



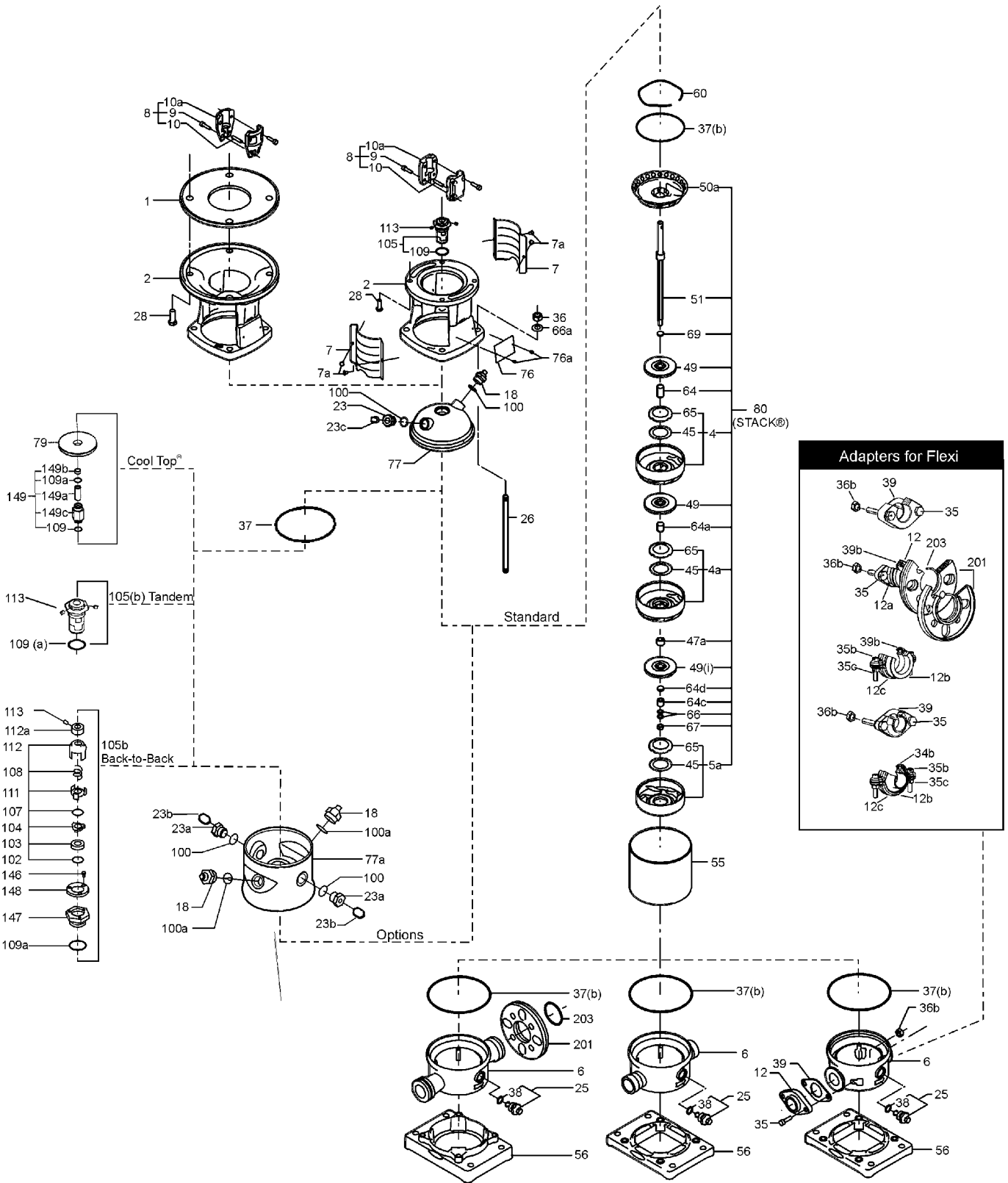
CR1s

Parts List & Kits

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Exploded View CRI1s



Pos. No.	Part Description	Model	Stages	No. Used	Comments/Dimensions	B.O.M. Ref. No.	Material No.	Included in kits ?
PARTS LIST								
1	Adapter for Motor Stool				For NEMA, 213/215TC, 7.5 - 10HP	96476208		No
2	Motor Stool		3/2-27	1	NEMA, 56C, 1/3 - 2HP NEMA, 182/184TC, 3 - 5HP Add Pos. 1, NEMA, 213TC, 7.5 - 10HP	96436510 96436511 96436511		No No No
			3/2-19	1	IEC, F85, MG 71, .37 - .55kW	96436506		No
			21-36	1	IEC, F100, MG 80, .75 - 1.1kW IEC, F115, MG 90, 1.5 - 2.2kW IEC, F130, MG 100/112, 3.0 - 4.0 kW IEC, F265, MG132, 5.5 - 7.5kW	96436507 96436508 96436509 96436514		No No No No
4	Chamber, Complete with Pos. 45 & 65		3/2-36	^^^	PTFE Pos. 45	96439480	97690020	No
4a	Chamber Cpl. w/Pos. 45 & 65 & Bearing		3/2-36	^^^^	Silicon Carbide Bearing, PTFE Pos. 45	96439475	97690601	YES
	Chamber Cpl. w/Pos. 45 & 65 & Brg. (option)		3/2-36	^^^^	Bronze Bearing, PTFE Pos. 45	96440612		YES
			3/2-36	^^^^	Graflon Bearing, PTFE Pos. 45	96440615		YES
5a	Chamber, Bottom Complete with Pos. 45 & 65		3/2-36	1	PTFE Pos. 45	96439484	96588148	No
6	Base		3/2-17	1	Flexi -Clamp / Oval, Stainless (max 232 PSI)	96438394		No
			3/2-36	1	For Flanges JIS, FGJ, ANSI, Stainless (max 362 PSI)	96438328		No
			3/2-36	1	Victualic (PIE) 1.25", Stainless (max 362 PSI)	96436851		No
7	Coupling Guard			2	IEC, F85-F100	96438136		YES
				2	NEMA-56C, IEC-F115,130, & 265	96438137		YES
7a	Screw for Coupling Guard		3/2-36	4	NEMA, 182-215TC M4 x 8mm	96438138 96488481		YES YES
9	Allen Screw		3/2-27	4	M6 x 20mm, Delta Seal	001D7899		YES
				4	M8 x 25mm, Delta Seal	001D7900		YES
				4	M10 x 25mm, Delta Seal	001D7901		YES
10	Shaft Pin		3/2-36	1	ø5 x 26mm	310192		YES
10a	Coupling Half		3/2-27	2	NEMA, 56C, 1/3 - 2HP. ø15.8 / ø12	410108		YES
				2	NEMA, 182/184TC, 3-5HP. ø28.5/ø12	410109		YES
				2	NEMA, 213TC, 7.5-10HP. ø34.9/ø12	96472175		YES
			3/2-19	2	IEC, F85, MG71, .37-.55kW. ø14/ø12	410041		YES
			21-36	2	IEC, F100, MG80,.75-1.1kW. ø19/ø12	410043		YES
				2	IEC, F115, MG 90, 1.5-2.2kW. ø24/ø12	410045		YES
				2	IEC, F130, MG100/112, 3-4 kW.ø28/ø12	410047		YES
				2	IEC, F265, MG132, 5.5-7.5kW. ø38/ø12	410115		YES
12	Oval Flange for Flexi Base		3/2-17	2	Painted CI, 1" -11.5 NPT (max 232 PSI)	96468333		YES
			3/2-23	2	Painted CI, RP 1" BSP DIN (max 232 PSI)	400173		No
12	Oval Flange for Flexi Base (option)		3/2-17	2	Stainless, 1" -11.5 NPT (max 232 PSI)	96468336		YES
			3/2-23	2	Stainless, RP 1" BSP DIN (max 232 PSI)	96437814		No
12a	Adapter Flg. for ANSI Pos. 201/Flexi Base (option)		3/2-17	2	Stainless, (max 232 PSI)	96437818		YES
12b	Pipe Stub for Clamp/Flexi Base (option)		3/2-17	2	Stainless, Internal 1" -11.5 NPT (max 232 PSI)	400182		YES
			3/2-17	2	Stainless, Internal 1.25" -11.5 NPT (max 232 PSI)	410279		YES
			3/2-17	2	Stainless, External 2" -11.5 NPT (max 232 PSI)	96468338		YES
12c	Clamp for Flexi Base & Pos. 12b (option)		3/2-17	4	Stainless, (max 232 PSI)	001D7194		YES
18	Priming/Vent Plug		3/2-36	*	G 1/2A, NV24 with NV9 x M8 stem	405150	95061351	No
23	Plug (option)		3/2-36	**	G 1/2A, Solid no port, NV24	370025	95061733	No
23a	Plug		3/2-36	**	G 1/2A, w/1/4" port, NV24	91120659		No
23b	Pipe Plug for Pos. 23 & 25 with hollow stem		3/2-36	**	1/4" NPT,SS SQHD	001D7216		No
25	Drain/Priming Plug Cpl. with O-rings		3/2-36	1	G 1/2A, NV24 w/NV9 x M8 stem, EPDM	96440611		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 stem, FKM	96446891		No
	Drain/Priming Plug Cpl. with O-rings (option)		3/2-36	1	G 1/2A, NV24 w/NV9 x M8 stem, FXM	96460009		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 stem, FFKM	96475474		No
	Dr./Pr. Plug Cpl. for gauge, w/O-rings (option)		3/2-36	1	G 1/2A, NV24 w/NV9 x M8 hollow stem, EPDM	96527050		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 hollow stem, FKM	96527051		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 hollow stem, FXM	96549174		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 hollow stem, FFKM	96527052		No
26	Staybolt		3/2-3	4	M12 x 151mm	414004		No
			4	4	M12 x 169mm	404007		No
			5	4	M12 x 187mm	404008		No
			6	4	M12 x 205mm	414006		No
			7	4	M12 x 223mm	404010		No
			8	4	M12 x 241mm	404011		No
			9	4	M12 x 259mm	414008		No
			10	4	M12 x 277mm	404013		No
			11	4	M12 x 294mm	96442754		No
			12	4	M12 x 313mm	414010		No
			13	4	M12 x 330mm	96442760		No
			15	4	M12 x 367mm	414012		No
			17	4	M12 x 402mm	96442762		No
			19	4	M12 x 439mm	404022		No
			21	4	M12 x 475mm	414016		No
			23	4	M12 x 511mm	404026		No
			25	4	M12 x 546mm	96442765		No
			27	4	M12 x 583mm	404030		No

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Parts List & Kits CR11s

Pos. No.	Part Description	Model	Stages	No. Used	Comments/Dimensions	B.O.M. Ref. No.	Material No.	Included in kits?		
PARTS LIST										
26	Staybolt Staybolt) (Cool Top®, Back-to-Back & Tandem Seal option			30	4	M12 x 637mm (50 Hz.)	414022	No		
				33	4	M12 x 691mm (50 Hz.)	96442777	No		
				36	4	M12 x 745mm (50 Hz.)	96442778	No		
			3/2-3	4	4	M12 x 265mm	96442753	No		
			4	4	4	M12 x 286mm	414009	No		
			5	4	4	M12 x 294mm	96442754	No		
			6	4	4	M12 x 319mm	96442756	No		
			7	4	4	M12 x 340mm	414011	No		
			8	4	4	M12 x 349mm	404017	No		
			9	4	4	M12 x 367mm	414012	No		
			10	4	4	M12 x 385mm	404019	No		
			11	4	4	M12 x 402mm	96442762	No		
			12	4	4	M12 x 427mm	96442763	No		
			13	4	4	M12 x 436mm	96458181	No		
			15	4	4	M12 x 475mm	414016	No		
			17	4	4	M12 x 511mm	404026	No		
			19	4	4	M12 x 546mm	96442765	No		
			21	4	4	M12 x 583mm	404030	No		
			23	4	4	M12 x 618mm	96442767	No		
			25	4	4	M12 x 655mm	96458442	No		
			27	4	4	M12 x 691mm	96442777	No		
						30	4	M12 x 745mm (50 Hz.)	96442778	No
						33	4	M12 x 799mm (50 Hz.)	96442779	No
						36	4	M12 x 853mm (50 Hz.)	96458446	No
		28	Motor Bolt		3/2-27	4	NEMA, 56C, 1/3 - 2HP. UNC 3/8" x 25mm NEMA, 182/184TC, 3 - 5HP.UNC1/2" x 25mm NEMA, 213TC, 7.5 -10HP. UNC 1/2" x 1.25"	001D1839 001D1840 91128631	No No No	
					3/2-19	4	IEC, F85, MG71, .37-.55kW. M6 x 20mm	001D8022	No	
					21-36	4	IEC, F100, MG80,.75-1.1kW. M6 x 25mm IEC, F115, MG 90, 1.5-2.2kW. M8 x 20mm IEC, F130, MG100/112, 3-4 kW. M8 x 25mm IEC, F265, MG132, 5.5-7.5kW. M12 x 45mm	001D8023 001D8024 001D8025 001D7914	No No No No	
	3/2-17			4	M10 x70mm, 8.8, A4, DIN931	96447227	YES			
	3/2-17			4	M10 x 60mm, A4, DIN931	96447228	YES			
	3/2-17			4	M8 x 40mm - A2, RR DIN933	001D7188	YES			
35	Hex. Head Screw for Oval "Cl" Flange (Flexi opt.)		3/2-17	4	M10 x70mm, 8.8, A4, DIN931	96447227	YES			
	Hex. Head Screw for Oval "N" Flange (Flexi opt.)		3/2-17	4	M10 x 60mm, A4, DIN931	96447228	YES			
35b	Screw for Clamp Pos.12c (Flexi option)		3/2-17	4	M8 x 40mm - A2, RR DIN933	001D7188	YES			
35c	Nut for Screw Pos. 35b for Clamp Pos. 12c (Flexi opt.)		3/2-17	4	M8, 304SS	001D7187	YES			
36	Staybolt Nut		3/2-36	4	19mm x M12, Delta Seal	001D7917	No			
36b	Nut for Screw Pos. 35 Oval Flange (Flexi option)		3/2-17	4	M10, 316SS w/Delta Seal	96438757	YES			
37	Sleeve O-ring		3/2-36	◆◆	EPDM, ø137.5 x 3.3mm	96438743	YES			
			3/2-36	◆◆	FKM, ø137.5 x 3.3mm	96438744	YES			
			3/2-36	◆◆	FXM, ø137.5 x 3.3mm	96458109	YES			
			3/2-36	◆◆	FFKM, ø136.12 x 3.53mm	96466718	YES			
37b	Sleeve O-ring (option)		3/2-36	1	EPDM, ø16.3 x 2.4mm	001D1288	YES			
			3/2-36	1	FKM, ø16.3 x 2.4mm	001D2231	YES			
			3/2-36	1	FFKM, ø16.3 x 2.4mm	96428162	YES			
			3/2-36	1	FXM, ø16.3 x 2.4mm	96442869	YES			
38	Drain Plug O-ring		3/2-17	2	95 x 55 x ø35 x 2mm, KLINGERSIL C4430	400189	YES			
39b	O-ring for Clamp,Thread stub-Union-& FGJ Flge., (option)		3/2-17	2	EPDM, ø44.45 x 3.53mm	96407726	YES			
			3/2-17	2	FKM, ø44.45 x 3.53mm	96411713	YES			
45	Neck Ring		3/2-36	# stgs	ø41.3 x ø30.6 x .75mm, PTFE	400003	YES			
47a	Bearing Ring/Spacer Brg. Ring/Spacer (option for Graflon / Brz. 4a)		3/2-36	^^^^	SIC 150, ø17.37 x ø13.10 x ø10.9 x 13mm	96437488	YES			
			3/2-36	^^^^	TC, ø15.92 x ø13.10 x ø10.9 x 9.7mm	400041	YES			
49	Impeller		3/2-36	# stgs	ø73.0 x ø30.6 x 9.0mm (back-plate .5mm)	96433134	No			
50a	Top Guide Vane Top Guide Vane Plate (option for destaging)		3-36	1		96457637	No			
			3/2	1		96478562	No			
51	Shaft, Complete		3/2-3	1	ø12 x 160.5mm	96439607	96588198	No		
			4	1	ø12 x 180.5mm	96440386	96588199	No		
			5	1	ø12 x 196.5mm	96440387	96588230	No		
			6	1	ø12 x 214.5mm	96440388		No		
			7	1	ø12 x 234.5mm	96440389	96588231	No		
			8	1	ø12 x 250.5mm	96440390		No		
			9	1	ø12 x 268.5mm	96440391		No		
			10	1	ø12 x 288.5mm	96440392		No		
			11	1	ø12 x 304.5mm	96440393		No		
			12	1	ø12 x 322.5mm	96440394	96588233	No		
			13	1	ø12 x 342.5mm	96440395	96588234	No		
			15	1	ø12 x 376.5mm	96440396	96588235	No		
			17	1	ø12 x 412.5mm	96440398		No		
			19	1	ø12 x 450.5mm	96440400		No		
			21	1	ø12 x 484.5mm	96440401	96588236	No		
			23	1	ø12 x 520.5mm	96440403		No		
	25	1	ø12 x 556.5mm	96440405	96588237	No				

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PARTS LIST									
51	Shaft, Complete (continued)		27	1	ø12 x 592.5mm	96440406	No		
			30	1	ø12 x 646.5mm (50 Hz.)	96440408	No		
			33	1	ø12 x 700.5mm (50 Hz.)	96440410	No		
			36	1	ø12 x 754.5mm (50 Hz.)	96440411	96588238	No	
	Shaft, Complete (Cool Top®, Back-to-Back & Tandem Seal option)	3/2-3	1	ø12 x 265.5mm	96457560	No			
		4	1	ø12 x 285.5mm	96457561	No			
		5	1	ø12 x 301.5mm	96457562	No			
		6	1	ø12 x 319.5mm	96457563	No			
		7	1	ø12 x 339.5mm	96457564	No			
		8	1	ø12 x 355.5mm	96457565	No			
		9	1	ø12 x 373.5mm	96457566	No			
		10	1	ø12 x 393.5mm	96457567	No			
		11	1	ø12 x 409.5mm	96457568	No			
		12	1	ø12 x 427.5mm	96457569	No			
		13	1	ø12 x 447.5mm	96457570	No			
		15	1	ø12 x 481.5mm	96457571	No			
		17	1	ø12 x 517.5mm	96457573	No			
		19	1	ø12 x 555.5mm	96457575	No			
		21	1	ø12 x 589.5mm	96457576	No			
		23	1	ø12 x 625.5mm	96457578	No			
		25	1	ø12 x 661.5mm	96457580	No			
		27	1	ø12 x 697.5mm	96457581	No			
			30	1	ø12 x 751.5mm (50 Hz.)	96457583	No		
			33	1	ø12 x 805.5mm (50 Hz.)	96457585	No		
			36	1	ø12 x 859.5mm (50 Hz.)	96457586	No		
		55	Outer Sleeve	3/2-3	1	ø138 x 44.6mm	96437865	No	
				4	1	ø138 x 62.6mm	96440010	No	
				5	1	ø138 x 80.6mm	96441510	No	
				6	1	ø138 x 98.6mm	96439999	No	
				7	1	ø138 x 116.6mm	96441511	No	
				8	1	ø138 x 134.6mm	96441513	No	
	9			1	ø138 x 152.6mm	96440000	No		
	10			1	ø138 x 170.6mm	96441514	No		
	11			1	ø138 x 188.6mm	96441516	No		
	12			1	ø138 x 206.6mm	96440001	No		
	13			1	ø138 x 224.6mm	96441517	No		
15	1			ø138 x 260.6mm	96440002	No			
17	1			ø138 x 296.6mm	96441520	No			
19	1			ø138 x 332.6mm	96441521	No			
21	1			ø138 x 368.6mm	96440004	No			
23	1			ø138 x 404.6mm	96441524	No			
25	1			ø138 x 440.6mm	96441525	No			
27	1			ø138 x 476.6mm	96440006	No			
	30			1	ø138 x 530.6mm (50 Hz.)	96440007	No		
	33			1	ø138 x 584.6mm (50 Hz.)	96440008	No		
	36			1	ø138 x 638.6mm (50 Hz.)	96439652	No		
56	Base Plate (Low) for PJE / Flexi-clamp Pos. 6			2-36	1	Cast Iron	96438133	No	
	B. P. (High) for Flexi-clamp w/ANSI/DIN/JIS Pos. 6			2-36	1	Cast Iron	96438132	No	
	Base Plate N (Low) for PJE / Flexi-clamp Pos. 6			2-36	1	Cast Stainless	96437870	No	
	B. P. N. (High) for Flexi-clamp w/ANSI/DIN/JIS Pos. 6			2-36	1	Cast Stainless	96437868	No	
60	Stack Compression Spring			3/2-36	1	ø136 x 3.5mm	96439662	96547664	No
64	Spacing Pipe			2-36	^^^	ø15.85 x ø12.85 x 17.52mm	400035	95061339	No
64a	Spacing Pipe	3/2-36	^^^^	ø15.85 x ø12.85 x 4.5mm	96440292		YES		
	Spacing Pipe (option for Graflon / Brz. 4a)	3/2-36	^^^^	Use with TC Pos.47a, ø15 x ø12.7 x 7.8mm	400016		YES		
64c	Clamp, Splined	3/2-36	1	ø15 x ø13.10 x ø10.9 x 13mm	96439668		YES		
65	Neck Ring Retainer	3/2-36	# stgs	ø43.5 x ø34.0 x 3.6mm	96438746		YES		
66	Lock Washer Set for Shaft	3/2-36	1	ø13.5 x ø8.2 x 2.6mm	96417297		YES		
66a	Washer for Staybolt	3/2-36	4	DIN 125A, ø24 x ø13 x 2.5mm, Delta Seal	96430377		No		
67	Lock Nut for Shaft	3/2-36	1	13mm x M8	001D2061		YES		
69	Spacing Pipe	3/2	1	ø15.85 x 12.85 x 18.0mm	400125	95061443	No		
76	Nameplate	3/2-36	1	304SS, 60 x 45mm	96439820		No		
76a	Rivet for Nameplate	3/2-36	2	304SS, ø3 x 5mm	96022882		No		
77	Pump Head Cover for Motor Stool Pos. 2	3/2-36	1	Cast Stainless	96436340		No		
77a	Pump Head Cover for Back-to-Back & Tandem Seal	3/2-36	1	Cast Stainless	96456293		No		
	Pump Head Cover for Cool Top® (option)	3/2-36	1	Cast Stainless	96456294		No		
79	Disc / Plate for Cool Top®	3/2-36	■	Stainless	96456296		No		
100	Priming/Vent Plug O-ring	3/2-36	■	EPDM, ø16.3 x 2.4mm	001D1288		YES		
		3/2-36	■	FKM, ø16.3 x 2.4mm	001D2231		YES		
		3/2-36	■	FFKM, ø16.3 x 2.4mm	96428162		YES		
100a	Priming/Vent Plug O-ring (option)	3/2-36	■	FFKM, ø16.3 x 2.4mm	96442869		YES		
		3/2-36	■	FKM, ø16.3 x 2.4mm			YES		
102	O-ring for Pos. 105b Back-to-Back	3/2-36	1	EPDM, ø18 x 2.5mm	001D2041		YES		
		3/2-36	1	FKM, ø17.86 x 2.62mm	001D2187		YES		

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102	O-ring for Pos. 105b Back-to-Back		3/2-36	1	FFKM, $\phi 17.86 \times 2.62\text{mm}$	96440281		No
				1	FXM, $\phi 17.86 \times 2.62\text{mm}$	96472584		No
103	Stationary Seal Ring for 105b Back-to-Back Stationary Seal Ring for 105b Back-to-Back (opt.)		3/2-36	1	TC, 12mm	980190		No
				1	SiC, 12mm	980746		YES
104	Rotating Seal Ring for 105b Back-to-Back Rotating Seal Ring for 105b Back-to-Back (opt.)		3/2-36	1	TC, 12mm	980163		No
				1	SiC, 12mm	980733		YES
105(b)	Shaft Seal HQBE Shaft Seal HQBV Shaft Seal HQBK (option) Shaft Seal HQQE Shaft Seal HQQV Shaft Seal HQQF (option) Shaft Seal HQQK (option) Shaft Seal HUBE Shaft Seal HUBV Shaft Seal HUBF (option) Shaft Seal HUBK (option) Shaft Seal HUUE Shaft Seal HUUV Shaft Seal HUUF (option) Shaft Seal HUUK (option)		3/2-36	***	SiC, Carbon with resin-impregnated, EPDM	96441879		YES
				***	SiC, Carbon with resin-impregnated, FKM	96441880		YES
				***	SiC, Carbon with resin-impregnated, FFKM	96489537		YES
				***	SiC, SiC, EPDM	96441877		YES
				***	SiC, SiC, FKM	96441878		YES
				***	SiC, SiC, FXM	96472620		YES
				***	SiC, SiC, FFKM	96464381		YES
				***	TC, Carbon with resin-impregnated, EPDM	96441873		YES
				***	TC, Carbon with resin-impregnated, FKM	96441874		YES
				***	TC, Carbon with resin-impregnated, FXM	96481464		YES
				***	TC, Carbon with resin-impregnated, FFKM	96481463		YES
				***	TC, TC, EPDM	96441875		YES
				***	TC, TC, FKM	96441876		YES
				***	TC, TC, FXM	96475542		YES
				***	TC, TC, FFKM	96467885		YES
105b	Shaft Seal/inboard for Back-to-Back OQQE Shaft Seal/inboard for Back-to-Back OQQV Shaft Seal/inboard for Back-to-Back OUUE Shaft Seal/inboard for Back-to-Back OOUV		3/2-36	1	SiC, SiC, EPDM	985200		YES
				1	SiC, SiC, FKM	985760		YES
				1	TC, TC, EPDM	985189	405145	No
				1	TC, TC, FKM	985190	405145	No
107	O-ring for Pos. 105b Back-to-Back O-ring for Pos. 105b Back-to-Back (option)		3/2-36	1	EPDM, $\phi 11.5 \times 4.3\text{mm}$	001D2040		YES
				1	FKM, $\phi 11.5 \times 4.3\text{mm}$	001D2186		YES
				1	FFKM, $\phi 11.5 \times 4.3\text{mm}$	96440282		No
				1	FXM, $\phi 11.5 \times 3.18\text{mm}$	96472618		No
108	Spring for Pos. 105b Back-to-Back		3/2-36	1	12mm	980195		YES
109(a)	O-ring for Shaft Seal Pos. 105		3/2-36	1	EPDM, $\phi 21.3 \times 3.0\text{mm}$	001D1798		YES
				1	FKM, $\phi 21.2 \times 3.0\text{mm}$	001D2339		YES
109b	O-ring for Shaft Seal Pos. 105 (option)		3/2-36	1	FXM, $\phi 22 \times 2.75\text{mm}$	96458111		YES
				1	FFKM, $\phi 23.47 \times 2.62\text{mm}$	96464384		YES
111	Seal Driver (small) for Pos. 105b Back-to-Back		3/2-36	1		980192		YES
112	Seal Driver (large) for Pos. 105b Back-to-Back		3/2-36	1		980191		YES
112a	Seal Drv threaded for 112, Pos. 105b Back-to-Back		3/2-36	1		400203		YES
113	Set Screw for 112a, for Pos. 105b Back-to-Back		3/2-36	1	3mm x M5 x 6mm	001D7392		YES
117	Pipe for Air Vent (option)		3/2-36	1	R 1/2", 316 Stainless	330272		YES
117a	Counter Nut for Pipe 117		3/2-36	1	NV 24, Internal G 1/2, 316 SS	96506709		YES
118	Automatic Air Vent (option)		3/2-36	1	Type AES05 1/2" BSP, Stainless	96498508		YES
146	Allen Bolt for 147/148, for Pos. 105b Back-to-Back		3/2-36	1	2.5mm x M3 x 5mm	96462639		YES
147	Stationary Seal Retainer - Pos. 105b Back-to-Back		3/2-36	1	NV36, 316SS	96457354		No
148	Seal Retainer Washer - Pos. 105b Back-to-Back		3/2-36	1	316SS, $\phi 36.0 \times \phi 21.6 \times 5.0\text{mm}$	96457355		No
149	Connecting Pipe CPL for Cool Top®		3/2-36	1	NV36, 316SS, FXM & EPDM	96460414		No
				1	NV36, 316SS, FXM & FKM	96460415		No
149a	Retainer for bushing		3/2-36	1	316SS, $\phi 22.0 \times \phi 17.0 \times 9\text{mm}$	96457639		YES
149b	Bushing		3/2-36	1	Graflon®, $\phi 21.2 \times \phi 12.4 \times 53\text{mm}$	96456297		YES
149c	Connecting Pipe less 109a&b and 149a&b		3/2-36	1	NV36, 316SS	96456295		YES
				1	NV36, 316SS, FXM & FKM	96460415		No
201	Flange		3/2-36	1	ANSI, DIN, JIS PN40/30K, Cast Iron	96439203		YES
				1	ANSI, DIN, JIS PN40/30K, Stainless	96439492		YES
203	Lock Ring for Flange		3/2-36	1	Stainless	96439718		YES

Due to part changes over time, all position numbers (1-203) may not be used.

This column indicates which model uses the spare part. If blank, the part is used in all models.

B.O.M. Ref. Number is only available if it is not included in a kit or does not have a material number listed. If it is included in a kit (YES), or has a material number, request one of these numbers. If not included in a kit (No), but has a Material Number, use Material Number.

Notes:

^^^ 3/2 to 9 stage= # of Stages less 2
10 to 19 stage= # of stages less 3
21 to 27 stage = # of stages less 4
29 to 36 stage = # of stages less 5

^^^ 3/2 to 9 stage= use 1
10 to 19 stage= use 2
21 to 27 stage = use 3
29 to 36 stage = use 4

* Standard use 1. Back-to-Back or Tandem pump version use 3
** Standard use 1. Back-to-Back or Tandem pump version use 3
*** 1 used in Hxxx (Standard), 2 used in Pxxx (Tandem) pump version

◆◆ Standard use 2. Back-to-Back or Tandem pump version use 3
■ Standard use 2. Back-to-Back or Tandem pump version use 6

Cool Top® is a registered trademark of Grundfos Pumps

Key to Symbols:

KITS (YES) Recommended spare part

Ø Diameter

ANSI American National Standards Institute

CPL Complete Assembly – these parts consist of more than one component

EPDM Ethylene Propylene (also known as EPR and EPT) – an elastic substance similar to rubber

FFKM Kalrez Elastomer made by DuPont

FKM Fluoro Elastomer (generic for Viton)

FXM Fluoroelastomer made by Greene Tweed

M International standard thread size designation (thread diameter in mm)

mm Millimeter

MG Identifies Grundfos motor type/size

N Stainless

NBR Buna - N (also known as Nitrile) – an elastic substance similar to rubber

NEMA National Electrical Manufacturers Association

PTFE Teflon

SiC Silicon Carbide

TC Tungsten Carbide

Spare Part Kits

Since certain pump parts can be expected to exhibit wear at the same time as related pump parts, they have been grouped into the following kits for your convenience. The numbers indicate the quantity of the part within each kit. Please order these kits using the kit material number at the top of the columns.

CR(I, N)1S, 1, & 3 SiC Bearing							
WEAR PARTS KIT 2-9			Kit No.	96455095			
WEAR PARTS KIT 10-19			Kit No.	96455092			
WEAR PARTS KIT 20-27			Kit No.	96455093			
WEAR PARTS KIT 28-36			Kit No.	96455094			
Pos. No.	Description	Material No.	Qty. Included in each Kit				
4a	Chamber N Cpl. w/Pos.45 & 65 & SiC Bearing	96439476	1	2	3	4	
39	Gasket for Oval Flange, 95 x 55 x ø35 x 2mm	400189	2	2	2	2	
45	Neck Ring, ø41.3 x ø30.6 x .75mm, PTFE	400003	8	17	24	32	
47a	Bearing Ring/Spacer, SiC 150, 13mm	96437488	1	2	3	4	
64a	Spacing Pipe, ø15.85 x ø12.85 x 4.5mm	96440292	1	2	3	4	
64c	Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm	96439668	1	1	1	1	
65	Neck Ring Retainer, N, ø43.5 x ø34.0 x 3.6mm	96438746	8	17	24	32	
66	Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm	96417297	1	1	1	1	
67	Lock Nut, 13mm x M8	00ID2061	1	1	1	1	

STACK® KITS	
Model	Material No.
CR(I)1S-3/2	96479046
CR(I)1S-3	96479047
CR(I)1S-4	96479048
CR(I)1S-5	96479049
CR(I)1S-6	96479060
CR(I)1S-7	96479061
CR(I)1S-8	96479062
CR(I)1S-9	96479063
CR(I)1S-10	96479064
CR(I)1S-11	96479065
CR(I)1S-12	96479066
CR(I)1S-13	96479067
CR(I)1S-15	96479068
CR(I)1S-17	96479069
CR(I)1S-19	96479070
CR(I)1S-21	96479071
CR(I)1S-23	96479072
CR(I)1S-25	96479073
CR(I)1S-27	96479074
*** CR(I)1S-30	96479075
*** CR(I)1S-33	96479076
*** CR(I)1S-36	96479077

***For 50 Hz operation only.

CR(I, N)1S, 1, & 3 Graflon Bearing							
WEAR PARTS KIT 2-9			Kit No.	96460140			
WEAR PARTS KIT 10-19			Kit No.	96455110			
WEAR PARTS KIT 20-27			Kit No.	96455111			
WEAR PARTS KIT 28-36			Kit No.	96455112			
Pos. No.	Description	Material No.	Qty. Included in each Kit				
4a	Chamber N Cpl. w/Pos.45 & 65 & Graflon Bearing	96440615	1	2	3	4	
39	Gasket for Oval Flange, 95 x 55 x ø35 x 2mm	400189	2	2	2	2	
45	Neck Ring, ø41.3 x ø30.6 x .75mm, PTFE	400003	8	17	24	32	
47a	Bearing Ring/Spacer, TC, 9.7mm	400041	1	2	3	4	
64a	Spacing Pipe, ø15.85 x ø12.85 x 7.8mm	400016	1	2	3	4	
64c	Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm	96439668	1	1	1	1	
65	Neck Ring Retainer, N, ø43.5 x ø34.0 x 3.6mm	96438746	8	17	24	32	
66	Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm	96417297	1	1	1	1	
67	Lock Nut, 13mm x M8	00ID2061	1	1	1	1	

CR(I)1S, 1, & 3 Bronze Bearing							
WEAR PARTS KIT 2-9			Kit No.	96455102			
WEAR PARTS KIT 10-19			Kit No.	96455104			
WEAR PARTS KIT 20-27			Kit No.	96455105			
WEAR PARTS KIT 28-36			Kit No.	96455106			
Pos. No.	Description	Material No.	Qty. Included in each Kit				
4a	Chamber Cpl. w/Pos.45 & 65 & Bronze Bearing	96440612	1	2	3	4	
39	Gasket for Oval Flange, 95 x 55 x ø35 x 2mm	400189	2	2	2	2	
45	Neck Ring, ø41.3 x ø30.6 x .75mm, PTFE	400003	8	17	24	32	
47a	Bearing Ring/Spacer, TC, 9.7mm	400041	1	2	3	4	
64a	Spacing Pipe, ø15.85 x ø12.85 x 7.8mm	400016	1	2	3	4	
64c	Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm	96439668	1	1	1	1	
65	Neck Ring Retainer, N, ø43.5 x ø34.0 x 3.6mm	96438746	8	17	24	32	
66	Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm	96417297	1	1	1	1	
67	Lock Nut, 13mm x M8	00ID2061	1	1	1	1	

GASKET KIT (EPDM)				Kit No.	96455090					
GASKET KIT (FKM)				Kit No.	96455091					
GASKET KIT (FXM)				Kit No.	96463944					
GASKET KIT (FFKM)				Kit No.	96533328					
GASKET KIT (EPDM)-Double Seal option.				Kit No.	96533362					
GASKET KIT (FKM)-Double Seal option.				Kit No.	96533363					
GASKET KIT (FFKM)-Double Seal option.				Kit No.	96533364					
GASKET KIT (FXM, & EPDM)- Cool-Top option				Kit No.	96533329					
Pos. No.	Description	Material No.	Qty. Included in each Kit							
37	Sleeve O-ring, EPDM, ø137.5 x 3.3mm	96438743	2				3			1
	Sleeve O-ring, FKM, ø137.5 x 3.3mm	96438744		2				3		
37b	Sleeve O-ring, FXM, ø137.5 x 3.3mm	96458109			2					2
	Sleeve O-ring, FFKM, ø136.12 x 3.53mm	96466718				2			3	
38, 100(a)	Drain Plug O-ring, EPDM, ø16.3 x 2.4mm	00ID1288	3				7			4
	Drain Plug O-ring, FKM, ø16.3 x 2.4mm	00ID2231		3				7		
38, 100a	Drain Plug O-ring, FXM, ø16.3 x 2.4mm	96442869			3					3
	Drain Plug O-ring, FFKM, ø16.3 x 2.4mm	96428162				3			7	
109(a)	O-ring for Pos.105(b) & 149, EPDM, ø21.3 x 3.0mm	00ID1798	1				1			
	O-ring for Pos.105(b) & 149, FKM, ø21.2 x 3.0mm	00ID2339		1				1		
109b	O-ring for Pos.105(b) & 149, FXM, ø22.0 x 2.75mm	96458111			1					2
	O-ring for Pos.105(b) & 149, FFKM, ø23.47 x 2.62mm	96464384				1			2	

Spare Part Kits (continued)

STANDARD SHAFT SEAL KIT, BALANCED CARTRIDGE		Kit No. 96455088								
(Maximum allowed working PSI is 435)		Kit No. 96455089								
(Tandem Seal option Pumps require 2 of each Seal Kit)		Kit No. 96455086								
		Kit No. 96455087								
		Kit No. 96455082								
		Kit No. 96455083								
		Kit No. 96455084								
		Kit No. 96455085								
Pos. No.	Description	Material No.	Qty. Included in each Kit							
105	HQBE	96441879	1							
	HQBV	96441880		1						
	HQQE	96441877			1					
	HQQV	96441878				1				
	HUBE	96441873					1			
	HUBV	96441874						1		
	HUUE	96441875							1	
	HUUV	96441876								1
N/A	Grinding Device Tool for Emery Cloth	370711	1	1	1	1	1	1	1	1
N/A	Emery Cloth	370712	1	1	1	1	1	1	1	1

OPTIONAL SHAFT SEAL KIT, BALANCED CARTRIDGE		Kit No. 96491375								
(Maximum allowed working PSI is 435)		Kit No. 96533327								
(Tandem Seal option Pumps require 2 of each Seal Kit)		Kit No. 96533326								
		Kit No. 96533323								
		Kit No. 96533322								
		Kit No. 96533325								
		Kit No. 96533324								
Pos. No.	Description	Material No.	Qty. Included in each Kit							
105	HQBK	96489537	1							
	HQQF	96472620		1						
	HQQK	96498109			1					
	HUBF	96481464				1				
	HUBK	96481463					1			
	HUUF	96475542						1		
	HUUK	96498108							1	
N/A	Grinding Device Tool for Emery Cloth	370711	1	1	1	1	1	1	1	1
N/A	Emery Cloth	370712	1	1	1	1	1	1	1	1

INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQQE		Kit No. 96533360		
INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQQV		Kit No. 96533361		
(An HQQx seal kit must also be used for a seal repair)				
Pos. No.	Description	Material No.	Qty. Included in each Kit	
37	Sleeve O-ring, EPDM, ø137.5 x 3.3mm	96438743	3	
	Sleeve O-ring, FKM, ø137.5 x 3.3mm	96438744		3
38, 100(a)	Drain Plug O-ring, EPDM, Ø16.3 x 2.4mm	00ID1288	7	
	Drain Plug O-ring, FKM, Ø16.3 x 2.4mm	00ID2231		7
102	O-ring, EPDM, ø18 x 2.5mm	00ID2041	1	
	O-ring, FKM, ø17.86 x 2.62mm	00ID2187		1
103	Stationary Seal Ring, SiC, 12mm	980746	1	
104	Rotating Seal Ring, SiC, 12mm	980733	1	1
107	O-ring, EPDM, ø11.5 x 4.3mm	00ID2040	1	
	O-ring, FKM, ø11.5 x 4.3mm	00ID2186		1
108	Spring, 12mm	980195	1	1
109a	O-ring, EPDM, ø21.3 x 3.0mm	00ID1798	1	
	O-ring, FKM, ø21.2 x 3.0mm	00ID2339		1
111	Driver for pos.104	980192	1	1
112	Driver for pos.111	980191	1	1
112a	Driver for pos.112	400203	1	1
113	Set Screw for pos.112a	00ID7392	2	2
146	Allen Bolt for pos.147 & 148, 2.5mm x M3 x 5mm	96462639	3	3

IEC COUPLING KIT		Kit No. 415060					
ø14/ø12		Kit No. 415061					
ø19/ø12		Kit No. 415062					
ø24/ø12		Kit No. 415063					
ø28/ø12		Kit No. 415065					
ø38/ø12		Kit No. 415065					
Pos. No.	Description	Material No.	Qty. Included in each Kit				
9	Allen Screw, M6 x 20mm, Delta Seal	00ID7899	4				
	Allen Screw, M8 x 25mm, Delta Seal	00ID7900		4	4	4	
	Allen Screw, M10 x 25mm, Delta Seal	00ID7901					4
	Shaft Pin, ø5 x 26mm, Stainless	310192	1	1	1	1	1
10a	Coupling Half, F85, MG71, .37-.55kW. ø14/ø12	410041	2				
	Coupling Half, F100, MG80,.75-1.1kW. ø19/ø12	410043		2			
	Coupling Half, F115, MG 90, 1.5-2.2kW. ø24/ø12	410045			2		
	Coupling Half, F130, MG100/112, 3-4 kW.ø28/ø12	410047				2	
	Coupling Half, F265, MG132, 5.5-7.5kW. ø38/ø12	410115					2

Spare Part Kits (continued)

NEMA COUPLING KIT					
		$\phi 15.8/\phi 12$	Kit No.	415314	
		$\phi 28.5/\phi 12$	Kit No.	415315	
		$\phi 34.9/\phi 12$	Kit No.	96478700	
Pos. No.	Description	Material No.	Qty. Included in each Kit		
9	Allen Screw, M6 x 20mm, Delta Seal	00ID7899	4		
	Allen Screw, M8 x 25mm, Delta Seal	00ID7900		4	4
	Allen Screw, M10 x 25mm, Delta Seal	00ID7901			
10a	Shaft Pin, $\phi 5$ x 26mm, Stainless	310192	1	1	1
	Coupling Half, 56C, 1/3 - 2HP. $\phi 15.8 / \phi 12$	410108	2		
	Coupling Half, 182/184TC, 3-5HP. $\phi 28.5/\phi 12$	410109		2	
	Coupling Half, 213TC, 7.5-10HP. $\phi 34.9/\phi 12$	96472175			2

COUPLING GUARD KIT					
				Kit No.	96505130
				Kit No.	96505131
				Kit No.	96505132
Pos. No.	Description	Material No.	Qty. Included in each Kit		
7	Coupling Guard, W=127mm x H=66mm	96438136	2		
	Coupling Guard, W=127mm x H=90.5mm	96438137		2	
	Coupling Guard, W=157mm x H=171mm	96438138			2
7a	Screw comb.slot torx/straight slot 4x8mm	96488481	4	4	4

FLEXI FLANGE KIT FOR SMALL CRI1S, 1, & 3					
				Kit No.	96468491
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12	Flange, Cast Iron, 1" - 11.5 NPT	96468333		2	
35	Hex Head Bolt, M10 x 70mm, Delta Seal	96447227		4	
36b	Nut, M10, 316SS w/Delta Seal	96438757		4	
39	Gasket, .95 x 55 x $\phi 35$ x 2mm, KLINGERSIL C4430	400189		2	

FLEXI FLANGE KIT FOR SMALL CRI1S, 1, & 3					
				Kit No.	964680850
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12	Flange, Stainless, 1" - 11.5 NPT	96468336		2	
35	Hex Head Bolt, M10 x 60mm, A4, DIN931	96447228		4	
36b	Nut, M10, 316SS w/Delta Seal	96438757		4	
39	Gasket, .95 x 55 x $\phi 35$ x 2mm, KLINGERSIL C4430	400189		2	

FLEXI FLANGE KIT FOR SMALL CRI1S, 1, 3, & 5					
				Kit No.	96470781
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12	Flange, Cast Iron, 1-1/4" - 11.5 NPT	96468335		2	
35	Hex Head Bolt, M10 x 70mm, Delta Seal	96447227		4	
36b	Nut, M10, 316SS w/Delta Seal	96438757		4	
39	Gasket, .95 x 55 x $\phi 35$ x 2mm, KLINGERSIL C4430	400189		2	

FLEXI FLANGE KIT FOR SMALL CRI1S, 1, 3, & 5					
				Kit No.	96480851
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12	Flange, Stainless, 1" - 11.5 NPT	96468337		2	
35	Hex Head Bolt, M10 x 60mm, A4, DIN931	96447228		4	
36b	Nut, M10, 316SS w/Delta Seal	96438757		4	
39	Gasket, .95 x 55 x $\phi 35$ x 2mm, KLINGERSIL C4430	400189		2	

FLEXI CLAMP FLANGE KIT FOR SMALL CRI(N)1S, 1, 3, & 5					
				Kit No.	96480858
				Kit No.	96480859
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12a	Adapter Flg. for ANSI pos.201/Flexi Base (232 PSI)	96437818	2	2	
35	Hex Head Bolt, M10 x 60mm, A4, DIN931	96447228	4	4	
36b	Nut, M10, 316SS w/Delta Seal	96438757	4	4	
39b	O-ring, EPDM, $\phi 44.45$ x 3.53mm	96407726	2		
	O-ring, FKM, $\phi 44.45$ x 3.53mm	96411713			2
201	Flange, ANSI, DIN, JIS PN40/30K, Stainless	96439492	2	2	
203	Lock Ring, Stainless	96439718	2	2	

FLEXI CLAMP KIT FOR SMALL CRI1S, 1, & 3					
				Kit No.	96480854
				Kit No.	96480855
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12b	Stainless, Internal 1" -11.5 NPT	400182	2	2	
12c	Clamp for Flexi Base & pos.12b	00ID7194	4	4	
35b	Screw for Pos. 12c, M8 x 40mm - A2, RR DIN933	00ID7188	4	4	
35c	Nut for Pos. 35b, M8, 304SS	00ID7187	4	4	
39b	O-ring, EPDM, $\phi 44.45$ x 3.53mm	96407726	2		
	O-ring, FKM, $\phi 44.45$ x 3.53mm	96411713			2

Spare Part Kits (continued)

FLEXI CLAMP KIT FOR SMALL CRI1S, 1, 3, & 5		EPDM		Kit No.	96480856
1-1/4" Internal Threaded SS Pipe Stub (232 PSI Ma)		FKM		Kit No.	96480857
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12b	Stainless, Internal 1-1/4" -11.5 NPT	410279	2	2	
12c	Clamp for Flexi Base & pos.12b	00ID7194	4	4	
35b	Screw for Pos. 12c, M8 x 40mm - A2, RR DIN933	00ID7188	4	4	
35c	Nut for Pos. 35b, M8, 304SS	00ID7187	4	4	
39b	O-ring, EPDM, ø44.45 x 3.53mm	96407726	2		
	O-ring, FKM, ø44.45 x 3.53mm	96411713		2	

FLEXI CLAMP KIT FOR SMALL CRI1S, 1, 3, & 5		EPDM		Kit No.	96480852
2" External Threaded SS Pipe Stub (232 PSI Max.)		FKM		Kit No.	96480853
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12b	Stainless, Internal 2" -11.5 NPT	96468338	2	2	
12c	Clamp for Flexi Base & pos.12b	00ID7194	4	4	
35b	Screw for Pos. 12c, M8 x 40mm - A2, RR DIN933	00ID7188	4	4	
35c	Nut for Pos. 35b, M8, 304SS	00ID7187	4	4	
39b	O-ring, EPDM, ø44.45 x 3.53mm	96407726	2		
	O-ring, FKM, ø44.45 x 3.53mm	96411713		2	

AIR VENT FOR SMALL CR		Kit No.		91128708
Pos. No.	Description	Material No.	Qty. Included in each Kit	
117	Pipe for Air Vent, R1/2" , 316SS	330272	1	
117a	Counter Nut for Pipe 117	96506709	1	
118	Automatic Air Vent, Type AE50S 1/2" BSP, SS.	96498508	1	

Accessories


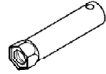
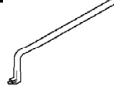

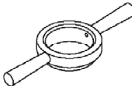
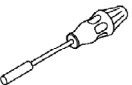
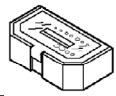

ANSI COMPANION FLANGES FOR SMALL CR		Kit No.		91122260
1-1/4" Threaded Cast Iron, 250 Lb. Class				
Pos. No.	Description	Material No.	Qty. Included in each Kit	
N/A	Nut, HEX 5/8"-11 UNC, Grade 2	00ID1510	8	
N/A	Plain Bolt, 5/8" x 2-1/2", Grade 2	00ID1920	8	
N/A	Flange 1-1/4", Cast Iron	00ID3650	2	
N/A	Gasket Full Face Flange, 1-1/4", 300#, Cut Ring	400201	2	

ANSI COMPANION FLANGES FOR SMALL CR		Kit No.		91129013
1-1/4" Threaded Stainless, 300 Lb. Class				
Pos. No.	Description	Material No.	Qty. Included in each Kit	
N/A	Nut, HEX 5/8"-11 UNC, 18-8SS	0ID00164	8	
N/A	Bolt, HEX 5/8" x 2-3/4", UNC 18-8SS	00ID7241	8	
N/A	Flange 1-1/4" Stainless, ANSI, DIN, JIS PN40/30K,	00ID7239	2	
N/A	Gasket Full Face Flange, 1-1/4", 300#, Cut Ring	400201	2	

VICTAULIC TYPE COMPANION CONNECTIONS FOR SMALL CRI(N)		EPDM		Kit No.	4013010
		FKM		Kit No.	0ID00118
Pos. No.	Description	Material No.	Qty. Included in each Kit		
N/A	Victaulic Type Coupling, 1-1/4", EPDM	0ID17810	2		
N/A	Victaulic Type Coupling, 1-1/4", 77 FKM	0ID00112	2		
N/A	1-1/4" Stainless NPT Nipple	4000011	2		


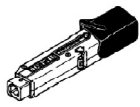
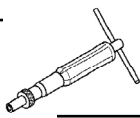




Special Tools

Tools not generally available from normal sources.

Mat. No.	Description and Use	
00SV0040	Shaft Holder for Dismantling/Assembly Used to hold and protect the shaft during dismantling and assembly.	
00SV2007	Tubular Box Spanner for Shaft Seal 36.1 mm Used to install and remove the shaft seal. Fits a 1/2" drive ratchet.	
00SV0239	Puller for Neck Ring Used to remove the Neck Ring from Chamber.	
00SV2014	Circlip Pliers for Flange Lock Ring Used to remove the Lock Ring for the Flange.	
00SV2066	Tool for Outer Sleeve Used to press sleeve into base. (optional)	
00SV2011	Bit Holder Used with Bits Kit, 1/4"	
00SV2010	Bits Kit NV 5 mm for M6, 1/4" NV 6 mm for M8, 1/4" NV 8 mm for M10, 1/4"	
00SV2012	Hexagon Socket Bit Used for Shaft Seal NV 2.5 mm for M5, 1/4"	

Standard Tools

In addition to being available from Grundfos, comparable tools can be purchased through normal sources.

Mat. No.	Description and Use	
00SV0083 00SV0055 00SV0056 00SV0054 00SV0122	Wrenches Used to tighten various nuts. NV 10 mm for M6 NV 13 mm for M8 NV 17 mm for M10 NV 19 mm for M12 NV 24 mm for M16	
00SV0292 00SV0269 00SV0400	Torque Wrench Used to torque various screws. 4-20 Nm, 9 x 12 20-100 Nm, 9 x 12 40-200 Nm, 14x18	
00SV0438	Torque Screwdriver Used to tighten various nuts. 1-6 Nm, 1/4"	
00SV0295	Ratchet Spanner for all Adapters 9 mm x 12 mm, 1/2"	
00SV0296 00SV0297 00SV0298	Socket Spanner with Inside Hex NV 5 mm for M6, 1/2" x 1/2" NV 6 mm for M8, 1/2" x 1/2" NV 8 mm for M10, 1/2" x 1/2"	
00SV0310 00SV0294 00SV0270 00SV0271 00SV0524	Ring Spanner NV 10 mm for M6 NV 13 mm for M8 NV 17 mm for M10 NV 19 mm for M12 NV 24 mm for M16	
00SV2013	Socket Spanner NV 13 mm for M8, 9 x 12	

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