

# 323 Drive with MC4 pumphead

300 series cased pump

## Features and benefits

- Manual or remote 4 mA to 20 mA or 0 V to 10 V analogue auto-control or RS232 control commands
- Up to 133:1 enhanced digital manual speed control
- Keypad lock prevents tampering or accidental changes
- MemoDose facility for accurate single-shot dosing
- Digital TTL inputs for run/stop and direction
- Instantly reversible
- Two-year warranty



## 323 Drive with MC4 pumphead performance

MC4 four-roller five-channel microcassette pumpheads — Tube bore and flow rates (ml/min)										
Tube codes	Orange/ Black	Orange/ Red	Orange/ Blue	Orange/ Green	Orange/ Yellow	Orange/ White	Black/ Black	Orange/ Orange	White/ White	Red/ Red
<b>Bore mm</b>	<b>0.13</b>	<b>0.19</b>	<b>0.25</b>	<b>0.38</b>	<b>0.50</b>	<b>0.63</b>	<b>0.76</b>	<b>0.88</b>	<b>1.02</b>	<b>1.14</b>
3.0rpm	0.002	0.01	0.01	0.03	0.05	0.08	0.13	0.17	0.22	0.27
110rpm	0.09	0.3	0.5	0.9	1.7	3.1	4.6	6.4	8.1	9.9
Tube code	Grey/ Grey	Yellow/ Yellow	Yellow/ Blue	Blue/ Blue	Green/ Green	Purple/ Purple	Purple/ Black	Purple/ Orange	Purple/ White	
<b>Bore mm</b>	<b>1.29</b>	<b>1.42</b>	<b>1.52</b>	<b>1.65</b>	<b>1.85</b>	<b>2.05</b>	<b>2.29</b>	<b>2.54</b>	<b>2.79</b>	
3.0rpm	0.35	0.46	0.52	0.60	0.76	0.90	1.1	1.3	1.4	
110rpm	13	17	19	22	28	33	40	47	53	

## Technical specifications

	323 Drive with MC4 pumphead
Pumphead number of rollers	4
Pumphead number of channels	5
Flow rate	0.002 ml/min to 53 ml/min
Speed control ratio	133:1
Operating speed	3 rpm to 400 rpm
Operating temperature	5 °C to 40 °C (40 °F to 104 °F)
Weight	5 kg (11 lbs)
Drive control options	Du, S
Standards	CE, cETLus
Drive ingress protection	IP31
Drive humidity	80 % up to 31 °C, 88 °F, decreasing linearly to 50 % at 40 °C, 104 °F
Drive noise	<70dB(A) at 1m
Max. altitude	2000 m (6562 ft)
Drive power supply	1ph, 100 V to 120 V, 220 V to 240 V 50/60 Hz, 100 VA
Compatible tubing bore size	0.13, 0.19, 0.25, 0.38, 0.5, 0.63, 0.76, 0.88, 1.02, 1.14, 1.29, 1.42, 1.52, 1.65, 1.85, 2.05, 2.29, 2.54, 2.79 mm

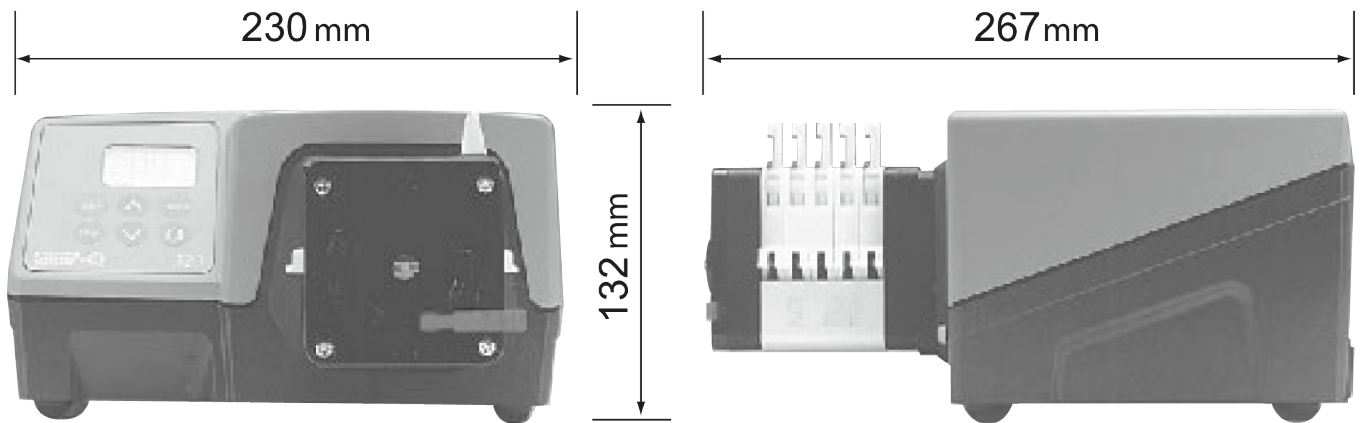
## Materials of construction

	323 Drive with MC4 pumphead
Bearings	Carbon steel
Drive casework	Acrylonitrile butadiene styrene (ABS), Powder coated aluminium LM24
Mounting plate assembly	Glass filled Nylon, IXEF (Polyarylamide)
Pumphead body assembly	Aluminium
Pumphead roller assembly	MoS2 filled Nylon 6 (Nylatron)
Pumphead rotor assembly	Aluminium
Spindles	Stainless steel

Information listed covers the complete range.

For detailed specifications of individual models/components refer to user manual or contact WMFTS representative.

## 323 Drive with MC4 pumphead dimensions



## Control options

Functionality	323E	323S	323U	323Du
<b>Manual control</b>				
Keypad speed control	✓	✓	✓	✓
15-400rpm 27:1 speed control	✓			
3-400rpm 133:1 speed control		✓	✓	✓
1.5-220rpm 147:1 speed control		✓	✓	✓
MemoDose for accurate single shot dosing		✓	✓	✓
<b>Remote control</b>				
Run/Stop, direction change via contact closure or 5V TTL			✓	✓
Remote operation of MemoDose (hand/foot switch)			✓	✓
<b>Analogue speed control</b>				
Inputs; 0-10V or 4-20mA			✓	✓
<b>RS232 digital communication</b>				
Digital serial control				✓
<b>Security</b>				
Keypad lock to protect set-up		✓	✓	✓

## Product codes

Drives and pumpheads product codes		
Description		Partcode
323S	drive only	036.3134.000*
323Du	drive only	036.3154.000*
314MC	four-roller five-channel pumphead	033.6453.000
314MCX	four-roller five-channel extension pumphead	033.6454.000

\*Replace last 0 with A, E or U for American, European or UK mains supply (American 110 V 1 ph 60 Hz)

Tubing product codes				
Colour code	Tube (mm)	Marprene*	PVC	Silicone
Orange/black	0.13		981.0013.000	
Orange/red	0.19		981.0019.000	
Orange/blue	0.25	979.0025.000	981.0025.000	
Orange/green	0.38	979.0038.000	981.0038.000	
Orange/yellow	0.50	979.0050.000	981.0050.000	
Orange/white	0.63	979.0063.000	981.0063.000	983.0063.000
Black/black	0.76	979.0076.000	981.0076.000	983.0076.000
Orange/orange	0.88	979.0088.000	981.0088.000	983.0088.000
White/white	1.02	979.0102.000	981.0102.000	983.0102.000
Red/red	1.14	979.0114.000	981.0114.000	983.0114.000
Grey/grey	1.29	979.0129.000	981.0129.000	983.0129.000
Yellow/yellow	1.42	979.0142.000	981.0142.000	983.0142.000
Yellow/blue	1.52	979.0152.000	981.0152.000	983.0152.000
Blue/blue	1.65	979.0165.000	981.0165.000	983.0165.000
Green/green	1.85	979.0185.000	981.0185.000	983.0185.000
Purple/purple	2.05	979.0205.000	981.0205.000	983.0205.000
Purple/black	2.29	979.0229.000	981.0229.000	983.0229.000
Purple/orange	2.54	979.0254.000	981.0254.000	983.0254.000
Purple/white	2.79	979.0279.000	981.0279.000	983.0279.000

\* For autoclavable Marprene tubing, please replace last "0" with "\*" - for example 979.0238.00\*

Disclaimer: All flow rates shown were obtained pumping water at 20 °C (68 °F) with zero suction and delivery heads. The information contained in this document is believed to be correct but Watson-Marlow Limited accepts no liability for any errors it contains and reserves the right to alter specifications without notice. It is the user's responsibility to ensure product suitability for use within their application. Watson-Marlow, LoadSure, Pumpsil, PureWeld XL, Bioprene, Marprene are registered trademarks of Watson-Marlow Limited. Tri-Clamp is a registered trademark of Alfa Laval Corporate AB. GORE and STA-PURE are registered trademarks of W.L. Gore and Associates. Please state the product code when ordering pumps and tubing.



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