

4.4 Tank Accessories

Accessories for your tank



PD Sheets

SMPU Skid Mounted Pump Unit	4.4.1072
LKS 105 Tank Sight Glass	4.4.1074

Ordering Leaflets

SMPU Skid Mounted Pump Unit	4.4.1075
Tank Legs and Base Plate	4.4.1076
Sight Glasses	4.4.1078
Tank Side mounted sightglass / Level gauge	4.4.1082
Metal fused sight glass	4.4.1083
LKGG-1 and LKGL-1 In-line Sight Glasses	4.4.1084
In-line Sight Glasses	4.4.1085
LKFL In-line Sight Glasses	4.4.1086
Ventilation Cap	4.4.1087
Accessories - Relief Valves	4.4.1088

Making Mixing and CIP Easy

SMPU Skid Mounted Pump Unit

Applications

The Alfa Laval Skid Mounted Pump Unit for mixing and CIP is a cost-effective and standardized pump unit to be used in combination with an Alfa Laval Rotary Jet Mixer or a Toftejorg Rotary Jet Head cleaning machine.

Design

The unit contains the highly energy efficient, sanitary Alfa Laval LKH centrifugal pump and a variable frequency drive, piping, two Alfa Laval Pressure Gauges, two manual Alfa Laval LKB-2 Butterfly Valves at inlet and outlet and a drain valve (Alfa Laval LKB-2). The Alfa Laval In-line Instrumentation House prepares the unit for installation of an instrument from e.g. the Alfa Laval range of hygienically designed instruments. Also, the unit is prepared for a flow transmitter. Everything is mounted on a stainless steel frame with a stainless steel cover for protection of the frequency drive. The unit is not electrically wired, nor is the frequency converter programmed. This is done during installation. Start and stop of the unit can be done via the plant's control system or directly from the VFD. The unit is available in three different sizes; 7.5, 11, and 15 kW.



TECHNICAL DATA

Pump

Type: Alfa Laval LKH Centrifugal Pump
 Model: See table
 Mechanical seal: Single shaft seal, C/SiC, EPDM
 Motor: ABB foot-flanged motor according to the IEC metric standard with cover, 2 poles = 3000/3600 rpm at 50/60 Hz, IP 55, insulation class F. Energy efficiency class: IE2

Frequency drive

Type: Danfoss VLT® AutomationDrive FC 301
 Power rating: See table
 Mains voltage: 380/480 VAC
 On/off: Local mains disconnect
 Insulation class: IP55/NEMA 12
 RFI filter: Class A1/B
 Display: Graphical Local Control Panel

Valves

Type: Alfa Laval LKB-2 Butterfly Valves

Pressure gauges

Type: Alfa Laval Pressure Gauge
 Measuring range: 0 to 10 bar
 Accuracy: Class 1.0 (+/- 1%)
 Pressure overload on diaphragm: Short time 130% of FS

PHYSICAL DATA

Materials

Product wetted steel parts: AISI 316L, AISI 329
 Other steel parts: AISI 304, AISI 304L
 Finish: Semi bright
 Product wetted seals: EPDM rubber
 Pressure gauge filling: FDA approved silicone oil

Operating pressure and temperature

Max. inlet/outlet pressure: 10 bar
 Temperature range wetted parts: -10°C to 95°C (max. temperature if valve operates)
 Ambient temperature: -10°C to 45°C

Process connection

Inlet and outlet: Complete DIN11851 (2nd series) unions, for dimensions see table
 Connection type on In-line Instrumentation House: Clamp DIN32676 DN40/ISO2852 DN38
 Connection type for insertion of flow transmitter: Clamp DIN32676 in dimension as outlet connection, see table

Weight

See table



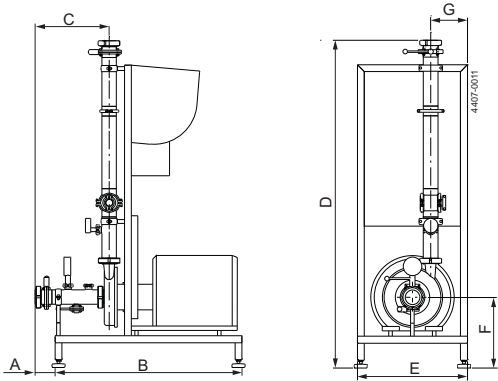
Operation with Alfa Laval Rotary Jet Mixer

The Alfa Laval Skid Mounted Pump Unit is typically installed together with an Alfa Laval Rotary Jet Mixer for mixing in a tank. The tank outlet is connected to the inlet of the Alfa Laval Skid Mounted Pump Unit and the Alfa Laval Skid Mounted Pump Unit is connected via the piping system to the inlet of an Alfa Laval Rotary Jet Mixer that is submerged in the liquid inside the tank. The liquid flow generated by the Alfa Laval Skid Mounted Pump Unit leaves the rotating nozzles of the Alfa Laval Rotary Jet Mixer – making sure that the injected liquid reaches all the tank contents, ensuring good mixing.

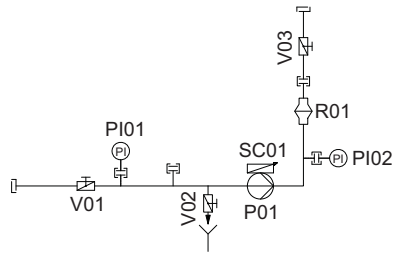
Benefits

With the Alfa Laval Skid Mounted Pump Unit you get a high quality system, optimized for the Alfa Laval Rotary Jet Mixer or the Toftejorg tank cleaning machine. The installation time is short. You only have to connect two pipes, do the electrical wiring and set up the variable frequency drive. If additional instrumentation is needed this can be inserted without further welding.

Dimensions (mm)

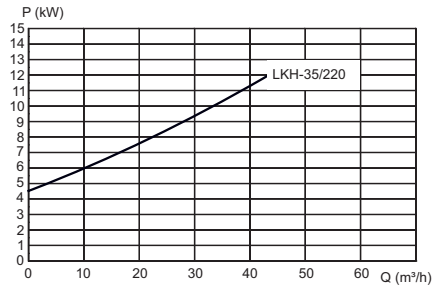
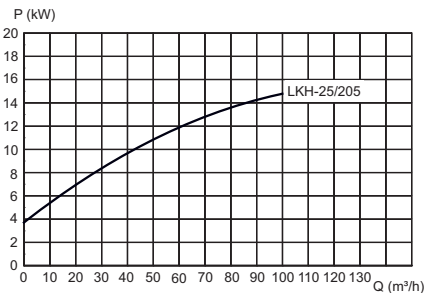
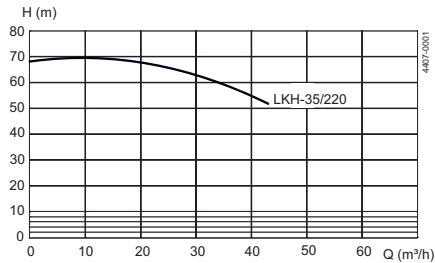
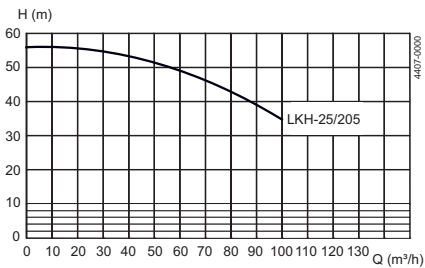


P&I diagram of Skid Mounted Pump Unit



Type	Pump model	VFD power rating	Inlet	Outlet	Weight (kg)	A	B	C	D	E	F	G
SMPU 7.5	LKH-35/220/7.5 kW	7.5 kW / 10 hp	DN65	DN50	271	117	1090	640	~1900	1085	~400	200
SMPU 11	LKH-25/205/11 kW	11 kW / 15 hp	DN80	DN65	287	117	1090	640	~1900	1085	~411	214
SMPU 15	LKH-25/205/15 kW	15 kW / 20 hp	DN80	DN80	333	117	1090	640	~1900	1311	~411	214

Pump Curves at 50 Hz



Keep an Eye on Your Product

LKS 105 Tank Sight Glass

Application

Sight glass, type LKS 105, is designed for pressureless storage tanks and should be installed above liquid level. The sight glass is welded into tanks or containers to facilitate inspection of product, level, processing, cleaning ect.

Standard design

The sight glass consists of a welding flange with inside thread, two seal rings as well as a glass plate and lock washer. The sight glass is completely tight-fitting.



TECHNICAL DATA

Max. product pressure: 100 kPa (1 bar).
 Max. temperature: 90 °C.

Options

- a. MiniVision light fitting with push botton for LKS (20 or 50 Watt).
- b. MiniVision light fitting without push botton for LKS (50 Watt).
- c. Collar flange fixation for MiniVision light fitting without push botton for LKS size 105.

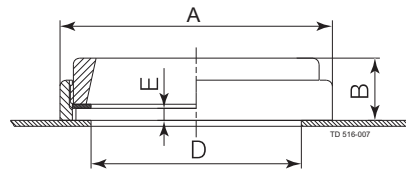
PHYSICAL DATA

Materials

Washers: Stainless steel AISI 304.
 Glass: Borasilikat
 Seal rings: Para rubber, Klingerite.
 Finish: Semi-bright.

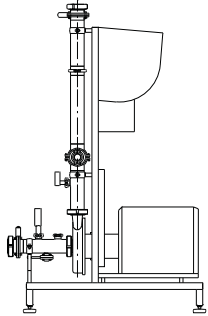
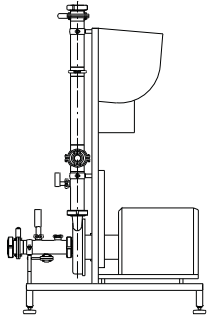
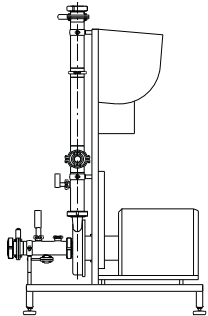
Measurements

Size: ø 105 mm.
 Weight: 1 kg.



Size	105
A	136
B	31
D	105
E	6.5

Product code: 5510

Item No.	RCPL EUR	Description	Dimensions (mm)			
			L	W	H	
SMPU Type 7.5						
9680-1599-95		Skid mounted pump unit with LKH-35/220/7.5 kW centrifugal pump and DN65 inlet and DN50 outlet	1207	640	~1900	
SMPU Type 11						
9680-1575-89		Skid mounted pump unit with LKH-25/205/11 kW centrifugal pump and DN80 inlet and DN65 outlet	1207	640	~1900	
SMPU Type 15						
9680-1599-96		Skid mounted pump unit with LKH-25/205/15 kW centrifugal pump and DN80 inlet and DN80 outlet	1207	640	~1900	

Tank Legs and Base Plate

Tank Accessories

Product code: 5534

Material: 1.4301 (304)


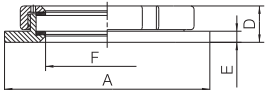
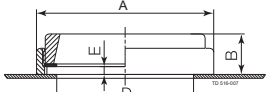
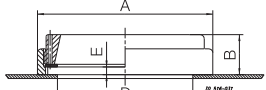
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Item No.	RCPL EUR	Dimension (mm)					LKTC Tank leg with base plate
		A	B	C	D (BSP)	E	
9611-71-022-0		38	35.5	58	3/4"	35	
9611-71-023-0		53	39.8	80	1"	40	
9611-71-025-0		80	65.3	100	1 1/2"	45	
LKTC Tank leg without base plate							
9611-71-029-0		38	35.5		3/4"	35	
9611-71-030-0		53	39.8		1"	40	
9611-71-032-0		80	65.3		1 1/2"	45	
Base plate							
9611-71-037-0				58			
9611-71-040-0				80			
9611-71-043-0				100			

Item No.	RCPL EUR	Size	Dimension (mm)					Max. load	
			A	B	C	D	SW		
Tank leg complete									
9612-3908-01		½"						4.0 t	
9612-3908-02		¾"					6.0 t		
9612-3908-03		1"					8.0 t		
9612-3908-04		1¼"					15.0 t		
9612-3908-05		1½"					19.0 t		
Tank leg complete									
9612-3673-01		½"	100	70					
9612-3673-02		¾"	100	70					
9612-3673-03		1"	120	90					
9612-3673-04		1¼"	150	120					
9612-3673-05		1½"	150	120					
Socket									
9612-3675-01		½"	30	25	17	35			
9612-3675-02		¾"	38	32	17	35			
9612-3675-03		1"	46	39.5	17	35			
9612-3675-04		1¼"	56	49.5	20	40			
9612-3675-05		1½"	63	57	25	50			
Lock nut									
9612-3674-01		½"	8				32		
9612-3674-02		¾"	9				36		
9612-3674-03		1"	11				41		
9612-3674-04		1¼"	12				55		
9612-3674-05		1½"	15				60		
Base plate									
31801-5390-1		½" - 1"	120	5	32	12			
31801-5390-2		1¼" - 1½"	160	8	50	14			

LKS and Sight Glasses acc. to DIN 28120 and based on DIN11851
 Product code: 5532

4.4

Item No.	RCPL EUR	Size	Dimension (mm)					
			A	B	D	E	F	
1.4404 (316L)								Sight glass LKS 78 and 120
9611-71-0101 9611-71-0102		78 120	130 180		23 28	7 7.5	78 120	
LKS 78 and 120 for minIVision light fitting								
9611-71-0103 9611-71-0104		78 120	130 180		23 28	7 7.5	78 120	
1.4301 (304)								Sight glass LKS 105
32010-2527-1		105	136	31	105	6.5		
LKS 105 for minIVision light fitting								
32010-2527-2		105	136	31	105	6.5		

LKS and Sight Glasses acc. to DIN 28120 and based on DIN11851
 Product code: 5532

Finish: Semi bright
 Material: 1.4404 (316L)

Item No.	RCPL EUR	Size	Dimension (mm)							Sight glass acc. to DIN 28120
			DIN/DN	s	d ₁	d ₄	D	k	h ₁	
9611-99-5021		50	15	80	100	165	125	16	30	
9611-99-5022		80	15	100	125	200	160	20	30	
9611-99-3292		100	20	125	150	220	180	22	30	
9611-99-3662		125	20	150	175	250	210	25	30	
9611-99-3663		150	25	175	200	285	240	30	36	
9611-99-5023		200	30	225	250	340	295	35	36	
		DIN/DN	ID	a	A	OD	D			Union sight glass based on DIN11851
9611-99-5024		50	50	18	46	55	92			
9611-99-3664		65	66	22	49	72	112			
9611-99-5025		80	80	23	54	87	127			
9611-99-3667		100	100	32	65	106	148			
9611-99-3669		125	125	20	60	132	178			
9611-99-5026		150	150	15	62	157	210			
										Union sight glass based on DIN11851 for miniVision
9611-99-5027		50	50	18	46	55	92			
9611-99-3665		65	66	22	49	72	112			
9611-99-5028		80	80	23	54	87	127			
9611-99-3668		100	100	32	65	106	148			
9611-99-3670		125	125	20	60	132	178			
9611-99-5029		150	150	15	62	157	210			
										Flange for LKS 78 and 105
9611-99-3676		78								
9611-99-3677		105								

Sight Glasses

Tank Accessories

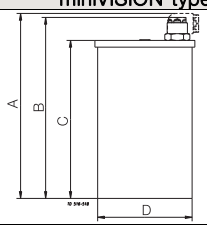
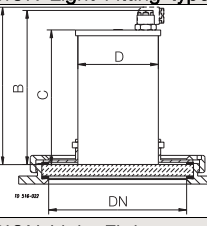
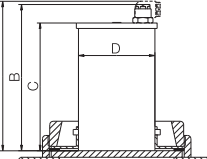
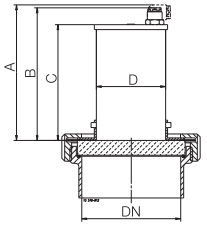
LKS and Sight Glasses acc. to DIN 28120 and based on DIN11851 with miniVISION Light Fitting type 53
 Product code: 5532

Material: 1.4301 (304)

4.4

Item No.	RCPL EUR	Type				Dimension (mm)					miniVISION Light Fitting type 53
						A	B	C	D	E	
9611-99-3671 9611-99-3672 9611-99-3673		For DIN 28120 For LKS and DIN11851 For LKS and DIN11851	With push botton With push botton With push botton	50 W 20 W 50 W	24V 24V 24V	90 90 90	53 53 53			73 73 73	
Sight glass LKS 78 and 120 with miniVISION Light Fitting type 53											
9612-6304-03 9612-6304-04 9612-6304-05 9612-6304-06		LKS 78 LKS 78 LKS 120 LKS 120	With push botton With push botton With push botton With push botton	20 W 50 W 20 W 50 W		90 90 90 90	53 53 53 53	48 48 69 69	72 72 72 72	73 73 73 73	
Sight glass LKS 105 with miniVISION Light Fitting type 53											
9612-6304-07 9612-6304-08		LKS 105 LKS 105	With push botton With push botton	20 W 50 W		90 90	53 53	59 59	72 72	73 73	
Sight glass acc. to DIN 28120 with miniVISION Light Fitting type 53											
9612-6304-09 9612-6304-10 9612-6304-11		DN100 DN125 DN150	With push botton With push botton With push botton	50 W 50 W 50 W		90 90 90	53 53 53	87 100 112	90 90 90	73 73 73	
Union sight glass based on DIN11851 with miniVISION Light Fitting type 53											
9612-6304-12 9612-6304-13 9612-6304-14 9612-6304-15 9612-6304-16 9612-6304-17		DN65 DN65 DN100 DN100 DN125 DN125	With push botton With push botton With push botton With push botton With push botton With push botton	20 W 50 W 20 W 50 W 20 W 50 W		90 90 90 90 90 90	53 53 53 53 53 53	39 39 57 57 69 69	90 90 90 90 90 90	73 73 73 73 73 73	

LKS and Sight Glasses based on DIN11851 and miniVISION Light Fitting type 70
 Product code: 5532

Item No.	RCPL EUR	Type			DIN DN	Dimension (mm)				
						A	B	C	D	
miniVISION type 70										
9611-99-3674		For LKS and Union Sight Glass based on DIN11851	50 W	24V		141	134	117	70	
Sight glass LKS 78 with miniVISION Light Fitting type 70										
9612-6304-01		LKS 78 without push botton	50 W		78	141	134	117	70	
Sight glass LKS 105 with miniVISION Light Fitting type 70										
9612-6304-02		LKS 105 without push botton	50 W		105	141	134	117	70	
Union sight glass based on DIN11851 with miniVISION Light Fitting type 70										
9612-6304-18		Size DN65 only			65	141	134	117	70	

4.4

Item No.	RCPL EUR	Description	Pres- sure	Max. Temper- ature	Free view		A	B	C	h1	h2	
					Length	Width						
Tapping drilled through, type DB base flange												
9611-99-5030		Short version	2.5	100°C	200	50	266	116	94	25	15	
9611-99-5031		Short version	2.5	243°C	200	50	266	116	94	25	15	
9611-99-5032		Short version	6	100°C	195	30	261	96	74	25	15	
9611-99-5033		Short version	6	243°C	195	30	261	96	74	25	15	
9611-99-5034		Long version	2.5	100°C	725	50	791	116	94	25	15	
9611-99-5035		Long version	2.5	243°C	725	50	791	116	94	25	15	
9611-99-5036		Long version	6	100°C	580	30	646	96	74	25	15	
9611-99-5037		Long version	6	243°C	580	30	646	96	74	25	15	
Blind tapping, type SL base flange												
9611-99-5038		Short version	2.5	100°C	200	50	266	116	94	25	15	
9611-99-5039		Short version	2.5	243°C	200	50	266	116	94	25	15	
9611-99-5040		Short version	6	100°C	195	30	261	96	74	25	15	
9611-99-5041		Short version	6	243°C	195	30	261	96	74	25	15	
9611-99-5042		Long version	2.5	100°C	725	50	791	116	94	25	15	
9611-99-5043		Long version	2.5	243°C	725	50	791	116	94	25	15	
9611-99-5044		Long version	6	100°C	580	30	646	96	74	25	15	
9611-99-5045		Long version	6	243°C	580	30	646	96	74	25	15	

Other lengths are available on request.

Product code : 5532

Material : 1.4462
 Connection: Tri-clamp DIN 32676
 Temperature range: -30 °C to + 280 °C
 Pressure: -1 to 10 bar

Item No.	RCPL EUR	Description	Size	A	B	C	t	
								Metal fused sightglass
9611-99-5046		DN50/2"	DN50/ 2"	52	30	64	10	
9611-99-5047		DN65/3"	DN65/ 3"	76	40	91	10	
9611-99-5048		DN80/3.5"	DN80/ 3.5"	90	50	106	10	

Other Metal fused sightglass available on request, such as Metal fused sight glass with wiper.

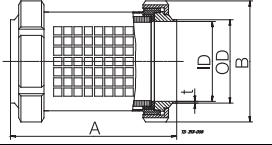
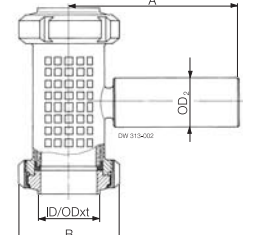
LKGG-1 and LKGL-1 In-line Sight Glasses

Tank Accessories

Product code: 5083

Inch Tube
Seals: EPDM

4.4

Item No.	RCPL EUR	Item No.	RCPL EUR	Size	Dimension (mm)			OD ₂	LKGG-1
					OD/ID x t	A	B		
1.4301 (304)		1.4404 (316L)							
9612-1414-01		9612-1414-06		25	26.2/22.5 x 1.85	200	64		
9612-1414-02		9612-1414-07		38	38.9/35.5 x 1.7	200	77		
9612-1414-03		9612-1414-08		51	51.6/48.5 x 1.55	200	91		
9612-1414-04		9612-1414-09		63.5	64.3/60.5 x 1.9	200	106		
9612-1414-05		9612-1414-10		76.1	76.6/72 x 2.3	200	122		
9612-1414-11		9612-1414-12		101.6	102/97.6 x 2.2	203	148		
With bulb, LKGL-1									
9612-1416-01		9612-1416-06		25	26.2/22.5 x 1.85	175	64	17	
9612-1416-02		9612-1416-07		38	38.9/35.5 x 1.7	181	77	22	
9612-1416-03		9612-1416-08		51	51.6/48.5 x 1.55	188	91	29	
9612-1416-04		9612-1416-09		63.5	64.3/60.5 x 1.9	194	106	29	
9612-1416-05		9612-1416-10		76.1	76.6/72 x 2.3	200	122	29	

Product code: 5083

DIN Tube
Material: 1.4301 (304)
Seals: NBR

Item No.	RCPL EUR	Size	Dimension (mm)					Welding
			DIN	A	B	C	D	
9611-29-235-1		10	88	10	60	15	2.5	
9611-29-236-1		15	88	16	60	21	2.5	
9611-29-237-1		20	88	20	60	25	3	
9611-29-238-1		25	98	26	70	31	3	
9611-29-239-1		32	104	32	70	37	3	
9611-29-240-1		40	112	38	70	43	5	
9611-29-241-1		50	112	50	70	55	5	
9611-29-242-1		65	127	66	85	72	5	
9611-29-243-1		80	135	81	85	87	5	
9611-29-244-1		100	169	100	115	105	5	
9611-29-245-1		125	202	125	160	132	7	
9611-29-246-1		150	216	150	170	157	9	
								Male/male
9611-29-248-1		10	122	10	60	2.5	28 x 1/8"	
9611-29-249-1		15	122	16	60	2.5	34 x 1/8"	
9611-29-250-1		20	124	20	60	3	44 x 1/6"	
9611-29-251-1		25	142	26	70	3	52 x 1/6"	
9611-29-252-1		32	154	32	70	3	58 x 1/6"	
9611-29-253-1		40	164	38	70	5	65 x 1/6"	
9611-29-254-1		50	168	50	70	5	78 x 1/6"	
9611-29-255-1		65	191	66	85	5	95 x 1/6"	
9611-29-256-1		80	209	81	85	5	110 x 1/4"	
9611-29-258-1		100	257	100	115	5	130 x 1/4"	
9611-29-259-1		125	270	125	160	7	160 x 1/4"	
9611-29-260-1		150	290	150	170	9	160 x 1/4"	
								Male/nut-liner
9611-29-261-1		10	122	10	60	2.5	28 x 1/8"	
9611-29-262-1		15	122	16	60	2.5	34 x 1/8"	
9611-29-263-1		20	124	20	60	3	44 x 1/6"	
9611-29-264-1		25	142	26	70	3	52 x 1/6"	
9611-29-265-1		32	154	32	70	3	58 x 1/6"	
9611-29-266-1		40	164	38	70	5	65 x 1/6"	
9611-29-267-1		50	168	50	70	5	78 x 1/6"	
9611-29-268-1		65	191	66	85	5	95 x 1/6"	
9611-29-269-1		80	209	81	85	5	110 x 1/4"	
9611-29-271-1		100	257	100	115	5	130 x 1/4"	
9611-29-272-1		125	270	125	160	7	160 x 1/4"	
9611-29-273-1		150	290	150	170	9	160 x 1/4"	
								Nut-liner/Nut-liner
9611-29-274-1		10	122	10	60	2.5	28 x 1/8"	
9611-29-275-1		15	122	16	60	2.5	34 x 1/8"	
9611-29-276-1		20	124	20	60	3	44 x 1/6"	
9611-29-277-1		25	142	26	70	3	52 x 1/6"	
9611-29-278-1		32	154	32	70	3	58 x 1/6"	
9611-29-279-1		40	164	38	70	5	65 x 1/6"	
9611-29-280-1		50	168	50	70	5	78 x 1/6"	
9611-29-281-1		65	191	66	85	5	95 x 1/6"	
9611-29-282-1		80	209	81	85	5	110 x 1/4"	
9611-29-284-1		100	257	100	115	5	130 x 1/4"	
9611-29-285-1		125	270	125	160	7	160 x 1/4"	
9611-29-286-1		150	290	150	170	9	160 x 1/4"	

Product code: 5083

Seals: EPDM
 Connections: Welding ends
 Material: 1.4404 (316L)

4.4

Item No.	RCPL EUR	Size	Dimension (mm)			
			A ₁	B	C	
9611-94-0001		38	102	50		
9611-94-0002		51	152	66		
9611-94-0003		63.5	152	64		
9611-94-0004		76.1	204	73		
9611-94-0005		101.6	204	91		

						With bulb
9611-94-0011		38	102	50	179	
9611-94-0012		51	152	66	194	
9611-94-0013		63.5	152	64	191	
9611-94-0014		76.1	204	73	199	
9611-94-0015		101.6	204	91	244	

For further information - please see PD-sheet.

NOTE! Additional length (mm) A₂ measure for male parts - please see below.

										Seals
										Replacement to seals of Nitrile (NBR).
										Replacement to seals of Fluorinated rubber (FPM).

Item No.	RCPL EUR	Size	SMS	DS	ISO-clamp	IDF for ISO tube	IDF for SWG tube	BS	DIN for INCH tube
In-line sight glasses with male parts on request. Additional prices for sight glasses with male Parts.									
		38							
		51							
		63.5							
		76.1							
		101.6							

Overall length (mm) A ₂ measure with male parts									
		38	142	142	128	145	145	146	146
		51	192	192	177	195	195	196	196
		63.5	200	200	177	195	195	196	202
		76.1	252	252	229	247	247	248	264
		101.6	274	252	236	247	264	258	264

Size	1½"	2"	2½"	3"	4"		
SMS	142	192	200	252	274		
DS	142	192	200	252	252		
ISO clamp	128	177	177	229	236		
IDF for ISO tube	145	195	195	247	247		
IDF for SWG tube	145	145	195	247	264		
BS	146	196	196	248	258		
DIN	146	196	202	264	264		

Item No.	RCPL EUR	Dimension (mm)			Ventilation Cap with strainer
		A	B	D	
32011-0686-1		123	68	72	

Product code: 5534

4.4

Item No.	RCPL EUR	Material	Max. Flow	Relief Function	Dimension	
9612-9291-63		Polyethylene	130hl/h	Glass Ball	G 1 1/4"	<p style="text-align: right;">RV 130</p>
9612-9291-62 9612-9291-65		Polyethylene Polyethylene	400hl/h 400hl/h	Polyethylene Ball Polyethylene Ball	1 1/4" 1 1/2"	<p style="text-align: right;">RV 400 and RV 400A</p>
9612-9291-64		Polyethylene	800hl/h	Polyethylene Ball	2"	<p style="text-align: right;">RV 800</p>
9612-9458-51 9612-9458-53		1.4301 (304) 1.4401 (316)	300hl/h 300hl/h	Oil Bath Oil Bath		<p style="text-align: right;">RV 300</p>
9612-9458-55 9612-9458-57		1.4301 (304) 1.4401 (316)	1000hl/h 1000hl/h	Oil Bath Oil Bath		<p style="text-align: right;">RV 1000</p>