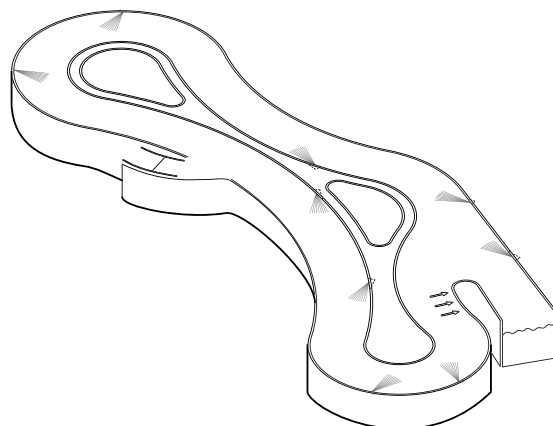
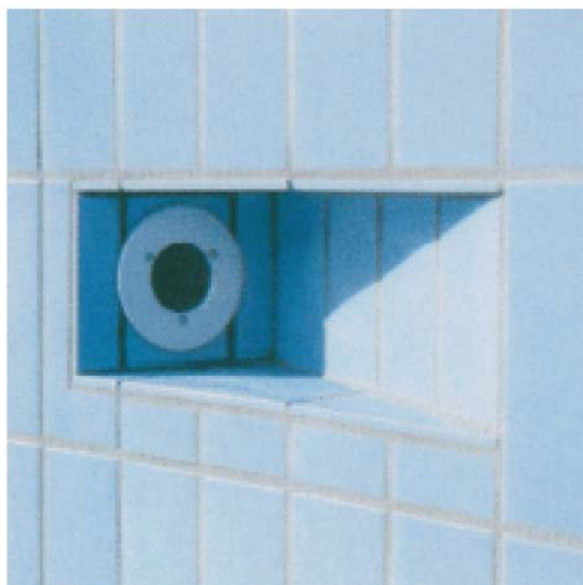


Lazy River

GB Operator's Manual

Translation of the original



27112 - B

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1 Lazy river

1.1 General Description

fluvo - lazy river nozzles can be supplied in four different models (with and without the addition of air, moveable or fixed), in three different sizes (48 m³/h, 60 m³/h, 100 m³/h) and with five different flow-in angles (20°, 25°, 35°, 45°, 65°).

The specially shaped nozzle niches produce optimum water supply with a lazy river effect. All parts coming into contact with media are designed for water quality to **DIN 19643**.

1.2 Safety Instructions

The regulations of the German Society for Swimming Baths contained in **Instruction Sheet 65.07** must be complied with. Consequently the lazy river nozzles must be installed so that the centre of the nozzle is **0.25 m to 0.40 m** underneath the surface of the water in the pool.

Apart from that, the distance between the lazy river nozzles should be between **2.0 m** and **4.0 m** from each other.

As a good guideline, it is recommended that the average speed of current should be from **0.8 m/s** to **1.2 m/s**. If the channels are predominantly used by children then the speed should be reduced accordingly. The suction (**A**) should be located at the end of the lazy river.

2 Layout of a Lazy River

2.1 Speed calculation for a lazy river

In order to ensure that the lazy river is perfectly safe and to determine the number of nozzles, it is recommended that a channel speed calculation is carried out. This can be obtained from the manufacturer by specifying the following parameters:

- Depth of water
- River width
- River length
- Channel profile

For a system example please see page 25.

System example :

Pump specifications									
Variant	Nozzels	Type of the pump	Pumps	Q total	H	Average flow speed		Type of the river	
No.	Pcs.		Pcs.	[m³/h]	[m]	[m/s]	[km/h]		
1	3	NB 20025/4-15	1	300	12	0,52	1,87	Lazy river slow	
2	4	NB 20025/4-18,5	1	400	12	0,69	2,50	Lazy river	
3	6	NB 20025/4-15	2	600	12	1,04	3,74	Lazy river	
4	8	NB 20025/4-18,5	2	800	12	1,39	4,99	Lazy river	
5	9	NB 20025/4-15	3	900	12	1,56	5,62	Lazy river fast	
6	12	NB 20025/4-18,5	3	1200	12	2,08	7,49	Lazy river fast	

River breadth	River lenght	Depth of water	Channel profile
env. 2,5 m	env. 15 m	env. 1,2 m	CAD-drawing



Note:

The calculation assumes a flow-efficient pipework system. I.e. no **90° T-pieces** or **angles** should be used. A change in the channel profile or the input flow angle also changes the average speed of current that can be expected. The average speed of current that can be expected applies exclusively to the use of **fluvo** products. The input flow angles and the precise location and installation depth of the nozzles can only be determined once the order has been received and a relevant drawing has been provided.

2.2 Positioning the Nozzles and Determination of the Input Flow Angle

The positioning of the nozzles and input flow angles can be obtained from the manufacturer. For that a plan of the proposed lazy river must be provided. (Fig. 1)
To get the surface of the water in motion, the lazy river nozzles should be inclined at 8°-12° to the horizontal. They should be installed approx. **0.40 m** to **0.60 m** under the surface of the water. (Fig. 2)

System example: I

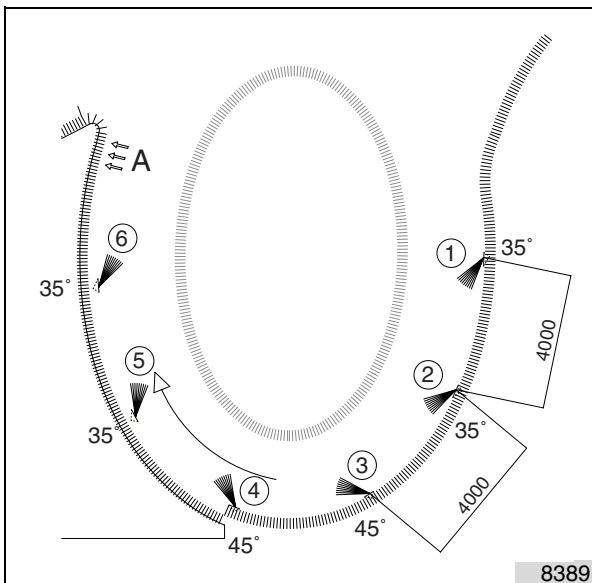


fig. 1

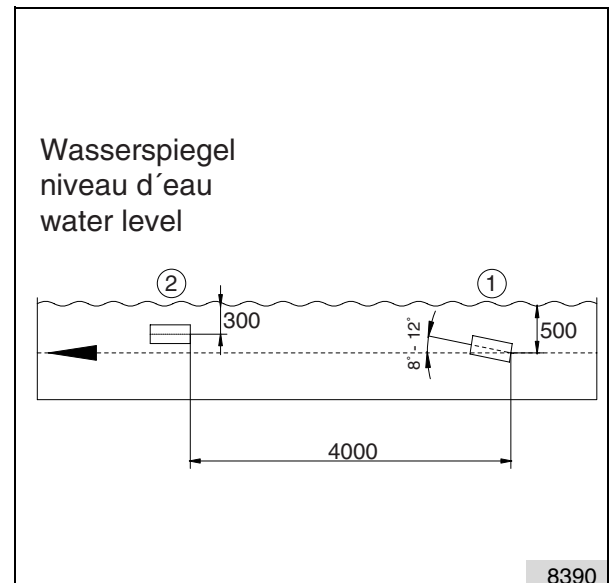


fig. 2

3 Lazy River Nozzle without Added Air

3.1 Technical Data

Water connection	DN 100 (PVC)	
Material	Installation housing with niche shuttering	PVC / wood
	Fixing elements	1.4401
	Nozzles	PVC
Operating limits	1.4401 (max. 3,000 mg/l Cl ⁻)	
Operating pressure	0.8 -1.2 bar	
Max. perm. pressure	1.5 bar	
Flow	100 m ³ /h	

Only fixed model available.

3.2 Shuttering fixed nozzle / Concrete-tile pool

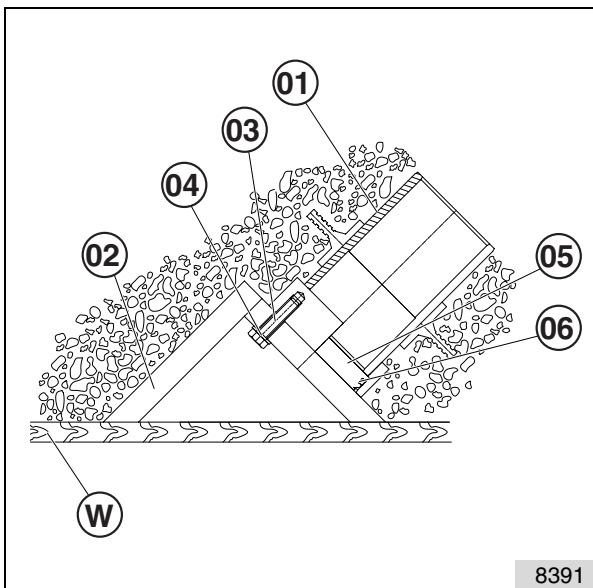


fig. 3

- W Shuttering
- 01 Installation kit
- 02 Shuttering
- 03 Hexagon screw
- 04 Distance washer
- 05 Cover
- 06 Square ring

Fasten installation kit (01) with shuttering (02) to the shuttering (W).

Also anchor installation kit (01) to the reinforcement with binding wire so that it cannot move.

Before pouring the concrete the installation kit (01) must be fitted between the shuttering true to dimensions and in such a way that it cannot move.

3.3 Shuttering Removal / Concrete-tile pool

After loosening the shuttering (W) the no longer required shuttering (02) must be removed.

Loosen the hexagon screws (03) and the distance washers (04) for this.

Extract the cover (05) together with the square ring (06) out of the installation kit (01).

3.4 Installation fixed nozzle / Concrete-tile pool

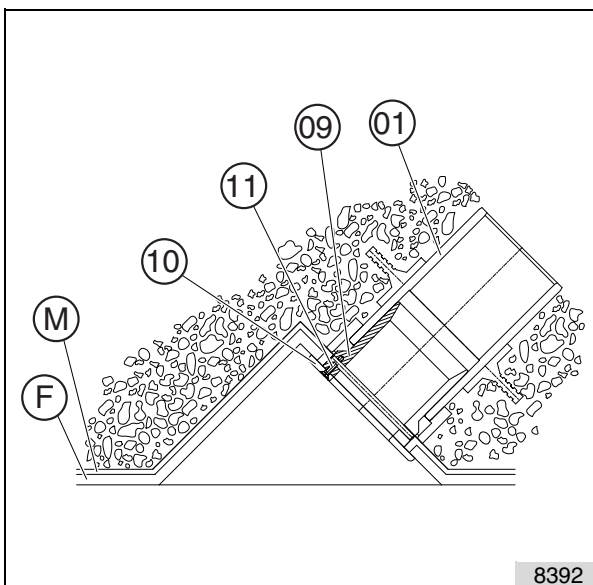


fig. 4

- F Tiles
- M Mortar
- 01 Installation kit
- 09 Assembly kit
- 10 Screen
- 11 Screw

Apply mortar (M) and tiles (F) only just up to the installation kit (01).

Coat the assembly kit (09) on the outside and the installation kit (01) on the inside with a minimum of 3 cm of PVC glue and push them together.

The tile screen (10) must make flush contact with the upper edge of the tiles (F) after the screws (11) have been tightened.

3.5 Shuttering fixed nozzle / Concrete pool with brush-applied sealant

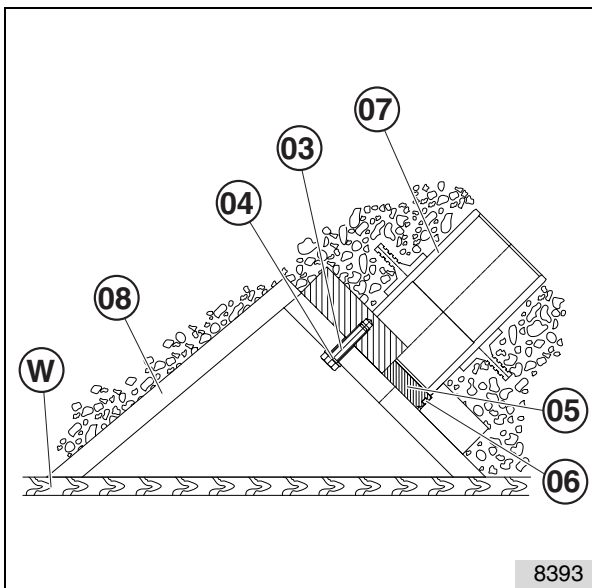


fig. 5

- W Shuttering
- 03 Hexagon screw
- 04 Distance washer
- 05 Cover
- 06 Square ring
- 07 Installation kit
- 08 Shuttering

Fasten installation kit (07) with shuttering (08) to the shuttering (W).

Also fasten installation kit (07) to the reinforcement with binding wire so that it cannot move.

Before pouring the concrete the installation kit (07) must be fitted between the shuttering true to dimensions and in such a way that it cannot move.

3.6 Shuttering removal / Concrete pool with brush-applied sealant

After loosening the shuttering (W) the no longer required shuttering (08) must be removed. Loosen the hexagon screws (03) and the distance washers (04) for this. Extract the cover (05) together with the square ring (06) out of the installation kit (07).

3.7 Installation fixed nozzle / Concrete pool with brush-applied sealant

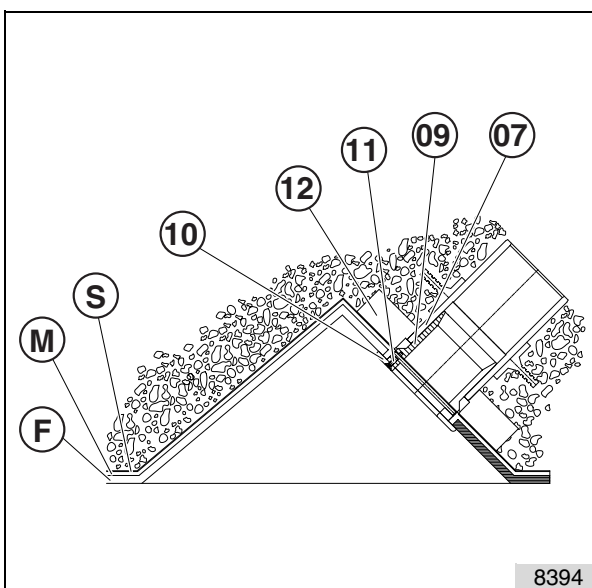


fig. 6

- F Tile
- M Mortar
- S Brush-applied sealant
- 07 Installation kit
- 09 Assembly kit
- 10 Screen
- 11 Screw
- 12 Flange

Fasten installation kit (07) with shuttering (08) to the shuttering (W).

Also fasten installation kit (07) to the reinforcement with binding wire so that it cannot move.

Before pouring the concrete the installation kit (07) must be fitted between the shuttering true to dimensions and in such a way that it cannot move.

4 Lazy River Nozzle with Added Air

4.1 Technical Data

Water connection	DN 50 (PVC)	
Air connection	DN 20 (PVC)	
Material	Installation housing with niche shuttering	Bronze (2.1050) / wood
	Fixing elements	1.4401
	Nozzles	ABS
Operating limits	1.4401 (max. 3,000 mg/l Cl ⁻)	
Operating pressure	0.8 -1.2 bar	
Max. perm. pressure	1.5 bar	
Flow moveable nozzle	48 m ³ /h	
Flow fixed nozzle	60 m ³ /h	

Fixed and moveable models available.

4.2 Shuttering moveable nozzle / Concrete-tile pool

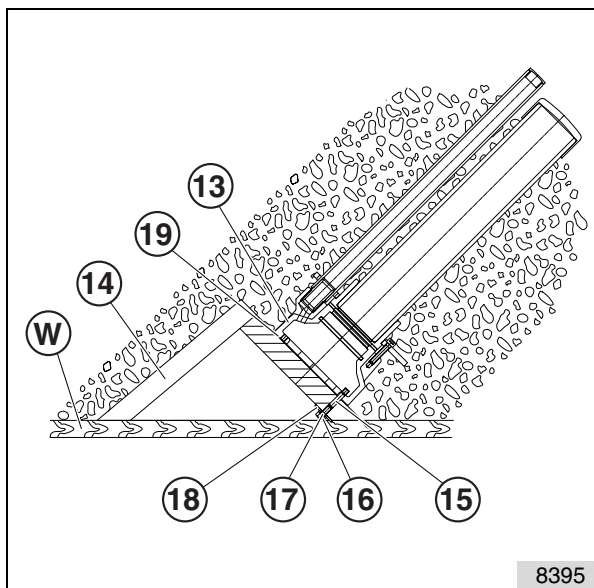


fig. 7

- W Shuttering
- 13 Installation kit
- 14 Shuttering
- 15 Stud bolt
- 16 Nut
- 17 Distance washer
- 18 Distance washer
- 19 Protection film

Fasten installation kit (13) with shuttering (14) to the shuttering (W).

Also anchor installation kit (13) to the reinforcement with binding wire so that it cannot move.

Before pouring the concrete the installation kit (13) must be fitted between the shuttering true to dimensions and in such a way that it cannot move.

4.3 Shuttering removal moveable nozzle / Concrete-tile pool

After loosening the shuttering (W) the no longer required shuttering (14) must be removed. Loosen the stud bolts (15), the nuts (16) and distance washers (17+18) for this. Remove the protection film (19) from the installation kit (13).

4.4 Installation moveable nozzle / Concrete-tile pool

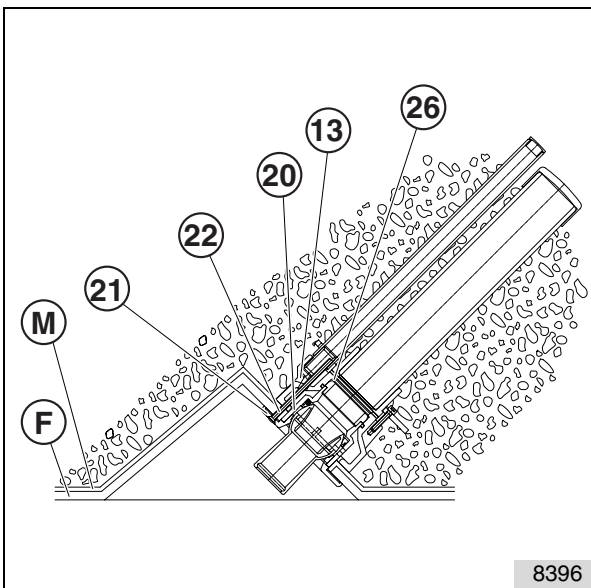


fig. 8

<i>F</i>	<i>Tile</i>
<i>M</i>	<i>Mortar</i>
<i>13</i>	<i>Installation kit</i>
<i>20</i>	<i>Assembly kit</i>
<i>21</i>	<i>Screen</i>
<i>22</i>	<i>Face plate screw</i>
<i>26</i>	<i>Spacer pipe</i>

Apply mortar (M) and tiles (F) only just up to the installation kit (13).

Note: If the mortar applied (M) and the tiles (F) are together more than 1.0 cm thick, then the supplied spacer pipe (26) must be used. Saw the spacer pipe (26) to the required length for this.



Coat the assembly kit (13) on the inside and the spacer pipe (26) on the outside with PVC glue. Push the spacer pipe (26) right to the end of the installation kit (13).

Then coat the assembly kit (20) on the outside and the installation kit (13) on the inside with PVC glue and push them together. The tile screen (21) must make flush contact with the upper edge of the tiles (F) after the screws (22) have been tightened.

4.5 Shuttering fixed nozzle / Concrete-tile pool

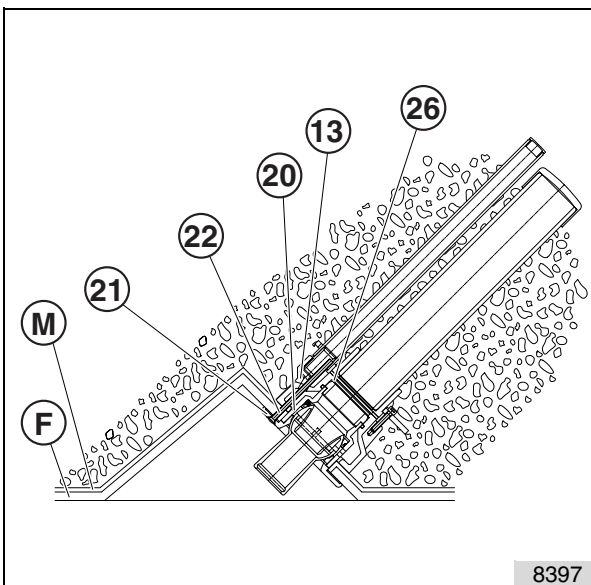


fig. 9

<i>W</i>	<i>Shuttering</i>
<i>02</i>	<i>Shuttering</i>
<i>15</i>	<i>Stud bolt</i>
<i>16</i>	<i>Nut</i>
<i>18</i>	<i>Distance washer</i>
<i>27</i>	<i>Installation kit</i>

Fasten installation kit (27) with shuttering (02) to the shuttering (W).

Also anchor installation kit (27) to the reinforcement with binding wire so that it cannot move.

Before pouring the concrete the installation kit (27) must be fitted between the shuttering true to dimensions and in such a way that it cannot move.

4.6 Shuttering removal fixed nozzle / Concrete-tile pool

After loosening the shuttering (W) the no longer required shuttering (02) must be removed. Loosen the stud bolts (15), the nuts (16) and distance washers (18) for this. Remove the protection film (19) from the installation kit (27).

4.7 Installation fixed nozzle / Concrete-tile pool

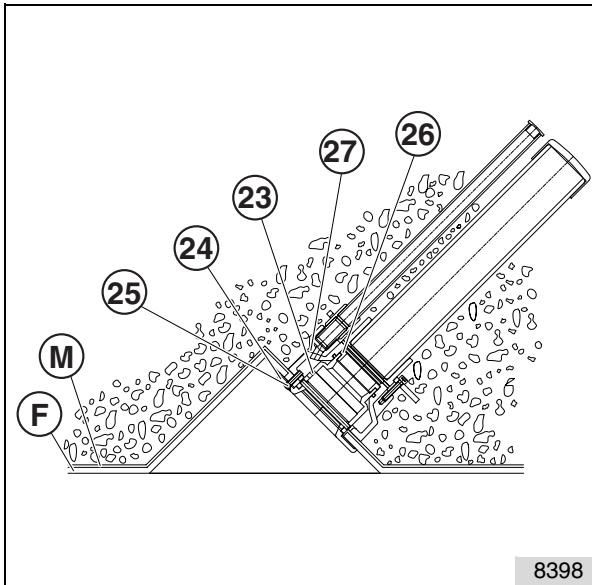


fig. 10

<i>F</i>	<i>Tile</i>
<i>M</i>	<i>Mortar</i>
<i>23</i>	<i>Assembly kit</i>
<i>24</i>	<i>Screen</i>
<i>25</i>	<i>Face plate screw</i>
<i>26</i>	<i>Spacer pipe</i>
<i>27</i>	<i>Installation kit</i>

Apply mortar (M) and tiles (F) only just up to the installation kit (27).

Note: If the mortar applied (M) and the tiles (F) are together more than 1.0 cm thick, then the supplied spacer pipe (26) must be used. Saw the spacer pipe (26) to the required length for this.



Coat the assembly kit (27) on the inside and the spacer pipe (26) on the outside with PVC glue. Push the spacer pipe (26) right to the end of the installation kit (27).

Then coat the assembly kit (23) on the outside and the installation kit (27) on the inside with PVC glue and push them together. The tile screen (24) must make flush contact with the upper edge of the tiles (F) after the screws (25) have been tightened.

5 Spare Parts List

Pos.	Best. Nr. No. de réf. Order No.	Bezeichnung	Désignation	Description	Stck. Nbre. Qty.	Bemerkung Remarque Remark
01.1	91576	Einbausatz komplett 20°	Pièce à sceller complète 20°	Installation kit, complete 20°	1	
01.2	91577	Einbausatz komplett 25°	Pièce à sceller complète 25°	Installation kit, complete 25°	1	
01.3	93773	Einbausatz komplett 35°	Pièce à sceller complète 35°	Installation kit, complete 35°	1	
01.4	93926	Einbausatz komplett 45°	Pièce à sceller complète 45°	Installation kit, complete 45°	1	
01.5	92902	Einbausatz komplett 65°	Pièce à sceller complète 65°	Installation kit, complete 65°	1	
02.1	58743	Schalung 20°	Coffrage 20°	Shuttering 20°	1	
02.2	58744	Schalung 25°	Coffrage 25°	Shuttering 25°	1	
02.3	56372	Schalung 35°	Coffrage 35°	Shuttering 35°	1	
02.4	56395	Schalung 45°	Coffrage 45°	Shuttering 45°	1	
02.5	56396	Schalung 65°	Coffrage 65°	Shuttering 65°	1	
03	10714	Sechskantschraube	Vis six pans	Hexagon screw	4	M12x50
04	12380	Unterlegscheibe	Rondelle	Distance washer	4	
05	56949	Deckel	Couvercle	Cover	1	
06	24242	Quadring	Joint torique	Square ring	1	
07.1	93072	Einbausatz komplett 20°	Pièce à sceller complète 20°	Installation kit, complete 20°	1	
07.2	93073	Einbausatz komplett 25°	Pièce à sceller complète 25°	Installation kit, complete 25°	1	
07.3	93074	Einbausatz komplett 35°	Pièce à sceller complète 35°	Installation kit, complete 35°	1	
07.4	93075	Einbausatz komplett 45°	Pièce à sceller complète 45°	Installation kit, complete 45°	1	
07.5	93076	Einbausatz komplett 65°	Pièce à sceller complète 65°	Installation kit, complete 65°	1	
08.1	57957	Schalung 20°	Coffrage 20°	Shuttering 20°	1	
08.2	57958	Schalung 25°	Coffrage 25°	Shuttering 25°	1	
08.3	57959	Schalung 35°	Coffrage 35°	Shuttering 35°	1	
08.4	57960	Schalung 45°	Coffrage 45°	Shuttering 45°	1	
08.5	57961	Schalung 65°	Coffrage 65°	Shuttering 65°	1	
09	56882	Fertigmontage	Kit de montage	Assembly kit	1	

Pos.	Best. Nr. No. de réf. Order No.	Bezeichnung	Désignation	Description	Stck. Nbre. Qty.	Bemerkung Remarque Remark
10	56880	Blende	Cache	Screen	1	
11	10917	Schraube	Vis	Screw	3	M5x16
12	55584	Flansch	Bride	Flange	1	
13.1	93087	Einbausatz komplett 20°	Pièce à sceller complète 20°	Installation kit, complete 20°	1	
13.2	92932	Einbausatz komplett 25°	Pièce à sceller complète 25°	Installation kit, complete 25°	1	
13.3	93066	Einbausatz komplett 35°	Pièce à sceller complète 35°	Installation kit, complete 35°	1	
13.4	93088	Einbausatz komplett 45°	Pièce à sceller complète 45°	Installation kit, complete 45°	1	
13.5	93089	Einbausatz komplett 65°	Pièce à sceller complète 65°	Installation kit, complete 65°	1	
14.1	59273	Schalung 20°	Coffrage 20°	Shuttering 20°	1	
14.2	58980	Schalung 25°	Coffrage 25°	Shuttering 25°	1	
14.3	58876	Schalung 35°	Coffrage 35°	Shuttering 35°	1	
14.4	59274	Schalung 45°	Coffrage 45°	Shuttering 45°	1	
14.5	59275	Schalung 65°	Coffrage 65°	Shuttering 65°	1	
15	10550	Stiftschraube	Bouton fileté	Locking screw	3	M6x40
16	12103	Mutter	Écrou	Nut	3	M6
17	12377	Unterlegscheibe	Rondelle	Distance washer	3	
18	12422	Unterlegscheibe	Rondelle	Distance washer	3	
19	72188	Schutzfolie	Feuille protectrice	Protection film	1	
20	92795	Fertigmontage	Kit de montage	Assembly kit	1	
21	56742	Blende	Cache	Screen	1	
22	10327	Linsensenkschraube	Vis à tête conique bombée	Face plate screw	6	M6x100
23	92505	Fertigmontage	Kit de montage	Assembly kit	1	
24	56742	Blende	Cache	Screen	1	
25	10489	Linsensenkschraube	Vis à tête conique bombée	Face plate screw	6	M6x25
26	56615	Zwischenrohr	Tube intermédiaire	Spacer pipe	1	
27.1	93061	Einbausatz komplett 20°	Pièce à sceller complète 20°	Installation kit, complete 20°	1	
27.2	93062	Einbausatz komplett 25°	Pièce à sceller complète 25°	Installation kit, complete 25°	1	
27.3	93063	Einbausatz komplett 35°	Pièce à sceller complète 35°	Installation kit, complete 35°	1	
27.4	93064	Einbausatz komplett 45°	Pièce à sceller complète 45°	Installation kit, complete 45°	1	
27.5	93065	Einbausatz komplett 65°	Pièce à sceller complète 65°	Installation kit, complete 65°	1	

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