

# 323 Drive with 313D pumphead

300 series cased pump

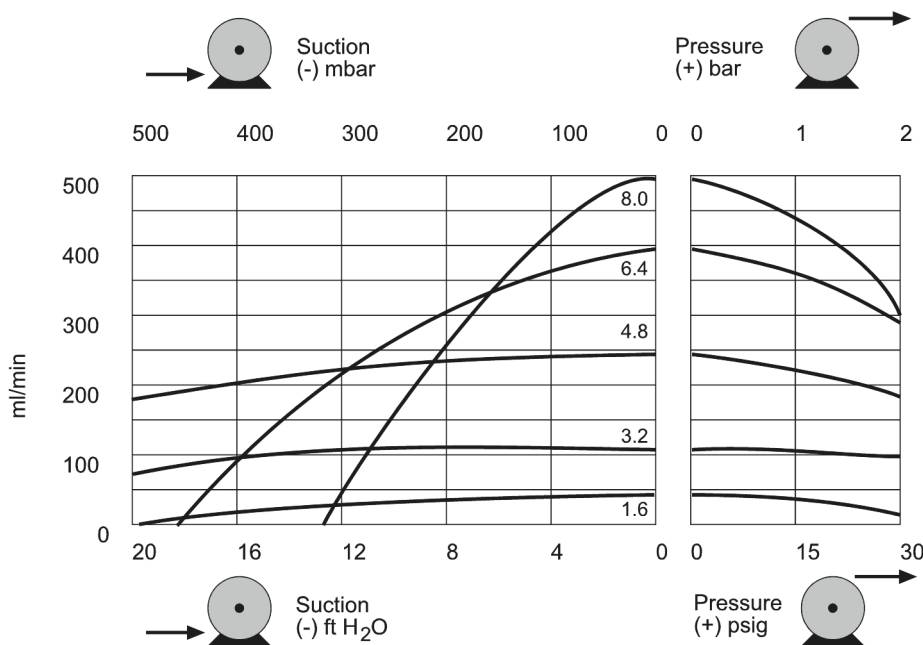
## Features and benefits

- Manual or remote 4 mA to 20 mA or 0 V to 10 V analogue auto-control or RS232 control commands
- Up to 133:1 enhanced digital manual speed control
- Keypad lock prevents tampering or accidental changes
- MemoDose facility for accurate single-shot dosing
- Digital TTL inputs for run/stop and direction
- Instantly reversible
- Two-year warranty



## 323 Drive with 313D pumphead performance

| 313D three-roller flip-top pumpheads for continuous tubing – Tube bore and flow rates (ml/min) |           |            |           |           |           |           |
|--|-----------|------------|-----------|-----------|-----------|-----------|
|  | Speed rpm | 1.6 mm     | 3.2 mm    | 4.8 mm    | 6.4 mm    | 8.0 mm    |
| 323E/D   | 15 - 400  | 4.1 - 110  | 15 - 400  | 33 - 880  | 54 - 1400 | 75 - 2000 |
| 323S/D   | 3 - 400   | 0.81 - 110 | 3.0 - 400 | 6.6 - 880 | 11 - 1400 | 15 - 2000 |
| 323U/D   | 3 - 400   | 0.81 - 110 | 3.0 - 400 | 6.6 - 880 | 11 - 1400 | 15 - 2000 |
| 323Du/D  | 3 - 400   | 0.81 - 110 | 3.0 - 400 | 6.6 - 880 | 11 - 1400 | 15 - 2000 |
| 323Dz/D  | 2.0 - 400 | 0.54-110   | 2.0-400   | 4.4-880   | 7.2-1400  | 10-2000   |



313 pumphead  
(3 roller) at 100rpm

## Technical specifications

| 323 Drive with 313D pumphead     |   |
|----------------------------------|---|
| Pumphead number of rollers       | 3   |
| Pumphead number of channels      | 1   |
| Flow rate range                  | 0.06 ml/min to 2000 ml/min  |
| Speed control ratio              | 133:1, 200:1, 27:1  |
| Operating speed range            | 2 rpm to 400 rpm  |
| Operating temperature ranges     | 5 °C to 40 °C (40 °F to 104 °F)                                       |
| Weight ranges                    | 4.7 kg (10.4 lbs)   |
| Drive control options            | Du, Dz, E, S, U   |
| Standards                        | CE, cETLus  |
| Drive ingress protection         | IP31  |
| Drive humidity                   | 80 % up to 31 °C, 88 °F, decreasing linearly to 50 % at 40 °C, 104 °F |
| Drive noise                      | <70dB(A) at 1m  |
| Max. altitude                    | 2000 m (6562 ft)  |
| Drive power supply               | 1ph, 100 V to 120 V, 220 V to 240 V 50/60 Hz, 100 VA                  |
| Compatible tubing bore size      | 1.6, 3.2, 4.8, 6.4, 8 mm  |
| Compatible tubing wall thickness | 1.6 mm  |

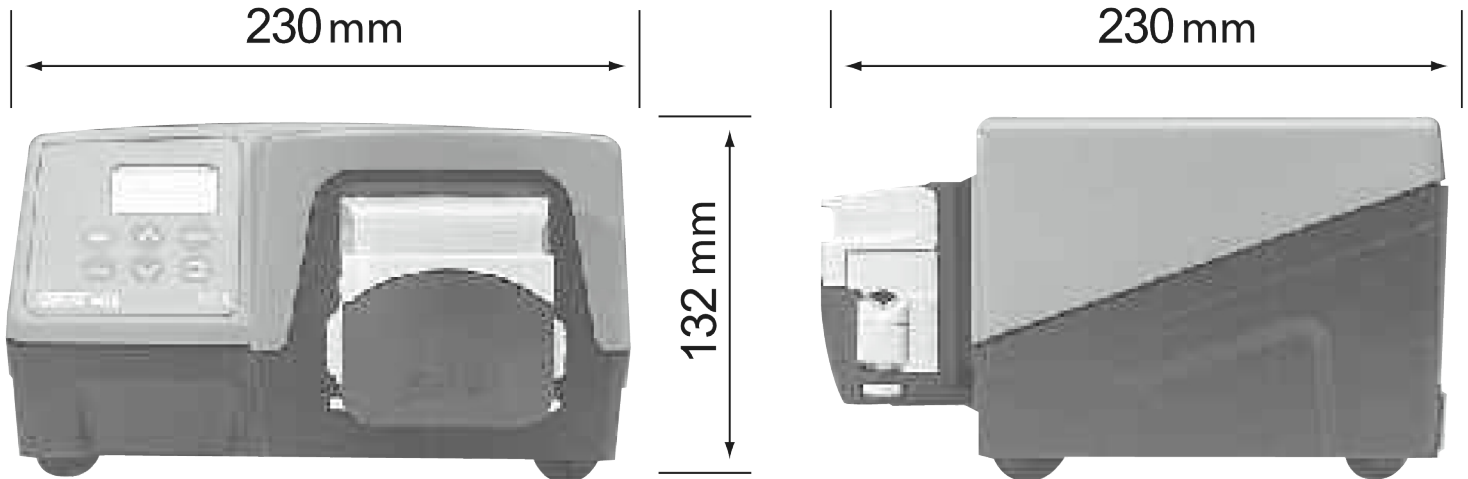
## Materials of construction

| 323 Drive with 313D pumphead |   |
|------------------------------|---|
| Bearings                     | Carbon steel, Sintered bronze   |
| Drive casework               | Acrylonitrile butadiene styrene (ABS), Powder coated aluminium LM24     |
| Mounting plate assembly      | Glass filled Nylon, IXEF (Polyarylamide)                                |
| Pumphead body assembly       | Glass filled polypropylene, Polyacrylamide-IXEF (PARA), Stainless steel |
| Pumphead roller assembly     | MoS2 filled Nylon 6 (Nylatron)  |
| Pumphead rotor assembly      | Electroless nickel plated hardened steel, Glass filled Nylon            |
| Pumphead track               | Polyacrylamide-IXEF (PARA)  |
| Spindles                     | Electroless nickel plated hardened steel                                |
| Tube clamp assembly          | Glass filled Nylon  |

Information listed covers the complete range.

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

## 323 Drive with 313D pumphead dimensions



## Control options

| Functionality  | 323E | 323S | 323U | 323Du |
|--|------|------|------|-------|
| <b>Manual control</b>                                    |      |      |      |       |
| Keypad speed control                                     | ✓    | ✓    | ✓    | ✓     |
| 15-400rpm 27:1 speed control                             | ✓    |      |      |       |
| 3-400rpm 133:1 speed control                             |      | ✓    | ✓    | ✓     |
| 1.5-220rpm 147:1 speed control                           |      | ✓    | ✓    | ✓     |
| MemoDose for accurate single shot dosing                 |      | ✓    | ✓    | ✓     |
| <b>Remote control</b>                                    |      |      |      |       |
| Run/Stop, direction change via contact closure or 5V TTL |      |      | ✓    | ✓     |
| Remote operation of MemoDose (hand/foot switch)          |      |      | ✓    | ✓     |
| <b>Analogue speed control</b>                            |      |      |      |       |
| Inputs; 0-10V or 4-20mA                                  |      |      | ✓    | ✓     |
| <b>RS232 digital communication</b>                       |      |      |      |       |
| Digital serial control                                   |      |      |      | ✓     |
| <b>Security</b>  |      |      |      |       |
| Keypad lock to protect set-up                            |      | ✓    | ✓    | ✓     |

## Product codes

| Pumps, drives and pumpheads product codes |  |               |
|---|--|---------------|
| Description                               |  | Partcode      |
| 323E/D                                    | Drive and 313D three-roller pumphead                               | 030.3124.3D0* |
| 323S/D                                    | Drive and 313D three-roller pumphead                               | 030.3134.3D0* |
| 323U/D                                    | Drive and 313D three-roller pumphead                               | 030.3144.3D0* |
| 323Du/D                                   | Drive and 313D three-roller pumphead                               | 030.3154.3D0* |
| 323Dz/D                                   | Drive and 313D three-roller pumphead                               | 030.3184.3D0* |
| 323E                                      | Drive only   | 036.3124.000* |
| 323S                                      | Drive only   | 036.3134.000* |
| 323U                                      | Drive only   | 036.3144.000* |
| 323Du                                     | Drive only   | 036.3154.000* |
| 313DW                                     | Three-roller pumphead for 1.6mm wall tube                          | 033.3451.000  |
| 313X                                      | Three-roller extension pumphead for 1.6mm wall tube (maximum five) | 033.3431.000  |

\*Replace last 0 with A, E or U for American, European or UK mains supply (American 110V 1ph 60Hz)

If required for use with STA-PURE tubing, please contact Watson-Marlow Bredel technical support for drive and pumphead selection

| Tubing product codes |                     |                     |                   |
|----------------------|---------------------|---------------------|-------------------|
| Bore/wall (mm)       | Bioprene            | Marpene             | Platinum Silicone |
| 0.5 / 1.6            | 933.0005.016        | 902.0005.016        | 913.A005.016      |
| 0.8 / 1.6            | 933.0008.016        | 902.0008.016        | 913.A008.016      |
| 1.6 / 1.6            | 933.0016.016        | 902.0016.016        | 913.A016.016      |
| 3.2 / 1.6            | 933.0032.016        | 902.0032.016        | 913.A032.016      |
| 4.8 / 1.6            | 933.0048.016        | 902.0048.016        | 913.A048.016      |
| 6.4 / 1.6            | 933.0064.016        | 902.0064.016        | 913.A064.016      |
| 8.0 / 1.6            | 933.0080.016        | 902.0080.016        | 913.A080.016      |
| Bore/wall (mm)       | STA-PURE*Series PCS | STA-PURE*Series PFL |                   |
| 0.8 / 1.6            |                     |                     |                   |
| 1.6 / 1.6            | 961.0016.016        | 966.0016.016        |                   |
| 3.2 / 1.6            | 961.0032.016        | 966.0032.016        |                   |
| 4.8 / 1.6            | 961.0048.016        | 966.0048.016        |                   |
| 6.4 / 1.6            | 961.0064.016        | 966.0064.016        |                   |
| 8.0 / 1.6            | 961.0080.016        | 966.0080.016        |                   |

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.



wmfts.com/global  
20 October 2025