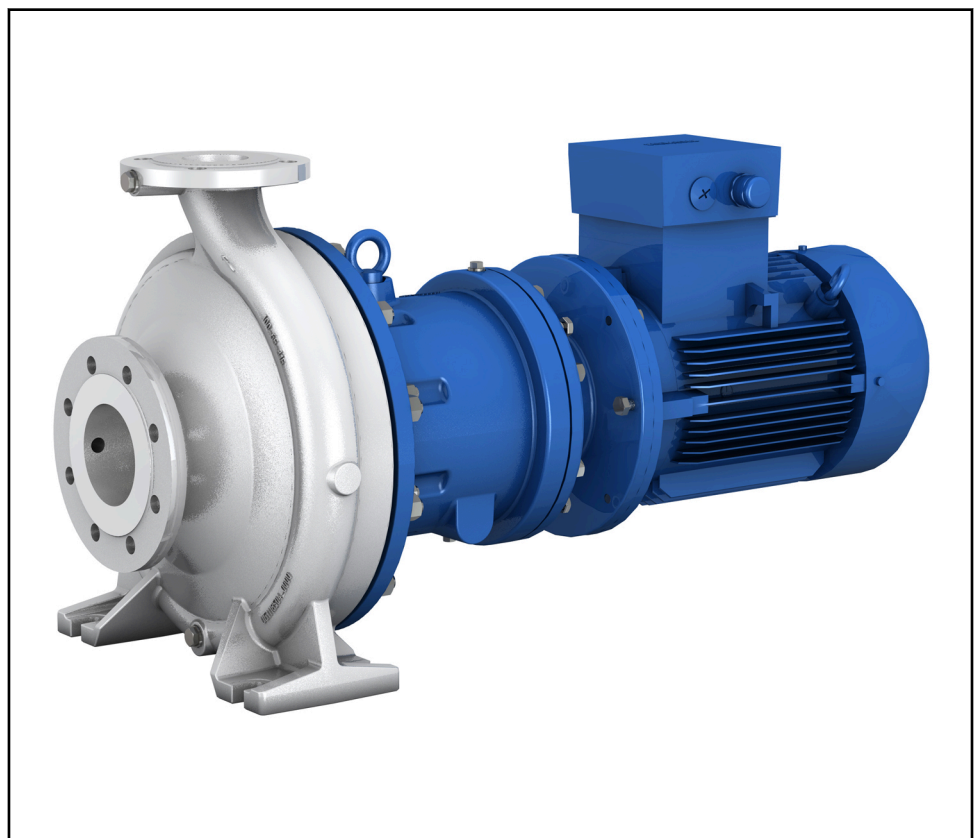


Mag-drive Pump

Magnochem-Bloc

Type Series Booklet



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Type Series Booklet Magnochem-Bloc

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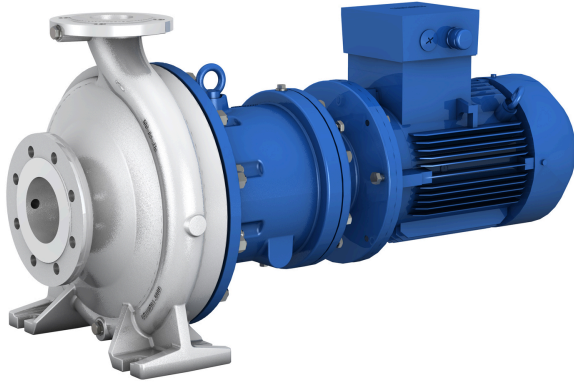
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Seal-less Pumps

Mag-drive Pumps

Magnochem-Bloc



Main applications

- Chemical industry
- District heating
- Industrial recirculation systems
- Air-conditioning systems
- Condensate transport
- Cooling circuits
- Petrochemical industry
- Pipelines and tank farms
- Refineries
- Process engineering
- Hot-water heating systems
- Sugar industry

Fluids handled

- Aggressive fluids
- Explosive fluids
- Flammable fluids
- Toxic fluids
- Valuable fluids
- Fluids which are injurious to health
- Malodorous fluids

Operating data

Operating properties

Characteristic	Value	
Flow rate	Q	Up to 625 m ³ /h (50 Hz) Up to 754 m ³ /h (60 Hz)

Characteristic	Value	
Head	H	Up to 162 m (50 Hz) Up to 236 m (60 Hz)
	t ₁	-90 °C to +200 °C
Operating temperature	t ₂	-20 °C to +40 °C
Ambient temperature	p	40 bar max.

Designation

Example: MACB050-032-2501CCHX1A

Key to the designation

Code	Description
MACB	Type series (full name: Magnochem-Bloc)
050	Nominal suction nozzle diameter [mm]
032	Nominal discharge nozzle diameter [mm]
250	Nominal impeller diameter [mm]
1	Hydraulic system, e.g. 1 = low-flow hydraulic system
C	Casing material, e.g. C = stainless steel
C	Impeller material, e.g. C = stainless steel
H	Additional code, e.g. H = heatable casing
X	Special design
1	Nominal diameter of magnetic coupling, e.g. 1 = 85 mm
A	Effective length of magnetic coupling, e.g. A = 10 mm

Further information on the designation

(⇒ Page 33)

Design details

Design

- Volute casing pump
- Horizontal installation
- Vertical installation
- Close-coupled design
- Single-stage
- Meets the technical requirements to ISO 5199
- Ratings to ISO 2858 complemented by pumps of nominal diameters DN 25

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
- Heatable
- Draining facility

Impeller type

- Closed radial impeller with multiply curved vanes
- Discharge-side sealing clearance reduces axial thrust

Shaft seal

- Seal-less, with magnetic coupling
- Containment shroud as sealing element

Casing cover variants

- Internal circulation
- Low-boiling fluids
- External circulation
- Dead-end configuration

In addition:

- Flushing connection
- Heatable
- Draining facility
- Internal ring filter or main flow filter

Bearings
Drive-end bearings:

- Shaft supported by motor

Pump-end bearings:

- Hydrodynamic plain bearings
- Product-lubricated

Automation

Automation options:

- PumpDrive
- PumpMeter

Materials

Overview of available materials

Part No.	Description	Material	Material variant S=standard, O=option											
			CC	CD	VV	VD	EG	EC	ED	YG	YC	YD	DD	
102	Casing	Stainless steel 1.4408/ A743 Gr CF8 M	S	S	-	-	-	-	-	-	-	-	-	-
		Stainless steel 1.4408	-	-	S ¹⁾	S ¹⁾	-	-	-	-	-	-	-	-
		Duplex stainless steel 1.4593/1.4517/ A995 GR 1B	-	-	-	-	-	-	-	-	-	-	-	S
		Steel GP240GH+N/ A216 Gr WCB	-	-	-	-	S	S	S	-	-	-	-	-
		1.7706	-	-	-	-	-	-	-	S	S	S	-	-
502.01 / 502.02	Casing wear ring	Grey cast iron GG/cast iron	-	-	-	-	O	O	O	O	O	O	O	-
		CrNiMo steel	O	O	O	O	-	-	-	-	-	-	-	-
		Duplex steel	-	-	-	-	-	-	-	-	-	-	-	O
		CrNi steel VG 434	-	-	-	-	O	O	O	O	O	O	-	-
		None	S	S	S	S	S	S	S	S	S	S	S	S
411.10	Joint ring	CrNi steel/graphite	O	O	O	O	O	O	O	S	S	S	O	
		Thermoplastic	S	S	S	S	S	S	S	-	-	-	S	
		Gylon 3501E	O	O	O	O	O	O	O	-	-	-	O	
230	Impeller	Stainless steel 1.4408/ A743 GR CF8M	S	-	S	-	-	S	-	-	S	-	-	
		Grey cast iron JL1040/ A48CL35 B	-	-	-	-	S	-	-	S	-	-	-	
		Duplex stainless steel 1.4593/1.4517/A995 GR 1B	-	S	-	S	-	-	S	-	-	S	S	
503	Impeller wear ring	CrNiMo steel	O	-	O	-	-	O	-	-	O	-	-	
		Stainless steel 1.4027+QT	-	-	-	-	O	-	-	O	-	-	-	
		Duplex steel	-	O	-	O	-	-	O	-	-	O	O	
		None	S	S	S	S	S	S	S	S	S	S	S	

¹⁾ Heatable casing optionally available.

Part No.	Description	Material	Material variant S=standard, O=option										
			CC	CD	VV	VD	EG	EC	ED	YG	YC	YD	DD
920.95	Impeller nut	A4/AISI 316	S	S	S	S	S	S	S	S	S	S	-
		Duplex stainless steel 1.4462/ UNS S31803	-	-	-	-	-	-	-	-	-	-	S
940.01	Key	1.4571+C/A276 TP316 COND B	S	S	S	S	S	S	S	S	S	S	-
		Duplex stainless steel 1.4462/ UNS S31803	-	-	-	-	-	-	-	-	-	-	S
161	Casing cover	Stainless steel 1.4408/ A743 GR CF8M	§ ²⁾	§ ²⁾	-	-	-	-	-	-	-	-	-
		Stainless steel 1.4408	-	-	§ ²⁾	§ ²⁾	-	-	-	-	-	-	-
		Duplex stainless steel 1.4593/1.4517/A995 Gr CD4MCuN	-	-	-	-	-	-	-	-	-	-	§ ²⁾
		Steel GP240GH+N/ A216 Gr WCB	-	-	-	-	§ ²⁾	§ ²⁾	§ ²⁾	§ ²⁾	§ ²⁾	§ ²⁾	-
391.01	Bearing ring carrier	Stainless steel 1.4408/ A743 Gr CF8M	S	S	S	S	S	S	S	S	S	S	-
		Duplex stainless steel 1.4593/ /1.4517/A995 Gr CD4MCuN	-	-	-	-	-	-	-	-	-	-	S
545.21/ 545.22	Bearing bush	SiC	S	S	S	S	S	S	S	S	S	S	S
529.21/ 529.22	Bearing sleeve	SiC	S	S	S	S	S	S	S	S	S	S	S
		SiC, DLC-coated	O	O	O	O	O	O	O	O	O	O	O
386.01/ 386.02	Thrust bearing ring	SiC	S	S	S	S	S	S	S	S	S	S	S
		SiC, DLC-coated	O	O	O	O	O	O	O	O	O	O	O
818.01	Inner rotor	1.4571-SAMCO	S	S	S	S	S	S	S	S	S	S	-
		1.4462-SAMCO	-	-	-	-	-	-	-	-	-	-	S
23-2.02	Auxiliary impeller	CrNiMo St INT	S	S	S	S	S	S	S	S	S	S	-
818.02	Outer rotor	ST-SAMCO	S	S	S	S	S	S	S	S	S	S	S
82-15	Containment shroud	1.4571-2.4610	S	S	S	S	S	S	S	S	S	S	-
		1.4462-2.4610	-	-	-	-	-	-	-	-	-	-	S
		Zirconium oxide	O	O	O	O	O	O	O	O	O	O	O
132.01	Intermediate piece, containment shroud	Stainless steel 1.4408/ A743 GR CF8M	S	S	-	-	-	-	-	-	-	-	-
		Stainless steel 1.4408	-	-	S	S	-	-	-	-	-	-	-
		Steel GP240GH+N/ A216 Gr WCB	-	-	-	-	S	S	S	S	S	S	-
		Duplex stainless steel 1.4593/ 1.4517/A995 Gr CD4MCuN	-	-	-	-	-	-	-	-	-	-	S
210.03	Shaft (plain bearing)	Duplex stainless steel 1.4462/ UNS S31803	S	S	S	S	S	S	S	S	S	S	S
		1.4313+QT780/ A479 UNS S41500	O	O	O	O	O	O	O	O	O	O	-
344	Bearing bracket lantern	Steel GP240GH+N/ A216 Gr WCB	S	S	S	S	S	S	S	S	S	S	S

Coating and preservation

- Coating and preservation to KSB standard

Product benefits

- High operating reliability:
 - Only static seals are required.
 - Containment shroud protected by anti-rub feature
 - Self-draining facility of containment shroud
 - Pump does not need to be drained before drive unit is fitted/removed.
- Broad application range ensured by:

- Product-lubricated plain bearings made of silicon carbide (DLC coating optionally available)
- Modular design principle for hydraulic system and magnetic coupling
- Large number of operating modes
- Temperature maintenance and heating facility for casing and casing cover

Acceptance tests/Guarantees

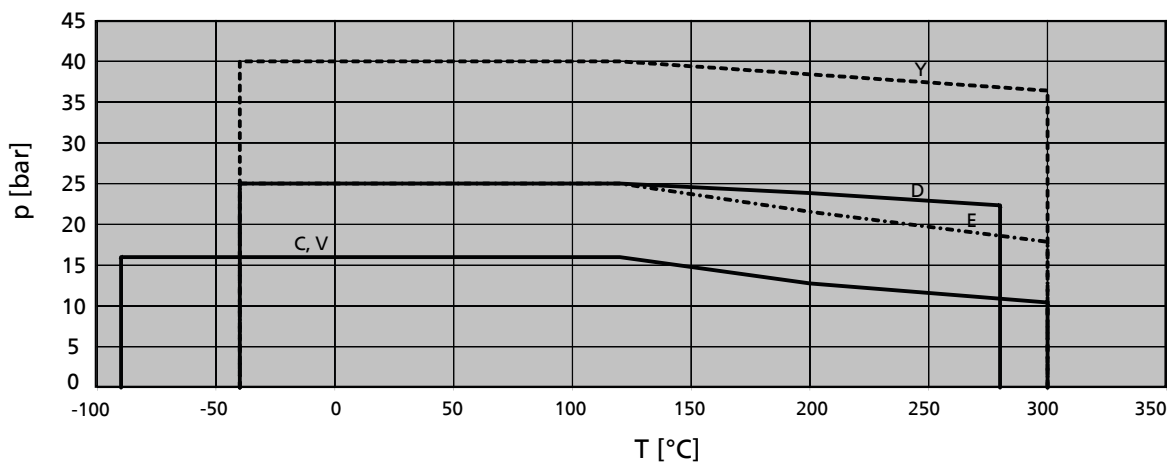
- Materials testing
 - Test report 2.2 on request
- Final inspection

²⁾ Heatable casing cover optionally available.

- 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 can be performed and certified at extra charge:
 - Performance test to ISO 9906
 - NPSH test
- Other tests (e.g. vibrations, strength) on request.
- Warranty
Warranties are given within the scope of the valid delivery conditions.

Pressure and temperature limits

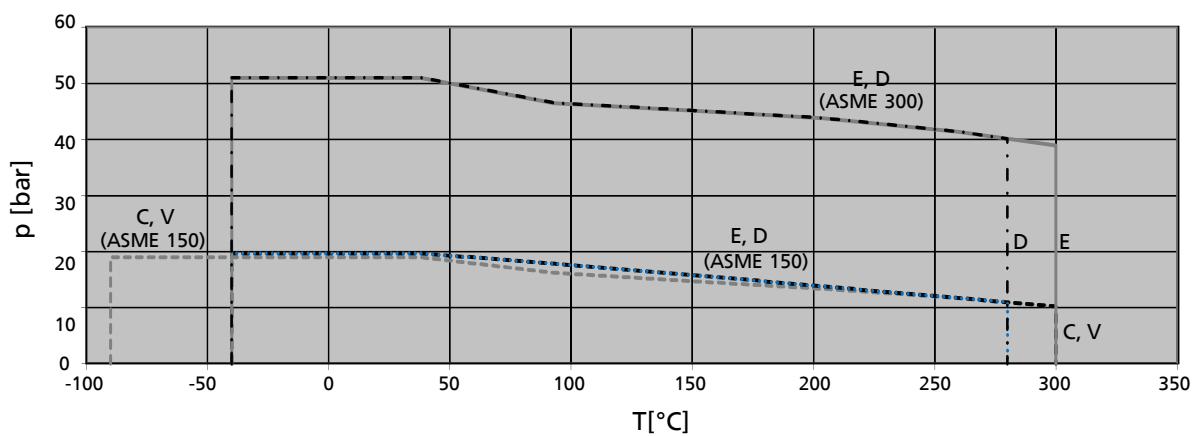
Pressure and temperature limits of hydraulic system



Pressure and temperature limits of hydraulic system

The pressure and temperature limits depend on the configuration.

Pressure and temperature limits of ASME flanges



Pressure and temperature limits of ASME flanges³⁾

On models with ASME flanges, the pressure and temperature limits are determined by the lowest value given in the diagram "Pressure and temperature limits of hydraulic system" and the diagram "Pressure and temperature limits of ASME flanges".

Technical data

Technical data

Size	Bearing bracket	Impeller					Casing type ⁴⁾	Heatable casing	Heatable casing cover	Nominal diameter						
		Impeller outlet width	Free passage	Impeller inlet diameter	Impeller diameter					85		123		172		
					max.	min.				Magnetic coupling length [mm]						
										min	max	min	max	min	max	
		[mm]	[mm]	[mm]	[mm]	[mm]				10	60	10	70	10	100	
											[mm]					
040-025-160	CS40	6	5,7	44	169	130	E	X	X	X	X	-	-	-		
040-025-200	CS40	6	5,7	44	209	160	E	-	X	X	X	X	-	-		
050-032-125.1	CS40	7	6,0	52	139	114	E	-	X	X	X	X	-	-		
050-032-160.1	CS40	6	5,4	52	170	138	E	X	X	X	X	-	-	-		
050-032-200.1	CS40	6	5,3	54	204	138	E	X	X	X	X	-	-	-		
050-032-250.1	CS50	6	5,2	58	254	220	E	X	X	X	X	X	X	X		
050-032-125	CS40	10	5,7	63	139	110	E	X	X	X	X	-	-	-		
050-032-160	CS40	9	5,8	63	174	135	E	X	X	X	X	-	-	-		
050-032-200	CS40	7	6,7	62	209	178	E	X	X	X	X	-	-	-		
050-032-250	CS50	8	7,1	63	261	212	E	X	X	X	X	X	X	X		
065-040-125	CS40	14	9,6	74	139	110	E	-	X	X	X	X	-	-		
065-040-160.1	CS40	9	8,5	65	169	130	E	-	X	X	X	X	-	-		
065-040-160	CS40	13	11,5	70	174	135	E	X	X	X	X	X	-	-		
065-040-200	CS40	9	8,9	69	209	175	E	X	X	X	X	X	-	-		
065-040-250.1	CS50	7	6,6	68	260	200	E	X	X	X	X	X	X	X		
065-040-250	CS50	8	8,0	73	260	214	E	X	X	X	X	X	X	X		
065-040-315	CS50	8	7,1	75	326	278	E	X	X	X	X	X	X	X		
080-050-125	CS40	20	11,6	88	142	114	E	-	X	X	X	X	-	-		
080-050-160	CS40	17	11,6	87	174	135	E	X	X	X	X	X	-	-		
080-050-200	CS40	14	11,9	83	219	180	E	X	X	X	X	X	-	-		
080-050-250	CS50	11	10,0	84	260	220	E	X	X	X	X	X	X	X		
080-050-315.1	CS50	8	7,6	85	320	260	E	X	X	X	X	X	X	X		
080-050-315	CS50	10	9,5	86	323	270	E	X	X	X	X	X	X	X		
100-065-125	CS40	26	12,9	99	141	114	E	-	X	X	X	X	-	-		
100-065-160	CS50	21	12,2	92	174	132	E	-	X	X	X	X	X	X		
100-065-200	CS50	17	13,3	100	219	180	E	X	X	X	X	X	X	X		
100-065-250	CS50	15	14,3	101	260	220	E	-	X	X	X	X	X	X		
100-065-315	CS60	14	13	107	320	270	E	-	X	X	X	X	X	X		
125-080-160	CS50	32	15,1	124	174	122	E	-	X	X	X	X	X	X		
125-080-200	CS50	25	15,2	115	219	180	D	X	X	X	X	X	X	X		
125-080-250	CS50	19	15,8	115	269	220	D	X	X	X	X	X	X	X		
125-080-315	CS60	19	17,8	115	334	281	D	X	X	X	X	X	X	X		
125-080-400	CS60	15	14,3	129	398	330	E	X	X	X	X	X	X	X		
125-100-160	CS50	38	16,4	135	185	155	E	-	X	X	X	X	X	X		
125-100-200	CS50	33	17,9	142	219	179	D	-	X	X	X	X	X	X		
125-100-250	CS60	27	18,8	145	262	216	D	X	X	X	X	X	X	X		
125-100-315	CS60	23	19,9	142	334	280	D	-	X	X	X	X	X	X		
125-100-400	CS60	18	17,1	142	401	329	E	-	X	X	X	X	X	X		
150-125-200	CS60	41	21,1	160	224	162	D	-	X	X	X	X	X	X		
150-125-250	CS60	37	22,4	162	269	218	E	-	X	X	X	X	X	X		
150-125-315	CS60	31	22,6	162	334	280	D	X	X	X	X	X	X	X		
150-125-400	CS60	26	20,9	162	419	330	D	X	X	X	X	X	X	X		

³⁾ If material Y (ASME 300) is used, the pressure and temperature limits are higher than those stipulated for the hydraulic system.

⁴⁾ E = single volute, D = double volute

Size	Bearing bracket	Impeller					Casing type ⁴⁾	Heatable casing	Heatable casing cover	Nominal diameter					
		Impeller outlet width	Free passage	Impeller inlet diameter	Impeller diameter					85	123		172		
					max.	min.				Magnetic coupling length [mm]					
		[mm]	[mm]	[mm]	[mm]	[mm]				min	max	min	max	min	max
										10	60	10	70	10	100
[mm]															
200-150-200	CS60	60	25,2	179	224	158	E	-	X	X	X	X	X	X	
200-150-250	CS60	49	23,0	191	269	220	E	X	X	X	X	X	X	X	

Weight

 Weight of pump [kg]⁵⁾

Size	Bearing bracket	Motor									
		90S 90L	100L 112M	132S 132M	160M 160L 180M 180L	200	225M, 2 poles	225S, 4-6 poles 225M, 4-6 poles	250M, 2 poles	250M, 4-6 poles /280S, 2 poles /280M, 2 poles	280S, 4-6 poles 280M, 4-6 poles
040-025-160	CS40	68	79	83	87	-	-	-	-	-	-
040-025-200	CS40	81	92	95	100	-	-	-	-	-	-
050-032-125.1	CS40	65	77	80	84	-	-	-	-	-	-
050-032-160.1	CS40	68	80	83	86	-	-	-	-	-	-
050-032-200.1	CS40	82	93	97	100	-	-	-	-	-	-
050-032-250.1	CS50	125	138	164	170	185	193	194	207	207	208
050-032-125	CS40	65	76	80	83	-	-	-	-	-	-
050-032-160	CS40	68	79	82	87	-	-	-	-	-	-
050-032-200	CS40	81	93	96	99	-	-	-	-	-	-
050-032-250	CS50	125	138	164	170	185	193	194	207	207	208
065-040-125	CS40	66	78	81	84	-	-	-	-	-	-
065-040-160.1	CS40	72	83	87	91	-	-	-	-	-	-
065-040-160	CS40	70	81	85	89	-	-	-	-	-	-
065-040-200	CS40	83	95	98	104	-	-	-	-	-	-
065-040-250.1	CS50	125	137	164	169	185	193	194	207	207	208
065-040-250	CS50	126	139	165	171	186	194	195	208	208	209
065-040-315	CS50	161	173	200	205	219	227	228	241	241	242
080-050-125	CS40	71	83	86	90	-	-	-	-	-	-
080-050-160	CS40	73	84	88	92	-	-	-	-	-	-
080-050-200	CS40	86	97	101	105	-	-	-	-	-	-
080-050-250	CS50	129	142	168	174	189	197	198	211	211	212
080-050-315.1	CS50	160	172	198	204	217	225	226	239	239	240
080-050-315	CS50	166	178	205	210	223	231	232	245	245	246
100-065-125	CS40	76	88	91	96	-	-	-	-	-	-
100-065-160	CS50	119	133	160	165	179	187	188	201	201	202
100-065-200	CS50	119	134	160	166	179	187	188	201	201	202
100-065-250	CS50	141	154	180	186	201	209	210	223	223	224
100-065-315	CS60	170	183	209	215	230	238	239	252	252	253
125-080-160	CS50	122	136	163	168	182	190	191	204	204	205
125-080-200	CS50	135	147	174	180	194	202	203	216	216	217
125-080-250	CS50	160	172	198	204	219	227	228	241	241	242
125-080-315	CS60	195	207	234	239	254	262	263	276	276	277
125-080-400	CS60	218	231	258	263	291	299	300	313	313	314
125-100-160	CS50	137	151	178	183	197	205	206	219	219	220
125-100-200	CS50	148	160	186	192	207	215	216	229	229	230
125-100-250	CS60	170	182	208	214	228	236	237	250	250	251

4) E = single volute, D = double volute

5) The weight data applies to a pump of max. possible length and with the largest magnetic coupling diameter. The weight data only applies to unheated models without motor.

Size	Bearing bracket	Motor									
		90S 90L	100L 112M	132S 132M	160M 160L 180M 180L	200	225M, 2 poles	225S, 4-6 poles 225M, 4-6 poles	250M, 2 poles	250M, 4-6 poles	280S, 4-6 poles 280M, 4-6 poles
125-100-315	CS60	204	217	243	249	263	271	272	285	285	286
125-100-400	CS60	227	245	272	277	287	295	296	309	309	310
150-125-200	CS60	171	183	209	215	230	238	239	252	252	253
150-125-250	CS60	173	186	212	218	233	241	242	255	255	256
150-125-315	CS60	236	248	275	280	295	303	304	317	317	318
150-125-400	CS60	290	302	329	334	349	357	358	371	371	372
200-150-200	CS60	207	219	246	251	267	275	276	289	289	290
200-150-250	CS60	200	213	239	245	260	268	269	282	282	283

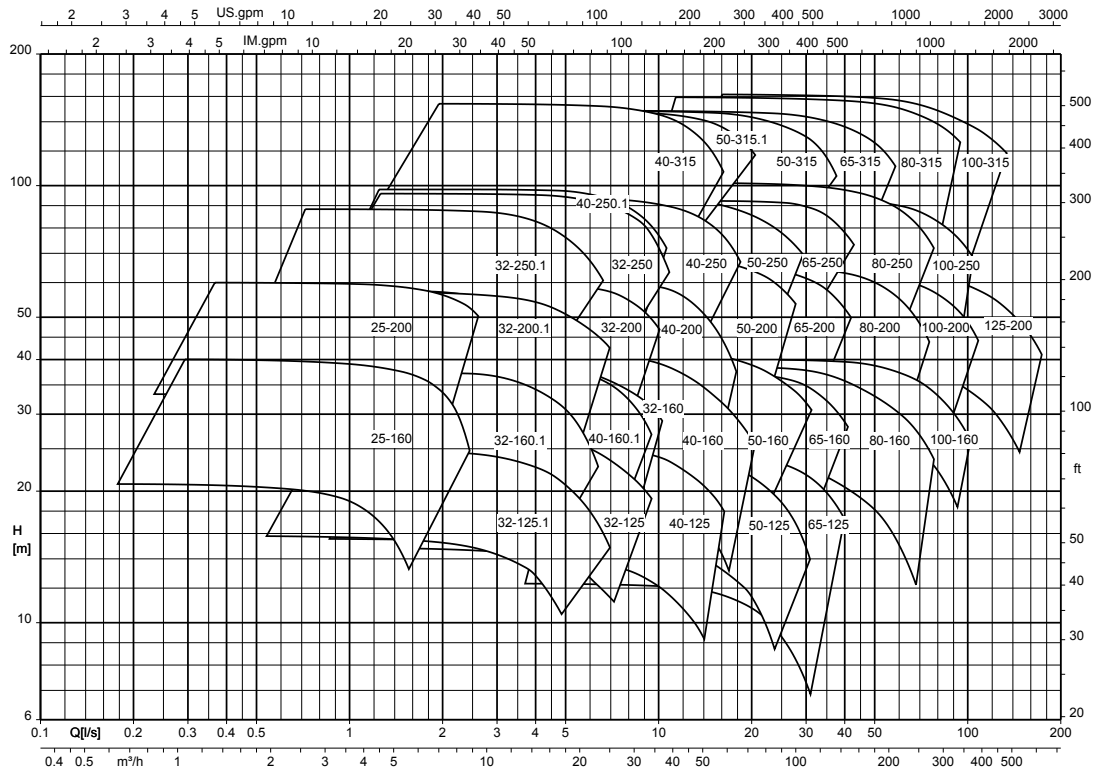
Motor weight

Motor	Weight ⁶⁾ [kg]
90S	13
90L	16
100L	24
112M	29
132S	39
132M	53
160M	74
160L	90
180M	165
180L	180
200L	240
225S	300
225M	330
250M	435
280S	640
280M	660

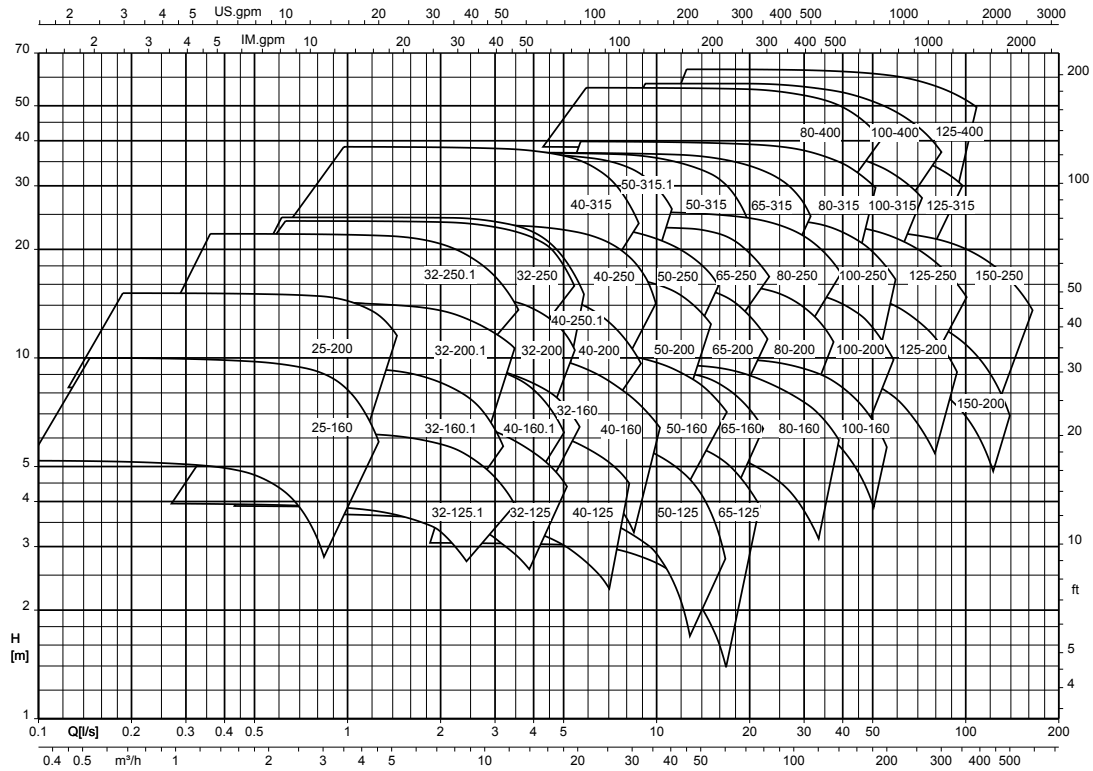
⁶⁾ Weight applies to a 4-pole standard Siemens motor

Selection charts

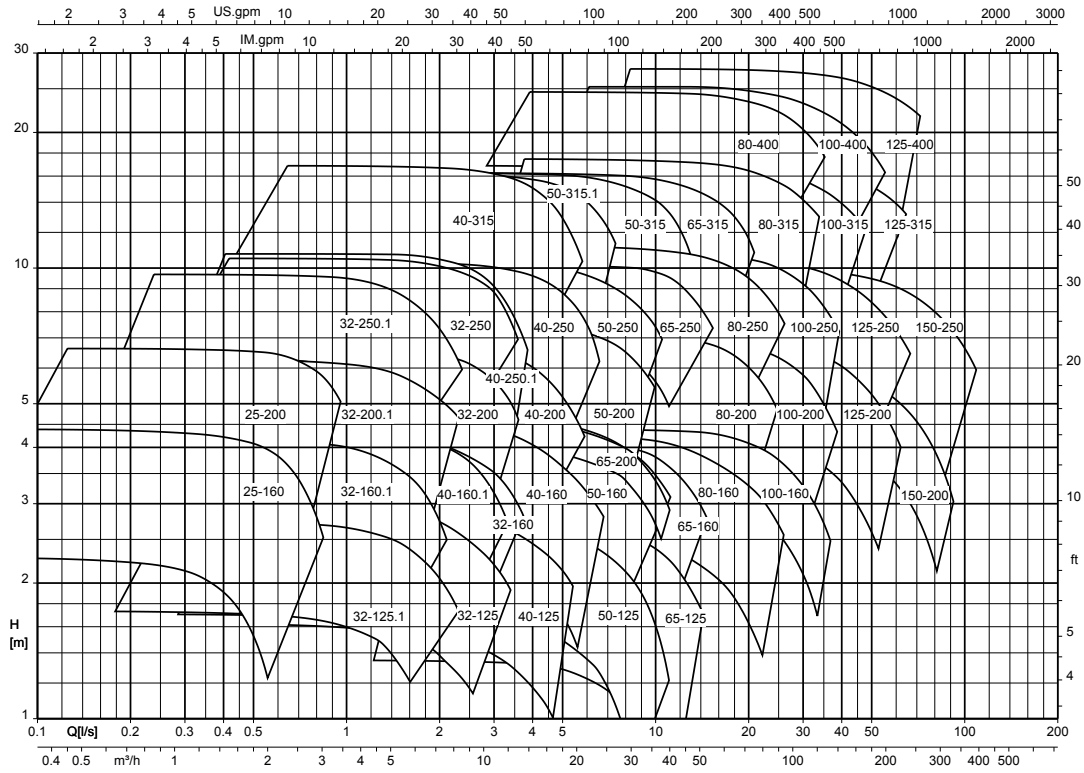
Magnochem-Bloc, n = 2900 rpm



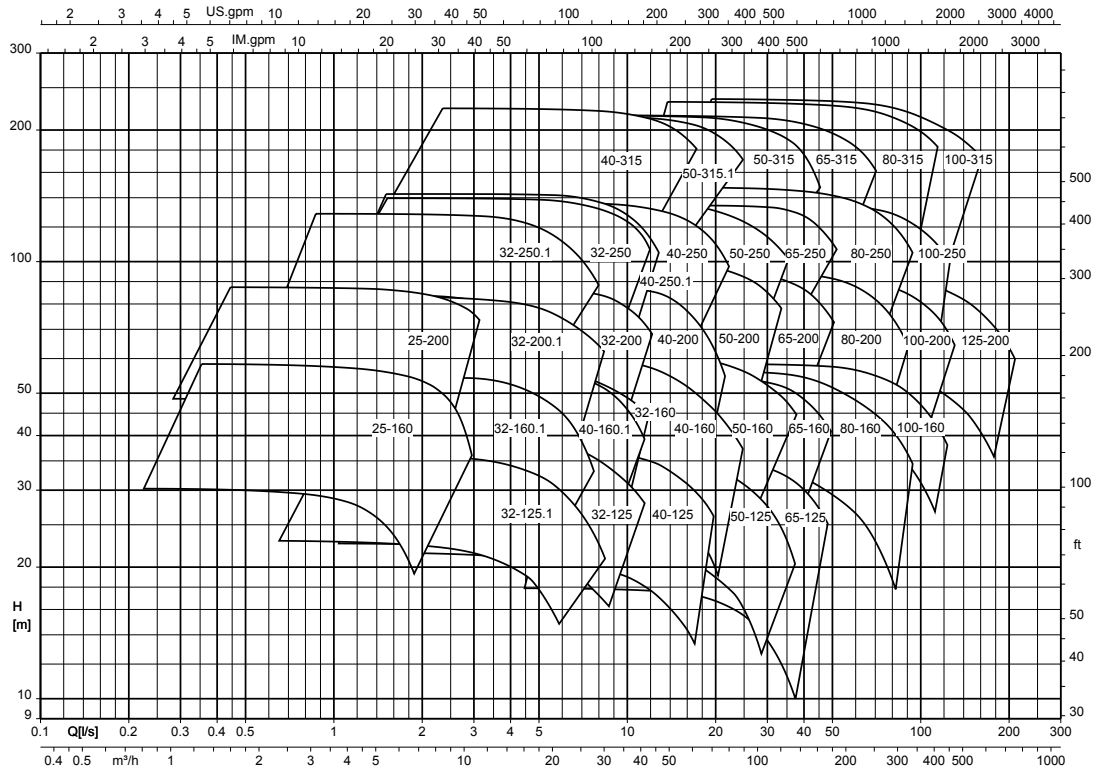
Magnochem-Bloc, n = 1450 rpm



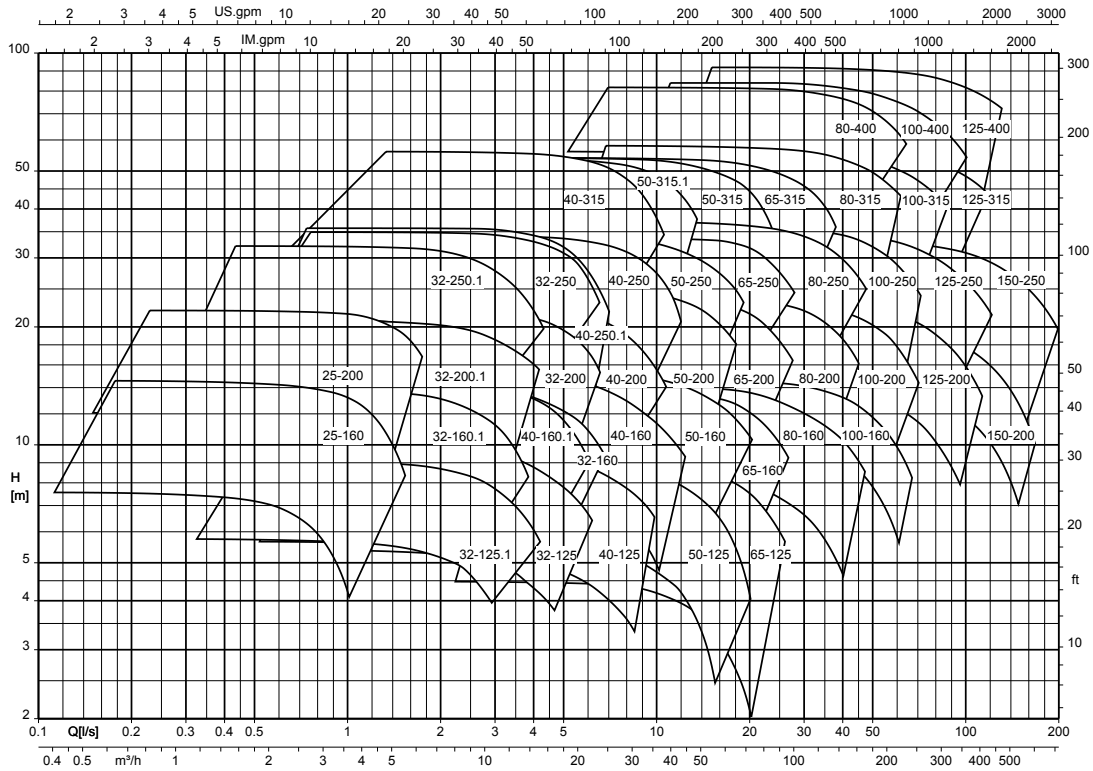
Magnochem-Bloc, n = 960 rpm



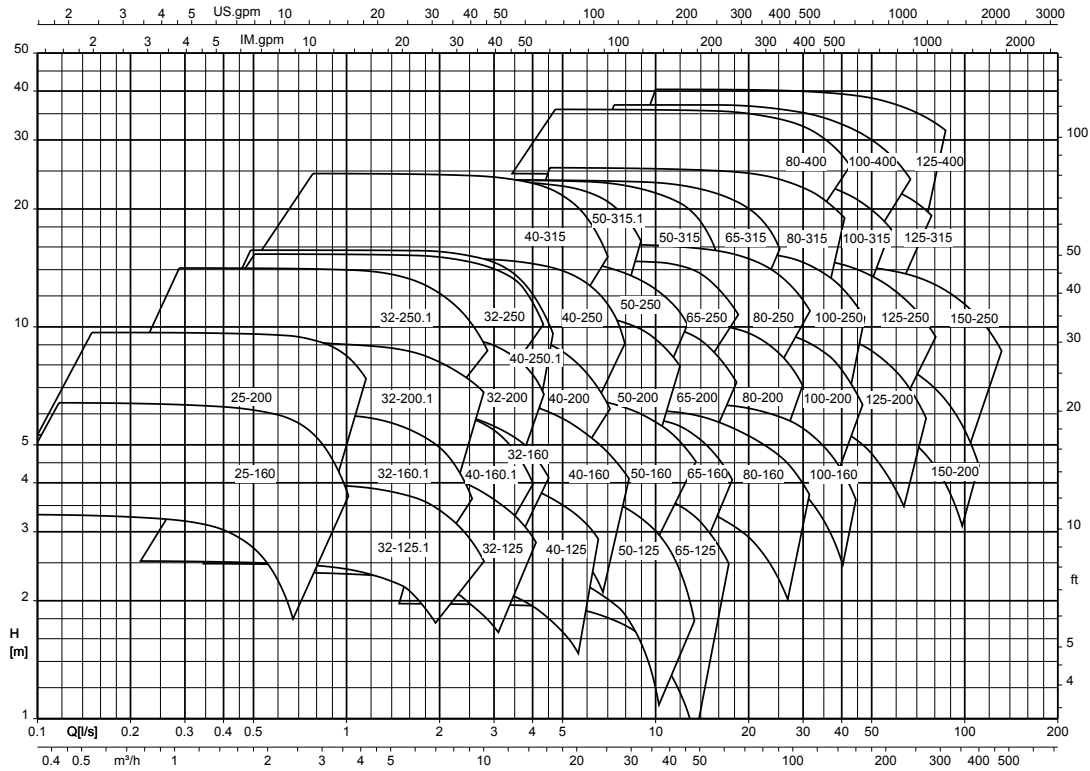
Magnochem-Bloc, n = 3500 rpm



Magnochem-Bloc, n = 1750 rpm

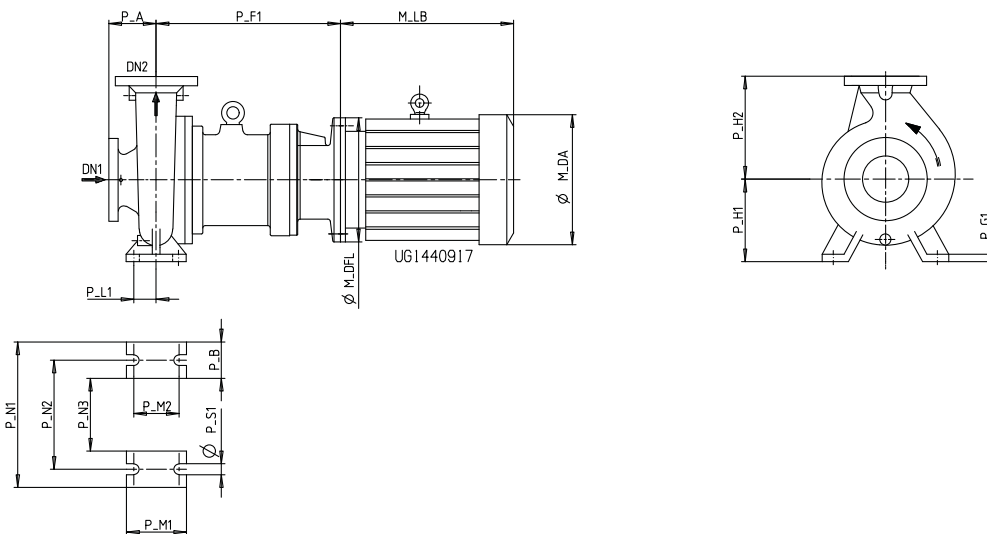


Magnochem-Bloc, n = 1160 rpm

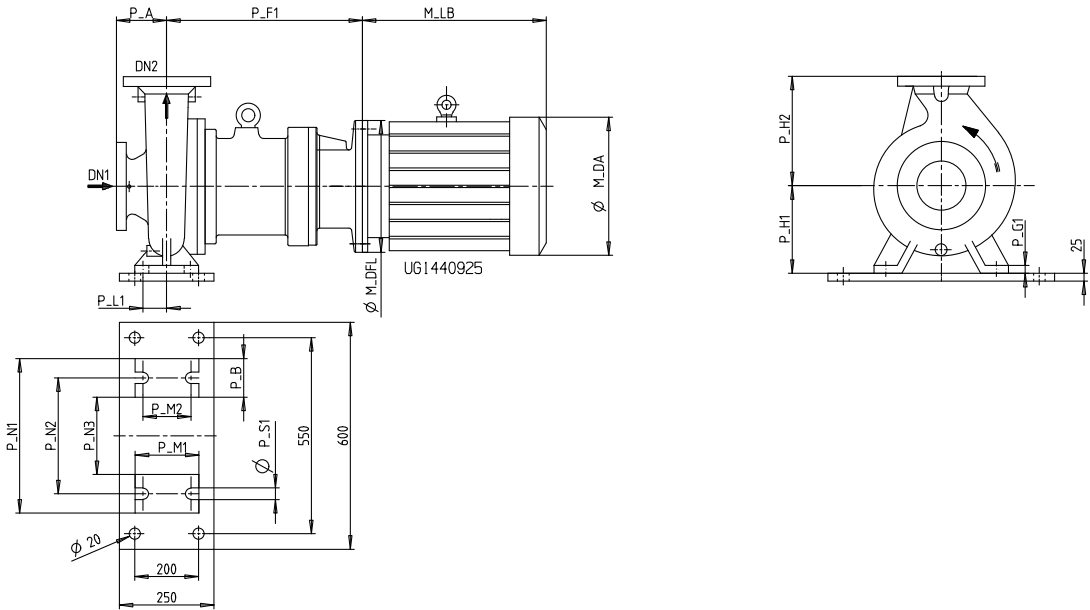


Dimensions and connections

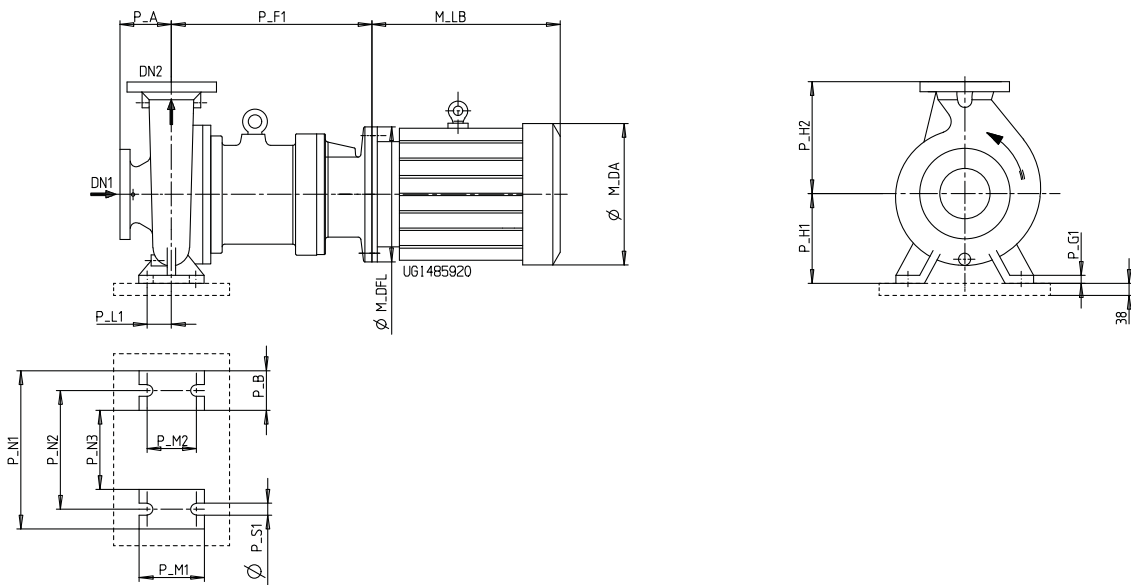
Dimensions of the pump set



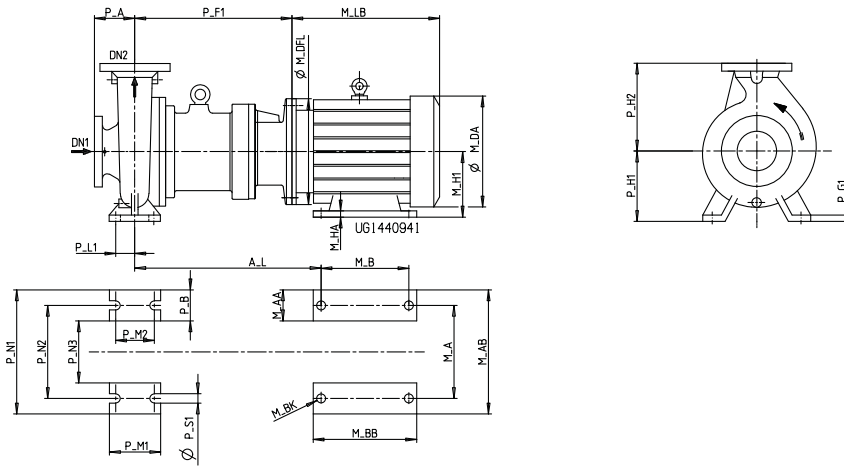
Dimensions for installation without mounting plate and without support foot



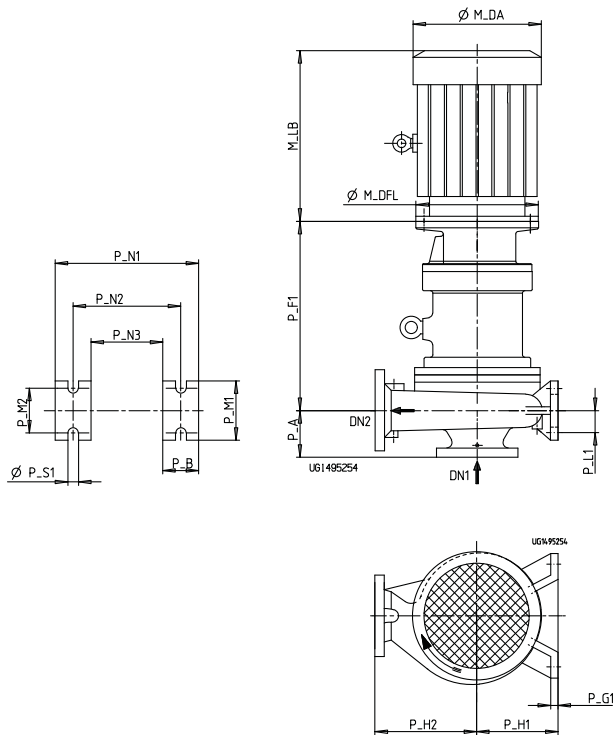
Dimensions for installation with mounting plate



Dimensions for installation with site-supplied mounting plate (mounting plate is not included in KSB' scope of supply.)



Dimensions for installation with motor feet



Dimensions for vertical installation

Technical data of mounting plate⁷⁾

Dimensions [mm]	Weight [kg]
	24
Height: 25	

Pump dimensions

Size	Bearing bracket	Pump dimensions													
		DN1	DN2	P_A	P_B	P_G1	P_H1	P_H2	P_L1	P_M1	P_M2	P_N1	P_N2	P_N3	Ø P_S1
040-025-160 ⁹⁾	CS40	40	25	80	50	15	132	160	35	100	70	240	190	140	14
040-025-200 ¹⁰⁾	CS40	40	25	80	50	15	160	180	35	100	70	240	190	140	14
050-032-125.1 ¹¹⁾¹²⁾	CS40	50	32	80	50	15	112	140	35	100	70	190	140	90	14
050-032-160.1 ⁹⁾	CS40	50	32	80	50	15	132	160	35	100	70	240	190	140	14
050-032-200.1 ¹⁰⁾	CS40	50	32	80	50	18	160	180	35	100	70	240	190	140	14
050-032-250.1	CS50	50	32	100	65	18	180	225	47,5	125	95	320	250	190	14
050-032-125 ¹¹⁾¹²⁾	CS40	50	32	80	50	15	112	140	35	100	70	190	140	90	14
050-032-160 ⁹⁾	CS40	50	32	80	50	15	132	160	35	100	70	240	190	140	14
050-032-200 ¹⁰⁾	CS40	50	32	80	50	18	160	180	35	100	70	240	190	140	14
050-032-250	CS50	50	32	100	65	18	180	225	47,5	125	95	320	250	190	14
065-040-125 ¹¹⁾¹²⁾	CS40	65	40	80	50	15	112	140	35	100	70	210	160	110	14
065-040-160.1 ⁹⁾	CS40	65	40	80	50	15	132	160	35	100	70	240	190	140	14
065-040-160 ⁹⁾	CS40	65	40	80	50	15	132	160	35	100	70	240	190	140	14
065-040-200 ¹⁰⁾	CS40	65	40	100	50	18	160	180	35	100	70	265	212	165	14
065-040-250.1	CS50	65	40	100	65	18	180	225	47,5	125	95	320	250	190	14
065-040-250	CS50	65	40	100	65	18	180	225	47,5	125	95	320	250	190	14
065-040-315	CS50	65	40	125	65	18	200	250	47,5	125	95	345	280	215	14
080-050-125 ⁹⁾	CS40	80	50	100	50	18	132	160	35	100	70	240	190	140	14
080-050-160 ¹⁰⁾	CS40	80	50	100	50	18	160	180	35	100	70	265	212	165	14
080-050-200 ¹⁰⁾	CS40	80	50	100	50	18	160	200	35	100	70	265	212	165	14
080-050-250	CS50	80	50	125	65	18	180	225	47,5	125	95	320	250	190	14
080-050-315.1	CS50	80	50	125	65	18	225	280	47,5	125	95	345	280	215	14
080-050-315	CS50	80	50	125	65	18	225	280	47,5	125	95	345	280	215	14
100-065-125 ¹⁰⁾	CS40	100	65	100	65	18	160	180	47,5	125	95	280	212	150	14
100-065-160 ¹⁰⁾	CS50	100	65	100	65	18	160	200	47,5	125	95	280	212	150	14
100-065-200	CS50	100	65	100	65	18	180	225	47,5	125	95	320	250	190	14
100-065-250	CS50	100	65	125	80	20	200	250	60	160	120	360	280	200	18
100-065-315	CS60	100	65	125	80	20	225	280	60	160	120	400	315	240	18
125-080-160	CS50	125	80	125	65	18	180	225	47,5	125	95	320	250	190	14
125-080-200	CS50	125	80	125	65	18	180	250	47,5	125	95	345	280	215	14
125-080-250	CS50	125	80	125	80	18	225	280	60	160	120	400	315	240	18
125-080-315	CS60	125	80	125	80	20	250	315	60	160	120	400	315	240	18

⁷⁾ The mounting plate is not included in the standard scope of supply.

Size	Bearing bracket	Pump dimensions													
		DN1	DN2	P_A	P_B	P_G1	P_H1	P_H2	P_L1	P_M1	P_M2	P_N1	P_N2	P_N3	Ø P_S1
125-080-400	CS60	125	80	125	80	20	280	355	60	160	120	435	355	275	18
125-100-160	CS50	125	100	125	80	18	200	280	60	160	120	360	280	200	19
125-100-200	CS50	125	100	125	80	18	200	280	60	160	120	360	280	200	18
125-100-250	CS60	125	100	140	80	18	225	280	60	160	120	400	315	240	18
125-100-315	CS60	125	100	140	80	18	250	315	60	160	120	400	315	240	18
125-100-400	CS60	125	100	140	100	20	280	355	75	200	150	500	400	300	23
150-125-200	CS60	150	125	140	80	20	250	315	60	160	120	400	315	240	19
150-125-250	CS60	150	125	140	80	20	250	355	60	160	120	400	315	240	18
150-125-315	CS60	150	125	140	100	20	280	355	75	200	150	500	400	300	23
150-125-400	CS60	150	125	140	100	20	315	400	75	200	150	500	400	300	23
200-150-200	CS60	200	150	180	100	20	280	400	75	200	150	550	450	350	24
200-150-250	CS60	200	150	160	100	20	280	375	75	200	150	500	400	300	23

Pump dimensions

Size	Bearing bracket	Motor size ⁸⁾						
		90S 90L	100L 112M	132S 132M	160M 160L 180M 180L	200	225M, 2 poles 225S, 4-6 poles 225M, 4-6 poles	250M, 2 poles 250M, 4-6 poles 280S, 2 poles 280M, 2 poles 280S, 4-6 poles 280M, 4-6 poles
		P_F1						
040-025-160 ⁹⁾	CS40	314	319	345	379	-	-	-
040-025-200 ¹⁰⁾	CS40	314	319	345	379	-	-	-
050-032-125.1 ¹¹⁾¹²⁾	CS40	314	319	345	379	-	-	-
050-032-160.1 ⁹⁾	CS40	314	319	345	379	-	-	-
050-032-200.1 ¹⁰⁾	CS40	314	319	345	379	-	-	-
050-032-250.1	CS50	399	404	430	464	504	524	534
050-032-125 ¹¹⁾¹²⁾	CS40	314	319	345	379	-	-	-
050-032-160 ⁹⁾	CS40	314	319	345	379	-	-	-
050-032-200 ¹⁰⁾	CS40	314	319	345	379	-	-	-
050-032-250	CS50	399	404	430	464	504	524	534
065-040-125 ¹¹⁾¹²⁾	CS40	314	319	345	379	-	-	-
065-040-160.1 ⁹⁾	CS40	314	319	345	379	-	-	-
065-040-160 ⁹⁾	CS40	314	319	345	379	-	-	-
065-040-200 ¹⁰⁾	CS40	314	319	345	379	-	-	-
065-040-250.1	CS50	399	404	430	464	504	524	534
065-040-250	CS50	399	404	430	464	504	524	534
065-040-315	CS50	399	404	430	464	504	524	534
080-050-125 ⁹⁾	CS40	314	319	345	379	-	-	-
080-050-160 ¹⁰⁾	CS40	314	319	345	379	-	-	-
080-050-200 ¹⁰⁾	CS40	314	319	345	379	-	-	-
080-050-250	CS50	399	404	430	464	504	524	534
080-050-315.1	CS50	399	404	430	464	504	524	534
080-050-315	CS50	399	404	430	464	504	524	534
100-065-125 ¹⁰⁾	CS40	314	319	345	379	-	-	-
100-065-160 ¹⁰⁾	CS50	399	404	430	464	504	524	534
100-065-200	CS50	399	404	430	464	504	524	534
100-065-250	CS50	399	404	430	464	504	524	534
100-065-315	CS60	399	404	430	464	504	524	534

8) From motor size 200, always with motor foot

9) A mounting plate is required for motor 132.

10) A mounting plate is required for motors 160 and 180.

11) A mounting plate is required for motors 100 and 112.

12) A mounting plate with a height of 38 mm is required for motor 132. (Not included in the scope of supply)

Size	Bearing bracket	Motor size ⁸⁾						
		90S 90L	100L 112M	132S 132M	160M 160L 180M 180L	200	225M, 2 poles 225S, 4-6 poles 225M, 4-6 poles	250M, 2 poles 250M, 4-6 poles 280S, 2 poles 280M, 2 poles 280S, 4-6 poles 280M, 4-6 poles
		P_F1						
125-080-160	CS50	399	404	430	464	504	524	534
125-080-200	CS50	399	404	430	464	504	524	534
125-080-250	CS50	399	404	430	464	504	524	534
125-080-315	CS60	399	404	430	464	504	524	534
125-080-400	CS60	399	404	430	464	504	524	534
125-100-160	CS50	399	404	430	464	504	524	534
125-100-200	CS50	399	404	430	464	504	524	534
125-100-250	CS60	399	404	430	464	504	524	534
125-100-315	CS60	399	404	430	464	504	524	534
125-100-400	CS60	399	404	430	464	504	524	534
150-125-200	CS60	399	404	430	464	504	524	534
150-125-250	CS60	399	404	430	464	504	524	534
150-125-315	CS60	399	404	430	464	504	524	534
150-125-400	CS60	399	404	430	464	504	524	534
200-150-200	CS60	399	404	430	464	504	524	534
200-150-250	CS60	399	404	430	464	504	524	534

Motor dimensions

Motor dimensions

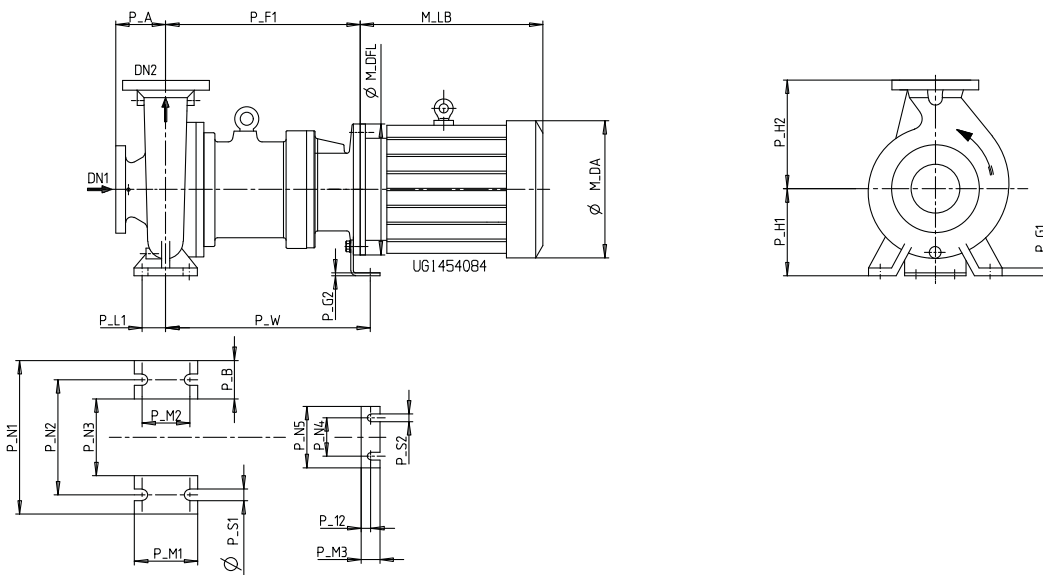
Designation	90S	90L	100L	112M	132S	132M	160M	160L	180M	180L	200L	2 poles				4 poles				
												225M	250M	280S	280M	225M	225S	250M	280S	280M
M_LB ¹³⁾	282	308	382	371	413	441	546	552	610	610	669	755	817	925	980	725	695	817	925	980
M_DA ¹³⁾	190	190	213	234	266	298	325	325	370	370	422	468	520	575	575	468	460	520	575	575
M_DFL	200	200	250	250	300	300	350	350	350	350	400	450	550	550	550	450	450	550	550	550
A_L ¹⁴⁾	-	-	-	-	-	-	-	-	-	-	637	673	702	724	724	673	673	702	724	724
M_H1	-	-	-	-	-	-	-	-	-	-	200	225	250	280	280	225	225	250	280	280
M_A	-	-	-	-	-	-	-	-	-	-	318	356	406	457	457	356	356	406	457	457
M_AA ¹³⁾	-	-	-	-	-	-	-	-	-	-	85	100	100	100	100	100	100	100	100	100
M_AB ¹³⁾	-	-	-	-	-	-	-	-	-	-	400	450	506	557	557	450	450	506	557	557
M_B	-	-	-	-	-	-	-	-	-	-	305	311	349	368	419	311	286	349	368	419
M_BB ¹³⁾	-	-	-	-	-	-	-	-	-	-	388	410	425	480	530	410	385	425	480	530
M_BK	-	-	-	-	-	-	-	-	-	-	19	19	24	24	24	19	19	24	24	24
M_HA ¹³⁾	-	-	-	-	-	-	-	-	-	-	30	35	40	40	40	35	35	40	40	40

⁸⁾ From motor size 200, always with motor foot

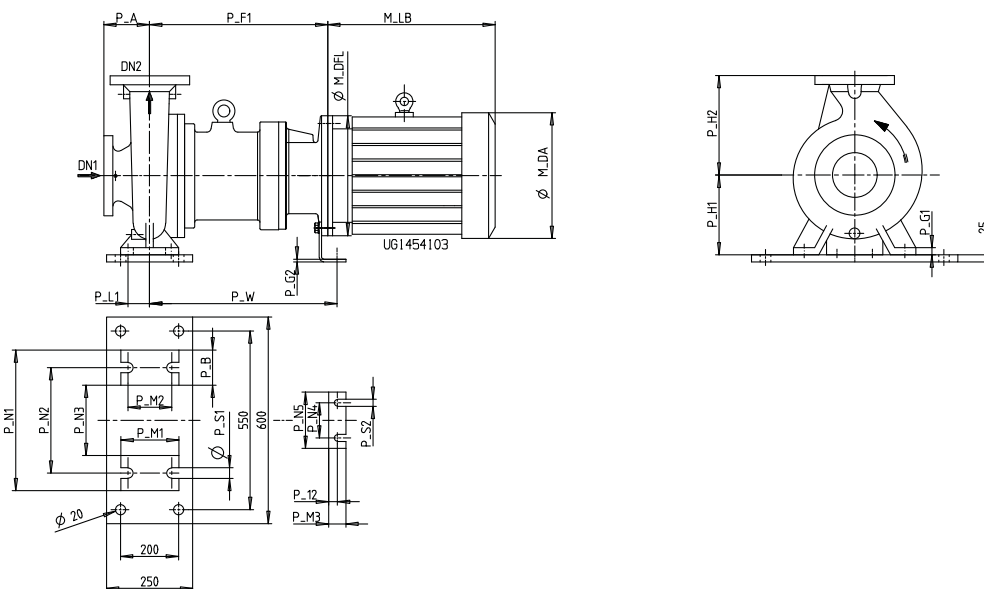
¹³⁾ The figures indicated refer to the maximum dimensions.

¹⁴⁾ The dimension applies to a motor combined with a CS50 or CS60 bearing bracket.

Dimensions of pump with support foot



Dimensions for installation with support foot



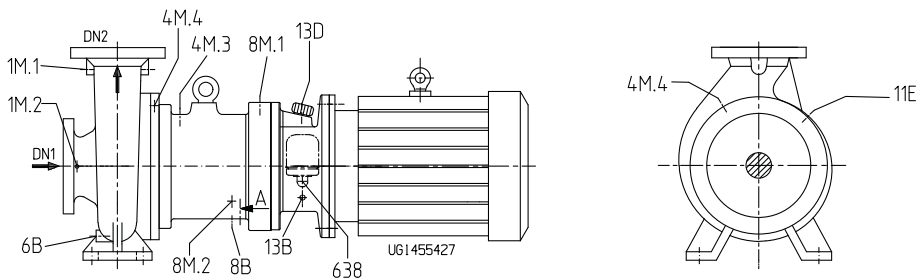
Dimensions for installation with support foot and mounting plate

Dimensions of pump with support foot

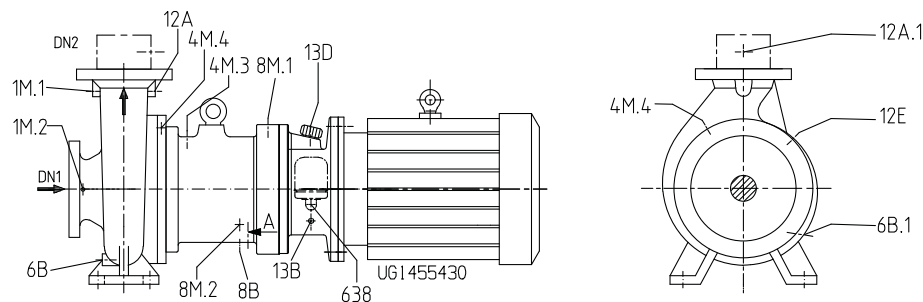
Size	Bearing bracket	P_W	P_S2	P_N4	P_N5	P_12	P_M3	P_G2
040-025-160	CS40	-	-	-	-	-	-	-
040-025-200	CS40	370	14	110	160	20	48	4
050-032-125.1	CS40	-	-	-	-	-	-	-
050-032-160.1	CS40	-	-	-	-	-	-	-
050-032-200.1	CS40	370	14	110	160	20	48	4
050-032-250.1	CS50	455	14	110	160	20	48	4
050-032-125	CS40	-	-	-	-	-	-	-
050-032-160	CS40	-	-	-	-	-	-	-
050-032-200	CS40	370	14	110	160	20	48	4
050-032-250	CS50	455	14	110	160	20	48	4
065-040-125	CS40	-	-	-	-	-	-	-
065-040-160.1	CS40	-	-	-	-	-	-	-

Size	Bearing bracket	P_W	P_S2	P_N4	P_N5	P_12	P_M3	P_G2
065-040-160	CS40	-	-	-	-	-	-	-
065-040-200	CS40	370	14	110	160	20	48	4
065-040-250.1	CS50	455	14	110	160	20	48	4
065-040-250	CS50	455	14	110	160	20	48	4
065-040-315	CS50	455	14	110	160	20	48	4
080-050-125	CS40	-	-	-	-	-	-	-
080-050-160	CS40	370	14	110	160	20	48	4
080-050-200	CS40	370	14	110	160	20	48	4
080-050-250	CS50	455	14	110	160	20	48	4
080-050-315.1	CS50	455	14	110	160	20	48	4
080-050-315	CS50	455	14	110	160	20	48	4
100-065-125	CS40	370	14	110	160	20	48	4
100-065-160	CS50	455	14	110	160	20	48	4
100-065-200	CS50	455	14	110	160	20	48	4
100-065-250	CS50	455	14	110	160	20	48	4
100-065-315	CS60	455	14	110	160	20	48	4
125-080-160	CS50	455	14	110	160	20	48	4
125-080-200	CS50	455	14	110	160	20	48	4
125-080-250	CS50	455	14	110	160	20	48	4
125-080-315	CS60	453	14	110	160	20	48	6
125-080-400	CS60	453	14	110	160	20	48	6
125-100-160	CS50	455	14	110	160	20	48	4
125-100-200	CS50	455	14	110	160	20	48	4
125-100-250	CS60	455	14	110	160	20	48	4
125-100-315	CS60	453	14	110	160	20	48	6
125-100-400	CS60	453	14	110	160	20	48	6
150-125-200	CS60	453	14	110	160	20	48	6
150-125-250	CS60	453	14	110	160	20	48	6
150-125-315	CS60	453	14	110	160	20	48	6
150-125-400	CS60	453	14	110	160	20	48	6
200-150-200	CS60	453	14	110	160	20	48	6
200-150-250	CS60	453	14	110	160	20	48	6

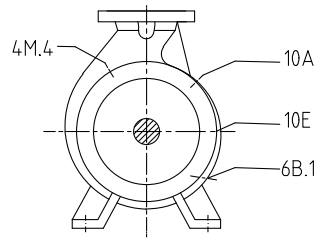
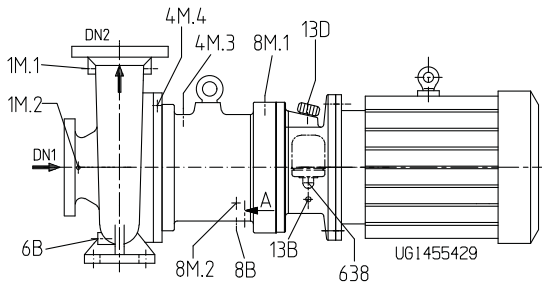
Connections



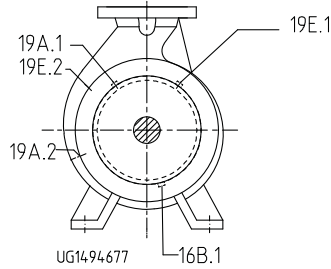
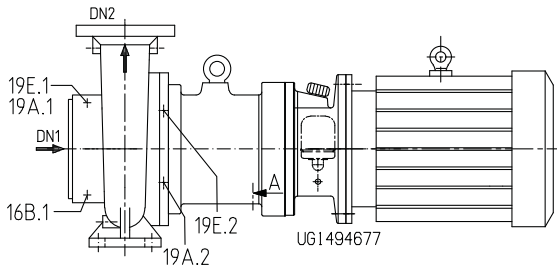
Connections for operating modes: internal circulation and low-boiling fluids



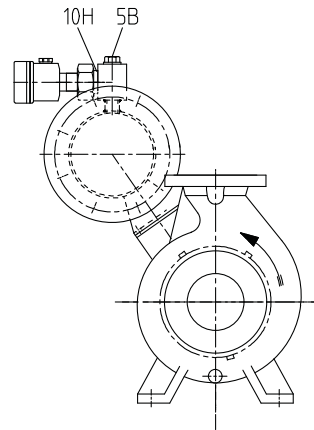
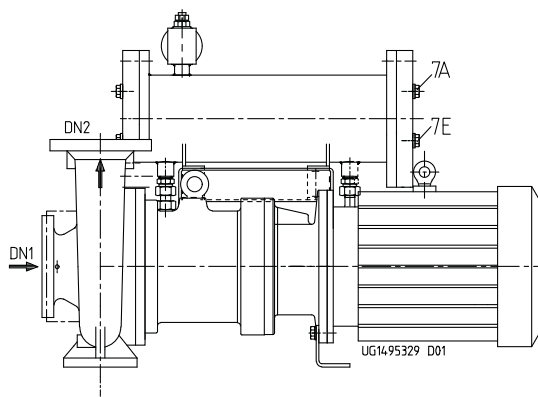
Connections for operating modes: external circulation and external circulation with main flow filter



Connections for dead-end configuration operating mode



Connections for heating¹⁵⁾



Connections for heat exchanger

Connections at the volute casing

Connection	Discharge nozzle			Description
	≤ DN 50	DN 65 - DN 80	≥ DN 100	
1M.1	G1/4	G3/8	G1/2	Pressure gauge
1M.2	G1/4	G3/8	G1/2	Pressure gauge
6B ¹⁶⁾	G1/4	G3/8	G1/2	Fluid drain (volute casing)
12A	G1/4	G3/8	G1/2	Circulation liquid OUT
16B.1		G1/4		Condensate drain (volute casing)
19A.1		G3/8		Heating liquid OUT (volute casing)
19E.1		G3/8		Heating liquid IN (volute casing)

¹⁵⁾ Only possible for operating modes: internal circulation, low-boiling fluids and dead-end configuration

¹⁶⁾ Design with DN 15 flange if drain line is provided.

Connections for casing cover 161, bearing bracket lantern 344, intermediate piece 132.03, main flow filter

Connection	Bearing bracket CS40/CS50/CS60 with MD 85/123/172	Description
4M.3	G1/4	Temperature monitoring of containment shroud, PT 100
4M.4	G1/4	Temperature monitoring of containment shroud, thermocouple
6B.1	G1/4	Containment shroud drain
8B	G1/4	Bearing bracket lantern drain
8M.1	G1/4	Leakage monitoring (gas, vapour)
8M.2	G3/4	Leakage monitoring (liquid)
10A	G1/4	Barrier fluid OUT
10E	G1/4	Barrier fluid IN
11E	G1/4	Flushing liquid, containment shroud IN
12A.1	G1/4	Main flow filter OUT
12E	G1/4	Circulation liquid IN
13B	G1/4	Oil drain
13D	Diameter 20	Vent plug
19A.2	G3/8	Heating liquid OUT (casing cover)
19E.2	G3/8	Heating liquid IN (casing cover)
638	Rp 1/4	Constant level oiler

Connections for heat exchanger

Connection	Heat exchanger size	Connection	Description
7A	76	G 3/8	Cooling liquid OUT
	115	G 3/4	
	152	G 1	
7E	76	G 3/8	Cooling liquid IN
	115	G 3/4	
	152	G 1	
5B	76	G 3/4	Venting
	115		
	152		
10H	76	G 1	Monitoring and check
	115		
	152		

Flange design

Overview of available flange designs

Material	Standard	Pressure class
C	EN 1092-1	PN16
	Drilled to ASME B16.5	Class 150
V	EN 1092-1	PN16
	Drilled to ASME B16.5	Class 150
E	EN 1092-1	PN16
	Drilled to ASME B16.5	Class 150/Class 300
E	EN 1092-1	PN25
	Drilled to ASME B16.5	Class 150/Class 300
Y	EN 1092-1	PN40
	Drilled to ASME B16.5	Class 300
D	EN 1092-1	PN16
	Drilled to ASME B16.5	Class 150/Class 300
D	EN 1092-1	PN25
	Drilled to ASME B16.5	Class 150/Class 300
Heatable casing	EN 1092-1	PN16
	Drilled to ASME B16.5	Class 150

Scope of supply

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

- Pump

- Mounting plate
- Mounting plate adjusting elements for installation without foundation

Special accessories

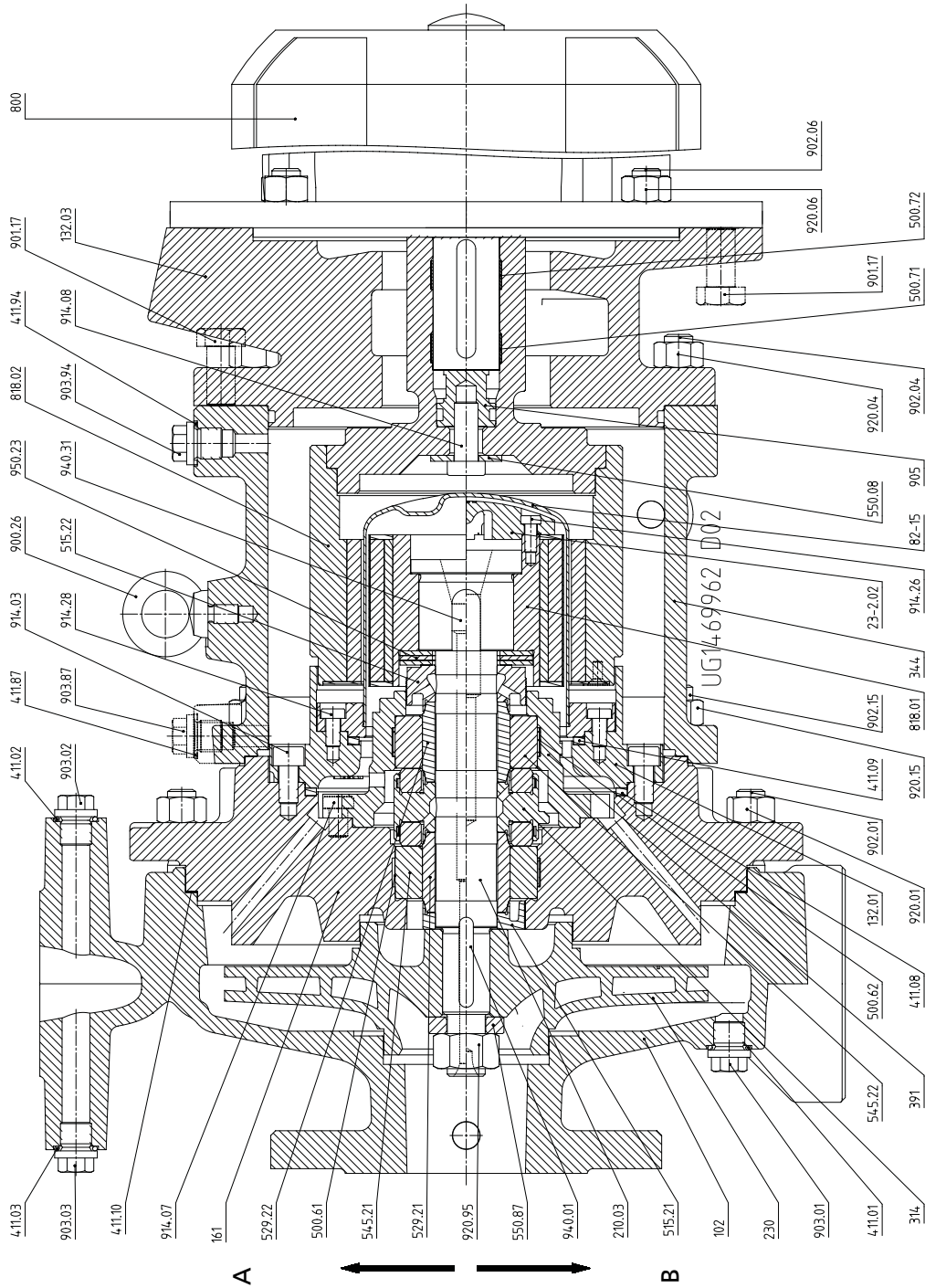
- As required

Accessories

- Temperature monitoring (metal containment shroud)
 - PT100
 - Mineral-insulated thermocouple
- Fill level monitoring to protect against dry running
 - Liquiphant level transmitter
- Monitoring for containment shroud leakage
 - Liquiphant level transmitter
 - Contact pressure gauge
 - Pressure switch
 - Pressure transducer
- Monitoring of pump power to detect dry running and/or asynchronous operation of the magnetic coupling and to protect against overload operation
 - Motor load monitor

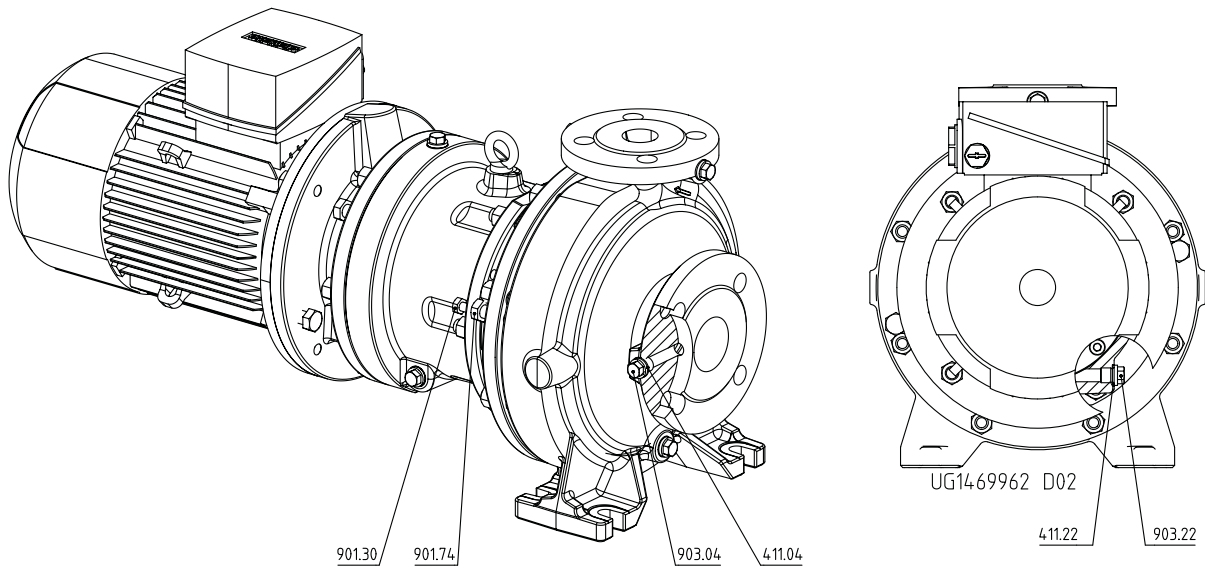
Electronic analysis equipment as well as additional components for operation in potentially explosive atmospheres can also be ordered from KSB.

General assembly drawings

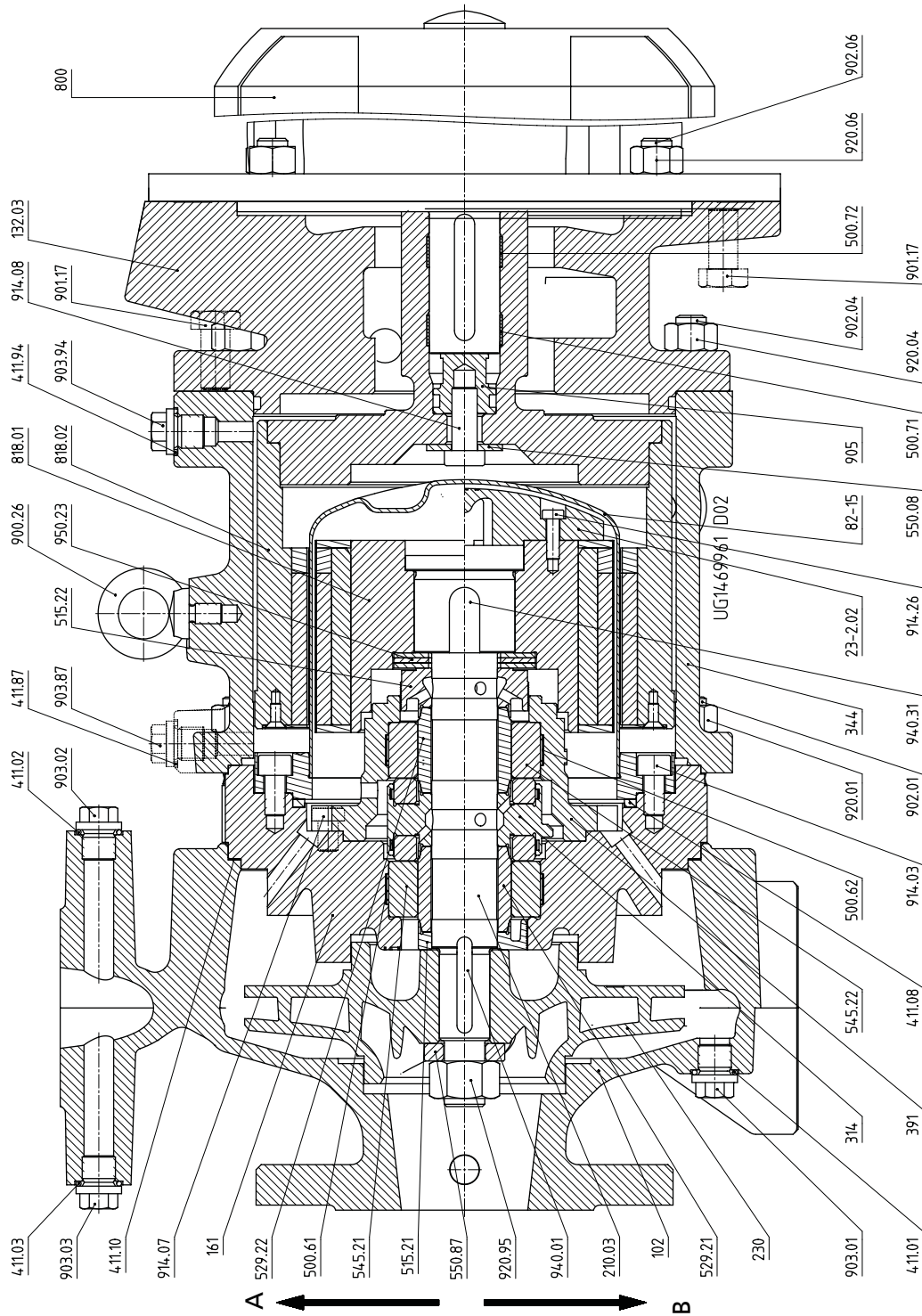


General assembly drawing of model with bolted cover and intermediate piece

A	Internal circulation, external circulation	B	Low-boiling fluids, dead-end configuration
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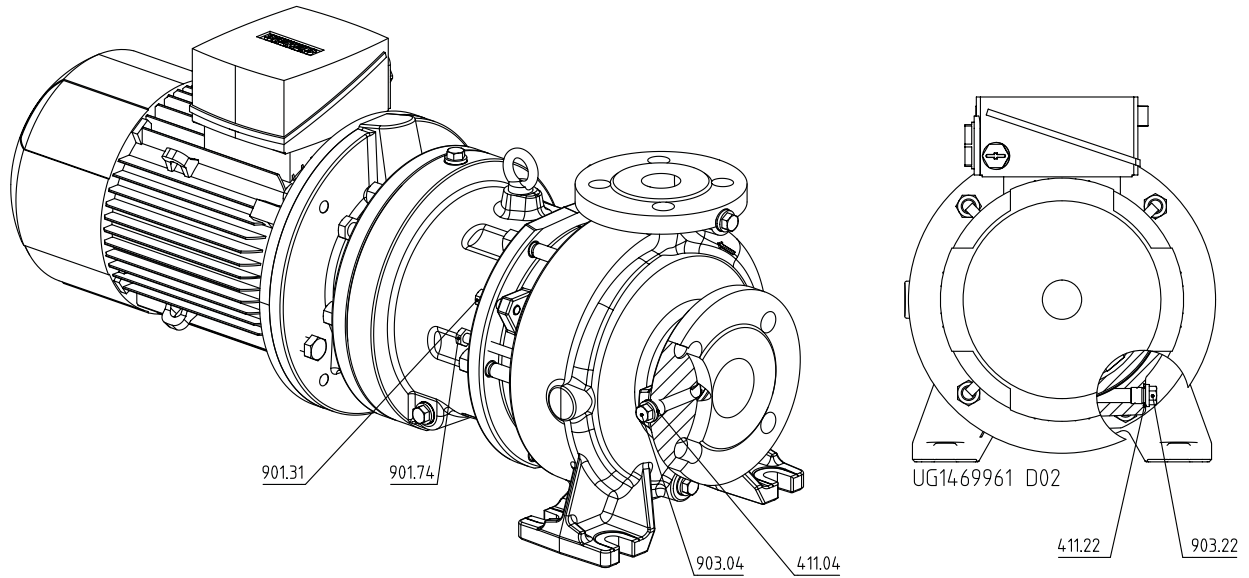


Discharge cover fastening at pump casing on designs with bolted cover

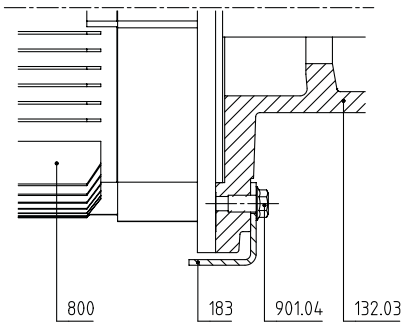


General assembly drawing of model with clamped cover and without intermediate piece

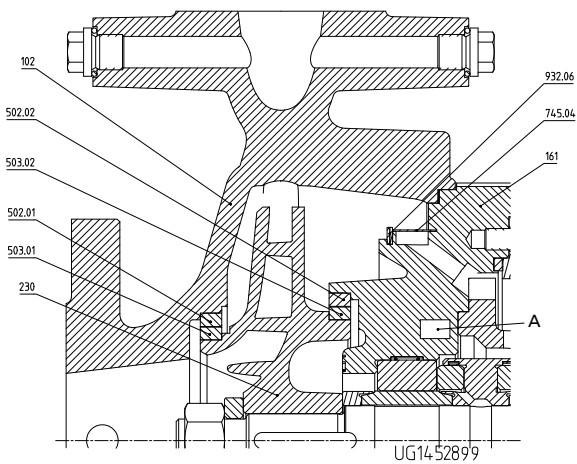
A	Internal circulation, external circulation	B	Low-boiling fluids, dead-end configuration
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Discharge cover fastening at pump casing on designs with clamped cover

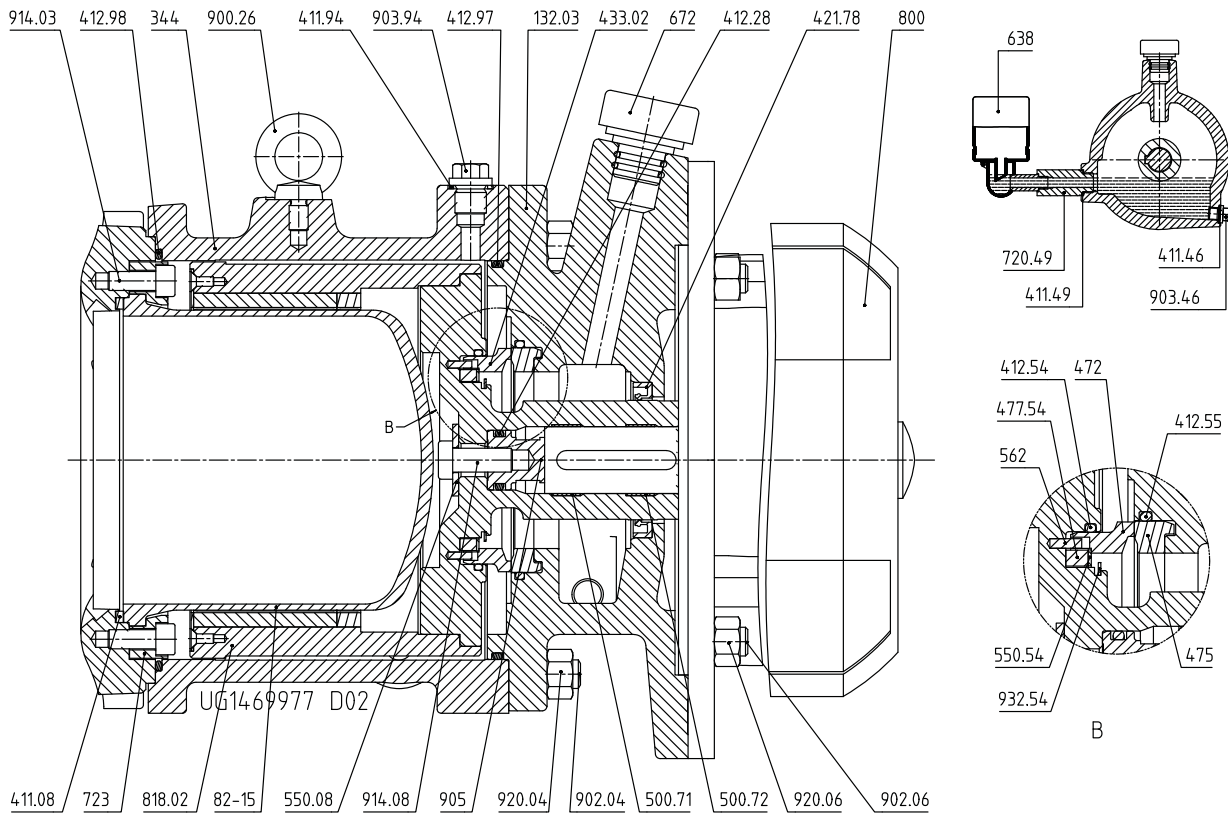


Support foot fastening for motors 160 and 180



Model with volute casing and ring filter, heating chamber, casing and impeller wear rings

A	Heating chamber
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Design with ceramic containment shroud

List of components

Part No.	Comprising	Description
102	102	Volute casing
	411.01 ¹⁷⁾ / .02 ¹⁷⁾ / .03 ¹⁷⁾ / .04 ¹⁷⁾	Joint ring
	502.01 ¹⁷⁾	Casing wear ring
	902.01	Stud
	903.01 ¹⁷⁾ / .02 ¹⁷⁾ / .03 ¹⁷⁾ / .04 ¹⁷⁾	Screw plug
	920.01	Hexagon nut
132.03	132.03	Intermediate piece
161	161	Casing cover
502.02 ¹⁷⁾	502.02 ¹⁷⁾	Casing wear ring
183	183 ¹⁷⁾	Support foot
210.03	210.03	Shaft
	550.87	Disc
	920.95	Nut
	940.01/.31	Key
230	230	Impeller
	503.01 ¹⁷⁾ / .02 ¹⁷⁾	Impeller wear ring
23-2.02	23-2.02 ¹⁷⁾	Auxiliary impeller
	914.26 ¹⁷⁾	Hexagon socket head cap screw
310	310	Plain bearing assembly
	500.61	Locking element
	500.62	Locking element
	515.21	Taper lock ring
	515.22	Taper lock ring
	529.21	Plain bearing sleeve
	529.22	Plain bearing sleeve

¹⁷⁾ Not on all versions.

Part No.	Comprising	Description
	545.21	Plain bearing bush
	545.22	Plain bearing bush
314	314	Thrust bearing
344	344	Bearing bracket lantern
391	391	Bearing ring carrier
411.08	411.08	Joint ring
411.09	411.09	Joint ring
411.10	411.10	Joint ring
411.22 / .87 / .94	411.22 / .87 / .94	Joint ring
500.71 / .72	500.71 / .72	Locking elements
509.02	509.02	Intermediate ring
550.08	550.08	Disc
800	800	Motor
818.01	818.01	Inner rotor
818.02	818.02	Outer rotor
82-15	82-15	Containment shroud
	132.01	Containment shroud intermediate piece
	723 ¹⁸⁾	Containment shroud flange
	914.03	Hexagon socket head cap screw
	914.28	Hexagon socket head cap screw
900.26	900.26	Eyebolt
901.04	901.04 ¹⁷⁾	Hexagon head bolt
901.17	901.17	Hexagon head bolt
901.30	901.30	Hexagon head bolt
901.31	901.31	Hexagon head bolt
901.74	901.74	Hexagon head bolt
902.04	902.04	Stud
902.06	902.06	Stud
902.15	902.15	Stud
903.22 / .87 / .94	903.22 / .87 / .94	Screw plug
905	905	Threaded connecting element
914.07	914.07	Hexagon socket head cap screw
914.08	914.08	Hexagon socket head cap screw
920.04	920.04	Nut
920.06	920.06	Nut
920.15	920.15	Nut
950.23	950.23	Disc spring
Casing cover design with ring filter		
745.04	745.04	Filter
932.06	932.06	Circlip

Plain bearings arrangement

Overview of plain bearings arrangement

Hydraulic system	Bearing bracket	Nominal diameter of magnetic coupling		
		85	123	172
		1 ¹⁹⁾	2 ¹⁹⁾	3 ¹⁹⁾
040-25-160	CS40	A31	A31	-
040-25-200	CS40	A31	A31	-
050-32-125.1	CS40	A31	A31	-
050-32-160.1	CS40	A31	A31	-
050-32-200.1	CS40	A31	A31	-
050-32-250.1	CS50	B31	B31	A31
050-32-125	CS40	A31	A31	-
050-32-160	CS40	A31	A31	-
050-32-200	CS40	A31	A31	-
050-32-250	CS50	B31	B31	A31
065-40-125	CS40	A31	A31	-
065-40-160.1	CS40	A31	A31	-

¹⁸⁾ For pump sets with ceramic containment shroud only

¹⁹⁾ Nominal diameter of magnetic coupling as per name plate

Hydraulic system	Bearing bracket	Nominal diameter of magnetic coupling		
		85	123	172
		1 ¹⁹⁾	2 ¹⁹⁾	3 ¹⁹⁾
065-40-160	CS40	A31	A31	-
065-40-200	CS40	A31	A31	-
065-40-250.1	CS50	B31	B31	A31
065-40-250	CS50	B31	B31	A31
065-40-315	CS50	B31	B31	A31
080-50-125	CS40	A31	A31	-
080-50-160	CS40	A31	A31	-
080-50-200	CS40	A31	A31	-
080-50-250	CS50	B31	B31	A31
080-50-315.1	CS50	B31	B31	A31
080-50-315	CS50	B31	B31	A31
100-65-125	CS40	A31	A31	-
100-65-160	CS50	B31	B31	A31
100-65-200	CS50	B31	B31	A31
100-65-250	CS50	B31	B31	A31
100-65-315	CS60	B31	B31	A31
125-80-160	CS50	B31	B31	A31
125-80-200	CS50	B31	B31	A31
125-80-250	CS50	B31	B31	A31
125-80-315	CS60	B31	B31	A31
125-80-400	CS60	B31	B31	A31
125-100-160	CS50	B31	B31	A31
125-100-200	CS50	B31	B31	A31
125-100-250	CS60	B31	B31	A31
125-100-315	CS60	B31	B31	A31
125-100-400	CS60	B31	B31	A31
150-125-200	CS60	B31	B31	A31
150-125-250	CS60	B31	B31	A31
150-125-315	CS60	B31	B31	A31
150-125-400	CS60	B31	B31	A31
200-150-200	CS60	B31	B31	A31
200-150-250	CS60	B31	B31	A31

Plain bearings arrangement

Description	Detailed view
Case B31 Bearing brackets CS50 and CS60 Magnetic couplings 85 and 123	

Detailed designation

Product code example

Position																															
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
M	A	C	D	0	5	0	-	0	3	2	-	2	5	0	1	C	C	-	X	1	A	E	N	-	-	1	3	2	S	6	B
See name plate and data sheet																See data sheet															

¹⁹⁾ Nominal diameter of magnetic coupling as per name plate

Key to the designation

Position	Code	Description
1-4	Pump type	
	MACD	Magnochem
	MACB	Magnochem Bloc
5-16	Size	
	050	Nominal suction nozzle diameter [mm]
	032	Nominal discharge nozzle diameter [mm]
	2501	Nominal impeller diameter [mm]
17	Pump casing material	
	C	1.4408/A743CF8M
	E	GP240GH+N/WCB
	Y	1.7706
	V	1.4408
	D	Noridur 1.4593/1.4517/A995 CD4MCuN
18	Impeller material	
	G	JL 1040/A48CL35
	C	1.4408/A743CF8M
	D	Noridur 1.4593/1.4517/A995 CD4MCuN
19	Heatable model	
	-	Standard
	H	Heatable casing
20	Special design	
	-	Standard
	X	Special design
21	Magnetic coupling diameter	
	1	85
	2	123
	3	172
	4	235
	5	265
22	Magnetic coupling length	
	A	10
	B	20
	C	30
	D	40
	E	50
	F	60
	G	70
	H	80
	I	90
	J	100
	K	110
	L	120
	M	130
N	140	
O	150	
P	160	
Q	170	
23-26	Operating modes	
	EN--	External circulation
	EP--	Dead-end configuration
	EP-H	Dead-end configuration, heatable
	IN--	Internal circulation
	IN-H	Internal circulation, heatable
	INR-	Internal circulation, ring filter
	INRH	Internal circulation, ring filter, heatable
	IP--	Low-boiling fluids
	IP-H	Low-boiling fluids, heatable
	IPR-	Low-boiling fluids, ring filter
IPRH	Low-boiling fluids, ring filter, heatable	
27-30	IEC motor size	
	090S	090S
	100L	100L
	112M	112M

Position		Code	Description
		...	Other
31	Number of poles		
		2	2 poles
		4	4 poles
		6	6 poles
32	Product generation		
		B	Magnochem Global Pump product generation



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