

EN ISO 9905

CSN

Tuma

PUMPEN mit SYSTEM

Chemical Process Pumps

EN 22858 / ISO 2858



ST.2800.05/08.00

Liquids Handled

CSN Type pumps are suitable for clean or slightly contaminated liquids with low viscosity.

Technical Data

Suction Flange	_____	DN 50 DN 200 mm
Discharge Flange	_____	DN 32 DN 150 mm
Capacity	_____	up to 550 m ³ /h
Discharge Head	_____	up to 140 m
Speed	_____	up to 3000 rpm
Operating Temperature	_____	-20 °C' - +175 °C*
Casing Pressure (Pmax)	_____	16 bar (25 bar) *

(Pmax: Suction pressure + Shutoff Head)

(*) The material of pumps differs according to the type of pumped liquid, operating temperature and pressure. Contact our company for detailed information.

Fields of Application

- Chemical and Petrochemical Industry
- Refineries and Loading Plants
- Paper and Cellulose Industry
- Iron and Steel Industry
- Food and Beverage Industry
- Cooling and Heating Plants
- Water Treatment Plants
- Power Plants

Design Features

- Horizontal, single stage, radially split volute casing type, end suction centrifugal pumps with closed or semi-open impeller.
- 25 models dimensionally comply with EN 22858 / ISO 2858 standards.
- Suction and discharge flanges conforming to ISO 7005 / PN16 or ANSI B16,5 class 150 on request.

- Due to the back-pull-out design, the complete bearing assembly including impeller and shaft can be dismantled without removing the volute casing from the piping system.
- All impellers are dynamically balanced according to ISO 1940 class 6.3.
- Axial thrust is balanced in closed impeller by wear ring / balance hole system and in semi-open impeller by back ribs.
- Heavy duty shaft not in contact with the medium handled (dry shaft).
- For casing sealing, confined gaskets are used to prevent blow-out under pressure.

Bearings

- Pump shaft is supported by oil lubricated, long-life, heavy duty ball bearings. On the coupling side two angular contact ball bearings and on impeller side cylindrical roller bearing or ball bearing is used.
- Metal thrower, in addition to oil seals, is used to prevent leakage into the bearings.
- High capacity oil reservoir decreases oil temperature thus increases bearing life.
- Cooling chamber in the bearing bracket for oil cooling.
- Cast iron bearing bracket provides a solid support for the pump shaft and increases bearing life.

Shaft Sealing

- Depending on request or requirement, pumps with soft packing or single, double and cartridge type mechanical seals can be supplied.
- External seal cooling system may be used if required.

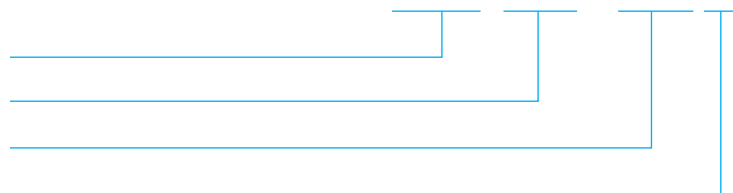
Direction of Rotation

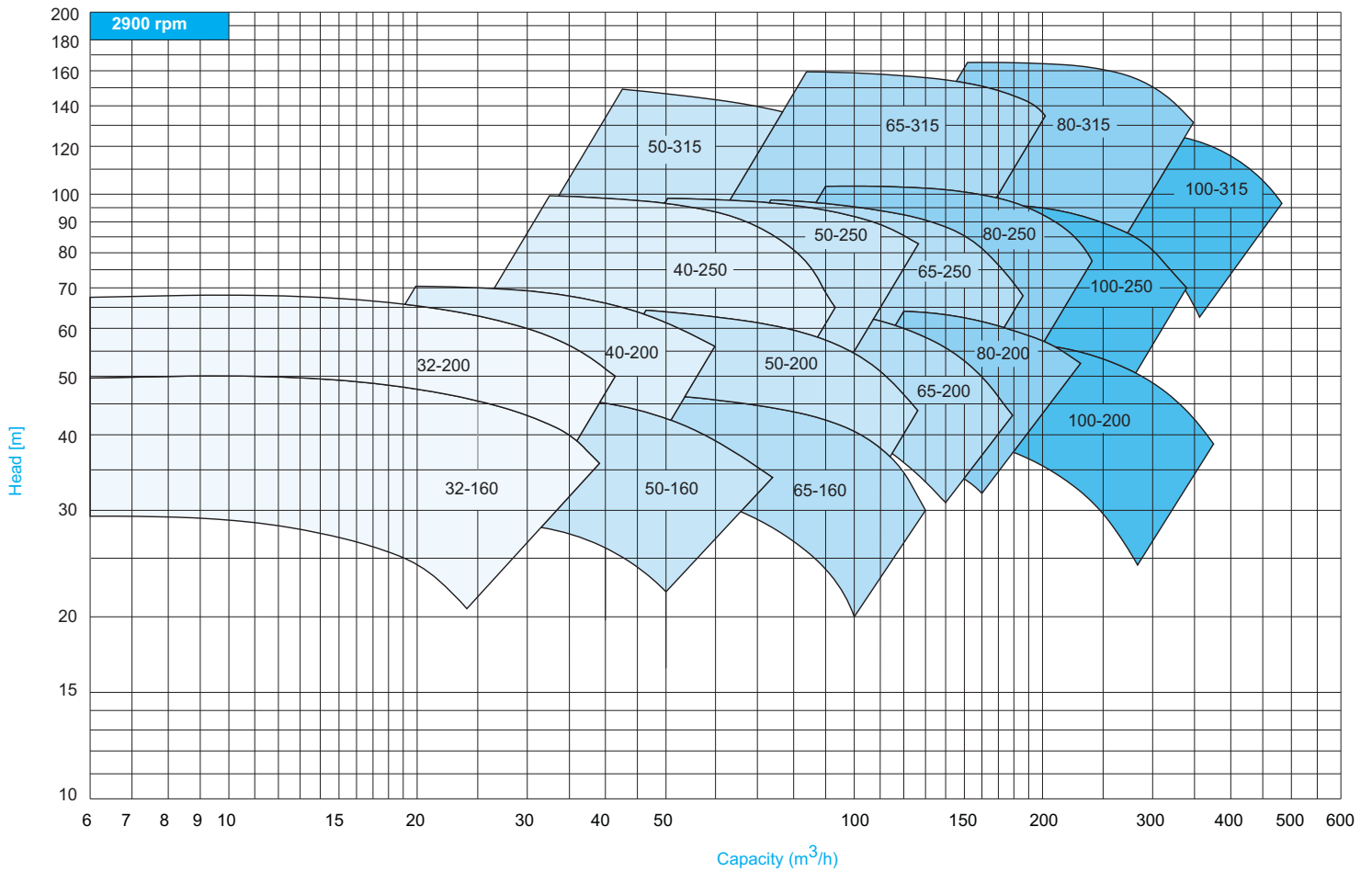
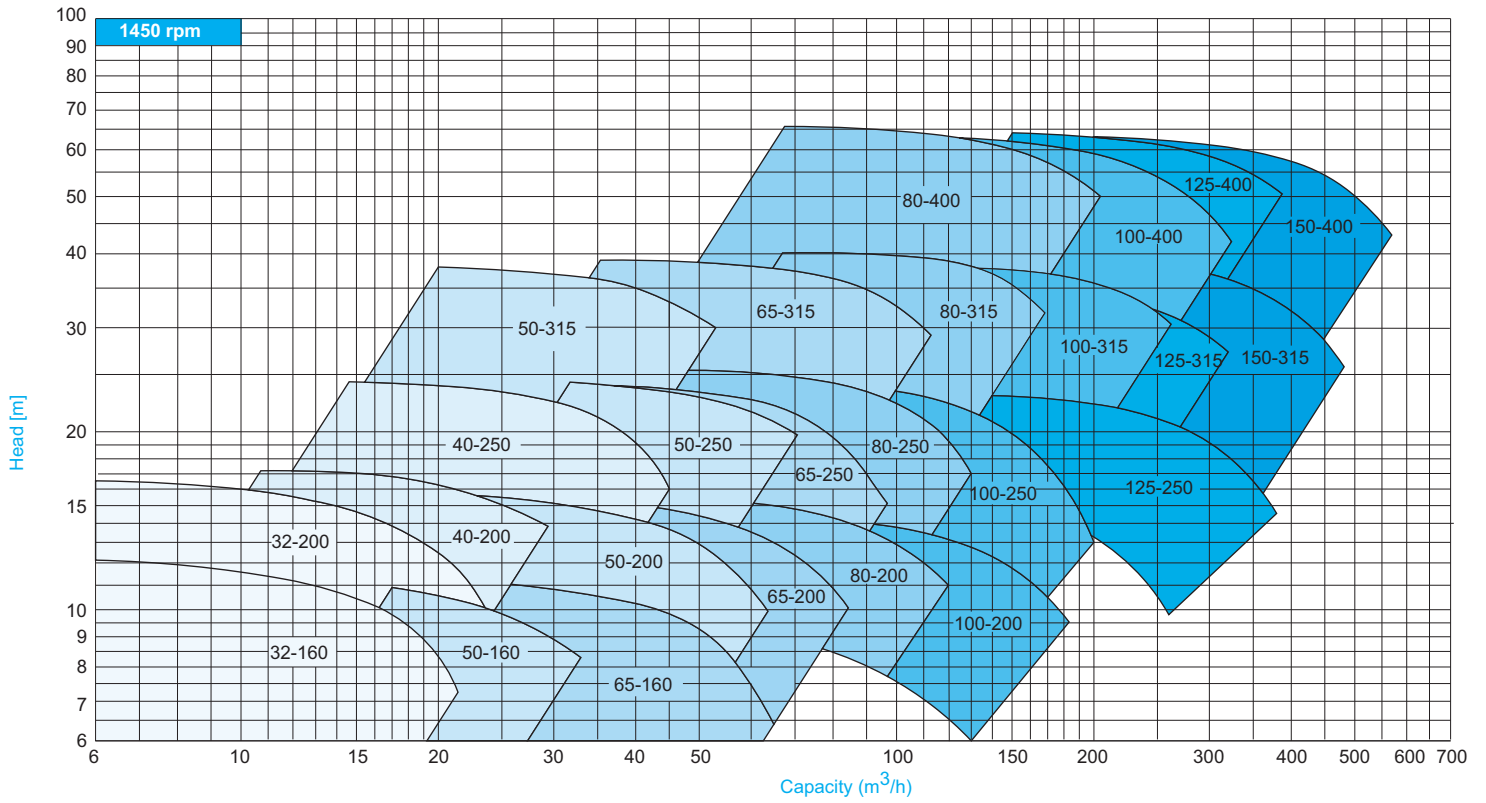
- The direction of rotation is clockwise (CW) viewed from the driver end.

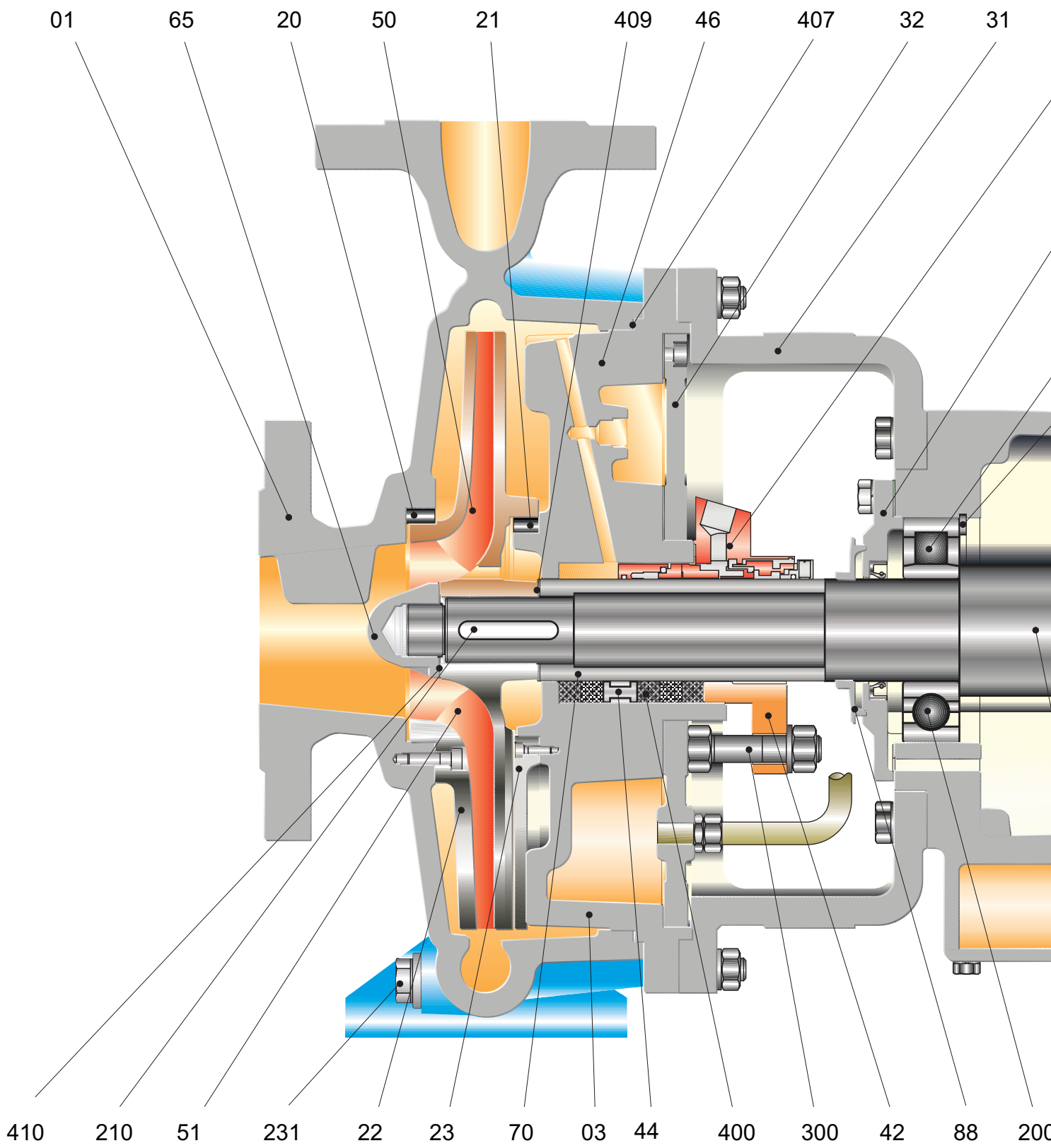
Pump Designation

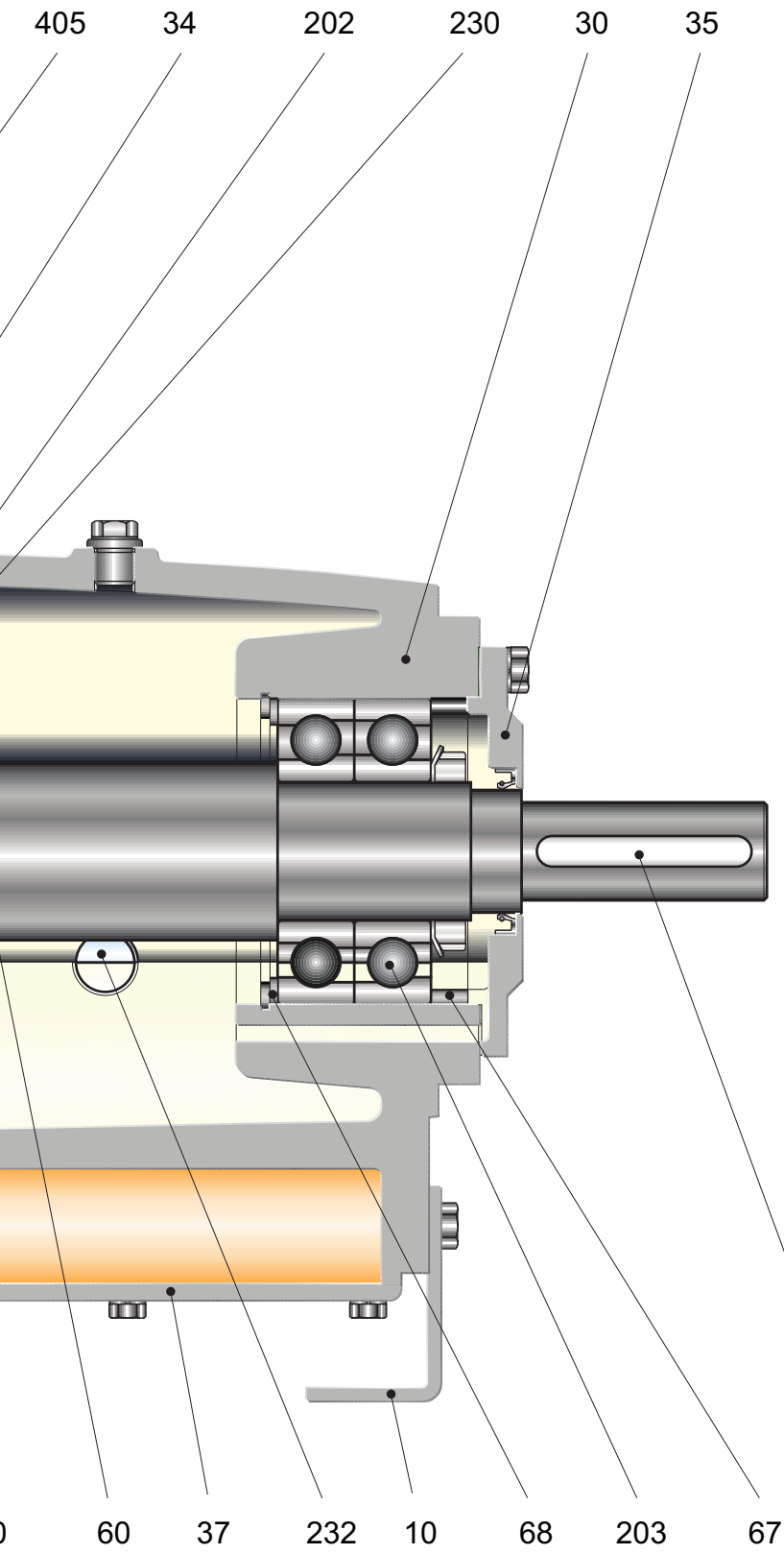
Pump Type _____
Discharge Nozzle (DN) _____
Nominal Impeller Diameter (mm) _____
Impeller Type (A: semi-open
K: closed) _____

CSN 125 - 315 X





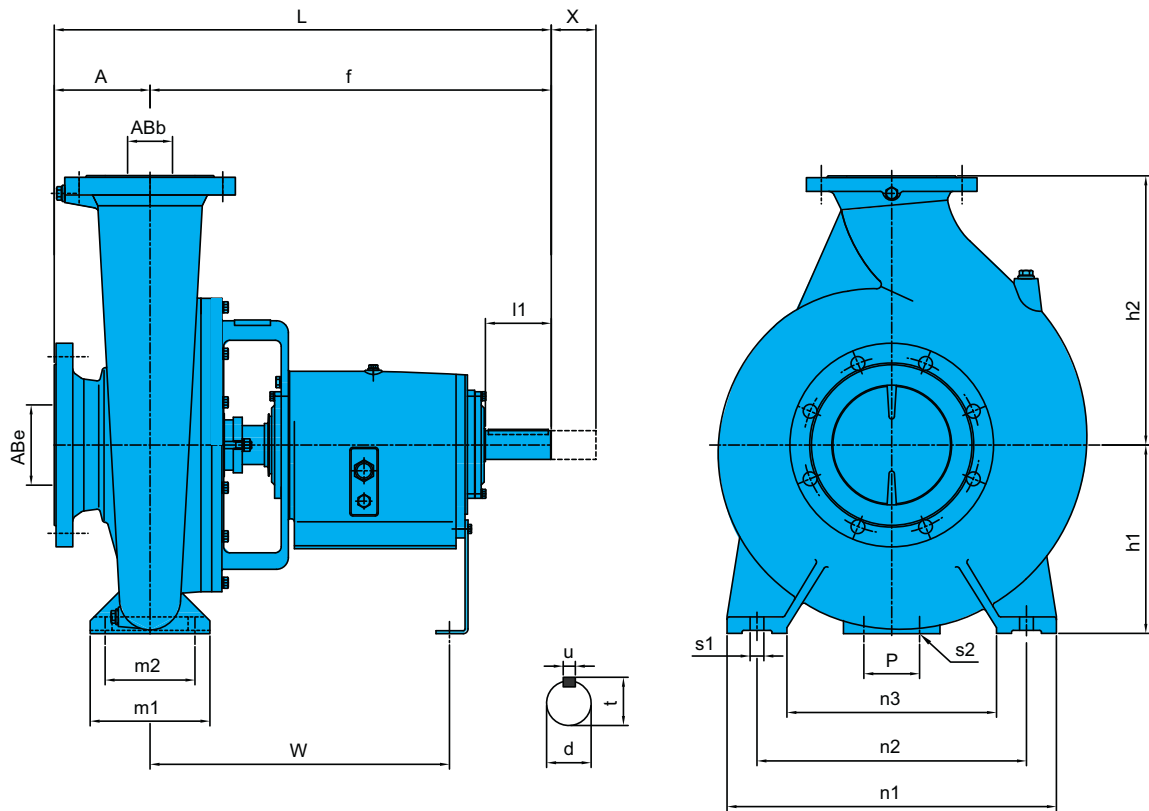




Part List

- 01 — Volute Casing
- 03 — Casing Cover
- 10 — Support Foot
- 20 — Wear Ring (casing)
- 21 — Wear Ring (casing cover)
- 22 — Wear Plate (front) *
- 23 — Wear Plate (back) *
- 30 — Bearing Bracket
- 31 — Bearing Bracket Lantern
- 32 — Cover (cooling/heating for sealing chamber) *
- 34 — Bearing Cover (drive side)
- 35 — Bearing Cover (pump side)
- 37 — Cover (bearing cooling chamber) *
- 42 — Stuffing Box Gland
- 44 — Lantern Ring
- 46 — Mechanical Seal Cover *
- 50 — Impeller
- 51 — Impeller (semi-open) *
- 60 — Shaft
- 65 — Impeller Nut
- 67 — Spacer Ring (bearing)
- 68 — Spacer Ring (bearing)
- 70 — Shaft Sleeve
- 88 — Thrower
- 200 — Ball Bearing
- 202 — Radial Roller Bearing
- 203 — Angular Ball Bearing
- 210 — Key (impeller)
- 211 — Key (coupling)
- 230 — Circlip
- 231 — Draing Plug
- 232 — Oil Sight Gauge
- 300 — Stud & Nut
- 400 — Stuffing Box Packing
- 405 — Mechanical Seal *
- 407 — Gasket
- 409 — Gasket
- 410 — Gasket

(*) Optional :Depending on customer requirement or request



Pump Type	DIMENSIONS (mm)																											
	Overall Dimensions						Support & Feet Dimensions							Shaft End				Space										
	ABe	ABb	A	f	L	h1	h2	m1	m2	n1	n2	n3	s1	p	s2	w	d	l1	t	u	x							
32-160	50	32	80	385	465	132	160	100	70	240	190	140	14	110	14	285	24	50	27	8	100							
32-200						160	180										24	50	27	8								
40-200	65	40	100	385	485	160	180	100	70	265	212	165	14	110	14	285	24	50	27	8	100							
40-250				500	600	180	225									125	95	320	250	190		370	32	80	35	10		
50-160	80	50	100	385	485	160	180	100	70	265	212	165	14	110	14	285	24	50	27	8	100							
50-200						180	200										24	50	27	8								
50-250						180	225										24	50	27	8								
50-315						225	280										32	80	35	10								
65-160	100	65	100	500	600	160	200	125	95	280	212	150	14	110	14	370	32	80	35	10	140							
65-200						180	225										32	80	35	10								
65-250						625	200										250	160	120	360		280	200	19	42	110	45	12
65-315						530	655										225	280	160	120		400	315	240	19	42	110	45
80-200	125	80	125	500	625	180	250	125	95	345	280	215	14	110	14	370	32	80	35	10	140							
80-250						225	280										42	110	45	12								
80-315						250	315										160	120	400	315		240	19	42	110	45	12	
80-400						530	655										280	355	435	355		275	42	110	45	12		
100-200	125	100	125	500	625	200	280	160	120	360	280	200	19	110	14	370	32	80	35	10	140							
100-250						225	280										42	110	45	12								
100-315						250	315										200	150	500	400		300	23	42	110	45	12	
100-400						280	355										160	120	400	315		240	19	42	110	45	12	
125-250	150	125	140	530	670	250	355	200	150	500	400	300	23	110	14	370	42	110	45	12	140							
125-315						280	355										42	110	45	12								
125-400						315	400										42	110	45	12								
150-315						280	355										42	110	45	12								
150-400	200	150	160	670	830	315	400	200	150	550	450	350	23	140	19	500	48	110	51.5	14	180							
150-315						400	450										48	110	51.5	14								
150-400	450	450	48	110	51.5	14																						

Material Options

Parts List	0.6025	0.7040	1.0619	1.4308	1.4309	1.4408	1.4409	2.1050.01	2.1090.01	1.4138	1.0501	1.1191	1.4021	1.4301	1.4306	1.4401	1.4404	1.4462
Volute casing	○	●	○	○	○	○	○	○	○									
Stuffing box cover	○	●	○	○	○	○	○	○	○									
Impeller	○	●	○	○	○	○	○	○	○									
Shaft											●	○	○	○	○	○	○	○
Bearing housing	●	○	○	○	○	○	○	○	○									
Wear ring (Casing)	○	●	○	○	○	○	○	○	○	○								
Wear plate	○	○	○	○	○	○	○	○	○									
Shaft protecting sleeve											○	○	○	○	○	●	○	○

Mechanical seal (*)

EN 12756 / DIN 24960

(*) Optional :Depending on customer requirement or request different types and brands of mechanical seals are applicable.

● Standard manufacturing

○ Optional

Material Equivalents

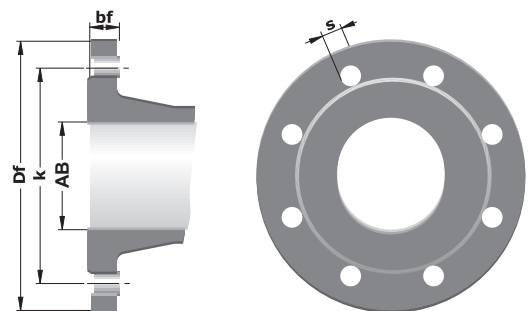
Description	DIN 17007	EN-DIN	ASTM
Cast iron	0.6025	GJL-250 (GG 25)	A 48 Class 40-B
Nodular cast iron	0.7040	GJS-400-15 (GGG 40)	A 536 Gr. 60-40-18
Cast steel	1.0619	GP240GH (GS-C 25)	A 216 Gr. WCB
Chrome nickel cast steel	1.4308	G-X5 Cr Ni 19-10	A 351/743/744 Gr. CF8
Chrome nickel cast steel (low carbon)	1.4309	G-X2 Cr Ni 19-11	A 351/743/744 Gr. CF3
Chrome nickel molybdenum cast steel	1.4408	G-X5 Cr Ni Mo 19-11-2	A 351/743/744 Gr. CF8M
Chrome nickel molybdenum cast steel (low carbon)	1.4409	G-X2 Cr Ni Mo 19-11-2	A 351/743/744 Gr. CF3M
Cast bronze	2.1050.01	G-Cu Sn 10	B 584 C 90700
Cast bronze	2.1090.01	G-Cu Sn 7 Zn Pb	B 584 C 93200
Chrome molybdenum cast steel	1.4138	G-X120 Cr Mo 29-2	-
Carbon steel	1.0501	C 35	A 29/108/576 1035
Carbon steel	1.1191	C 45 E (Ck 45)	A 29/108/576 1045
Chrome steel	1.4021	X20 Cr 13	A 276 Type 420
Chrome nickel steel	1.4301	X5 Cr Ni 18-10	A 276 Type 304
Chrome nickel steel (low carbon)	1.4306	X2 Cr Ni 19-11	A 276 Type 304L
Chrome nickel molybdenum steel	1.4401	X5 Cr Ni Mo 17-12-2	A 276 Type 316
Chrome nickel molybdenum steel (low carbon)	1.4404	X2 Cr Ni Mo 17-12-2	A 276 Type 316 L
Duplex (austenitic-ferritic) steel	1.4462	X2 Cr Ni Mo N 22-5-3	A 276 (S 31803)

Flange Dimensions

Pump Type	Suction (PN 16)						Discharge (PN 16)					
	ABe	Df	k	s	n	bf	ABb	Df	k	s	n	bf
32	50	165	125	18	4	20	32	140	100	18	4	18
40	65	185	145	18	4	20	40	150	110	18	4	18
50	65	185	145	18	4	20	50	165	125	18	4	20
65	80	200	160	18	8	22	65	185	145	18	4	20
80	100	220	180	18	8	24	80	200	160	18	8	22
100	125	250	210	18	8	26	100	220	180	18	8	24
125	150	285	240	23	8	26	125	250	210	18	8	26
150	200	340	295	23	12	30	150	285	240	23	8	26

"n" number of holes

ASME/ANSI B16,5 class 150 flanges on request



Tuma
PUMPEN mit SYSTEM

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