

## 521CC INDUSTRIAL PUMPS

**NEW**

The new standard



Tough chemicals – Tough treatment – the 521 can take it

# For aggressive fluids and extreme industrial conditions

## For industry – and for extremes

Where the duty is chemically or physically tough, industry needs a pump that can take the punishment – and keep taking it.

The Watson-Marlow Bredel 520RC is the peristaltic pumphead for the task. It is highly resistant to chemical attack and rugged enough for the harshest environment. It delivers cost-effective, precise pumping and a long service life. It's also versatile: there are two pumpheads and five industrial drive options.

As a bonus, it's highly competitive to buy and far less costly to own and operate than other positive displacement pumps – low whole life cost.

The 521CC drives range with the 520RC pumphead are the pumps of first choice – the pumps for extreme industrial conditions.

- High performance engineering plastics and 316 stainless steel protect against acid, alkaline and solvent attack. Corrosion forecast: none
- Heavy-duty enough for the most arduous environment. Clear-view, shatter-proof guard with tool-unlocking latch
- Durable track and rotor: no paint, no surface treatments, no limits
- Easy to use; easy to manage; easy tube-loading
- Wide flow range: from 0.1 GPD to 1.27 GPM, a 19,000:1 turndown ratio, pressure up to 30 PSI (Peak). Choice of pumpheads, and tubing from 1/50" bore to 3/8" bore

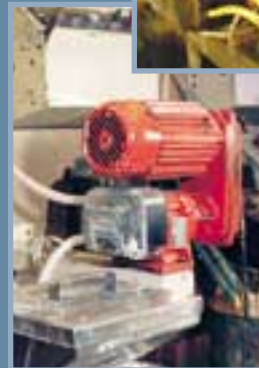
### Chemical

Total fluid containment with no seals. High accuracy and reliability



### Mining

Accurate metering of reagents and flocculants, even in the toughest environment

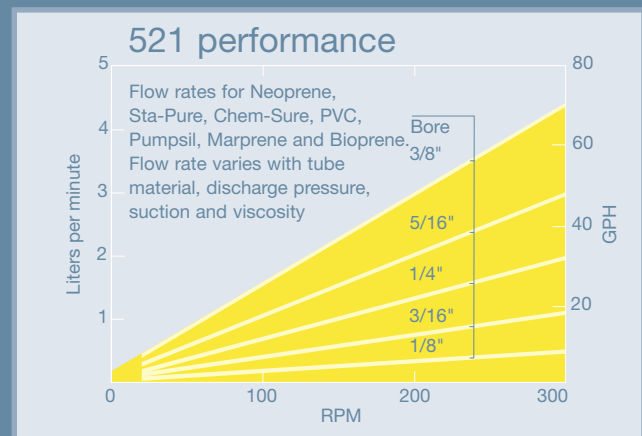


### Printing

Low shear, no foaming, no cross-contamination, fast change-over time

### Water treatment

Accurate dosing of ferric chloride and sodium hypochlorite with outstanding reliability



The 521CC pumps can take it

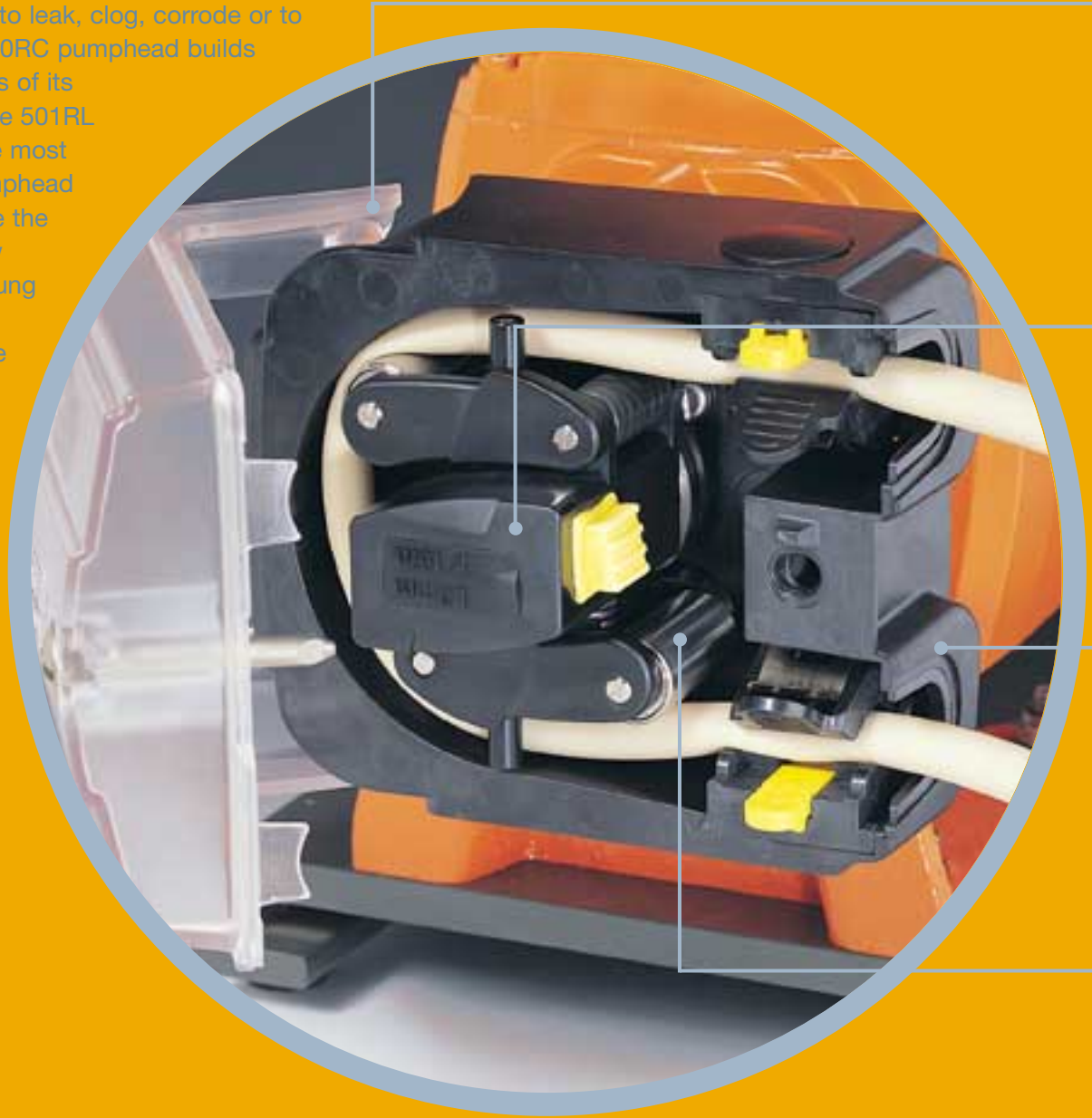
Varmeca:  
your premier  
drive option



Varmeca heavy-duty drive

## ... giving precision and superior operating benefits

Compared with other positive displacement pumps, peristaltic pumps win on all counts. They handle aggressive and shear-sensitive fluids and suspended solids with ease, and provide precision dosing and metering. Cleaning and maintenance are quick and easy. They self-prime, can run dry, and have no valves or seals to leak, clog, corrode or to replace. The 520RC pumphead builds on the strengths of its predecessor, the 501RL for 25 years the most successful pumphead in its class. Like the 501RL, the new 520RC has sprung rollers for accurate, gentle pumping and long tube life.



## Varmeca gives industrial users complete control

The Varmeca drive brings 10:1 speed control, constant torque output and total reliability to the 521's industrial environment – at a very attractive price. With no external wiring and resin-shrouded electronics, humidity and vibration are no threat.

Inverter and motor are UL Approved and sealed to NEMA 4X. Internal Viton gearbox seals protect bearings from corrosive chemicals.

Control could not be simpler, with local forward / stop / reverse switching and a large speed control knob calibrated in percentage of maximum speed. Indicator warning lights guard against mechanical and thermal overload.

The drive offers 230V and 460V three-phase power options, plus 115V and 230V single-phase. Fully configurable analog and digital remote control options include Profibus, InterBus and Device Net.

... based on knowledge of industry's needs

## The benefits include...

Tool-unlocking,  
impact-resistant  
guard

Easy-grip hub and  
clutched rotor  
for quick, effortless  
tube loading

Heavy-duty  
construction for  
extreme industrial  
conditions

Long-lasting  
performance from  
large, 316 stainless  
steel rollers and  
bearings

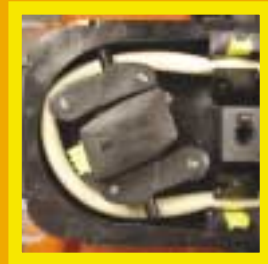


### Tube life

Long tube life means economical, trouble-free running. The 520RC includes low-friction rollers; a fixed track gap to ensure optimum tube compression; and spring-loaded roller arms to minimize roller impact.

### Easy setup and maintenance

The large rotor hub has a clutch to allow easy loading and avoid tube twist. There's one adjustment: setting the tube clamps to grip large or small tubing. Changing the tube is the only routine maintenance. Minimum downtime means maximum throughput – and maximum value.



### Versatility

520RC pumpheads offer rotors for 1.6mm thin wall tubing; and with firmer springs for 2.4mm thick wall tubing up to 3/8 bore. We offer tubing in eight materials and many different sizes making a turndown ratio of 19,000:1 possible for almost any chemical requirement.

## The options

521F/RC



Compact inverter ready energy efficient integral or optional NEMA gearmotors

521I/RC



As the 521F/RC, plus Siemens stand-alone inverter with digital / analog input option

521DV/RC



Explosion proof mechanical belt variator for 5:1 speed reduction, with three speed options

521DF/RC



Explosion proof fixed speed pump

521P/RC



Variable speed, pneumatic drive with optional baseplate mounting

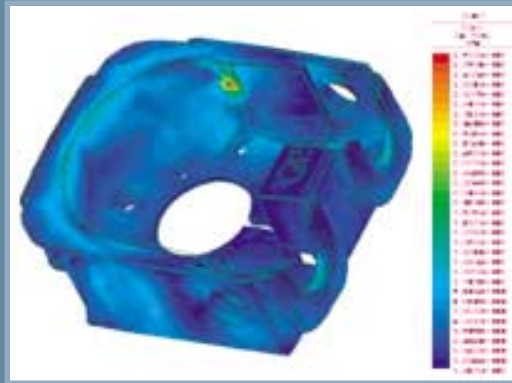
\* /R2C

2.4mm wall thickness pumpheads are available with all drives for enhanced performance against suction, pressure and viscosity

# ... based on in-depth research and development

## Construction materials: ▶

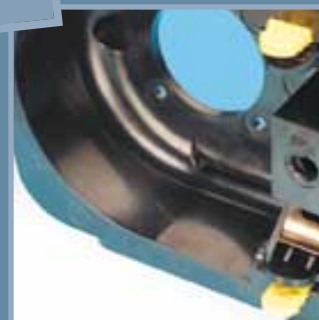
The 520RC track, rotor body, and rotor arms are injection molded from glass and mineral filled linear PPS high performance engineering plastic. PPS (polyphenylene sulfide) offers a unique combination of dimensional stability, impact-resistance and chemical resistance. PPS is flame-resistant and virtually unaffected by corrosive chemicals, even at high temperatures. It out-performs aluminum alloy. Stress analysis on the 520RC track design is seen here. The colored areas show the greatest load – and where the greatest strength is built in by Watson-Marlow Bredel design engineers.



## The rotor: ▼

The 520RC rotor is a complex engineering design. Its objective is to compress tubing sufficiently to hold prime, but no more: if roller load and tube compression exceed what is required, the result will be premature tube failure. The 520RC's solution lies in the design of the rotor's spring-loaded arms and low-friction rollers.

We offer a two-year replacement guarantee on the rotor when fitted to our close-coupled drives.



**GUARANTEED**

## The rollers: ▲

The tube rollers are 316 stainless steel, with low-friction stainless steel bearings and double PTFE seals, which guarantee correct occlusion for the life of the pump and stops high-speed impact wear.

## The finish: ▲

All components that come into contact with the tubing have a special mirror finish to minimize friction and boost tube life.

## Chemical compatibility is high...

There is no known solvent that will attack the 520RC's main construction material, linear polyphenylene sulfide (PPS), below 392°F.

Its resistance to hydrocarbons, acids, alkalis, alcohols and glycols is outstanding. Industrial chemicals that PPS handles include toluene, nitric acid, phosphoric acid, acetone, fuel oils and mineral spirits. For details on chemical resistance please contact Watson-Marlow Bredel.

With PPS so well suited to hostile chemical environments, process development engineers can depend upon the 520RC.



The 520RC is tough against chemical assault

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Tough chemicals, tough treatment

the 521CC can take it

Order information		
Model	Speed	Supply
<b>Simplex Assemblies Fixed Speed</b>		
521F/RC	57 or 227 rpm	1/3 Hp TEFC Gearmotor, 230/460V 60Hz 3 ph
521F/R2C	57 or 227 rpm	1/3 Hp TEFC Gearmotor, 230/460V 60Hz 3 ph
521F/RC	57 or 227 rpm	1/3 Hp TEFC Gearmotor, 115/230V 60Hz 1 ph
521F/R2C	57 or 227 rpm	1/3 Hp TEFC Gearmotor, 115/230V 60Hz 1 ph
<b>Explosion proof</b>		
521DF/RC	57 or 227 rpm	1/3 Hp XP Motor, Gearbox, 230/460V 60Hz 3 ph
521DF/R2C	57 or 227 rpm	1/3 Hp XP Motor, Gearbox, 230/460V 60Hz 3 ph
521DF/RC	57 or 27 rpm	1/3 Hp XP Motor, Gearbox, 115/230V 60Hz 1 ph
521DF/R2C	57 or 227 rpm	1/3 Hp XP Motor, Gearbox, 115/230V 60Hz 1 ph
<b>Varmeca Controlled</b>		
521V/RC	6-63 rpm	1/3 Hp Varmeca Drive 115 or 230V 60Hz 1 ph
521V/RC	27-275 rpm	1/3 Hp Varmeca Drive 115 or 230V 60Hz 1 ph
521V/R2C	6-63 rpm	1/3 Hp Varmeca Drive 115 or 230V 60Hz 1 ph
521V/R2X	27-275 rpm	1/3 Hp Varmeca Drive 115 or 230V 60Hz 1 ph
521V/RC	6-63 rpm	1/3 Hp Varmeca Drive 230 or 460V 60Hz 3 ph
521V/RC	27-275 rpm	1/3 Hp Varmeca Drive 230 or 460V 60Hz 3 ph
521V/R2C	6-63 rpm	1/3 Hp Varmeca Drive 230 or 460V 60Hz 3 ph
521V/R2C	27-275 rpm	1/3 Hp Varmeca Drive 230 or 460V 60Hz 3 ph
<b>Air Operated</b>		
521P/RC	57 or 227 rpm	Up to equivalent 1.4 Hp @ 100 psi, 45 cfm

For 3-phase motor, please specify fixed or variable speed. For variable speed up to 10:1 reduction is achievable. Alternative speed ratios are available, please contact your representative. White epoxy paint optional on non-XP assemblies. Customer assumes responsibility for selection and installing an air motor in an XP environment.

Tubing						
1.6mm wall thickness tubing for /RC						
Tube#	Tube bore	Bioprene	Marprene	Silicone	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	Butyl	Tygon	Fluorel	
13	0.8mm 1/32"	920.0008.016			970.0008.016	
14	1.6mm 1/16"	920.0016.016	930.0016.016	950.0016.016	970.0016.016	
16	3.2mm 1/8"	920.0032.016	930.0032.016	950.0032.016	970.0032.016	
25	4.8mm 3/16"	920.0048.016	930.0048.016	950.0048.016	970.0048.016	
17	6.4mm 1/4"	920.0064.016	930.0064.016	950.0064.016	970.0064.016	
18	8.0mm 5/16"	920.0080.016	930.0080.016	950.0080.016	970.0080.016	
2.4mm wall thickness tubing for /R2C						
Tube#	Tube bore	Bioprene	Marprene	Silicone	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

Pumpheads for different tube wall thicknesses can be accommodated during factory set-up. Please contact your Watson-Marlow Bredel Pumps agent/distributor to discuss your requirements

call 1-800-282-8823  
 for further information on the  
 521CC close coupled pump range  
 including technical data sheets.

or log on to our web site:  
[www.watson-marlow.com](http://www.watson-marlow.com)  
 to view details on our complete  
 peristaltic pump range.

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