

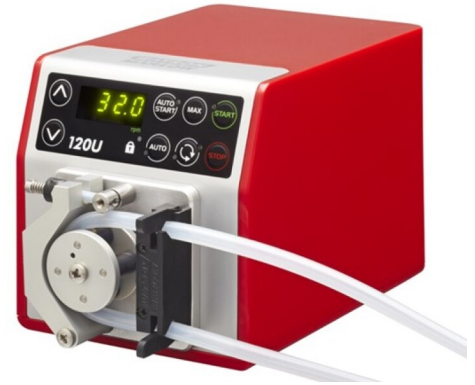
# Drive with 400D1 Pumphead



100 series cased pump

## Features and benefits

- Smooth, wipe down case with no sharp edges to tear gloves and no bug traps. IP31 ingress protection
- Superior speed control up to 2,000:1,  $\pm 1\%$  set speed accuracy, repeatable flow
- Efficient and intuitive to use, requiring minimal key presses
- Compact footprint requires minimal countertop space
- Maintenance-free, brushless DC motor
- Single, twin or three channels of flow
- Manual, remote or auto control
- Three-year warranty



## Drive with 400D1 Pumphead performance

400D1 pumphead for continuous tubing for manual (120S) and auto (120U) variable speed pumps — Tube bore and flow rates (ml/min)							
	Speed rpm	0.5mm	0.8mm	1.6mm	2.4mm	3.2mm	4.0mm
120S/D1	1 - 200rpm	0.01 - 2.2	0.03 - 5.8	0.11 - 23	0.24 - 49	0.41 - 81	0.59 - 120
120U/D1	0.1 - 200rpm	0.001 - 2.2	0.003 - 5.8	0.011 - 23	0.024 - 49	0.041 - 81	0.059 - 120

## Technical specifications

	Drive with 400D1 Pumphead
Pumphead number of channels	1
Max. flow rate	120 ml/min
Min. flow rate	0.001 ml/min
Max. flow rate	3.04 usgph
Min. flow rate	0.00002 usgph
Max. operating pressure	2 bar
Max. operating pressure	30 psi
Speed control ratio	200:1, 2000:1
Max. operating speed	200 rpm
Min. operating speed	0.1 rpm
Operating temperature range	5 to 40 °C
Operating temperature range	40 to 104 °F
Weight	1.65 kg
Weight	3.6 lbs
Control options	Automatic variable speed, Manual variable speed
Standards	CE, cETLus
Ingress rating	IP31, NEMA 2
Humidity	(Non-condensing) 80% up to 31°C (88°F), decreasing linearly to 50% at 40C (104F)
Noise	<60dB(A) at 1 m
Max. altitude	2000
Power supply	Supplied with 24 VDC mains transformer plug (range 90-264 VAC 47-63 Hz) which comes with multi-country adapters

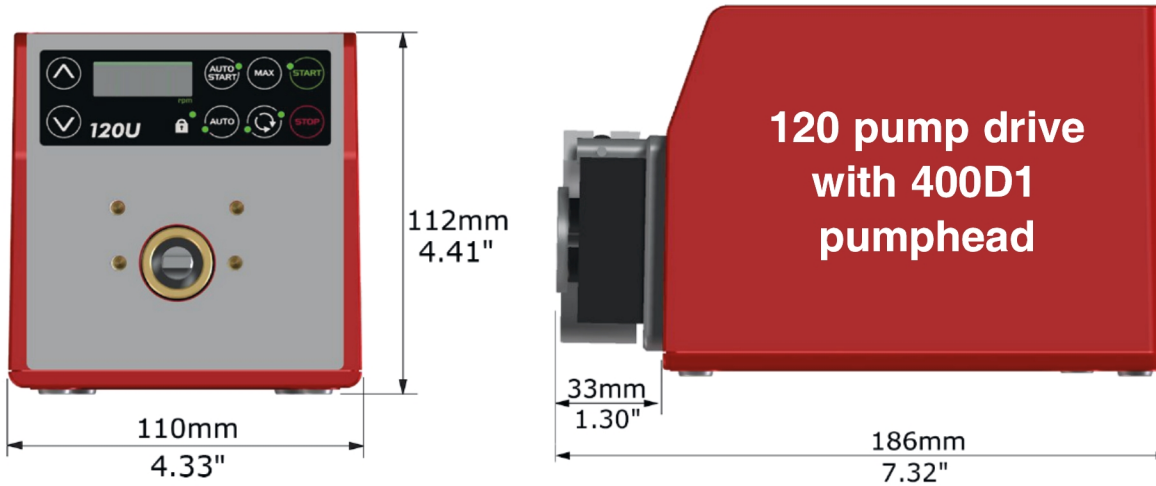
## Materials of construction

	Drive with 400D1 Pumphead
Drive shaft	Stainless steel
Drive casework	ABS plastic
Keypad/HMI	Polyester
Pumphead roller assembly	Acetal
Pumphead rotor assembly	Aluminum (anodized)
Pumphead track	Aluminum (anodized)
Spindles	Stainless steel

Information listed covers the complete range.

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

## Drive with 400D1 Pumphead dimensions

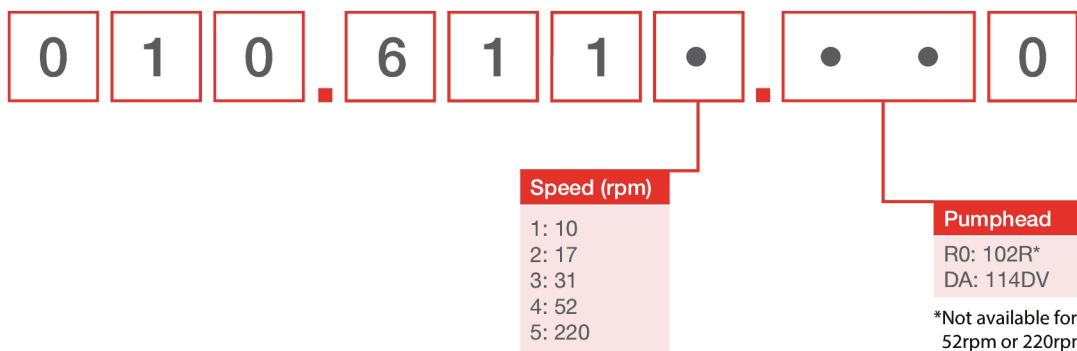


## Control options

Key to pump drive control											
120F	120S	120U									
Fixed speed	Manual variable speed	Auto variable speed									
<b>Manual control</b>											
<b>Pump drives</b>											
	120F	120S	120U								
Fixed speed (CW direction)	✓										
Variable speed 1rpm increments		✓									
Variable speed 0.1rpm increments			✓								
Numerical speed display		✓	✓								
Direction change		✓	✓								
Max (prime)		✓	✓								
Auto start		✓	✓								
<b>Remote control and feedback</b>											
<b>Pump drives</b>											
	120F	120S	120U								
Run/stop, direction change, auto/man toggle, alarm			✓								
<b>Analogue control</b>											
<b>Pump drives</b>											
	120F	120S	120U								
Variable speed 0.1rpm increments			✓								
Analogue speed input; 4-20mA, 0-10V			✓								
Tacho speed output; 0-5V			✓								
<b>Security</b>											
<b>Pump drives</b>											
	120F	120S	120U								
Keypad lock to protect set-up		✓	✓								
<b>Control Ratio</b>											
	120F 120S						120U				
<b>Pumphead</b>	N/A	102R	114DV	400D1	400DM2	400DM3	102R	114DV	400D1	400DM2	400DM3
Manual	Fixed	1-32 rpm (32:1)	1-200 rpm (200:1)	1-200 rpm (200:1)	1-100 rpm (100:1)	1-100 rpm (100:1)	0.1-32 rpm (320:1)	0.1-200 rpm (2,000:1)	0.1-200 rpm (2,000:1)	0.1-100 rpm (1,000:1)	0.1-100 rpm (1,000:1)
Automatic	N/A	N/A	N/A	N/A	N/A	N/A	0.01-32 rpm (3,200:1)	0.01-200 rpm (20,000:1)	0.01-200 rpm (20,000:1)	0.01-100 rpm (10,000:1)	0.01-100 rpm (10,000:1)

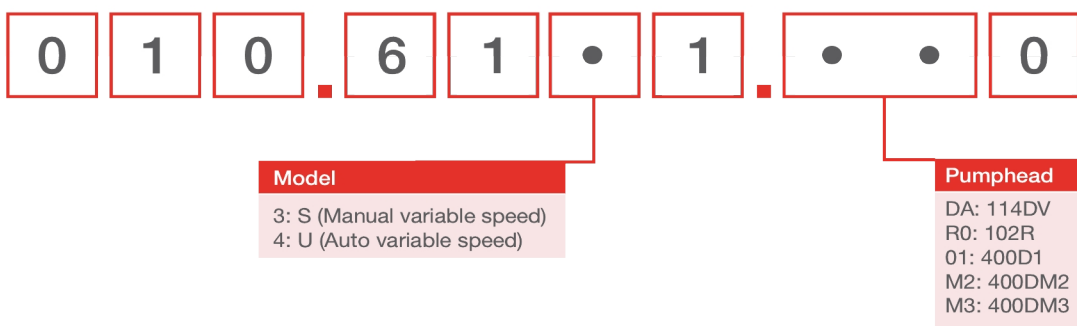
## Product codes

### 120F



Note: All models are IP31 / NEMA 2

### 120S, 120U



## Product codes

Pumphead product codes		
Model	Description	Product code
400D1	400D1 pumphead kit, 1 channel	043.001D.D1C
120 PSU	120V PSU kit 1A	MN2634B

### Notes:

The pumpheads can only be sold as 120 replacement heads

The pumpheads are not interchangeable between drive models as they use different shaft designs

Tubing 1.6mm wall thickness for 400D1 pumphead						
	0.5mm	0.8mm	1.6mm	2.4mm	3.2mm	4.0mm
Bioprene	903.0005.016	903.0008.016	903.0016.016	903.0024.016	903.0032.016	
Pumpsil (Silicone)	913.A005.016	913.A008.016	913.A016.016	913.A024.016	913.A032.016	
STA-PURE® Series PCS			961.0016.016		961.0032.016	
Marprene	902.0005.016	902.0008.016	902.0016.016	902.0024.016	902.0032.016	902.0040.016
STA-PURE® Series PFL			966.0016.016		966.0032.016	
PVC			950.0016.016		950.0032.016	

---

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 users 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.

[wmfts.com/global](https://wmfts.com/global)



07 August 2023