

530 Drive with 520R Pumphead



500 series cased pump

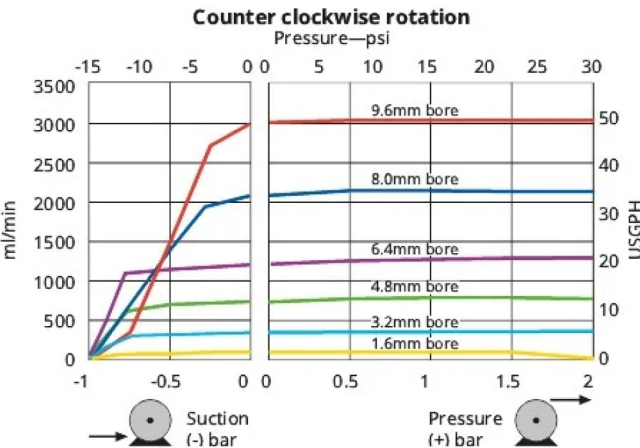
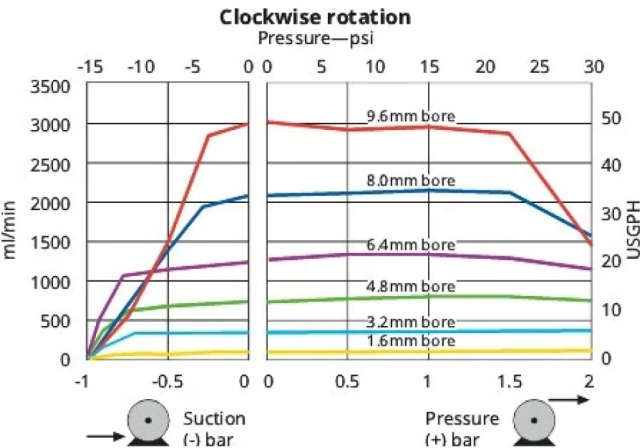
Features and benefits

- Color display and intuitive menu structures provide visual status indication and minimal key presses
- Flow rates from 0.0006 GPH (0.004 ml/min) to 55.48 GPH (3.5 L/min)
- 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
- NEMA 2 (IP31) and NEMA 4X (IP66) 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 520R Pumphead performance

520R twin sprung roller pumpheads for continuous 1.6 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	0.004-9.5 (0–0.15)	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)	NA	
Marprene®, Bioprene®, PureWeld XL®	0.1–220rpm	0.004-9.0 (0–0.14)	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)	NA	



Technical specifications

	530 Drive with 520R Pumphead
Pumphead number of rollers	2
Pumphead number of channels	1
FlowRateRange	0.004 ml/min to 2400 ml/min
FlowRateRange	0.0006 USGPH to 38.4 USGPH
Drive speed control ratio	2200:1
Drive speed	0.1 - 220 rpm
Operating temperature	40 °F to 104 °F (5 °C to 40 °C)
Weight	23.4 - 25.4 lbs (10.6 - 11.5 kg)
Drive weight	21.6, 23.6 lbs (9.82, 10.7 kg)
NEMA module weight	2 lbs (0.9 kg)
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
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 40C (104F)
Drive noise	<70dBA at 1m
Max. altitude	6562 ft (2000 m)
Drive power supply	115/230 V 1ph 50/60 Hz 135 VA
Compatible tubing bore size	0.5, 1.6, 3.2, 4.8, 6.4, 8 mm

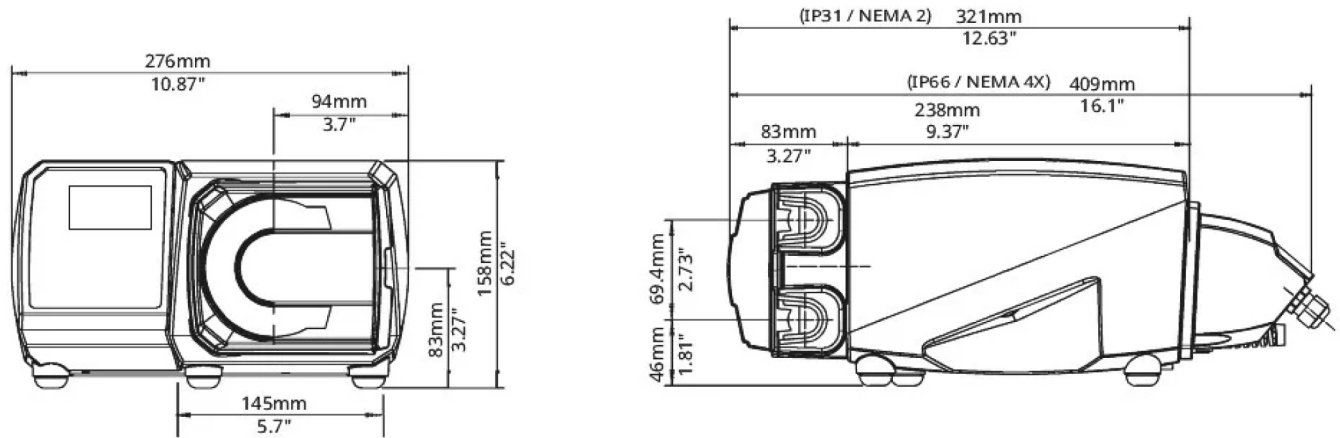
Materials of construction

	530 Drive with 520R Pumphead
Bearings	Stainless steel
Driveshaft	Electroless nickel plated carbon steel
Drain port assembly	Hytrel, PP (polypropylene)
Drive casework	Pressure die-cast aluminum 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, Aluminum, Aluminum 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)
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 and leak detector, via contact closure or 5V TTL or 24V industrial logic***			✓	✓	✓	✓					✓	✓	✓	✓	
Pressure switch input, via contact closure or 5V TTL or 24V 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					✓									

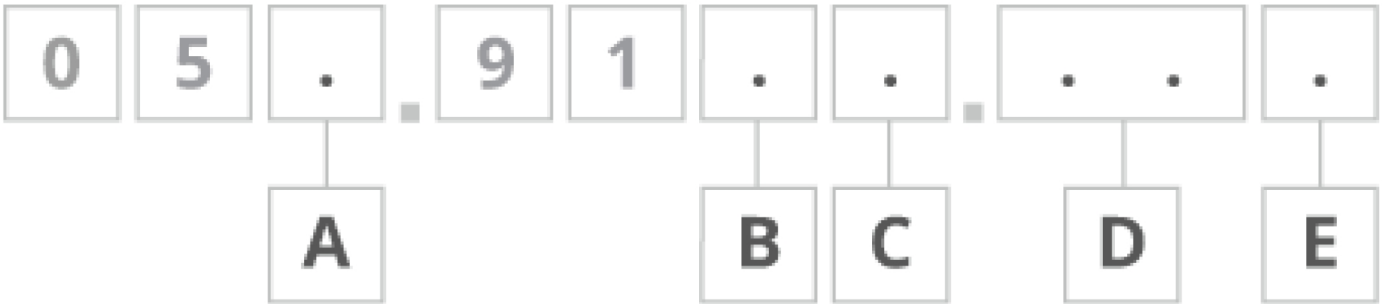
Digital pump commands (Profibus / EtherNet/IP)														
Pump drives	530S	530SN	530U	530UN	530Du	530DuN	530Bp	530BpN	530US	530DuS	530En	530EnN	530Pn	530PnN
PROFIBUS® DP V0							✓	✓						
PROFINET® (CC-B & Netload Class III)													✓	✓
EtherNet/IP™											✓	✓		
Communication speeds from 9.6 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											✓	✓	✓	✓
Dipensing (Network Control)**											✓	✓	✓	✓

*Range of 3rd party pressure/flow sensors supported—see compatible sensor list

**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.

***If you can't see the option you need, contact the engineered products team at WML to discuss

Product codes



Description	Description	Part code
505L	Only pumphead for 2.4mm wall tube	053.4001.000
505LX	Extension pumphead only for 2.4mm wall tube	053.4011.020
505LG	Pumphead only for STA-PURE for 2.4mm wall tube	053.4010.00G
505LTC	Tube clamp set	059.4001.000

Tube ordering codes - Double 'Y' tubing elements						
Tube bore (mm)	Marprene	STA-PURE PFL®	STA-PURE PCS®	Pumpsil	Bioprene	PureWeldXL
1.6 / 2.4	902.E016.K24	966.E016.K24	961.E016.K24	913.AE16.K24	933.E016.K24	
3.2 / 2.4	902.E032.K24	966.E032.K24	961.E032.K24	913.AE32.K24	933.E032.K24	
4.8 / 2.4	902.E048.K24	966.E048.K24	961.E048.K24	913.AE48.K24	933.E048.K24	
6.4 / 2.4	902.E064.K24	966.E064.K24	961.E064.K24	913.AE64.K24	933.E064.K24	942.E064.K24
8.0 / 2.4	902.E080.K24	966.E080.K24	961.E080.K24	913.AE80.K24	933.E080.K24	942.E080.K24
9.6 / 2.4	902.E096.K24			913.AE96.K24	933.E096.K24	942.E096.K24

Transfer tube				
Tube bore (mm)	Marprene	Pumpsil	Bioprene	PureWeldXL
1.6 / 2.4	902.0016.024	913.A016.024	933.0016.024	942.0016.024
3.2 / 2.4	902.0032.024	913.A032.024	933.0032.024	
4.8 / 2.4	902.0048.024	913.A048.024	933.0048.024	942.0048.024
6.4 / 2.4	902.0064.024	913.A064.024	933.0064.024	942.0064.024
8.0 / 2.4	902.0080.024	913.A080.024	933.0080.024	942.0080.024
9.6 / 2.4	902.0096.024	913.A096.024	933.0096.024	942.0096.024

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 users 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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