

Standardised Chemical Pump

MegaCPK

Type Series Booklet



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Type Series Booklet MegaCPK

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Centrifugal Pumps with Shaft Seal

Standardised Chemical Pumps

MegaCPK



Main applications

Pump for handling aggressive liquids in the chemical and petrochemical industries.

- Paper and cellulose industry
- Seawater desalination / reverse osmosis
- Food and beverages industry
- Fossil-fuelled power stations
- Chemical industry
- Petrochemical industry
- Refineries
- Sugar industry
- Alcohol industry

Operating data

Operating properties

Characteristic		Value
Flow rate	Q	Up to 1160 m³/h (50 Hz) Up to 1400 m³/h (60 Hz)
Head	H	Up to 162 m (50 Hz) Up to 233 m (60 Hz)
Operating temperature	t	-40 °C to +400 °C
Operating pressure	p	Up to 25 bar

Designation

Example: MCPK 50-32-160 CDh

Key to the designation

Code	Description
MCPK	Type series (full name: MegaCPK)
50	Nominal suction nozzle diameter [mm]

Code	Description
32	Nominal discharge nozzle diameter [mm]
160	Nominal impeller diameter [mm]
C	Casing material
G	= cast iron
C	= stainless steel
E	= unalloyed steel
V	= stainless steel
D	= duplex stainless steel
D	Impeller material if different from casing material
G	= cast iron
C	= stainless steel
B	= bronze
E	= unalloyed steel
D	= duplex stainless steel
X	= chrome steel
h	Additional code
h	= heatable
i	= inducer
x	= special design

Design details

Design

- Volute casing pump
- Horizontal installation
- Back pull-out design
- Single-stage
- Meets the technical requirements to ISO 5199
- Dimensions and ratings to EN 22858/ISO 2858, complemented by pumps of nominal diameters DN 25, DN 200 and above

Pump casing

- Single or double volute, depending on the pump size
- Radially split volute casing
- Volute casing with integrally cast pump feet
- Replaceable casing wear rings (as required)

Impeller type

- Closed radial impeller with multiply curved vanes

Shaft seal

- Gland packing
- Commercial single and double mechanical seals
- Commercial cartridge seals
- Shaft fitted with a replaceable shaft protecting sleeve in the shaft seal area

Alternative:

- Version without shaft protecting sleeve, with "wet" shaft (Europe only)

Bearing assembly

Bearings:

- Medium-duty
 - Radial bearing: cylindrical roller bearing
 - Fixed bearing: paired angular contact ball bearings / double-row angular contact ball bearing

- Economy
 - Floating bearing assembly: deep-groove ball bearings

Lubrication:

- Oil lubrication
- Grease lubrication

Bearing bracket designation

Example: CS50E

Bearing bracket designation

Designation	Description
CS	Bearing bracket MegaCPK
50	Size code (based on dimensions of seal chamber and shaft end)
E	Bearing design
E	= Economy
-1)	= Medium Duty

Bearings used

Standard bearing assembly

Design	Bearing bracket	Rolling element bearings	
		Pump end	Drive end
Medium-duty (oil and grease lubrication)	CS40	NU208-E	3208
	CS50	NU310-E	2 x 7310 ²⁾
	CS60	NU312-E	2 x 7312 ²⁾
	CS80	NU216-E	2 x 7216 ²⁾
Economy (oil lubrication)	CS40E	6208 C3	6208 C3
	CS50E	6310 C3	6310 C3
	CS60E	6312 C3	6312 C3
	CS80E	6216 C3	6216 C3
Economy (grease lubrication)	CS40E	6208-2Z C3	6208-2Z C3
	CS50E	6310-2Z C3	6310-2Z C3
	CS60E	6312-2Z C3	6312-2Z C3
	CS80E	6216-2Z C3	6216-2Z C3

Bearing life

The calculated minimum bearing life is:

- 17,500 h for economy bearing assemblies
- 25,000 h for medium-duty bearing assemblies or 40,000 h for operation between 0.7-1.1Q/Q_{opt}

Automation

Automation options:

- Hyamaster
- hyatronic
- PumpDrive

1) Blank

2) FAG designation: B-TVP-UA; SKF designation: BECBP

Materials

Overview of available materials (Europe)

Description	Material variant										
	G	GC	GD	EG	EC	ED	C	CD	VC	VD	D
Volute casing	CI			CS			SS		1.4408 ³⁾		D
Casing cover	CI			CS			SS		1.4408 ³⁾		D
Impeller	CI	SS	D	CI	SS	D	SS	D	SS	D	D
Shaft	C45+N ⁴⁾										
Bearing bracket	DI										
Support foot	St										
Seal cover	CrNiMoSt										DS
Casing wear ring	CI ⁵⁾			_5)6)			_7)		_7)		_8)
Impeller wear ring	-			_9)	-	_8)	_7)	_8)	_7)	_8)	_8)
Shaft protecting sleeve (mechanical seal)	CrNiMoSt										DS
Shaft protecting sleeve (gland packing)	1.4122			1.4122			CrNiMoSt		CrNiMoSt		DS
Impeller nut	CrNiMoSt										D

Overview of available materials (Asia)

Description	Material variant					
	G	GB	GC	E	EC	C
Volute casing	CI	CI	CI	CS	CS	SS
Casing cover	CI	CI	CI	CS	CS	SS
Impeller	CI	B	SS	CS	SS	SS
Shaft	IS5517 45C8		IS5517 45C8 ¹⁰⁾		IS5517 45C8 ¹¹⁾	
Bearing bracket	CI					
Support foot	St (S235JR)					
Seal cover	CrNiMoSt					
Casing wear ring	CI	IS318LTB4	A743 GR CF8M	_12)	_13)	_13)
Impeller wear ring	-	-	-	_12)	_13)	_13)
Shaft protecting sleeve (mechanical seal)	A276 TYPE 316					
Shaft protecting sleeve (gland packing)	A276 TYPE 316		A276 TYPE 410 COND. H		A276 TYPE 316	
Impeller nut	A743 GR CF8M					

Overview of available materials (Americas)

Description	Material variant										
	G	GC	C	CX	E	EC	B	S	SC	D	
Volute casing	CI		SS		CS		B	DI		D	
Casing cover	CI		SS		CS		B	DI		D	
Impeller	CI	SS	SS	CR	CS	SS	B	DI	CS	D	
Shaft	A576 GR 1045 ¹⁴⁾										DS
Bearing bracket	CI										
Support foot	St										

3) To VDMA24276

4) T_{≤10°C} : 1.4462 ; T_{>250°C} 1.7709.05 ; wet shaft: 1.4462

5) Optional: VG434

6) Optional: CI

7) Optional: CrNiMo ST Int

8) Optional: DS

9) Optional: 1.4027+QT

10) Optional: A276 TYPE 410 COND. H

11) Optional: A276 TYPE 410 COND. H, A276 TYPE 316, 1.4462

12) Optional: casing wear ring in Chrome hard 400 in combination with impeller wear ring A743 GR CA15.09

13) Optional: casing wear ring A743 GR CF8M in combination with impeller wear ring A743 GR CF8M

14) Optional: 1.4021/ A276 TYPE 20 or A276 TYPE 316

Description	Material variant										
	G	GC	C	CX	E	EC	B	S	SC	D	
Seal cover	CrNiMoSt										DS
Casing wear ring	CI		_15)		_16)		B15)	CI		_8)	
Shaft protecting sleeve (mechanical seal)	CrNiMoSt										DS
Shaft protecting sleeve (gland packing)	CI	CrNiMoSt									DS
Impeller nut	CrNiMoSt										D

Codes used

Code	Material
B	IS318 LTB2 or CC480K-GS
CrNiMoSt	1.4408/ 1.4404/ 1.4401/ 1.4571/ A743 GR CF-8M/ A276 TYPE 316/ A479 GR 316L
CI	JL1040/ A48CL35B
CR	A745 CA6NM
CS	GP240GH+N/ A216GRWCB
D	1.4593/ 1.4517/ A995GR 1B
DI	JS1025
DS	1.4462/ UNS S31803
SS	1.4408/ A743 GR CF8M

Coating and preservation

- Coating and preservation to KSB standard

Product benefits

- Hydraulic characteristics optimised for excellent efficiency and NPSH, ensuring energy-efficient and environmentally friendly use of resources
- Lower investment costs as duty points required can be achieved with smaller pump sizes
- Lower operating costs due to reduced energy consumption, optimised spare parts concept and hard-wearing, service-friendly design
- Optimised hydraulic systems for improved handling of gas-containing and solids-laden fluids

Acceptance tests / warranties

- Material analysis
 - Test report 2.2 on request
- Final inspection
 - Inspection certificate 3.1 to EN 10204 on request
- Hydraulic test

The duty point of each pump is guaranteed according to ISO 9906/2A.

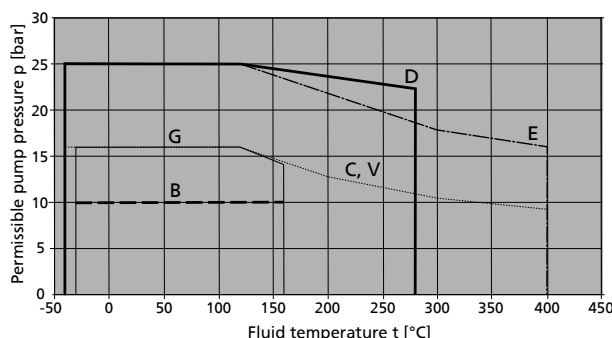
The following acceptance tests may be performed and certified at extra charge:

 - Performance test to ISO 9906
 - Performance test to API (API 610)
 - NPSH test
- Other tests (e.g. vibrations, strength) on request.
- Warranties

Warranties are given within the scope of the valid delivery conditions.

Pressure and temperature limits

Pressure and temperature limits of pump



Pressure and temperature limits of pump

Pressure and temperature limits for heating chamber (heatable version "h")

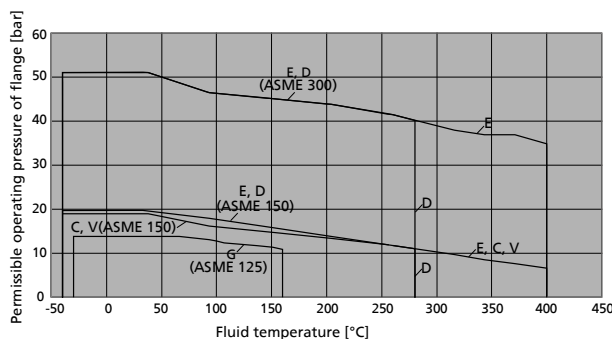
Temperature limits for heating with hot water or thermal oil

Heating medium	t _{max} [°C]	p _{max} [bar]
Hot water / saturated steam	300	20
Thermal oil	300	6

Pressure and temperature limits for shaft seals

The application limits of shaft seals depend on the circumferential speed, the material and the fluid handled. Verify the application limits in each individual case on the basis of manufacturers' catalogues, taking into account the actual operating conditions.

Pressure and temperature limits of ASME flanges



Pressure and temperature limits of ASME flanges

¹⁵⁾ Optional: SS
¹⁶⁾ Optional: 1.4021/ AISI420

The pressure and temperature limits of models with ASME flanges are defined by the lowest value indicated in the "Pressure and temperature limits of pump" diagram and in the "Pressure and temperature limits of ASME flanges" diagram.

Technical data

Technical data

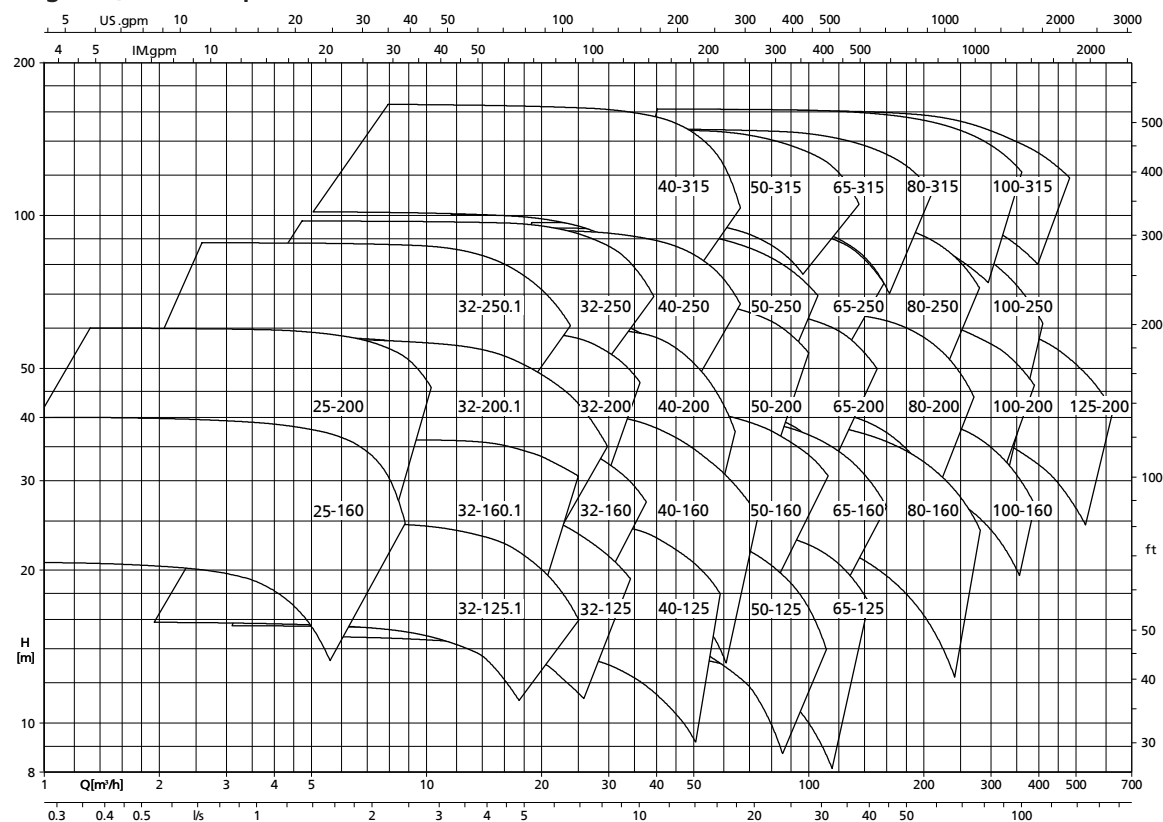
Size	Bearing bracket	Impeller					Shaft diameter in seal chamber					Diameter of shaft protecting sleeve			Volute type ¹⁷⁾	Heatable casing
		Impeller outlet width	Free passage	Impeller inlet diameter	Impeller diameter		Dry shaft	Wet shaft		Bearing	Coupling	Gland packing	Mechanical seal			
					Max.	Min.		Europe	Americas				Europe	Asia/ Americas		
		[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]		
40-25-160	CS40	6	5,7	44	169	130	28	33	35	40	24	35	33	35	E	X
40-25-200	CS40	6	5,7	44	209	160	28	33	35	40	24	35	33	35	E	-
50-32-125	CS40	10	5,7	63	139	110	28	33	35	40	24	35	33	35	E	X
50-32-125.1	CS40	7	6,0	52	139	114	28	33	35	40	24	35	33	35	E	-
50-32-160	CS40	9	5,8	63	174	135	28	33	35	40	24	35	33	35	E	X
50-32-160.1	CS40	6	5,4	52	170	138	28	33	35	40	24	35	33	35	E	X
50-32-200	CS40	7	6,7	62	209	178	28	33	35	40	24	35	33	35	E	X
50-32-200.1	CS40	6	5,3	54	204	138	28	33	35	40	24	35	33	35	E	X
65-40-125	CS40	14	9,6	74	139	110	28	33	35	40	24	35	33	35	E	-
65-40-160	CS40	13	11,5	70	174	135	28	33	35	40	24	35	33	35	E	X
65-40-200	CS40	9	8,9	69	209	175	28	33	35	40	24	35	33	35	E	X
80-50-125	CS40	20	11,6	88	142	114	28	33	35	40	24	35	33	35	E	-
80-50-160	CS40	17	11,6	87	174	135	28	33	35	40	24	35	33	35	E	X
80-50-200	CS40	14	11,9	83	219	180	28	33	35	40	24	35	33	35	E	X
100-65-125	CS40	26	12,9	99	141	114	28	33	35	40	24	35	33	35	E	-
50-32-250	CS50	8	7,1	63	261	212	38	43	45	50	32	45	43	45	E	X
50-32-250.1	CS50	6	5,2	58	254	220	38	43	45	50	32	45	43	45	E	X
65-40-250	CS50	8	8,0	73	260	214	38	43	45	50	32	45	43	45	E	X
65-40-315	CS50	8	7,1	75	326	278	38	43	45	50	32	45	43	45	E	X
80-50-250	CS50	11	10,0	84	260	220	38	43	45	50	32	45	43	45	E	X
80-50-315	CS50	10	9,5	86	323	270	38	43	45	50	32	45	43	45	E	X
100-65-160	CS50	21	12,2	92	174	132	38	43	45	50	32	45	43	45	E	-
100-65-200	CS50	17	13,3	100	219	180	38	43	45	50	32	45	43	45	E	X
100-65-250	CS50	15	14,3	101	260	220	38	43	45	50	32	45	43	45	E	-
125-80-160	CS50	32	15,1	124	174	122	38	43	45	50	32	45	43	45	E	-
125-80-200	CS50	25	15,2	115	219	180	38	43	45	50	32	45	43	45	E	X
125-80-250	CS50	19	15,8	115	269	220	38	43	45	50	32	45	43	45	E	X
125-100-160	CS50	38	16,4	135	185	155	38	43	45	50	32	45	43	45	E	-
125-100-200	CS50	33	17,9	142	219	179	38	43	45	50	32	45	43	45	E	-
100-65-315	CS60	14	13,0	107	320	270	48	53	55	60	42	55	53	55	E	-
125-80-315	CS60	19	17,8	115	334	281	48	53	55	60	42	55	53	55	E	X
125-80-400	CS60	15	14,3	129	398	330	48	53	55	60	42	55	53	55	E	X
125-100-250	CS60	27	18,8	145	262	216	48	53	55	60	42	55	53	55	E	X
125-100-315	CS60	23	19,9	142	334	280	48	53	55	60	42	55	53	55	E	-
125-100-400	CS60	18	17,1	142	401	329	48	53	55	60	42	55	53	55	E	-
150-125-200	CS60	41	21,1	160	224	162	48	53	55	60	42	55	53	55	E	-
150-125-250	CS60	37	22,4	162	269	218	48	53	55	60	42	55	53	55	E	-
150-125-315	CS60	31	22,6	162	334	280	48	53	55	60	42	55	53	55	E	X
150-125-400	CS60	26	20,9	162	419	330	48	53	55	60	42	55	53	55	E	X
200-150-200	CS60	60	25,2	179	224	158	48	53	55	60	42	55	53	55	E	-
200-150-250	CS60	49	23,0	191	269	220	48	53	55	60	42	55	53	55	E	X

¹⁷⁾ E = single volute, D = double volute

Size	Bearing bracket	Impeller					Shaft diameter in seal chamber					Diameter of shaft protecting sleeve			Volute type ¹⁷⁾	Heatable casing
		Impeller outlet width	Free passage	Impeller inlet diameter	Impeller diameter		Dry shaft	Wet shaft		Bearing	Coupling	Gland packing	Mechanical seal			
					Max.	Min.		Europe	Americas				Europe	Asia/ Americas		
					[mm]	[mm]		[mm]	[mm]				[mm]	[mm]		
200-150-315	CS80	40	26,9	192	334	264	60	65	65	80	48	65	65	65	E	X
200-150-400	CS80	33	23,8	191	419	330	60	65	65	80	48	65	65	65	E	-
200-150-500	CS80	23	19,1	190	504	400	60	65	65	80	48	65	65	65	D	-
200-200-250	CS80	62	37,2	190	260	200	60	65	65	80	48	65	65	65	E	-
250-200-315	CS80	50	20,8	222	320	260	60	65	65	80	48	65	65	65	E	X
250-200-400	CS80	40	18,4	222	404	320	60	65	65	80	48	65	65	65	D	X
250-200-500	CS80	32	20,6	222	504	400	60	65	65	80	48	65	65	65	D	-
300-250-315	CS80	73	26,7	270	324	260	60	65	65	80	48	65	65	65	D	X

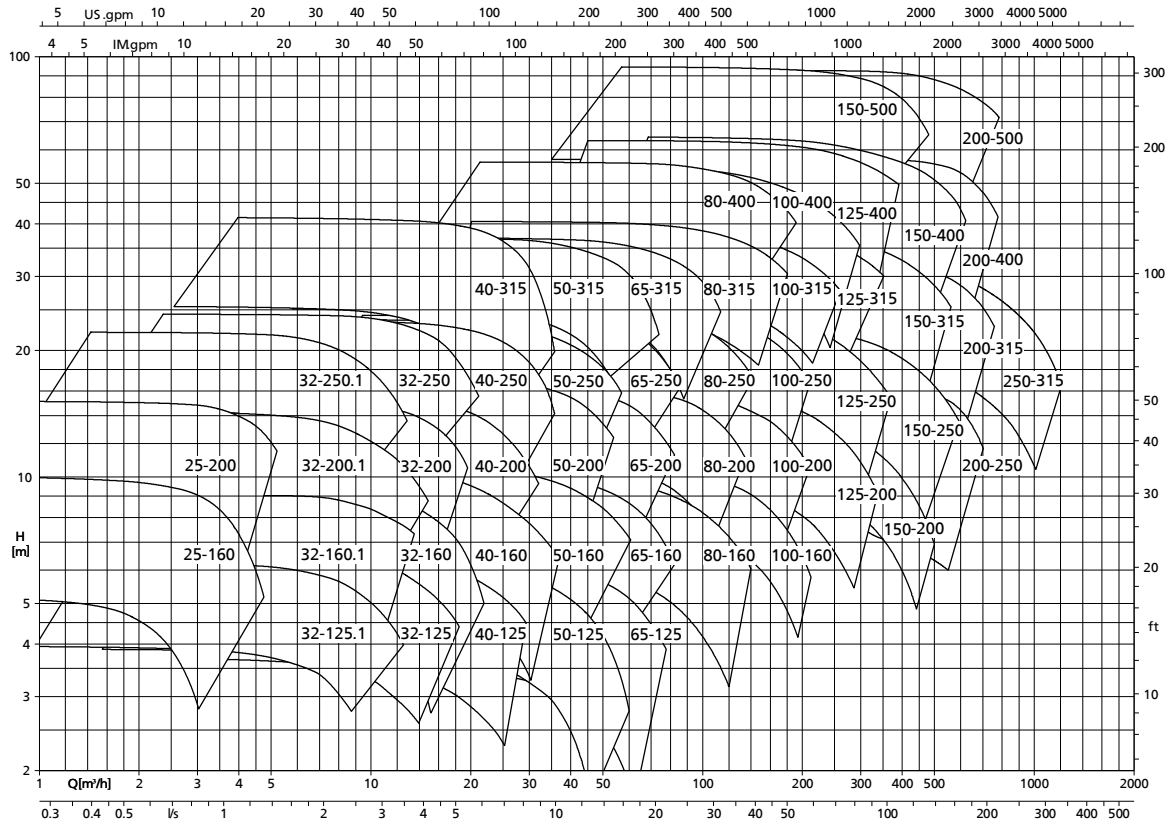
Selection charts

MegaCPK, n = 2900 rpm

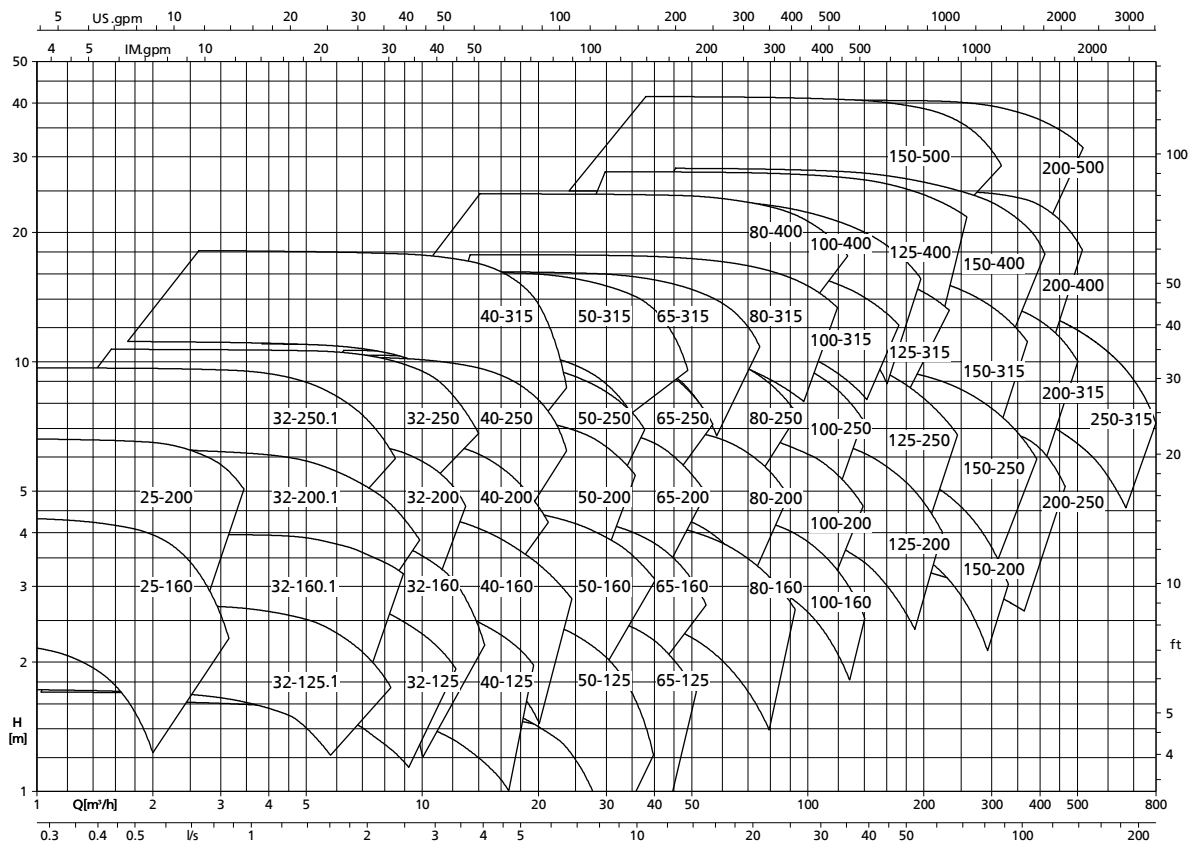


¹⁷⁾ E = single volute, D = double volute

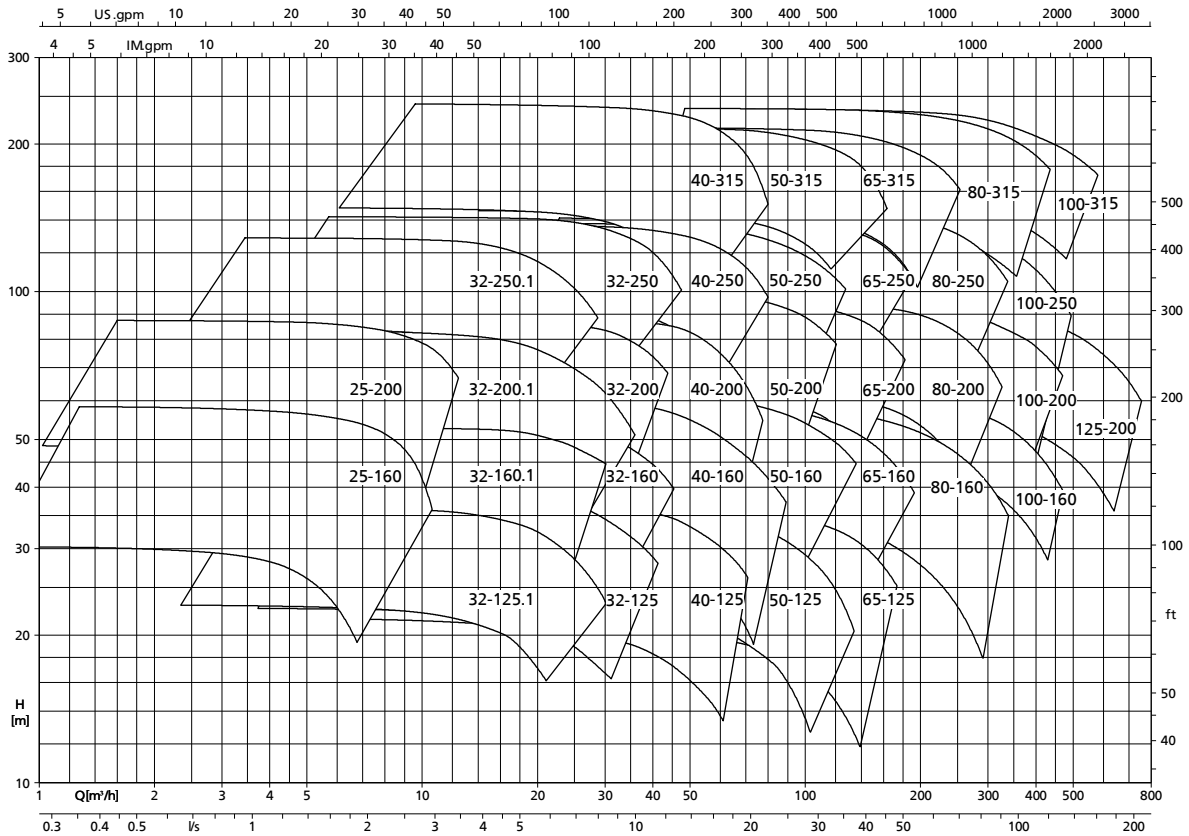
MegaCPK, n = 1450 rpm



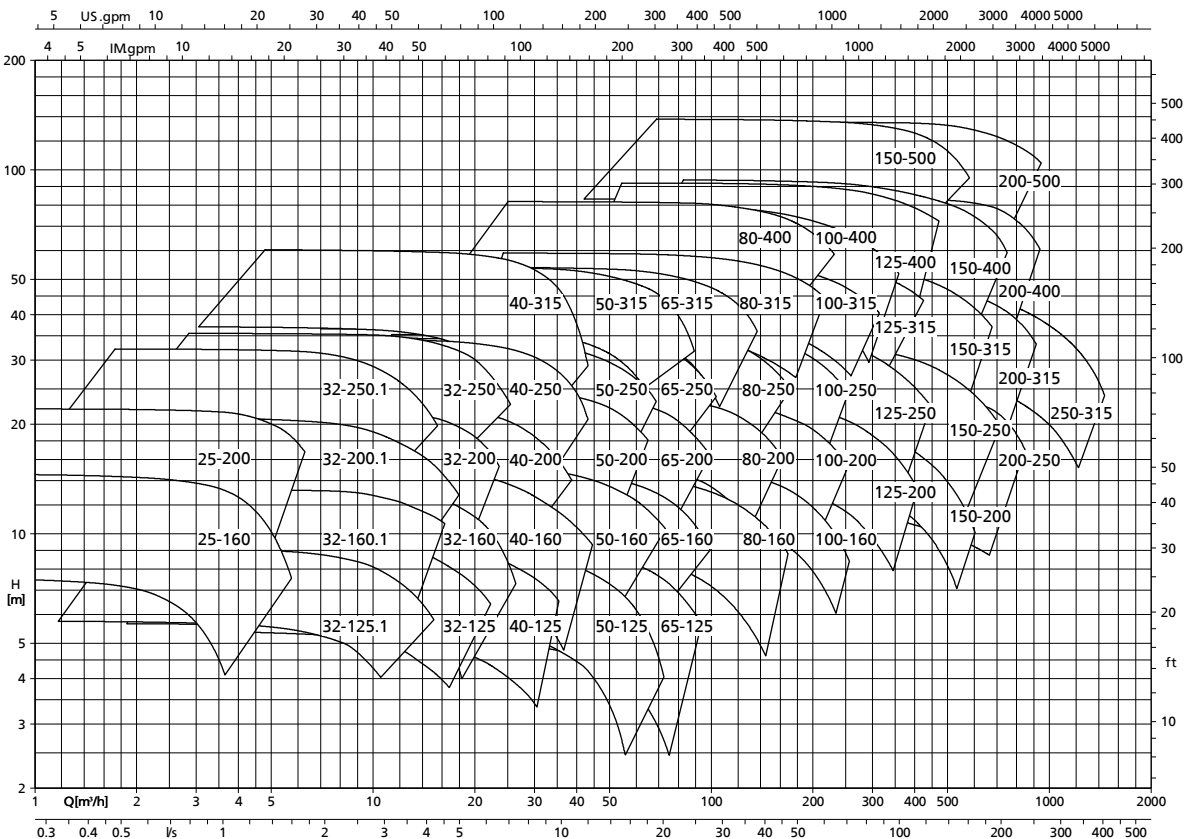
MegaCPK, n = 960 rpm



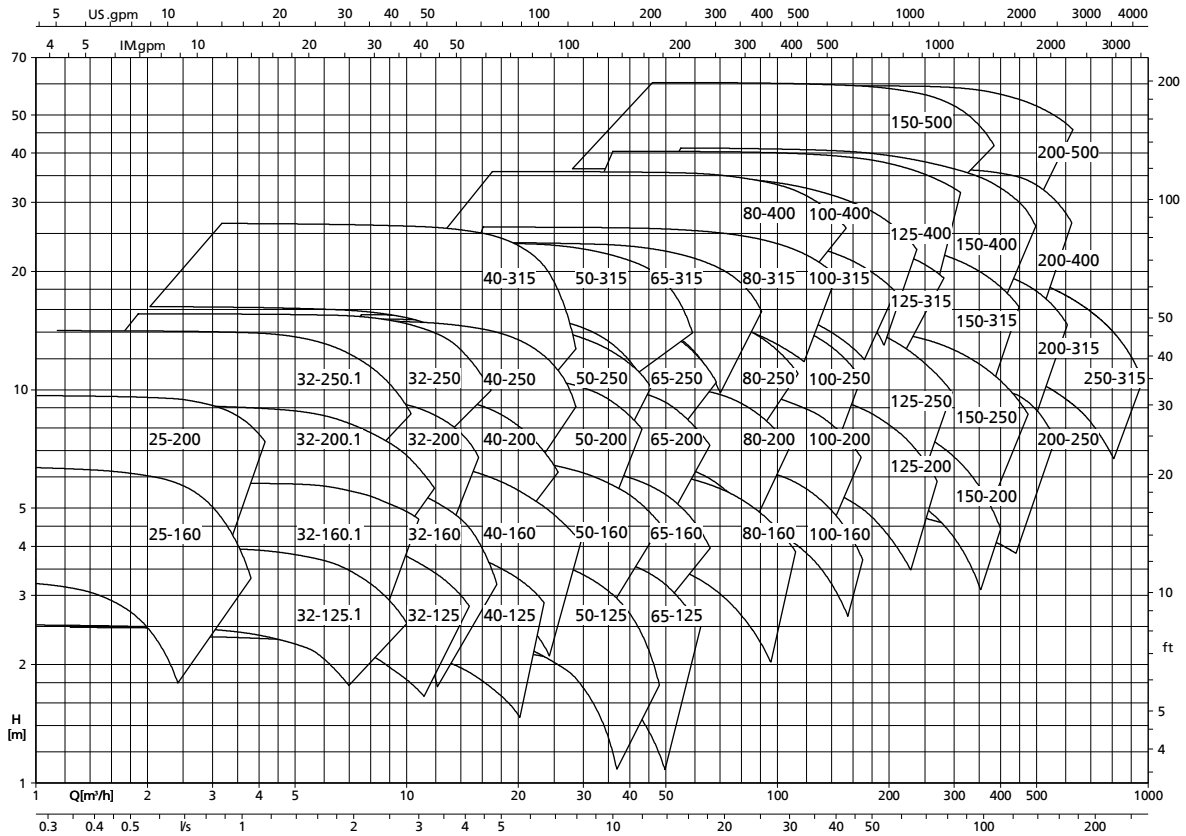
MegaCPK, n = 3500 rpm



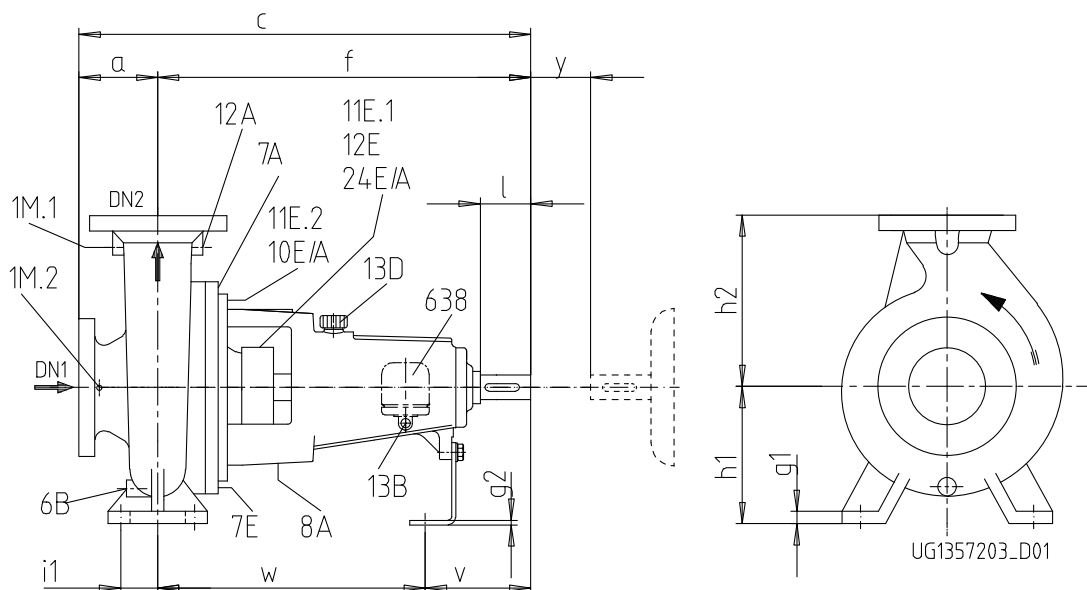
MegaCPK, n = 1750 rpm



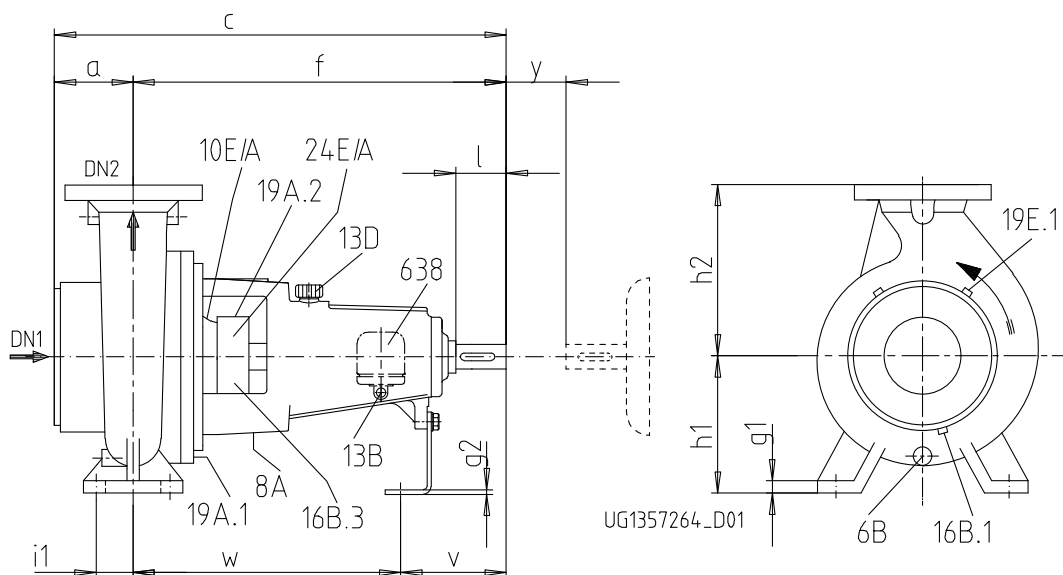
MegaCPK, n = 1160 rpm



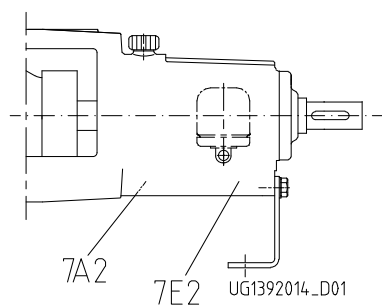
Dimensions and connections



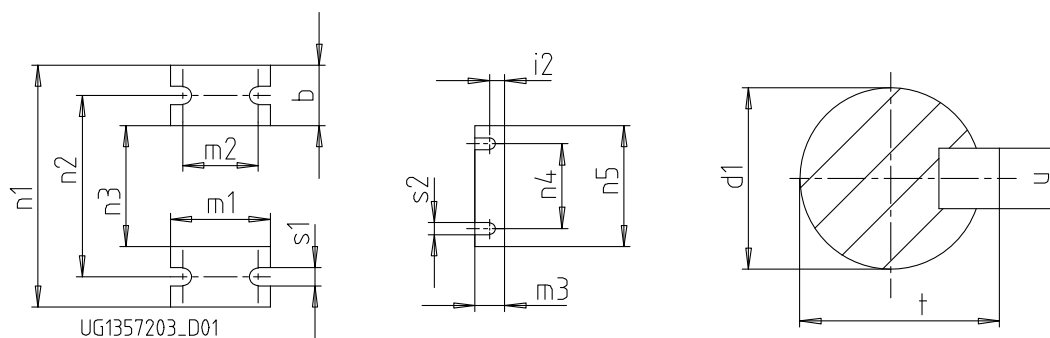
Pump dimensions



Dimensions of heatable version ("h" version)



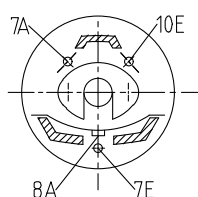
Version with coolable bearing bracket



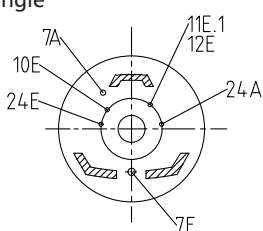
UG1357203_D01

Dimensions of pump feet and shaft end

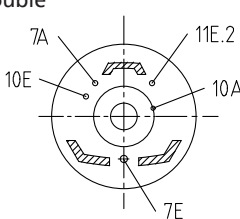
Gland packing



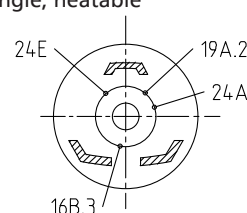
Mechanical seal, single



Mechanical seal, double



Mechanical seal, single, heatable



Shaft seal connections

Connections, Europe

Connection	Discharge nozzle			Description
	≤ DN 50	DN 65 - DN 80	≥ DN 100	
1 M.1	G1/4	G3/8	G1/2	Pressure gauge
1 M.2	G1/4	G3/8	G1/2	Pressure gauge
6B	G1/4	G3/8	G1/2	Fluid drain
7 E/A ¹⁸⁾	Ø 12 (CS40: Ø 8)			Cooling liquid IN/OUT
7 E2/A2 ¹⁸⁾	G1 (CS40: G3/4)			Cooling liquid IN/OUT
8 A ¹⁸⁾	Rp1/2			Leakage drain
10 E/A	G1/4			Barrier fluid IN/OUT
11 E.1	G1/4			Flushing liquid IN
11 E.2	G1/4			Flushing liquid IN
12 E	G1/4			Circulation liquid IN
12 A	G1/4	G3/8	G1/2	Circulation liquid OUT
13 B	G3/8			Oil drain
13 D	Ø 20			Vent plug
16 B.1	G1/4			Condensate drain
16 B.3	G1/4			Condensate drain
19 E.1	G3/8			Heating liquid IN
19 A.1	Ø 12 (CS40: Ø 8)			Heating liquid OUT
19 A.2	G3/8			Heating liquid OUT
24 E/A	G1/4			Quench liquid IN/OUT
638	Rp1/4			Constant-level oiler

Connections Asia

Connection	Discharge nozzle			Description
	≤ DN 50	DN 65 - DN 80	≥ DN 100	
1 M.1	G1/4	G3/8	G1/2	Pressure gauge
1 M.2	G1/4	G3/8	G1/2	Pressure gauge

¹⁸⁾ Optional

Connection	Discharge nozzle			Description
	≤ DN 50	DN 65 - DN 80	≥ DN 100	
6B	G1/4	G3/8	G1/2	Fluid drain
7 E/A ¹⁸⁾	Ø 12 (CS40: Ø 8)			Cooling liquid IN/OUT
7 E2/A2 ¹⁸⁾	G1 (CS40: G3/4)			Cooling liquid IN/OUT
8 A ¹⁸⁾	Rp1/2			Leakage drain
10 E/A	G1/4			Barrier fluid IN/OUT
11 E.1	G1/4			Flushing liquid IN
11 E.2	G1/4			Flushing liquid IN
12 E	G1/4			Circulation liquid IN
12 A	G1/4	G3/8	G1/2	Circulation liquid OUT
13 B	G3/8			Oil drain
13 D	Ø 20			Vent plug
16 B.1	G1/4			Condensate drain
16 B.3	G1/4			Condensate drain
19 E.1	G3/8			Heating liquid IN
19 A.1	Ø 12 (CS40: Ø 8)			Heating liquid OUT
19 A.2	G3/8			Heating liquid OUT
24 E/A	G1/4			Quench liquid IN/OUT
638	Rp1/4			Constant-level oiler

Connections Americas

Connection	Discharge nozzle			Description
	≤ DN 50	DN 65 - DN 80	≥ DN 100	
1 M.1	NPT1/4	NPT1/4	NPT1/4	Pressure gauge
1 M.2	NPT1/4	NPT1/4	NPT1/4	Pressure gauge
6B	NPT1/4	NPT3/8	NPT1/2	Fluid drain
7 E/A ¹⁸⁾	Ø 12 (CS40: Ø 8)			Cooling liquid IN/OUT
7 E2/A2 ¹⁸⁾	NPT1 (CS40: NPT3/4)			Cooling liquid IN/OUT
8 A ¹⁸⁾	Rp1/2			Leakage drain
10 E/A	NPT1/4			Barrier fluid IN/OUT
11 E.1	NPT1/4			Flushing liquid IN
11 E.2	NPT1/4			Flushing liquid IN
12 E	NPT1/4			Circulation liquid IN
12 A	NPT1/4	NPT3/8	NPT1/2	Circulation liquid OUT
13 B	NPT1/4 (CS80: NPT1/2)			Oil drain
13 D	Ø 20			Vent plug
16 B.1	G1/4			Condensate drain
16 B.3	G1/4			Condensate drain
19 E.1	G3/8			Heating liquid IN
19 A.1	Ø 12 (CS40: Ø 8)			Heating liquid OUT
19 A.2	G3/8			Heating liquid OUT
24 E/A	NPT1/4			Quench liquid IN/OUT
638	NPT1/4			Constant-level oiler

Pump dimensions

Size	Bearing bracket	Pump dimensions [mm]														
		DN1	DN2	a	b	c	f	g1	g2	h1	h2	m1	m3	n1	n3	n5
040-025-160	CS40	40	25	80	50	465	385	15	4	132	160	100	48	240	140	160
040-025-200	CS40	40	25	80	50	465	385	15	4	160	180	100	48	240	140	160
050-032-125	CS40	50	32	80	50	465	385	15	4	112	140	100	48	190	90	160
050-032-125.1	CS40	50	32	80	50	465	385	15	4	112	140	100	48	190	90	160
050-032-160	CS40	50	32	80	50	465	385	15	4	132	160	100	48	240	140	160
050-032-160.1	CS40	50	32	80	50	465	385	15	4	132	160	100	48	240	140	160
050-032-200	CS40	50	32	80	50	465	385	18	4	160	180	100	48	240	140	160
050-032-200.1	CS40	50	32	80	50	465	385	18	4	160	180	100	48	240	140	160
065-040-125	CS40	65	40	80	50	465	385	15	4	112	140	100	48	210	110	160
065-040-160	CS40	65	40	80	50	465	385	15	4	132	160	100	48	240	140	160

Size	Bearing bracket	Pump dimensions [mm]														
		DN1	DN2	a	b	c	f	g1	g2	h1	h2	m1	m3	n1	n3	n5
065-040-200	CS40	65	40	100	50	485	385	18	4	160	180	100	48	265	165	160
080-050-125	CS40	80	50	100	50	465	385	18	4	132	160	100	48	240	140	160
080-050-160	CS40	80	50	100	50	485	385	18	4	160	180	100	48	265	165	160
080-050-200	CS40	80	50	100	50	485	385	18	4	160	200	100	48	265	165	160
100-065-125	CS40	100	65	100	65	485	385	18	4	160	180	125	48	280	150	160
050-032-250	CS50	50	32	100	65	600	500	18	4	180	225	125	48	320	190	160
050-032-250.1	CS50	50	32	100	65	600	500	18	4	180	225	125	48	320	190	160
065-040-250	CS50	65	40	100	65	600	500	18	4	180	225	125	48	320	190	160
065-040-315	CS50	65	40	125	65	625	500	18	6	200	250	125	48	345	215	160
080-050-250	CS50	80	50	125	65	625	500	18	4	180	225	125	48	320	190	160
080-050-315	CS50	80	50	125	65	625	500	18	6	225	280	125	48	345	215	160
100-065-160	CS50	100	65	100	65	600	500	18	4	160	200	125	48	280	150	160
100-065-200	CS50	100	65	100	65	600	500	18	4	180	225	125	48	320	190	160
100-065-250	CS50	100	65	125	80	625	500	20	6	200	250	160	48	360	200	160
125-080-160	CS50	125	80	125	65	625	500	18	4	180	225	125	48	320	190	160
125-080-200	CS50	125	80	125	65	625	500	18	4	180	250	125	48	345	215	160
125-080-250	CS50	125	80	125	80	625	500	18	6	225	280	160	48	400	240	160
125-100-160	CS50	125	100	125	80	625	500	18	6	200	280	160	48	360	200	160
125-100-200	CS50	125	100	125	80	625	500	18	6	200	280	160	48	360	200	160
100-065-315	CS60	100	65	125	80	655	530	20	6	225	280	160	48	400	240	160
125-080-315	CS60	125	80	125	80	655	530	20	6	250	315	160	48	400	240	160
125-080-400	CS60	125	80	125	80	655	530	20	6	280	355	160	48	435	275	160
125-100-250	CS60	125	100	140	80	670	530	18	6	225	280	160	48	400	240	160
125-100-315	CS60	125	100	140	80	670	530	18	6	250	315	160	48	400	240	160
125-100-400	CS60	125	100	140	100	670	530	20	6	280	355	200	48	500	300	160
150-125-200	CS60	150	125	140	80	670	530	20	6	250	315	160	48	400	240	160
150-125-250	CS60	150	125	140	80	670	530	20	6	250	355	160	48	400	240	160
150-125-315	CS60	150	125	140	100	670	530	20	6	280	355	200	48	500	300	160
150-125-400	CS60	150	125	140	100	670	530	20	6	315	400	200	48	500	300	160
200-150-200	CS60	200	150	180	100	710	530	20	6	280	400	200	48	550	350	160
200-150-250	CS60	200	150	160	100	690	530	20	6	280	375	200	48	500	300	160
200-150-315	CS80	200	150	160	100	830	670	20	8	315	400	200	60	550	350	200
200-150-400	CS80	200	150	160	100	830	670	20	8	315	450	200	60	550	350	200
200-150-500	CS80	200	150	180	100	850	670	22	8	375	500	200	60	550	350	200
200-200-250	CS80	200	200	180	100	850	670	22	8	355	425	200	60	550	350	200
250-200-315	CS80	250	200	200	100	870	670	22	8	355	450	200	60	550	350	200
250-200-400	CS80	250	200	180	100	850	670	22	8	355	500	200	60	550	350	200
250-200-500	CS80	250	200	200	100	870	670	22	8	425	560	200	60	660	460	200
300-250-315	CS80	300	250	250	130	920	670	26	8	400	560	260	60	690	430	200

Dimensions of pump feet and shaft end

Size	Bearing bracket	Shaft end [mm]					Pump feet [mm]								
		d1	l	t	u	y	i1	i2	m2	n2	n4	s1	s2	v	w
040-025-160	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285
040-025-200	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285
050-032-125	CS40	24	50	27	8	100	35	20	70	140	110	14	14	100	285
050-032-125.1	CS40	24	50	27	8	100	35	20	70	140	110	14	14	100	285
050-032-160	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285
050-032-160.1	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285
050-032-200	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285
050-032-200.1	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285
065-040-125	CS40	24	50	27	8	100	35	20	70	160	110	14	14	100	285
065-040-160	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285
065-040-200	CS40	24	50	27	8	100	35	20	70	212	110	14	14	100	285
080-050-125	CS40	24	50	27	8	100	35	20	70	190	110	14	14	100	285

Size	Bearing bracket	Shaft end [mm]					Pump feet [mm]								
		d1	l	t	u	y	i1	i2	m2	n2	n4	s1	s2	v	w
080-050-160	CS40	24	50	27	8	100	35	20	70	212	110	14	14	100	285
080-050-200	CS40	24	50	27	8	100	35	20	70	212	110	14	14	100	285
100-065-125	CS40	24	50	27	8	100	47,5	20	95	212	110	14	14	100	285
050-032-250	CS50	32	80	35	10	100	47,5	20	95	250	110	14	14	130	370
050-032-250.1	CS50	32	80	35	10	100	47,5	20	95	250	110	14	14	130	370
065-040-250	CS50	32	80	35	10	100	47,5	20	95	250	110	14	14	130	370
065-040-315	CS50	32	80	35	10	100	47,5	20	95	280	110	14	14	130	370
080-050-250	CS50	32	80	35	10	100	47,5	20	95	250	110	14	14	130	370
080-050-315	CS50	32	80	35	10	100	47,5	20	95	280	110	14	14	130	370
100-065-160	CS50	32	80	35	10	100	47,5	20	95	212	110	14	14	130	370
100-065-200	CS50	32	80	35	10	140	47,5	20	95	250	110	14	14	130	370
100-065-250	CS50	32	80	35	10	140	60	20	120	280	110	18	14	130	370
125-080-160	CS50	32	80	35	10	140	47,5	20	95	250	110	14	14	130	370
125-080-200	CS50	32	80	35	10	140	47,5	20	95	280	110	14	14	130	370
125-080-250	CS50	32	80	35	10	140	60	20	120	315	110	18	14	130	370
125-100-160	CS50	32	80	35	10	140	60	20	120	280	110	19	14	130	370
125-100-200	CS50	32	80	35	10	140	60	20	120	280	110	18	14	130	370
100-065-315	CS60	42	110	45	12	140	60	20	120	315	110	18	14	160	370
125-080-315	CS60	42	110	45	12	140	60	20	120	315	110	18	14	160	370
125-080-400	CS60	42	110	45	12	140	60	20	120	355	110	18	14	160	370
125-100-250	CS60	42	110	45	12	140	60	20	120	315	110	18	14	160	370
125-100-315	CS60	42	110	45	12	140	60	20	120	315	110	18	14	160	370
125-100-400	CS60	42	110	45	12	140	75	20	150	400	110	23	14	160	370
150-125-200	CS60	42	110	45	12	140	60	20	120	315	110	19	14	160	370
150-125-250	CS60	42	110	45	12	140	60	20	120	315	110	18	14	160	370
150-125-315	CS60	42	110	45	12	140	75	20	150	400	110	23	14	160	370
150-125-400	CS60	42	110	45	12	140	75	20	150	400	110	23	14	160	370
200-150-200	CS60	42	110	45	12	180	75	20	150	450	110	24	14	160	370
200-150-250	CS60	42	110	45	12	180	75	20	150	400	110	23	14	160	370
200-150-315	CS80	48	110	51	14	180	75	39	150	450	140	23	18	170	500
200-150-400	CS80	48	110	51	14	180	75	39	150	450	140	23	18	170	500
200-150-500	CS80	48	110	51	14	180	75	39	150	450	140	23	18	170	500
200-200-250	CS80	48	110	51	14	180	75	39	150	450	140	23	18	170	500
250-200-315	CS80	48	110	51	14	180	75	39	150	450	140	23	18	170	500
250-200-400	CS80	48	110	51	14	180	75	39	150	450	140	23	18	170	500
250-200-500	CS80	48	110	51	14	180	75	39	150	560	140	23	18	170	500
300-250-315	CS80	48	110	51	14	180	95	39	190	560	140	28	18	170	500

Flange design

Flange design by materials

Material	Europe/Asia/Americas					Americas		
	Standard	Pressure class	Standard	Pressure class		Standard	Pressure class	
G	EN 1092-2	PN 16	Drilled to ASME B16.1	Class 125	-	ASME B16.1	Class 125	Class 250 ¹⁹⁾
C	EN 1092-1	PN 16	Drilled to ASME B16.5	Class 150	-	ASME B16.5	Class 150	-
V	EN 1092-1	PN 16	Drilled to ASME B16.5	Class 150	-	-	-	-
D	EN 1092-1	PN 25	Drilled to ASME B16.5	Class 150	Class 300 ²⁰⁾	-	-	-
E	EN 1092-1	PN 25	Drilled to ASME B16.5	Class 150	Class 300 ²⁰⁾	ASME B16.5	Class 150	Class 300 ¹⁹⁾

Scope of supply

Depending on the model, the following items are included in the scope of supply:

- Pump

Drive

- Surface-cooled IEC three-phase squirrel-cage motor

Shaft coupling

- Flexible coupling with or without spacer

Contact guard

- Coupling guard

Baseplate

- Baseplate (Europe: to ISO 3661), cast or welded, for pump and motor, in torsion-resistant design
- Channel section steel or folded steel plate

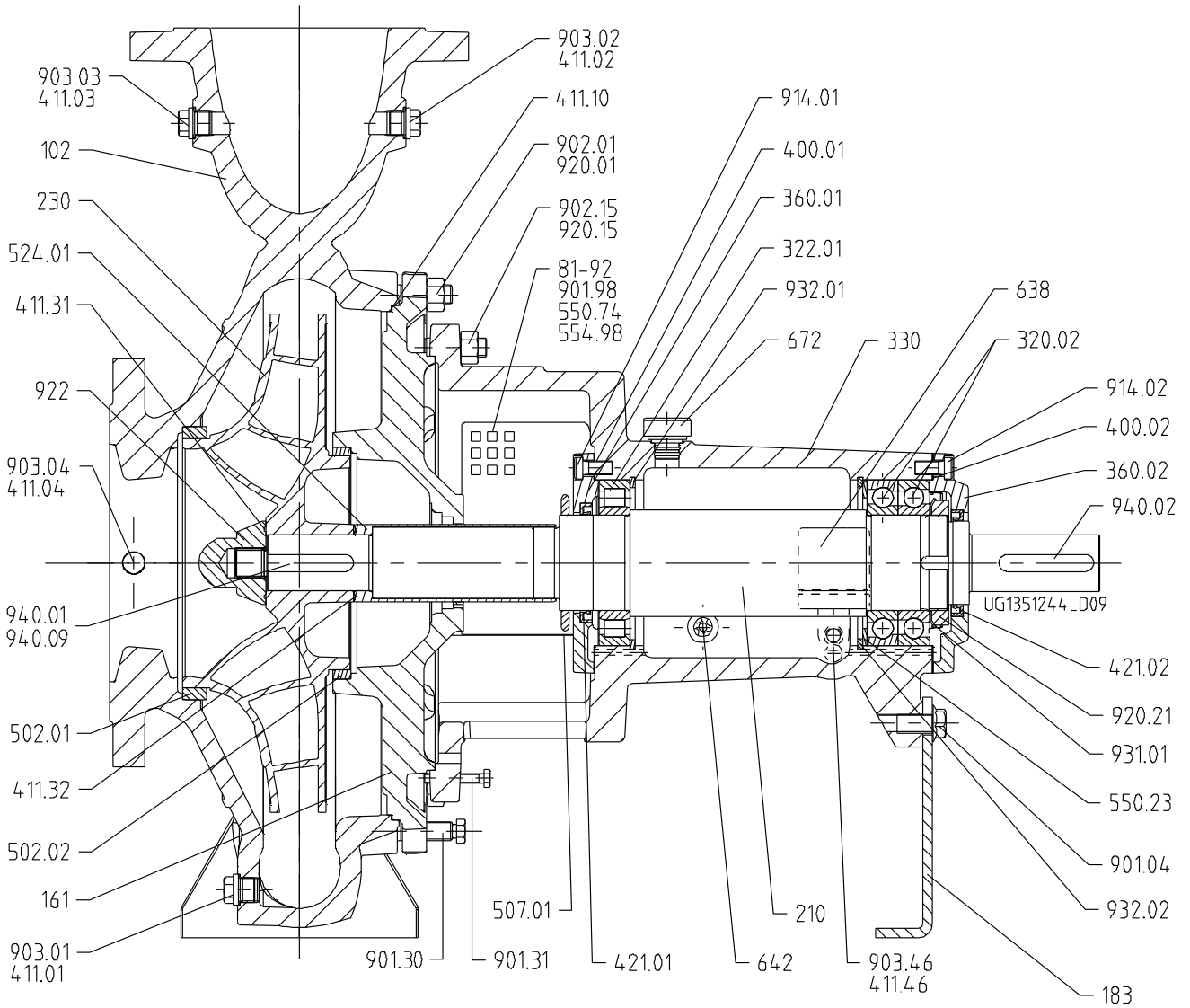
Special accessories

- As required

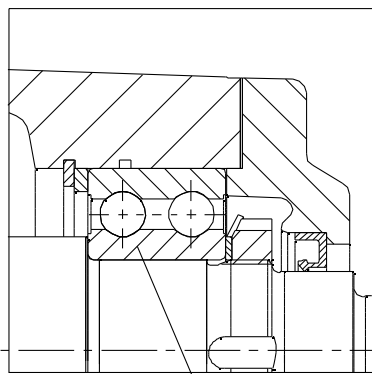
¹⁹⁾ Depending on size

²⁰⁾ Not possible for size 100-65-125

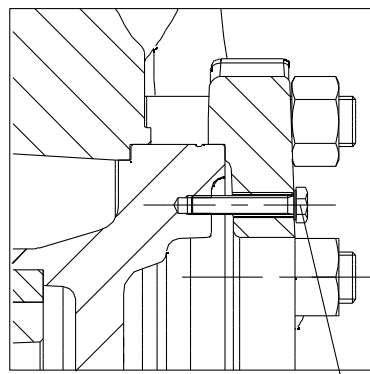
General assembly drawing with list of components



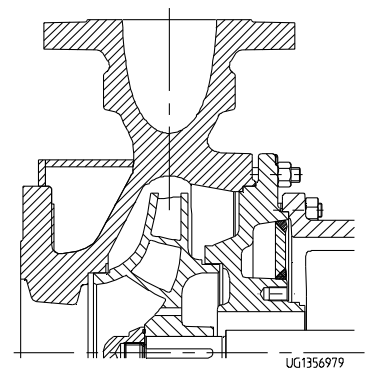
General assembly drawing of standard version (oil-lubricated)



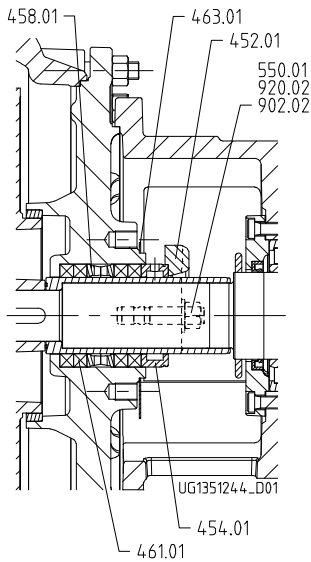
Version with bearing bracket CS40



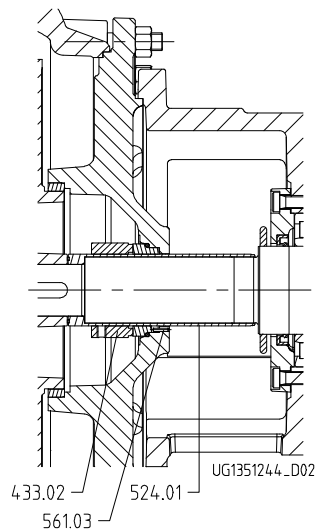
Version with clamped discharge cover



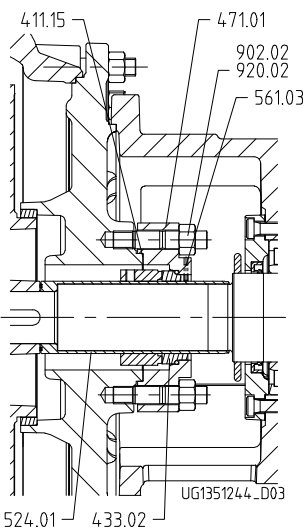
Heatable version ("h" version)



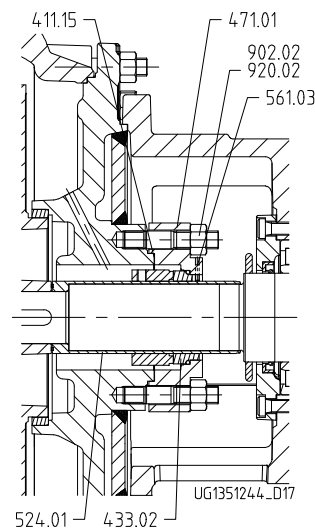
Version with gland packing



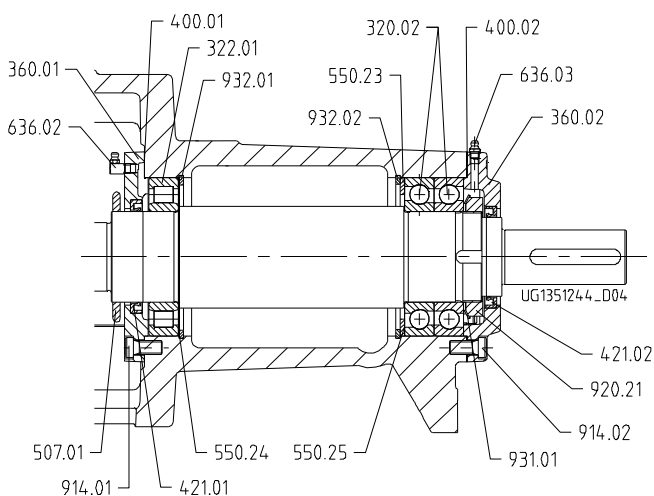
Mechanical seal with conical casing cover



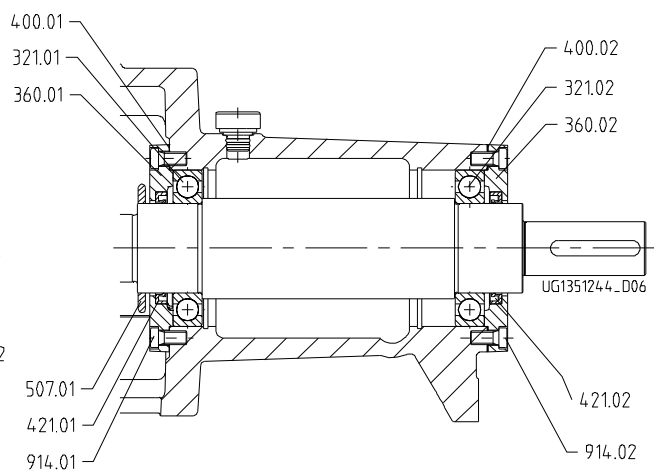
Mechanical seal with cylindrical casing cover



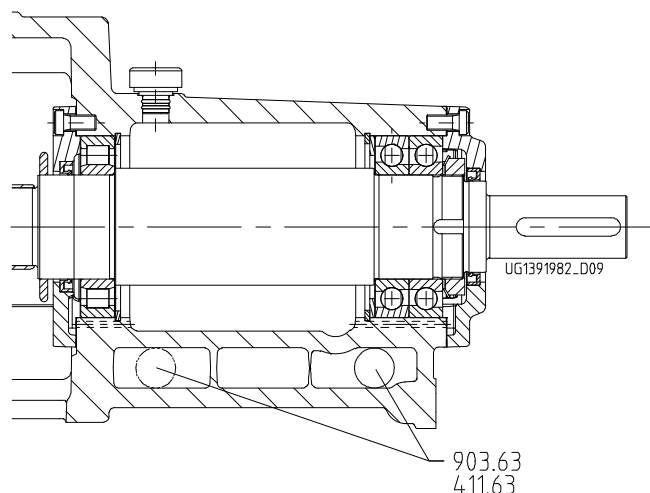
Mechanical seal with cylindrical casing cover
(heatable version "h")



Grease-lubricated version (medium-duty bearing assembly)



Oil-lubricated version (economy bearing assembly)



Version with coolable bearing bracket

List of components

Part No.	Comprising	Description
102	102	Volute casing
	411.01/.02 ²¹⁾ /03 ²¹⁾ /.04 ²¹⁾ /.10 ²²⁾	Joint ring
	502.01 ²¹⁾	Casing wear ring
	902.01	Stud
	903.01/.02 ²¹⁾ /.03 ²¹⁾ /.04 ²¹⁾	Screw plug
	920.01	Hexagon nut
161	161	Casing cover
	502.02 ²¹⁾	Casing wear ring
	901.22 ²³⁾ /31	Hexagon head bolt
	902.02	Stud
	920.02	Hexagon nut
183	183	Support foot
210	210	Shaft
	920.21 ²⁴⁾	Keywayed nut
	931.01 ²⁴⁾	Lockwasher
	940.01/.02/.09 ²⁵⁾	Key
230	230	Impeller
	503.01/.02 ²¹⁾	Impeller wear ring
320.02 ²⁴⁾	320.02	Angular contact ball bearing (double-row in CS40)
321.01 ²⁶⁾	321.01	Deep-groove ball bearing
321.02 ²⁶⁾	321.02	Deep-groove ball bearing
322.01 ²⁴⁾	322.01	Cylindrical roller bearing
330	330	Bearing bracket
360.01	360.01	Bearing cover
360.02	360.02	Bearing cover
400.01	400.01	Gasket
400.02	400.02	Gasket
411.15 ²²⁾	411.15	Joint ring
411.31	411.31	Joint ring
411.32	411.32	Joint ring
421.01	421.01	Lip seal
421.02	421.02	Lip seal

²¹⁾ Not on all versions.

²²⁾ Joint ring 411.10 (and 411.15 for versions with mechanical seal with seal cover only) depending on the operating temperature. To be ordered separately in spare parts order.

²³⁾ Only for clamped cover

²⁴⁾ Not fitted on versions with economy bearing assembly

²⁵⁾ From CS 60

²⁶⁾ On versions with economy bearing assembly only

Part No.	Comprising	Description
433.02	433.02	Mechanical seal, complete
452.01	452.01	Gland follower
454.01	454.01	Stuffing box ring
458.01	458.01	Lantern ring
461.01	461.01	Gland packing
463.01	463.01	Drip plate
471.01	471.01	Seal cover
502.01 ²¹⁾	502.01	Casing wear ring
502.02 ²¹⁾	502.02	Casing wear ring
503.01 ²¹⁾	503.01	Impeller wear ring
503.02 ²¹⁾	503.02	Impeller wear ring
507.01	507.01	Thrower
524.01	524.01	Shaft protecting sleeve
550.01	550.01	Disc
550.23	550.23	Disc
550.24 ²⁷⁾	550.24	Disc
550.25 ²⁷⁾	550.25	Disc
550.74	550.74	Disc
554.98	554.98	Washer
561.03	561.03	Grooved pin
636.02 ²⁷⁾	636.02	Lubricating nipple
636.03 ²⁷⁾	636.03	Lubricating nipple
638 ²⁸⁾	638	Constant-level oiler
642 ²⁸⁾	642	Oil level sight glass
672 ²⁸⁾	672	Vent plug
81-92	81-92	Cover plate
99-9	411.01/.02/.03/.04/.10/.15/31/.32/.46	Joint ring
	400.01/02	Gasket
901.04	901.04	Hexagon head bolt
901.30	901.30	Hexagon head bolt
901.31	901.31	Hexagon head bolt
901.32	901.32	Hexagon head bolt
901.98	901.98	Hexagon head bolt
902.15	902.15	Stud
903.46	903.46	Screw plug
914.01	914.01	Hexagon socket head cap screw
914.02	914.02	Hexagon socket head cap screw
920.15	920.15	Hexagon nut
922	922	Impeller nut
932.01	932.01	Circlip
932.02	932.02	Circlip

The relevant version is indicated in the documentation supplied.

²⁷⁾ On grease-lubricated versions only

²⁸⁾ Not applicable for grease-lubricated versions



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