



Cleaning with Water Jets

Location	Switzerland	Hydra-Cell model	G15XDSTHFECB
Type of application	Cleaning with Water Jets	Flow rate	Up to 50 I/min (13 gpm)
Liquid	Water	Pressure	150-200 bar (2175-2900 psi)

Application details

A Swiss manufacturer specialised in the use of water jets for cutting, machining and surface cleaning operations has patented a new system for the fast, controlled removal of rust, scale and coatings from critical surface areas of equipment and components such as rotors and steam turbine blades.

In contrast to water jet injection systems, where any abrasive content does not pass through the pump, though it may be added to the high-pressure liquid downstream, the new cleaning system enables abrasives to be included in the water as a suspension before pumping. This facilitates flexible control over the abrasive type, particle size and ratio of abrasive medium to water.

Typical abrasives in use, to suit price and performance demands, are Garnet, Corundum and Zirblast. A hardness of 7 or higher on the Mohs scale is normally required to achieve acceptable cleaning speeds. Particle diameters are generally in the range 0.1–0.3mm.

The Hydra-Cell model G15, with its seal-less design and ability to handle abrasive particles at high pressure, has been preferred as the delivery pump and makes an important contribution to the special features of the new cleaning system. One significant system advantage, say the manufacturers, is that it is the only suspension cleaning system running at pressures above 20 bar that is designed for continuous duties.

Another notable feature is component size. Working at high pressure means small diameter, but very flexible, hose can be used for delivering abrasive liquid to the cleaning nozzle. Using the Hydra-Cell has its own advantages: high pumping efficiency avoids oversizing the motor, while the build of the pump itself is extremely compact. The whole system is portable and fits on a euro pallet, 800mm x 1200mm, (24in x 36in).

Advantages of Hydra-Cell pump on this application Seal-less design. High pressure capability. Ability to handle hard, abrasive particles. Simplicity of control. Steady, smooth, low-pulse flow. Low maintenance.

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