



APPLICATION NOTE

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This application note provides an overview of the successful use of external gear pumps for the metering of constituents used in the production of bulk photographic emulsions.

THE INDUSTRY

A manufacturer of photographic emulsions, photographic film and papers, photographic glass plates and digital enlarger paper for industrial, commercial and recreational use offers years of experience in the photographic field. This manufacturer produces quality emulsions for coating onto premium black and white analogue photographic films and papers.

THE APPLICATION

Photographic emulsion constituents are drawn from a process vessel into an external gear pump. The pump meters the constituents at variable flows and pressures and at constant temperature. Heating media is pumped (using a separate pump) through a double walled magnetic coupling at the rear of the pump to maintain the temperature of the pumped liquid. A PC or other controller is used to calibrate the pumps and provide feedback of actual pump speeds.

THE PUMP SOLUTION

Liquiflo 31F series magnetically coupled gear pumps are direct mounted to pedestal motor mounting frames with DC permanent magnet motors with tacho feedback. The pumps are fitted with a double walled "Dual-Kan" magnet cup to allow the pumped fluid to be kept at a constant temperature.

FEATURE	ADVANTAGE	BENEFIT
External gear pump design	<ul style="list-style-type: none">• Smooth, pulse-free flow• Simple to service and maintain• Low shearing of pumped media	<ul style="list-style-type: none">• Easy to monitor, easy to control• Reduced downtime and less production lost• Consistency of emulsion make-up is guaranteed
Magnetic coupling	<ul style="list-style-type: none">• Containment of pumped fluid• No seals to fail• Leak free pumping	<ul style="list-style-type: none">• Reduced chemical and environmental hazards - no leakage in the plant• Extended pump operation between servicing means reduced downtime• Integrity of media and reduced risk of quality issues
Permanent magnet DC motors with tacho feedback	<ul style="list-style-type: none">• Motor output speed can be easily adjusted and monitored	<ul style="list-style-type: none">• Emulsion constituents dosage can be adjusted automatically