

# 530 Drive with 520R2 Pumphead



500 series cased pump

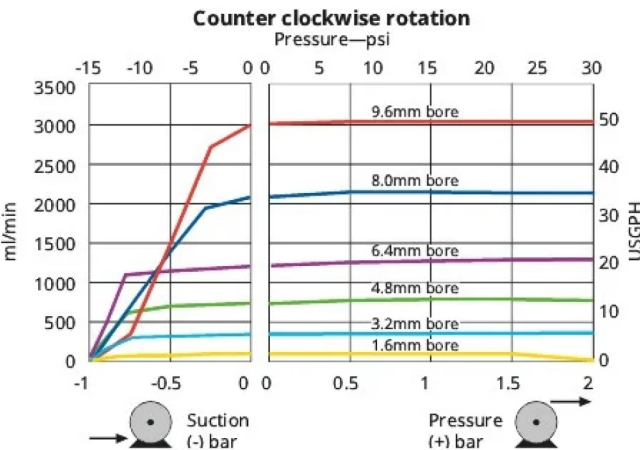
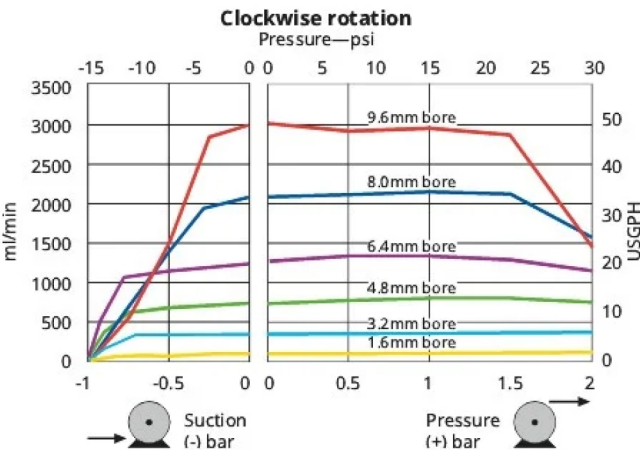
### Features and benefits

- Colour display and intuitive menu structures provide visual status indication and minimal key presses
- Flow rates from 0.004 ml/min (0.0006 USGPH) to 3.5 L/min (55.48 USGPH)
- 520R, 520R2, 520REL, 520REM, 520REH, 520RET and 505L pumpheads available as standard, others available on request
- 2,200:1 speed control range from 0.1 rpm to 220 rpm in 0.1 rpm increments
- Keypad incorporates 3-level security PIN lock
- IP31 (NEMA 2) and IP66 (NEMA 4X) cased pumps
- Dual voltage, 115 V/230 V 50/60 Hz
- Remote Analogue/Digital, RS232, RS485, PROFIBUS®, PROFINET®, SCADA and EtherNet/IP™ control options



### 530 Drive with 520R2 Pumphead performance

520R2 twin sprung roller pumpheads for continuous 2.4 mm wall thickness tubing— Tube bore and flow rates — ml/min (USGPH)								
Tube material	Speed	0.5mm	1.6mm	3.2mm	4.8mm	6.4mm	8.0mm	9.6mm
Pumpsil®, GORE® STA-PURE® Pump Tubing – Series PCS, GORE® STA-PURE® Pump Tubing – Series PFL	0.1–220rpm	NA	0.04-97 (0–1.54)	0.18-390 (0–6.18)	0.40-870 (0.01–13.8)	0.70-1500 (0.01–23.8)	1.10-2400 (0.02–38)	1.60-3500 (0.03–55.5)
Marprene®/Bioprene®, PureWeld XL®	0.1–220rpm	NA	0.04-92 (0–1.46)	0.17-370 (0–5.86)	0.38-830 (0–13.2)	0.67-1500 (0.01–23.8)	1.10-2300 (0.02–36.5)	1.50-3300 (0.02–52.3)



## Technical specifications

	530 Drive with 520R2 Pumphead
Pumphead number of rollers	2
Pumphead number of channels	1
Max. flow rate	3500 ml/min
Min. flow rate	0.04 ml/min
Max. flow rate	56 USGPH
Min. flow rate	0.0006 USGPH
Drive speed control ratio	2200:1
Drive speed	0.1 - 220 rpm
Operating temperature range	5 °C to 40 °C
Operating temperature range	40 °F to 104 °F
Weight	10.6 - 11.5 kg
Weight	23.4 - 25.4 lbs
Drive weight	9.82, 10.7 kg
Drive weight	21.6, 23.6 lbs
NEMA module weight	0.9 kg
NEMA module weight	2 lbs
Control types	EtherNet/IP™, Profibus®, Profinet®, Remote Analogue/Digital, RS232, RS485, SCADA
Drive control options	Bp, BpN, Du, DuN, DuS, En, EnN, Pn, PnN, S, SN, U, UN, US
Drive standards	CE, cETLus, C-Tick, IRAM, NSF/ANSI 61 (for Marprene tubing and loadsure elements), RoHS
Drive ingress protection	IP31, IP66, NEMA 2, NEMA 4X
Drive humidity	(Non-condensing) 80 % up to 31 °C (88 °F) decreasing linearly to 50 % at 40 °C (104 °F)
Drive noise	<70dBA at 1m
Max. altitude	2000 m
Drive power supply	115/230 V 1ph 50/60 Hz 135 VA
Compatible tubing bore size	1.6, 3.2, 4.8, 6.4, 8, 9.6 mm

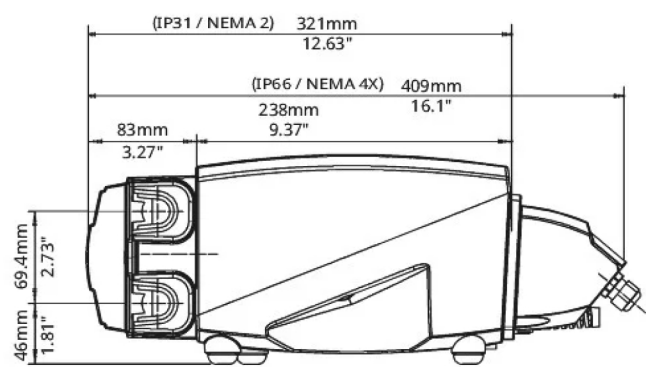
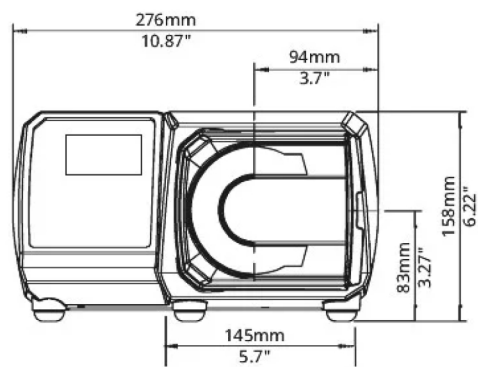
## Materials of construction

	530 Drive with 520R2 Pumphead
Bearings	Stainless steel
Driveshaft	Electroless nickel plated carbon steel
Drain port assembly	Hytrel, PP (polypropylene)
Drive casework	Pressure die-cast aluminium LM24
Drive casework coating	Alocrom pre-treatment, Exterior grade polyester powder coat
Guide roller assembly	MoS2 filled Nylon 6 (Nylatron)
Drive keypad/HMI	Polyester
Drive rear blanking plate	Stainless steel 304
Pumphead body assembly	Acetal, Aluminium, Aluminium alloy, Brass, Polycarbonate (PC), Polyphenylene sulphide (PPS)
Pumphead guard	Polycarbonate (PC)
Pumphead roller assembly	MoS2 filled Nylon 6 (Nylatron), Polyphenylene sulphide (PPS), Stainless steel 316
Pumphead rotor assembly	Polyphenylene sulphide (PPS), Stainless steel 316
Pumphead track	Polyphenylene sulphide (PPS)
Seals	Neoprene, PTFE
Pumphead seals	Neoprene, PTFE
Switch-plate	Glass filled ABS plastic

Information listed covers the complete range.

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

Dimensions



## Control options

### Key to pump drive models

530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
Standard	Standard IP66 / NEMA 4X	Universal	Universal IP66 / NEMA 4X	Digital Universal	Digital Universal IP66 / NEMA 4X	Bus Pump / Profibus	Bus Pump / Profibus IP66 / NEMA 4X	Universal SCADA / IP66 / NEMA 4X	Digital Universal SCADA / IP66 / NEMA 4X	EtherNet/IP	EtherNet/IP / IP66 / NEMA 4X	PROFINET®	PROFINET® / IP66 / NEMA 4X

### Manual control

Pump drive	530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
Intuitive keypad and colour display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Choice of flowrate or speed display	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Full calibration with choice of flow units	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MemoDose function	✓	✓	✓	✓	✓	✓				✓	✓			
Auto restart facility	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Leak detection	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Dispensing (Network Control)											✓	✓	✓	✓

### Remote control

Pump drives	530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
Configurable Start/Stop, leak detector and pressure switch input via contact closure or 5 V TTL or 24 V industrial logic			✓	✓	✓	✓					✓	✓	✓	✓
Configurable Start/Stop, leak detector and pressure switch input via 110 V industrial logic									✓	✓				
Direction change and auto/manual toggle input via contact closure or 5 V TTL or 24 V industrial logic			✓	✓	✓	✓								
Direction change and auto/manual toggle input via 110 V industrial logic									✓	✓				
Remote operation of MemoDose (foot/hand-switch or logic input)			✓	✓	✓	✓								
Four configurable digital status outputs through 24 V, 30 W relays				✓		✓								
Four configurable digital status outputs through 110 V relays									✓	✓				
Menu configurable logic outputs			✓		✓									
Remote pressure/flow sensors											✓	✓	✓	✓

### Analogue speed control

Pump drives	530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
Fully configurable inputs; 0-10 V or 4-20 mA			✓	✓	✓	✓			✓	✓				
Analogue outputs; 0-10 V, 4-20 mA			✓	✓	✓	✓			✓	✓				
Keypad/analogue input scaling (replacement of diaphragm pumps)					✓	✓				✓				
Tacho frequency output; 0-991 Hz			✓	✓	✓	✓								
2x sensor inputs 4-20 mA or 0-1000Hz*											✓	✓	✓	✓

### Security

Pump drives	530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
3-level Security PIN lock	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

### Network communication

Pump drives	530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
RS485 network control						✓				✓				
RS232 network control					✓									

### Digital pump commands (Profibus / EtherNet/IP)

Pump drives	530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
PROFIBUS® DP V0							✓	✓						
PROFINET® (CC-B & Netload Class III)													✓	✓
EtherNet/IP™											✓	✓		
Communication speeds from 9.6 kbits/s up to 12000 kbits/s							✓	✓						
Network speed: 10/100 Mbps - Full Duplex Operation											✓	✓		
Network speed: 100 Mbps - Full Duplex Operation													✓	✓
Auto-detect bus speed							✓	✓						
Speed set point							✓	✓			✓	✓	✓	✓
Speed feedback							✓	✓			✓	✓	✓	✓
Flow calibration function							✓	✓			✓	✓	✓	✓
Hours run							✓	✓			✓	✓	✓	✓
Revolution counter							✓	✓			✓	✓	✓	✓
Leak detection							✓	✓			✓	✓	✓	✓
Low fluid level alarm							✓	✓			✓	✓	✓	✓
Diagnostic feedback							✓	✓			✓	✓	✓	✓
Flow Totaliser											✓	✓	✓	✓
Sensor scaling											✓	✓	✓	✓
Dispensing (Network Control)**											✓	✓	✓	✓

\*Range of 3rd party pressure/flow sensors supported—see compatible sensor list on [www.wmftg.com/literature](http://www.wmftg.com/literature)

\*\*Dispensing (Network/Manual) - Store up to 100 recipes locally or via network control. Features include volume, flow rate, anti-drip, ramp and time delays. Run these as batches using local, network or manual keypad control.

Product codes

0

5

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9

1

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Configuration

0: Pump  
6: Drive only

Model

3: S  
4: U  
5: Du  
6: Bp  
8: En  
9: Pn

Ingress Protection

1: IP31 / NEMA 2  
N: IP66 / NEMA 4X  
S: SCADA IP66 / NEMA 4X\*

\*U and Du models only  
\*Only available with American mains plug

Pumphead

EL: 520REL  
EM: 520REM  
EH: 520REH  
ET: 520RET  
2L: 520R2  
10: 520R  
5L: 505L\*

\*With the exception of Bp, En and Pn models, this option has an engineered product code— consult factory for more information

Plug options

U: UK mains plug  
E: EU mains plug  
A: American mains plug  
K: Australia mains plug  
R: Argentina mains plug  
C: Swiss mains plug  
D: India/South Africa mains plug  
B: Brazilian mains plug

Product codes

Tubing 2.4 mm wall thickness tubing for 520R2							
Tube bore	Tube	Pumpsil®	PureWeld XL®	Bioprene®	STA-PURE® PCS	STA-PURE® PFL	Marprene®
1.6mm (1/16in)	119	913.A016.024	NA	933.0016.024	961.0016.024	966.0016.024	902.0016.024
3.2mm (1/8in)	120	913.A032.024		933.0032.024	961.0032.024	966.0032.024	902.0032.024
4.8mm (3/16in)	15	913.A048.024		933.0048.024	961.0048.024	966.0048.024	902.0048.024
6.4mm (1/4in)	24	913.A064.024	941.0064.024	933.0064.024	961.0064.024	966.0064.024	902.0064.024
8.0mm (5/16in)	121	913.A080.024	NA	933.0080.024	961.0080.024	966.0080.024	902.0080.024
9.6mm (3/8in)	122	913.A096.024		933.0096.024	961.0096.024	966.0096.024	902.0096.024

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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