

## 400F/D2-D3 two or three channel peristaltic pumps



400F/D2

The 400F/D is our standard instrument quality peristaltic pump for low flow rates. The pumps have a spring-loaded track, which gives superior tube life and flow-accuracy. The tubing occlusion can be adjusted to produce higher pressures. The pump is available with four standard gearmotors. Each one is extremely small in size and has low power requirements. The pump accepts tube elements with a 1.0 mm wall thickness. The tubing is available in 4 bore sizes, allowing the user to precisely match the pump to the required flow. See page 21 for additional options.

### Flow capacity

	1.05mm WT Tubing Elements			
	0.5mm	1.0mm	2.0mm	3.0mm <sup>1</sup>
Bore mm	0.5mm	1.0mm	2.0mm	3.0mm <sup>1</sup>
Bore "	1/50"			
Flow rate ml/revolution	<i>0.013</i>	<i>0.05</i>	<i>0.18</i>	<i>0.33</i>
Max continuous flow ml/min	<i>2.6</i>	<i>10</i>	<i>36</i>	<i>66</i>
Max intermittent flow ml/min	<i>5.2</i>	<i>20</i>	<i>72</i>	<i>132</i>

<sup>1</sup> rated for silicone tubing only

### Materials of construction

Rotor, rollers, track, tube holder	<i>Black Acetal (POM)</i>
Mounting plate	<i>Black anodized aluminum</i>
Screws, springs, shafts	<i>Acid resistant stainless steel</i>

### Specifications

Maximum continuous speed	<i>200 rpm</i>
Maximum intermittent speed	<i>400 rpm</i>
Weight of complete pump	<i>240-420 g</i>
Tube type	<i>Tube elements with fittings</i>

### Performance against pressure

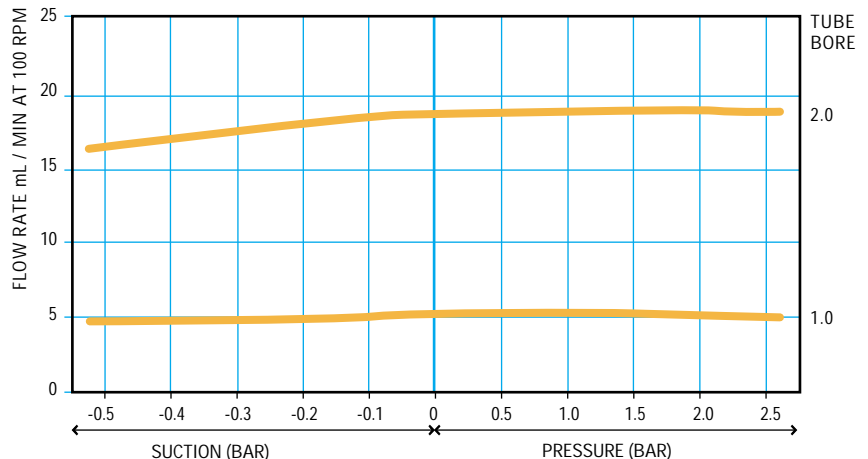
The spring-loaded tension arm makes it possible to adjust the pump to operate at higher back pressures/suction heights without overloading the tubing. In the diagram shown below the arm is set for optimal performance at backpressures up to approx. 2.5 Bar. The pump is capable of operating against pressures up to 3 Bar.

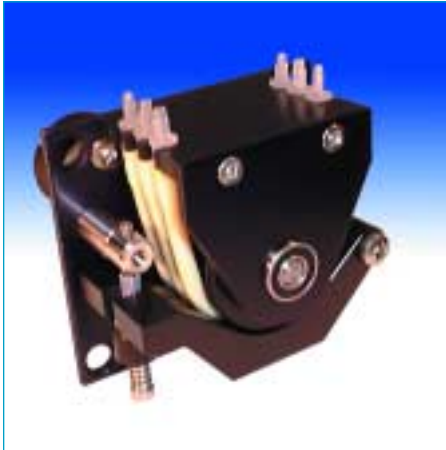
#### Conversion Factors:

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





400F/D3

Ordering information

Standard DC	12rpm	40rpm	100rpm	200rpm
400FDC/D2 12V Two Channel	<i>040.D81D.N2C</i>	<i>040.DH1D.N2C</i>	<i>040.DP1D.N2C</i>	<i>040.DS1D.N2C</i>
400FDC/D2 24V Two Channel	<i>040.E81D.N2C</i>	<i>040.EH1D.N2C</i>	<i>040.EP1D.N2C</i>	<i>040.ES1D.N2C</i>
400FDC/D3 12V Three Channel	<i>040.D81D.N3C</i>	<i>040.DH1D.N3C</i>	<i>040.DP1D.N3C</i>	
400FDC/D3 24V Three Channel	<i>040.E81D.N3C</i>	<i>040.EH1D.N3C</i>	<i>040.EP1D.N3C</i>	
Economy DC	25rpm	75rpm	200rpm	
400FD/D2 12V Two Channel		<i>040.AC1D.N2C</i>	<i>040.AN1D.N2C</i>	<i>040.AS1D.N2C</i>
400FD/D2 24V Two Channel		<i>040.BC1D.N2C</i>	<i>040.BN1D.N2C</i>	<i>040.BS1D.N2C</i>
400FD/D3 12V Three Channel		<i>040.AC1D.N3C</i>	<i>040.AN1D.N3C</i>	
400FD/D3 24V Three Channel		<i>040.BC1D.N3C</i>	<i>040.BN1D.N3C</i>	
Brushless DC	15rpm	50rpm	130rpm	250rpm
400FDL/D2 24V Two Channel	<i>040.F91D.N2C</i>	<i>040.FK1D.N2C</i>	<i>040.FQ1D.N2C</i>	<i>040.FT1D.N2C</i>
400FDL/D3 24V Three Channel	<i>040.F91D.N3C</i>	<i>040.FK1D.N3C</i>	<i>040.FQ1D.N3C</i>	
Synchronous AC 110V		5rpm	12rpm	25rpm
400FS/D2 110VAC 60hz Two Chan.		<i>040.H41D.N2C</i>	<i>040.H81D.N2C</i>	<i>040.HC1D.N2C</i>
Synchronous AC		4rpm	10rpm	20rpm
400FS/D2 220VAC 50hz Two Chan.		<i>040.J31D.N2C</i>	<i>040.J71D.N2C</i>	<i>040.JA1D.N2C</i>

See motor descriptions on page 46.

Flow rates

Tubing	Per channel 1.05 mm WT			
	0.5mm	1.0mm	2.0mm	3.0mm <sup>1</sup>
Bore mm	0.5mm	1.0mm	2.0mm	3.0mm <sup>1</sup>
Bore "	1/50			
<i>Standard DC 12rpm</i>	<i>0.16</i>	<i>0.6</i>	<i>2.2</i>	<i>4.0</i>
<i>Standard DC 40rpm</i>	<i>0.52</i>	<i>2.0</i>	<i>7.2</i>	<i>13.2</i>
<i>Standard DC 100rpm</i>	<i>1.3</i>	<i>5.0</i>	<i>18.0</i>	<i>33.0</i>
<i>Standard DC 200rpm</i>	<i>2.6</i>	<i>10.0</i>	<i>36.0</i>	<i>66.0</i>
<i>Economy DC 25rpm</i>	<i>0.33</i>	<i>1.3</i>	<i>4.5</i>	<i>8.3</i>
<i>Economy DC 50rpm</i>	<i>1.0</i>	<i>3.8</i>	<i>13.5</i>	<i>24.8</i>
<i>Economy DC 200rpm</i>	<i>2.6</i>	<i>10.0</i>	<i>36.0</i>	<i>66.0</i>
<i>Brushless DC 15rpm</i>	<i>0.20</i>	<i>0.75</i>	<i>2.7</i>	<i>5.0</i>
<i>Brushless DC 50rpm</i>	<i>0.65</i>	<i>2.5</i>	<i>9.0</i>	<i>16.5</i>
<i>Brushless DC 130rpm</i>	<i>1.7</i>	<i>6.5</i>	<i>23.4</i>	<i>42.9</i>
<i>Brushless DC 250rpm</i>	<i>3.3</i>	<i>12.5</i>	<i>45.0</i>	<i>82.5</i>
<i>Synchronous AC 60hz 5rpm</i>	<i>0.07</i>	<i>0.25</i>	<i>0.90</i>	<i>1.7</i>
<i>Synchronous AC 60hz 12rpm</i>	<i>0.16</i>	<i>0.6</i>	<i>2.2</i>	<i>4.0</i>
<i>Synchronous AC 60hz 25rpm</i>	<i>0.33</i>	<i>1.3</i>	<i>4.5</i>	<i>8.3</i>
<i>Synchronous AC 50hz 4rpm</i>	<i>0.05</i>	<i>0.20</i>	<i>0.72</i>	<i>1.3</i>
<i>Synchronous AC 50hz 10rpm</i>	<i>0.13</i>	<i>0.5</i>	<i>1.8</i>	<i>3.3</i>
<i>Synchronous AC 50hz 20rpm</i>	<i>0.26</i>	<i>1.0</i>	<i>3.6</i>	<i>6.6</i>

<sup>1</sup> rated for silicone tubing only

For tube selection, see Table C on page 48.

