

TECHNICAL SPECIFICATIONS

PASSENGER LIFTING PLATFORM

DH



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1. General description

1.1. Application

Lifting platform intended for the vertical transport of people for operation between defined landing levels in houses, commercial premises and public buildings.

It is appropriate for persons with impaired mobility. The range in sizes permits use by wheelchair users with an attendant.

The lifting platform is designed for permanent installation in a building, within a space physically separated from the surroundings (enclosed liftway) and with doors on all accesses to the shaft.

1.2. Regulations

The lifting platform complies with the 2006/42/EC Machinery Directive and may therefore be commercialized in all countries in the European Union.

The lifting platform is included in annex IV of the Directive under category 17 referring to devices for the lifting of persons and goods involving a hazard of falling from a vertical height of more than three meters. The conformity assessment procedure is applied through a total quality assurance system according to Annex IX, with a certificate issued by Aenor.

The lifting platforms without the option of car doors comply with the EN 81-41 european harmonized standard.

1.3. Characteristics

Rated load (Q) 225, 300 or 400 kg

Rated speed (v) 0.15 m/s

Stops 2, 3 or 4 stops

Travel (R) Up to 11 meters, depending on the available pit and headroom.
Enquire in case of larger travels.

Type of drive Hydraulic, direct or indirect acting, depending on the model.

Electric characteristics There are two independent circuits in the lifting platform: a main circuit and an additional circuit for the lighting both of the car and of the shaft. Each of these circuits requires an independent supply with the following characteristics.

Main circuit: 230V \pm 5% single-phase 50Hz (other voltages available). The maximum line current consumption at full load depending on the motor, which in turn depends on the load and the options of the lifting platform, may reach the following values:

Q (kg)	Options	Motor (kW)	Current (A)
225		1.5	10.0
300		1.5 ⁽¹⁾	10.0
400	Without car doors	1.5	10.0
	With car doors	2.2 ⁽²⁾	13.5

⁽¹⁾ Possibility of a 2.2 kW motor for cars with double entrance and 3 leaf telescopic doors.

⁽²⁾ Possibility of a 1.5 kW motor depending on the car options.

Lighting circuit: 230V \pm 5% single-phase 50Hz (other voltages available). Depending of the travel of the lifting platform the power draw may reach 400W.

2. Detailed description

2.1. Drive

Model 1:1	Direct action hydraulic type, driven by a 2 or 3 section telescopic side acting cylinder, depending on travel and the available dimensions of pit and headroom.
Model 2:1	<p>Indirect action hydraulic type, with a 2:1 rope suspension and simple cylinder, depending on travel and the available dimensions of pit and headroom.</p> <p>Suspensión with three cables with an 8 mm diameter, composition 6x19-FC and wires with a 1770 N/mm² resistance. Instantaneous safety gear of the roller type actuated by the rupture or slackening of the suspension cables.</p>
Cylinder	<p>Cylinders with inner hydraulic buffering, with rupture valve and oil leakage collection in the cylinder head.</p> <p>Depending on the load, the travel and the values of pit and headroom, the cylinder can be either simple with a 70 or 80 mm diameter or telescopic with 2 or 3 sections and a rod with a 35 mm diameter.</p> <p>Possibility for the supply of the simple cylinders in two sections.</p>

2.2. Machinery

Installation conditions	<p>The lifting platform is intended for a machine-room less installation, with the hydraulic unit and the electric board located outside the shaft and inside a cabinet.</p> <p>This cabinet shall have appropriate ventilation and a door which opens towards the outside of the cabinet and which includes a lock with a key but that will allow the door to be closed and locked without the need to use the key.</p> <p>Available as an option is the possibility to include a metal cabinet according to the previous requirements in the supply of the lifting platform; the cabinet is 800x350x1560 mm in size and it includes a fan as well as a light with a switch and an integrated power socket (see "3.5. Location of the machinery").</p> <p>As an alternative the hydraulic power unit and the electric board may be installed in an enclosed space which is dedicated solely for the machinery of the lifting platform, provided it has appropriate ventilation and a door according to the previous requirements (see "3.5. Location of the machinery").</p> <p>The installation of the lifting platform is foreseen so that the power unit and the electric board are located at a maximum distance of 10 meters from the oil inlet to the cylinder. Enquire for larger distances.</p>
Hydraulic power unit	<p>Single speed hydraulic power unit with a motor-pump assembly with an outer motor and spindle pump for low noise level.</p> <p>The valve block has ascent and descent valves, as well as a non-return valve and an overpressure valve. A pressure gauge with a protection shutt-off valve is also included. As an emergency system for the rescue of the passengers a manual descent push button is included, together with a minimum pressure valve to prevent cable slackening in model 2:1.</p> <p>Hand pump for the disengagement of the safety gear is also included for models 2:1.</p> <p>The hydraulic power unit also has a return filter and a shut-off valve.</p>
Electric board	Electric board in a metal cabinet with a main switch located on the outside of the door of the cabinet and which is lockable with a padlock. The switch cuts off power to all the circuits except the lighting circuit; a switch for the lighting circuit is also provided, located by the main switch.

2.3. Guiding and installation

The guiding of the car sling is by means of T70 calibrated lift guide rails. The guiding of the pulley head in model 2:1 is also by means of these same T70 guide rails, while the guiding of the intermediate sections of the telescopic cylinders in model 1:1 is by means of a guide made of folded metal sheet.

Guide rails are supplied as standard in 5 m long sections and are available in 2.5 m sections as an option. Fixation of the guides to the wall with supports at least every 1500 mm is foreseen. The cylinder and pedestal are also intended for fixation to the wall independently during installation, as is the cylinder guide in the drive model 1:1.

Depending on the model, all the required material for the fixation of the guides, cylinder, etc, to one of the walls of the shaft is supplied, with supports and mechanical anchorages appropriate for fixation to concrete as well as for solid or hollow brick. Enquire possibilities of other types of anchorages or for fixation to other types of supports.

To handle the different elements during installation, a hook or beam shall be available on the shaft ceiling and located in the vertical projection of the guides, with a resistance of at least 1000 kg.

The reaction forces transmitted to the shaft are specified in the assembly instructions.

2.4. Structure and enclosure

The supply of a steel structure to allow the enclosing of the shaft required for the operation of the lifting platform, without further need for brickwork, available as an option. It enables the lifting platform to be installed attached to the wall of a courtyard or in a staircase.

The structure is designed to be fixed to the floor of the pit, to the floor slabs at each landing level and at the upper section of the shaft either sideways or to the ceiling (see "3.3. Dimensions of the structure in elevation"). All the required material is supplied for the fixation of the structure to the building and of the guides and cylinder to the structure. Additional intermediate fixations of the guides or structure are not required.

The structure is of a modular design, made of folded metal sheet with bolted joints that require no welding during installation.

Finishing	Epoxy-polystyrene paint colour grey RAL7035 as standard finishing.
Options	<p>Enclosure panels for installation on the profiles of the structure profiles, made of folded metal sheet or glazed with clear or frosted glass.</p> <p>Finishing painted in other colours in the RAL chart.</p> <p>Finishing with a high resistance to corrosion with parts made of galvanized metal sheet and polystyrene paint.</p> <p>Support substructure to transfer the loads to the slab of the lower landing level for those installations where a resistant pit is not available (suspended pit).</p> <p>Closing of the upper part of the structure with roofing.</p> <p>Installation of the landing doors of the main entrance on the structure or on the slab of the building.</p>

2.5. Hydraulic installation

Flexible double metal mesh hydraulic hoses, individually tested for pressure together with the corresponding connectors; the result of the test is marked on the pipe.

Oil inlet in the lower section of the cylinder through the rupture valve.

2.6. Electric installation

The car and shaft electrical installation is supplied pre-assembled and with plug-in connectors at the control panel and the junction box located on the car ceiling.

Shaft lighting, optional upon request, is provided by flexible LED strips. Switches are included to control the lighting from the pit and the control panel.

2.7. Car

Five models of finishing are available in which different materials and colours for walls, flooring and ceiling are combined, together with additional options: Flex, Estandar, Advance, Advance Nature, Elegance and Exclusive.

The Flex finishing allows for customisation of the car decoration and it includes among the options for this finishing the possibility of a supply of the car with no wall or floor facing, so that they may be lined afterwards by the installer.

The description of each of these finishings together with the corresponding graphic information is included in the product catalogue.

Walls

Panels made of steel sheet with plastic lining, stainless steel or galvanised sheet metal for subsequent lining, depending on the car model.

Stainless steel skirting board. Not supplied with walls made of galvanised sheet metal.

Glazed wall in the car available as an option.

Flooring

Vynil flooring or artificial stone, depending on the car model. The flooring is not supplied with cars with the sides made of galvanised sheet metal.

The car may be supplied as an option prepared for the installation of any type of flooring with a 12 mm thickness by the installer.

Ceiling

Steel sheet in matt white epoxy-polystyrene paint or stainless steel sheet, depending on the car model.

Trapdoor with electrical locking control in order to allow maintenance operations to be carried out from inside the car with the aid of a step-ladder.

Push button panel

Push button panel in a stainless steel plate bolted to one of the sides of the car or integrated in a column made of stainless steel and installed on one of the car walls, depending on the car model.

Lighting

With lights integrated in the ceiling or in the push button, depending on the car model. The following types are available:

- Two 7W LED spotlights recessed into the car ceiling.
- A light at the top of the column, with 2x8W low-consumption LED lamps.
- A light at the top and another at the bottom of the column, with low-consumption LED lamps, 2x8W for the top and 8W for the bottom.
- Two LED panels, one on the upper and one on the lower section of the column.

Emergency alarm device

It allows the passengers to call for outside assistance. The device permits a two-way voice communication allowing permanent contact with a rescue service.

Three different types of device are available:

- Conventional telephone installed on one of the car walls.
- Lift emergency telephone for telephone line integrated in the push button panel.
- Interphone for private line to allow communication with a fixed point such as a reception desk, integrated in the push button panel.

Miscellaneous

Stainless steel Ø40 handrail on the side of the push button panel column, depending on the car model.

Half mirror or column type mirror on the end wall of the car, or on the side wall for cars with double 180° access, available as an option depending on the car model.

Dimensions

Width (A): between 700 and 1100 mm (between 750 and 1400 mm for cars with single access with rear mounted guide rails)

Depth (B): between 750 and 1400 mm (between 700 and 1100 mm for cars with single access with rear mounted guide rails)

Height (H): 2100 mm

Minimum dimensions for wheelchair users:

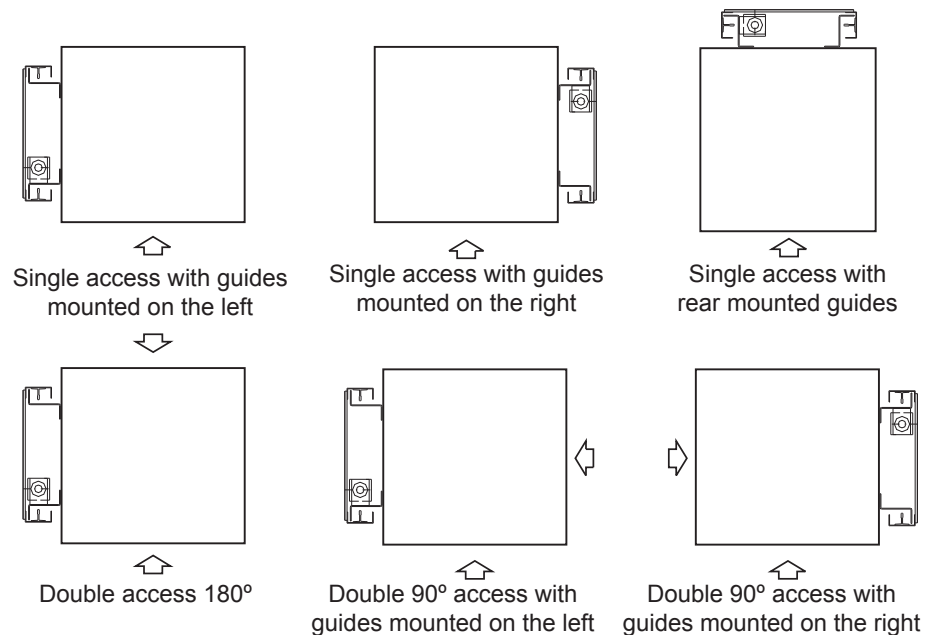
Use	A (mm)	B (mm)
Wheelchair	800	1250
Wheelchair with an attendant	900	1400
Wheelchair with an attendant in cars with adjacent entrances	1100	1400

Maximum surface according to the rated load (Q):

Q (kg)	A·B (m ²)
225	0.90
300	1.20
400	1.54

Accesses

Simple, double at 180° or double at 90°.



Car doors

There are three possible solutions for the protection of the accesses to the car.

Car with no doors, with safety light curtains at the entrances.

Automatic folding "bus" type doors, with vision panel or fully glazed and with a stainless steel sheet finishing.

Automatic telescopic two or three leaf side opening doors with a stainless steel sheet finishing.

2.8. Landing doors

Types

Semiautomatic lift swing doors with vision panel or fully glazed.

Telescopic two or three leaf side opening doors; actuation of landing doors is simultaneous with the car doors.

Finishing

Painted with epoxy paint in colour grey RAL7032. Telescopic doors available on request with finishing with stainless steel sheet.

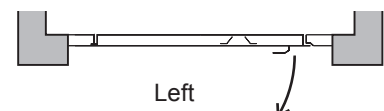
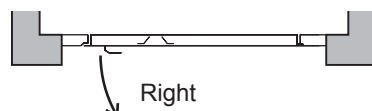
Dimensions

Clear height (HL): 2000 mm.

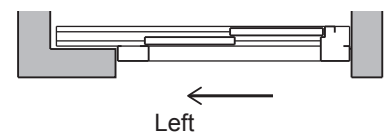
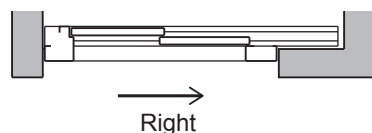
Clear opening (PL): 700, 800 (minimum for wheelchair users) or 900 mm.

Hand

Swing doors:



Telescopic doors:



Options

Automation of the opening and closing of the swing doors with an operator integrated inside the door lintel.

2.9. Control

The lifting platform has a control push button panel at each landing level and another control push button panel inside the car.

Landing push button panels

One push button panel designed to be embedded at each landing level in the frame of the landing doors. Push button panels with flush mounting controls installed on a stainless steel plate.

The following elements are included in the push button panels:

- Key enabling switch for restriction of use in the model without car doors.
- Call push button with car busy indication with outer illuminated ring.
- Light indication of car present for lifting platforms with swing doors.

Car push button panel

Flush mounting control elements with a layout at an appropriate height for use by wheelchair users.

The following elements are included in the push button panel:

- Key enabling switch for restriction of use in the model without car doors.
- Push buttons for each landing level, with light indication of the actuation with outer illuminated ring.
- Push button for door opening for model with car doors.
- Push button for the sound alarm and where applicable, for the activation of the emergency telephone.
- Emergency stop push button with light indication of activation, in the model without car doors.
- Integrated emergency telephone, where applicable.
- Backlit characteristics plate installed in the push button panel with indication of load, use, logotype and reference. The emergency lighting and the overload indicator are also included in this plate.
- Optional position indicator.

Main control features

Control based on integrated electronics with microcontroller with the following main features:

- Automatic movement of the car (not hold to run operation) from the landing push button panels.
- Movement of the car from the car push button panel with hold to run control in the models without car doors and automatic (without hold to run operation) in the models with car doors.
- Priority of the car commands over the landing push button panel commands.
- Landing detection with magnetic switches.
- Movement of the car is subject to the landing doors being closed and locked and, where applicable, to the light curtain not being interrupted.
- Re-levelling with open doors.
- Car lighting timing with automatic turn-off for energy consumption reduction.

2.10. Safety elements

Among the safety measures of the lifting platform, the following may be highlighted:

General

- Rupture valve as a safety measure against descent at excessive speed due to rupture of piping.
- Instantaneous safety gear of the roller type actuated by safety rope as a safety measure against free fall due to breakage of the suspension cables in the model with a 2:1 suspension.
- Doors with electric control both of closure and locking of the lock.
- Re-levelling with open doors system as a safety measure against car creepage.
- Upper final limit switch.
- Control of the maximum motor and descent electrovalve electric supply time.

Use

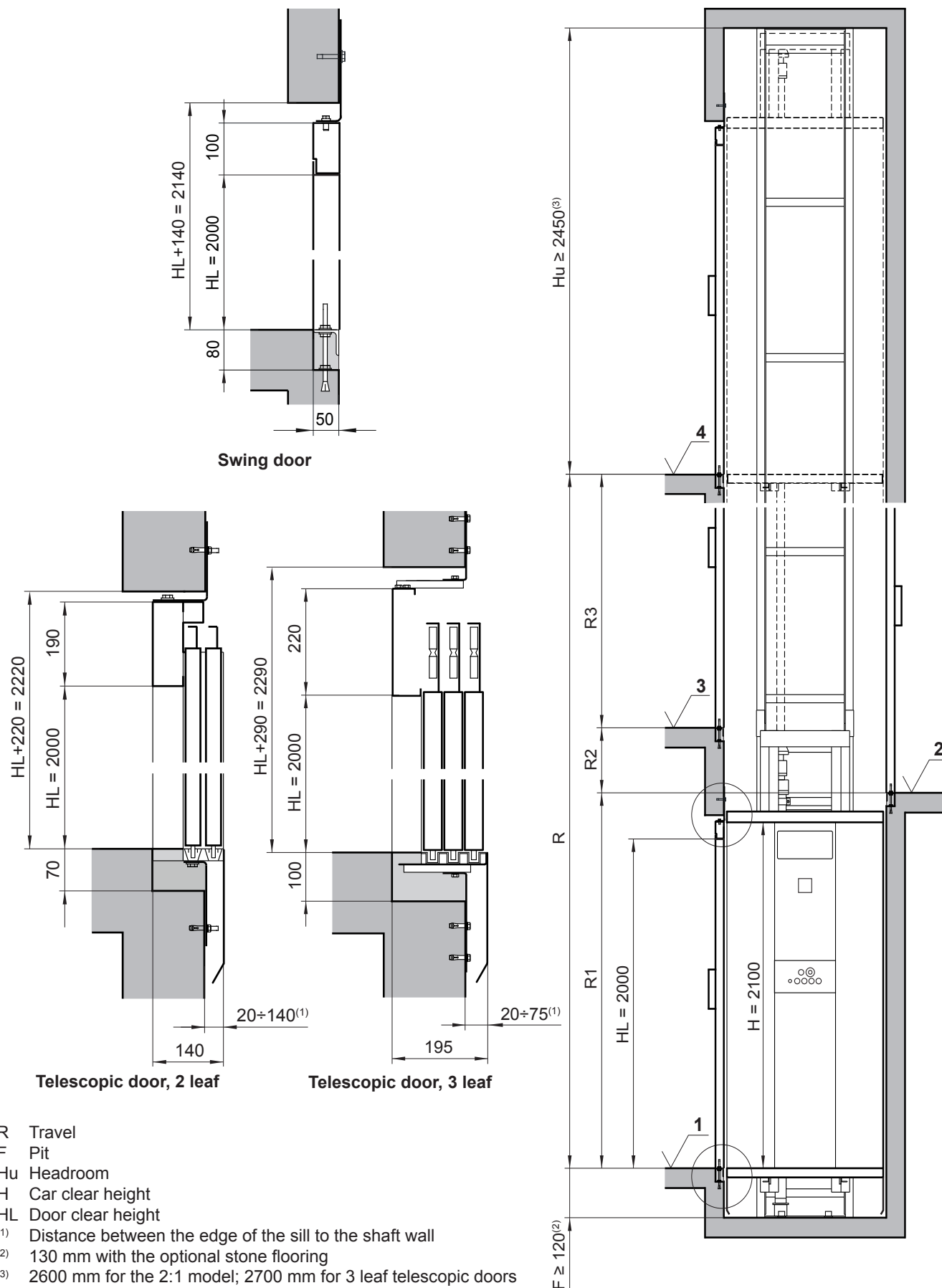
- Light curtain as a safety measure against trapping hazards in the entrance, in the model without car doors.
- Load control system with pressure transducer.
- System for limiting the closing force of the doors with reopening system in case of obstacle detection, with the optional automatic doors.
- Emergency stop push button in the car, for the model without car doors.
- Sound alarm activated by a push button in the car to call for outside assistance in case of being trapped inside the car due to breakdown.
- Emergency alarm device installed in the car to permit a two-way voice communication allowing permanent contact with a rescue service so that passengers may call for outside assistance.
- Descent operation with battery supply to the landing situated immediately below the present position in case of power supply failure, commanded from the car.
- Manual descent push button in the hydraulic power unit for rescue operations in case of breakdown.
- Hand pump in the hydraulic power unit for the disengagement of the safety gear, in the model with indirect action.
- Manual opening of the doors with the triangular safety key for rescue of passengers in case of breakdown.

Maintenance

- Designed so that maintenance operations may be carried out from the pit and from the inside of the car through the ceiling trapdoor. The trapdoor includes an electric contact of the trap closure. Aluminium step-ladder for maintenance operations from pit and car, with a system for the fixation inside the shaft and accessible from the lower landing door, available as an option.
- Movable safety blocking device to guarantee the necessary safety spaces for the maintenance operations in the pit. The device is manually activated and includes an acoustic signal that warns of access to the pit until the device has been activated.
- System for pit access detection for maintenance operations which is activated when the opening of the lower landing level door with the emergency triangular key is detected, and which prevents the normal operation of the lifting platform.
- Emergency stop push button in the pit to prevent car movements before the mobile blocking device is activated.

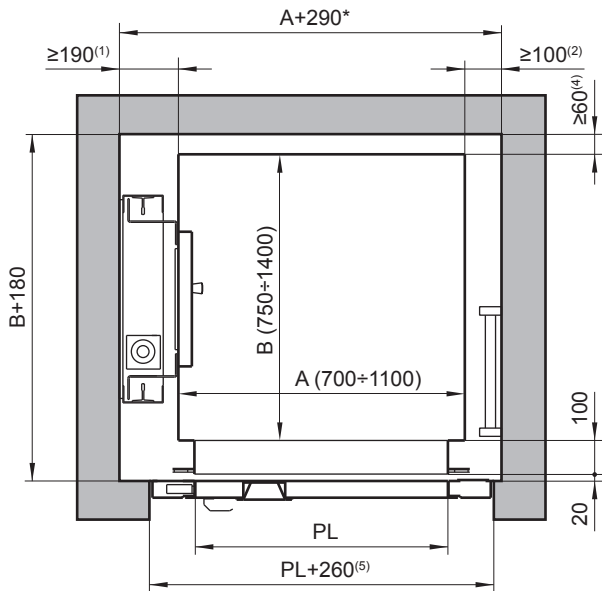
3. Dimensions for installation

3.1. Minimum shaft dimensions in elevation

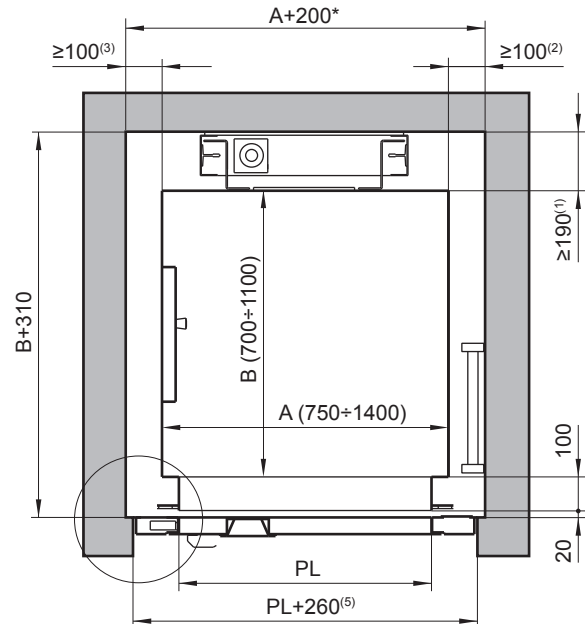


3.2. Minimum shaft dimensions in plan view

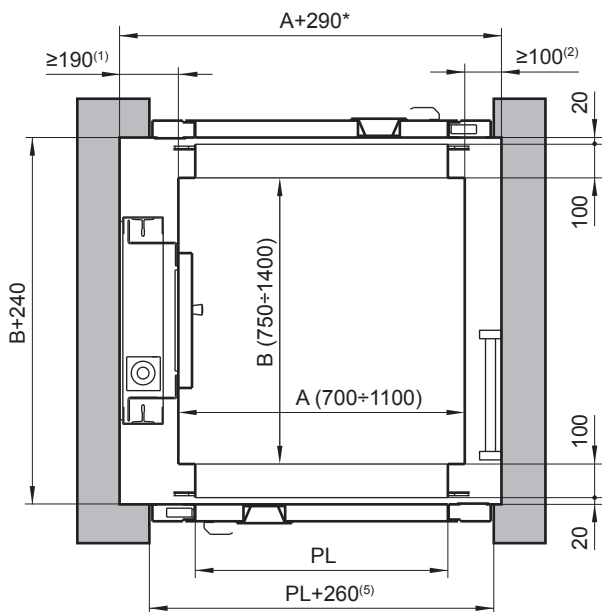
Without car doors



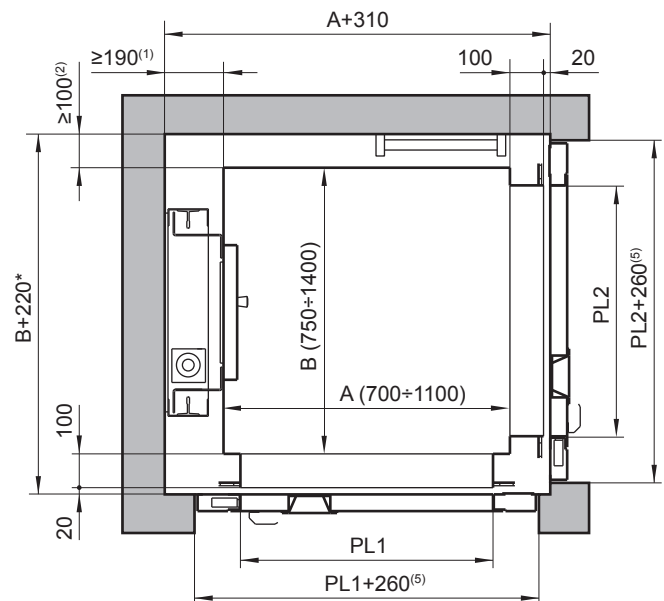
Single access with guide rails mounted on the side



Single access with rear mounted guide rails



Double access 180°



Double access 90°

A Car width

B Car depth

PL Clear opening (maximum A-100 mm)

PL1 Clear opening 1 (maximum A-100 mm)

PL2 Clear opening 2 (maximum B-100 mm)

(1) Distance for guide installation (maximum 400 mm)

(2) Distance car-wall on side adjacent to the entrance (60 mm without stepladder)

(3) Distance car-wall on side adjacent to the entrance with push button panel

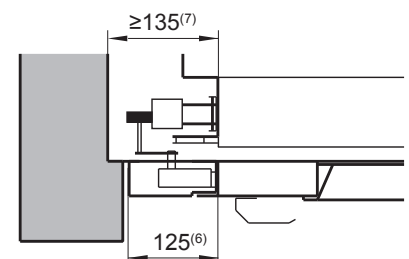
(4) Distance car-wall on rear side

(5) Gap in the wall for door installation (PL+240 mm for glazed doors)

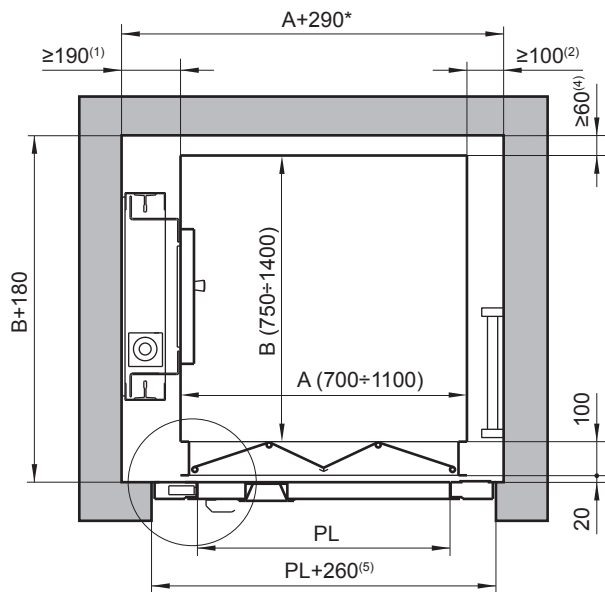
(6) Width of the door frame (115 mm for glazed doors)

(7) Distance wall-entrance panel on the closing side of the door

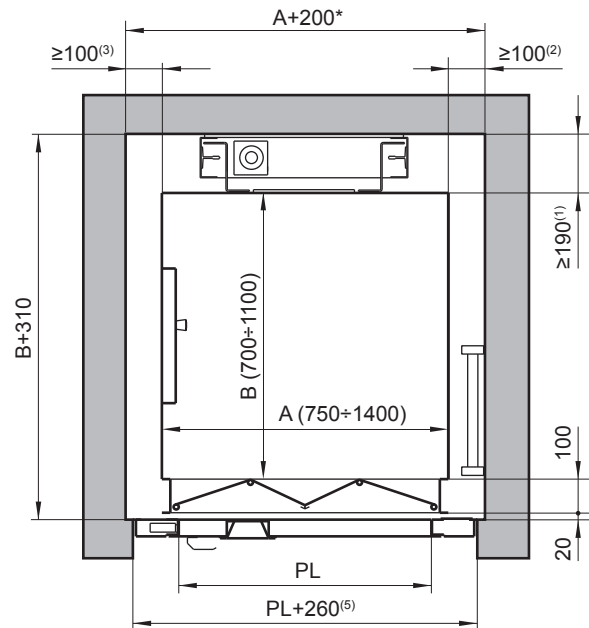
* May be larger without stepladder (take into account the door characteristics and the car dimensions)



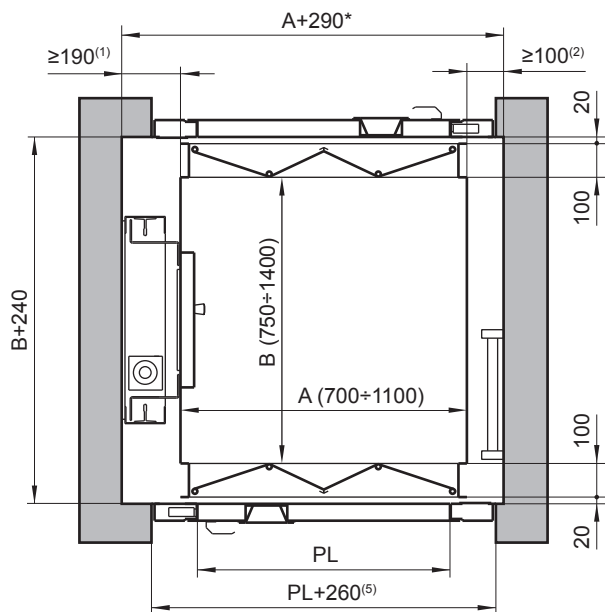
"Bus" type folding car doors



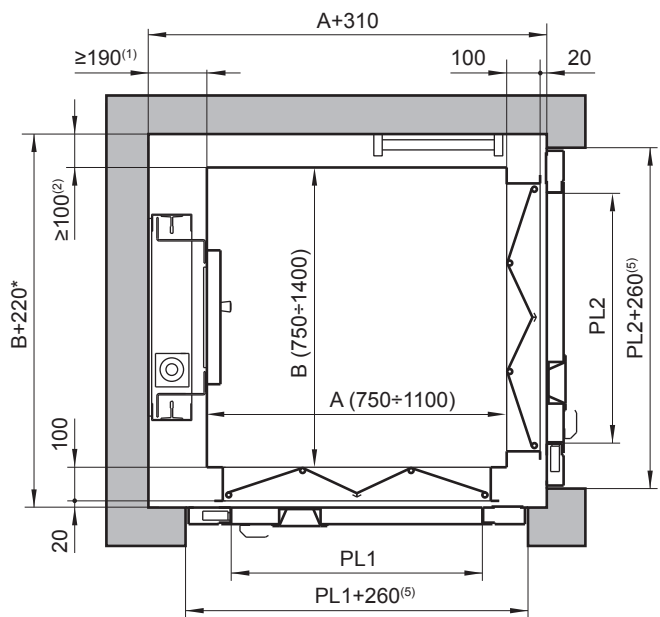
**Single access with guide rails
mounted on the side**



**Single access with rear
mounted guide rails**



Double access 180°



Double access 90°

A Car width
B Car depth

PL Clear opening (maximum A-100 mm)

PL1 Clear opening 1 (maximum A-100 mm)

PL2 Clear opening 2 (maximum B-100 mm)

(1) Distance for guide installation (maximum 400 mm)

(2) Distance car-wall on side adjacent to the entrance (60 mm without stepladder)

(3) Distance car-wall on side adjacent to the entrance with push button panel

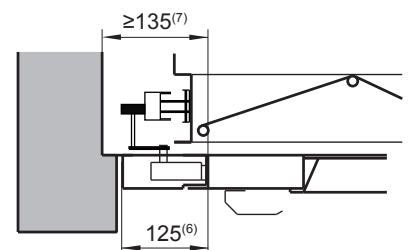
(4) Distance car-wall on rear side

(5) Gap in the wall for door installation (PL+240 mm for glazed doors)

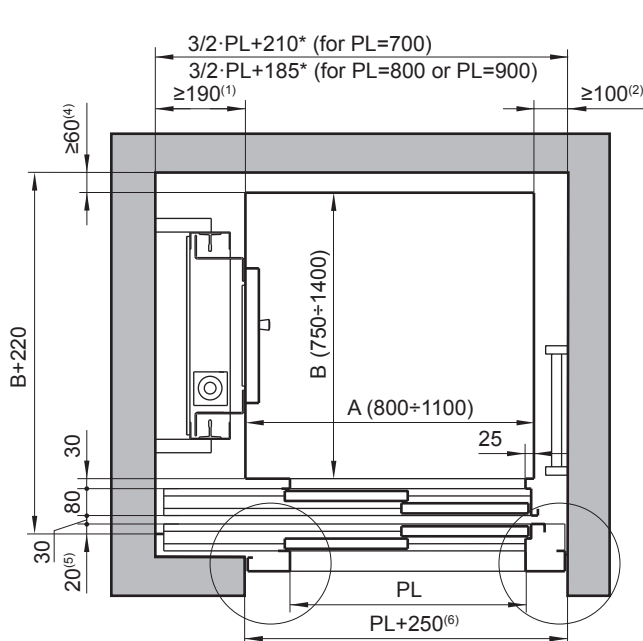
(6) Width of the door frame (115 mm for glazed doors)

(7) Distance wall-entrance panel on the closing side of the door

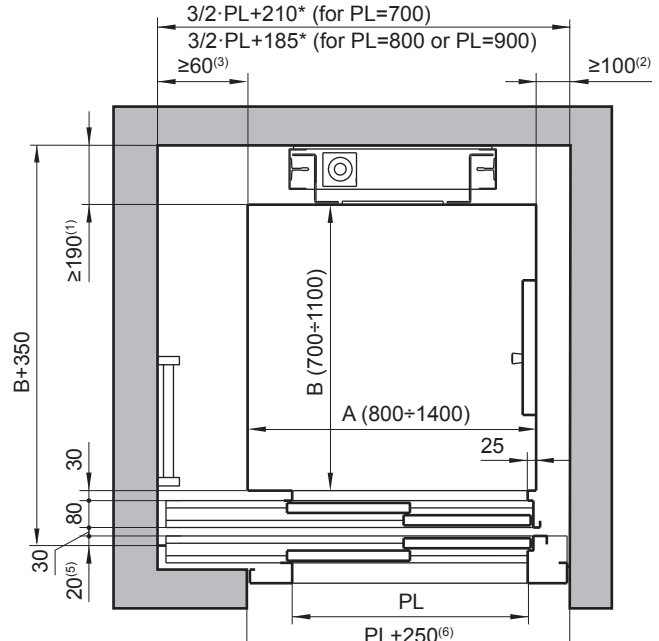
* May be larger without stepladder (take into account the door characteristics and the car dimensions)



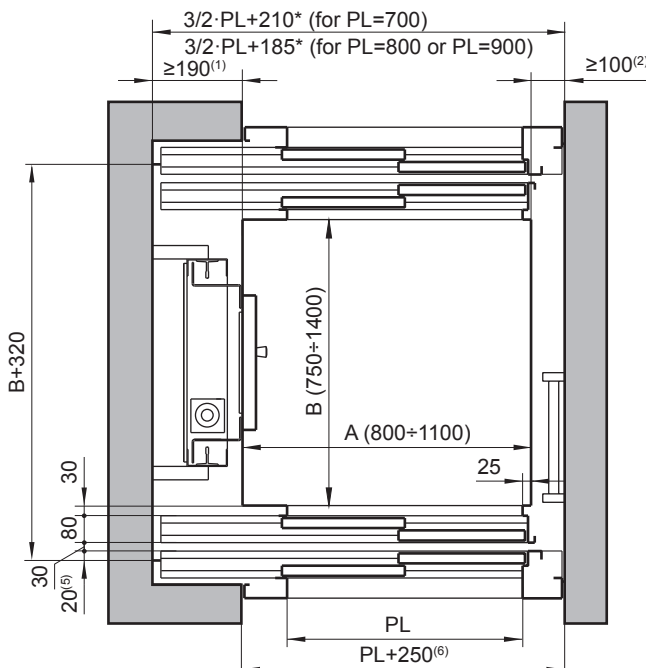
2 leaf telescopic doors



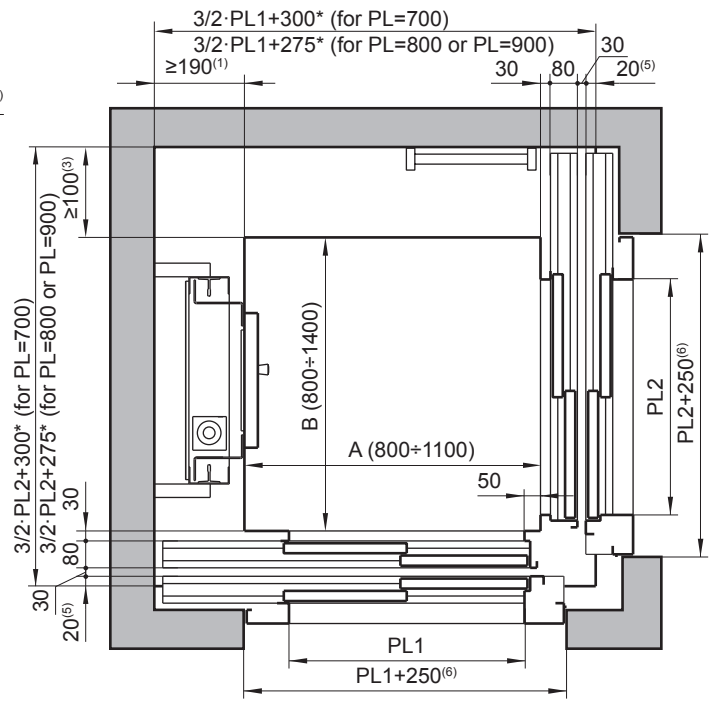
Single access with guide rails mounted on the side



Single access with rear mounted guide rails

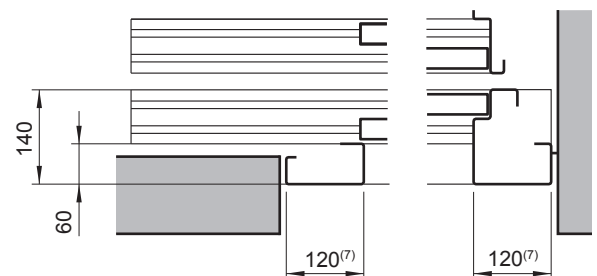


Double access 180°

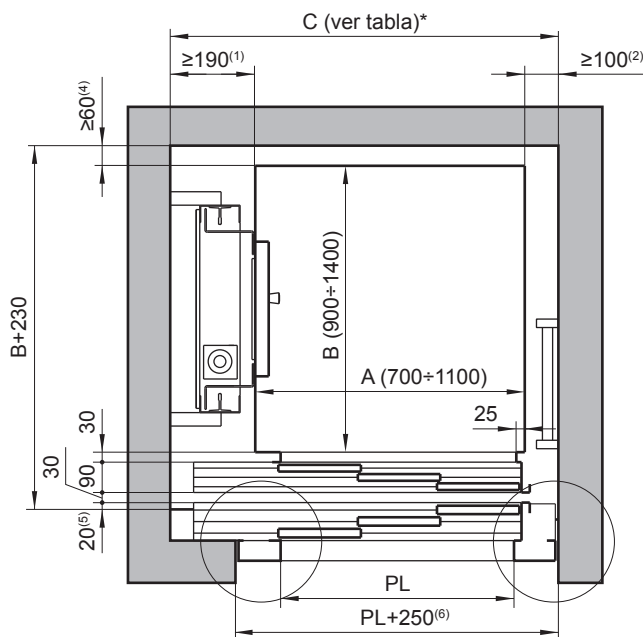


Double access 90°

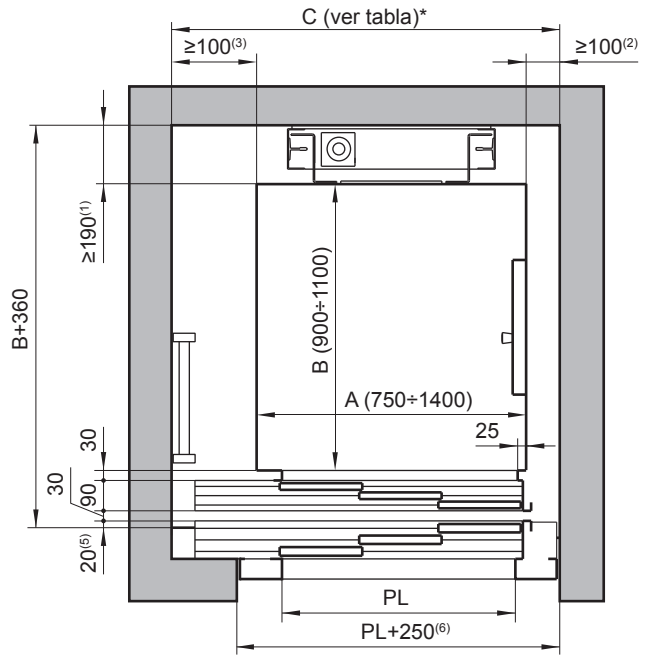
- A Car width
- B Car depth
- PL Clear opening (minimum A-500, maximum A-100 mm)
- PL1 Clear opening 1 (minimum A-500 mm, maximum A-100 mm)
- PL2 Clear opening 2 (minimum B-500 mm, maximum B-100)
- (1) Distance for guide installation (maximum 400 mm)
- (2) Distance car-wall on closing side of the door
- (3) Distance car-wall on opening side (100 mm with ladder)
- (4) Distance car-wall on rear side
- (5) Distance edge sill to wall (maximum 140 mm)
- (6) Gap in the wall for door installation
- (7) Width of the door frame
- * May be larger depending on the door and car dimensions



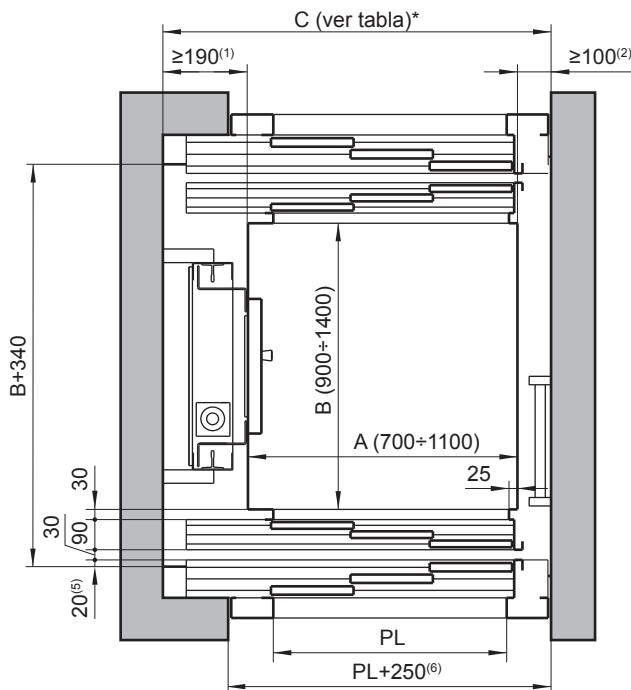
3 leaf telescopic doors



Single access with guide rails
mounted on the side

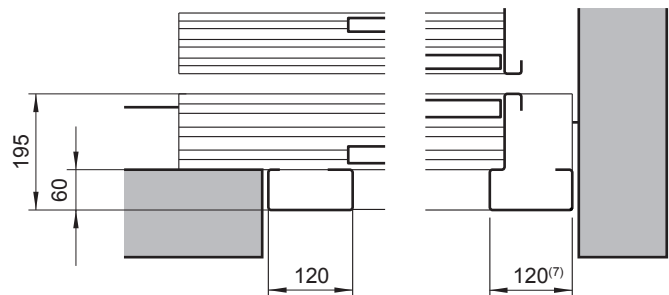


Single access with rear mounted
guide rails



Double access 180°

PL	C
700	1180
800	1280
900	1405



A Ancho de cabina

B Fondo de cabina

PL Clear opening (minimum A-500 mm, maximum A-100 mm)

(1) Distance for guide installation (maximum 400 mm)

(2) Distance car-wall on closing side of the door

(3) Distance car-wall on opening side (60 mm without stepladder)

(4) Distance car-wall on rear side

(5) Distancia entre la pisadera de puerta de piso y hueco. Máximo 75 mm

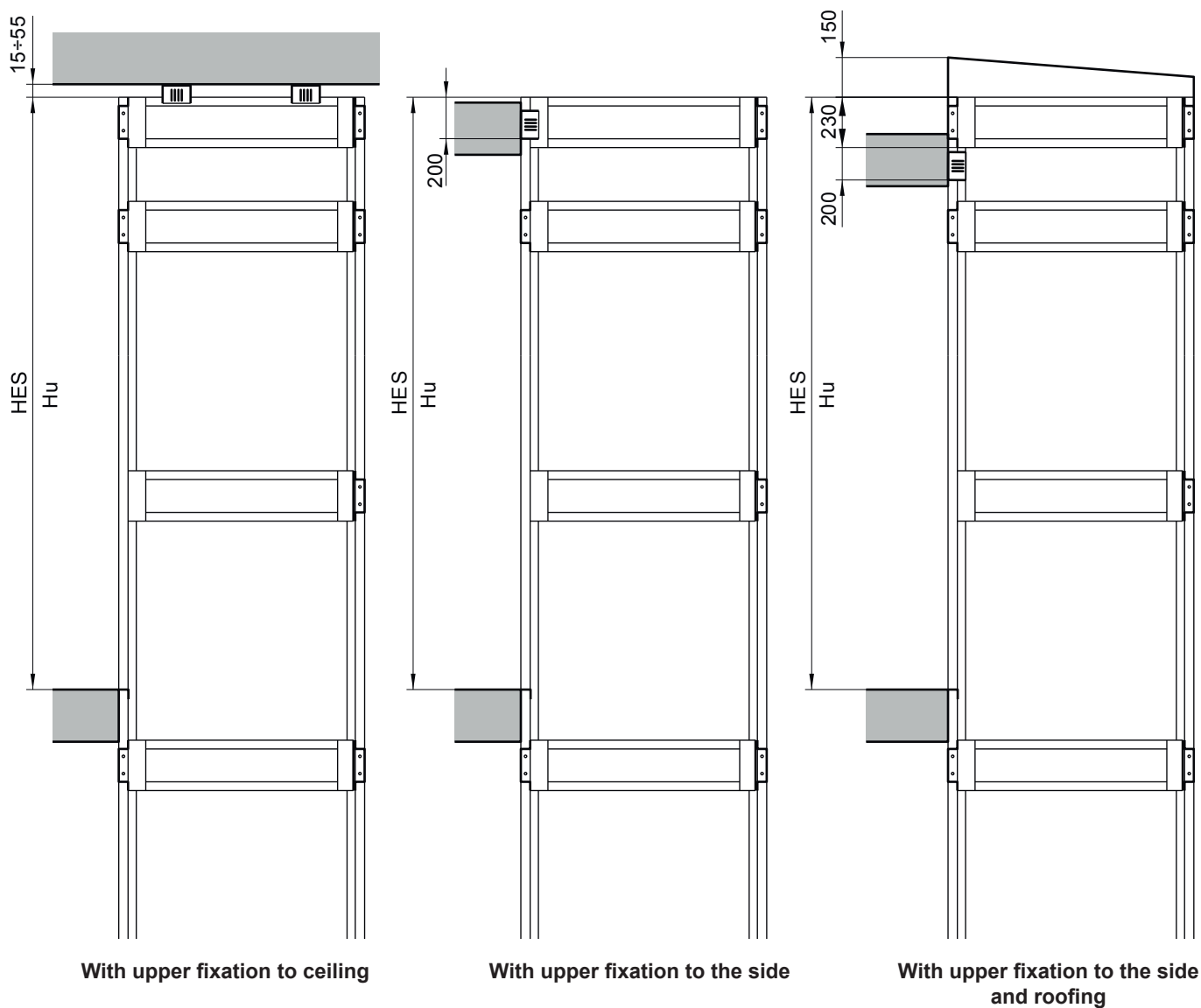
(6) Gap in the wall for door installation

(7) Width of the door frame

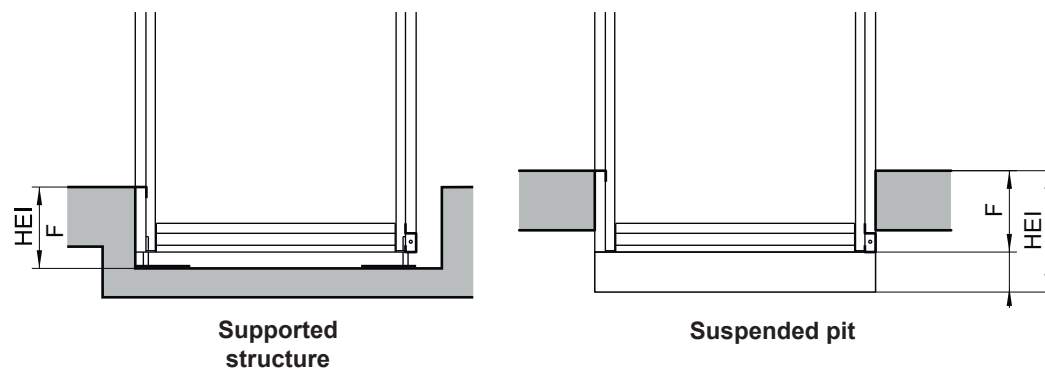
* May be larger depending on the door and car dimensions

3.3. Structure dimensions in elevation

Upper section



Lower section



HES Height of the structure above the upper landing level

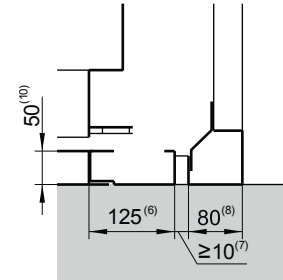
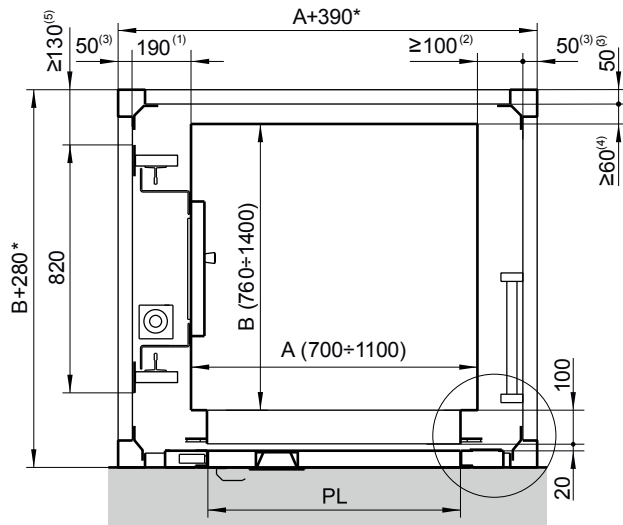
HEI Height of the structure under the lower landing level

Hu Headroom available for guiding (equal to HES)

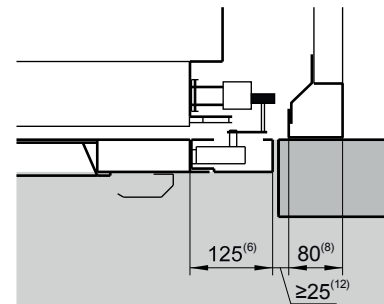
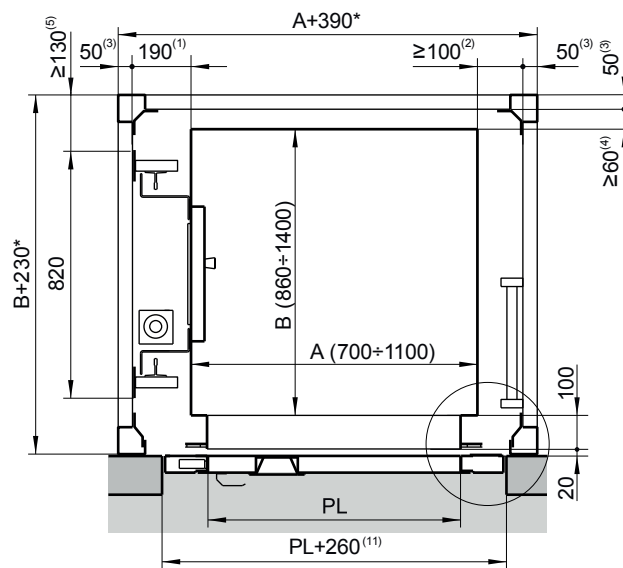
F Pit available for guiding

3.4. Structure dimensions in plan view

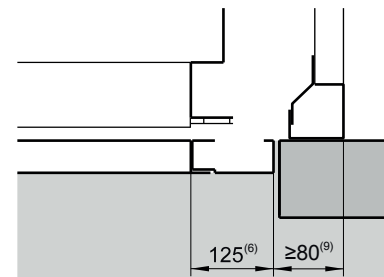
Without car doors



Door installed on structure



Closing side



Hinge side

Door installed on building slab

A Car width

B Car depth

PL Clear opening (maximum A-100 mm)

(1) Distance for guide installation

(2) Distance car-crossbeam on side adjacent to entrance (60 mm without stepladder)

(3) Width of structure crossbeam

(4) Distance car-crossbeam on rear side

(5) Distance guide fixation-outer surface of the structure

(6) Width of the door frame (115 mm with glazed doors)

(7) Play door frame-structure pillar with doors installed on the structure

(8) Width of structure pillar

(9) Distance door frame-outer surface of the structure on hinge side

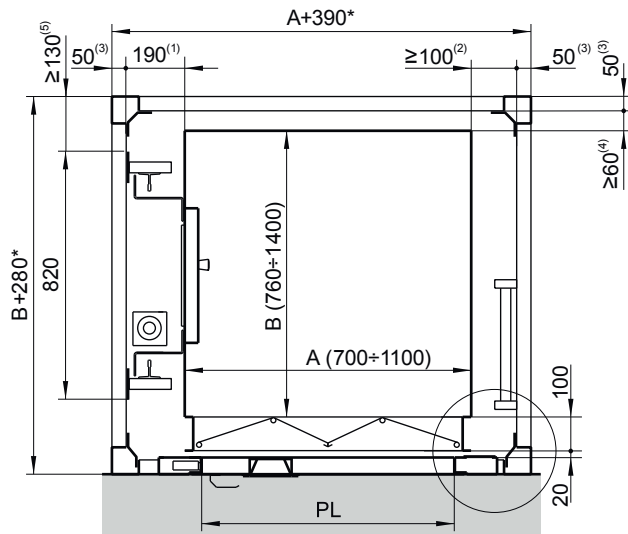
(10) Depth of the door frame (75 mm with glazed doors)

(11) Gap in wall for door installation (PL+240 mm with glazed doors)

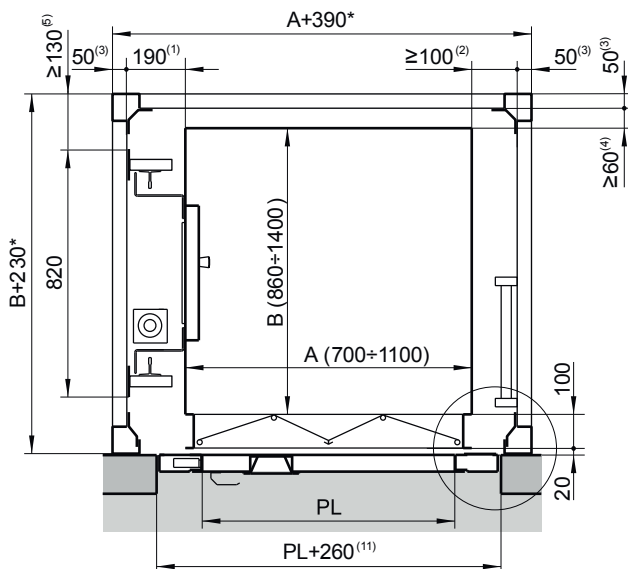
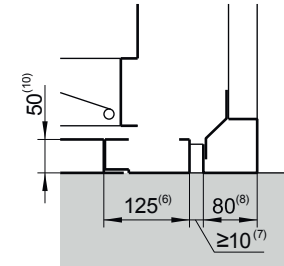
(12) Play door frame-structure pillar on the closing side with doors installed on building slab (35 mm with glazed doors)

* May be different depending on the door characteristics and car dimensions

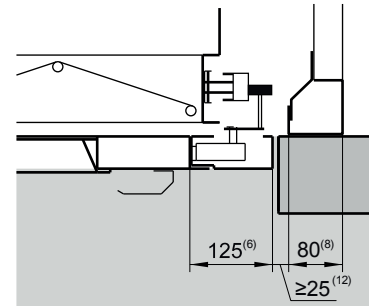
"Bus" type foldable car doors



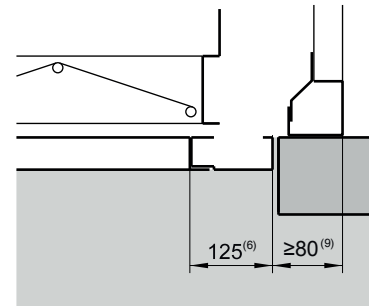
Door installed on structure



Door installed on building slab



Lado cierre



Lado bisagra

A Car width

B Car depth

PL Clear opening (maximum A-100 mm)

(1) Distance for guide installation

(2) Distance car-crossbeam on side adjacent to the entrance (60 mm without stepladder)

(3) Width structure crossbeam

(4) Distance car-crossbeam on rear side

(5) Distance guide fixation-outer surface of structure

(6) Width of door frame (115 mm for glazed doors)

(7) Play door frame-structure pillar with doors installed on the structure

(8) Width of structure pillar

(9) Distance door frame-outer surface of the structure on hinge side

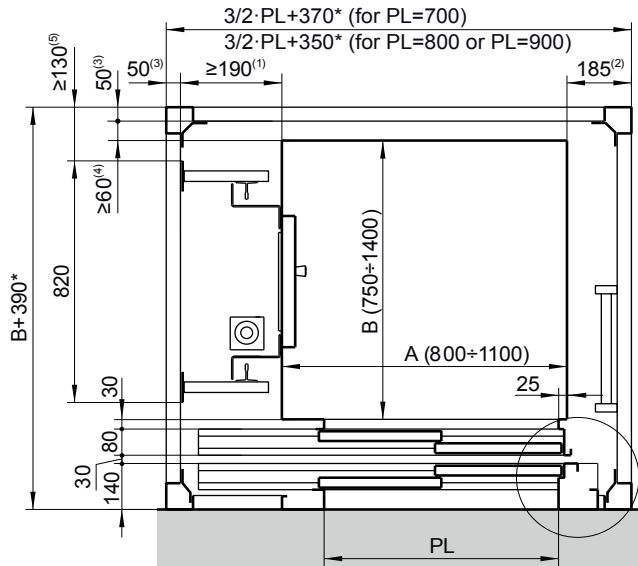
(10) Depth of the door frame (75 mm for glazed doors)

(11) Gap in the wall for door installation (PL+240 mm for glazed door)

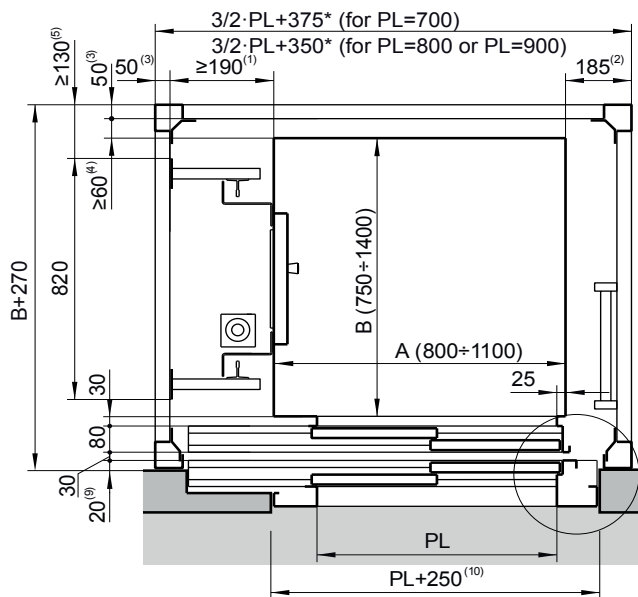
(12) Play door frame-structure pillar on closing side with door installed on building slab (35 mm for glazed doors)

* May be different depending on the door characteristics and car dimensions

2 Leaf telescopic doors



Door installed on structure



Door installed on building slab

A Car width

B Car depth

PL Clear opening (maximum A-100 mm)

(1) Distance for guide installation (maximum 400mm)

(2) Distance car-outer surface of the structure on closing side of the door

(3) Width structure crossbeam

(4) Distance car-crossbeam on rear side

(5) Distance guide fixation-outer surface of the structure

(6) Width of door frame

(7) Play door frame-structure pillar

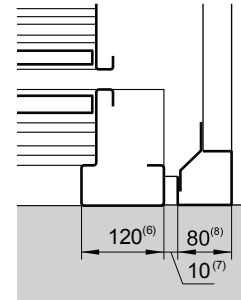
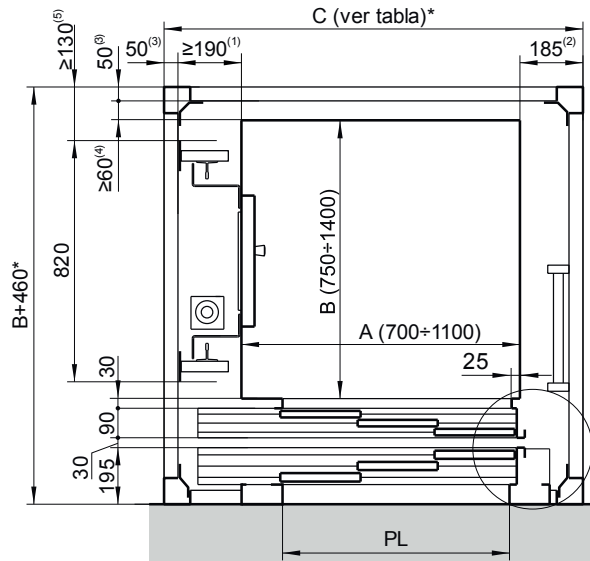
(8) Width of structure pillar

(9) Distance edge sill to wall (maximum 140 mm)

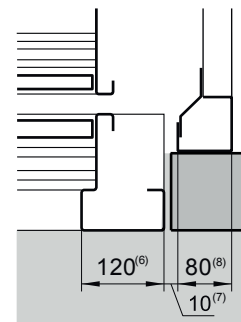
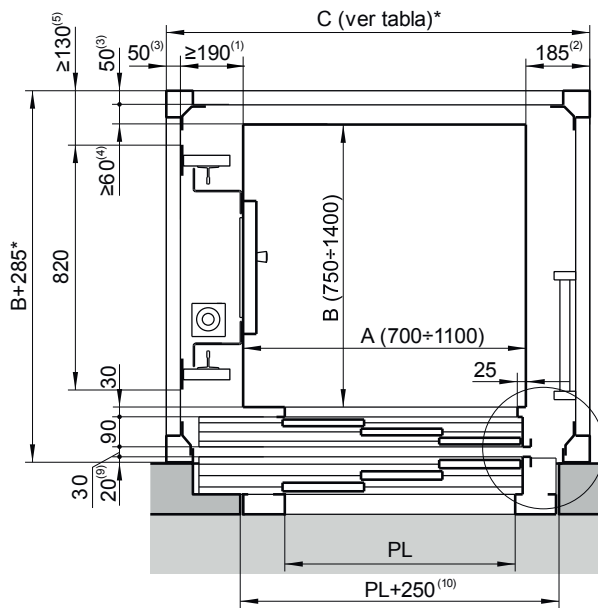
(10) Gap in wall for door installation

* May be larger depending on the door characteristics and the car dimensions

3 Leaf telescopic doors



Door installed on structure

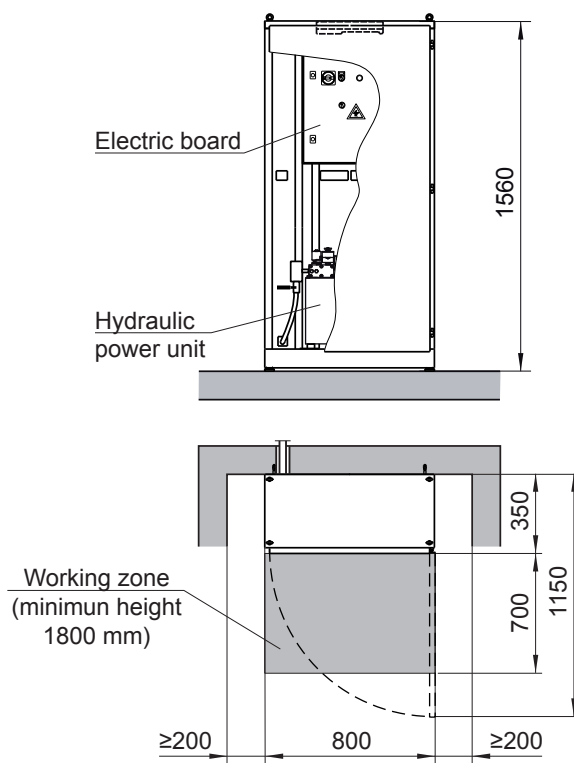


Door installed on building slab

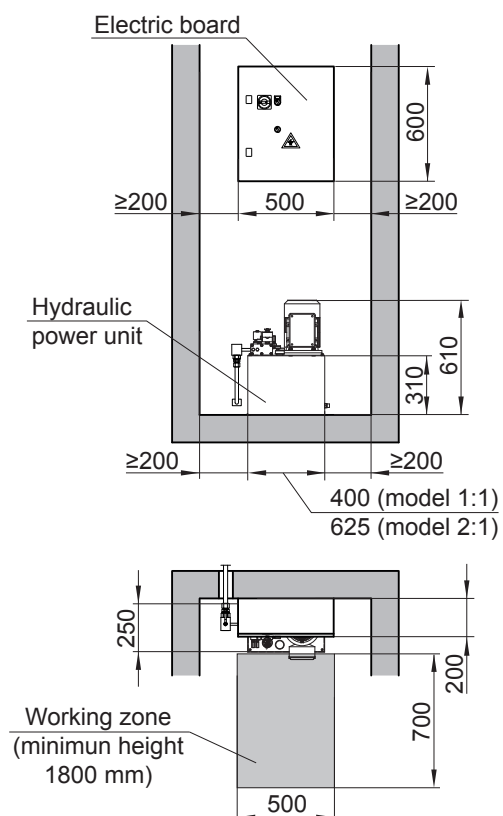
- A Car width
- B Car depth
- PL Clear opening (maximum A-100 mm)
- (1) Distance for guide installation (maximum 400 mm)
- (2) Distance car-outer surface of the structure on closing side of the door
- (3) Width structure crossbeam
- (4) Distance car-crossbeam on rear end
- (5) Distance guide fixation-outer surface of the structure
- (6) Width of the door frame
- (7) Play door frame-structure pillar
- (8) Width structure pillar
- (9) Distance sill edge to wall for 3 leaf telescopic and building wall. Maximum 75 mm
- (10) Gap in wall for door installation
- * May be larger depending on the door characteristics and car dimensions

3.5. Location of the machinery

Metal cabinet (optional)



Enclosed space





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