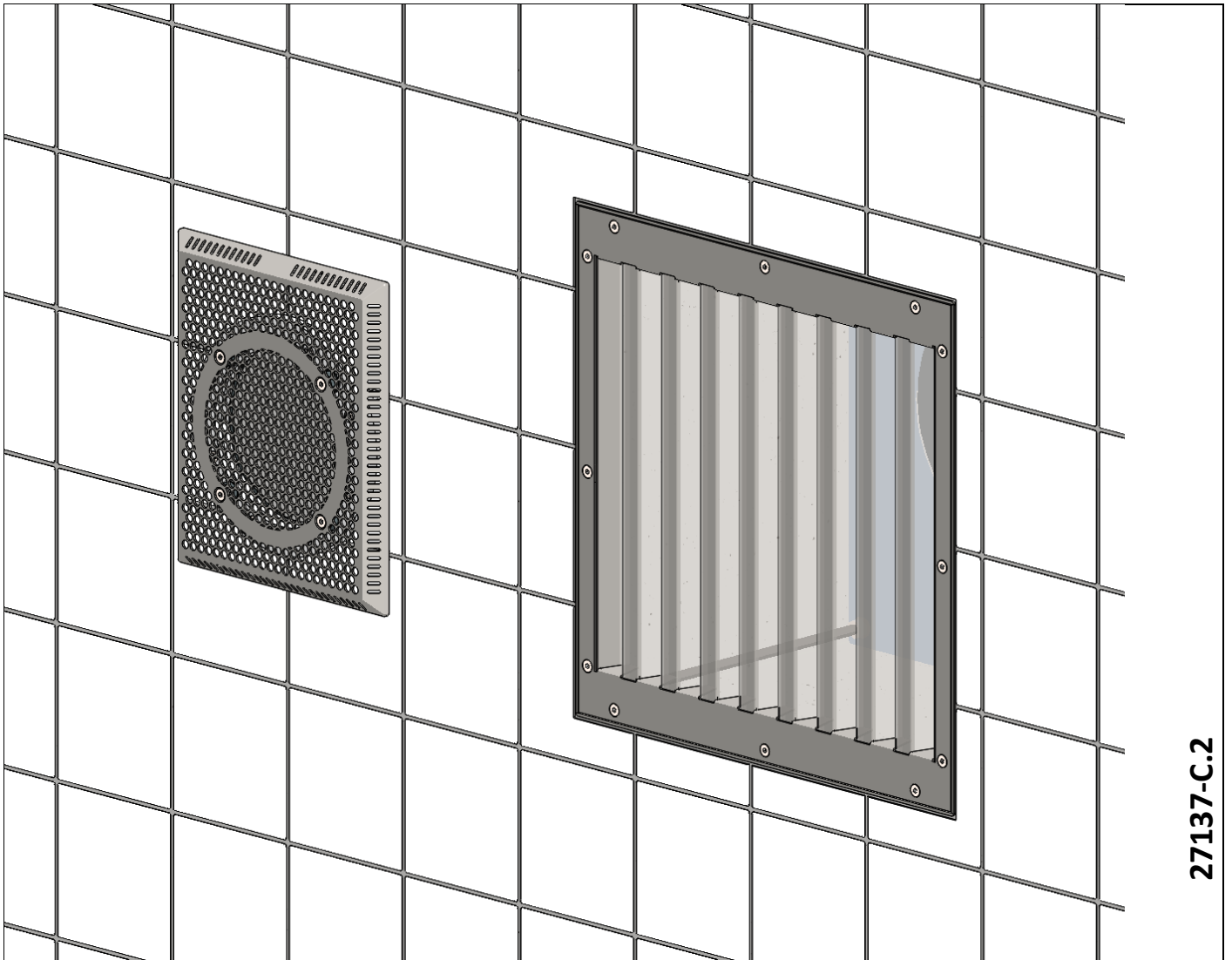


secur[®] suction units

GB Operator's Manual

Original instructions




27137-C.2

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1. General information

1.1. Warranty notice

	<p>The entire system or parts of it are not suitable for use in other systems. The function of the entire system in combination with other systems or components can not be guaranteed. Accordingly we explicitly instruct you only to use such parts or the entire system in indoor swimming pools for their intended purpose. Failure to comply with the information provided in this operator's manual voids all claims under warranty.</p>
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1.2. General information

fluvo - suction units are available in various sizes and models.

All parts in contact with media are designed for water quality according to DIN 19643. The installation of the entire system must be carried out in accordance with the applicable standards.

1.3. secur[®]40 suction units (DN100)

The secur[®]40 suction unit (DN100) is only suitable for wall installation.


1.4. secur[®] and secur[®]classic suction niches

The secur[®] and secur[®]classic suction niches are available in three different sizes and different nominal widths and as combination suction units (double and triple) for several attractions simultaneously.

The secur[®] design (suction grille) is only suitable for wall installation.


The secur[®]classic design (suction screen) is suitable for wall installation and floor installation.

2. Safety Instructions

	<p>The calculations and dimensioning for the combination line must take into account special local features. The design and shape of the suction niches reduce suction danger. The stipulations of the Deutsche Gesellschaft für das Badewesen e.V. (German Society for Bathing, reg.org.) as outlined in pamphlet 60.03 and DIN EN 13451 must also be observed.</p>
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2.1. General information


- Make certain before commissioning that the operating personnel have read and understood the operator's manual. It is the owner rather than the operator who is responsible for safety.
- All parts that come in contact with medium are resistant up to an absolute salt content of (4500 mg/l Cl-). If higher concentrations of salt are present, please contact the manufacturer.
- Use the suction unit only when it is in flawless condition technically and according to its intended purpose. Be conscious of safety and dangers and observe all the instructions of this Operator's Manual!
- Eliminate all malfunctions that could have a detrimental effect on safety immediately.
- Repairs of any nature must only be made by qualified professionals.
- The operator must ensure that
 - the operator's manual is always available for operating personnel,
 - the instructions in the operator's manual are observed,
 - the suction unit is stopped immediately if any abnormal electrical voltages, temperatures, noises, vibrations, leaks, or other faults occur.

	<p>Caution! Risk of injury!</p> <p>Never start up or use the suction unit without a securely mounted cover (suction grille or screen)!</p>
--	--

2.2. Marking

The following symbols are used in this operator's manual to make special reference to dangers.

	<p>Caution! Risk of injury! / Attention! Risk of damage!</p> <p>This symbol warns of hazards due to mechanical effects and of actions that will damage the product.</p>
--	---

	<p>Caution! Danger of death!</p> <p>This symbol warns you of dangers due to electrical current.</p>
--	---

	<p>Important note!</p>
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Notices attached directly, such as the arrows for direction of rotation, must always be observed and must be maintained in legible condition.

3. Description of the device / general technical data

Abbreviations

- A Preassembled pool (GFK, PVC, PP or similar)
- B Concrete pool with tiles
- E Stainless steel pool
- H Concrete pool with liner seal
- S Concrete pool with tiles, with and without brush-applied sealant or liquid seal


3.1. Pipe dimensioning

3.1.1. Flow speeds

To prevent impacts due to acceleration or delay, the flow speed should be kept uniform in the pipework. The following guide values are given in the literature (for pipework up to 6m, the following exemplary recommendations apply):

	Recommended flow speed (for water)	42 m ³ /h	48 m ³ /h	60 m ³ /h	72 m ³ /h
Suction line	1.0 – 1.5 m/s	DN100	DN125	DN125	DN150
Pressure line	2.5 – 3.0 m/s	DN65	DN80	DN100	DN100

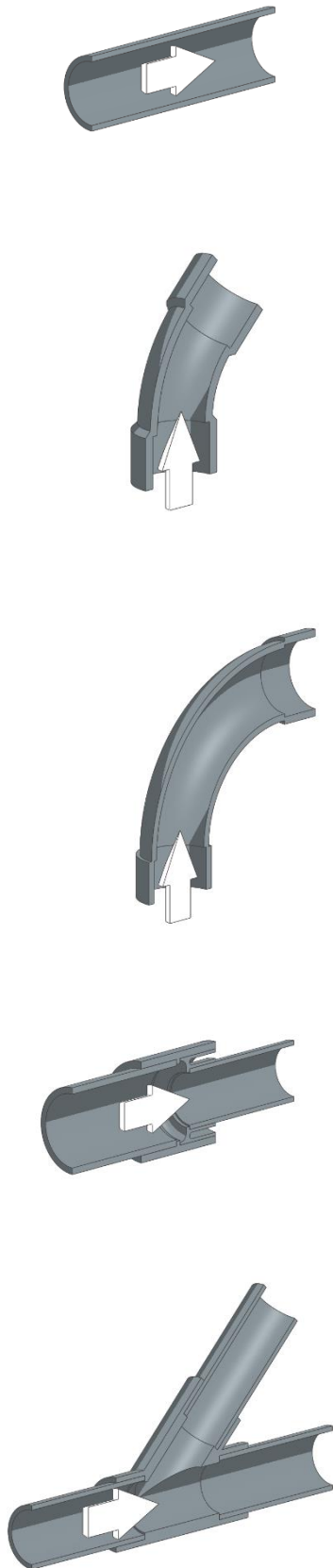
An economical speed is the determining factor for the dimensioning. It results from the optimum of the sum of the investment costs for the pipework, the investment costs of the machinery (pumps, blowers) and the energy and maintenance costs over the entire operating period.

	<p>Note! For pipework longer than 6m, the nominal width must be enlarged, for example on the suction side from DN100 to DN125 and on the pressure side from DN80 to DN100. To keep pipeline resistances as low as possible, always use pipework with bends, not angles, and use 45° T-pieces instead of 90° T-pieces.</p>
---	--

3.1.2. Flow Losses - Pipes and Elements

The following values were used as a basis for the following examples:
Water, 48 m³/h; turbulent flow; roughness value: 0.1 mm

Flow losses in the entire pipeline (pressure and suction side) must be noted.
Flow losses must be kept low in the components that are used.



Pipe, 30 m, PVC hard, DIN 19532	Pressure loss	Flow speed
DN80	0.263 bar	2.562 m/s
DN100	0.095 bar	1.718 m/s
DN150	0.014 bar	0.812 m/s

DN80	Pressure loss	Flow speed
45° bend	0.015 bar	2.562 m/s
90° bend	0.006 bar	2.562 m/s

DN80	Pressure loss	Flow speed
Abrupt pipe contraction DN80 to DN50	0.278 bar	2.562 m/s
Edged run-in under angle	0.027 bar	2.562 m/s

Fig. 1 Exemplary flow values

3.2. Technical data - secur[®]40 suction units (DN100)

Connection	DN100 (PVC)
Materials	Installation housing: ABS Fixing elements: 1.4401/ 1.4571 Suction screen: 1.4571
Usage limits	max. 4,500mg/l Cl ⁻
Flow rate at 0.5m/s	Installation from 0.6m below water level Suction screen hole diameter 8mm → max. 40m ³ /h

3.3. Technical data - secur[®] and secur[®]classic suction niches

Connection	DN100 DN125 DN150 DN200 DN250 (PVC)
Materials	Installation housing / brush-applied flange: PVC with wood/polystyrene mould Fixing elements: 1.4401/ 1.4571 Suction screen/grille: 1.4571
Usage limits	max. 4,500mg/l Cl ⁻

3.4. Flow rate at 0.5m/s – secur[®] suction niche

Wall and floor installation

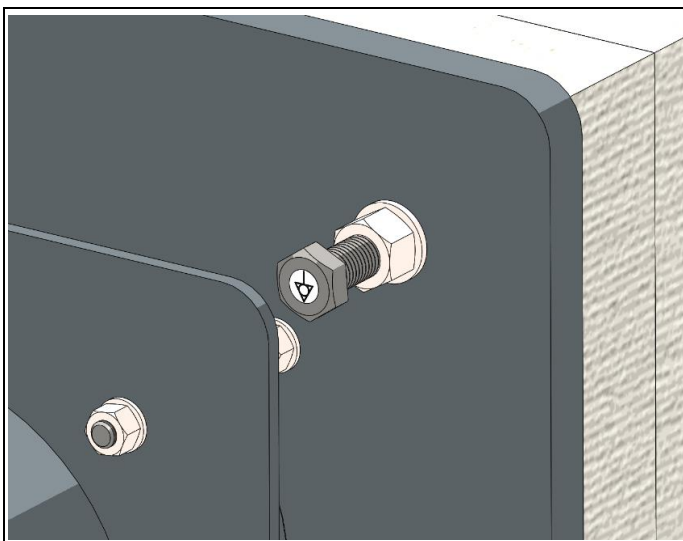
Installation up to 0.6m below water level Suction grille mesh size 2mm	Installation from 0.6m below water level Suction grille mesh size 5mm
---	--

up to 60m ³ /h	secur [®] 60	up to 80m ³ /h	secur [®] 80
up to 120m ³ /h	secur [®] 120	up to 160m ³ /h	secur [®] 160
up to 180m ³ /h	secur [®] 180 [single]	up to 240m ³ /h	secur [®] 240 [single]
up to 360m ³ /h	secur [®] 360 [double]	up to 480m ³ /h	secur [®] 480 [double]
up to 580m ³ /h	secur [®] 580 [triple]	up to 720m ³ /h	secur [®] 720 [triple]

3.5. Flow rate at 0.5m/s – secur[®] classic suction niche

Wall and floor installation			
Installation up to 0.6m below water level Suction screen hole diameter 3mm		Installation from 0.6m below water level Suction screen hole diameter 8mm	
up to 15m ³ /h	secur [®] classic 15	up to 40m ³ /h	secur [®] classic 40
up to 20m ³ /h	secur [®] classic 20	up to 60m ³ /h	secur [®] classic 60
up to 40m ³ /h	secur [®] classic 40 [single]	up to 110m ³ /h	secur [®] classic 110 [single]
up to 80m ³ /h	secur [®] classic 80 [double]	up to 220m ³ /h	secur [®] classic 220 [double]
up to 120m ³ /h	secur [®] classic 120 [triple]	up to 330m ³ /h	secur [®] classic 330 [triple]

3.6. Equalizing tension



	<p>Note! The rear (outer) screws can be used as connection points for possible equalizing tension of the entire suction unit or suction niche!</p>
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Fig. 2 Example of secur[®] suction niche

3.7. Device Units

The suction units and suction niches are delivered in 2 modules

- Installation kit
- Assembly kit

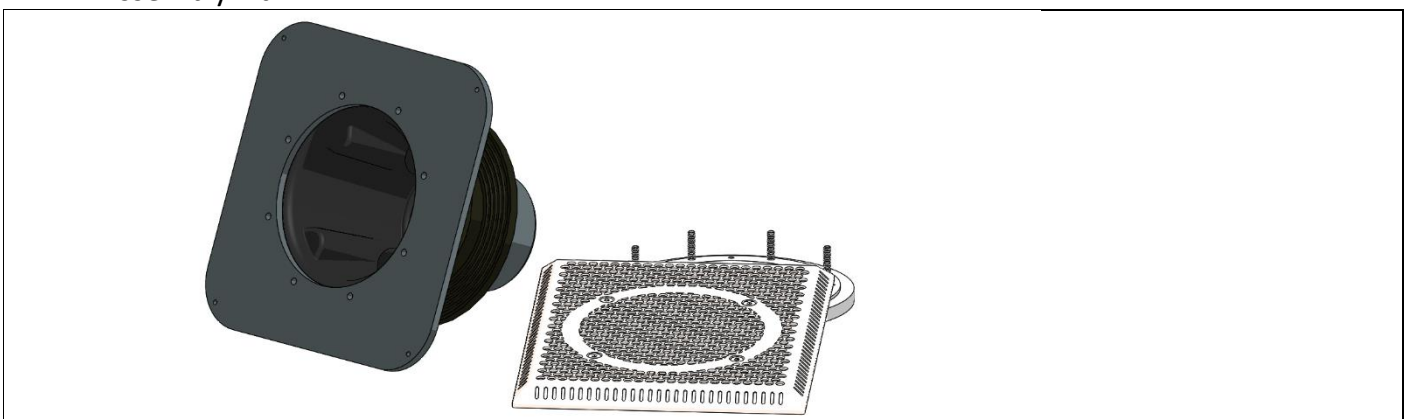


Fig. 3 Exemplary illustration

4. secur[®]40 installation instructions



Observe minimum distance between two suction units according to DIN EN 13451-3 or DIN EN 16582-1!

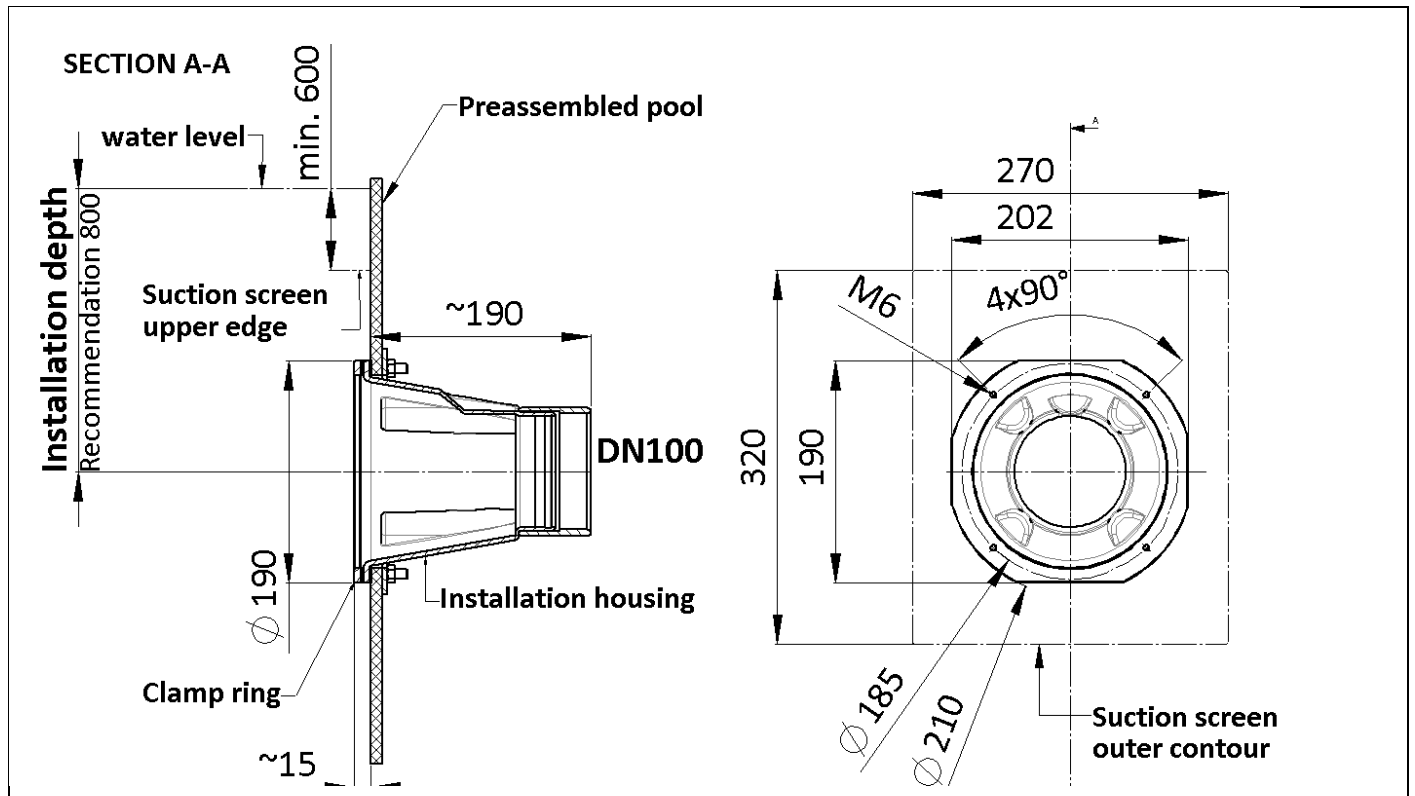


Fig. 4 Example of preassembled pool: Dimensions and recommendation regarding the installation depth

Before assembly, it is essential to ensure that the installation kit is horizontal, assembled to correct dimensions and secured to prevent it from moving. The assembly kit cannot be adjusted afterwards.

4.1. Preparation for installation of preassembled pool [-A]

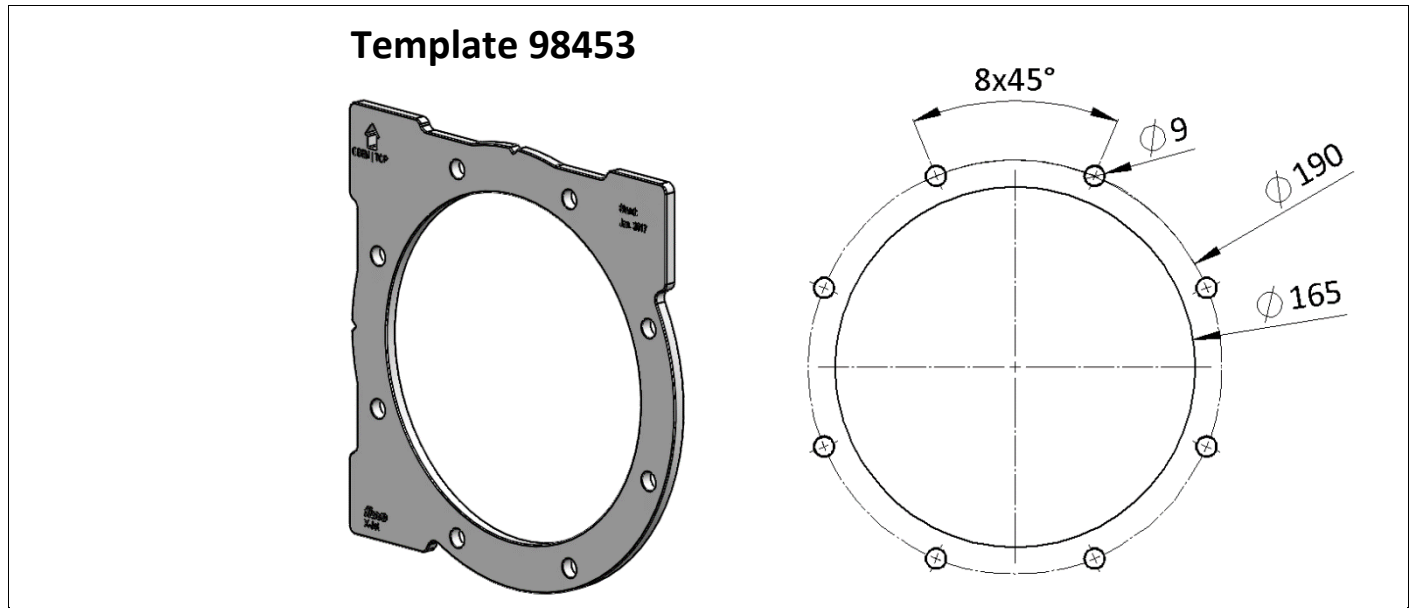


Fig. 5

Introduce the recess \varnothing 165 and the attachment holes \varnothing 9.5 in the pool wall with the aid of the template (article number 98453) that is available separately. Make sure the preparation of the attachment holes is horizontal and true to size as subsequent adjustment is no longer possible.

4.2. Assembly of concrete pool installation kit [-BHS]

Attach the installation kit in the desired position onto the mould (pool rear).

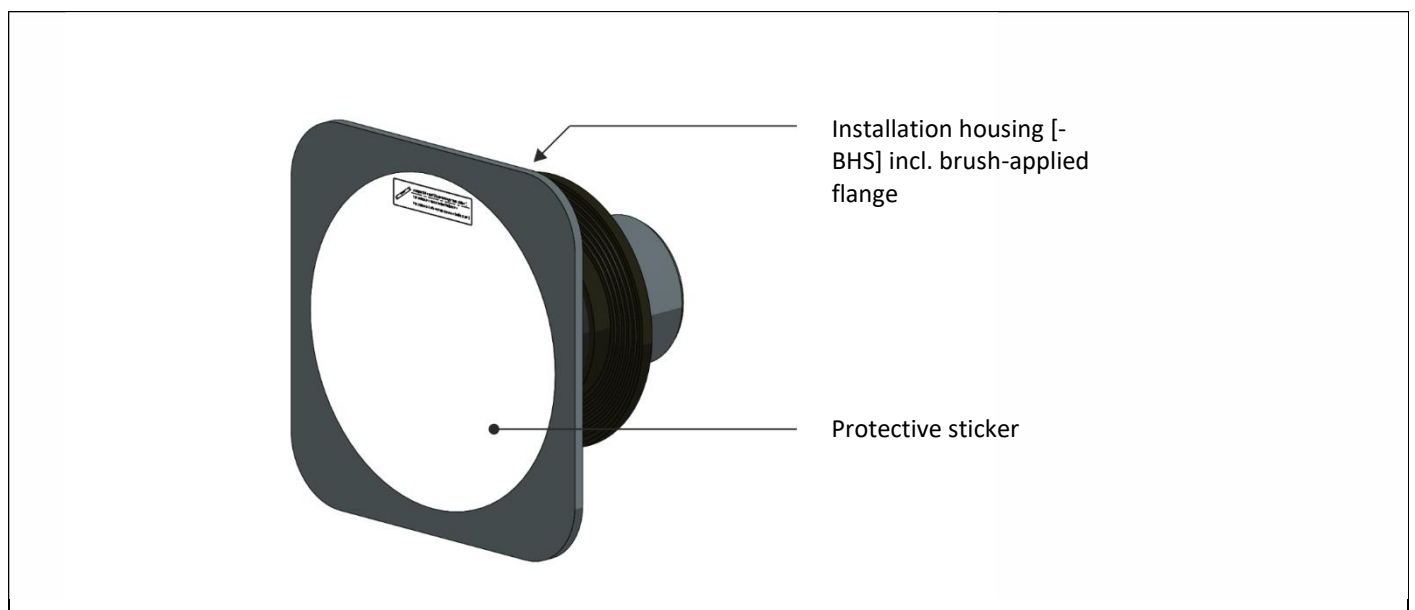


Fig. 6

4.3. Preassembled pool installation kit assembly [-A]

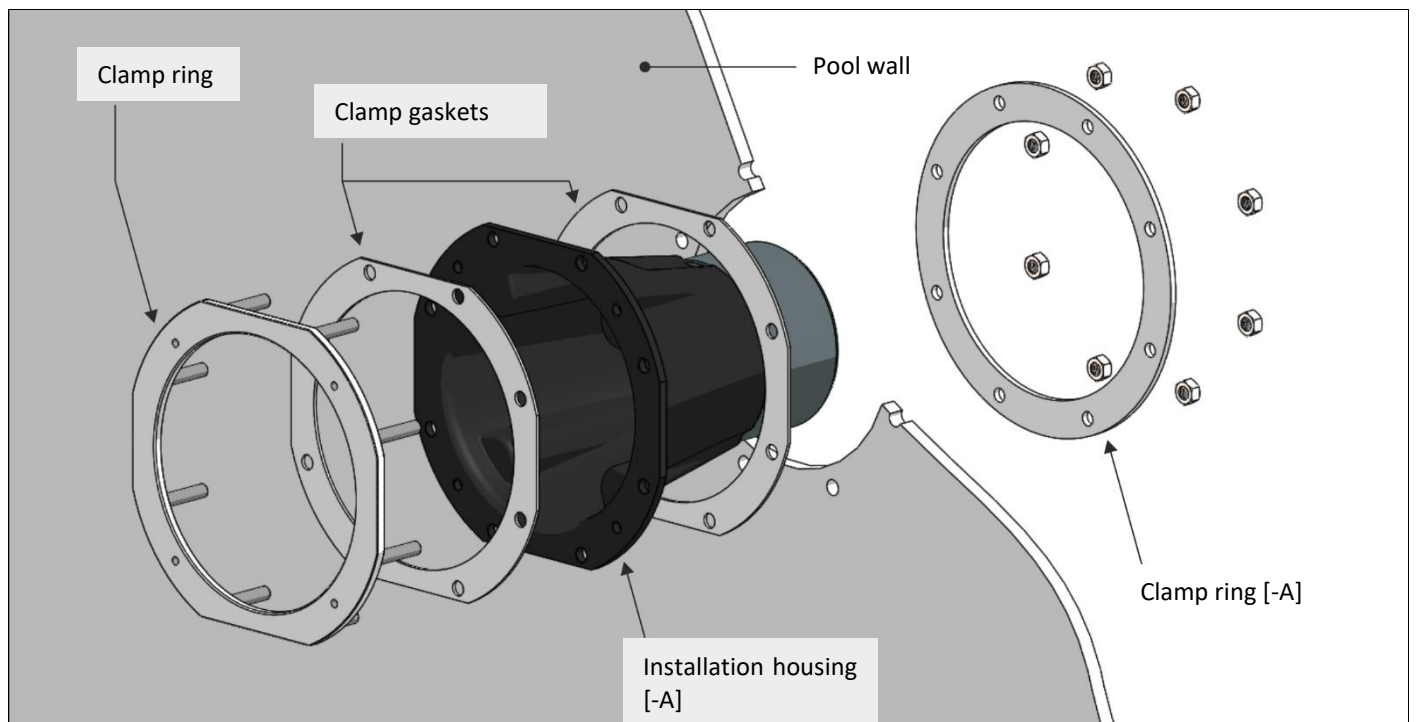


Fig. 7

Mount the installation kit in the order shown with the supplied screws onto the pool wall. The seal surfaces must be clean and smooth.

4.4. Assembly of stainless steel pool installation kit [-E]

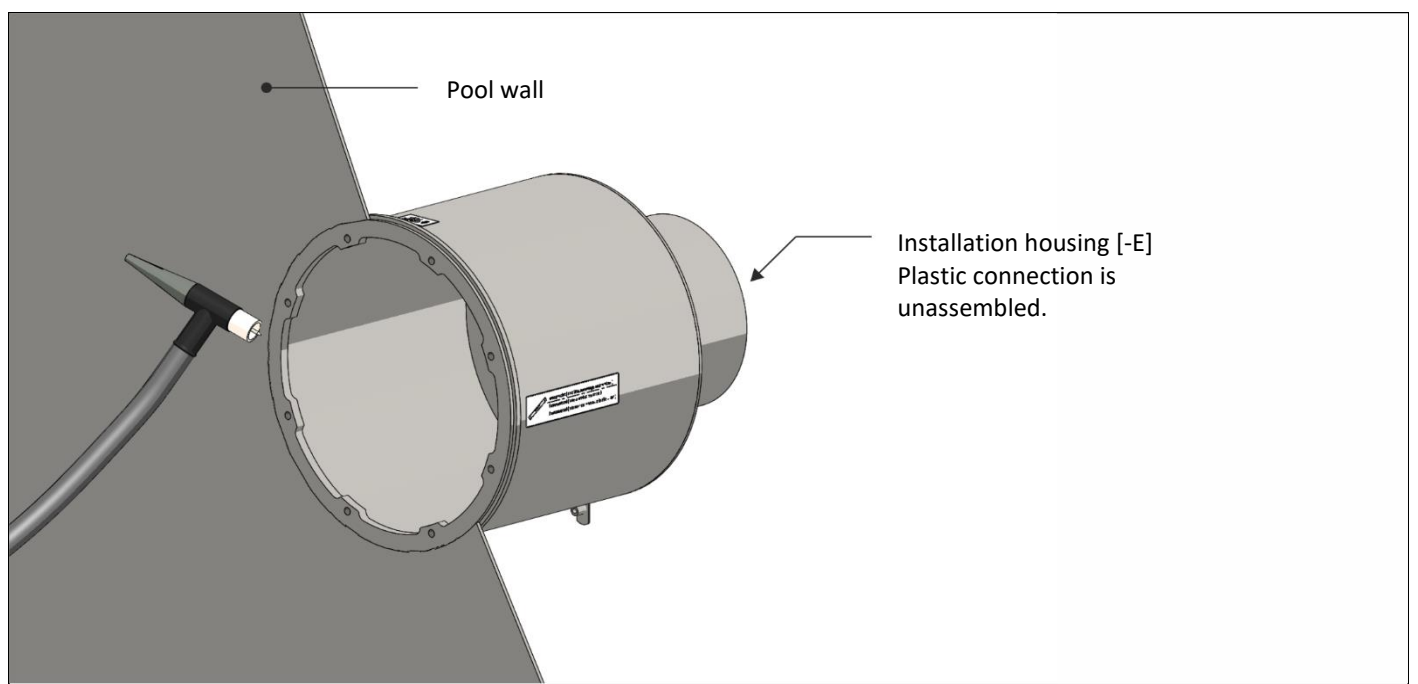


Fig. 8

Weld the installation kit flush with the pool and in correct position. Screw in the plastic connections tightly with a suitable sealing liquid.

4.5. Preassembled pool assembly kit [-A]

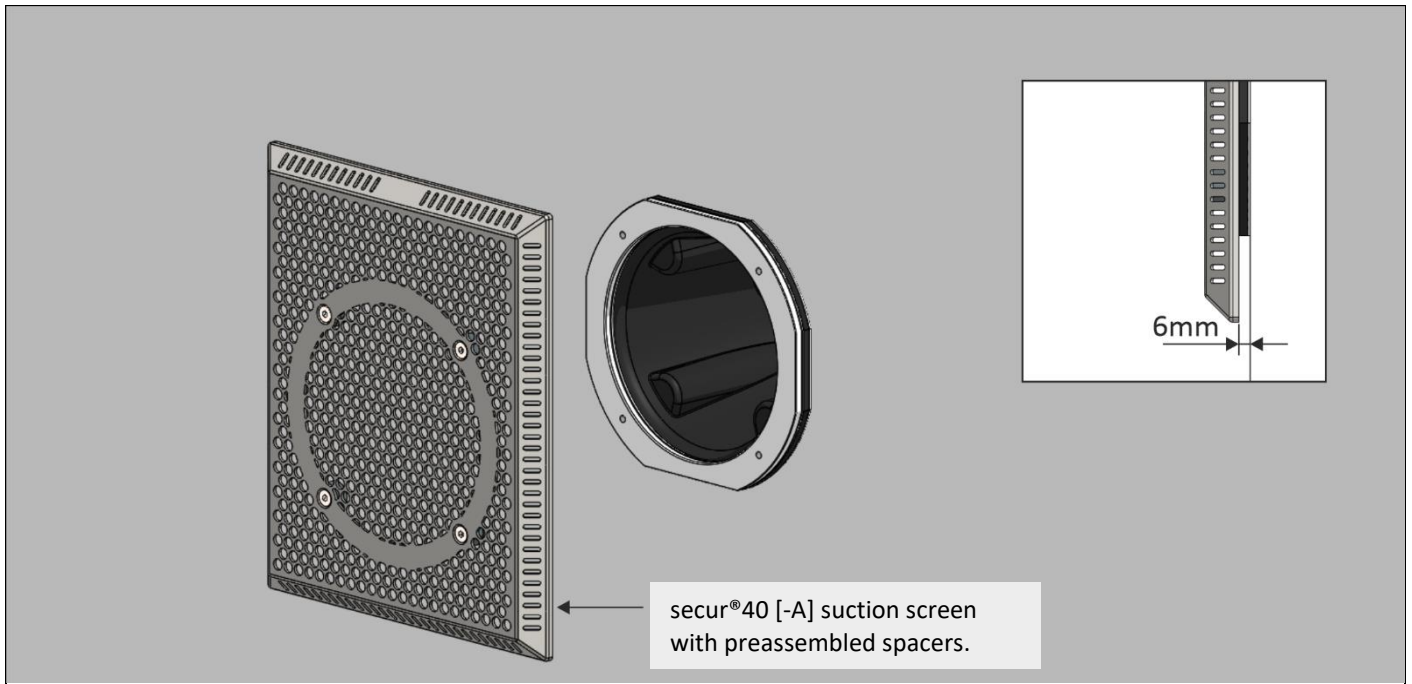


Fig. 9

4.6. Assembly kit for concrete pool with tiles - with and without brush-applied sealant [-BS]

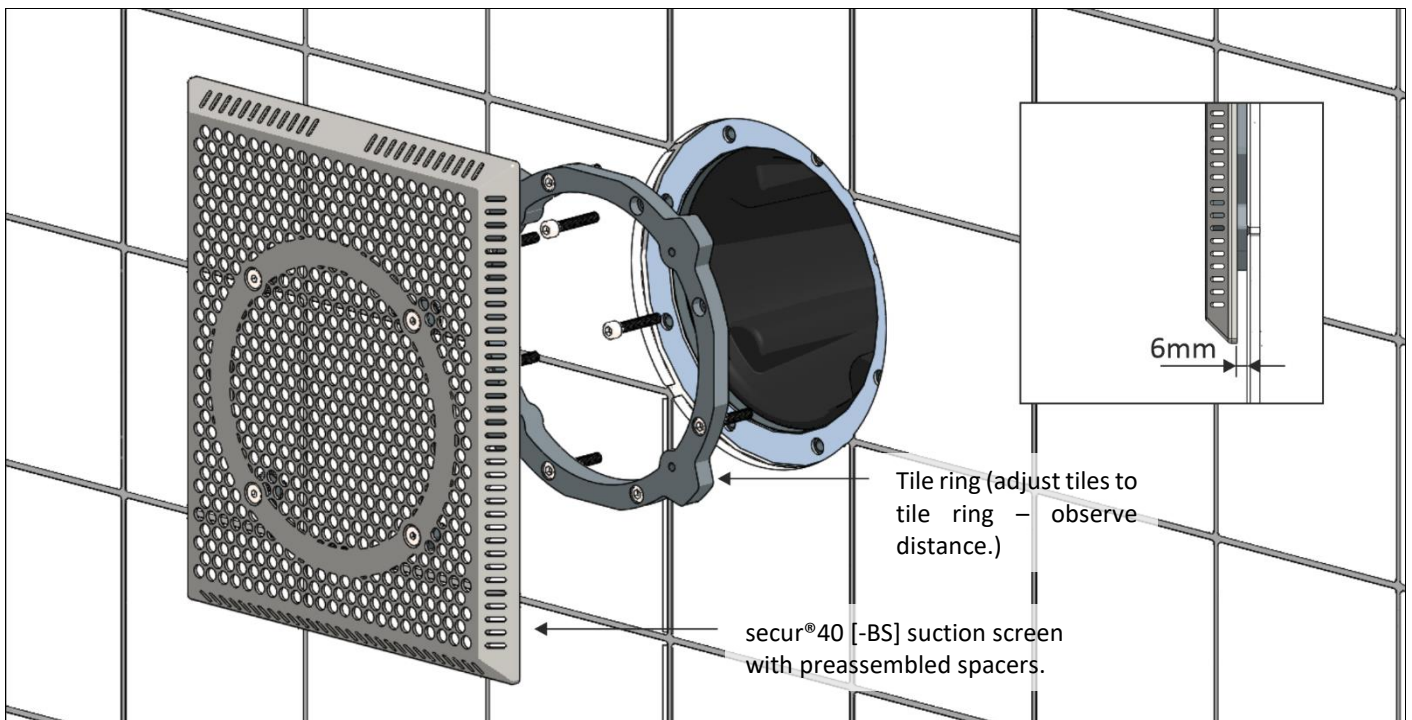


Fig. 10

4.7. Assembly kit for concrete pool with liner [-H]

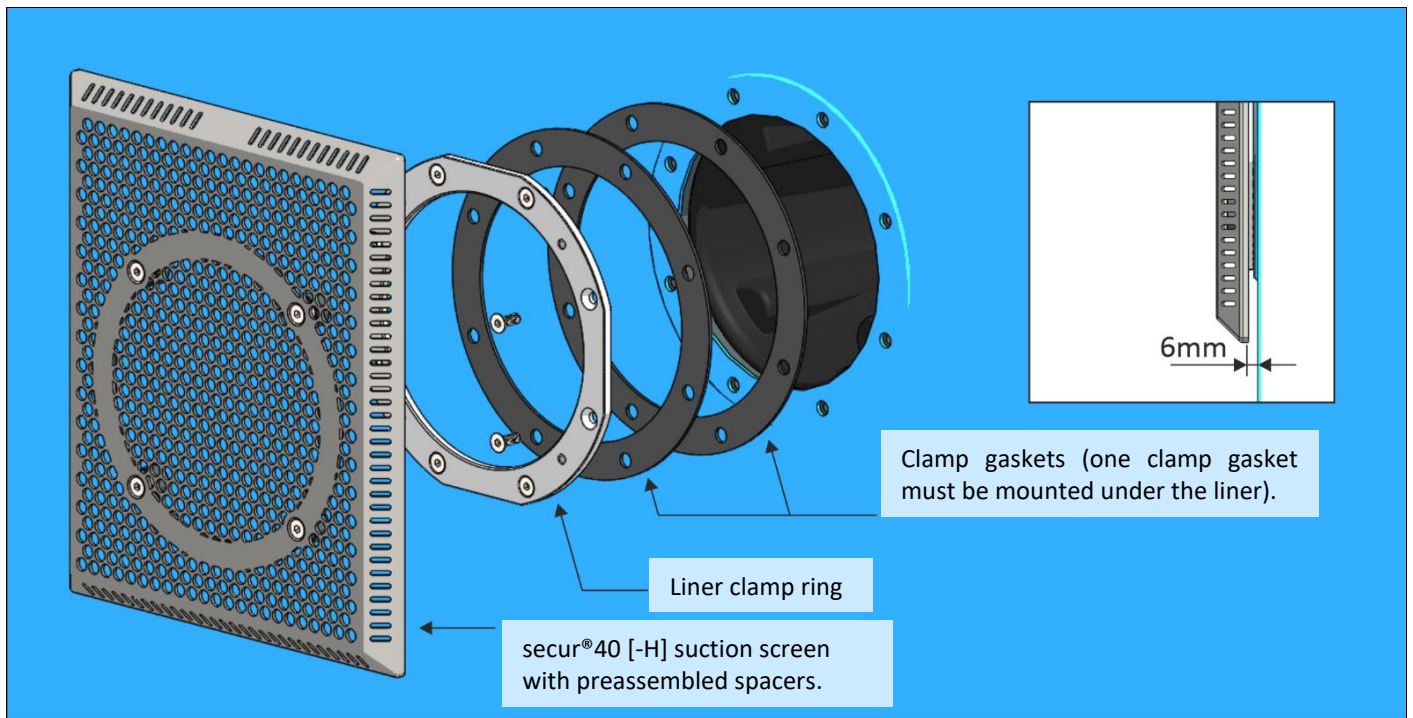


Fig. 11

4.8. Assembly kit for stainless steel pool [-E]

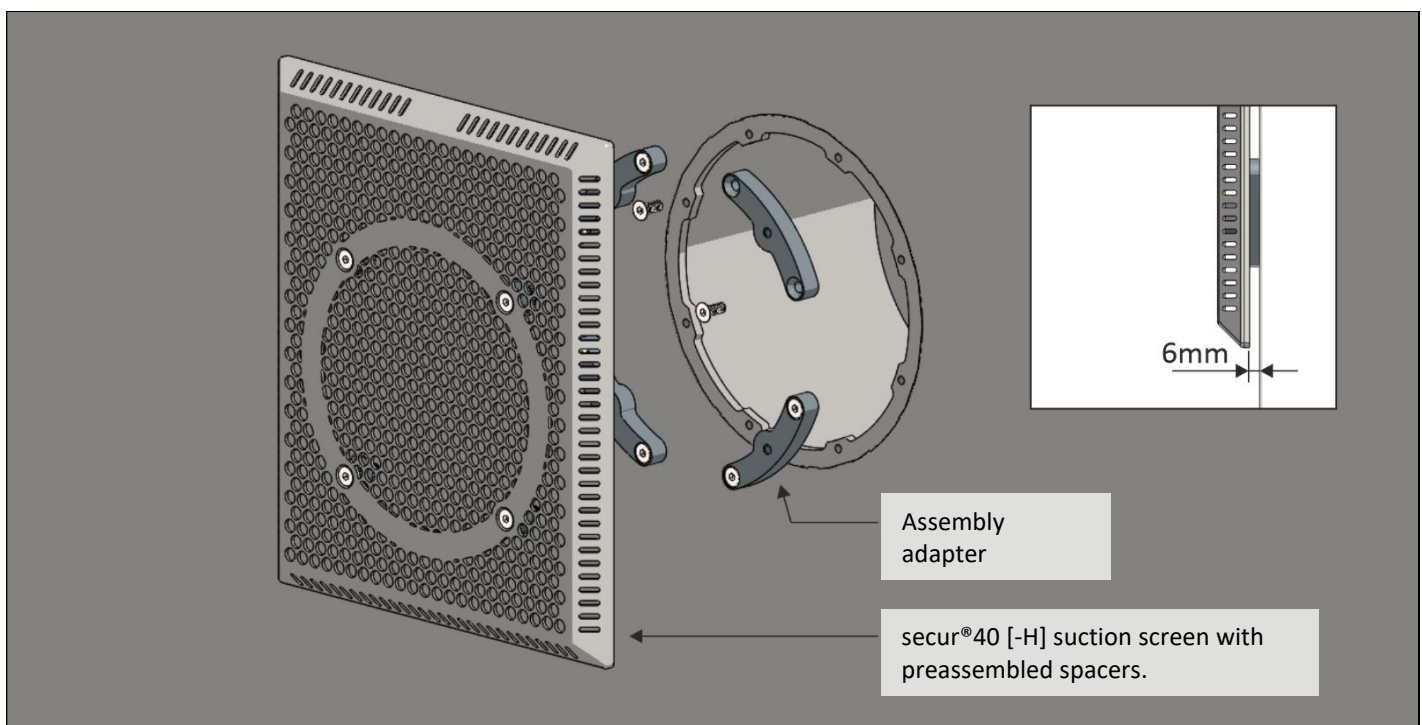



Fig. 12

5. secur[®] and secur[®]classic installation instructions

5.1. Preparation for installation of installation kit for concrete pool with tiles – with and without brush-applied sealant [-BS]

	<p>The installation kit must be installed to correct dimensions and securely fastened so it cannot be moved between the form walls. Make certain the wooden frame is resting neatly and tightly against the form wall.</p>
--	--

Depending on the model, the statics and design of the pool wall must be checked or adjusted accordingly.

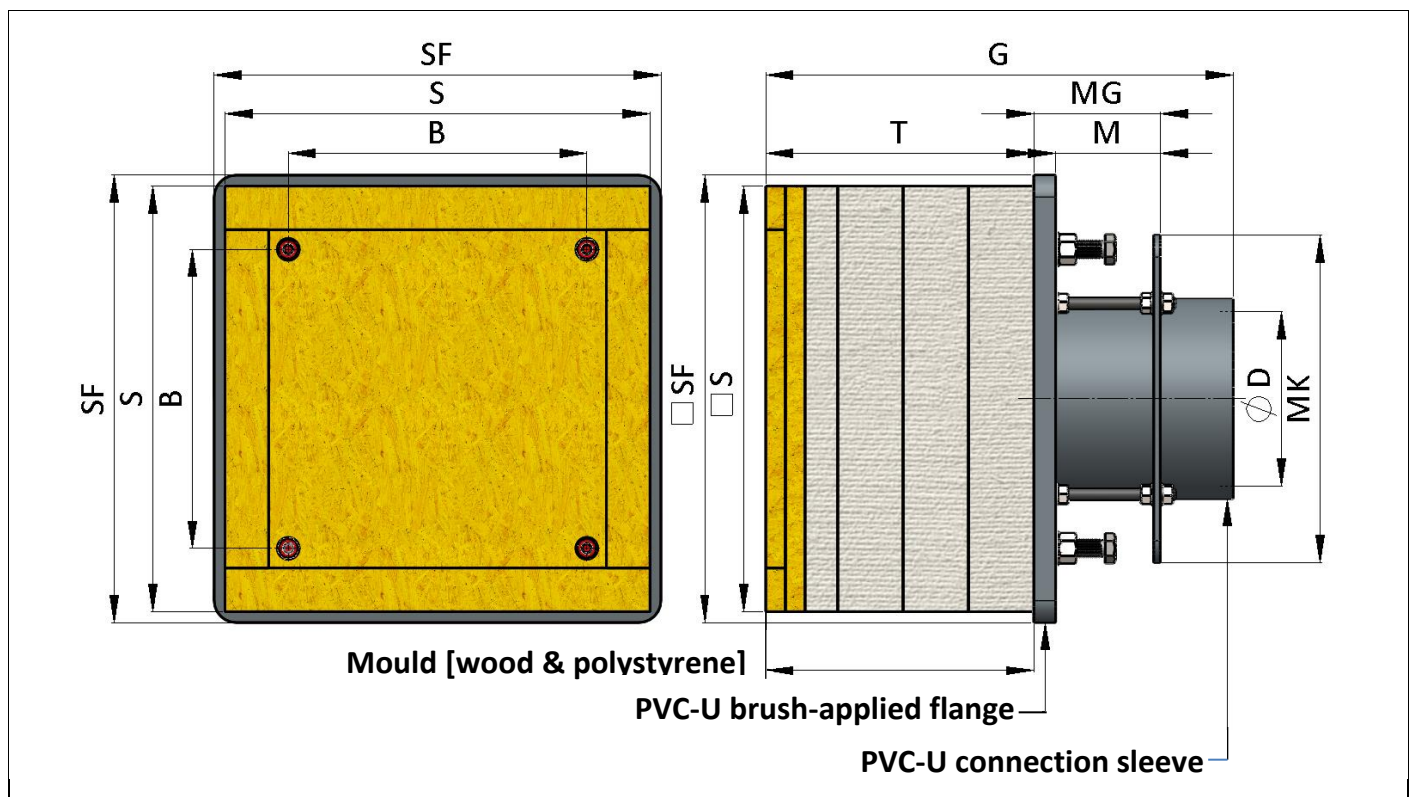


Fig. 13

5.2. Version overview and dimensions [mm]

Design	ØD [DN DR]	S	SF	T	M	MG	MK	G	B
310x310	100 110	390x390	410x410	176	96	116	300x300	307	274
	125 140			216				378	
	150 160			246				429	
400x400	100 110	480x480	500x500	176	96	116	370x370	307	364
	125 140			216				378	
	150 160			246				429	
	200 225			346				597	
490x490	100 110	570x570	590x590	176	96	116	438x438	307	454
	125 140			216				378	
	150 160			246				429	
	200 225			346				597	
	250 280			426				743	

5.3. Installation instructions after concreting

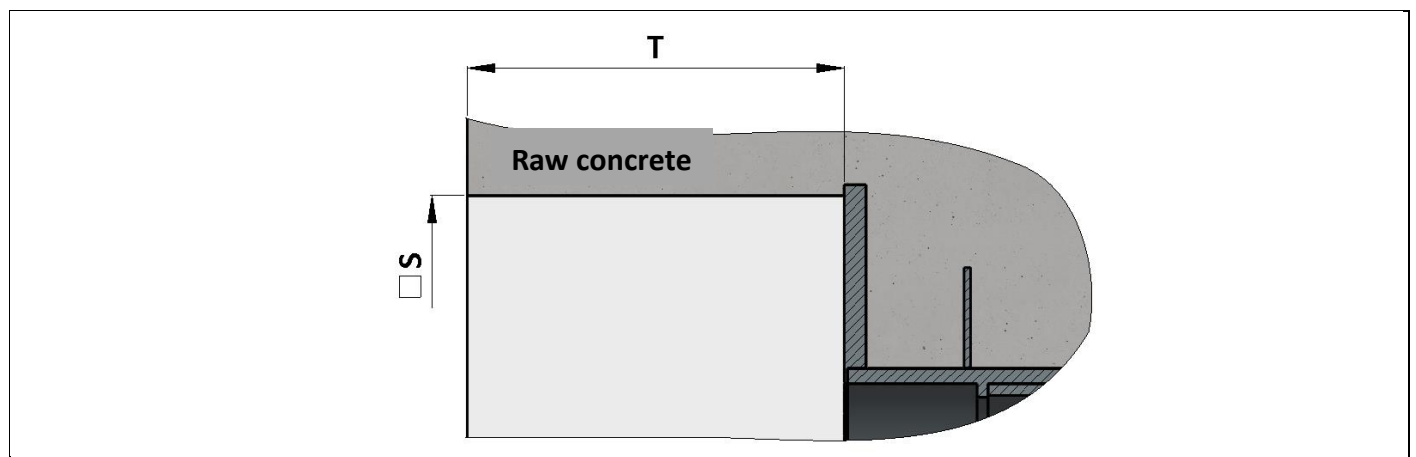



Fig. 14

	<p>Removing the mould – to do this, loosen the nuts, remove the wooden shuttering and the polystyrene sections. Then unscrew the colour-coded threaded rods (steel) – these are no longer required.</p>
---	--

5.4. Apply brush-applied sealant or liquid seal

Apply any levelling layer, brush-applied sealant or liquid seal and tiles.

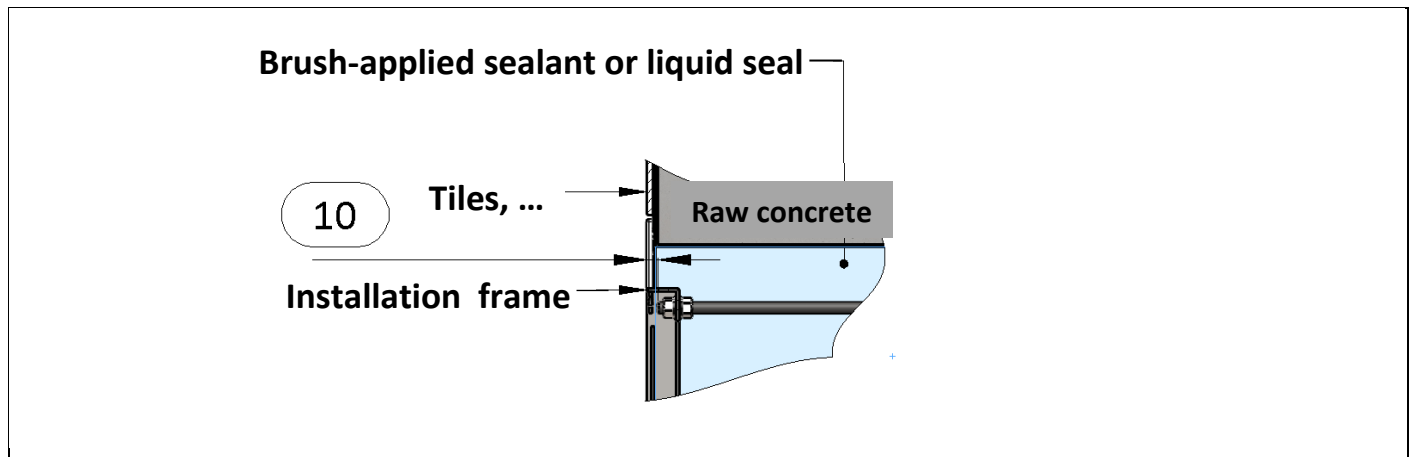


Fig. 15

5.5. Assembly kit assembly instructions

Shorten the stainless steel threaded rods (M10) included with delivery to size and screw them tightly into the provided attachment points (secure with locknut).

Position the installation frame of the assembly kit flush with the tiles and fix it accordingly.

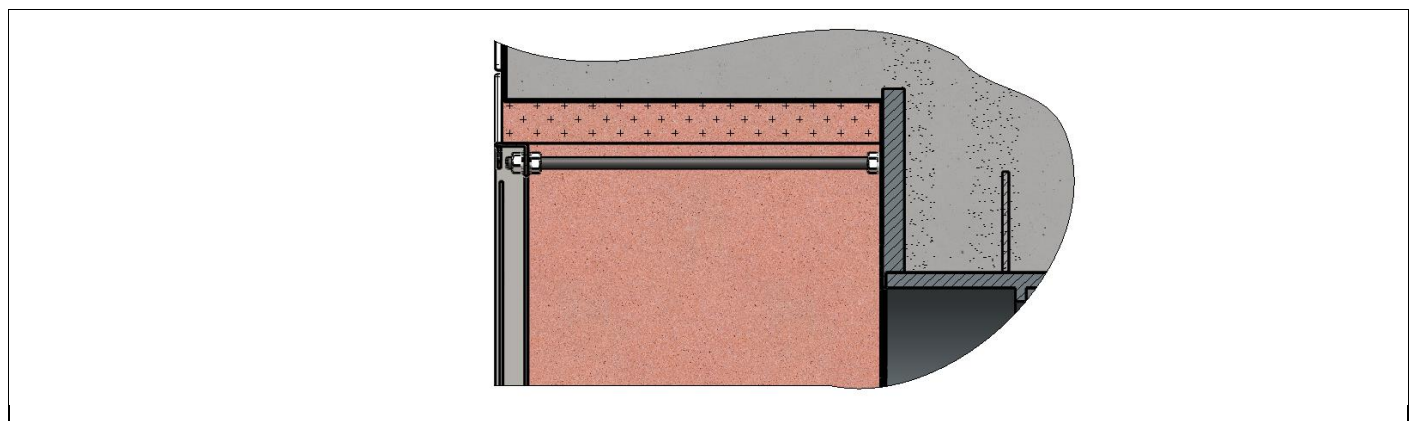


Fig. 16

Mounting the suction grille or screen in correct position.

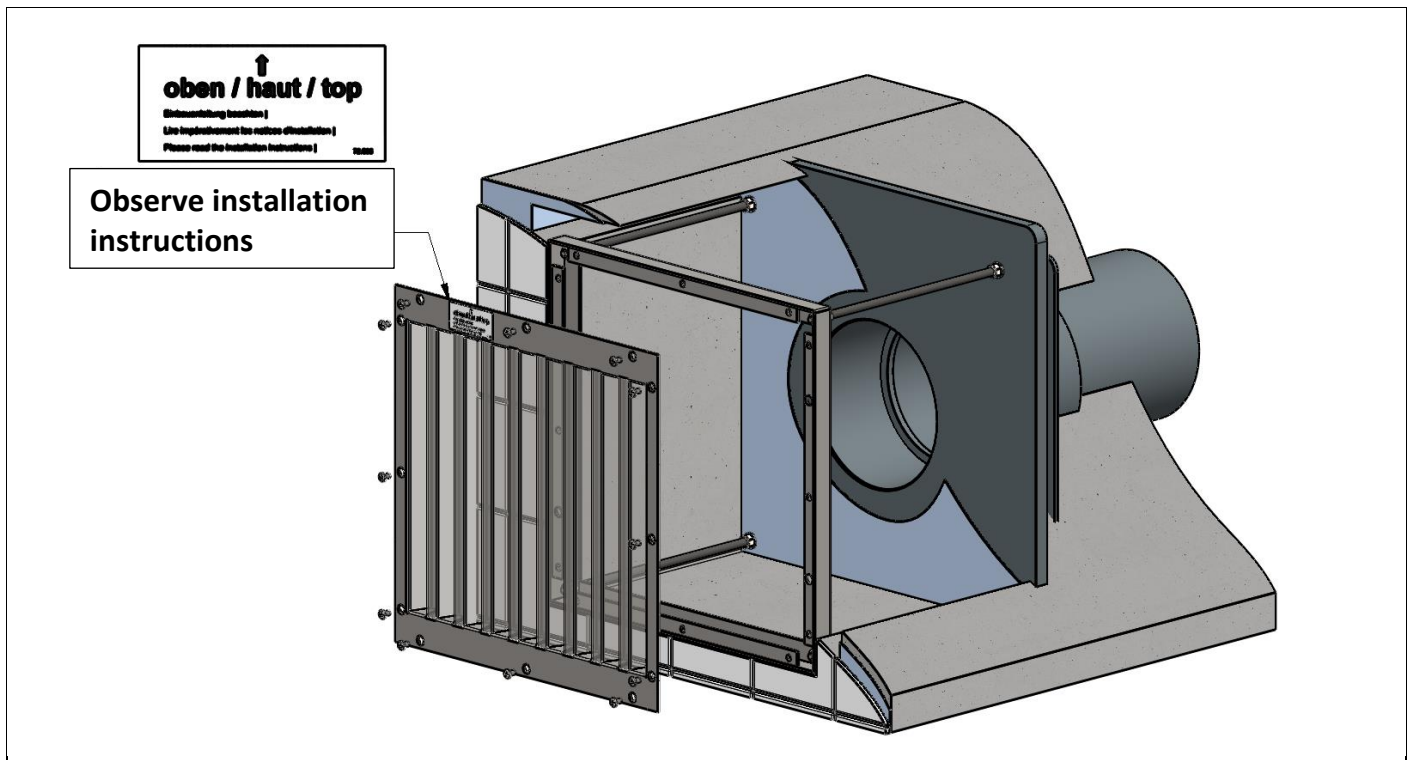


Fig. 17

6. Exploded drawings
6.1. secur[®]40 installation kit

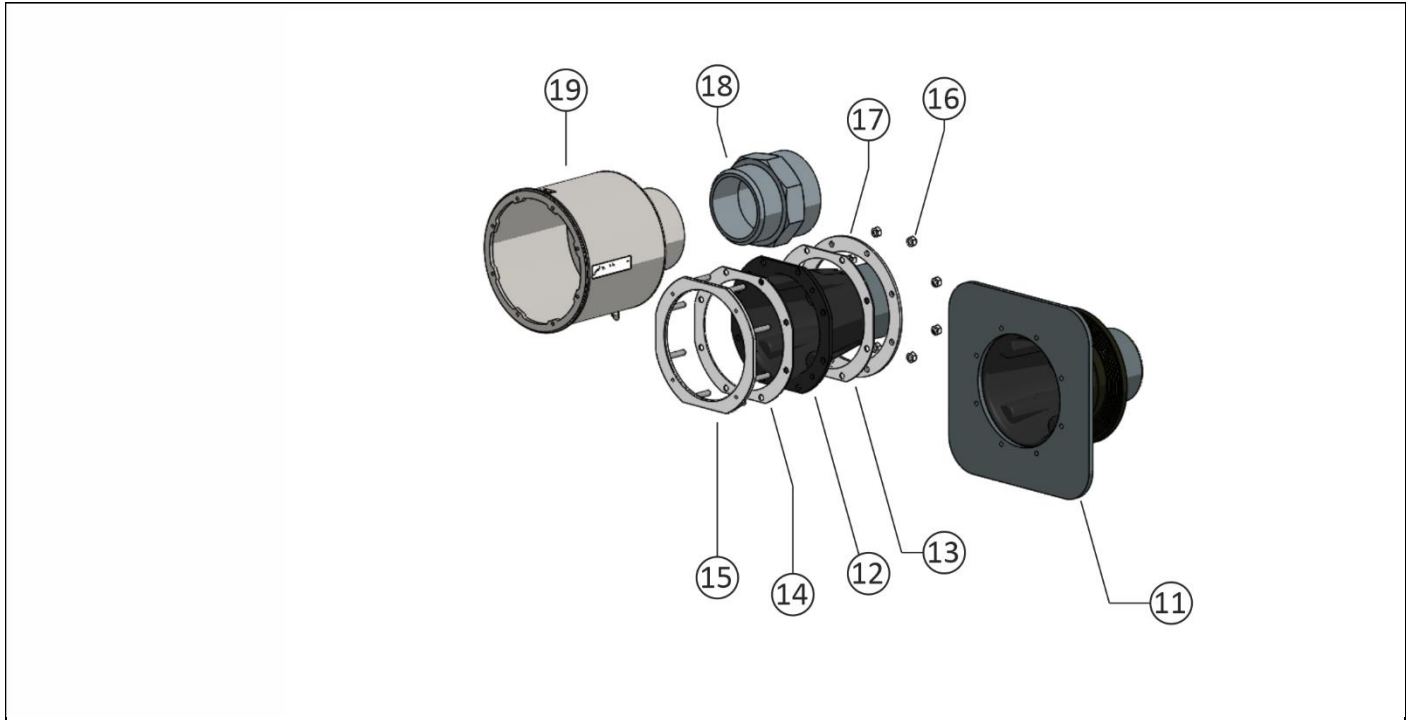


Fig. 18

6.2. secur[®]40 assembly kit

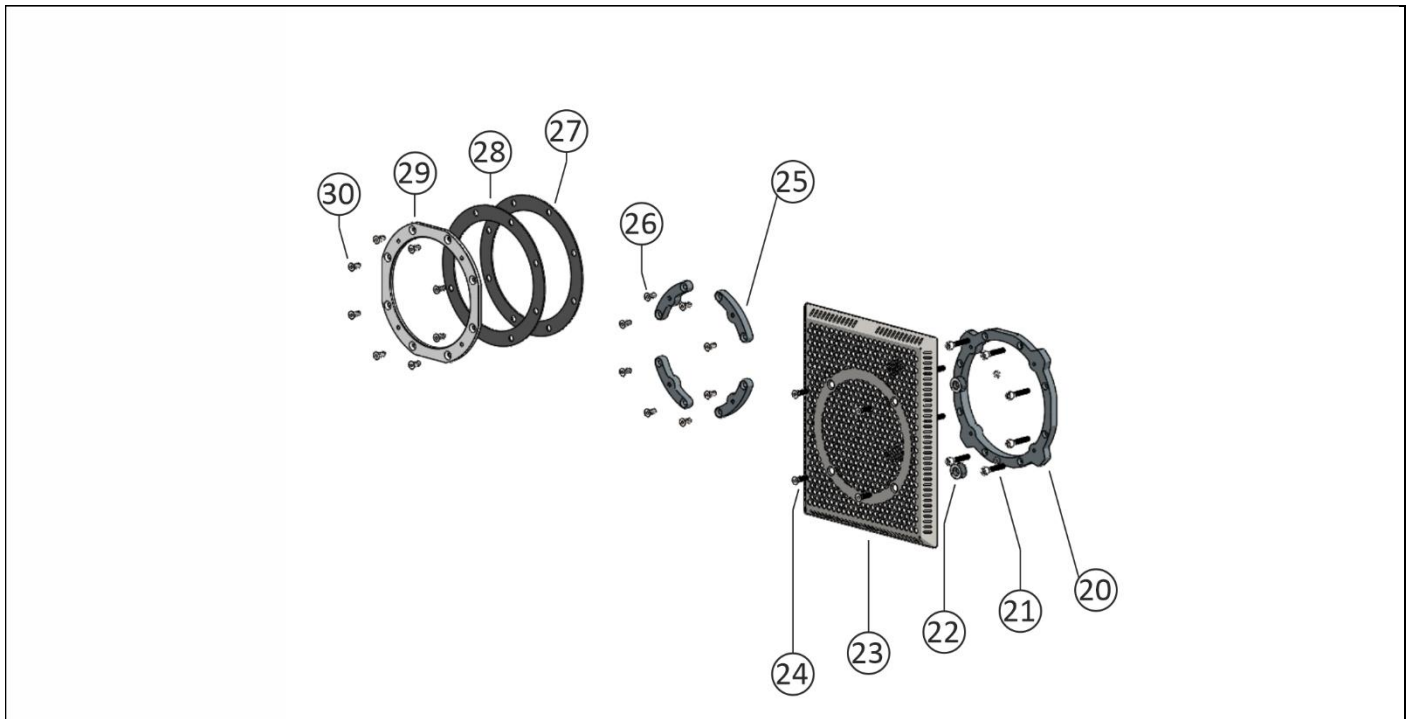


Fig. 19

6.3. secur[®] and secur[®]classic installation kit

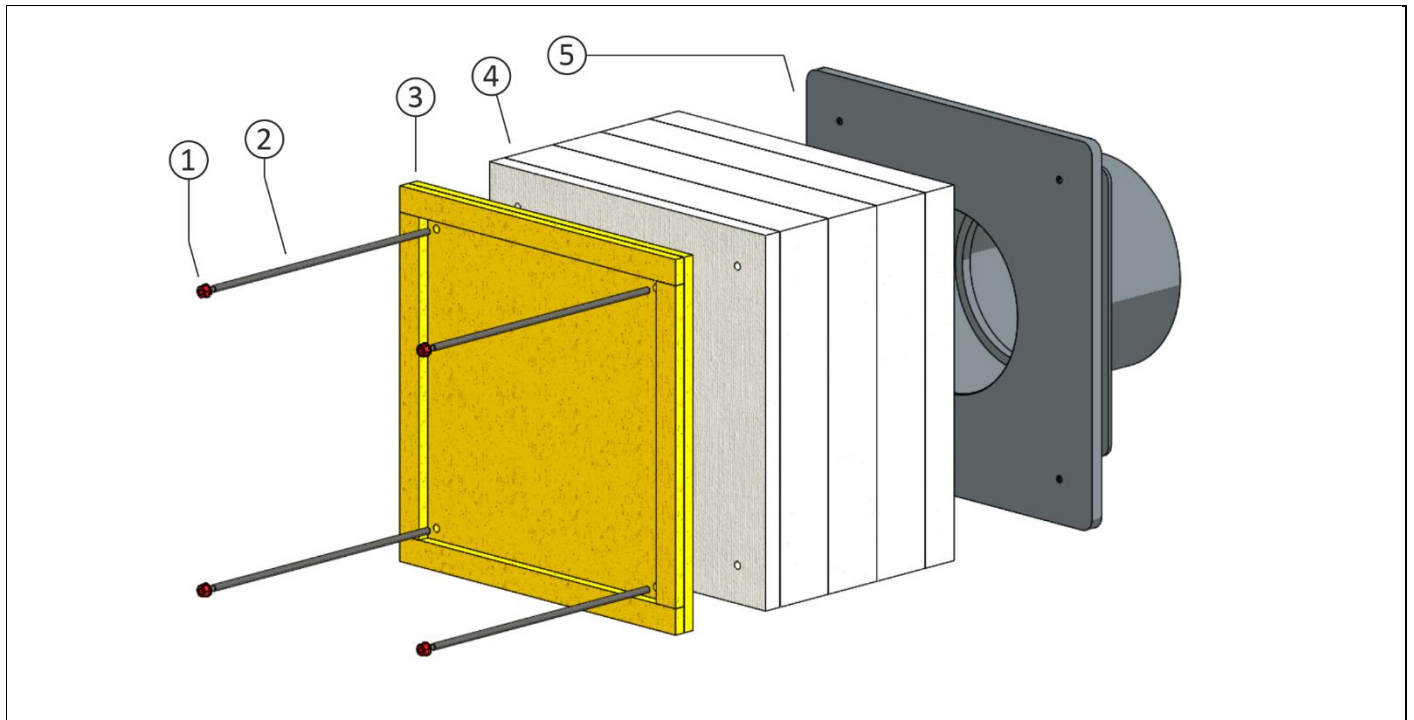


Fig. 20

6.4. secur[®] and secur[®]classic assembly kit

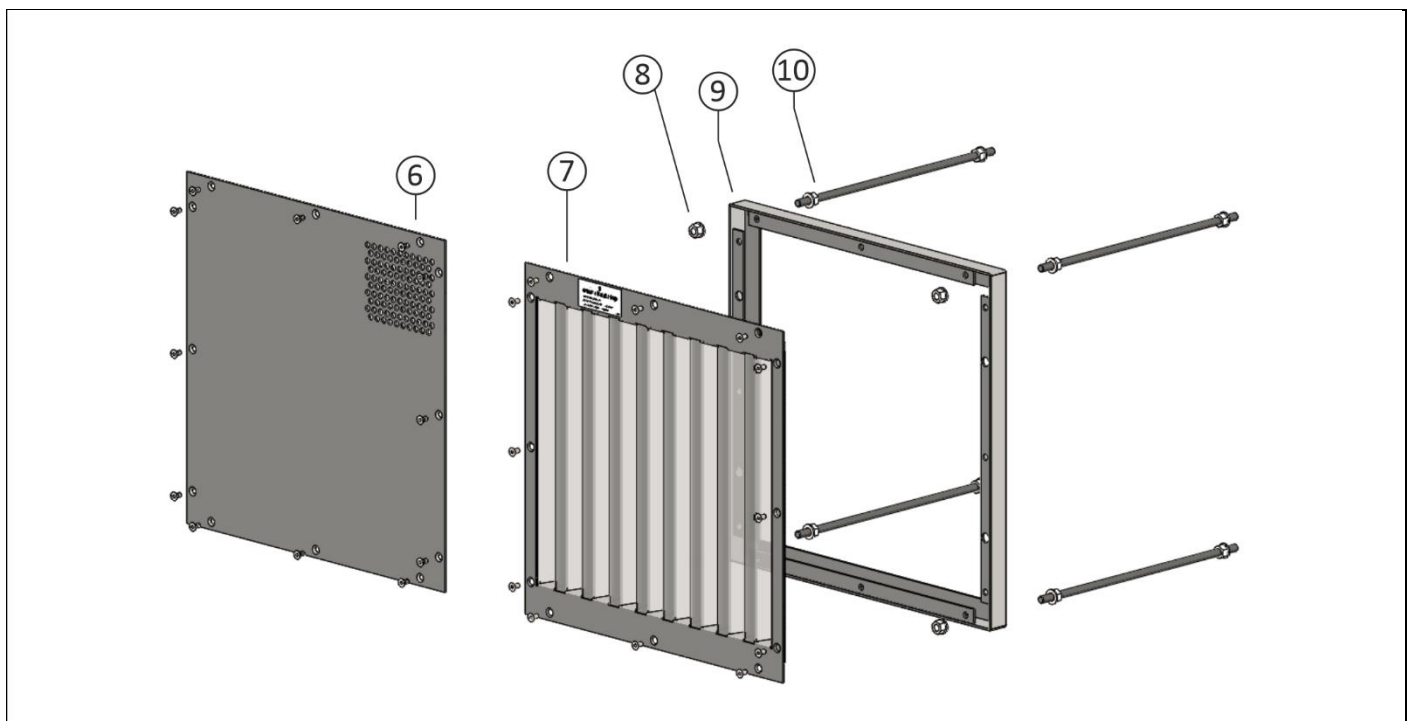


Fig. 21

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secur® suction units
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