# **ProMinent® Makro Series**

**Experts in Chemical Feed and Water Treatment** 

## Rugged, accurate and dependable pumps!

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  $\pm 2$  % in the stroke length range from 30 % -100 % subject to defined conditions and correct installation.



ProMinent® Makro TZb HM

## **Applications**

- The addition of chemicals based on measured values, e.g. acid and caustic metering for pH neutralization in wastewater treatment
- Metering of treatment agents in industrial production technology
- Time-controlled metering of chemicals for ion exchange regeneration
- Varied Water and wastewater treatment applications
- Some heavy industrial applications

### **Features and benefits**

- Supplied as a single or dual-headed version
- Add on pumps can easily be retrofitted on site if necessary
- Each pump has its own independent stroking frequency due to its own internal gear reducer



complete systems

- Stroke rate: Standard speed motor or variable automatic capacity adjustment
- Gear housing: cast housing with a coorosion resistant acrylic resin lacquer finish

# **ProMinent®** Makro Series

### **Experts in Chemical Feed and Water Treatment**

## Capacity data

Pump Capacity at Max. backpressure			with 1800 rpm motor at 60 Hz					Мах.	Suc-	Connection	Shipping
Pump type   gph   I/h   psi   bar   mI/ strokes   ft (m)   in (DN)   lb (kg)		Pump Capacity				Stroke	tion	Suction	Weight		
Pump type         gph         I/h         psi         bar         ml/stroke         strokes/min.         ft (m)         in (DN)         lb (kg)           TZMbH         120260         82         312         174         12         60         86         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120340         108         408         174         12         60         115         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120430         136         516         174         12         60         144         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120510         162         612         174         12         60         173         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120650         -         -         174         12         60         -         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           070430         136         516         100         7         99         86         11.5 (3.5)         2 (32)         110.2/141 (50/64)           070720         228         864         100         7         99         173         11.5 (3.5)         2 (32)         110.			at Max. backpressure					Frequency	Lift	Discharge	PP, PC,
TZMbH         stroke         min.           120260         82         312         174         12         60         86         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120340         108         408         174         12         60         115         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120430         136         516         174         12         60         144         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120510         162         612         174         12         60         173         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           120650         -         -         174         12         60         -         13.1 (4)         1 1/2 (25)         101.4/119 (46/54)           070430         136         516         100         7         99         86         11.5 (3.5)         2 (32)         110.2/141 (50/64)           070570         180         684         100         7         99         144         11.5 (3.5)         2 (32)         110.2/141 (50/64)           07020         228         864         100         7         99         173         11.5 (3.5) </td <td colspan="2"></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Side</td> <td>TT/SS</td>										Side	TT/SS
120260       82       312       174       12       60       86       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120340       108       408       174       12       60       115       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120430       136       516       174       12       60       144       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120510       162       612       174       12       60       173       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120650       -       -       174       12       60       -       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         070430       136       516       100       7       99       86       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)		Pump type	gph	l/h	psi	bar	ml/	strokes/	ft (m)	in (DN)	lb (kg)
120340       108       408       174       12       60       115       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120430       136       516       174       12       60       144       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120510       162       612       174       12       60       173       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120650       -       -       174       12       60       -       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         070430       136       516       100       7       99       86       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)		TZMbH					stroke	min.			
120430       136       516       174       12       60       144       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120510       162       612       174       12       60       173       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120650       -       -       174       12       60       -       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         070430       136       516       100       7       99       86       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       115       9.8 (3)		120260	82	312	174	12	60	86	13.1 (4)	1 1/2 (25)	101.4/119 (46/54)
120510       162       612       174       12       60       173       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         120650       -       -       174       12       60       -       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         070430       136       516       100       7       99       86       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070860       272       1032       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       115       9.8 (3) <td< td=""><td></td><td>120340</td><td>108</td><td>408</td><td>174</td><td>12</td><td>60</td><td>115</td><td>13.1 (4)</td><td>1 1/2 (25)</td><td>101.4/119 (46/54)</td></td<>		120340	108	408	174	12	60	115	13.1 (4)	1 1/2 (25)	101.4/119 (46/54)
120650       -       -       174       12       60       -       13.1 (4)       1 1/2 (25)       101.4/119 (46/54)         070430       136       516       100       7       99       86       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       144       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070860       272       1032       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)		120430	136	516	174	12	60	144	13.1 (4)	1 1/2 (25)	101.4/119 (46/54)
070430       136       516       100       7       99       86       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       144       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070860       272       1032       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       144       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)		120510	162	612	174	12	60	173	13.1 (4)	1 1/2 (25)	101.4/119 (46/54)
070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       144       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070860       272       1032       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       144       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)		120650	-	-	174	12	60	-	13.1 (4)	1 1/2 (25)	101.4/119 (46/54)
070570       180       684       100       7       99       115       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070720       228       864       100       7       99       144       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070860       272       1032       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       144       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)											
070720       228       864       100       7       99       144       11.5 (3.5)       2 (32)       110.2/141 (50/64)         070860       272       1032       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       144       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)		070430	136	516	100	7	99	86	11.5 (3.5)	2 (32)	110.2/141 (50/64)
070860       272       1032       100       7       99       173       11.5 (3.5)       2 (32)       110.2/141 (50/64)         071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       144       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)		070570	180	684	100	7	99	115	11.5 (3.5)	2 (32)	110.2/141 (50/64)
071070       -       -       100       7       99       -       11.5 (3.5)       2 (32)       110.2/141 (50/64)         040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       144       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)		070720	228	864	100	7	99	144	11.5 (3.5)	2 (32)	110.2/141 (50/64)
040840       266       1008       58       4       194       86       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041100       348       1320       58       4       194       115       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041400       443       1680       58       4       194       144       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)         041670       529       2004       58       4       194       173       9.8 (3)       2 1/4 (40)       123.5/176.4 (56/80)		070860	272	1032	100	7	99	173	11.5 (3.5)	2 (32)	110.2/141 (50/64)
041100     348     1320     58     4     194     115     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)       041400     443     1680     58     4     194     144     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)       041670     529     2004     58     4     194     173     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)		071070	-	-	100	7	99	-	11.5 (3.5)	2 (32)	110.2/141 (50/64)
041100     348     1320     58     4     194     115     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)       041400     443     1680     58     4     194     144     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)       041670     529     2004     58     4     194     173     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)											
041400     443     1680     58     4     194     144     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)       041670     529     2004     58     4     194     173     9.8 (3)     2 1/4 (40)     123.5/176.4 (56/80)		040840	266	1008	58	4	194	86	9.8 (3)	2 1/4 (40)	123.5/176.4 (56/80)
041670 529 2004 58 4 194 173 9.8 (3) 2 1/4 (40) 123.5/176.4 (56/80)		041100	348	1320	58	4	194	115	9.8 (3)	2 1/4 (40)	123.5/176.4 (56/80)
		041400	443	1680	58	4	194	144	9.8 (3)	2 1/4 (40)	123.5/176.4 (56/80)
042100 58 4 194 - 9.8 (3) 2 1/4 (40) 123.5/176.4 (56/80)		041670	529	2004	58	4	194	173	9.8 (3)	2 1/4 (40)	123.5/176.4 (56/80)
		042100	-	-	58	4	194	-	9.8 (3)	2 1/4 (40)	123.5/176.4 (56/80)

Stroke length 10 mm

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

The TZMa version is still available "on request".

## Liquid end materials in contact with media

	Pump Head	Suction/ Dis- charge Connector	DN 25 Bal Seals	l Valves Valve Balls	Valve Seat	DN 32/D Seals	N 40 Plate Valves <sup>a</sup> Valve Plate/ Valve Spring	* Valve Seat
PPT	Polypropylene	PVDF	PTFE	Ceramic	PTFE	PTFE	Ceramic/	PTFE
							Hast. C + CTFE**	
PCT	PVC	PVDF	PTFE	Ceramic	PTFE	PTFE	Ceramic/ Hast. C + CTFE**	PTFE
TTT	PTFE with carbon	PTFE with carbon	PTFE	Ceramic	PTFE	PTFE	Ceramic/	PTFE
							Hast. C + CTFE**	
SST	Stainless steel	Stainless steel	PTFE	Stainless steel	PTFE	PTFE	Stainless steel Hast. C + CTFE*	PTFE

Multi-layer safety diaphragm with PTFE coating.

#### **ProMinent Fluid Controls, Inc. (US)**

136 Industry Drive, Pittsburgh, PA 15275-1014 Tel: (412) 787-2484 Fax: (412) 787-0704 eMail: sales@prominent.us www.prominent.us

#### ProMinent Fluid Controls Ltd. (Canada)

490 Southgate Drive, Guelph, ON N1G 4P5 Tel: 1-888-709-9933 I (519) 836-5692 Fax: (519) 836-5226 eMail: sales@prominent.ca www.prominent.ca



<sup>\*\*</sup> The valve spring is coated with CTFE (similar to PTFE) Custom designs available to order.