goods only lift

EH

TECHNICAL SPECIFICATIONS







ET-300en
V.05
16/12/11

CONTENTS		PAGE
1.	BASIC DESCRIPTION	4
1.1	Application	4
1.2	Regulations	4
1.3	Summary of general (characteristics) features	4
1.4	Interpretation of selection diagram	6
2.	DETAILED DESCRIPTION	8
2.1	Operation (Traction characteristics)	8
2.2	Sling and Guiding system	9
2.3	Guide structure fastening system	10
2.4	Load platform. Loading structure	10
2.5	Protection sides	11
2.6	Specified installation conditions. Shaft and Accesses. Shaft conditions & boardings	13
2.7	Hidral Landing doors	14
2.8	Cylinders	15
2.9	Central Unit. Oil pump unit	15
2.10	Hydraulic lines and hydraulic fluid. Hydraulic pipes and oil characteristics	16
2.11	Button panels	17
2.12	Electrical control	17
3.	CONTROL AND ELECTRICAL OPTIONS	21
4.	DRAWINGS	22
4.1	HO model	22
4.2	EH-500 model	24
4.3	EH-1500 model	26
4.4	EH/DC-1000, EH/DC-3000, EH/DC-5000 model	28
4.5	EH/DCL-3000 model	30
4.6	EH/4C model	32
4.7	Single and double manual hinged swing doors	34

1. Basic description

1.1. Application

Goods only lift are elevator installed permanently for the vertical transport of goods only, which serves given stopping levels. They have a surface area suitable for the objects to be moved, and this is accessible to users during the loading and unloading processes.
These machines are designed to be used by trained authorized staff.

They are intended for various applications within the Services and Industrial Sectors, where the load may be handled with the appropriate means, such as by hand, manual pallet trucks, automatic pallet trucks or mechanical lift trucks.

The design of these lift platforms takes into account that the sum of the weight of the handling means plus the goods to be lifted should not exceed the load rating requested.

1.2. Regulations

The design and manufacture of our platforms are in accordance with **Machinery Directive 2006/42/EC**.
Hidral supplies the **EC Declaration of conformity and EC mark** of the elevator platform for its marketing in any country in the European Union.

The goods only lift platform will comply with the Machinery Directive provided that it is installed with the requirements foreseen in the Installation Drawing and Assembly Instructions supplied by Hidral should supply all the safety components (side walls, landing doors,...) for fulfilling whit that.

If the doors are not supplied by Hidral, they should meet minimum safety requirements, which should comply with those supplied by the customer.

1.3. Summary of general (characteristics) features

They are indirect acting lift, 2:1 or 4:1 depending on the total travel; driven by cable or chain with one or two rucksack sling and one or two guiding structures.
The guide structures, sling, driving elements and cylinders are supplied pre-assembled in order to speed up the installation process.

Load

The maximum load depends on the lift model. See list below:

Model	Maximum Load (Kg)
HO	100, 200, 300, 400 and 500
EH-500	200, 300, 400, 500 and 750
EH-1500	1000, 1500 and 2000
EH/DC-1000	1000 and 1500
EH/DC-3000 and EH/DCL-3000	2000 and 3000
EH/DC-5000	4000 and 5000
EH/4C	5000, 6000, 8000 and 10000

A model selection diagram is presented in figure 1 to be used as a guide when deciding on the appropriate model according to the maximum load and dimensions.

Speed

The speeds available are 0.1 and 0.2 m/s. **By way of exception, they may be supplied for 0.3 m/s for the HO model.**

Stops

The maximum number of stops is 8. **Enquire with regard to a larger number of floors.**

Travel

The maximum standard travel is 12 m; each one of the models, however, can achieve longer travel according to special conditions. **See detailed information of each model in the end pages.**

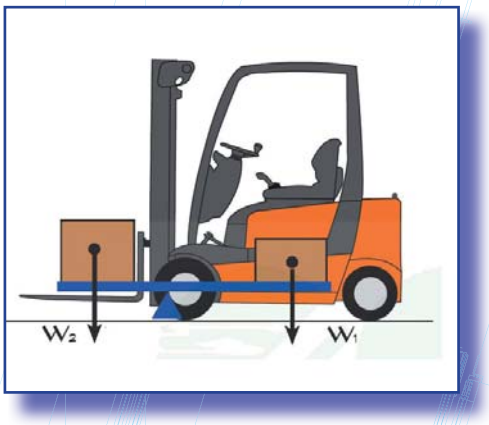
Power Supply

The supply voltages available as standard are 230 V 1~/N 50 Hz, 230 V 3~ 50 Hz and 400 V 3~/N 50 Hz. **Other options are possible, according to the particular conditions of each order.**

Side Protections

There are three solutions available for defining the area of the load to be lifted: handrails, car and car with no roof (facings) with reinforced structure.

Side walls are recommended for having solid walls limiting the loading area, higher than 1.1 m and without a roof to prevent confusions causing maintenance to be done from it. Neither the car nor the side walls options are available on the HO model.



W1+W2 < Maximum load to be lifted.

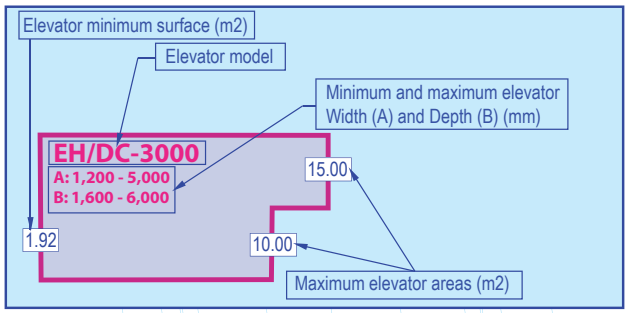
The lift floor area and the maximum load acceptable are connected by the 200 Kg/m2 ratio, for safety reasons, so as to prevent mechanical damage due to overweight.

The lift is supplied in RAL 5017 colour. Some of the parts are stoved with EPOXY paint and others come with primer paint. The frame will always be painted in EPOXY and the guides and floor will depend on their dimensions.

A mechanical solution is available that assures floor parking without steps during the loading and unloading operations. It is the Anti-creep option and it is available on the EH-1500, EH/DC-3000, EH/DC-5000 and EH/4C models (supplied always on EH/4C model).

1.4. Interpretation of the selecting diagram.

Here you can find an example how to read the previous Selection Diagram:



Take the needed rated load (axis X) and the needed loading surface (axis Y); then use the Selection Diagram with those datas and identify the model/s that could fulfill with the requirements. See more details about our elevators in the following pages, just to decide which one is better for your needs.

1.4.1. Interpretation of tables.

Following you can find a key note for the dimensions that are represented in the vertical hoistway requirements for all the models:

- Headroom height (**Hu**)
- Pit Depth (**F**)
- Protections/cabin height (**H**)
- Door clear height (**HL**)

Here you can find the key note for plan view for hoistway dimensions. The dimensions between the loading platform and the shaft wall have been stated for safety reasons to avoid personal risks during maintenance operations with the maintenance push button panel:

- Platform width (**A**)
- Platform depth (**B**)
- Distance to the shaft wall in lateral guiding columns (**DC**)
- Distance to the shaft wall in the side closings (**DL**)
- Reduction of the loading area **(AP)** due to handrails or inner bumpers (in case of walls or cabins)

These dimensions can be modified depending on several options available for each product.

- **Platform protections:** handrail or walls around the edge of the platform which define the loading surface, avoiding the possible shock of the load with the shaft structure or the load penetration in the guiding co-lumns. Hidral offers four different options:

Platform carrier options
Without protections
With handrails
With walls-no roof
With cabin-no doors

All the dimensions have been stated according to Hidral swing doors requirements.

1.4.2. Selecting model general diagram.

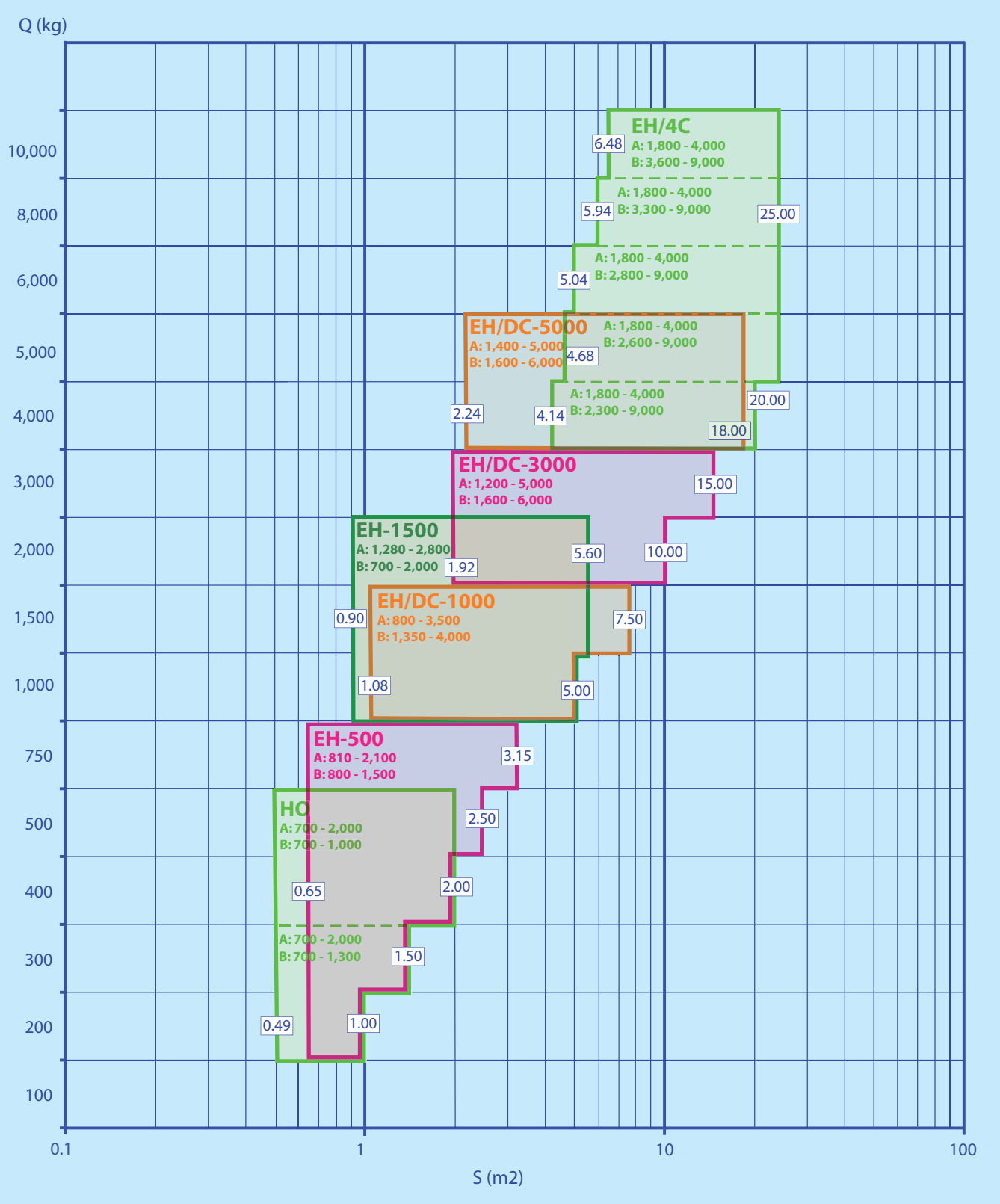


Figure 1. Selecting model diagram according to maximum Load (Q) and máximum usable Load Area (S). The maximum surface is limited by the 200 kg/m² relation and by the A and B constructive maximums for each model.

2. Detailed Description

2.1. Operation (Traction characteristics)

Suspension element

All our platforms are 2:1 Indirect Action Hydraulic Lifts, up to 12 m. For longer travels, it can be executed in a 4:1 indirect ratio or using cylinders in two parts.



Figure 2. Indirect Action Hydraulic Lift Platform.

The suspension components may be cables or chains, depending on the model and the load chosen. This feature is optional on some models.

Chain drive offers the advantage that the elongation of the system is lower and therefore facilitates loading and unloading (smaller differences in level when aligning the floor with the stopping level); less maintenance is also required.

The suspension elements are sized in accordance with an appropriate safety coefficient: 4 for chains and 5 for cables.

EH lift platforms can be supplied, depending on the model chosen, with single column guiding or with double column guiding.

The column is the guide structure where the frame, pulley header and suspension elements come preassembled.
Double columns are based on the design of single ones, but uniting two guiding structures and two frames (they have two cylinders).

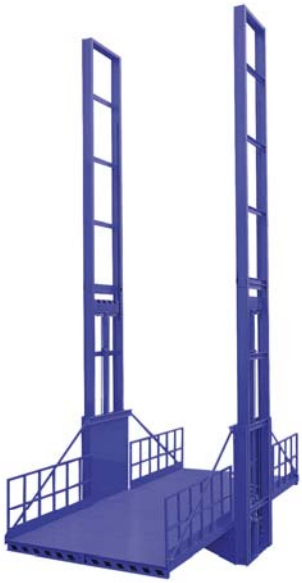


Figure 3. Lift Platform guided in a double column EH/DC

The may be of two facing columns (EH/DC) or else with the two columns on the same side (EH/DCL).



Figure 4. Lift Platform guided in a double column EH/DC.

The advantage of the supply of pre-assembled components is based on the saving in installation time, in the event of use of appropriate installation materials.

The guide structure is supplied in a single section up to a length of 4.5 m in the case of HO, EH-500 and EH/DC-1000 and 5 m in the case of EH-1500, EH/DC-3000 and EH/DC 5000 (approx. 2.5 m travel).
In the event of supply in two sections, the lower section would have the frame, pulley header and chains/cables pre-assembled. The length of this lower section may be of up to 7400 mm when the travel is 12 m (the cylinder would have an approx. length of 6.2 m).

The guide may be supplied in more than two sections when the travel is more than 12 m. In this situation we will have a 2:1 drive with a coupled cylinder (see Cylinders section) or a 4:1 drive.

Each guide structure (column) is provided with two drive chains or cables and two safety cables. The safety cable is a backup device to prevent the lift falling in the event of the suspension elements breaking. This not tensioned when working.

2.2. Sling and Guiding system

The rucksack type frame has a front guiding system with 4 metal runners that roll inside the guide structure (IPE type rolled shapes). The pulley header is guided by a T45 calibrated guide by way of nylon shoes.



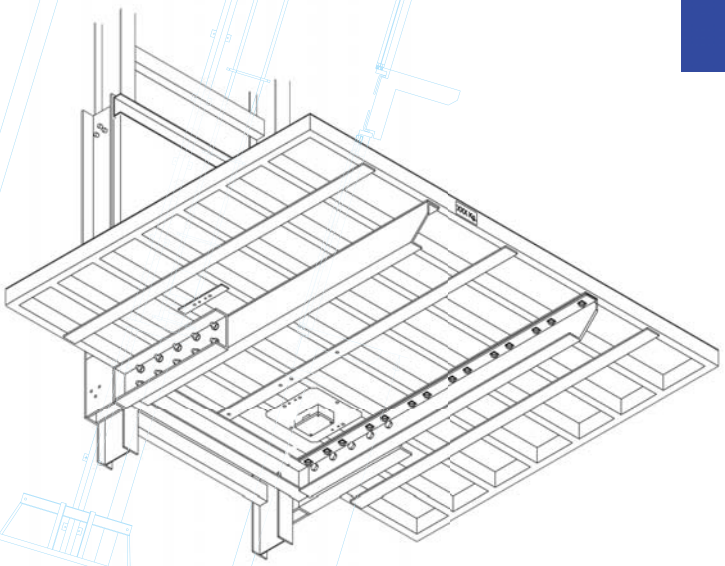


Figure 5. Rucksack type frame, Front Guiding.

The EH-1500, EH/DC-3000, EH/DCL-3000 and EH/DC-5000 models are supplied with a lateral guiding system based on 4 high-strength bearings per frame.

Their effect is perpendicular to the above guiding system and improves the performance of the lift in case of off-centred load (especially on lateral shipments).

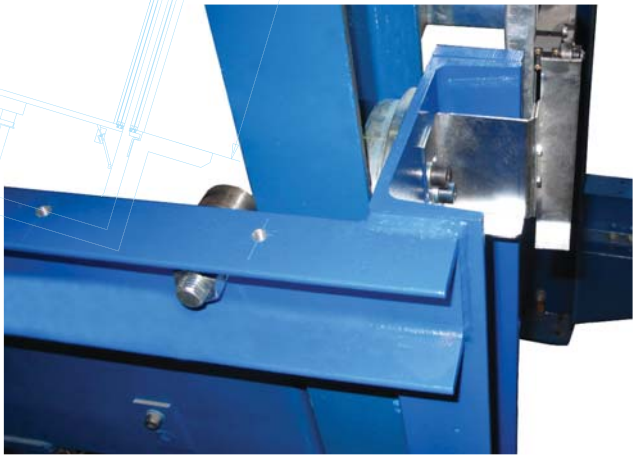


Figure 6. Lateral Guiding, 4 bearings per frame.



The EH/4C model differs from the rest and it is the product indicated for loads of more than 5000 kg and lifting areas of up to 25 m^2.
It is designed with 4 Guide Columns, one at each corner of the shaft, and with a self-guiding floor (with no sling structures) by shoes that run on them. The way that the floor movement is balanced is through the Pantograph systems with chains.

Optionally, the guides and frame could be supplied with a Galvanized finish, especially suited for damp environments. In the event of needing an electrical system with a suitable level of water protection, see the Electrical Options section.

As an option, the guide structure and frame could be supplied so that they do not protrude above the upper stopping level (inverted sling option), especially suitable for solutions where there is no overhead run-by space, or the stopping level is adjustable (including the space occupied by the platform), etc. This option has to be studied case by case, with each request.

Figure 7. Rear view of the lower guiding structure, pre-assembled.

2.3. Guide structure fastening system

Anchorages are supplied to fix the guide assembly to the shaft walls by means of inter-adjustable brackets. These parts will be welded to the guides. The walls where the guides are fixed should be of structural concrete or consist of a metal structure with horizontal shapes on a level with the fastenings, which should withstand the afore-mentioned reactions.
In the case of hollow brick walls, recessed metal shapes should be provided to weld the guide fixing parts or else use grommets if the wall is accessible from the rear side.

The reactions on the guide supports are specified in the installation instructions.

2.4. Load platform. Loading structure

It is supplied for bolting to the slings (HO, EH-500 and EH-1500) or else to the central support girders (EH/DC).
On the HO, EH-500 and EH-1500 models they are supplied in one piece (see Maximum Dimensions).
On the EH/DC-1000, 3000 and 5000 models they may be supplied in 1 or 2 pieces, depending on the floor dimensions. The platform floors supplied in 2 pieces are cut through the axis perpendicular to the floor door line.
The maximum width of each piece is 2400 mm, due to transport questions.
The decks consist of a mesh assembly of IPE rolled sections and a fluted panel (of appropriate thickness) which make up the load surface.
They come painted in RAL 5017 as standard. Depending on dimensions, they may be supplied in EPOXY paint.

As an option, the fluted floor panel may be supplied in stainless steel 304.
Similarly, the metal structure of the floor may be supplied in galvanized finish. As a supplement to the above, in the case of moist environments.

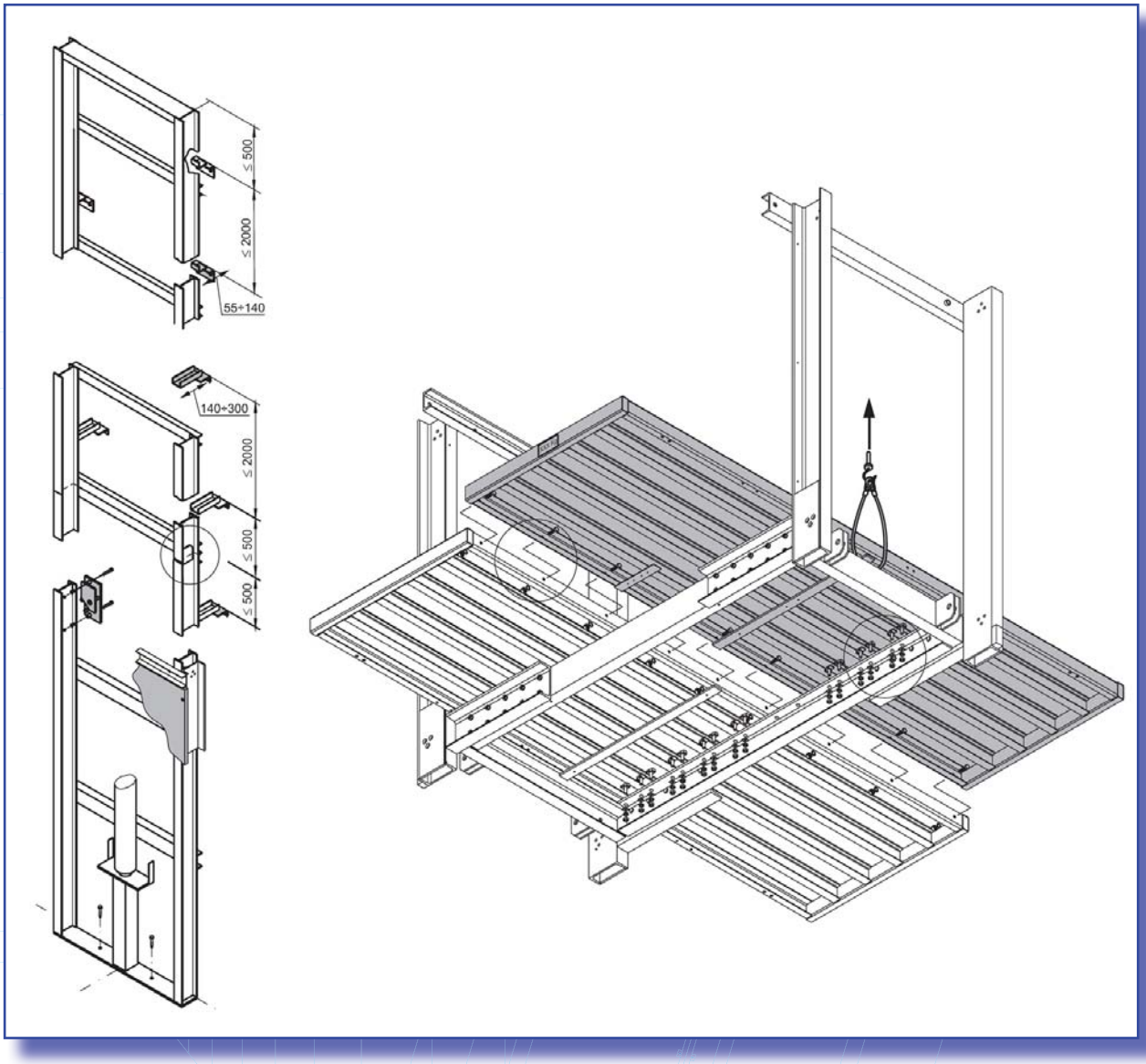


Figure 8. Load platform.

2.5. Protection sides

Three types of sides are available as the surrounds for the load floor, so that its useful area is defined and in order to:

- Prevent the load falling off or getting hooked up with the shaft.
- Prevent risks of body area getting trapped (the feet) in loading and unloading operations.
- Prevent staff getting trapped in maintenance operations.

The three types available are:

- Rails.
- Car.
- Facing (car without roof).

On the guide column side, we always supply a protective side wall (even though none of the options is requested) due to the gaps between the load platform and shaft wall, which means there is a risk of trapping in loading and unloading processes (> 100 mm).
They all facilitate maintenance from the platform, since the maintenance button panel can be connected and they may be removed temporarily to gain access to the shaft components.

Railings:

Available for all Platform models.

They are side protections 1100 mm high which have to be bolted to the load platform around its outside edges.

They have a thickness of 30 mm, which has to be taken into account as a reduction of the useful area of the load platform.

Two types are available:

- Tubular. Forming a grid with 30x30 tubing.
- Plain plate. They are full surface railings.

And they are available in two possible finishes:

- Plate painted in stoved Epoxy with RAL 5017.
- In AISI 441 stainless steel.



Figure 9. Rails.

Facings:

Available for all models except HO. It is a modular enclosure using 1.5 mm thick plate panels. They form a car without a roof with a maximum height of 2500 mm.

It is reinforced with an upper perimeter structure to provide the assembly with sufficient strength. It is designed to withstand the impacts that may occur in the platform loading and unloading processes.

The side panels are fastened to one another by means of quick-fit screws.

To facilitate maintenance from the platform, special fixed safeguards are provided:

- Removable central panel (on the cylinder side) of sufficient size to be able to gain access to the pulley header, guide shoes and side guide bearings.
- Removable inspection windows to offer access to the shaft contacts.

Inside the facings protection tubes are provided in the bottom area in order to protect the side panels from impacts of:

- Manual or automatic pallet trucks, on the EH-500 (optional) and EH-1500 models.
- Lift truck, on EH/DC and EH/DCL models.



Figure 10. Facings.

We have to take into account that the floor door clearance should be 100 mm less than the height of the facing to avoid impacts against the upper reinforcement structure.
Finish options. The vertical facings are available in two finishes:

- Galvanized plate.
- AISI 441 stainless steel.

Car:

Similar features to the vertical facing, but with a roof (interior light included in the standard supply). Maintenance must be carried out from the load floor. The same fixed safeguards (removable) are provided for easy maintenance.

Finish options. The vertical facings are available in two finishes:

- Galvanized plate.
- AISI 441 stainless steel.

As an option, a folding pack car door may be supplied.



Figure 11. Car.

2.6. Specified installation condition. Shaft and Accesses. Shaft conditions & boardings

The shaft should be completely enclosed (with walls, floor and roof) by means of masonry or metal mesh of adequate strength. Metal mesh holes should be small enough to prevent trapping.

Accesses to the shaft should be equipped with a solid core door of sufficient metal strength. They should have electrical closed leaf presence contact, mechanical locking and electrical locking control.

The pit should be completely smooth and it should be provided with a pit (safety) stop so that it may be activated before maintenance staff take up a position below the platform.

It will be necessary to make allowance for sufficient space to accommodate the central hydraulic unit and the switchboard.



Figure 12. Folding pack type car doors.

Type of Switchboard	Maximum Dimensions
Standard (with electric lock)	600
Relevelling in slow speed and/or anti-creep (with electric lock)	700
Relevelling in slow speed and/or anti-creep, with Y-D starting (with electric lock)	800

A 1 m free space opposite the board and the central unit is advisable to facilitate maintenance tasks. Clearances of up to 0.5 m are recommended at the sides. It would be an advantage to have a hook above the central unit so as to be able to raise the unit in case of repair or maintenance.



Figure 13. Pit .

2.7. Hidral Landing doors

Hidral has a type of extremely sturdy industrial doors. These are one or two-leaf manual hinged doors.

We may make special mention of some of the important features of these doors:



Figure 14. Hinges.

- They come with three high-strength hinges as of HL>2400 m. There would be two-hinges below this height. They may be screwed to vertical frames; they are adjustable for height and the leaves may be opened to an angle of 180º.
- They have an E-120 classification fire resistance, according to EN 81-28.
- They have a retainer and leaf-closed presence contact per leaf.
- They are supplied with automatic electric safety locks, as per EN 81-2. They operate in cam mode, so that they are disengaged all the time the lift is stationery at floor level. They have electric engagement control.



Figure 15. Manual two-leaf hinged doors.

- They have a triangular key device for emergency opening from both inside and outside the shaft.
- Made with 1.5 mm steel plate and welded dual-face interior reinforcements.
- They are doors without a peephole. The floor button panels have a luminous signal to advise of the arrival of the lift at the floor.
- The fitting of a retractable platform cam and recesses in the load platform are not used for installation purposes.

Optionally, “Super-Reinforced” Doors may be supplied, which are a version of the above, as they have 3 mm plate at the bottom area of the leaf, up to a height of 1200 mm.

Finishes available:
- In plate painted with RAL 7032.
- In AISI 441 stainless steel.



Figure 16. Doors with no peephole.

2.8. Cylinders

Cylinders designed and manufactured at Hidral. An “immersed piston” single-acting type cylinder with a solid chromium-plated rod. The liner is made with a DIN 2391 type tube of appropriate thickness. The cylinders are tailor-made to the actual travel of the system with sufficient extra stroke.
They are always supplied with a parachute valve in case of breakage of the hydraulic lines. This valve is connected directly to the cylinder oil input. It is a progressive closing valve with external adjustment. The cylinder will be supplied in two sections (for on-site coupling) when the unit is chain drive and travel is > 12 m. This measure is accompanied, when ordered, by the guides in more than 2 sections. The guide supply is not pre-assembled and on-site installation time is increased.

2.9. Central Unit. Oil pump unit

Central unit designed and manufactured at Hidral. A motor pump unit with an external asynchronous motor (1500 r.p.m.) and a gear pump.

The valve set is the AH-1VS model and comprises a non-return valve, overpressure valve, low pressure delivery regulating valve, manual DOWN button and minimum working pressure valve (for when the manual DOWN button is pressed). The low pressure solenoid valve is 220 V AC.
It is supplied with a pressure gauge (with protection key) and a cut-off valve.

The relevelling system is executed as standard with central units with a single motor pump set, where the relevelling speed coincides with the rated speed.
In the event of a power failure, a DOWN button is provided on the central hydraulic unit so that the platform is aligned with floor level.



Figure 17. Central Hydraulic Unit.

As an option a “Central Hydraulic Slow Speed Relevelling Unit” may be supplied:

This option procures that the relevelling speed lies between 0.05 and 0.1 m/s. This option is not advisable when the rated speed is 0.1 m/s, as this speed is already suitable for relevelling.
It is therefore recommended when:

- We have platforms with Speed=0.2 m/s and Load > = 1500 kg.
- On those platforms that are going to be loaded with lift trucks and for those that have a travel of more than 10 metres.
- On the EH/DC-5000 and EH/4C models slow speed relevelling is included as standard.

As an option a “Low Noise Central Hydraulic Unit” may be supplied:

This option is available for platforms that are supplied with Slow Speed Relevelling. It has very low noise and vibration characteristics. The difference lies in the use of “DC” volumetric instead of gear pumps. Only available on EH-1500 and EH/DC-3000 models.

Central Hydraulic Unit Dimensions

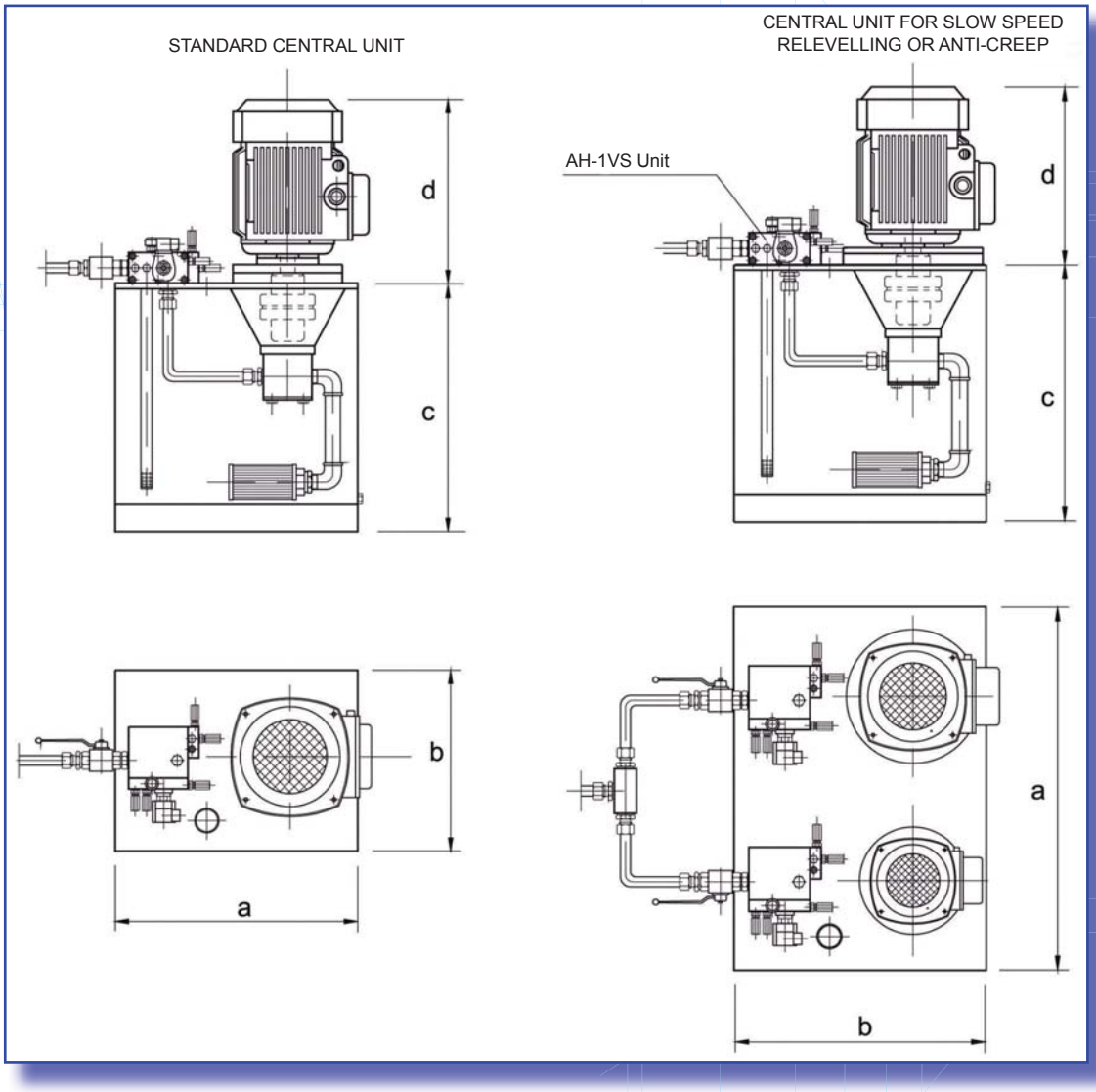


Figure 18. Central Hydraulic Unit Dimensions.

2.10. Hydraulic lines and hydraulic fluid. Hydraulic pipes and oil characteristics

It comes with all the hoses and connectors needed to execute the hydraulic system. In the case of rigid piping, this is sufficiently flexible so as to shape the elbows that may be necessary, so pipe coupling elbows are not supplied.

Two options:

- Rigid, pipes as per DIN 2391, 37.4 (NBK) stainless steel material, 3 m standard for EH - HO and 6 m for EH/DC-EH/4C.
- Flexible, hydraulic hose with double metal mesh and fitted connectors.

The central hydraulic unit is designed for fitting at a maximum distance of 10 m from the cylinder oil input; enquire when needing to install it at a longer distance.

The standard hydraulic fluid will be Cepsa ISO HM-46 oil for general purpose use.

2.11. Button Panels

The call and send button panels should be installed in the areas before the floor doors. This location is to impede any user from being able to use the platform as a lift for persons.

They are made up of plastic boxes for surface fitting and industrial pushbuttons.

Button panels are never sent for installation inside the unit.

They are call and send controls, which are provided with:

- A call button for each floor (with the appropriate designation of the stop number).
- An enabling key button to restrict the use of each button panel to the informed and advised user.
- A Green indicator light which informs when the platform is at the floor (the doors may be supplied without peephole). It also informs of when a new send call may be made.
- A Red indicator light which shows when the platform is not available for performing a send or come call.

As an option, button panels may be supplied for flush wall fitting. They will be metal plate button panels with flush-fit buttons.

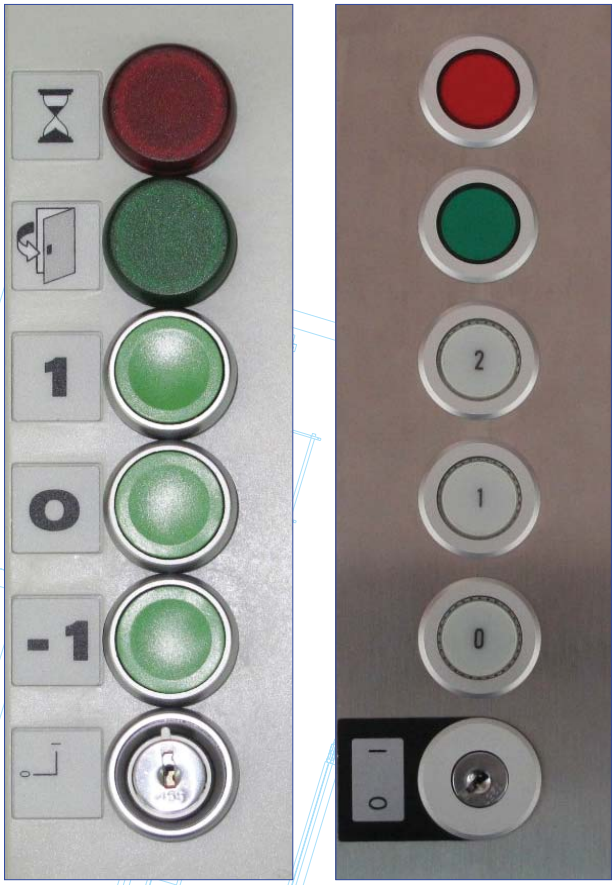


Figure 19. Button panels.

2.12. Electrical Control

- Simple automatic operating system by means of 24V rectified DC relay plate;
- 230V AC Safety series, formed by safety contacts fitted for Positive Action.
- Positioning control and call management are carried out by way of a 24V DC circuit.
- Stops are controlled by safety limit switches.
- Relevelling with door open. It comes as standard with “Simple Relevelling”, where a single motor/solenoid valve is activated, both for a travel between floors and for a relevelling operation. The relevelling speed is therefore the same as the rated speed.
- Priority time for floor button panels, which prevents acceptance of a new call in the 4 s subsequent to the lift platform arriving at the floor so as to allow time for the door to be opened.
- Maximum travel time.
- 48 or 24V AC electrical automatic type floor lock operating system, with “cam type” working (floor door permanently disengaged while the platform is at floor level). Design for Proudhomme lift locks.



Figure 20. Electrical control panel.

- "Lift type" pit button panel, with Stop and 230V AC socket outlet.
- Maintenance button panel.
  Plug-in platform inspection button panel for maintenance operations. Constant pushbutton controlled action. The system design is fully guaranteed to prevent operation by the end users. It meets prEN81-31 requirements.
- Preassembled plug-in shaft and platform installation.
- It comes with a load weighing system for platforms which have a load rating of more than 1000 Kg. It will be optional if the load rating is < 1000 Kg.
- Electric switches for safe operation in both the Power and the Lighting circuit:

  1. Omnipolar cutoff section switch for the power circuit, with locking to prevent tampering by other than maintenance staff. It may be activated from outside the switchboard.
  2. Manual switch which may be activated from outside the switchboard, for shaft lighting.
  3. Differential switch for power and lighting circuit, activated from inside the switchboard.
  4. Magneto-thermal differential switch for protection against short circuits and current surges. Activated from inside the switchboard, for the power and lighting circuits.



Figure 21. Electrical switches.

The following supply options are available:

1. Slow speed relevelling. This option is described in the hydraulic central unit options. The panel contains the power switches and contactors for both motors.
2. Other types of floor door lock opening Control:
   - With 230V AC electrical retractable cam, for disengaging floor doors that do not have automatic electric locks.
   - Other automatic locks that are not 48V AC Proudhomme. Enquire about solutions available.
3. Shaft light switched on automatically when the floor door is opened, for illuminating the working area during loading and unloading operations.
4. Car light with automatic ON/OFF switching.
5. Operating systems for automatic side-opening slat doors (hydraulic or electrical). Enquire about other automatic door options.
6. Electrical installation when the platform is going to be installed in Potentially Explosive Environments. The electrical control features will be similar to the standard model, except that door opening will be by retractable cam. Anti-creep options are not available.



Figure 22. Button panel plugged in facing.

It is necessary to pinpoint the areas of the platform subjected to Potentially Explosive Environments. State whether the plant room has to be in this environment.
The electrical installation will be special and is specified below:

- Electrical components as per Directive 94/9/EC, with EC Marking Ex II 2 G, and with additional Eex d/e B T4 Marking.
- Shaft and platform wiring according to the RBT Supplementary Technical Instruction ITC 29.

7. Sealed electrical installation, with protection level IP-54. It is not plugged-in or preassembled and is executed by way of sealed shaft junction boxes.

Risks to be covered

Risk to be covered		Description
Breakage of suspension elements	HO	If one of the chains breaks, the instant parachute is actuated. There is an electrical contact that shuts off the operation in this case. It works in case of breakage or loosening of one of the chains, or even both at the same time.
	EH-500, EH-1500, EH/DC-1000, EH/DC-3000, EH/DC-5000 and EH/4C	In case of breakage of one of the drive chains/cables, there are additional safety cables to support the load (with adequate safety coefficients). There are electrical contacts that detect drive chain/cable breakage and stops operation.
Slackening of suspension elements		Each drive chain/cable has a tensioner and electrical contact detection system which would detect slackening and breakage, stopping movement. In addition, the hydraulic unit has a safety valve which prevents downward movement by way of the manual DOWN button, if the pressure drops below a regulated minimum value.
Go past upper stop level		An electrical safety limit switch is provided in each upper guide section. It shuts off movement if activated when the platform goes past the upper stop level.
Breakage of hydraulic lines		Parachute valve (made by Hidral) against hydraulic line breakage. Externally adjustable. It provides immediate shut-off, with deceleration of less than 2 g in case of exceeding the down speed set.
Fall into the shaft from a stopping level		The shaft must be for sole use by the lift platform and be fully enclosed by walls, floor and roof. Doors of proper strength have to be fitted at each of the service levels (access to lift on different floors). Also all the doors have to be equipped with mechanical engagement and electrical locking control to prevent a door from being opened when the lift is not at that level.
Persons trapped from the stopping level		Same requirement for the shaft as in the previous point. Floor doors are provided at each service level and there is an electrical safety contact that informs of door closed status. If a door leaf opens, the circuit is broken and movement is halted.
Persons trapped by moving parts, inside the lift		Same requirement for the shaft as in the previous point. The safety of users from this risk is based on the fact that use of the lift by persons is forbidden. For this purpose the necessary warning notices are provided to inform users of this situation. In case of maintenance operations, it is specified that the Hidral inspection button panel should be used.
Persons trapped in the pit, during maintenance operations		A mechanical frame locking system is provided, which prevents it from descending below a pit safety height. Access to the locking system is from the floor door and it has an electrical safety contact which prevents movement when activated. In addition, a pit button panel is supplied with a safety stop. This device is supplied, in line with standard practice in lifts, to be activated prior to access to the pit. It also comes with a pit access detection system, which comes into action if the lower level door is opened when the platform is not situated at a defined stopping level. This lock is not overridden when the power supply is shut off and restored. It is only cancelled when the panel Reset button is pressed. Locks are also provided with emergency disengagement from the interior of the shaft.

Risks to be covered

Lifting more than maximum load	It is supplied with an adjustable hydraulic safety valve (excess pressure valve), which prevents lifting movement if the regulated pressure is exceeded. Load weigher for loads in excess of 1000 Kg.
Fall due to slippery floor during loading and unloading operations	The load platform floor is made with non-slip fluted plate.
Fall into the shaft during loading and unloading operations	If the distance to the wall is > 35 mm, perimeter guards will have to be fitted. See the different options offered by Hidral.
Objects dropping from or projected by the lift platform	The shaft has to be completely sealed on all its sides with full surface materials or mesh with sufficiently small holes to prevent for parts of the body to be inserted.
Use of the lift platform by untrained or unauthorized persons	The floor button panels are provided with a small key that enables the call-send controls. The key has two stable positions (ON, OFF) and it may be taken out in both.



3. Control and electrical options

Anti-creep

Installation of the Anti-creep device (electrical or hydraulic) is based on the need for the lift platform to have “Perfect Flush” during the loading and unloading operations. This need has to stem from the customer because differences in level of more than 15 mm are not acceptable during the above-mentioned operations (lift truck with small rigid wheel, etc.).

These are mechanical devices, sliding bolts, which assure the anchorage of the lift platform at floor level preventing any creep in the platform as a result of leakage, oil compression, and stretching of the suspension elements. Perfect flush with floor level is assured. The respective supports will be provided on the guides.
It would be the equivalent of a retaining device on lifts.

This type of device is only available for the platform models using IPE 160 guides (EH-1500, EH/DC-3000, EH/DC-5000) and for the EH/4C model.

The supports are positioned automatically at slow speed by means of the platform operating system.

Two types are differentiated depending on their mode of action: **Electrical and Hydraulic**.

Electrical: operated by means of a coil connected at 220V DC, which collects the support bolt; the return action is by means of a compression spring. The maximum load specified for each one is 15 kN.

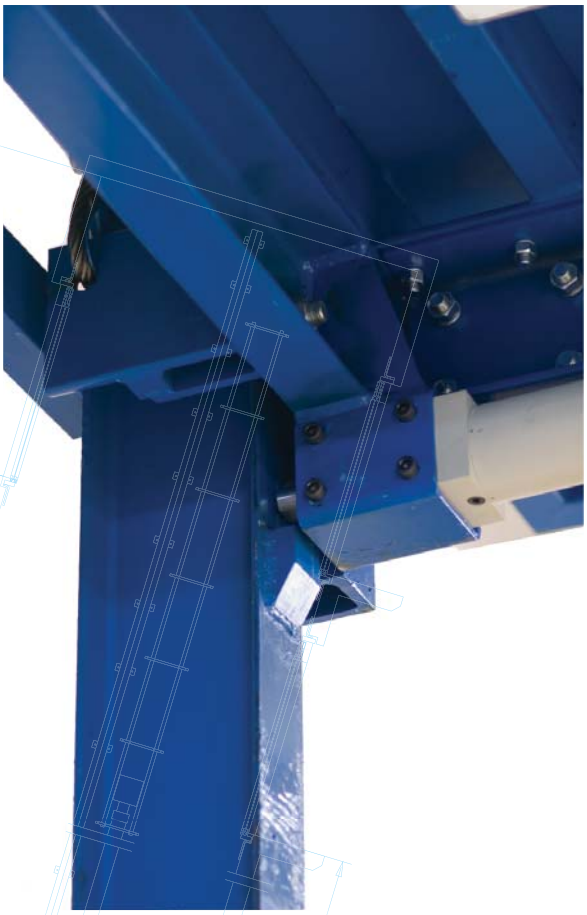


Figure 23. Electrical anti-creep device.

Hydraulic: operated by means of a double-acting cylinder. A central hydraulic unit is required to bring about the movement of the cylinders, which will be installed underneath the platform. The maximum load specified for each one is 40 kN.
For the EH/DC-5000 model only the Hydraulic Anti-creep is specified (the electrical model is not available).

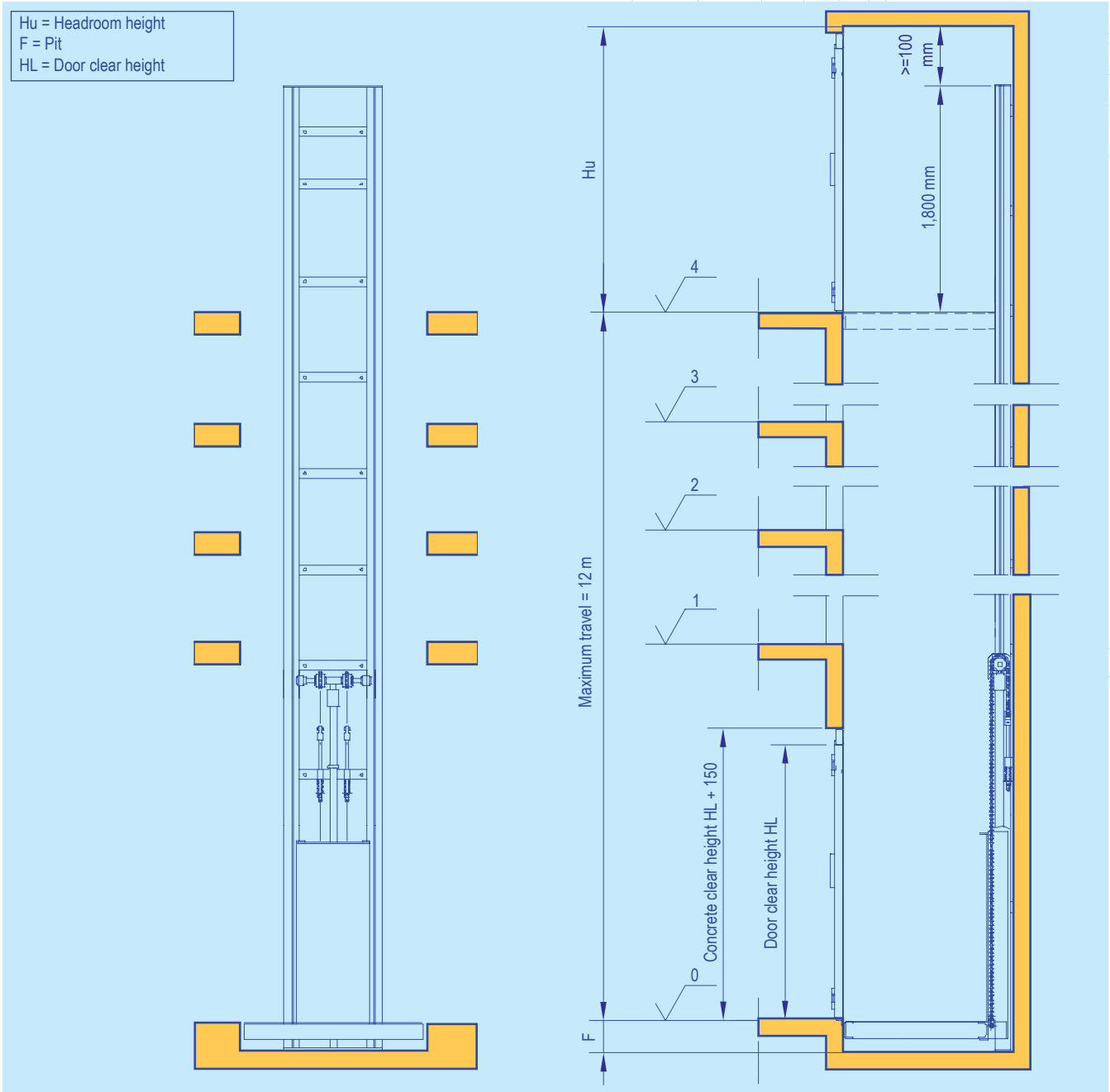
For EH type 2 units would be supplied, for EH/DC type 4 units would be supplied, and for EH/4C the necessary units would be supplied in accordance with the load to be lifted, so that the platform is provided with proper support.

4. Drawings

4.1. HO model.

Model	Available loads (Kg)
HO	100, 200, 300, 400 and 500

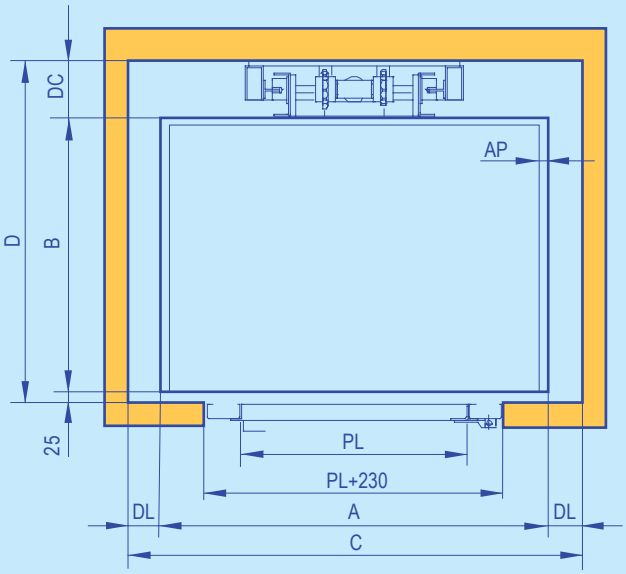
Minimun shaft dimension for HO model. Elevation view.



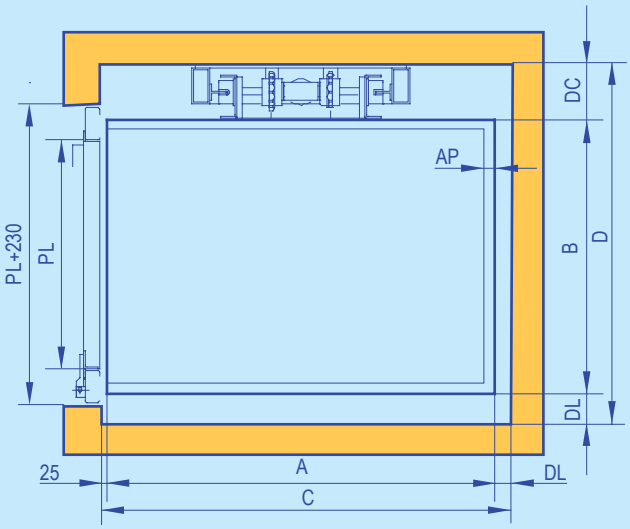
Dimension	Option	Value (mm)
Headroom height (Hu)		Take the maximum within: ● 2,000 ● HL + 250
Pit (F)	With safety gear	120 ÷ 700
Clear door height (HL)		2,000 ÷ 2,950

NOTES: The safety gear must be ordered for all the HO elevators, for safety reasons. Consult us for lower pits.
Walls (no roof) or cabin are not available for HO model.

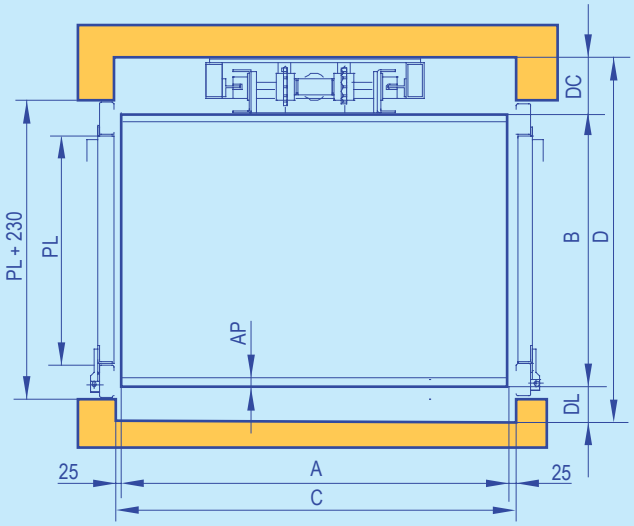
Minimun shaft dimension for HO model. Plan view.



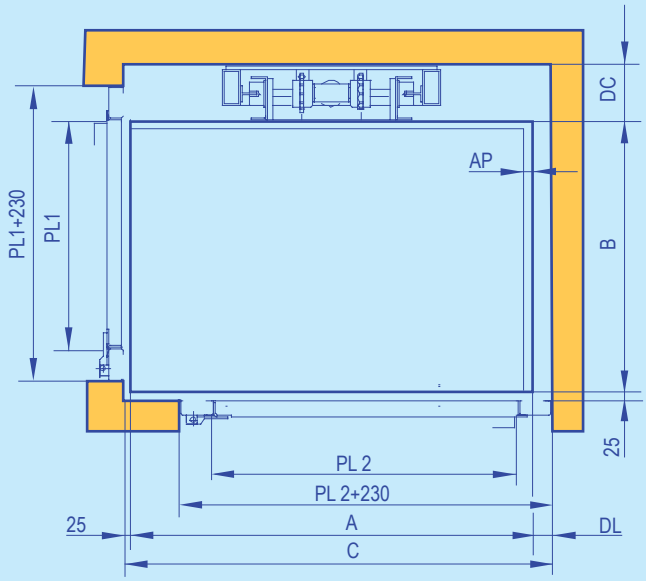
Layout 1, front single boarding.



Layout 2 - 3, side single boarding.



Layout 4, 180° double boarding.



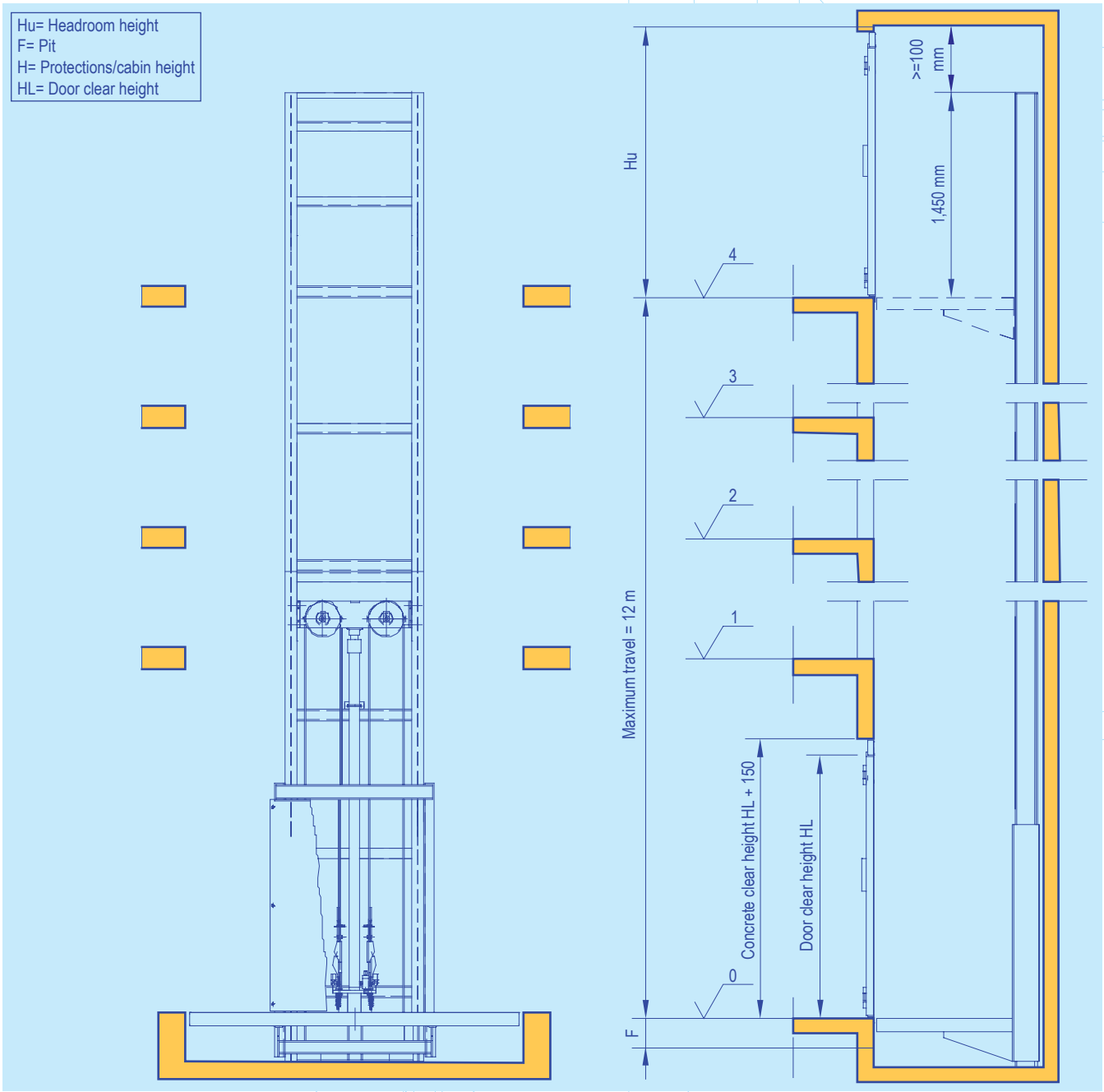
Layout 5 - 6, 90° double boarding.

Dimension	Option	Value (mm)
Width (A)		700 ÷ 2,000
Depth (B)	Loads from 100 kg to 300 kg	700 ÷ 1,300
	Loads from 400 kg to 500 kg	700 ÷ 1,000
Distance to the hollow in lateral guiding columns (DC)		125 ÷ 180
Distance to the hollow in the side closings (DL)	Without handrails	25 ÷ 35
	With handrails	≥ 100
Usable load area reduction (AP)	Without handrails	0
	With handrails	30

4.2. EH-500 model.

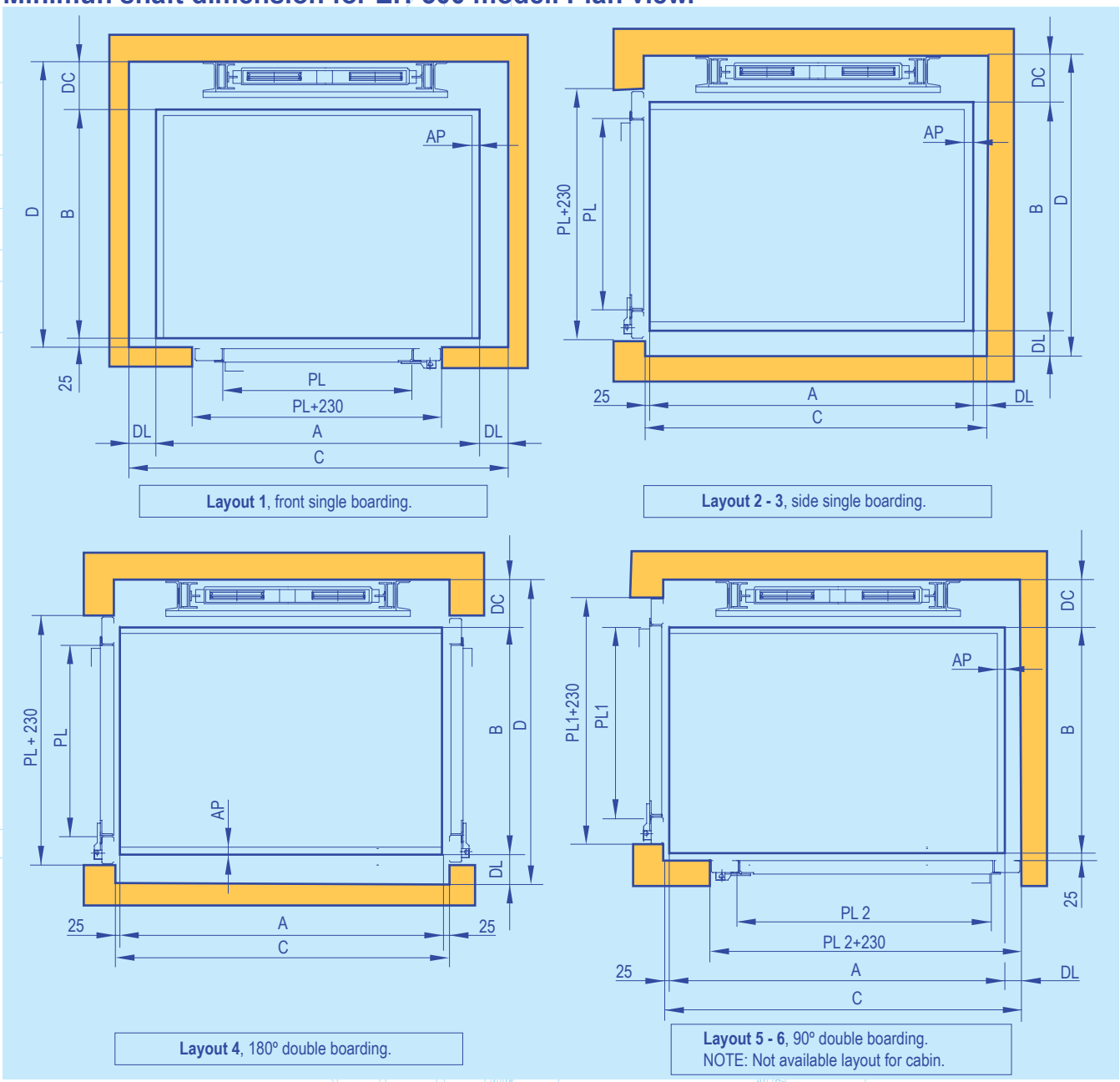
Model	Available loads (Kg)
EH-500	**200, 300, 400, 500 and 750**

Minimun shaft dimension for EH-500 model. Elevation view.



Dimension	Option	Value (mm)
Headroom height (Hu)	Without protections/cabin	Take the maximum within: ● 2,000 ● HL + 250
	With protections	H + 250
	With cabin	H + 350
Pit (F)		250 ÷ 1,200
Walls/cabin height (H)		2,000 ÷ 2,500
Clear door height (HL)	Without protections/cabin	2.000 ÷ 2.950
	With walls	2.000 ÷ 2.400 (HL ≤ H - 100)
	With cabin	2.000 ÷ 2.500 (HL ≤ H)

Minimun shaft dimension for EH-500 model. Plan view.

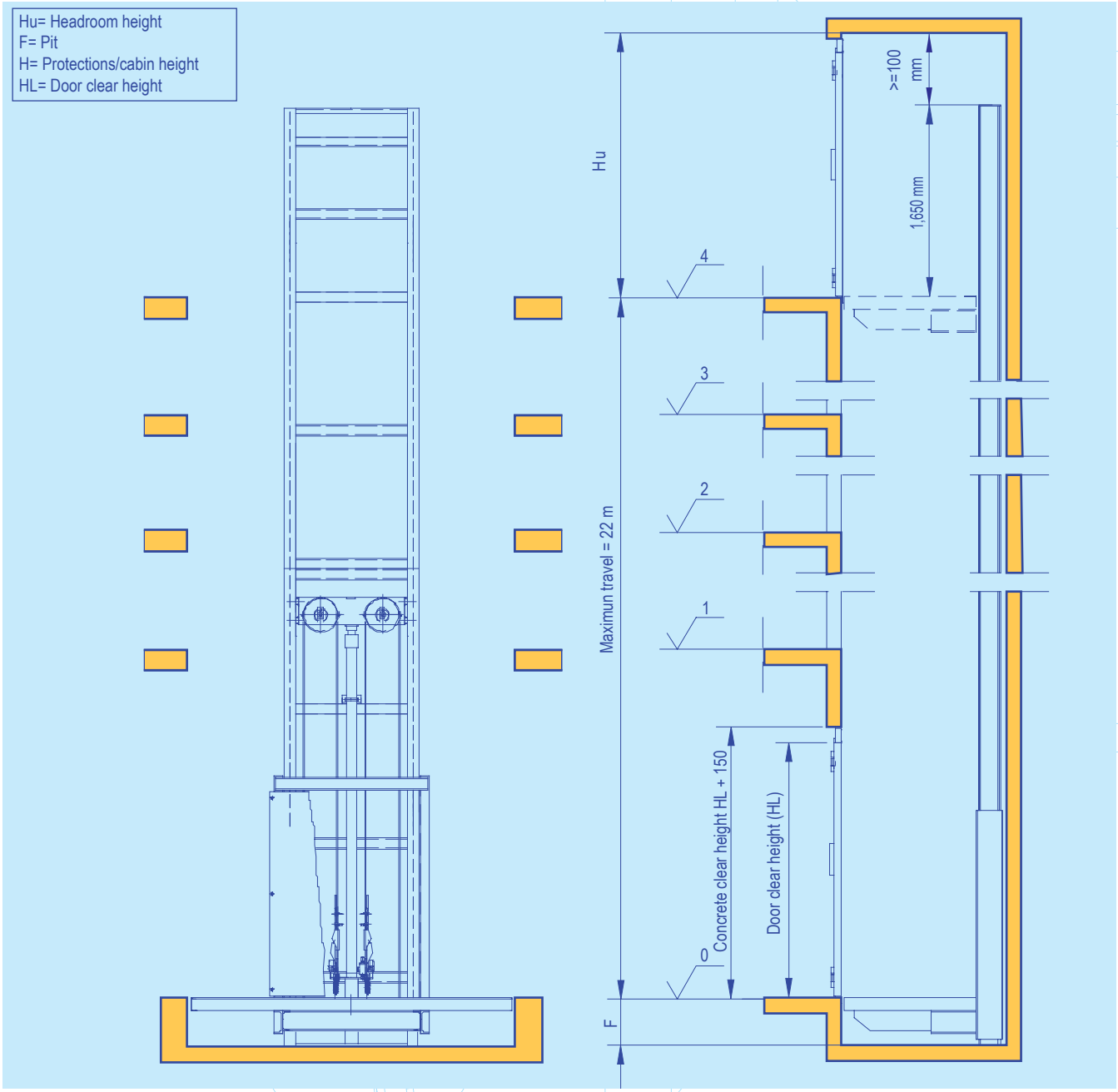


Dimension	Option		Value (mm)
Width (A)	Ropes hanging	Without protections/cabin	810 ÷ 2,100
		With protections/cabin	1,060 ÷ 2,100
	Chains hanging	Without protections/cabin	1,060 ÷ 2,100
		With protections/cabin	1,310 ÷ 2,100
Depth (B)			800 ÷ 1,500
Distance to the wall in lateral guiding columns (DC)	Without walls/cabin		210 ÷ 400
	With walls/cabin		250 ÷ 450
Distance to the wall in the side closings (DL)	Without protections		25 ÷ 35
	With handrails		≥ 100
	With walls/cabin		≥ 80
Usable load area reduction (AP)	Without protections		0
	With handrails		30
	With walls/cabin	Without bumpers	0
		With bumpers	40

4.3. EH-1500 model.

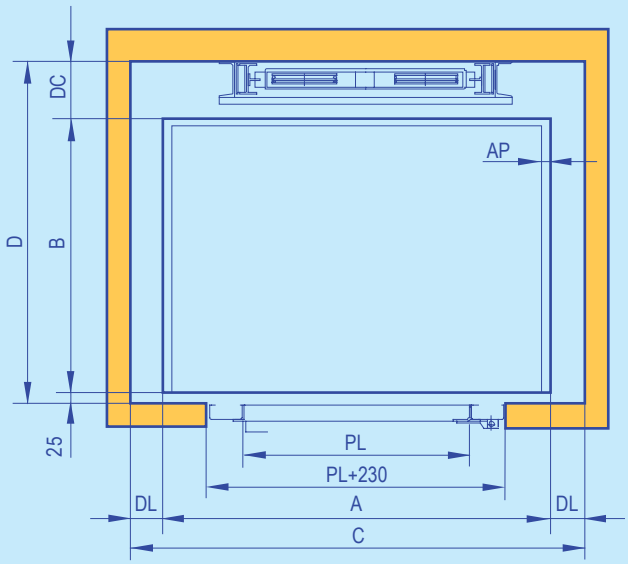
Model	Available loads (Kg)
EH-1500	**1,000, 1,500,and 2,000**

Minimun shaft dimension for EH-1500 model. Elevation view.

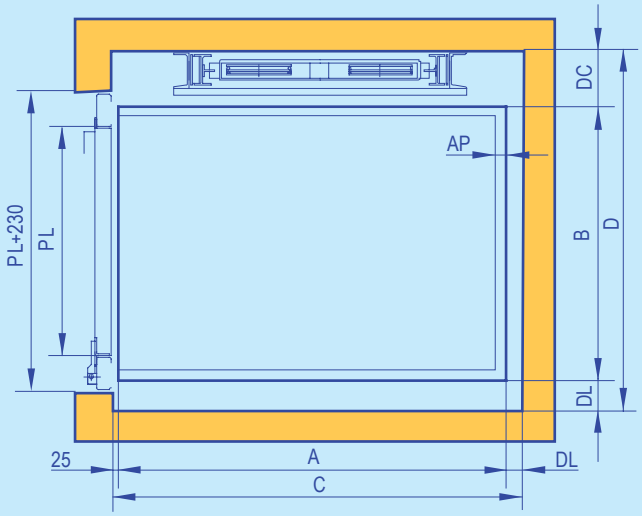


Dimension	Option	Value (mm)
Headroom height (Hu)	Without protections/cabin	Take the maximum within: ● 2,000 ● HL + 250
	With walls	H + 250
	With cabin	H + 350
Pit (F)	Without anti-creep device	350 ÷ 1,500
	With anti-creep device	400 ÷ 1,500
Walls/cabin height (H)		2,000 ÷ 2,500
Clear door height (HL)	Without protections/cabin	2,000 ÷ 2,950
	With walls	2,000 ÷ 2,400 (HL ≤ H - 100)
	With cabin	2,000 ÷ 2,500 (HL ≤ H)

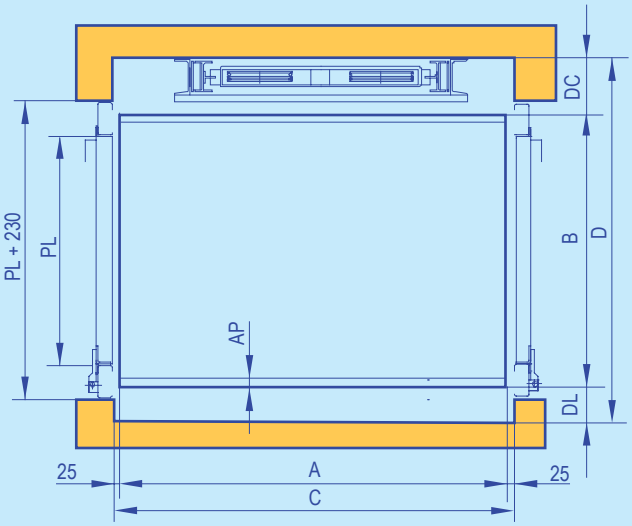
Minimun shaft dimension for EH-1500 model. Plan view.



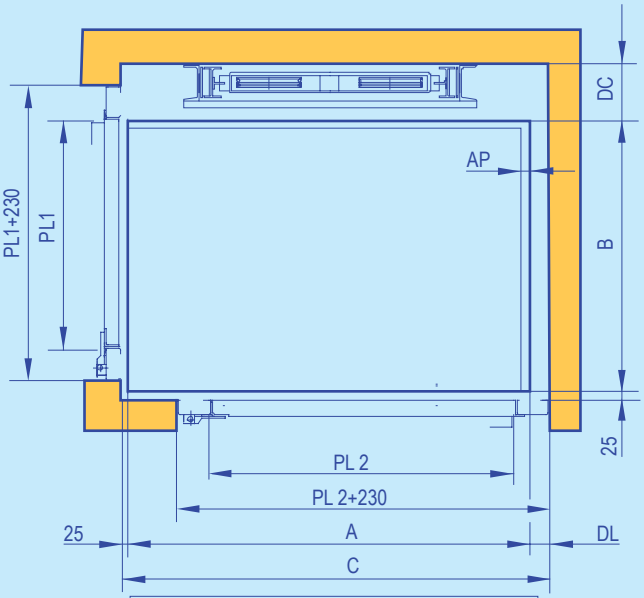
Layout 1, front single boarding.



Layout 2 - 3, side single boarding.



Layout 4, 180° double boarding.



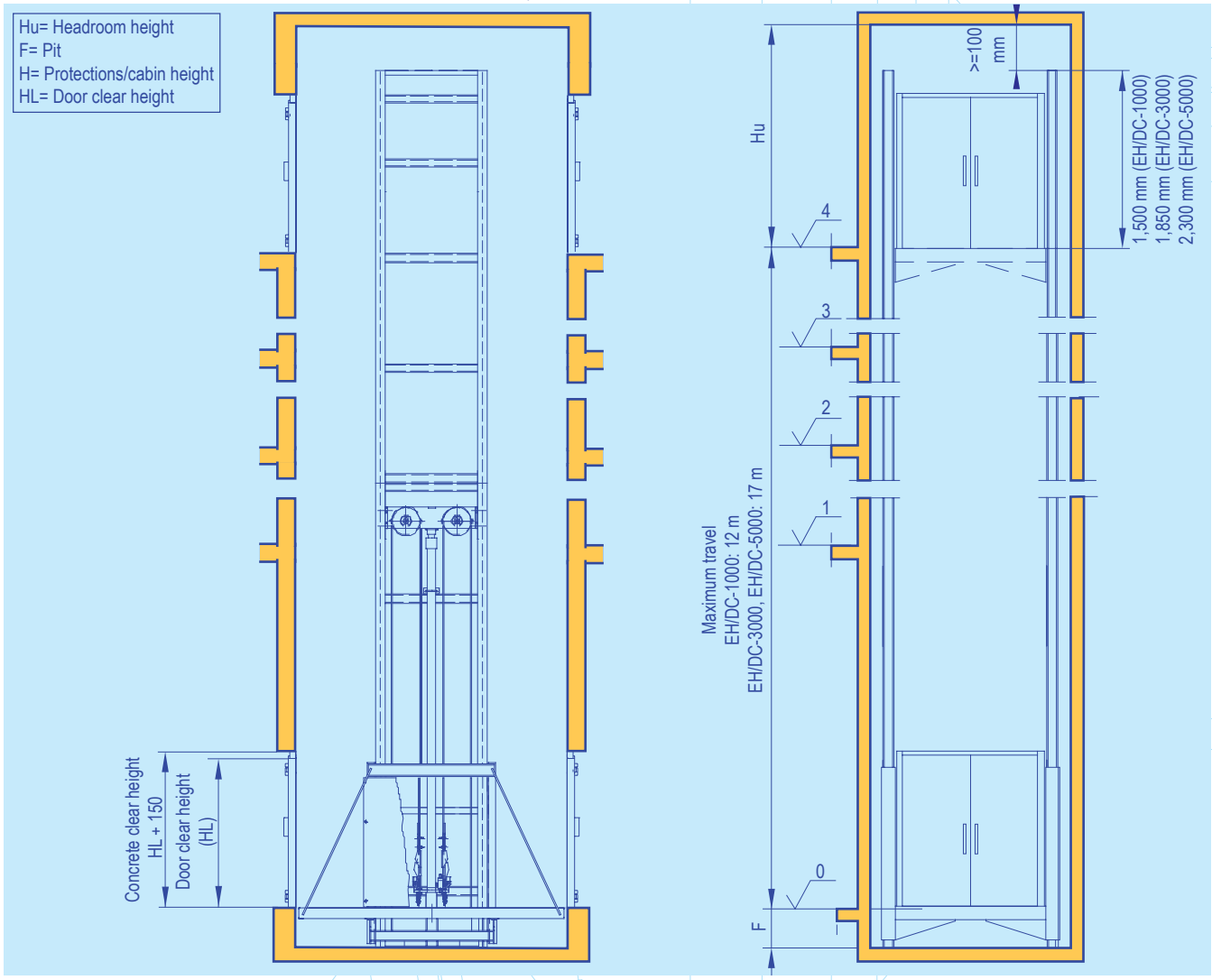
Layout 5 - 6, 90° double boarding.
NOTE: Not available layout for cabin.

Dimension	Option	Value (mm)
Width (A)	Without walls/cabin	1,280 ÷ 2,800
	With walls/cabin	1,500 ÷ 2,800
Depth (B)		700 ÷ 2,000
Distance to the wall in lateral guiding columns (DC)	Without walls/cabin	300 ÷ 500
	With walls/cabin	380 ÷ 580
Distance to the wall in the side closings (DL)	Without handrails	25 ÷ 35
	With handrails	≥ 100
	With walls/cabin	≥ 80
Usable load area reduction (AP)	Without protections	0
	With handrails	30
	With walls/cabin	40

4.4. EH/DC-1000, EH/DC-3000, EH/DC-5000 model.

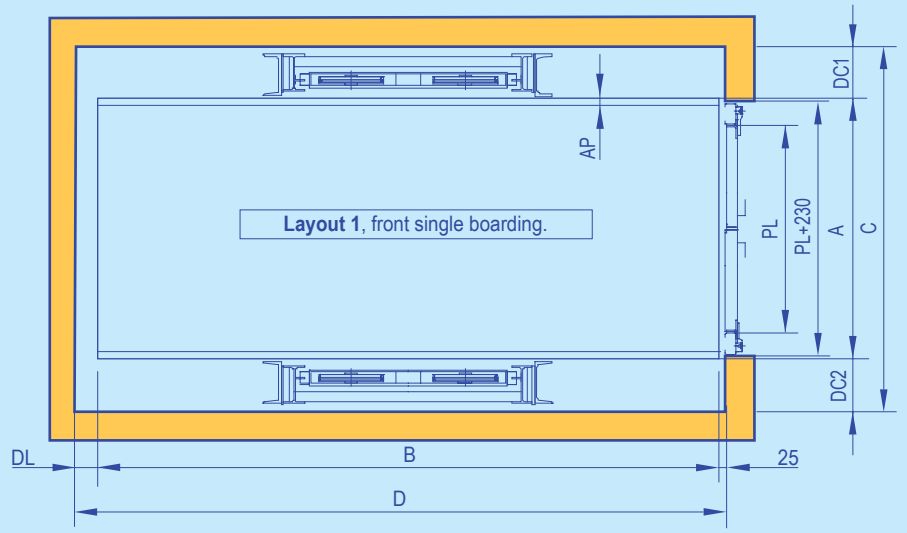
Model	Available loads (Kg)
EH/DC-1000	**1,000 and 1,500**
EH/DC-3000	**2,000 and 3,000**
EH/DC-5000	**4,000 and 5,000**

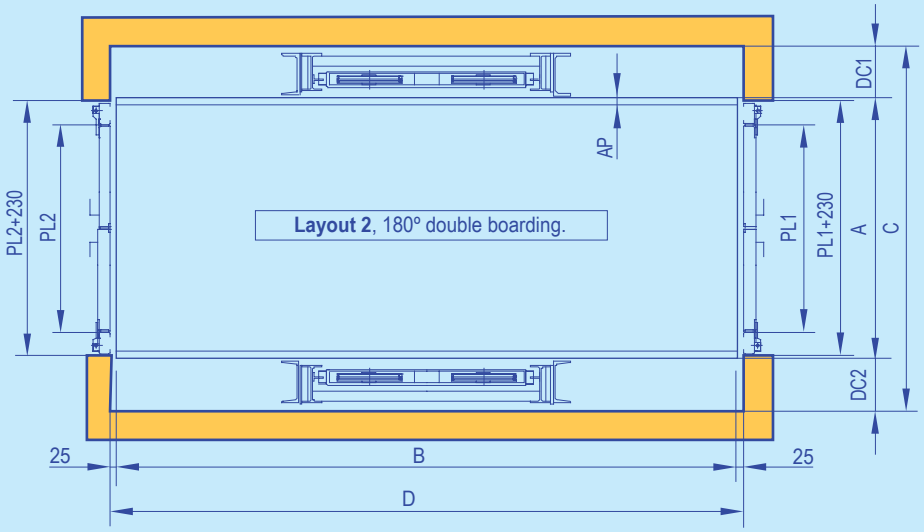
Minimun shaft dimension for EH/DC-1000, EH/DC-1000 and EH/DC-5000 model. Elevation view.



Dimension	Option		Value (mm)
Headroom height (Hu)	Without walls/cabin	EH/DC-1000 EH/DC-3000	Take the maximum within: ● 2,000 ● HL + 250
		EH/DC-5000	Take the maximum within: ● 2,400 ● HL + 250
	With walls		H + 250
	With cabin		H + 350
Pit (F)	EH/DC-1000		350 ÷ 1,200
	EH/DC-3000		400 ÷ 1,700
	EH/DC-5000	Without anti-creep device	450 ÷ 1,700
		With anti-creep device	700 ÷ 1,700
Walls/cabin height (H)			2,000 ÷ 2,500
Clear door height (HL)	Without walls/cabin		2,000 ÷ 2,950
	With walls		2,000 ÷ 2,400 (HL ≤ H - 100)
	With cabin		2,000 ÷ 2,500 (HL ≤ H)

Minimun shaft dimension for EH/DC-1000, EH/DC-3000 and EH/DC-5000 model. Plan view.





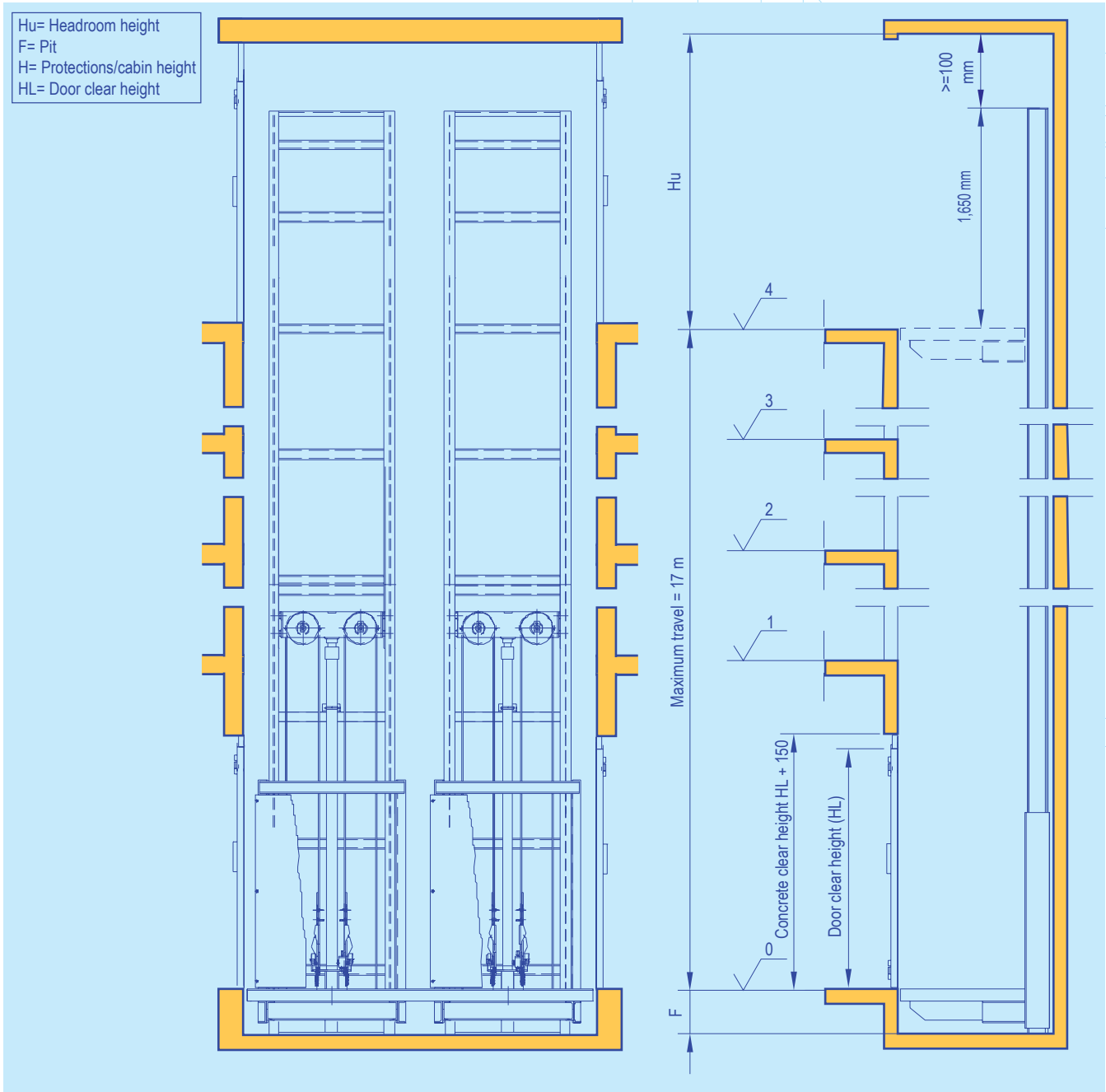
Dimension	Option		Value (mm)
Width (A)	EH/DC-1000		800 ÷ 3,500
	EH/DC-3000		1,200 ÷ 5,000
	EH/DC-5000		1,400 ÷ 5,000
Depth (B)	EH/DC-1000		1,350 ÷ 4,000
	EH/DC-3000, EH/DC-5000		1,600 ÷ 6,000
Distance to the wall in lateral guiding columns (DC)	Without walls/cabin	EH/DC-1000	210 ÷ 400
		EH/DC-3000, EH/DC-5000	300 ÷ 500
	With walls/cabin	EH/DC-1000	290 ÷ 480
		EH/DC-3000, EH/DC-5000	380 ÷ 580
Distance to the wall in the side closings (DL)	Without handrails		25 ÷ 35
	With handrails		≥ 100
	With walls/cabin		≥ 100
Usable load area reduction (AP)	Without handrails		0
	With handrails		30
	With walls/cabin		40

NOTES: For EH/DC-1000 model, dimension A or dimension B must be 2,300 mm or lower.
For EH/DC-3000 model, maximum area is limited to 15 m^2.
For EH/DC-5000 model, maximum area is limited to 18 m^2.

4.5. EH/DCL-3000.

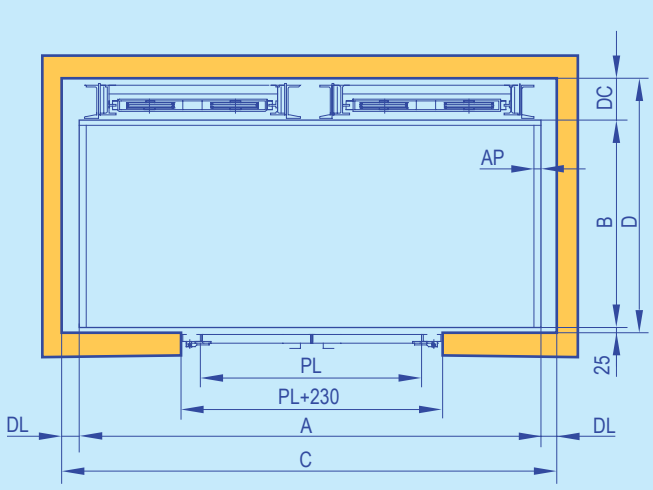
Model	Available loads (Kg)
EH/DCL-3000	**2,000 and 3,000**

Minimun shaft dimension for EH/DCL-3000 model. Elevation view.

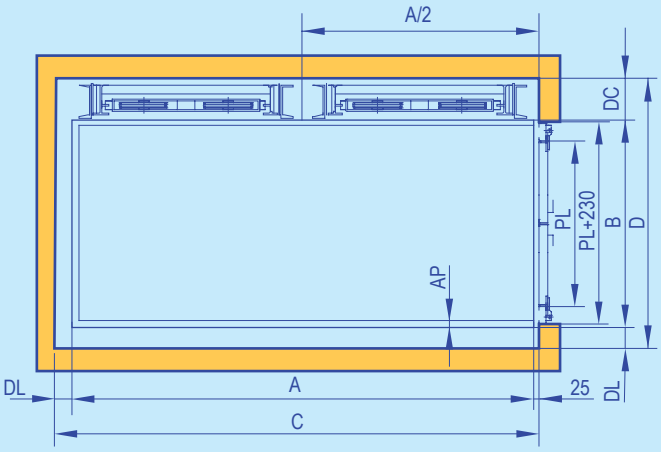


Dimension	Option	Value (mm)
Headroom height (Hu)	Without walls/cabin	Take the maximum within: ● 2,000 ● HL + 250
	With walls	H + 250
	With cabin	H + 350
Pit (F)		450 ÷ 1,700
Walls/cabin height (H)		2,000 ÷ 2,500
Clear door height (HL)	Without walls/cabin	2,000 ÷ 2,950
	With walls	2,000 ÷ 2,400 (HL ≤ H - 100)
	With cabin	2,000 ÷ 2,500 (HL ≤ H)

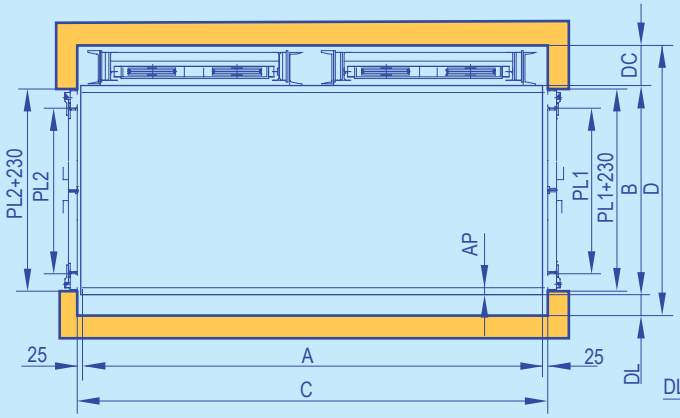
Minimun shaft dimension for EH/DCL-3000 model. Plan view.



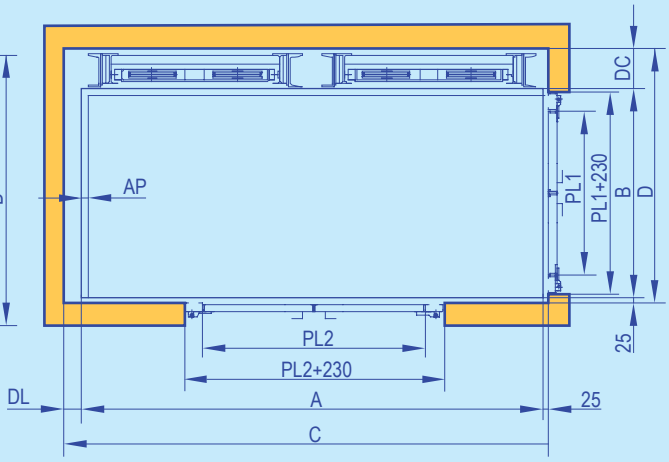
Layout 1, front single boarding.



Layout 2 - 3, side single boarding.



Layout 4, 180° double boarding.



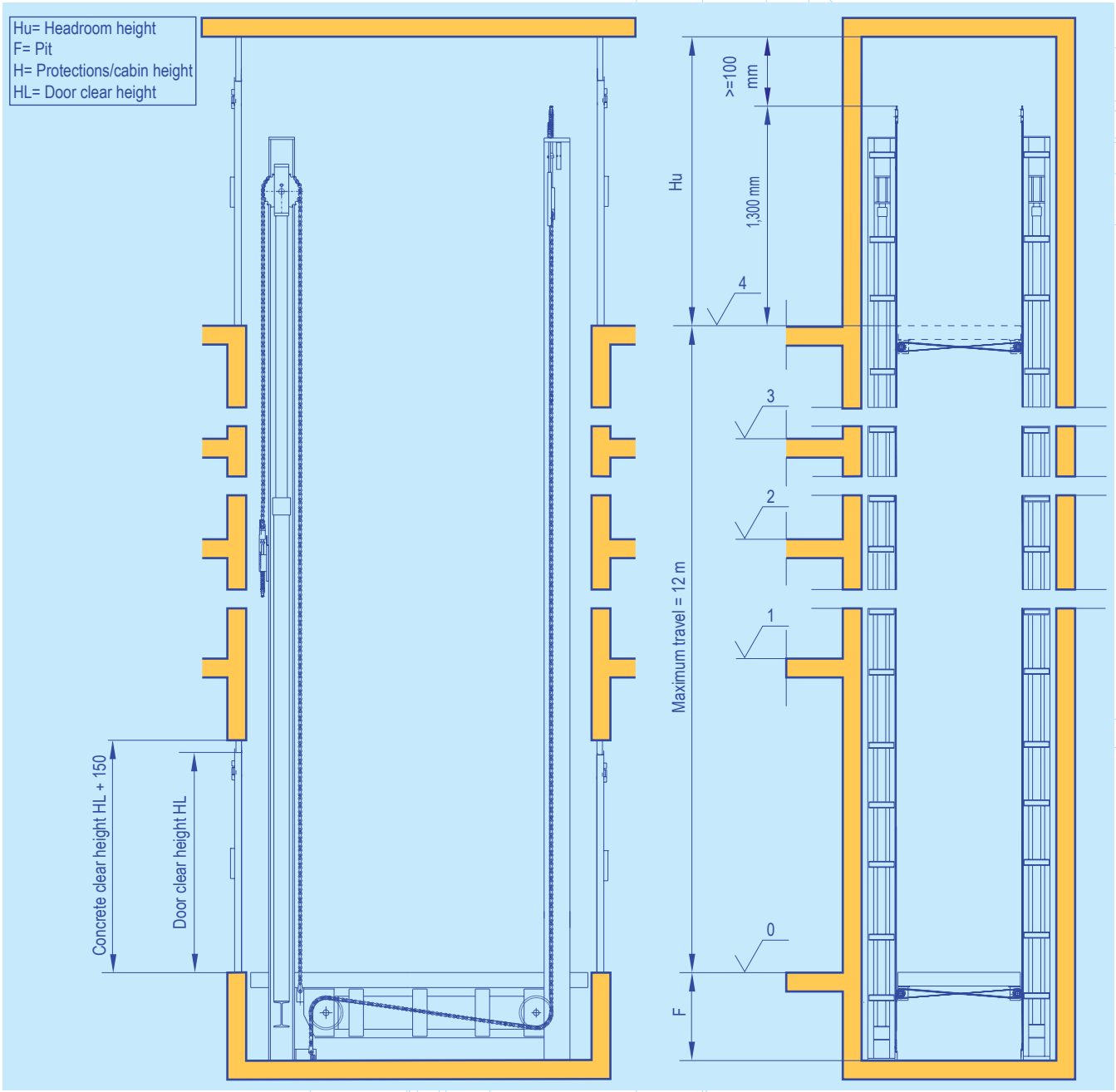
Layout 5 -6, 90° double boarding.
NOTE: Not available layout for cabin.

Dimension	Option	Value (mm)
Width (A)	Without walls/cabin	2,800 ÷ 5,500
	With walls/cabin	3,000 ÷ 5,500
Depth (B)		800 ÷ 2,500
Distance to the wall in lateral guiding columns (DC)	Without walls/cabin	300 ÷ 500
	With walls/cabin	380 ÷ 580
Distance to the wall in the side closings (DL)	Without protections	25 ÷ 35
	With handrails	≥ 100
	With walls/cabin	≥ 100
Usable load area reduction (AP)	Without handrails	0
	With handrails	30
	With walls/cabin	40

4.6. EH/4C model.

Model	Available loads (Kg)
EH/4C	**4,000, 5,000, 6,000, 8,000 and 10,000**

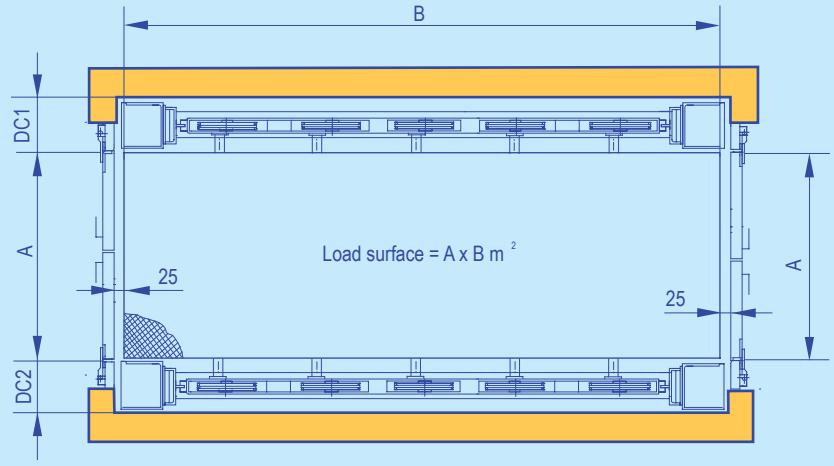
Minimun shaft dimension for EH/4C model. Elevation view.



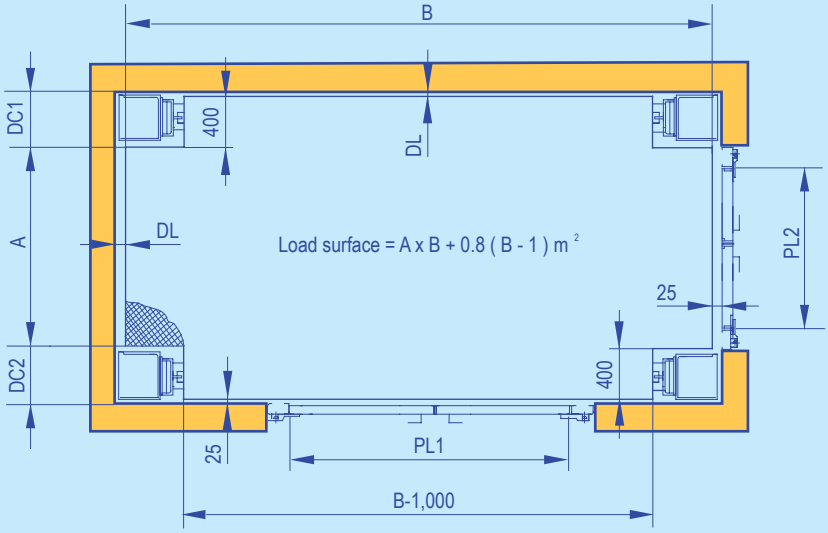
Dimension	Option	Value (mm)
Headroom height (Hu)	Without walls/cabin	Take the maximum within: ● 2,000 ● HL + 250
	With walls	H + 250
Pit (F)		700 ÷ 1,700
Walls/cabin height (H)		2.000 ÷ 2,500
Clear door height (HL)	Without walls	2.000 ÷ 2,950
	With walls	2.000 ÷ 2,400 (HL ≤ H - 100)

NOTE: For EH/4C model the with walls option is only available with 90º boarding layouts.

Minimun shaft dimension for EH/4C model. Plan view.



Surface type 1 with 180º boardings (2 available boardings)
NOTE: With wall option is not available for this layout.



Surface type 2 with 90º boardings (4 available boardings)

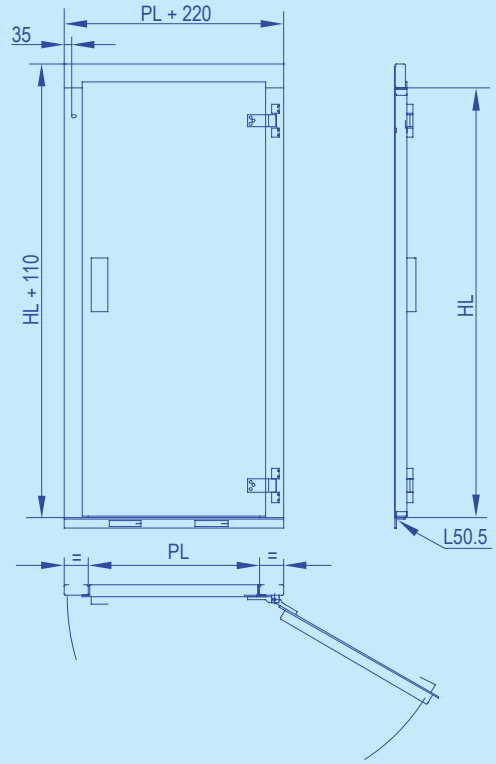
Dimension	Option	Value (mm)
Width (A)		1,800 ÷ 4,000
Depth (B):	4,000 Kg	2,300 ÷ 9,000
	5,000 Kg	2,600 ÷ 9,000
	6,000 Kg	2,800 ÷ 9,000
	8,000 Kg	3,300 ÷ 9,000
	10,000 kg	3,600 ÷ 9,000
Distance to the wall in lateral guiding columns (DC)		425 ÷ 570
Distance to the wall in the side closings (DL)	Without protections	25 ÷ 35
	With handrails	≥ 100
	With walls	≥ 100

NOTES: For EH/4C model the maximum surface is limited to 25 m².
For EH/4C model the with walls option is only available with 90º boarding layouts.

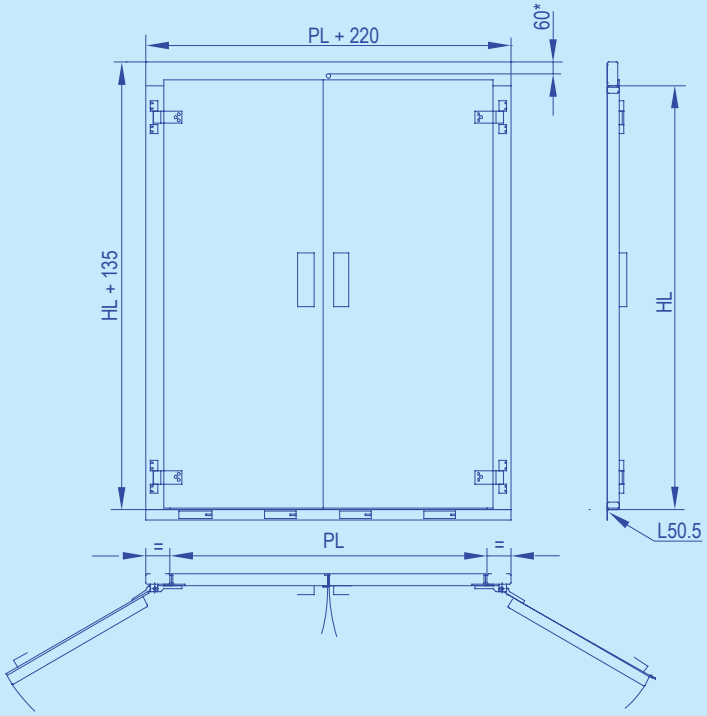
4.7. Single and double manual hinged swing doors.

- Manufactured by Hidral.
- E120 flameproof doors according to EN 81-58.
- Without vision panel.
- Electric lock.

* Emergence door unlocking device height

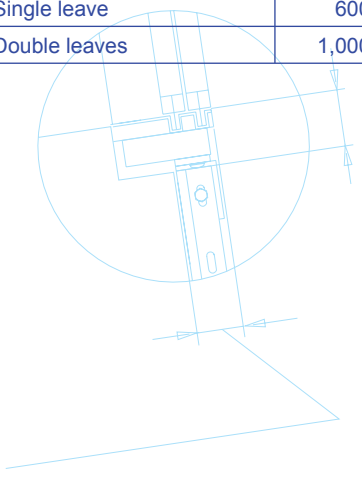


Model of a leaf (right hand opening).



Double swing-hinged leaves model.

Dimension	Option	Value (mm)
Clear door height (HL)		2,000 ÷ 2,950
Door width (PL)	Single leave	600 ÷ 1,200
	Double leaves	1,000 ÷ 3,000



Notes



HIDRAL, S. A. **GOODS LIFT EH** TECHNICAL SPECIFICATIONS

Version 05 (16/05/11)
Published in May, 2011

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Edited by **InterManual Comunicación Técnica**
Technical Publications
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