313 rapid load pumpheads, three rollers

These pumpheads are fast loading, handle tube sizes with 1.6 mm wall thickness from 0.5 mm to 8.0 mm bore and extension pumpheads can be snapped on up to the power limit of the drive. 313 pumpheads have three Nylatron rollers running in a triangular rotor and are suitable for continuous use up to a speed of 400 rpm, giving flow rates up to 2000 ml/min, or intermittently up to 600 rpm, giving flow rates up to 3000 ml/min.

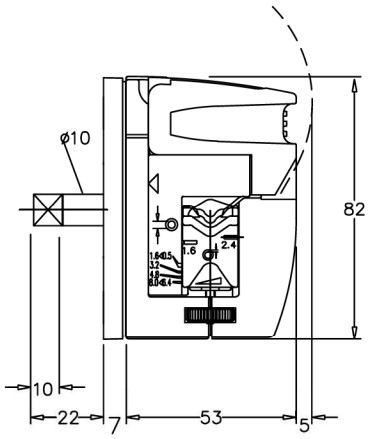
The 313 range of pumpheads includes the 313D pumphead for mounting on either Watson-Marlow 300 series OEM drives or users' own drive shaft arrangement, the 313B bare shaft pumphead for drives with a flexible coupling, and the 313X extension pumphead for use with the 313D.

The 313D pumpheads accept up to five extension pumpheads for multi-channel installations, depending on the power limit of the drive. A mounting plate which must be incorporated into the installation, is supplied with 313B and 313D pumpheads. Extension pumpheads snap fit directly behind 313D pumpheads.

A pumphead is available that will accept 2.4 mm wall tube, for applications that will benefit from using a thicker wall tube. To order a 313 pumphead for 2.4 mm wall thickness tubing, add suffix "2" - 313D2.

The ordering information below shows the full range of 313 pumpheads as detailed on page 7.

313B BARESHAFT PUMPHEAD



Ordering information

Three roller 1.6 mm wall thickness tubing

Clamp setting	313D	313X	313B	313XB	313DW	313BW
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*	*033.3421.00c*	*033.3441.00c*	*033.3451.00c*	*033.3461.00c*
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 2.4 mm wall thickness tubing

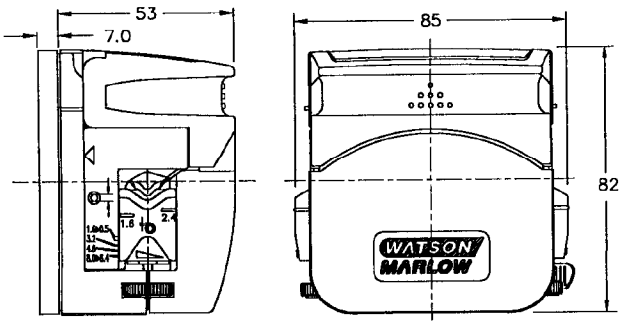
Clamp setting	313D2	313X2	313B2	313XB2	313DW2	313BW2
Variable	*033.3511.000*	*033.3531.000*	*033.3521.000*	*033.3541.000*	*033.3551.000*	*033.3561.000*
0.5 - 1.6	*033.3511.00c*	*033.3531.00c*	*033.3521.00c*	*033.3541.00c*	*033.3551.00c*	*033.3561.00c*
3.2	*033.3511.00f*	*033.3531.00f*	*033.3521.00f*	*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*

Flow rates

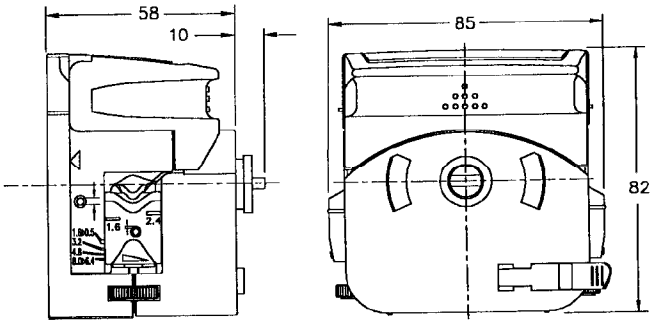
	1.6mm (1/16") wall tubing						
Bore mm	0.5	0.8	1.6	3.2	4.8	6.4	8.0
Bore "	1/50	1/32	1/16	1/8	1/16	1/4	5/16
Flow rate: ml/revolution	*0.03*	*0.06*	*0.26*	*1.0*	*2.2*	*3.6*	*5.0*
Maximum continuous flow: ml/min	*12*	*24*	*104*	*400*	*880*	*1400*	*2000*
Maximum intermittent flow: ml/min	*18*	*36*	*156*	*600*	*1320*	*2160*	*3000*

For tube selections, see Table A on page 48.

314D PUMPHEAD



314X EXTENSION PUMPHEAD



Materials of construction

Body rear	*Glass filled polypropylene*
Body front, body front extension, mounting plate, track and lever	*IXEF*
Rotor, tube clamps and mounting plate locking tab	*Glass filled Nylon*
Rollers	*MoS2 filled Nylon 6 (Nylatron)*
Spindles	*Electroless nickel plated, hardened steel*
Screws	*Stainless steel*
Sealed bearings	*Carbon steel*

Specifications

	1.6mm (1/16") wall tubing						
Bore mm	0.5	0.8	1.6	3.2	4.8	6.4	8.0
Bore "	1/50	1/32	1/16	1/8	3/16	1/4	5/16
Maximum continuous speed: rpm	*400*	*400*	*400*	*400*	*400*	*400*	*400*
Maximum 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
Maximum continuous pressure: bar	*2*	*2*	*2*	*2*	*1.3*	*1.3*	*1.3*
Maximum intermittent pressure: bar	*3*	*3*	*3*	*2.5*	*2*	*2*	*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
Maximum continuous pressure: bar	*2*	*2*	*1.5*	*1.5*	*1*	*1*	*1*
Maximum intermittent pressure: bar	*2.5*	*2.5*	*2*	*2*	*1.3*	*1.3*	*1.3*

Performance against pressure

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 H_2O
Back pressure in Bar x 14.5 = psi