

Mono® NOV Dosing Pumps Offer The Right Mix For Foundry Systems

A leading foundry equipment manufacturer has chosen low flow pumps from Mono® NOV LF Range for arduous chemical dosing duties demanding extreme accuracy and consistency.

Integrated Sand Systems Ltd of Walsall carried out extensive trials over a 12 month period before deciding to replace gear and diaphragm pumps, previously incorporated in its Temcon catalyst control system, with Mono progressing cavity pumps. The Temcon system is built into the company's high speed continuous sand mixers, which blend sand with chemicals and resins, setting hard to form a mould for casting molten metal.

The LF pumps play a particularly important role in furane binder systems, delivering sulphuric or sulphonic acid to act as a catalyst on furane resin. The highly corrosive nature of the acid was a key factor in Integrated Sand Systems' choice of pump.

The LF Range of progressing cavity pumps can be run at low speeds, thereby reducing wear and offering extended service life. The corrosion resistance of the pump's polyethylene body and hypalon stator, coupled with the limited number of component parts, further minimises the maintenance requirements.

The LF Range features Mono's Flexishaft which provides a single component link between the rotary motion of the drive shaft and the eccentric motion of the helical rotor. The reduced number of moving parts in the drive train eliminates wear and makes lubrication unnecessary, reducing the risk of product contamination. The simplicity of the Flexishaft drive, and consequently

the pump design, means that the pump is easily dismantled and reassembled when routine maintenance is required.

In addition to low component wear rates and optimum ease of maintenance, the furane sand binder systems demand a high degree of accuracy and consistency. The sulphuric acid gives off sulphur dioxide fumes during casting, and it is therefore a key requirement to keep the release into atmosphere, caused by excess acid, to an absolute minimum.

The Temcon system uses two catalysts, working at slow and fast setting rates, blended to give a specific setting time, which is dependent on the temperature of the sand. Steady, consistent flow which can be adjusted to adapt to a change in temperature is therefore important.

The diaphragm pumps used previously, could not easily be programmed for low dosage, and showed a tendency to deliver the chemical in spurts which did not blend well.

The LF Range is specifically designed for accurate, intermittent or continuous dosing with a repeatability of $\pm 2\%$.

The furane sand binder systems come in capacities from 2 tonne/h to 40 tonne/h, incorporating pumps delivering chemicals at 5 l/h up to 55 l/h. Typically the sand is blended with 0.9% resin and 0.3% chemical catalyst.



Pump:	PLF102, PLF202 and PLF502
Product:	Sulphuric or sulphonic acid and furane resin
Capacity:	Up to 600 l/h
Pressure:	Up to 12 bar
Pump Speed:	1750 rpm
Drive:	Invertor



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Mono® NOV

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