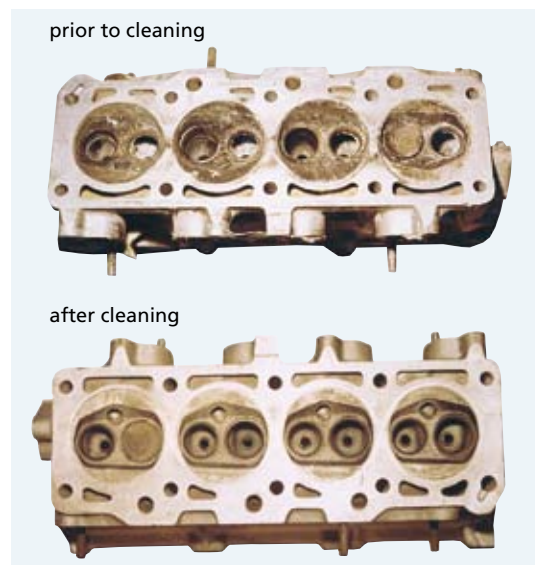
Typical pressure ranges for water jet applications in the automotive industry



Removal of cast cores from suction pipes



Cleaning of body skirts in enamelling cells



Reconditioning of cylinder heads