

Application story



Milk - Membrane Filtration

Location	India	Hydra-Cell model	G10SKSJSNETE
Type of application	Membrane Filtration of Milk to Remove Water Content	Flow rate	Up to 18.8 l/min (5 gpm)
Liquid	Milk	Pressure	Up to 32 bar (460 psi)
Application details	Moving bulk containers of milk from a point of production to scattered distribution centres can be very costly, because of the high water content of the product. By extracting water, liquid volume can be substantially reduced, lowering bulk and transport costs and also extending shelf life. An established process for removing water content is to pump the milk across a filter membrane – water passes through, while concentrated milk is retained for shipment and eventual reconstitution in other locations. In connection with these processes, a global packaging / processing company developed a series of pilot plants for use in various locations in India and elsewhere. A feature of these plants is that they are able to share a single pump and motor unit which is shifted between them at need. Originally a centrifugal pump was used to feed milk to the membrane, but it was not satisfactory. Milk is sensitive to shear forces. At the high operating speeds needed by this type of pump to generate filtration pressure, the properties of the liquid were affected and the system was unable to maintain milk quality. In place of the centrifugal pump a Hydra-Cell G10 pump is now in use. Its low-shear pumping action safeguards the integrity of the milk and provides constant flow and stable pressure. For this application, handling a biodegradable food product, the pump was supplied to an optional hygienic specification that includes mirror-finish internal surfaces polished to 0.8 Ra. Tri clamp stainless steel flange fittings and drain plug give easy access and convenience for cleaning.		
Advantages of Hydra-Cell pump on this application	Seal-less design. Gentle handling, with low-shear pumping action. Hygienic options. Constant flow and stable pressure.		

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