

# 120 PERISTALTIC PUMPS

Small, Simple, Precise



- Biopharm
- Research
- Science
- OEM

# The new 120 peristaltic pumps

- Compact footprint saves bench space
- Exceptional speed control and accuracy
- New flip-top 114 pumphead up to 190 ml/min
- Simple: minimum key presses, intuitive operation

Smooth, wipe-down enclosure for ultimate cleanability

Fewer key presses, fewer mistakes and minimal setup time. The 120 pump is efficient and intuitive to use

The 114DV pumphead offers trouble-free tube loading in seconds, for high accuracy and repeatable flow

# For biopharm, science, research and OEM

## Fermentation

The 120 is the perfect pump for maximising yield in fermentation and cell culture applications. Ultra-compact and stackable for multiple feeds like **pH control, anti-foam, nutrient and buffer addition**, the 120 offers the ideal combination of size and technology to optimise your process.



## Single-use systems

The new 120 pump is perfectly suited to single-use systems where no contamination can be accepted. Error-free tube change takes only seconds, with tubing automatically clamped and tensioned to ensure repeatable performance.



## Process validation

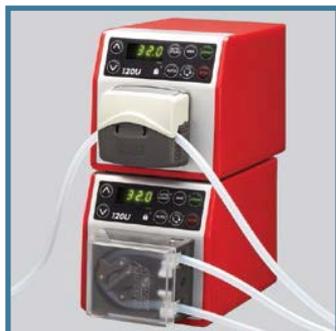
The biopharm process requires accurate and repeatable pumping which is easy to validate. With an exceptional 2,000:1 speed range and a selection of USP Class VI tubes, the 120 delivers the flexibility and purity so vital to drug trials. A keypad lock secures your pumping parameters for constant and repeatable performance.



# Small, simple, precise

## Compact footprint

The compact, stackable 120 pump saves valuable space in cleanroom, LAF and biosafety cabinet installations.



## Flexible control

The 120 range of fixed speed, manual control or auto control pumps all guarantee  $\pm 1\%$  accuracy, considerably better than the nearest competitive peristaltic pumps. For ultimate flexibility, the 120U delivers 2,000:1 speed control.



## High accuracy flows

The flip-top 114DV pumphead assures trouble-free tube loading in seconds for high accuracy and repeatable flow, and long tube life.



## Intuitive use

The 120 pump's intuitive interface makes the pump easy and quick to setup, with fewer key presses for fewer mistakes. The pump brings maximum efficiency to your process.



## Hygienic

The pump case has no sharp edges to tear gloves and no bug traps. Rated to IP31, it is ideally suited for ethanol wipe-down.



## Process security

Two of the 120 models feature a keypad lock. The security of your process and product is safe with a 120 pump.



# The Watson-Marlow family of pumps

## Watson-Marlow value

Our pumps combine simple operation with sophisticated control and flow accuracy – available next day and backed by an outstanding warranty and knowledgeable global support. Our products deliver real value with minimum maintenance, maximum performance and the lowest lifecycle cost.

## Three-year warranty

Demonstrating total confidence in our reliability and our commitment to customer satisfaction, Watson-Marlow 120 pumps carry a three-year warranty. Your production is safe with us.

## The perfect pump

Low-shear peristaltic pumping is created by compressing a tube with rollers, which progress the fluid forward. This simple dynamic effect requires no seals or valves to leak, clog or replace. The fluid is totally contained within the tube, eliminating contamination risks and simplifying validation. The pump handles delicate or viscous fluids with precision, and pumps suspended solids and live cells with integrity.



**The 120 is the latest model in the world's most widely respected biopharm pumps range**

**PROCESS UPSCALING**

**Full scale production**

**Pilot/lab scale**



**120** for flows up to 190 ml/min, pressures up to 2 bar



**323** for flows up to 2,000 ml/min, pressures up to 2 bar



**520** for flows up to 3,500 ml/min, pressures up to 7 bar



**620** for flows up to 18 litre/min, pressures up to 4 bar



**720** for flows up to 55 litre/min, pressures up to 2 bar

# Choose your pump

## Three drives



### Fixed speed

The 120F is offered in five fixed flow rate versions: 10, 17, 31, 52 and 220 rpm. Pumphead options are the 114DV and the 120R.



### Manual variable speed

The manual control, variable speed 120S offers 1-200 rpm operation in 1 rpm increments. It features speed scrolling, priming and keypad lock. All pumpheads are available.



### Automatic control

The 0.1 to 200 rpm 120U offers manual remote control of the pump in 0.1 rpm increments or automatic control via 4-20mA or 0-10V inputs. All pumpheads are available.

## Five pumpheads



### 114DV

The flip-top, 114DV single-channel pumphead assures trouble-free continuous tube loading in seconds, high accuracy

and repeatable flow. It accepts tubing in bores sizes 0.5mm to 4.8mm.



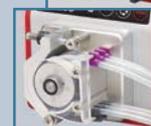
### 102R

The 102R single-channel pumphead with two-roller rotor is suitable for silicone tubing in bore sizes 0.5mm to 4.8mm.



### 400 series

The single-channel 400D1 accepts tubing from 0.5mm to 3.2mm. The multi-channel 400DM2 and 400DM3 pumpheads use three-bridge manifold tubing.



## Tubing



### Pumpsil

Pumpsil platinum-cured silicone tubing is Animal Derived Content Free (ADCF) and laser-etched to make it lot traceable

and is post-cured to reduce leachables to near zero. It is manufactured in our own dedicated tubing plant, and carries full USP Class VI and ISO 10993 certification, is FDA compliant and is fully validated.



### PureWeld XL

Fully weldable ADCF and heat-sealable PureWeld XL thermoplastic elastomer gives excellent pumping performance and

produces virtually no internal spallation. It is USP Class VI and FDA compliant, and is fully validated.



### Bioprene

Bioprene thermoplastic elastomer offers the best combination of purity, chemical compatibility and long

pumping life. It is manufactured in our own dedicated tubing plant. It is USP Class VI certified and FDA compliant, and is fully validated.

### STA-PURE PCS

GORE STA-PURE PCS is a composite of silicone in an ePTFE lattice. It offers 18 times the pumping life of silicone. It is USP Class VI approved.

### STA-PURE PFL

GORE STA-PURE PFL is a composite of ePTFE and a high-grade fluoroelastomer, offering extraordinary chemical resistance and long life. It is USP Class VI approved.

## Performance information

Tube bore and flow rates 114DV, 102R and 400D1 (ml/min)							
Model and Speed	0.5mm	0.8mm	1.6mm	2.4mm	3.2mm	4.0mm	4.8mm
120F/DV 10 rpm	0.2	0.4	1.4	2.9	4.7	6.7	8.5
120F/DV 17 rpm	0.3	0.7	2.4	4.9	8.0	11	14
120F/DV 31 rpm	0.6	1.2	4.3	9.0	15	21	26
120F/DV 52 rpm	1.0	2.1	7.3	15	24	35	44
120F/DV 220 rpm	4.4	8.8	31	64	100	150	190
120S/DV 1-200 rpm	0.02-4.0	0.04-8.0	0.14-28	0.29-58	0.47-94	0.67-130	0.85-170
120U/DV 0.1-200 rpm	0.002-4.0	0.004-8.0	0.014-28	0.029-58	0.047-94	0.067-130	0.085-170
120F/R 10 rpm	0.3	0.5	2.1	-	8.5	-	17
120F/R 17 rpm	0.5	0.9	3.6	-	14	-	29
120F/R 31 rpm	0.9	1.6	6.5	-	26	-	52
120S/R 1 - 32 rpm	0.03-0.9	0.05-1.6	0.21-6.7	-	0.85-27	-	1.6-54
120U/R 0.1 - 32 rpm	0.003-0.9	0.005-1.6	0.02-6.7	-	0.09-27	-	0.16-54
120S/D1 1-200 rpm	0.01-2.2	0.03-5.8	0.11-23	0.24-49	0.41-81	0.59-120	-
120U/D1 0.1 - 200 rpm	0.001-2.2	0.003-5.8	0.011-23	0.024-49	0.041-81	0.059-120	-
Tube bore and flow rates 400DM2 and 400DM3 (ml/min)							
Model and Speed	0.13mm	0.19mm	0.25mm	0.38mm	0.50mm	0.63mm	0.76mm
120S/DM2 1-100 rpm	0.001-0.1	0.002-0.2	0.004-0.4	0.008-0.8	0.014-1.4	0.022-2.2	0.031-3.1
120U/DM3 0.1-100 rpm	0.0001-0.1	0.0002-0.2	0.0004-0.4	0.0008-0.8	0.001-1.4	0.002-2.2	0.003-3.1
	<b>0.88mm</b>	<b>1.02mm</b>	<b>1.14mm</b>	<b>1.29mm</b>	<b>1.42mm</b>	<b>1.52mm</b>	<b>1.65mm</b>
120S/DM2 1-100 rpm	0.043-4.3	0.055-5.5	0.070-7.0	0.089-8.9	0.110-11	0.120-12	0.140-14
120U/DM3 0.1-100 rpm	0.004-4.3	0.006-5.5	0.007-7.0	0.009-8.9	0.011-11	0.012-12	0.014-14
	<b>1.85mm</b>	<b>2.05mm</b>	<b>2.29mm</b>	<b>2.54mm</b>	<b>2.79mm</b>		
120S/DM2 1-100 rpm	0.180-18	0.210-21	0.260-26	0.31-31	0.360-36	-	-
120U/DM3 0.1-100 rpm	0.018-18	0.021-21	0.026-26	0.031-31	0.036-36	-	-

# Product ordering

Pump product codes			
Pump	Specification	Pumphead	Product code
120F/DV	10 rpm	114DV pumphead, continuous tubing, max 0.5 bar	010.6111.DA0
	17 rpm	114DV pumphead, continuous tubing, max 0.5 bar	010.6112.DA0
	31 rpm	114DV pumphead, continuous tubing, max 0.5 bar	010.6113.DA0
	52 rpm	114DV pumphead, continuous tubing, max 0.5 bar	010.6114.DA0
	220 rpm	114DV pumphead, continuous tubing, max 0.5 bar	010.6115.DA0
120F/R	10 rpm	102R pumphead, continuous tubing, max 0.5 bar	010.6111.R00
	17 rpm	102R pumphead, continuous tubing, max 0.5 bar	010.6112.R00
	31 rpm	102R pumphead, continuous tubing, max 0.5 bar	010.6113.R00
120S/DV	1-200 rpm	114DV pumphead, continuous tubing, max 2 bar	010.6131.DA0
120S/R	1-32 rpm	102R pumphead, continuous tubing, max 2 bar	010.6131.R00
120S/D1	1-200 rpm	400D1 pumphead, continuous tubing, max 2 bar	010.6131.010
120S/DM2	1-100 rpm	400DM2 pumphead, manifold tubing, max 2 bar	010.6131.M20
120S/DM3	1-100 rpm	400DM3 pumphead, manifold tubing, max 2 bar	010.6131.M30
120U/DV	0.1-200 rpm	114DV pumphead, continuous tubing, max 2 bar	010.6141.DA0
120U/R	0.1-32 rpm	102R pumphead, continuous tubing, max 2 bar	010.6141.R00
120U/D1	0.1-200 rpm	400D1 pumphead, continuous tubing, max 2 bar	010.6141.010
120U/DM2	0.1-100 rpm	400DM2 pumphead, manifold tubing, max 2 bar	010.6141.M20
120U/DM3	0.1-100 rpm	400DM3 pumphead, manifold tubing, max 2 bar	010.6141.M30

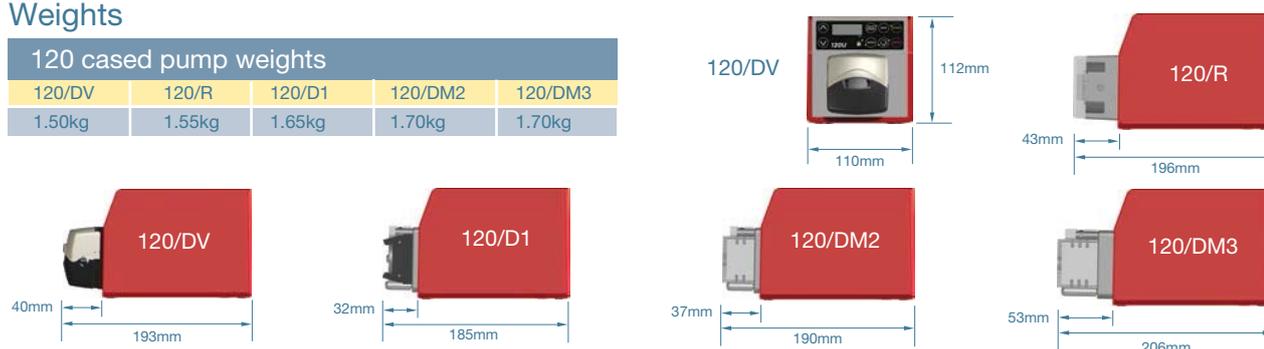
Pumpheads		
Pumphead	Specification	Product code
114DV	4 roller pumphead for maximum 2 bar pressure. Accepts continuous tubing only	013.6000.00A
102R	2 roller pumphead for maximum 2 bar pressure. Accepts continuous Pumpsil silicone tubing only	013.7101.000
400D1	Single-channel pumphead. Accepts continuous tubing only, 3.2mm (1/8in) bore maximum	043.001D.D1C
400DM2	2-channel pumphead. Accepts manifold tubing only	043.001D.D2C
400DM3	3-channel pumphead. Accepts manifold tubing only	043.001D.D3C

Continuous tubing for 114DV, 102R and 400D1 pumpheads 1.6mm (1/16in) thin wall tubing							
Bore	0.5mm (#112, 1/50in)	0.8mm (#13 1/32in)	1.6mm (#14, 1/16in)	2.4mm (3/32in)	3.2mm (#16, 1/8in)	4.0mm (5/32in)	4.8mm (#25, 3/16in)
Pumpsil	913.A005.016	913.A008.016	913.A016.016	913.A024.016	913.A032.016	913.A040.016	913.A048.016
Bioprene	933.0005.016	933.0008.016	933.0016.016	933.0024.016	933.0032.016	933.0040.016	933.0048.016
STA-PURE PCS	-	-	960.0016.016	-	960.0032.016	-	960.0048.016
STA-PURE PFL	-	-	965.0016.016	-	965.0032.016	-	965.0048.016
PureWeld XL	941.0005.016	-	941.0016.016	-	941.0032.016	-	941.0048.016

Manifold Tubing (DM2 and DM3 Pumpheads)				
colour code	Bore (mm)	Pharmed	Tygon R3603/3607	Tygon LFL
orange/black	0.13	-	981.A013.072	-
orange/red	0.19	-	981.A019.072	-
orange/blue	0.25	979.A025.072	981.A025.072	988.A025.072
orange/green	0.38	979.A038.072	981.A038.072	988.A038.072
green/yellow	0.44	-	981.A044.072	-
orange/yellow	0.51	979.A051.072	981.A051.072	988.A051.072
white/yellow	0.57	-	981.A057.072	-
orange/white	0.64	979.A064.072	981.A064.072	988.A064.072
black/black	0.76	979.A076.072	981.A076.072	988.A076.072
orange/orange	0.89	979.A089.072	981.A089.072	988.A089.072
white/black	0.95	-	981.A095.072	-
white/white	1.02	979.A102.072	981.A102.072	988.A102.072
white/red	1.09	-	981.A109.072	-
red/red	1.14	979.A114.072	981.A114.072	988.A114.072
red/grey	1.22	-	981.A122.072	-
grey/grey	1.30	-	981.A130.072	988.A130.072
yellow/yellow	1.42	979.A142.072	981.A142.072	988.A142.072
yellow/blue	1.52	979.A152.072	981.A152.072	988.A152.072
blue/blue	1.65	979.A165.072	981.A165.072	988.A165.072
blue/green	1.75	-	981.A175.072	-
green/green	1.85	979.A185.072	981.A185.072	988.A185.072
purple/purple	2.06	979.A206.072	981.A206.072	988.A206.072
purple/black	2.29	979.A229.072	981.A229.072	988.A229.072
purple/orange	2.54	979.A254.072	981.A254.072	988.A254.072
purple/white	2.79	979.A279.072	981.A279.072	988.A279.072

## Weights

120 cased pump weights				
120/DV	120/R	120/D1	120/DM2	120/DM3
1.50kg	1.55kg	1.65kg	1.70kg	1.70kg



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