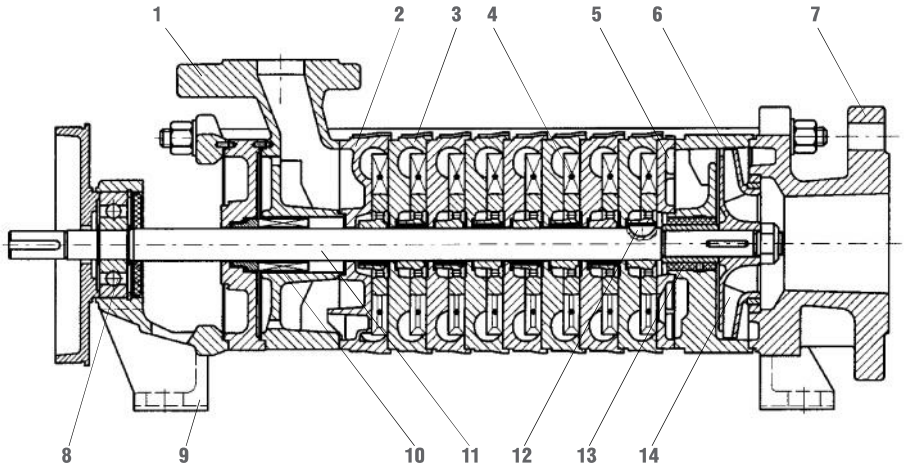
APPLICATION

Rotodynamic, liquid ring SKC and SKD pumps with side channels, open impellers and centrifugal impeller on the first stage have been designed to pump liquids within the range of corrosion resistance of pump components. The SKC pump is designed as for operation with inflow or as conventionally sucking pump, after prior installation of a check valve on the suction pipeline and complete filling of the pump and suction pipeline.

The SKD pump is self-priming, i.e. it does require only filling up of the pump with no need for filling the suction pipeline.

The SKC pumps are able to pump liquids with minimal pressure surplus over boiling point. Low anti-cavitation reserve NPSHr and very good self-priming abilities are special advantages of these pumps.

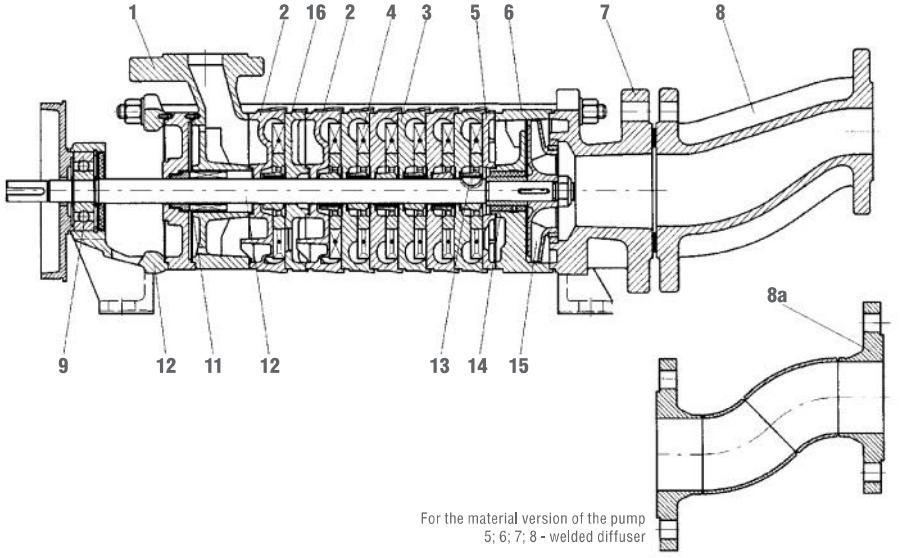
Cross-section of the pump, type SKC



TYPE SKC

1. *Discharge housing*
2. *Discharge module*
3. *Suction - discharge module*
4. *Impeller*
5. *Suction module*
6. *Stator*
7. *Suction housing*
8. *Ball bearing*
9. *Bearing housing*
10. *Shaft sealing*
11. *Shaft*
12. *Disk key*
13. *Slide bearing*
14. *Centrifugal impeller*

Cross-section of the pump, type SKD



For the material version of the pump 5; 6; 7; 8 - welded diffuser

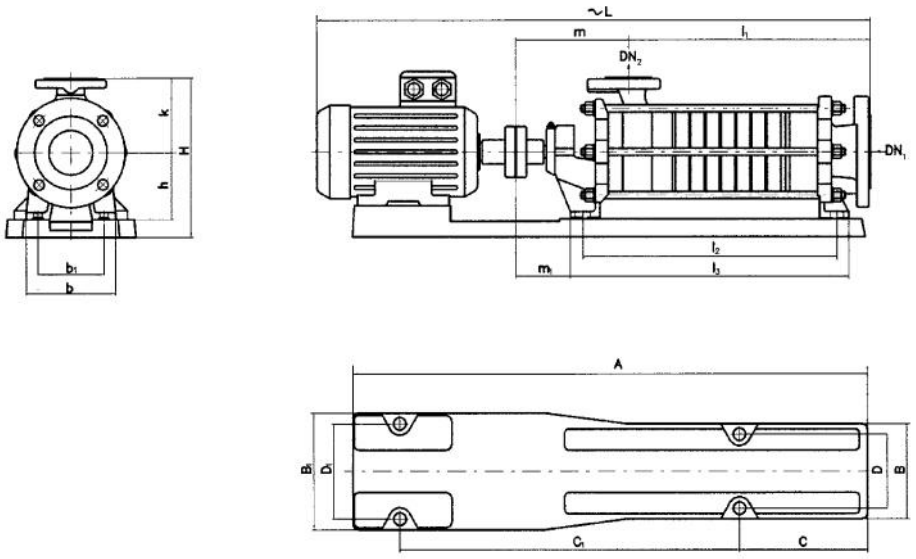
TYPE SKD

1. *Discharge housing*
2. *Discharge module*
3. *Suction - discharge module*
4. *Impeller*
5. *Suction module*
6. *Stator*
7. *Suction housing*
8. *Diffuser*

8a. *Welded diffuser*

9. *Ball bearing*
10. *Bearing housing*
11. *Shaft sealing*
12. *Shaft*
13. *Disk key*
14. *Slide bearing*
15. *Centrifugal impeller*
16. *Suction module (special)*

Dimensions of the SKC pump



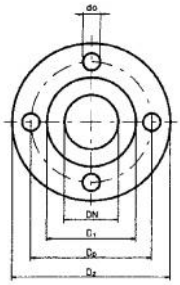
SKC Pressure side

Pump type dimension	DN_2	D_1	D_2	D_0	d_0	i
SKC.2	25	68	115	85	14	4
SKC.3	32	78	140	100	18	4
SKC.4	32	78	140	100	18	4
SKC.5	40	88	145	110	18	4
SKC.6	40	88	145	110	18	4
SKC.7	50	102	160	125	18	4
SKC.8	65	122	185	145	18	8

Suction side

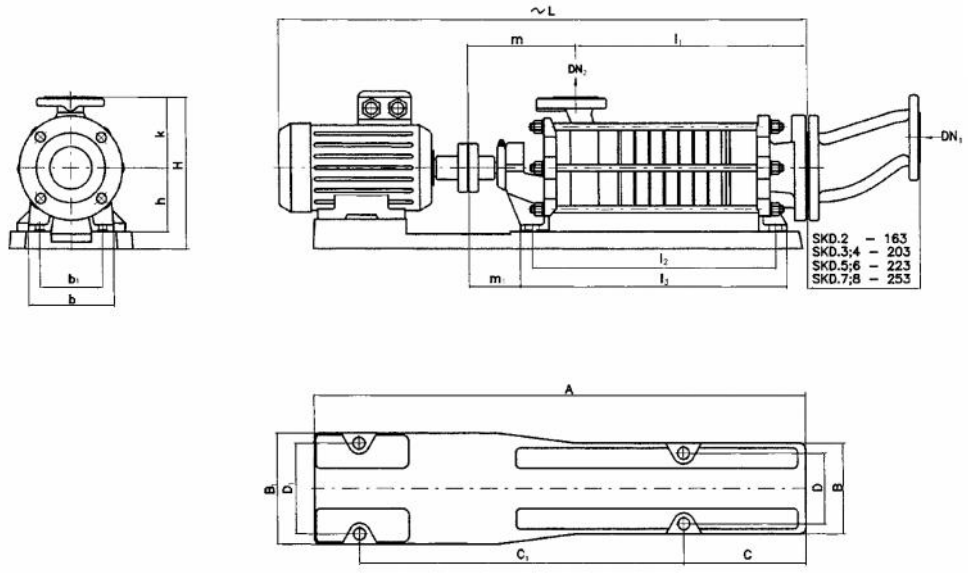
Pump type dimension	DN_1	D_1	D_2	D_0	d_0	i
SKC.2	50	102	165	125	18	4
SKC.3	65	122	185	145	18	8
SKC.4	65	122	185	145	18	8
SKC.5	80	138	200	160	18	8
SKC.6	80	138	200	160	18	8
SKC.7	100	158	235	190	22	8
SKC.8	100	158	235	190	22	8

Collar sizes



i - number of holes

Dimensions of the SKD pump



SKD Pressure side

Pump type dimension	DN_2	D_1	D_2	D_0	d_0	i
SKD.2	25	68	115	85	14	4
SKD.3	32	78	140	100	18	4
SKD.4	32	78	140	100	18	4
SKD.5	40	88	145	110	18	4
SKD.6	40	88	145	110	18	4
SKD.7	50	102	160	125	18	4
SKD.8	65	122	185	145	18	8

*Suction side**

Pump type dimension	DN_1	D_1	D_2	D_0	d_0	i
SKD.2	32	78	140	100	18	4
SKD.3	42	88	150	110	18	4
SKD.4	42	88	150	110	18	4
SKD.5	50	102	165	125	18	4
SKD.6	50	102	165	125	18	4
SKD.7	65	122	185	145	18	4
SKD.8	65	122	185	145	18	4

* for SKD pumps of material type 5; 6; 7; and 8, the collar sizes the same as for SKC pumps

The dimensions of 1-stage SKC and SKD pumps are identical – they are marked as SKC pumps

Selection and dimensions of pumps sets of SKC.4 and SKD.4 types

Pump type dimension	Completeness 1	2	3	5	Coupling	Motor		Foundation plate		Overall dimensions of the pump set																	
	with free shaft end	with coupling	with coupling and plate	with coupling, motor and plate		Mechanical size	Power	Plate	Block	H	b_1	~L	h	k	b	m	m_1	l_1	l_2	l_3	A	C	C_1	D	B	B_1	D_1
	kg				type	-	kW																				
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
SKC.4.01	26	27	49	63	EZ1	90S4	1,1	60.45.01.1	68.40.16.1	297	112	738	112	125	152	185	84	230	252	291	755	25	620	-	155	250	226
				65,5		90L4	1,5					763															
SKC.4.02	28	29	51	65	EZ1	90S4	1,1	60.45.01.1	68.40.16.1	297	112	764	112	125	152	185	84	256	278	317	755	25	620	-	155	250	226
				67,5		90L4	1,5					789															
				76		100L4A	2,2		68.40.17.1																		
				77		100L4B	3,0					835															
SKC.4.03 **SKD.4.02**	30	31	53	69,5	EZ1	90L4	1,5	60.45.01.1	68.40.16.1	297	112	815	112	125	152	185	84	282	304	343	755	25	620	-	155	250	226
				78		100L4A	2,2		68.40.17.1			861															
				79		100L4B	3,0																				
				87		112M4	4,0		-			866															
SKC.4.04 **SKD.4.03**	32,5	33,5	55,5	80,5	EZ1	100L4A	2,2	60.45.01.1	68.40.17.1	297	112	891	112	125	152	185	84	308	330	369	755	25	620	-	155	250	226
				81,5		100L4B	3,0																				
				89,5		112M4	4,0		-			899															
		35	63	125	EZ3	132S4	5,5	60.46.01.1	68.40.18.1	312		978									965	260	545	131	155	285	261
SKC.4.05 **SKD.4.04**	35	36	64	89	EZ1	100L4A	2,2	60.46.01.1	68.40.17.1	292	112	913	112	125	152	185	84	334	356	395	965	260	545	131	155	285	261
				90		100L4B	3,0																				
				98		112M4	4,0		-			921															
		37,5	65,5	127,5	EZ3	132S4	5,5		68.40.18.1	312		1004															
SKC.4.06 **SKD.4.05**	37,5	38,5	66,5	91,5	EZ1	100L4A	2,2	60.46.01.1	68.40.17.1	292	112	939	112	125	152	185	84	360	382	421	965	260	545	131	155	285	261
				92,5		100L4B	3,0																				
				100,5		112M4	4,0		-			947															
		40	68	130	EZ3	132S4	5,5		68.40.18.1	312		1030															
SKC.4.07 **SKD.4.06**	40	41	69	94	EZ1	100L4B	3,0	60.46.01.1	68.40.17.1	292	112	965	112	125	152	185	84	386	408	447	965	260	545	131	155	285	261
				103		112M4	4,0		-			973															
		42,5	70,5	132,5	EZ3	132S4	5,5		68.40.18.1	312		1056															
				143,5		132M4	7,5					1094															
SKC.4.08 **SKD.4.07**	42	43	71	96	EZ1	100L4B	3,0	60.46.01.1	68.40.17.1	292	112	991	112	125	152	185	84	412	434	473	965	260	545	131	155	285	261
				105		112M4	4,0		-			999															
		44,5	72,5	134,5	EZ3	132S4	5,5		68.40.18.1	312		1082															
				145,5		132M4	7,5					1120															
SKD.4.08	44	45	73	98	EZ1	100L4B	3,0	60.46.01.1	68.40.17.1	292	112	1017	112	125	152	185	84	438	460	499	965	260	545	131	155	285	261
				107		112M4	4,0		-			1025															
		46,5	74,5	136,5	EZ3	132S4	5,5		68.40.18.1	312		1108															
				147,5		132M4	7,5					1146															

Selection and dimensions of pumps sets of SKC.5 and SKD.5 types

Pump type dimension	Completeness 1	2	3	5	Coupling	Motor		Foundation plate		Overall dimensions of the pump set																	
	with free shaft end	with coupling	with coupling and plate	with coupling, motor and plate		Mechanical size	Power	Plate	Block	H	b_1	~L	h	k	b	m	m_1	l_1	l_2	l_3	A	C	C_1	D	B	B_1	D_1
	kg				type	-	kW																				
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
SKC.5.01	40	41	67	81	EZ1	90S4	1,1	60.48.01.1	68.40.07.1	332	145	789	132	140	185	211	82	255	287	332	810	180	505	162	186	284	260
				83,5		90L4	1,5					814															
				92		100L4A	2,2	60.48.03.1	-			860															
SKC.5.02	44	45	71	87,5	EZ1	90L4	1,5	60.48.01.1	68.40.07.1	332	145	844	132	140	185	211	82	285	317	362	810	180	505	162	186	284	260
				96		100L4A	2,2	60.48.03.1	-			890															
				97		100L4B	3,0					890															
				105		112M4	4,0	60.48.02.1	-			898															
SKC.5.03 **SKD.5.02**	48	49	80	114	EZ1	112M4	4,0	60.49.01.1	68.40.05.1	332	145	928	132	140	185	211	82	315	347	392	945	200	610	162	186	325	300
		50,5	81,5	143,5	EZ3	132S4	5,5		-			1011															
SKC.5.04 **SKD.5.03**	52	54,5	85,5	119,5	EZ3	112M4	4,0	60.49.01.1	68.40.05.1	332	145	962	132	140	185	211	82	345	377	422	945	200	610	162	186	325	300
				147,5		132S4	5,5		-			1041															
				158,5		132M4	7,5					1079															
SKC.5.05 **SKD.5.04**	56	57	88	122	EZ1	112M4	4,0	60.49.01.1	68.40.05.1	332	145	988	132	140	185	211	82	375	407	452	945	200	610	162	186	325	300
		58,5	89,5	151,5	EZ3	132S4	5,5		-			1071															
				162,5		132M4	7,5					1109															
				194,5		160M4	11,0	60.50.02.1		360		1220									1090	220	710	162	186	325	300
SKC.5.06 **SKD.5.05**	60	61	92	126	EZ1	112M4	4,0	60.50.01.1	68.40.05.1	332	145	1018	132	140	185	211	82	405	437	482	1090	220	710	162	186	325	300
		62,5	93,5	155,5	EZ3	132S4	5,5		-			1101															
				166,5		132M4	7,5					1139															
				198,5		160M4	11,0	60.50.02.1	-	360		1250															
SKC.5.07 **SKD.5.06**	64	65	96	130	EZ1	112M4	4,0	60.50.01.1	68.40.05.1	332	145	1048	132	140	185	211	82	435	467	512	1090	220	710	162	186	325	300
		66,5	97,5	159,5	EZ3	132S4	5,5		-			1131															
				170,5		132M4	7,5					1169															
				202,5		160M4	11,0	60.50.02.1		360		1280															
				222,5		160L4	15,0	60.51.01.1				1324									1205	250	750	162	186	360	336
SKC.5.08 **SKD.5.07**	68	69	100	134	EZ1	112M4	4,0	60.50.01.1	68.40.05.1	332	145	1078	132	140	185	211	82	465	497	542	1090	220	710	162	186	325	300
		70,5	101,5	163,5	EZ3	132S4	5,5		-			1161															
				174,5		132M4	7,5					1199															
				206,5		160M4	11,0	60.51.01.1		360		1310									1205	250	750	162	186	360	336
				226,5		160L4	15,0					1354															
SKD.5.08	72	73	104	138	EZ1	112M4	4,0	60.50.01.1	68.40.05.1	332	145	1108	132	140	185	211	82	495	527	572	1090	220	710	162	186	325	300
		74,5	105,5	167,5	EZ3	132S4	5,5		-			1191															
				178,5		132M4	7,5					1229															
				210,5		160M4	11,0	60.51.01.1		360		1340									1205	250	750	162	186	360	336
				230,5		160L4	15,0					1384															

Selection and dimensions of pumps sets of SKC.8 and SKD.8 types

Pump type dimension	Completeness 1 with free shaft end	Completeness 2 with coupling	Completeness 3 with coupling and plate	Completeness 5 with coupling, motor and plate	Coupling	Motor Mechanical size	Motor Power	Foundation plate	Foundation block	H	b_1	~L	h	k	b	m	m_1	l_1	l_2	l_3	A	C	C_1	D	B	B_1	D_1
	kg				type	-	kW																				
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
SKC.8.01	68	69	100	126	EZ1	100L4B	3.0	60.52.01.1	68.40.15.1	390	150	961	160	160	200	257	105	306	359	409	950	210	580	176	200	270	252
				134		112M4	4.0		68.40.05.1			969															
		71	102	164	EZ3	132S4	5.5		-			1047															
				175		132M4	7.5					1085																
SKC.8.02	75	76	107	133	EZ1	100L4B	3.0	60.52.01.1	68.40.15.1	390	150	1010	160	160	200	257	105	355	408	458	950	210	580	176	200	270	252
				141		112M4	4.0		68.40.05.1			1018															
		78	109	171	EZ3	132S4	5.5		-			1096															
				182		132M4	7.5					1134																
			110	215		160M4	11.0	60.53.01.1				1245										1065	210	685	176	200	310	286
				235		160L4	15.0					1289																
SKC.8.03 **SKD.8.02**	82	83	115	149	EZ1	112M4	4.0	60.54.01.1	68.40.05.1	390	150	1067	160	160	200	257	105	404	457	507	1110	240	720	176	200	270	252
		85	117	188	EZ3	132S4	5.5		-			1145															
				199		132M4	7.5					1183																
			124	229		160M4	11.0	60.55.01.1	68.40.05.1	410		1294										1245	240	820	176	200	350	326
				249		160L4	15.0		-			1338																
		88	127	292	EZ7	180M4	18.5					1392																
SKC.8.04 **SKD.8.03**	89	90	122	156	EZ1	112M4	4.0	60.54.01.1	68.40.05.1	390	150	1116	160	160	200	257	105	453	506	556	1110	240	720	176	200	270	252
		92	124	186	EZ3	132S4	5.5		-			1194															
				197		132M4	7.5					1232																
			131	235		160M4	11.0	60.55.01.1	68.40.05.1	410		1343										1245	240	820	176	200	350	326
				256		160L4	15.0					1387																
		95	134	299	EZ7	180M4	18.5		-			1441																
				309		180L4	22.0					1441																
SKC.8.05 **SKD.8.04**	96	99	141	245	EZ3	160M4	11.0	60.56.01.1	-	390	150	1393	160	160	200	257	105	502	555	605	1280	250	820	176	200	310	286
				266		160L4	15.0					1437																
		101	160	325	EZ7	180M4	18.5	60.57.01.1	68.40.09.1	430		1491										1580	360	890	176	200	400	376
				335		180L4	22.0					1491																
				425		200L4	30.0		-			1611																
SKC.8.06 **SKD.8.05**	103	106	148	253	EZ3	160M4	11.0	60.56.01.1	-	390	150	1442	160	160	200	257	105	551	604	654	1280	250	820	176	200	310	286
				273		160L4	15.0					1486																
		109	168	333	EZ7	180M4	18.5	60.57.01.1	68.40.09.1	430		1540										1580	360	890	176	200	400	376
				343		180L4	22.0					1540																
				433		200L4	30.0		-			1660																
SKC.8.07 **SKD.8.06**	110	113	172	277	EZ3	160M4	11.0	60.57.02.1	68.40.08.1	430	150	1491	160	160	200	257	105	600	653	703	1580	360	890	176	200	400	376
				297		160L4	15.0					1535																
		116	175	340	EZ7	180M4	18.5		68.40.19.1			1589																
				350		180L4	22.0					1589																
				440		200L4	30.0		-			1709																
SKC.8.08 **SKD.8.07**	117	120	179	284	EZ3	160M4	11.0	60.57.02.1	68.40.08.1	430	150	1540	160	160	200	257	105	649	702	752	1580	360	890	176	200	400	376
				304		160L4	15.0					1584																
		123	182	347	EZ7	180M4	18.5		68.40.19.1			1638																
				357		180L4	22.0					1638																
				447		200L4	30.0		-			1758																
SKD.8.08	124	127	186	291	EZ3	160M4	11.0	60.57.02.1	68.40.08.1	430	150	1589	160	160	200	257	105	698	751	801	1580	360	890	176	200	400	376
				311		160L4	15.0					1633																
		130	189	354	EZ7	180M4	18.5		68.40.19.1			1682																
				364		180L4	22.0					1682																
				454		200L4	30.0		-			1807																

The pump symbol structure

The pump symbol consists of the following elements.

S	K	C	6	0	8	5	1	1	6	0	5
a	a	a	b	c	c	d	e_1	e_2	e_3	e_4	h

where: a a a - classification group SK and product type
C - for work with inflow
D - for work with deep suction

b - pump size (2-8)

c c - pump type dimension (01-08), number of stages of the pump

d - Material selection

$e_1 e_2 e_3 e_4$ - pump design

h - delivery completeness,

Pump marking for liquid propane-butane gas (LPG)

Pumps for LPG gas are made only from materials „5" or „6" and only as the design type „1160" for SKC and „1161" for SKD. It is necessary to add „LPG" at the end of the marking.

Example of the marking:

SKC.4.08.5.1160.5.LPG

SKD.4.08.5.1161.5.LPG

Delivery completeness

1 - The pump with free shaft end
2 - The pump with coupling
3 - The pump with coupling, foundation bolts, and coupling guard on the foundation plate
4 - Completeness 3 + motor

Basic technical data

Capacity Q:	max. 30 m^3/h
Delivery head Hmax:	max. 310 m
Temperature:	-40° +180 °C
Liquid density:	up to 1,3 kg/dm^3
Liquid viscosity:	up to 150 mm^2/s

Solid, non-abrasive particles of the size up to 0,5 mm are permissible in vestigial amount. For hot liquids (from +70 °C to +180 °C), the delivery head of the pump should be decreased by 10-20 % comparing to pumping water at t=20 °C. Pump characteristics are valid for water at t=20 °C temperature and motor rotating speed n=1450 rpm.

Construction materials of SKC and SKD pumps

Materials applied in SKC and SKD pumps

Part name	Construction materials „d"						
	1	2	3	4	5,6**	7	8
Housings	grey cast iron	tin bronze	grey cast iron	grey cast iron	nodular cast iron	cast carbon steel	cast austenitic steel
Modules	grey cast iron	chromium cast iron	grey cast iron	chromium cast iron	nodular cast iron	cast carbon steel	cast austenitic steel
Impellers	tin bronze	tin bronze	nodular cast iron	tin bronze	tin bronze	tin bronze	cast austenitic steel
Shaft	Stainless steel	acid resistant steel	Stainless steel	acid resistant steel	stainless steel	stainless steel	acid resistant steel
Shaft seal	soft-cord seal* face mechanical***						

* - *The selection of the seal material type depends on the type of the liquid*

** - *Minimal operation temperature – 40 °C*

*** - *There is possibility to produce pumps made of other materials (high-nickel cast irons, cast steel), but it requires separate technical and business arrangements*

Design variants of SKC and SKD pumps

Variant no	Variant name	SKC2	SKD2	SKC3	SKD3	SKC4	SKD4	SKC5	SKD5	SKC6	SKD6	SKC7	SKD7	SKC8	SKD8
1030	Pump with cord packing with liquid chamber of temperature -30 °C ÷ +70 °C	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1110	Pump with single end-face packing of V type for liquid of temperature -30 °C ÷ +70 °C	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1130	Pump with single end-face packing of US type for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x	x	x	x	x	x	x	x	x
1140	Pump with single end-face packing of VB type for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x	x	x	x	x	x	x	x	x
1160	Pump with single end-face packing of 502 type for liquid of temperature -40 °C	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1360	Pump with single end-face packing of V Quenching type for liquid of temperature -30 °C ÷ +70 °C	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1380	Pump with single end-face packing of US Quenching type for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x	x	x	x	x	x	x	x	x
1390	Pump with single end-face packing of YB Quenching type for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x	x	x	x	x	x	x	x	x
1400	Pump with single end-face packing of 502 Quenching type for liquid of temperature -30 °C ÷ +70 °C	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1600	Pump with double end-face packing, BACK TO BACK alignment of V+V type with barrage liquid for liquid of temperature -30 °C ÷ +70 °C	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1610	Pump with double end-face packing, BACK TO BACK alignment of V+VB type with barrage liquid for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x	x	x	x	x	x	x	x	x
1630	Pump with double end-face packing, BACK TO BACK alignment of U+US type with barrage liquid for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x					x	x	x	x
1640	Pump with double end-face packing of BED type for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x	x	x	x	x	x	x	x	x
1650	Pump with double end-face packing of BED type with installation of buffer fluid for liquid of temperature -30 °C ÷ +70 °C			x	x	x	x	x	x	x	x	x	x	x	x
3040	Pump with cord packing with liquid chamber of temperature +70 °C ÷ +180 °C	x		x		x		x		x		x		x	
3110	Pump with single end-face packing of V type for liquid of temperature +70 °C ÷ +180 °C	x		x		x		x		x		x		x	
3130	Pump with single end-face packing of US type for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3140	Pump with single end-face packing of VB type for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3160	Pump with single end-face packing of 502 type for liquid of temperature +70 °C ÷ +180 °C	x		x		x		x		x		x		x	
3360	Pump with single end-face packing of V Quenching type for liquid of temperature +70 °C ÷ +180 °C	x		x		x		x		x		x		x	
3380	Pump with single end-face packing of US Quenching type for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3390	Pump with single end-face packing of YB Quenching type for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3400	Pump with single end-face packing of 502 Quenching type for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3600	Pump with double end-face packing, BACK TO BACK alignment of V+V type with barrage fluid for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3610	Pump with double end-face packing, BACK TO BACK alignment of V+VB type with barrage fluid for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3630	Pump with double end-face packing, BACK TO BACK alignment of U+US type with barrage fluid for liquid of temperature +70 °C ÷ +180 °C			x		x		x		x		x		x	
3640	Pump with double end-face packing of BED type for liquid of temperature +70 °C ÷ +180 °C			x	x	x	x	x	x	x	x	x	x	x	x
3650	Pump with double end-face packing of BED type with installation of buffer fluid for liquid of temperature +70 °C ÷ +180 °C			x	x	x	x	x	x	x	x	x	x	x	x