

Application story



Coolant for Sapphire Machining

Location	USA	Hydra-Cell model	D10EKSTCCECB
Type of application	Pumping Coolant for Cutting Machines	Flow rate	8-20 l/min (400-1000 rpm)
Liquid	Sapphire Dust Machine Tool Coolant	Pressure	35 bar (500 psi)
Application details	A leading US specialist in growing and machining sapphire crystals found that the centrifugal pumps fitted as original equipment on the cutting machines were unable to deliver coolant fluid at pressures needed on a process in which sapphires are machined into wafers. Nor were they able to handle fine abrasive particles carried in the coolant liquid. Sapphire dust created in the machining process is not only very abrasive, it is very difficult to filter. Though the centralised coolant system incorporates three centrifuge filters, with two bag filters before the pump, dust particles still get through. Replacing the centrifugal pumps with Hydra-Cell G10 pumps enabled the coolant systems to work at higher pressures, resulting in cleaner cutting and extended tool life. And the seal-less design of the pumps meant greatly improved resistance to wear as compared with the seal-reliant centrifugal pumps. The ceramic valves and seats in the Hydra-Cell pumps last for some 6-10 months before being replaced. The first G10 pumps have now been in operation more than 3 years. Tests more recently undertaken with a Hydra-Cell G25 working at 8 l/min (400 rpm) could prolong valve and seat life even further.		
Advantages of Hydra-Cell pump on this application	Seal-less design, with total separation of pumped fluid from the hydraulic end of the pump. High pressure capability.		

www.hydra-cell.co.uk

Wanner Engineering -
World Headquarters & Manufacturing
Minneapolis USA
t: (612) 332-5681
e: sales@wannereng.com

Wanner International
Hampshire UK
t: +44 (0) 1252 816847
e: sales@wannerint.com

Wanner Pumps
Shanghai CHINA
t: +86-21-6876 3700
e: sales@wannerpumps.com

Wanner Pumps
Kowloon HONG KONG
t: +852 3428 6534
e: sales@wannerpumps.com