

# Side Channel Pumps

Self-priming, segmental type



SIHI® Pumps

## AEH

Sizes 1201 ... 6108

### Technical data

Capacity:	max. 35 m <sup>3</sup> /h
Delivery head:	max. 348 m
Speed:	max. 1800 1/min
Temperature:	max. 120 °C max. 180 °C for high temperature design (higher temperature upon request)
Casing pressure:	PN 40
Shaft sealing:	Stuffing box or mechanical seal
Flange connection:	DIN 2501 / PN 40
Direction of rotation:	clockwise (when seen from the drive end)



### Application

The SIHI AEH pump is a self-priming side channel pump capable of handling gas along with the medium. The AEH is a Side Channel pump as per **DIN EN 734** and operates at a low noise level.

The AEH pumps were especially developed for difficult applications in all industry sectors and are thus applied when pure, turbid or aggressive media have to be pumped under difficult conditions without any problems.

The different material possibilities with uniform dimensions and performance characteristics as well as the standard exchangeable components, make the AEH particularly recommendable as universal pump for all possible pumping problems. This results in a wide application range in many sectors such as:

- Chemical Industry
- Petro-chemical Industry
- Pharmaceutical Industry
- OEM
- Oil Industry
- Food Industry

### Design

Pumps of the series AEH have a segmental type construction with open vane wheel impellers. The pumps is available in a normal industrial design with one liquid surrounded slide bearing and one ball bearing or in a heavy-duty construction with a double ball bearing design.

The program comprises 6 sizes each with 1-8 stages. The existing material design allows an optimum rating for the respectively desired performance range and the pumping medium.

The applied hydraulic components are from our Modular Side Channel system (interchangeability of parts).

### Construction

#### Casing pressure

Maximum 40 bar from -40 °C up to +120 °C.  
Maximum 32 bar from +120 °C up to +180 °C.  
Pressure stages for temperature as per DIN EN 1333.

#### Please observe

Technical rules and safety regulations.  
Casing pressure = inlet pressure + delivery head at minimum pump capacity

#### Position of branches

Suction and discharge branch point radially upwards.

#### Flanges

The flanges correspond to DIN EN 1092-2 / PN 40.  
Flange design as per DIN 2512 with groove or drilled according to ANSI 150 or 300 lbs is basically possible.

#### Bearing

Either by a ball bearing and a liquid surrounded sleeve bearing (design A) or by two ball bearings (design B). The ball bearings are according to DIN 625 and greased for life.

#### Direction of rotation

Clockwise, when looking at the pump from the drive end.  
Anti-clockwise is possible.

#### Shaft sealing

The shaft can be sealed by a stuffing box or a mechanical seal conform DIN EN 12756.

The shaft sealing is also available in a design suitable for heating or cooling of the stuffing box or the mechanical seal.

Double mechanical seal (back-to-back as well as tandem) or a quench design with throttle bush are available upon request.

The AEH can also be supplied with a magnetic coupling (for information see the separate catalogue).

## Material design

### Cast iron and ductile iron

Pos.	Components	Material design					
		0A	0B	0F	1A	1B	1F
1060	Suction casing	EN-GJL-250			EN-GJS-400-18-LT		
1070	Discharge casing	EN-GJL-250			EN-GJS-400-18-LT		
1090 1140 1141	Intermediate piece	EN-GJL-250			EN-GJS-400-18-LT		
2100	Shaft	X 20 Cr 13					
2350	Vane wheel impeller	CuZn40Al2	G-X 3 CrNiMoCuN 26 6 3 3	PAEK	CuZn40Al2	G-X 3 CrNiMoCuN 26 6 3 3	PAEK
3500	Bearing housing	EN-GJL-250					
3550	Bearing bracket*	EN-GJL-250			EN-GJS-400-18-LT		
4410	Mechanical seal casing	EN-GJL-250			EN-GJS-400-18-LT		
4510	Stuffing box casing	EN-GJL-250			EN-GJS-400-18-LT		
5451	Bearing bush	EK 2203					

\* only for design A

### Stainless steel

Pos.	Components	Material design	
		4B	4F
1060	Suction casing	G-X 6 CrNiMo 18 10	
1070	Discharge casing	G-X 6 CrNiMo 18 10	
1090 1140 1141	Intermediate piece	G-X 6 CrNiMo 18 10	
2100	Shaft	X 5 CrNiMo 17 12 2	
2350	Vane wheel impeller	G-X 3 CrNiMoCuN 26 6 3 3	PAEK
3500	Bearing housing	EN-GJL-250 coated	
4410	Mechanical seal casing	G-X 6 CrNiMo 18 10	

### Casing seal

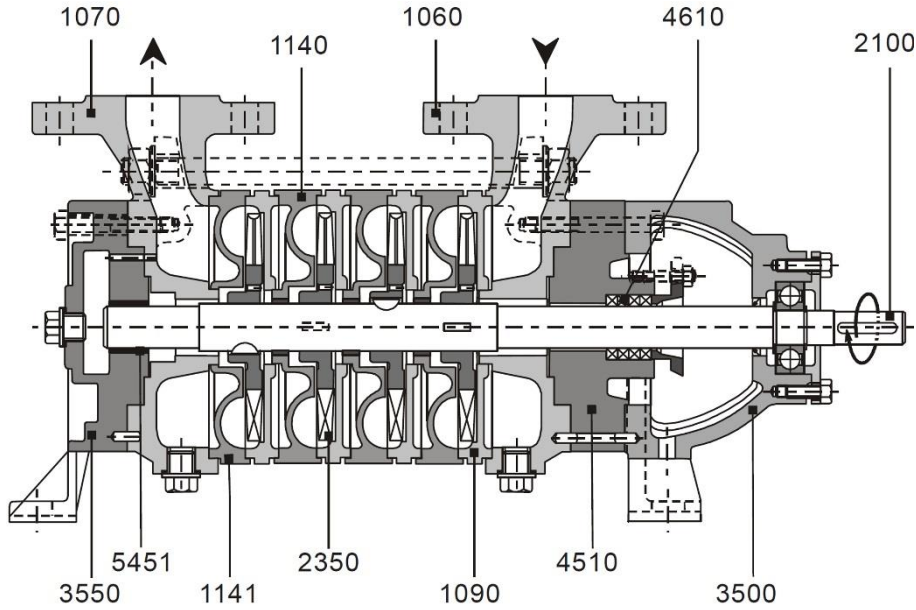
The casing can be sealed with liquid sealing compound or soft Teflon.

### Drive

By electric motor, type of construction IM B3.

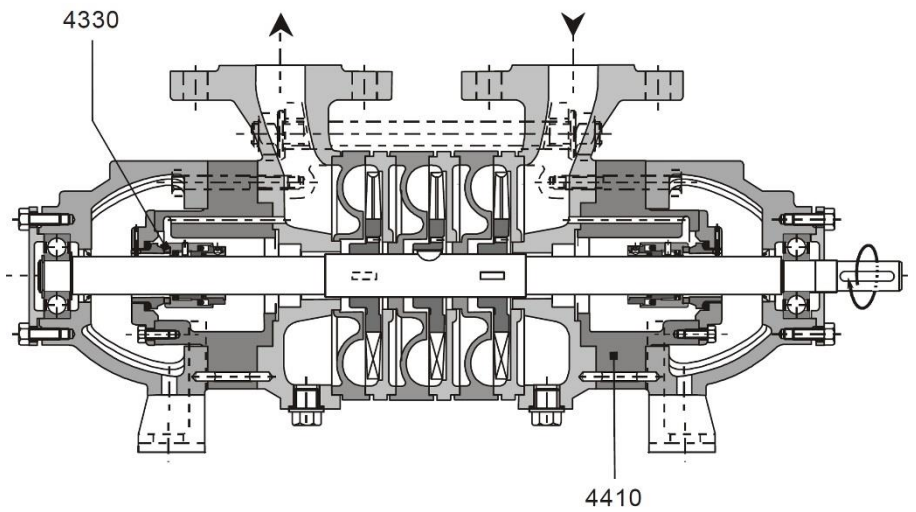
Sectional drawing and parts list

AEH in design A

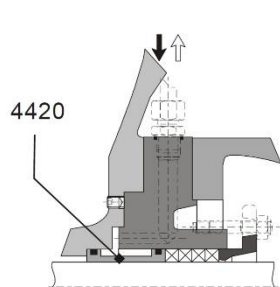


- 1060 Suction casing
- 1070 Discharge casing
- 1090 Suction intermediate piece
- 1140 Discharge intermediate piece
- 1141 Discharge intermediate piece
- 2100 Shaft
- 2350 Vane wheel impeller
- 3500 Bearing housing
- 3550 Bearing bracket
- 4330 Mechanical seal
- 4410 Mechanical seal casing
- 4420 Cooling insert
- 4510 Stuffing box casing
- 4610 Stuffing box
- 5451 Bearing bush

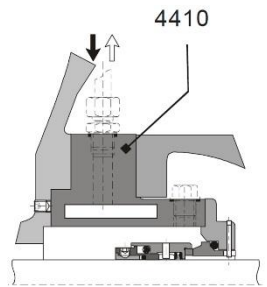
AEH in design B



Cooled shaft sealing possibilities



Cooled stuffing box



Cooled mechanical seal

## Performance range

### General conditions

Liquid: Water  
 Density: 1 kg/dm<sup>3</sup>  
 Viscosity: 1 cSt  
 Temperature: 20 °C  
 Atmospheric pressure: 1013 mbar

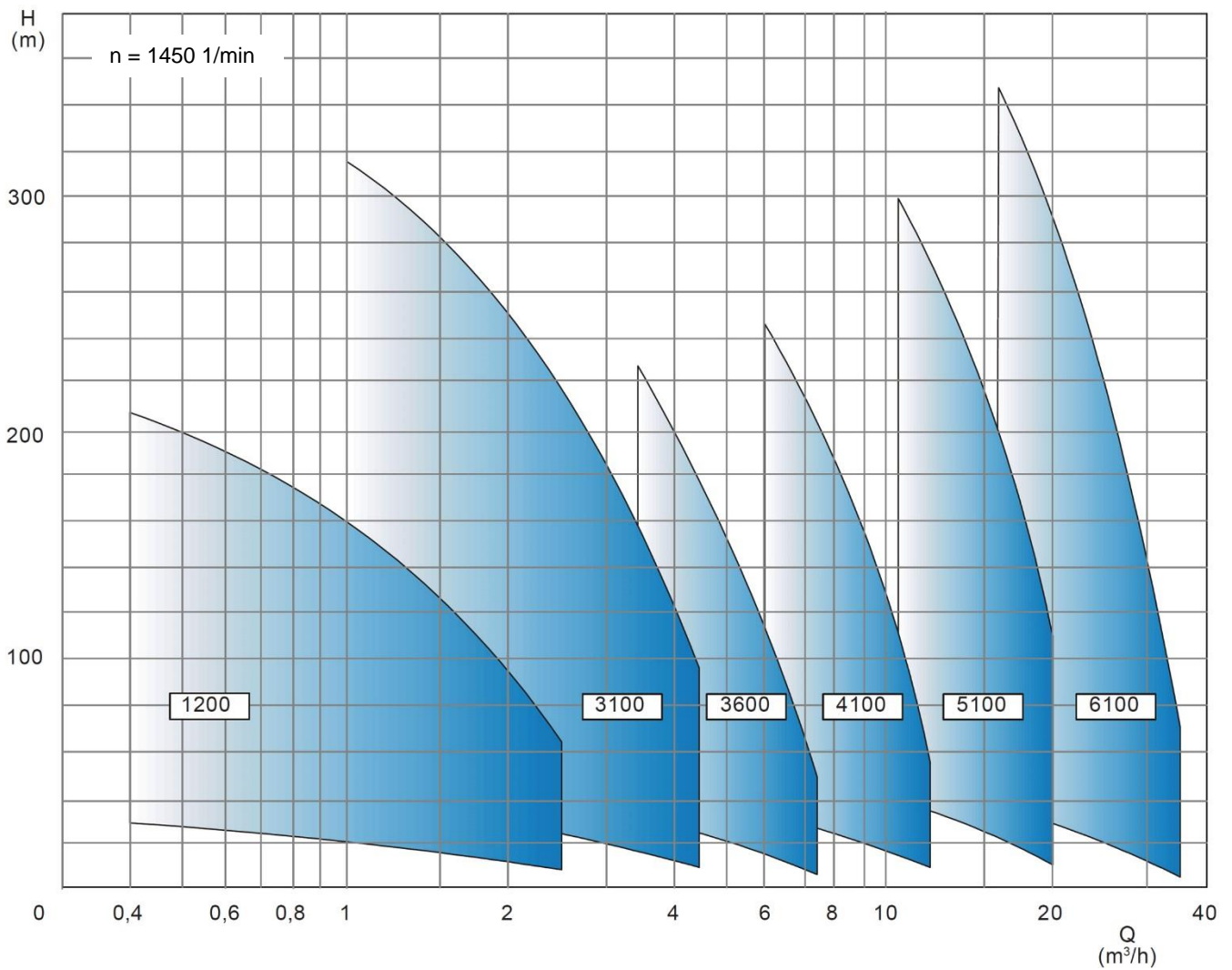
### Characteristic tolerances

Capacity ± 5% - Delivery head ± 5% - Power + 10%

For designs with a mechanical seal or a casing seal in soft Teflon, the tolerance for the delivery head is extended by 2% each.

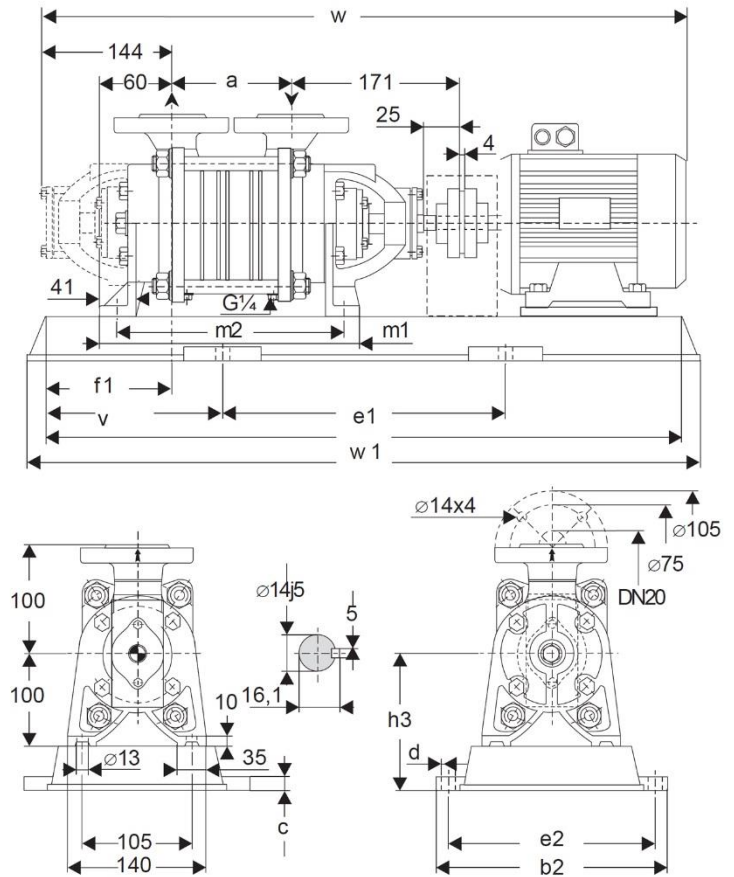
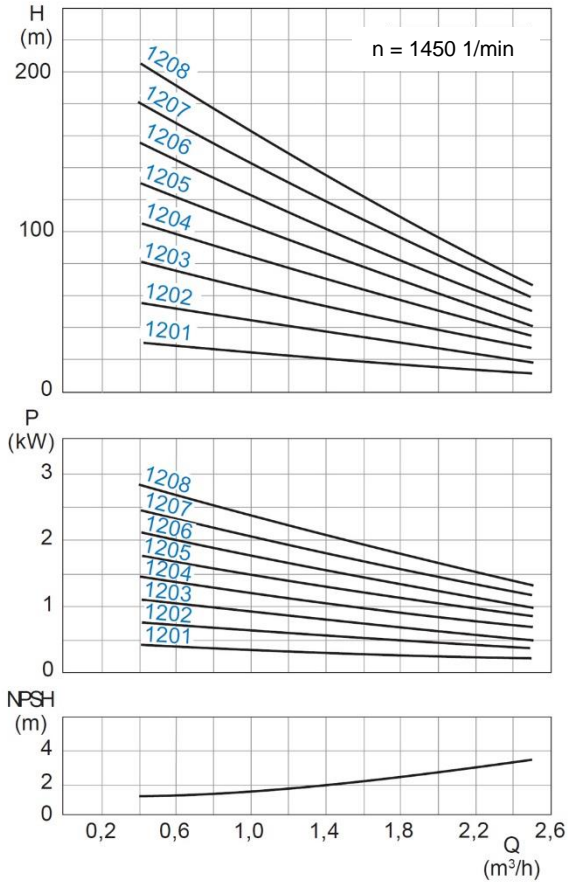
### Measuring standard

According to ISO 5198.



Dimension chart, pump set drawing and performance curves

AEH 1200



Values are valid for water with 1 kg/dm<sup>3</sup> and Viscosity 1 cSt.

Capacity ± 5% - Delivery head ± 5% - Power + 10%

For designs with a mechanical seal or a casing seal in soft Teflon, the tolerance for the delivery head is extended by 2% each.

Bau- größe	Motor		Grund- platte	Kupp- lung	Gewicht [kg]		Abmessungen [mm]												
	kW	Größe			Pumpe	Aggr.	a	b2	c	d	e1	e2	v	f1	h3	m1	m2	w*	w1
1201	0,37	71	P008	B68	19	44	120	297	20	15	400	265	120	98	140	270	236	677	640
	0,55	80				711													
1202	0,55	80	P008	B68	20	48	120	297	20	15	400	265	120	98	140	270	236	711	640
	0,75	80				769													
	1,1	90S	P241	57	330	25	19	480	290	125	165	769	730						
1203	0,75	80	P210	B68	21	52	154	300	25	19	420	260	115	98	165	304	270	745	650
	1,1	90S				59												330	
	1,5	90L	P241	63	330	25	19	480	290	125	803	730							
1204	1,1	90S	P241	B68	23	61	188	330	25	19	480	290	125	98	165	338	304	837	730
	1,5	90L				65												360	
	2,2	100L	P272	B80	76	360	25	19	540	320	140	878	820						
1205	1,1	90S	P272	B68	25	66	222	360	25	19	540	320	140	98	165	372	338	871	820
	1,5	90L				70												360	
	2,2	100L	P272	B80	77	360	25	19	540	320	140	912	820						
1206	1,5	90L	P272	B68	27	72	256	360	25	15	540	320	140	98	165	406	372	905	820
	2,2	100L				84												361	
	3,0	100L	P015	B80	85	361	25	15	600	325	160	946	920						
1207	1,5	90L	P015	B68	29	79	290	361	25	15	600	325	160	98	150	440	406	939	920
	2,2	100L				86												361	
	3,0	100L	P015	B80	87	361	25	15	600	325	160	980	920						
1208	2,2	100L	P015	B80	31	89	324	361	25	15	600	325	160	98	150	474	440	1014	920
	3,0	100L				90												324	

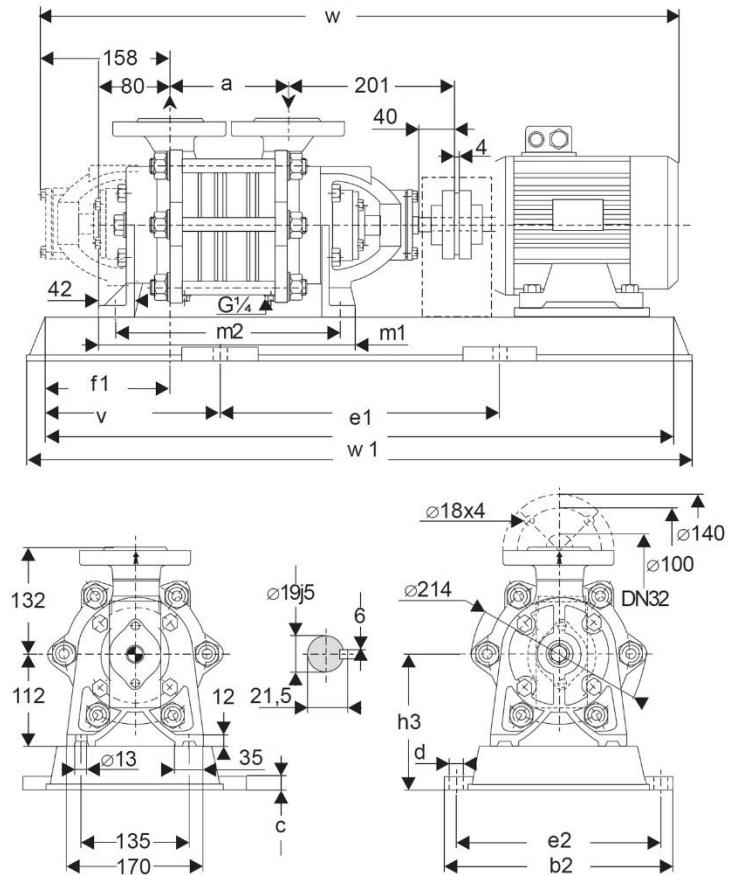
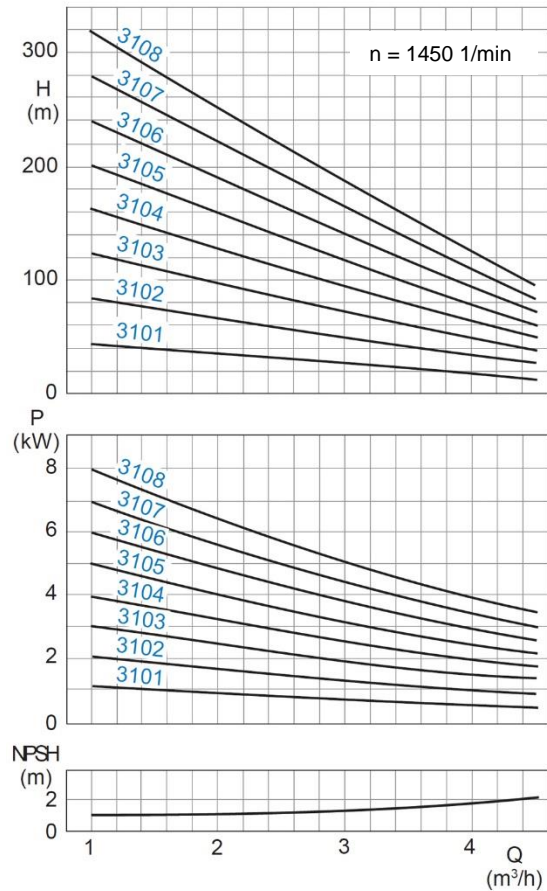
\* Design B: dimensions depend on motor brand.

The weight of the pump in design A will be approximately 1 kg less.

The weight will be approximately 6% higher when using stainless steel.

## Dimension chart, pump set drawing and performance curves

### AEH 3100



Values are valid for water with 1 kg/dm<sup>3</sup> and Viscosity 1 cSt.

Capacity ± 5% - Delivery head ± 5% - Power + 10%

For designs with a mechanical seal or a casing seal in soft Teflon, the tolerance for the delivery head is extended by 2% each.

Pump size	Motor		Base plate	Coupling	Weight [kg]		Dimensions [mm]												
	kW	size			Pump	Set	a	b2	c	d	e1	e2	v	f1	h3	m1	m2	w*	w1
3101	0.75	80	P241	B68	33	64	146	330	25	19	480	290	125	107	177	314	280	781	730
	1.1	90S				68												839	
3102	1.1	90S	P241	B68	35	70	146	330	25	19	480	290	125	107	177	314	280	839	730
	1.5	90L				72												880	
3103	2.2	100L	P272	B80	37	85	186	360	25	19	540	320	140	107	177	354	320	920	820
	3.0	100L				89												920	
3104	2.2	100L	P015	B80	40	97	226	361	25	15	600	325	160	107	162	394	360	960	920
	3.0	100L				98												981	
3105	4.0	112M	P015	B80	44	102	266	361	25	15	600	325	160	107	162	434	400	1000	920
	5.5	132S				120												1021	
3106	4.0	112M	P017	B80	49	137	306	361	25	15	700	325	200	107	172	474	440	1097	1100
	7.5	132M				139												1061	
3107	4.0	112M	P017	B80	53	161	346	361	25	15	700	325	200	107	172	514	480	1137	1100
	5.5	132S				171												1163	
3108	4.0	112M	P017	B95	57	144	386	361	25	15	700	325	200	107	192	554	520	1101	1100
	7.5	132M				165												1177	
3108	5.5	132S	P017	B95	57	205	386	361	25	15	700	325	200	107	192	554	520	1203	1100
	7.5	132M				199												1217	
3108	11.0	160M	P436	B95	57	209	386	540	30	24	840	490	215	240	240	554	520	1243	1100
	11.0	160M				255												1335	

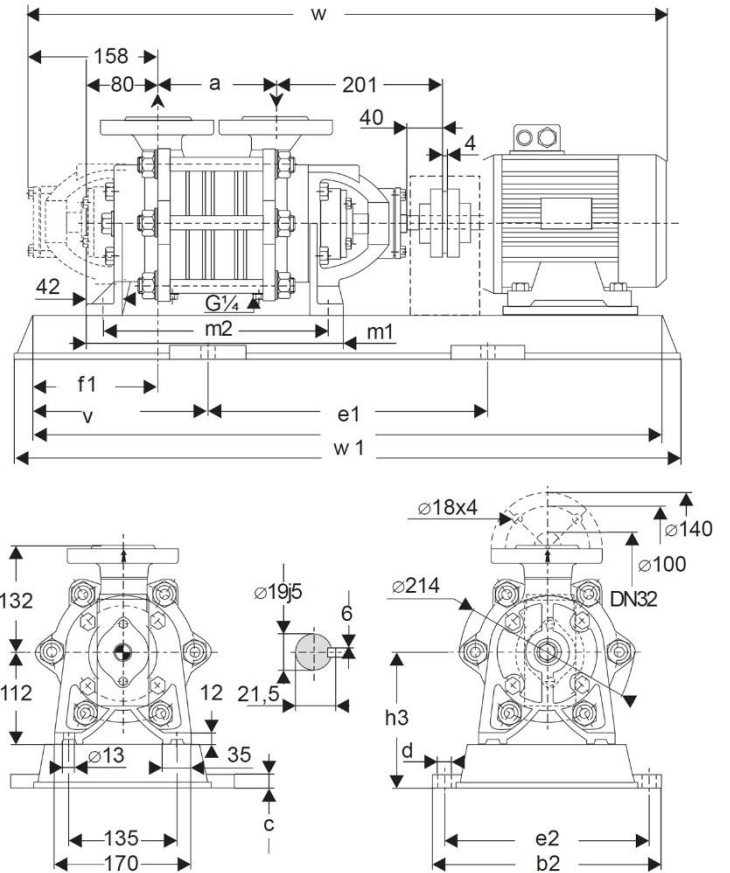
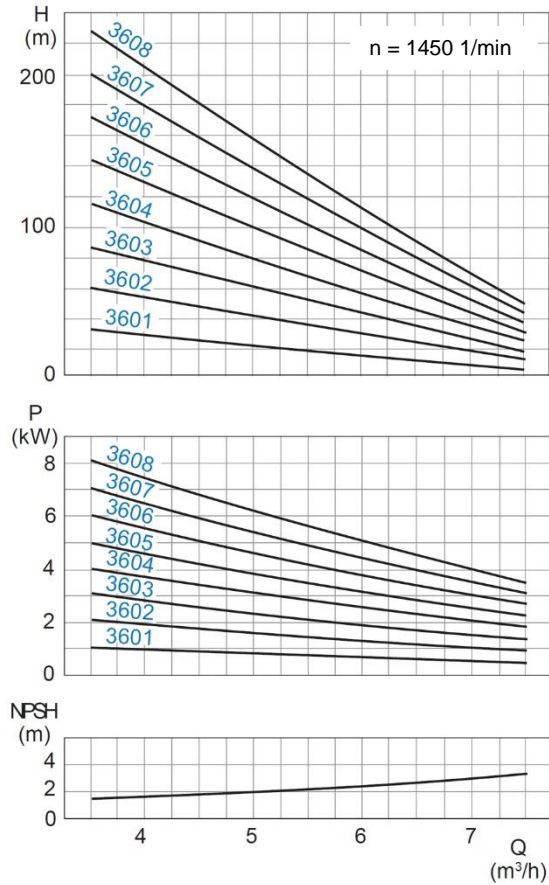
\* Design B: dimensions depend on motor brand.

The weight of the pump in design A will be approximately 2.5 kg less.

The weight will be approximately 6% higher when using stainless steel.

Dimension chart, pump set drawing and performance curves

AEH 3600



Values are valid for water with 1 kg/dm<sup>3</sup> and Viscosity 1 cSt.

Capacity ± 5% - Delivery head ± 5% - Power + 10%

For designs with a mechanical seal or a casing seal in soft Teflon, the tolerance for the delivery head is extended by 2% each.

Pump size	Motor		Base plate	Coup-ling	Weight [kg]		Dimensions [mm]												
	kW	size			Pump	Set	a	b2	c	d	e1	e2	v	f1	h3	m1	m2	w*	w1
3601	0.75	80	P241	B68	30	64	146	330	25	19	480	290	125	107	177	314	280	781	730
	1.1	90S				68												839	
3602	1.5	90L	P241	B68	34	74	146	330	25	19	480	290	125	107	177	314	280	839	730
	2.2	100L	P272	B80		85												540	
3603	2.2	100L	P272	B80	39	89	186	360	25	19	540	320	140	107	177	354	320	920	820
	3.0	100L				90												920	
3604	4.0	112M	P015	B80	40	109	226	361	25	15	600	325	160	107	162	226	394	941	920
	3.0	100L				98												960	
3605	4.0	112M	P015	B80	44	116	266	361	25	15	600	325	160	107	162	266	434	981	920
	5.5	132S				P017												B95	
3606	3.0	100L	P017	B80	49	102	306	361	25	15	700	325	200	107	172	306	474	1000	1100
	4.0	112M				120												1000	
3607	5.5	132S	P017	B95	53	137	266	361	25	15	700	325	200	107	192	306	474	1021	1100
	7.5	132M				139												1097	
3608	5.5	132S	P017	B95	57	161	386	361	25	15	700	325	200	107	192	386	554	1061	1100
	7.5	132M				171												1137	
3608	5.5	132S	P436	B95	57	209	386	361	25	15	700	325	200	107	192	386	554	1177	1100
	11.0	160M				219												1243	
						255		540	30	24	840	490	215	240				1335	1270

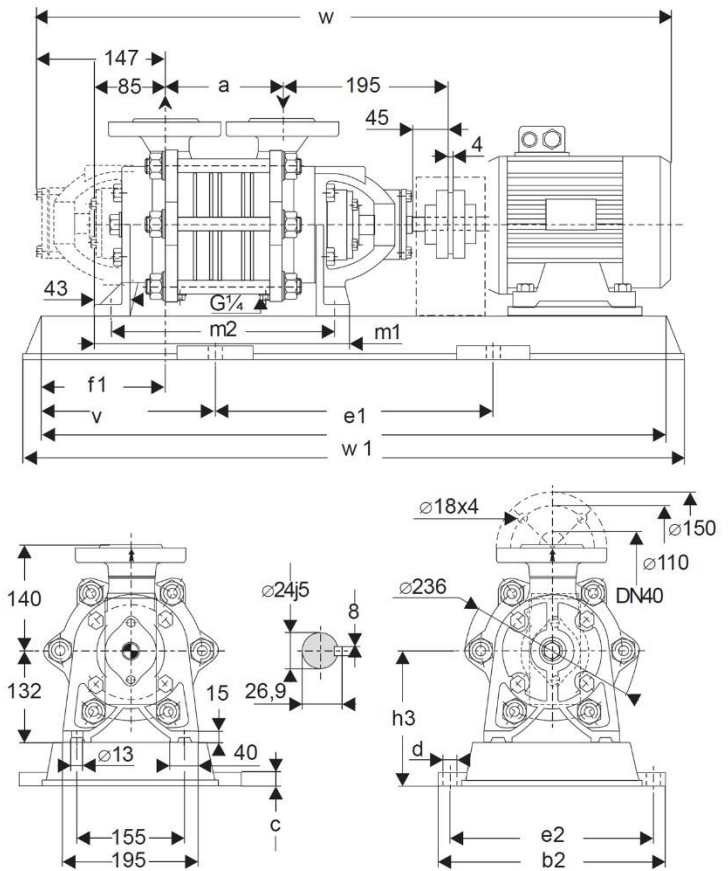
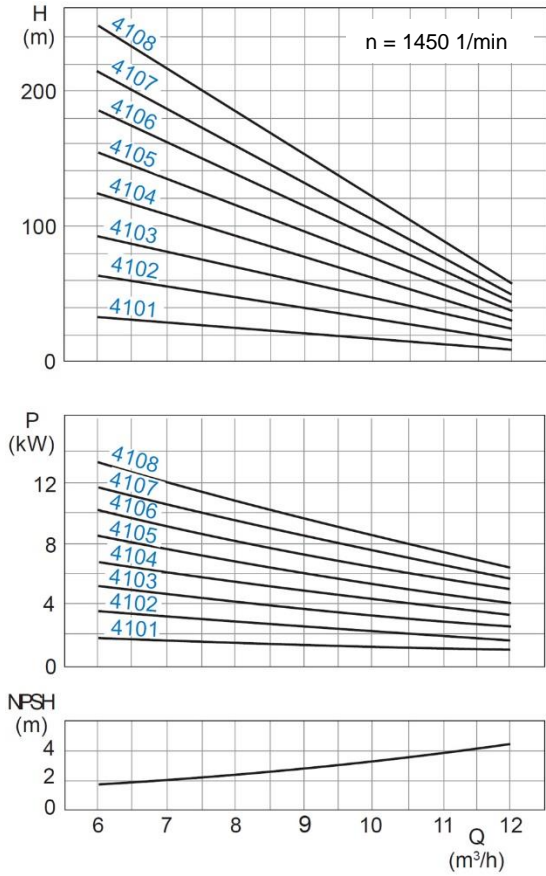
\* Design B: dimensions depend on motor brand.

The weight of the pump in design A will be approximately 2.5 kg less.

The weight will be approximately 6% higher when using stainless steel.

## Dimension chart, pump set drawing and performance curves

### AEH 4100



Values are valid for water with 1 kg/dm<sup>3</sup> and Viscosity 1 cSt.

Capacity ± 5% - Delivery head ± 5% - Power + 10%

For designs with a mechanical seal or a casing seal in soft Teflon, the tolerance for the delivery head is extended by 2% each.

Pump size	Motor		Base plate	Coup-ling	Weight [kg]		Dimensions [mm]												
	kW	size			Pump	Set	a	b2	c	d	e1	e2	v	f1	h3	m1	m2	w*	w1
4101	1.5	90L	P241	B68	40	84	160	330	25	19	480	290	125	94	197	303	269	836	730
	2.2	100L	P272	B80		95					540	320	140					877	820
4102	2.2	100L	P272	B80	47	101	215	360	25	19	540	320	140	94	197	358	324	932	820
	3.0	100L				102													
4103	4.0	112M	P015	B80	52	120	270	361	25	15	600	325	160	94	182	413	379	1008	920
	5.5	132S	P017	B95		172					700	200	192		1084			1100	
4104	5.5	132S	P017	B95	61	175	325	361	25	15	700	325	200	94	192	468	434	1139	1100
	7.5	132M				185												1165	
4105	5.5	132S	P017	B95	67	181	380	361	25	15	700	325	200	94	192	523	489	1194	1100
	7.5	132M				221												1220	
	11.0	160M				P385												275	1312
4106	7.5	132M	P385	B95	73	237	435	490	30	24	740	440	200	94	212	578	544	1275	1140
	11.0	160M	P436			272					540	490	215		240			1367	1270
4107	7.5	132M	P436	B95	79	234	490	540	30	24	840	490	215	94	212	633	599	1330	1270
	11.0	160M				278									1422				
	15.0	160L				P487									B110			314	610
4108	11.0	160M	P487	B95	85	298	545	610	35	28	940	550	240	94	260	688	654	1477	1420
	15.0	160L		B110		319												1539	

\* Design B: dimensions depend on motor brand.

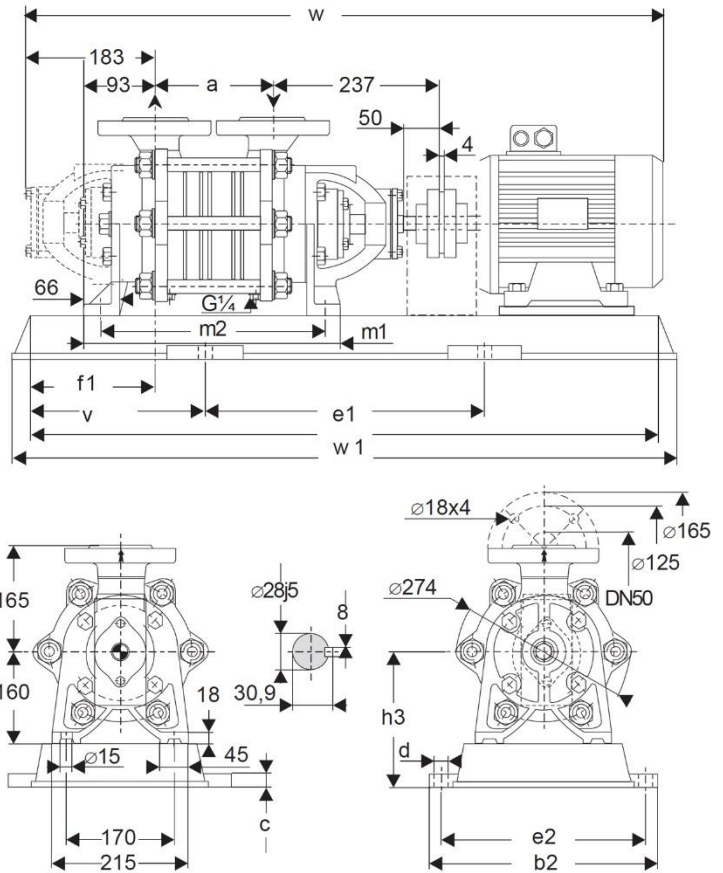
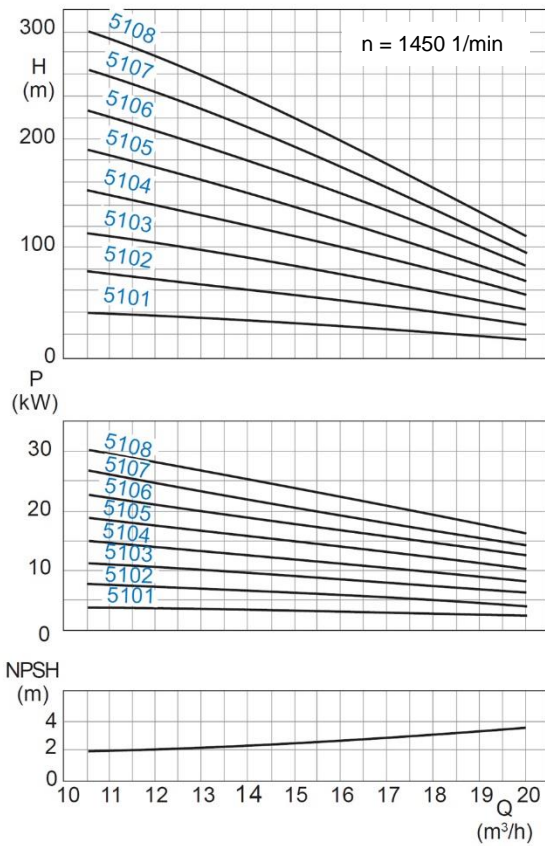
The weight of the pump in design A will be approximately 2.5 kg less.

The weight will be approximately 6% higher when using stainless steel.



Dimension chart, pump set drawing and performance curves

AEH 5100



Values are valid for water with 1 kg/dm<sup>3</sup> and Viscosity 1 cSt.

Capacity ± 5% - Delivery head ± 5% - Power + 10%

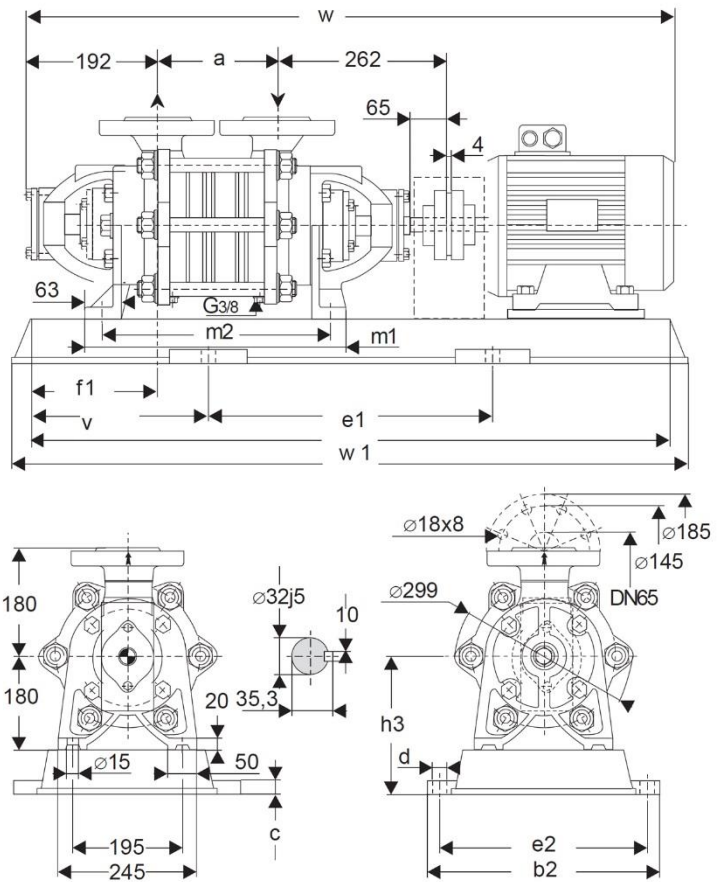
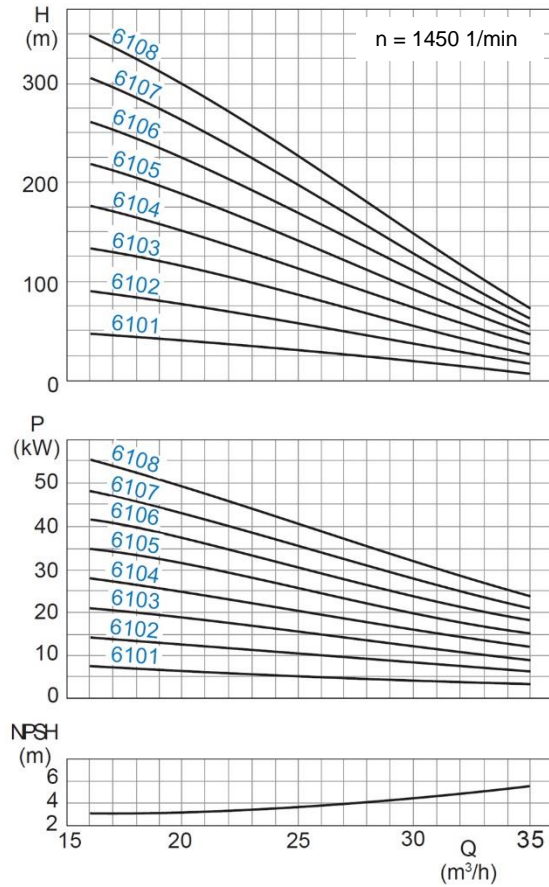
For designs with a mechanical seal or a casing seal in soft Teflon, the tolerance for the delivery head is extended by 2% each.

Pump size	Motor kW	Motor size	Base plate	Coupling	Weight [kg]		Dimensions [mm]												
					Pump	Set	a	b2	c	d	e1	e2	v	f1	h3	m1	m2	w*	w1
5101	3.0	100L	P015	B80	65	118	175	361	25	15	600	325	160	118	210	369	331	970	920
	4.0	112M				137												991	
5102	5.5	132S	P017	B95	73	184	250	361	25	15	700	325	200	118	220	444	406	1142	1100
	7.5	132M				194												1168	
	11.0	160M				278												1260	
5103	7.5	132M	P017	B95	85	235	325	361	25	15	700	325	200	118	220	519	481	1243	1100
	11.0	160M	280			1335													
	15.0	160L	298			1397													
5104	11.0	160M	P436	B95	92	290	400	540	30	24	840	490	215	118	240	594	556	1410	1270
	15.0	160L	P487	B110		325												610	
5105	15.0	160L	P487	B110	103	336	475	610	35	28	940	550	240	118	260	669	631	1547	1420
	18.5	180M		B125		357												1609	
	22.0	180L		377		1622													
5106	15.0	160L	P538	B110	115	387	550	660	35	28	1060	600	280	118	280	744	706	1684	1620
	18.5	180M		B125		408												1742	
	22.0	180L		428		1817													
5107	30.0	200L	P538	B125	130	509	625	660	35	28	1060	600	280	118	280	619	781	1759	1620
	18.5	180M		419		1817													
	22.0	180L		439		1817													
5108	22.0	180L	P538	B125	141	480	700	660	35	28	1060	600	280	118	280	894	856	1834	1620
	30.0	200L	S389			533												540	

\* Design B: dimensions depend on motor brand.  
 The weight of the pump in design A will be approximately 5 kg less.  
 The weight will be approximately 6% higher when using stainless steel.

## Dimension chart, pump set drawing and performance curves

### AEH 6100



Values are valid for water with  $1 \text{ kg/dm}^3$  and Viscosity  $1 \text{ cSt}$ .

Capacity  $\pm 5\%$  - Delivery head  $\pm 5\%$  - Power  $+ 10\%$

For designs with a mechanical seal or a casing seal in soft Teflon, the tolerance for the delivery head is extended by 2% each.

Pump size	Motor		Base plate	Coup-ling	Weight [kg]		Dimensions [mm]																													
	kW	size			Pump	Set	a	b2	c	d	e1	e2	v	f1	h3	m1	m2	w*	w1																	
6101	5.5	132S	P017	B95	74	198	195	361	25	15	700	325	200	129	240	412	374	1121	1100																	
	7.5	132M				218												1147																		
6102	11.0	160M	P385	B95	87	305	285	490	30	24	740	440	200	129	260	502	464	1329	1140																	
	15.0	160L	P436	B110		317												840		490	215	1391	1270													
6103	18.5	180M	P487	B110	99	363	375	610	35	28	940	550	240	129	280	592	554	1543	1420																	
	22.0	180L				B125												383		550	240	129	280	592	554	1543	1420									
6104	22.0	180L	P487	B125	112	396	465	610	35	28	940	550	240	129	280	682	644	1633	1420																	
	30.0	200L	P538	B125		517									1060			600		280	1691	1620														
6105	30.0	200L	P538	B125	124	529	555	660	35	28	1060	600	280	129	300	772	734	1781	1620																	
	37.0	225S				B140									598			600		280	129	325	1846													
6106	30.0	200L	S389	B125	137	544	645	540	40	28	1200	490	300	129	300	862	824	1871	1800																	
	37.0	225S	14206	B140		542									640			40		28	1200	690	300	129	343	862	824	1936								
	45.0	225M				602																							730	1200	670	310	300	1961	1820	
6107	30.0	200L	S609	B125	149	556	735	740	40	28	1200	670	310	129	300	952	914	2026	1950																	
	37.0	225S	14208	B140		545									740			40		28	1300	690	325	129	343	952	914	2121								
	45.0	225M				612																							1300	690	325	129	343	952	914	2121
	55.0	250M				14209																							B160	664	1300	690	325	129	343	952
6108	37.0	225S	14211	B140	162	584	825	740	40	28	1300	690	350	129	343	1042	1004	2116	2000																	
	45.0	225M				651												1300		690	350	129	343	1042	1004	2116	2000									
	55.0	250M				14212												B160		702	1300	690	350	129	343	1042	1004	2116	2000							

\* Dimensions depend on motor brand.

The weight will be approximately 6% higher when using stainless steel.



## General comments

Side channel pumps with the same hydraulic construction are manufactured in series as:

- AKH** Medium duty pump, PN 16
- AEH** High duty pump, PN 40, also available with magnetic coupling
- CEH** High duty pump, PN 40, also available with magnetic coupling
- CEB** Vertical tank mounted pump, PN 25 with magnetic coupling

Technical documentation about these pump series will be supplied on request.

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