

Case Study: Food Waste Management



ENQUIRY

Castle Pumps received an enquiry from a company involved in waste management, in particular food waste recycling. The fluid that they needed this pump to transfer was a caking mix of bran and water. Whilst they were unaware of the exact viscosity, the customer explained that the consistency of the mix is similar to a liquid porridge, making it quite a viscous product to pump.

The presence of the bran in the mix also meant that small solids needed to be able to be handled without causing damage to the pump or causing any blockages, as the company could not afford for an operator to spend time unblocking it.

KEY CHALLENGES

1. High viscosity of the pumped medium
2. Presence of small solids



EQUIPMENT SUPPLIED

Boyser FMP 40 Peristaltic Pump c/w Motor & Gear Reducer

Flow	1135 – 3973 l/hr
Pressure	3-4 bar
Max Pressure	8 bar
Fluid	Bran/Water Caking Mix & Food Waste
Hose	NBR
Connections	1 ½" BSP Stainless Steel
Power	2.2kW, 3 Phase, 400v, 50Hz
Extras	Supplied with Gear Reducer

SOLUTION

The fluid in question isn't a fluid that just any pump design could handle. The viscous, solid laden nature of a bran/water mix could result in other pump types such as a centrifugal pump suffering massive efficiency losses as "viscous drag" sets in, as well as clogging of the impellers. For that reason, we quoted a peristaltic pump; a pump design with no valves or impellers to clog. The only part of a Boyser FMP 40 peristaltic pump that comes into contact with the fluid is its inner hose, making it ideal for thicker fluids containing solids up to 35mm in size.



After confirming the flow and pressure requirements, we supplied this Boyser peristaltic pump complete with gear reducer so that the motor is able to be slowed down to the flow rate that the customer needs at that time. This extends the life span of the motor by not making it unnecessarily work to full capacity and helps to reduce wasted energy costs.

This particular customer needed their viscous fluid pump urgently, so we arranged with the factory to ship the pump direct within 3-4 weeks of order confirmation.



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