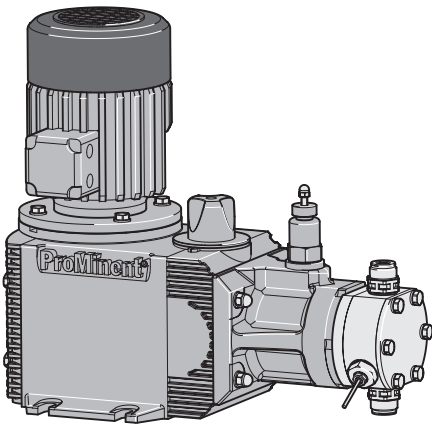


2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

2.6

Hydro hydraulic Diaphragm Metering Pumps



Hydro main pump H

The hydraulic diaphragm metering pump is a standard sized metering pump with a 0.37/0.75 kW dual wound three phase motor, 230/400 V, 50/60 Hz, enclosure rating IP 55, insulation class F. The stroke length is 15 mm and is adjustable within 1 % accuracy. The cast aluminium housing is combined at any one time with 4 gear reductions. Comes in 2 liquid end sizes and 2 liquid end materials. All pump types are standard sized and fitted with a preset bypass (**relief**) valve integrated into the hydraulics, as well as a multi-layer diaphragm with diaphragm rupture signalling. Metering reproducibility under defined conditions and when installed correctly, is better than ± 1 % in a stroke length range of between 20 and 100 % (instructions in the operating instructions manual must be followed precisely).

Hydro double-head version

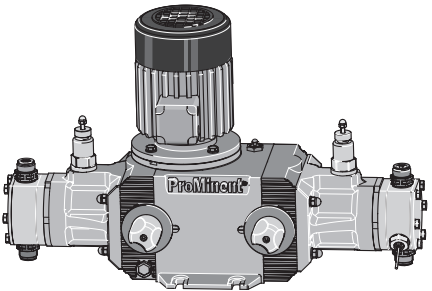
The double-head version is fitted with a second liquid end which operates on a push-pull action (Boxer principle). Each liquid end is provided with a separate stroke length-adjusting knob so that each liquid end can operate at an independent feed rate.

Hydro add-on pumps

For the Hydro add-on pumps the same basic instructions apply as for the simplex pumps. A main power end can be combined with an add-on power end in both simplex and duplex forms.

Hydro Triplex

The Hydro Triplex pump comprises a main drive (arranged centrally) and 2 add-on drives. Typical applications for Triplex pumps include metering applications in medium to upper pressure levels with pulsation reduction. The pulsation damping features are produced by the offset pressure stroke (offset 120° crank angle).



Stroke length actuator/controller

Actuator for automatic stroke length adjustment, actuating period approx. 1 sec for 1% stroke length, 1k Ohm response signal potentiometer, enclosure rating IP 54. Controller consists of actuator with servomotor and integrated servo control for stroke length adjustment via a standard signal. Standard signal input 0/4-20 mA, corresponds to stroke length 0 - 100 %. Automatic/manual operation selection key for manual stroke adjustment. Mechanical status display of actual stroke length value output 0/4-20 mA for remote display.

Variable speed motors with integrated speed controller (identcode characteristic V)

Power supply 1 ph 230 V, 50/60 Hz, 0.18 kW
External control with 0/4-20 mA

2.6 ProMinent® Hydro/ 2 - Single Head Hydraulic Diaphragm Metering Pumps

2.6.1 Hydro/ 2 Technical Data

Type HP2aH	With motor 1500 rpm at 50 Hz				With motor 1800 rpm at 60 Hz			Suction height mWC	Perm. admiss. pressure suction side bar	Connec- tion on suction/ pressure side G-DN	Shipping weight kg
	backpressure bar	Delivery rate at max. l/h ml/stroke	Max. stroke rate strokes/min	psi	Delivery rate at max. l/h / gph	Max. stroke rate strokes/min	psi				
100003*	100	3	0.8	60	1,450	3.6/1.0	72	3.0	5	Rp 1/4	31
100006*	100	6	0.8	125	1,450	7.0/1.8	150	3.0	5	Rp 1/4	31
100007*	100	7	0.8	150	1,450	8.0/2.1	180	3.0	5	Rp 1/4	31
100009*	100	9	0.8	187	1,450	11.0/2.9	224	3.0	5	Rp 1/4	31
100010*	100	10	0.8	212	-	-	-	3.0	5	Rp 1/4	31
064007	64	7	2.0	60	928	8.4/2.2	72	3.0	5	G 3/4-10	31
064015	64	15	2.0	125	928	18.0/4.8	150	3.0	5	G 3/4-10	31
064018	64	18	2.0	150	928	21.0/5.5	180	3.0	5	G 3/4-10	31
064022	64	22	2.0	187	928	26.0/6.9	224	3.0	5	G 3/4-10	31
064025	64	25	2.0	212	-	-	-	3.0	5	G 3/4-10	31
025019	25	19	5.3	60	362	23.0/6.	172	3.0	5	G 3/4-10**	31
025040	25	40	5.3	125	362	48.0/12.7	150	3.0	5	G 3/4-10**	31
025048	25	48	5.3	150	362	58.0/15.3	180	3.0	5	G 3/4-10**	31
025060	25	60	5.3	187	362	72.0/19.0	224	3.0	5	G 3/4-10**	31
025068	25	68	5.3	212	-	-	-	3.0	5	G 3/4-10**	31

Material version PVDF max. 25 bar.

* Material version SST/HCT with double ball valve, valve connection on suction/pressure side

** HV version for G1-DN 15 designed as standard with internal thread Rp 1/4 and external, thread G 3/4-DN 10

Material in contact with media

Material	Liquid End	Suction/Discharge connector	Seals/ball seat	Valve Balls
SST	stainless steel no. 1.4571/1.4404	stainless steel no. 1.4581	PTFE/ZrO2	stainless steel
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	ceramic
HCT	Hast. C	Hast. C	PTFE/Hast. C	ceramic

2.6 Hydro/ 3 Technical Data

Type HP3aH	With motor 1500 rpm at 50 Hz				With motor 1800 rpm at 60 Hz			Suction height mWC	Perm. admiss. at max. bar	Connec- tion on G-DN	Shipping weight kg
	backpressure bar	Delivery rate at max. stroke	Max. Delivery rate stroke	psi	side l/h / gph	side strokes/min	psi				
100010*	100	10	2.8	60	1,450	12.0/3.2	72	3.0	5	Rp 1/4	41
100021*	100	21	2.8	125	1,450	25.0/6.6	150	3.0	5	Rp 1/4	41
100025*	100	25	2.8	150	1,450	30.0/7.9	180	3.0	5	Rp 1/4	41
100041*	100	41	2.8	187	1,450	37.0/9.8	224	3.0	5	Rp 1/4	41
100035*	100	35	2.8	212	-	-	-	3.0	5	Rp 1/4	41
064019	64	19	5.3	60	928	23.0/6.1	72	3.0	5	G 3/4-10**	41
064040	64	40	5.3	125	928	48.0/12.7	150	3.0	5	G 3/4-10**	41
064048	64	48	5.3	150	928	58.0/15.3	180	3.0	5	G 3/4-10**	41
064060	64	60	5.3	187	928	72.0/19.0	224	3.0	5	G 3/4-10**	41
064068	64	68	5.3	212	-	-	-	3.0	5	G 3/4-10**	41
025048	25	48	13.4	60	362	58.0/15.3	172	3.0	5	G 1-15***	41
025100	25	100	13.4	125	362	120.0/31.7	150	3.0	5	G 1-15***	41
025120	25	120	13.4	150	362	144.0/38.0	180	3.0	5	G 1-15***	41
025150	25	150	13.4	187	362	180.0/47.6	224	3.0	5	G 1-15***	41
025170	25	170	13.4	212	-	-	-	3.0	5	G 1-15***	41

Material version PVDF max. 25 bar.

* Material version SST/HCT with double ball valve, valve connection on suction/pressure side

** HV version for G1-DN 15 designed as standard with internal thread Rp 1/4 and external, thread G 3/4-DN 10

*** HV version for G1 1/4"-DN 20 connection

Material in contact with media

Material	Liquid End	Suction/Discharge connector	Seals/ball seat	Valve Balls
SST	stainless steel no. 1.4571/1.4404	stainless steel no. 1.4581	PTFE/ZrO2	stainless steel
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	ceramic
HCT	Hast. C	Hast. C	PTFE/Hast. C	ceramic

2.6 ProMinent® Hydro/ 2 - Single Head Hydraulic Diaphragm Metering Pumps



2.6.2 Identity Code Ordering System For Hydro/ 2 - Single Head

HP2a

Hydro/ 2

H	Main power end																					
<table border="1"> <tr> <td>Pump type:</td> <td>Pump type:</td> <td>Pump type:</td> </tr> <tr> <td>100003 100 bar, 3 litre</td> <td>064007 64 bar, 7 litre</td> <td>025019 25 bar, 19 litre</td> </tr> <tr> <td>100006 100 bar, 6 litre</td> <td>064015 64 bar, 15 litre</td> <td>025040 25 bar, 40 litre</td> </tr> <tr> <td>100007 100 bar, 7 litre</td> <td>064018 64 bar, 18 litre</td> <td>025048 25 bar, 48 litre</td> </tr> <tr> <td>100009 100 bar, 9 litre</td> <td>064022 64 bar, 22 litre</td> <td>025060 25 bar, 60 litre</td> </tr> <tr> <td>100010 100 bar, 10 litre</td> <td>064025 64 bar, 25 litre</td> <td>025068 25 bar, 68 litre</td> </tr> <tr> <td colspan="3">PVT Liquid End Maximum 25 Bar</td> </tr> </table>		Pump type:	Pump type:	Pump type:	100003 100 bar, 3 litre	064007 64 bar, 7 litre	025019 25 bar, 19 litre	100006 100 bar, 6 litre	064015 64 bar, 15 litre	025040 25 bar, 40 litre	100007 100 bar, 7 litre	064018 64 bar, 18 litre	025048 25 bar, 48 litre	100009 100 bar, 9 litre	064022 64 bar, 22 litre	025060 25 bar, 60 litre	100010 100 bar, 10 litre	064025 64 bar, 25 litre	025068 25 bar, 68 litre	PVT Liquid End Maximum 25 Bar		
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T	PTFE seal																					
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<table border="1"> <tr> <td colspan="2">Version:</td> </tr> <tr> <td>0</td> <td>With ProMinent® logo</td> </tr> <tr> <td>1</td> <td>Without ProMinent® logo</td> </tr> </table>		Version:		0	With ProMinent® logo	1	Without ProMinent® logo															
Version:																						
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<table border="1"> <tr> <td colspan="2">Power supply:</td> </tr> <tr> <td>S</td> <td>3 ph. 230 V/400 V 50/60 Hz, 0.37kW</td> </tr> <tr> <td>L</td> <td>3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating</td> </tr> <tr> <td>P</td> <td>3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating</td> </tr> <tr> <td>R</td> <td>3ph, variable speed motor 4 pol. 230/400 V</td> </tr> <tr> <td>V (0)</td> <td>var. speed motor with integral speed control 230/1/50</td> </tr> <tr> <td>V (2)</td> <td>var. speed motor with integral speed control Exd</td> </tr> </table>		Power supply:		S	3 ph. 230 V/400 V 50/60 Hz, 0.37kW	L	3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating	P	3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating	R	3ph, variable speed motor 4 pol. 230/400 V	V (0)	var. speed motor with integral speed control 230/1/50	V (2)	var. speed motor with integral speed control Exd							
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V (0)	var. speed motor with integral speed control 230/1/50																					
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<table border="1"> <tr> <td colspan="2">Enclosure rating:</td> </tr> <tr> <td>0</td> <td>IP 55</td> </tr> <tr> <td>1</td> <td>Exe motor version (ATEX-T3)</td> </tr> <tr> <td>2</td> <td>Exde motor version (ATEX-T4)</td> </tr> </table>		Enclosure rating:		0	IP 55	1	Exe motor version (ATEX-T3)	2	Exde motor version (ATEX-T4)													
Enclosure rating:																						
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1	Exe motor version (ATEX-T3)																					
2	Exde motor version (ATEX-T4)																					
<table border="1"> <tr> <td colspan="2">Stroke sensor:</td> </tr> <tr> <td>0</td> <td>No stroke sensor (standard)</td> </tr> <tr> <td>1</td> <td>Stroke sensor for explosion-proof applications</td> </tr> </table>		Stroke sensor:		0	No stroke sensor (standard)	1	Stroke sensor for explosion-proof applications															
Stroke sensor:																						
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<table border="1"> <tr> <td colspan="2">Stroke length adjustment:</td> </tr> <tr> <td>0</td> <td>Manual (standard)</td> </tr> <tr> <td>1</td> <td>With stroke positioning motor, 230V/50/60Hz</td> </tr> <tr> <td>2</td> <td>With stroke positioning motor, 115V/60Hz</td> </tr> <tr> <td>B</td> <td>With stroke control motor, 4...20 mA 230 V/50/60Hz</td> </tr> <tr> <td>D</td> <td>With stroke control motor, 4...20 mA 115 V/50/60Hz</td> </tr> </table>		Stroke length adjustment:		0	Manual (standard)	1	With stroke positioning motor, 230V/50/60Hz	2	With stroke positioning motor, 115V/60Hz	B	With stroke control motor, 4...20 mA 230 V/50/60Hz	D	With stroke control motor, 4...20 mA 115 V/50/60Hz									
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0	Manual (standard)																					
1	With stroke positioning motor, 230V/50/60Hz																					
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B	With stroke control motor, 4...20 mA 230 V/50/60Hz																					
D	With stroke control motor, 4...20 mA 115 V/50/60Hz																					
<table border="1"> <tr> <td colspan="2">Hydraulic oil:</td> </tr> <tr> <td>0</td> <td>Standard</td> </tr> <tr> <td>1</td> <td>Food products grade</td> </tr> <tr> <td>2</td> <td>Temp. < 10 °C</td> </tr> </table>		Hydraulic oil:		0	Standard	1	Food products grade	2	Temp. < 10 °C													
Hydraulic oil:																						
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<table border="1"> <tr> <td colspan="2">Prepack Option</td> </tr> <tr> <td>P*</td> <td>See options</td> </tr> </table>		Prepack Option		P*	See options																	
Prepack Option																						
P*	See options																					

Prepack option P* for PVDF
 P0 - 064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 1/2" Male BSPT PVDF adaptor

for SS
 064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 3/8" Female BSP insert and union nut

HP2a H 025060 SS T 0 0 0 0 S 0 0 0 0 P1

2.6 ProMinent® Hydro/ 2 - Double Head Hydraulic Diaphragm Metering Pumps

2.6.3 Identity Code Ordering System For Hydro/ 2 - Double Head

HP2a

Hydro/ 2

NOTE: Capacities shown are per Head

D	Main power end, duplexed		
	Pump type:	Pump type:	Pump type:
	100003 100 bar, 3 litre	064007 64 bar, 7 litre	025019 25 bar, 19 litre x 2
	100006 100 bar, 6 litre	064015 64 bar, 15 litre	025040 25 bar, 40 litre x 2
	100007 100 bar, 7 litre	064018 64 bar, 18 litre	025048 25 bar, 48 litre x 2
	100009 100 bar, 9 litre	064022 64 bar, 22 litre	025060 25 bar, 60 litre x 2
	100010 100 bar, 10 litre	064025 64 bar, 25 litre	025068 25 bar, 68 litre x 2
	PVT Liquid End Maximum 25 Bar		
	Liquid end material:		
	PV PVDF		
	SS Stainless steel		
	HC Hastalloy C		
	Seal material:		
	T PTFE seal		
	Positive displacement element:		
	0 Standard multi-layer diaphragm with rupture protection signal		
	Liquid end version:		
	0 No valve springs		
	1 With valve springs		
	D Double ball valve		
	H HV-Version (only for PVDF version 025019-025060)		
	Hydraulic connector:		
	0 Standard threaded connector <i>SEE NOTE IN BOX BELOW</i>		
	E With DIN ISO flange		
	F With ANSI flange		
	Version:		
	0 With ProMinent® logo		
	1 Without ProMinent® logo		
	Power supply:		
	S 3 ph. 230 V/400 V 50/60 Hz, 0.37kW		
	L 3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating		
	P 3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating		
	R 3ph, variable speed motor 4 pol. 230/400 V		
	V (0) var. speed motor with integral speed control 230/1/50		
	V (2) var. speed motor with integral speed control Exd		
	Enclosure rating:		
	0 IP 55		
	1 Exe motor version (ATEX-T3)		
	2 Exde motor version (ATEX-T4)		
	Stroke sensor:		
	0 No stroke sensor (standard)		
	1 Stroke sensor for explosion-proof applications		
	Stroke length adjustment:		
	0 Manual (standard)		
	1 With stroke positioning motor, 230V/50/60Hz		
	2 With stroke positioning motor, 115V/60Hz		
	B With stroke control motor, 4...20 mA 230 V/50/60Hz		
	D With stroke control motor, 4...20 mA 115 V/50/60Hz		
	Hydraulic oil:		
	0 Standard		
	1 Food products grade		
	2 Temp. < 10 °C		
	Prepack Option		
	P* See options		

Prepack option P* for PVDF
 P0 - 064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 1/2" Male BSPT PVDF adaptor

for SS
 064007 - 064015 - 064018 - 064022 - 064025
 025019 - 025040 - 025048 - 025060 - 025068
 3/8" Female BSP insert and union nut

HP2a D 025060 SS T 0 0 0 0 S 0 0 0 0 P1

2.6 ProMinent® Hydro/ 3 - Single Head Hydraulic Diaphragm Metering Pumps

2.6.4 Identity Code Ordering System For Hydro/ 3 - Single Head

HP3a

Hydro/ 3

H Main power end

Pump type:		Pump type:		Pump type:	
100010	100 bar, 10 litre	064019	64 bar, 19 litre	025048	25 bar, 48 litre
100021	100 bar, 21 litre	064040	64 bar, 40 litre	025100	25 bar, 100 litre
100025	100 bar, 25 litre	064048	64 bar, 48 litre	025120	25 bar, 120 litre
100031	100 bar, 31 litre	064060	64 bar, 60 litre	025150	25 bar, 150 litre
100035	100 bar, 35 litre	064068	64 bar, 68 litre	025170	25 bar, 170 litre

PVT Liquid End Maximum 25 Bar

Liquid end material:	
PV	PVDF
SS	Stainless steel
HC	Hastalloy C

Seal material:	
T	PTFE seal

Positive displacement element:	
0	Standard multi-layer diaphragm with rupture protection signal

Liquid end version:	
0	No valve springs
1	With valve springs
D	Double ball valve
H	HV-Version (only for PVDF version)

Hydraulic connector:	
0	Standard threaded connector SEE NOTE IN BOX BELOW
E	With DIN ISO flange
F	With ANSI flange

Version:	
0	With ProMinent® logo
1	Without ProMinent® logo

Power supply:	
S	3 ph. 230 V/400 V 50/60 Hz, 0.75kW
L	3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating
P	3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating
R	3ph, variable speed motor 4 pol. 230/400 V
V (0)	var. speed motor with integral speed control 230/1/50
V (2)	var. speed motor with integral speed control Exd

Enclosure rating:	
0	IP 55
1	Exe motor version (ATEX-T3)
2	Exde motor version (ATEX-T4)

Stroke sensor:	
0	No stroke sensor (standard)
1	Stroke sensor for explosion-proof applications

Stroke length adjustment:	
0	Manual (standard)
1	With stroke positioning motor, 230V/50/60Hz
2	With stroke positioning motor, 115V/60Hz
B	With stroke control motor, 4...20 mA 230 V/50/60Hz
D	With stroke control motor, 4...20 mA 115 V/50/60Hz

Hydraulic oil:	
0	Standard
1	Food products grade
2	Temp. < 10 °C

Prepack Option	
P*	See options

Prepack option P* for PVDF

P0 - 064019 - 064040 - 064048 - 064060 - 064068
 1/2" Male BSPT PVDF adaptor
 025048 - 025100 - 025120 - 025150 - 025170
 3/4" Male BSPT PVDF adaptor

for SS

064019 - 064040 - 064048 - 064060 - 064068
 3/8" Female BSP insert and union nut
 025048 - 025100 - 025120 - 025150 - 025170
 1/2" Female BSP insert and union nut

HP3a H 100035 SS T 0 0 0 0 S 0 0 0 0 P1

2.6 ProMinent® Hydro/ 3 - Double Head Hydraulic Diaphragm Metering Pumps

2.6.5 Identity Code Ordering System For Hydro/ 3 - Double Head

HP3a Hydro/ 3 **NOTE: Capacities shown are per Head**

D	Main power end, duplexed		
	Pump type:	Pump type:	Pump type:
	100010 100 bar, 10 litre	064019 64 bar, 19 litre	025048 25 bar, 48 litre x 2
	100021 100 bar, 21 litre	064040 64 bar, 40 litre	025100 25 bar, 100 litre x 2
	100025 100 bar, 25 litre	064048 64 bar, 48 litre	025120 25 bar, 120 litre x 2
	100031 100 bar, 31 litre	064060 64 bar, 60 litre	025150 25 bar, 150 litre x 2
	100035 100 bar, 35 litre	064068 64 bar, 68 litre	025170 25 bar, 170 litre x 2
	PVT Liquid End Maximum 25 Bar		
	Liquid end material:		
	PV PVDF		
	SS Stainless steel		
	HC Hastalloy C		
	Seal material:		
	T PTFE seal		
	Positive displacement element:		
	0 Standard multi-layer diaphragm with rupture protection signal		
	Liquid end version:		
	0 No valve springs		
	1 With valve springs		
	D Double ball valve		
	H HV-Version (only for PVDF version)		
	Hydraulic connector:		
	0 Standard threaded connector <i>SEE NOTE IN BOX BELOW</i>		
	E With DIN ISO flange		
	F With ANSI flange		
	Version:		
	0 With ProMinent® logo		
	1 Without ProMinent® logo		
	Power supply:		
	S 3 ph. 230 V/400 V 50/60 Hz, 0.75kW		
	L 3 ph. 230 V/400 V 50 Hz (EExe, EExde) } See Enclosure Rating		
	P 3 ph. 230 V/400 V 60 Hz (EExe, EExde) } See Enclosure Rating		
	R 3ph, variable speed motor 4 pol. 230/400 V		
	V (0) var. speed motor with integral speed control 230/1/50		
	V (2) var. speed motor with integral speed control Exd		
	Enclosure rating:		
	0 IP 55		
	1 Exe motor version (ATEX-T3)		
	2 Exde motor version (ATEX-T4)		
	Stroke sensor:		
	0 No stroke sensor (standard)		
	1 Stroke sensor for explosion-proof applications		
	Stroke length adjustment:		
	0 Manual (standard)		
	1 With stroke positioning motor, 230V/50/60Hz		
	2 With stroke positioning motor, 115V/60Hz		
	B With stroke control motor, 4...20 mA 230 V/50/60Hz		
	D With stroke control motor, 4...20 mA 115 V/50/60Hz		
	Hydraulic oil:		
	0 Standard		
	1 Food products grade		
	2 Temp. < 10 °C		
	Prepack Option P*		
	Prepack option P* for PVDF		
	P0 - 064019 - 064040 - 064048 - 064060 - 064068		
	1/2" Male BSPT PVDF adaptor		
	025048 - 025100 - 025120 - 025150 - 025170		
	3/4" Male BSPT PVDF adaptor		
	for SS		
	064019 - 064040 - 064048 - 064060 - 064068		
	3/8" Female BSP insert and union nut		
	025048 - 025100 - 025120 - 025150 - 025170		
	1/2" Female BSP insert and union nut		

Prepack option P* for PVDF
P0 - 064019 - 064040 - 064048 - 064060 - 064068
 1/2" Male BSPT PVDF adaptor
 025048 - 025100 - 025120 - 025150 - 025170
 3/4" Male BSPT PVDF adaptor

for SS
 064019 - 064040 - 064048 - 064060 - 064068
 3/8" Female BSP insert and union nut
 025048 - 025100 - 025120 - 025150 - 025170
 1/2" Female BSP insert and union nut

HP3a D 025120 SS T 0 0 0 0 S 0 0 0 0 P1

2.6 ProMinent® Hydro/ 4 - Single Head Hydraulic Diaphragm Metering Pumps

2.6.6

Hydro/ 4 Technical Data

Type HP4aH	With motor 1500 rpm			With motor 1800 rpm			Suction height	Perm. admiss. pressure suction side	Connec- tion on suction/ pressure side	Shipping weight
	bar	Delivery rate	Max. stroke rate	psi	Delivery rate	Max. stroke rate				
		at max. backpressure	at 50 Hz		at max. backpressure	at 60 Hz				
		l/h	strokes/min		l/h	strokes/min	mWC	bar	G-DN	kg
250130	25	130	71	363	155	86	3	1	1-1/2" 25	69
250190	25	190	103	363	230	124	3	1	1-1/2" 25	69
250250	25	250	136	363	300	164	3	1	1-1/2" 25	69
250350	25	350	188	363	420	225	3	1	1-1/2" 25	69
250400	25	400	214	-	-	-	3	1	1-1/2" 25	69
160210	16	210	71	232	250	86	3	1	1-1/2" 25	76
160300	16	300	103	232	360	124	3	1	1-1/2" 25	76
160400	16	400	136	232	480	164	3	1	1-1/2" 25	76
160550	16	550	188	232	660	225	3	1	1-1/2" 25	76
160625	16	625	214	-	-	-	3	1	1-1/2" 25	76
100330	10	330	71	145	400	86	3	1	2" 32	87
100480	10	480	103	145	580	124	3	1	2" 32	87
100635	10	635	136	145	760	164	3	1	2" 32	87
100880	10	880	188	145	1050	225	3	1	2" 32	87
101000	10	1000	214	-	-	-	3	1	2" 32	87
070465	7	465	71	102	560	86	3	1	2-1/4" 40	96
070670	7	670	103	102	805	124	3	1	2-1/4" 40	96
070890	7	890	136	102	1070	164	3	1	2-1/4" 40	96
071230	7	1230	188	102	1450	225	3	1	2-1/4" 40	96
071400	7	1400	214	-	-	-	3	1	2-1/4" 40	96

Material in contact with media

Material	Liquid End	Suction/Discharge connector	Seals/ball seat	Valve Balls
SST	stainless steel 1.4404	stainless steel no. 1.4401	PTFE/PTFE	stainless steel 1.4404
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	glass
HCT	Hast. C	Hast. C	PTFE/PTFE	Hast. C

DN32 and DN40 plate valves		Suction/Discharge connector	Seals/seats	Valve plates	Springs
Material	Liquid End	stainless steel no. 1.4401	PTFE/PTFE	stainless steel 1.4404	Hast. C
SST	stainless steel 1.4404	stainless steel no. 1.4401	PTFE/PTFE	stainless steel 1.4404	Hast. C
PVT	PVDF (Polyvinylidenfluoride)	PVDF (Polyvinylidenfluoride)	PTFE/PTFE	ceramic	C-CTFE
HCT	Hast. C	Hast. C	PTFE/PTFE	Hast. C	C-CTFE

Motor Data

Identity code	Power supply	Remarks
S 3 ph, IP 55	220-240 V/380-420 V 50 Hz 1.1 kW 250-280 V/440-480 V 60 Hz	
T 3 ph, IP 55	220-240 V/380-420 V 50 Hz 1.1 kW 265-280 V/440-480 V 60 Hz	With PTC, speed control range 1:5
R 3 ph, IP 55	230V/400 V 50/60 Hz 1.5 kW	With PTC, speed control range 1:20, with external fan 1 ph 230 V; 50/60 Hz
V0 3 ph, IP 55	400 V 50/60 Hz 1.5 kW	Variable speed motor w/integrated frequency converter
L1 3 ph, II2GEEexIICT3	220-240 V/380-420 V 50 Hz 1.1 kW	
L2 3 ph, II2GEEexIICT4	220-240 V/380-420 V 50 Hz 1.1 kW	With PTC, speed control range 1:5
P1 3 ph, II2GEEexIICT3	254-277 V/440-480 V 60 Hz 1.1 kW	
P2 3 ph, II2GEEexIICT4	254-277 V/440-480 V 60 Hz 1.1 kW	With PTC, speed control range 1:5
V2 3 ph, II2GEEexIICT4	400 V ±10 % 50/60 Hz 1.5 kW	Ex-variable speed motor with integrated frequency converter

Motor data sheets can be requested for more information.

Special motors or special motor flanges are available on request.

The motors are designed in compliance with the Ecodesign Directive 2005/32/EC (IE2 standard).

Information for use in areas at risk from explosion

Only use pumps with the appropriate labelling in line with the ATEX Directive 94/9/EC in premises at risk from explosion. Ensure that the explosion group, category and degree of protection specified on the label corresponds to or is better than the conditions prevalent in the intended field of application.

2.6 ProMinent® Hydro/ 4 - Single Head Hydraulic Diaphragm Metering Pumps

2.6.7 Identity Code Ordering System For Hydro/ 4 - Single Head

HP4a

Hydro/ 4

H		Main power end	
Pump type:		Pump type:	
250130	25 bar, 130 l/h	PVT	160210 16 bar, 210 l/h
250190	25 bar, 190 l/h	SS	160300 16 bar, 300 l/h
250250	25 bar, 250 l/h		160400 16 bar, 400 l/h
250350	25 bar, 350 l/h		160550 16 bar, 550 l/h
250400	25 bar, 400 l/h		160625 16 bar, 625 l/h
Liquid end material:		Liquid end version:	
PV	PVDF	0	No valve springs
SS	Stainless steel	1	With valve springs DN32 and DN40
HC	Hastalloy C <i>Price on Application</i>	Hydraulic connector:	
Seal material:		0	Standard threaded connector
T	PTFE seal	E	With DIN ISO flange
Positive displacement element:		F	With ANSI flange
0	Standard multi-layer diaphragm with rupture protection signal	Version:	
Liquid end version:		0	With ProMinent® logo, with overpressure signal
0	No valve springs	1	Without ProMinent® logo, with overpressure signal
1	With valve springs DN32 and DN40	M	Modified
Power supply:		Enclosure rating:	
S	3 ph. 230 V/400 V 50/60 Hz, 1.1kw	0	IP 55
L	3 ph. 230 V/400 V 50 Hz (Exe, Exd) } See Enclosure Rating	1	Exe motor version (ATEX-T3)
P	3 ph. 230 V/400 V 60 Hz (Exe, Exd) } See Enclosure Rating	2	Exde motor version (ATEX-T4)
R	3ph, variable speed motor 4 pol. 230/400 V 1.5 kw	Stroke sensor:	
V (0)	var. speed motor with integral speed control	0	No stroke sensor (standard)
V (2)	var. speed motor with integral speed control Exd	1	Stroke sensor for explosion-proof applications
Stroke length adjustment:		Hydraulic oil:	
0	Manual (standard)	0	Standard
1	With stroke positioning motor, 230V/50/60Hz	1	Food products grade
2	With stroke positioning motor, 115V/60Hz	2	Low Temp. to -25 °C
B	With stroke control motor, 4...20 mA 230 V/50/60Hz	Hydraulic oil:	
D	With stroke control motor, 4...20 mA 115 V/50/60Hz	P*	
Hydraulic oil:		See options	
0	Standard		
1	Food products grade		
2	Low Temp. to -25 °C		

Prepack option P* for PVDF
P0 - 250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Male BSPT PVDF adaptor
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/2" Male BSPT SS Insert and Union Nut

for SS
 250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Male BSPT PVDF adaptor
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/2" Male BSPT SS Insert and Union Nut

HP4a H 025130 SS T 0 0 0 0 S 0 0 0 0 P1

2.6 ProMinent® Hydro/ 4 - Double Head Hydraulic Diaphragm Metering Pumps



2.6.8 Identity Code Ordering System For Hydro/ 4 - Double Head

HP4a Hydro/ 4 *NOTE: Capacities shown are per Head*

D Main power end Double Head V\version

Pump type:			Pump type:		
250130	25 bar, 130 l/h	PVT	160210	16 bar, 210 l/h	PVT
250190	25 bar, 190 l/h	SS	160300	16 bar, 300 l/h	SS
250250	25 bar, 250 l/h		160400	16 bar, 400 l/h	
250350	25 bar, 350 l/h		160550	16 bar, 550 l/h	
250400	25 bar, 400 l/h		160625	16 bar, 625 l/h	
100330	10 bar, 330 l/h	PVT	070465	7 bar, 465 l/h	PVT
100480	10 bar, 480 l/h	SS	070670	7 bar, 670 l/h	SS
100635	10 bar, 625 l/h		070890	7 bar, 890 l/h	
100880	10 bar, 880 l/h		071230	7 bar, 1230 l/h	
101000	10 bar, 1000 l/h		071400	7 bar, 1400 l/h	

Liquid end material:	
PV	PVDF
SS	Stainless steel
HC	Hastalloy C <i>Price on Application</i>

Seal material:	
T	PTFE seal

Positive displacement element:	
0	Standard multi-layer diaphragm with rupture protection signal

Liquid end version:	
0	No valve springs
1	With valve springs DN32 and DN40

Hydraulic connector:	
0	Standard threaded connector
E	With DIN ISO flange
F	With ANSI flange

Version:	
0	With ProMinent® logo, with overpressure signal
1	Without ProMinent® logo, with overpressure signal
M	Modified

Power supply:	
S	3 ph. 230 V/400 V 50/60 Hz, 1.1kw
L	3 ph. 230 V/400 V 50 Hz (Exe, Exd) } See Enclosure Rating
P	3 ph. 230 V/400 V 60 Hz (Exe, Exd) } See Enclosure Rating
R	3ph, variable speed motor 4 pol. 230/400 V 1.5 kw
V (0)	var. speed motor with integral speed control
V (2)	var. speed motor with integral speed control Exd

Enclosure rating:	
0	IP 55
1	Exe motor version (ATEX-T3)
2	Exde motor version (ATEX-T4)

Stroke sensor:	
0	No stroke sensor (standard)
1	Stroke sensor for explosion-proof applications

Stroke length adjustment:	
0	Manual (standard)
1	With stroke positioning motor, 230V/50/60Hz
2	With stroke positioning motor, 115V/60Hz
B	With stroke control motor, 4...20 mA 230 V/50/60Hz
D	With stroke control motor, 4...20 mA 115 V/50/60Hz

Hydraulic oil:	
0	Standard
1	Food products grade
2	Low Temp. to -25 °C

Hydraulic oil:	
P*	See options

Prepack option P* for PVDF
P0 - 250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Male BSPT PVDF adaptor
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/2" Male BSPT SS Insert and Union Nut
for SS
 250130 - 250190 - 250250 - 250350 - 250400
 160210 - 160300 - 160400 - 160550 - 160625
 1" Male BSPT PVDF adaptor
 100330 - 100480 - 100635 - 100880 - 101000
 1-1/2" Male BSPT SS Insert and Union Nut

HP4a H 025130 SS T 0 0 0 0 S 0 0 0 0 P1

2.6 ProMinent® Hydro/ Spare Parts Kits Hydraulic Diaphragm Metering Pumps

2.6.9

Spare Parts Kits

The spare parts kits generally contain the consumable components for the liquid ends.

Supplied as standard for SST material version

- 1 dosing diaphragm
- 2 valve balls
- 1 seal set

Supplied as standard for PVT material version

- 1 dosing diaphragm
- 1 suction connector set
- 1 discharge connector set
- 2 valve balls
- 1 seal set

Spare parts kits Hydro/ 2

Applies to identity code:

Type 100010, 100009, 100007, 100006, 100003,
064025, 064022, 064018, 064015, 064007,

FMH 25 - DN 10		Part No.
	PVT	1005548
	SST	1005549
	SST (with 2 valve set)	1005550

Applies to identity code:

Type 025068, 025060, 025048, 025040, 025019

FMH 60 - DN 10		Part No.
	PVT	1005552
	SST	1005553
	SST (with 2 valve set)	1005554

Spare parts kits Hydro/ 3

Applies to identity code:

Type 100035, 100031, 100025, 100021, 100010, 064068,
064060, 064048, 064040, 064019

FMH 60 - DN 10		Part No.
	PVT	1005552
	SST	1005553
	SST (with 2 valve set)	1005554

Applies to identity code:

Type 025170, 025150, 025120, 025100, 025048

FMH 150 - DN 15		Part No.
	PVT	1005556
	SST	1005557
	SST (with 2 valve set)	1005558

Pump Diaphragms PTFE/SS - 1.4404

FMH 25 applies to identity code:

Type 100010, 100009, 100007, 100006, 100003,
064025, 064022, 064018, 064015, 064007,

FMH 25	Part No.
	1005545

FMH 60 applies to identity code:

Type 025068, 025060, 025048, 025040, 025019,
100035, 100031, 100025, 100021, 100010, 064068,
064060, 064048, 064040, 064019

	1005546
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FMH 150 applies to identity code:

025150, 025120, 025100, 025048

	1005547
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Pump Diaphragms PTFE/Hastalloy C covered with PTFE

FMH 25 applies to identity code:

064025, 064022, 064018, 064015, 064007

FMH 25	Part No.
	1006481

FMH 60 applies to identity code:

025068, 025060, 025048, 025040, 025019,
064068, 064060, 064048, 064040, 064019

	1006482
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FMH 150 applies to identity code:

025170, 025150, 025120, 025100, 025048

	1006483
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2.6 ProMinent® Hydro/ Spare Parts Kits Hydraulic Diaphragm Metering Pumps

2.6.10

Spare Parts Kits

Spare parts kits Hydro/ 4

Applies to identity code:

Type 250130, 250190, 250250, 250350, 250400

	Part No.
FMH 400 - DN 25 PVT	1023057
SST	1040812
SST (with 2 valve set)	1040813

Applies to identity code:

Type 160210, 160300, 160400, 160550, 160625

FMH 625 - DN 32 PVT	1040863
SST	1040824
SST (with 2 valve set)	1040825

Applies to identity code:

Type 100330, 100480, 100635, 100880, 101000

FMH 1000 - DN 32 PVT	1040866
SST	1040826
SST (with 2 valve set)	1040827

Applies to identity code:

Type 070465, 070670, 070890, 071230, 071400

FMH 1400 - DN 40 PVT	1040869
SST	1040828
SST (with 2 valve set)	1040829

Hydro /4 Diaphragm PTFE/1.4404

	Part No.
Type 250130, 250190, 250250, 250350, 250400	1040808
Type 160210, 160300, 160400, 160550, 160625	1040809
Type 100330, 100480, 100635, 100880, 101000	1040810
Type 070465, 070670, 070890, 071230, 071400	1040811

Hydro /4 Diaphragm PTFE/Hast.C coated

	Part No.
Type 250130, 250190, 250250, 250350, 250400	1040874
Type 160210, 160300, 160400, 160550, 160625	1040875
Type 100330, 100480, 100635, 100880, 101000	1040876
Type 070465, 070670, 070890, 071230, 071400	1040877