



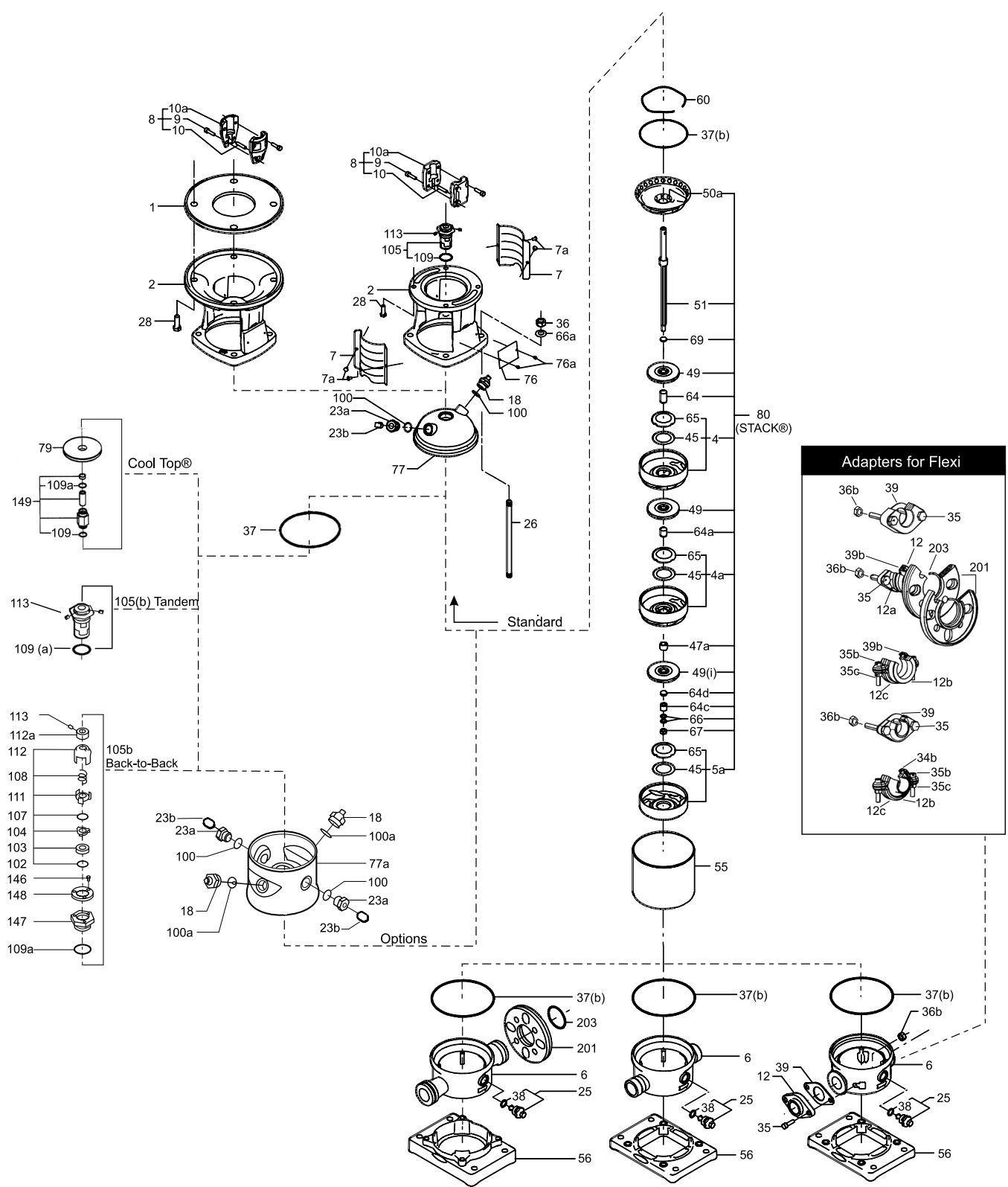
CRN1s

Parts List & Kits

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Exploded View CRN1s



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	96436510		No
					NEMA, 182/184TC, 3 - 5HP	96436511		No
					Add Pos. 1, NEMA, 213TC, 7.5 - 10HP	96436511		No
			3/2-19	1	IEC, F85, MG 71, .37 - .55kW	96436506		No
			21-36	1	IEC, F100, MG 80, .75 - 1.1kW	96436507		No
					IEC, F115, MG 90, 1.5 - 2.2kW	96436508		No
					IEC, F130, MG 100/112, 3.0 - 4.0 kW	96436509		No
					IEC, F265, MG132, 5.5 - 7.5kW	96436514		No
4	Chamber, Complete with Pos. 45 & 65		3/2-36	^^^	PTFE Pos.45	96439481		No
4a	Chamber Cpl. w/Pos. 45 & 65 & Bearing		3/2-36	^^^	Silicon Carbide Bearing, PTFE Pos. 45	96439476		YES
	Chamber Cpl. w/Pos. 45 & 65 & Brg. (option)		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	96439485	96588149	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 (PJE) 1.25", Stainless (max 232 PSI)	96436851		No
7	Coupling Guard			2	IEC, F85-F100	96438136		YES
				2	NEMA-56C, IEC-F115,130, & 265	96438137		YES
					NEMA, 182-215TC	96438138		YES
7a	Screw for Coupling Guard		3/2-36	4	M4 x 8mm	96488481		YES
9	Allen Screw		3/2-27	4	M6 x 20mm, Delta Seal	00ID7899		YES
				4	M8 x 25mm, Delta Seal	00ID7900		YES
					M10 x 25mm, Delta Seal	00ID7901		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
					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
					IEC, F130, MG100/112, 3-4 kW.ø28/ø12	410047		YES
					IEC, F265, MG132, 5.5-7.5kW. ø38/ø12	410115		YES
12	Oval Flange for Flexi Base		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)	00ID7194		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	00ID7216		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	96487020		No
			4	4	M12 x 169mm	96442055		No
			5	4	M12 x 187mm	414103		No
			6	4	M12 x 209mm	404135		No
			7	4	M12 x 227mm	414134		No
			8	4	M12 x 241mm	414105		No
			9	4	M12 x 259mm	96459210		No
			10	4	M12 x 281mm	414136		No
			11	4	M12 x 295mm	414107		No
			12	4	M12 x 313mm	96463414		No
			13	4	M12 x 335mm	414138		No
			15	4	M12 x 367mm	96459214		No
			17	4	M12 x 403mm	414111		No
			19	4	M12 x 439mm	96442118		No
			21	4	M12 x 475mm	414143		No
			23	4	M12 x 511mm	414115		No
			25	4	M12 x 547mm	96442119		No
			27	4	M12 x 587mm	404156		No
			30	4	M12 x 637mm (50 Hz.)	96461557		No
			33	4	M12 x 691mm (50 Hz.)	96442122		No
			36	4	M12 x 745mm (50 Hz.)	96442123		No

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Parts List & Kits CRN1s

Pos. No.	Part Description	Model	Stages	No. Used	Comments/Dimensions	B.O.M. Ref. No.	Material No.	Included in kits ?
PARTS LIST								
26	Staybolt (Cool Top®, Back-to-Back & Tandem Seal option)		3/2-3	4	M12 x 263mm	404138		No
			4	4	M12 x 281mm	414136		No
			5	4	M12 x 295mm	414107		No
	Staybolt (Cool Top®, Back-to-Back & Tandem Seal Option)		6	4	M12 x 317mm	404141		No
			7	4	M12 x 335mm	414138		No
			8	4	M12 x 349mm	414109		No
			9	4	M12 x 367mm	96459214		No
			10	4	M12 x 385mm	96458503		No
			11	4	M12 x 403mm	414111		No
			12	4	M12 x 425mm	404147		No
			13	4	M12 x 439mm	96442118		No
			15	4	M12 x 475mm	414143		No
			17	4	M12 x 511mm	414115		No
			19	4	M12 x 547mm	96442119		No
			21	4	M12 x 587mm	404156		No
			23	4	M12 x 619mm	414119		No
			25	4	M12 x 659mm	414160		No
			27	4	M12 x 691mm	96442122		No
			30	4	M12 x 745mm (50Hz.)	96442123		No
			33	4	M12 x 799mm (50Hz.)	414155		No
			36	4	M12 x 853mm (50Hz.)	96458507		No
28	Motor Bolt		3/2-27	4	NEMA, 56C, 1/3 - 2HP. UNC 3/8" x 25mm	001D1839		No
					NEMA, 182/184TC, 3 - 5HP.UNC1/2" x 25mm	001D1840		No
					NEMA, 213TC, 7.5 -10HP. UNC 1/2" x 1.25"	91128631		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	001D8023		No
					IEC, F115, MG 90, 1.5-2.2kW. M8 x 20mm	001D8024		No
					IEC, F130, MG100/112, 3-4 kW. M8 x 25mm	001D8025		No
					IEC, F265, MG132, 5.5-7.5kW. M12 x 45mm	001D7914		No
35	Hex. Head Screw for Oval "CI" Flange (Flexi option)		3/2-17	4	M10 x70mm, 8.8, A4, DIN931	96447227		YES
	Hex. Head Screw for Oval "N" Flange (Flexi option)		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 option)		3/2-17	4	M8, 304SS	001D7187		YES
36	Staybolt Nut		3/2-36	4	19mm x M12, 316SS	001D0876		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	97683277	YES
			3/2-36	◆◆	FKM, ø137.5 x 3.3mm	96438744	97683278	YES
37b	Sleeve O-ring (option)		3/2-36	◆◆	FXM, ø137.5 x 3.3mm	96458109	97683279	YES
			3/2-36	◆◆	FFKM, ø136.12 x 3.53mm	96466718	97683280	YES
38	Drain Plug O-ring		3/2-36	1	EPDM, ø16.3 x 2.4mm	001D1288		YES
	Drain Plug O-ring (option)		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
39	Gasket for Oval Flange		3/2-17	2	95 x 55 x ø35 x 2mm, KLINGERSIL C4430	400189		YES
39b	O-ring for Clamp,Thread stub-Union-& FGJ - Flange (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	# stgts	ø41.3 x ø30.6 x .75mm, PTFE	400003		YES
47a	Bearing Ring/Spacer		3/2-36	^^^^	SiC 150, ø17.37 x ø13.10 x ø10.9 x 13mm	96437488		YES
	Brg. Ring/Spacer (option for Grafion Pos. 4a)		3/2-36	^^^^	TC, ø15.92 x ø13.10 x ø10.9 x 9.7mm	400041		YES
49	Impeller		3/2-36	# stgts	ø73.0 x ø30.6 x 9.0mm (back-plate .5mm)	96433166		No
50a	Top Guide Vane		3-36	1		96457638		No
	Top Guide Vane Plate (option for destaging)		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
			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

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PARTS LIST								
51	Shaft, Complete Shaft, Cpl. (Cool Top®, Back-to-Back & Tandem Seal option)		36	1	ø12 x 754.5mm (50 Hz.)	96440411	96588238	No
			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
	Shaft, Cpl. (Cool Top®, Back-to-Back & Tandem Seal option)		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	96439996		No
			4	1	ø138 x 62.6mm	96440025		No
			5	1	ø138 x 80.6mm	96441528		No
			6	1	ø138 x 98.6mm	96440014		No
			7	1	ø138 x 116.6mm	96441529		No
			8	1	ø138 x 134.6mm	96441531		No
			9	1	ø138 x 152.6mm	96440015		No
			10	1	ø138 x 170.6mm	96441532		No
			11	1	ø138 x 188.6mm	96441534		No
			12	1	ø138 x 206.6mm	96440016		No
			13	1	ø138 x 224.6mm	96441535		No
			15	1	ø138 x 260.6mm	96440017		No
			17	1	ø138 x 296.6mm	96441538		No
			19	1	ø138 x 332.6mm	96441539		No
			21	1	ø138 x 368.6mm	96440019		No
			23	1	ø138 x 404.6mm	96441542		No
			25	1	ø138 x 440.6mm	96441543		No
			27	1	ø138 x 476.6mm	96440021		No
			30	1	ø138 x 530.6mm (50Hz.)	96440022		No
			33	1	ø138 x 584.6mm (50Hz.)	96440023		No
36	1	ø138 x 638.6mm (50Hz.)	96439997	No				
56	Base Plate (Low) for PIE / Flexi-clamp Pos. 6 B. P. (High) for Flexi-clamp w/ANSI/DIN/JIS Pos. 6 Base Plate N (Low) for PIE / Flexi-clamp Pos.6 B. P. N (High) for Flexi-clamp w/ANSI/DIN/JIS Pos. 6		2-36	1	Cast Iron	96438133		No
			2-36	1	Cast Iron	96438132		No
			2-36	1	Cast Stainless	96437870		No
			2-36	1	Cast Stainless	96437868		No
60	Stack Compression Spring		3/2-36	1	ø136 x 3.5mm	96439662	95061339	No
64	Spacing Pipe		2-36	^^^	ø15.85 x ø12.85 x 17.52mm	400035		No
64a	Spacing Pipe		3/2-36	^^^^	ø15.85 x ø12.85 x 4.5mm	96440292		YES
	Spacing Pipe (option for Graflon Pos. 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	95061443	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	001D3103		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		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 & Tand. 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
100a	Priming/Vent Plug O-ring (option)		3/2-36	■	FFKM, ø16.3 x 2.4mm	96428162		YES
			3/2-36	■	FXM, ø16.3 x 2.4mm	96442869		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
			3/2-36	1	FFKM, ø17.86 x 2.62mm	96440281		No
			3/2-36	1	FXM, ø17.86 x 2.62mm	96472584		No
103	Station. Seal Ring for 105b Back-to-Back Station. Seal Ring for 105b Back-to-Back (option)		3/2-36	1	TC, 12mm	980190		No
			3/2-36	1	SiC,12mm	980746		YES

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PARTS LIST								
104	Rotating Seal Ring for 105b Back-to-Back		3/2-36	1	TC, 12mm	980163		No
	Rotating Seal Ring for 105b Back-to-Back (opt.)		3/2-36	1	SiC, 12mm	980733		YES
105(b)	Shaft Seal HQBE		3/2-36	***	SiC, Carbon with resin-impregnated, EPDM	96441879		YES
	Shaft Seal HQBV		3/2-36	***	SiC, Carbon with resin-impregnated, FKM	96441880		YES
	Shaft Seal HQBK (option)		3/2-36	***	SiC, Carbon with resin-impregnated, FFKM	96489537		YES
	Shaft Seal HQQE		3/2-36	***	SiC, SiC, EPDM	96441877		YES
	Shaft Seal HQQV		3/2-36	***	SiC, SiC, FKM	96441878		YES
	Shaft Seal HQQF (option)		3/2-36	***	SiC, SiC, FXM	96472620		YES
	Shaft Seal HQQK (option)		3/2-36	***	SiC, SiC, FFKM	96464381		YES
	Shaft Seal HUBE		3/2-36	***	TC, Carbon with resin-impregnated, EPDM	96441873		YES
	Shaft Seal HUBV		3/2-36	***	TC, Carbon with resin-impregnated, FKM	96441874		YES
	Shaft Seal HUBF (option)		3/2-36	***	TC, Carbon with resin-impregnated, FXM	96481464		YES
	Shaft Seal HUBK (option)		3/2-36	***	TC, Carbon with resin-impregnated, FFKM	96481463		YES
	Shaft Seal HUUE		3/2-36	***	TC, TC, EPDM	96441875		YES
	Shaft Seal HUUV		3/2-36	***	TC, TC, FKM	96441876		YES
	Shaft Seal HUUF (option)		3/2-36	***	TC, TC, FXM	96475542		YES
	Shaft Seal HUUK (option)		3/2-36	***	TC, TC, FFKM	96467885		YES
105b	Shaft Seal/inboard for Back-to-Back OQQE		3/2-36	1	SiC, SiC, EPDM	985200		YES
	Shaft Seal/inboard for Back to Back OQQV		3/2-36	1	SiC, SiC, FKM	985760		YES
	Shaft Seal/inboard for Back-to-Back OUUE		3/2-36	1	TC, TC, EPDM	985189	405145	No
	Shaft Seal/inboard for Back-to-Back OUUV		3/2-36	1	TC, TC, FKM	985190	405145	No
107	O-ring for Pos. 105b Back-to-Back		3/2-36	1	EPDM, ø11.5 x 4.3mm	00ID2040		YES
			3/2-36	1	FKM, ø11.5 x 4.3mm	00ID2186		YES
	O-ring for Pos. 105b Back-to-Back (option)		3/2-36	1	FFKM, ø11.5 x 4.3mm	96440282		No
			3/2-36	1	FXM, ø11.5 x 3.18mm	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, ø21.3 x 3.0mm	00ID1798		YES
			3/2-36	1	FKM, ø21.2 x 3.0mm	00ID2339		YES
109b	O-ring for Shaft Seal Pos. 105 (option)		3/2-36	1	FXM, ø22 x 2.75mm	96458111		YES
			3/2-36	1	FFKM, ø23.47 x 2.62mm	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 thread. 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	00ID7392		YES
117	Pipe for Air Vent (option)		3/2-36	1	R 1/2", 316 Stainless	330272		YES
118	Automatic Air Vent (option)		3/2-36	1	Type AE50S 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, ø36.0 x ø21.6 x 5.0mm	96457355		No
149	Connecting Pipe for Cool Top®		3/2-36	1	NV36, 316SS, FXM & EPDM	96460414		No
			3/2-36	1	NV36, 316SS, FXM & FKM	96460415		No
201	Flange		3/2-36	1	ANSI, DIN, JIS PN40/30K, Cast Iron	96439203		YES
			3/2-36	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

Keys to Symbol

- 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** Fluoraz Elastomer 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
- UNC** Unified National Coarse – a standard for threads on bolts

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

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 Brg.	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

STACK KITS	
Model	Material No.
CRN1S-3/2	96479078
CRN1S-3	96479079
CRN1S-4	96479080
CRN1S-5	96479081
CRN1S-6	96479082
CRN1S-7	96479083
CRN1S-8	96479084
CRN1S-9	96479085
CRN1S-10	96479086
CRN1S-11	96479087
CRN1S-12	96479088
CRN1S-13	96479089
CRN1S-15	96479090
CRN1S-17	96479091
CRN1S-19	96479092
CRN1S-21	96479093
CRN1S-23	96479094
CRN1S-25	96479095
CRN1S-27	96479096
*** CRN1S-30	96479097
*** CRN1S-33	96479098
*** CRN1S-36	96479099

***For 50 Hz operation only.

GASKET KIT (EPDM)						
GASKET KIT (FKM)			Kit No. 96455091			
GASKET KIT (FKM)			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 (FKM, & 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		
37b	Sleeve O-ring, FKM, Ø137.5 x 3.3mm	96458109			2	2
	Sleeve O-ring, FFKM, Ø136.12 x 3.53mm	96466718			2	
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		
38, 100a	Drain Plug O-ring, FKM, Ø16.3 x 2.4mm	96442869			3	3
	Drain Plug O-ring, FFKM, Ø16.3 x 2.4mm	96428162			3	
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		
109b	O-ring for Pos.105(b) & 149, FKM, Ø22.0 x 2.75mm	96458111		1		2
	O-ring for Pos.105(b) & 149, FFKM, Ø23.47 x 2.62mm	96464384		1		

STANDARD SHAFT SEAL KIT, BALANCED CARTRIDGE						
(Maximum allowed working PSI is 435)			Kit No. 96455088			
(Tandem Seal option Pumps require 2 of each Seal Kit)			Kit No. 96455089			
			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
N/A	Emery Cloth	370712	1	1	1	1

Spare Part Kits (continued)

OPTIONAL SHAFT SEAL KIT, BALANCED CARTRIDGE (Maximum allowed working PSI is 435) (Tandem Seal option Pumps require 2 of each Seal Kit)			Kit No. 96491375													
			Kit No. 96533327													
			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					1			
	HUUK	96498108													1	
	N/A	Grinding Device Tool for Emery Cloth	370711	1	1	1	1	1	1	1	1	1	1	1	1	1
N/A	Emery Cloth	370712	1	1	1	1	1	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			ø14/ø12		Kit No. 415060		ø19/ø12		Kit No. 415061		ø24/ø12		Kit No. 415062		ø28/ø12		Kit No. 415063		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
10	Shaft Pin, ø5 x 26mm, Stainless		310192	1	1		1		1		1		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

NEMA COUPLING KIT		ø15.8/ø12		Kit No. 415314		ø28.5/ø12		Kit No. 415315		ø34.9/ø12		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								4	
10	Shaft Pin, ø5 x 26mm, Stainless			310192		1		1				1	
10a	Coupling Half, 56C, 1/3 - 2HP. ø15.8 / ø12			410108		2							
	Coupling Half, 182/184TC, 3-5HP. ø28.5/ø12			410109				2					
	Coupling Half, 213TC, 7.5-10HP. ø34.9/ø12			96472175								2	

COUPLING GUARD KIT			Kit No. 96505130		96505131		96505132	
IEC, F85-F100, .37 to 1.1 kW			Kit No.		96505130			
NEMA 56C, 1/3-2HP; IEC-F115-130 &			Kit No.		96505131			
NEMA 182-215TC, 3-10HP			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	

Spare Part Kits *(continued)*

FLEXI FLANGE KIT FOR SMALL CR1S, 1, & 3 1" Threaded Stainless (232 PSI Max.)		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 35 x 2mm, KLINGERSIL C4430	400189	2

FLEXI FLANGE KIT FOR SMALL CR1S, 1, 3, & 5 1-1/4" Threaded Stainless (232 PSI Max.)		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 35 x 2mm, KLINGERSIL C4430	400189	2

FLEXI CLAMP FLANGE KIT FOR SMALL CR1(N)S, 1, 3, & 5 1-1/4" Stainless Flange (Conversion max. allowable operating pressure 232)		EPDM FKM	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, 44.45 x 3.53mm	96407726	2		
	O-ring, FKM, 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 CR1S, 1, & 3 1" Internal Threaded SS Pipe Stub (232 PSI Max.)		EPDM FKM	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, 44.45 x 3.53mm	96407726	2		
	O-ring, FKM, 44.45 x 3.53mm	96411713		2	

FLEXI CLAMP KIT FOR SMALL CR1S, 1, 3, & 5 1-1/4" Internal Threaded SS Pipe Stub (232 PSI Max.)		EPDM FKM	Kit No. 96480856	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, 44.45 x 3.53mm	96407726	2		
	O-ring, FKM, 44.45 x 3.53mm	96411713		2	

FLEXI CLAMP KIT FOR SMALL CR1S, 1, 3, & 5 2" External Threaded SS Pipe Stub (232 PSI Max.)		EPDM FKM	Kit No. 96480852	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, 44.45 x 3.53mm	96407726	2		
	O-ring, FKM, 44.45 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
118	Automatic Air Vent, Type AE50S 1/2" BSP, SS.	96498508	1

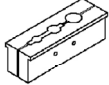
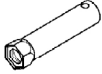
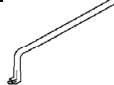
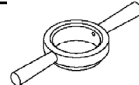
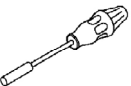
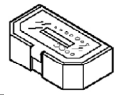
Accessories

ANSI COMPANION FLANGES FOR SMALL CR 1-1/4" Threaded Stainless, 300 Lb. Class		Kit No. 91129013	
Pos. No.	Description	Material No.	Qty. Included in each Kit
N/A	Nut, HEX 5/8"-11 UNC, 18-8SS	01D00164	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 CR1(N)		EPDM FKM	Kit No. 4013010	Kit No. 01D00118	
Pos. No.	Description	Material No.	Qty. Included in each Kit		
N/A	Victaulic Type Coupling, 1-1/4", EPDM	01D17810	2		
N/A	Victaulic Type Coupling, 1-1/4", 77 FKM	01D00112		2	
N/A	1-1/4" Stainless NPT Nipple	4000011	2	2	

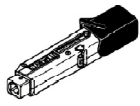
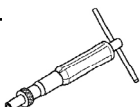
Special Tools

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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