

AUTOMOTIVE

Quick STUDY

Hydra-Cell®
Seal-less Pumps

www.Hydra-Cell.com

Location:	United Kingdom
Application:	Component cleaning during production
Media:	• Water
Model No.:	D15XDSGHFEMB x 2
Flow Rate:	Up to 11 gph (40 l/hr)
Pressure:	Up to 2465 psi (170 bar)
Hydra-Cell Advantages:	• Seal-less design • No need for ultra-fine filtration • High-pressure capability • Low maintenance



Cleaning Crankshafts on a Production Line

A purpose-designed wash unit for cleaning crankshafts on-line embodies a radical new approach to the fast removal of carbon deposits from the heat-treated components during manufacture. The new unit, operating in a Mexican automotive engine plant, breaks with tradition by using high-pressure wash jets instead of relying on arbor-mounted nylon brushes that would be expensive, need frequent replacement and also continual CNC controlled readjustment to compensate for wear. Even with the fine adjustment there would be an element of inconsistency and risk of over or under compensating for brush wear.

The production line is required to work 24/7, with a new crankshaft arriving at the cleaning station every 55 seconds, following the heat treatment and dipping out in oil that have left difficult-to-shift deposits.

The wash system incorporates two Hydra-Cell D15 pumps feeding 12 spray nozzles via a manifold. Hydra-Cell pumps were chosen following crankshaft cleaning trials at the factory. Seal-less design was a critical advantage for the OEM, who was already aware that high-pressure piston pumps were susceptible to seal wear and would need filtration to 5 or 10 microns, whereas on this project the process itself only calls for a 50- micron filter unit.

The OEM, a leading builder of bespoke wash units for the automotive industries, has identified a number of other applications that could use high-pressure jetting, although they may only need 1015 to 1160 psi (70 to 80 bar). The company is looking at further opportunities to utilize Hydra-Cell technology. On the present project, by using jets which are non-contact and non-intrusive, it has simplified the cleaning operation and reduced operating costs, targeting a tooling and maintenance expenditure "close to zero."



Characteristics of Fluid Pumped:

☒ Contains Abrasives ☐ Corrosive ☐ Solids in Suspension ☐ High-temp. (>158°F/70°C) ☒ Non-lubricating ☐ High-viscosity (>500 cPs)