



**TECHNICAL
SPECIFICATIONS**

**PLATFORM STAIR-LIFT
FOR WHEELCHAIR
MODELS SH, SHV**

APPLICACIÓN To overcome the obstacles to the handicapped with wheelchair so that they can access buildings. The user is allowed to control the lift without any assistance, except to fold down the platform which is done manually.

It is adaptable to a wide range of locations, fully integrating into its environment.

STANDARDS The lift fully complies with Machine Directive 98/37/CE, allowing its commercialisation in any country of the European Community.

CHARACTERISTICS

MODEL SH

<i>LOAD</i>	150 Kg
<i>SPEED</i>	0.1 m/s
<i>POWER SUPPLY</i>	230 V ± 5% Single-phase, 50/60 Hz. 230 V ± 5% Three-phase, 50/60 Hz. 400 V ± 5% Three-phase, 50/60 Hz. Other voltages available.
<i>MOTOR POWER</i>	0.37 kW (400 V 3 ~ / 1.2 A) 0.55 kW (230 V 1~ / 6.0 A)
<i>TRAJECTORY</i>	Inclined and straight motion, parallel to the staircase slope line Slope angle from a horizontal line : 20° to 45 °
<i>DIMENSIONS</i>	Usable space of platform = 900 x 760
<i>TRAVEL</i>	Up to 8 meters.
TYPE OF DRIVE	Hydraulic, indirect acting lift with 2:1 ratio
MODEL SH	
<i>CYLINDER</i>	Single acting cylinder with internal catch, with safety valve if pipe is broken connected directly to the cylinder. Plunger formed by a solid, chromium - plated piston rod. Steel Fe 510 C. Jacket formed by a tube of the appropriate thickness. DIN 2391 tube with BK finish, St-52 steel.
<i>POWER UNIT</i>	Hydraulic unit with external motor, gear pump and lower electrovalve. It includes non-return valve, pressure relief valve and manual lowering button.
<i>PIPPING</i>	Rigid , tubes as per DIN 2391, material steel St-37.4 (NBK) - 3 m standard - Flexible , hydraulic hose with double metallic mesh and couplings fitted - optional on demand -
<i>ROPES</i>	Suspension by 1, Ø6mm cable, format 6x37+1 Break force 20.3 KN (1770 N/mm ²) Safety cable with the same features

WORKING MODEL SH	<p>Manual folding platform, with counterweight compression springs.</p> <p>Constant pressure command push buttons; when button is released the platform stops and, when pushed again, travel direction is reversed.</p> <p>Call buttons in both service levels.</p> <p>The platform may travel folded if there is enough space for travel with the protection bars up.</p> <p>Automatic protection bars triggered when push button is pressed; they are raised manually.</p> <p>Platform motion only occurs with bars in a horizontal position.</p>
SAFETY DEVICES MODEL SH	<p>All moving parts in vehicle and guide rail are enclosed by protective covers so fingers or other thing can not be caught in guides or mechanisms of vehicle.</p> <p>The platform stair-lift is fitted with safety arms and ramps which are placed before moving so that it avoids falling from the platform. Also the platform is fitted with hand rail and the floor is finished in non-slip contoured rubber as a additional measures again danger of falling.</p> <p>The safety devices are:</p> <ul style="list-style-type: none">- Safety rope- Obstacle safety device- Automatic re-levelling (electrical anti-creep system)- Safety valve againts pipe breaking connected directly to the cylinder
<i>SAFETY ROPE</i>	<p>Should the traction rope fails the vehicle is hanging by the safety rope.</p> <p>The platform stops and remains out of order when a safety switch is operated by the safety rope.</p>
<i>OBSTACLE SAFETY DEVICE</i>	<p>A safety plate fitted to the base of the vehicle stops it should there be any obstruction to the platform; if the control buttons is then pressed, the platform will move in the opposite direction avoiding the obstacle.</p>
<i>AUTOMATIC RE-LEVELLING</i>	<p>The lift has got a switches system which place the platform at right level when it lowers because of oil leakes or change of oil density.</p>
<i>SAFETY VALVE AGAINTS PIPE BREAKING</i>	<p>In case of a breakage in the piping which links the power unit and the cylinder, the cylinder itself is equipped with a safety valve which blocks the leakage of oil from the cylinder when the descent flow increases above a value.</p>
OPCIONAL CHARACTERISTICS MODEL SH	<ul style="list-style-type: none">- Entrances at 180° or 90°, depending on avalaible space- Fixing of guide rail assembly to wall or steps (with stands), depending on type of wall- Single phase or 3-phase power supply- Water proof (water proof electrics, galvanized structural part and polyester paint)- Remote control- Flexible hose- Non-standard colour (consult us avalaible colour)

FINISH

Guide rails assembly, structures and covers in baked enamel paint.
Light-grey as standard colour.
Platform floor in black contoured rubber, edges covered by rubber and fabric.
Safety arms and hand rail in stainless steel.

INSTALLATION

MODEL SH

FIXING

THE GUIDE RAILS

Wall fixings – standard -

Clamps are provided to fix rails set to a wall on the sides of the staircase; the wall must be made of concrete or solid brick for a correct installation.

In the case of walls made of hollow bricks there will have to be built-in metallic sections to allow the guide rails to be soldered. If the wall is accessible from the other side a wall-passer can be used.

Stair fixings - optional-

Pedestals are supplied to fix to the steps with anchorages, similarly an appropriate type of mounting will have to be found for the base of the pedestals if the material the steps are made of will not allow the anchorages to be securely fixed (built-in metal section for soldering, filleted rods embedded in the stairs, etc.)

The forces on the guide rails supports are specified in the assembly instructions in both cases.

HYDRAULIC INSTALLATION

All the necessary piping and couplings are supplied to carry out hydraulic installation. In the case of rigid tubing, this is maleable enough to form any necessary bends.

ELECTRIC INSTALLATION

The elevator is supplied with the electrical parts already fitted, that is to say, the vehicle controls, the limit switches and the series of safety contacts are connected to a wiring board. The connection to the control board is by a electric hose.

It is anticipated that the landing button panels will be built in to the wall as they have to be located near the access to the stairs so that they are readily available to the user.

Wiring will be make in accordance with the Low Tension Directive or with the harmanized standard EN 60204-1.

MACHINE ROOM

It is envisaged that the hydraulic power unit shall be positioned no more than 10 metres from where oil enters the cylinder; consult us if a greater distance is required.

Dimensions of the power unit: 350 x 250 x 510 (height)

Dimensions of the electric control board: 300 x 300 x 150 (depth)

SUPPLY

GUIDE RAILS ASSEMBLY

These are supplied as a pre-assembled unit: guide rails, cylinder, pulley assembly, carriage - to which the vehicle is screwed - suspension elements, limit switches, pre-assembled electrical installation and protective cover.

For travels greater than 4,3 metres the guide rails assembly are supplied in 2 sections.

PEDESTALS

Where it is expected that the guide rails assembly will be fixed to the stairs the pedestals to which they will be attached are supplied.

PLATFORM The entire vehicle chassis is supplied along with the hinged platform already assembled and with the electrical connections pre-fitted. Similarly the operating systems of the protection arms and access ramps are tested and adjusted in the factory before being despatched to the customer.

HYDRAULIC POWER UNIT Consisting of the equipment described in previous paragraphs, this is supplied after testing its operation and ensuring that its components are without oil leaks.

ACCESSORIES BOX Includes the electric control panel, electric hose, landing buttons panels, hydraulic material, anchorages, protection arms and others.

DATA COLLECTION It is important that all the stair measurements are correctly taken so that no problem exists at the moment of assembly as the guide rails assembly are made for each individual staircase and are difficult to adjust later.

Figure 1 shows how the measurements should be taken, the layout of the guide rails assembly on the right and left hand side and the minimum spaces required to be able to install the elevator.

Figures 2 and 3 show the layouts of the elevator for various entrance and fixing options.

**CHARACTERISTICS
MODEL SHV**

LOAD 200 Kg

SPEED 0.1 m/s

POWER SUPPLY 230 V ± 5% Single-phase, 50/60 Hz.
230 V ± 5% Three-phase, 50/60 Hz.
400 V ± 5% Three-phase, 50/60 Hz.
Other voltages available.

MOTOR POWER 0.37 kW (400 V 3 ~ / 1.2 A)
0.55 kW (230 V 1~ / 6.0 A)

DIMENSIONS Usable space of platform = 1050 x 760

TRAVEL Vertical raising up to 1.8 meters. This elevator is designed to over go small high ground in the entrances to public or flat buildings.

**TYPE OF DRIVE
MODEL SHV** Hydraulic, direct acting lift with 1:1 ratio

CYLINDER Single acting cylinder with internal catch, with safety valve if pipe is broken connected directly to the cylinder.

Plunger formed by a solid, chromium - plated piston rod. Steel Fe 510 C.

Jacket formed by a tube of the appropriate thickness. DIN 2391 tube with BK finish, St-52 steel.

POWER UNIT Hydraulic unit with external motor, gear pump and lower electrovalve. It includes non-return valve, pressure relief valve and manual lowering button.

PIPPING **Rigid**, tubes as per DIN 2391, material steel St-37.4 (NBK) - 3 m standard -
Flexible, hydraulic hose with double metallic mesh and couplings fitted - optional on demand -

**WORKING
MODEL SHV**

Constant pressure command push buttons; when button is released the platform stops and, when pushed again, travel direction is reversed.
Call buttons in both service levels.
Automatic protection bars triggered when push button is pressed; they are raised manually.
Platform motion only occurs with bars in a horizontal position.

**SAFETY DEVICES
MODEL SHV**

If travel exceeds 0.5 m a landing door has to be provided in the upper level to avoid the falling risk when the platform is in lower level; this landing door or barrier will be provided with a electric contact avoiding moving of platform when the door is open.

All moving parts in vehicle and guide rails assembly are enclosed by protective covers so fingers or other thing can not be caught in guides or mechanisms of vehicle.

The platform is fitted with safety arms and ramps which are placed before moving so that it avoids falling from the platform. Also the platform is fitted with hand rail and the floor is finished in non-slip contoured rubber as a additional measures again danger of falling.

The control board and all operation controls function at delay current to 24 V as a electrical safety measure.

The safety devices are:

- Obstacle safety device
- Automatic re-levelling (electrical anti-creep system)
- Safety valve againsts pipe breaking connected directly to the cylinder

*OBSTACLE
SAFETY DEVICE*

A safety plate fitted to the base of the vehicle stops it should there be any obstruction to the Platform when it goes down; if the control buttons is then pressed, the platform will move in the opposite direction avoiding the obstacle.

*AUTOMATIC
RE-LEVELLING*

The lift has got a switches system which place the platform at right level when it lowers because of oil leaks or change of oil density.

*SAFETY VALVE
AGAINTS PIPE
BREAKING*

In case of a breakage in the piping which links the power unit and the cylinder, the cylinder itself is equipped with a safety valve which blocks the leakage of oil from the cylinder when the descent flow increases above a value.

**OPCIONAL
CHARACTERISTICS
MODEL SHV**

- Entrances at 180° or 90°, depending on available space
- Single phase or 3-phase power supply - Water proof (water proof electrics, galvanized structural part and polyester paint)
- Remote control
- Flexible hose
- Non-standard colour (consult us available colour)

INSTALLATION

MODEL SHV

FIXING THE GUIDE RAILS

Clamps are provided to fix rails set to a wall on the sides of the staircase; the wall must be made of concrete or solid brick for a correct installation.

In the case of walls made of hollow bricks there will have to be built-in metallic sections to allow the guide rails to be soldered. If the wall is accessible from the other side a wall-passer can be used.

The forces on the guide rails supports are specified in the assembly instructions.

HYDRAULIC INSTALLATION

All the necessary piping and couplings are supplied to carry out hydraulic installation. In the case of rigid tubing, this is maleable enough to form any necessary bends.

ELECTRIC INSTALLATION

The elevator is supplied with the electrical parts already fitted, that is to say, the vehicle controls, the limit switches and the series of safety contacts are connected to a wiring board. The connection to the control board is by a electric hose.

It is anticipated that the landing button panels will be built in to the wall as they have to be located near the access to the stairs so that they are readily available to the user.

Wiring will be make in accordance with the Low Tension Directive or with the harmonized standard EN 60204-1.

MACHINE ROOM

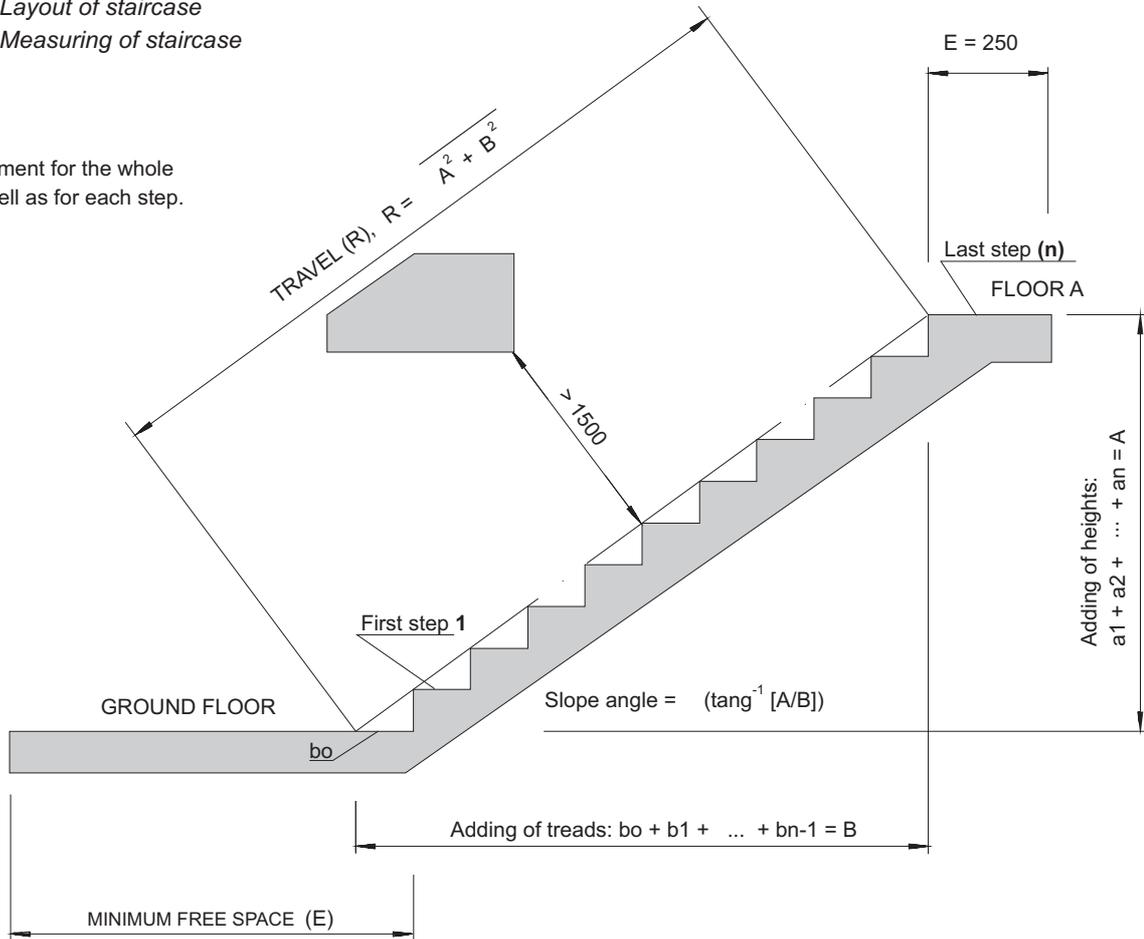
It is envisaged that the hydraulic power unit shall be positioned no more than 10 metres from where oil enters the cylinder; consult us if a greater distance is required.

Dimensions of the power unit: 350 x 250 x 510 (height)

Dimensions of the electric control board: 300 x 300 x 150 (depth)

Figure 1. Minimum free space
 Layout of staircase
 Measuring of staircase

Take measurement for the whole staircase as well as for each step.



MINIMUM WIDTH OF STAIRCASE

Entrances 180°, $E = 2150 + b$

Entrances at 90°, greater of :

$$E = 1000 + b$$

$$E = \frac{400}{\text{tang}} - \frac{200}{\text{sen}} + 400 \text{ sen} + 500 + b$$

Example:

= 22° $E = 1106 + b$

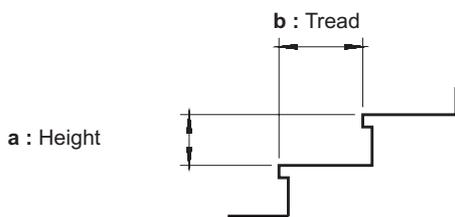
= 25° $E = 1053 + b$

= 28° $E = 1014 + b$

= 31° $E = 983 + b (< 1000 + b)$ $E = 1000 + b$

	Fixing to wall	Fixing to steps
Entrance at 180°	1000	1070
Entrance at 90°	1200	1270

ACCURATE MEASUREMENT OF STEPS



The tread of steps must be measured from nose to nose of each step

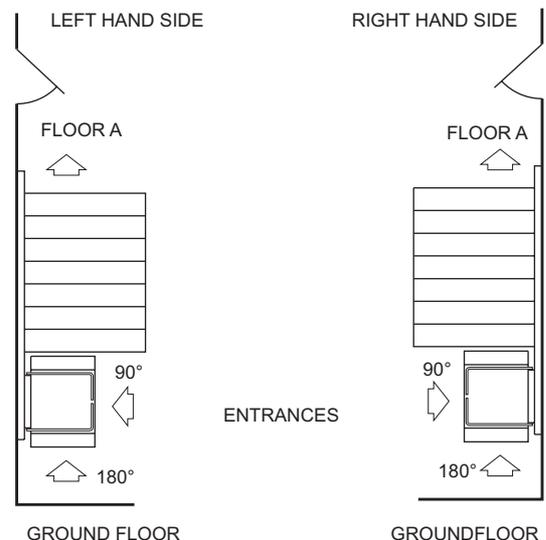
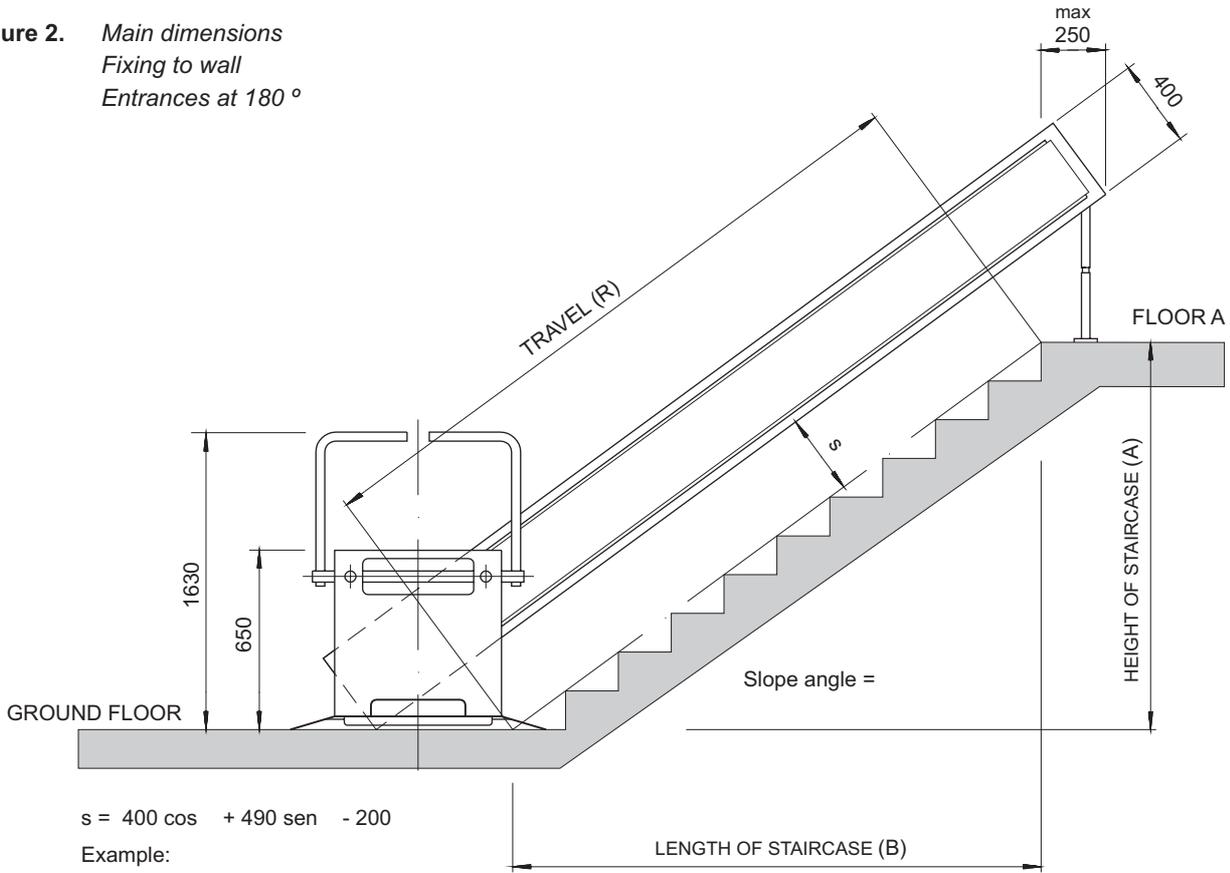


Figure 2. Main dimensions
 Fixing to wall
 Entrances at 180°

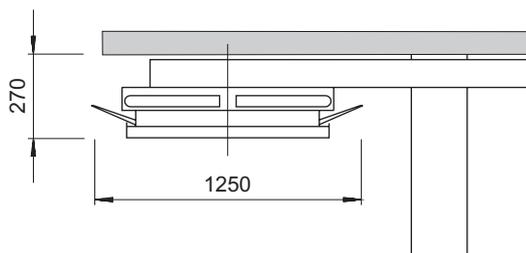
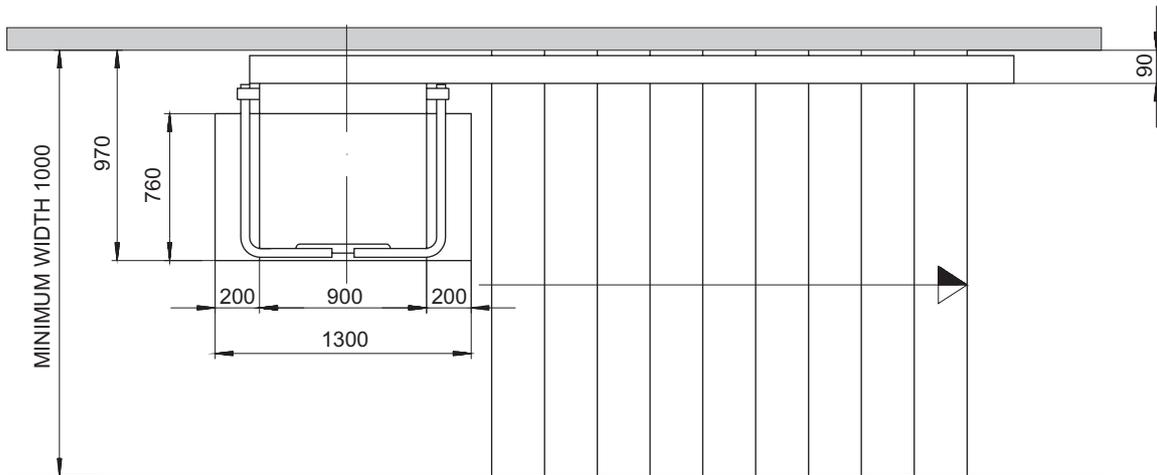


$$s = 400 \cos + 490 \sin - 200$$

Example:

$$= 22^\circ \quad s = 354 ; \quad = 25^\circ \quad s = 369$$

$$= 28^\circ \quad s = 383 ; \quad = 31^\circ \quad s = 395 ; \quad = 35^\circ \quad s = 409$$



PLATFORM FOLDED UP

Figure 3. Variables, main dimensions

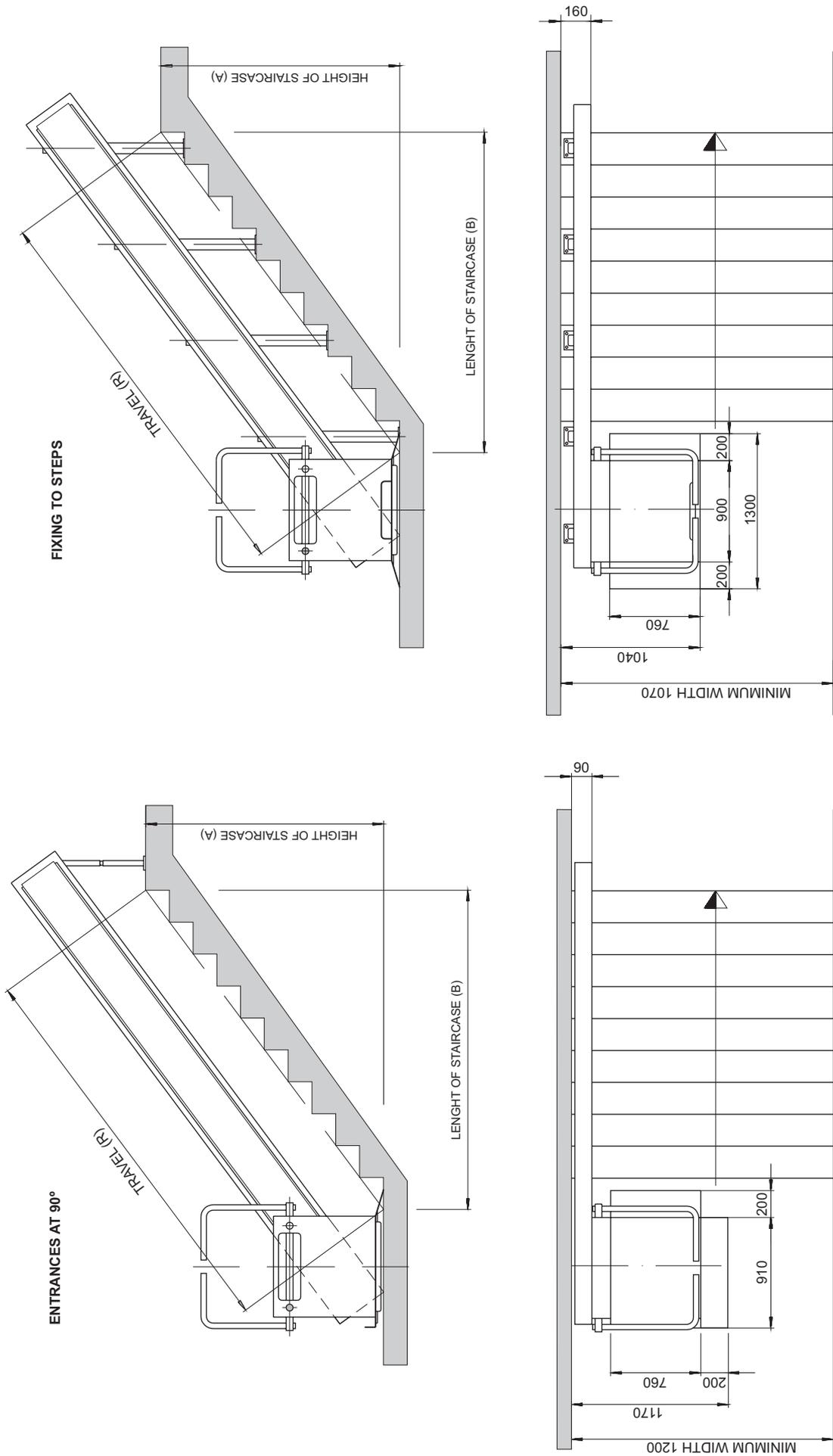


Figure 4. Vertical wheelchair platform.
 Layout; main dimensions.

