

### 314 rapid load pumpheads, four rollers



With the same bayonet mounting system, 314 pumpheads may be interchanged with the 313 pumpheads or specified as an alternative head when ordering 300 series OEM pumps. Their four roller design gives higher precision and less pulsation and is suitable for continuous use up to 300 rpm giving flow rates up to 1200 ml/min (intermittent use up to 600 rpm giving flow rates up to 2400 ml/min).

The 314 range of pumpheads includes the 314D pumphead for mounting on either Watson-Marlow 300 series OEM drives or users' own drives having the same drive shaft arrangement, the 314B bare shaft pumphead for drives with a flexible coupling and the 314X extension pumphead for use with the 314D.

The 314D and 314B 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 314B and 314D pumpheads. Extension pumpheads snap fit directly behind 314D pumpheads. To use 2.4 mm wall thickness tubing, please add the suffix "2" - 314D2

The ordering information below shows the full range of 314 pumpheads as detailed on page 7.

#### Ordering information

##### Four roller 1.6 mm wall thickness tubing

Clamp setting	314D	314X	314B	314XB	314DW	314BW
Variable	033.4411.000	033.4431.000	033.4421.000	033.4441.000	033.4451.000	033.4461.000
0.5 - 1.6	033.4411.00c	033.4431.00c	033.4421.00c	033.4441.00c	033.4451.00c	033.4461.00c
3.2	033.4411.00f	033.4431.00f	033.4421.00f	033.4441.00f	033.4451.00f	033.4461.00f
4.8	033.4411.00k	033.4431.00k	033.4421.00k	033.4441.00k	033.4451.00k	033.4461.00k
6.4 - 8.0	033.4411.00n	033.4431.00n	033.4421.00n	033.4441.00n	033.4451.00n	033.4461.00n

##### Four roller 2.4 mm wall thickness tubing

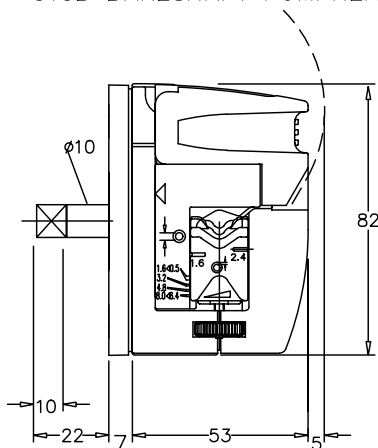
Clamp setting	314D2	314X2	314B2	314XB2	314DW2	314BW2
Variable	033.4511.000	033.4531.000	033.4521.000	033.4541.000	033.4551.000	033.4561.000
0.5 - 1.6	033.4511.00c	033.4531.00c	033.4521.00c	033.4541.00c	033.4551.00c	033.4561.00c
3.2	033.4511.00f	033.4531.00f	033.4521.00f	033.4541.00f	033.4551.00f	033.4561.00f
4.8	033.4511.00k	033.4531.00k	033.4521.00k	033.4541.00k	033.4551.00k	033.4561.00k
6.4	033.4511.00n	033.4531.00n	033.4521.00n	033.4541.00n	033.4551.00n	033.4561.00n

#### Flow rates

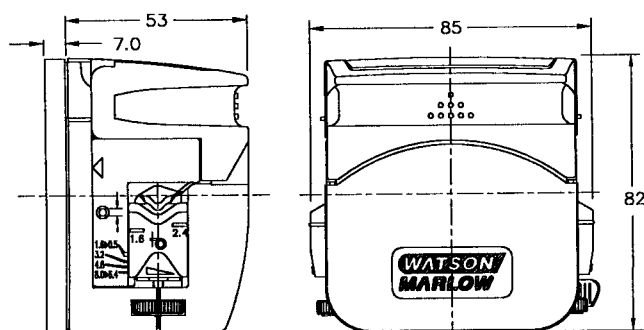
	1.6mm (1/16") wall tubing						
Bore mm	0.5	0.8	1.6	3.2	4.8	6.4	8.0
Bore "	1/50	1/32	1/16	1/8	3/16	1/4	5/16
Flow rate: ml/revolution	0.03	0.06	0.25	0.85	1.9	3.0	4.0
Maximum continuous flow: ml/min	9	18	75	255	570	900	1200
Maximum intermittent flow: ml/min	18	36	150	510	1140	1800	2400

For tube selections, see Tables A and B on page 48.

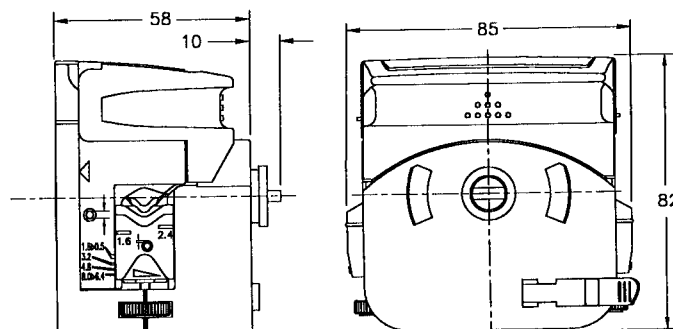
313B BARESHAFT PUMPHEAD



314D PUMPHEAD



314X EXTENSION PUMPHEAD





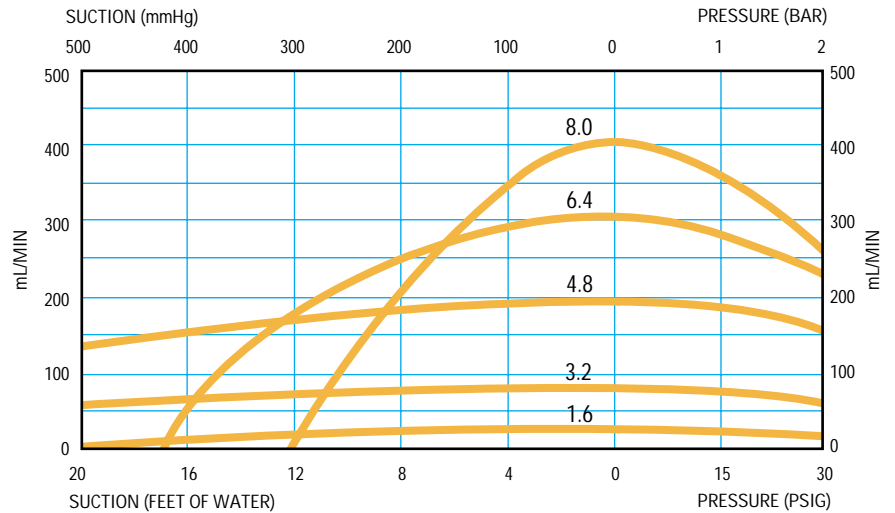
#### Materials of construction

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 thickness 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
<b>With Marprene tubing</b>							
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
<b>With Silicone tubing</b>							
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

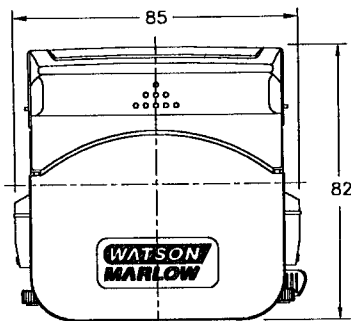


#### Conditions:

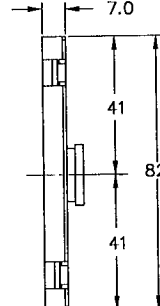
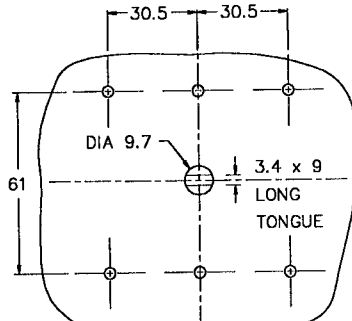
- Suction curves obtained with zero output pressure.
- Pressure curves obtained with zero lift.
- Pumphead speed 100 rpm

#### Conversion Factors:

- Suction pressure in Bar x 747.7 = mm Hg
- Suction pressure in Bar x 33.5 = Ft H<sub>2</sub>O
- Back pressure in Bar x 14.5 = psi



#### CUSTOMER DRIVE DETAILS



#### MOUNTING PLATE

