

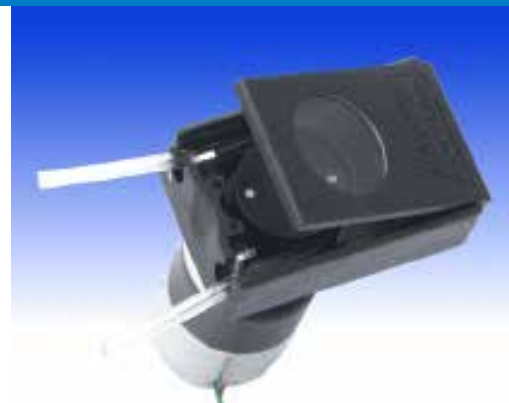
400F/A single channel precision pump

400^{series}

Watson-Marlow Pumps

FEATURES AND BENEFITS

- Instrument quality in compact design 31x48mm
- Flow rates from $\mu\text{l}/\text{min}$ to 30 ml/min
- Precision dispense down to one micro liter
- Combines easy tube loading with safe closed design
- Spring loaded track for flow precision and long tube life
- For 0.85-0.9mm tube wall thickness
- Tube holder for continuous tubing and for use with tube elements



Watson-Marlow...Innovation in Full Flow

PERFORMANCE

Flow rates (ml/min) Santoprene tubing wall 0.85mm, zero pressure and no suction height.

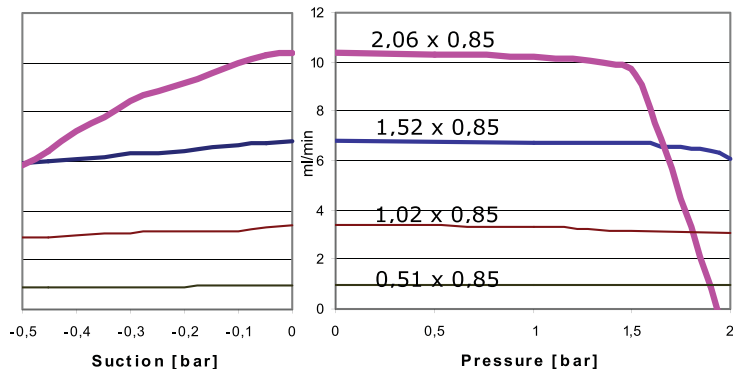
		Speed (rpm)						
Tube bore (mm)	(ml/rev)	13	26	35	47	74	155	290
0.25	0.0025	0.03	0.07	0.09	0.12	0.19	0.39	0.73
0.51	0.0097	0.13	0.25	0.34	0.46	0.72	1.5	2.8
0.76	0.020	0.26	0.52	0.7	0.94	1.5	3.1	5.8
1.02	0.034	0.44	0.88	1.2	1.6	2.5	5.3	9.9
1.22*	0.046	0.6	1.2	1.6	2.2	3.4	7.1	13
1.52	0.068	0.88	1.8	2.4	3.2	5	11	20
2.06	0.104	1.4	2.7	3.6	4.9	7.7	16	30

Note: Reduced tube life with tube sizes from 1.65mm up to 2.06mm

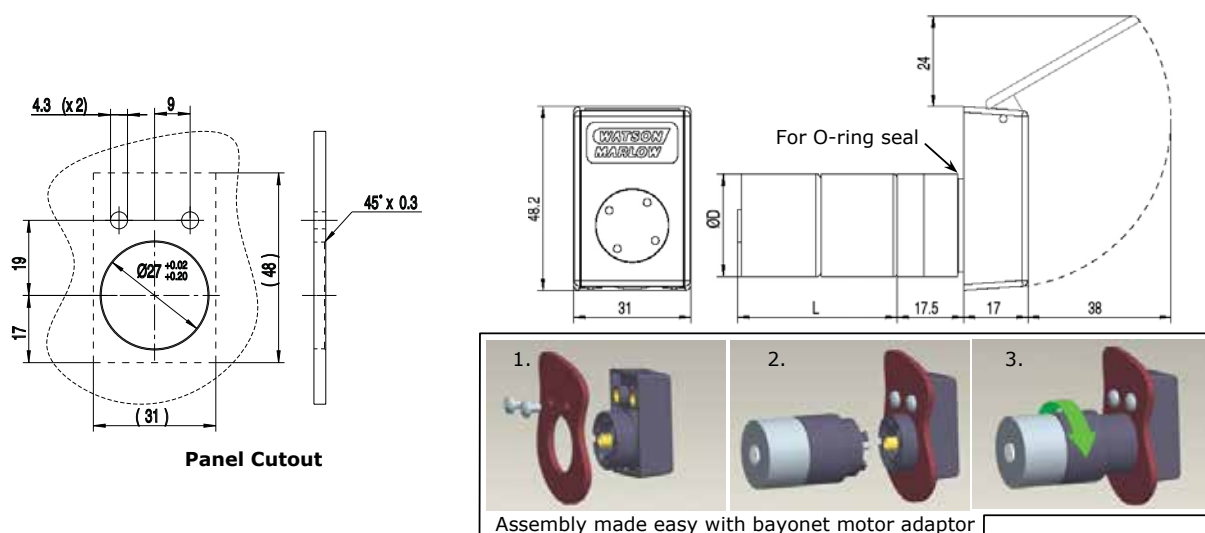
All flow figures are nominal and may vary +/-10% depending on tube tolerances

* This dimension is only available in PVC

Pressure Chart Santoprene tubing @100rpm



DIMENSIONS



All dimensions in mm

TECHNICAL SPECIFICATION

Pumptype	Single channel peristaltic pump
Tubing	0,85mm wall continuous tubing or for tube elements
Recommended use	Intermittent use or light applications
Operation	CW or CCW
Brushes	Metal or Carbon
Supply voltage	12VDC, 24VDC
Weight	140g

MATERIALS OF CONSTRUCTION

Component	Material
Pump house	Acetal (black)
Rotor	Acetal (black)
Window	PET
Rollers	Acetal (black)
Track	Acetal (black)
Shafts	Stainless steel
Springs	Stainless steel

ORDER INFORMATION

Product codes: 400FD/A drive 12V					
Description/Motor type	Nominal speed (rpm)	Current nominal (mA)	Track setting	Pumps for continuous tubing	Pumps for tube element
L	13	<30	standard	040.K91A.B1C	040.K91A.T1C
L	13	<30	+Pressure	040.K91A.B15	040.K91A.T15
L	47	~55	standard	040.KK1A.B1C	040.KK1A.T1C
L	47	~55	+Pressure	040.KK1A.B15	040.KK1A.T15
HV	155	~180	standard	040.QR1A.B1C	040.QR1A.T1C
HV	155	~180	+Pressure	040.QR1A.B15	040.QR1A.T15
HV	290	~250	standard	040.QT1A.B1C	040.QT1A.T1C
HV	290	~250	+Pressure	040.QT1A.B15	040.QT1A.T15

Product codes: 400FD/A drive 24V					
Description/Motor type	Nominal speed (rpm)	Current nominal (mA)	Track setting	Pumps for continuous tubing	Pumps for tube element
HL	35	<50	standard	040.PG1A.B1C	040.PG1A.T1C
HL	35	<50	+Pressure	040.PG1A.B15	040.PG1A.T15
HL	74	~60	standard	040.PN1A.B1C	040.PN1A.T1C
HL	74	~60	+Pressure	040.PN1A.B15	040.PN1A.T15
HV	290	~125	standard	040.PT1A.B1C	040.PT1A.T1C
HV	290	~125	+Pressure	040.PT1A.B15	040.PT1A.T15

+Pressure track recommended with PVC-tubing and with >Ø1,0mm ID Santoprene and Silicone >Ø1,5mm ID tubing.
Some tubing-speed combinations may not be suitable for continuous tubing models

Motor	ØD	L	Description
L	27	13rpm: 47mm 47rpm: 42mm	Small metal brush DC-motor with Varisto-Disc noise suppression
HL	30	35.74rpm: 71mm	Carbon brush DC-motor with Varisto-Disc noise suppression. 3-pulse encoder available
HV	30	155rpm: 71mm 290rpm: 66mm	Carbon brush DC-motor with Varisto-Disc noise suppression. 3-pulse encoder available

All flow rates shown were obtained pumping water at 20°C (68°F) with zero suction and delivery heads. Watson-Marlow, Bioprene and Marprene are trademarks of Watson-Marlow Limited. Disclaimer: 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. LoadSure is a trademark of Watson-Marlow Limited. © STA-PURE PFL and © STA-PURE PCS are registered trademarks of W.L. Gore & Associates Inc. Please state the product code when ordering pumps and tubing.

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Pumps**

wmpg.com
info@wmpg.com
+44 (0) 1326 370370