

TECHNICAL DOCUMENTATION ARITCO 7000 ARITCO 6000

Site preparation
manual



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1. Preparations before the installation

Before the installation starts, prepare the site according to below:

- Make sure that the entire installation will be made in an indoor environment, except for Aritco 7000 outdoor lift.
- Check that the installation site corresponding to the lift drawings regarding the travel and top height. The length of the mast top depends on the door configuration:
 - Full size door - Length from top level floor to top of the mast, min 1055 mm.
 - Half size door - Length from top level floor to top of the mast, 1070±15 mm.
- Make holes through floors and pit according to the lift drawings, see chapter 4 and 5.
- Prepare the pit, see chapter 7.
- Check that the distance between floor and ceiling on each landing is more than 240 mm greater than the door height. This to make sure that the emergency opening of the lift door is possible (if 2000 mm door opening -2240 mm ceiling height).
- Make sure the building floor and pit can carry the weight from the lift and is prepared for fixations, see chapter 2.
- Make sure the building wall can hold the lift and is prepared for fixations, see chapter 3.
- Make sure floor surfaces on each landing match so lift doors will be able to open.
- Mount lifting device (bar or lifting eye bolt) in the ceiling or top floor ensuring all requirements are met for the lift installation, see chapter 9.
- Mount openable safety-railings at the shaft holes.
- Paint the ceiling of the building above the lift shaft, as this is partially visible through the ceiling of the lift.
- Dust-seal the supporting walls, behind the mast in the shaft, and the pit with oil-resistant paint.
- Provide main electrical supply to the lift electrical cabinet via a main breaker outside the lift. Ensure that the lift is connected to the building main earthing terminal via a PE conductor.
- Power supply requirements:
 - 1-phase 230V 50/60 Hz, rated load 250kg/410kg: L1 + N + PE (Fuse 1x16A type C).
 - 1-phase 230V 50Hz, rated load 250kg/410kg/500kg: L1 + N + PE (Fuse 1x16A type C).
 - 1-phase 230V 60Hz, rated load 250kg/410kg: L1 + N + PE (Fuse 1x16A type C).
 - 3-phase 400V rated load 250kg/410kg/500kg: L1 + L2 + L3 + N + PE (Fuse 3x16A type C).
- Mount a power outlet socket near the lift.
- Provide a two-way communication for the alarm phone to an Alarm receiver. If PSTN, provide cable to the electrical cabinet. A SIM card shall be provided to possible GSM-phone
- Provide lift ambient conditions; temperature range +5°C to +40°C and relative humidity below 60%.
- Ensure that the room has adequate ventilation.
- Provide the installation site with satisfying lighting for the installation.
- Provide lighting, 50 lux, in front of every lift door.
- Clean out the shaft area.

Conditions for Aritco 7000 outdoor lift, lift size 1100x1480 mm.

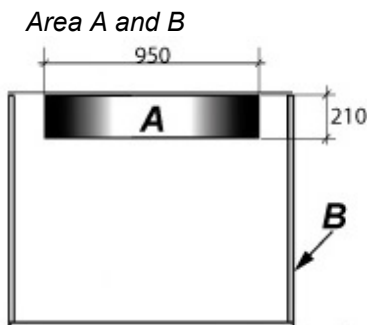
- Outdoor lift ambient conditions; temperature range -5°C to + 40°. Optional heat fan and ventilation fans can help to keep temperature and humidity within the limits. If the lift is going to be installed in colder climate than -5°C, an externally insulated and heated shaft must be built around the lift.
- Wind load limitations:
 - Up to 10 m/s average wind speed @ 12 m height above ground:
 - Maximum travel height: 10m.
 - Maximum top height 2,5 m (Shaft height above top landing).
 - Possible to fix lift with L-bracket (specially developed for outdoor usage).
 - Up to 25 m/s average wind speed @ 12 m height above ground:
 - Shaft only with shaft panels in EPS. Glass shaft panels not available.
 - Shaft shall be glued, see instructions in the Installation manual.
 - Lift must be fixed against a wall. Fixing with L-brackets is not possible.
- Snow load max 2kN/m². Snow load zone according to EN 1991-1-3. For higher snow loads an external shaft /roof must be installed.
- Installation above ground level and with a drained pit.
- Installation is not recommended in salt or chlorine rich environment.

2. Loads on building floor/pit

The floor underneath the lift must be able to sustain the loads acting on the floor which are composed by three components, lift weight, lift load and the dynamic forces that occur during braking.

The tables below show the maximum total load in kN that the floor should withstand given these forces.

In the tables the column *Lift travel height* includes the top height 2,5 m.



Area A carries the weight from mast, drive unit, platform, rated load, over load (75 kg) and maximum dynamic force.

Area B carries the weight from the shaft, including ceiling and doors. The size of the area is calculated as the shaft panel width times the total shaft wall length.

Area A

Load under area A from mast, platform load and dynamic forces.

Table 1

Load under area A from mast, platform load and dynamic forces								
Lift travel height, m	Lift size 900x1040 kN	Lift size 900x1280 kN	Lift size 900x1480 kN	Lift size 1000x1280 kN	Lift size 1000x1480 kN	Lift size 1100x1480 kN	Lift size 1100x1580 kN	Lift size 1000x1980 kN
1	8,0	11,4	12,8	11,4	12,9	12,9	13,0	13,4
2	8,5	11,9	13,4	12,0	13,5	13,5	13,6	14,0
3	9,1	12,5	14,0	12,6	14,1	14,1	14,2	14,7
4	9,7	13,1	14,6	13,1	14,7	14,7	14,9	15,4
5	10,2	13,7	15,2	13,7	15,3	15,3	15,5	16,0
6	10,8	14,3	15,8	14,3	15,9	15,9	16,1	16,7
7	11,3	14,8	16,4	14,9	16,5	16,5	16,7	17,3
8	11,9	15,4	17,0	15,4	17,1	17,1	17,3	18,0
9	12,4	16,0	17,6	16,0	17,7	17,7	17,9	18,6
10	13,0	16,6	18,2	16,6	18,3	18,3	18,5	19,3
11	13,5	17,1	18,8	17,2	18,9	18,9	19,1	20,0
12	14,1	17,7	19,4	17,8	19,5	19,5	19,7	20,6
13	14,6	18,3	20,0	18,3	20,1	20,1	20,3	21,3

Surface pressure under Area A, platform load and dynamic forces. (see the area in the previous page).

N.B. Most of the load from the mast is distributed in the outer end areas under the rails.

Table 2

Surface pressure on the area A from mast, platform load and dynamic forces								
Lift travel height, m	Lift size 900x1040 kg/cm ²	Lift size 900x1280 kg/cm ²	Lift size 900x1480 kg/cm ²	Lift size 1000x1280 kg/cm ²	Lift size 1000x1480 kg/cm ²	Lift size 1100x1480 kg/cm ²	Lift size 1100x1580 kg/cm ²	Lift size 1000x1980 kg/cm ²
1	2,2	3,0	3,4	3,1	3,4	3,4	3,5	3,5
2	2,4	3,3	3,7	3,3	3,7	3,7	3,7	3,8
3	2,7	3,6	3,9	3,6	3,9	3,9	4,0	4,1
4	2,9	3,8	4,2	3,9	4,2	4,2	4,2	4,4
5	3,2	4,1	4,4	4,1	4,5	4,5	4,5	4,7
6	3,4	4,4	4,7	4,4	4,7	4,7	4,8	5,0
7	3,6	4,7	5,0	4,7	5,0	5,0	5,0	5,2
8	3,9	4,9	5,2	4,9	5,2	5,2	5,3	5,5
9	4,1	5,2	5,5	5,2	5,5	5,5	5,6	5,8
10	4,4	5,5	5,8	5,5	5,8	5,8	5,8	6,1
11	4,6	5,7	6,0	5,7	6,0	6,0	6,1	6,4
12	4,9	6,0	6,3	6,0	6,3	6,3	6,4	6,6
13	5,1	6,3	6,5	6,3	6,6	6,6	6,6	6,9

Area B

Load under area B (see the area in the previous page).

The shaft load is evenly distributed under the shaft walls.

Table 3 Glass wall panels

Load under area B from the shaft with glass wall panels								
Lift travel height, m	Lift size 900x1040 kN	Lift size 900x1280 kN	Lift size 900x1480 kN	Lift size 1000x1280 kN	Lift size 1000x1480 kN	Lift size 1100x1480 kN	Lift size 1100x1580 kN	Lift size 1000x1980 kN
1	2,7	3,0	3,2	3,1	3,4	3,5	3,6	3,9
2	3,5	3,8	4,1	3,9	4,3	4,4	4,6	4,9
3	4,2	4,6	4,9	4,8	5,2	5,4	5,5	6,0
4	5,0	5,4	5,8	5,6	6,1	6,3	6,5	7,0
5	5,7	6,2	6,7	6,5	7,0	7,3	7,4	8,1
6	6,5	7,0	7,6	7,3	7,9	8,2	8,4	9,1
7	7,2	7,9	8,4	8,2	8,8	9,2	9,4	10,1
8	8,0	8,7	9,3	9,0	9,7	10,1	10,3	11,2
9	8,7	9,5	10,2	9,8	10,6	11,1	11,3	12,2
10	9,5	10,3	11,0	10,7	11,5	12,0	12,3	13,3
11	10,2	11,1	11,9	11,5	12,4	12,9	13,2	14,3
12	11,0	11,9	12,8	12,4	13,3	13,9	14,2	15,4
13	11,7	12,7	13,6	13,2	14,2	14,8	15,2	16,4

Table 4 EPS wall panels

Load under area B from the shaft with EPS wall panels								
Lift travel height, m	Lift size 900x1040 kN	Lift size 900x1280 kN	Lift size 900x1480 kN	Lift size 1000x1280 kN	Lift size 1000x1480 kN	Lift size 1100x1480 kN	Lift size 1100x1580 kN	Lift size 1000x1980 kN
1	2,0	2,2	2,3	2,3	2,4	2,5	3,0	2,8
2	2,5	2,8	3,0	2,9	3,1	3,2	3,8	3,6
3	3,1	3,3	3,6	3,5	3,7	3,8	4,6	4,3
4	3,6	3,9	4,2	4,1	4,4	4,5	5,4	5,1
5	4,1	4,5	4,8	4,7	5,0	5,2	6,2	5,8
6	4,7	5,1	5,4	5,3	5,7	5,8	7,0	6,6
7	5,2	5,7	6,1	5,9	6,3	6,5	7,8	7,3
8	5,8	6,2	6,7	6,5	7,0	7,2	8,6	8,1
9	6,3	6,8	7,3	7,1	7,6	7,8	9,3	8,8
10	6,8	7,4	7,9	7,7	8,2	8,5	10,1	9,5
11	7,4	8,0	8,6	8,3	8,9	9,2	10,9	10,3
12	7,9	8,6	9,2	8,9	9,5	9,8	11,7	11,0
13	8,4	9,1	9,8	9,5	10,2	10,5	12,5	11,8

Surface pressure under area B (see the area in the previous page).

Table 5

Surface pressure on the area B from the shaft.		
Lift travel height, m	EPS wall panels kg/cm ²	Glass wall panels kg/cm ²
1	2,2	3,0
2	2,4	3,3
3	2,7	3,6
4	2,9	3,8
5	3,2	4,1
6	3,4	4,4
7	3,6	4,7
8	3,9	4,9
9	4,1	5,2
10	4,4	5,5
11	4,6	5,7
12	4,9	6,0
13	5,1	6,3

In addition, the floor under the platform should withstand two people weighing 200 kg in total.

(10 N \approx 1 kg)

3. Reaction forces on wall and positioning of wall fixings

The reaction force, **Fr**, in table below shows the force on each of the two fixing bolts (one at each rail) at every fixing height according to lift size.

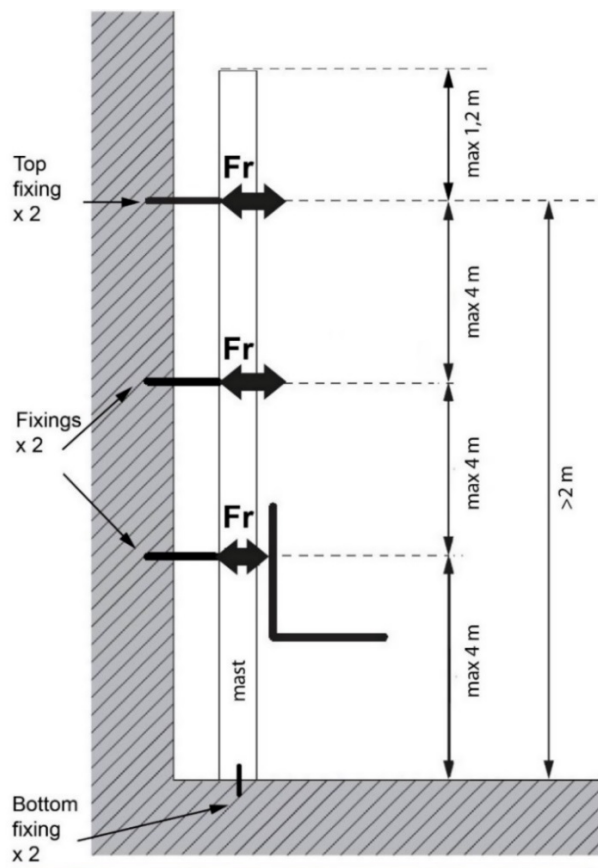
Table 6

Lift size (mm)	Rated load (kg)	Force (Fr) on one fixing bolt (kN)
900 x 1040	250	1,8
900 x 1280	410	2,8
1000 x 1280	410	2,8
900 x 1480	500	3,6
1000 x 1480	500	3,6
1000 x 1980	500	3,6
1100 x 1480	500	3,6
1100 x 1580	500	3,6

The fixings should be placed according to specified heights below:

- Minimum distance from bottom fixing (pit) to top fixing is 2 m.
 - Maximum distance between two fixings is 4 m.
 - Maximum distance from the top of the mast down to the top fixing is 1,2 m.
- For outdoor lift up to 25 m/s, another measure applies, see page 12.**

ILLUSTRATION 1 Wall fixings, Indoor lifts and outdoor lifts at wind forces up to 10 m/s



Additional forces/wind forces on fixings, mast to wall

Note: Only valid for Aritco 7000 Outdoor lifts.

Additional force (Fr) on outdoor lifts, depending on wind force.

See Illustration 1 for outdoor lifts wind force up to 10 m/s and illustration 2 for outdoor lifts wind force up to 25 m/s.

The wind load calculations are done in accordance with the European standard EN 1991-1-4-2005 (Wind pressure):

- Max travel height 10 m.
- Max top height 2,5 m (Shaft height above top landing).
- Terrain category III (Table 4.1 in the standard).
- Peak velocity pressure Exposure factor 1,8 (Table 4.2 in the standard).

Two wind speed are used in the calculations:

- Max 10 m/s average wind speed @ 12 m height above ground.
- Max 25 m/s average wind speed @ 12 m height above ground.

Table 7

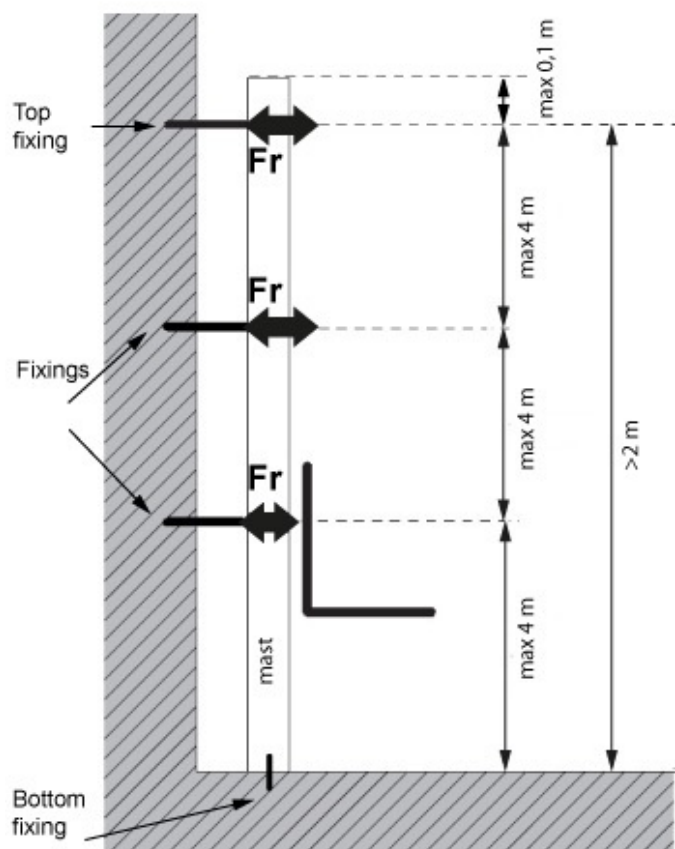
Average Wind speed (m/s)	Distance between mast fixings in the wall (m)	Fr (kN)	Extra force due to wind, Fw (kN)	Total force, Fr+Fw (kN)
10	2	3,6	0	3,6
10	3	3,6	0	3,6
10	4	3,6	0	3,6
25	2	3,6	0	3,6
25	3	3,6	0,5	4,1
25	4	3,6	1,0	4,6

Table shows Additional force (Fw) per each anchor point (fixing bolt), depending on wind speed. See Ch. 8 Mast fixings.

Outdoor lifts, wind forces up to 25 m/s

- Maximum distance from the top of the mast down to the top fixing is 0,1 m.

ILLUSTRATION 2 Fixings mast to wall, outdoor lifts at wind forces up to 25 m/s

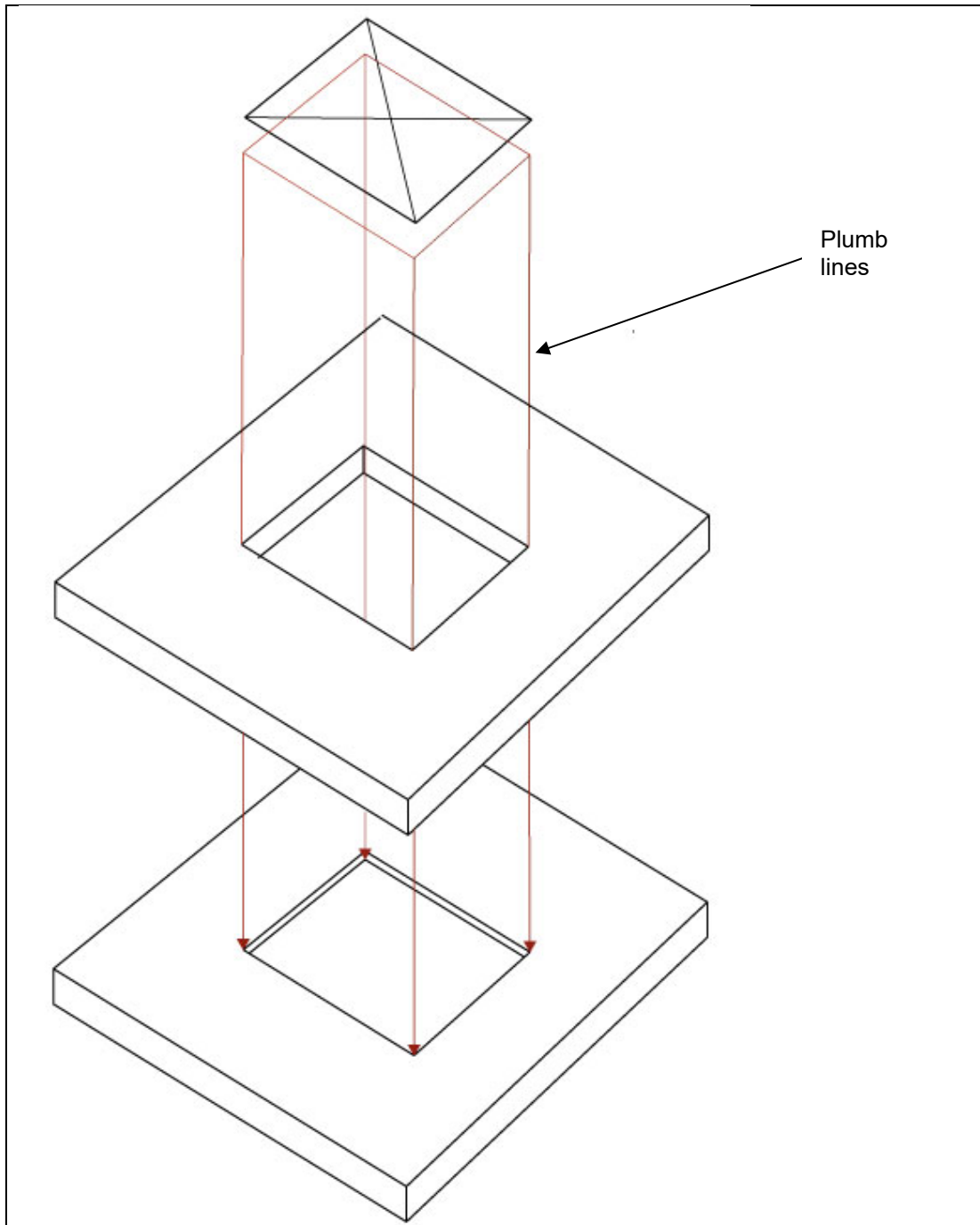


4. Making holes through the floors and in the pit

Be very careful and accurate when making the openings in the floors and pit to make sure all holes are aligned. This is crucial for a successful installation.

Use plumb lines to check the accuracy during the work.

ILLUSTRATION 3



5. Dimensions for the holes through the floors and in the pit

The rectangular opening in the floor or pit should be min. 15 mm bigger than the lift at all sides.

Dimensioning of the holes and sockets is described below.

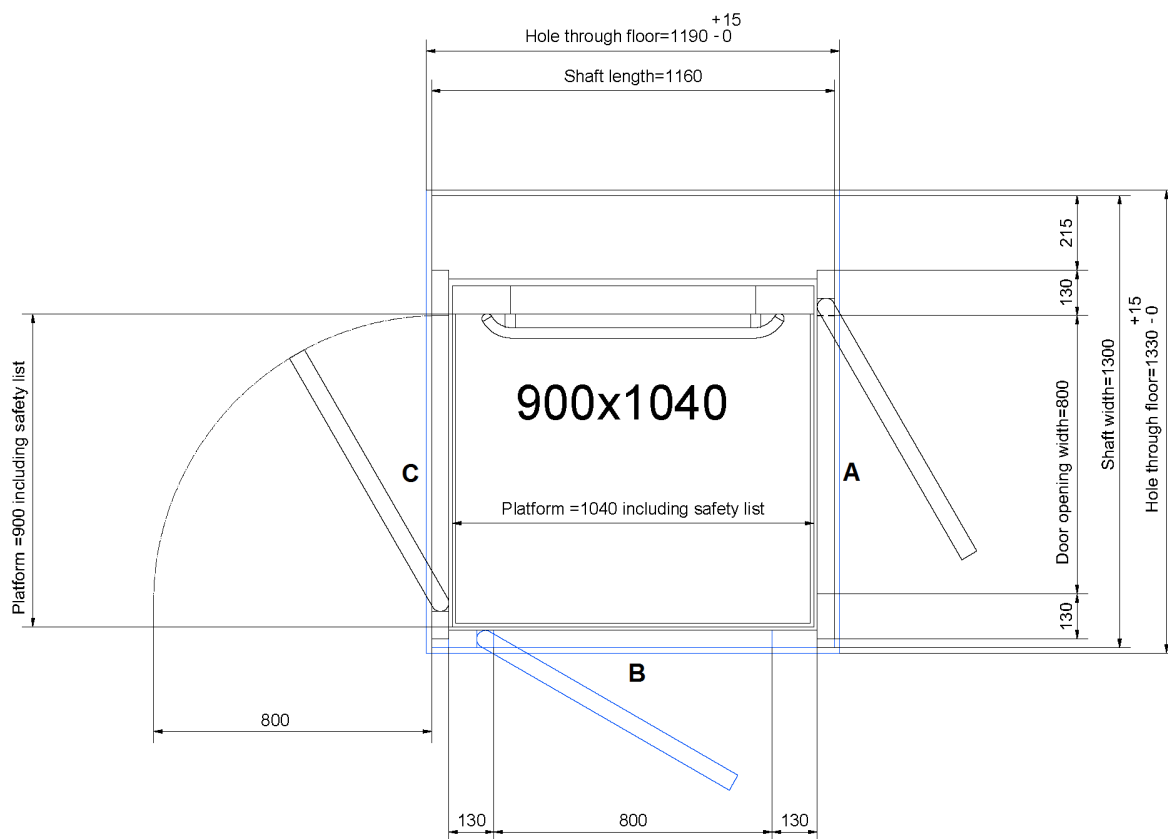
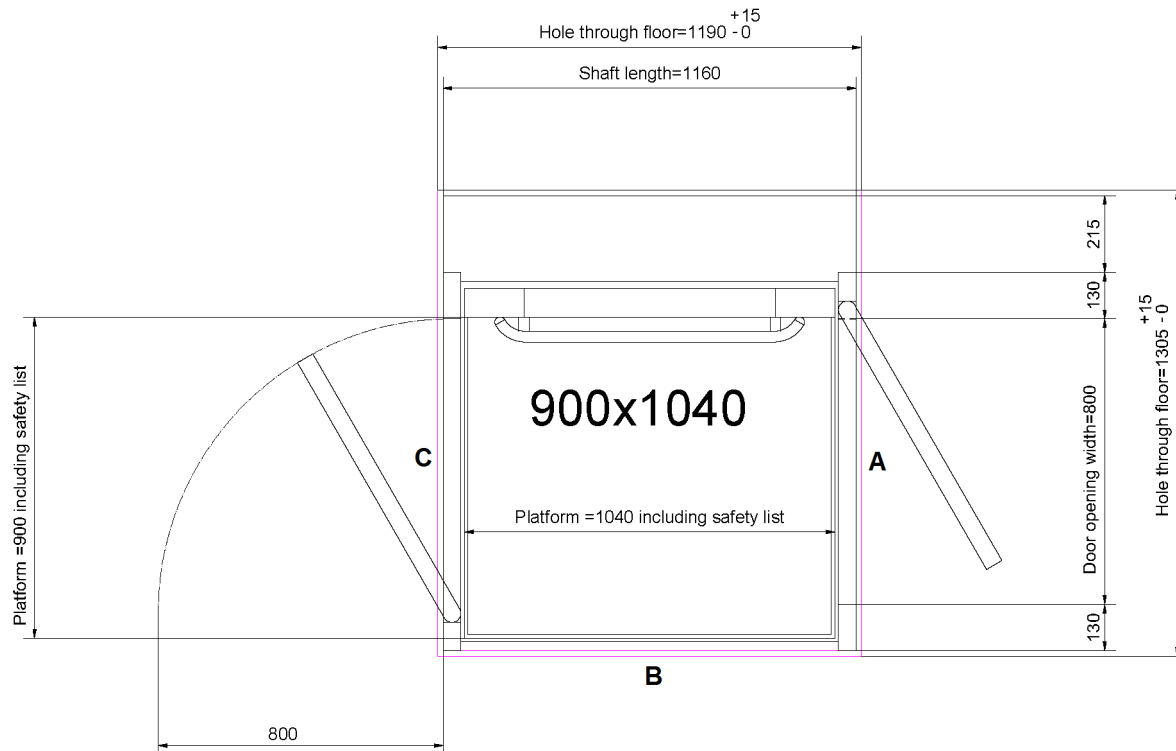
Please observe for lifts with doors on the B-side there also must be an extra 25 mm space for fixing the door socket.

Dimensioning of the holes and sockets for the eight lift sizes is described below.

If there is a pit, refer to chapter 7 for information about pit depth.

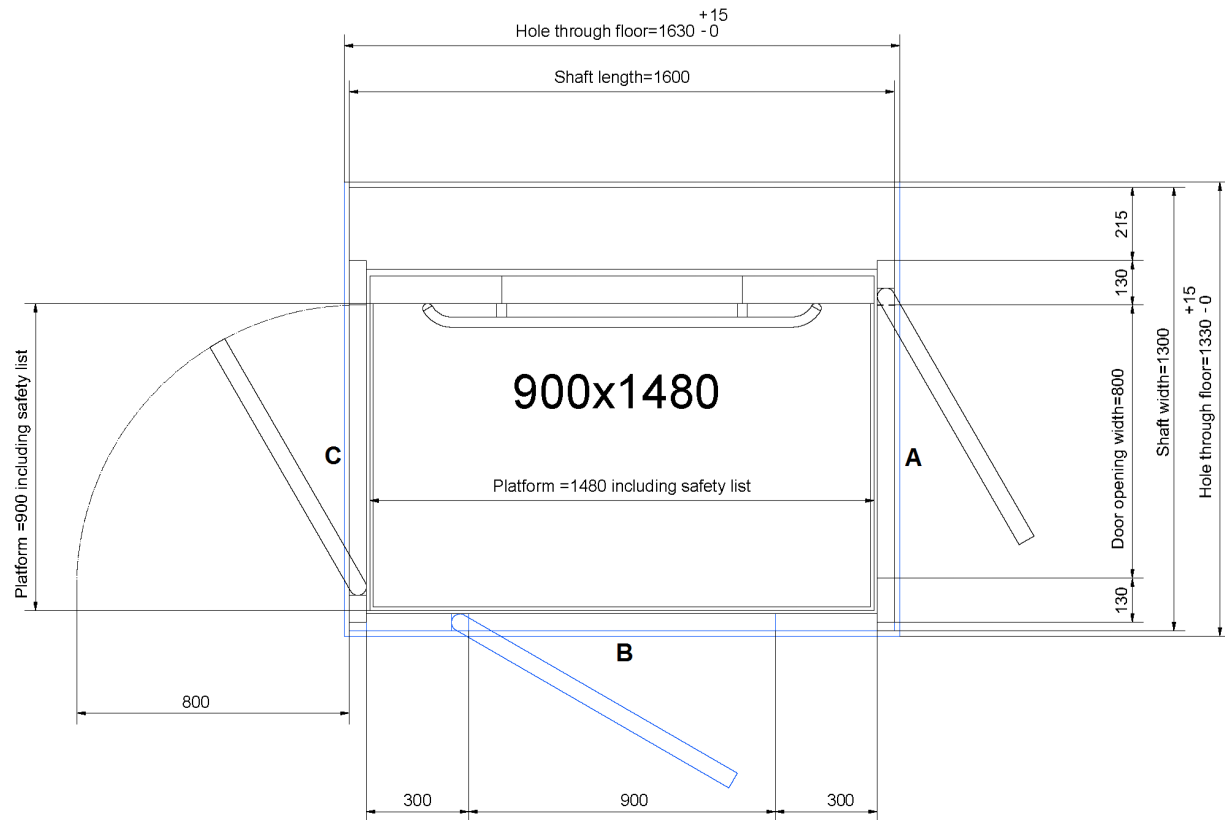
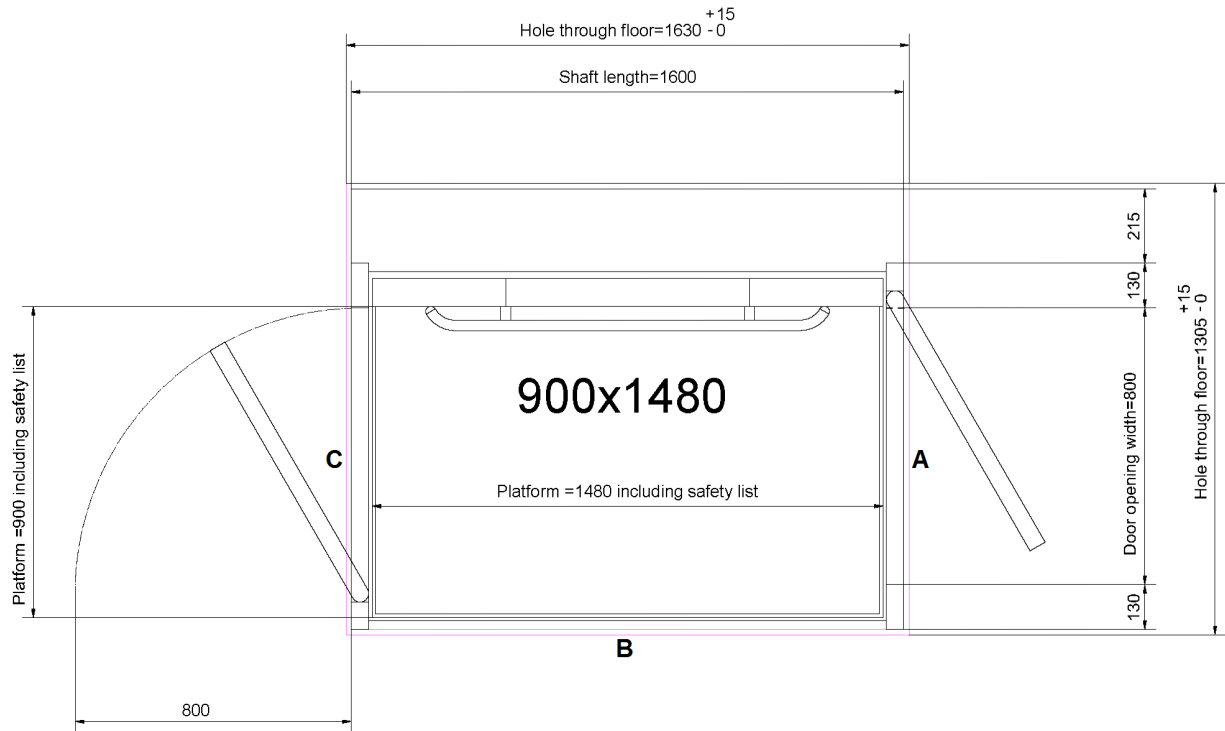
Lift size 900 x 1040

ILLUSTRATION 4



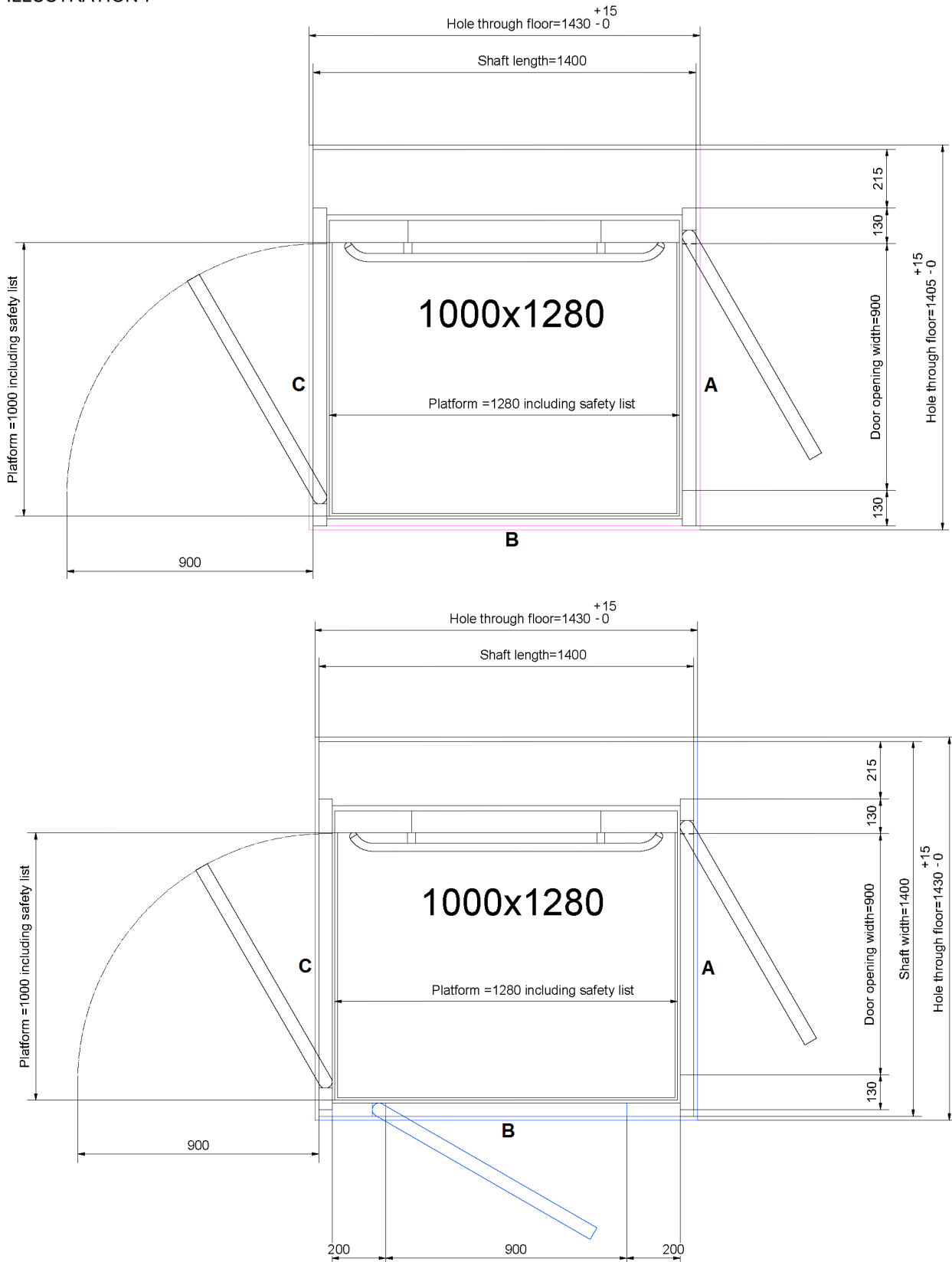
Lift size 900 x 1480

ILLUSTRATION 6



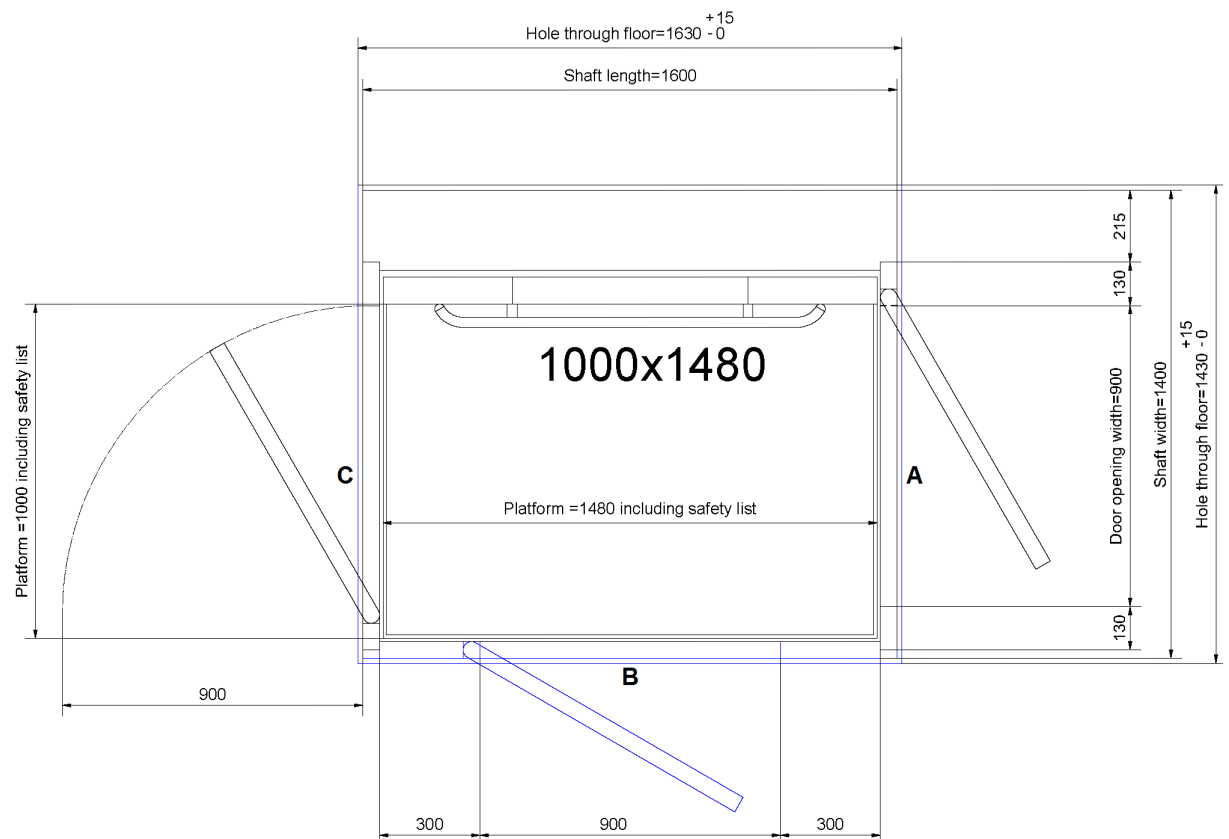
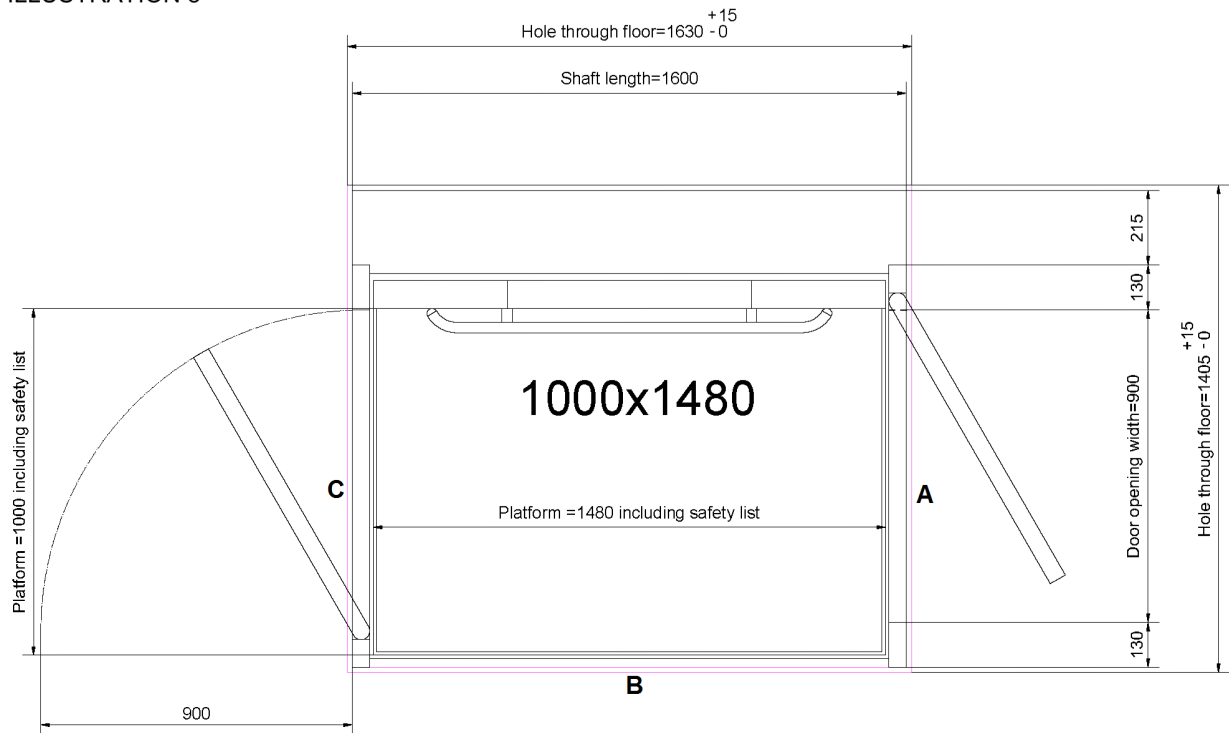
Lift size 1000 x 1280

ILLUSTRATION 7



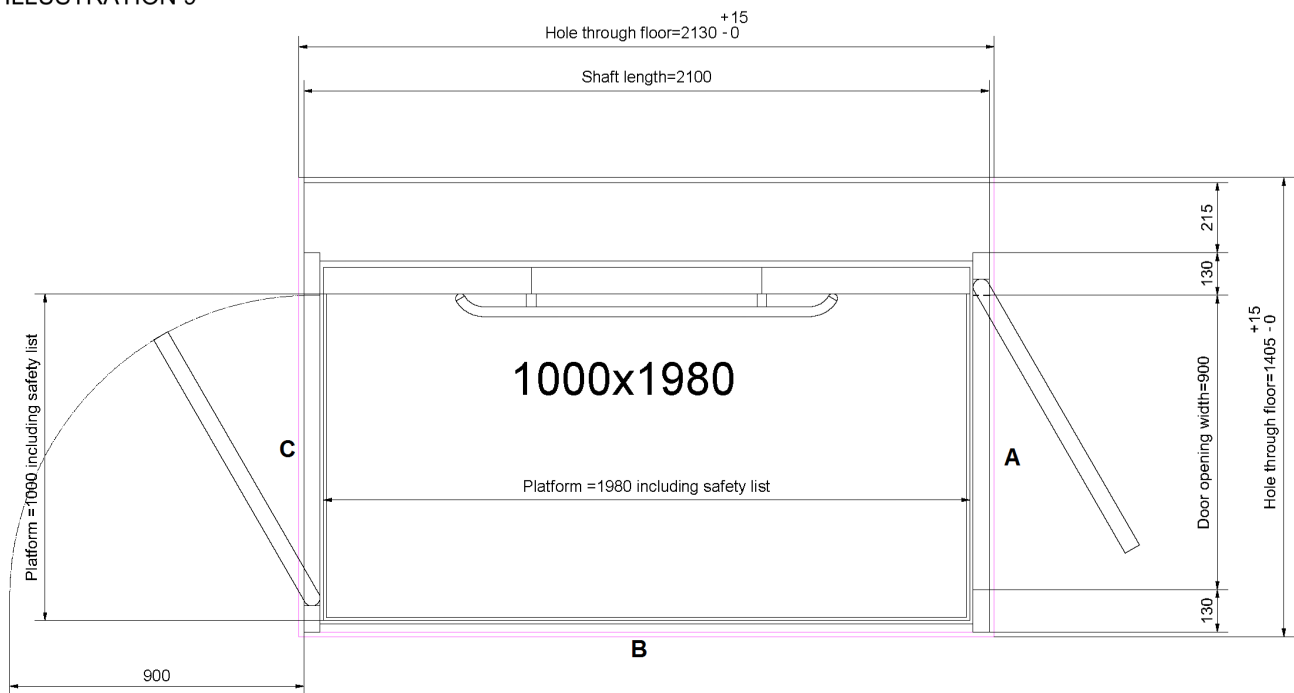
Lift size 1000 x 1480

ILLUSTRATION 8



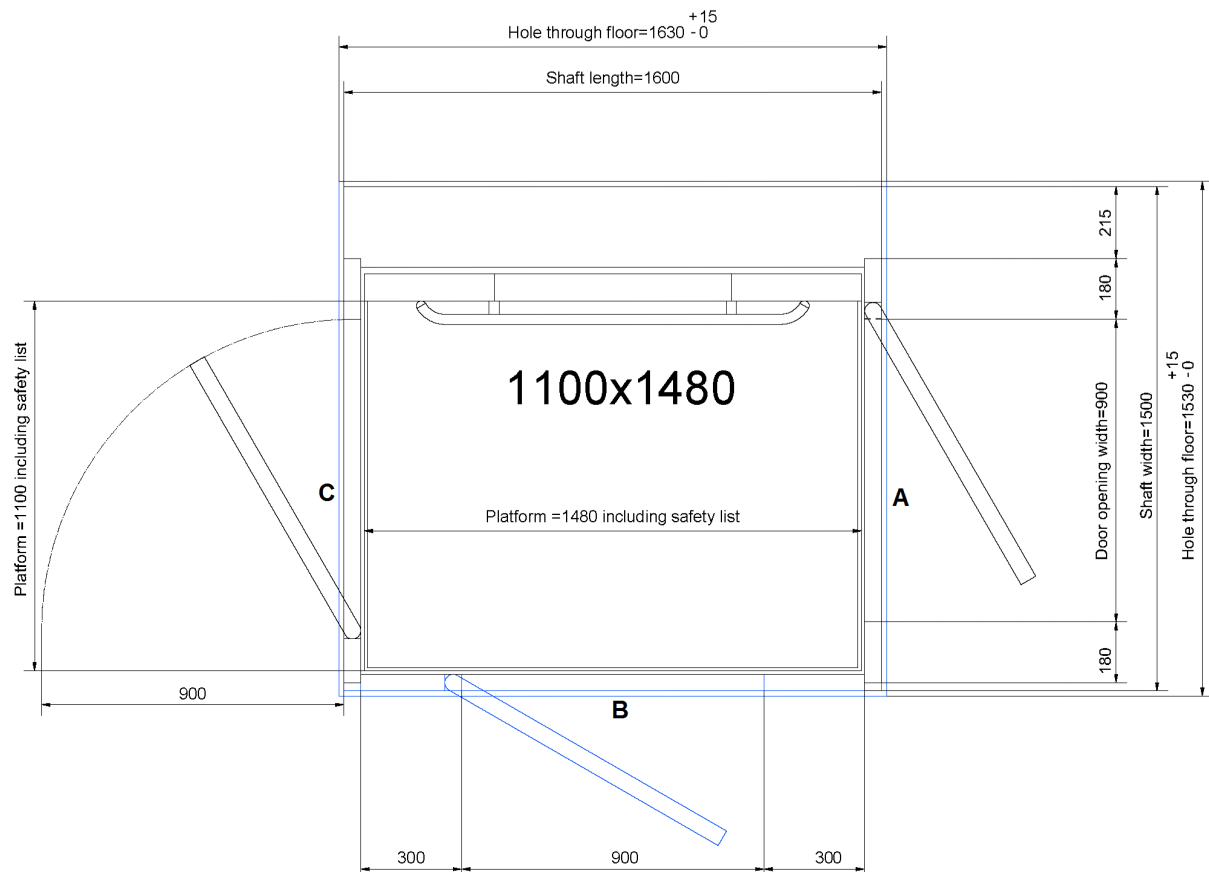
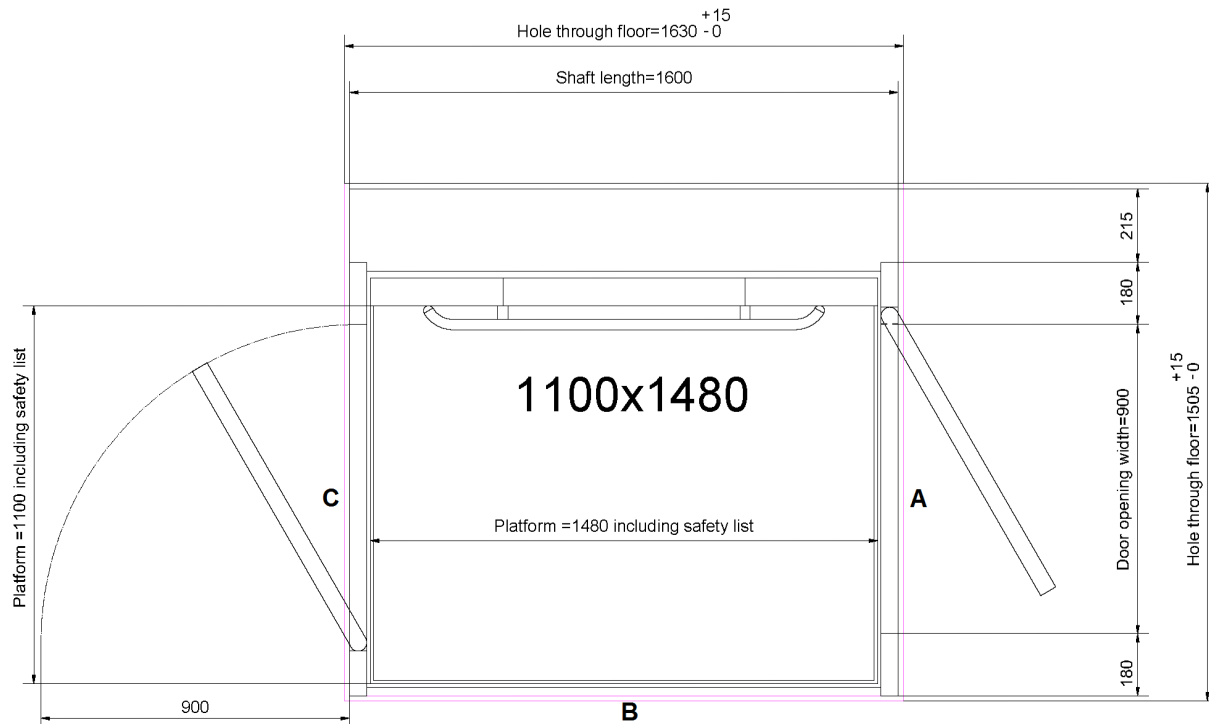
Lift size 1000 x 1980

ILLUSTRATION 9



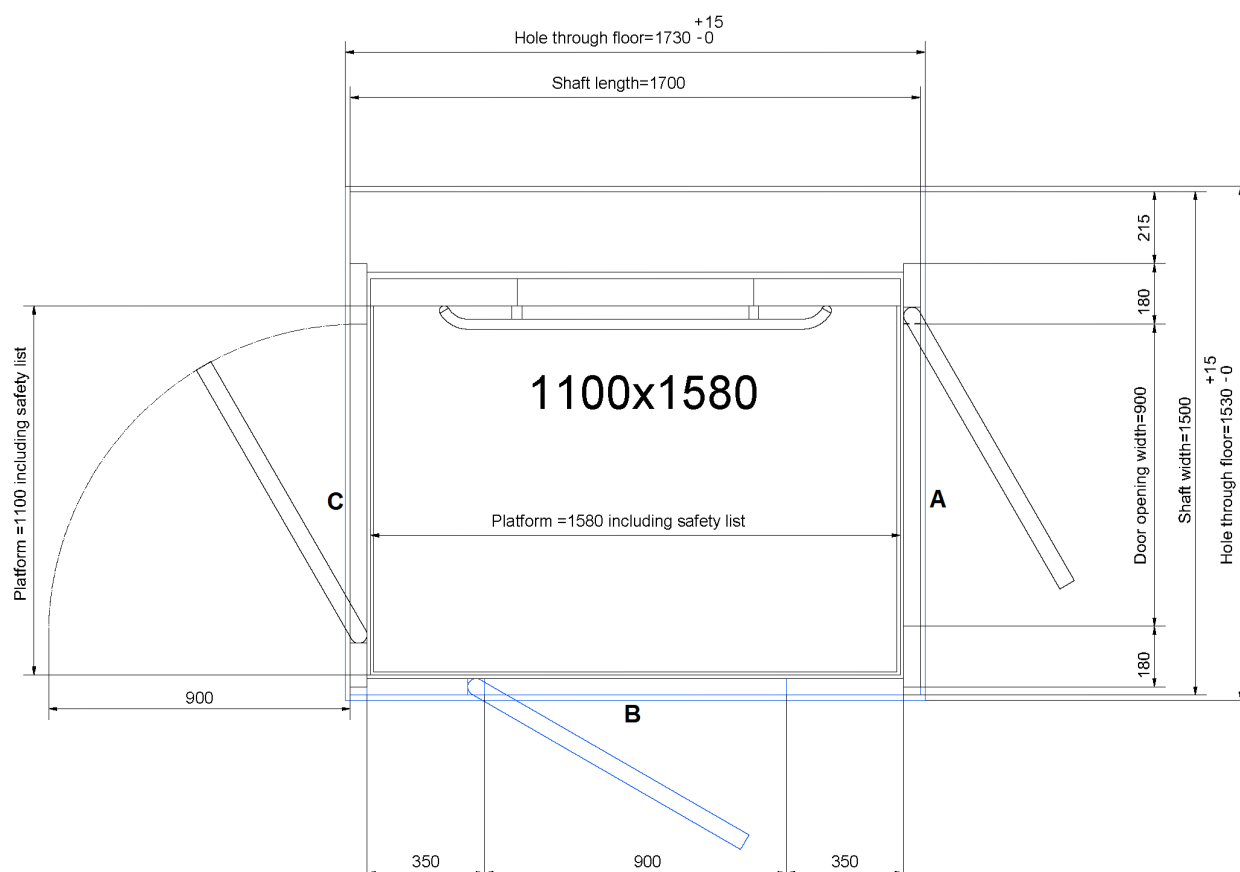
Lift size 1100 x 1480

ILLUSTRATION 10



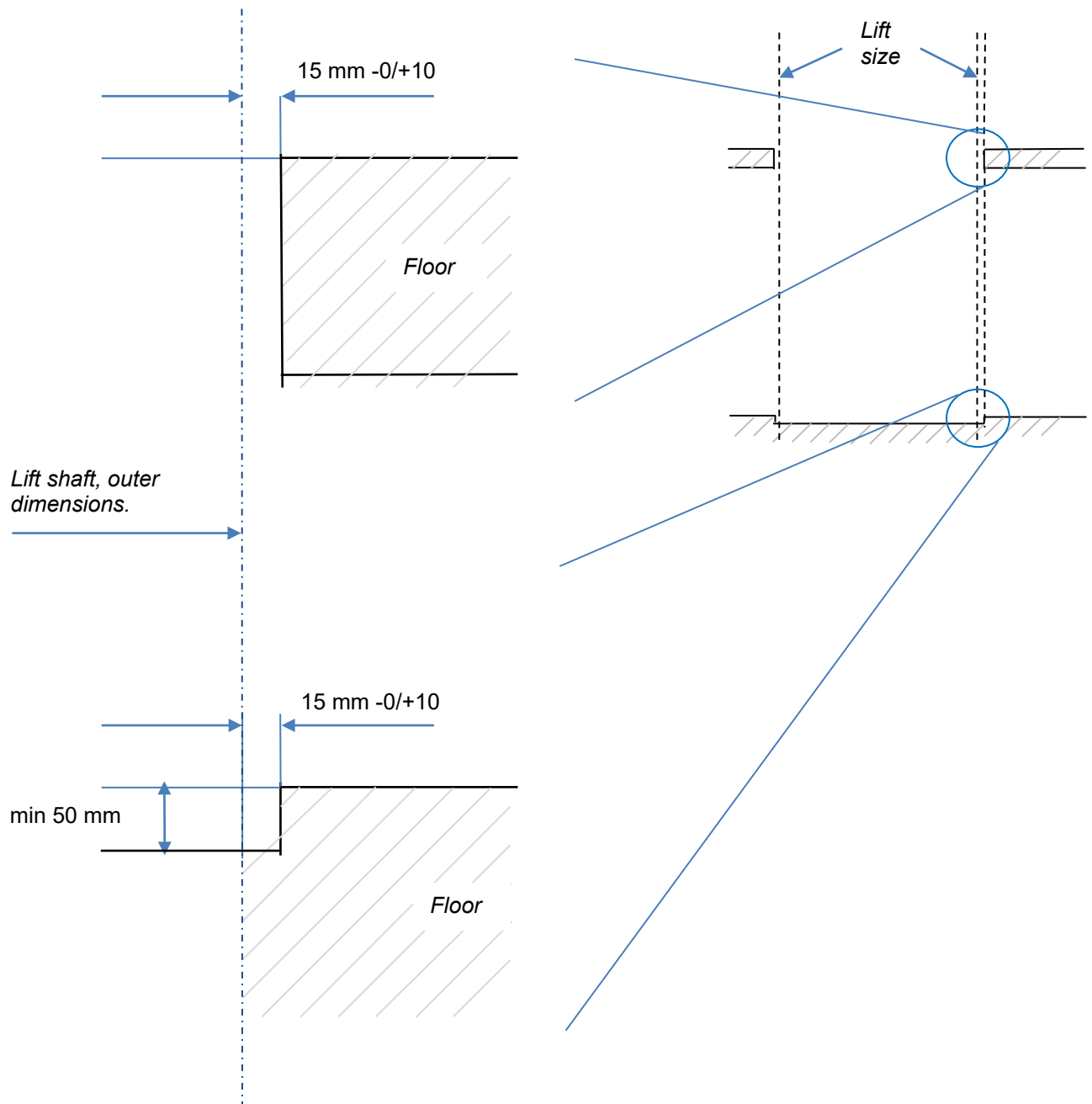
Technical drawing of a platform scale (Illustration 11) showing dimensions and components. The drawing includes the following specifications:

- Platform = 1580 including safety list**
- Platform = 1100 including safety list**
- Door opening width = 900**
- Hole through floor = 1730 -0 +15**
- Shaft length = 1700**
- Door opening width = 900**
- Hole through floor = 1505 -0 +15**
- Dimensions:** 215, 180, 180, 900, 1100x1580
- Labels:** A, B, C



6. Door socket depth clarification

ILLUSTRATION 12



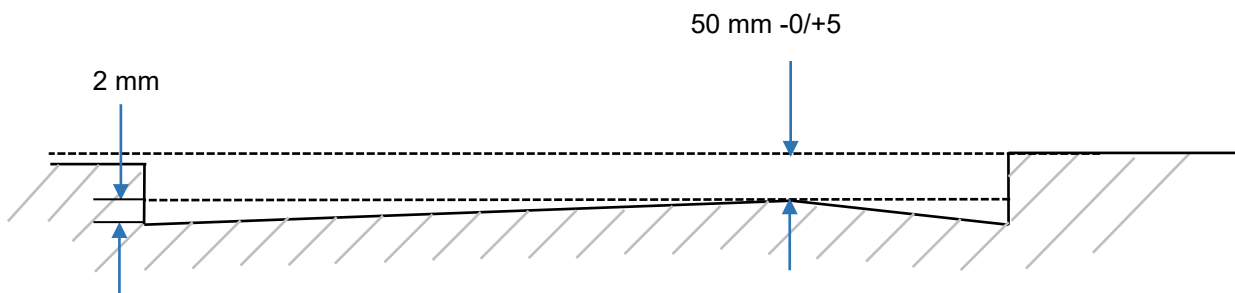
7. The pit depth and bottom surface

It is very important that the pit is made with care as this is the surface on which the lift will rest and be securely aligned!

The pit depth shall be 50 -0/+5 mm across the bottom surface, measured from the highest level on the surrounding floor outside the door. See picture below.

The bottom of the pit must be leveled and should not differ more than 2 mm in height. The surface should be completed in the same way to a bottom floor without a pit. The pit should always be prepared with oil-resistant paint.

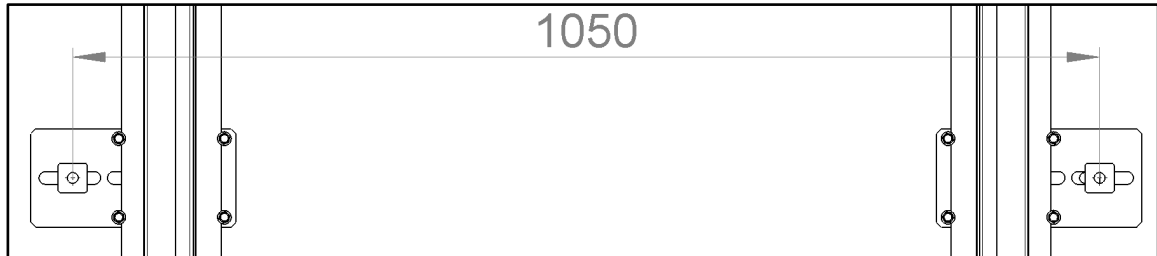
ILLUSTRATION 13



8. Mast fixings

Distance between the fixing bolts on the wall, behind the mast:

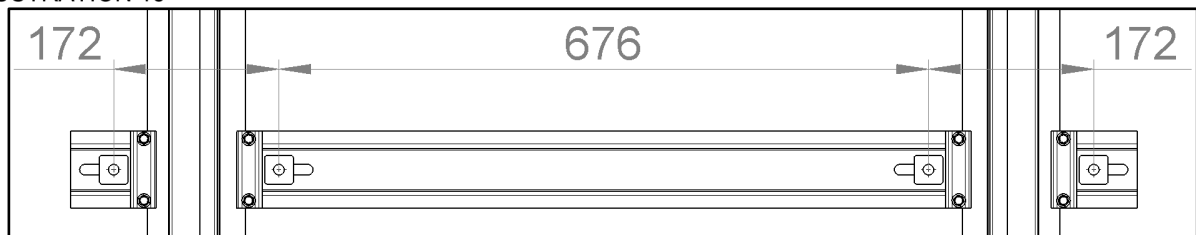
ILLUSTRATION 14



Outdoor lifts, wind load up to 25 m/s

Outdoor lifts for 25 m/s average wind speed has a reinforced wall bracket with 4 fixing bolts.

ILLUSTRATION 15

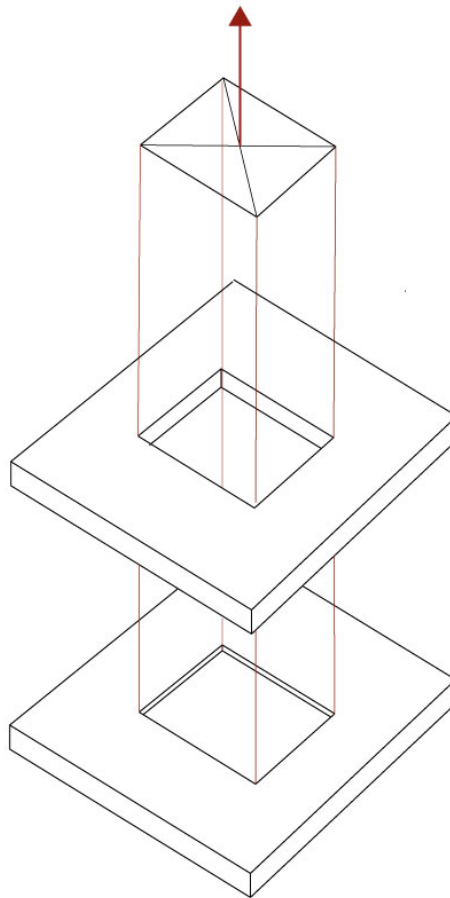


9. Lifting device for the mast

Mount an eye bolt or similar in the ceiling to be used when raising the mast during installation.

The eye bolt shall be dimensioned to carry the weight of the mast, drive screw and the lifting unit.

ILLUSTRATION 16



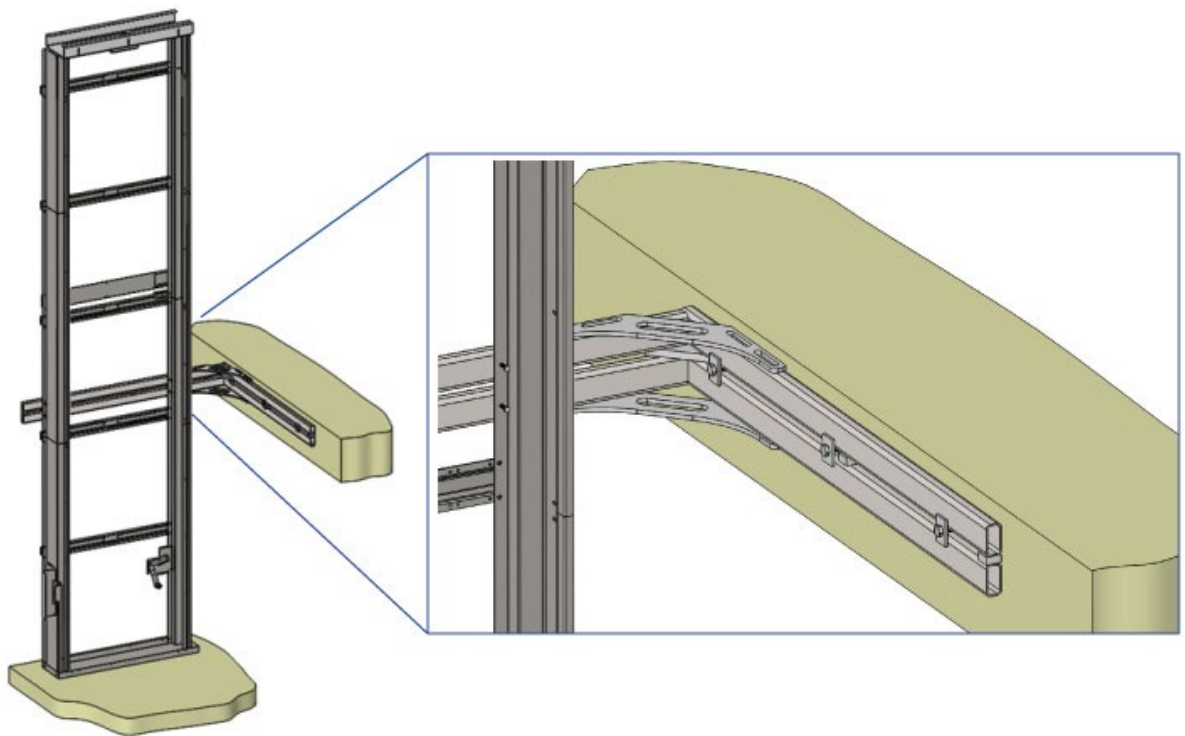
10. L-bracket (option)

The L-brackets are used when there is no wall or joist behind the mast for attachment. They should be mounted before raising the mast at a distance of maximum 4000 mm from other wall fixings.

- Fasten the L-bracket to the wall with minimum three M12 screws, one of them as close to the L-angle as possible. The screws are not included in delivery, choose screws depending on wall materials. The highest point of the L-bracket shall be mounted at minimum 47 mm below the landing floor to make space for the door frame.
- Fasten the L-bracket to the mast with four self-drilling 6,3 mm screws for each rail. Distance from the floor landing to the platform shall be 80 mm. (for fire door 90 mm).
- The L-bracket can be mounted on the A-side or the C-side depending on where the door is situated.
- Dimensions for the holes through the floors are the same as for a lift mounted without L-brackets.

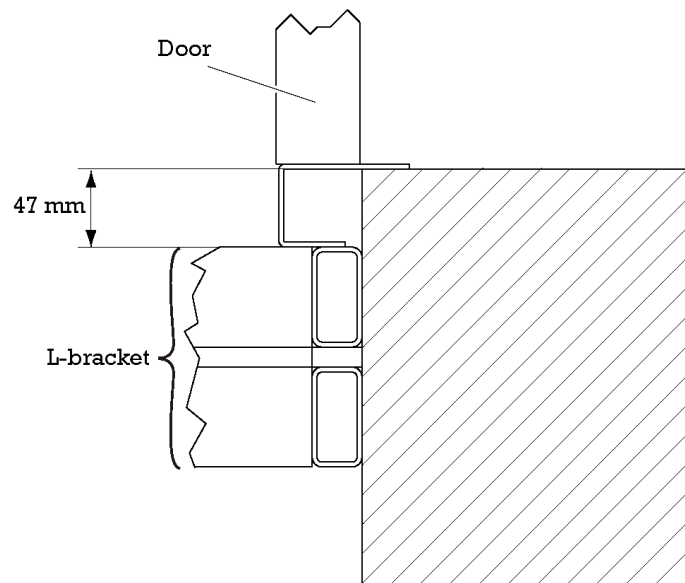
ILLUSTRATION 17

L-bracket mounted to joist and mast.



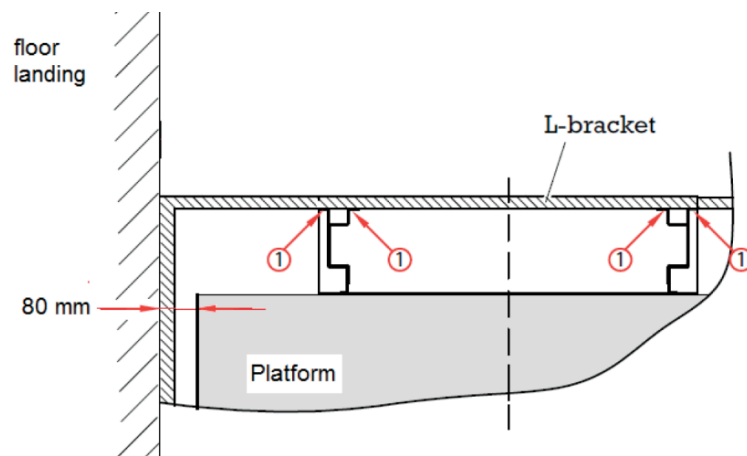
The picture shows the L-bracket outdoor version, the installation is the same for both indoor and outdoor versions.

ILLUSTRATION 18



L-bracket mounted min. 47 mm below floor landing level.

ILLUSTRATION 19



Distance from the floor landing to the platform shall be 80 mm (for fire door 90 mm).

11. Shipping and storage

The material must be kept dry and protected from damage during transport and storage.

The lift is delivered on several pallets and the total shipping weight can be up to 3 500 kg depending on size and configuration.

Store the material in its packing material until installation.

Check that delivered material is not damaged from the transport. If there are damages, immediately contact the responsible shipping company and also inform Aritco Lift AB.

Check that the delivered material corresponds to the packing list. Report missing materials to Aritco Lift AB.

Use handling aids when moving heavy objects.

12. To check ahead of the installation

Check

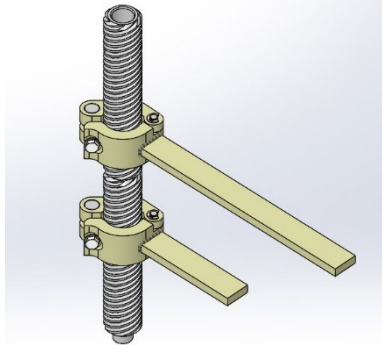
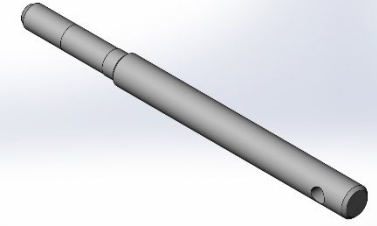
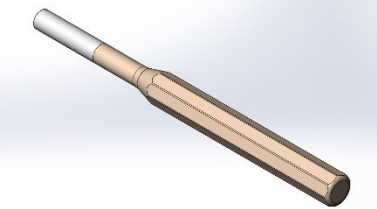
Installation site corresponds to the drawings, including travel and top heights.	<input type="checkbox"/>
Openings in the floors and pit corresponds to drawing. Make sure pit floor is flat and levelled.	<input type="checkbox"/>
Openings through floors and pit match vertically.	<input type="checkbox"/>
Floor surfaces on each landing match so lift doors will be able to open.	<input type="checkbox"/>
Supporting walls in the shaft and the pit/floor are dust sealed with oil-resistant paint.	<input type="checkbox"/>
The ceiling of the building above the lift shaft is painted, as this is partially visible through the ceiling of the lift.	<input type="checkbox"/>
A lifting device (i.e. eye bolt or bar in the ceiling) that meets the requirements needed for the lift to be installed is in place.	<input type="checkbox"/>
Main electrical supply with a main circuit breaker is provided at the electrical cabinet, see the technical specification for the lift.	<input type="checkbox"/>
A power outlet near the lift is in place.	<input type="checkbox"/>
Two-way connection for the alarm phone connected to an Alarm receiver is in place, and where applicable, a PSTN-cable. A SIM card shall be provided to possible GSM-phone.	<input type="checkbox"/>
The lift ambient condition meets the temperature range of +5°C to +40°C. For Aritco 7000 outdoor the temperature range is -5°C to +40°C.	<input type="checkbox"/>
The relative humidity is below 60% (except for Aritco 7000 outdoor).	<input type="checkbox"/>
Ensure that the room has adequate ventilation.	<input type="checkbox"/>
Safety-railings, openable, are mounted at the shaft holes.	<input type="checkbox"/>
Lighting for the installer is sufficient.	<input type="checkbox"/>
Shaft is cleaned out.	<input type="checkbox"/>
For outdoor lifts; check that the pit has an abundant floor drain (for rain water).	<input type="checkbox"/>
For outdoor lifts; that there is an external 230 V supply (for ventilation /heating fan).	<input type="checkbox"/>

Before the lift is CE marked and the lift is taken into use, make sure that:


There is lighting that provides at least 50 lux in front of every door.	<input type="checkbox"/>
There is a two-way communication line to an alarm center.	<input type="checkbox"/>

13. Lift tools





Tools delivered in Aritco 6000/7000 Installation kit.



<p>Clamp arm, screw joint, long (55010-L) Clamp arm, screw joint, short (55010-S)</p>	
<p>Gauge, screw joint (55139)</p>	
<p>Mandrel, d=8 (47014)</p>	

Service tools delivered with Aritco 6000/7000. (to stay by the lift)







<p>Triangular key (64103)</p>	
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Recommended installation tools for Aritco 6000/7000



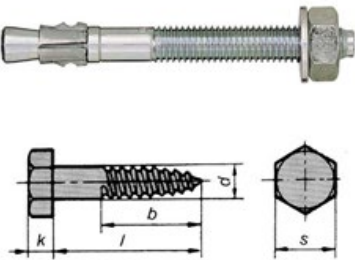


Hoist 500 kg	
Drill set 1 – 13 mm	
Concrete drill 8 – 12 mm	
Crow bar	

Hammer	
Plumb 300 gr. with line 15 m, 2 pcs	
Laser plummet	
Spirit level	



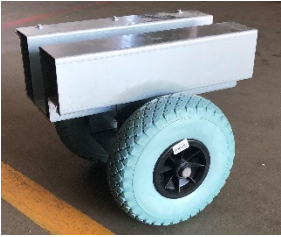
Measure tape	
Calipers	
Plate shearing tool Right & Left	
Nipper /wire stripper	
Nose plier	

Screw driver 2,0 – 5,5 mm	
Screw driver cross PH1 + 2	
Screw driver Torx T10-T30	
Magnetic Screw Bit Holder	
Magnetic Screw Bit Holder 300 mm	
Bit PH1 + 2	

Magnetic case 10 mm	
File for screw joint	
Clamp 400 mm, 4 pcs	
Complete set of sockets and spanners 10 – 21 mm	

Toolbox with common tools	
Suction Cup Lifter, 2 pcs	
Fixings material for guide rails, frame and doors, for example expander bolts or chemical bolts.	
Insulation tester	
Drilling machine / screw driving machine with moment clutch	

Hammer drill	
Circular saw for steel and aluminum	
Safety harness	
Test weights, Rated load x 1,25	
Ladder	
Trestle	

	
Carrier	
Mast trolley	

[illegible]

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