Report
Sewer Technique

WOMA®
Water as a tool
for a clean environment

For technical and sanitary reasons, sewer channels are frequently cleaned. Particularly, the blocking of the cross sections as well as odour problems need to be avoided. Also, damages at the channel walls must early be recognized which is only possible if the walls are completely clean. Further, inorganic deposits that reduce the sewage treatment efficiency must be removed.
Since more than 35 years, water jetting, introduced by WOMA under the name 'Duisburger Verfahren', is state-of-the-art in sewer cleaning. The WOMA high-pressure water jet technology is suitable for the following applications in the sewer technique:

- Removal of incrustations and impurities from sewer channels.
- Cleaning of sewers and collecting drains of different profiles and wall materials.
- Removal of deposits, sand and sludge from channel bottoms.
- Removal of drain skins from sewer walls.
- Treatment of concrete and brick linings in channels.
- Removal of worn protective coating systems.
- Cleaning of sludge troughs and sand catchers.
- Removal of chemical deposits (e.g. calcium carbonate).
- Flushing of blocked channels.

Why High-Pressure Water Jets?

- Method works independent on the channel profile.
- Guarantee of channel aeration.
- Disburdening of operators from manual, dirty and insanitary jobs.

Water jetting nozzle for sewer cleaning

Removal of cement-based flat coat in man-sized channels by high-pressure water jet tools

Combined suction-cleaning vehicle for sewer cleaning with reel, high-pressure cleaning nozzle and suction hose

Pneumatically controlled 3/2-way valve for municipal applications

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▶ High cleaning efficiency even in areas of difficult accessibility.

▶ Possibility of combining cleaning and suction.

▶ Minimum traffic obstruction.

▶ Reduction of the number of gully holes to be opened.

▶ Sensitive treatment of the wall materials.

▶ Reduction of cleaning cost.

▶ Possibility of partially mechanized cleaning.

▶ Cleaning of selected parts of the channel construction (e.g. bottom, certain cross sections, complete channel).

▶ Adaptation of cleaning on amount and degree of impurities.

The Material Range

Using high-pressure water jets, among others, the following materials can reliably be removed: Cement and lime residues, coatings, concrete, corrosion products, deposits, drain skins, impurities, oxide layers, roots, sediments, sludge.

The Technique

WOMA offers stationary and mobile high- and ultra-high pressure water jetting systems with operating pressures up to 3,000 bar and water flow rates up to 900 l/min, consisting of electric or combustion drive, high-pressure plunger pump, guiding and control devices, water tools, and high-pressure accessory. Also, for operating pressures up to 295 bar and power ratings up to 245 kW, abrasive resistant pumps (ARP®) are available for dealing with impurified water.

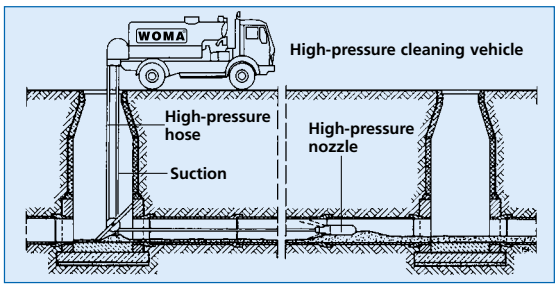
The special high-pressure program for sewer applications also includes the following components:

▶ Vertical high-pressure plunger pumps for the installation in municipal vehicles.
▶ High-pressure guns in modular design for cleaning and decoating of man-sized channels and gully holes.
▶ Self aligning oscillating nozzles for cleaning channel bottoms.
▶ Channel cleaning nozzles with several orifices.
▶ High-pressure valves for impurified water.
▶ Flexible high-pressure hoses with large cross sections.
▶ Round and fan shape nozzles.
▶ Reel systems for sewer cleaning hoses.

Sewer channel bottom cleaning with a Skip Jack nozzle

Well cleaning with high-pressure water
right: prior to cleaning
left and bottom: after cleaning

Abrasive resistant high-pressure plunger pumps ARP® for sewage water



Basic principle of sewer cleaning with high-pressure water