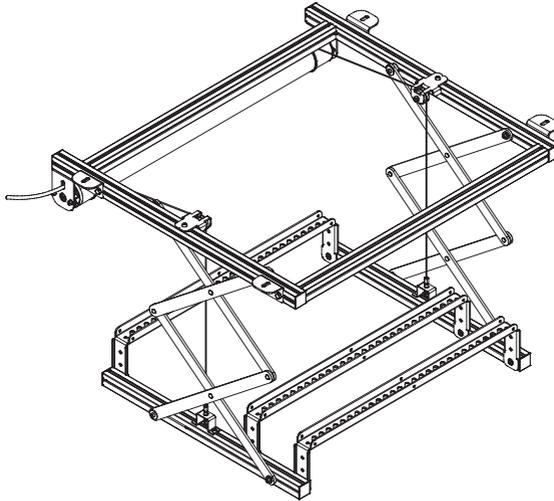


INSTALLATION AND MAINTANANCE MANUAL

PROJECTOR LIFT

PPL 2040



INDEX

In order to guarantee the best performances of your lift, please
READ CAREFULLY this installation manual

- 1.0 GENERAL INFORMATION
 - 1.1 Projector lift description
 - 1.2 Manufacturer's rights
 - 1.3 Contents and map of this manual
 - 1.4 Aim, contents and to whom it may concern this manual
 - 1.5 Symbols legend
 - 1.6 Technical assistance
 - 1.7 Warranty – General information
 - 1.8 Technical labels and markings used on the projector lift
 - 1.9 Correct use of the projector lift
 - 1.10 Improper use of the projector lift

- 2.0 GENERAL DESCRIPTION OF THE PROJECTOR LIFT
 - 2.1 General description
 - 2.2 Dimensions of closed projector lift
 - 2.3 Dimensions of open projector lift
 - 2.4 Mechanical specifications
 - 2.5 Motor specifications

- 3.0 SAFETY STANDARDS AND RESIDUAL RISKS
 - 3.1 Safety standards
 - 3.2 Description of safety devices
 - 3.3 Residual risks
 - 3.4 Noise generated by the projector lift

- 4.0 INSTALLATION
 - 4.1 Packaging contents
 - 4.2 Installation "L" form metal ceiling mounting brackets
 - 4.3 Ceiling mounting of the projector lift
 - 4.4 Mounting of the videoprojector
 - 4.5 Electrical connection
 - 4.6 End-stops settings
 - 4.7 Use of components for fixing the false ceiling tile

- 5.0 OUT OF ORDER
 - 5.1 Waste of projector lift

1.0 GENERAL INFORMATION

1.1 PROJECTOR LIFT DESCRIPTION

The projector lifts PPL 2040 is a motorized lift for videoprojectors. Therefore it can be included in the definition of machinery following the Directive 2006/42/CE and modifications.

The present installation manual, the conformity certification and the technical labels on the lift are conform to this directive.

1.2 MANUFACTURER'S RIGHTS

Copyrights of this installation manual are exclusively of:

VOGEL'S PRODUCTS BV
Hondsruglaan 93
5628 DB Eindhoven
The Netherlands

Email: salesprof@vogels.com
www.vogels.com

1.3 CONTENTS AND MAP OF THIS MANUAL

This installation manual contains the description of "projector lift" as it is manufactured by the manufacturer. This manual contains information about installation, use and maintenance of the lift.

It also contains the information about the technical features and safe use of the product.

The installation manual is composed from:

- 1.0 General information
- 2.0 Projector lift description
- 3.0 Safety and residual risks
- 4.0 Installation
- 5.0 Out of order
- 6.0 Check register

1.4 AIM, CONTENTS AND TO WHOM IT MAY CONCERN THIS MANUAL

This installation manual is addressed to:

- end user of the product, owner, people in charge of the product;
- people in charge of disinstalling and moving;
- installers;
- users;
- maintenance technicians;
- people in charge for dismantling and wasting.

The information in this installation manual are aimed to indicate how to use the lift and its technical features, how to move, install, set and use the lift. Moreover, it contains the instructions for personnel that will be in charge for maintenance and safety.

1.5 SYMBOLS LEGEND

In this installation manual, the following symbols will be used:



IMPORTANT

This symbol is used to indicate recommendations, rules and information that every person has to take care during the life cycle of the product (installation, use, maintenance, waste, move).



DANGER

This symbol is used in the safety warnings of this installation manual, in order to indicate behaviours that are absolutely forbidden during the use of the lift, during maintenance operations or when there are potential dangerous situations that can cause serious injury or death.



WARNING

This symbol is used in the safety warnings of this installation manual, in order to indicate dangerous situations that in case of negligence, can cause limited injuries or damages. The symbol can also be used to indicate situations that can damage the lift.

1.6 TECHNICAL ASSISTANCE

Manufacturer's customer service is available to support you with technical information about:

- queries concerning this installation manual;
- supply of spare parts;
- maintenance procedures;
- severe repairing;
- possible malfunctions of the product.

In any case, it will be compulsory to quote serial number reported on the product identification label n. 01 and reference page number of this installation manual.

1.7 WARRANTY – GENERAL INFORMATION

For warranty conditions, please refer to law in force within the country where the product is used.

Please note the following issues:

1.7.1 Warranty includes substitution or repair of the faulty part (component or part of the product) excluding installing, dismantling and transport costs of the component or of the entire product.

1.7.2 The purchasing company is obliged to inform in written the manufacturer about the fault within 8 days that the product run faulty. In case of negligence, the warranty is voided.

In any case, the fault or complaint have to be verified by the manufacturer.

1.7.3 Warranty has duration of two years from end user's purchasing date.

1.7.4 Any component or part of the product substituted under warranty is manufacturer's property only.

1.7.5 Warranty do not include:

- Damages caused by transport;
- Damaged parts subject to normal tear and wear due to weather and environment conditions;
- Parts damaged due to insufficient, wrong or non-made maintenance;
- Parts damaged due to misuse, poor, wrong or non-authorized use;
- Parts damaged due to product modification, non-authorized repairing or tampering;
- Parts damaged due to maintenance for alleged faults.

- 1.7.6 Warranty is officially voided in case of:
- Repairing, modifications or components' removing and substitution not previously agreed and authorized by the manufacturer.
 - Improper use from the end user.
 - Lack of checking of the projector lift following the check register on chapter 6.0

For these reasons, we suggest to inform promptly the manufacturer in case of malfunctions or faults of the lift.

1.7.7 The actual installation manual with all its attachments represents the official and only documentation of this product and it has to be archived and used during the entire lifetime of the product.

1.7.8 In case the lift is passed to a third party, it is **COMPULSORY** that the user hands over to the third party this document and to inform the manufacturer of full name and address of the new owner.

1.7.9 The manufacturer reserves the right to modify at any time all the technical documentation and, consequently, the installation manual of the product without obligation of notice to the end users.

1.7.10 This installation manual is exclusively property of the manufacturer. Handling of this installation manual has to be authorized by the manufacturer. It is forbidden to copy, reproducing even partially, drawings and documentation included in this manual.

All violations are punishable by law and subject to compensation for damages under the protection of commercial rights.

It is allowed to keep one copy only for archive purposes.

1.8 PRODUCT IDENTIFICATION LABELS

This lift is identified by product identification labels that indicate its essential technical specifications.

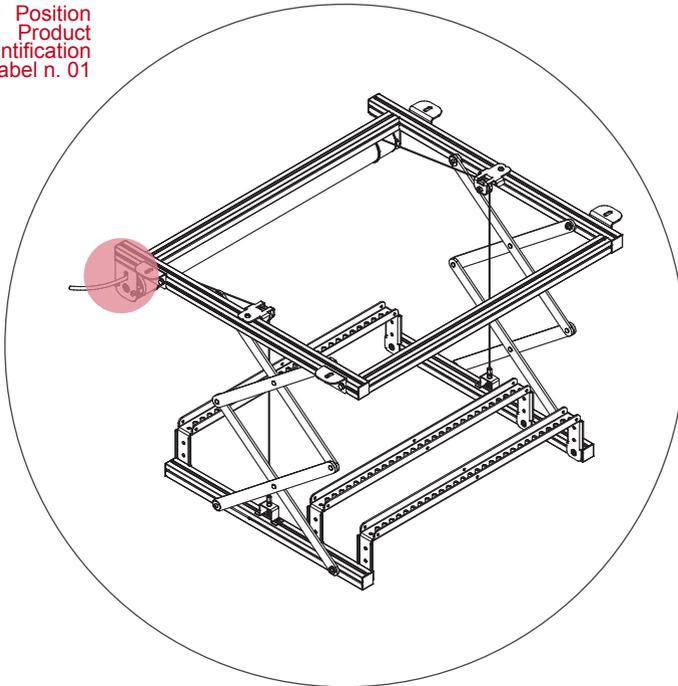
1.8.1 Product identification label n. 01.

This label reports the following information:

- A) Type of lift
- B) Model name of lift
- C) Serial number
- D) Year of manufacturing
- E) Motor power
- F) Operating Frequency
- G) Phases
- H) Power consumption

Vogel's Products BV Hondsruglaan 93 5628 DB Eindhoven		CE	
A		C	
B		D	
E	F	G	H

Position
Product
identification
label n. 01



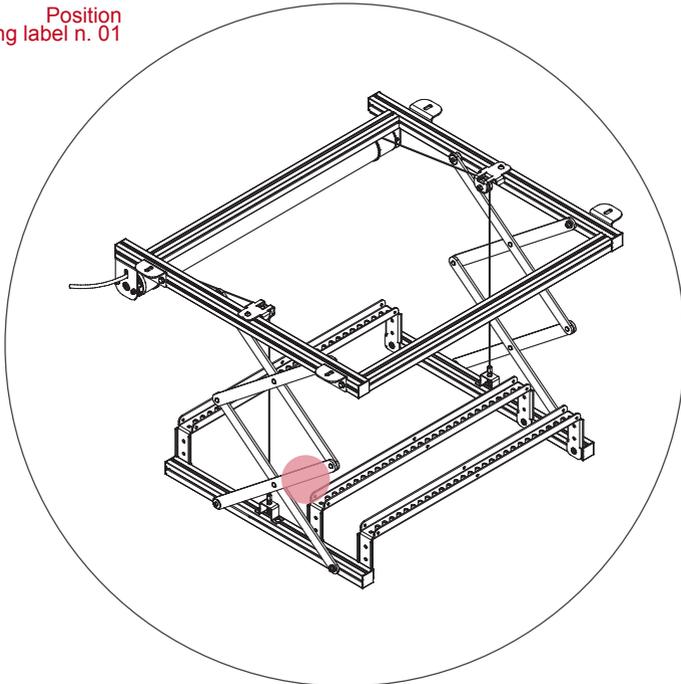
1.8.2 Warning label n. 01

This label reports the following information:

Near the lift scissors, there is danger of cutting and crushing while the lift is operating.



Position
Warning label n. 01



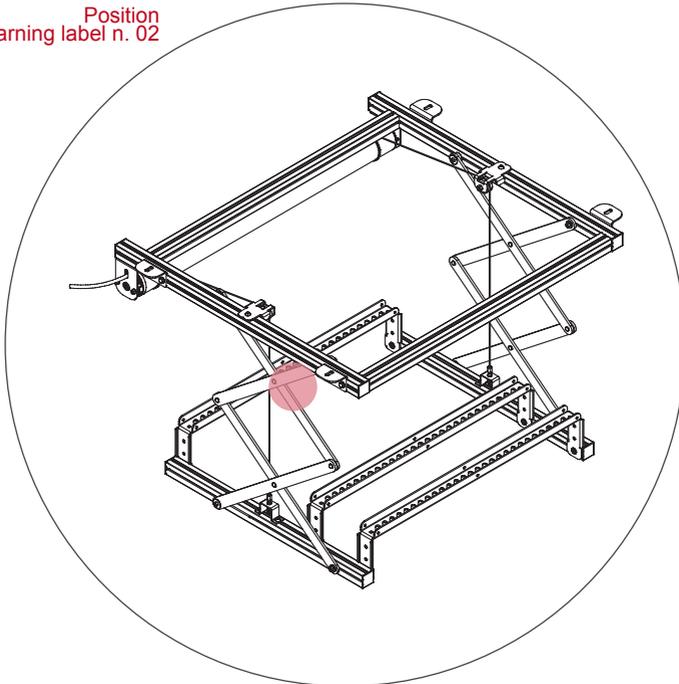
1.8.3 Warning label n. 02

This label reports the following information:

A) Maximum load allowed (projector + tile of the false ceiling)



Position
Warning label n. 02



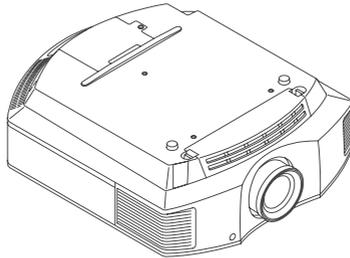
1.9 CORRECT USE OF THE PROJECTOR LIFT

1.9.1 The product is a motorized lift for videoprojectors. It is developed to be installed and used indoor only. After the ceiling installation of the lift and the projector made by professional technicians only, the end user is only authorized to operate the lift up and down.

The lift has to be used from qualified persons only.

With "Qualified persons" we mean people that are instructed and trained by the technician of the installation company about the use of the lift and eventual risks related. Specifically, the end users have to be instructed that the use of this machine has to be done conforming to the indications of this installation manual. The lift has to be used specifically for what it is purposed, that it is indicated inside the installation manual.

These obligations have to be fulfilled also from forwarders, installers, maintenance technicians and people in charge for waste of the product, each of them regarding their own task.



1.10 IMPROPER USE OF THE PROJECTOR LIFT

The lift has been developed for the professional use mentioned above, any other use can cause damages to the product and/or create dangerous situations of which the manufacturer cannot be considered responsible.

Specifically, it is forbidden to:

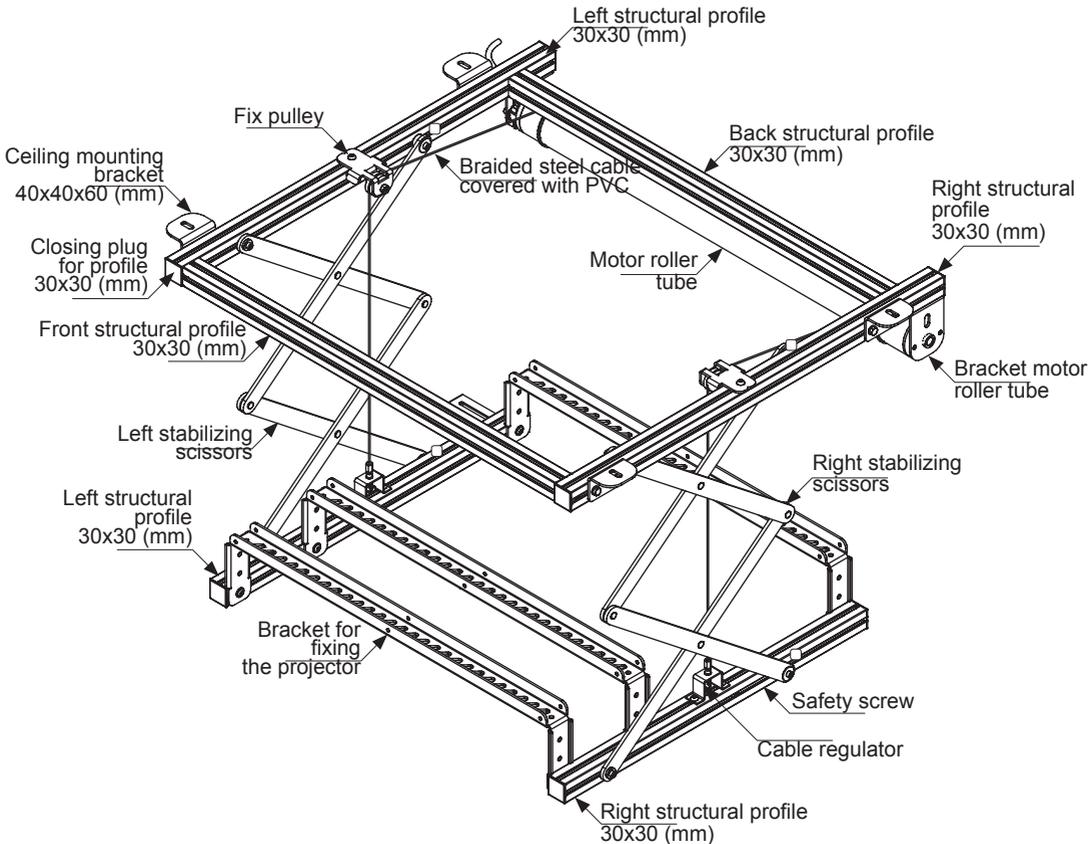
- Connect the lift to a different AC-power than the one specified on the product identification label;
- Use the product to move up and down animals or objects which are different from videoprojectors;
- Lift loads heavier than maximum load specified;
- Use the lift outdoor.



2.0 GENERAL DESCRIPTION OF THE PROJECTOR LIFT

2.1 GENERAL DESCRIPTION

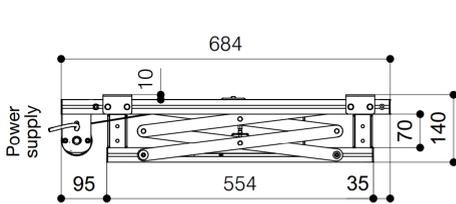
The drawing here under points out the main components of the lift.



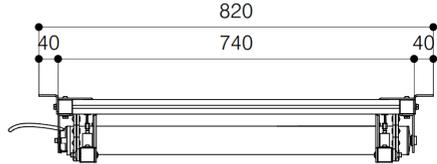
□ Brass guide shoe

2.2 DIMENSIONS OF CLOSED PROJECTOR LIFT

The drawings here under 2.2.a - 2.2.b indicates maximum dimensions of the closed lift.



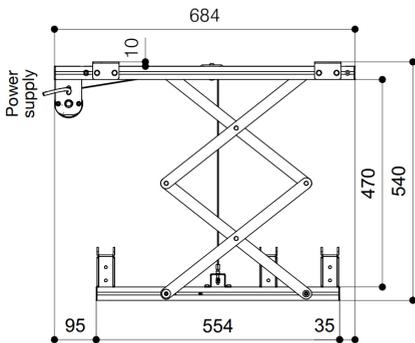
2.2.a - side view



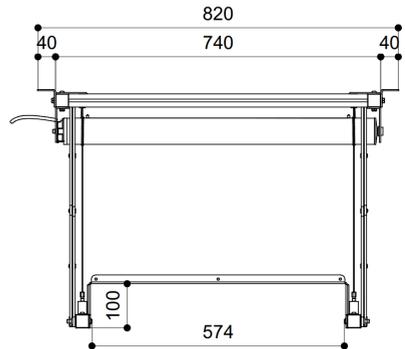
2.2.b - rear view

2.3 MECHANICAL SPECIFICATIONS

The drawings here under 2.3.a - 2.3.b indicate maximum dimensions of the open lift.



2.3.a - side view



2.3.b - rear view

2.4 TECHNICAL SPECIFICATIONS

DIMENSION LIFT CLOSED	684x140x740 (WxHxD)
DIMENSION LIFT OPENED	680x540x740 (WxHxD)
MAXIMUM SIZE FIXING POINTS OF PROJECTOR	520x520 (WxD)
MAXIMUM PROJECTOR DIMENSIONS	570x590 (WxD)
MAXIMUM CAPACITY	30 Kg
NET WEIGHT OF THE PROJECTOR LIFT	13 Kg

2.5 MOTOR SPECIFICATIONS

GAPOSA MOTOR series XQ50P
Tubular motor with mechanical end stops

cod:
XQ5P2017

cod:
XQ5P2016

POWER SUPPLY (V)	230	120
FREQUENCY (Hz)	50	60
LENGTH OF POWER CABLE	2.5 m	2.5 mt/8 ft
SECTION OF POWER CABLE WIRE	4x0.75 mm ²	4x0.75 mm ²
OPERATING TEMPERATURE	-10°C/40°C	14°F/104°F
THERMO-PROTECTION	4 min	-
PROTECTION (IP)	44	44
TORQUE (Nm)	20	20
SPEED (round/min)	17	16
MAXIMUM CONSUMPTION (W)	184	-
ABSORPTION (A)	0,80	1,10
MAXIMUM ROTATIONS OF THE MOTOR	28	28
DUTY RATING		1minON/1minOFF

3.0 SAFETY STANDARDS AND RESIDUAL RISKS

3.1 SAFETY STANDARDS

-The lift has to be used specifically for what it is purposed. The manufacturer cannot be held liable for eventual damages and injuries to people, animals and objects in case of improper or wrong use of the lift itself. (see chapter 1.9).

DISCONNECT THE MAINS FROM THE LIFT BEFORE STARTING ANY MAINTENANCE OR CLEANING OPERATION OF THE PRODUCT. CHECK CAREFULLY THAT THE LIFT IS DISCONNECTED BEFORE ANY OPERATION.



-Do not disassemble any safety device mounted on the product (see chapter 3.2).

-Do not activate the lift if any safety device is dismantled or not properly fixed.

-It is possible to interrupt any operation of the lift, by releasing the button of the supplied up/down switcher.

-In case of failure or malfunction of the lift, do not attempt to carry out repairs. For any repairing, please contact an authorised dealer which is authorised by the manufacturer.



-Take care to do the electric connections as described in chapter 4.5.

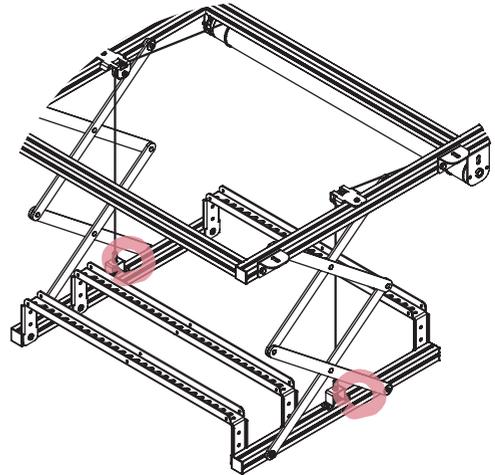
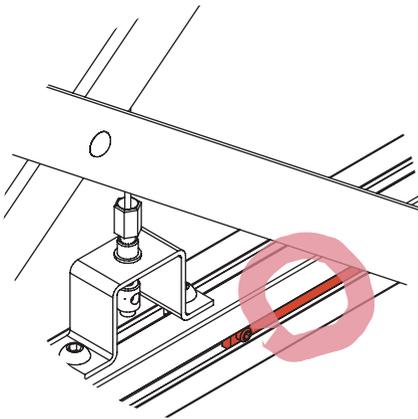
-Take care to carry out maintenance program.

-Do not remove or alter product identification labels affixed on the lift by the manufacturer.

3.2 DESCRIPTION OF SAFETY DEVICES

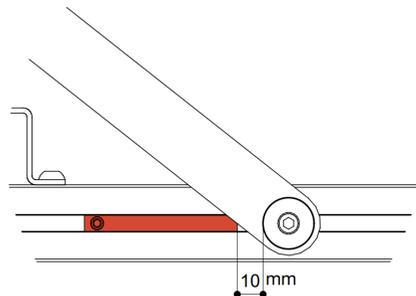
The lift is equipped with two safety screws fixed one onto the bottom left profile and one onto the bottom right profile.

The safety screws are fixed in a specific position so that, in case one or both steel cables break, the stabilizing scissors will stop at the adjusted end stop.



WARNING:

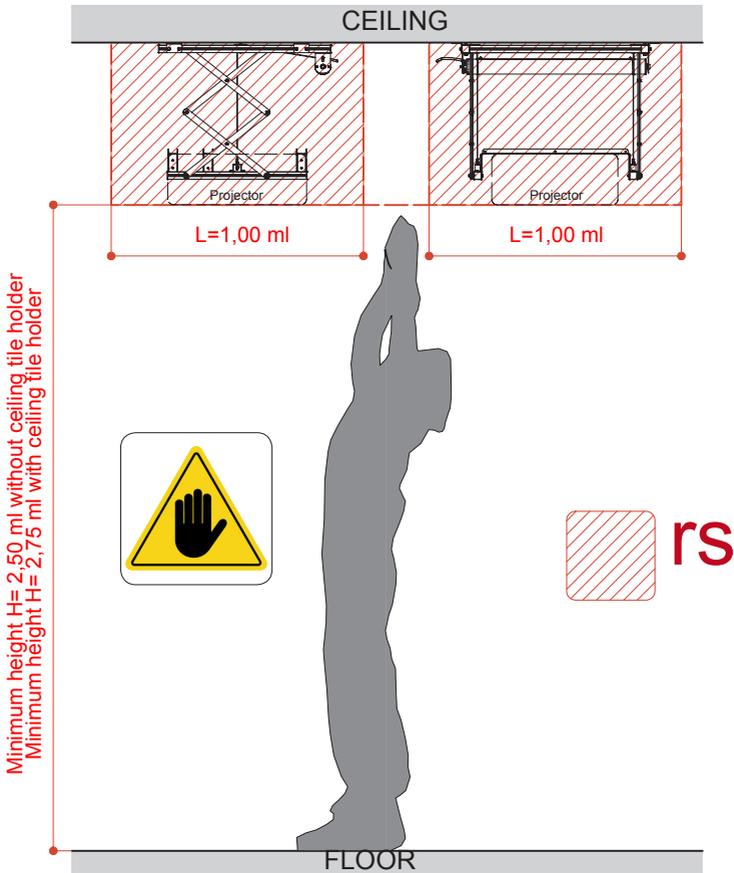
After having set the bottom end stop, **FIX TIGHTLY WITH PROPER ALLEN KEY** both safety screws at a distance of 10 mm. from the brass skater.



3.3 RESIDUAL RISKS (rs)

3.3.1 During the use of the lift, please take care of areas that have residual risks for people or objects, in case of incorrect use or evaluation error or inattention eluding the norms specified in this installation manual and indications on product identification labels.

The drawing here under identifies the residual risk area above the plate for fixing the projector.



3.3.2 Other residual risks

- Do not lift up or down people or animals.
- On the lift have to be installed videoprojectors only.
- Do not mount more load under the lift than the maximum load specified on the warning label n. 02 (see 1.8.3).
- Do not leave free flying cables near the stabilizing scissors in order to avoid cutting or damages on them.

3.3.3 Electrical risks

The lift has been developed according to the safety norms of industrial machines. In any case, all specifications mentioned inside this installation manual and all normal cautions have to be followed when using appliances connected to the mains.

ANY OPERATION THAT INVOLVES PARTS CONNECTED TO THE MAINS AND AT ELECTRICAL COMPONENTS HAVE TO BE CARRIED OUT FROM QUALIFIED PERSONNEL ONLY, ALWAYS FOLLOWING THE PROCEDURE HERE UNDER:

- 1) SWITCH OFF THE MACHINE.
- 2) DISCONNECT THE MAINS BY THE GENERAL SWITCH.
- 3) DISCONNECT THE LIFT FROM THE MAINS.
- 4) MAKE THE NECESSARY MAINTENANCE OPERATIONS.

3.4 NOISE GENERATED BY THE PROJECTOR LIFT

3.4.1 Warnings

The indicated noise values are indication levels and are not necessarily safe operational levels.

Even though there is a relationship between emission levels and exposure levels, this cannot be reliable in order to define if there is need of supplementary precautions.

The factors that define the user's exposure level include the duration of exposure, the features of the room where the lift is installed and other sources of noise.

The maximum exposure levels may vary between countries. All these information will allow the user to better evaluate danger and risk using this product.



The noise of the projector lift is LESS than 70 dBa.

User has to pay attention also to other factors that can influence the noise level of the product. Among the others, two of these factors are: correct installation and careful maintenance of the lift.



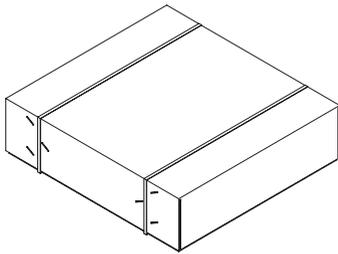
In case of continuous unusual noises and vibrations, the lift is probably damaged. In this case, do not use the lift and proceed with an accurate and complete maintenance.

4.0 INSTALLATION

4.1 PACKAGING CONTENTS

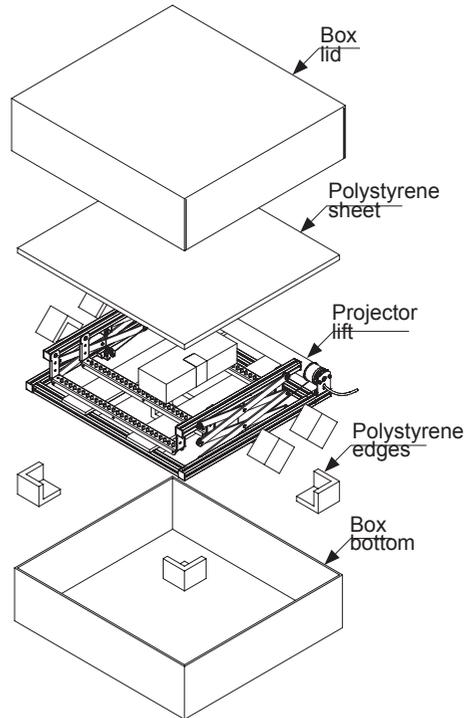
When you open the packaging, please CHECK that it contains ALL the components below. In case one or more components are missing, please refer to the dealer you purchased the product from.

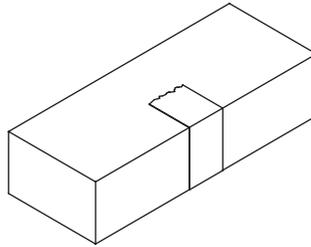
COMPONENTS OF THE PACKAGING CARTON BOX



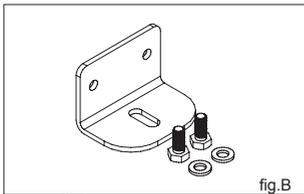
pcs. 01
Packaging carton box

PLEASE
STORE UP
THE ORIGINAL
CARTON BOX

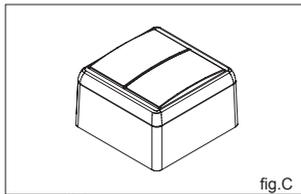




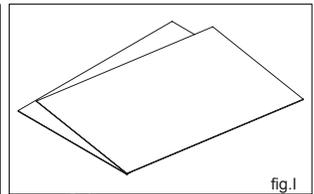
pcs. 01
Small carton box containing all accessories listed here under



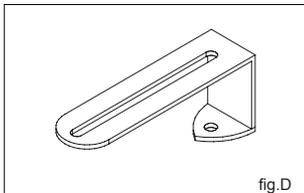
pcs. 04
"L" form metal brackets for ceiling mounting with 8 screws and 8 washers



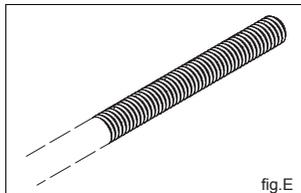
pcs. 01
Up/down switcher



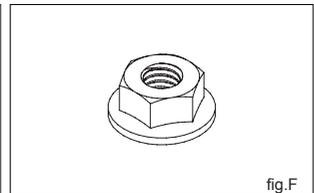
pcs. 01
Installation and maintenance manual



pcs. 04
Sliding brackets to support the false ceiling plate



pcs. 04
Threaded bars M6x25 cm – for fixing the ceiling cover plate



pcs. 12
Nuts M6 for mounting the threaded bars to the sliding brackets

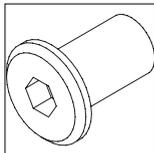


fig.L1

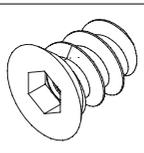


fig.L2

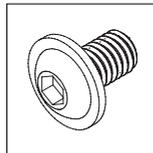


fig.M

pcs. 4
Blind screws M6 ø8 (L1)
Bushes M6 ø10 (L2)

pcs. 4
Hex head screws M6x10

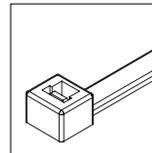


fig.N

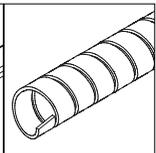


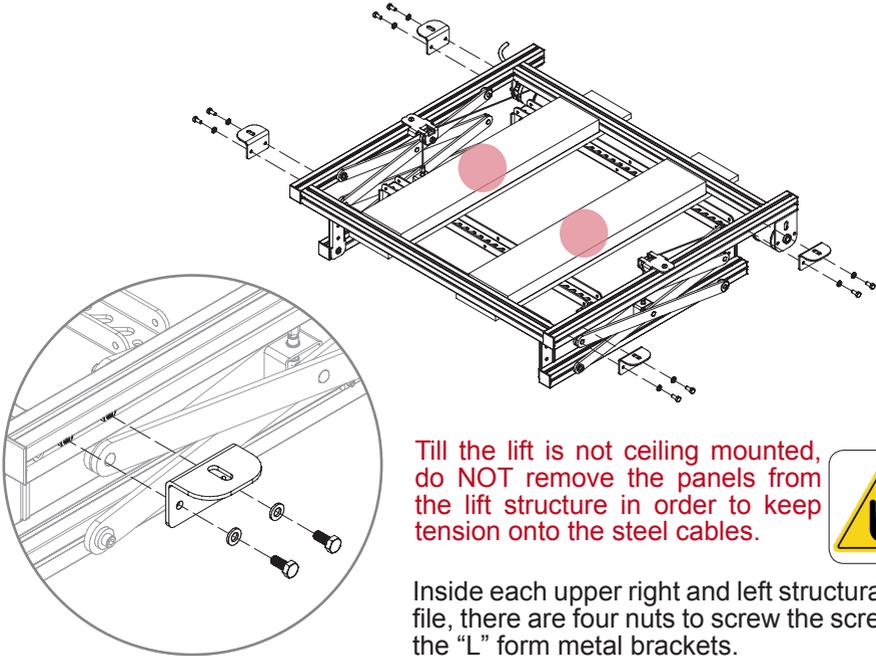
fig.O

pz. 5
Wire clamp

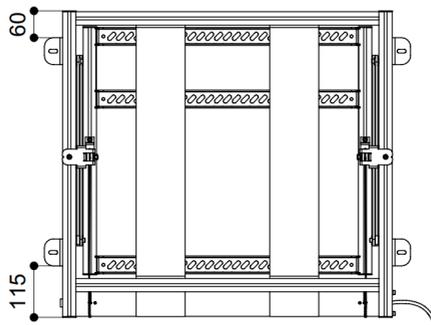
pz. 1
Spiral for power cables
L=50 cm

4.2 INSTALLATION “L” FORM METAL CEILING MOUNTING BRACKETS

Use the screws and washers to mount the “L” form metal brackets to the left and right profile of the lift, as shown below.



The drawing below indicates the recommended position where to mount the “L” form metal brackets. In this installation manual, we suppose an installation to a flat and horizontal ceiling made of concrete.



4.3 CEILING MOUNTING OF THE PROJECTOR LIFT

INSTALLATION OF THIS LIFT HAS TO BE CARRIED OUT FROM AT LEAST TWO QUALIFIED PERSONS.

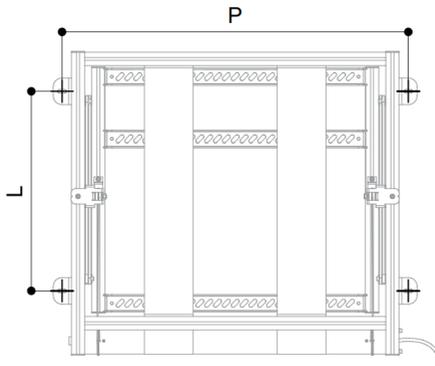


Before proceeding with the ceiling mounting, we advise to mark the fixing points where to fix the ceiling mounting brackets in the most accurate way.

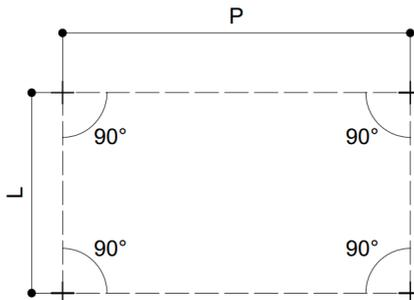
The ceiling has to be clean and flat.

Installing the lift perfectly level is **IMPORTANT** and ensures silent movement of the lift without any shaking, jolting or friction that would compromise the alignment between projector and projection screen.

Measure centre hole of the brackets as accurate as possible.

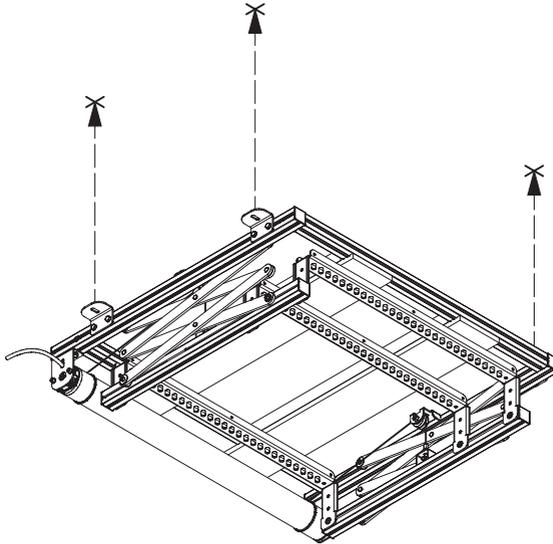


Mark these measures onto the ceiling, in the required position, taking care to keep the squareness between the four points.

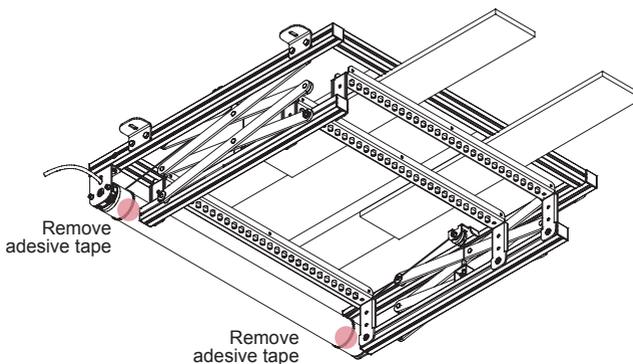


Now drill the holes in the ceiling in order to fix the brackets.

Without removing the panels from the lift structure (in order to keep tension onto the steel cables), lift up the lift (using proper safety devices) aligning the brackets with the drilled holes. Mount the lift to the ceiling using the suitable bolts/screws and wall plugs (NOT SUPPLIED) suitable for the kind of ceiling and the weight that have to be supported (max $\varnothing 8$).

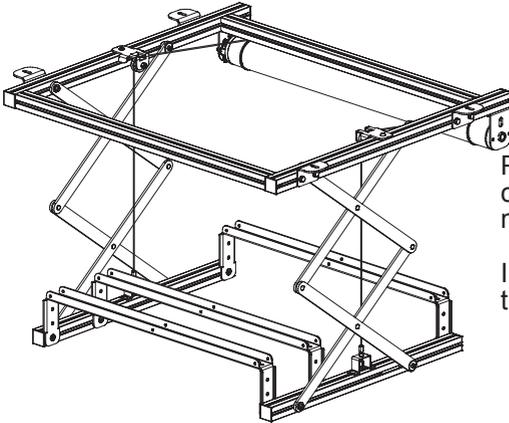


After having fixed the lift to the ceiling, please remove the panels from the lift structure.



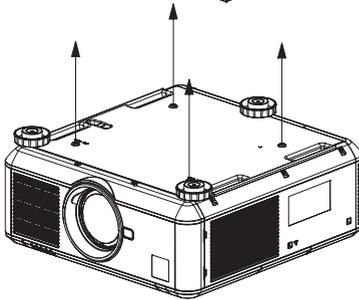
4.4 MOUNTING OF THE VIDEOPROJECTOR

Connect the projector lift to the mains as explained in chapter 4.5 and lower the plate for fixing the projector to the desired height in order to fix the video-projector with suitable screws (not supplied).

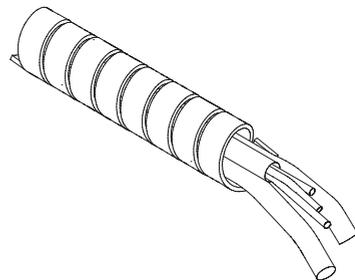


Please take care that the projector's centre of gravity is located in the middle of the plate.

In order to define the ideal position of the projector, please use a spirit level.

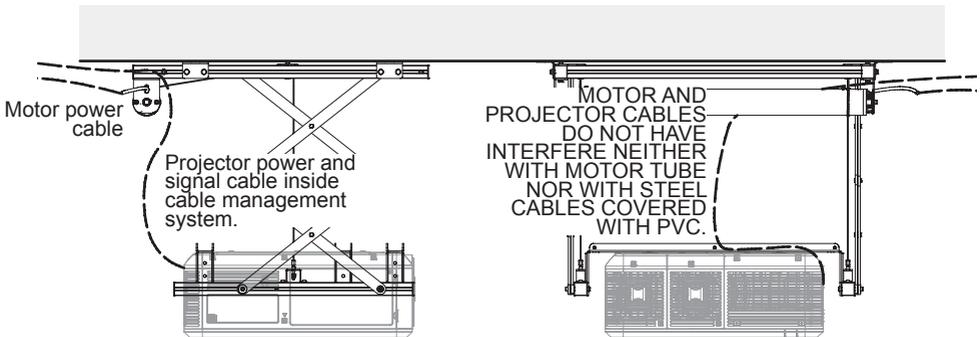
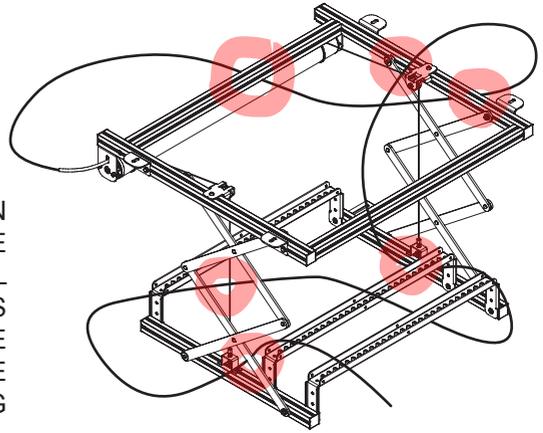


All the power and signal cables have to be stored inside the plastic spiral.
WARNING: Use flexible cable only. Cables that cannot be properly bended are not allowed.
Insert and fix the cables only when the lift is completely in open position.



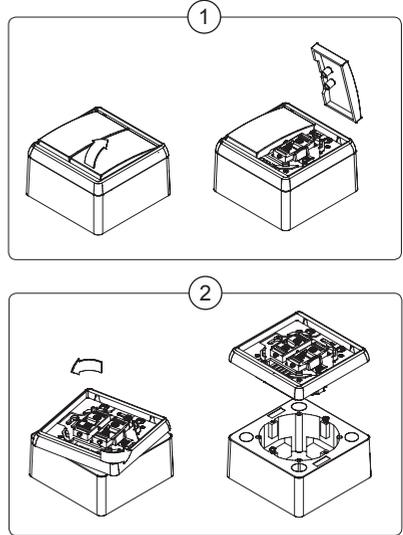
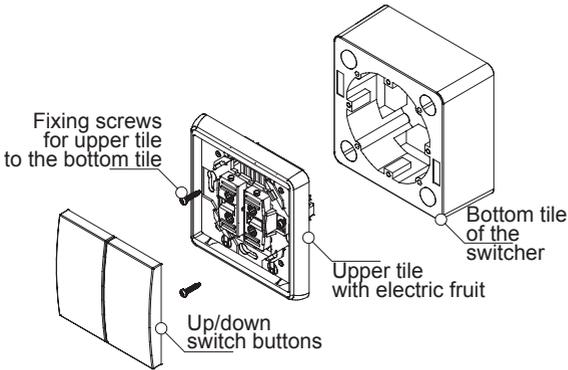


IT IS ABSOLUTELY FORBIDDEN TO POSITION THE POWER CABLE OF THE LIFT IN THE RESIDUAL RISK AREA OF THE LIFT AS SHOWN IN THE DRAWING HERE AT THE RIGHT SIDE. OTHERWISE THE CABLE CAN BE CUT DURING OPERATION OF THE LIFT.



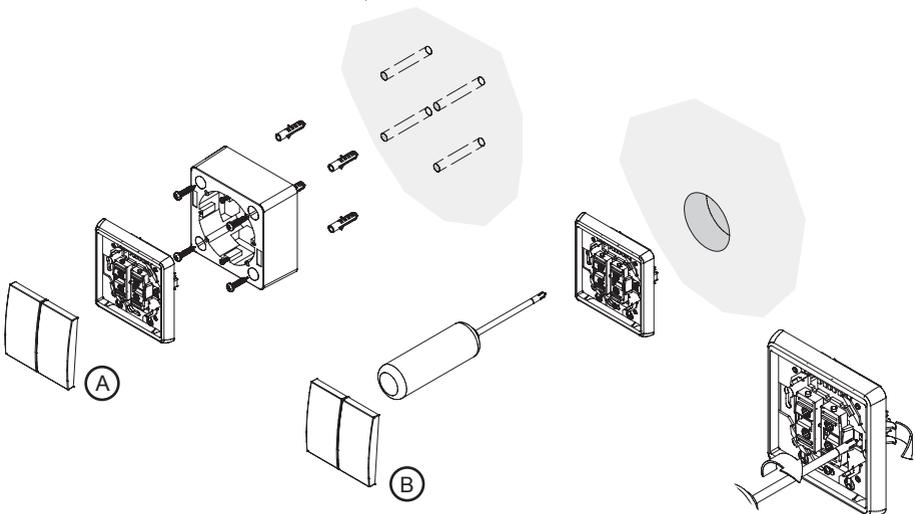
4.5 ELECTRICAL CONNECTION

4.5.1 Parts of the up/down switcher included in the box



- Fig. 1 Without using screwdrivers, remove the up/down buttons.
- Fig. 2 Turn the upper tile of the switcher in order to remove it from the bottom tile.

The up/down switcher supplied gives the possibility to be fixed to the wall in two different ways: with the bottom tile (A) or without the bottom tile (B).

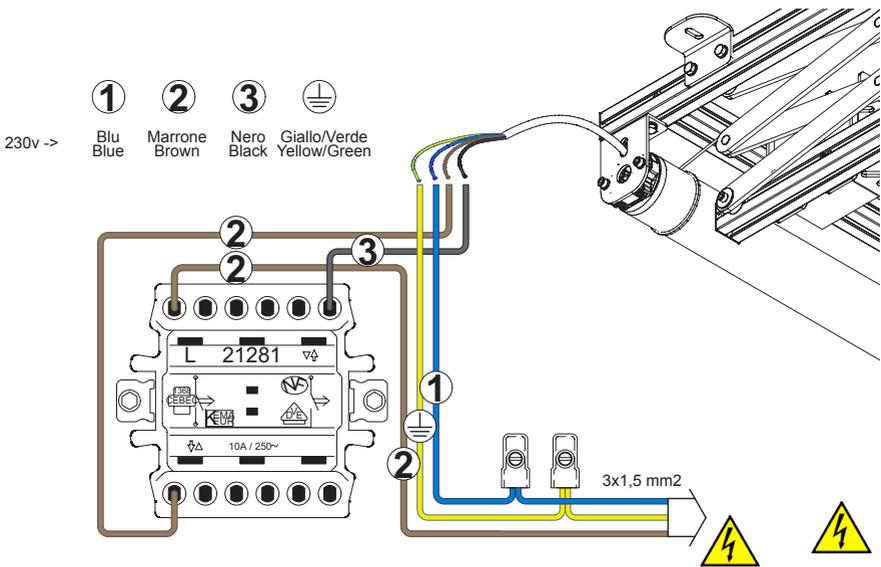


4.5.2 Use power cable with appropriate section for the motor power. The cable has to be protected from high temperatures, oils, collisions, crushes and sharp edges. Check that the mains tension is the same as the one indicated on the product identification label n. 01 (see 1.8.1).

It is compulsory to connect the electrical connection of the lift also to earth.

4.5.3 Before connecting the lift to the mains, please carefully check the security safety devices efficiency and the absence of failures or damages.

4.5.4 Please find here under the electrical connection diagram to be used together with the supplied up/down switcher (see pag. 20 – Fig. C)



4.5.5 Any operation that will involve electrical components has to be carried out by qualified personnel only, always following the procedure here under:

- 1) SWITCH OFF THE MACHINE.
- 2) DISCONNECT THE MAINS BY THE GENERAL SWITCH.
- 3) DISCONNECT THE LIFT FROM THE MAINS.
- 4) MAKE THE NECESSARY MAINTENANCE OPERATIONS

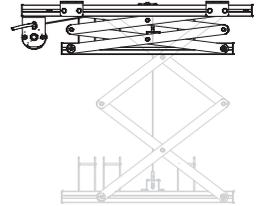
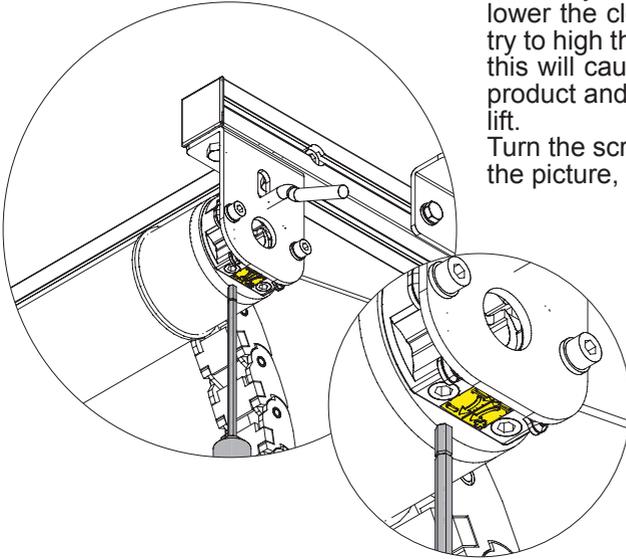


4.6 END-STOP SETTINGS

4.6.1 In order to fix the "UPPER END POSITION"

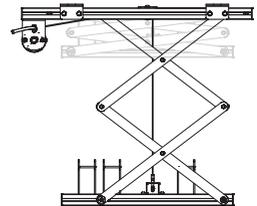
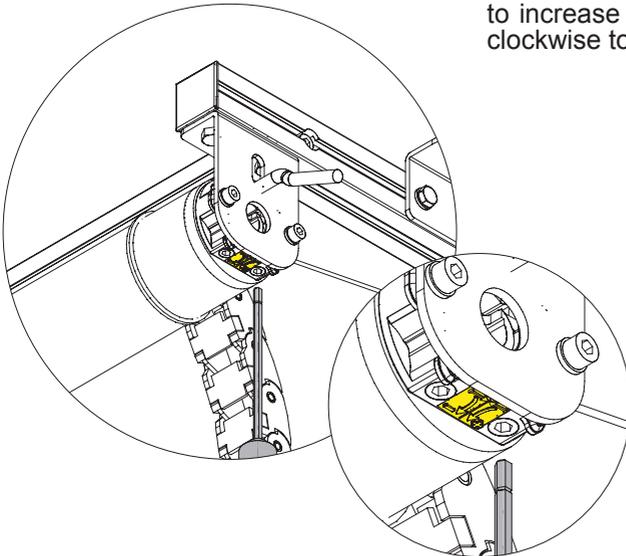
WARNING: in case the installer needs to modify this end-stop, it is allowed to lower the closed stop position. Do not try to high the upper end-stop because this will cause severe damages to the product and invalidate warranty on the lift.

Turn the screw on the motor shown on the picture, clockwise to lower the lift.



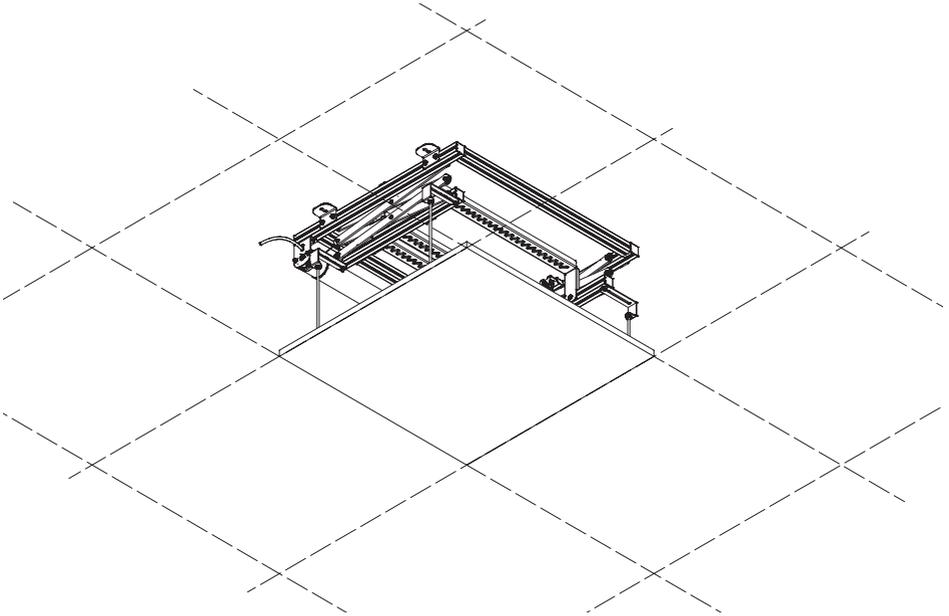
4.6.2 In order to fix the "LOWER END STOP POSITION"

Turn the screw on the motor, as shown on the picture, anticlockwise to increase the bottom stop point and clockwise to reduce it.



4.7 USE OF COMPONENTS FOR FIXING THE FALSE CEILING TILE

4.7.1 The supplied components allow to install the lift inside a false ceiling.

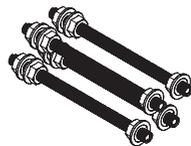
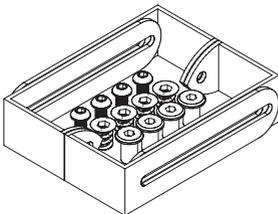


THE FALSE CEILING PLATE IS NOT SUPPLIED WITH THE LIFT.
THE MAXIMUM WEIGHT OF THE FALSE CEILING PLATE HAS NOT TO EXCEED 2 KG.



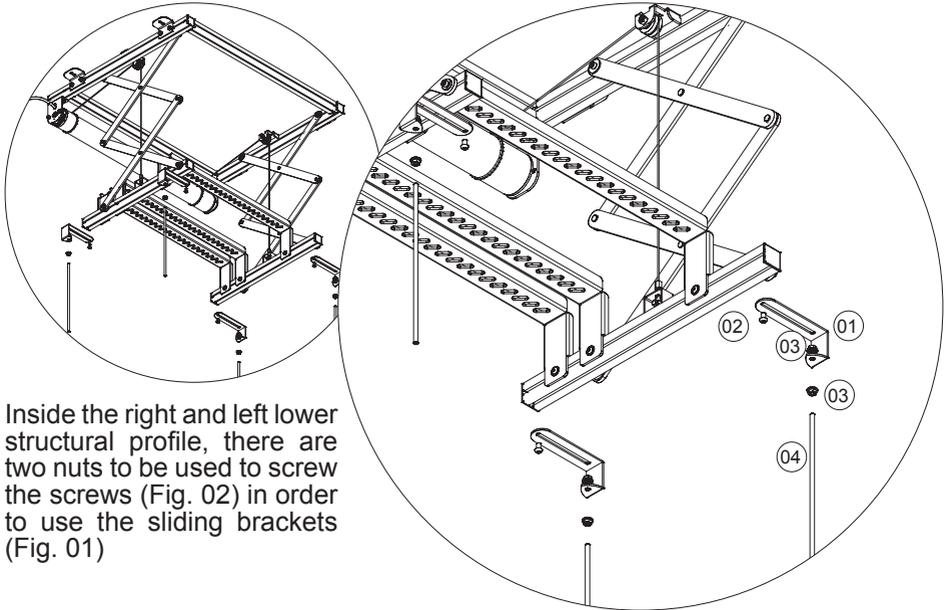
Components to fix the false ceiling plate are listed in chapter 4.1 – Fig. D, E, F, L1 and L2.

These components are suitable to fix a false ceiling plate under the projector in order to hide the lift inside a false ceiling.



4.7.2 Mounting

The following drawings explain how to mount the components above mentioned.



Inside the right and left lower structural profile, there are two nuts to be used to screw the screws (Fig. 02) in order to use the sliding brackets (Fig. 01)

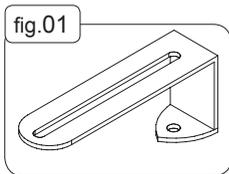


fig.01 Sliding brackets to support the false ceiling plate

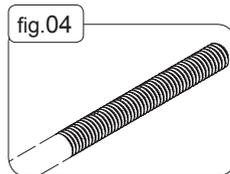


fig.04 Threaded bars M6x25cm

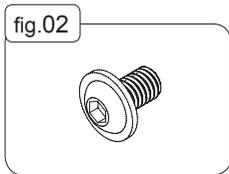


fig.02 Hex head screws M6x10

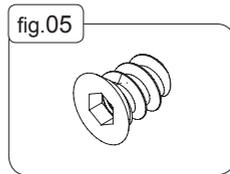


fig.05 Blind screws M6x10

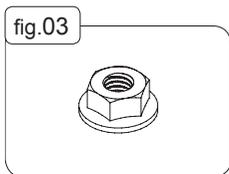


fig.03 Nuts M6

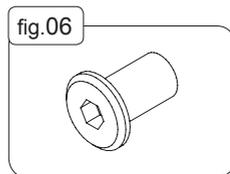
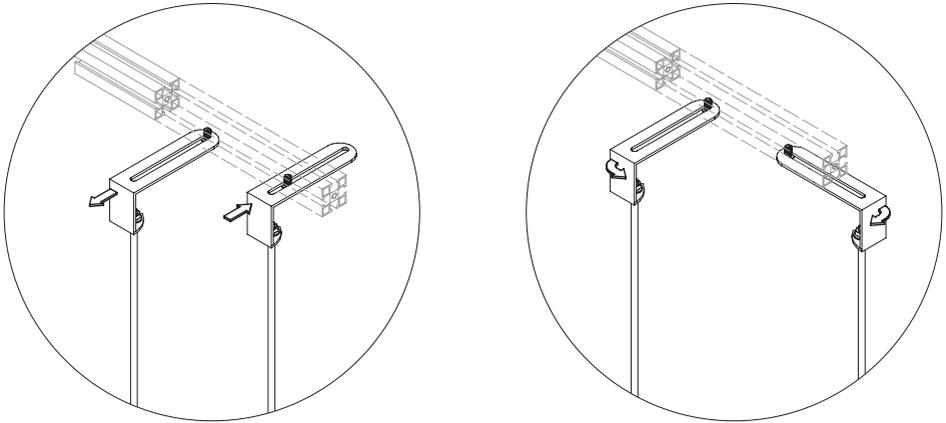


fig.06 Bushes M6

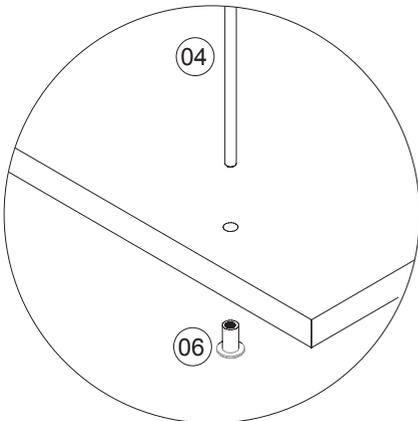
The sliding brackets (fig. 01) have to be positioned in the suitable point in order to fix correctly the false ceiling plate.



After fixing the threaded bars (fig. 04) and defined the right length, the false ceiling plate can be mounted using two types of screws.

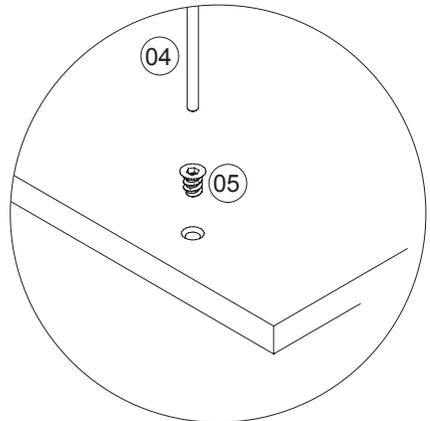
VISIBLE SCREW

Drill the hole in the plate, fit in the bush from the bottom side and screw the threaded bar to it.



NON VISIBLE SCREW

Drill a partial hole at the top side of the plate and screw the blind screw into it avoiding to go through the



5.0 OUT OF ORDER

At the end of the life of the lift, it has to be waste.

Please follow the procedure below.

If the machine has to be stored before wasting, please make the following operations:

- Disconnect it from the mains;
- Put the lift in the original box;
- Put on the machine the following note:
 "CAUTION: DO NOT USE THIS MACHINE
 PRODUCT TO BE WASTED"

5.1 WASTE OF PROJECTOR LIFT

Before starting waste of the projector lift, please check that it is disconnected from the mains.

In case the lift is still connected, disconnected it from the mains.

When wasting it, it is necessary to divide the plastic parts from the electrical components in order to waste them properly following the recycling norms.

As regards the mechanic parts of the lift, it is suggested to divide steel parts from other metals or alloys parts so that they can be sent for a proper recycling process.

Dismantling the lift, please pay attention to all heavy metal parts in order to avoid crushing.

Wasting of the components have to be carried out according to the laws in force in the country where the lift is installed.

In any case, EC Directives have to be respected:

- | | |
|-------------|-------------------------------|
| -91/156/CEE | waste |
| -91/689/CEE | dangerous waste |
| -94/62/CE | packaging and packaging waste |

These procedures have to be followed in order to recycle and waste in the best way all the components and to avoid dangers for health and environment, specifically avoiding:

- dangers for water, air, soil, fauna and flora;
- noises and smells
- damages to landscape and to cultural places based on the norms in force.

6.0 CHECK REGISTER

6.1 HALF - YEARLY CHECK

Half-yearly, the following checks have to be carried on:

- Check if rolling up and rolling down is working properly, without frictions or decelerations.
- Every six months (estimated 300 cycles) grease the 4 brass guide shoe □ (see. par. 2.1) using white grease PTFE (Würth HHS grease or equivalent).
- Check with the end user that projector lift and projection screen (if this is the configuration) operate in different times (not at the same time) and that while the first one is operating, the other one is not in power (switcher has to be a deadman switcher or domotic system that works with this logic).
- Check steel cables covered by black PVC – no steel wires have to be visible outside the black PVC scabbard.
- Check of the ceiling fixing brackets of the projector lift.
- Check that the end stops are set properly, so that in the rolled down position (projector lift completely open) it remains at least 3 turns of steel wire onto the roller tube.
- Check that bolts on the bottom ends of the steel cables are tightly fixed.
- Check that screws that fix projector to the projector lift are tightly fixed.
- Check safety devices – see chapter 3.2.