



# CR5

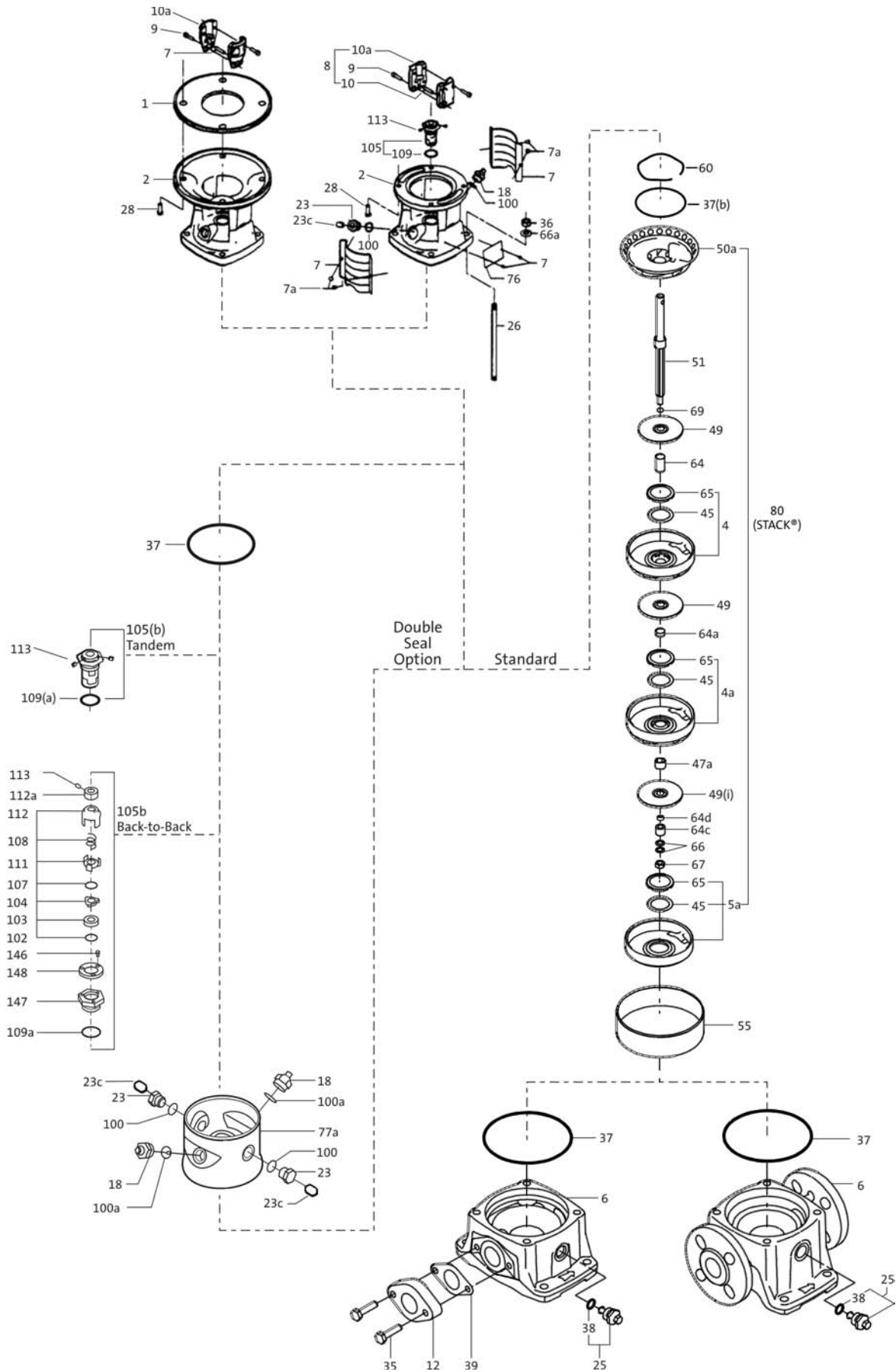
## Parts List & Kits

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Parts List  
Spare Part Kits  
Accessories  
Special Tools  
Standard Tools  
Tools for Torques

# Exploded View CR5



Pos. No.	Part Description	Model	Stages	No. Used	Comments/Dimensions	B.O.M. Ref. No.	Material No.	Included in kits ?
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**PARTS LIST**

1	Adapter for Motor Stool		18-24	1	For NEMA, 213/215TC, 7.5 - 10HP	96476208		No
2	Motor Stool		2-8	1	NEMA, 56C, 1/3 - 2HP	96436501		No
			9-16	1	NEMA, 182/184TC, 3 - 5HP	96436502		No
			18-24	1	Add Pos. 1, NEMA, 213TC, 7.5 - 10HP	96436502		No
			2-4	1	IEC, F85, MG 71, .37 - .55kW	96436495		No
			5-8	1	IEC, F100, MG 80, .75 - 1.1kW	96436496		No
			9-16	1	IEC, F115, MG 90, 1.5 - 2.2kW	96436499		No
			18-29	1	IEC, F130, MG 100/112, 3.0 - 4.0 kW	96436500		No
			32-36	1	IEC, F265, MG132, 5.5 - 7.5kW	96436505		No
4	Chamber, Complete with Pos. 45 & 65		2-36	^^^	PTFE Pos.45	96437517		No
4a	Chamber Cpl. w/Pos. 45 & 65 & Bearing		2-36	^^^^	Silicon Carbide Brg, PTFE Pos.45	96437636		YES
	Chamber Cpl. w/Pos. 45 & 65 & Brg. (option)		2-36	^^^^	Bronze Bearing, PTFE Pos.45	96440616		YES
			2-36	^^^^	Graflon Bearing, PTFE Pos.45	96440619		YES
5a	Chamber, Bottom Complete with Pos. 45 & 65		2-36	1	PTFE Pos.45	96437737		No
	Cmb. Btm. Cpl. w/Pos. 45 & 65, (Low NPSH opt.)		2-36	2	PTFE Pos.45	96462144		No
6	Base		2-17	1	Oval (max 232 PSI)	96436516		No
			2-36	1	JIS, FGJ, ANSI (Max 362 PSI)	96442012		No
7	Coupling Guard			2	IEC, F85-F100	96438136		No
				2	NEMA-56C, IEC-F115,130, & 265	96438137		No
				2	NEMA, 182-215TC	96438138		No
7a	Screw for Coupling Guard		2-36	4	M4 x 8mm	96488481		No
9	Allen Screw		2-8	4	M6 x 20mm, Delta Seal	00ID7899		YES
			9-16	4	M8 x 25mm, Delta Seal	00ID7900		YES
			18-24	4	M10 x 25mm, Delta Seal	00ID7901		YES
10	Shaft Pin		2-36	1	ø5 x 26mm	310192		YES
10a	Coupling Half		2-8	2	NEMA, 56C, 1/3 - 2HP, ø15.8 / ø12	410108		YES
			9-16	2	NEMA, 182/184TC, 3-5HP, ø28.5/ø12	410109		YES
			18-24	2	NEMA, 213TC, 7.5-10HP, ø34.9/ø12	96472175		YES
			2-4	2	IEC, F85, MG71, .37-.55kW, ø14/ø12	410041		YES
			5-8	2	IEC, F100, MG80, .75-1.1kW, ø19/ø12	410043		YES
			9-16	2	IEC, F115, MG 90, 1.5-2.2kW, ø24/ø12	410045		YES
			18-29	2	IEC, F130, MG100/112, 3-4 kW, ø28/ø12	410047		YES
			32-36	2	IEC, F265, MG132, 5.5-7.5kW, ø38/ø12	410115		YES
12	Oval Flange		2-16	2	Painted CI, 1.25" -11.5 NPT (max 232 PSI)	96488335		YES
			2-22	2	Painted CI, RP 1.25" BSP DIN (max 232 PSI)	400174		No
18	Priming/Vent Plug		2-36	*	G 1/2A, NV24 with NV9 x M8 stem	405150		No
23	Plug		2-36	**	G 1/2A, w/1/4"port, NV24	91120659		No
	Plug (option)		2-36	**	G 1/2A, Solid no port, NV24	370025		No
23c	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	96440608		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 stem, FKM	96440609		No
	Drain/Priming Plug Cpl. with O-rings (option)		3/2-36	1	G 1/2A, NV24 w/NV9 x M8 stem, FFKM	96486530		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	96527046		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 hollow stem, FKM	96527047		No
			3/2-36	1	G 1/2A, NV24 w/NV9 x M8 hollow stem, FFKM	96527049		No
26	Staybolt		2	4	M12 x 79mm	404002		No
			3	4	M12 x 103mm	96442750		No
			4	4	M12 x 133mm	404005		No
			5	4	M12 x 157mm	96442751		No
			6	4	M12 x 187mm	404008		No
			7	4	M12 x 211mm	96442752		No
			8	4	M12 x 241mm	404011		No
			9	4	M12 x 265mm	96442753		No
			10	4	M12 x 294mm	96442754		No
			11	4	M12 x 319mm	96442756		No
			12	4	M12 x 349mm	404017		No
			13	4	M12 x 373mm	96442761		No
			14	4	M12 x 402mm	96442762		No
			15	4	M12 x 427mm	96442763		No
			16	4	M12 x 454mm	96442764		No
			18	4	M12 x 511mm	404026		No
			20	4	M12 x 562mm	96442766		No
			22	4	M12 x 618mm	96442767		No
			24	4	M12 x 670mm	96442768		No
			26	4	M12 x 724mm (50 Hz.)	96442769		No
			29	4	M12 x 805mm (50 Hz.)	96442770		No
			32	4	M12 x 886mm (50 Hz.)	96442771		No
			36	4	M12 x 994mm (50 Hz.)	96442772		No
	Staybolt (Back-to-Back & Tandem Seal option)		2	4	M12 x 187mm	404008		No
			3	4	M12 x 211mm	96442752		No
			4	4	M12 x 241mm	404011		No
			5	4	M12 x 265mm	96442753		No

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

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# Parts List & Kits CR5

Pos. No.	Part Description	Model	Stages	No. Used	Comments/Dimensions	B.O.M. Ref. No.	Material No.	Included in kits ?
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## PARTS LIST

26	Staybolt (Back-to-Back & Tandem Seal option)		6	4	M12 x 294mm	96442754		No
			7	4	M12 x 319mm	96442756		No
			8	4	M12 x 340mm	414011		No
			9	4	M12 x 373mm	96442761		No
			10	4	M12 x 402mm	96442762		No
			11	4	M12 x 427mm	96442763		No
			12	4	M12 x 454mm	96442764		No
			13	4	M12 x 481mm	96458439		No
			14	4	M12 x 511mm	404026		No
			15	4	M12 x 535mm	96458440		No
			16	4	M12 x 562mm	96442766		No
			18	4	M12 x 618mm	96442767		No
			20	4	M12 x 670mm	96442768		No
			23	4	M12 x 724mm	96442769		No
			24	4	M12 x 778mm	96458444		No
			26	4	M12 x 832mm (50 Hz.)	96458445		No
	29	4	M12 x 913mm (50 Hz.)	96458449		No		
	32	4	M12 x 994mm (50 Hz.)	96442772		No		
	36	4	M12 x 1102mm (50 Hz.)	96458454		No		
28	Motor Bolt		2-8	4	NEMA, 56C, 1/3 - 2HP. UNC 3/8" x 25mm	00ID1839		No
			9-16	4	NEMA, 182/184TC, 3 - 5HP. UNC 1/2" x 25mm	00ID1840		No
			18-24	4	NEMA, 213TC, 7.5 - 10HP. UNC 1/2" x 1.25"	91128631		No
			2-4	4	IEC, F85, MG71, .37-.55kW. M6 x 20mm	00ID8022		No
			5-8	4	IEC, F100, MG80, .75-1.1kW. M6 x 25mm	00ID8023		No
			9-16	4	IEC, F115, MG 90, 1.5-2.2kW. M8 x 20mm	00ID8024		No
			18-29	4	IEC, F130, MG100/112, 3-4 kW. M8 x 25mm	00ID8025		No
			32-36	4	IEC, F265, MG132, 5.5-7.5kW. M12 x 45mm	00ID7914		No
35	Hexagon Head Screw for Oval Flange		2-17	4	M10 x 40mm, Delta Seal	00ID8027		YES
36	Staybolt Nut		2-36	4	19mm x M12, Delta Seal	00ID7917		No
37	Sleeve O-ring		2-36	◆◆	EPDM, $\phi$ 137.5 x 3.3mm	96438743		YES
			2-36	◆◆	FKM, $\phi$ 137.5 x 3.3mm	96438744		YES
37b	Sleeve O-ring (option)		2-36	◆◆	FXM, $\phi$ 137.5 x 3.3mm	96458109		YES
			2-36	◆◆	FFKM, $\phi$ 136.12 x 3.53mm	96466718		YES
38	Drain Plug O-ring		2-36	1	EPDM, $\phi$ 16.3 x 2.4mm	00ID1288		YES
			2-36	1	FKM, $\phi$ 16.3 x 2.4mm	00ID2231		YES
			2-36	1	FFKM, $\phi$ 16.3 x 2.4mm	96428162		YES
	Drain Plug O-ring (option)		2-36	1	FXM, $\phi$ 16.3 x 2.4mm	96442869		YES
39	Gasket for Oval Flange		3/2-17	2	95 x 55 x $\phi$ 35 x 2mm, KLINGERSIL C4430	400189		YES
45	Neck Ring		2-36	# stgs	$\phi$ 50.45 x $\phi$ 35 x .7mm, PTFE	96436720		YES
47a	Bearing Ring/Spacer		2-36	^^^^	SiC 150, $\phi$ 17.37 x $\phi$ 13.10 x $\phi$ 10.9 x 13mm	96437488		YES
			2-36	^^^^	TC, $\phi$ 15.92 x $\phi$ 13.10 x $\phi$ 10.9 x 11mm	410121		YES
49	Impeller		2-36	# stgs-	$\phi$ 73.0 x $\phi$ 35.0 x 13.2mm (back-plate 1.0mm)	96437414		No
49i	Impeller (Low NPSH option)		3-36	1	$\phi$ 98.0 x $\phi$ 52.8 x 17.3mm (back-plate 1.0mm)	96462490		No
50a	Top Guide Vane		3-36	1		96439170		No
			2/1	1		96478562		No
51	Shaft, Complete		2	1	$\phi$ 12 x 160.5mm	96439607		No
			3	1	$\phi$ 12 x 180.5mm	96440386		No
	Shaft, Complete		4	1	$\phi$ 12 x 214.5mm	96440388		No
		5	1	$\phi$ 12 x 234.5mm	96440389		No	
	Shaft, Complete		6	1	$\phi$ 12 x 268.5mm	96440391		No
		7	1	$\phi$ 12 x 288.5mm	96440392		No	
	Shaft, Complete		8	1	$\phi$ 12 x 322.5mm	96440394		No
		9	1	$\phi$ 12 x 342.5mm	96440395		No	
	Shaft, Complete		10	1	$\phi$ 12 x 376.5mm	96440396		No
		11	1	$\phi$ 12 x 396.5mm	96440397		No	
	Shaft, Complete		12	1	$\phi$ 12 x 430.5mm	96440399		No
		13	1	$\phi$ 12 x 450.5mm	96440400		No	
	Shaft, Complete		14	1	$\phi$ 12 x 484.5mm	96440401		No
		15	1	$\phi$ 12 x 504.5mm	96440402		No	
	Shaft, Complete		16	1	$\phi$ 12 x 538.5mm	96440404		No
		18	1	$\phi$ 12 x 592.5mm	96440406		No	
	Shaft, Complete		20	1	$\phi$ 12 x 646.5mm	96440408		No
		22	1	$\phi$ 12 x 700.5mm	96440410		No	
	Shaft, Complete		24	1	$\phi$ 12 x 754.5mm	96440411		No
		26	1	$\phi$ 12 x 801.5mm (50 Hz.)	96440412		No	
	Shaft, Complete		29	1	$\phi$ 12 x 882.5mm (50 Hz.)	96440413		No
		32	1	$\phi$ 12 x 963.5mm (50 Hz.)	96440414		No	
	Shaft, Complete		36	1	$\phi$ 12 x 1071.5mm (50 Hz.)	96440415		No
		2	1	$\phi$ 12 x 265.5mm	96457560		No	
	Shaft, Cpl. (Back-to-Back & Tandem Seal option)		3	1	$\phi$ 12 x 285.5mm	96457561		No
		4	1	$\phi$ 12 x 319.5mm	96457563		No	
	Shaft, Cpl. (Back-to-Back & Tandem Seal option)		5	1	$\phi$ 12 x 339.5mm	96457564		No

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**PARTS LIST**

51	Shaft, Cpl. (Back-to-Back & Tandem Seal option)		6	1	ø12 x 373.5mm	96457566	No
			7	1	ø12 x 393.5mm	96457567	No
			8	1	ø12 x 427.5mm	96457569	No
			9	1	ø12 x 447.5mm	96457570	No
			10	1	ø12 x 481.5mm	96457571	No
			11	1	ø12 x 501.5mm	96457572	No
			12	1	ø12 x 535.5mm	96457574	No
			13	1	ø12 x 555.5mm	96457575	No
			14	1	ø12 x 589.5mm	96457576	No
			15	1	ø12 x 609.5mm	96457577	No
			16	1	ø12 x 643.5mm	96457579	No
			18	1	ø12 x 697.5mm	96457581	No
			20	1	ø12 x 751.5mm	96457583	No
			22	1	ø12 x 805.5mm	96457585	No
			24	1	ø12 x 859.5mm	96457586	No
			26	1	ø12 x 906.5mm (50 Hz.)	96457587	No
	29	1	ø12 x 987.5mm (50 Hz.)	96457588	No		
	32	1	ø12 x 1068.5mm (50 Hz.)	96457589	No		
	36	1	ø12 x 1176.5mm (50 Hz.)	96457590	No		
55	Outer Sleeve		2	1	ø138 x 44.6mm	96437865	No
			3	1	ø138 x 71.6mm	96440013	No
			4	1	ø138 x 98.6mm	96439999	No
			5	1	ø138 x 125.6mm	96441512	No
			6	1	ø138 x 152.6mm	96440000	No
			7	1	ø138 x 179.6mm	96441515	No
			8	1	ø138 x 206.6mm	96440001	No
			9	1	ø138 x 233.6mm	96441518	No
			10	1	ø138 x 260.6mm	96440002	No
			11	1	ø138 x 287.6mm	96441519	No
			12	1	ø138 x 314.6mm	96440003	No
			13	1	ø138 x 341.6mm	96441522	No
			14	1	ø138 x 368.6mm	96440004	No
			15	1	ø138 x 395.6mm	96441523	No
			16	1	ø138 x 422.6mm	96440005	No
			18	1	ø138 x 476.6mm	96440006	No
	20	1	ø138 x 530.6mm	96440007	No		
	22	1	ø138 x 584.6mm	96440008	No		
	24	1	ø138 x 638.6mm	96439652	No		
	26	1	ø138 x 692.6mm (50 Hz.)	96440009	No		
	29	1	ø138 x 773.6mm (50 Hz.)	96440011	No		
	32	1	ø138 x 854.6mm (50 Hz.)	96440012	No		
	36	1	ø138 x 962.6mm (50 Hz.)	96439653	No		
60	Stack Compression Spring		2-36	1	ø136 x 3.5mm	96439662	No
64	Spacing Pipe		2-36	^^^	ø15.85 x ø12.85 x 26.03mm	410143	No
64a	Spacing Pipe		2-36	^^^^	ø15.85 x ø12.85 x 13.0mm	96443611	YES
	Spacing Pipe (option for Graflon / Brz. 4a)		2-36	^^^^	Use with TC Pos.47a, ø15 x ø12.7 x 15.0mm	410142	YES
64c	Clamp, Splined		2-36	1	ø15 x ø13.10 x ø10.9 x 13mm	96439668	YES
64d	Spacing Pipe		2-36	^^^^^	ø15 x ø13.10 x ø10.9 x 4.5mm	96440292	YES
64e	Spacing Pipe (Low NPSH option only)		2-36	2	ø15 x ø13.10 x ø10.9 x 10.0mm	430022	No
64f	Spacing Pipe (Low NPSH option only)		2-36	1	ø15 x ø13.10 x ø10.9 x 7.3mm	400233	No
64g	Spacing Pipe (de-staging option only)		2-36	1	ø15 x ø13.10 x ø10.9 x 27.0mm	410062	No
65	Neck Ring Retainer		2-36	# stgs	ø52.5 x ø36.7 x 5.3mm	96436722	YES
66	Lock Washer Set for Shaft		2-36	1	ø13.5 x ø8.2 x 2.6mm	96417297	YES
66a	Washer for Staybolt		2-36	4	DIN 125A, ø24 x ø13 x 2.5mm, Delta Seal	96430377	No
67	Lock Nut for Shaft		2-36	1	13mm x M8	00ID2061	YES
69	Spacing Pipe		2-36	⊖	ø15.85 x 12.85 x 2.0mm	96440295	No
69a	Spacing Pipe (de-staging option only)		2/1	1	ø15.85 x 12.85 x 18.0mm	400258	No
76	Nameplate		2-36	1	304SS, 60 x 45mm	96439820	No
76a	Rivet for Nameplate		2-36	2	304SS, ø3 x 5mm	96022882	No
77a	Pump Head Cover for Back-to-Back, Tandem Seal		2-36	1	Cast Stainless	96456293	No
100	Priming/Vent Plug O-ring		2-36	■	EPDM, ø16.3 x 2.4mm	00ID1288	YES
			2-36	■	FKM, ø16.3 x 2.4mm	00ID2231	YES
100a	Priming/Vent Plug O-ring (option)		2-36	■	FFKM, ø16.3 x 2.4mm	96428162	YES
			2-36	■	FXM, ø16.3 x 2.4mm	96442869	YES
102	O-ring for Pos. 105b Back-to-Back		2-36	1	EPDM, ø18 x 2.54mm	00ID2041	YES
			2-36	1	FKM, ø17.86 x 2.62mm	00ID2187	YES
	O-ring for Pos. 105b Back-to-Back (option)		2-36	1	FFKM, ø17.86 x 2.62mm	96440281	No
			2-36	1	FXM, ø17.86 x 2.62mm	96472584	No
103	Stationary Seal Ring for 105b Back-to-Back		2-36	1	TC, 12mm	980190	No
	Stationary Seal Ring for 105b Back-to-Back (option)		2-36	1	SiC, 12mm	980746	YES
104	Rotating Seal Ring for 105b Back-to-Back		2-36	1	TC, 12mm	980163	No
	Rotating Seal Ring for 105b Back-to-Back (option)		2-36	1	SiC, 12mm	980733	YES

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Pos. No.	Part Description	Model	Stages	No. Used	Comments/Dimensions	B.O.M. Ref. No.	Material No.	Included in kits ?
102	O-ring for Pos. 105b Back-to-Back		2-36	1	EPDM, $\phi 18 \times 2.5\text{mm}$	00ID2041		YES
			2-36	1	FKM, $\phi 17.86 \times 2.62\text{mm}$	00ID2187		YES
	O-ring for Pos. 105b Back-to-Back (option)		2-36	1	FFKM, $\phi 17.86 \times 2.62\text{mm}$	96440281		No
			2-36	1	FXM, $\phi 17.86 \times 2.62\text{mm}$	96472584		No
103	Stationary Seal Ring for 105b Back-to-Back Station. Seal Ring for 105b Back-to-Back (option)		2-36	1	TC, 12mm	980190		No
			2-36	1	SiC, 12mm	980746		YES
104	Rotating Seal Ring for 105b Back-to-Back Rotating Seal Ring for 105b Back-to-Back (option)		2-36	1	TC, 12mm	980163		No
			2-36	1	SiC, 12mm	980733		YES
105(b)	Shaft Seal HQBE		2-36	***	SiC, Carbon with resin-impregnated, EPDM	96441879		YES
	Shaft Seal HQBV		2-36	***	SiC, Carbon with resin-impregnated, FKM	96441880		YES
	Shaft Seal HQBK (option)		2-36	***	SiC, Carbon with resin-impregnated, FFKM	96489537		YES
	Shaft Seal HQQE		2-36	***	SiC, SiC, EPDM	96441877		YES
	Shaft Seal HQQV		2-36	***	SiC, SiC, FKM	96441878		YES
	Shaft Seal HQQF (option)		2-36	***	SiC, SiC, FXM	96472620		YES
	Shaft Seal HQQK (option)		2-36	***	SiC, SiC, FFKM	96464381		YES
	Shaft Seal HUBE		2-36	***	TC, Carbon with resin-impregnated, EPDM	96441873		YES
	Shaft Seal HUBV		2-36	***	TC, Carbon with resin-impregnated, FKM	96441874		YES
	Shaft Seal HUBF (option)		2-36	***	TC, Carbon with resin-impregnated, FXM	96481464		YES
	Shaft Seal HUBK (option)		2-36	***	TC, Carbon with resin-impregnated, FFKM	96481463		YES
	Shaft Seal HUUE		2-36	***	TC, TC, EPDM	96441875		YES
	Shaft Seal HUUV		2-36	***	TC, TC, FKM	96441876		YES
	Shaft Seal HUUF (option)		2-36	***	TC, TC, FXM	96475542		YES
	Shaft Seal HUUK (option)		2-36	***	TC, TC, FFKM	96467885		YES
	105b	Shaft Seal/inboard for Back-to-Back OQQE		2-36	1	SiC, SiC, EPDM	985200	
Shaft Seal/inboard for Back-to-Back OQQV			2-36	1	SiC, SiC, FKM	985760		YES
Shaft Seal/inboard for Back-to-Back OUUE			2-36	1	TC, TC, EPDM	985189		No
Shaft Seal/inboard for Back-to-Back OUUV			2-36	1	TC, TC, FKM	985190		No
107	O-ring for Pos. 105b Back-to-Back		2-36	1	EPDM, $\phi 11.5 \times 4.3\text{mm}$	00ID2040		YES
			2-36	1	FKM, $\phi 11.5 \times 4.3\text{mm}$	00ID2186		YES
	O-ring for Pos. 105b Back-to-Back (option)		2-36	1	FFKM, $\phi 11.5 \times 4.3\text{mm}$	96440282		No
			2-36	1	FXM, $\phi 11.5 \times 3.18\text{mm}$	96472618		No
108	Spring for Pos. 105b Back-to-Back		2-36	1	12mm	980195		YES
109(a)	O-ring for Shaft Seal Pos. 105		2-36	1	EPDM, $\phi 21.3 \times 3.0\text{mm}$	00ID1798		YES
	O-ring for Shaft Seal Pos. 106		2-36	1	FKM, $\phi 21.2 \times 3.0\text{mm}$	00ID2339		YES
109b	O-ring for Shaft Seal Pos. 105 (option)		2-36	1	FXM, $\phi 22 \times 2.75\text{mm}$	96458111		YES
			2-36	1	FFKM, $\phi 23.47 \times 2.62\text{mm}$	96464384		YES
111	Seal Driver (small) for Pos. 105b Back-to-Back		2-36	1		980192		YES
112	Seal Driver (large) for Pos. 105b Back-to-Back		2-36	1		980191		YES
112a	Seal Drv thread. for 112, Pos. 105b Back-to-Back		2-36	1		400203		YES
113	Set Screw for 112a, for Pos. 105b Back-to-Back		2-36	1	3mm x M5 x 6mm	00ID7392		YES
146	Allen Bolt for 147/148, for Pos. 105b Back-to-Back		2-36	1	2.5mm x M3 x 5mm	96462639		YES
147	Stationary Seal Retainer - Pos. 105b Back-to-Back		2-36	1	NV36, 316SS	96457354		No
148	Seal Retainer Washer - Pos. 105b Back-to-Back		2-36	1	316SS, $\phi 36.0 \times \phi 21.6 \times 5.0\text{mm}$	96457355		No

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

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

## Notes:

- ^^^ 2 to 7 stage= # of Stages less 2  
8 to 12 stage= # of stages less 3  
13 to 16 stage = # of stages less 4  
18 to 22 stage = # of stages less 5  
24 to 26 stage = # of stages less 6  
29 to 32 stage = # of stages less 7  
36 stage = # of stages less 8  
Exception to the above: Low NPSH model less 1 additional.
- ^^^^ 2 to 7 stage= use 1  
8 to 12 stage= use 2  
13 to 16 stage = use 3  
18 to 22 stage = use 4  
24 to 26 stage= use 5  
29 to 32 stage= use 6  
36 stage= use 7
- ^^^^^ 1 used only in pumps with the following amount of stages  
2, 4, 6, 8, 10, 12, 14, 16, 20, 22, & 24.
- \* 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 1. CR(I,N)5-2/1 replace with pos.69a
- # stgs- Use the number of stages in standard models, less one in de-staged and Low NPSH models.
- ◆◆ Standard use 2. Back-to-Back or Tandem pump version use 3
- Standard use 2. Back-to-Back or Tandem pump version use 6

## Key to Symbols:

- KITS (YES) ..... Recommended spare part
- ∅ ..... 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
- NPSH ..... Net Positive Suction Head
- 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.

<b>CR(I, N)5 SiC Bearing</b>		<b>Kit No.</b>	<b>96455096</b>					
<b>WEAR PARTS KIT 2-7</b>		<b>Kit No.</b>	<b>96455097</b>					
<b>WEAR PARTS KIT 8-12</b>		<b>Kit No.</b>	<b>96455098</b>					
<b>WEAR PARTS KIT 13-16</b>		<b>Kit No.</b>	<b>96455099</b>					
<b>WEAR PARTS KIT 17-22</b>		<b>Kit No.</b>	<b>96455101</b>					
<b>WEAR PARTS KIT 23-26</b>		<b>Kit No.</b>	<b>96455100</b>					
<b>WEAR PARTS KIT 27-36</b>		<b>Kit No.</b>	<b>96455100</b>					
Pos. No.	Description	Material No.	Qty. Included in each Kit					
4a	Chamber N Cpl. w/Pos.45 & 65 & SiC Bearing	96437645	1	2	3	4	5	6
39	Gasket for Oval Flange, 95 x 55 x ø35 x 2mm	400189	2	2	2	2	2	2
45	Neck Ring, ø50.45 x ø35 x .7mm, PTFE	96436720	6	10	13	18	21	30
47a	Bearing Ring/Spacer, SiC 150, 13mm	96437488	1	2	3	4	5	6
64a	Spacing Pipe, ø15.85 x ø12.85 x 13.0mm	96443611	1	2	3	4	5	6
64c	Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm	96439668	1	1	1	1	1	1
65	Neck Ring Retainer, N, ø52.5 x ø36.7 x 5.3mm	96436722	6	10	13	18	21	30
66	Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm	96417297	1	1	1	1	1	1
67	Lock Nut, 13mm x M8	00ID2061	1	1	1	1	1	1

<b>CR(I, N)5 Graflon Bearing</b>		<b>Kit No.</b>	<b>96460141</b>					
<b>WEAR PARTS KIT 2-7</b>		<b>Kit No.</b>	<b>96460142</b>					
<b>WEAR PARTS KIT 8-12</b>		<b>Kit No.</b>	<b>96455113</b>					
<b>WEAR PARTS KIT 13-16</b>		<b>Kit No.</b>	<b>96455114</b>					
<b>WEAR PARTS KIT 17-22</b>		<b>Kit No.</b>	<b>96460143</b>					
<b>WEAR PARTS KIT 23-26</b>		<b>Kit No.</b>	<b>96455115</b>					
<b>WEAR PARTS KIT 27-36</b>		<b>Kit No.</b>	<b>96455115</b>					
Pos. No.	Description	Material No.	Qty. Included in each Kit					
4a	Chamber N Cpl. w/Pos.45 & 65 & Graflon Brg.	96440619	1	2	3	4	5	6
39	Gasket for Oval Flange, 95 x 55 x ø35 x 2mm	400189	2	2	2	2	2	2
45	Neck Ring, ø50.45 x ø35 x .7mm, PTFE	96436720	6	10	13	18	21	30
47a	Bearing Ring/Spacer, TC, 11.0mm	410121	1	2	3	4	5	6
64a	Spacing Pipe, ø15.85 x ø12.85 x 15.0mm	00410142	1	2	3	4	5	6
64c	Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm	96439668	1	1	1	1	1	1
65	Neck Ring Retainer, N, ø52.5 x ø36.7 x 5.3mm	96436722	6	10	13	18	21	30
66	Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm	96417297	1	1	1	1	1	1
67	Lock Nut, 13mm x M8	00ID2061	1	1	1	1	1	1

<b>CR(I)5 Bronze Bearing</b>		<b>Kit No.</b>	<b>96455103</b>					
<b>WEAR PARTS KIT 2-7</b>		<b>Kit No.</b>	<b>96460106</b>					
<b>WEAR PARTS KIT 8-12</b>		<b>Kit No.</b>	<b>96455107</b>					
<b>WEAR PARTS KIT 13-16</b>		<b>Kit No.</b>	<b>96455108</b>					
<b>WEAR PARTS KIT 17-22</b>		<b>Kit No.</b>	<b>96460107</b>					
<b>WEAR PARTS KIT 23-26</b>		<b>Kit No.</b>	<b>96455109</b>					
<b>WEAR PARTS KIT 27-36</b>		<b>Kit No.</b>	<b>96455109</b>					
Pos. No.	Description	Material No.	Qty. Included in each Kit					
4a	Chamber N Cpl. w/Pos.45 & 65 & Bronze Brg.	96440616	1	2	3	4	5	6
39	Gasket for Oval Flange, 95 x 55 x ø35 x 2mm	400189	2	2	2	2	2	2
45	Neck Ring, ø50.45 x ø35 x .7mm, PTFE	96436720	6	10	13	18	21	30
47a	Bearing Ring/Spacer, TC, 11.0mm	410121	1	2	3	4	5	6
64a	Spacing Pipe, ø15.85 x ø12.85 x 15.0mm	00410142	1	2	3	4	5	6
64c	Clamp, Splined, ø15 x ø13.10 x ø10.9 x 13mm	96439668	1	1	1	1	1	1
65	Neck Ring Retainer, N, ø52.5 x ø36.7 x 5.3mm	96436722	6	10	13	18	21	30
66	Lock Washer Set of 2, ø13.5 x ø8.2 x 2.6mm	96417297	1	1	1	1	1	1
67	Lock Nut, 13mm x M8	00ID2061	1	1	1	1	1	1

<b>GASKET KIT (EPDM)</b>		<b>Kit No.</b>	<b>96455090</b>					
<b>GASKET KIT (FKM)</b>		<b>Kit No.</b>	<b>96455091</b>					
<b>GASKET KIT (FKM)</b>		<b>Kit No.</b>	<b>96463944</b>					
<b>GASKET KIT (FKM)</b>		<b>Kit No.</b>	<b>96533328</b>					
<b>GASKET KIT (EPDM)-Double Seal option.</b>		<b>Kit No.</b>	<b>96533362</b>					
<b>GASKET KIT (FKM)-Double Seal option.</b>		<b>Kit No.</b>	<b>96533363</b>					
<b>GASKET KIT (FKM)-Double Seal option.</b>		<b>Kit No.</b>	<b>96533364</b>					
Pos. No.	Description	Material No.	Qty. Included in each Kit					
37	Sleeve O-ring, EPDM, ø137.5 x 3.3mm	96438743	2			3		
	Sleeve O-ring, FKM, ø137.5 x 3.3mm	96438744		2			3	
37b	Sleeve O-ring, FXM, ø137.5 x 3.3mm	96458109			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	
	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			
	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			
	O-ring for Pos.105(b) & 149, FFKM, Ø23.47 x 2.62mm	96464384				1		2

STACK KITS	
Model	Material No.
CR(I)5-2	96453575
CR(I)5-3	96453576
CR(I)5-4	96453577
CR(I)5-5	96453578
CR(I)5-6	96453579
CR(I)5-7	96453580
CR(I)5-8	96453581
CR(I)5-9	96453582
CR(I)5-10	96453583
CR(I)5-11	96453584
CR(I)5-12	96453585
CR(I)5-13	96453586
CR(I)5-14	96453587
CR(I)5-15	96453588
CR(I)5-16	96453589
CR(I)5-18	96453590
CR(I)5-20	96453591
CR(I)5-22	96453592
CR(I)5-24	96453593
*** CR(I)5-26	96453594
*** CR(I)5-29	96453595
*** CR(I)5-32	96453596
*** CR(I)5-36	96453597

\*\*\*For 50 Hz operation only.

Spare Part Kits (continued)

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

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		
	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 INBOARD SHAFT SEAL & Gasket KIT, Back to Back OQQV (An HQQx seal kit must also be used for a seal repair)			Kit No.	96533360	
			Kit No.	96533361	
Pos. No.	Description	Material No.	Qty. Included in each Kit		
37	Sleeve O-ring, EPDM, $\phi$ 137.5 x 3.3mm	96438743	3		
	Sleeve O-ring, FKM, $\phi$ 137.5 x 3.3mm	96438744		3	
38, 100(a)	Drain Plug O-ring, EPDM, $\phi$ 16.3 x 2.4mm	00ID1288	7		
	Drain Plug O-ring, FKM, $\phi$ 16.3 x 2.4mm	00ID2231		7	
102	O-ring, EPDM, $\phi$ 18 x 2.5mm	00ID2041	1		
	O-ring, FKM, $\phi$ 17.86 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, $\phi$ 11.5 x 4.3mm	00ID2040	1		
	O-ring, FKM, $\phi$ 11.5 x 4.3mm	00ID2186		1	
108	Spring, 12mm	980195	1	1	
109a	O-ring, EPDM, $\phi$ 21.3 x 3.0mm	00ID1798	1		
	O-ring, FKM, $\phi$ 21.2 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		
			Kit No.	415061		
			Kit No.	415062		
			Kit No.	415063		
			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	
	Allen Screw, M10 x 25mm, Delta Seal	00ID7901				4
10	Shaft Pin, $\phi$ 5 x 26mm, Stainless	310192	1	1	1	1
10a	Coupling Half, F85, MG71, .37-.55kW. $\phi$ 14/ $\phi$ 12	410041	2			
	Coupling Half, F100, MG80, .75-1.1kW. $\phi$ 19/ $\phi$ 12	410043		2		
	Coupling Half, F115, MG 90, 1.5-2.2kW. $\phi$ 24/ $\phi$ 12	410045			2	
	Coupling Half, F130, MG100/112, 3-4 kW. $\phi$ 28/ $\phi$ 12	410047				2
	Coupling Half, F265, MG132, 5.5-7.5kW. $\phi$ 38/ $\phi$ 12	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			
10	Shaft Pin, $\phi 5$ x 26mm, Stainless	310192	1	1	1
10a	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

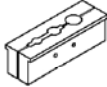



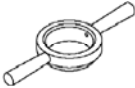



OVAL FLANGE KIT FOR SMALL CR15, 1, & 3					
		1-1/4" Threaded Cast Iron (232 PSI Max.)		Kit No.	96474337
Pos. No.	Description	Material No.	Qty. Included in each Kit		
12	Flange, Cast Iron, 1-1/4" - 11.5 NPT	96468335		2	
35	Hex Head Bolt, M10 x 40mm, Delta Seal	00ID8027		4	
39	Gasket, 95 x 55 x $\phi 35$ x 2mm, KLINGERSIL C4430	400189		2	

## Accessories

ANSI COMPANION FLANGES FOR SMALL CR					
		1-1/4" Threaded Cast Iron, 250 Lb. Class		Kit No.	91122260
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, Cast Iron, 1-1/4"	00ID3650		2	
N/A	Gasket Full Face Flange, 1-1/4", 300#, Cut Ring	400201		2	

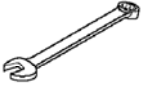






## Special Tools

Tools not generally available from normal sources.

Mat. No.	Description and Use	
00SV0040	<b>Shaft Holder for Dismantling/Assembly</b> Used to hold and protect the shaft during dismantling and assembly.	
00SV2007	<b>Tubular Box Spanner for Shaft Seal 36.1 mm</b> Used to install and remove the shaft seal. Fits a 1/2" drive ratchet.	
00SV0239	<b>Puller for Neck Ring</b> Used to remove the Neck Ring from Chamber.	
00SV2014	<b>Circlip Pliers for Flange Lock Ring</b> Used to remove the Lock Ring for the Flange.	
00SV2066	<b>Tool for Outer Sleeve</b> Used to press sleeve into base. (optional)	
00SV2011	<b>Bit Holder</b> Used with Bits Kit, 1/4"	
00SV2010	<b>Bits Kit</b> NV 5 mm for M6, 1/4" NV 6 mm for M8, 1/4" NV 8 mm for M10, 1/4"	
00SV2012	<b>Hexagon Socket Bit</b> 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	<b>Wrenches</b> 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	<b>Torque Wrench</b> Used to torque various screws. 4-20 Nm, 9 x 12 20-100 Nm, 9 x 12 40-200 Nm, 14x18	
00SV0438	<b>Torque Screwdriver</b> Used to tighten various nuts. 1-6 Nm, 1/4"	
00SV0295	<b>Ratchet Spanner for all Adapters</b> 9 mm x 12 mm, 1/2"	
00SV0296 00SV0297 00SV0298	<b>Socket Spanner with Inside Hex</b> 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	<b>Ring Spanner</b> 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	<b>Socket Spanner</b> NV 13 mm for M8, 9 x 12	



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