

Side Channel Pumps



CEH 1201 ... 6108

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

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 / PN 25
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

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.

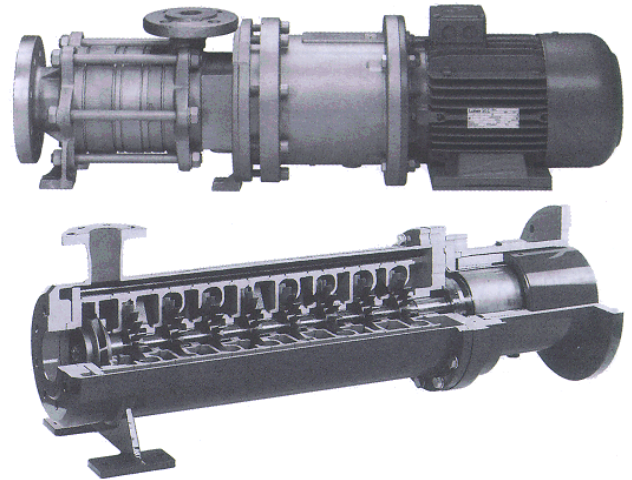
DESIGN

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.



CEH pump with shell

CONSTRUCTION

Casing pressure:

Construction size 1200, 3100, 3600, 4100, 5101 to 5104:PN 40
Construction size 5105 to 5108, 6100 :PN 25

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.	BAUTELE	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)			G-X 6 Cr Ni Mo 18 10 (1.4408)	
21.00	shaft	up to 4-stufig: 1.4462; from 5 stages: 1.4021			X 2 Cr Ni Mo N 22 5 (1.4462)	
23.10	impeller	GG 25 (0.6025)			G-X 6 Cr Ni Mo 18 10 (1.4408)	
23.50	vane wheel impeller	Cu Zn 40 Al 2 (2.0550)	G-X 20 Cr 14 (1.4027 05)	PAEK	G-X 3 Cr Ni Mo Cu 26 6 (1.4517)	PAEK
0242	bearing bush	-			special carbon	
31.40 52.90, 52.91 54.00, 54.01	thrust bearing bushing bearing bush	silicon carbide (SiC) **				
34.60	stool	GG 25 (0.6025) or St 52-3 (1.0570)				
81.70	isolation shroud	Hastelloy C4 (2.4610)				
81.71	flange for can	St 52-3 (1.0570)				
84.71	inner magnet	SmCo-magnets on St 52-3 (1.0570), jacketed with X 6 Cr Ni MoTi 17 12 2 (1.4571)				
84.72	outer magnet	SmCo-magnets on St 52-3 (1.0570)				
84.80	driving flange	St 52-3 (1.0570)				

* Special materials upon request, e.g. Hastelloy B/C
titanium
Monel
1.4500

** Optionally - coating to diminish the friction energy

***Only for the construction sizes 1200, 3100, 3600, 4100. Larger vane wheel impellers of PAEK are not available at present.

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:

SIHI ISOchem-MAT-system e.g.:

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

Series **ZTKA** volute casing pump for medium temperature up to 400°C

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.

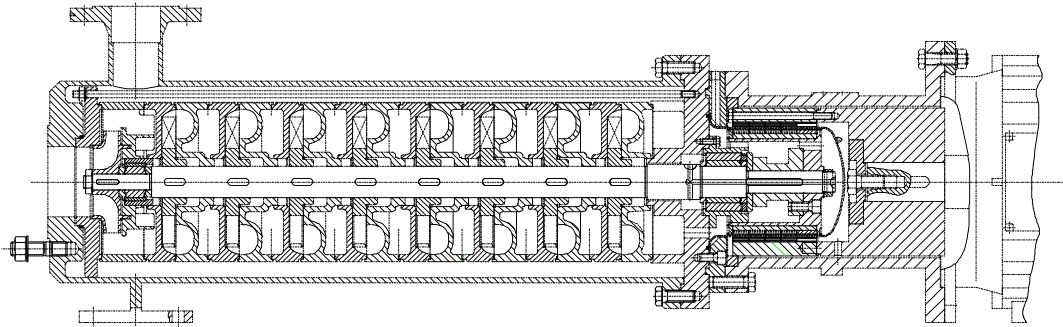
Safety:

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.

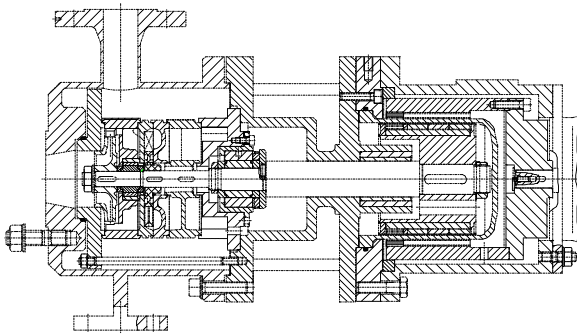
The pump has to be run with a motor load detector. It protects the machine against dry operation and operation beyond the range of the characteristic curves.

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.



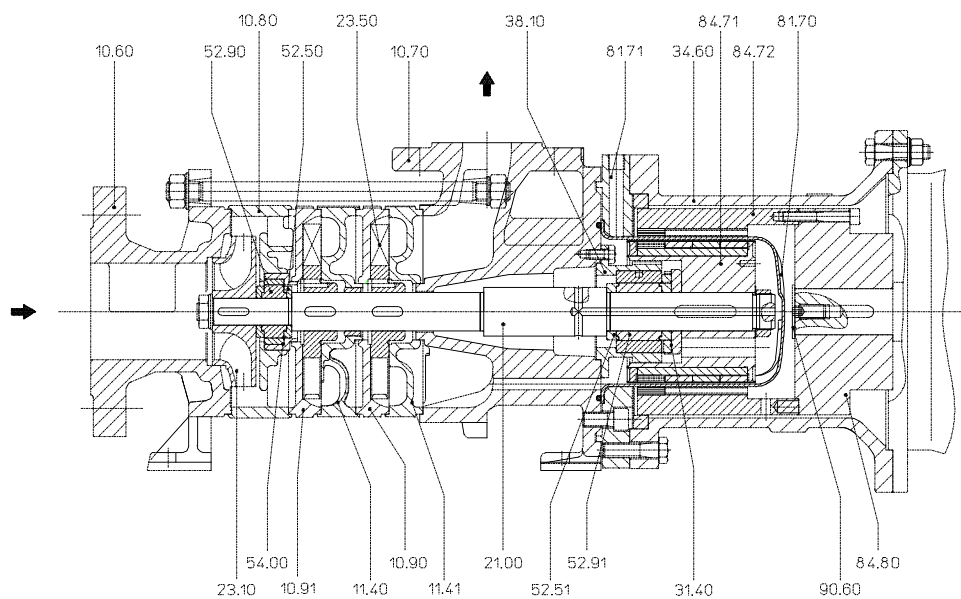
The pump shown down on the right is equipped with a heat barrier and thus applicable at medium temperatures up to 400°C without cooling.



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.

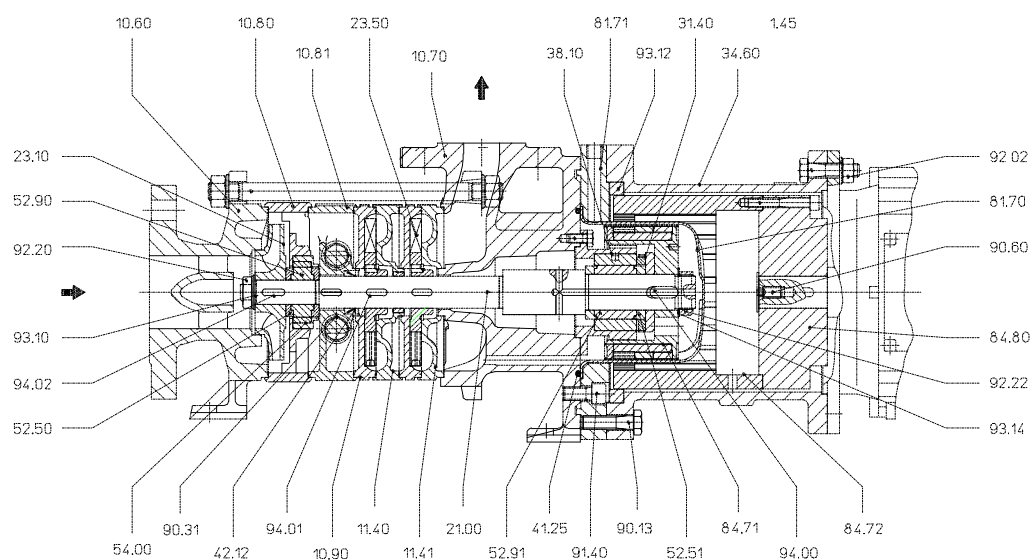
Sectional drawing and nomenclature

CEH



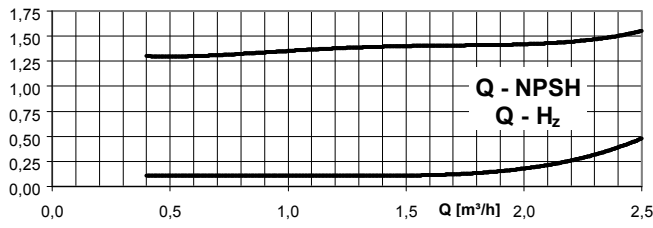
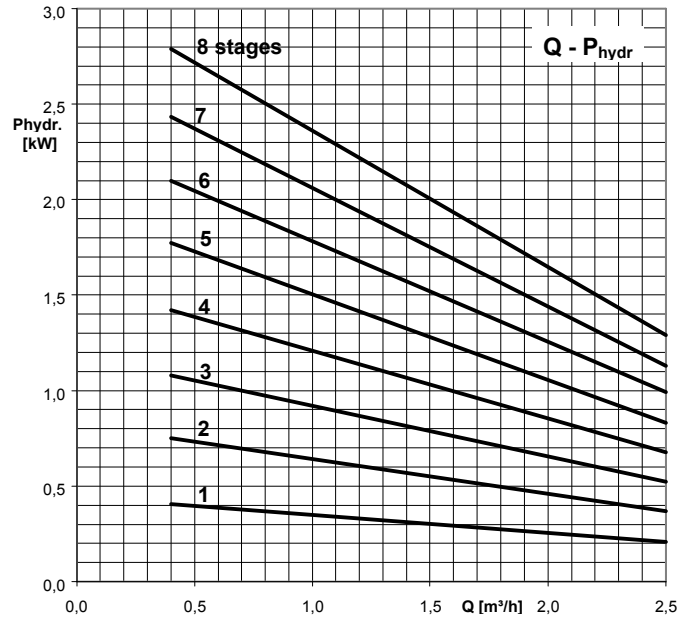
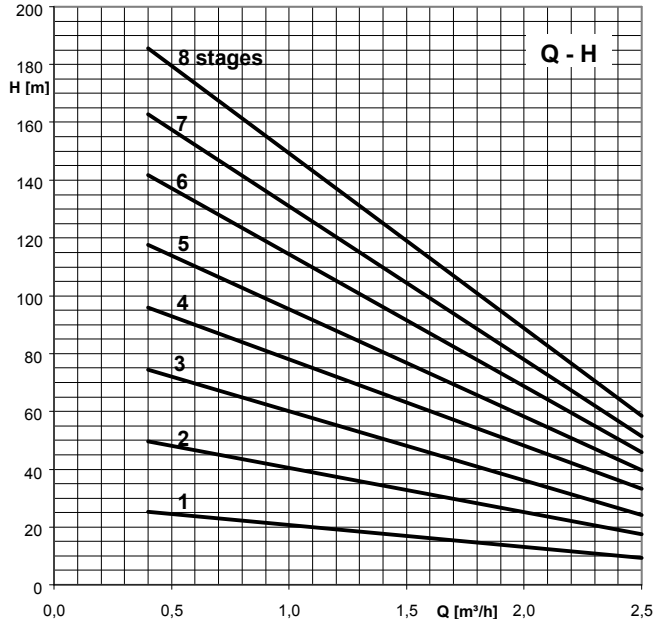
10.60	suction casing	23.50	vane wheel impeller	81.70	isolation shroud
10.70	discharge casing	31.40	thrust bearing	81.71	flange for can
10.80	intermediate piece	34.60	stool	84.71	interior magnet
10.90, 10.91	suction piece	38.10	bearing carrier	84.72	exterior magnet
11.40, 11.41	discharge piece	52.50, 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

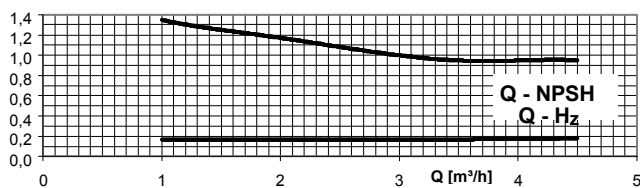
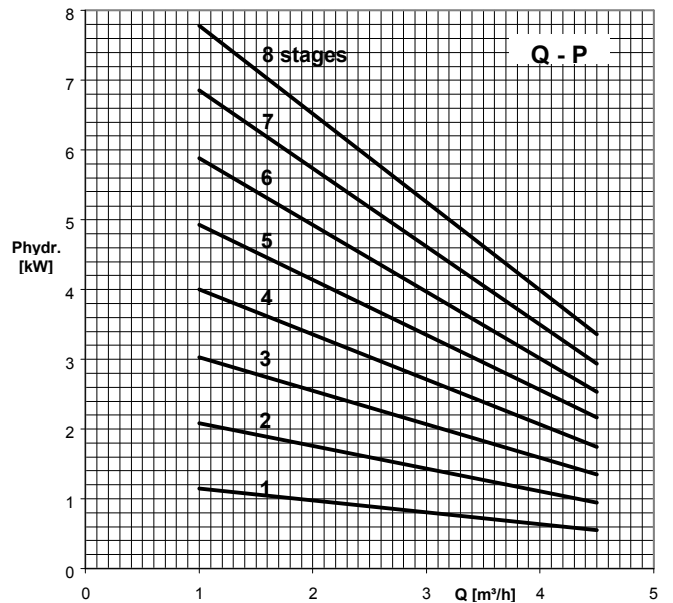
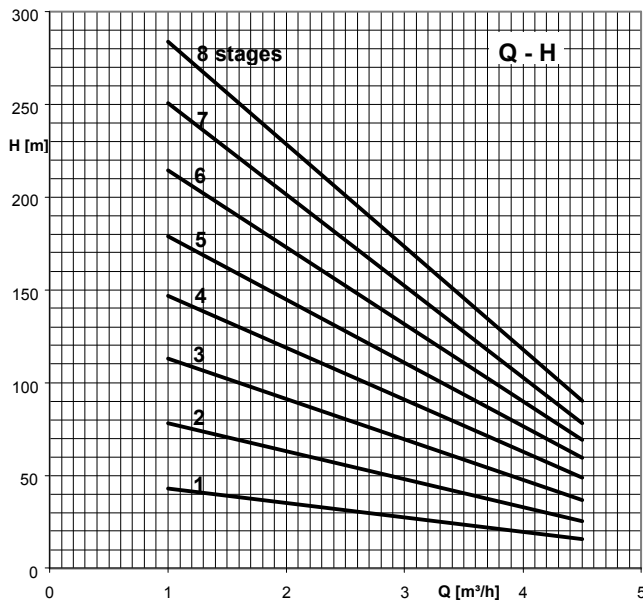
Characteristic curves



CEH 1200 with magnetic coupling

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

* pay attention to suction conditions

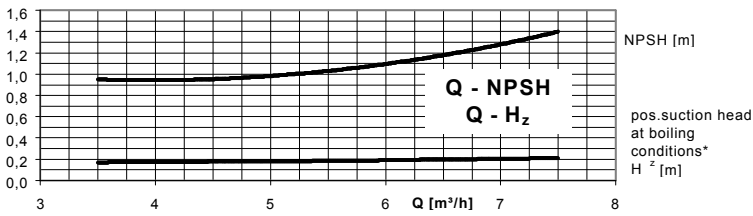
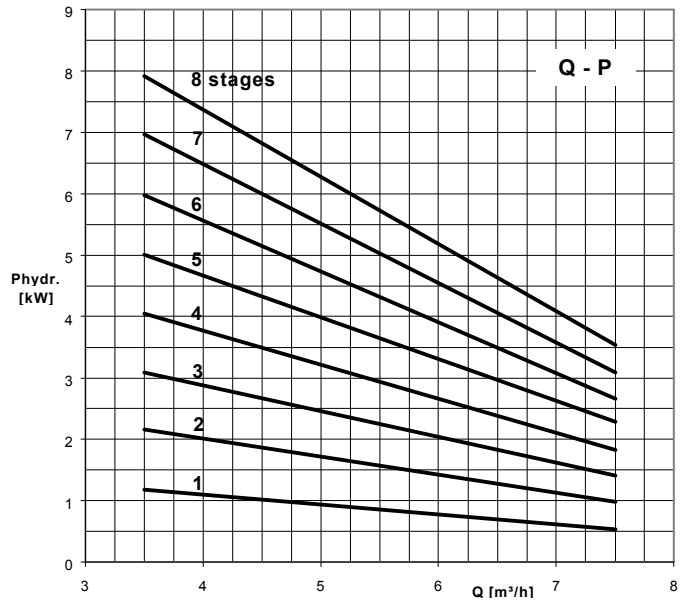
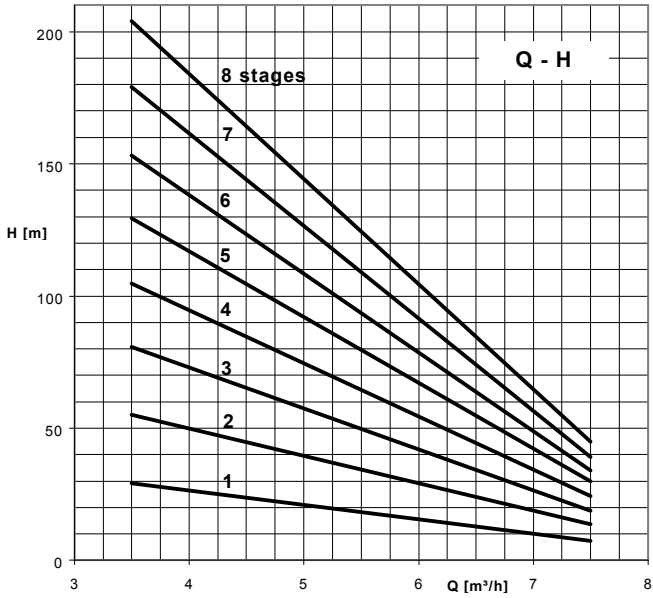


CEH 3100 with magnetic coupling

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

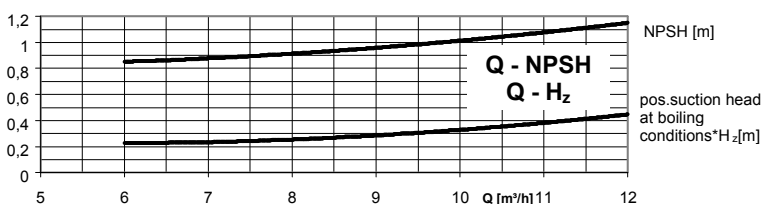
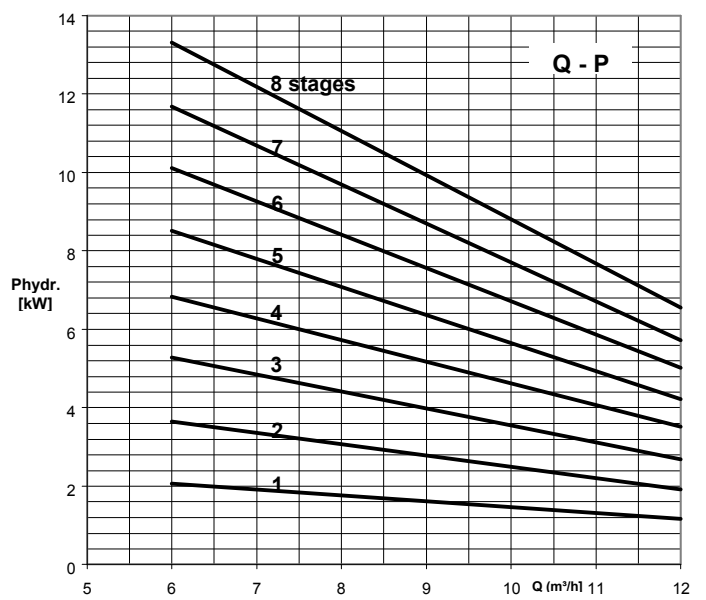
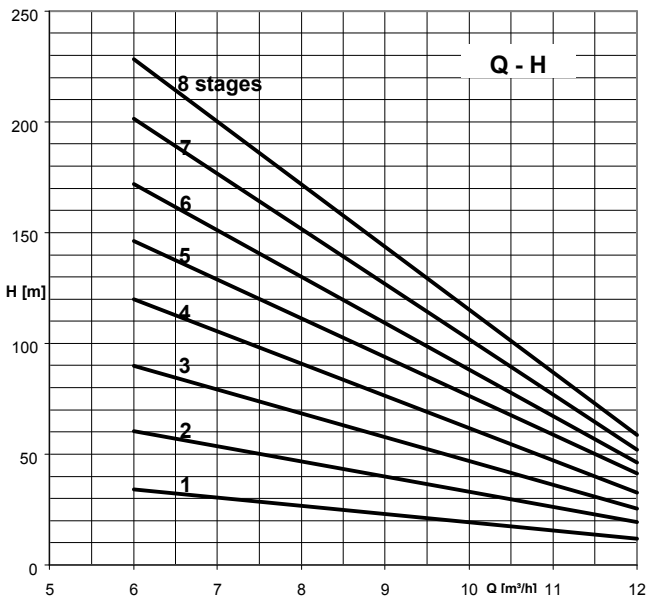
* pay attention to suction conditions

Characteristic curves



CEH 3600 with magnetic coupling

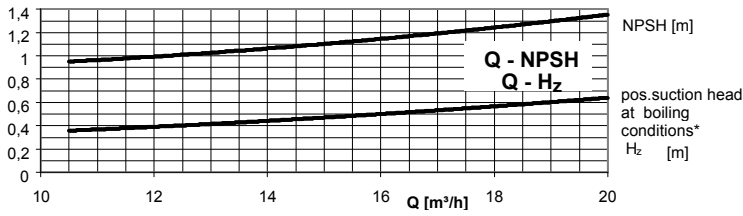
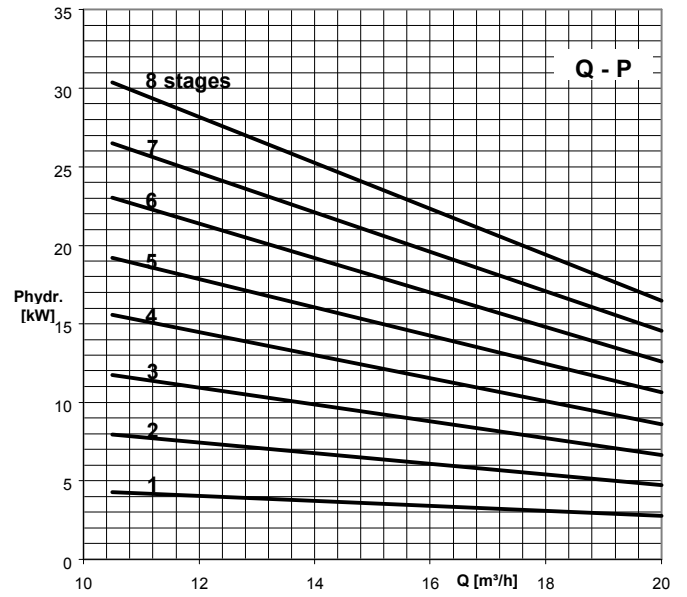
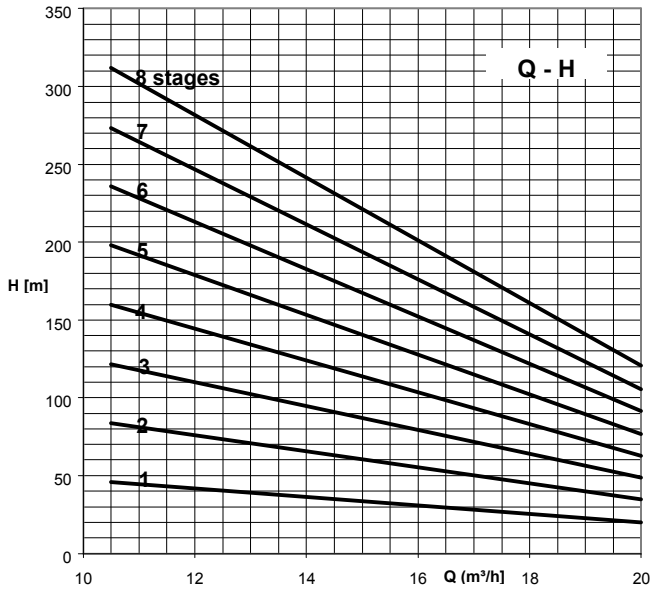
n = 1450 rpm, Visc. 1 mm²/s, spec.grav. 1 kg/dm³
* pay attention to suction conditions



CEH 4100 with magnetic coupling

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

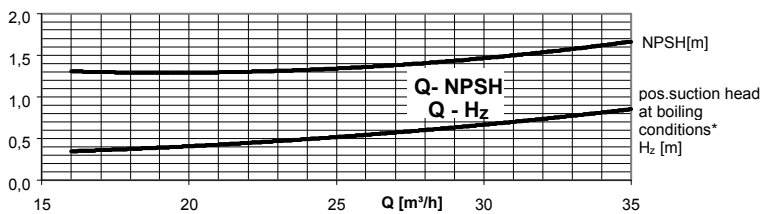
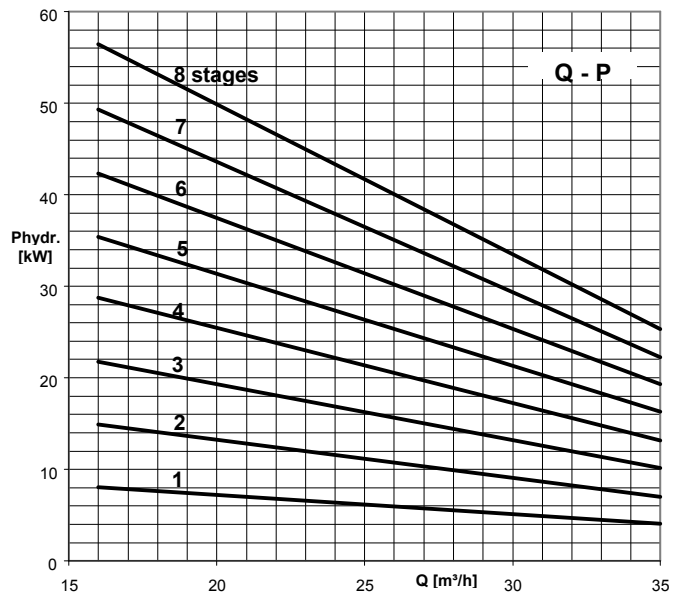
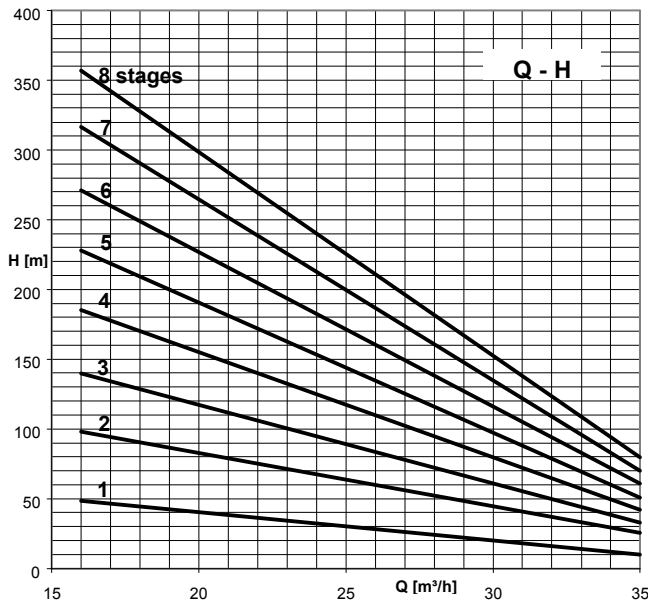
Characteristic curves



CEH 5100 with magnetic coupling

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

* pay attention to suction conditions



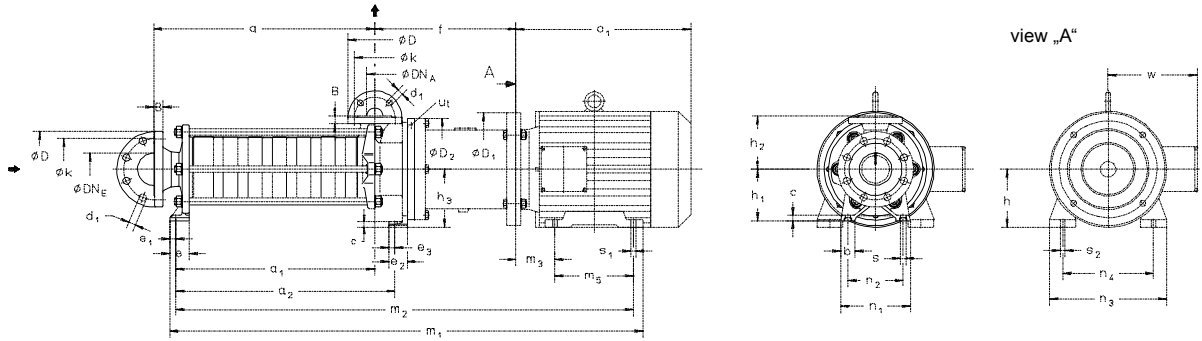
CEH 6100 with magnetic coupling

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

* pay attention to suction conditions

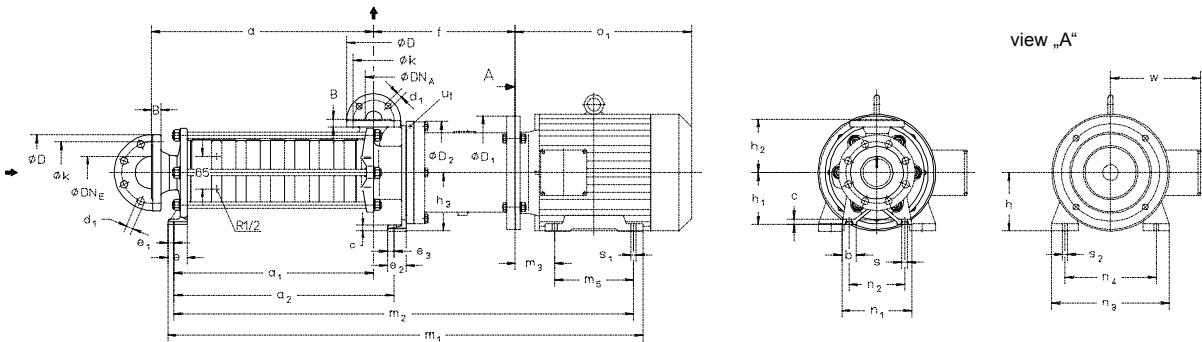
Dimension table

CEHB 1201 - 6108



u_t : connection for temperature probe G¹/₄

CEHB 1201/6 - 6107/6



u_t : connection for temperature probe G¹/₄

flanges acc. DIN 2501 PN 40							
DN _{AVE}	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	EExe II T3	torque of the magnetic coupling	DNa	DNE	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
1201	0,55	0,55	K	20	40	195	146	196	32	10	182	44	17	34	17	227	100	100	100	553	523	140	105	13	46
	0,75	0,75																		587	557				
1202	0,75	0,75	K	20	40	229	180	230	32	10	182	44	17	34	17	227	100	100	100	595	563	140	105	13	51
	1,1	1																		620	588				
	1,5	1,35																		621	591				
1203	0,75	0,75	K	20	40	263	214	264	32	10	182	44	17	34	17	237	100	100	100	629	597	140	105	13	62
	1,1	1																		654	622				
	1,5	1,35																		686	654				
1204	2,2	2	P	20	40	297	248	298	32	10	182	44	17	34	17	237	100	100	100	663	631	140	105	13	65
	1,1	-																		686	656				
	1,5	1,35																		720	688				
	2,2	2																		722	690				
1205	3	2,5	V	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																		764	729				
	2,2	2																		756	724				
	-	3,6																		788	756				
1206	-	1,35	P	20	40	365	316	366	32	10	182	44	17	34	17	227	100	100	100	798	763	140	105	13	70
	-	2																		822	790				
	2,2	-																		832	797				
	3	2,5																		856	824				
1207	4	3,6	V	20	40	399	350	400	32	10	182	44	17	34	17	237	100	100	100	866	831	140	105	13	73
	-	2																		910	870				
	2,2	2																		882	850				
	3	2,5																		896	864				
1208	4	3,6	V	20	40	433	384	434	32	10	182	44	17	34	17	257	100	100	100	886	851	140	105	13	76
	-	5																		910	870				
	2,2	2																		924	892				
	3	2,5																		938	906				
3101	1,1	1	T	32	65	213	161	218	35	12	260	50	17	50	17	295	112	132	132	644	612	170	135	13	122
	1,5	1,35																		669	637				
	2,2	2																		701	669				
3102	1,5	1,35	T	32	65	253	201	258	35	12	260	50	17	50	17	295	112	132	132	709	677	170	135	13	130
	2,2	2																		741	709				
	3	2,5																		751	716				
3103	4	3,6	T	32	65	293	241	298	35	12	260	50	17	50	17	305	112	132	132	781	749	170	135	13	138
	2,2	2																		791	756				
	3	2,5																		835	795				
	-	5																		821	789				
3104	3	2,5	T	32	65	333	281	338	35	12	260	50	17	50	17	305	112	132	132	831	796	170	135	13	142
	-	3,6																		831	796				
	-	5																		875	835				
	4	-																		831	796				
	5,5	-																		875	835				
	-	6,8																		913	873				
3105	3	-	T	32	65	373	321	378	35	12	260	50	17	50	17	305	112	132	132	861	829	170	135	13	146
	-	3,6																		871	836				
	-	5																		915	875				
	4	-																		871	836				
	5,5	-																		915	875				
	-	6,8																		953	913				
3106	7,5	-	A	32	65	413	361	418	35	12	260	50	17	50	17	325	112	132	132	911	876	170	135	13	157
	-	3,6																		955	915				
	4	-																		993	953				
	-	5																		1074	1034				
	5,5	-																		951	916				
	-	6,8																		995	955				
3107	11	10	W	32	65	453	401	458	35	12	260	50	17	50	17	325	112	132	132	1033	993	170	135	13	161
	4	-																		1114	1074				
	-	5																		1035	995				
	5,5	-																		1073	1033				
3108	7,5	6,8	A	32	65	493	441	498	35	12	260	50	17	50	17	355	112	132	132	1154	1114	170	135	13	165
	11	10																		1198	1158				
	-	13,5																		1198	1158				

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	331	132	140	132	751	719	195	155	13	113																																																																																																																																									
	3	2,5																		761	726																																																																																																																																													
	-	3,6																		806	774																																																																																																																																													
2,2	2	T	4102			323	260	321												36	15				260	52	17	49	17	331	132	140	132	132	816	781	195	155	13	140																																																																																																																										
4	3,6	860																																	820																																																																																																																															
5,5	5	861																																	829																																																																																																																															
3	-	T	4103			378	315	376																											36	15				260	52	17	49	17	331	132	140	132	132	871	836	195	155	13	156																																																																																																											
-	3,6	915																																																875																																																																																																																
4	-	953																																																913																																																																																																																
5,5	5	Z	4104			433	370	431																																										36	15				260	52	17	49	17	331	132	140	132	132	1034	994	195	155	13	204																																																																																												
-	10	1008																																																															968																																																																																																	
-	5	1089																																																															1049																																																																																																	
5,5	-	-	4105			488	425	486																																																									36	15				260	52	17	49	17	331	132	140	132	132	1025	985	195	155	13	211																																																																													
-	5	1144																																																																														1104																																																																																		
5,5	-	1188																																																																														1148																																																																																		
-	6,8	A	4106			543	480	541																																																																								36	15				260	52	17	49	17	331	132	140	132	132	1118	1078	195	155	13	218																																																														
7,5	-	1199																																																																																													1159																																																																			
-	10	1243																																																																																													1203																																																																			
-	15	E	4107			598	535	596																																																																																							36	15				260	52	17	49	17	331	132	140	132	132	1250	1203	195	155	13	225																																															
7,5	6,8	1254																																																																																																												1214																																																				
-	10	1298																																																																																																												1258																																																				
11	-	D	4108			653	590	651																																																																																																						36	15				260	52	17	49	17	331	132	140	132	132	1305	1258	195	155	13	235																																
15	13,5	1329																																																																																																																											1288																																					
18,5	15	1399																																																																																																																											1351																																					
7,5	-	C	5101			50	100	305																																																																																																																					45	17				260	60	19	57	19	368	160	165	160	160	792	758	215	170	15	200																	
-	10	802																																																																																																																																										765																						
11	-	846																																																																																																																																										804																						
15	13,5	A	5102					380																																																																																																																																				312	374				45	17	260	60	19	57	19	368	160	165	160	160	884	842	215	170	15	235
5,5	-	921																																																																																																																																																											879					
7,5	6,8	959																																																																																																																																																											917					
11	10	C	5103	455	387			449	45	17	260	60	19	57	19	368	160	165	160			160	1040	998																																																																																																																				215	170																15	254				
-	13,5	1084																					1042																																																																																																																																											
-	15	1091																					1042																																																																																																																																											
-	6,8	A	5104	530	462			524												45	17		260	60	19	57	19	368	160	165	160	160	1034	992			215	170	15																																																																																																																							315				
7,5	-	1115																															1073																																																																																																																																	
-	10	1159																															1117																																																																																																																																	
11	-	D	5105	605	537			599																									45	17	260	60				19	57	19	368	160	165	160	160	1166	1117			215	170	15																																																																																																								366				
15	13,5	1190																																														1148																																																																																																																		
18,5	15	1234																																														1192																																																																																																																		
-	17,5	1241	1192	5106	680			612																																								674	45	17	260				60	19	57	19	368	160	165	160	1279	1230			215	170	15																																																																																									378				
-	24	1317	1268																																																																																																																																																															
-	10	1331	1289																																																																																																																																																															
11	-	B	5106	680	612			674																																								45															17	260	60	19				57	19	368	160	165	160	160	1375	1333	215			170	15	366																																																																														
15	13,5	1381																																																																											1333																																																																																					
18,5	15	1419																																																																											1371																																																																																					
-	17,5	1458	1409	5106	680			612																																																																					674	45		17	260			60	19	57	19	368	160	165	160	1450	1408	215			170	15	378																																																															
-	24	1456	1408																																																																																																																																																															
22	-	1494	1446																																																																																																																																																															
-	24	1533	1484	5106	680			612																																																																					674															45	17		260	60			19	57	19	368	160	165	160	1572	1511	215	170			15	378																																																	
30	-	1572	1511																																																																																																																																																															
-	30																																																																																																																																																																	

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														
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																		1531	1483																			
	-	17,5																		1569	1521																			
	22	-																		1608	1559																			
	-	24																		1647	1586																			
30	-	F	830			762	824	464								434				1644	1596				1683	1634	1722	1661	1747	1686	1797	1743	948	907	298					
-	30																																			986	945			
37	-																																			1068	1026			
-	17,5																																			1112	1070			
22	-																																			1077	1035			
5108	-	24	H	65	100	428	355	422	50	20	315	64	19	65	20	413	180	180	180	1158	1116	245	195	15	401															
	30	-																		1202	1160																			
	-	30																		1208	1160																			
	37	-																		1246	1198																			
	-	36																		1292	1250																			
6101	5,5	5	A			65	100	518								445				512	50				20	315	64	19	65	20	443	180	180	180	1298	1250	245	195	15	335
	7,5	6,8																																	1336	1288				
	-	10																																	1375	1326				
	11	-																																	1382	1340				
	-	13,5																																	1388	1340				
6102	7,5	-	A	65	100			608	535	602	50	20	315	64	19	65	20	413	180	180		180	1426	1378							245				195	15				320
	-	10																					1465	1416																
	11	-																					1504	1443																
	15	13,5																					1529	1468																
	18,5	15																					1516	1468																
6103	-	17,5	E			65	100	698	625	692								50			20		315	64	19	65	20	443	180	180		180	1555	1506			245	195	15	368
	-	10																															1594	1533						
	15	13,5																															1619	1558						
	18,5	15																															1669	1615						
	-	17,5																															1607	1558						
6104	15	13,5	E	65	100			788	715	782	50	20	315	64	19	65	20		443	180		180						180			1645		1596	245	195	15				382
	-	10																													1684		1623							
	11	-																													1709		1648							
	-	13,5																													1759		1705							
	18,5	15																													1645		1596							
6105	-	17,5	F			65	100	878	805	872								50	20		315		64	19	65	20	443		180	180	180	1684	1623				245	195	15	397
	-	10																														1735	1686							
	11	-																														1774	1713							
	-	13,5																														1799	1738							
	18,5	15																														1849	1795							
6106	-	17,5	E	65	100			968	895	962	50	20	315	64	19	65	20			443		180					180	180				1735	1686	245	195	15				415
	-	10																														1825	1776							
	15	13,5																														1864	1803							
	18,5	15																														1889	1828							
	-	17,5																														1939	1885							
6107	22	-	F			65	100	968	895	962								50	20	315	64		19	65	20	443			180	180	180	1825	1776				245	195	15	397
	-	24																														1864	1803							
	30	-																														1889	1828							
	37	-																														1939	1885							
	-	30																														1939	1885							
6108	30	-	K	65	100			968	895	962	50	20	315	64	19	65	20					443				180	180	180				1825	1776	245	195	15				415
	-	30																														1864	1803							
	37	-																														1889	1828							
	-	36																														1939	1885							
	45	-																														1939	1885							

size	IP 54 kW	EExe II T3 kW	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																																																																																																																																																																																																						
																										mm																																																																																																																																																																																																					
1201/6	0,55	0,55	K	20	40	229	180	230																	587	557	140	105	13	48																																																																																																																																																																																																	
	0,75	0,75																							621	591																																																																																																																																																																																																					
1202/6	0,75	0,75	K																																																					629	597																																																																																																																																																																						
	1,1	1																																																						654	622																																																																																																																																																																						
1203/6	1,5	1,35	K																																																																																	655	625																																																																																																																																										
	1,1	1																																																																																		663	631																																																																																																																																										
	1,5	1,35																																																																																		688	656																																																																																																																																										
1204/6	2,2	2	P																																																																																																														720	688																																																																																																													
	1,1	-																																																																																																															697	665																																																																																																													
	1,5	1,35																																																																																																															722	690																																																																																																													
1205/6	2,2	2	K																																																																																																																																												754	722																																																																															
	3	2,5																																																																																																																																													756	724																																																																															
	1,5	1,35																																																																																																																																													788	756																																																																															
1206/6	-	2	V																																																																																																																																																																										798	763																																																	
	2,2	-																																																																																																																																																																											790	758																																																	
	3	2,5																																																																																																																																																																											822	790																																																	
1207/6	-	3,6	P																																																																																																																																																																																																									832	797																		
	2,2	-																																																																																																																																																																																																										832	797																		
	3	2,5																																																																																																																																																																																																										856	824																		
3101/6 3601/6	4	3,6	V																																																																																																																																																																																																																												
	2,2	-		868	831																																																																																																																																																																																																																										
	3	2,5		884	852																																																																																																																																																																																																																										
3102/6 3602/6	3	2,5	T																																901	869																																																																																																																																																																																											
	1,5	1,35																																	901	869																																																																																																																																																																																											
	2,2	2																																	911	876																																																																																																																																																																																											
3103/6 3603/6	3	2,5	T																																																															955	915																																																																																																																																																												
	2,2	2																																																																955	915																																																																																																																																																												
	3	2,5																																																																993	953																																																																																																																																																												
3104/6 3604/6	4	3,6	W																																																																																														993	953																																																																																																																													
	5,5	-																																																																																															993	953																																																																																																																													
	2,2	2																																																																																															1033	993																																																																																																																													
3105/6 3605/6	-	5	T																																																																																																																													1074	1033																																																																																														
	3	2,5																																																																																																																														1074	1033																																																																																														
	-	3,6																																																																																																																														1114	1074																																																																																														
3106/6 3606/6	-	5	W																																																																																																																																																												1114	1114																																																															
	4	-																																																																																																																																																													1114	1114																																																															
	-	5																																																																																																																																																													1154	1114																																																															
3107/6 3607/6	4	-	Z																																																																																																																																																																																												1154	1114																															
	5,5	-																																																																																																																																																																																													1154	1114																															
	-	6,8																																																																																																																																																																																													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																			
6101/6	5,5	5	A	65	100	428	355	422	50	20	315	64	19	65	20	180	180	180	245	195	15			1038	997	311																					
	7,5	6,8																						1076	1035																						
	-	10																						1158	1116																						
	11	-																						1202	1160																						
6102/6	-	13,5	B			518	445	512																443	443		1167	1125	1248	1206	1292	1250	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	332		
	7,5	-																																												1167	1125
	-	10																																												1248	1206
	11	-																																												1292	1250
6103/6	-	13,5	E			608	535	602																443	443		1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	348		
	7,5	-																																												1167	1125
	-	10																																												1248	1206
	11	-																																												1292	1250
6104/6	15	13,5	E			698	625	692																443	443		1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	362		
	18,5	15																																												1167	1125
	-	17,5																																												1248	1206
	15	13,5																																												1292	1250
6105/6	18,5	15	E			788	715	782																443	443		1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	381		
	-	17,5																																												1167	1125
	22	-																																												1248	1206
	15	13,5																																												1292	1250
6106/6	-	17,5	F			878	805	872																443	443		1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	395		
	22	-																																												1167	1125
	-	24																																												1248	1206
	30	-																																												1292	1250
6107/6	30	-	H	968	895	962	443	443	1298	1250	1336	1288	1382	1340	1388	1340	1426	1378	1465	1416	1472	1430	1478	1430	1516	1468	410																				
	-	30																										1167	1125																		
	-	36																										1248	1206																		
	45	-																										1292	1250																		

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 12 / 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	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 4105 3AZ, 3AA, 3AC, 3AD 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	alternatively: 1A 1B 1F 4B 4F	4

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
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	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

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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