

# Application story



## Reverse Osmosis for Confectionery Manufacture

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| <b>Location</b>                                          | UK                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Hydra-Cell model</b> | G35EDSESNEMD      |
| <b>Type of application</b>                               | Reverse Osmosis for Confectionery Manufacture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Flow rate</b>        | 85 l/min (22 gpm) |
| <b>Liquid</b>                                            | Water<br>Sugars                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Pressure</b>         | 55 bar (798 psi)  |
| <b>Application details</b>                               | <p>The Hydra-Cell G35 pump was chosen to feed a reverse osmosis system in this new plant designed for a UK confectionery producer.</p> <p>For rinsing mixing vessels the plant uses purified water – which in the process becomes soiled. Environmental regulations forbid run-off through surface drains, while off-site disposal would be costly. Instead, the used rinse water is treated by RO separating pure water from concentrated sugars and enabling both to be recovered. Delivering 'dirty' water to the RO membrane calls for high pressure. But if a piston pump or another type of sealed pump were to be used, crystallisation of sugar at the seals would quickly threaten problems of wear and leakage.</p> <p>The seal-less Hydra-Cell pump does not have this problem. Moreover, it delivers a low-pulsation flow which is easily controlled by frequency inverter, linked to a pressure sensor, to maintain constant optimum pressure at the RO membrane.</p> |                         |                   |
| <b>Advantages of Hydra-Cell pump on this application</b> | Seal-less design, avoiding leakage problems and wear of moving parts. Simple, accurate control of flow/pressure by controlling pump speed. Required operating pressure is well within the capability of the G35.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                         |                   |

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