530 Drive with 520RET Pumphead

500 series cased pump

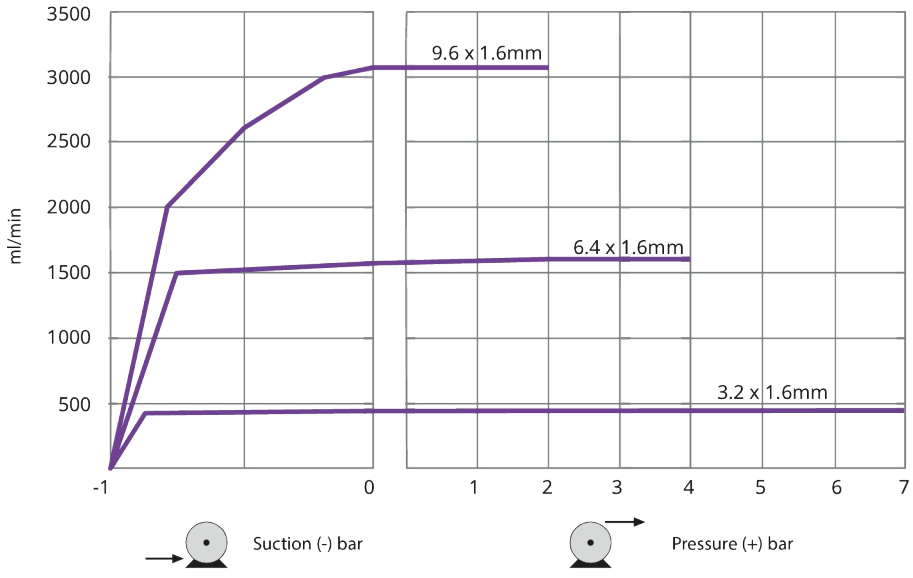
Features and benefits

- 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 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 520RET Pumphead performance

520RET twin-roller pumpheads for Maxthane® LoadSure® elements tubing — flow rates — ml/min (USGPH)				
Tube material	**Speed**	**3.2 mm**	**6.4 mm**	**9.6 mm**
Maxthane®	0.1-220 rpm	0.24-520 (0-8.24)	0.75-1600 (0.01-25.4)	1.3-2900 (0.02-46.0)

Maxthane® LoadSure® Elements, Counter clockwise Rotation 200 rpm RET rotor



To achieve the discharge pressures stated above, the rotor must be run counter clockwise. To achieve optimal tube life, run the rotor clockwise at a maximum discharge pressure of 2 bar.

Technical specifications

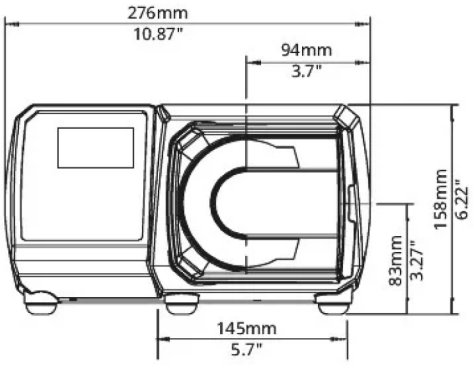
	530 Drive with 520RET Pumphead
Pumphead number of rollers	2
Pumphead number of channels	1
Max. flow rate	2900 ml/min
Min. flow rate	0.24 ml/min
Max. flow rate	46 USGPH
Min. flow rate	0 USGPH
Drive speed control ratio	2200:1
Drive speed	0.1 - 220 rpm
Operating temperature range	5 °C to 40 °C
Operating temperature range	40 °F to 104 °F
Weight	10.5 - 11.4 kg
Weight	23.2 - 25.1 lbs
Drive weight	9.82, 10.7 kg
Drive weight	21.6, 23.6 lbs
NEMA module weight	0.9 kg
NEMA module weight	1.9 lbs
Control types	EtherNet/IP™, Profibus®, Profinet®, Remote Analogue/Digital, RS232, RS485, SCADA
Drive control options	Bp, BpN, Du, DuN, En, EnN, Pn, PnN, S, SN, U, UN
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	3.2, 6.4, 9.6 mm

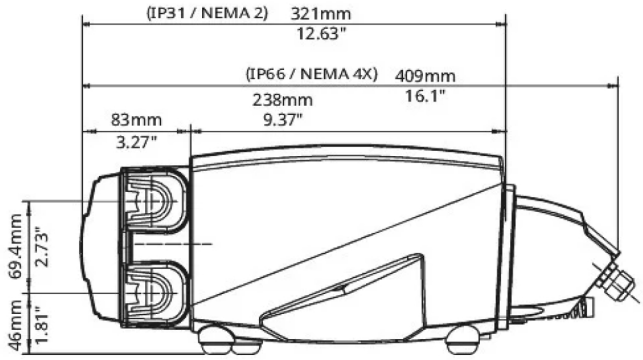
Materials of construction

	530 Drive with 520RET 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
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


276mm
10.87"
94mm
3.7"
158mm
6.22"
83mm
3.27"
145mm
5.7"


(IP31 / NEMA 2) 321mm
12.63"
(IP66 / NEMA 4X) 409mm
16.1"
238mm
9.37"
83mm
3.27"
69.4mm
2.73"
46mm
1.81"

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											✓	✓	✓	✓
Dipensing (Network Control)**											✓	✓	✓	✓

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

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

Element product codes for 520RET			
	Sanitary LoadSure® elements, 3/4 in Sanitary PVDF connectors		
	3.2 mm	6.4 mm	9.6 mm
Maxthane® 0-2 bar (0-30 psi)	-	-	945.0096.PFT
Maxthane® 0-4 bar (0-60 psi)	-	945.0064.PFT	-
Maxthane® 0-7 bar (0-100 psi)	945.0032.PFT	-	-

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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27 November 2023