

Side Channel Pumps

CEH 1201 ... 6108

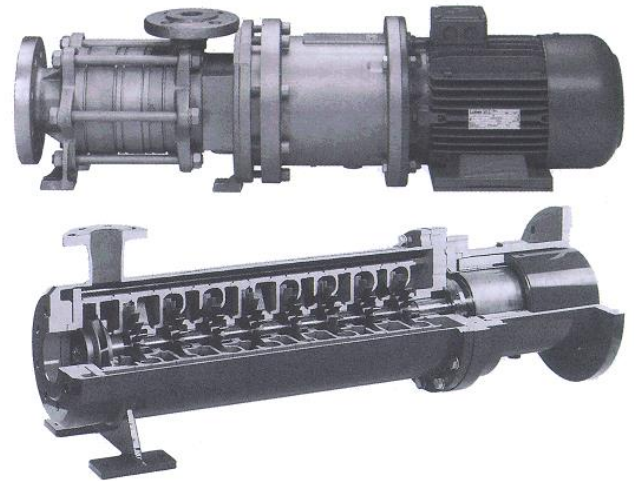
CEH 1201/6 ... 6107/6 with magnetic coupling



SIHI® Pumps

TECHNICAL DATA

Output:	max. 35 m ³ /h
Delivery head:	max. 354 m (at 1450 rpm)
Speed:	max. 1800 rpm
Temperature:	max. 180 °C
Casing pressure:	PN 40
Shaft sealing:	without shaft seal because of magnetic coupling
Flange connections:	DIN 2501 PN 40
Direction of rotation:	anti-clockwise, seen from the drive on the pump



CEH pump with shell

APPLICATION

CEH pumps are side channel pumps with **NPSH inducer stage** suitable to handle liquids which do not contain solid matters or abrasive admixtures. The NPSH inducer stage allows the operation under unfavourable pumping conditions at suction side, also at positive suction heads lower than 0,5 m.

The special ability of these pumps to handle liquids at the boiling point has led to a wide field of application when condensate, distillate, coolant and liquefied gas shall be pumped.

CEH pumps are applied in the chemical and petrochemical industry, in the pharmaceutical industry, in the plastic and rubber industry, in the surface finishing and hardening, in the food, beverage and tobacco industry and in the air conditioning and refrigeration engineering.

Pumps of the series CEH.../6 with retaining stage to guarantee the min. filling level in the pump are especially applied to handle liquids under vapour pressure, also from underground tanks.

DESIGN

Pumps of the series CEH are horizontal, selfpriming side channel pumps, capable of handling gas along with the medium, in segmental-type construction, with open vane wheel impeller as well as pre-arranged centrifugal stage for attaining favourable NPSH values. The sealing to atmosphere is effected glandless by an isolation shroud; the driver power is transmitted contactless by a magnetic coupling. The use of stable permanent magnetic material ensures the transmission of the nominal torque and given protection against overload.

On the basis of the compact close coupled design has been created a pumping unit that is easily to be installed. All IEC standard motors of the construction type IM B 35 are applicable. This design permits the operation of the pump without any additional coupling. Thus the alignment, a source of trouble, can be omitted.

The pumps of the series CEH.../6 are equipped with an additional retaining stage, behind the centrifugal stage, to prevent the emptying of the pump during standstill and thus keeping the selfpriming ability of the pump.

The simple construction of the pump allows the assembly or disassembly without special tools.

CONSTRUCTION

Casing pressure:

Construction size 1200 to 6100:

PN 40

Please note:

Casing pressure = zero head + inlet pressure
Test pressure 52 bar resp. 33 bar

Branch positions:

Suction branch arranged axially, discharge branch radially upwards.

Flanges:

The flanges comply with DIN 2535/PN 40

Flanges according to DIN 2512 with groove and bored to ANSI 150 or 300 as well as to BS table F is possible.

Hydraulics:

First hydraulics, designation of this construction type: A

Bearings:

The pump shaft runs in two sleeve bearings of pure silicon carbide (SiC), lubricated by the pumping medium
The remaining axial forces are absorbed by axial sleeve bearings.

Optionally available a friction reducing coating of the bushings to avoid critical operation.

The outer magnet is directly fixed on the motor shaft consequently the external bearing becomes unnecessary.
Designation of this construction type: F

Sense of rotation:

Anti-clockwise when seen from the drive on the pump.

Shaft sealing:

Without shaft seals by an isolation shroud Transmission of the driving moment by a magnetic coupling.

Designation of this construction type: see last page.

Material design:

Pos.	Parts	MATERIAL DESIGN				
		1A	1B	1F	4B	4F
10.60 10.70 10.80 10.90 11.40 11.41 10.81	suction casing discharge casing intermediate piece retaining stage		GGG 40.3 (0.7043)		1.4408	
21.00	shaft		1.4021		1.4462	
23.10	impeller		GG 25 (0.6025)		1.4408	
23.50	vane wheel impeller	2.0550	1.4517	PAEK	1.4517	PAEK
0242	bearing bush		-		special carbon	
31.40 52.90 52.91 54.00 54.01	thrust bearing bushing bearing bush			SiC		
34.60	stool			GG 25 (0.6025) or 1.0570		
81.70	isolation shroud			Hastelloy C4 (2.4610) or ZrO2		
81.71	flange for can			1.0570		
84.71	inner magnet			1.4571/SmCo		
84.72	outer magnet			1.0570/SmCo		
84.80	driving flange			1.0570		

Casing sealing:

The casing sealing is made by soft Teflon and O-ring PTFE. Designation of this construction type: 4

Drive:

By commercial three-phase A.C. motors, construction type IM B35. The selection is depending on the power consumption of the hydraulics, taking into consideration the density and viscosity of the pumping medium. For the motor rating the eddy current losses are to be added to the pump performance.

Motors controlled by frequency converters are admissible. The motors and magnetic couplings indicated in the delivery programme are selected for a mains frequency of max. 50 Hz and are applicable for watery liquids. In case of differing speeds other magnetic dipole moments are necessary for the couplings. It is recommendable to check the selection with Sterling SIHI.

Position:

Usually the pump units are installed horizontally. The operation with vertically installed pump units is possible, but should be made only in consultation with Sterling SIHI because of the special instructions for starting-up, the support and thermal load of the drive motor.

General remarks:

The following pump series with magnetic couplings are available:

Side channel pump without NPSH inducer stage:

Series **AEHB** with vertical connection flanges

Volute casing pumps acc. to:

Series **CBMD** volute casing pump as per **DIN EN 22858 bearing bracket design**

Series **CBED** volute casing pump as per **DIN EN 22858 close coupled construction**

Series **ZLKD** volute casing pump close coupled construction - branches as per **DIN 24255 / EN 733**

Series **ZLID** inline pump

For lower delivery heads:

Series **AKLA /AKVA** single-stage inline side channel pump

Technical documentation on these programmes is available on request.

FUNCTION

Partial flow:

For the cooling of the isolation shroud, heated up by eddy currents, a partial flow is derived which at the same time serves as lubricant for the ceramic sleeve bearings. The partial flow flows through two longitudinal bores in the discharge casing into the isolation shroud and is led back through the hollow bored shaft and the balance bores of the rear vane wheel impeller to its suction side. By the pumping capability of the inner magnet, inside the isolation shroud a circulation flow is created which flows through the longitudinal bores of the inner magnet towards the bottom of the isolation shroud and in the gap between inner magnet and isolation shroud back to the front side of the inner magnet. This circulation flow is nearly independent of the operating point of the pump. Consequently the cooling of the isolation shroud is guaranteed over the entire characteristic.

By the pumping capability of the lubricating grooves in the thrust bearing disk a further flow is created through the bearing gap of the radial bearing over the thrust bearing towards the longitudinal bores of the inner magnet. Thus, also independent of the operating point of the pump, the lubrication of the bearings is guaranteed.

The front radial bearings are lubricated by a partial flow that flows from the first side channel stage through the bearing gap towards the rear side of the NPSH impeller.

Bearings:

The SiC bushings are clamped axially on the shaft. The material combination secures that the clamping power is maintained also in case of high temperatures. The stationary bearing inserts are screwed to the discharge casing or pressed into the intermediate piece.. Alternatively bearings coated with adamantine carbon are available. Hereby are considerably reduced the coefficients of friction during dry operation and danger to the pump can be prevented. This coating is applicable up to 250°C.

Safety:

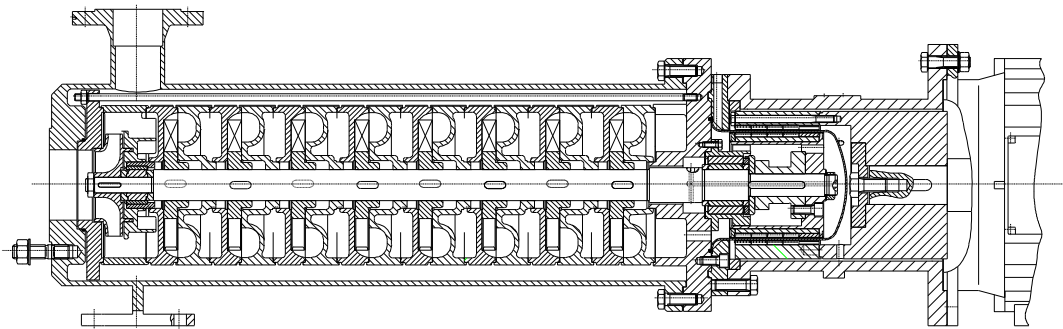
The magnetic bell is directly fixed on the motor shaft. The load on the bearings resulting from this is relatively slight and therefore a damage to the bearings very improbable. In order to protect the isolation shroud against internal or external damages by rotating parts, a stationary seat is installed in the stool and at the bearing insert. The distance from the rotors is smaller than that of the rotors from the isolation shroud.

In order to obtain double leakproofness the application of fanless motors which withstand flooding, is possible. Then the sealed stool chamber serves to control the function of the isolation shroud.

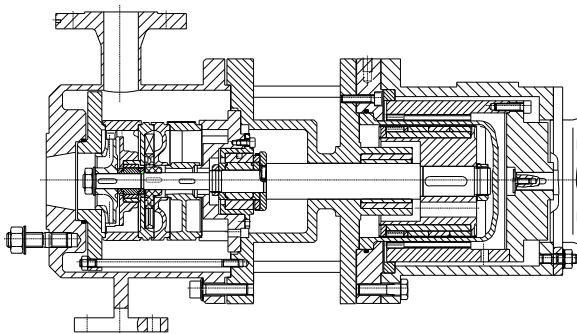
The pump has to be run with a motor load detector. It protects the machine against dry operation and operation beyond the range of the characteristic curves.

VARIANTS

Pump with shell applicable at high operating temperature and/or high operating pressure. Independent of the number of stages only two sealing points are necessary.



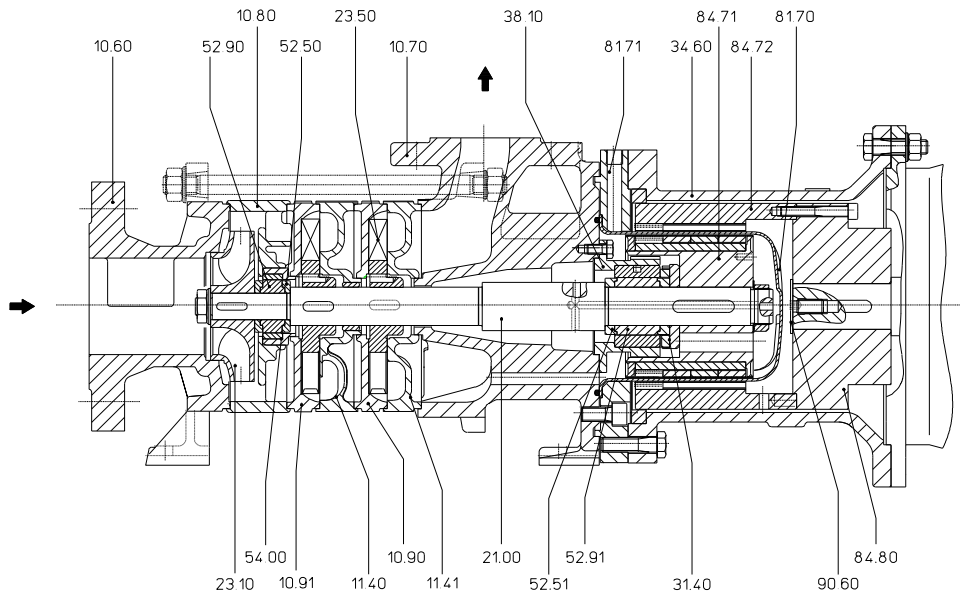
The pump shown down on the right is equipped with a heat barrier and thus applicable at medium temperatures up to 400°C without cooling.



Pumps with heating or cooling chambers for the handling of smeltings or boiling media also are available. For such cases special heating stages, instead of normal stages, are installed in the pump and thus offering the heating or cooling by means of liquid or vapour.

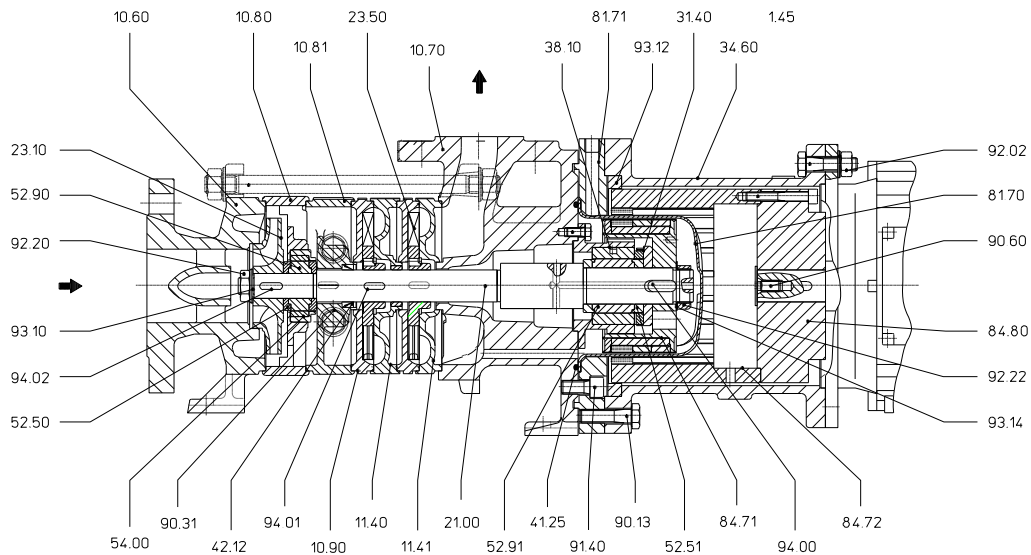
Sectional drawing and nomenclature

CEH



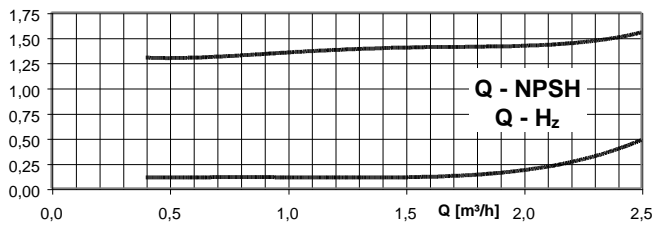
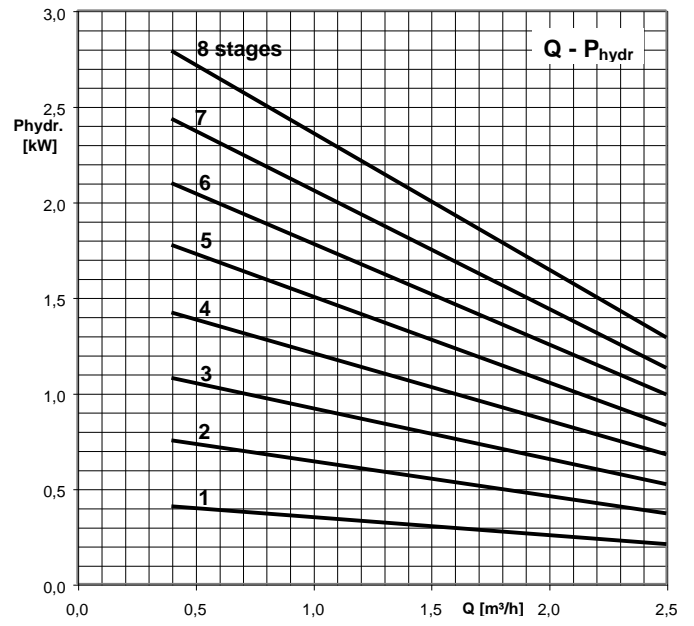
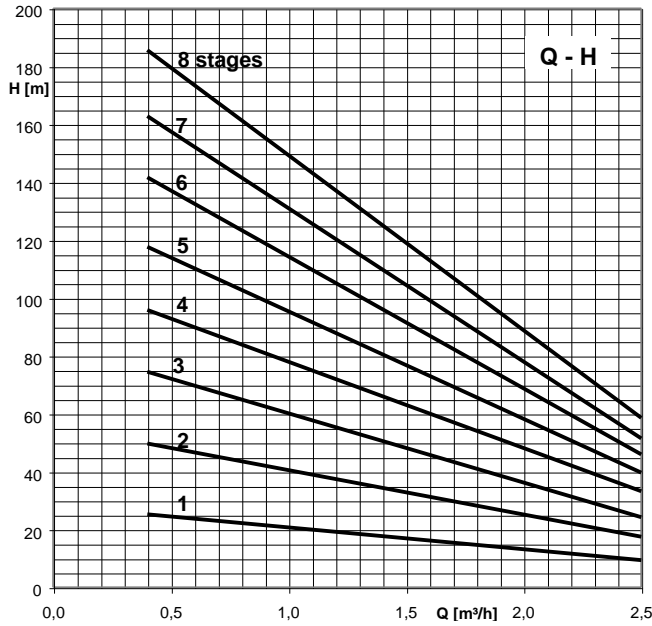
10.60	suction casing	23.50	vane wheel impeller	81.70	isolation shroud
10.70	discharge casing	31.40	thrust bearing	81.71	flange for can
10.80	intermediate piece	34.60	stool	84.71	interior magnet
10.90, 10.91	suction piece	38.10	bearing carrier	84.72	exterior magnet
11.40, 11.41	discharge piece	52.50, 52.51	spacer	84.80	driving flange
21.00	shaft	52.90, 52.91	sleeve	90.60	shaft screw
23.10	impeller	54.00	bearing bush		

CEH /6



10.60	suction casing	23.10	impeller	54.00	bearing bush
10.70	discharge casing	23.50	vane wheel impeller	81.70	isolation shroud
10.80	intermediate piece	31.40	thrust bearing	81.71	flange for can
10.81	retaining stage	34.60	stool	84.71	interior magnet
10.90, 10.91	suction piece	38.10	bearing carrier	84.72	exterior magnet
11.40, 11.41	discharge piece	52.50, 52.51	spacer	84.80	driving flange
21.00	shaft	52.90, 52.91	sleeve	90.60	shaft screw

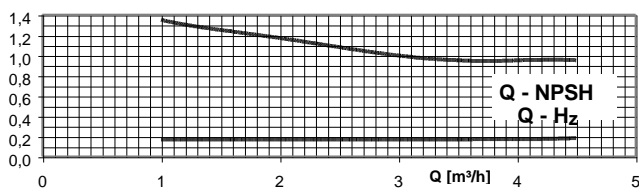
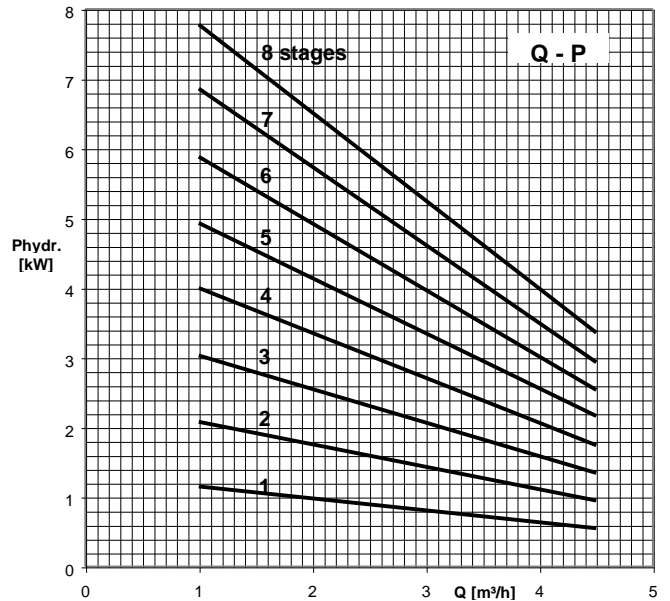
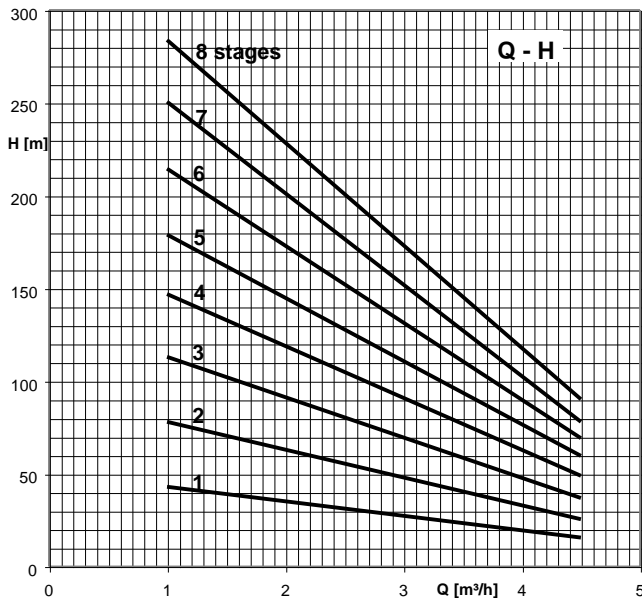
Characteristic curves



CEH 1200 with magnetic coupling

n = 1450 rpm, Visc.= 1 mm²/s, spec.grav. = 1 kg/dm³

* pay attention to suction conditions

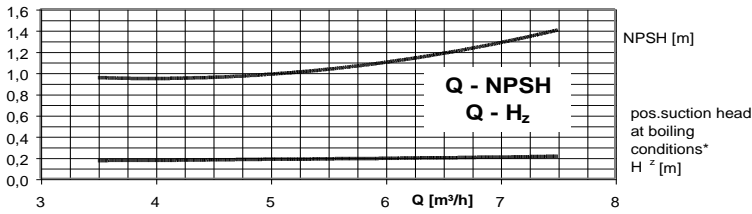
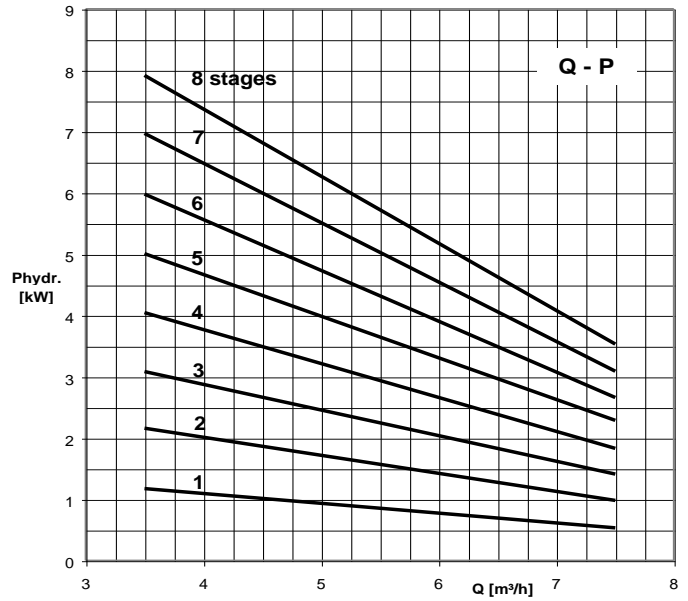
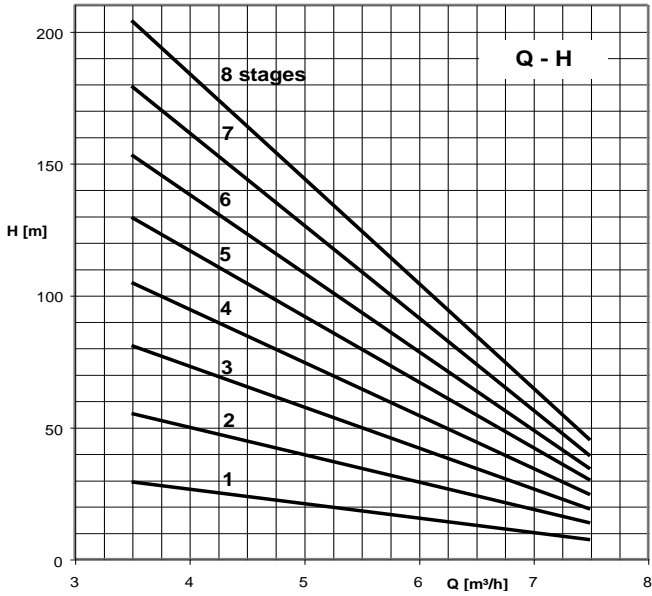


CEH 3100 with magnetic coupling

n = 1450 rpm, Visc. 1 mm²/s, spec.grav. 1 kg/dm³

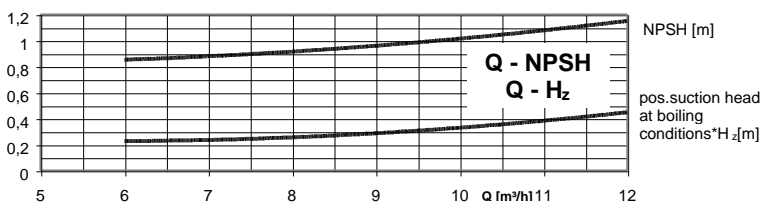
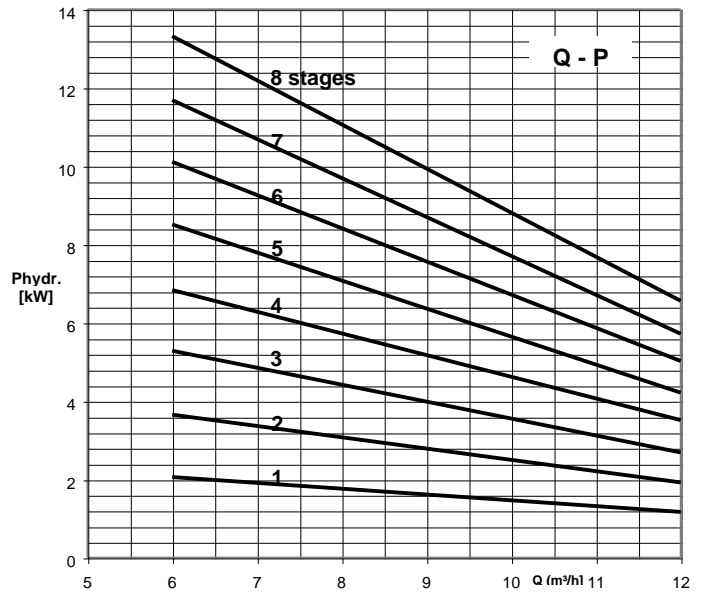
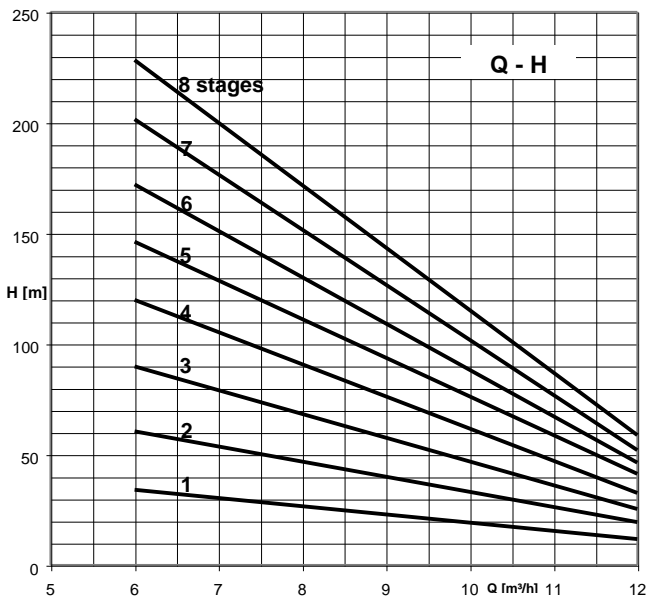
* pay attention to suction conditions

Characteristic curves



CEH 3600 with magnetic coupling

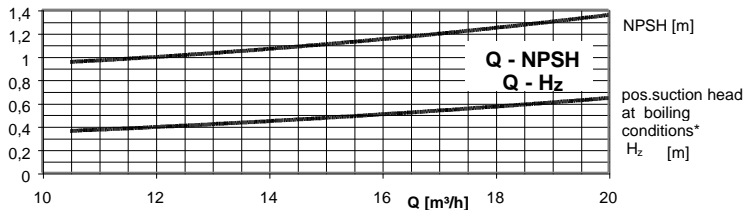
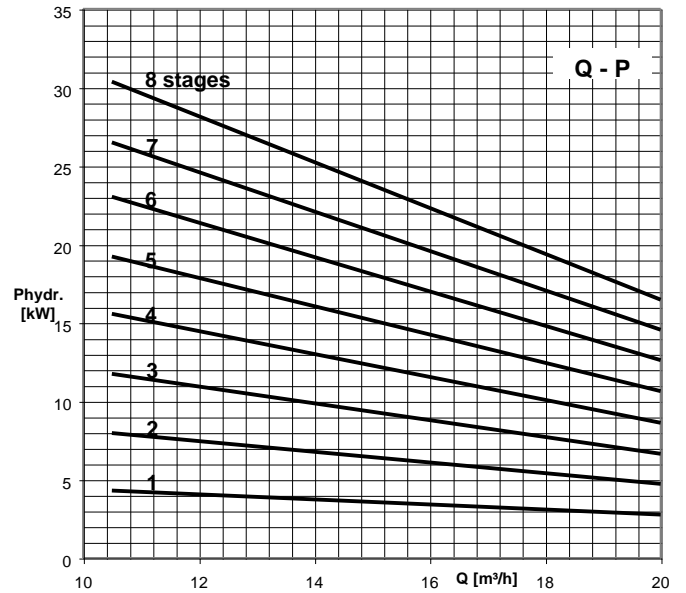
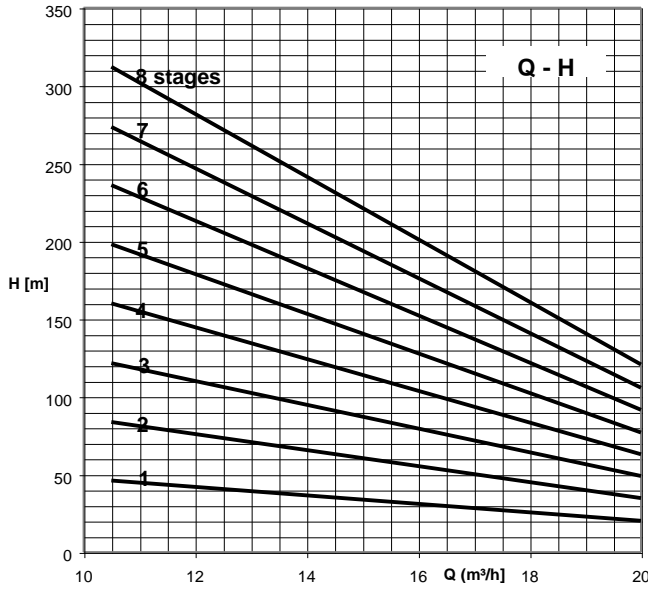
n = 1450 rpm, Visc. 1 mm²/s, spec.grav. 1 kg/dm³
* pay attention to suction conditions



CEH 4100 with magnetic coupling

n = 1450 rpm, Visc. 1 mm²/s, spec.grav. 1 kg/dm³
* pay attention to suction conditions

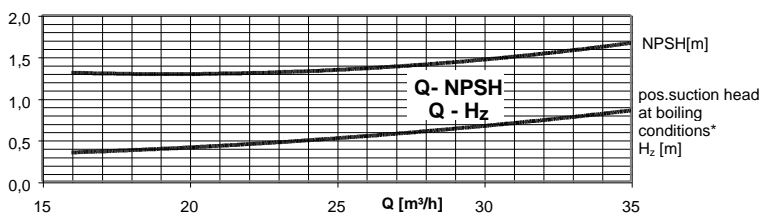
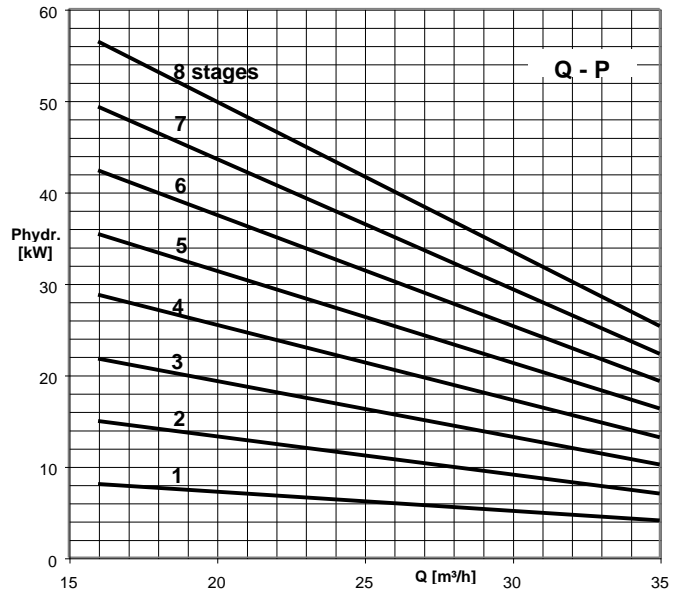
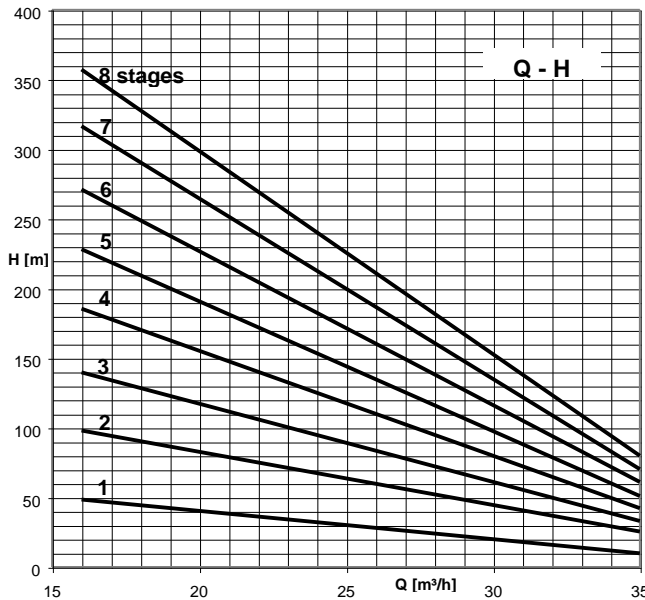
Characteristic curves



CEH 5100 with magnetic coupling

n = 1450 rpm, Visc. 1 mm²/s, spec.grav. 1 kg/dm³

* pay attention to suction conditions



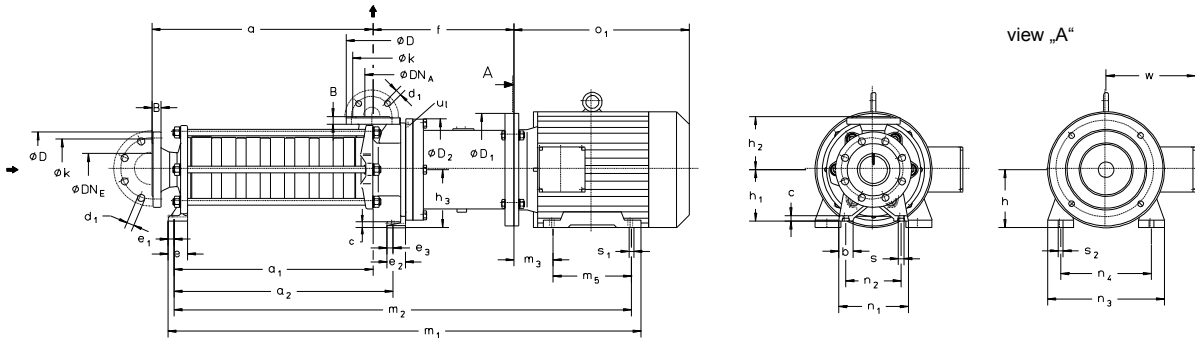
CEH 6100 with magnetic coupling

n = 1450 rpm, Visc. 1 mm²/s, spec.grav. 1 kg/dm³

* pay attention to suction conditions

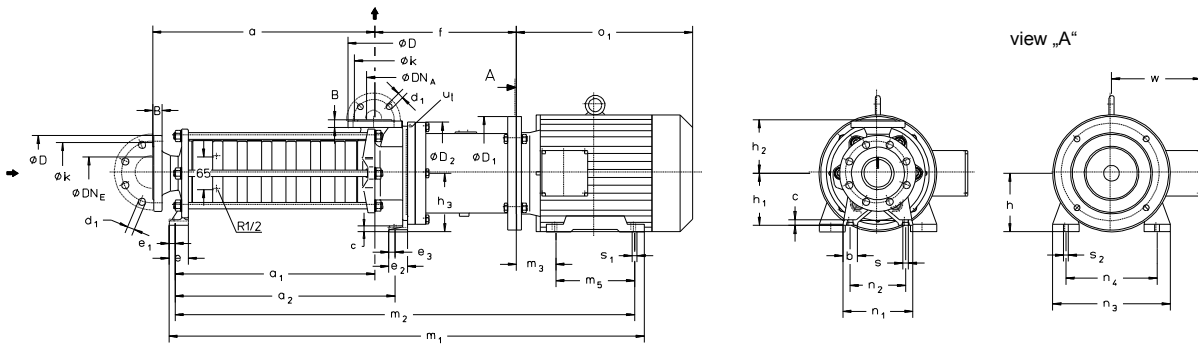
Dimension table

CEHB 1201 - 6108



u_t : connection for temperature probe G $\frac{1}{4}$

CEHB 1201/6 - 6107/6



u_t : connection for temperature probe G $\frac{1}{4}$

flanges acc. DIN 2501 PN 40							
DN _{A/E}	20	32	40	50	65	80	100
D	115	140	154	165	190	200	235
k	75	100	110	125	145	160	190
d ₂ x number	14 X 4	18 x 4	18 x 4	18 x 4	18 x 8	18 x 8	22 x 8

Dimensions of the motor

size	nominal power		D ₁	h	m ₃	m ₅	n ₃ [*]	n ₄	o ₁ [*]	s ₁ [*]	s ₂ [*]	w [*]	weight abt. kg
	IP54resp. EExde	EExe											
80A	0,55	0,55	200	80	50	100	151	125	229	8,5	15	121	8,3
80B	0,75	0,75	200	80	50	100	151	125	229	8,5	15	121	10
90 S	1,1	1,0	200	90	56	100	180	140	250	10,5	-	167	14
90 L	1,5	1,35	200	90	56	125	180	140	275	10,5	-	167	18
100 L 1	2,2	2,0	250	100	63	140	205	160	323	12	-	175	23
100 L 2	3,0	2,5	250	100	63	140	205	160	323	12	-	175	25
112 M	4,0	3,6	250	112	70	140	230	190	329	12	18	191	38
132 S	5,5	5,0	300	132	89	140	266	216	361	12	18	213	59
132 M	7,5	6,8	300	132	89	178	266	216	399	12	18	213	69
160 M	11,0	10,0	350	160	108	210	310	254	470	15	22	245	108
160 L	15,0	13,5	350	160	108	254	310	254	514	15	22	245	130
180 M	18,5	15,0	350	180	121	241	345	279	536	15	25	280	162
180 L	22,0	17,5	350	180	121	279	345	279	574	15	25	295	176
200 L	30,0	24,0	400	200	133	305	400	318	656	20	26	329	254
225 S	37,0	30,0	450	225	149	286	450	356	678	20	26	365	305
225 M	45,0	36,0	450	225	149	311	450	356	703	20	26	365	335
250 M	55,0	44,0	550	250	168	349	505	406	790	25	36	406	425

* : dimension dependent on motor make

Dimensions of the pump

size	IP 54	EEExe II T3	torque of the magnetic coupling	DN _A	DN _E	a	a ₁	a ₂	b	c	D ₂	e	e ₁	e ₂	e ₃	f	h ₁	h ₂	h ₃	m ₁ *	m ₂ *	n ₁	n ₂	s	weight of the pump	
																									kW	kW
mm																										
1201	0,55	0,55	K	20	40	195	146	196													553	523	140	105	13	46
	0,75	0,75																								587
1202	0,75	0,75	K	20	40	229	180	230													595	563	140	105	13	51
	1,1	1																								620
1203	0,75	0,75	K	20	40	263	214	264													621	591	140	105	13	62
	1,1	1																								629
1204	1,5	1,35	P	20	40	297	248	298													654	622	140	105	13	65
	2,2	2																								686
1205	1,1	-	K	20	40	331	282	332	32	10	182	44	17	34	17	237	100	100	100		754	722	140	105	13	67
	1,5	1,35																								663
1206	2,2	2	P	20	40	365	316	366													688	656	140	105	13	70
	3	2,5																								720
1207	-	2	V	20	40	399	350	400								237	100	100	100		754	722	140	105	13	73
	2,2	-																								722
1208	3	2,5	V	20	40	433	384	434													764	729	140	105	13	76
	-	3,6																								756
3101	1,1	1	T	32	65	213	161	218													822	790	170	135	13	76
	2,2	2																								832
3601	1,5	1,35	T	32	65	253	201	258													832	797	170	135	13	76
	2,2	2																								856
3102	1,5	1,35	T	32	65	293	241	298	35	12	260	50	17	50	17	305	112	132	132		886	831	170	135	13	76
	2,2	2																								910
3602	3	2,5	W	32	65	333	281	338													910	870	170	135	13	76
	4	3,6																								940
3103	2,2	2	T	32	65	413	361	418													955	915	170	135	13	76
	3	2,5																								1074
3603	4	3,6	W	32	65	453	401	458													993	953	170	135	13	76
	-	5																								1074
3104	3	2,5	T	32	65	493	441	498													1033	993	170	135	13	76
	5,5	-																								1114
3604	4	3,6	W	32	65	555	5	Z													1074	1034	170	135	13	76
	-	6,8																								1154
3105	3	-	T	32	65	593	5	Z													1074	1034	170	135	13	76
	7,5	-																								1154
3605	4	-	W	32	65	644	612	644													1074	1034	170	135	13	76
	5,5	-																								1154
3106	5,5	-	Z	32	65	686	654	686													1074	1034	170	135	13	76
	7,5	-																								1154
3606	11	10	A	32	65	722	690	722													1074	1034	170	135	13	76
	11	10																								1154
3107	4	-	W	32	65	754	722	754													1074	1034	170	135	13	76
	5,5	-																								1154
3607	5,5	-	Z	32	65	822	790	822													1074	1034	170	135	13	76
	7,5	-																								1154
3108	11	10	A	32	65	886	831	886													1074	1034	170	135	13	76
	-	13,5																								1154
3608	11	10	C	32	65	910	870	910													1074	1034	170	135	13	76
	-	13,5																								1154

size	IP 54	EExe II T3	torque of the magnetic coupling	DN _A	DN _E	a	a ₁	a ₂	b	c	D ₂	e	e ₁	e ₂	e ₃	f	h ₁	h ₂	h ₃	m ₁ *	m ₂ *	n ₁	n ₂	s	weight of the tpump																																																															
	kW	kW																								mm	kg																																																													
4101	2,2	2	T	40	80	268	205	266	36	15	260	52	17	49	17	311	132	140	132	751	719	195	155	13	113																																																															
	3	2,5																								761	726																																																													
	-	3,6																																																																																						
4	-	W																																																																																						
4102	2,2	2	T			40	80	323								260				321	36				15	260	52	17	49	17	311	132	140	132	806	774	195	155	13	140																																																
	3	2,5																																							816	781																																														
	4	3,6																																									W																																													
5,5	5	Z	331					860								820																																																																								
3	-	T																																																																																						
4103	-	3,6	W					40								80				378											315				376	36				15	260	52	17	49	17	311	132	140	132	861	829	195	155	13	156																																	
	4	-	Z																																																					361	871	836																														
	5,5	5	A																																																																																					
7,5	6,8	A	331																	915											875																																																									
-	10	Z																																																																																						
4104	-	5	Z																	40											80				433											370				431	36				15	260	52	17	49	17	331	132	140	132	953	913	195	155	13	204																		
	5,5	-	A																																																																				361	1034	994															
	7,5	6,8	A																																																																																					
-	10	Z	331																																970											930																																										
11	-	C																																																																																						
4105	-	5	Z																																40											80				488											425				486	36				15	260	52	17	49	17	331	132	140	132	1008	968	195	155	13	211			
	5,5	-	A																																																																																			361	1089	1049
	7,5	6,8	A																																																																																					
11	-	C	331																																															1025											985																											
-	5	Z																																																																																						
4106	-	6,8	A	40	80				543	480	541	36	15	260	52		17	49	17			331	132	140																										132											1063				1023											195				155	13				218			
	7,5	-	C																																																																																			361	1144	1104
	11	10	D																																																																																					
-	13,5	D	331						1188	1148																																																																														
7,5	6,8	A																																																																																						
4107	7,5	-	C			40	80		598	535	596										36	15			260	52	17	49	17	361		132	140	132			1118	1078	195																						155				13																				225			
	-	10	D																																																																																			331	1199	1159
	11	-	D																																																																																					
15	13,5	E	361						1243	1203																																																																														
-	15	E																																																																																						
4108	7,5	6,8	C					40	80	653	590					651														36						15	260	52		17	49	17	331	132	140		132	1250	1203			195	155	13																															235			
	-	10	D																																																																																			361	1298	1258
	11	-	D																																																																																					
15	13,5	E	361							1305	1258																																																																													
18,5	15	E																																																																																						
5101	3	-	T							50	100					305				237											299												45					17	260		60				19	57	19	318	160	165		160	792	758			215	170	15																200			
	4	3,6	W																																																																																			338	802	765
	5,5	5	Z																																																																																					
7,5	6,8	A	338													846				804																																																																				
-	5	Z																																																																																						
5102	5,5	-	A													50				100											380				312											374												45					17	260		60				19	57	19	338	160	165		160	921	879			215	170	15	235			
	7,5	6,8	A																																																																																			368	959	917
	11	10	C																																																																																					
-	13,5	D	338																												1040				998																																																					
-	15	D																																																																																						
5103	-	6,8	A	50	100							455	387	449	45		17	315	60				19	57							19				368											160				165																							160			1091		1042	215	170	15				254			
	7,5	-	C																																																																																			368	1034	992
	-	10	D																																																																																					
11	-	D	368									1115	1073																																																																											
15	13,5	E																																																																																						
5104	18,5	15	E			50	100					530	462	524							45	17			315	60	19	57	19			368	160	165	160				1159																						1117				215											170		15							315			
	-	10	D																																																																																			368	1166	1117
	11	-	D																																																																																					
15	13,5	E	368									1190	1148																																																																											
18,5	15	E																																																																																						
5105	-	17,5	F					50	100			605	537	599																45		17				315	60	19	57	19	434	160		165	160		1234					1192	215	170							15																								366			
	-	24	F																																																																																			434	1241	1192
	-	10	A																																																																																					
11	-	B	434									1279	1230																																																																											
15	13,5	E																																																																																						
5106	18,5	15	E							50	100	680	612	674																											45		17				315	60	19		57	19			434	160	165		160	1317		1268					215	170	15																378			
	-	17,5	F																																																																																			434	1375	1333
	11	-	B																																																																																					
15	13,5	E	434									1381	1333																																																																											
22	-	F																																																																																						
5106	-	24	F									50	100	680		612				674																																			45			17		315		60	19	57		19				464	160	165		160	1458		1409					215	170	15	378			
	30	-	H																																																																																			464	1494	1446
	-	30	H																																																																																					
15	13,5	E	464											1450		1408																																																																								
18,5	15	E																																																																																						
-	17,5	F																																																																																						
22	-	F																																																																																						
30	-	H																																																																																						
-	30	H																																																																																						
-	30	H																																																																																						

size	IP 54	EExe II T3	torque of the magnetic coupling	DN _A	DN _E	a	a ₁	a ₂	b	c	D ₂	e	e ₁	e ₂	e ₃	f	h ₁	h ₂	h ₃	m ₁ *	m ₂ *	n ₁	n ₂	s	weight of the pump																	
	kW	kW																								mm																
5107	15	-	E	50	100	755	687	749	45	17	315	60	19	57	19	434	160	165	160	1525	1483	215	170	15	389																	
	18,5	15																								F	1569	1521														
	-	17,5																																								
	22	-	H																							1608	1559															
	-	24																																								
30	-																																									
-	30	J	1647			1586																																				
37	-																																									
5108	-	17,5	E			50	100	830								762				824	45				17	315	60	19	57	19	434	160	165	160	1644	1596	215	170	15	401		
	22	-	F																																						1683	1634
	-	24																																								
	30	-	H	1722	1661																																					
	-	30																																								
	37	-	J	1747	1686																																					
	-	36																																								
45	-	L	1797	1743																																						
-	44	K																																								
6101	5,5	5	A	65	100			338	265	332	50	20	315	64	19	65	20	413	180	180		180	948	907							245				195	15				298		
	7,5	6,8				1068	1026																																			
	-	10																																								
	11	-	B			1112	1070																																			
-	13,5																																									
7,5	-	A	1077			1035																																				
-	10																																									
6102	11	-	B			65	100	428	355	422								50			20		315	64	19	65	20	413	180	180		180	1158	1116			245	195	15	320		
	15	13,5	1202																																						1160	
	18,5	15																																								1246
	-	17,5																																								
6103	15	13,5	E	65	100			518	445	512	50	20	315	64	19	65	20		443	180		180						180			1292		1250	245	195	15				335		
	18,5	15																																							1336	1288
	-	17,5																																								
	22	-	F																																						1375	1326
-	24																																									
6104	30	-	H					65	100	608									535												602		50							20	315	64
	-	13,5	1388			1340																																				
	18,5	15					1426											1378																								
	-	17,5																																								
	22	-	F			1465	1416																																			
	-	24																																								
30	-	H	1504	1443																																						
-	30																																									
6105	37	-	J	65	100	698	625			692	50	20	315	64	19	65	20	443	180	180	180	1529	1468	245	195	15	368															
	-	36	1555																									1506														
	45	-						L	1594																				1533													
	-	44	1619					1558																																		
	-	44							K																			1669	1615													
	22	-	H					1607	1558																																	
	-	24	F																									1645	1596													
	30	-	J					1684	1623																																	
-	30	H	1709			1648																																				
37	-	J					1759	1705																																		
-	36																																									
6106	45	-	L	65	100	788	715	782	50	20	315	64	19	65	20	473	180	180	180	1735	1686	245	195	15	382																	
	-	44	K																							1774	1713															
	55	-	M																									1799	1738													
	-	24	F																							1849	1795															
	-	30	K																									1825	1776													
	30	-	F																							1864	1803															
	37	-	J																									1889	1828													
-	30	H	1939			1885																																				
-	36	J																																								
6107	45	-	L			65	100	878								805				872	50				20	315	64	19	65	20	443	180	180	180	1774	1713	245	195	15	397		
	-	44	K	1799	1738																																					
	55	-	M						1849	1795																																
	-	30	K	1825	1776																																					
	30	-	F						1864	1803																																
	37	-	J	1889	1828																																					
	-	30	H						1939	1885																																
-	36	J																																								
6108	45	-	L	65	100			968	895	962	50	20	315	64	19	65	20	473	180	180		180	1774	1713							245				195	15				415		
	-	44	K																																						1799	1738
	55	-	M			1849	1795																																			
	-	30	K																		1825				1776																	
	37	-	J			1864	1803																																			
	-	30	H																		1889				1828																	
-	36	J	1939			1885																																				
-	36	J																																								

size	IP 54	EEExe II T3	torque of the magnetic coupling	DN _A	DN _E	a	a ₁	a ₂	b	c	D ₂	e	e ₁	e ₂	e ₃	f	h ₁	h ₂	h ₃	m ₁ *	m ₂ *	n ₁	n ₂	s	weight of the pump				
	kW	kW																								mm			
1201/6	0,55	0,55	K	20	40	229	180	230	32	10	182	44	17	34	17	237	100	100	100	788	756	140	105	13	69				
	0,75	0,75																								587	557	48	
1202/6	0,75	0,75	K			263	214	264																		227	621	591	53
	1,1	1																											
	1,5	1,35				654	622																						
1203/6	0,75	0,75	K			297	248	298																		237	655	625	64
	1,1	1																											
	1,5	1,35				688	656																						
1204/6	2,2	2	P			331	282	332																		227	720	688	67
	1,1	-																											
	1,5	1,35				722	690																						
	2,2	2				754	722																						
1205/6	3	2,5	V			365	316	366																		227	756	724	69
	1,5	1,35																											
	-	2				798	763																						
	2,2	-				790	758																						
1206/6	3	2,5	V			399	350	400																		227	822	790	72
	-	3,6																											
	2,2	-				856	824																						
	3	2,5				866	831																						
1207/6	-	2	P	433	384	434	237	856	824	75																			
	2,2	-									866	831																	
	3	2,5		866	831																								
	4	3,6		866	831																								
3101/6	1,1	1	T	32	65	253	201	258	35	12	260	50	17	50	17	325	112	132	132	955	915	170	135	13	150				
	1,5	1,35																								295	295	126	
3102/6	2,2	2	T			293	241	298																		305	741	709	136
	1,5	1,35																											
	2,2	2				781	749																						
3103/6	3	2,5	T			333	281	338																		305	791	756	142
	4	3,6																											
	2,2	2				831	796																						
	-	5				875	835																						
3104/6	3	2,5	T			373	321	378																		305	861	829	146
	-	3,6																											
	-	5				915	875																						
	4	-				871	836																						
	5,5	-				915	875																						
3105/6	-	6,8	Z			413	361	418																		325	953	913	150
	3	-																											
	-	3,6				911	876																						
	-	5				955	915																						
	4	-				911	876																						
3106/6	5,5	-	Z			453	401	458																		325	955	915	161
	-	6,8		993	953																								
	-	6,8		951	916																								
	7,5	-		995	955																								
	11	10		1033	993																								
3107/6	4	-	W	493	441	498	355	1114	1074	165																			
	-	5									991	956																	
	5,5	-		1035	995																								
	-	6,8		1073	1033																								
	7,5	-		1154	1114																								

size	IP 54	EExe II T3	torque of the magnetic coupling	DN _A	DN _E	a	a ₁	a ₂	b	c	D ₂	e	e ₁	e ₂	e ₃	f	h ₁	h ₂	h ₃	m ₁ *	m ₂ *	n ₁	n ₂	s	weight of the pump																																																												
	kW	kW																								mm																				kg																																							
4101/6	2,2	2	T	40	80	323	260	321	36	15	260	52	17	49	17	311	132	140	132	806	774	195	155	13	119																																																												
	3	2,5																		816	781																																																																
	-	3,6																		861	829																																																																
	4	-																		871	836																																																																
4102/6	2,2	2	T			40	80	378								315				376	36				15	260	52	17	49	17	311	132	140	132	815	785	195	155	13	146																																													
	3	2,5	861																																829																																																		
	4	3,6	871																																836																																																		
	5,5	5	915																																875																																																		
4103/6	3	-	T					40								80				433											370				431	36				15	260	52	17	49	17	311	132	140	132	916	884	195	155	13	162																														
	-	3,6	926																																															891																																			
	4	-	970																																															930																																			
	5,5	5	1008																																															968																																			
4104/6	7,5	6,8	A																	40											80				488											425				486	36				15	260	52	17	49	17	361	132	140	132	1089	1049	195	155	13	210															
	-	10	1025																																																														985																				
	5,5	-	1063																																																														1023																				
	7,5	6,8	1144																																																														1104																				
4105/6	11	-	C																																40											80				543											480				541	36				15	260	52	17	49	17	331	132	140	132	1080	1040	195	155	13	217
	-	5	1118																																																																													1078					
	5,5	-	1199																																																																													1159					
	-	6,8	1243																																																																													1203					
4106/6	7,5	-	C	40	80				598	535	596	36	15	260	52		17	49	17			331	132	140																										132											1173				1133											195				155	13				224
	-	10	1254																																																										1214																								
	11	-	1298																																																										1258																								
	15	13,5	1305																																																										1258																								
4107/6	-	15	E			40	80		653	590	561										36	15			260	52	17	49	17	331		132	140	132			1228	1188	195																						155				13																				231
	7,5	6,8	1309																																		1269																																																
	11	-	1353																																		1313																																																
	18,5	15	1360																																		1313																																																
5101/6	3	-	T					50	100	380	312					374														45						17	260	60		19	57	19	318	160	165		160	867	833			215	170	15																															210
	4	3,6	877																																													840																																					
	5,5	5	921																																													879																																					
	7,5	6,8	959																																													917																																					
5102/6	-	5	Z							50	100					455				387											449												45					17	260		60				19	57	19	338	160	165		160	996	954			215	170	15																245
	5,5	-	1034																																																												992																						
	7,5	6,8	1115																																																												1073																						
	11	10	1159																																																												1117																						
5103/6	-	13,5	D													50				100											530				462											524												45					17	260		60				19	57	19	368	160	165		160	1166	1117			215	170	15	264
	-	15	1166																																																																											1117							
	-	6,8	1109																																																																											1067							
	7,5	-	1190																																																																											1148							
5104/6	11	-	D	50	100							605	537	599	45		17	260	60				19	57							19				368											160				165																							160			1234		1192	215	170	15				325
	15	13,5	1241																																																																									1192									
	18,5	15	1265																																																																									1223									
	-	17,5	1309																																																																									1267									
5105/6	-	24	F			50	100					680	612	674							45	17			260	60	19	57	19			368	160	165	160				1316																						1267				215											170		15							376
	11	-	1354																																				1305																																														
	15	13,5	1392																																				1343																																														
	18,5	15	1406																																				1364																																														
5106/6	11	-	B					50	100			755	687	749																45		17				260	60	19	57	19	434	160		165	160		1450					1408	215	170							15																								388
	15	13,5	1456																																												1408																																						
	18,5	15	1494																																												1446																																						
	-	17,5	1533																																												1484																																						
5107/6	22	-	F							50	100	830	762	824																											45		17				260	60	19		57	19			434	160	165		160	1525		1483					215	170	15																399
	-	24	1531																																																									1483																									
	30	-	1569																																																									1521																									
	30	-	1608																																																									1559																									
5108/6	30	-	H									50	100	830		762				824																																			45			17		260		60	19	57		19				464	160	165		160	1647		1586					215	170	15	399
	-	30	1647																																																																								1586										
	15	-	1600																																																																								1558										
	18,5	15	1606																																																																								1558										
5109/6	-	17,5	F	50	100									830	762	824	45	17	260	60			19	57							19															434				160																				165			160		1644		1596		215	170	15				399
	22	-	1683																																																																								1634										
	-	24	1722																																																																								1661										
	30	-																																																																																			
5110/6	-	30	H			50	100							830	762	824					45	17			260	60	19	57	19				464	160	165											160																														215	170	15							399
	37	-																																																																																			

size	IP 54	EExe II T3	torque of the magnetic coupling	DN _A	DN _E	a	a ₁	a ₂	b	c	D ₂	e	e ₁	e ₂	e ₃	f	h ₁	h ₂	h ₃	m ₁ *	m ₂ *	n ₁	n ₂	s	weight of the pump kg																																																										
	kW	kW																								mm																				kg																																					
6101/6	5,5	5	A	65	100	428	355	422																	413	1038	997	311																																																							
	7,5	6,8																							1076	1035																																																									
	-	10																							1158	1116																																																									
	11	-																							1202	1160																																																									
6102/6	-	13,5	E			518	445	512																	443	413	443		1292	1250	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	1555	1506	1594	1533	1619	1558	1516	1558	1645	1596	1684	1623	1709	1648	1759	1705	1697	1648	1735	1686	1774	1713	1799	1738	1849	1795	1825	1776	1864	1803	1889	1828	1939	1885	332
	7,5	-	A																																																																																
	-	10	B																																																																																
	11	-	B																																																																																
6103/6	15	13,5	E			608	535	602																	443	443	1292		1250	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	1555	1506	1594	1533	1619	1558	1516	1558	1645	1596	1684	1623	1709	1648	1759	1705	1697	1648	1735	1686	1774	1713	1799	1738	1849	1795	1825	1776	1864	1803	1889	1828	1939	1885	348	
	18,5	15	E																																																																																
	-	17,5	F																																																																																
	22	-	F																																																																																
6104/6	-	24	H			698	625	692																	443	443	1292		1250	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	1555	1506	1594	1533	1619	1558	1516	1558	1645	1596	1684	1623	1709	1648	1759	1705	1697	1648	1735	1686	1774	1713	1799	1738	1849	1795	1825	1776	1864	1803	1889	1828	1939	1885	362	
	15	13,5	E																																																																																
	18,5	15	E																																																																																
	-	17,5	F																																																																																
6105/6	30	-	H			788	715	782																	443	443	1292		1250	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	1555	1506	1594	1533	1619	1558	1516	1558	1645	1596	1684	1623	1709	1648	1759	1705	1697	1648	1735	1686	1774	1713	1799	1738	1849	1795	1825	1776	1864	1803	1889	1828	1939	1885	381	
	-	13,5	E																																																																																
	18,5	15	E																																																																																
	-	17,5	F																																																																																
6106/6	22	-	F	878	805	872	443	443	1292	1250	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	1555	1506	1594	1533	1619	1558	1516	1558	1645	1596	1684	1623	1709	1648	1759	1705	1697	1648	1735	1686	1774	1713	1799	1738	1849	1795	1825	1776	1864	1803	1889	1828	1939	1885	395																				
	30	-	H																																																																																
	-	30	J																																																																																
	37	-	J																																																																																
6107/6	-	36	L	968	895	962	443	443	1292	1250	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	1555	1506	1594	1533	1619	1558	1516	1558	1645	1596	1684	1623	1709	1648	1759	1705	1697	1648	1735	1686	1774	1713	1799	1738	1849	1795	1825	1776	1864	1803	1889	1828	1939	1885	410																				
	30	-	K																																																																																
	37	-	K																																																																																
	-	30	H																																																																																

Data regarding pump size - order hints

series + size	hydraulics + bearings	shaft sealing + magnetic coupling	material design	casing seal
	A• first hydraulics •F two liquid surrounded sleeve bearing	1 •• coupling system 1 2 •• coupling system 2 3 •• coupling system 3 4 •• coupling system 4 isolation shroud of: • A • Hastelloy C (2.4610) torque of desynchronization [Nm] for system 1 2 / 3 4 •• A 78 69 •• B 83 •• C 100 •• D 112 •• E 158 133 •• F 179 178 •• H 212 •• J 255 •• K 14 293 •• L 330 •• M 380 •• P 23 •• T 33 •• V 38 •• W 41 •• Z 54	1A main parts of spheroidal cast iron vane wheel impeller of brass 1B main parts of spheroidal cast iron vane wheel impeller of chrome steel 1F main parts of spheroidal cast iron vane wheel impeller of PEAK 4B stainless steel 4F stainless steel, vane wheel impeller PEAK	4 soft PTFE and PTFE-O-ring at isolation shroud
1201		1AK		
1202		1AK		
1203		1AK, 1AP		
1204		1AK, 1AP, 1AV		
1205		1AP, 1AV		
1206		1AP, 1AV		
1207		1AP, 1AV		
1208		1AV		
3101 and 3601		2AT		
3102 and 3602		2AT		
3103 and 3603		2AT, 2AW		
3104 and 3604		2AT, 2AW, 2AZ		
3105 and 3605		2AT, 2AW, 2AZ, 2AA		
3106 and 3606		2AT, 2AW, 2AZ, 2AA		
3107 and 3607		2AW, 2AZ, 2AA		
3108 and 3608		2AZ, 2AA, 2AC		
4101		3AT, 3AW		
4102		3AT, 3AW, 3AZ		
4103		3AT, 3AW, 3AZ, 3AA		
4104		3AZ, 3AA, 3AC		
CEH• 4105	AF	3AZ, 3AA, 3AC, 3AD	alternatively: 1A 1B 1F 4B 4F	4
4106		3AA, 3AC, 3AD, 3AE		
4107		3AC, 3AD, 3AE		
4108		3AC, 3AD, 3AE		
5101		3AT, 3AW, 3AZ, 3AA		
5102		3AZ, 3AA, 3AC, 3AD		
5103		3AA, 3AC, 3AD, 3AE		
5104		3AD, 3AE, 3AF		
5105		4AA, 4AB, 4AE, 4AF, 4AH		
5106		4AE, 4AF, 4AH		
5107		4AE, 4AF, 4AH, 4AJ		
5108		4AE, 4AF, 4AH, 4AJ, 4AK; 4AL		
6101		4AA, 4AB, 4AE		
6102		4AA, 4AB, 4AE		
6103		4AE, 4AF, 4AH		
6104		4AE, 4AF, 4AH, 4AJ		
6105		4AE, 4AF, 4AH, 4AJ, 4AK; 4AL		
6106		4AF, 4AH, 4AJ, 4AK; 4AL, 4AM		
6107		4AF, 4AH, 4AJ, 4AK; 4AL, 4AM		
6108		4AH, 4AJ, 4AK; 4AL, 4AM		

Possible pump-magnetic coupling-motor combinations please take from the dimensions table.

series + size	hydraulics + bearings	shaft sealing + magnetic coupling	material design	casing seal
	A • first hydraulics •F two liquid surrounded sleeve bearing	1 •• coupling system 1 2 •• coupling system 2 3 •• coupling system 3 4 •• coupling system 4 isolation shroud of: • A • Hastelloy C (2.4610) torque of desynchronization [Nm] for System 1 2 / 3 4 •• A 78 69 •• B 83 •• C 100 •• D 112 •• E 158 133 •• F 179 178 •• H 212 •• J 255 •• K 14 293 •• L 330 •• M 380 •• P 23 •• T 33 •• V 38 •• W 41 •• Z 54	1A main parts of spheroidal cast iron vane wheel impeller of brass 1B main parts of spheroidal cast iron vane wheel impeller of chrome steel 1F main parts of spheroidal cast iron vane wheel impeller of PEAK 4B stainless steel 4F stainless steel, vane wheel impeller PEAK	4 soft PTFE and PTFE O-ring at isolation shroud
CEH•	AF	1AK 1AK 1AK, 1AP 1AK, 1AP, 1AV 1AP, 1AV 1AP, 1AV 1AP, 1AV 2AT 2AT 2AT, 2AW 2AT, 2AW, 2AZ 2AT, 2AW, 2AZ, 2AA 2AT, 2AW, 2AZ, 2AA 2AW, 2AZ, 2AA 3AT, 3AW 3AT, 3AW, 3AZ 3AT, 3AW, 3AZ, 3AA 3AZ, 3AA, 3AC 3AZ, 3AA, 3AC, 3AD 3AA, 3AC, 3AD, 3AE 3AC, 3AD, 3AE 3AT, 3AW, 3AZ, 3AA 3AZ, 3AA, 3AC, 3AD 3AA, 3AC, 3AD, 3AE 3AD, 3AE, 3AF 4AA, 4AB, 4AE, 4AF, 4AH 4AE, 4AF, 4AH 4AE, 4AF, 4AH, 4AJ 4AA, 4AB, 4AE 4AA, 4AB, 4AE 4AE, 4AF, 4AH 4AE, 4AF, 4AH, 4AJ 4AE, 4AF, 4AH, 4AJ, 4AK; 4AL 4AF, 4AH, 4AJ, 4AK; 4AL, 4AM 4AF, 4AH, 4AJ, 4AK; 4AL, 4AM	alternatively: 1A 1B 1F 4B 4F	4
		1201/6 1202/6 1203/6 1204/6 1205/6 1206/6 1207/6 3101/6 and 3601/6 3102/6 and 3602/6 3103/6 and 3603/6 3104/6 and 3604/6 3105/6 and 3605/6 3106/6 and 3606/6 3107/6 and 3607/6 4101/6 4102/6 4103/6 4104/6 4105/6 4106/6 4107/6 5101/6 5102/6 5103/6 5104/6 5105/6 5106/6 5107/6 6101/6 6102/6 6103/6 6104/6 6105/6 6106/6 6107/6		

Possible pump-magnetic coupling-motor combinations please take from the dimensions table.

Order hints

selection table - 3-phase AC motors, speed: n=1450 rpm				
	IP 54 EEx e II T3 (Ex e G3)		IP 54 and IP 54 EEx d II T3 (TEF)	
size	nominal power [kW]	SIHI designation	nominal power [kW]	SIHI designation
80A	0,55	FK	0,55	FB
80B	0,75	GK	0,75	GB
90 S	1,0	HK	1,1	HB
90 L	1,35	JK	1,5	JB
100 L 1	2,0	KK	2,2	KB
100 L 2	2,5	LK	3,0	LB
112 M	3,6	MK	4,0	MB
132 S	5,0	NK	5,5	NB
132 M	6,8	PK	7,5	PB
160 M	10,0	SK	11,0	SB
160 L	13,5	UK	15,0	UB
180 M	15,0	VK	18,5	VB
180 L	17,5	WK	22,0	WB
200 L	24,0	XK	30,0	XB
225 S	30,0	ZK	37,0	ZB
225 M	36,0	AK	45,0	AB
250 M	44,0	BK	55,0	BB

Example of order

A two stage pump (the NPSH-impeller is not connected) of size 3100 in material design 4B, equipped with a T-magnet and a 1,35 kW motor, protection type EEx e II T3 has the complete order number:

CEH• 3102 AF 2AT 4B 4 JK

On delivery, the point (•) in the fourth place of the type designation is replaced by a letter in the factory.

Any changes in the interest of the technical development are reserved.

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