ProMinent® Makro TZ
Diaphragm Metering Pumps

Overview: Makro TZ

Ideal for high volume and high pressure applications (see page 135 for spare parts)

The ProMinent® Makro TZMb is a mechanically or hydraulically actuated motor driven diaphragm metering pump.

The stroke length can be adjusted by means of the shift ring mechanism from 0-10 mm (TZMb), with 0.5 % accuracy. The 5-speed gearbox is encased in a cast, seawater resistant, acrylic resin lacquered housing. Liquid ends are available in different material combinations to suit differing applications. The suction lift varies according to the density and viscosity of the medium, the dimension of the pipework and the pump stroke rate. Reproducibility of metering is better than ± 2 % in the stroke length range from 30 % -100 % subject to defined conditions and correct installation. (You must follow the instructions in the operating instruction manual).

ProMinent® Makro TZ TZMbA Add-On Pumps

The ProMinent® Makro TZ main diaphragm metering pump can be converted to a duplex or triplex pump with the ProMinent® Makro TZ add-on diaphragm pump (several add-on pumps can be operated at reduced back pressure). Multiplex pumps can also be retrofitted by the operator; all the necessary components and fittings are included with the TZMbA. Different stroke rates can be achieved with the add-on pump independently of the main pump as each TZMbA has its own reducing gear. The main power end can be fitted for this purpose with a more powerful drive motor. A base frame is required when using add-on power ends.

ProMinent® Makro TZ Double Head Version TZMbD/TZMbB

The double head version of the ProMinent® Makro TZ is similar to the simplex pump. It is, however, fitted with a second liquid end.

The liquid ends work in push-pull mode by means of a coupling element in the gearbox.
# ProMinent® Makro TZ Diaphragm Metering Pumps

## Identcode Ordering System (TZMb)

<table>
<thead>
<tr>
<th>TZMb</th>
<th>Motor-Driven Metering Pump TZMb Makro TZ 10 (mechanically driven add-on diaphragm pump)</th>
</tr>
</thead>
</table>
| Drive type: | H Main drive  
A Add-on power end  
D Double main drive  
B Double add-on power end |
| Pump type: | 120260 070430 040840  
120340 070570 041100  
120430 070720 041400  
120510 070880 041670  
120650 071070 |
| Liquid end material: | PC PVC  
PP Polypropylene  
SS Stainless steel  
TT PTFE + 25% carbon |
| Seal material: | T PTFE |
| Positive displacement element: | Standard composite diaphragm with rupture indicator |
| Liquid end version: | 0 No valve springs  
1 With valve springs |
| Hydraulic connection: | 0 Standard connection  
1 PVC union nut and insert  
2 PP union nut and insert  
3 PVDF union nut and insert  
4 SS union nut and insert |
| Version: | 0 with ProMinent® logo  
2 No ProMinent® logo  
A 0 with ProMinent® logo, with frame, simplex  
B 0 with ProMinent® logo, with frame, duplex  
C 0 with ProMinent® logo, with frame, triplex  
M Modified |
| Electrical power supply: | S 3 ph. 230/400 V 50/60 Hz (dual wound)  
P 3 ph. 230/400 V 60 Hz (Exe, Exde)  
R Variable speed motor 4 pole 230/400 V  
V Variable speed motor with integr.speed changer  
Z Speed control kit  
4 No motor, with 56 C flange  
7 No motor, with 120/80 flange  
8 No motor, with 160/90 flange  
9 No motor, with 200/90 flange |
| Enclosure rating: | 0 IP 55 (Standard) ISO class F  
A ATEX power end |
| Stroke sensor: | 0 No stroke sensor  
1 With stroke sensor (Namur) |
| Stroke length adjustment: | 0 0 Stroke length adjustment, man.  
1 230 V stroke actuator  
2 115 V stroke actuator  
3 230 V 0-20 mA stroke controller  
4 230 V 4-20 mA stroke controller  
5 115 V 0-20 mA stroke controller  
6 115 V 4-20 mA stroke controller |
| Applications: | 0 Standard |

**TZMb** 120260 PC T 1 0 0 0 S 0 0 0 0
ProMinent® Makro TZ Diaphragm Metering Pumps

Capacity Data (TZMbH)

with 1800 rpm motor at 60 Hz

<table>
<thead>
<tr>
<th>Pump type</th>
<th>gph</th>
<th>l/h</th>
<th>psi</th>
<th>bar</th>
<th>ml/stroke</th>
<th>strokes/min</th>
<th>ft (m)</th>
<th>in (DN)</th>
<th>lb (kg)</th>
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<tbody>
<tr>
<td>TZMbH</td>
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<td>1 (25)</td>
<td>101.4/119 (46/54)</td>
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<td>612</td>
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<td>1 (25)</td>
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<td>516</td>
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<td>110.2/141 (50/64)</td>
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<td>110.2/141 (50/64)</td>
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<td>123.5/176.4 (56/80)</td>
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<td>2 (40)</td>
<td>123.5/176.4 (56/80)</td>
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</table>

Stroke length 10 mm

The admissible priming pressure on the suction side is 50% of the maximum back pressure.

Materials In Contact With Chemical In Version

<table>
<thead>
<tr>
<th>Pump Head</th>
<th>Suction/ Discharge Connector</th>
<th>DN 25 Ball Valves</th>
<th>DN 32/DN 40 Plate Valves**</th>
<th>Valve Seat</th>
<th>Valve Seat</th>
<th>Valve Plate/ Valve Spring</th>
<th>Valve Seat</th>
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<tbody>
<tr>
<td>PPT</td>
<td>Polypropylene</td>
<td>PVDF</td>
<td>PTFE</td>
<td>Ceramic</td>
<td>PTFE</td>
<td>Ceramic/ Hast. C + CTFE**</td>
<td>PTFE</td>
</tr>
<tr>
<td>PCT</td>
<td>PVC</td>
<td>PVDF</td>
<td>PTFE</td>
<td>Ceramic</td>
<td>PTFE</td>
<td>Ceramic/ Hast. C + CTFE**</td>
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<tr>
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<td>PTFE with carbon</td>
<td>PTFE with carbon</td>
<td>PTFE</td>
<td>Ceramic</td>
<td>PTFE</td>
<td>Ceramic/ Hast. C + CTFE**</td>
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<tr>
<td>SST</td>
<td>Stainless steel</td>
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<td>Stainless steel</td>
<td>PTFE</td>
<td>Stainless steel/ Hast. C + CTFE*</td>
<td>PTFE</td>
</tr>
</tbody>
</table>

Multi-layer safety diaphragm with PTFE coating.

** The valve spring is coated with CTFE (similar to PTFE)

Custom designs available to order.