

General processing

Delivering smooth flow and leak-free solutions successfully



Hydra-Cell T8045 pump installation at a plant of OMV Petrom in Romania

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Freedom from pulsation was one of the big advantages cited by plant engineers at the Turburea, Romania, deethanisation station of OMV Petrom, following the installation of a Wanner Hydra-Cell T8045 seal-less diaphragm pump to transfer unstable gasoline from storage tanks to a heater. This is the first stage in the fractioning process that will produce LPG and stabilised gasoline.

Finding a pump that could deliver smooth flow and simultaneously satisfy other pumping parameters had been an ongoing problem for Petrom and several solutions had been tried with little success. The liquid, which is non-lubricating, must be pumped at 35-40 bar. No external leaks are acceptable – any tendency to leak must be countered. The pump must operate reliably for extended periods on 24/7 duty.

Prior to the installation of the Hydra-Cell pump in 2013 Petrom had been using on this application a pair of metering pumps from an established European manufacturer. These pumps, each fitted with a plunger-piston head, had not solved the problem of pulsation, which is a typical limitation of single-head metering pumps – including traditional hydraulic diaphragm pumps. Moreover the plunger pumps had not run reliably on this application, and were not leak-free.

It was decided to replace the plunger pumps permanently, and OMV Petrom requested diaphragm type pumps.

Wanner Engineering had extended its triple-diaphragm Hydra-Cell pump range, increasing flow and pressure capability with the development of the T Series 80hp pumps. One of these could take on the whole workload then being attempted by the pair of plunger pumps – while meeting all the particular challenges presented by this application.

The three diaphragms are manifolded together in a single compact pump head and act in sequence to produce a liquid flow that is virtually pulse-free – something that is not possible for a traditional single-head diaphragm pump.

Complete assembly

Verder Romania put together a complete assembly. It includes an ATEX compliant Hydra-Cell T 8045 pump driven by 15kW motor. The pump is in 316 stainless steel and is fitted with Viton diaphragms.

There are no packings or dynamic seals in the Hydra-Cell pump, and no potential for leaks to develop. The liquid handled is totally contained.

T Series pumps were originally conceived with the oil and gas industries already in mind. The T8045 can operate at pressures up to 207 bar and flows up to 170 l/min, handling a wide range of media from thin non-lubricants to viscous product and liquids carrying abrasive solids.

At Petrom's Turburea facility, delivering 10m³/hr of a non-lubricating liquid at the required pressure, the pump has given evidence of long-term performance reliability and shown that it is easy to maintain.

Since its installation in 2013 the T8045 has operated satisfactorily on 24/7 continuous duty with no threat to process integrity. Though there are no other locations where this specific process is used within Petrom, experience with the pump here has helped assess potential for processes where gasoline is the main product. OMV Petrom is the largest Romanian integrated oil and gas group, with activities in production, refining, distribution and marketing. ●

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