



520 NEMA 4X WASHDOWN PUMPS

NEW

The hot new process technology



NEMA 4X protection

The hot new technology ...

- 59% more flow
- 0.004 ml/min to 55.5 gph
- 2200:1 speed control range
- Rugged die cast case
- NEMA 4X ingress protection
- Maintenance-free drive
- Industrial control options

Peristaltic pumps – tube pumps and hose pumps – are the hot new technology; the world's fastest growing pump type¹. As the world leader in industrial peristaltic pumps, Watson-Marlow Bredel Pumps brings reliability, simplicity, and ease of use to more and more industries.

The new 520 pumps meter, dose, and transfer process fluids, whether corrosive or delicate, even in the harshest environment. With NEMA 4X washdown protection, they are rugged, chemically unrivalled, and mechanically durable!

Our NEMA 4X washdown pumps are tough enough for all industries including: chemical, waste/water treatment, mineral processing, pulp and paper, food and beverage and printing. Our three year guarantee proves we mean it.

¹ Frost & Sullivan studies North American Positive Displacement Pumps Market for Process Industries.



Chemical

Physically rugged and chemically resistant, 520 series industrial pumps are NEMA 4X Washdown. They are the ideal choice for chemical metering in harsh, humid and corrosive environments.

Watson-Marlow Bredel ...

With 60% fewer roller passes than our competitors, our pumps deliver 2½ times the tube life.

- **59% increased flow**
- **NEMA 4X Washdown**



- **0.1% speed accuracy**
- **2200:1 speed control range**

- **Power** to work 24/7: class-leading 2200:1 speed control range. Set speed accuracy of 0.1% and calibration by volume or weight for accurate metering.

- **Control** options: manual, analog, remote, RS485. Logical to program, easy to manage. Analog speed input – SCADA ready and scaleable for diaphragm pump replacement.

- **Flexibility:** accurate metering of fluids as demanding as sodium hypochlorite, ferric chloride nitric acid; or delicate as polymers and flavors all with one pump. Comprehensive pumphead and tube options, to match your precise needs.

- **Rugged** enough for every workplace: NEMA 4X washdown die cast case with polyester coating for accident and corrosion resistance. Pumphead construction withstands corrosive chemicals even at high temperatures.

- **Economy:** Brushless DC motor, long pump life, long tube life: minimal downtime, whatever the process. Process security through software protection and alarm outputs – low life cycle cost.



Why peristaltics?

Compared with other positive displacement pumps, peristaltic pumps win on every count. They handle difficult fluids and suspended solids with ease, and provide precision dosing and metering, without vapor locking or crystallization problems. Cleaning and maintenance are quick and easy. They self-prime, can run dry and have no valves or seals to leak, corrode or clog, and the process fluid is totally contained within the tube. That's why Watson-Marlow Bredel pumps outperform piston, progressive cavity, lobe, gear and diaphragm pumps.

- Pump and tubing last longer
- Less downtime, fewer failures, “one-minute” maintenance
- Hit a problem, next-day replacement keeps your production rolling
- Industry-leading warranty

So the best pump really does cost less.
Call us for the proof.

It all adds up to – *Value for life*

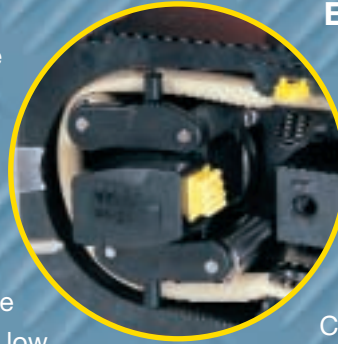
The pumphead that delivers ...

Outstanding performance, minimal downtime and low cost of ownership

That’s what the 520R pumphead brings to these pumps. Plus heavy-duty construction for extreme industrial environments.

Tube life

Long tube life means economical, trouble-free running. The 520R has low friction sprung rollers and a large diameter track for slow running and long tube life. And that means economical trouble free pumping.



Easy set-up and maintenance

The large rotor hub has a clutch to allow easy tube loading perfect for quick product change-over when pumping colors, inks, pigments, and flavors....

Changing the tube is the only routine maintenance. Minimum downtime means maximum throughput – and maximum value.

...and there’s more

- Match pump to process with eight tubing sizes, in eight materials and two wall thicknesses.
- Unrivalled chemical resistance with PPS (polyphenylene sulfide) and stainless steel.
- Tough, clear, snap-shut guard.



Waste/water treatment

Accurate metering of sodium hypochlorite, ferric chloride, polymers and other chemicals is vital for water and wastewater treatment. Watson-Marlow Bredel pumps avoid salt settlement, vapor locking, abrasive wear and clogging.

... for every process

520 NEMA 4X washdown pumps are available in three models: the 520SN with manual control; the 520UN which adds analog and remote control; and the 520DuN which adds calibrated flow and RS485 control.

Feature	520DuN	520UN	520SN
Manual control Speed adjustment; run and stop; forward/reverse; "max" key for rapid priming and purging. Keypad lock prevents tampering and accidental change Auto-restart for mains failure recovery	•	•	•
Remote auto control Digitally controlled with contact closure, 5V TTL or 24V industrial standard logic inputs for: run/stop, direction, auto/manual toggle, liquid detection and MemoDose trigger	•	•	
Analog control Software calibrated remote speed control (4-20mA) Second analog or keypad speed scaling	•	•	
Pump status outputs 0-10V or 0-1258Hz analog pump speed feedback, four digital 5V TTL or 24V industrial logic pump status outputs 4-20mA pump speed feedback	•	•	
MemoDose Accurate, easy, single-shot dosing	•	•	•
Calibration Simple calibration to display the flowrate as well as the rotation speed		•	•
Password protection Guard against any setup changes	•	•	
RS485 network control Full industrial standard connectivity for process control through PC, PLC or other plant controller	•		
Comprehensive calibration For precise metering and dispensing choice	•		

Our SCADA ready pump models have built-in compatibility with all SCADA systems in water/wastewater treatment plants using optional 120V logic inputs/outputs and 4-20mA outputs.

The 520N watertight module gives NEMA 4X high pressure hose protection. The connector terminals inside are large for easy wiring and clearly marked with every function.



The options



520SN/R2: Just plug in and switch on: low cost of ownership, with manual control, simple, accurate dosing and calibration.



520UN/R2: Keypad or remote control: the process workhorse with status outputs, configurable in software, and password protection.



520DuN/R2: Full industrial connectivity: the ultimate process pump, with RS485 and speed scaling and comprehensive calibration.

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Our finest, toughest, most versatile pumps ever.

Order information

Pump	Specification	Power	Supply	Product number
520SN/R 220 rpm	NEMA 4X 1.6mm wt tube	115/230V	1ph 50/60 Hz ETL	050.713N.10A
520SN/R2 220 rpm	NEMA 4X 2.4mm wt tube	115/230V	1ph 50/60 Hz ETL	050.713N.2LA
520UN/R 220 rpm	NEMA 4X 1.6mm wt tube	115/230V	1ph 50/60 Hz ETL	050.714N.10A
520UN/R2 220 rpm	NEMA 4X 2.4mm wt tube	115/230V	1ph 50/60 Hz ETL	050.714N.2LA
520US/R 220rpm	NEMA 4X 1.6mm wt tube	115/230V	1ph 50/60 Hz ETL	050.714S.10A
520US/R2 220rpm	NEMA 4X 2.4mm wt tube	115/230V	1ph 50/60 Hz ETL	050.714S.2LA
520DuN/R 220 rpm	NEMA 4X 1.6mm wt tube	115/230V	1ph 50/60 Hz ETL	050.715N.10A
520DuN/R2 220 rpm	NEMA 4X 2.4mm wt tube	115/230V	1ph 50/60 Hz ETL	050.715N.2LA
520DuS/R 220 rpm	SCADA NEMA 4X 1.6mm wt tube	115/230V	1ph 50/60 Hz ETL	050.715S.10A
520DuS/R2 220 rpm	SCADA NEMA 4X 2.4mm wt tube	115/230V	1ph 50/60 Hz ETL	050.715S.2LA

Drive only	Specification	Power	Supply	Product number
520SN Drive 220 rpm	NEMA 4X	115/230V	1ph 50/60 Hz ETL	056.713N.00A
520UN Drive 220 rpm	NEMA 4X	115/230V	1ph 50/60 Hz ETL	056.714N.00A
520US Drive 220 rpm	SCADA NEMA 4X	115/230V	1ph 50/60 Hz ETL	056.714S.00A
520DuN Drive 220 rpm	NEMA 4X	115/230V	1ph 50/60 Hz ETL	056.715N.00A
520DuS Drive 220 rpm	SCADA NEMA 4X	115/230V	1ph 50/60 Hz ETL	056.715S.00A

Pumphead options	Specification	Product number
505L	Low pulse twin channel pumphead	053.4001.000
505LX	Low pulse twin channel extension pumphead	053.4011.000
505LG	Low pulse twin channel pumphead for STA-PURE tubing	053.4010.00G
313D/A	Three roller pumphead with adapter plate for 500 series cased drives, for 1.6mm wall thickness tubing	033.3401.000
313D2/A	Three roller pumphead with adapter plate for 500 series cased drives, for 2.4mm wall thickness tubing	033.3501.000
314D/A	Four roller pumphead with adapter plate for 500 series cased drives, for 1.6mm wall thickness tubing	033.4401.000
314D2/A	Four roller pumphead with adapter plate for 500 series cased drives, for 2.4mm wall thickness tubing	033.4501.000
313X	Three roller extension pumphead for 1.6mm wall thickness tubing	033.3431.000
314X	Four roller extension pumphead for 1.6mm wall thickness tubing	033.4431.000
313X2	Three roller extension pumphead for 2.4mm wall thickness tubing	033.3531.000
314X2	Four roller extension pumphead for 2.4mm wall thickness tubing	033.4531.000

Tubing

2.4mm wall thickness tubing for 520R2

Tube#	Tube bore	Bioprene	Marprene	Pumpsil*	Sta-Pure	Chem-Sure
105	0.5mm 1/50"			913.A005.024		
108	0.8mm 1/32"			913.A008.024		
119	1.6mm 1/16"	903.0016.024	902.0016.024	913.A016.024	960.0016.024	965.0016.024
120	3.2mm 1/8"	903.0032.024	902.0032.024	913.A032.024	960.0032.024	965.0032.024
15	4.8mm 3/16"	903.0048.024	902.0048.024	913.A048.024	960.0048.024	965.0048.024
24	6.4mm 1/4"	903.0064.024	902.0064.024	913.A064.024	960.0064.024	965.0064.024
121	8.0mm 5/16"	903.0080.024	902.0080.024	913.A080.024	960.0080.024	965.0080.024
122	9.6mm 3/8"	903.0096.024	902.0096.024	913.A096.024	960.0096.024	965.0096.024

1.6mm wall thickness tubing for 520R

Tube#	Tube bore	Bioprene	Marprene	Pumpsil*	Sta-Pure	Chem-Sure
112	0.5mm 1/50"	903.0005.016	902.0005.016	913.A005.016		
13	0.8mm 1/32"	903.0008.016	902.0008.016	913.A008.016		
14	1.6mm 1/16"	903.0016.016	902.0016.016	913.A016.016	960.0016.016	965.0016.016
16	3.2mm 1/8"	903.0032.016	902.0032.016	913.A032.016	960.0032.016	965.0032.016
25	4.8mm 3/16"	903.0048.016	902.0048.016	913.A048.016	960.0048.016	965.0048.016
17	6.4mm 1/4"	903.0064.016	902.0064.016	913.A064.016	960.0064.016	965.0064.016
18	8.0mm 5/16"	903.0080.016	902.0080.016	913.A080.016	960.0080.016	965.0080.016

Tube#	Tube bore	Neoprene	PVC	Fluorel
112	0.5mm 1/50"			970.0005.016
13	0.8mm 1/32"	920.0008.016		970.0008.016
14	1.6mm 1/16"	920.0016.016	950.0016.016	970.0016.016
16	3.2mm 1/8"	920.0032.016	950.0032.016	970.0032.016
25	4.8mm 3/16"	920.0048.016	950.0048.016	970.0048.016
17	6.4mm 1/4"	920.0064.016	950.0064.016	970.0064.016
18	8.0mm 5/16"	920.0080.016	950.0080.016	970.0080.016

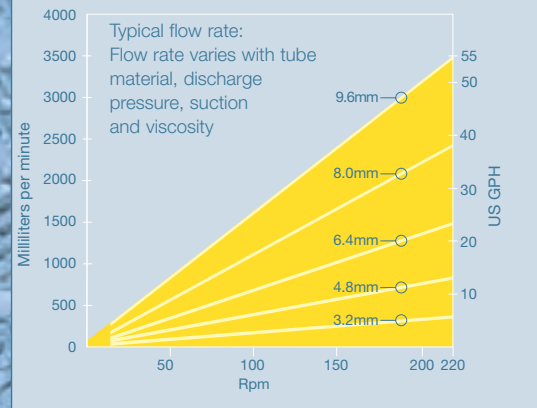
* Pumpsil is our own brand of platinum-cured silicone tubing with LaserTraceability.

For pumpheads requiring different tube wall thicknesses, contact Watson-Marlow Bredel or our authorized Representatives.



NEMA 4X

520 performance



Call 1-800-282-8823

for further information on the 520 NEMA 4X pump range including technical data sheets.

or log on to our web site:

www.watson-marlow.com

to view details on our complete peristaltic pump range.

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