

MAGUIRE®

NEW MS4 PeriStep Pump

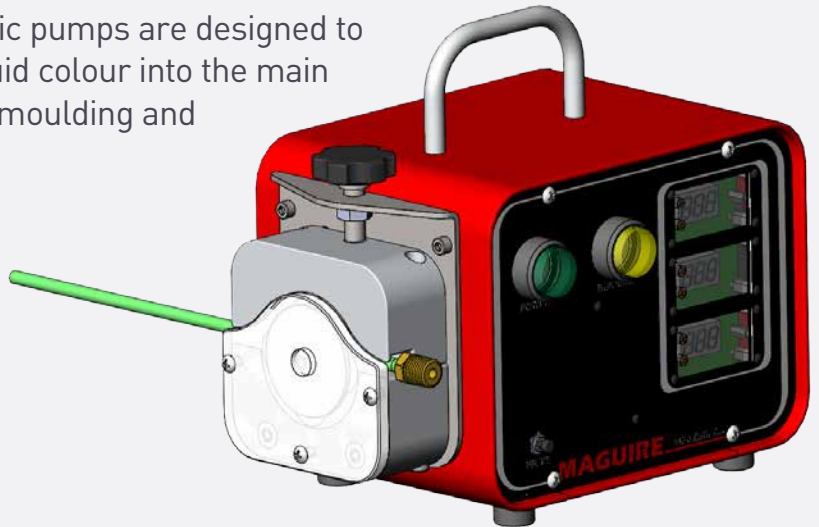


VERSION
#0814-MS4

New Maguire 4 PeriStep Liquid Colour Pump

The new MS4 patented Maguire peristaltic pumps are designed to accurately meter precise amounts of liquid colour into the main flow of natural material directly for both moulding and extrusion applications.

- ▶ **Highly efficient planetary roller drive design**
- ▶ **Stepper motor with no gearbox for precision control**
- ▶ **Minimal maintenance**
- ▶ **Easy for operators to use**
- ▶ **Quick and Clean liquid colour changes**



Three Steps to Easy Operation

The control requires only 3 inputs for an operator to setup and start using the MS4 pump. The design is simple and intuitive and avoids complex or menu driven interfaces that can be slow or complicated to set and start production. The simple 3-step process is:

- 1** Set **SHOT WEIGHT** (part GRAM weight), or extrusion rate (process kg/hr or lb/hr)
- 2** Set **LIQUID COLOUR PERCENTAGE**, (% of part weight)
- 3** Set **DENSITY** of the Liquid Colour, (lb/gal or kg/ltr)

Simpler entry of variables

It's easy as 1, 2, 3. With these 3 values entered the MS4 control automatically calculates the rest, working out the desired weight to volume to dose – again simplifying operator interface, setup time and minimizing opportunity for error.

Four Roller PeriStep Drive System

The new MS4 pump uses a “Sun and Planetary” design to drive the rollers. The precision stepper motor drives a central “sun” drive roller, which creates friction when pressed against the outer “planetary” rollers. The four outer planetary rollers are held in place by a cage to keep them positioned uniformly around the central drive roller to ensure accurate and precise peristaltic dosing of liquid.

Stepper motor

The new patented design of the pump (**Patent App #: 62/025**), utilizes a stepper motor with no gearbox to drive the dosing of the liquid and provides an extensive range on the dosing control and capacity.

The dosing range is fully maximised by the intelligent technology of the software control combined with the central roller driving an outer set of rollers through friction contact, providing a 5 to 1 speed reduction without a gearbox, ensuring accurate dosing, an efficient and compact design, minimal on-going maintenance, plus still allowing speed of access and colour change for operators.

Key Features

Positive Displacement Pump

Series MS4 PeriStep pumps are liquid colour pumps, with no seals, check valves or clearances to allow even the slightest internal leakage. The units are self-priming.

Automatic Speed Control

The MS4 control software use automatic speed control to assure self-adjusting accuracy. The pump design and control makes it versatile for all types of process including injection and blow moulding, and extrusion applications.

Three Tubing Sizes Available

Three tube diameters and assemblies are available to provide a further range of dosing outputs.

Ideal for Liquid Colour Applications

Maguire MS4 PeriStep pumps are best suited for accurate metering at low rates typical of liquid colour applications.

Easy Maintenance & Cleaning

The pump design is compact and lends itself to minimal maintenance. Liquid delivery tubes are quick and easy to change when colour changes are required and can be re-used, requiring replacement periodically according to usage and time. Typical tube life is 1 to 6 months.

There are no bearings to wear out. The compression rollers are solid rollers, so they never lose their tube compression tolerance, which can otherwise impact on dosing consistency and accuracy.

In the unlikely event of needing to dis-assemble the pump Split Head access is easy – the cover removes by releasing 3 screws and the complete roller set can be removed from there.

Lock & Load

“Easy Load” & “Safety Lock” design functionality.

Easy Load

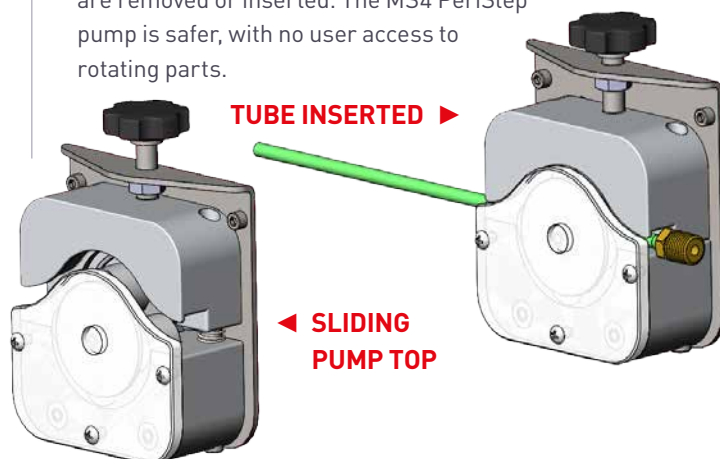
After a colour change the “Easy Load” design of the MS4 pumps allows a new colour tube to be positioned quickly and easily. The tube is simply laid over the top of the rollers without the need to work the tube into a compression zone.

Safety Lock

User Safety is key in the design of the Maguire PeriStep Pump utilising a safety interlock when accessing the pump drive assembly. The MS4 pump uses a “Split Head” design. When the split head is released it provides a 12.7mm (1/2”) access, exposing the top surface of the roller set.

The drive motor is safety-interlocked to ensure the motor cannot run when the top half of the pump head is raised / open, and the drive rollers are accessible.

The design makes sure the rollers cannot run whilst tubes are removed or inserted. The MS4 PeriStep pump is safer, with no user access to rotating parts.



MODEL	FEED TUBE ID			MOULDING – CYCLICAL DOSING RANGE				EXTRUSION CONTINUOUS DOSING RANGE			
	COLOUR	SIZE		MIN		MAX		MIN		MAX	
		IMPERIAL	METRIC	IMPERIAL	METRIC	IMPERIAL	METRIC	IMPERIAL	METRIC	IMPERIAL	METRIC
MS4-PS-G	Green	1/8”	3.18mm	0.02oz	0.05g	8lb	3.6kg	1lb/h	0.45kg/h	8lb/h	3.6kg/h
MS4-PS-R	Red	3/16”	4.76mm	0.02oz	0.05g	18lb	8.1kg	1lb/h	0.45kg/h	18lb/h	8.1kg/h
MS4-PS-C	Clear	1/4”	6.35mm	0.02oz	0.05g	24lb	10.8kg	1lb/h	0.45kg/h	24lb/h	10.8kg/h
MS4-ST-O	Custom										

The Maguire MS4 range of PeriStep pumps are subject to US Patent Application filling U.S. Provisional Patent Application No.: 62/025,542; 17 July 2014 and subsequent international fillings.



Compact, easy to use & setup, with quick liquid colour changes

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