

# Case Study: Solvents for Metal Reclamation



## ENQUIRY

Castle Pumps were approached by a precious metal reclamation and recycling company looking for a number of the same pumps. They wanted a solution for transferring the solvents used for the cleaning of recycled metal product surfaces to be used in the pharmaceutical industry.

The requirements of the pumps included being driven by air as opposed to an electric motor due to previous pumps used and being capable of offering a good service life despite the aggressive nature of the solvents.

## KEY CHALLENGES

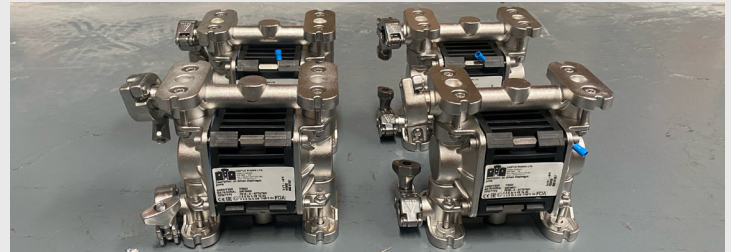
1. Wanted to use air rather than electric motor.
2. Compatibility with corrosive solvents.
3. ATEX approved for flammable solvents.



## EQUIPMENT SUPPLIED

### 4 x Debem Boxer 15 Pumps

Fluid	Solvents
Flow	17lpm
Pressure	8 bar
Body	Stainless Steel 316
Diaphragm	PTFE
Inlet/Outlet	¾" Tri Clamp
Certifications	ATEX Zone 1



## SOLUTION

As the customer requested an air operated diaphragm pump themselves, we specified a model from our Debem Boxer range of AODD pumps that best suited their flow and head requirements. The Debem Boxer range is our go to when it comes to AODDs thanks to their long-life diaphragm designed to run for more than 50 million cycles before replacement and they have 50% fewer parts to replace compared to others on the market.

For compatibility with the aggressive nature of the solvents that can eat through many other materials, we selected the pump body to be constructed of AISI 316 Stainless Steel with PTFE diaphragm and balls. Due to being used within pharmaceutical processes, this was also supplied with Tri-Clamp hygienic connections.

Due to being used as a corrosive liquid pump, the AODD's seal-less design is perfect as it reduces the chance of the solvent leaking out as the seals wear overtime. They also are able to dry run without damage if the container being pumped from becomes empty

We supplied these four pumps with ATEX certification to Zone 1 for safe operation in the potentially flammable environment.