

Application story



Cleaning Steel Sheet and Strip

Location	Sweden	Hydra-Cell model	G35XKCGHFEHH
Type of application	Cleaning Steel Sheet and Strip	Flow rate	60 l/min (14 gpm)
Liquid	Hot Water Recycled Water Detergent	Pressure	40-50 bar (580-725 psi)
Application details	By replacing large centrifugal pumps with energy efficient G35 pumps in its cold rolling mill, a Swedish steel company halved the energy needed to clean off oil and dirt from the surface of continuous sheet and strip after rolling. Annual pump maintenance costs (5000 Euros for each centrifugal pump) were also lowered. The G35s deliver hot, recycled water/detergent solution at 40-50 bar pressure to the cleaning nozzles, drawing liquid from one of two tanks by turns. As the process runs and dirty water is returned, the contents of tank no.1 gradually become contaminated. Eventually its pump is switched off, allowing the liquid in that tank to be put through separators, cleaned and reclaimed, while tank no.2 and its system take over. Each of the two centrifugal pumps used in this process was replaced with a set of four G35 pumps. The power consumption of each centrifugal pump was 150kW. A G35 on this installation, for a flow of 60 l/min and a pressure of 50 bar, consumes 18.5 kW. Total power consumption is 74kW for the four pumps - which translates into a 50% reduction in energy cost. Underlying the Hydra-Cell's low energy consumption is its high pumping efficiency - 85% compared with about 45% -for a typical centrifugal pump - allowing smaller motors to be used. This is achieved in part by the drive being submerged in oil, minimising frictional losses. Absence of dynamic seals eliminates the problems of seal leakage and frequent repair when handling reclaimed liquids. It is a major factor in the reduction of pump maintenance costs at the rolling mill. The steel works bought its first seven Hydra-Cell pumps in 2002, replacing five more centrifugals in 2004. Subsequently the replacement programme was extended again with the installation of 11 more Hydra-Cell pumps.		
Advantages of Hydra-Cell pump on this application	Seal-less design, ability to handle clean water (non-lubricating), controllability, low pulsation.		

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