

120 Drive with 114DV Pumphead



100 series cased pump

Features and benefits

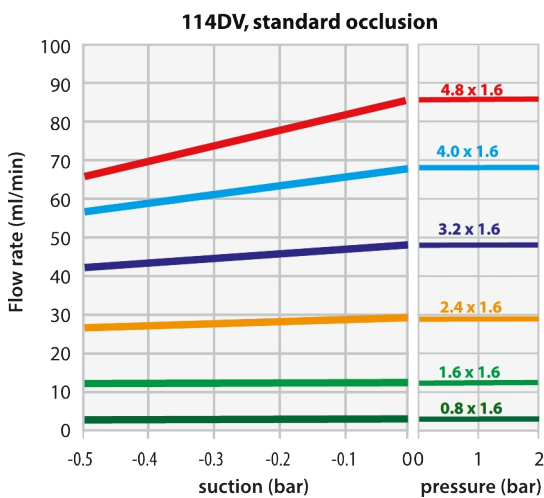
- Smooth, wipe down case with no sharp edges to tear gloves and no bug traps. IP31 ingress protection
- Superior speed control up to 2,000:1, $\pm 1\%$ set speed accuracy, repeatable flow
- Efficient and intuitive to use, requiring minimal key presses
- Compact footprint requires minimal benchtop space
- Maintenance-free, brushless DC motor
- 1 channel pumphead
- Automatic variable speed, Fixed speed, Manual variable speed options
- Three-year warranty



120 Drive with 114DV Pumphead performance

114DV pumphead for continuous tubing for fixed (120F) speed pumps — Tube bore and flow rates (ml/min)							
Speed rpm	0.5mm	0.8mm	1.6mm	2.4mm	3.2mm	4.0mm	4.8mm
10rpm	0.2	0.4	1.4	2.9	4.7	6.7	8.5
17rpm	0.3	0.7	2.4	4.9	8.0	11	14
31rpm	0.6	1.2	4.3	9.0	15	21	26
52rpm	1.0	2.1	7.3	15	24	35	44
220rpm	4.4	8.8	31	64	100	150	190

114DV 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	4.8mm
1 - 200rpm	0.02 - 4.0	0.04 - 8.0	0.14 - 28	0.29 - 58	0.47 - 94	0.67 - 130	0.85 - 170
0.1 - 200rpm	0.002 - 4.0	0.004 - 8.0	0.014 - 28	0.029 - 58	0.047 - 94	0.07 - 130	0.085 - 170



Flows obtained pumping water at 100rpm CCW-rotation
Typically 25% less pressure capacity in the CW direction

Technical specifications

	120 Drive with 114DV Pumphead
Pumphead number of rollers	4
Pumphead number of channels	1
Max. flow rate	190 ml/min
Min. flow rate	0.002 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	220 rpm
Min. operating speed	0.1 rpm
Operating temperature range	5 to 40 °C
Operating temperature range	40 to 104 °F
Weight	1.5 kg
Weight	3.3 lbs
Control options	Automatic variable speed, Fixed 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 40 °C (104 °F)
Noise	<60dB(A) at 1 m
Max. altitude	2000 m
Power supply	Supplied with 24 VDC mains transformer plug (range 90-264 VAC 47-63 Hz) which comes with multi-country adaptors

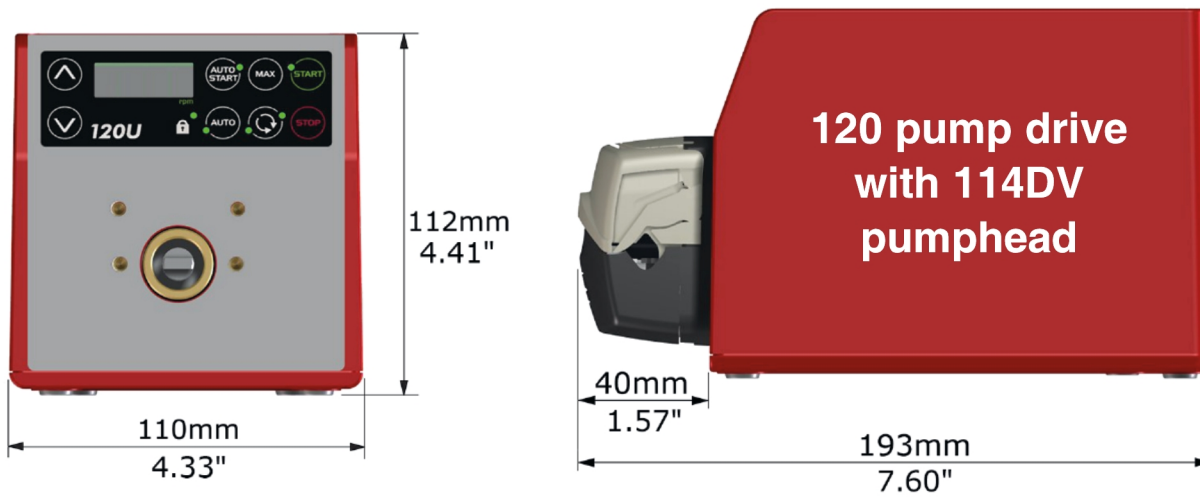
Materials of construction

	120 Drive with 114DV Pumphead
Bearings	Stainless steel
Drive shaft	Stainless steel
Drive casework	ABS plastic
Keypad/HMI	Polyester
Pumphead body assembly	Grilamid PA12, IXEF PARA
Pumphead roller assembly	PTFE filled PBT
Pumphead rotor assembly	IXEF PARA
Pumphead track	Stainless steel
Springs	Stainless steel

Information listed covers the complete range.

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

120 Drive with 114DV Pumphead dimensions

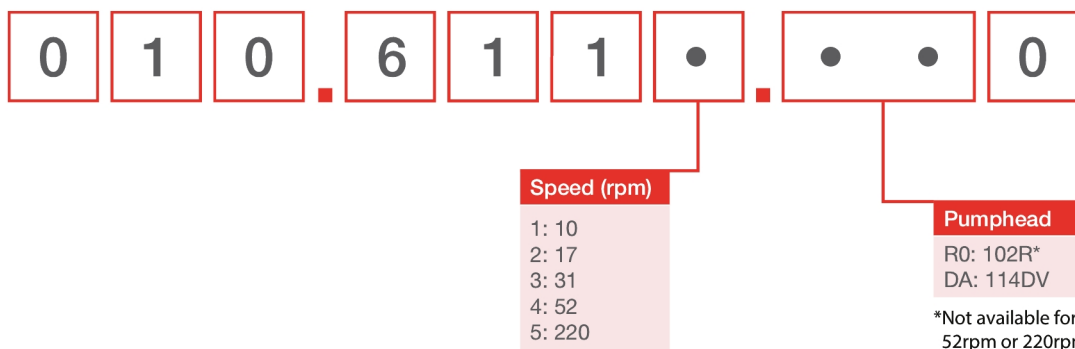


Control options

Key to pump drive control											
120F			120S			120U					
Fixed speed			Manual variable speed			Auto variable speed					
Manual control											
Pump drives						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							✓		✓		
Remote control and feedback											
Pump drives						120F	120S	120U			
Run/stop, direction change, auto/man toggle, alarm									✓		
Analogue control											
Pump drives						120F	120S	120U			
Variable speed 0.1rpm increments									✓		
Analogue speed input; 4-20mA, 0-10V									✓		
Tacho speed output; 0-5V									✓		
Security											
Pump drives						120F	120S	120U			
Keypad lock to protect set-up							✓		✓		
Control Ratio											
	120F	120S					120U				
Pumphead	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)

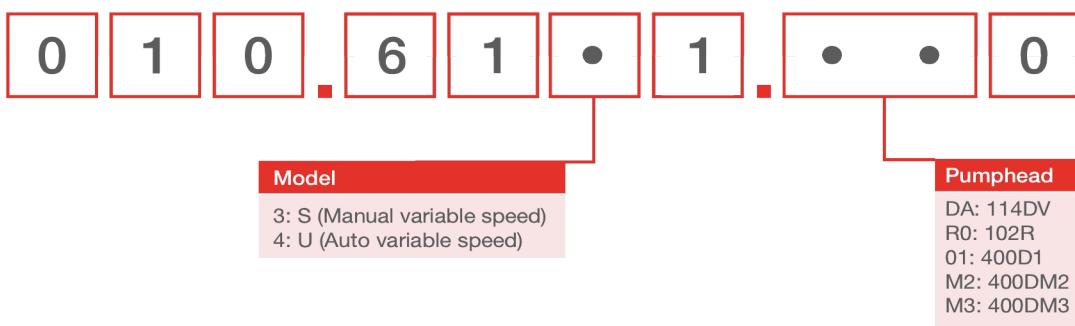
Product codes

120F



Note: All models are IP31 / NEMA 2

120S, 120U



Product codes

Pumphead product codes		
Model	Description	Product code
114DV	114DV pumphead	013.5000.00A
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 114DV pumphead							
	0.5mm	0.8mm	1.6mm	2.4mm	3.2mm	4.0mm	4.8mm
Bioprene	903.0005.016	903.0008.016	903.0016.016	903.0024.016	903.0032.016	903.0040.016	903.0048.016
Pumpsil (Silicone)	913.A005.016	913.A008.016	913.A016.016	913.A024.016	913.A032.016		913.A048.016
STA-PURE® Series PCS			961.0016.016		961.0032.016		961.0048.016
Marpene	902.0005.016	902.0008.016	902.0016.016	902.0024.016	902.0032.016	902.0040.016	902.0048.016
STA-PURE® Series PFL			966.0016.016		966.0032.016		966.0048.016

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 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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07 August 2023