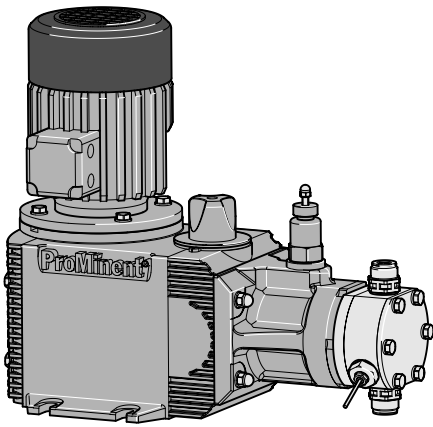


# 2.6 ProMinent® Hydro Hydraulic Diaphragm Metering Pumps

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  $\pm 1$  % in a stroke length range of between 20 and 100 % (instructions in the operating instructions manual must be followed precisely).

### Hydro double-head version

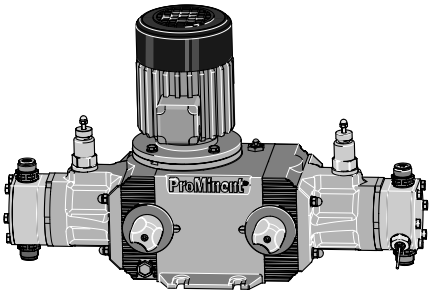
The double-head version is fitted with a second liquid end which operates on a push-pull action (Boxer principle). Each liquid end is provided with a separate stroke length-adjusting knob so that each liquid end can operate at an independent feed rate.

### 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 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	Delivery rate at max. backpressure psi	l/h / gph	Max. stroke rate strokes/min					
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. pressure at max. bar	Connec- tion on suction/ pressure side G-DN	Shipping weight kg
	backpressure bar	Delivery rate at max. stroke l/h ml/stroke	Max. Delivery rate stroke rate strokes/min	Delivery rate at max. backpressure psi	l/h / gph	Max. stroke rate strokes/min					
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

## 2.6.1 Identity Code Ordering System For Hydro/ 2 - Single Head

**HP2a**

**Hydro/ 2**

H	Main power end																					
<table border="1" style="width: 100%;"> <tr> <td><b>Pump type:</b></td> <td><b>Pump type:</b></td> <td><b>Pump type:</b></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" style="text-align: center;"><b>PVT Liquid End Maximum 25 Bar</b></td> </tr> </table>		<b>Pump type:</b>	<b>Pump type:</b>	<b>Pump type:</b>	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	<b>PVT Liquid End Maximum 25 Bar</b>		
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<table border="1" style="width: 100%;"> <tr> <td colspan="2"><b>Enclosure rating:</b></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>		<b>Enclosure rating:</b>		0	IP 55	1	Exe motor version (ATEX-T3)	2	Exde motor version (ATEX-T4)													
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<table border="1" style="width: 100%;"> <tr> <td colspan="2"><b>Stroke sensor:</b></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>		<b>Stroke sensor:</b>		0	No stroke sensor (standard)	1	Stroke sensor for explosion-proof applications															
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<table border="1" style="width: 100%;"> <tr> <td colspan="2"><b>Hydraulic oil:</b></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. &lt; 10 °C</td> </tr> </table>		<b>Hydraulic oil:</b>		0	Standard	1	Food products grade	2	Temp. < 10 °C													
<b>Hydraulic oil:</b>																						
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2	Temp. < 10 °C																					

S.S. Union with  $\frac{3}{8}$ " BSPF  
 PVT Union with  $\frac{1}{2}$ " BSPM  
**Note: for PVT pumps ONLY use PVT Injection valves etc.**

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

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

## 2.6.2 Identity Code Ordering System For Hydro/ 2 - Double Head

HP2a

Hydro/ 2

<b>D</b>	<b>Main power end, duplexed</b>		
	<b>Pump type:</b>	<b>Pump type:</b>	<b>Pump type:</b>
	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
	<b>PVT Liquid End Maximum 25 Bar</b>		
	<b>Liquid end material:</b>		
	PV PVDF		
	SS Stainless steel		
	HC Hastalloy C		
	<b>Seal material:</b>		
	T PTFE seal		
	<b>Positive displacement element:</b>		
	0 Standard multi-layer diaphragm with rupture protection signal		
	<b>Liquid end version:</b>		
	0 No valve springs		
	1 With valve springs		
	D Double ball valve		
	H HV-Version (only for PVDF version 025019-025060)		
	<b>Hydraulic connector:</b>		
	0 Standard threaded connector <i>SEE NOTE IN BOX BELOW</i>		
	E With DIN ISO flange		
	F With ANSI flange		
	<b>Version:</b>		
	0 With ProMinent® logo		
	1 Without ProMinent® logo		
	<b>Power supply:</b>		
	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		
	<b>Enclosure rating:</b>		
	0 IP 55		
	1 Exe motor version (ATEX-T3)		
	2 Exde motor version (ATEX-T4)		
	<b>Stroke sensor:</b>		
	0 No stroke sensor (standard)		
	1 Stroke sensor for explosion-proof applications		
	<b>Stroke length adjustment:</b>		
	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		
	<b>Hydraulic oil:</b>		
	0 Standard		
	1 Food products grade		
	2 Temp. < 10 °C		

S.S. Union with 3/8" BSPF  
 PVT Union with 1/2" BSPM  
**Note: for PVT pumps ONLY use PVT Injection valves etc.**

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

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

## 2.6.3 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
4	With stroke control motor, 4...20 mA 230 V/50/60Hz
6	With stroke control motor, 4...20 mA 115 V/50/60Hz

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

**100010 - 064068**  
 S.S. Union with 3/8" BSPF  
 PVT Union with 1/2" BSPM  
**Note: for PVT pumps ONLY use PVT Injection valves etc.**  
**025048 - 025170**  
 S.S. Union with 1/2" BSPF  
 PVT Union with 3/4" BSPM  
**Note: for PVT pumps ONLY use PVT Injection valves etc.**

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

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

## 2.6.4 Identity Code Ordering System For Hydro/ 3 - Double Head

HP3a

Hydro/ 3

<b>D</b>	<b>Main power end, duplexed</b>		
	<b>Pump type:</b>	<b>Pump type:</b>	<b>Pump type:</b>
	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
	<b>PVT Liquid End Maximum 25 Bar</b>		
	<b>Liquid end material:</b>		
	PV PVDF		
	SS Stainless steel		
	HC Hastalloy C		
	<b>Seal material:</b>		
	T PTFE seal		
	<b>Positive displacement element:</b>		
	0 Standard multi-layer diaphragm with rupture protection signal		
	<b>Liquid end version:</b>		
	0 No valve springs		
	1 With valve springs		
	D Double ball valve		
	H HV-Version (only for PVDF version)		
	<b>Hydraulic connector:</b>		
	0 Standard threaded connector <i>SEE NOTE IN BOX BELOW</i>		
	E With DIN ISO flange		
	F With ANSI flange		
	<b>Version:</b>		
	0 With ProMinent® logo		
	1 Without ProMinent® logo		
	<b>Power supply:</b>		
	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		
	<b>Enclosure rating:</b>		
	0 IP 55		
	1 Exe motor version (ATEX-T3)		
	2 Exde motor version (ATEX-T4)		
	<b>Stroke sensor:</b>		
	0 No stroke sensor (standard)		
	1 Stroke sensor for explosion-proof applications		
	<b>Stroke length adjustment:</b>		
	0 Manual (standard)		
	1 With stroke positioning motor, 230V/50/60Hz		
	2 With stroke positioning motor, 115V/60Hz		
	4 With stroke control motor, 4...20 mA 230 V/50/60Hz		
	6 With stroke control motor, 4...20 mA 115 V/50/60Hz		
	<b>Hydraulic oil:</b>		
	0 Standard		
	1 Food products grade		
	2 Temp. < 10 °C		

**100010 - 064068**  
 S.S. Union with 3/8" BSPF  
 PVT Union with 1/2" BSPM  
**Note: for PVT pumps ONLY use PVT Injection valves etc.**

**025048 - 025170**  
 S.S. Union with 1/2" BSPF  
 PVT Union with 3/4" BSPM  
**Note: for PVT pumps ONLY use PVT Injection valves etc.**

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

# 2.6 ProMinent® Hydro/ 2 & Hydro/ 3 Hydraulic Diaphragm Metering Pumps

## 2.6.5

### 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	PVT	Part No.
	SST	1005548.
	SST (with 2 valve set)	1005549.
		1005550.

Applies to identity code:

Type 025068, 025060, 025048, 025040, 025019

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

Applies to identity code:

Type 025170, 025150, 025120, 025100, 025048

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

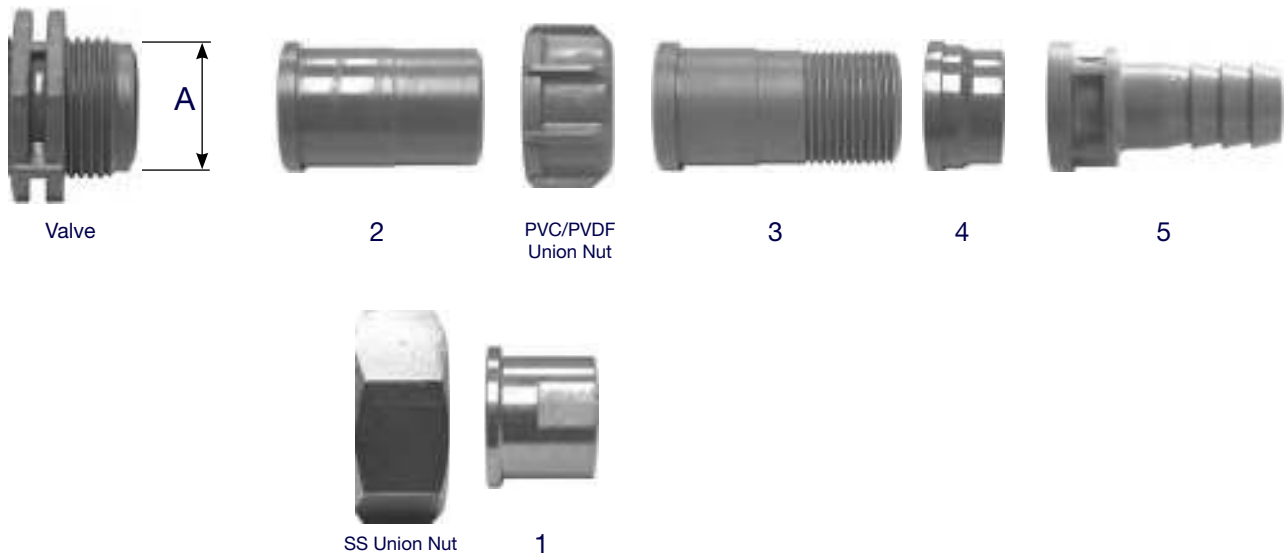
FMH 150 applies to identity code:

025170, 025150, 025120, 025100, 025048

	1006483.
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## 2.6 ProMinent® Adaptor Sizes for Motor Pumps

### Adaptor Sizes



### Standard Sizes & Fittings for Motor Driven Pumps

			1	2	3	4	5
Size	'A' Actual dia.	'A'	SSF Socket	SWM PVC	BSPM PVC/PVDF	SWF PVC	Hosetail PVC/PVDF
DN10	21.3 mm	3/4"	3/8" BSP	15 NB	1/2"		16 mm
DN15	32.8 mm	1"	1/2" BSP	20 NB	3/4"		20 mm
DN20	41.6 mm	1-1/4"	3/4" BSP	25 NB	1"		25 mm
DN25	47.5 mm	1-1/2"	1" BSP	25 NB	1"		25 mm
DN32	58.8 mm	2"	1-1/4" BSP		1-1/2"	32 NB	32 mm
DN40	65.1 mm	2-1/4"	1-1/2" BSP				

		Suction Discharge	PRV
Sigma/ 1	12017 12035 10050	DN10	16 mm
	10022 10044 07065	DN10	16 mm
	07042 04084 04120	DN15	16 mm
Sigma/ 2	12050 12090 12130	DN15	16 mm
	07120 07220 04350	DN 25	16 mm
Sigma/ 3	120145 120190 120270 120330	DN25	DN10
	070410 070580 040830 041030	DN32	DN20
Hydro/ 2	ALL	DN10	
Hydro/ 3	ALL 100 bar & 64 bar pumps	DN10	
	ALL 25 bar pumps	DN15	