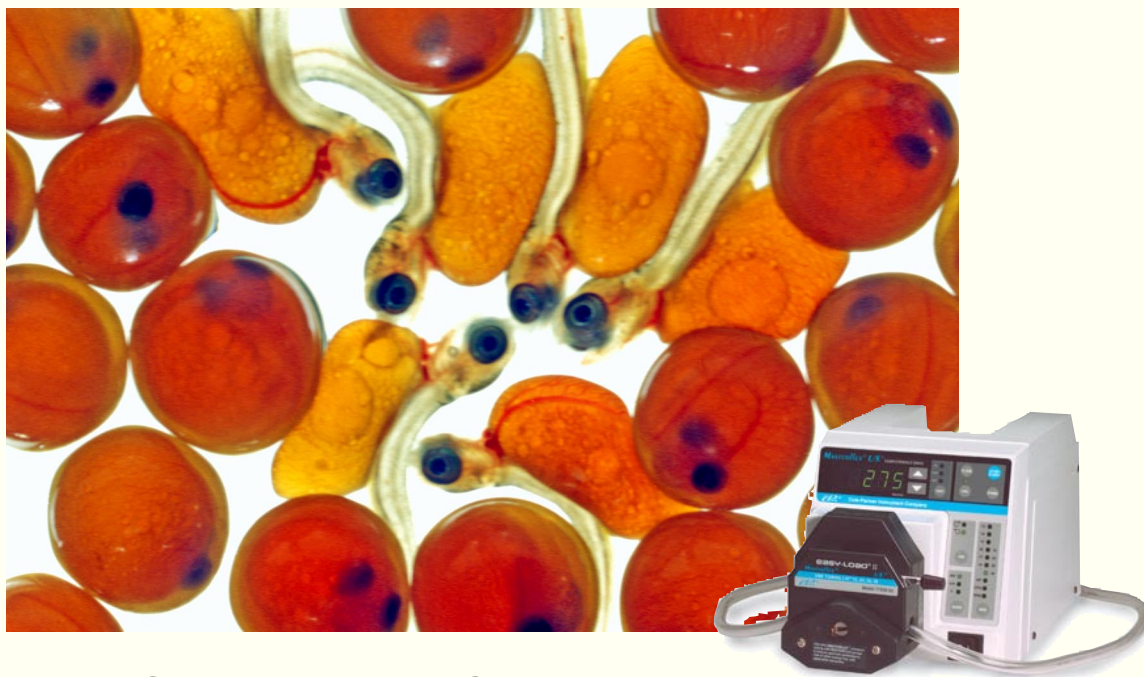


FOCUS

FISH HATCHERIES



Digital Chemical Dosing System Provides High Accuracy, Excellent Repeatability

Challenge:

Appropriate treatments are necessary to reduce the dissemination and amplification of infectious diseases and pathogens that can lead to egg, fry, and fingerling mortality. But overdosing drugs or chemicals such as formaldehyde solutions can lead to above normal treatment losses while underdosing will provide inadequate treatment. Maintaining precise dosing accuracy often presents major challenges for hatcheries – especially those operating older generation peristaltic pumps with insufficient calibration capabilities and poor repeatability.

Solution:

Unlike many pump designs, Thermo Scientific Masterflex® pumps easily maintain a precise, constant dosage rate with excellent repeatability – providing accuracies of $\pm 0.5\%$ or better. With adjustable 650:1 resolution, bi-directional flow and self-priming capabilities, Masterflex systems provide for smooth, seamless operation plus the dosing precision that is crucial for the integrity of flush treatments. Many Masterflex pump heads offer fixed occlusion to ensure optimal performance without the need for user adjustments.

Benefits:

High accuracy and repeatability combined with low maintenance have made the Masterflex pump a versatile and invaluable piece of equipment for today's modern hatcheries. Designed for fast, simple field set-up and calibration, Masterflex offers maintenance-free brushless motor drives and roller and ball bearing pumphead construction that provides for a robust, powerful pump in a small package – ideal for portable use for multiple applications. Many models include digital drives with simple push-button calibration for optimum, repeatable performance.

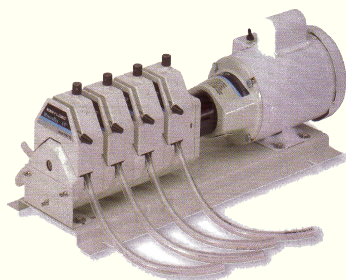
**INNOVATIVE, COST-EFFECTIVE
DIGITAL DOSING SYSTEMS**

The risks to hatchery operations from underdosing or overdosing chemical treatments are too high today to rely on old dosing technology. Hatcheries using older generation peristaltic pumping systems that provide only a single turn (10:1) potentiometer, or no speed adjustment, and poor field calibration capabilities not only create extra work for technicians, it can present a serious potential risk when making critical chemical additions.

Masterflex pumps, on the other hand, are innovative, cost-effective digital chemical dosing systems, optimally designed to provide reliable, precise, and repeatable chemical treatments for virtually all hatchery applications. Rather than relying on a 10:1 speed adjustment that provides $\pm 10\%$ accuracy, Masterflex systems provide a manually adjustable 650:1 resolution for up to 20 times the accuracy, and a repeatability rate of 99.5 percent.

Whether it's bath, dip or flush chemical treatments for hatching trays, hatchery troughs, raceways, or ponds, Masterflex peristaltic systems help maximize productivity and profitability through precision dosing. Field calibrations and set-up are easy and precise. Plus, hatcheries can dose up to eight runways simultaneously using a single Masterflex drive mounted with eight Masterflex pump heads, reducing manpower and operational costs even further.

Masterflex pumps provide for easy digital programming of volume and rate, bidirectional flow, auto-timing, and are self priming. Many models feature a sealed membrane keypad and digital display of volume, interval time and speed, and memory store for calibration values, volumes and custom setups.



Many Masterflex models offer a multi-head option, which can provide for dosing of up to eight raceways simultaneously.

User-friendly Masterflex systems are an invaluable piece of equipment for today's modern hatcheries.

**SIMPLE, EASY DOSING PRECISION****Optimally Designed For Reliable, Precise
And Repeatable Chemical Treatment**

With adjustable 650:1 resolution, bidirectional flow and self-priming capabilities, **Masterflex pumps provide for smooth, seamless chemical dosing.**

Requires very little maintenance to keep in peak operating condition.

Pumps have an **accuracy of $\pm 0.5\%$ or better**, manually adjustable speeds and flow rates from a few fluid ounces to multiple gallons per minute.

Pump acts as its own check valve – when the pump stops, the tube stays shut – no siphoning or overdosing!

Maintenance-free brushless motor drive (rated for continuous duty) and roller and ball bearing pumphead provide for **long-term operation.**

Self-priming for instant startup. And **high suction lift** provides for operating flexibility and **quick ramp up** from no-flow condition to the desired setpoint.

Masterflex pump heads are designed for **easy tubing exchange for reduced downtime.**

Simple, push button operation for optimum, repeatable performance and fast, simple field set-up and calibration.

The wide-ranging Masterflex peristaltic pump lines offer long-term operation and **pumping**

capacities from 0.001 mL per minute up to 175 gpm.

Masterflex systems accommodate a large range of tube sizes. High-tech tubing materials and new, advanced pumphead designs provide **precise, reliable and reproducible continuous**

fluid transfer for extended periods.

Many Masterflex models are lightweight and compact – **ideal for portable field use for multiple applications.**

With Masterflex Pumps, a well-balanced range of capacities and flexibility combines with excellent repeatability and optimal performance to provide for **precision, high reliability and long-term operation.**



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