

313D pumphead

300 series flip-top pumpheads

**WATSON
MARLOW
Pumps**

Features and benefits

- Its iconic flip-top design for fast and error-free tube loading makes it the most popular choice in many medical and upstream cell culture applications
- Pumpheads can be extended to provide up to six separate channels depending on drive torque
- Three and four roller versions are most popular. Up to eight rollers is possible for lowest pulsation and greatest accuracy
- Flow rates for up to 2000 ml/min for continuous use and up to 3000 ml/min for intermittent use



313D pumphead performance

313 rapid load pumpheads (three rollers) for continuous 1.6mm wall tubing – Flow rates (ml/min)

Tube bore (mm)	(ml/rev)	Max continuous flow (ml/min)	Max Intermittent flow (ml/min)
0.5	0.03	12	18
0.8	0.06	24	36
1.6	0.26	104	156
3.2	1.0	400	600
4.8	2.2	880	1320
6.4	3.6	1400	2160
8.0	5.0	2000	3000

1.6mm wall thickness tubing

Tube bore (mm)	0.5	0.8	1.6	3.2	4.8	6.4	8.0
Max continuous speed (rpm)	400	400	400	400	400	400	400
Max Intermittent speed (rpm)	600	600	600	600	600	600	600

With Marprene tubing

Required torque up to 0.5 bar kgcm	1.4	1.4	2.0	2.8	4.2	4.8	6.3
Required torque up to 2.0 bar kgcm	1.5	1.5	2.1	4.0	6.1	6.8	7.8
Max continuous pressure; bar	2.0	2.0	2.0	2.0	1.3	1.3	1.3
Max intermittent pressure; bar	3.0	3.0	3.0	2.5	2.0	2.0	1.7

With Silicone tubing

Required torque up to 0.5 bar kgcm	1.1	1.1	1.7	2.3	2.9	3.5	4.0
Required torque up to 2.0 bar kgcm	1.5	1.5	2.1	3.2	4.3	5.2	6.7
Max continuous pressure; bar	2.0	2.0	1.5	1.5	1.0	1.0	1.0
Max intermittent pressure; bar	2.5	2.5	2.0	2.0	1.3	1.3	1.3

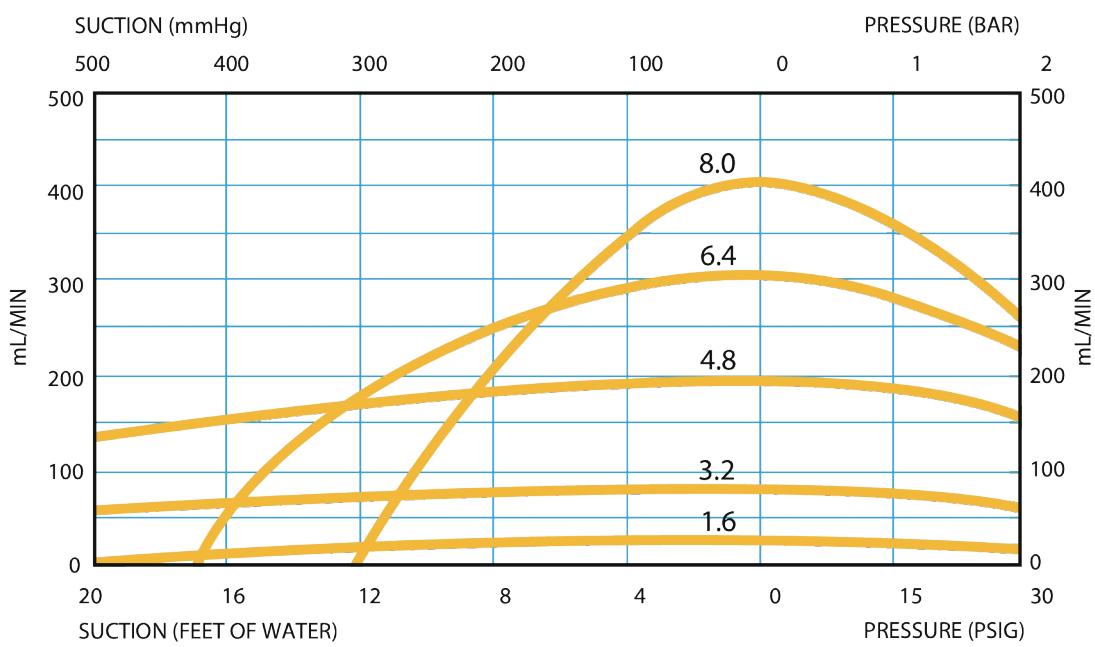
Curve conditions and conversion factors

Conditions:

- Suction curves obtained with zero output pressure.
- Pressure curves obtained with zero lift.
- Pumphead speed 100 rpm.

Conversion Factors:

- Suction pressure in Bar x 747.7 = mm Hg
- Suction pressure in Bar x 33.5 = Ft H₂O
- Back pressure in Bar x 14.5 = psi



Technical specifications

313D pumphead	
Number of channels	1
Number of rollers	3
Max. flow rate continuous	2000 ml/min
Max. flow rate intermittent	3000 ml/min
Max. continuous operating speed	400 rpm
Pump type	Cased, Panel mount
Compatible tubing bore size	0.5, 0.8, 1.6, 3.2, 4.8, 6.4, 8 mm
Compatible tubing wall thickness	1.6, 2.4 mm

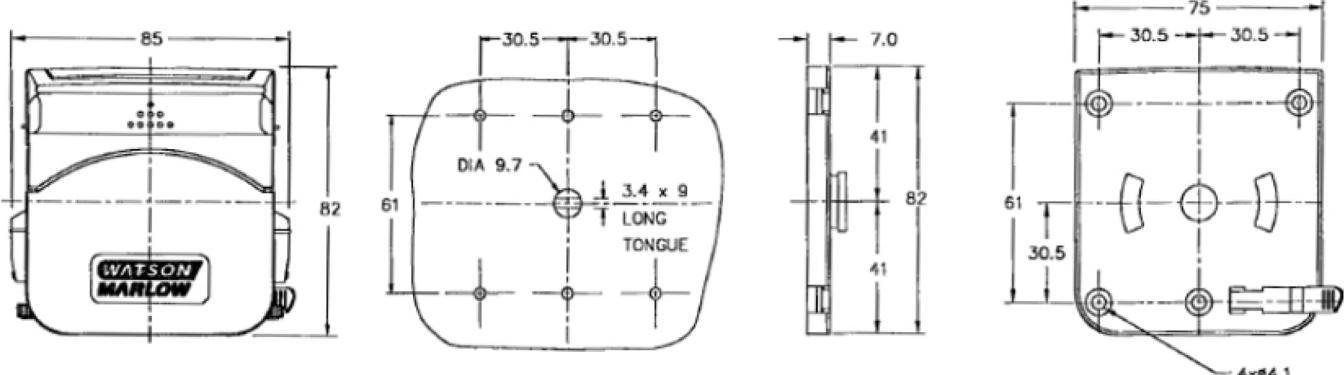
Materials of construction

313D pumphead	
Bearings	Carbon steel
Pumphead body assembly	Glass filled polypropylene, Polyacrylamide-IXEF (PARA), Stainless steel
Pumphead track	Polyacrylamide-IXEF (PARA)
Pumphead roller assembly	MoS2 filled Nylon 6 (Nylatron)
Pumphead rotor assembly	Electroless nickel plated hardened steel, Glass filled Nylon

Information listed covers the complete range.

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

313D pumphead dimensions



Product codes

Three roller 1.6mm wall thickness tubing

Description	Part code	313D	313X	313B	313XB	313DW	313BW
Clamp setting							
Variable	033.3411.000	033.3431.000		033.3421.000	033.3441.000	033.3451.000	033.3461.000
0.5-1.6	033.3411.00c	033.3431.00c			033.3441.00c	033.3451.00c	
3.2	033.3411.00f	033.3431.00f	033.3421.00f		033.3441.00f	033.3451.00f	033.3461.00f
4.8	033.3411.00k	033.3431.00k	033.3421.00k		033.3441.00k	033.3451.00k	033.3461.00k
6.4-8.0	033.3411.00n	033.3431.00n	033.3421.00n		033.3441.00n	033.3451.00n	033.3461.00n

Three roller 2.4mm wall thickness tubing

Description	Part code	313D2	313X2	313B2	313XB2	313DW2	313BW2
Clamp setting							
Variable	033.3511.000	033.3531.000		033.3521.000	033.3541.000	033.3551.000	033.3561.000
3.2	033.3511.00f	033.3531.00f	033.3521.00f		033.3541.00f	033.3551.00f	033.3561.00f
4.8	033.3511.00k	033.3531.00k	033.3521.00k		033.3541.00k	033.3551.00k	033.3561.00k
6.4	033.3511.00n	033.3531.00n	033.3521.00n		033.3541.00n	033.3551.00n	033.3561.00n

Disclaimer: All flow rates shown were obtained pumping water at 20 °C (68 °F) with zero suction and delivery heads. Watson-Marlow, Pumpsil, PureWeld XL, Bioprene and Marprene are trademarks of Watson-Marlow Limited. Disclaimer: 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. GORE and STA-PURE are trademarks of W. L. Gore & Associates. Please state the product code when ordering pumps and tubing.



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13 October 2025