

Requested by Oy Prevex Ab
FI-66900 NYKARLEBY
FINLAND

Order 23.3.2018, Kenneth Forsman

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Task **Type testing of waste fittings Smartloc for kitchen sink with one and two bowls**

Test samples Oy Prevex Ab delivered 27.3.2018 and 22.5.2018 (samples 18.083 & 18.084) following waste fittings for kitchen sink (1 sample/product):

Name	Product number	Description	Marked at VTT
Smartloc waste fitting	41K03A01	1-bowl 114 mm ¹⁾	18.044.1
Smartloc waste fitting	42K03A01	2-bowl 114 mm	18.045.1
Smartloc waste fitting	41R03A01	1-bowl 114 mm remote	18.046.1
Smartloc waste fitting	42R03A01	2-bowl 114 mm remote	18.047.1
Smartloc waste fitting	42N03001	2-bowl nut connection	18.049.1
Smartloc waste fitting	41N03001	1-bowl nut connection	18.050.1
	3107006		18.051.1
Overflow series	3320015	rigid overflow	18.052.1-1
Strainer kit	13882	-	18.053.1-2
Waste valve kit R1 1/2" 70mm	3405039	Waste valve kit to be attached Smartloc standard module	18.083.1-1
Overflow kit	3321005	overflow kit	18.084.1

1) 114 mm refers to the strainer size

Smartloc is identical to Lillviken waste fitting (tested VTT-S-05613-15).

Waste fittings are made of polypropylene (PP). Waste outlets of the fitting are for bowl with an outlet hole diameter of 90 mm. Connection to the discharge pipe is DN/OD 50 or 40, floor or wall connections. Both waste fittings have a hose connection possibility for washing machine. Waste valve remote can be used with both waste fittings.

Samples were enclosed with their product drawings and mounting instructions. Product description is presented in Appendix 1.

Test method

Waste fitting for sanitary appliances. Type approval guidelines 2007. The National Building Code of Finland. Ministry of Environment (in Finnish).
 Test method bases mainly on the following standards:
SFS-EN 274-2:2002 Waste fittings for sanitary appliances. Part 2: Test methods.
SFS-EN 274-1:2002 Waste fittings for sanitary appliances. Part 1: Requirements.

Results

The results are presented in the Appendix 2. Summary of the results is presented in the Table 1.

Table 1. Summary of the test results.

Test Product	Result						
	41K0 3A01	42K0 3A01	41R03 A01	42R03 A01	42N0 3001 ¹⁾	41N0 3001 ¹⁾	3405 039 ²⁾
1 General	+	+	+	+	+	+	+
2 Appearance of surfaces	+	+	+	+	+	+	+
3 Materials	+	+	+	+	+	+	+
4 Design and dimensions	+	+	+	+	+	+	+
5 Hydraulic requirements	+	+	+	+	+	+	+
6 Tightness	+	+	+	+	+	+	+
7 Marking	+	+	+	+	+	+	+

+ = Requirements of the type test method fulfilled.

Waste fitting for sanitary appliances. Type approval guidelines 2007 / SFS-EN 274-1.

- = not tested, o = requirements are not fulfilled.

1) Only a standard module without strainer kit. Tested with 13882 (18.053.1)

2) Only a strainer kit. Tested with 2N03001

Espoo, 28.5.2018

Ville Matveinen
Expert

Christer Björklund
Laboratory Technician

Appendices

- 1 Product description
- 2 Results

DISTRIBUTION

Customer

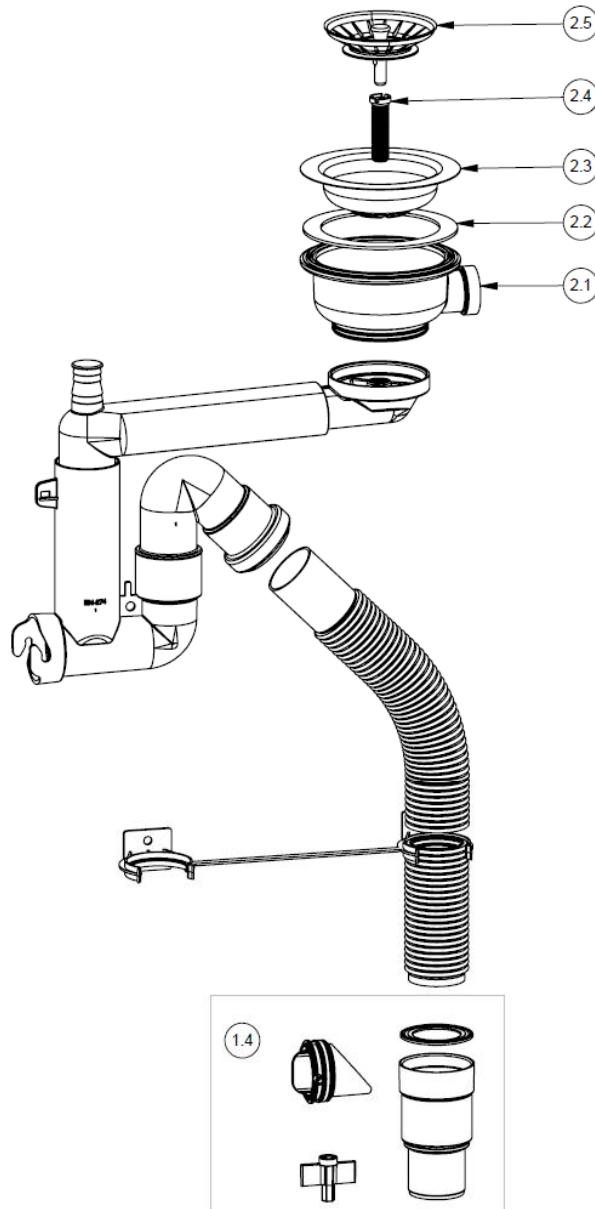
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Original

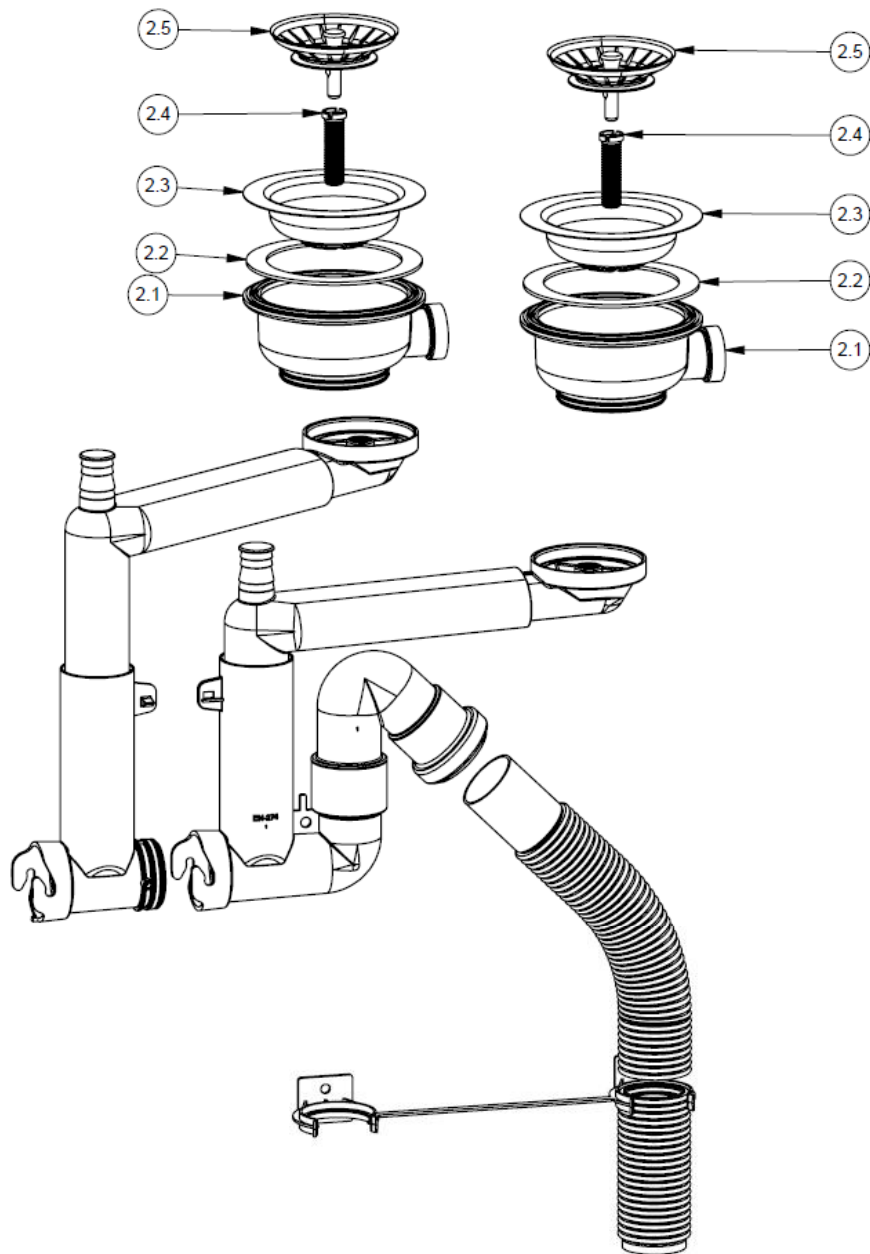
Waste fittings for kitchen sink with one or two bowls
Type: Smartloc

Manufacturer: Oy Prevox Ab

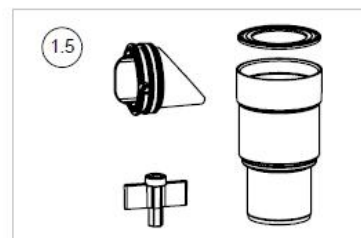


ITEM	PART NR	DESCRIPTION	QTY
1	41K03MOD	Smartloc 1-bowl standard module	1
1.1	632752	Smartloc body + bend 135°	1
1.2	632761	Bend 88° + waste arm	1
1.3	63284	Flexible hose + clips	1
1.4	3100074	Installation kit	1
2	3406040	Strainer kit	1
2.1	632421	Waste valve with overflow	1
2.2	71169	Gasket 110/85x2	1
2.3	71387	Strainer 114x30	1
2.4	71478	Hole screw M12x47	1
2.5	13712	Strainer plug	1

Product	Smartloc 1-bowl 114 mm		
Type			
No	41K03A0	ver.001	
Date	19.03.2018 mb		
<input checked="" type="checkbox"/> New type <input type="checkbox"/> New version <input type="checkbox"/> Old version			
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ITEM	PART NR	DESCRIPTION	QTY
1	42K03MOD	Smartloc 2-bowl standard module	1
1.1	632752	Smartloc body + bend 135°	1
1.2	632761	Bend 88° + waste arm	2
1.3	63238	Smartloc body extension part	1
1.4	63284	Flexible hose + clips	1
1.5	3100074	Installation kit	1
2	3406040	Strainer kit	2
2.1	632421	Waste valve with overflow	1
2.2	71169	Gasket 110/85x2	1
2.3	71387	Strainer 114x30	1
2.4	71478	Hole screw M12x47	1
2.5	13712	Strainer plug	1

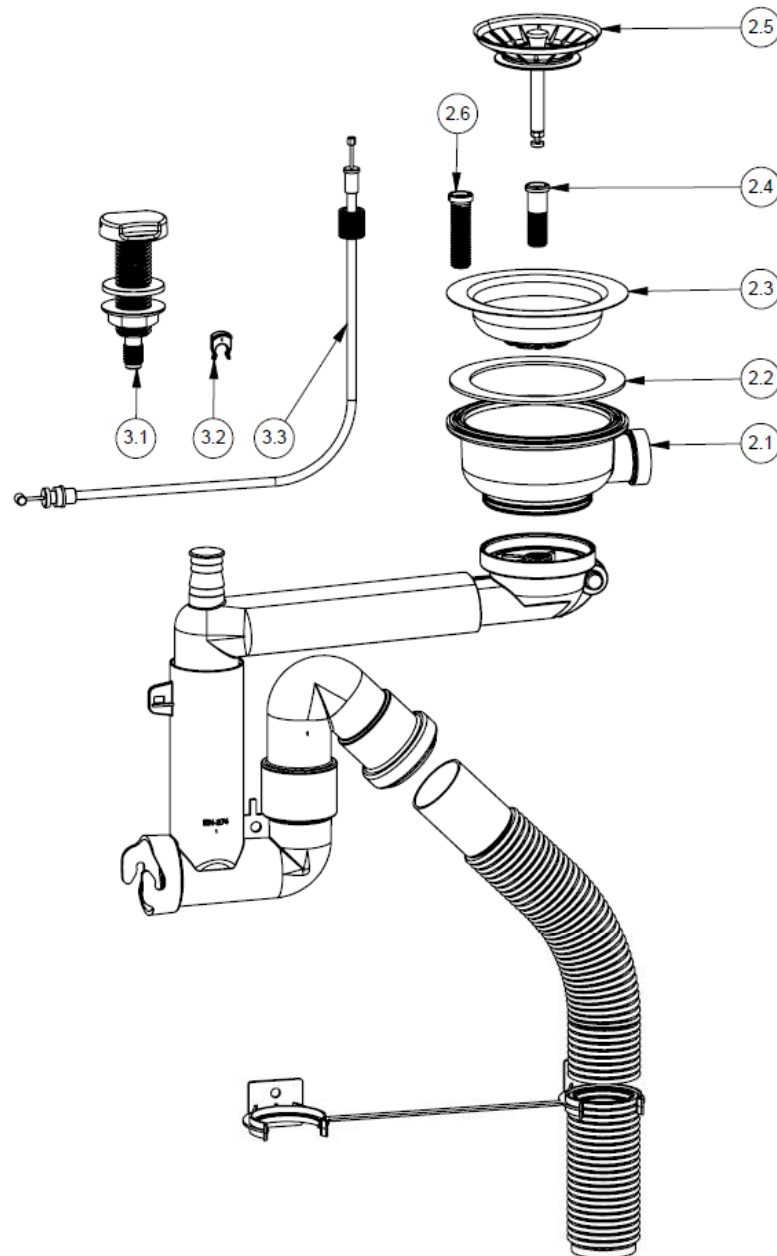


Product Smartloc 2-bowl 114 mm
Type
No 42K03A0 ver.001
Date 19.03.2018 mb

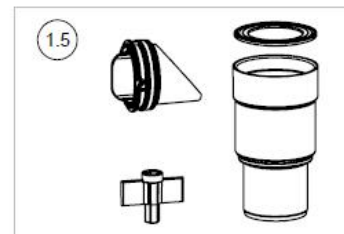
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FIN-66900 Uusikaarlepyy/Nykarleby

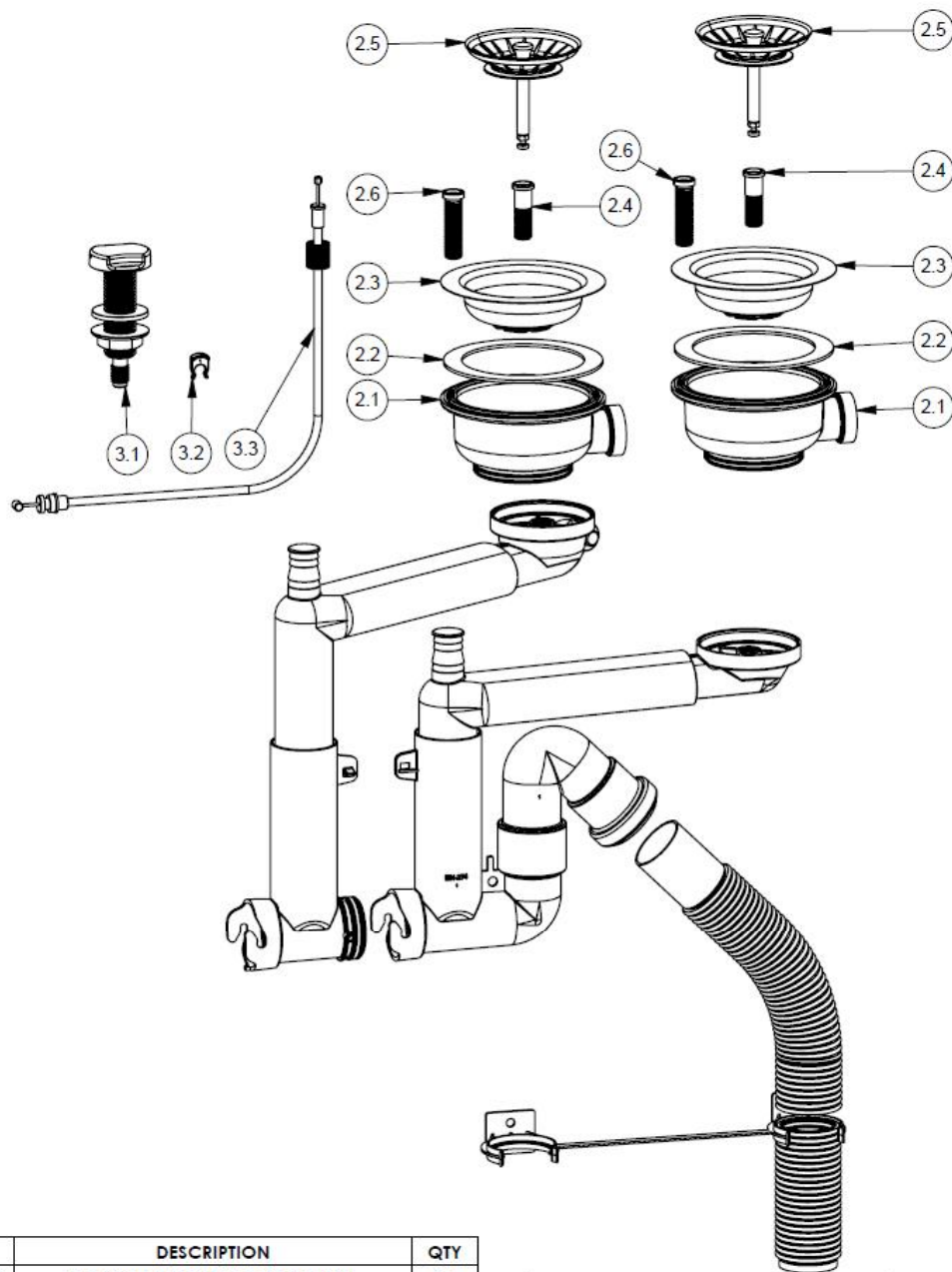
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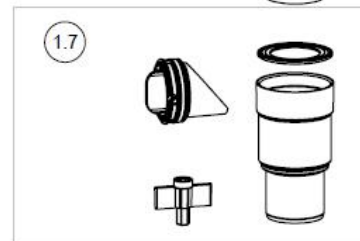
ITEM	PART NR	DESCRIPTION	QTY
1	41R03MOD	Smartloc 1-bowl remote module	1
1.1	632752	Smartloc body + bend 135°	1
1.2	63240	Bend 88°	1
1.3	690023	Remote arm	1
1.4	63284	Flexible hose + clips	1
1.5	3100074	Installation kit	1
2	3407021	Strainer kit remote	1
2.1	632421	Waste valve with overflow	1
2.2	71169	Gasket 110/85x2	1
2.3	71387	Strainer 114x30	1
2.4	71556	Hole screw M12x39	1
2.5	1284842	Strainer Plug adjustable	1
2.6	71478	Hole screw M12x47	1
3	3107007	Remote kit	1
3.1	128571	Remote control	1
3.2	63123	Spring washer	1
3.3	71453	Remote wire 600 mm	1



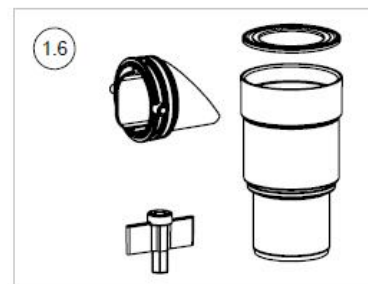
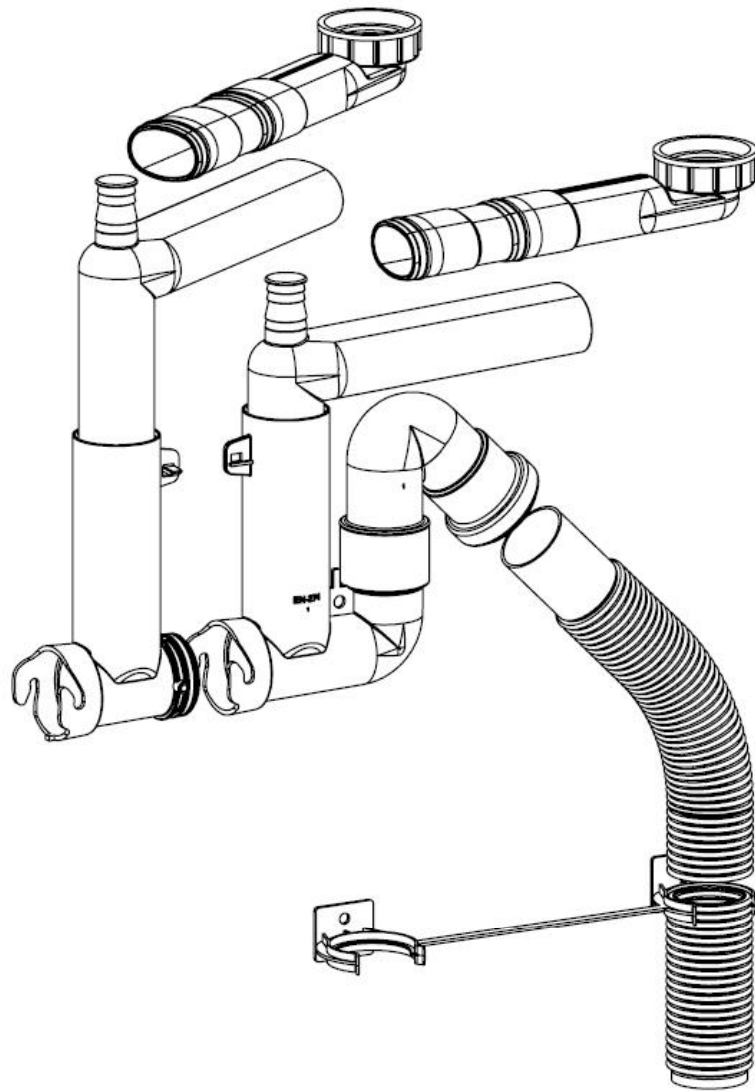
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Type			
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Date	19.03.2018 mb		
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ITEM	PART NR	DESCRIPTION	QTY
1	42R03MOD	Smartloc 2-bowl remote module	1
1.1	632752	Smartloc body + bend 135°	1
1.2	632761	Bend 88° + waste arm	1
1.3	63238	Smartloc body extension part	1
1.4	63240	Bend 88°	1
1.5	690023	Remote arm	1
1.6	63284	Flexible hose + clips	1
1.7	3100074	Installation kit	1
2	3407021	Strainer kit remote	2
2.1	632421	Waste valve with overflow	1
2.2	71169	Gasket 110/85x2	1
2.3	71387	Strainer 114x30	1
2.4	71556	Hole screw M12x39	1
2.5	1284842	Strainer Plug adjustable	1
2.6	71478	Hole screw M12x47	1
3	3107007	Remote kit	1
3.1	128571	Remote control	1
3.2	63123	Spring washer	1
3.3	71453	Remote wire 600 mm	1

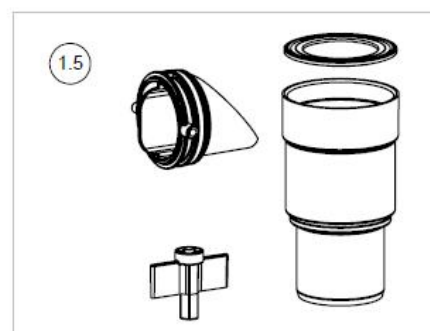
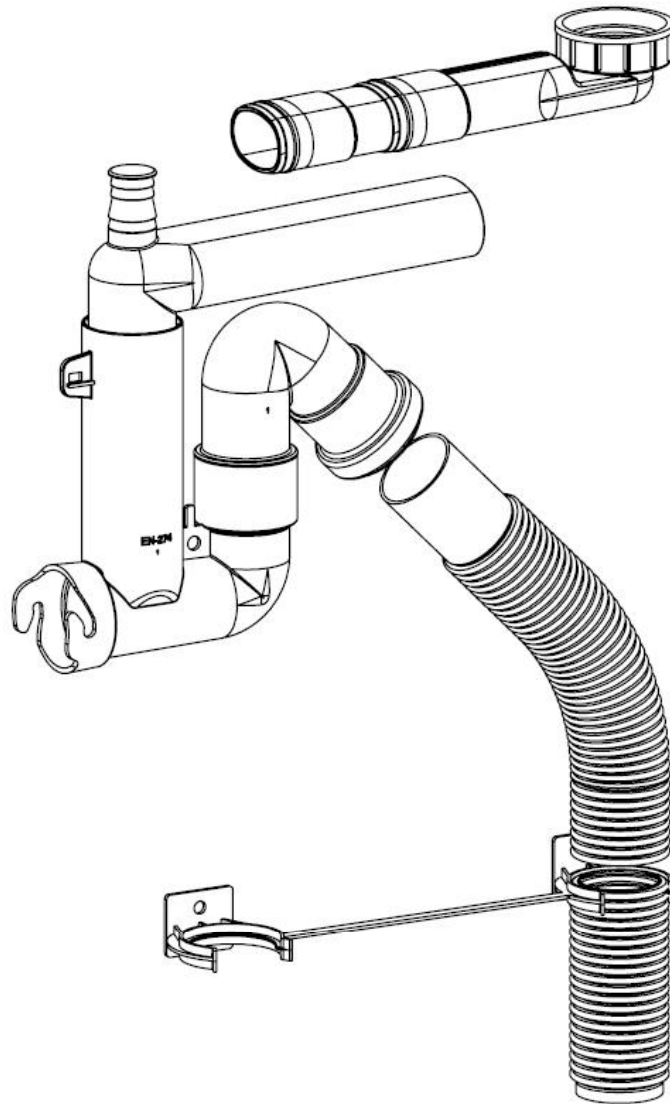


Product	Smartloc 2-bowl 114 mm remote		
Type			
No	42R03A0	ver.001	
Date	19.03.2018 mb		
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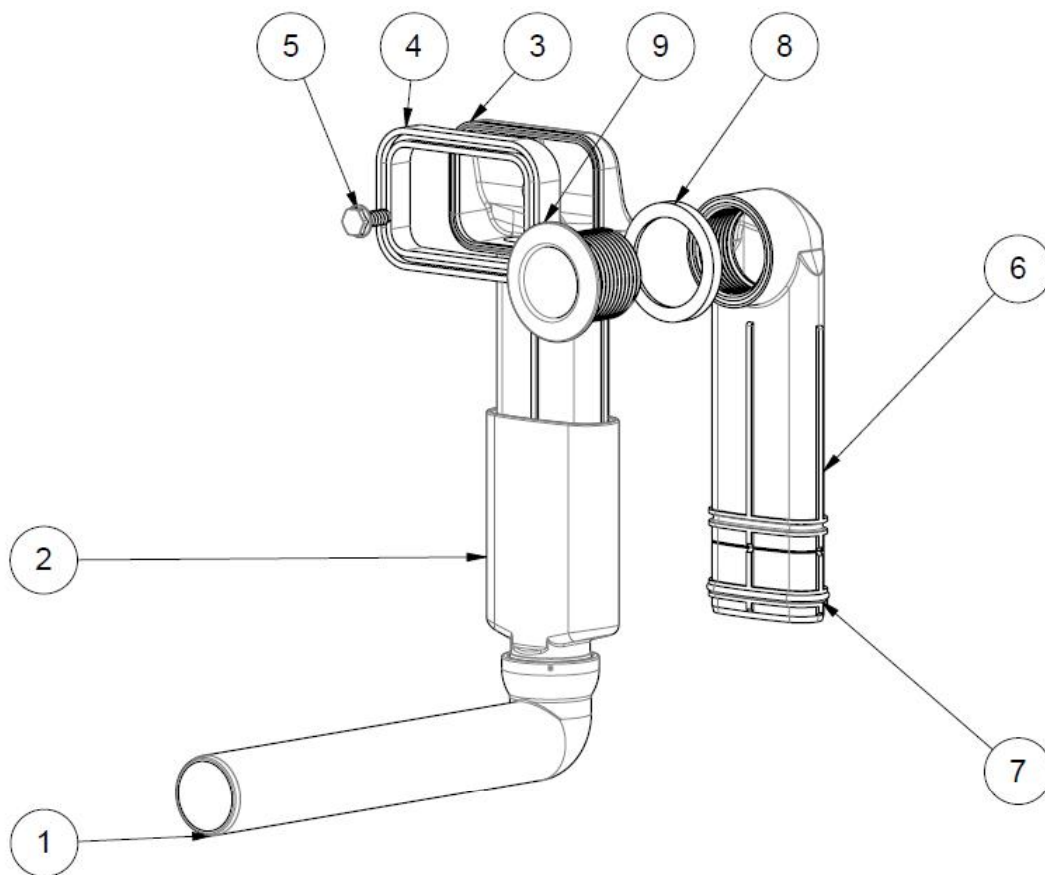
ITEM	PART NR	DESCRIPTION	QTY
1	42N03MOD	Smartloc 2-bowl nut conn. module	1
1.1	632752	Smartloc body + bend 135°	1
1.2	63240	Bend 88°	2
1.3	690060	Waste Arm + 1 1/2" nut	2
1.4	63238	Smartloc body extension part	1
1.5	63284	Flexible hose + clips	1
1.6	3100074	Installation kit	1

Product		Smartloc 2-bowl nut connection	
Type			
No	42N0300	ver.001	
Date	15.03.2018 mb		
<input checked="" type="checkbox"/> New type	<input type="checkbox"/> New version	Old version	
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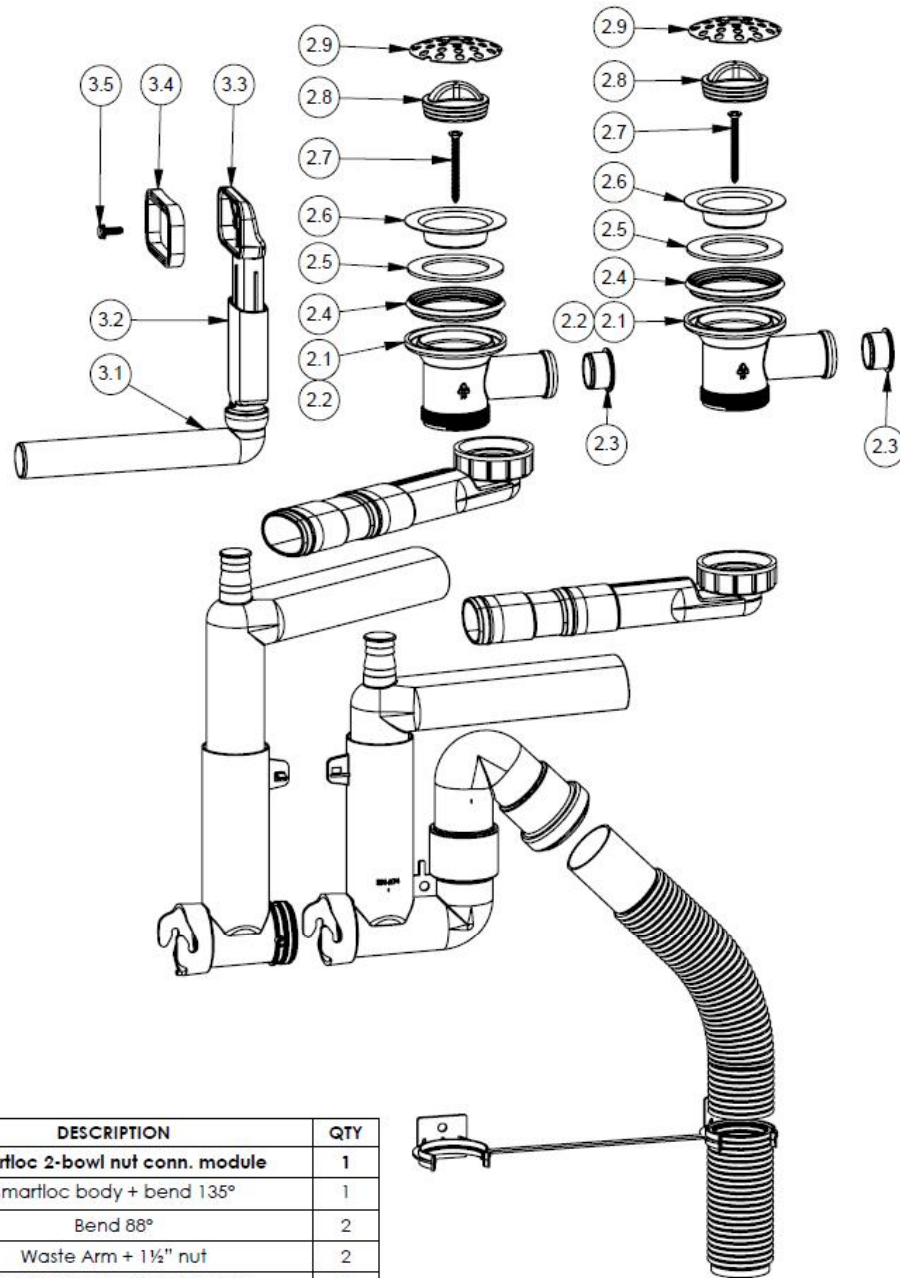
ITEM	PART NR	DESCRIPTION	QTY
1	41N03MOD	Smartloc 1-bowl nut conn. module	1
1.1	632752	Smartloc body + bend 135°	1
1.2	63240	Bend 88°	1
1.3	690060	Waste Arm + 1 1/2" nut	1
1.4	63284	Flexible hose + clips	1
1.5	3100074	Installation kit	1

Product		Smartloc 1-bowl nut connection	
Type			
No	41N0300	ver.001	
Date	15.03.2018 mb		
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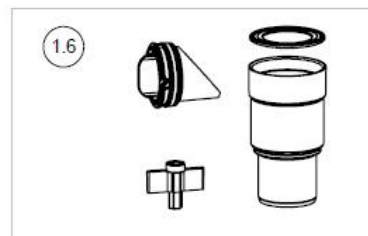


ITEM	PART NR	DESCRIPTION	QTY
1	632452	Overflow pipe part 1	1
2	632462	Overflow pipe part 2	1
3	63247	House 61x40 2K	1
4	61260	Gasket 65x48 R185	1
5	71840	Screw 4,8x13 A2	1
6	63156	House M28	1
7	71033	O-ring 29x2 NBR	1
8	61287	Gasket M28	1
9	71669	Connector M28 L25	1

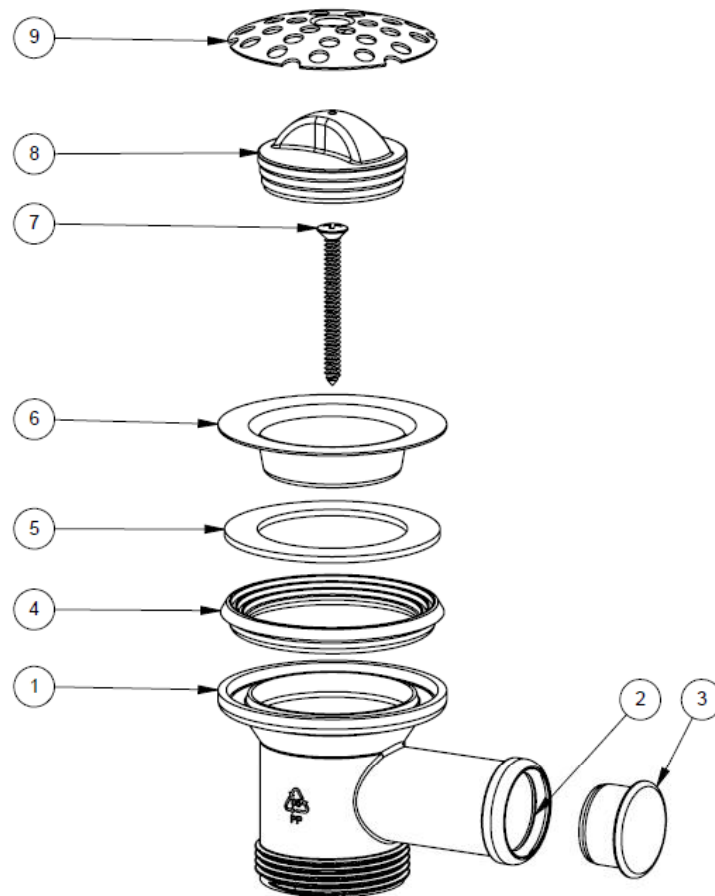
Product		Rigid overflow	
Type		Dual	
No		3320003	ver.002
Date		04.09.2017	CD
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 FIN-66900 Uusikaarlepyy/Nykarleby			Approved



ITEM	PART NR	DESCRIPTION	QTY
1	42N03MOD	Smartloc 2-bowl nut conn. module	1
1.1	632752	Smartloc body + bend 135°	1
1.2	63240	Bend 88°	2
1.3	690060	Waste Arm + 1½" nut	2
1.4	63238	Smartloc body extension part	1
1.5	63284	Flexible hose + clips	1
1.6	3100074	Installation kit	1
2	3405039	Waste valve kit R1½" 70 mm	2
2.1	63232	Waste valve 70-1½"	1
2.2	71488	O-ring 24,2x3	1
2.3	63340	Plug S25	1
2.4	61297	Gasket 69x8	1
2.5	71230	Gasket 66/46x2	1
2.6	71036	Strainer Ø70	1
2.7	71147	Screw 4,8x50 DIN7983	1
2.8	63101	Stopper ø45	1
2.9	71025	Strainer 64mm	1
3	3321005	Overflow kit	1
3.1	632452	Overflow pipe part 1	1
3.2	632462	Overflow pipe part 2	1
3.3	63247	House 61x40 2K	1
3.4	61260	Gasket 65x48 R185	1
3.5	71840	Screw 4,8x13 A2	1

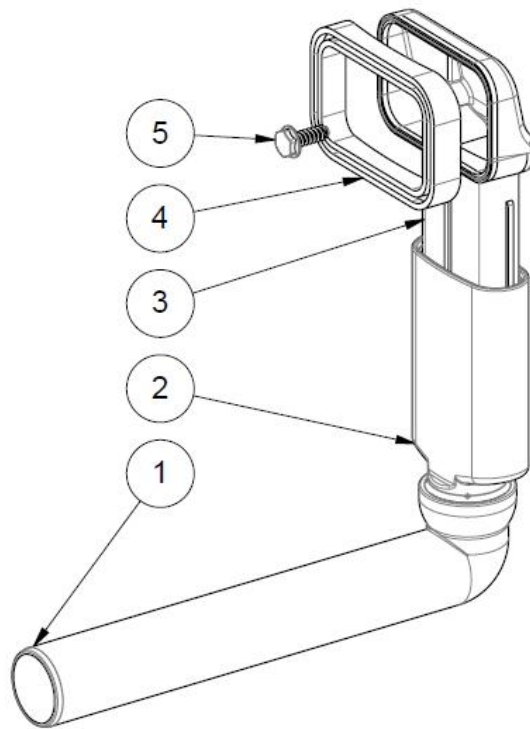


Product Smartloc 2-bowl 70 mm	
Type	
No	42L13F2 ver.001
Date	17.05.2018 mb
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 FIN-66900 Uusikaarlepyy/Nykarleby	
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ITEM	PART NR	DESCRIPTION	QTY
1	63232	Waste valve 70-1½	1
2	71488	O-ring 24,2x3	1
3	63340	Plug S25	1
4	61297	Gasket 69x8	1
5	71230	Gasket 66/46x2	1
6	71036	Strainer Ø70	1
7	71147	Screw 4,8x50 DIN7983	1
8	63101	Stopper ø45	1
9	71025	Strainer 64mm	1

Product		Waste valve kit R1½" 70 mm	
Type			
No	3405039	ver.002	
Date	17.05.2018 mb		
<input type="checkbox"/> New type	<input checked="" type="checkbox"/> New version	Old version	15.03.2018
 FIN-66900 Uusikaarlepyy/Nykarleby			Approved



ITEM	PART NR	DESCRIPTION	QTY
1	632452	Overflow pipe part 1	1
2	632462	Overflow pipe part 2	1
3	63247	House 61x40 2K	1
4	61260	Gasket 65x48 R185	1
5	71840	Screw 4,8x13 A2	1

Product		Overflow kit	
Type			
No	3321005	ver.002	
Date	06.09.2017	CD	
<input type="checkbox"/> New type <input checked="" type="checkbox"/> New version Old version 13.06.2017			
 FIN-66900 Uusikaarlepyy/Nykarleby			Approved

TEST RESULTS OF WASTE FITTINGS

Test samples: waste fittings Lillviken, type 50 mm for wash basin (3 samples/product).

Product name	Samples marked in VTT
41K03A01	18.044.1
42K03A01	18.045.1
41R03A01	18.046.1
42R03A01	18.047.1
42N03001	18.049.1
41N03001	18.050.1
3107006	18.051.1
3320015	18.052.1-2
3405039	18.083.1-1
3321005	18.084.1

Manufacturer: Oy Prevox Ab, Finland.

Date of testing: 27.3.2018-25.5.2018 (test samples received 27.3.2018 and 22.5.2018).

1 GENERAL (SFS-EN 274-1: 4.1)

Requirement: Waste outlet, traps and overflows shall be capable of being connected to drainage pipework system in accordance with EN 12056-1 and EN 12056-2.

Result: No remarks in test samples.

2 APPEARANCE OF SURFACES (SFS-EN 274-1: 4.2)

Test method	Result	Requirement
Visual observations	No fails in test samples. Colour of polypropylene parts: grey	The internal and external surfaces of the waste fittings shall be smooth free from grooving, blistering or any other surface defects likely to impair their function.
Neutral saline-spray test for NiCr coatings (EN 248)	No visible NiCr coated parts.	The appearance of visible electrodeposited shall comply with EN 248

3 MATERIALS (SFS-EN 274-1: 4.3)

Material: polypropylene (PP), seals: EPDM rubber and thermoplastic elastomer, metallic parts: stainless steel

3.1 Temperature cycling test (SFS-EN 274-1: Annex A and Ref. /1/)

Temperature cycling at water temperatures of 93 ± 2 °C and 10 ± 5 °C in periods of 60 s, between rest periods of 1 min, water flow (30±3) liter/min, 1500 cycles.	Result	Requirement
	no defects no leakage	no defects no leakage ¹⁾

¹⁾ After the test all leaktightness tests in accordance with Clause 6.

Ref. /1/ *Waste fitting for sanitary appliances. Type approval guidelines 2007.*

4 DESIGN AND DIMENSIONS

1- and 2-bowl waste fittings and kits. Samples according to drawings.

4.1 Waste outlet and overflow

Dimensions of waste outlets and overflows (SFS-EN 274-1: Table 1)

According to drawings, see Annex 1.

4.2 Trap

Dimensions of trap (SFS-EN 274-1: Table 1 and Figure 12)

According to drawings, see Annex 2.

5 HYDRAULIC REQUIREMENTS (SFS-EN 274-2: 5)

5.1 Measurements of flow rates

Measured flow rates and requirements are presented in the table below (test sample 2.2).

Flow rate of test object		Result (l/s)			Requirement min. flow l/s
		18.050.1 + 18.053.1 with strainer plug	18.050.1 + 18.053.1 without strainer plug	18.083.1 + 18.084.1 70 mm	
3.2 Waste outlet		-	-	-	0,7
Waste outlet with a trap	floor connection	0,85	1,0	0,7	0,6
3.4 Trap alone		-	-	-	0,7
3.5 Overflow		- ²⁾	- ²⁾	0,38	0,25
Connection for wash machine ¹⁾ : Flow rate to waste outlet when flow rate to hose connection to washing machine is 0,6 l/s at the same time		0,6	0,7	-	0,6

- 1) Water to the hose connection came from a water supply system by a hose (inside diameter 20 mm). Flow rate was set constant by a control valve. (Type approval guide 4.2.2)
- 2) Similar to Lillviken (tested VTT-S-05613-15)

6 TIGHTNESS

Test method	Result							Requirement
	41K03A 01	42K03 A01	41R03A 01	42R03A 01	42N030 01	41N03 001	3405 039	
SFS-EN 274-2: 6.1 Leaktightness of waste outlet with plug or flap Water height of 120 mm for 1 h.	nl	nl	nl	nl	nl	nl	nl	leakage < 1 l/h (SFS-EN 274-1: 4.7.1)
SFS-EN 274-2:6.2 Leaktightness of traps The trap with all parts and connections, a water pressure of 0,01 MPa (0,1 bar) for 5 min.	nl	nl	nl	nl	nl	nl	nl	no leakage (SFS-EN 274-1: 4.7.2)
4.2.1 Airtightness ¹⁾ Air pressure of 400 Pa in the outlet side of the water filled trap for 15 min.	nl	nl	nl	nl	nl	nl	nl	no leakage ¹⁾

¹⁾ Waste fitting for sanitary appliances. Type approval guidelines 2007.

nl = no leakage

7 MARKING

Requirements (SFS-EN 274-1: Clause 5): At least the name of the manufacturer and EN 274.

Marking:

“PREVEX”, “EN-274”,
recycling symbol: “ PP, 05 ”
> PP <