

Description

Standard chemical pumps of the SIHI^{ISOchem} range are horizontal single-stage volute casing pumps with dimensions to ISO 2858 / EN 22858. They meet the technical requirements of ISO 5199 / EN 25199.

It is a modular configuration of either bare shaft end or close-coupled design. Shaft sealing options are single or double acting mechanical seals, magnetic drives or canned motor designs.

The benefits are the interchangeability of the back pull-out assemblies and a reduction of spare parts costs.



Application

Pumps of the SIHI^{ISOchem} range meet the requirements on custom-built solutions in the process industry, in the following areas:

- chemical and pharmaceutical
- petrochemical
- paper
- plastics
- food processing
- plant engineering and construction.

Technical data

Flowrate:	max. 650 m ³ /h
Head:	max. 150 m
Speed:	max. 3600 rpm
Temperature:	max. 350 °C
Casing pressure:	max. 25 bar
Shaft seal:	- mechanical seal - magnetic drive - canned motor

Direction of rotation: clockwise, when viewed from drive end

Design

The SIHI^{ISOchem} hydraulics can be designed either with a closed impeller or a semi-open impeller.

The shaft seal chamber of the back pull-out assemblies can accommodate all usual mechanical seal types (single or double acting mechanical seal to ISO 3069/DIN 24960, cartridge mechanical seals, gas seals).

Close coupled pumps are furnished with standard motors.

Leak-free back pull-out assemblies with magnetic drive or canned motor meet the requirements with regard to job safety, operational reliability and environmental protection.

Magnetic drive isolation shroud materials are Hastelloy, plastics or ceramics.

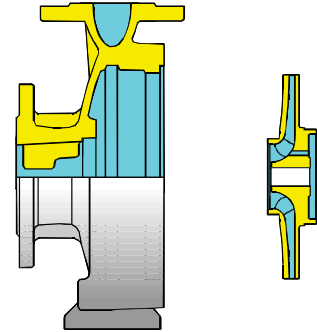
Options

- Temperatures up to 400 °C without external cooling
- Special materials
- Heating of all casing components that come into contact with the fluid handled
- Monitoring systems

Single-stage volute casing pumps
to ISO 5199/EN 25199 and ISO 2858/EN 22858
of either bare shaft end or close coupled
design with:

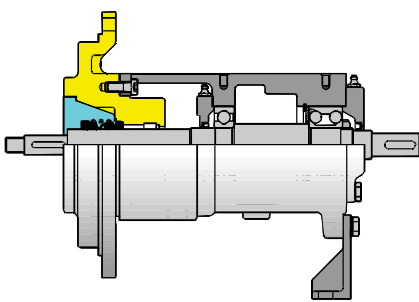
- mechanical seal
- magnetic coupling
- canned motor

Hydraulic

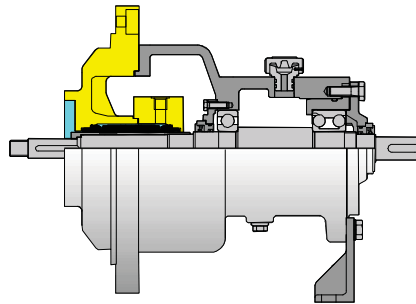


Volute casing with closed impeller

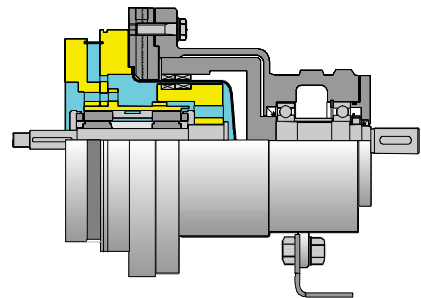
Backpull-out assemblies with bare shaft end



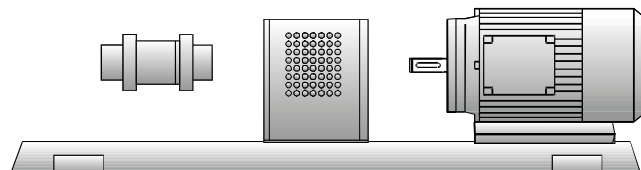
CBS
Pumps with single acting mechanical seal and grease lubricated ball bearings

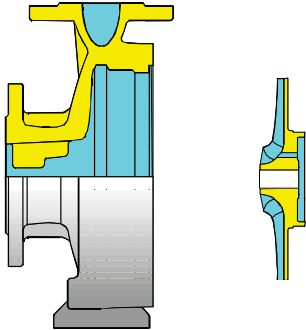


CBS
Pumps with single or double acting mechanical seal and oil lubricated ball bearings



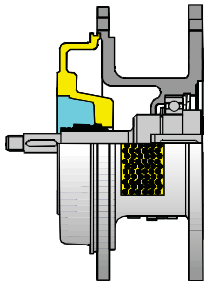
CBM
Pumps with magnetic coupling according to VDMA 24279





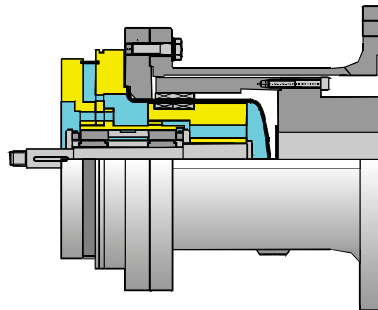
Volute casing with semi-open impeller

Close-coupled back pull-out assemblies



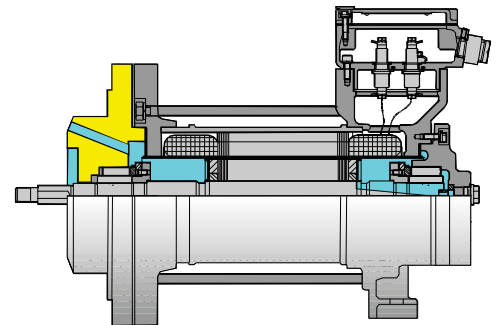
CBB

Pumps with single acting mechanical seal and lifetime-greased ball bearing



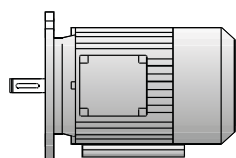
CBE

Pumps with magnetic coupling according to VDMA 24279



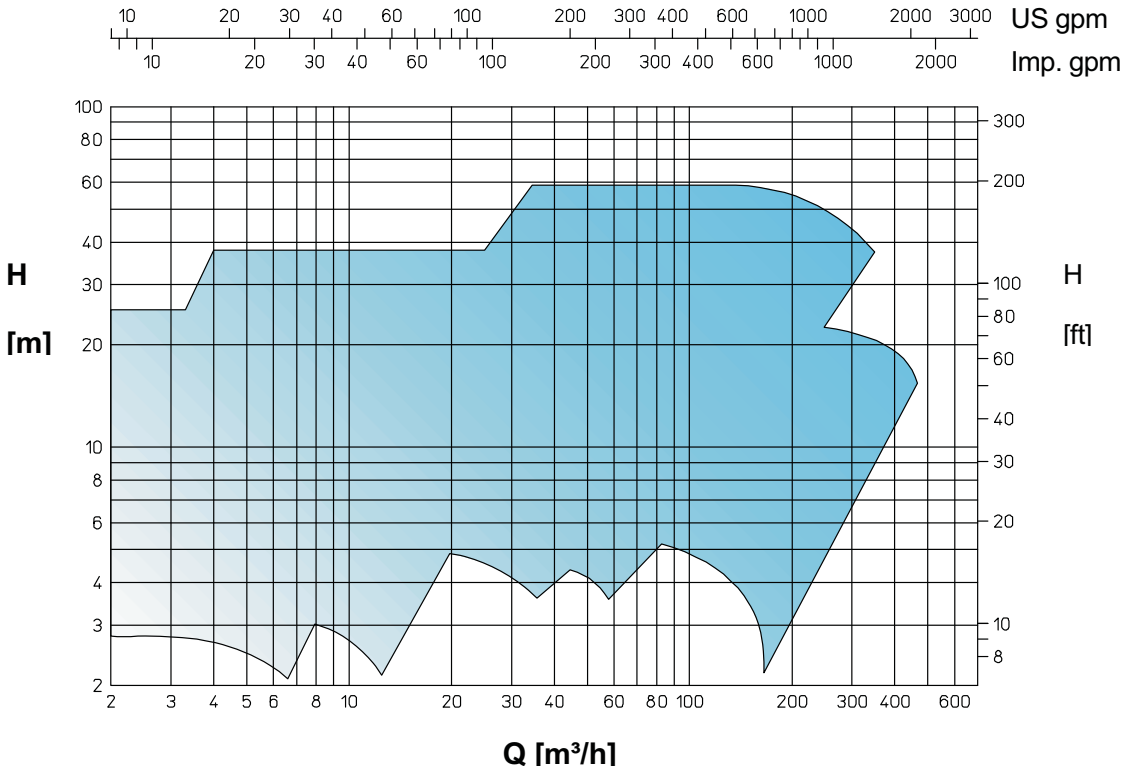
CBC

Pumps with standard or explosionproof canned motors

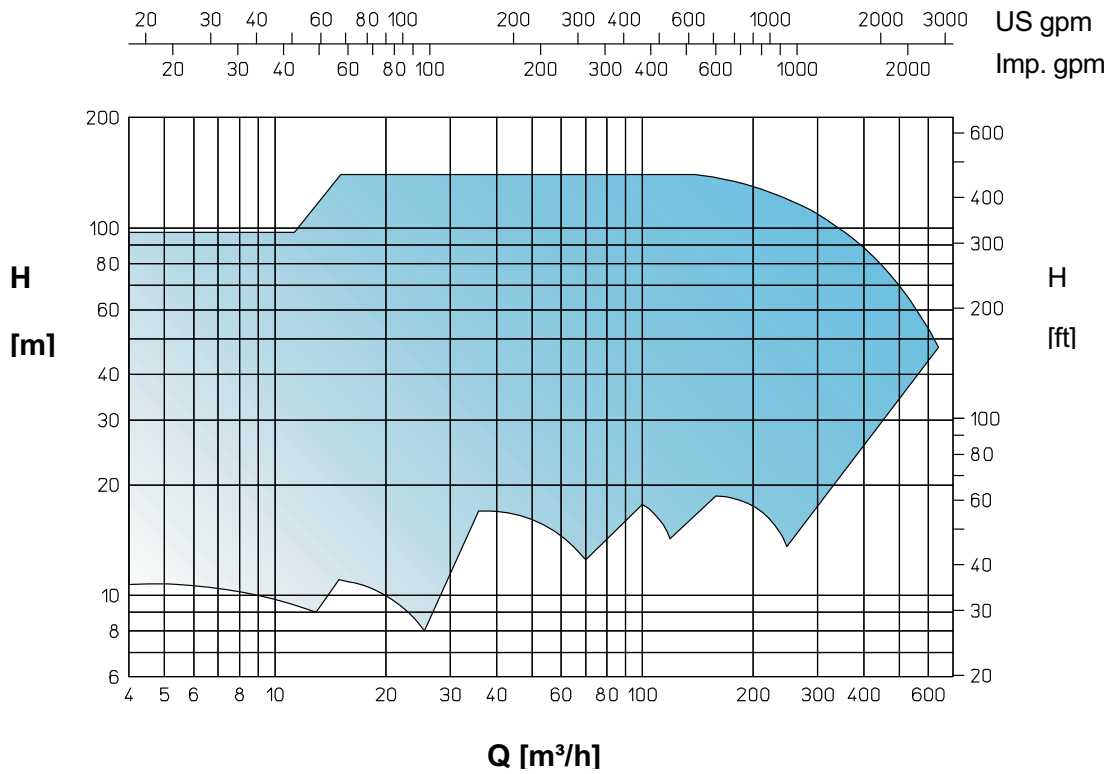


CBS, CBM, CBB, CBE, CBC Performance chart 50 Hz

n = 1450 rpm

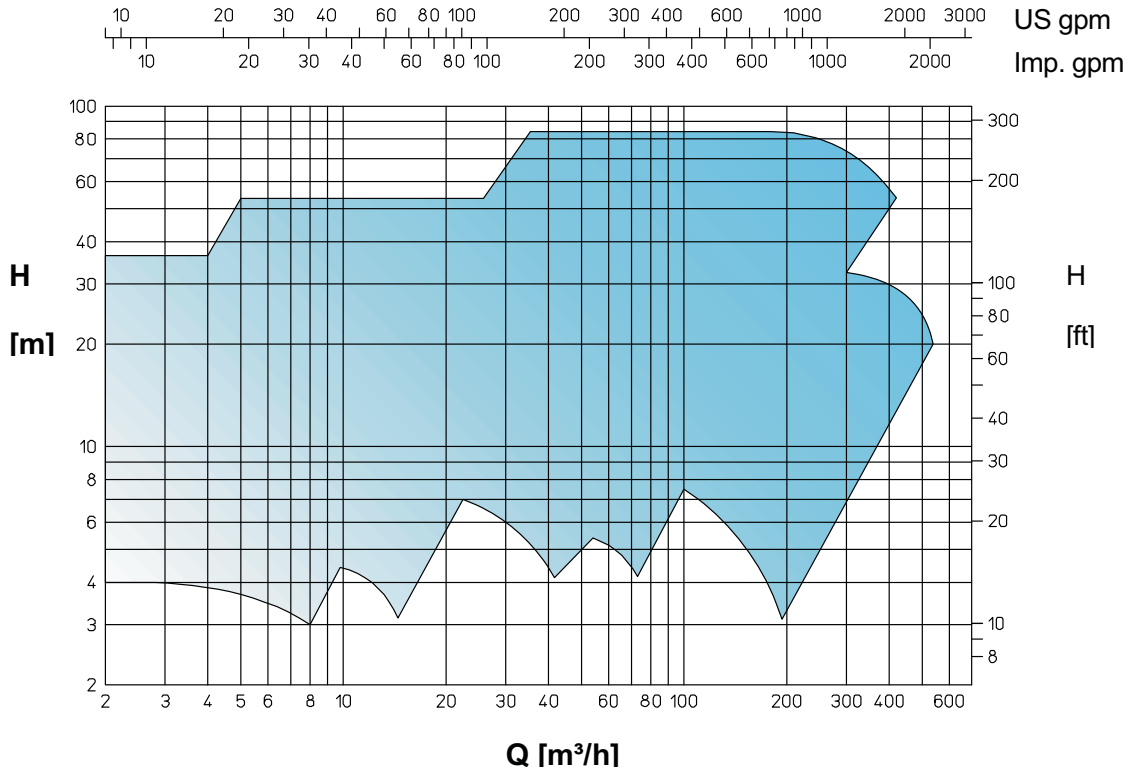


n = 2900 rpm

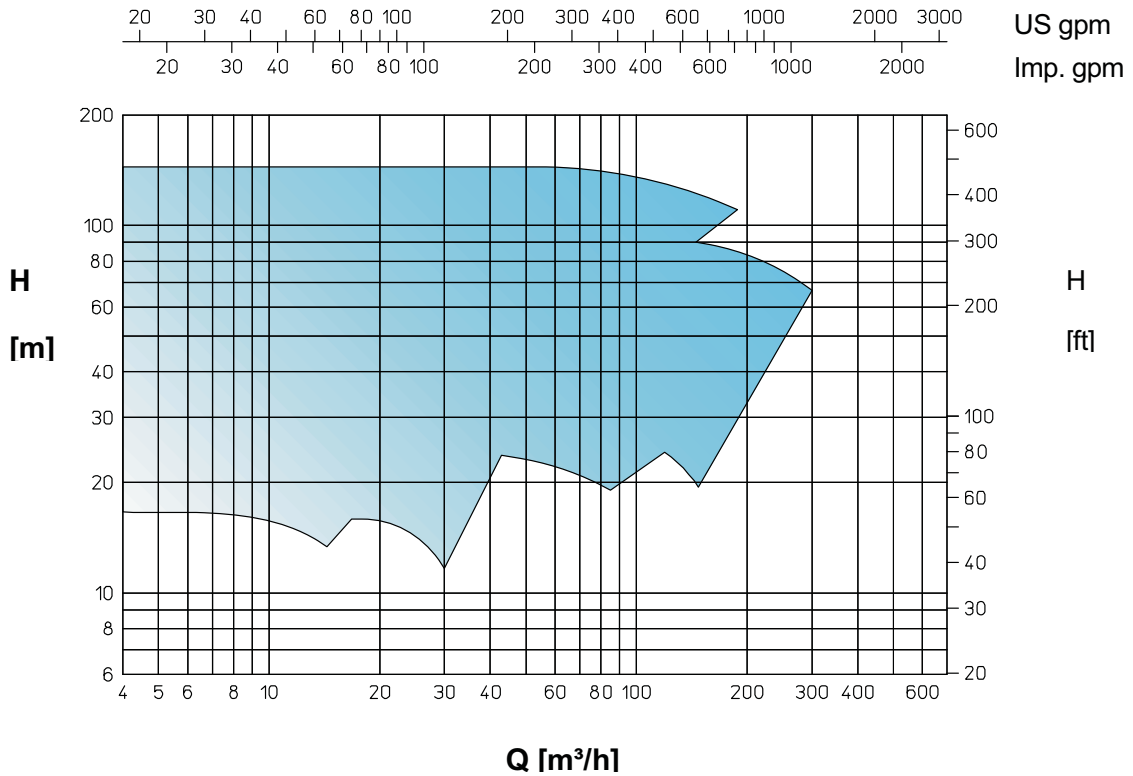


CBS, CBM, CBB, CBE, CBC Performance chart 60 Hz

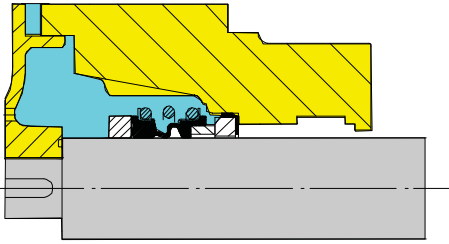
n = 1750 rpm



n = 3500 rpm

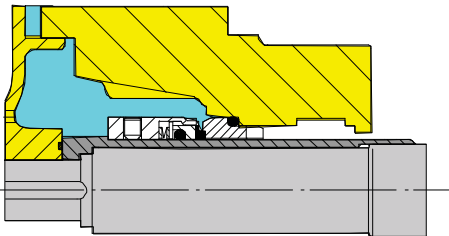


Mechanical seal designs to ISO 3069 / DIN 24960



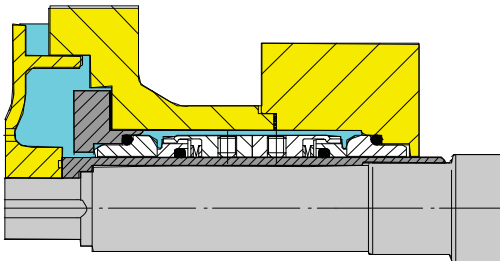
Mechanical seal with elastomeric bellows in conical shaft seal chamber

- shaft seal chamber with vortex breaker
- with or without quench connection, circulation connection
- without shaft sleeve



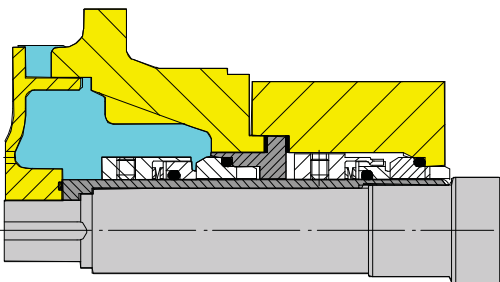
Single-acting mechanical seal in conical shaft seal chamber

- shaft seal chamber with vortex breaker
- with quench connection, circulation connection
- with or without shaft sleeve



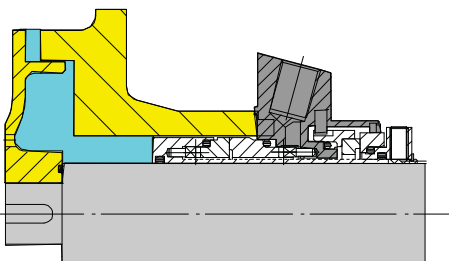
Double acting mechanical seal, back-to-back arrangement, in cylindrical shaft seal chamber

- with barrier liquid connection
- with shaft sleeve



Double-acting mechanical seal, tandem design, in conical shaft seal chamber

- with buffer liquid connection
- with shaft sleeve

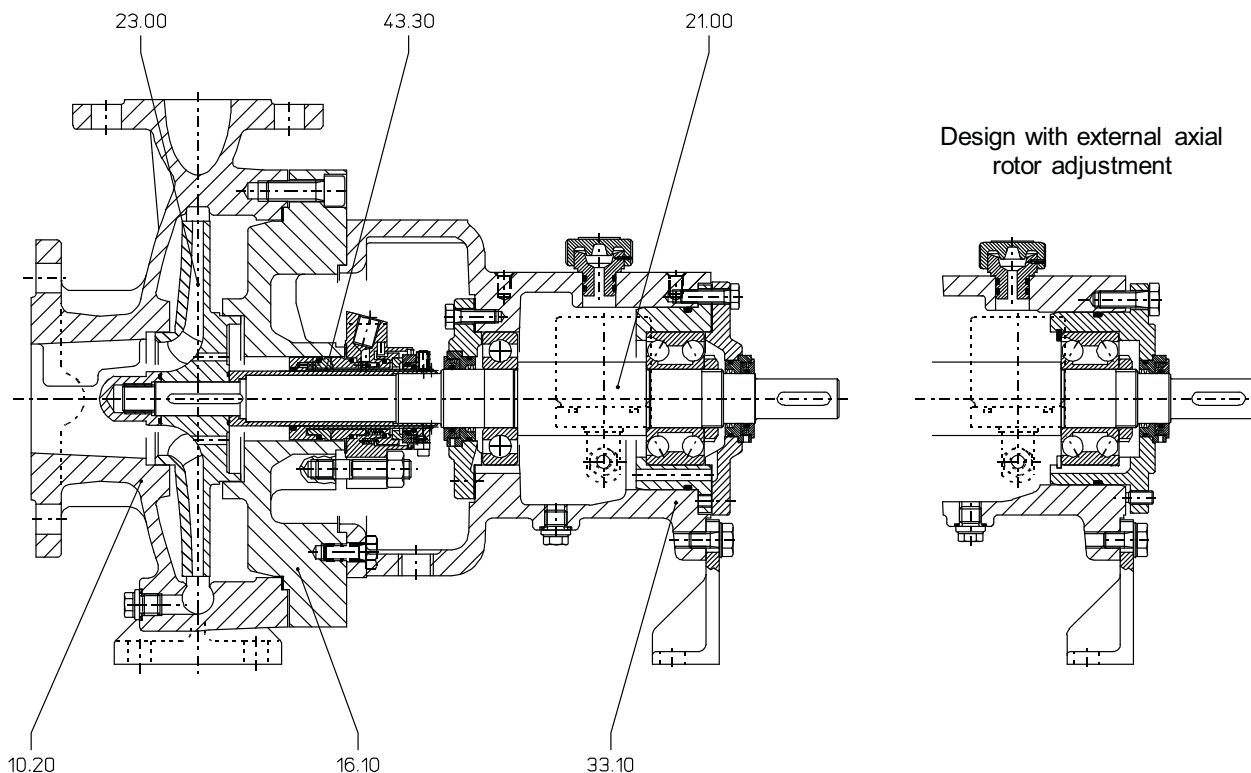


Cartridge type mechanical seal in cylindrical shaft seal chamber

- cartridge mechanical seal, single or double acting
- quench connection and buffer or barrier liquid connection
- with integrated shaft sleeve

Back pull-out assemblies with bare shaft end Design with mechanical seal

Type CBS (bearing configuration S or T)



Materials of construction

Item	Designation	Material									
		1B	1E	1R	1U	4B	4R	5K	5L	5G	5H
10.20	Volute casing	GGG-40.3				1.4408		Alloy R48 1.4517*		Alloy R53 2.4607*	
16.10	Casing cover	GGG-40.3/GS-C25				1.4408		Alloy R48 1.4517*		Alloy R.53 2.4607*	
21.00	Shaft	CK 45 N		1.4571		CK 45 N	1.4571	CK 45 N	1.4462	CK 45 N	2.4610
54.30	Shaft sleeve	1.4571		-		1.4571	-	1.4462	-	2.4610	-
23.00	Impeller	GG-25	1.4408	GG-25	1.4408	1.4408		Alloy R48 1.4517*		Alloy R53 2.4607*	
33.00	Bearing housing	GG-25									
43.30	Mechanical seal	various material combinations									

* similar material to DIN 17007

Operating limits

Temperature / Power

Type	Lubrication	Min. Temperature	Max. Temperature	Max. Power at 2900 rpm
CBS	Grease	-40°C	+140°C	160 kW
	Oil	-40°C	+350°C	
CBM	Grease	-40°C	+180°C	65 kW
	Oil	-40°C	+300°C	
CBB	Grease	-40°C	+140°C	37 kW
CBE	Liquid handled	-40°C	+300°C*	90 kW
CBC	Liquid handled	-40°C	+300°C	105 kW

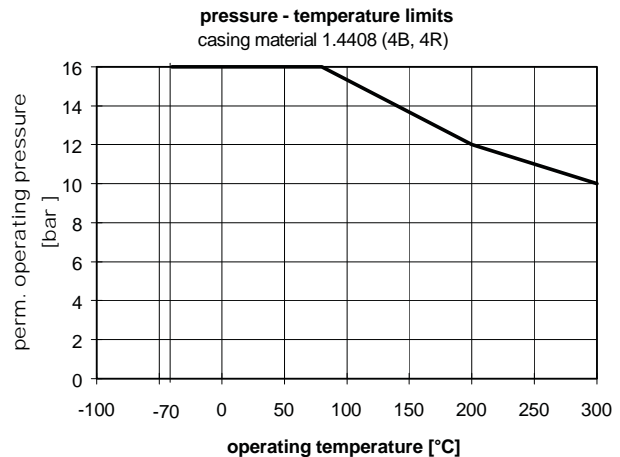
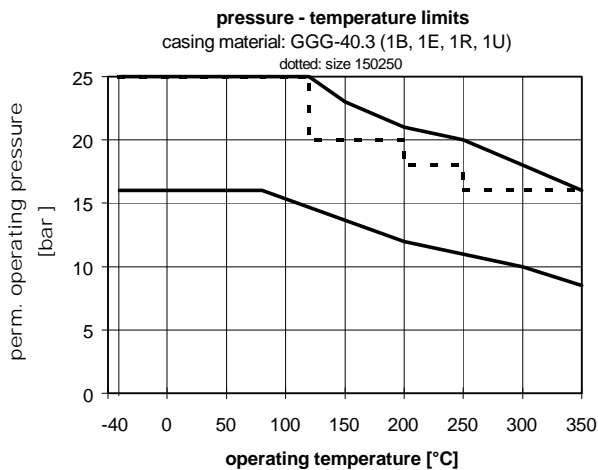
* uncooled up to 400 °C possible with thermal barrier

Speed

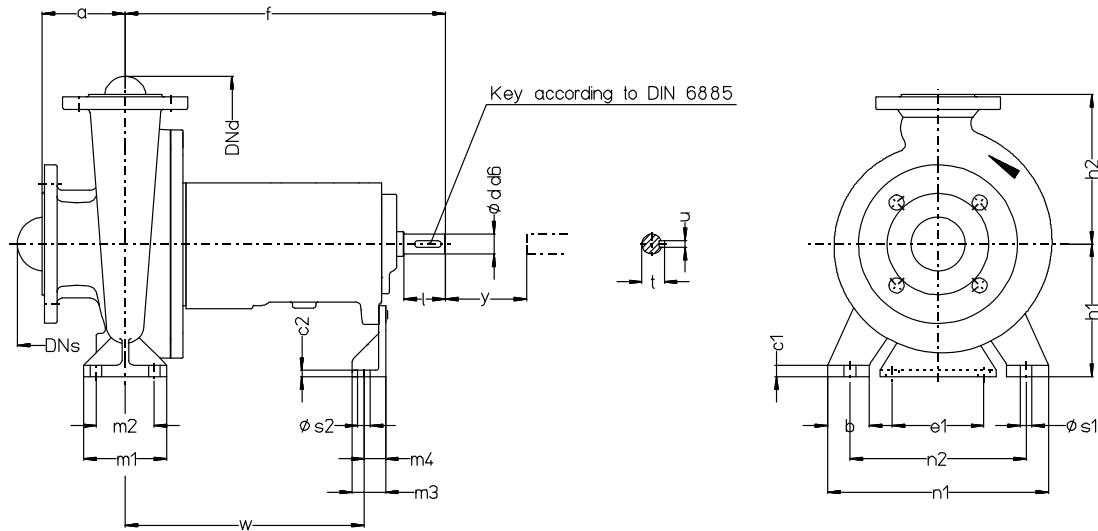
Size				Max. Speed rpm
32125	32160	32200	32250 ¹⁾	3600
40125	40160	40200	40250 ¹⁾	
	50160	50200	50250 ¹⁾	
	65160	65200	65250 ¹⁾	
	80160	80200		
100200	80250	40315 ²⁾		3000
		50315 ²⁾		
		65315 ²⁾		
		80315 ²⁾		
	100250	100315		
125250	125315	80400		1800
		100400		
		125400		
150250				

- 1) Impeller material 1.4408
Impeller material GG-25: n_{max} = 3000 rpm
- 2) Impeller material 1.4408
Impeller material GG-25: n_{max} = 1800 rpm

Casing pressure



**Table of dimensions - Pumps with bare shaft end to ISO 2858 / EN 22858
Types CBS, CBM**

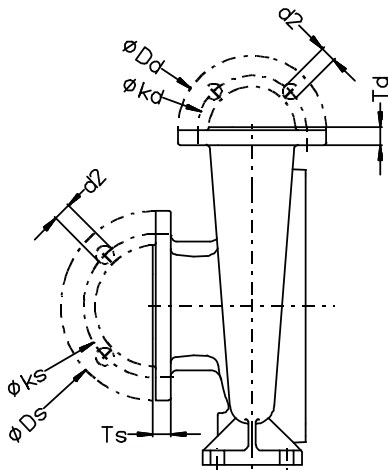


y: distance between pump shaft and motor shaft

Size	Pump dimension						Foot dimension														Shaft end dimension for removal					Pump weight kg	
	DN _d	DN _s	a	f	h ₁	h ₂	b	c ₁	c ₂	m ₁	m ₂	m ₃	m ₄	n ₁	n ₂	s ₁	s ₂	e ₁	e ₂	w	d	l	t	u	y	CBS	CBM
32125			80	385	112	140	50	14	8	100	70	40	28	190	140	14	15	110	140	285	24	50	27	8	140	38	-
32160	32	50	80	385	160	160	50	14	8	100	70	40	28	240	190	14	15	110	140	285	24	50	27	8	140	44	57
32200			80	385	160	180	50	14	8	100	70	40	28	240	190	14	15	110	140	285	24	50	27	8	140	53	76
32250			100	500	180	225	65	14	8	125	95	40	28	320	250	14	15	110	140	370	32	80	35	10	140	91	127
40125			80	385	112	140	50	14	8	100	70	40	28	210	160	14	15	110	140	285	24	50	27	8	140	38	-
40160			80	385	132	160	50	14	8	100	70	40	28	240	190	14	15	110	140	285	24	50	27	8	140	45	59
40200	40	65	100	385	160	180	50	14	8	100	70	40	28	265	212	14	15	110	140	285	24	50	27	8	140	55	79
40250			100	500	180	225	65	14	8	125	95	40	28	320	250	14	15	110	140	370	32	80	35	10	140	93	138
40315			125	500	200	250	65	14	88	125	95	40	28	345	280	14	15	110	140	370	32	80	35	10	140	117	260
50160			100	385	160	180	50	14	8	100	70	40	28	265	212	14	15	110	140	285	24	50	27	8	140	54	69
50200	50	80	100	385	160	200	50	14	8	100	70	40	28	265	212	14	15	110	140	285	24	50	27	8	140	58	84
50250			125	500	180	225	65	14	8	125	95	40	28	320	250	14	15	110	140	370	32	80	35	10	140	96	167
50315			125	500	225	280	65	14	8	125	95	40	28	345	280	14	15	110	140	370	32	80	35	10	140	122	280
65160			100	500	160	200	65	14	8	125	95	40	28	280	212	14	15	110	140	370	32	80	35	10	140	72	75
65200	65	100	100	500	180	225	65	14	8	125	95	40	28	320	250	14	15	110	140	370	32	80	35	10	140	83	147
65250			125	500	200	250	80	16	8	160	120	40	28	360	280	18	15	110	140	370	32	80	35	10	140	106	256
65315			125	530	225	280	80	16	88	160	120	40	28	400	315	18	15	110	140	370	42	110	45	12	140	136	-
80160			125	500	180	225	65	14	8	125	95	40	28	320	250	14	15	110	140	370	32	80	35	10	140	82	107
80200			125	500	180	250	65	14	8	125	95	40	28	345	280	14	15	110	140	370	32	80	35	10	140	92	195
80250	80	125	125	500	225	280	80	16	8	160	120	40	28	400	315	18	15	110	140	370	32	80	35	10	140	113	261
80315			125	530	250	315	80	16	8	160	120	40	28	400	315	18	15	110	140	370	42	110	45	12	140	147	-
80400			125	530	280	355	80	16	8	160	120	40	28	435	355	18	15	110	140	370	42	110	45	12	140	204	-
100200			125	500	200	280	80	16	8	160	120	40	28	360	280	18	15	110	140	370	32	80	35	10	140	106	207
100250	100	125	140	530	225	280	80	16	8	160	120	40	28	400	315	18	15	110	140	370	42	110	45	12	140	135	-
100315			140	530	250	315	80	16	8	160	120	40	28	400	315	18	15	110	140	370	42	110	45	12	140	157	-
100400			140	530	280	355	100	18	8	200	150	40	28	500	400	23	15	110	140	370	42	110	45	12	140	199	-
125250	125	150	140	530	250	355	80	16	8	160	120	40	28	400	315	18	15	110	140	370	42	110	45	12	140	142	-
125315			140	530	280	355	100	18	8	200	150	40	28	500	400	23	15	110	140	370	42	110	45	12	140	176	-
125400			140	530	315	400	100	18	8	200	150	40	28	500	400	23	15	110	140	370	42	110	45	12	140	209	-
150250	150	200	160	530	280	375	100	20	8	200	150	40	28	500	400	23	15	110	140	370	42	110	45	12	140	202	-

All dimensions in mm, tolerances to EN 735

Flange dimensions



Dimension to DIN PN 16									
DN _s /DN _d	32	40	50	65	80	100	125	150	200
k	100	110	125	145	160	180	210	240	295
d ₂ x n	18 x 4	18 x 4	18 x 4	18 x 4	18 x 8	18 x 8	18 x 8	22 x 8	22 x 12
Dimension to DIN PN 25									
DN _s /DN _d	32	40	50	65	80	100	125	150	200
k	100	110	125	145	160	190	220	250	310
d ₂ x n	18 x 4	18 x 4	18 x 4	18 x 8	18 x 8	22 x 8	26 x 8	26 x 8	26 x 12
Dimension to ANSI 150 RF									
DN _s /DN _d	32	40	50	65	80	100	125	150	200
k	1,5"	1,5"	2"	2,5"	3"	4"	5"	6"	8"
d ₂ x n	16 x 4	16 x 4	20 x 4	20 x 4	20 x 4	20 x 8	23 x 8	23 x 8	23 x 8

Size			SG iron DIN PN16				Stainless steel DIN PN16				SG iron DIN PN25				SG iron ANSI 150 RF				Stainless steel ANSI 150 RF			
	DN _s	DN _d	Discharge nozzle		Suction nozzle		Discharge nozzle		Suction nozzle		Discharge nozzle		Suction nozzle		Discharge nozzle		Suction nozzle		Discharge nozzle		Suction nozzle	
			D _d	T _d	D _s	T _s	D _d	T _d	D _s	T _s	D _d	T _d	D _s	T _s	D _d	T _d	D _s	T _s	D _d	T _d	D _s	T _s
32125			140	20	165	22	140	18	165	20	140	20	165	22	140	18	165	20	140	18	165	20
31160	32	50	140	20	165	22	140	18	165	20	140	20	165	22	140	18	165	20	140	18	165	20
32200			140	20	165	22	140	18	165	20	140	20	165	22	140	18	165	20	140	18	165	20
32250			140	20	165	22	140	18	165	20	140	20	165	22	140	18	165	20	140	18	165	20
40125			150	20	191	24	-	-	-	-	150	20	191	24	150	17	191	21	-	-	-	-
40160			150	20	191	24	150	18	191	18	150	20	191	24	150	17	191	21	150	18	191	18
40200	40	65	150	20	191	24	150	18	191	18	150	20	191	24	150	17	191	21	150	18	191	18
40250			150	20	191	24	150	18	191	18	150	20	191	24	150	17	191	21	150	18	191	18
40315			150	20	191	24	150	18	191	18	150	20	191	24	150	17	191	21	150	18	191	18
50160			165	22	200	26	165	20	200	20	165	22	200	26	165	19	200	23	165	20	200	20
50200	50	80	165	22	200	26	165	20	200	24	165	22	200	26	165	19	200	23	165	20	200	20
50250			165	22	200	26	165	20	200	24	165	22	200	26	165	19	200	23	165	20	200	20
50315			165	22	200	26	165	20	200	20	165	22	200	26	165	19	200	23	165	20	200	20
65160			191	24	235	28	191	18	229	24	191	24	235	28	191	21	235	25	191	18	229	24
65200	65	100	191	24	235	28	191	18	229	24	191	24	235	28	191	21	235	25	191	18	229	24
65250			191	24	235	28	191	18	229	24	191	24	235	28	191	21	235	25	191	18	229	24
65315			191	24	235	28	191	18	229	24	191	24	235	28	191	21	235	25	191	18	229	24
80160			200	26	270	30	200	20	254	24	200	26	270	30	200	23	270	27	200	20	254	24
80200			200	26	270	30	200	20	254	24	200	26	270	30	200	23	270	27	200	20	254	24
80250	80	125	200	26	270	30	200	20	254	24	200	26	270	30	200	23	270	27	200	20	254	24
80315			200	26	270	30	200	20	254	24	200	26	270	30	200	23	270	27	200	20	254	24
80400			200	26	270	30	200	20	254	24	200	26	270	30	200	23	270	27	200	20	254	24
100200			235	28	270	30	229	24	254	24	235	28	270	30	235	25	270	27	229	24	254	24
100250	100	125	235	28	270	30	229	24	254	24	235	28	270	30	235	25	270	27	229	24	254	24
100315			235	28	270	30	229	24	254	24	235	28	270	30	235	25	270	27	229	24	254	24
100400			235	28	270	30	229	24	254	24	235	28	270	30	235	25	270	27	229	24	254	24
125250			270	30	300	34	254	24	285	25	270	30	300	34	270	27	300	31	254	24	285	25
125315	125	150	270	30	300	34	254	24	285	25	270	30	300	34	270	27	300	31	254	24	285	25
125400			270	30	300	34	254	24	285	25	270	30	300	34	270	27	300	31	254	24	285	25
150250	150	200	300	34	360	34	285	29	343	32	300	34	360	34	300	31	360	31	285	26	343	29

All dimensions in mm, tolerances to EN 735