

Case Study:

Transfer of Hot, Viscous Bolognese Sauce



ENQUIRY

Castle Pumps received an enquiry from a new customer in the UK; a food manufacturer that wanted to increase production of spaghetti bolognese sauce that they produced on site. They required a pump to transfer the hot, viscous product containing meat solids from a drum hygienically from production to packaging. The customer also wanted to be able to control the speed of delivery and use a nozzle to dispense the fluid for greater control of the stop/start process.

Due to the product being for human consumption, the solution of course needed to be food grade and easy to clean.

KEY CHALLENGES

1. Approved as safe for food handling
2. Capable of handling relatively soft solids
3. Ability to dispense using a nozzle without damage



EQUIPMENT SUPPLIED

Flux F560GS Progressive Cavity Food Grade Barrel Pump

Fluid	Bolognese sauce containing meat solid
Installation	Vertical with a clamp to fit to the vessel
Pump Body	Stainless Steel 316 – electro polished
Stator	PTFE
Voltage	230V
Motor	F457EL with no-volt release and variable speed control device
Approval	Food contact according to Regulation (EC) No. 1935/2004 and FDA conform (CFR 21 Part 177.1550)

SOLUTION

Two days after receiving this enquiry we conducted a site visit to ensure the pump we specified met the installation requirements. Using our experience with food product transfer we knew a progressive cavity food grade barrel pump would be perfect for this application. The eccentric worm within the Flux pump is able to handle the meat solids without crushing them and viscosity of the sauce by using a positive displacement design that generates the pressure needed to move the thick fluid.

Due to the customer wanting to dispense via a nozzle, we had to manufacture a bespoke food grade “T piece” including pressure relief valve to recirculate the fluid back to the tank. Without this, when the nozzle is closed the pump would be working against a “dead head”, this would build up pressure and cause serious injury to the user and damage to the pump.

The food transfer pump supplied is fully food grade FDA approved to meet all the rules and regulations associated with products for human consumption. The body and connections of the tubeset are all stainless steel (316 Ti) electro polished, and it has minimal areas for food to congregate and for ease of cleaning.

The end product was a bespoke design food grade barrel pump kit complete with hoses and ancillaries, manufactured and delivered to our customer within 5 weeks.