



High Flow Fan EX 36 V4 C6  
EX 50 V4 C6  
ANNEX M+M

**Assembly** Manual

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## 01. Introduction

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This manual must be considered as part of the equipment; therefore, we recommend to always keep it. This equipment is designed to move or renew the stale air inside farms or greenhouses **“FOR FARMING INDUSTRIAL USE”**. The manufacturer is not responsible for the consequences derived from its use according other types of application.

### What is a fan?

A fan is a rotating machine that sets the air in motion. We can define it as an equipment whose main goal is to generate a permanent air flow. A fan basically has an activation motor, normally electric, with the appropriate control devices: starter, speed control, polarity commutation, etc. and a turning propeller in contact with the air, the one transmitted by the power. This propeller has a shape of a propeller with blades in a diverse form and number.

The set, or at least the bearing or the propeller, is covered by a box with locking walls in spiral form for the centrifuges and by a flat frame or tubular casing on the axial shafts.

Axial fans are the ones where the air flow follows the turning shaft direction. They are also usually named helical since the outlet flow has a direction with this shape. It is the adequate fan to move large air flows at high pressure.

Exafan's helical exhaust fans are machines that ventilate farms extraordinarily. They are robust, and suitable for ventilation in general, renewal of stale air environments in any kind of facilities inside farms and greenhouses. Their use is usually linked to evaporative systems. They are designed for large air flows at low speed. To position them is very simple since it is only required to fix them to the wall and supply them with the electric power.

## 02. Warnings and recommendations

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### 02.01. Safety general considerations

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Exhaust fans are made according to the current required standards on labor safety.

EXAFAN declines any responsibility for any eventual harm to people and damage to byproducts due to the non – authorized use of the ventilation system EX36-50, due to incorrect assembly of the mechanical or electric parts, or due to the elimination or manipulation of the protection devices. Any improper use or variation regarding the application according to the requirements for a correct use will be considered as an improper use.

Always carry on the personal safety equipment (PSE), that is to say, adequate clothes for the work site, whenever it is required to carry on with the task, do not to wear wide clothes because it could get hooked with any equipment mobile part or any of the worker's extremities could get trapped, personal protection elements for the workers exposed to ocular injuries; helmets, when there is the chance of objects falling down; safety footwear, when there is a risk of feet injuries, hearing protectors, when one is exposed to noise, masks, convenient to the dust generated by the grain or flour movement if necessary.

**Do not assemble at temperatures below 12°C.** In winter, if the material has been exposed to low temperatures, do not proceed to directly assemble without the plastic parts undergoing an acclimation period as they could break down.

The manufacturer Exafan S.A.U. is not responsible for the damage caused by:

- Not having previously interpreted the manual, in case of the damage this equipment may cause.
- An installation not in accordance with the manual instructions.
- Overloading exceeding what is recommended in this manual.
- Wrong manipulation of the equipment during its transportation, installation and later replacement.
- Installation, programming and / or manipulation by non – authorized staff.
- Non – compliance with the L.T.R. (Low Tension Regulation), on behalf of the installer regarding the building electric wiring, replacement of the fuses, adjustment of the probes, search for failures....., all according to the standard EN 60204-1.6.4. or the corresponding one to each country.
- Fault caused by the connection of Exafan electronic equipment to the same electrical installation with other equipment not belonging to the EXAFAN S.A.U. brand (e.g. welding equipment or similar), which causes voltage or current peaks in the mains. Electronic equipment must be disconnected from the mains while this type of operation is being carried out (e.g. welding).
- The non – presence, for its easy disconnection, of PIAS, differentials and motor-guards.
- Not having placed protection devices against over- intensities for the supply conductors.
- A wrong supply of the electric power, it must be within the limits approved by the Regulation on Low and Medium Tension.
- Earthquakes and atmospheric phenomena (snow, rain, lightning...)

## 02.02. Safety during the manipulation and transportation.

Check the conditions of the material at its reception. In case of any damage, you should inform the transportation agency about it by means of a written document, as well as immediately communicate it to the EXAFAN S.A.U. company.

In case of a not immediate installation, we recommend to store it in a clean and dry place, free of dust, of any vibration, gas and corrosive agents, with an air relative humidity not exceeding 60%.

The fans EX36/50 assembled in our facilities must not remain below the rain or under humid conditions if they are packed with the plastic they are sent with from our facilities, since the sheet might get oxidized, and acquires a white color due to this mentioned oxidation. Regarding the sending / reception of the materials, we must look for a warehouse that does not damage the product features. A warehouse that does not comply with these conditions, will cancel the manufacturer´s warranty.

Only the staff trained for its manipulation should use the equipment.

## 02.03. Safety during the installation, assembly and electric wiring.

In order to avoid potential accidents, and before turning on the equipment, we must make sure that the ground connection is made according to the current standards and that the connection is well tightened.

Electric motors have some low tension circuits, and turning components that can harm people.

The motors equipped with automatic thermal protection devices will be automatically connected again when the motor reaches the convenient temperature. Do not use the motor with automatic thermal protections in applications where the automatic re-starting point may be dangerous for people or for the equipment.

In case the automatic or manual thermal protection is activated, unplug the motor from the electric power and check the cause behind the thermal protector performance.

Do not cover or hinder the motor ventilation. The equipped motors with automatic thermal protectors have to be reconnected after the starting point.

Correctly plug the motor to the electric power through safe and permanent contacts, always according to the data shown on the motor features board, as the nominal tension, intensity, etc.

Regarding the right dimensioning of the supply cables, maneuver and protection devices, we must consider the nominal motor current, the service factor and the length of the cables, among others.

The cable inlets not used in the connection box should be covered with locking systems in order to guarantee the protection degree indicated on the features panel.

During the installation of the motors, these should be protected against any accidental starting point.

DURING THE ASSEMBLY OF TOTALLY STAINLESS STEEL FANS, WE MUST LUBRICATE THE SCREWS AND BOLTS WITH OIL, (NOT GREASE) IN ORDER TO FAVOUR THE ASSEMBLY PROCESS AND PREVENT THE SCREWS AND BOLTS FROM GETTING BLOCKED.

### Electric residual risks:

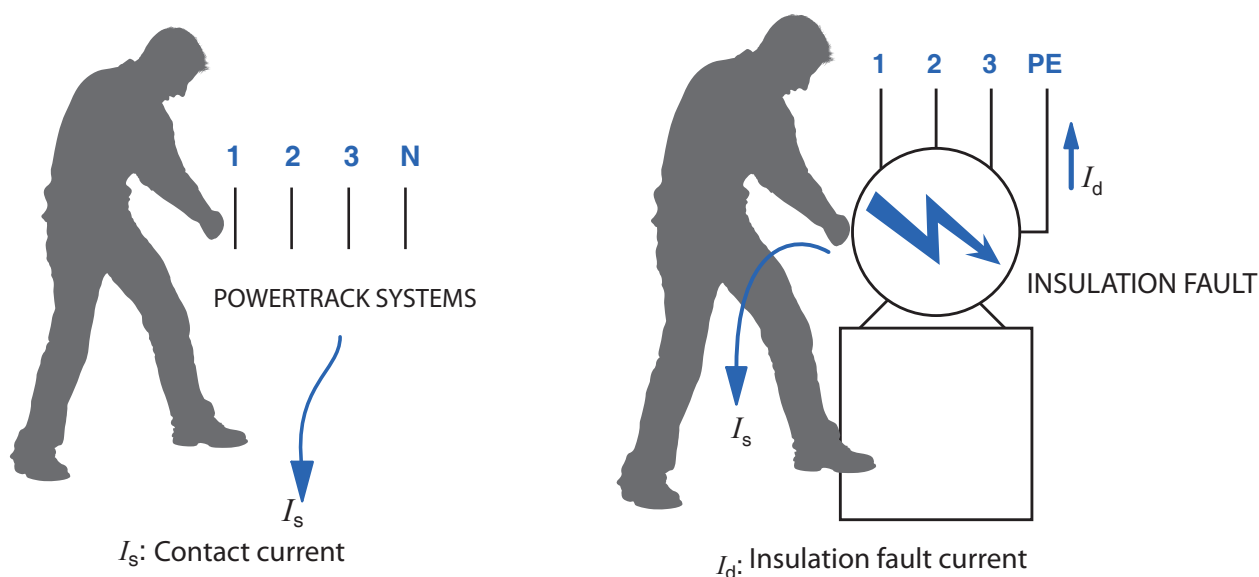
It must not be possible to access the active dangerous parts; the conducting parts we might access must not be dangerously active. This requirement must be applied:

Under normal conditions

Under a single default condition.

The protection under normal conditions corresponds to the protection against direct contacts (basic protection). The protection under a condition of a single default corresponds to the protection against indirect contacts (protection against defaults).

IN STORMY AREAS AND AREAS WITH ELECTRICAL APPARATUS, IT IS RECOMMENDED THAT A SURGE ARRESTER CONNECTED TO A GOOD EARTH CONNECTION BE INSTALLED NEXT TO EACH PIECE OF EQUIPMENT.



### Direct contacts:

A direct contact takes place when a person touches an active conductor under normal circumstances. The standard IEC 61140 changed the expression “protection against direct contacts” by the one “basic protection”. The previous name remains at least for information purposes.

### Indirect contacts:

An indirect contact refers to the person who touches a conducting part exposed that is not normally active, but that it turns active by accident (due to an insulation default or due to any other cause).

The current by default increases the conducting part exposed to a tension that can turn to be dangerously and originate a contact current through the person who touches this conducting part exposed.

The IEC 61140 standard has changed the expression “protection against indirect contacts” by the one “protection against defaults”).

## 02.04 Safety during the maintenance works

INSPECTION	FREQUENCY
Belt tension	Six-monthly
Absence of any vibration in the set.	Monthly
Correct opening and locking of the blades.	Monthly
Defects in the connections.	Annual

An authorized technical service by the Exafan Company S.A.U. must get in charge of the motor dismantling process during the warranty period.

Every motor manipulation must be made carefully so as not to damage the bearings.

The motor shaft pulley must be adequately aligned to the central pulley. An incorrect alignment, as well as an inadequate tension of the activating belts, most probably will damage the bearings and cause an excessive vibration.

It is required to set all the protection devices of the fan: meshes, belt and pulley protections.

Check the motor functioning on a regular basis according to its application; make sure the air flows without any obstacle.

When cleaning the fan, do not use pressurized water towards the mobile parts of the centrifuge or towards the motor.

Do not use products such as cement or expanded polyurethane to lock the holes between the fan and the wall, since they can cause a pressure force over its walls, which at the same time can make it work incorrectly.

**DO NOT APPLY CORROSIVE PRODUCTS, OXYDANTS, PEROXYDES OR BYPRODUCTS THAT CAN DAMAGE THE SHEET.**

It is required to clean the cooling blade of the motor every once a while. If the motor does not cool, it will overheat, this will shorten the useful life of the motor and the bearings even could break. (Refer to Fig. 36)

We recommend cleaning minimum for every new breeding process or if we also observe excessive dirtiness.

After some time, we recommend tightening the belt, whereby, we will have to dismantle and displace the motor outside the fan. Later, let´s insert it in the pulley again.

In case of requiring the belt spare parts, we will have to take a look at the inscription reference shown of the belt band.

It is strictly prohibited to cancel the existing protection elements of the equipment. When working with machines or parts in motion, the worker´s arms must not carry any jewelry as for example: rings, bracelets, watches, etc. The clothes used for working must not be very loose in order to avoid our extremities to get trapped. When using a machine, we must make sure that we know how to turn the machine off before its usage, that the materials we use don´t hinder the machine movements and that the working zone is free and clean of obstacles.

Whenever somebody makes some maintenance work and is required to remove some anti-trapping protection devices, the fan blades will get blocked mechanically in order to avoid that in case of a gust of wind, the unexpected movement of these blades trap or cut somebody´s extremities.

EXAFAN S.A.U. reserves the right to modify the design, measures, materials and technical manuals of its products without previous notification.

The size and number of the parts used are basically the difference between the EX50 and EX36 models, but not the assembly process itself. In this manual, you will see several notes regarding the differences between both.

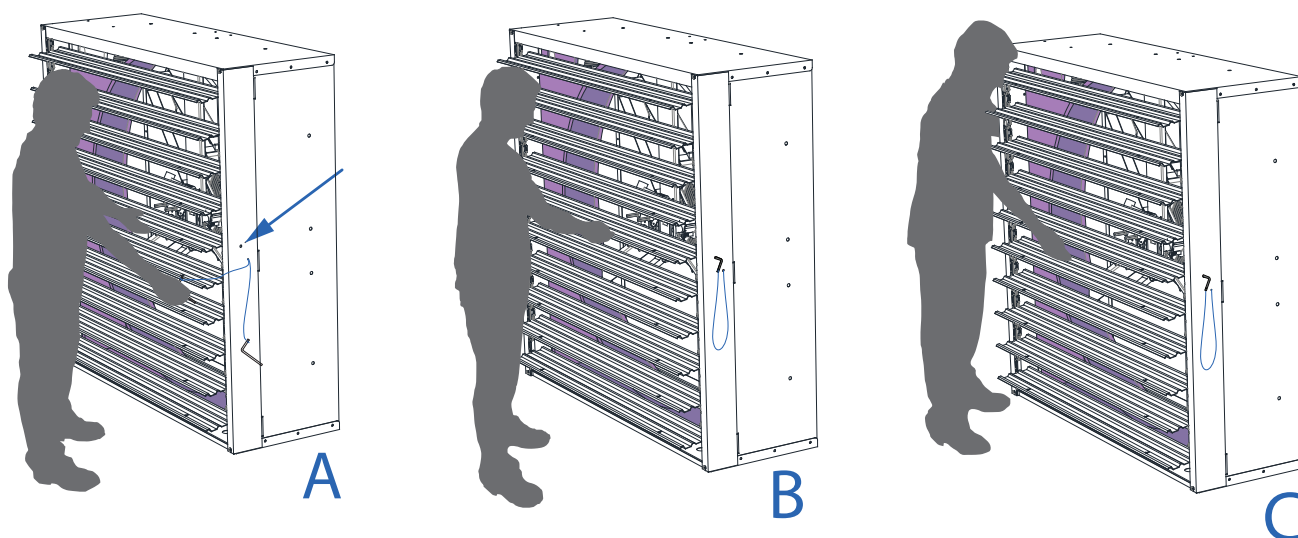
EXAFAN S.A.U.

## 02.05. Assembly of the safety pins

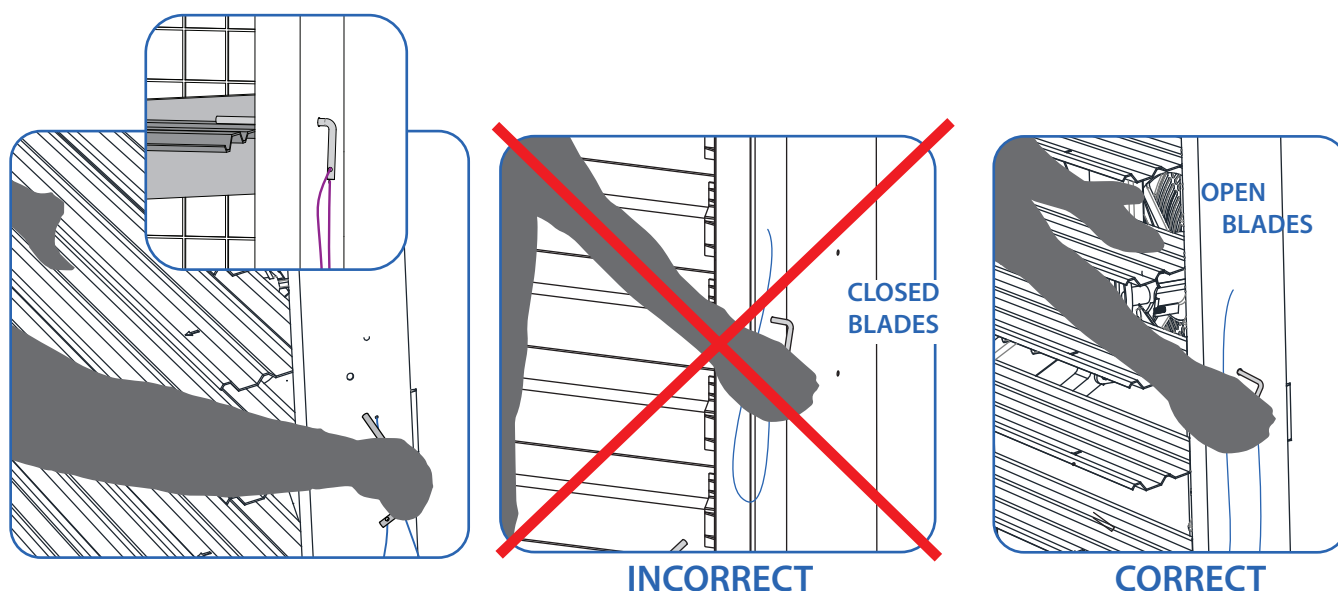
On the sides of the fan, you may find the safety pins (one on each side) enabling to block the fan shutter in open position. This function is especially useful when cleaning the fan, or simply in order to let the sunlight get through the fan in air inlet mode.

**FOR SAFETY REASONS, UNPLUG THE FAN FROM THE ELECTRIC POWER SUPPLY**

If we want to lift the blades in order to achieve more brightness inside the farm or let the air get inside without being the fan turned on, we must proceed as follows:



- Let's use some protection gloves to avoid any cut injury
- Due to the weight of the blades, please only lift the central blade with both hands, fix them by the ends. Keep the shutter open with one's hand on the central point of the blade where the centrifuge is fixed, and while the blades are in horizontal position, insert the safety pin inside the hole indicated with your other hand (Fig.A) and (Fig. B)
- Then without stopping from holding the blade by its center point, let's change one's hand and fix the central blade with our right hand. (Fig. C)
- This enables us to have our left hand free, which we will use to insert the safety pin through the other side of the fan.



ONCE YOU HAVE MADE THESE REQUIRED TASKS WHILE THE SHUTTER IS BLOCKED, AND BEFORE PLUG THE FAN TO THE ELECTRIC POWER SUPPLY AGAIN, DO NOT FORGET TO TAKE OUT THE SAFET PINS.

THESE SAFETY PINS ARE ONLY USED TO KEEP THE SHUTTER OPEN: THEY MUST NOT BE PLACED WITH THE SHUTTER CLOSED SINCE THIS COULD MAKE THE FAN WORK INCORRECTLY.

## 02.06. Wrong use

You must not manipulate the fan by means of the shutter. You must not lift the shutter with one's hand, and do not carry the fan by pulling from it. (Fig.01).



Fig.01. Do not manipulate the fan by means of the shutter.

You must not place any element hindering the normal operation of the fan. Do not place any object retaining the shutter and preventing it from closing, such as stones, bricks, pieces of wood or pallets (Fig. 02)

If the shutter is not completely closed or totally open at 100%, the four rods of the centrifuge will deform (Fig. 71), and will stop from working properly while the shutter remains open.

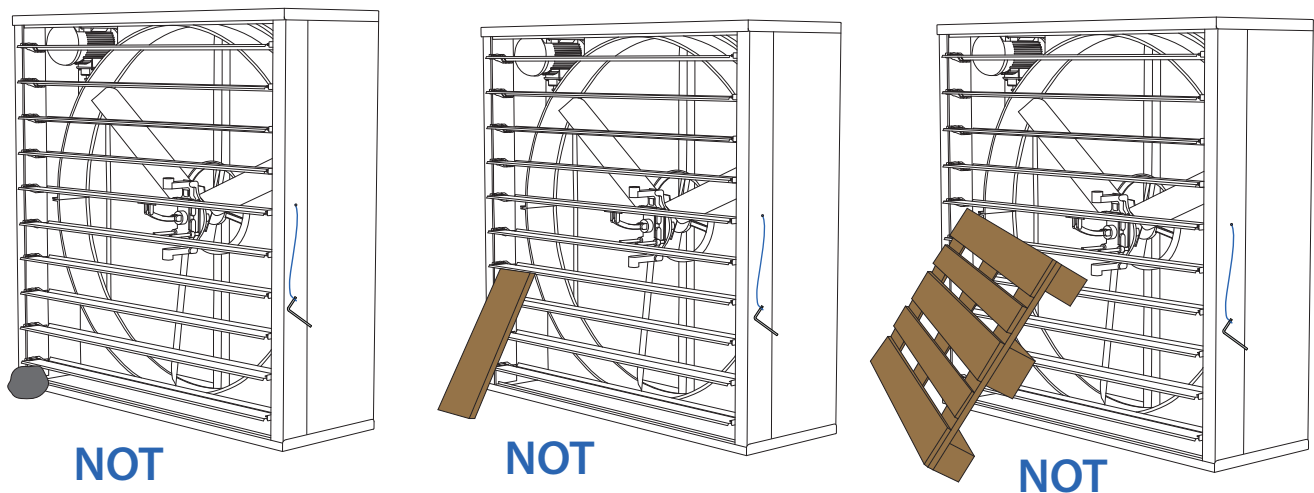


Fig 02. Do not put any element hindering the normal operation of the fan.



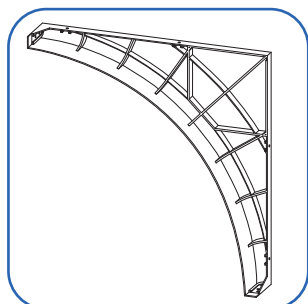
## 03. Ferrule assembly

Required material:

**01** Ferrule quarter  
without any hole

Mod. EX 50: 03 Units  
VI-VIROLA-50-LILA

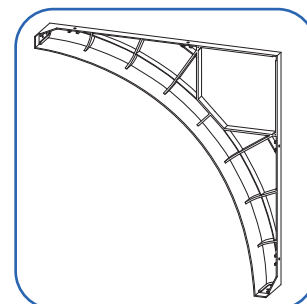
Mod: EX 36: 03 Units  
VI-VIROLA-36-LILA



**02** Ferrule quarter with a  
hole.

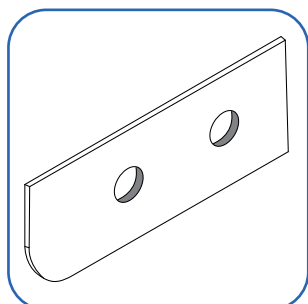
Mod. EX 50: 01 Unit  
VI-VIROL + AGU-50-LILA

Mod: EX 36: 01 Unit  
VI-VIROL+AGU-36-LILA



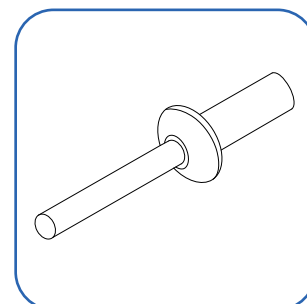
**03** Double washer

08 Units  
VI-ARANDELA-DOBLE



**04** Rivet made of aluminium  
Ø6.4x19,5mm. ZN

08 Units  
TOR-REM-ALU-6.4/19.5



- Step 1

Put each ferrule quarter as we see it on the image [01] y [02], in such a way that we form a complete ferrule (Fig.03).

Insert the pivots of the corners so that they fit perfectly (Fig.04).

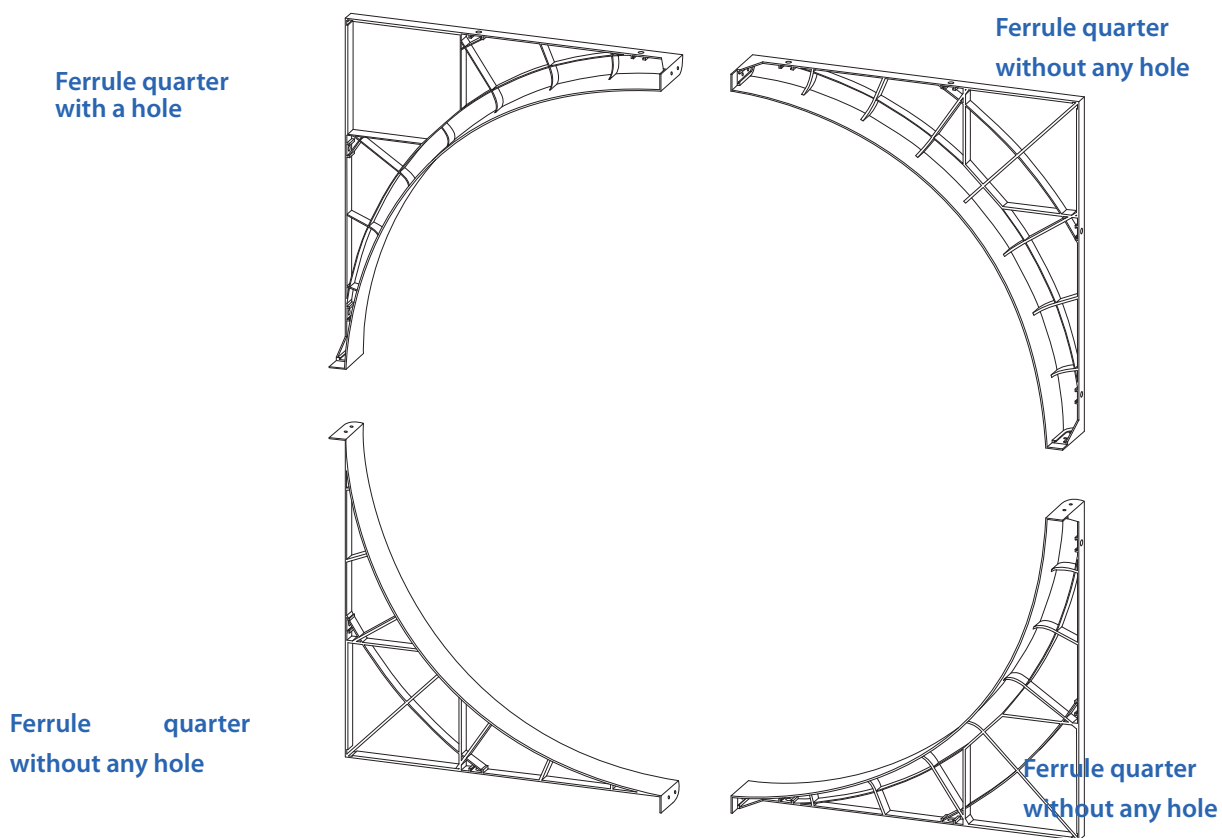


Fig. 03. Ferrule assembly.

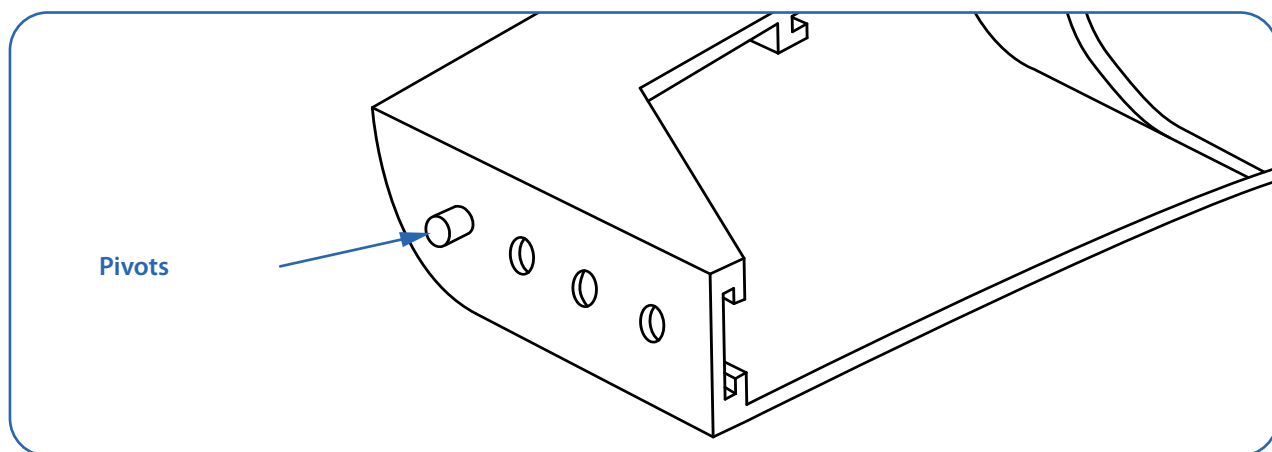


Fig. 04. Detail of the end of one fourth of ferrule.

- Step 2

Put each double washer [03] beside the link of two ferrule quarters, besides, these washes have a specific position (Fig. 05).

Put two rivets  $\text{Ø}6.4 \times 19,5$  mm ZN [04] crossing the two double washes (Fig. 07).



Do not assemble at a temperature below 12° C.

If the material has been exposed to a low temperature during winter time, do not proceed to directly assemble without an adaptation period of the plastic parts, since they could get broken.

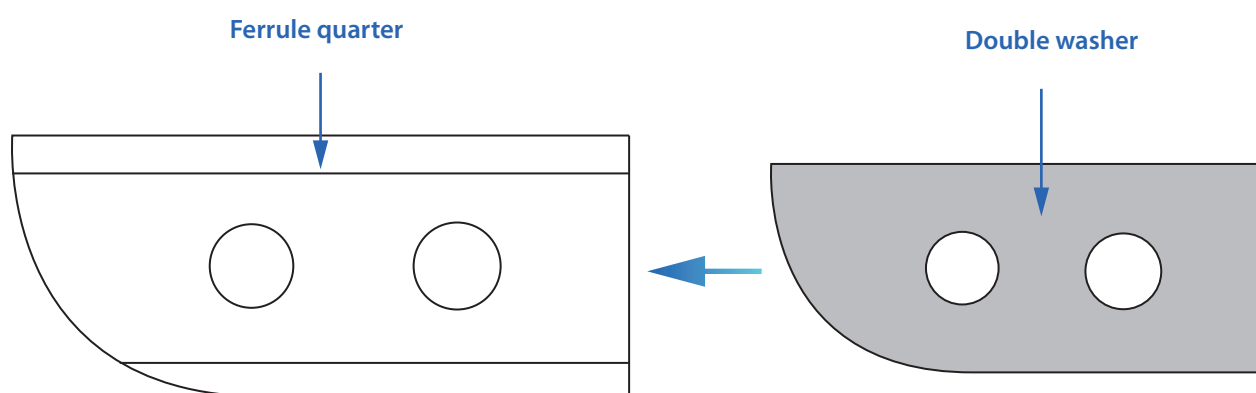


Fig. 05. Position of the double washers.

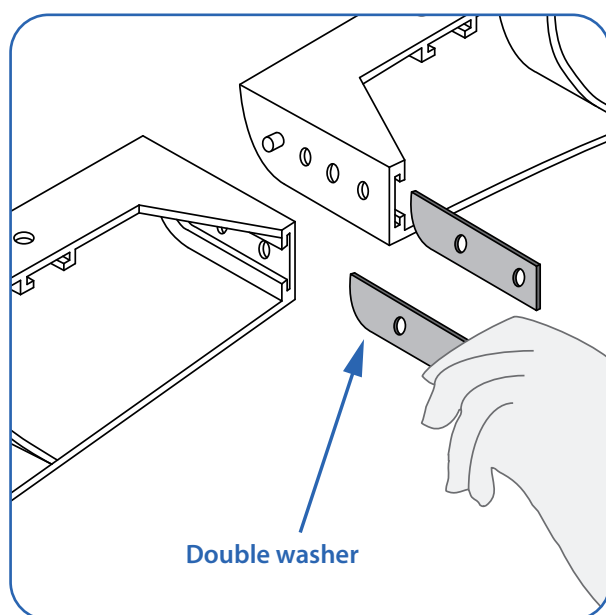


Fig . 06. Insertion of the double washers.

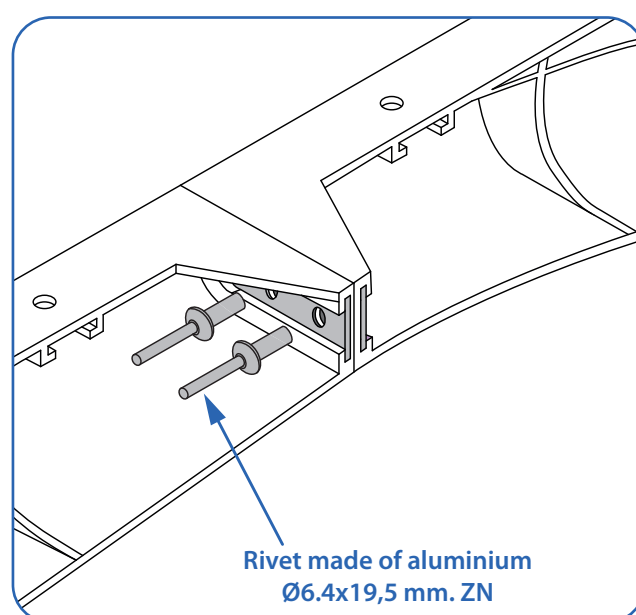


Fig. 07. Insertion of the rivets made of aluminium  $\text{Ø}6.4 \times 19,5$  mm.

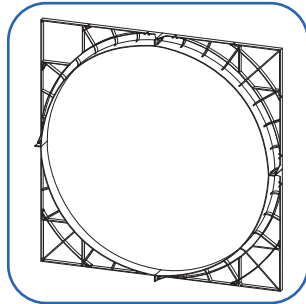
## 04. Structure assembly

### Required Material:

#### 01 Ferrule

Mod. EX 50: 01 Unit  
CJ-VIROLA-50-LILA

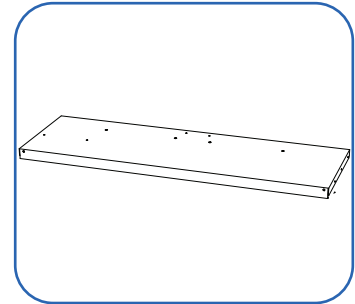
Mod. EX 36: 01 Unit  
CJ-VIROLA-36-LILA



#### 02 Roof+ Squad guide

Mod. EX 50: 01 Unit  
EST-TECHO-50-V4  
EST-SOPORTE-GUÍA

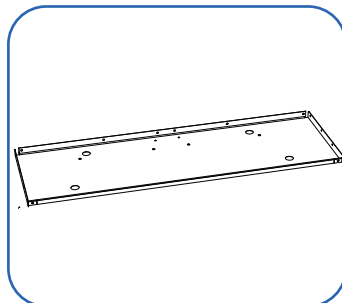
Mod. EX 36: 01 Unit  
EST-TECHO-36-V4  
EST-SOPORTE-GUÍA



#### 03 Base

Mod. EX 50: 01 Unit  
EST-SUELO-50-V4

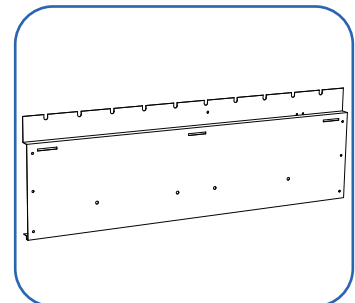
Mod. EX 36: 01 Unit  
EST-SUELO-36-V4



#### 04 Right side

Mod. EX 50: 01 Unit  
EST-LATERAL-50-D-V4

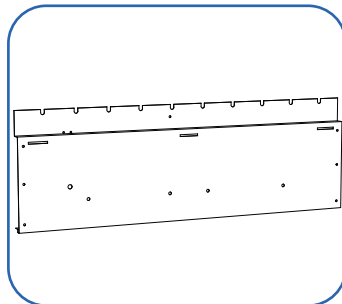
Mod. EX 36: 01 Unit  
EST-LATERAL-36-D-V4



#### 05 Left side

Mod. EX 50: 01 Unit  
EST-LATERAL-50-I-V4

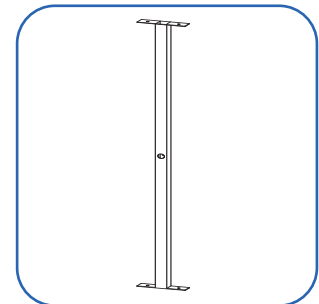
Mod. EX 36: 01 Unit  
EST-LATERAL-36-I-V4



#### 06 Central bar

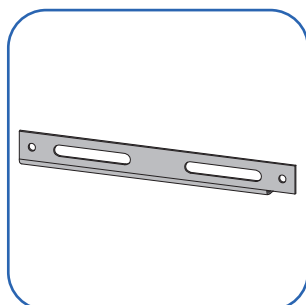
Mod. EX 50: 01 Unit  
EST-POSTE-CEN-50

Mod. EX 36: 01 Unit  
EST-POSTE-CEN-36



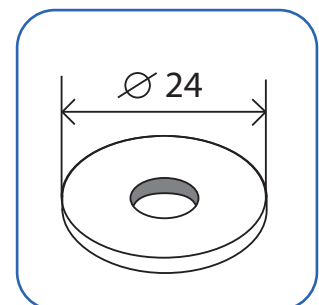
#### 07 Guide Bracket

01 Unit  
MOT-ESCUA-  
DRA-GUIA



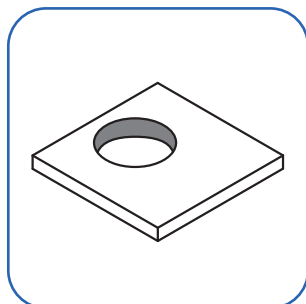
#### 08 Washer M7 DIN9021 ZN Special Ø24

08 Units  
TOR-ARAN-D9021-7Z-E



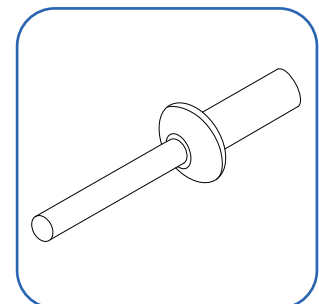
#### 09 Square washer

08 Units  
EST-ARANDELA-  
NUTSERT



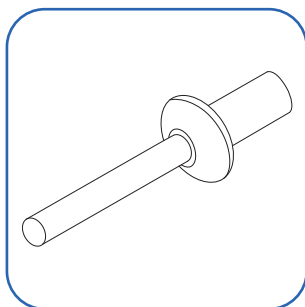
#### 10 Rivet made of aluminium Ø6.4x19,5 mm. ZN

10 Units  
TOR-REM-ALU-6.4/19.5



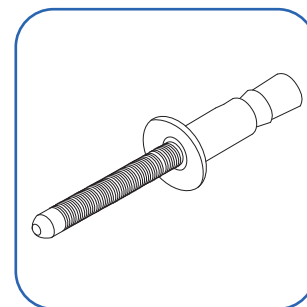
**11** Rivet made of aluminium Ø6.4x12,5 mm ZN

15 Units  
 TOR-REM-ALU-6.4X12.5



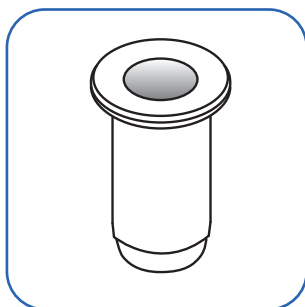
**12** Rivet made of Magna-lok Ø6.4x12 mm

04 Units  
 EST-CONO-RE-6.4X12



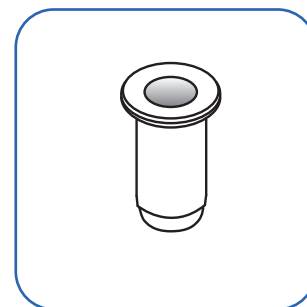
**13** Rivetable nut M8x21,5 ZN

08 Units  
 TOR-TUER-RE-A-8X21.5



**14** Rivetable nut M5x13,5 ZN

04 Units  
 TOR-TUER-RE-5X13-ZN



### • Step 1

For your greater comfort and before fixing the ferrule to the structure, place the washers M7 DIN9021 [08] in the places of the ferrule where we will put the rivets made of aluminium later on Ø6.4x19,5 mm ZN [10].

Also put the square washers [09] on the compartments where we will insert the rivetable nuts M8x21,5 [13], refer to (Fig. 08). The square washers have a certain orientation, please check it.

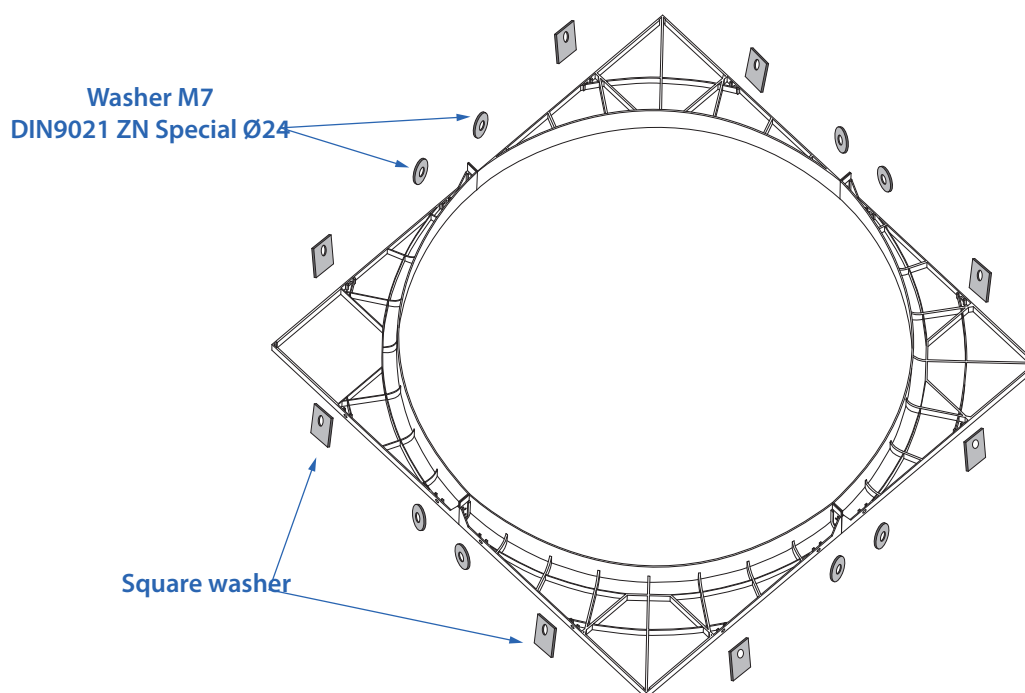


Fig. 08. Position of the Special washers M7 DIN9021 ZN and square washers.

Observe the orientation of the square washers [09] in their corresponding place, according to the drawing (Fig. 09) and (Fig. 11).

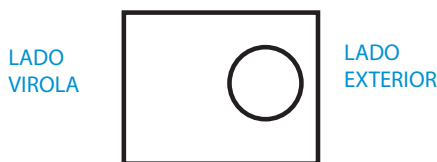


Fig. 09. Square washer.

During the assembly of the totally stainless steel fans, we must lubricate the bolts and screws with oil (not grease) in order to make the assembly process easier and prevent the bolts and screws from getting blocked.

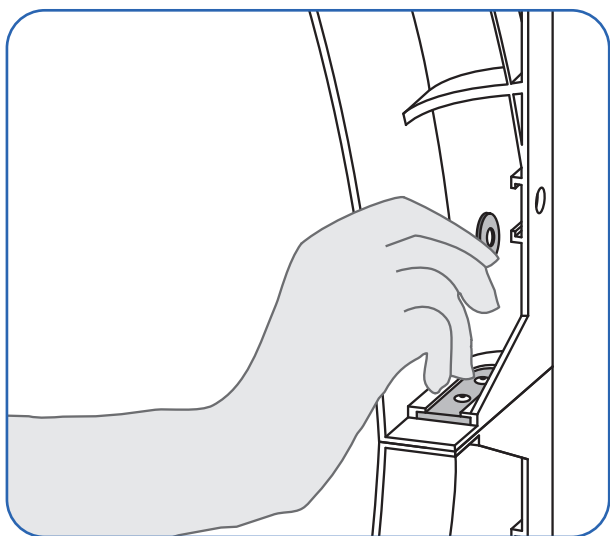


Fig. 10. Insertion of the Special washer M7 DIN9021 ZN Ø24.

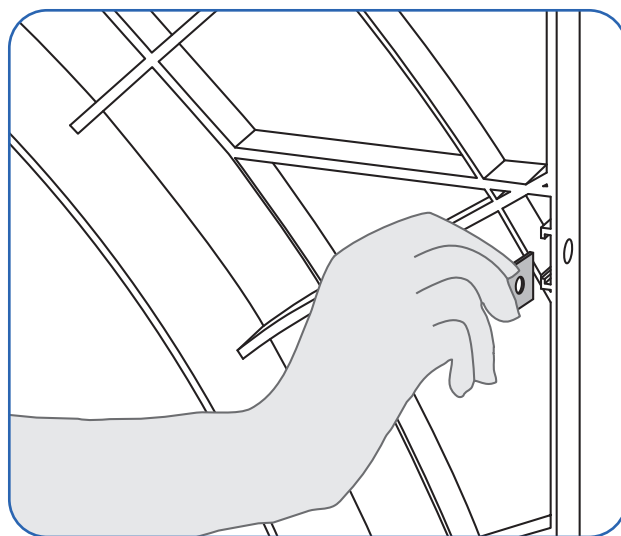


Fig. 11. Insertion of the square washer

## • Step 2

Assemble the two sides [04] and [05] with the floor [03] and roof [02] in a perimeter way. Let it be placed inside the ferrule [01], before assembling the structure with the rivets.

Pay attention to the placing of the roof and the floor as the situation of the ferrule and the sides, since all of them have a determined position (Fig. 12).

In order to identify the different parts, bear in mind what follows:

- Let's consider whether the fan faces towards the front through the shutter side, and not through the rear part with the meshes, in order to differentiate the right side from the left one.

- The roof must be assembled to the ferrule part where we will later put the motor. Pay attention to the hole where we will assemble the motor there is in the ferrule (Fig 12). We will identify the roof thanks to the fact of the guide support having been already assembled in our facilities.
- Do not get confused about the roof and the floor. In order to identify them, you must fix them in the waste holes we have made on the floor (Fig 12).
- The holes of the sides where we will assemble the shutter springs later on, shall remain closer to the roof than to the floor (Fig. 13 and Fig. 14).
- Another way to identify the left side is to pay attention to the hole where we will get the motor cable through it (Fig. 13).

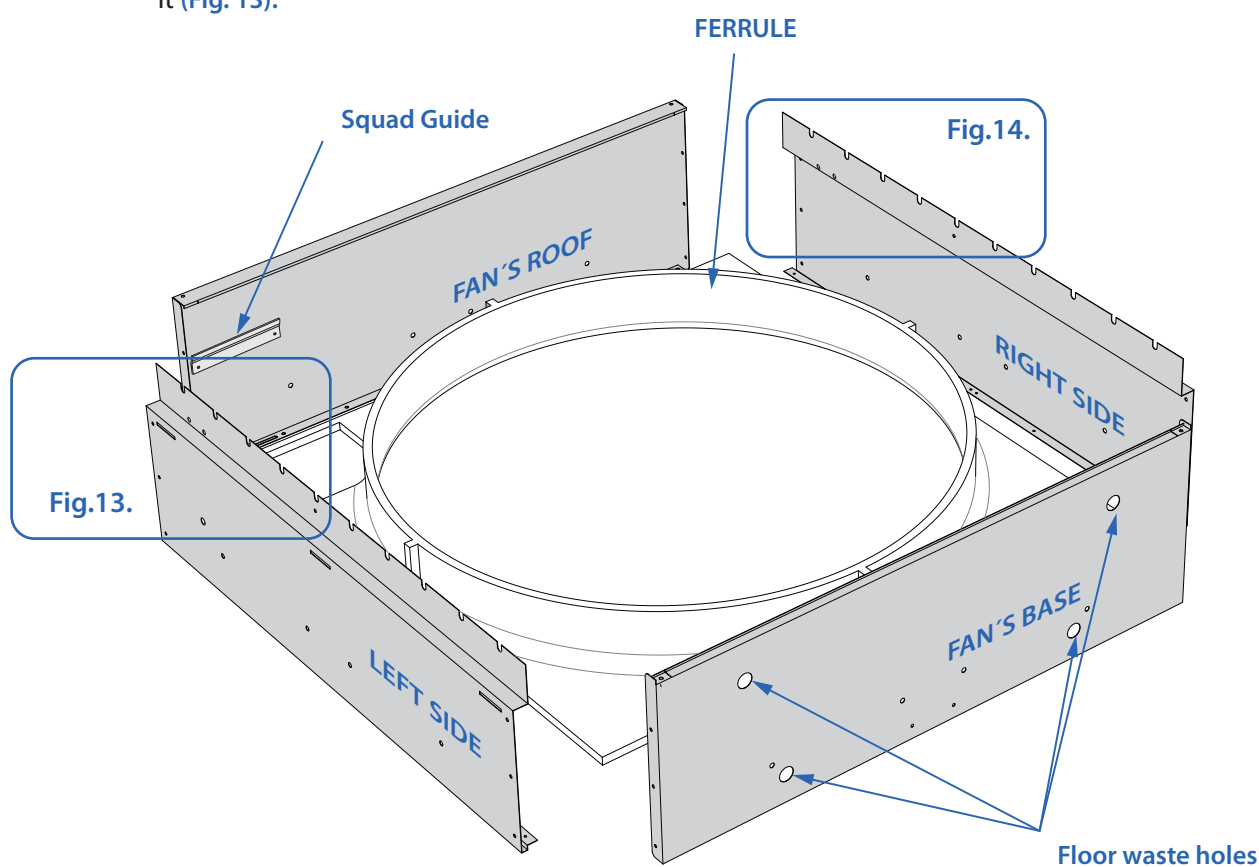


Fig. 12 Placing the floor, sides and roof in relationship with the ferrule.

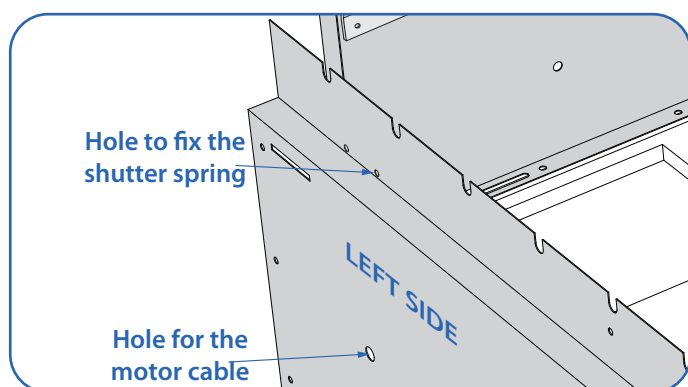


Fig.13. Detail of the left side.

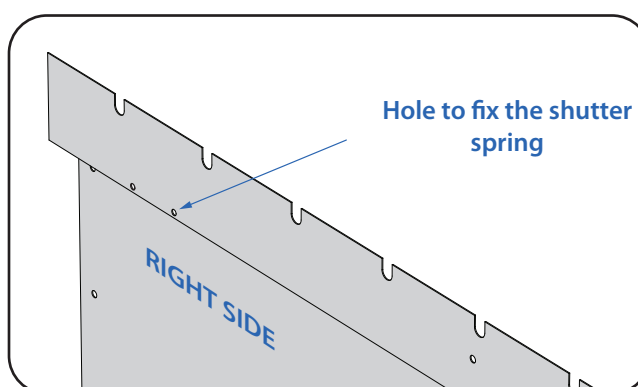


Fig.14. Detail of the right side.

Once the components shaping the fan structure are well placed (sides, floor and roof), proceed to assemble them together, start to link the sides to the floor and the roof, try to fit them perfectly and start to operate on the lower part of the fan while it lies on the floor (Fig 15).

It is important to perfectly insert the two sides inside the grooves of the roof and floor (Fig. 16 and Fig. 17, Fig. 18 and Fig. 19)

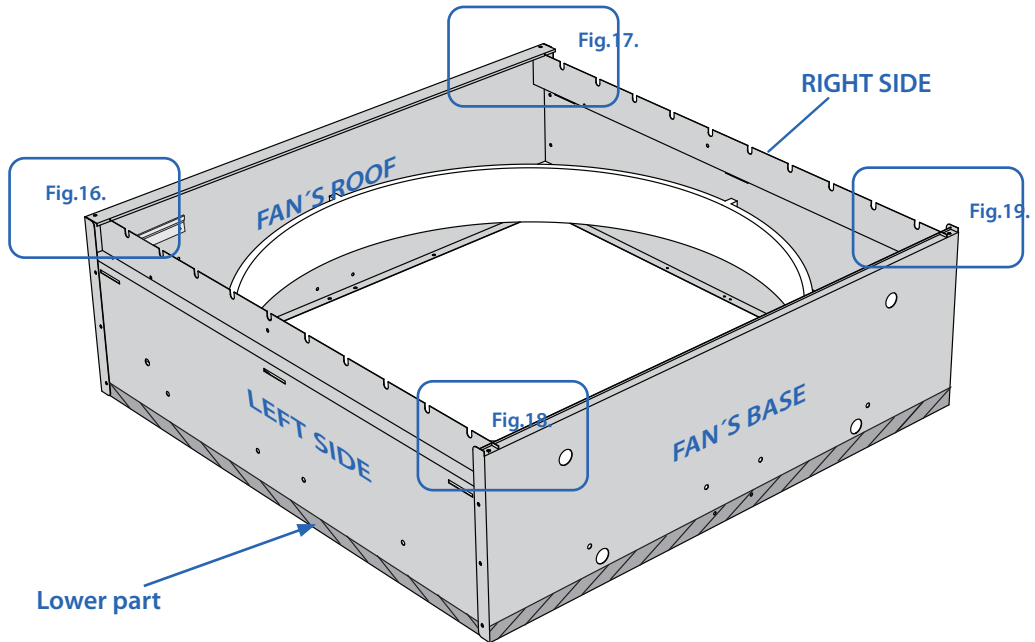


Fig. 15. Assemble the structure.

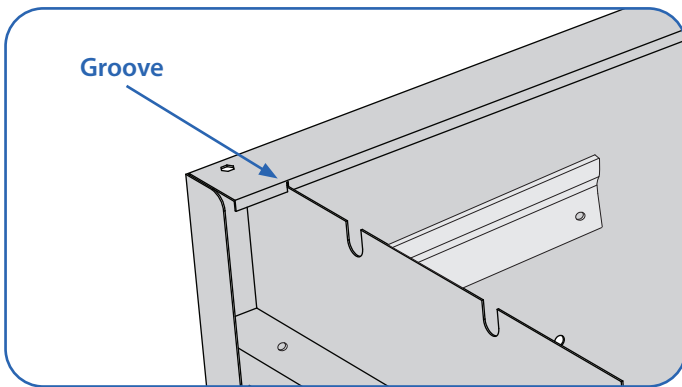


Fig. 16. Detail of the upper left corner.

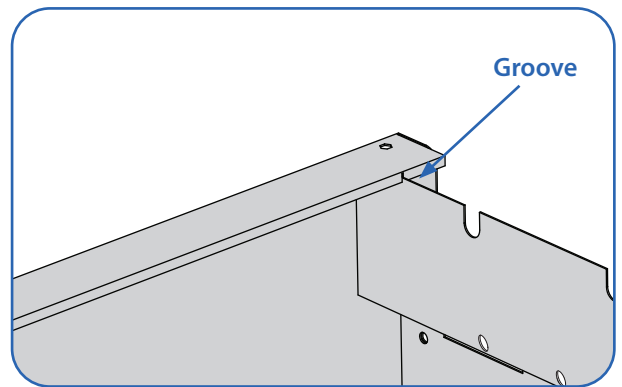


Fig. 17. Detail of the upper right corner.

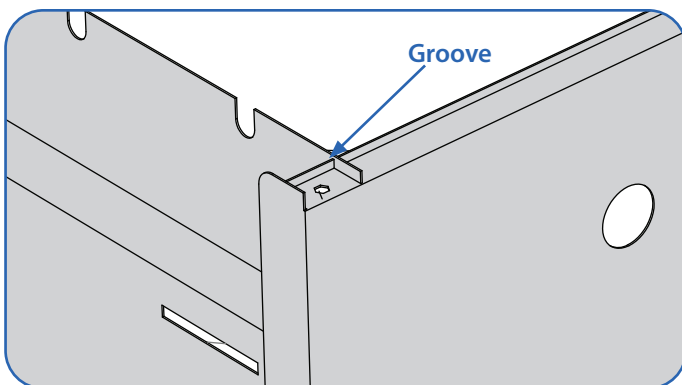


Fig. 18. Detail of the lower left corner.

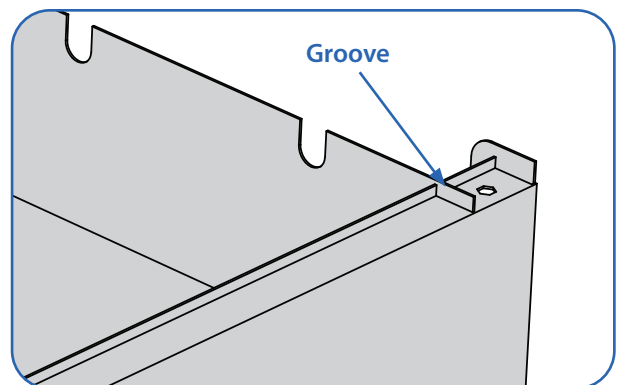


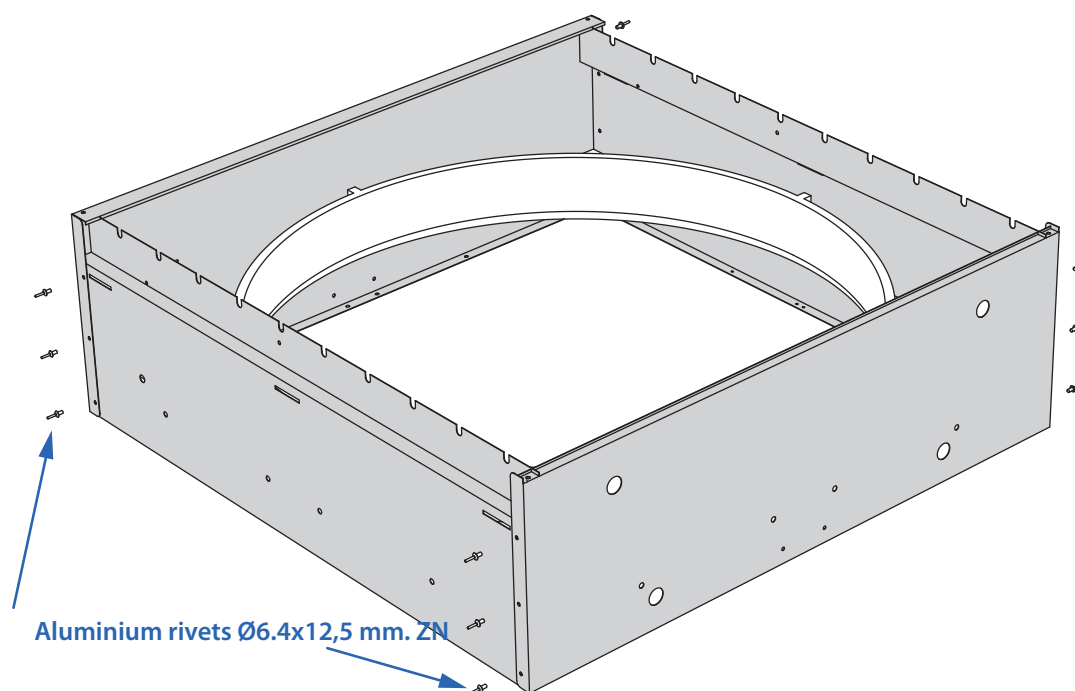
Fig. 19. Detail of the lower right corner.



- Step 3

Link the entire structure by means of 12 rivets made of aluminium  $\text{Ø}6.4 \times 12,5$  mm. ZN [11] (Refer to Fig. 20).

It is important not to leave any rivet, since these are important in order to provide the fan with robustness.



**Fig. 20.** Join the structure with aluminium rivets  $\text{Ø}6.4 \times 12,5$  mm. ZN.

- Step 4

- Fix the ferrule to the structure with the rivets  $\text{Ø}6.4 \times 19,5$  mm. ZN [10], where we have previously put the washers M7 DIN9021 [08] on the ferrule (Fig. 21). And then afterwards, put the rivetable nuts M8x21,5 [13] where we have previously put the square washers [09] (Fig.22).
- The rivets and nuts require 2 kinds of different tools for them to be placed, although both of them are named rivets (Fig. 24 and Fig 25).

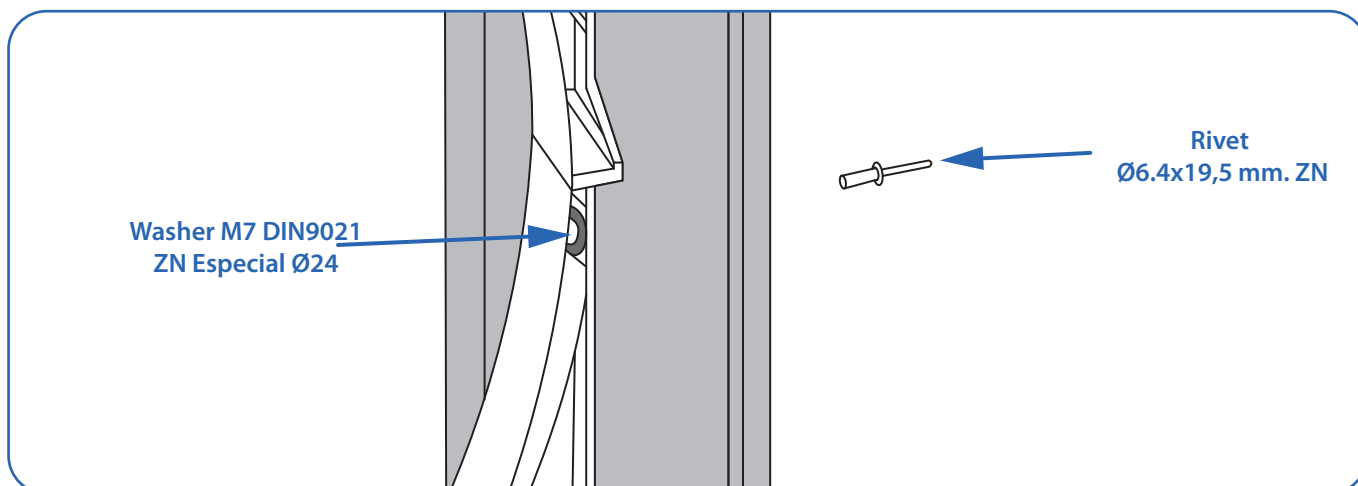


Fig. 21. Fixing the ferrule to the structure by means of a rivet Ø6.4x19,5 mm ZN.

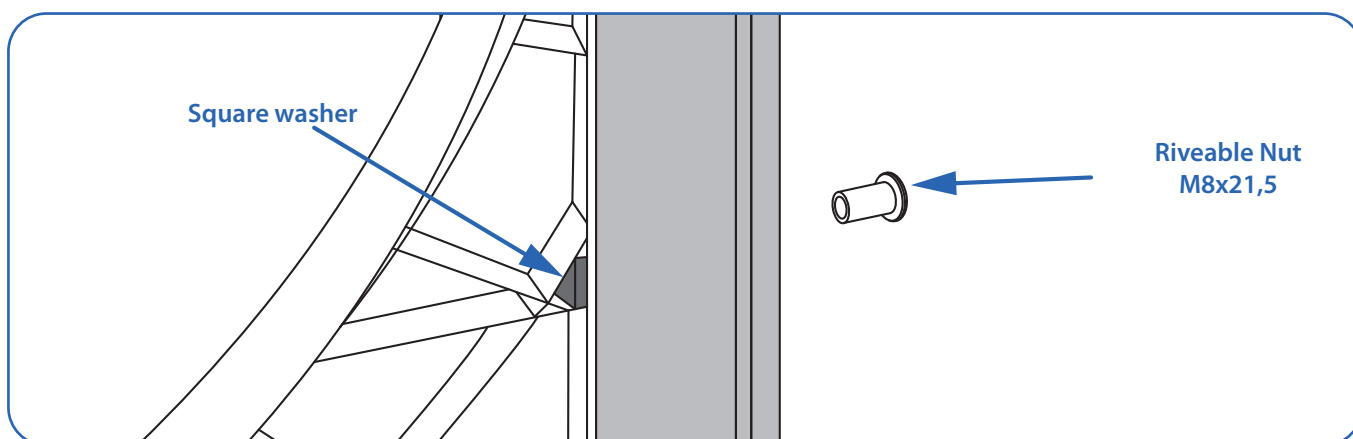


Fig. 22. Fixing the ferrule to the structure by means of a rivetable nut M8x21,5.

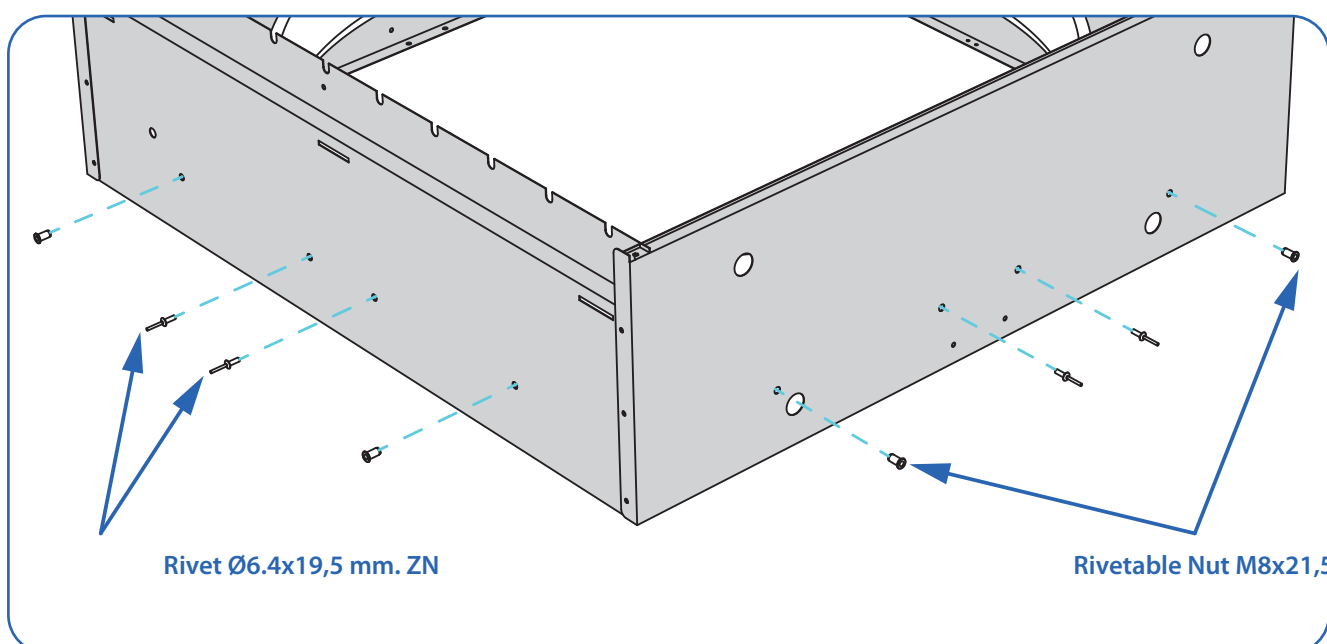


Fig. 23. Fixing the ferrule to the structure. General view.

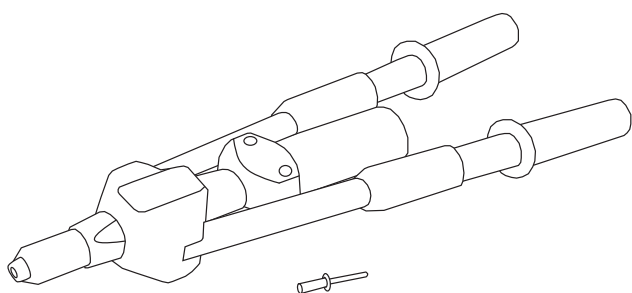


Fig. 24. Manual riveter for rivets POP.

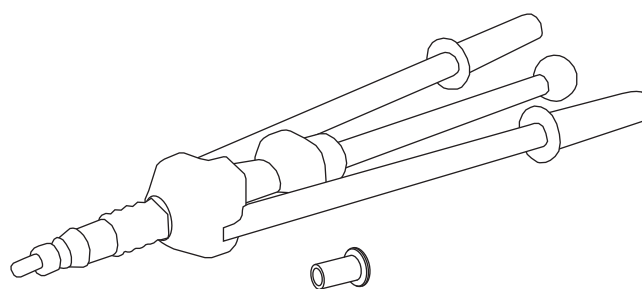


Fig. 25. Manual riveter for rivetable nuts.

### • Step 5

- Put the rear rivets [11] (Fig.26).
- Do not put any rivet on the corner where we will put the motor as we will assemble the guide square [07] inside this hole later on (Fig.28).

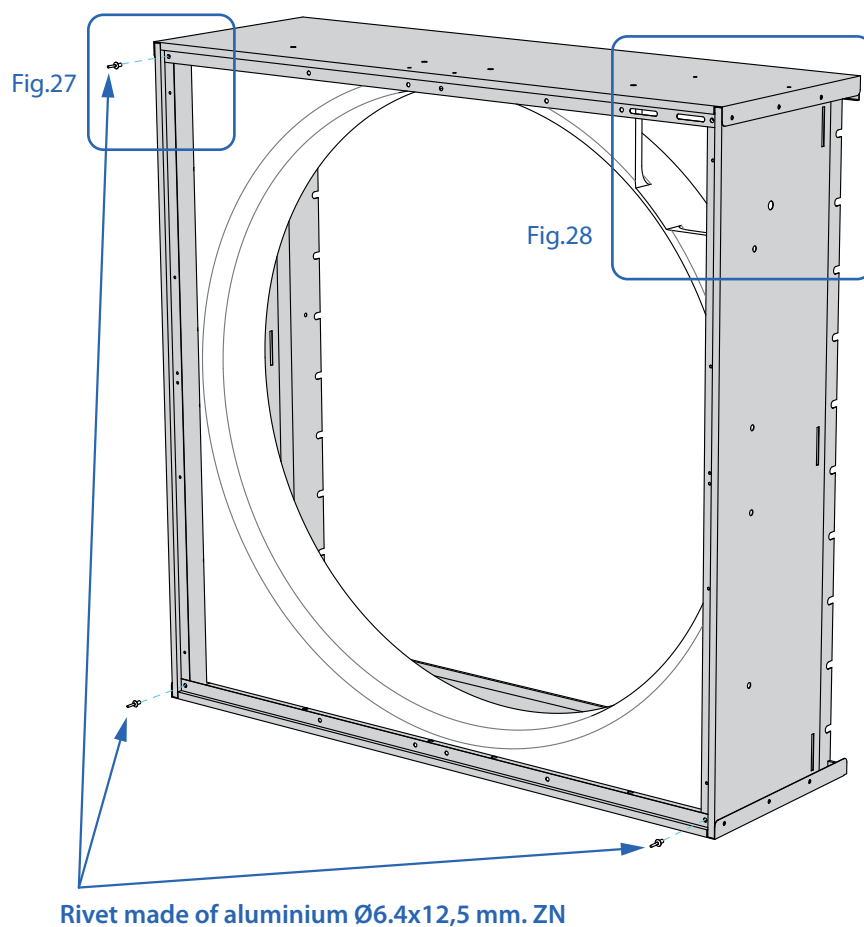


Fig. 26. Position of the rear rivets.

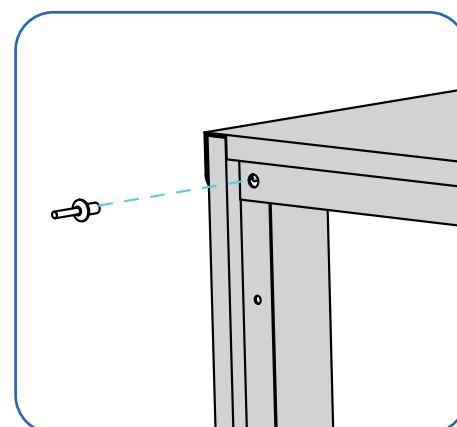


Fig. 27. Rivet on the left upper corner.

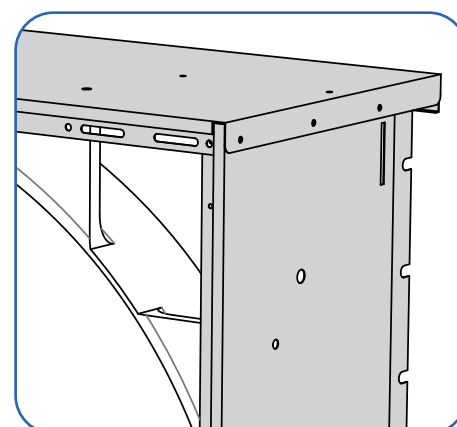


Fig. 28. Do not put any rivet on the right upper corner.

• Step 6

Put the central bar [06] on the structure by fixing it by means of the four highly resistant rivets  $\text{Ø}6.4 \times 12$  mm [12], two of them fixed to the roof and the other two as it is indicated by the following figures. In order to put the two floor rivets, lay down the fan.

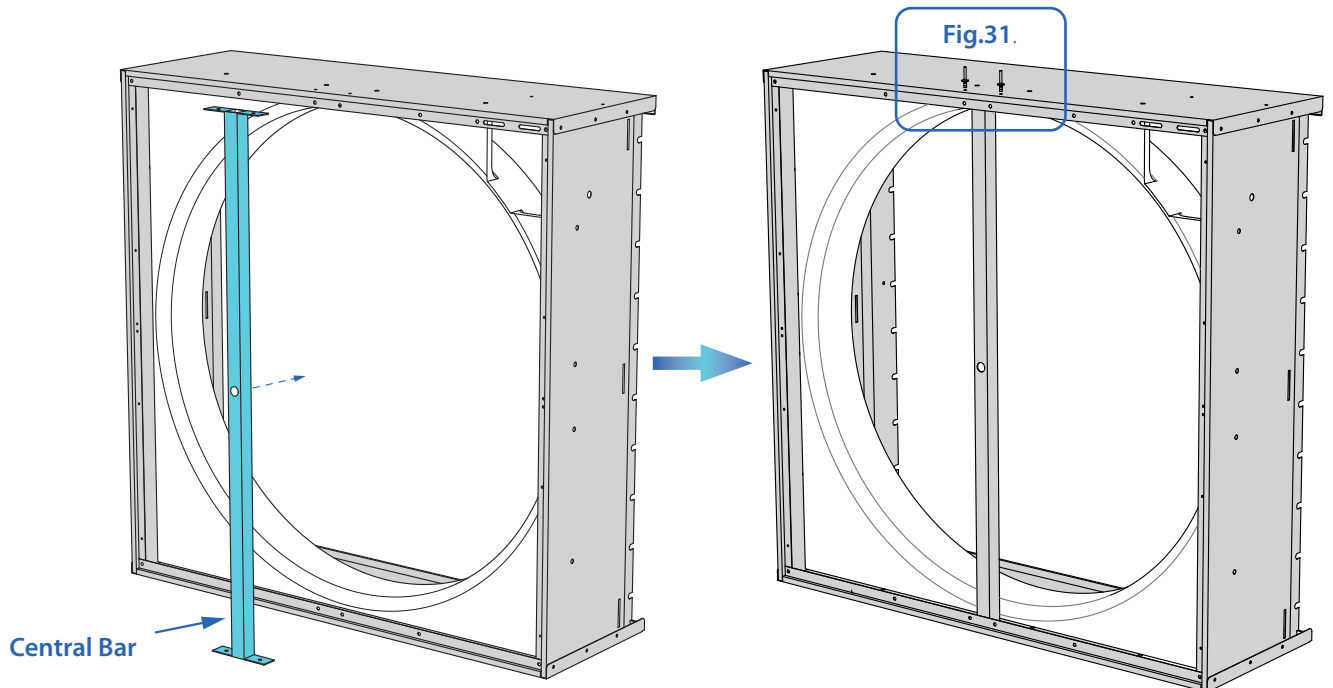


Fig. 29. Put the central bar.

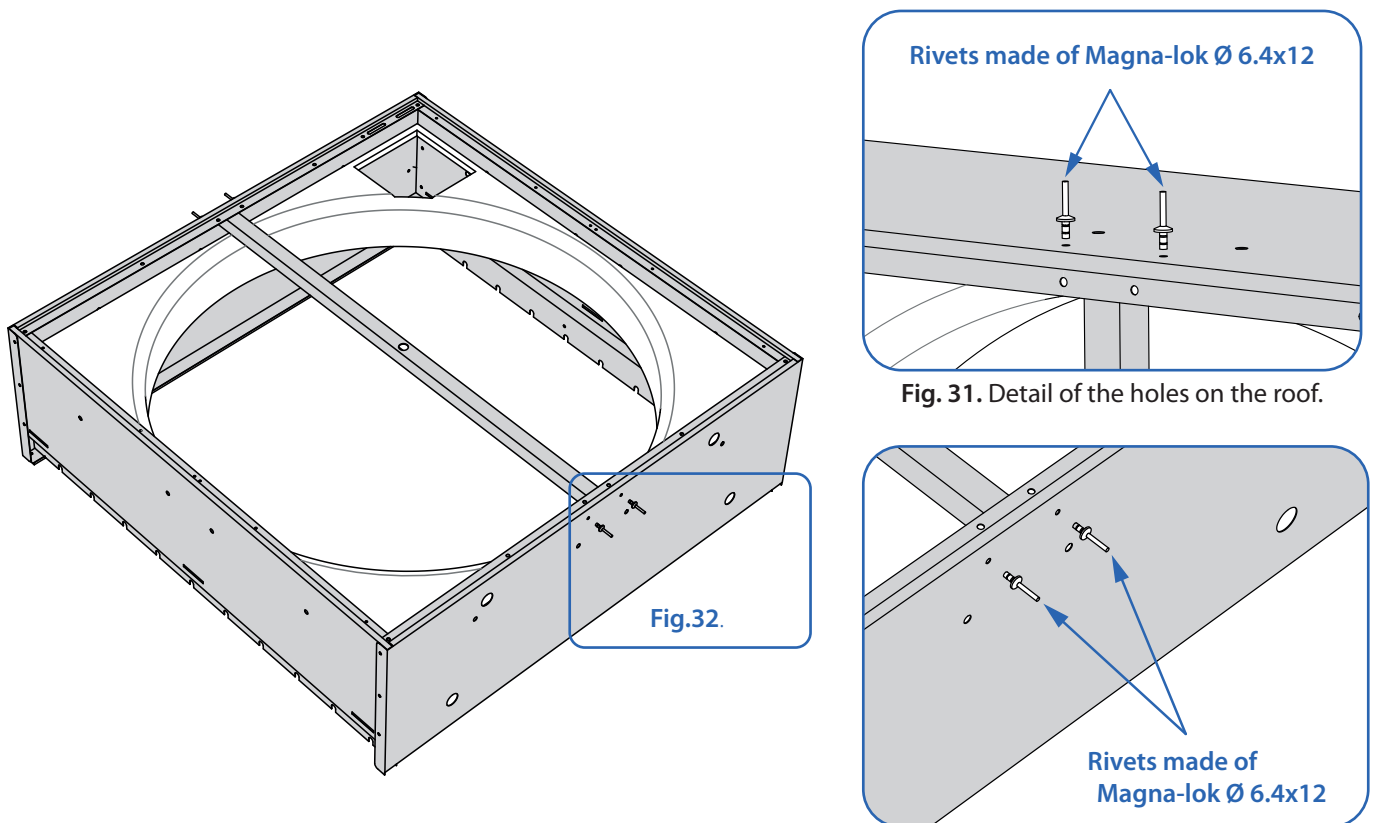


Fig. 30. Lay down the fan in order to rivet the bar to the floor.

Fig. 32. Detail of the holes on the floor.

- Step 7

Put the guide square [07] on the right upper corner (rear part of the fan) by means of two rivets made of aluminium  $\text{Ø}6.4 \times 19.5$  mm [10].

Put the second rivet on the place where it remained free before, by linking the fan structure and the guide square with this rivet.

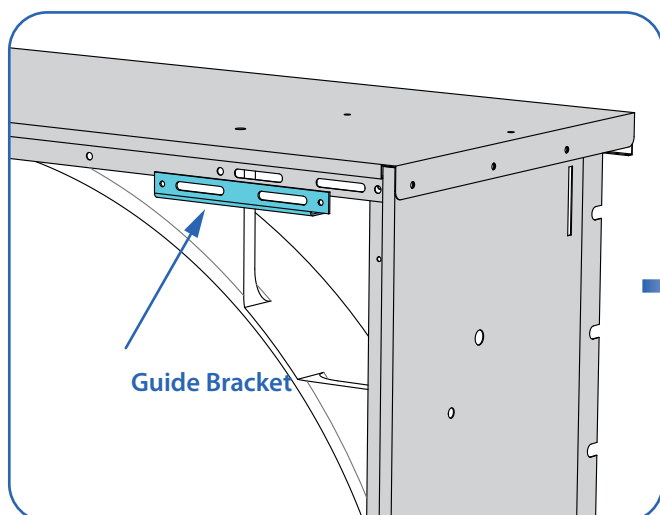


Fig. 33. Put the guide square

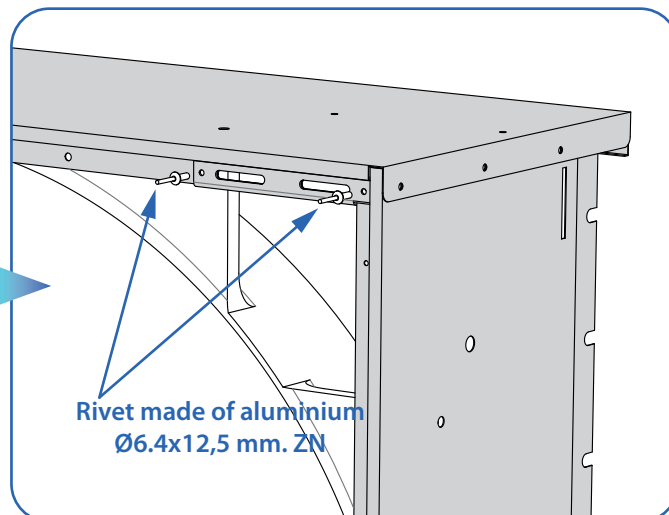


Fig. 34. Put two rivets made of aluminium  $\text{Ø}6.4 \times 19.5$  mm

- Step 8

On the fan front part, put the four rivetable nuts M5 X13,5 ZN [14], one on each corner of the fan. **This operation comes out of our facilities when an entire fan as well its sides have been requested.**

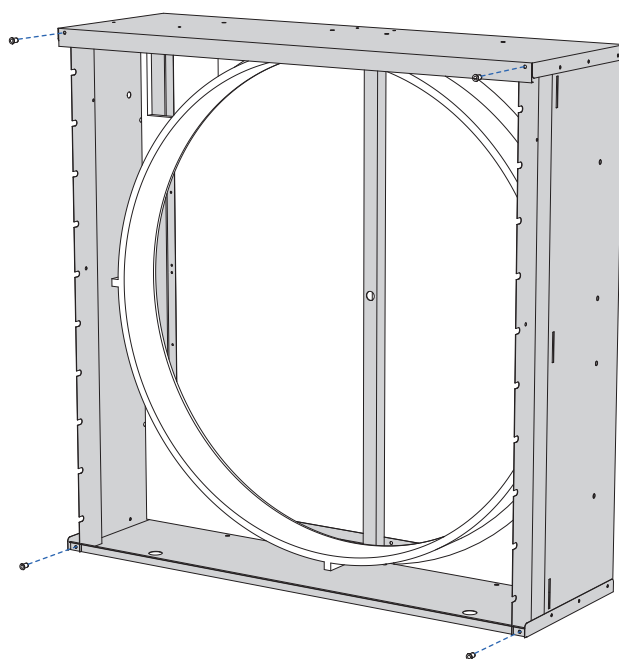


Fig. 35. Put the four rivetable nuts M5x13,5 ZN, one on each corner of the fan front part.

## 05. Assembly of the motor on the support

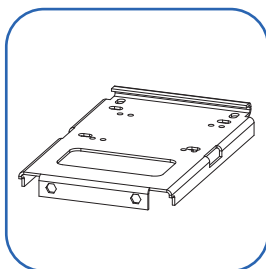
The assembly of the motor is just given for information purposes, since this set is sent assembled from the company. It will work in the case it is necessary to replace any of the components.

### Requerid Material:

#### 01 Motor Support

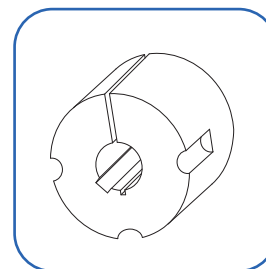
Mod. EX 50: 01 Unit  
MOT-SOPORTE-MOTOR-50 C6

Mod. EX 36: 01 Unit  
MOT-SOPORTE-MOTOR-36 C6



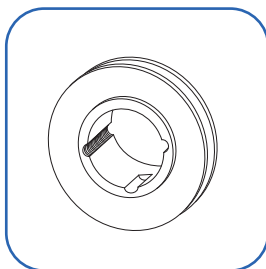
#### 02 Tapper lock

01 Unit



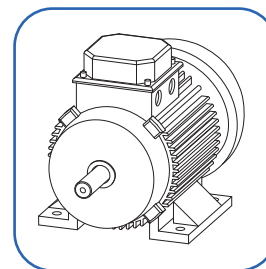
#### 03 Pulley SPA p/Tapper

01 Unit



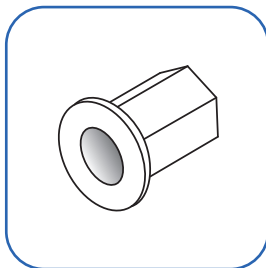
#### 04 Motor

01 Unit



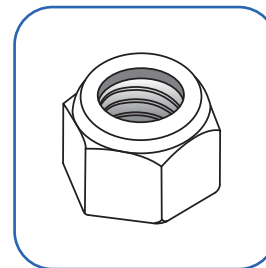
#### 05 Rivetable nut M8x19 mm. ZN

02 Units  
TOR-TUER-RE-A-8X19



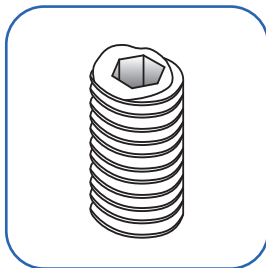
#### 06 Self-Blocking nut M8 DIN985 ZN

04 Units  
TOR-TUER-D985-M8-ZN



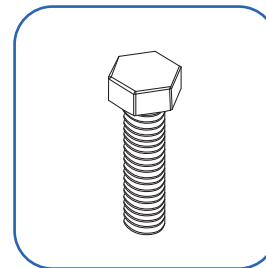
#### 07 Grub screw inside hexagon 3/8"x5/8"

02 Units



#### 08 Screw M8x25 DIN933 ZN

04 Units  
TOR-TOR-D933-M8X25



## • Step 1

Prepare the pulleys Tapper-lock on the motor shaft.

Insert the pulley [03] in the motor shaft in order to fit the Tapper – lock [02] inside the pulley through the conic side, make sure that the blind half – holes of the Tapper – lock match (Fig.36).

Put the two grub screws in the threaded holes, but without tightening too much, just a little bit (Fig.37). Insert the pulley in the shaft until it gets to the top of the front cover of the motor.

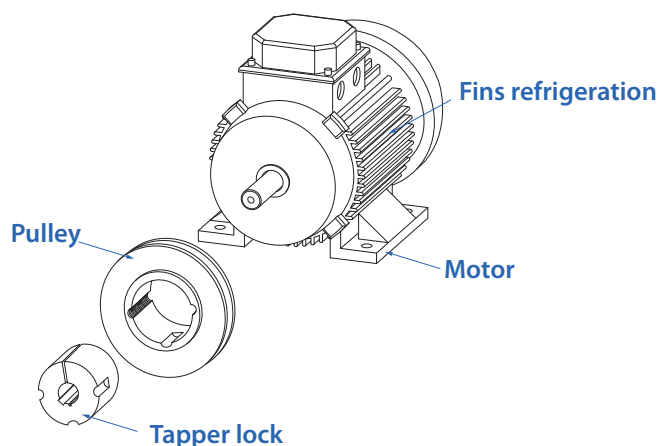


Fig. 36. Insert the pulley on the motor shaft.

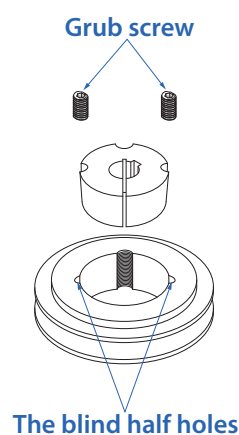


Fig. 37. Put the grub screws.

It is very important that once the pulley is in its position, we finish alternatively tightening the two grub screws with a dynamometric wrench, until a tightening torque of between 17 Nw and 20 Nw. Never tighten a screw to 100% and then the other, but alternatively either.

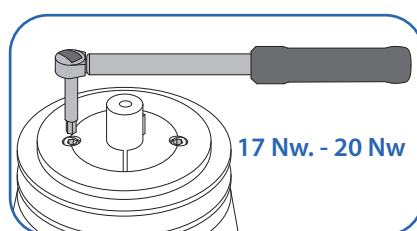


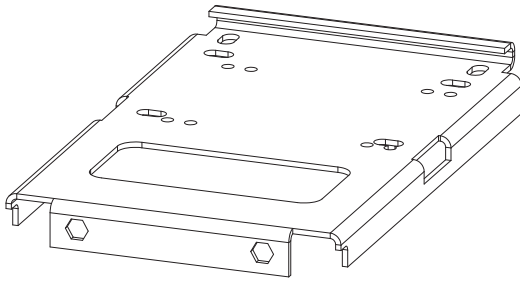
Fig. 38. Tighten alternatively.

The position of the Pulley + Tapper on the motor shaft depends on the motor model (1 Cv 1'5 CV, etc...), it must remain aligned with the central pulley. Please refer to the step 5 corresponding to the assembly of the bushing, pulley, bar and transmission (Fig. 58 and Fig. 59)

## • Step 2

- Put the rivetable nuts M8x19 [05] in the corresponding holes of the motor support [02]. Fix the already complete motor to the support by means of the screws M8x25 [08] mm, and the self – blocking nuts M8 DIN985 [06].

Motor support



Reversible nut M8x19 ZN

Fig. 39. Put the rivetable nuts.

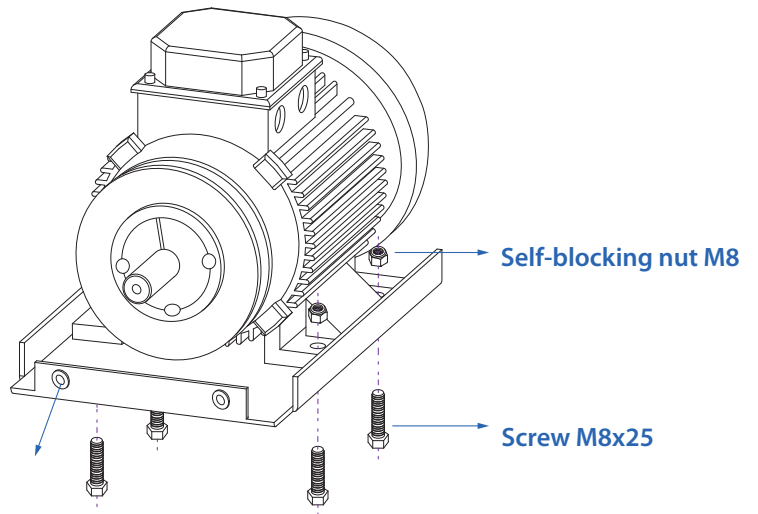


Fig. 40. Fix the motor to the shaft.

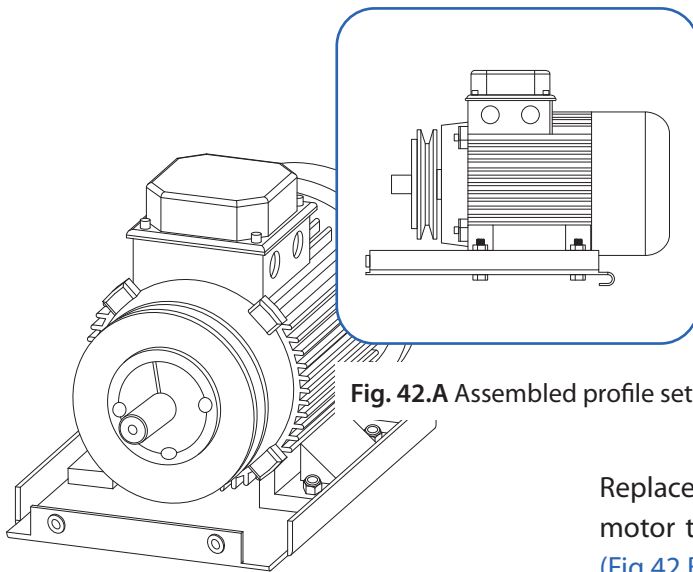


Fig. 41. Assembled set.

Fig. 42.A Assembled profile set.

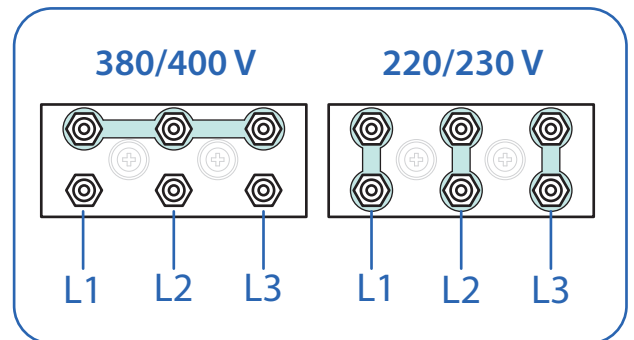


Fig. 42. B Adequation of the tensions.

Replacement of the connections in order to adequate the motor to the STAR (380/400 V) or TRIANGLE (220/230 V) (Fig 42 B).

REMARK: Regarding the three – phase motors, it is very simple to change the turning direction of the pulley, it is enough to exchange any of the two positions of the power supply phases (L1, L2 L3). Example: replacing the power supply cable L1 with the L2.

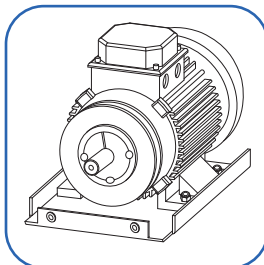


## 06. Assembly of the motor on the structure

Required Material:

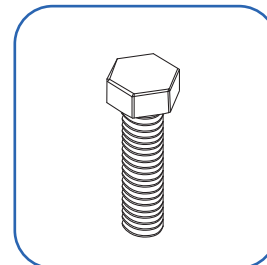
**01** Motor + pulley + motor support

01 Unit



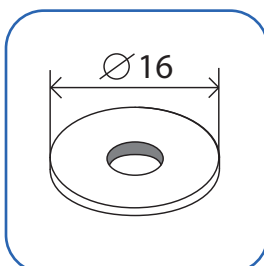
**02** Screw M8x25 DIN933 ZN

02 Units  
TOR-TOR-D933-M8x25



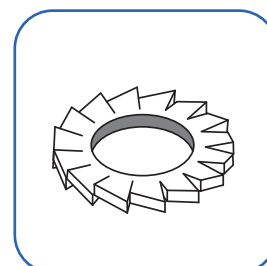
**03** Arandela M8  
DIN125 ZN Ø16

02 Unidades  
TOR-ARAN-D125-8Z



**04** Arandela M8  
DIN6798-A ZN

02 Unidades  
TOR-ARAN-D6798/8.2



### • Step 1

In order to make the assembly of the motor support easier on the structure of the fan, we must turn the structure 180° by putting the frame downward.

### • Step 2

Put the motor in its position by fixing it to the structure by means of the screws M825 [02] with the washer M8 DIN125 [04] and the washer M8 Din6798-A [03] (Fig.44).

Make sure that the motor support perfectly fits in the guide there is on the roof (Fig.45).

Do not stop tightening the screws M8x25 in order to be able to tighten the belt later on.

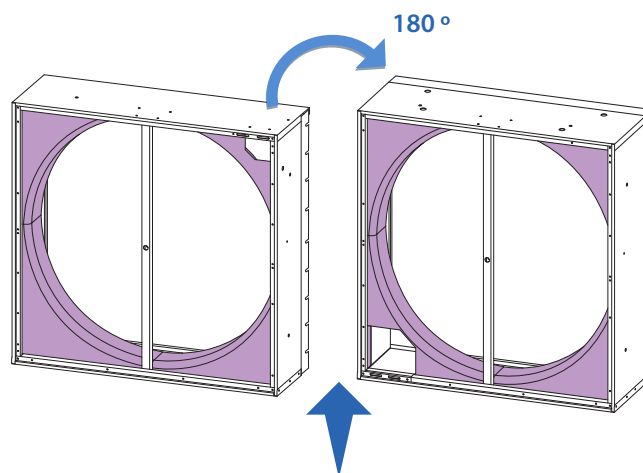


Fig. 43. Turn the structure.

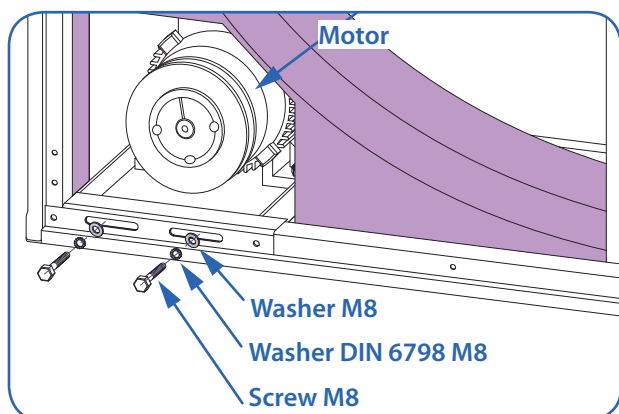


Fig. 44. Put the motor in its position.

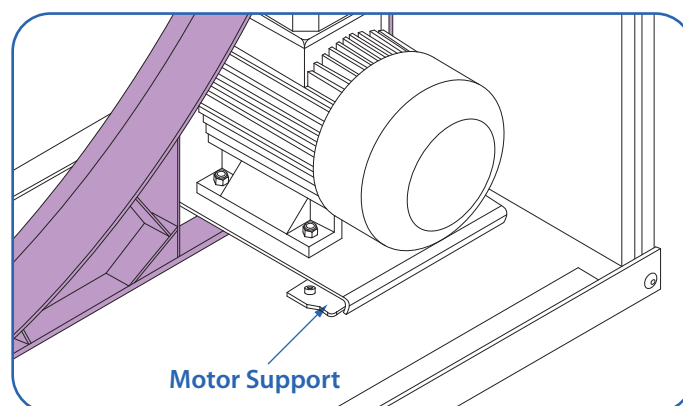
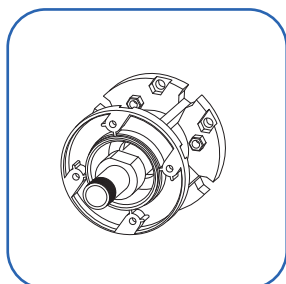


Fig. 45. Make sure the motor support fits inside the guide.

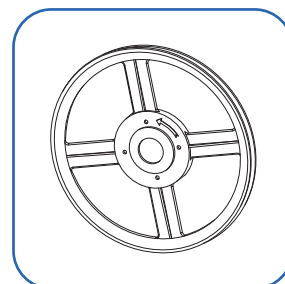
**01** Bushing + shaft + bearing

01 Unit  
BUJE-EX



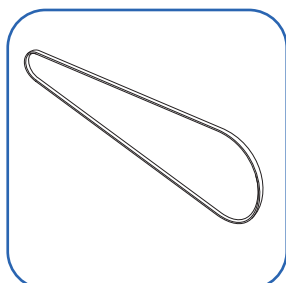
**02** Central pulley made of aluminium Ø330

01 Unit  
MOT-POLEA-50/36



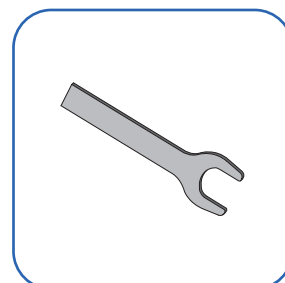
**03** Belt

01 Unit



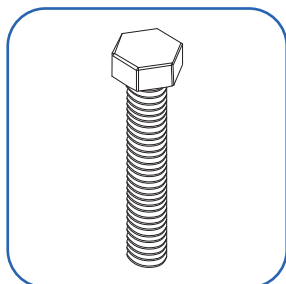
**04** Flat wrench

01 Unit



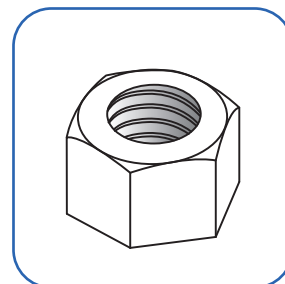
**05** Screw M6x30  
DIN933 ZN

04 Units  
TOR-TOR-D933-M6X30



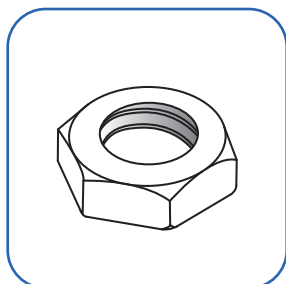
**06** Nut without any brake  
M6 DIN934 ZN

04 Units  
TOR-TUER-D934-M6-ZN



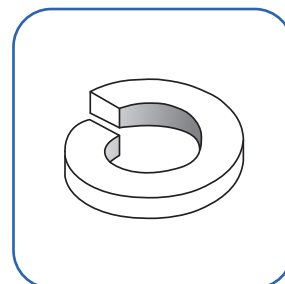
**07** Nut M24x2  
DIN936 ZN

01 Unit  
TOR-TUER-24/2



**08** Washer Grower M6  
DIN127 ZN

04 Units  
TOR-ARAN-D127-6Z



- Step 1

Assemble the central pulley made of aluminium [02] with the bushing [01].

In order to do so, use the four screws DIN933 of M6x30 [05], put the four washers grower [08] on the side of the screw head, and the four nuts without any brake M6 DIN934 [06] (Fig.46).

The nuts must fit perfectly in the place we have made in the bushing (Fig.47).

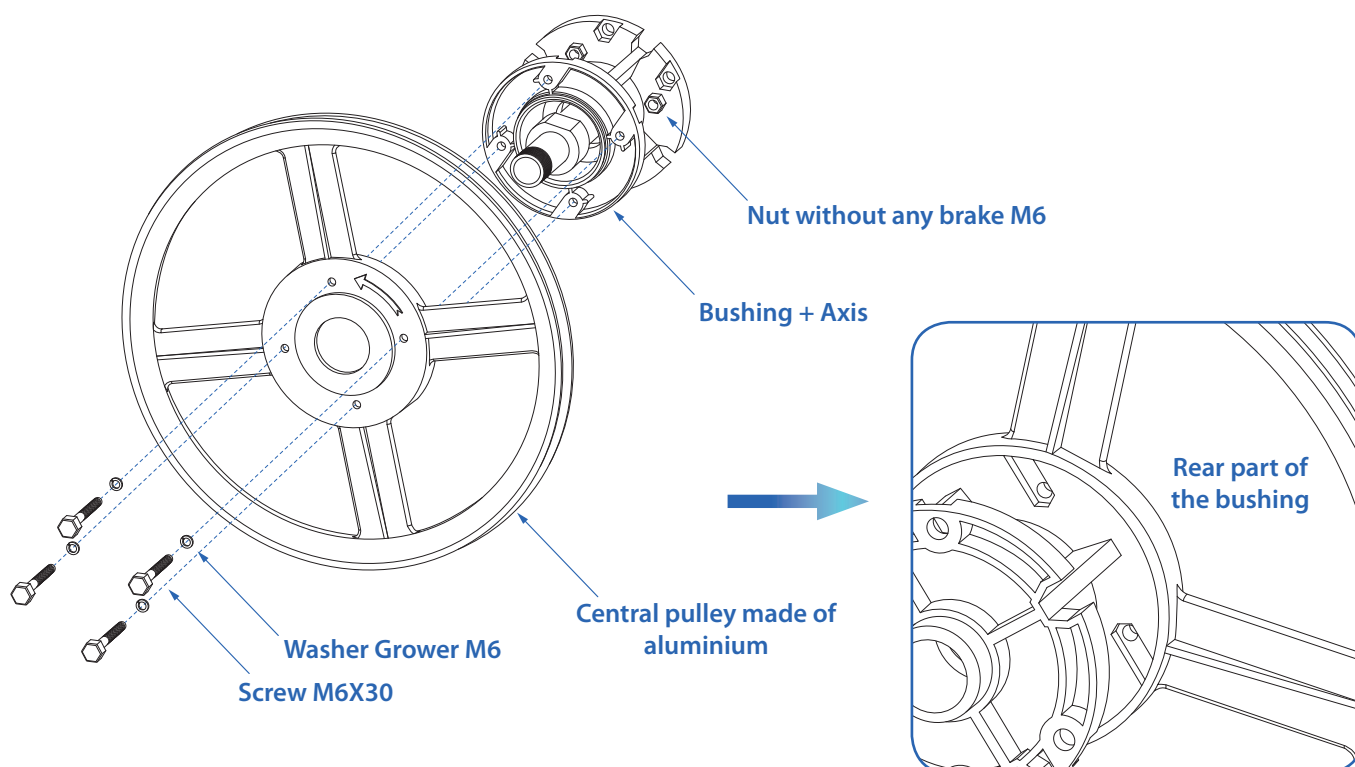


Fig. 46. Assemble the central pulley made of aluminium with the bushing

Fig. 47. Detail of the seat of the nuts in the bushing

- Step 2

Put the bushing on the central bar of the fan to later place the nut [07].

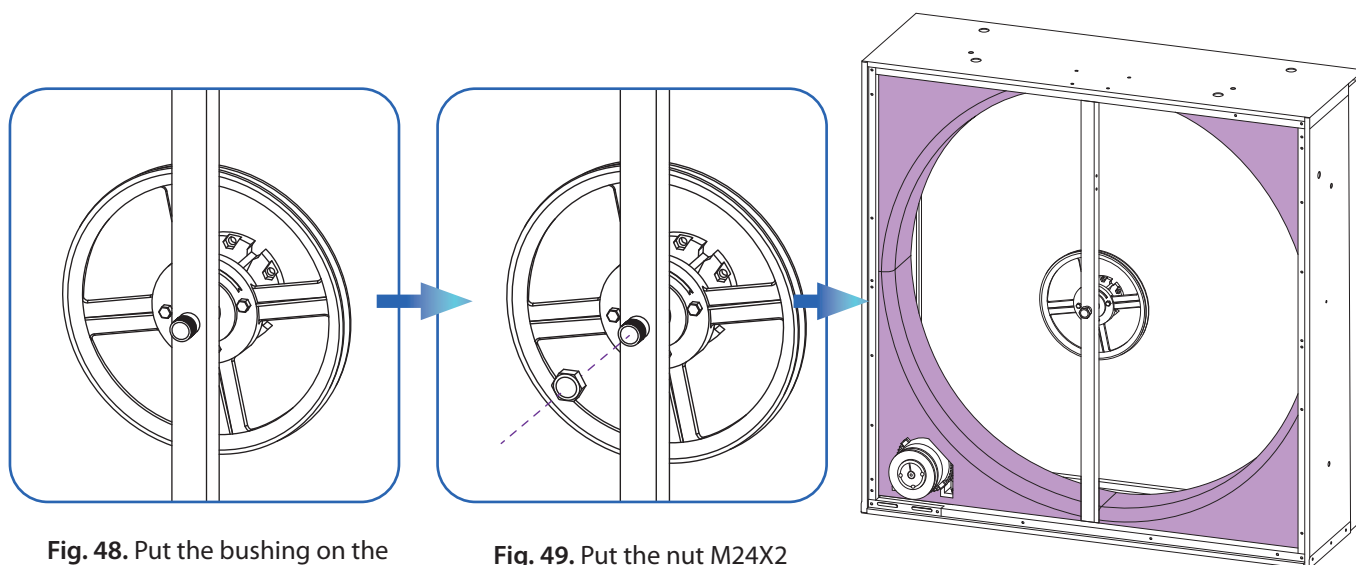


Fig. 48. Put the bushing on the central bar.

Fig. 49. Put the nut M24X2

Fig. 50. Put the nut M24X2

• Step 3

Tighten the nut M24x2 strongly in order to prevent it from coming out.

The shaft must be fixed with the flat wrench supplied at the same time we tighten the nut in order to prevent the Bushing + Pulley set from turning (Fig. 51) and (Fig. 52)

The nut M24x2 must remain totally parallel to the reinforcement. (Fig.53) y (Fig.54)

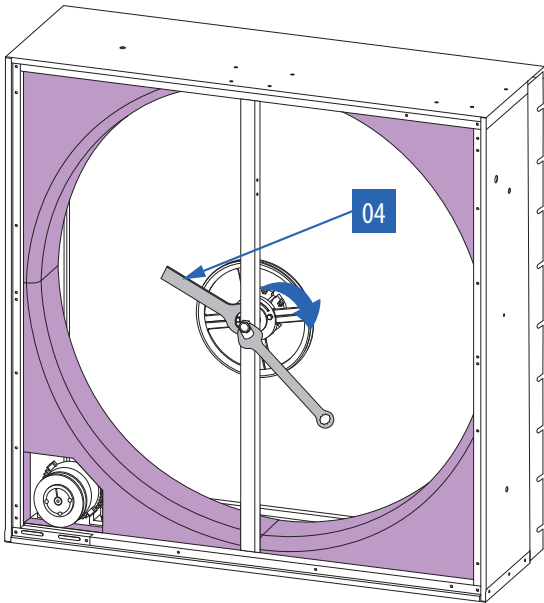


Fig. 51. Tighten the nut M24x2.

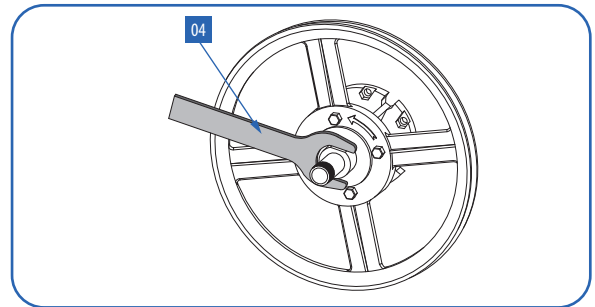


Fig. 52. Hold the shaft with the flat wrench supplied.

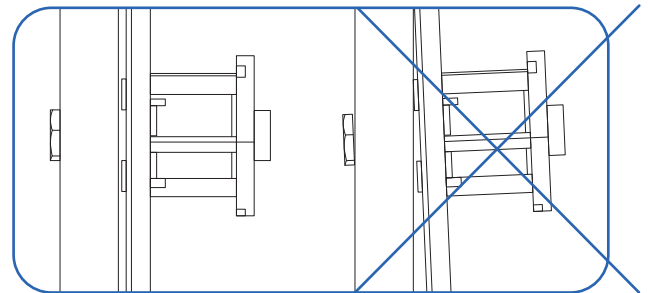


Fig. 53. Assembly OK

Fig. 54. Assembly NOT OK

• Step 4

Put the belt [03] by linking the central pulley made of aluminium with the motor pulley, in such a way that both remain aligned (Fig.56). Otherwise, the belt may come out of it and get cut because of the turns (Fig.57).

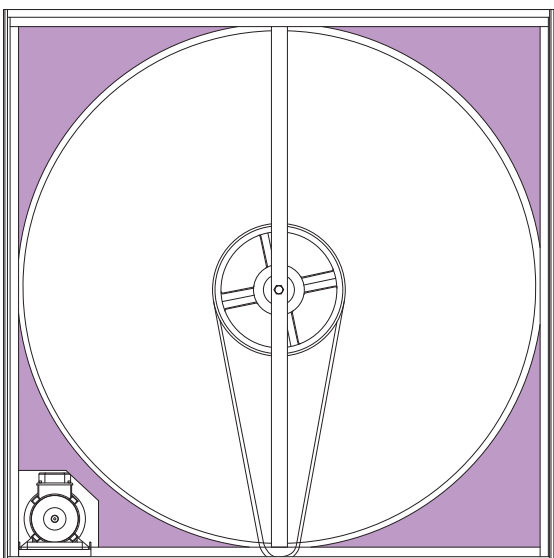


Fig. 55. Put the belt. Begin with the central pulley.

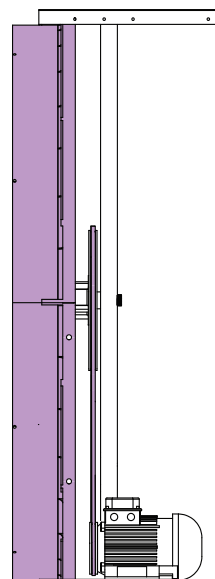


Fig. 56. Assembly OK.

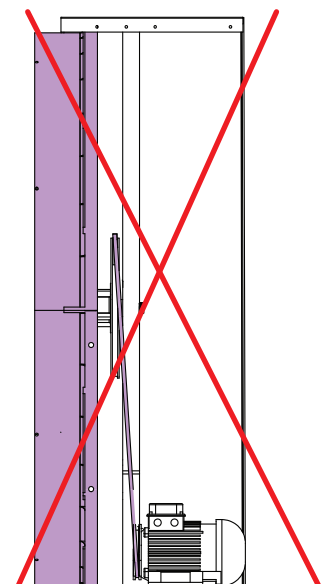


Fig. 57. Assembly NOT OK.

- Step 5

Tighten the belt, in order to do so, move the motor towards the fan outer part. Once the belt tightened, tighten the screws holding the motor. In order to check whether the belt is sufficiently tightened, try to link both sides of the belt with one's hand. The movement or approximation between the two sides of the belt should not exceed 1 cm. on each side (Fig. 60).

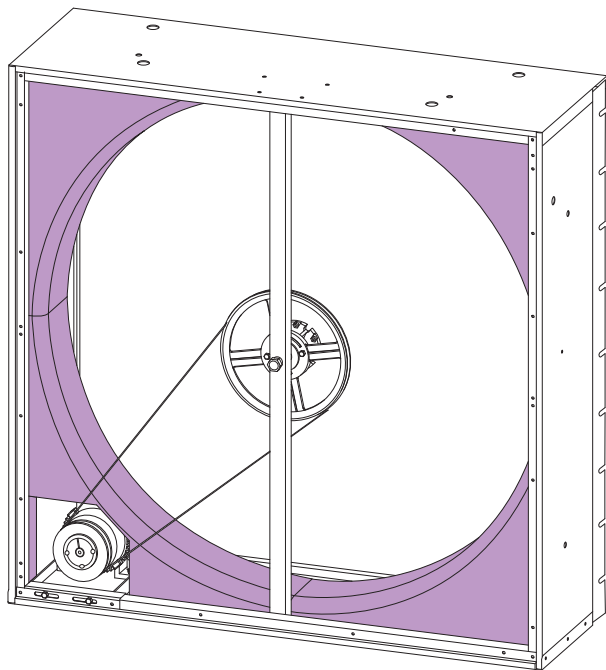


Fig. 58. Tighten the belt.

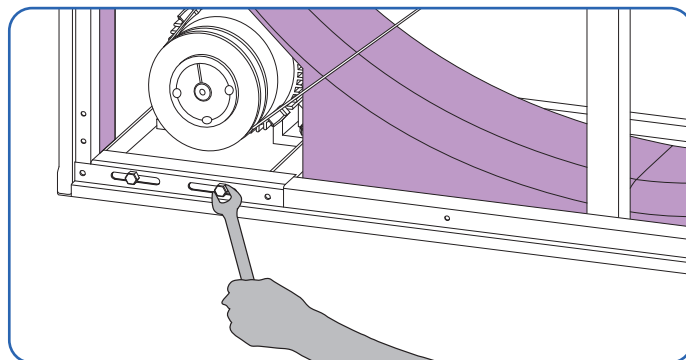


Fig. 59. Tighten the belt by moving the motor.

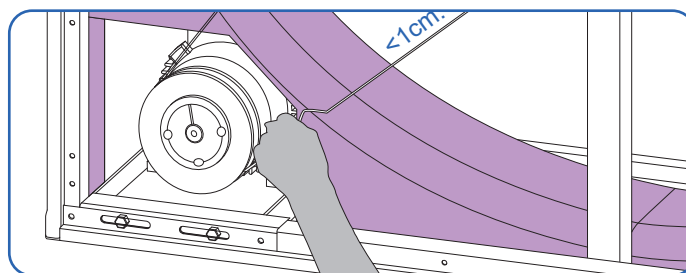


Fig. 60. Check whether the belt is sufficiently tightened.



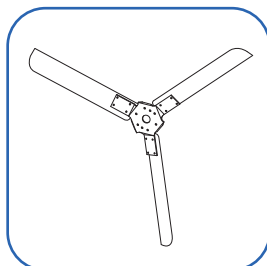
As times goes by, we recommend tightening the belt, therefore, we have to dismantle it and move the motor towards the fan outer part. Then, insert the pulley again.  
 If you need a spare part, please observe the reference in the inscription of the belt itself.

## 08. Assembly of the propeller, centrifuge and grommet

Required Material.

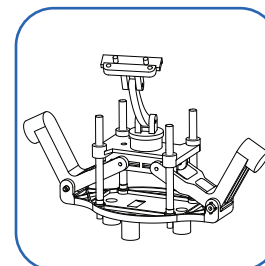
**01** Complete propeller

01 Unit



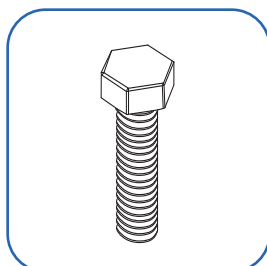
**02** Centrifuge

01 Unit  
CENTRI-EX-V4



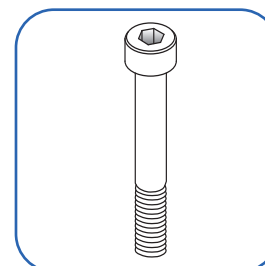
**03** Screw M8x25  
DIN933 ZN

04 Units  
TOR-TOR-D933-M8X25



**04** Screw M8x55  
DIN912 ZN

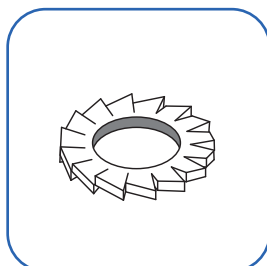
04 Units  
TOR-TOR-912-8X55-ZN



**05** Washers M8  
DIN6798-A ZN

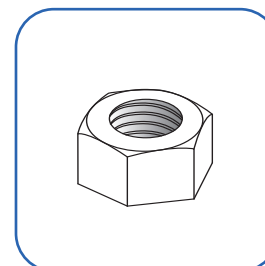
08 Units\*  
TOR-ARAN-D6798/8.2

\*NOTE: 04 units in the  
[stainless steel propeller  
model.](#)



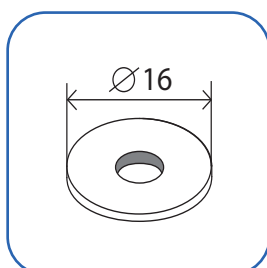
**06** Nut without any brake  
M8 DIN934 ZN

08 Units  
TOR-TUER-D934-M8-ZN



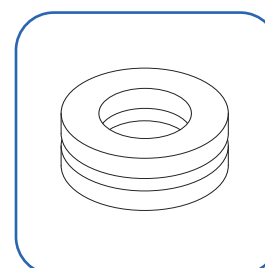
**07** Washers M8  
DIN125 ZN Ø16

04 Units  
TOR-ARAN-D125-8Z



**08** Grommet made of  
rubber 14x24

01 Unit  
PASACABLE -EX36/50



This section is explained only considering the propeller model of 3 blades used for the model EX-50; however, regarding the fans EX-36, the assembly is identical but with the corresponding propeller of 6 blades .

Regarding the dismantling of the propeller from the sending pallet, please follow the next steps:



- 1.- Rotate the propeller in order to dismantle the pallet with which it is sent.
- 2.- The propeller moves upward and comes out of it by itself when turning the propeller.
- 3.- There is no need to take out the propellers by pulling the from the ends of the blades.

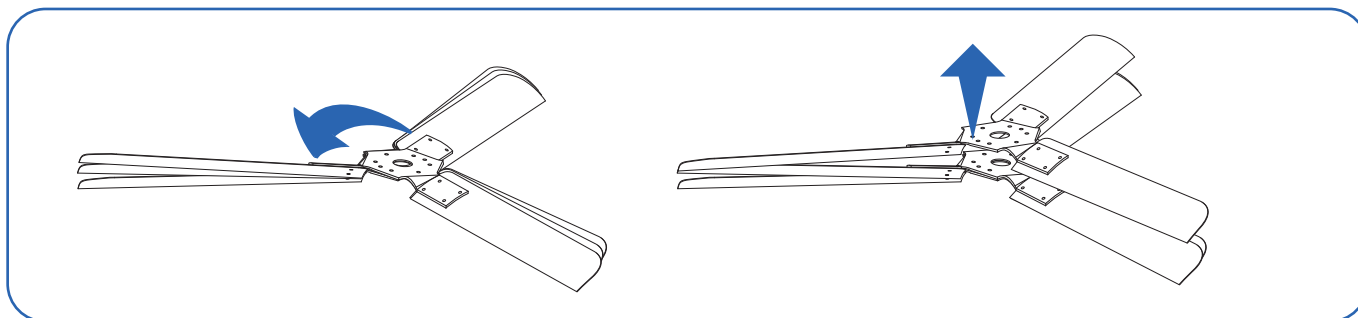


Fig. 61. Instructions in order to remove the propeller from the pallet used for the delivery.

### • Step 1

Assemble the propeller on the bushing of the fan by screwing on by means of four screws M8x25 DIN933 [03], four washers M8 DIN6798 [05], which we must set beside the screw head, and four nuts without any brake M8 DIN934 [06] (Fig.63 y Fig.64).

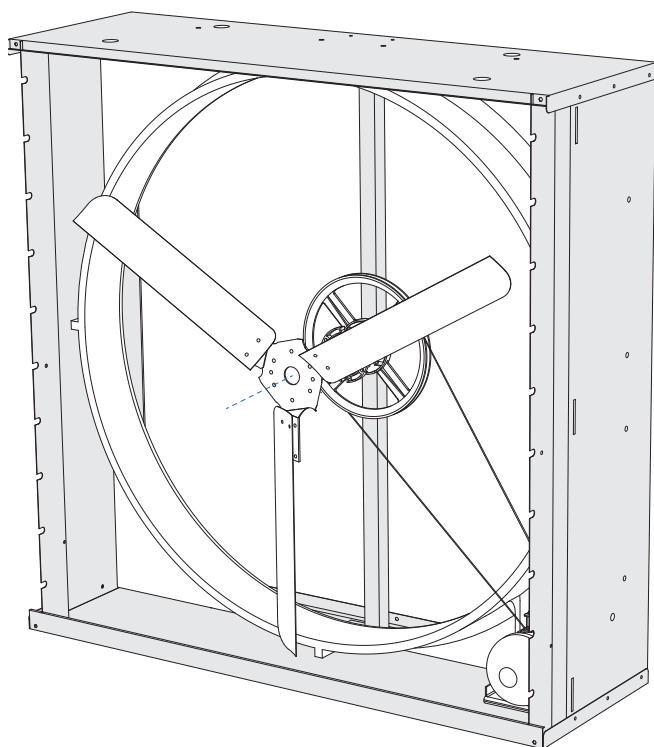


Fig. 62. Put the propeller on the bushing.

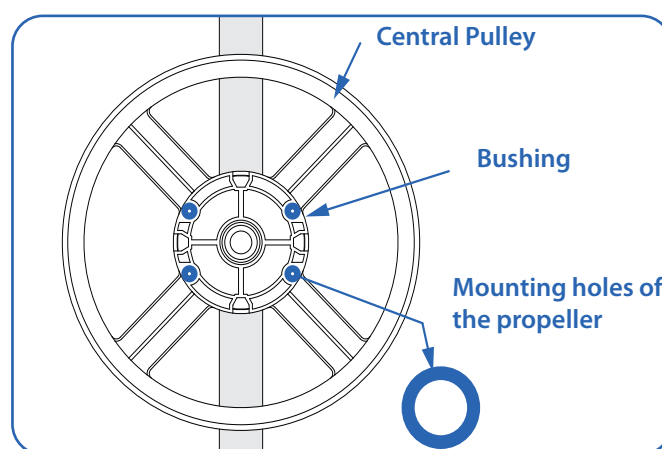


Fig. 63. Holes of the bushing where we must screw on the propeller.

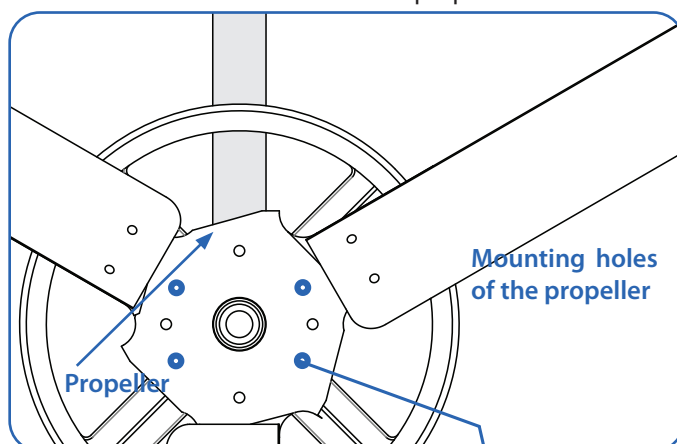


Fig. 64. Holes of the propeller where we must screw on.

The four screws must be tightened just a little bit until the nut fits in the rear place, then tighten the four of them for a second time. Do not tighten one after the other, but in a diagonal and alternative way.

Pay attention to the existing seat of the bushing where we must put the nuts M8 (Fig. 67)

At the same time we assemble the propeller by fixing it through the middle and not through its ends, we prevent it from moving and therefore avoid the tightening torque not to be convenient.

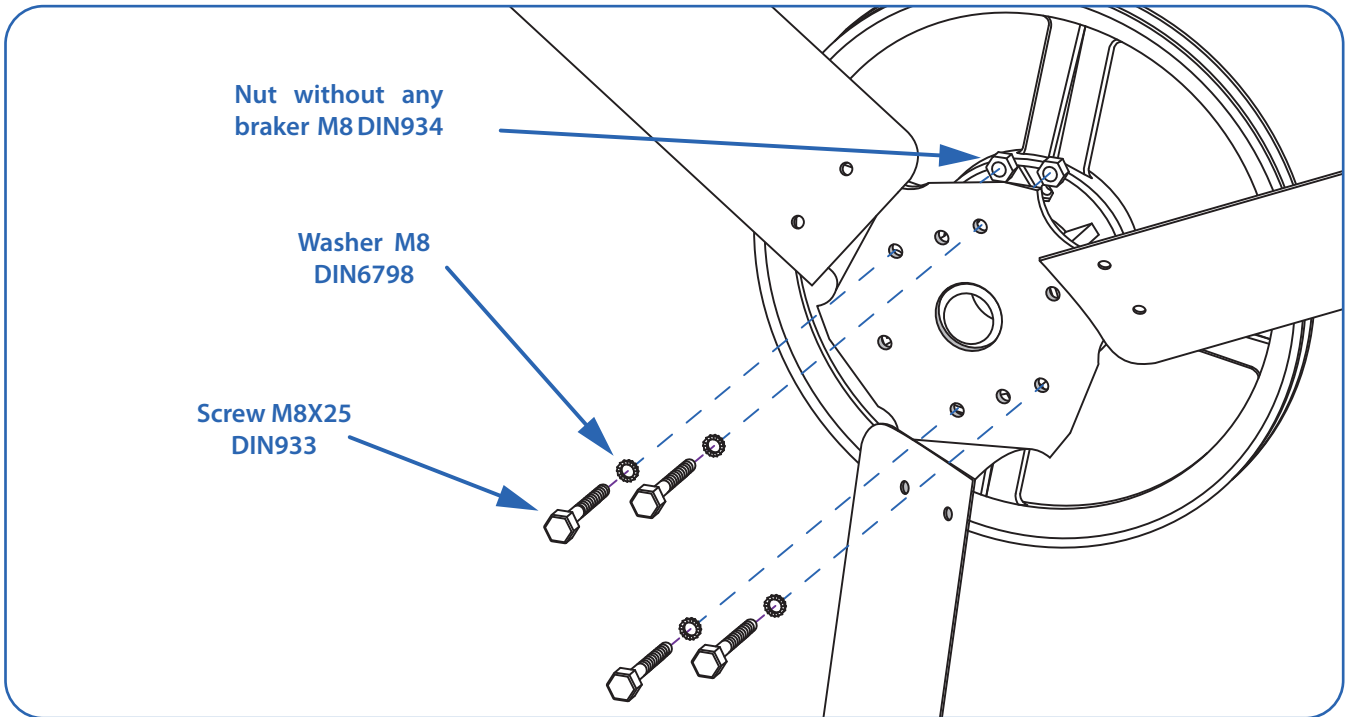


Fig. 65. Put the four screws its washers and nuts inside the indicated holes.

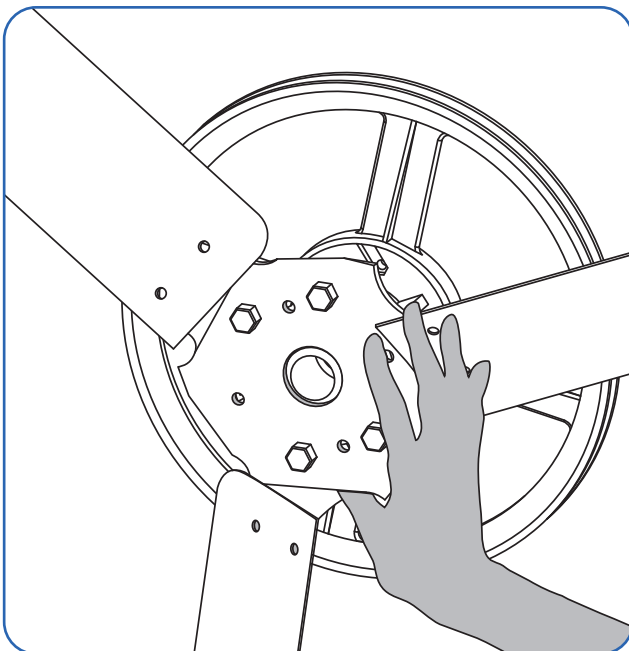


Fig. 66. Fix the propeller with one's hand at the same time we tighten.

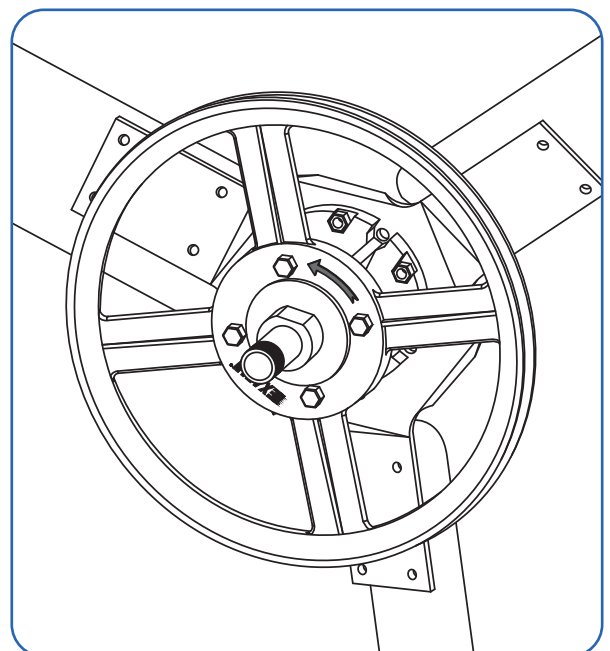


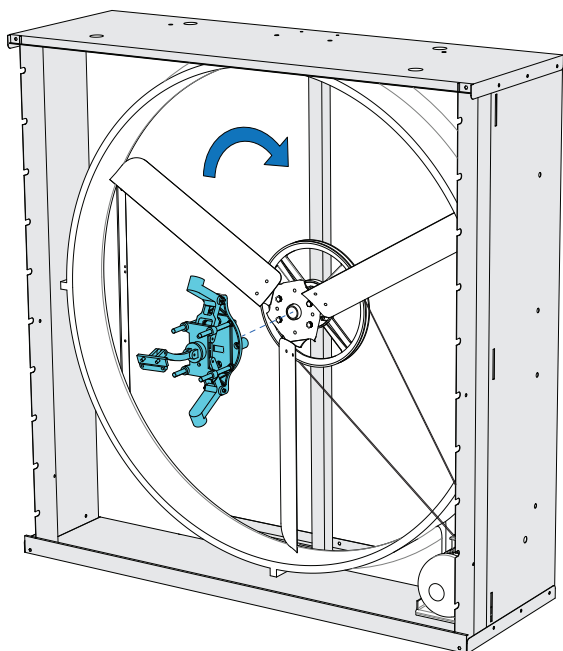
Fig. 67. Seats where we will leave the nuts on the bushing.



• Step 2

Put the centrifuge in the middle of the fan, to do so, use the four screws M8x55 DIN912 [04] with its four washers M8 DIN125 ZN [07] on the rear part and the four washers M8 DIN6798 ZN [05] on the rear part\* with its four nuts without brake M8 DIN 934 ZN. [06].

\*The stainless steel propeller model doesn't use washers M8 DIN6798 ZN in this step.

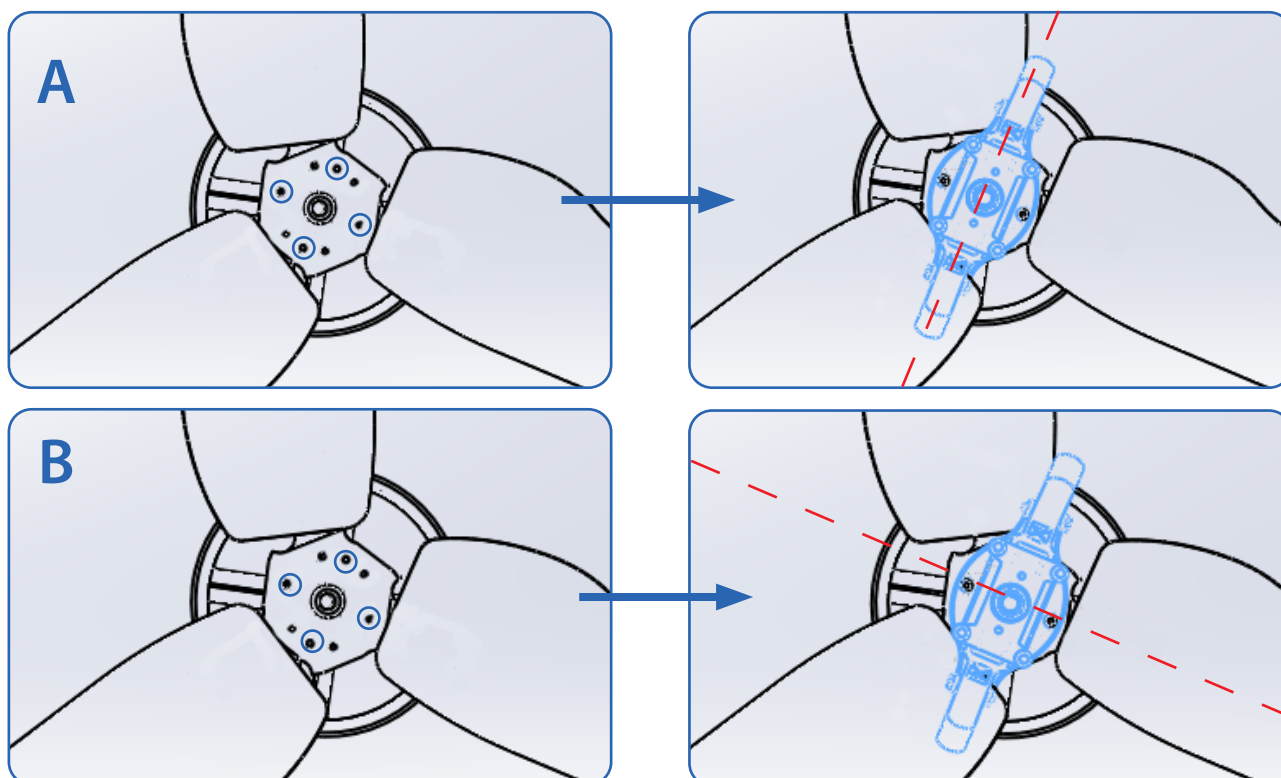


**REMARK:** Do not tighten the screws [04] of the centrifuge too much or we could damage the legs of the centrifuge, but neither too little.

**NOTE:** When installing the centrifugal MUST CONSIDER THEIR POSITION ON BLADES. PROPER INSTALLATION POSITION SHOWN IN **FIGURE "B"**.

If you detects vibrations may be due to poor positioning of the centrifuge; Check to fix it.

Fig. 68. Assemble the centrifuge



Regarding the first connection, make sure that the propeller turning direction fits the clockwise direction (Fig. 70) the turning direction is also indicated on the central pulley (Refer to Figure 69).

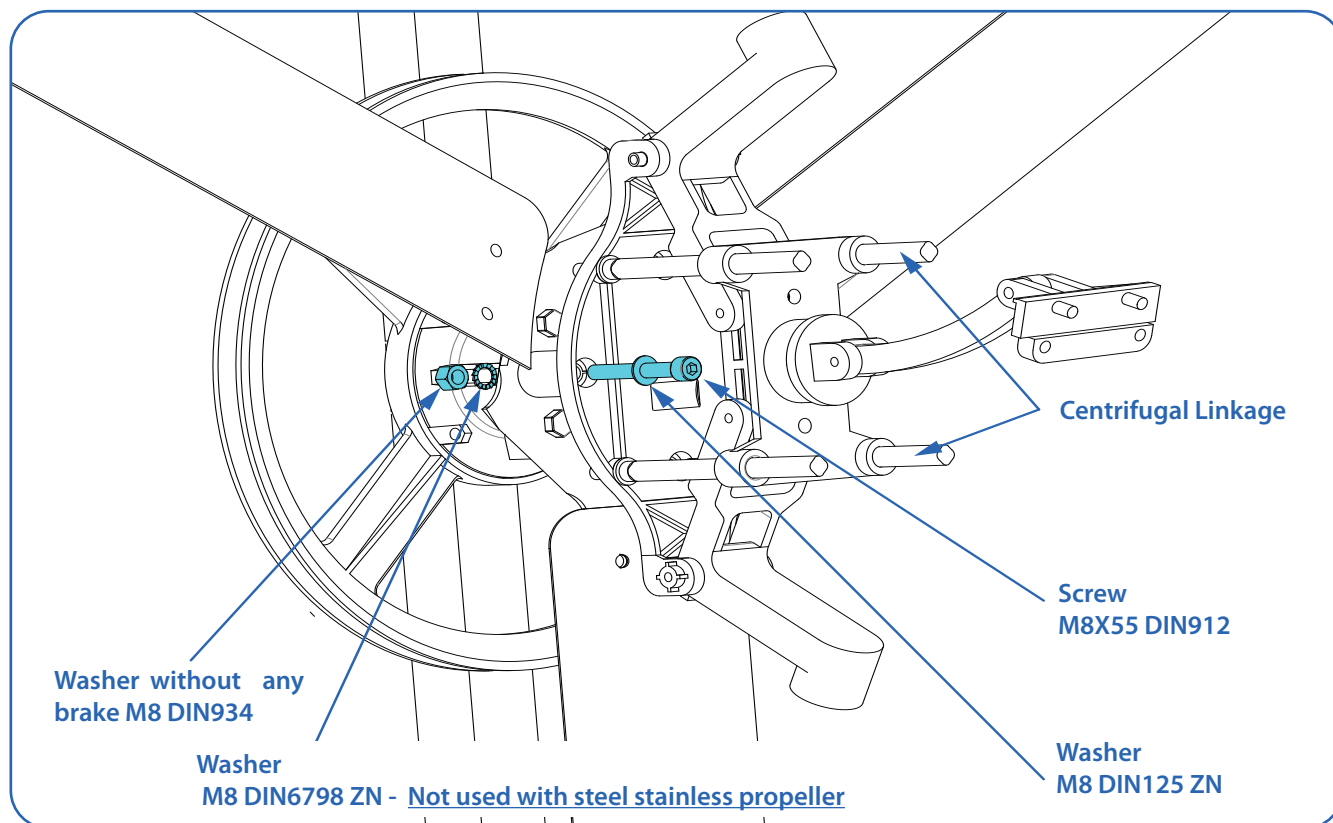


Fig. 69. Assemble the centrifuge. Position of the screws, washers and nuts.

• Step 3

Put the grommet (08) on the left side and then remove the cable out of the motor. The grommet works to avoid the plate cutting the cable and cause a circuit – cut (Fig 70). Completely stretch the cable out of the fan in order to prevent a certain part from remaining beside the motor pulley and cause a short – circuit because of friction.

Once we have made this, we may turn the fan 180° again in order to let it in its original position.

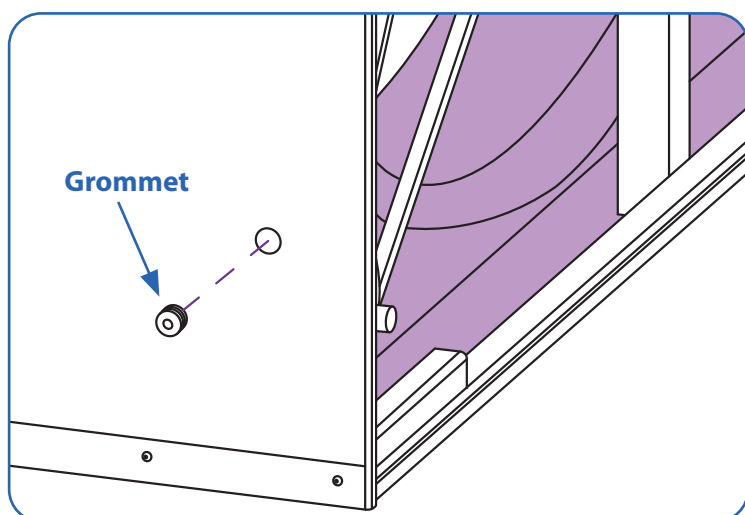


Fig. 70. Put the grommet inside its corresponding hole on the left side.

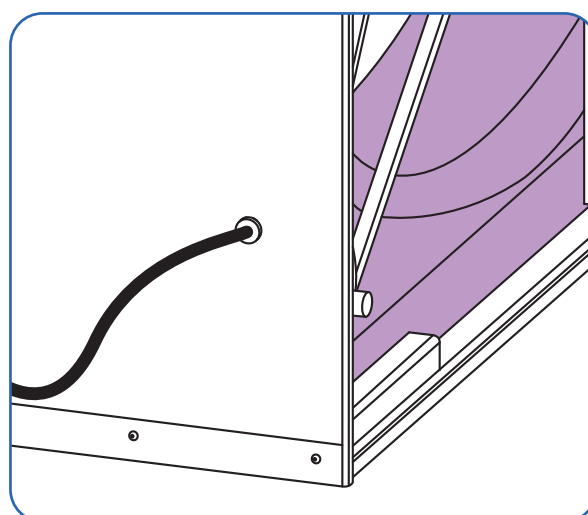
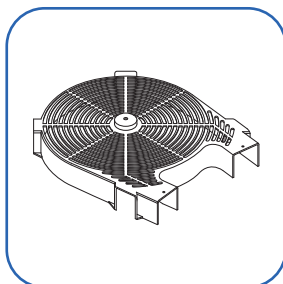


Fig. 71. Remove the cable out of the motor through the grommet.

## 09. Assembly of the protection and mesh

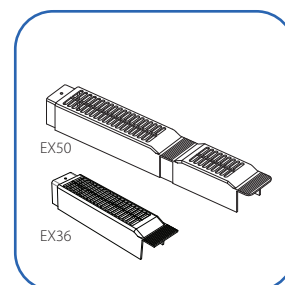
### 01 Wired Material : Protección polea

01 Unidad  
PROT-POLEA-LILA



### 02 Protección correa EX50 ó EX36

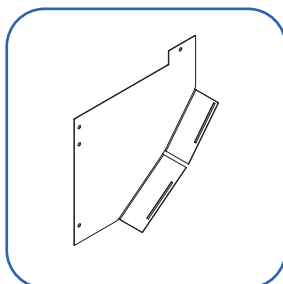
02 Unidades  
PROT-CORREA-LILA



### 03 Motor protection device

Mod EX-50: 01 Unit PROT-  
MOTOR-50

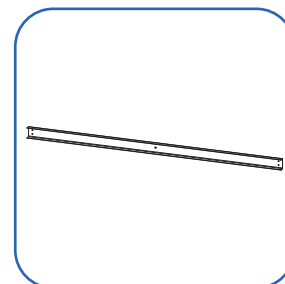
Mod EX-36: 01 Unit PROT-  
MOTOR-36



### 04 Reinforcement

Mod EX-50: 01 Unit  
EST-REFUERZO-50 C6

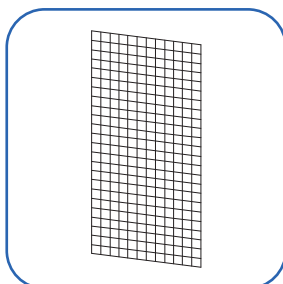
Mod EX-36: 01 Unit  
EST-REFUERZO-36 C6



### 05 Mesh

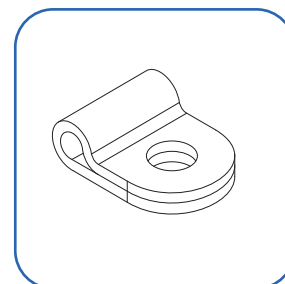
Mod EX-50: 02 Units  
EST-MALLA-50

Mod EX-36: 02 Units  
EST-MALLA-36



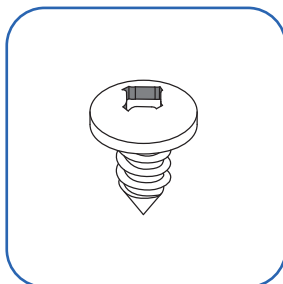
### 06 Reinforced fixing staple

08 Units  
EST-GRAPA



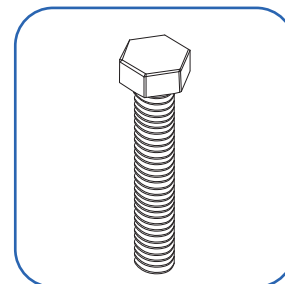
### 07 Metal sheet screw 6,3x19 ZN

21 Units  
TOR-TIRAF-CHAPA



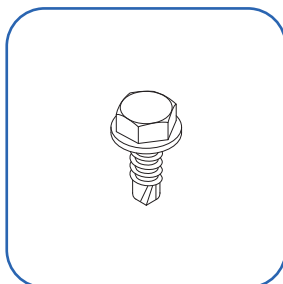
### 08 Screw M6x30 DIN933 ZN

01 Unit  
TOR-TOR-D933-M6X30



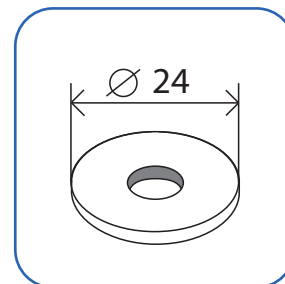
### 09 Self – drilling screw DIN7504/K 4,8x16 ZN

04 Units  
TOR-TOR-BROCA



### 10 Washer M7 DIN9021 ZN Ø18

08 Units  
TOR-ARAN-D9021-7Z



### 11 Washer M7 DIN9021 ZN Special Ø24

01 Unit  
TOR-ARAN-D9021-7Z-E

• Step 1

By means of two metal sheet screws [07], fix the belt protections [02] on the ends of the pulley protection device [01].

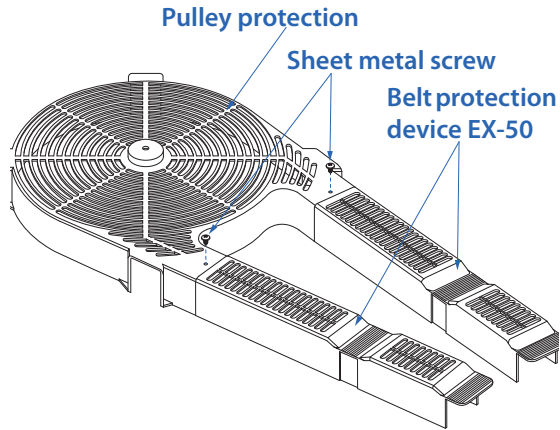


Fig. 72. Protection EX 50.

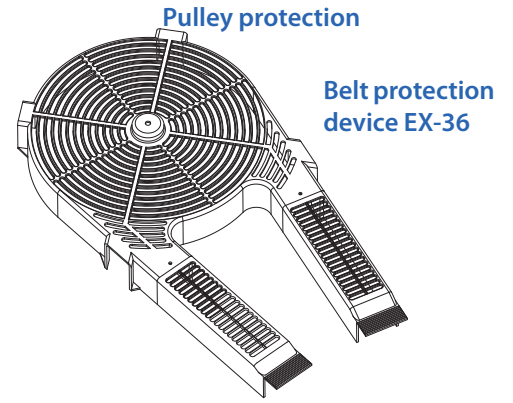


Fig. 73. Protection EX 36.

REMARK: Observe how the belt protectors are shorter in the EX36 .

• Step 2

Fix the motor protection [03] device on the right upper end of the fan with three metal sheet screws [07], where the motor is located. This protection device is intended to prevent anybody from contacting the motor pulley while turning.

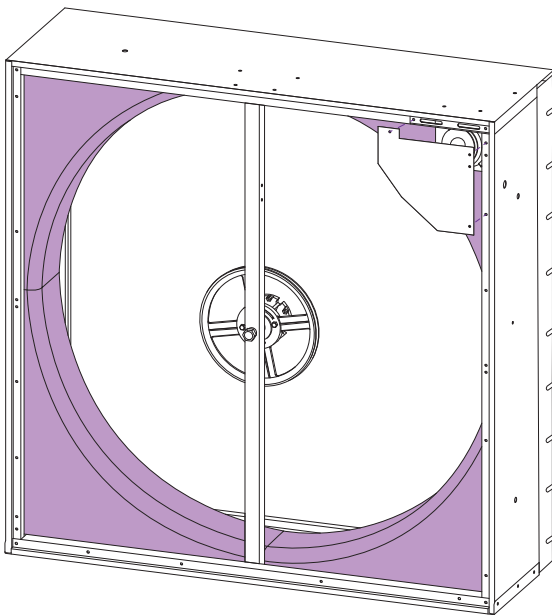


Fig. 74. Put the motor protection.

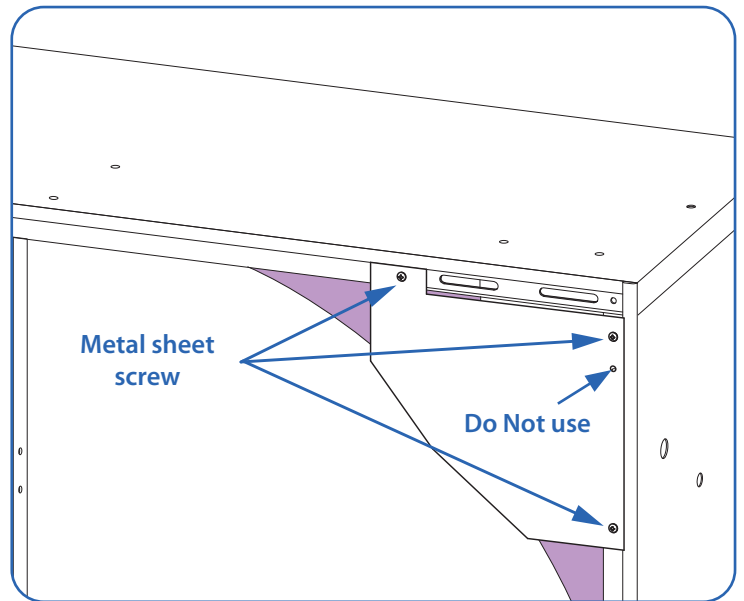


Fig. 75. Fix the motor protection to the fan by means of 3 sheet metal screws.

• Step 3

By means of two metal sheet screws, fix the belt protections on the ends of the pulley protection device (Fig.76).

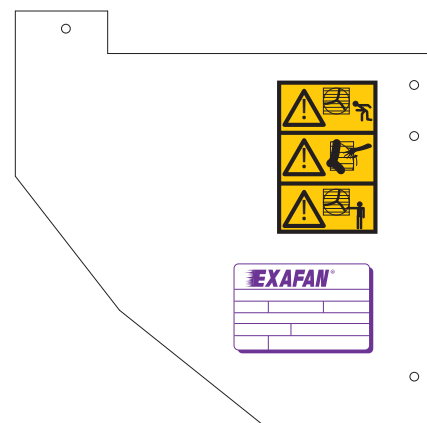


Fig. 76. Put the stickers.

• Step 4

Insert the ends of the belt protection devices in the grooves there are in the motor protection device (Fig.77). Make sure the pulley protection perfectly fits in the central bar and in the reinforcement as well (Fig.78).

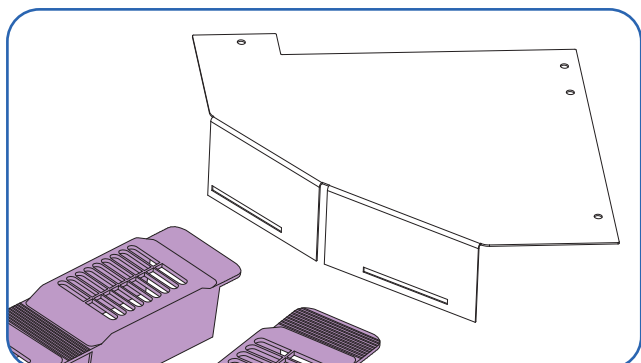


Fig. 77. Insert the belt protections in the grooves of the motor protection.

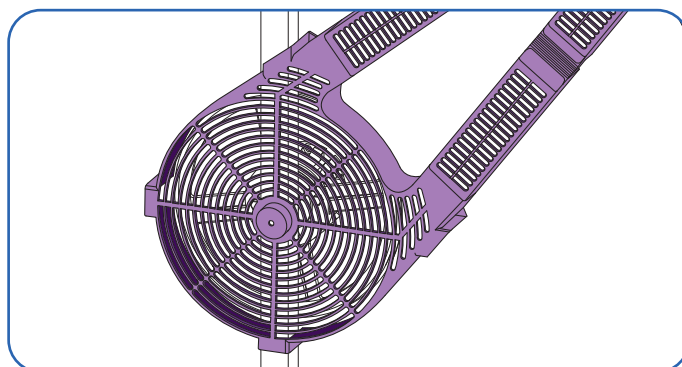


Fig. 78. Insert the pulley protection on the central bar and on the reinforcement one.

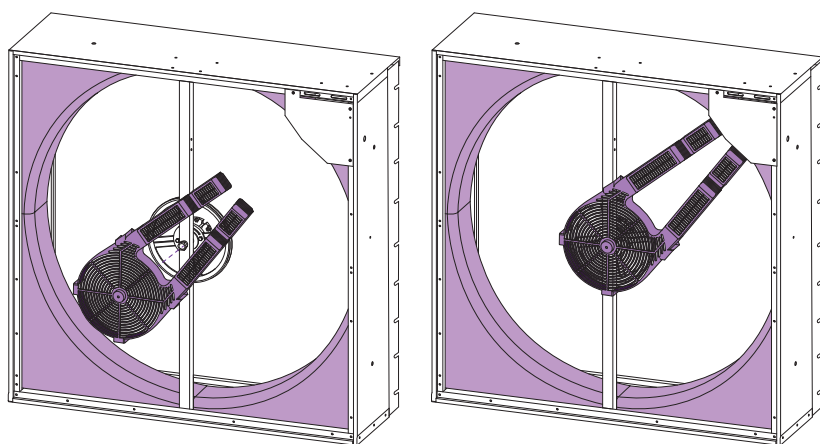


Fig. 79. Put the protections.



**MUST ALWAYS  
PLACE MESH AND  
PROTECTION OF  
THE BELT AND  
PULLEY.**

• Step 5

Fix the reinforcement to the remaining structure with the four self - drilling screws DIN7504/K [09].

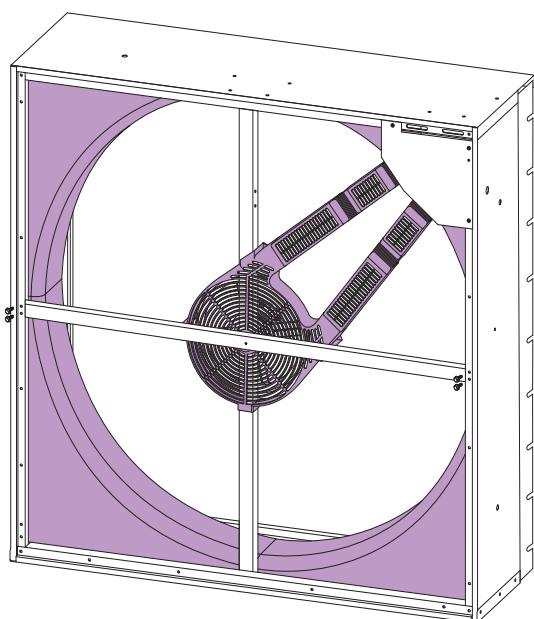


Fig. 80. Fix the reinforcement with four self - drilling screws.

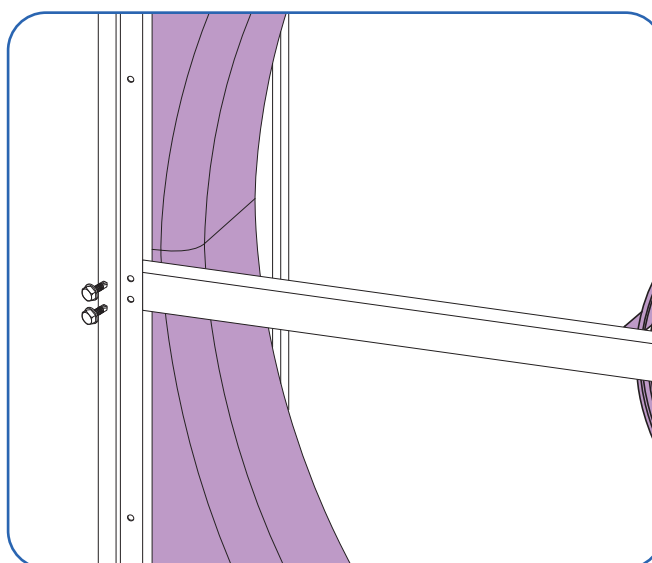


Fig. 81. Detail of the insertion of the self - drilling screws.

• Step 6

By means of four reinforced staples [06], fix each mesh [05] to the rear part of the fan, these staples should be placed on the long end of the mesh.

The staples ought to be placed in such a way that they work as hinges in order to be able to open the meshes.

The staple should be placed in such a way that the metal sheet screw linking it with the sheet remains inside the mesh (Fig.83) and (Fig.84).

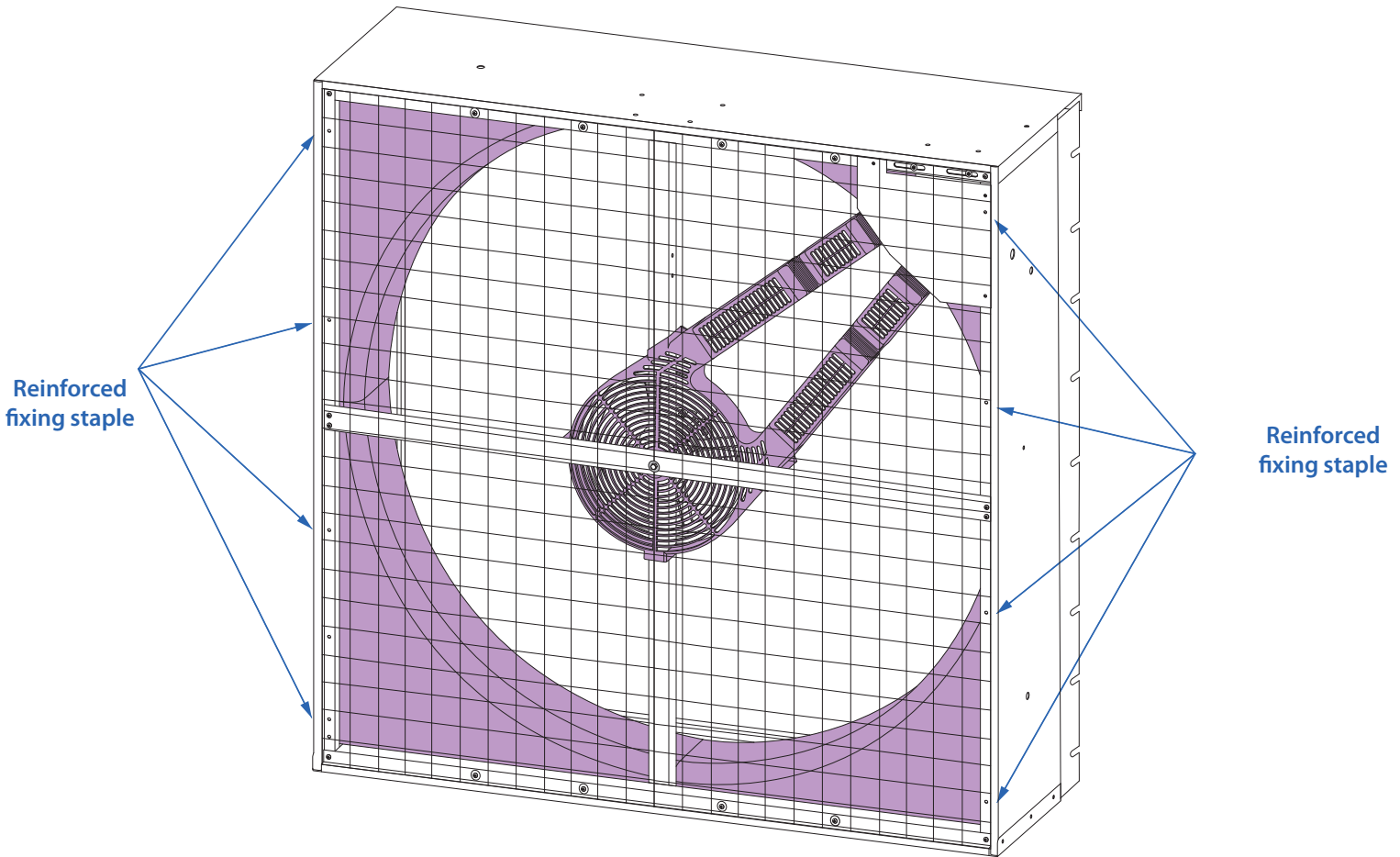


Fig. 82. Put the meshes on the rear part of the fan.

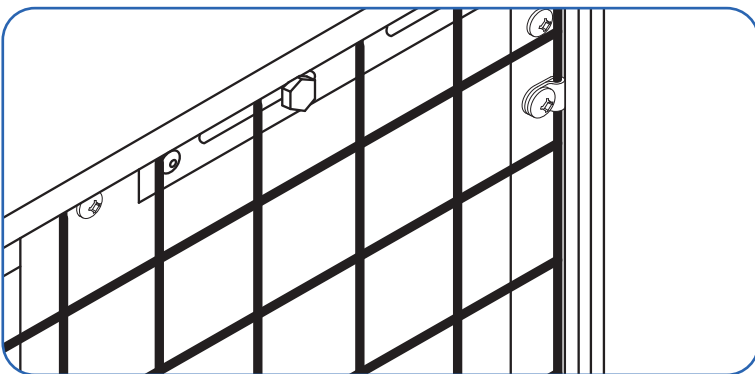


Fig. 83. The clips ought to be placed on the long end of the mesh, on the fan sides.

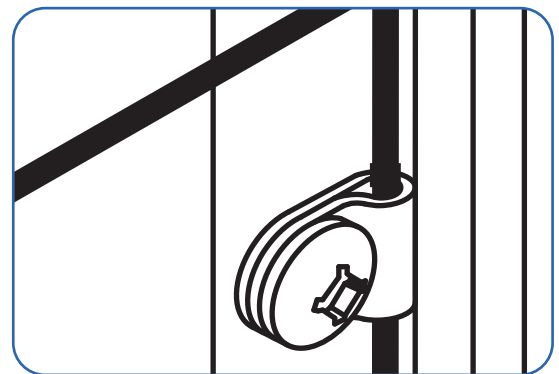


Fig. 84. The clips work as hinges in order to open the meshes.

• Step 7

In order to close the meshes, put four metal sheets screws [07] with four washers M7 DIN9021 [10], for each mesh (Fig.85).

In order to link two meshes in the middle, put a screw M6x30 [08] with a washer M7 DIN9021 Special [11], which we screw in on the fan shaft (Fig.87).

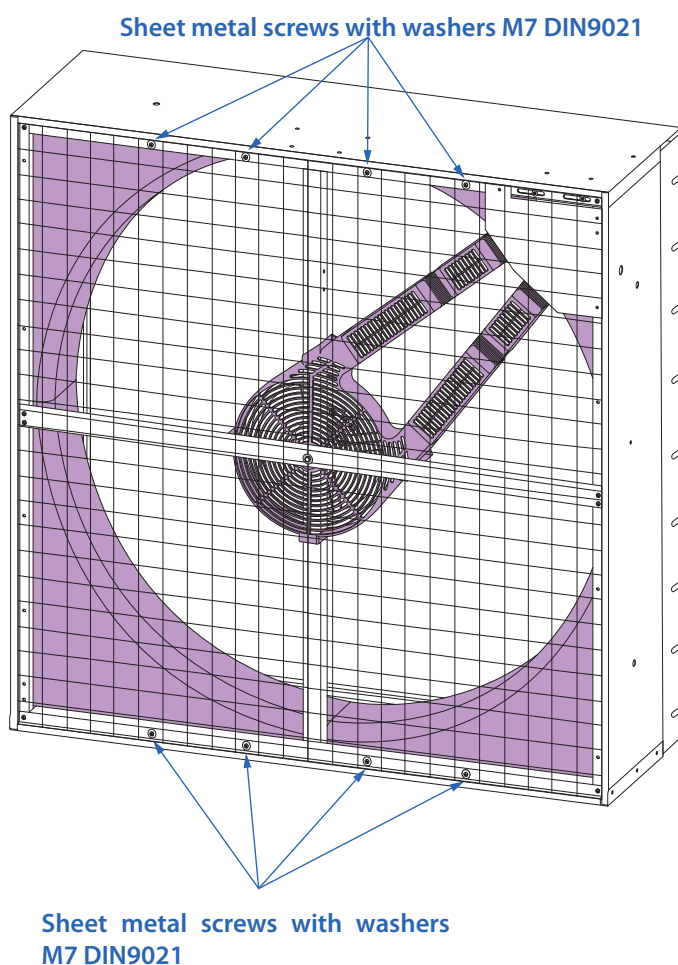


Fig. 85. Close the meshes by means of 8 sheet metal screws and washers M7 DIN9021.



**MUST ALWAYS PLACE MESH AND PROTECTION OF THE BELT AND PULLEY.**



**NEVER CONNECT FAN TO THE ELECTRICITY / TO THE NETWORK BEFORE INSTALLING ALL OF THE PROTECTIONS CORRECTLY!**

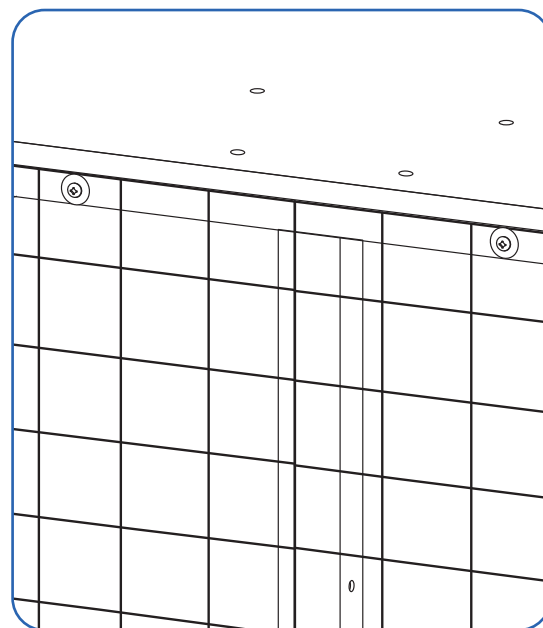


Fig. 86. Detail of the sheet metal screws.

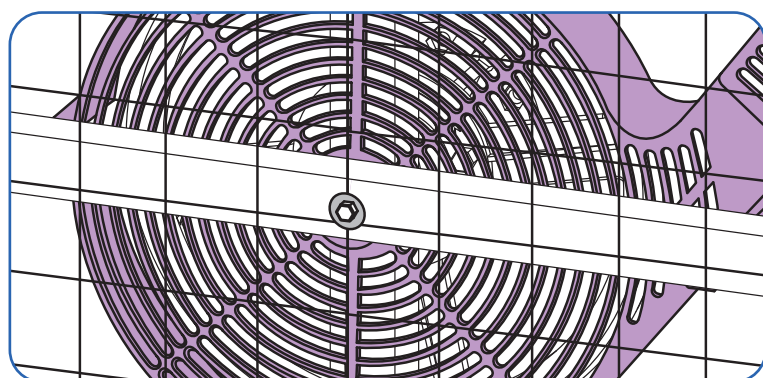


Fig. 87. Link the two meshes in the middle by means of a screw M6x30 and a Special washer M7 Din9021.

Special Washer M7 DIN9021

Screw M6X30

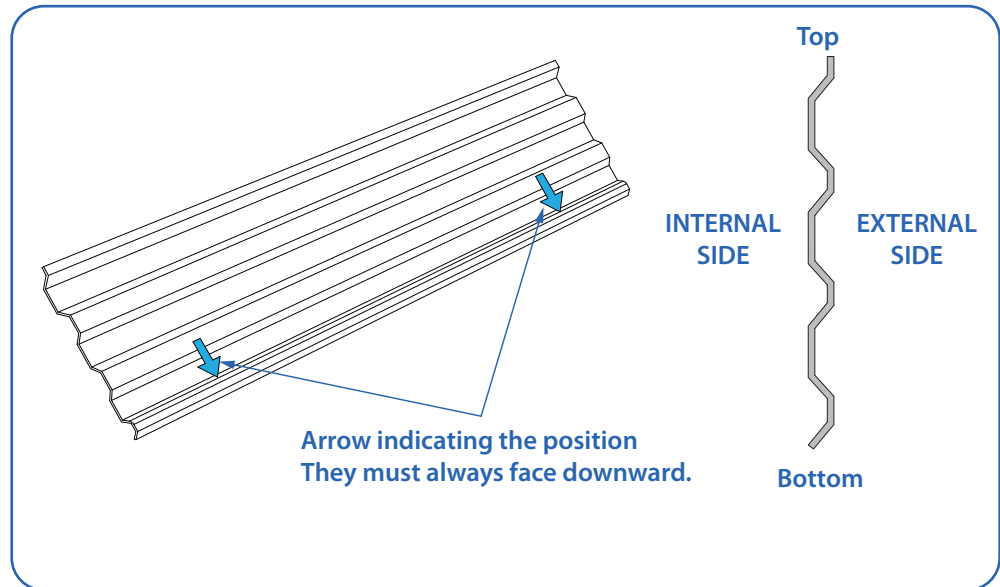
## 10. Shutter assembly

### Required Material :

#### 01 Blade

Mod. EX-50: 09 Units  
EST-LAMA-50-V4

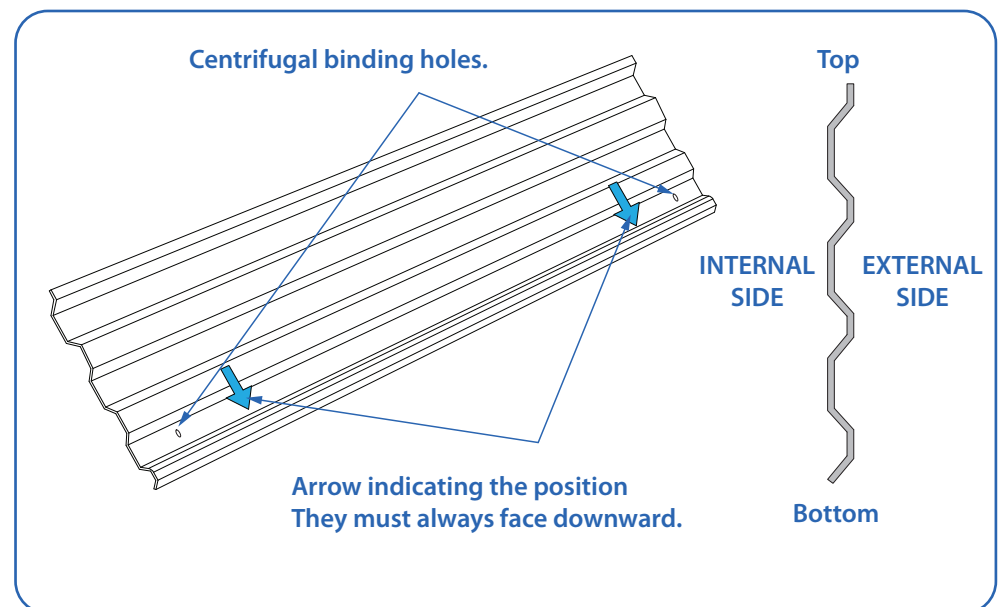
Mod. EX- 36: 07 Units  
EST-LAMA-36-V4



#### 02 Central blade

Mod EX-50: 01 Unit  
EST-LAMA-50-CENTR-V4

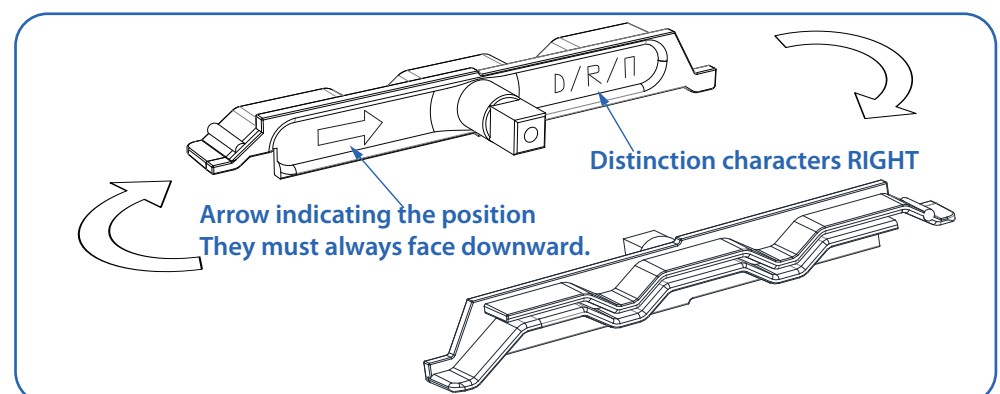
Mod EX-36: 01 Unit  
EST-LAMA-36-CENTR-V4



#### 03 Right blade pincer

Mod. EX-50: 10 Units  
EST-PINZA-L-DCHA-V4

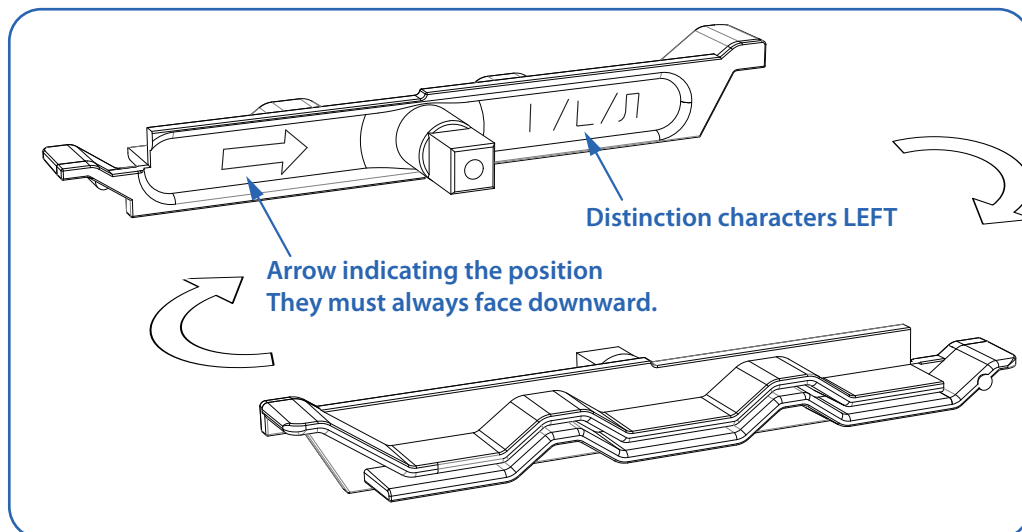
Mod. EX-36: 08 Units  
EST PINZA-L-DCHA-V4





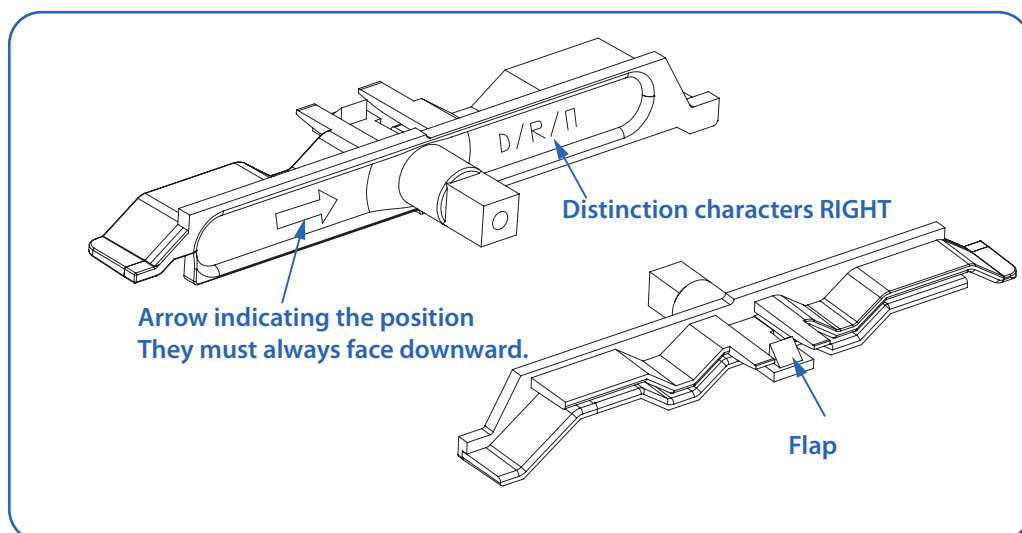
**04** Left blade pincer  
 Mod. EX-50: 10 Units  
 EST-PINZA-L-IZDA-V4

Mod. EX-36: 08 Units  
 EST-PINZA-L-IZDA-V4



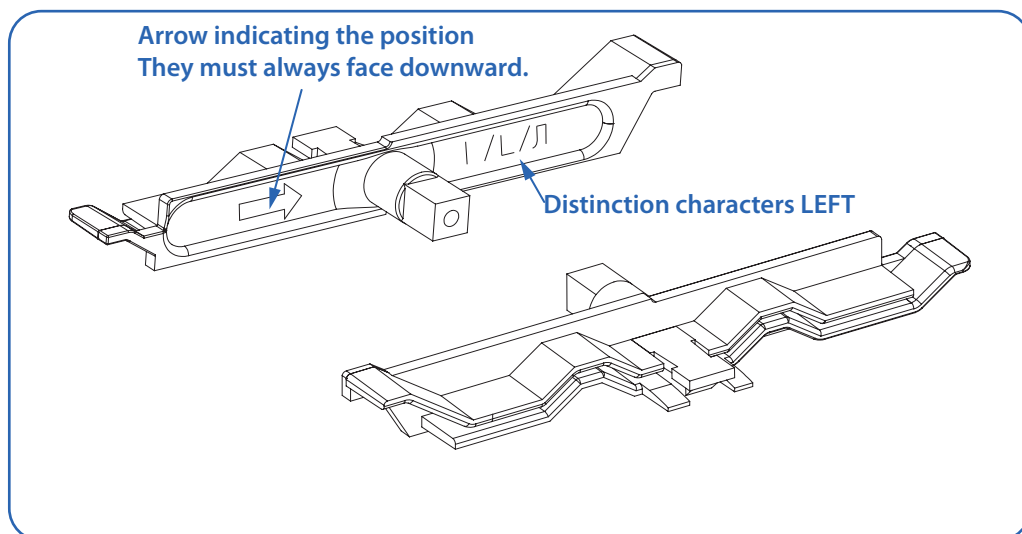
**05** Central right blade  
 pincer closure  
 Mod EX-50: 10 Units  
 EST-CIERRE-L-DCHA-V4

Mod EX-36: 08 Units  
 EST-CIERRE-L-DCHA-V4



**06** Central left blade  
 pincer closure  
 Mod EX-50: 10 Units  
 EST-CIERRE-L-IZDA-V4

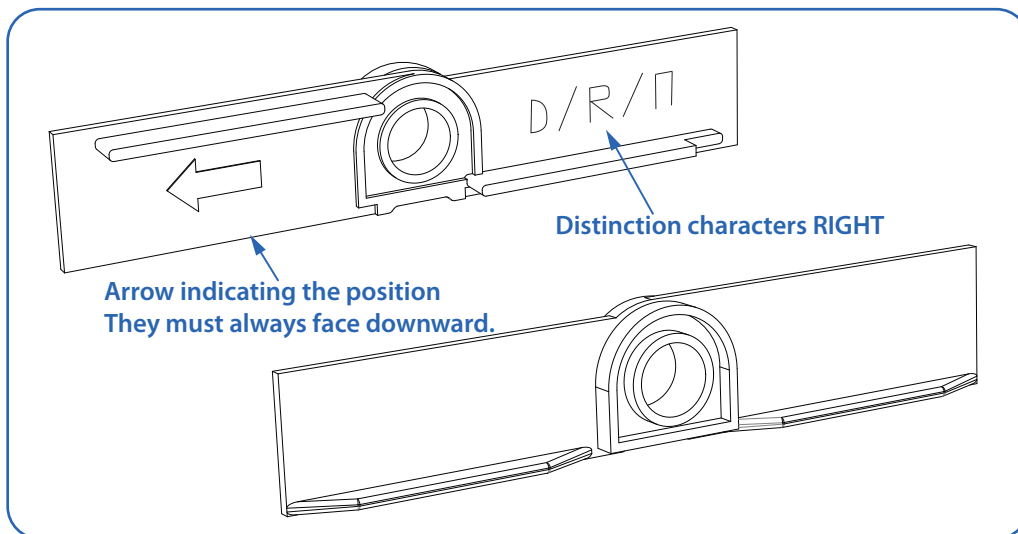
Mod EX-36: 08 Units  
 EST-CIERRE-L-IZDA-V4



**07** Right blade pincer closure

Mod EX-50: 10 Units  
EST-CIERRE-L-DCHA-V4

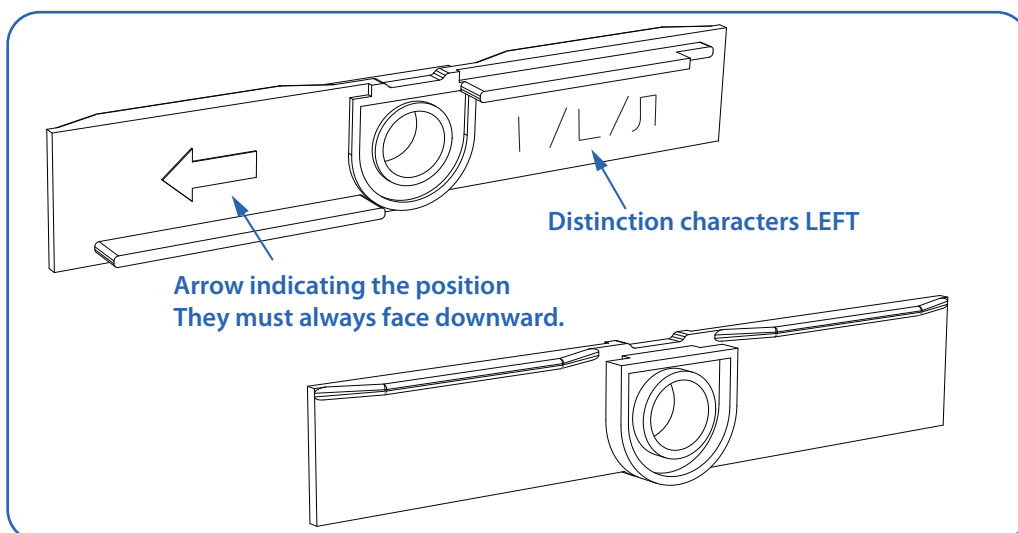
Mod EX-36: 08 Units  
EST-CIERRE-L-DCHA-V4



**08** Left blade pincer closure

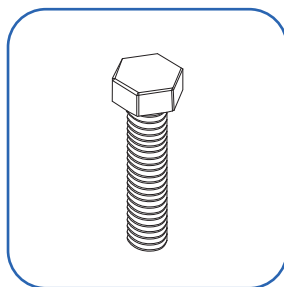
Mod EX-50: 10 Units  
EST-CIERRE-L-IZDA-V4

Mod EX-36: 08 Units  
EST-CIERRE-L-IZDA-V4



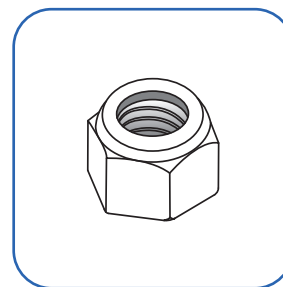
**09** Screw M6x20  
DIN933 ZN

02 Units  
TOR-TOR-D933-M6X20



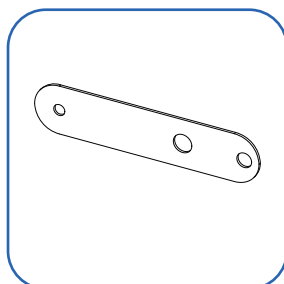
**10** Self – blocking nut  
DIN985 M6 ZN

06 Units  
TOR-TUER-D985-M6-ZN



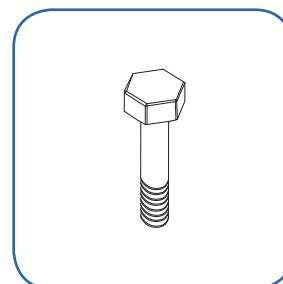
**11** Rod

02 Units  
EST-BIELA-V4



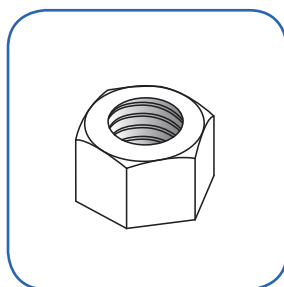
**12** Screw M6x16 DIN931 ZN

02 Units  
TOR-TOR-D931-M6X16-ZN



**13** Nut without any brake  
M6 DIN934 ZN

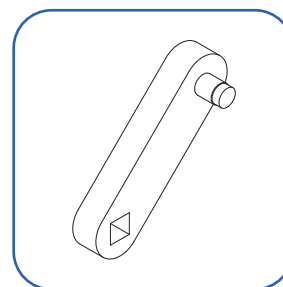
04 Units  
TOR-TUER-D934-M6-ZN



**14** Blade lever

Mod. EX-50: 20 Units  
EST-PALANCA-LAMA

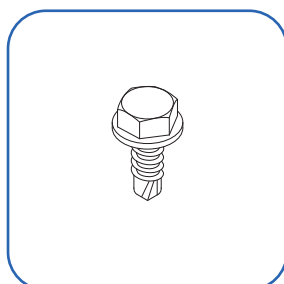
Mod. EX-36: 16 Units  
EST-PALANCA-LAMA



**15** Self – drilling screw  
DIN7504-K 4,8x16 ZN

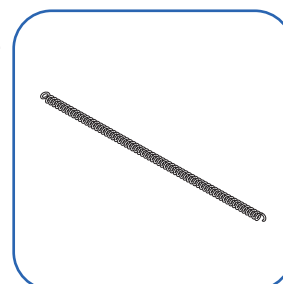
Mod. EX-50: 20 Units  
TOR-TOR-BROCA

Mod. EX-36: 16 Units  
TOR-TOR BROCA



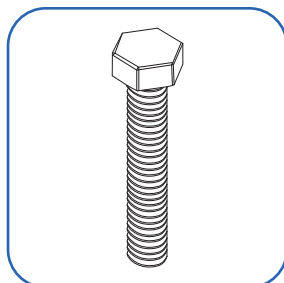
**16** Springs of English double  
hooks Stainless Steel.

02 Units  
EST-MUELLE-EX50-NX



**17** Screw M6x30  
DIN933 ZN

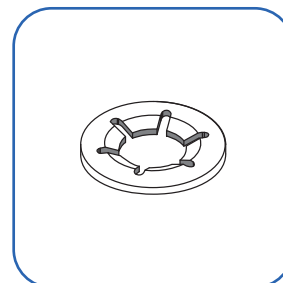
02 Units  
TOR-TOR-D933-M6X30



**18** Retention washer

Mod. EX-50: 20 Units  
TOR-ARAN-RETEN-M7

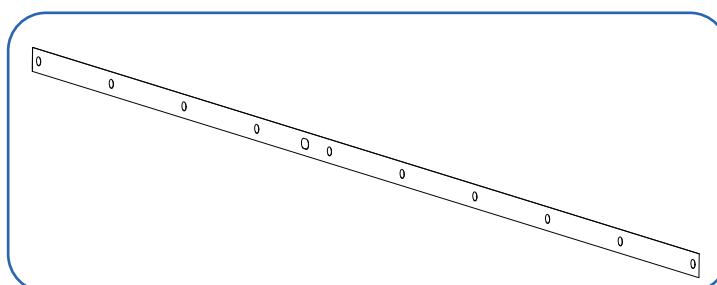
Mod. EX-36: 16 Units  
TOR-ARAN-RETEN-M7



**20** Blade guide

Mod. EX-50: 02 Unidades  
EST-GUIA-LAMA-50-V4

Mod. EX-36: 02 Unidades  
EST-GUIA-LAMA-36-V4



• Step 1

Get the hinges [11] ready for their later assembly. First, insert one end of the spring [16] on the screw [12].

In the hole of  $\varnothing 6$  mm, there is on one end of the rods, we must screw on a screw of M6X16 DIN931 [102] by means of a no brake nut M6 DIN934 [13] and another brake nut M6 DIN985 [08]; please refer to the exact assembly process on the figure (Fig. 88).

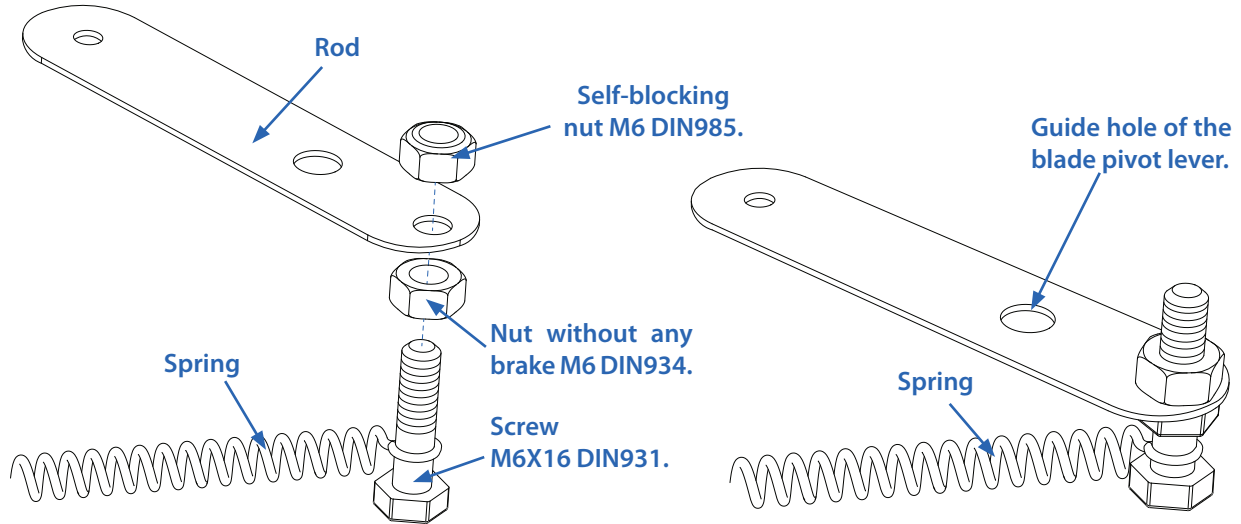


Fig. 88. Preparation of the connecting rods.

• Step 2

Put an M6x30 [17] screw on the other end of the spring [16] and insert it in the spring ring. On this screw, thread an M6 [13] nut but without tightening the spring too much (Fig.89) and leave some space of around 17 mm between the screw head and the M6 DIN 934 nut. The rod will remain hanging on the other end of the spring

Repeat the process for the two springs

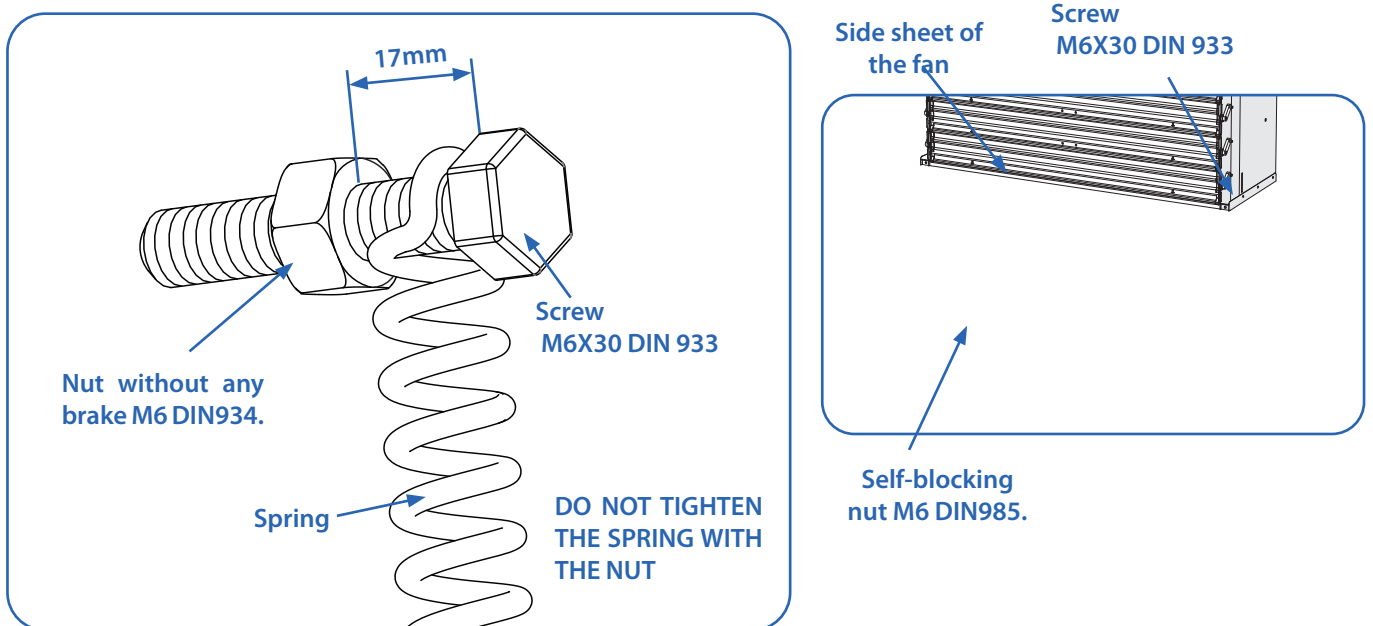


Fig. 89. Preparation of the springs.

### • Step 3

Let's insert this screw inside the lower hole of  $\varnothing 6$  mm, which is one of the two holes having the fan sides (Fig. 90). Then, let's place the nut M6 DIN 985 (self – blocking nut) on the other side by means of a wrench. Let's hold the nut M6 DIN934 [13] with another wrench in order to avoid releasing the nut M6 DIN985 when tightening the nut. Like this, it works as a nut and a counter- weight (Fig 91). Repeat the operation on the other side of the fan. It is important for the screw end M6x30 DIN933 not to stick out too much in order to prevent it from rubbing the internal blades.

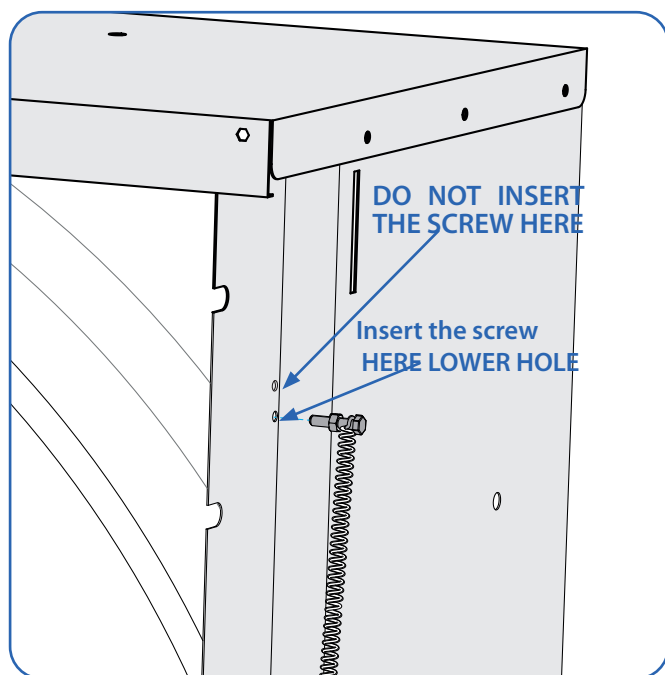


Fig. 90. Insert the screw inside the lower side hole.

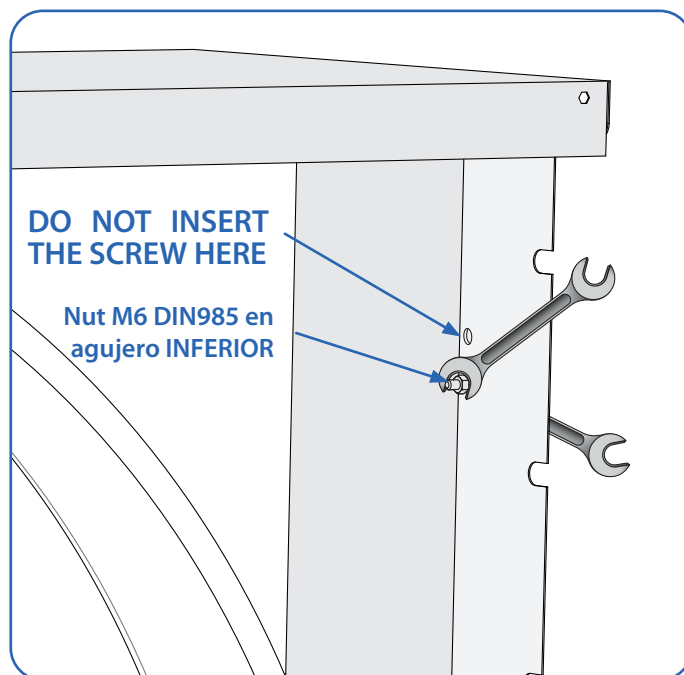


Fig. 91. Fix the screw by means of a nut M6 DIN985.

### • Step 4 : Assembly of the clamps of the central blades.

Wedge in the blade clamps [05] and [06] inside the central blade [02]. It may be a little bit a difficult to insert it, in this case; use a hammer with a head made of nylon in order to insert them BY HITTING SOFTLY. On top of it, you must hit carefully on the ends in order not to break them, make sure not to leave any broken clamp on any blade during the assembly.

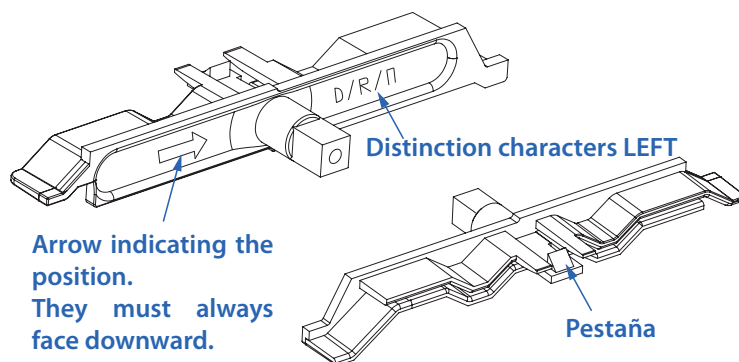


Fig. 92. Right central blade clamp. Please refer to the arrow direction and the differentiating signs.

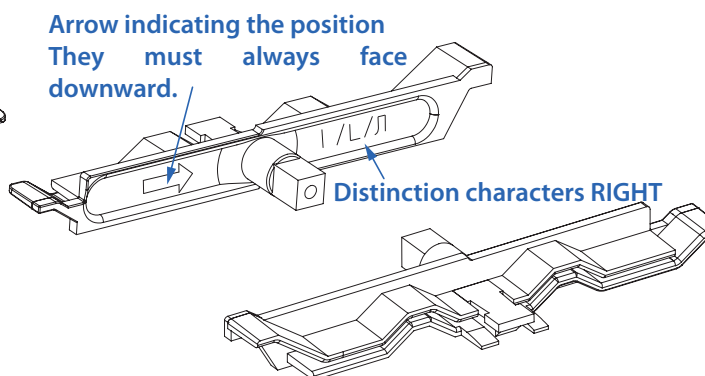
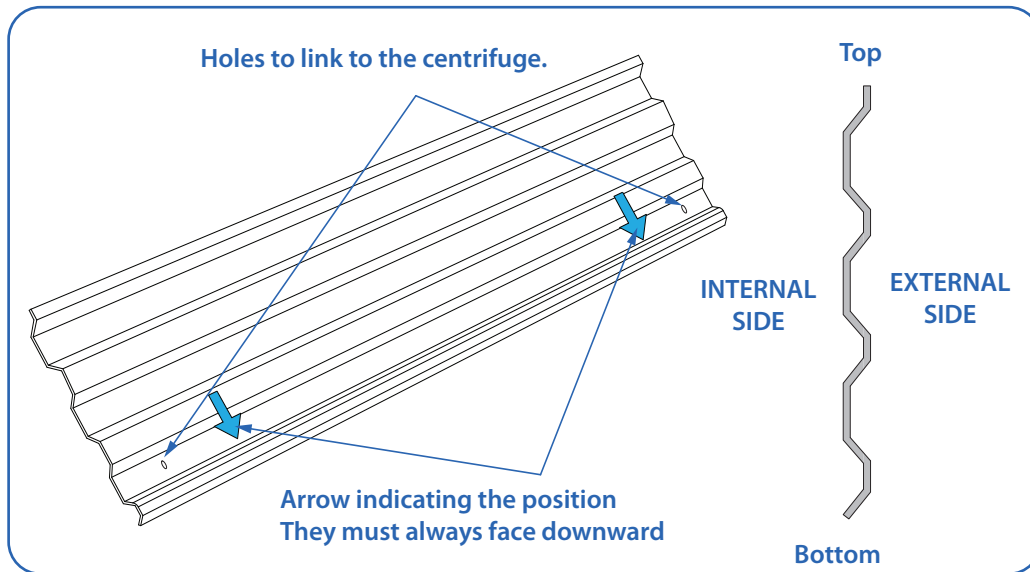
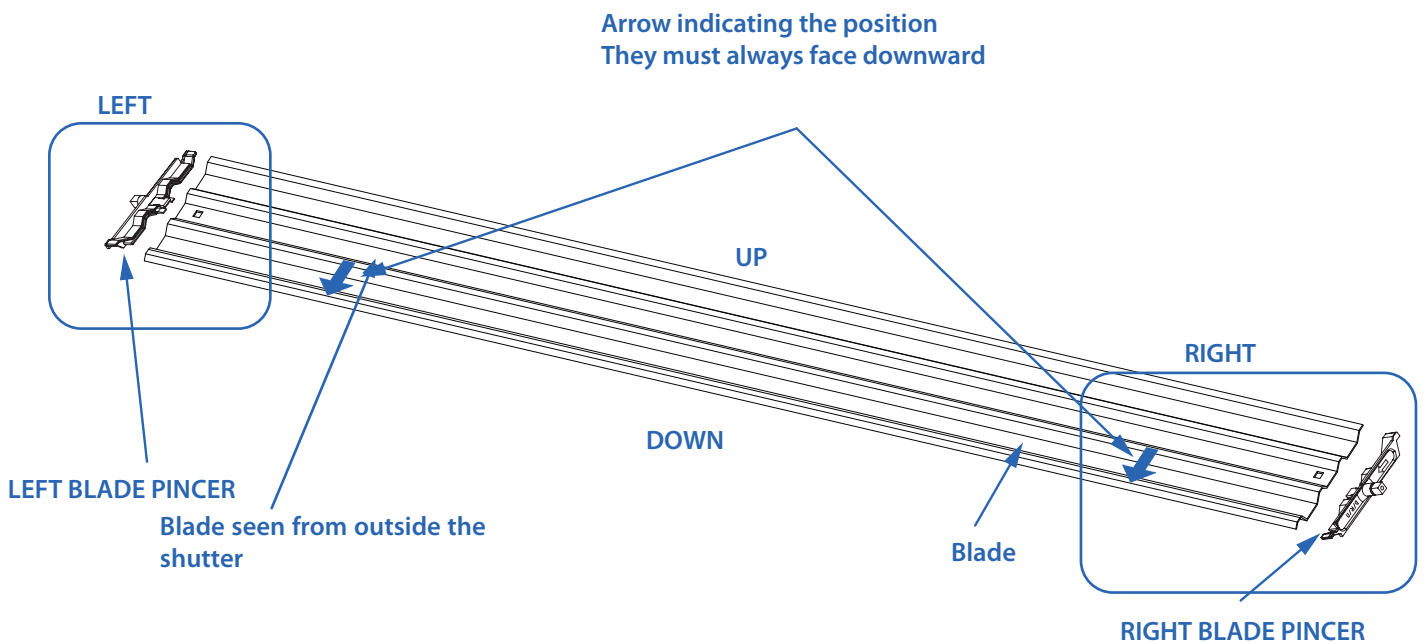


Fig. 93. Left central blade clamp.. Please refer to the arrow direction and differentiating signs.



**Fig. 94.** Blade. Please refer to the direction arrows, the same with the difference between the external and internal side.

The arrows for the blades and blade clamps (right and left) must face always downward during the assembly (Fig.95).



**Fig. 95.** Put a right central blade clamp and a left central blade clamp on the central blade.

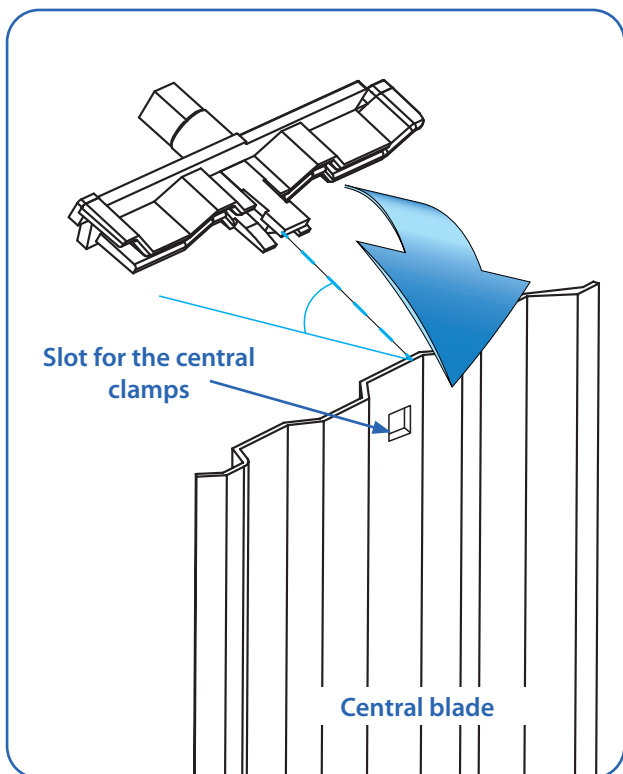
Due to the fact that the central blade clamps [05] and [06] have a right and left position, they are screen – printed with some useful signs in several languages (Spanish, English, and Russian) to identify them (Fig. 92) and (Fig.93).



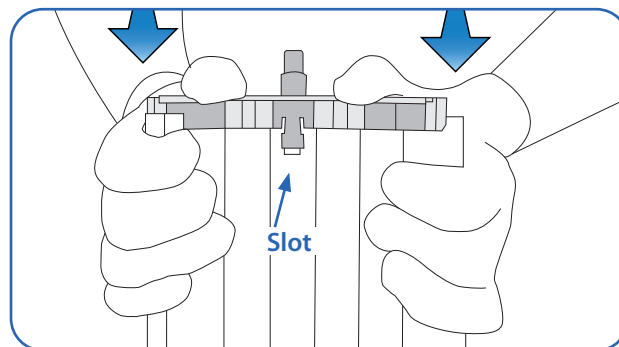
If necessary, we may slightly hit with a hammer including a head made of nylon in order to insert them in the blade.



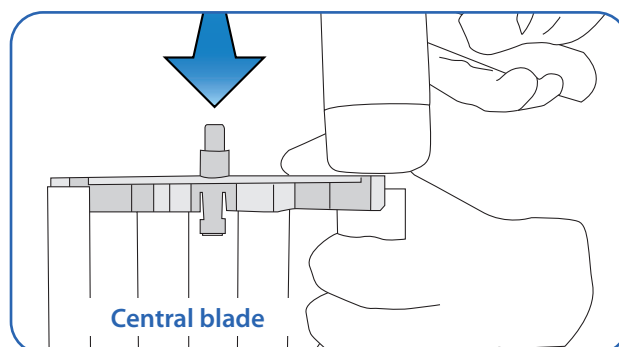
DON'T EVER CARRY OUT THIS OPERATION AT TEMPERATURES BELOW 12°C SINCE THE PLASTIC PARTS CAN BREAK APART. WE RECOMMEND TEMPERING THE PARTS BEFORE ASSEMBLING THEM.



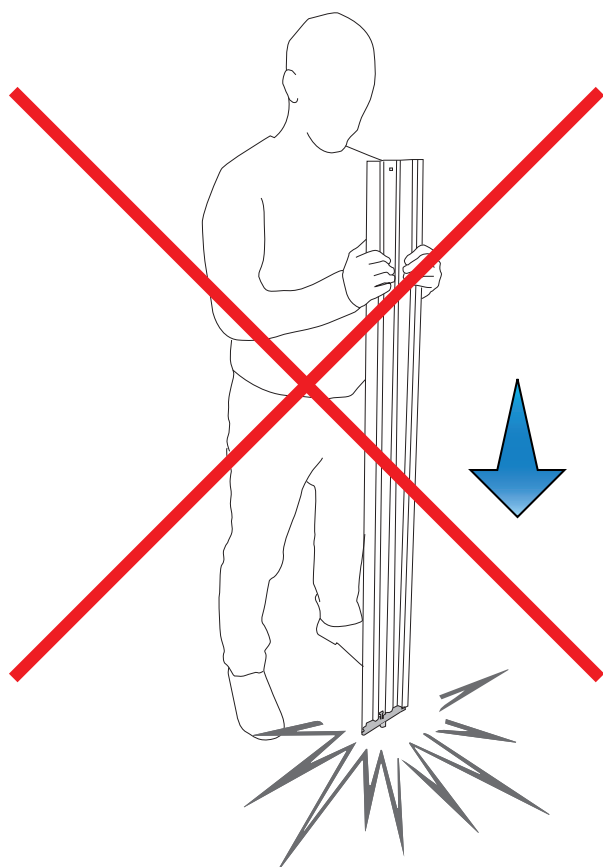
**Fig. 96.** When we put the clamp on the central blade, we must insert it by allowing a certain angle so that it won't pull any plastic material.



**Fig. 97.** Push the clamp with your hands until the tab fits in the blade slot.



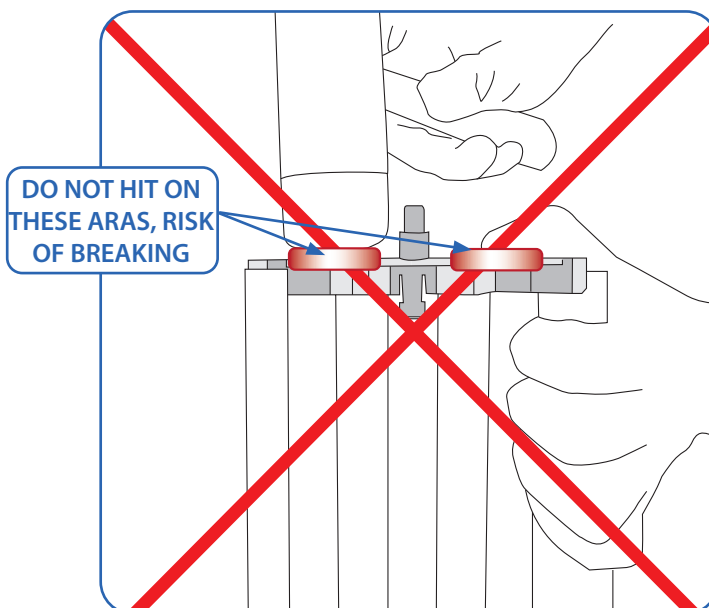
**Fig. 98.** If you don't manage to fit in the clamp perfectly, then, push it with a hammer including a head made of nylon, but HITTING SOFTLY.



**Fig. 99.** DO NOT HIT THE BLADE AGAINST ANYTHING IF YOU WISH TO POSITION THE CENTRAL BLADE CLAMP.



**DON'T EVER HIT THE CENTRAL BLADE AGAINST THE FLOR IF YOU WISH TO PUT THE CLAMP INSTEAD, DON'T HIT WITH A HAMMER ON THE COLORED AREAS EITHER. THIS MAY CAUSE THE CLAMP TO BREAK AND MAKE THE BLADE WORK INCORRECTLY.**



**Fig. 100.** DO NOT HIT AGAINST THE FLOOR IN THE MIDDLE OF THE CENTRAL BLADE CLAMP AS YOU MAY RISK BREAKING THE CENTRAL BLADE CLAMP.

Step 5: Assembly of the blade clamps.

Wedge in the blade clamps [03] and [04] on each of the blades [01]. Usually, it may be a little bit difficult to fit them in, in this case, use a hammer including a head made of nylon if you wish to insert them softly. Due to the fact that the blade clamps [03] and [04] have a right and left position, they have some signs screen printed in several languages (Spanish, English and Russian) in order to identify them (Fig. 101) and (Fig. 102).

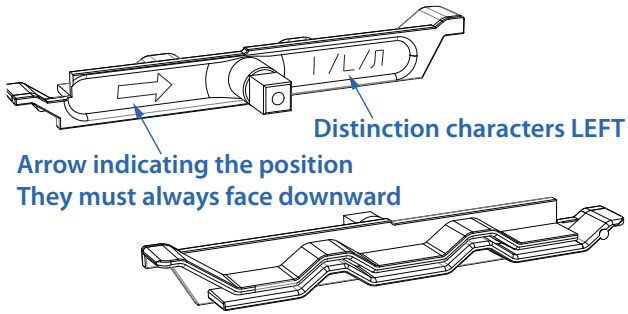


Fig. 101. Left blade clamp. Please refer to the arrow direction and the differentiating signs.

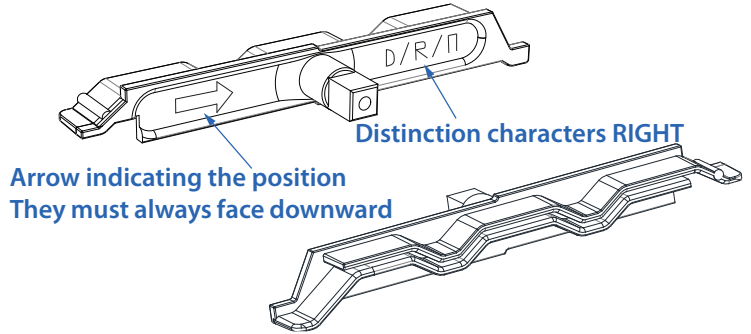


Fig. 102. Right blade clamp. Please refer to the arrow direction and the differentiating signs.

The blade and blade clamp arrows (right and left) must face always downward during the assembly process (Fig. 103).

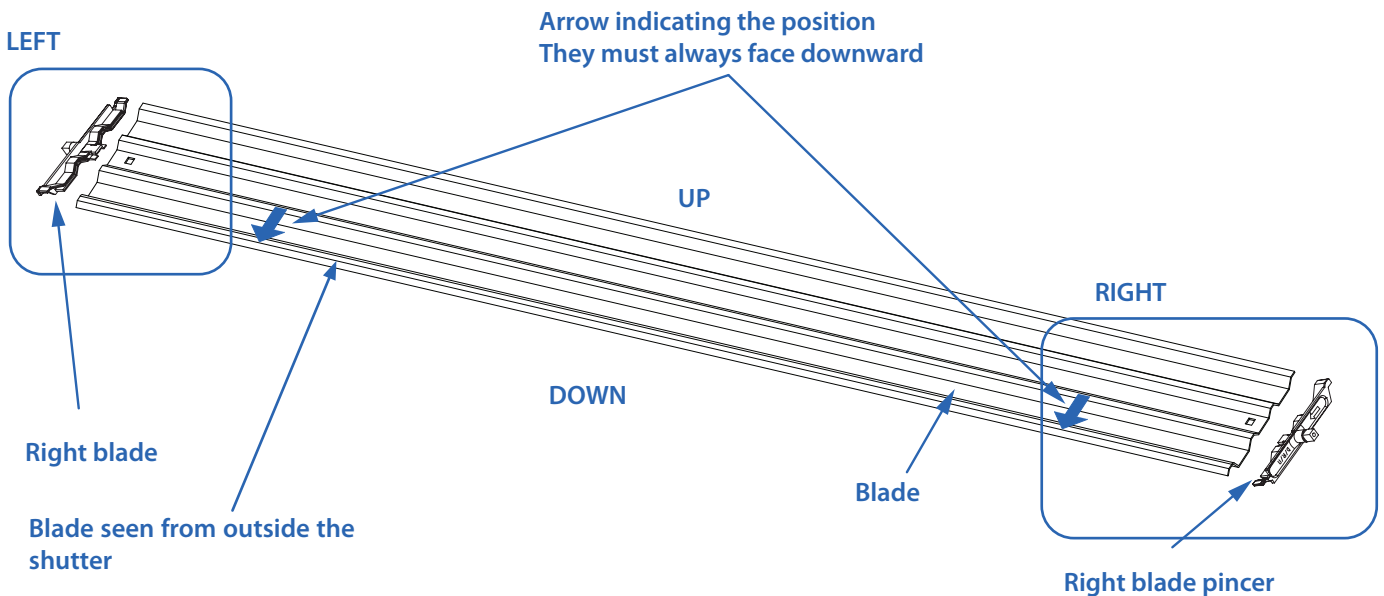
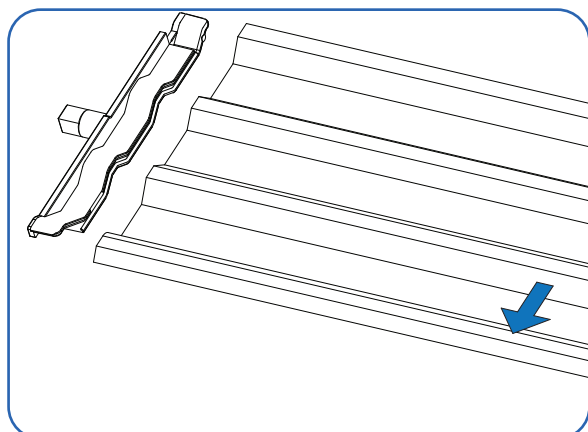


Fig. 103. Blade with its pincer blades (right and left).

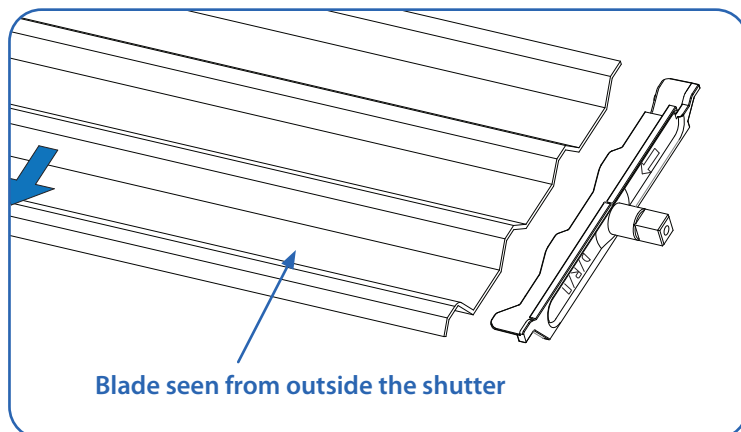


NEVER MAKE THIS OPERATION AT A TEMPERATURE BELOW 12° C SINCE THE PLASTIC PARTS MAY BREAK. WE RECOMMEND TEMPERING THE PARTS BEFORE ASSEMBLING THEM.

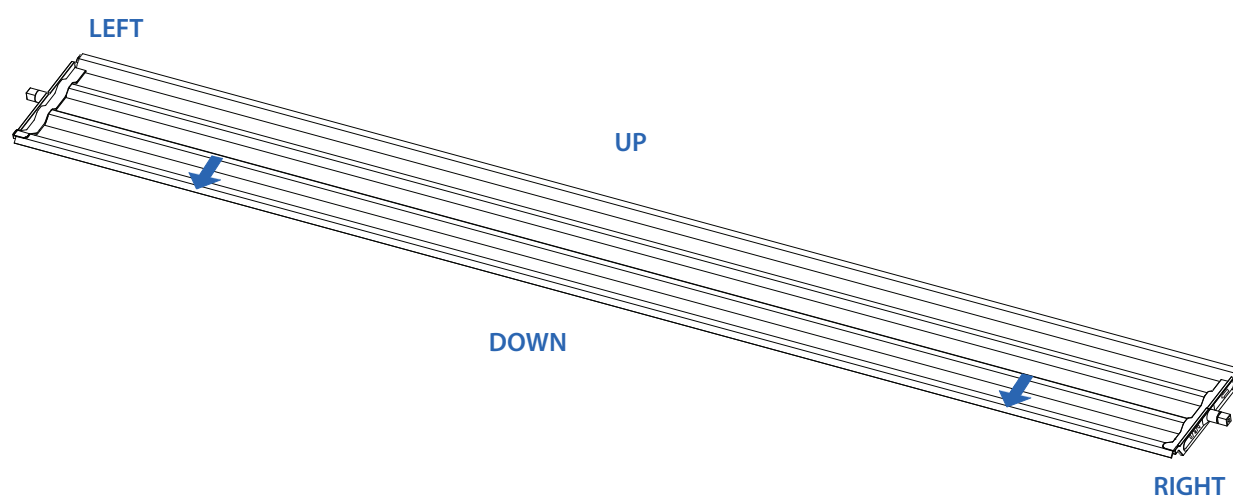




**Fig. 104.** Pay attention to the direction of the blade arrows.



**Fig. 105.** The arrows of the blade and pincer blades must always face downward.



**Fig. 106.** Blade with its pincer blades (right and left).

#### • Step 6

Put some pressure on the ten closing left pincer blades [08] on their position, located on the left side of the fan (Fig. 106). The closing pincer blades have some characters in several languages (Spanish, English Russian) screen – printed. They are used to identify them (Fig. 107).

They are also valuable to make the assembly process on the structure sides easier, the closing devices have an arrow indicating the part orientation. The arrow always faces towards the floor (Fig. 108).

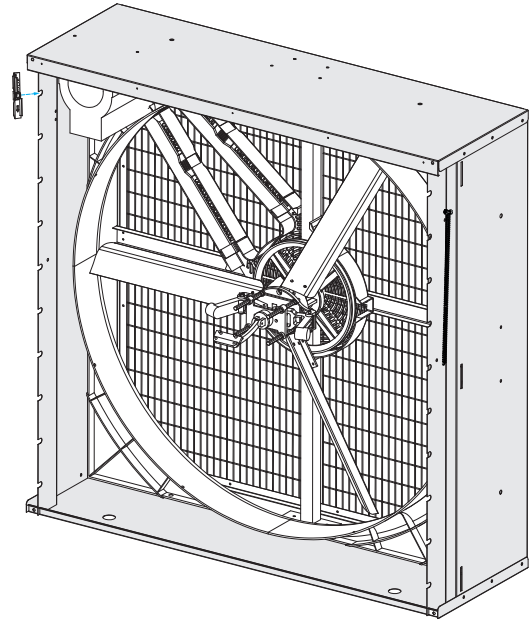
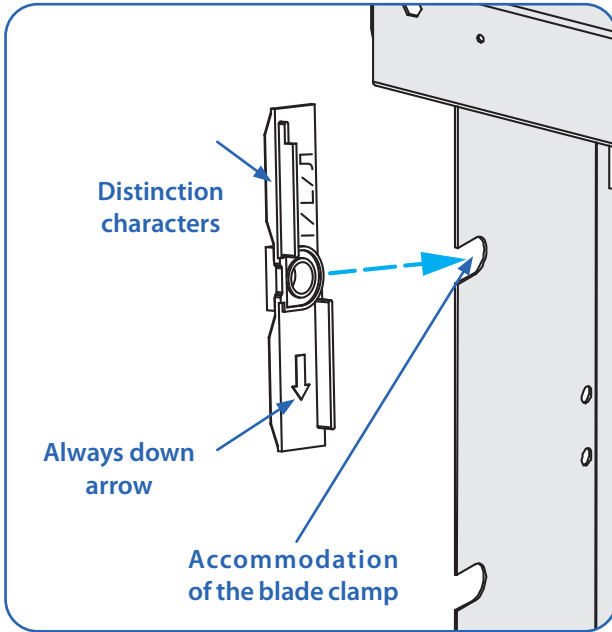


Fig. 107. Left closing position of the pincer blade.

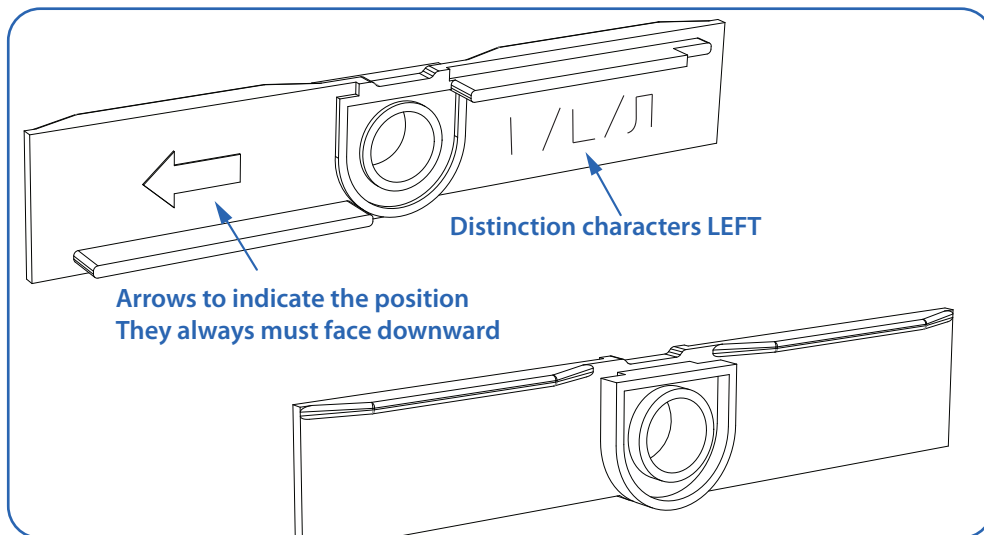


Fig. 108. Left closing device of the pincer blade.

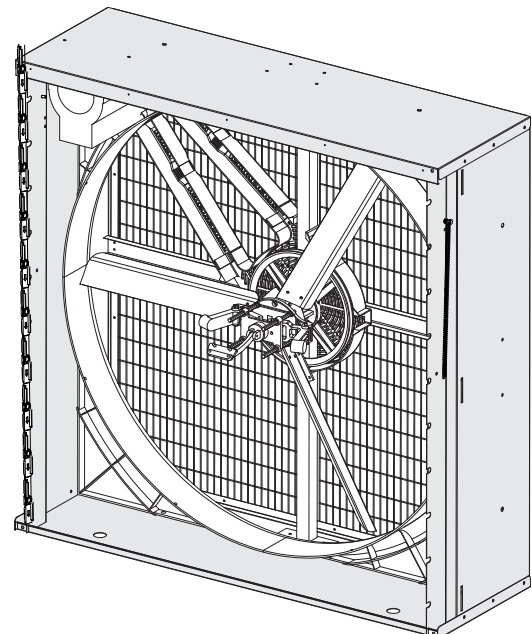
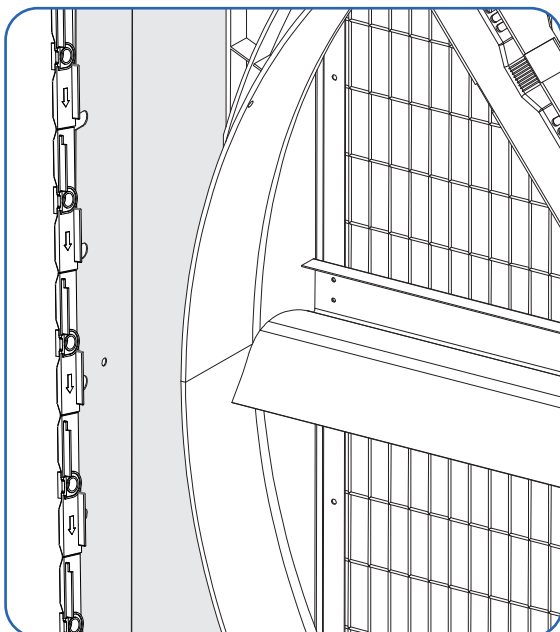


Fig. 109. Put the ten left closing devices of the pincer blades.

• Step 7

Assemble the central blade [02] on the fan. It is the first one we must assemble on the fan.

In order to carry out this operation first, put a pincer blade closing device [07] on the right end of the central blade (Fig. 110). Pay attention to the arrow position and the orientation of the parts, the blade and the pincer.

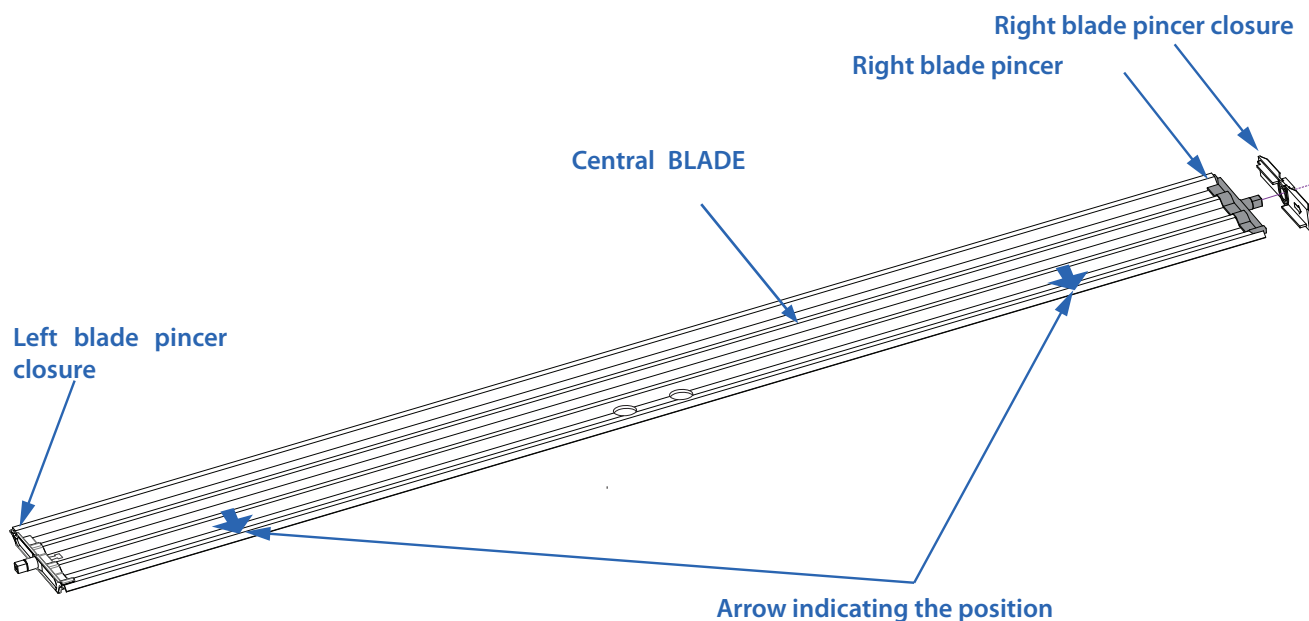


Fig. 110. Get the central blade ready in order to later insert it in the fan.

**WARNING: DURING THE ASSEMBLY OF THE BLADES, IT IS IMPORTANT TO HANDLE THEM CAREFULLY, IN ORDER NOT TO BEND OR CURVE THEM**

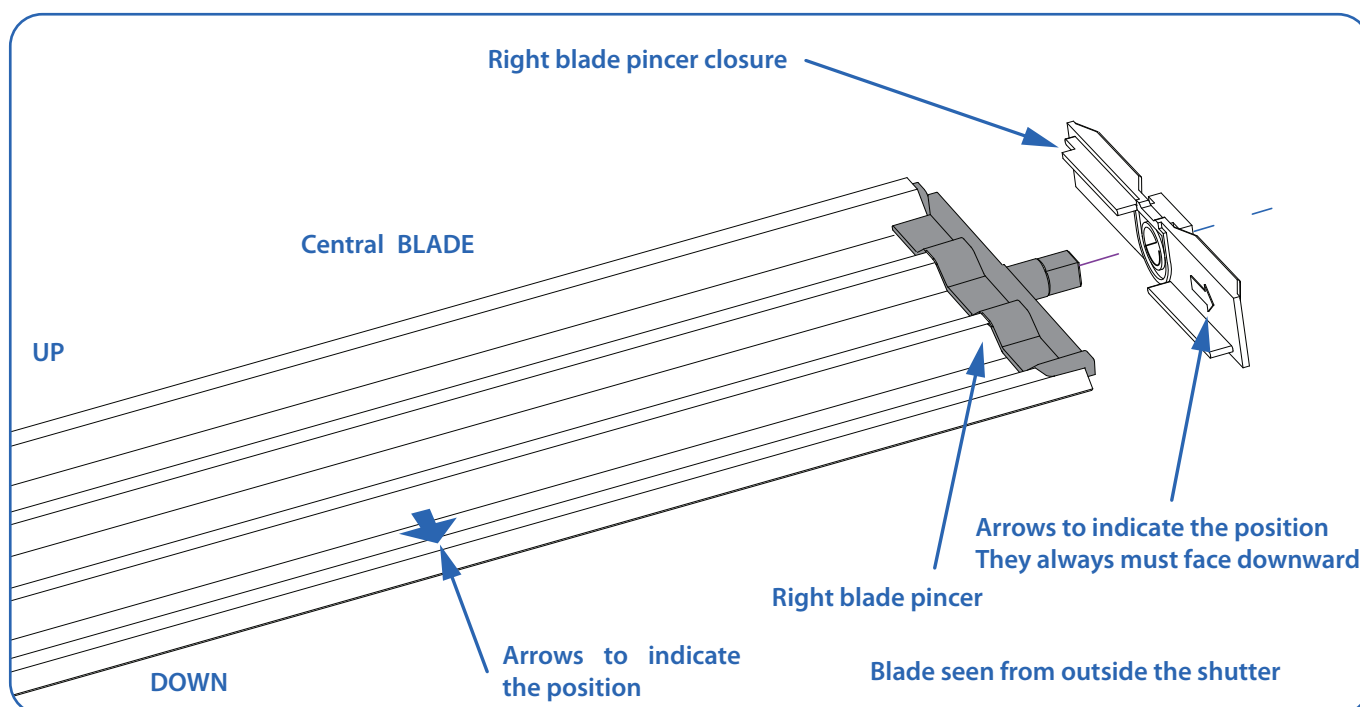


Fig. 111. Detail. Insertion of the right pincer blade closing device on the central blade.

Then, insert the central blade left end (rotation axis of the left pincer blade) in its corresponding position on the fan (5<sup>a</sup> position beginning from the upper side). Please refer to (Fig. 112).

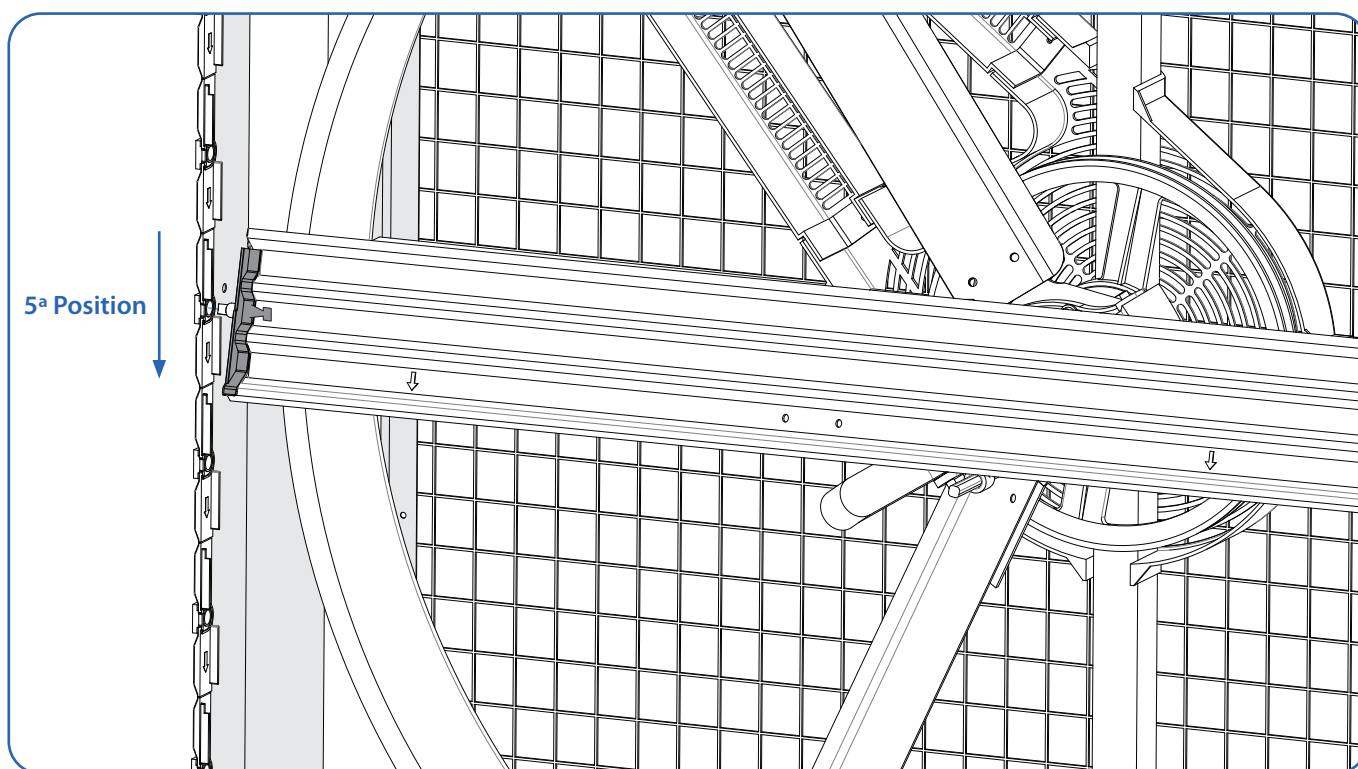


Fig. 112. Insert the left shaft of the central blade in its position (5<sup>a</sup> position beginning from the upper side).

By holding the central blade with one's hand, put the right blade closing device and afterwards, insert it in its position on the fan right side, along with the blade, make a movement allowing to insert it in its position. (Fig 113)

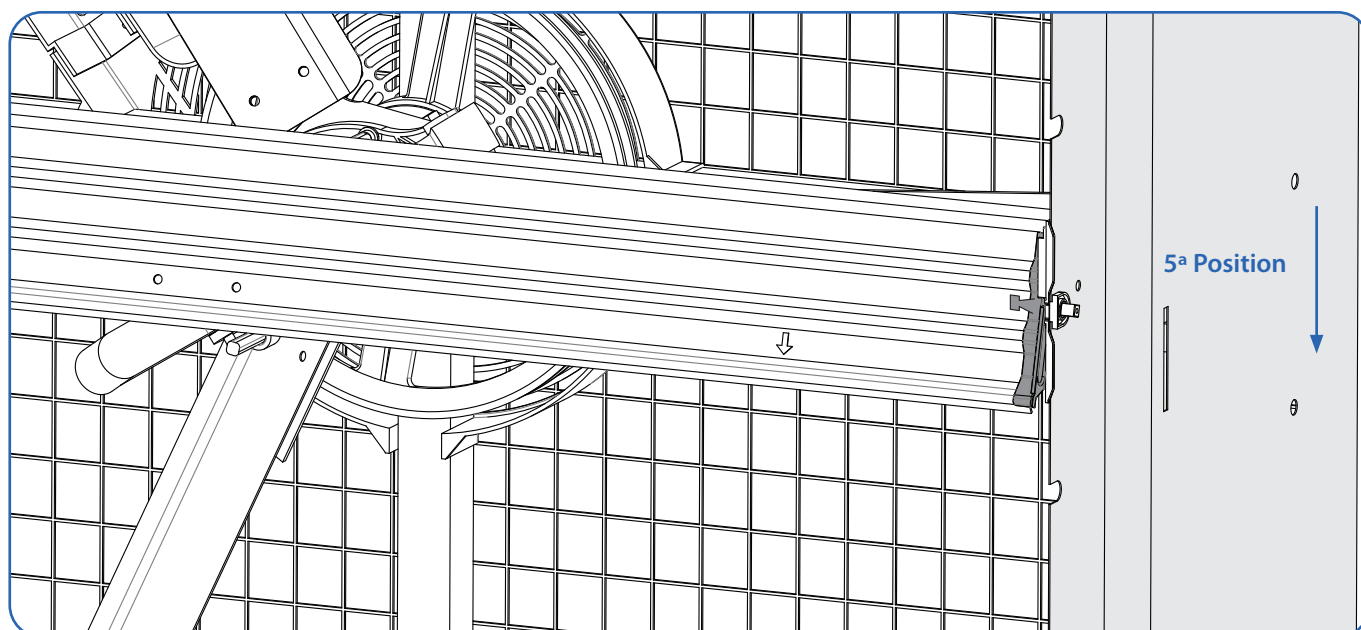


Fig. 113. Insert the right pincer blade closing device in its position on the fan right side (5<sup>a</sup> position beginning from the upper side)

- Step 8

Screw on the centrifuge on the central blade. In order to carry out this operation use two screws M6X20 [09] and two self – blocking nuts [10]. The head of the screws remains on the fan external part (Fig. 114). It is important to pay attention to the pushing rod position (Fig 115).

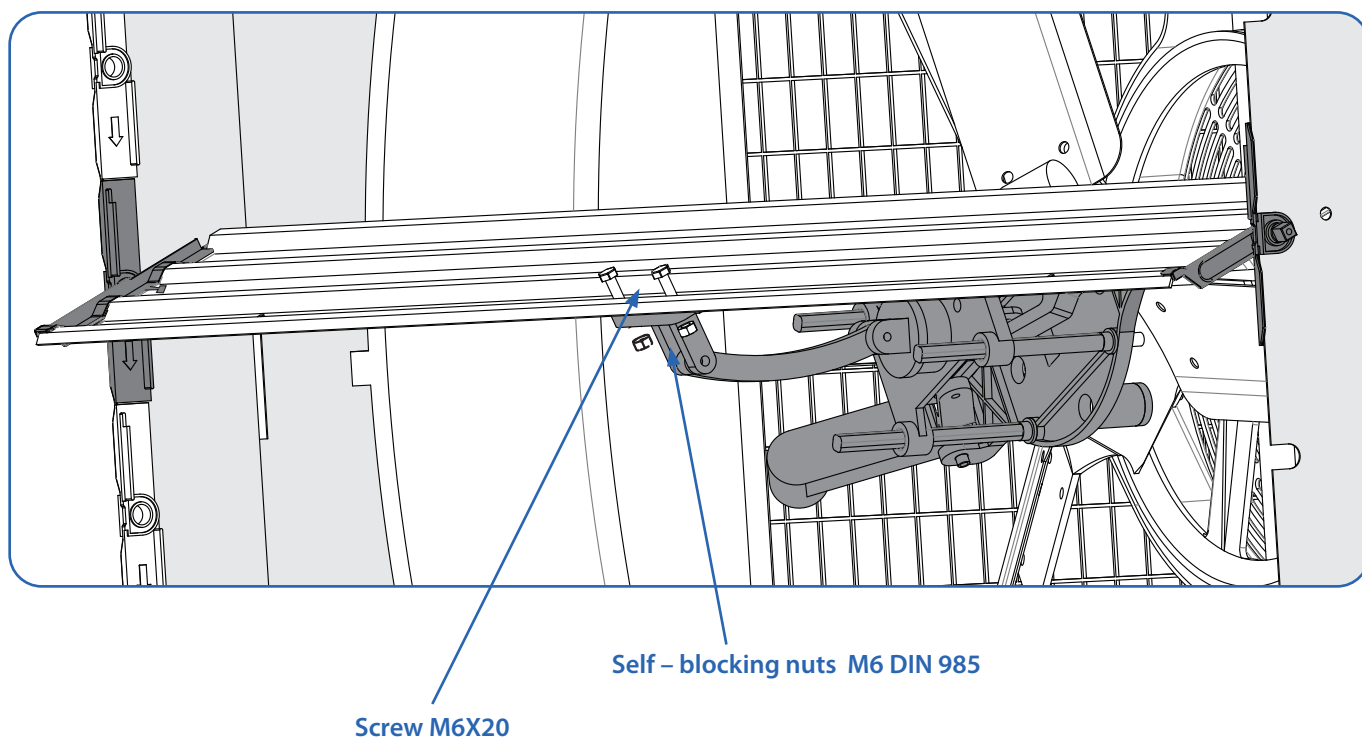


Fig. 114. Screw on the centrifuge to the central blade.

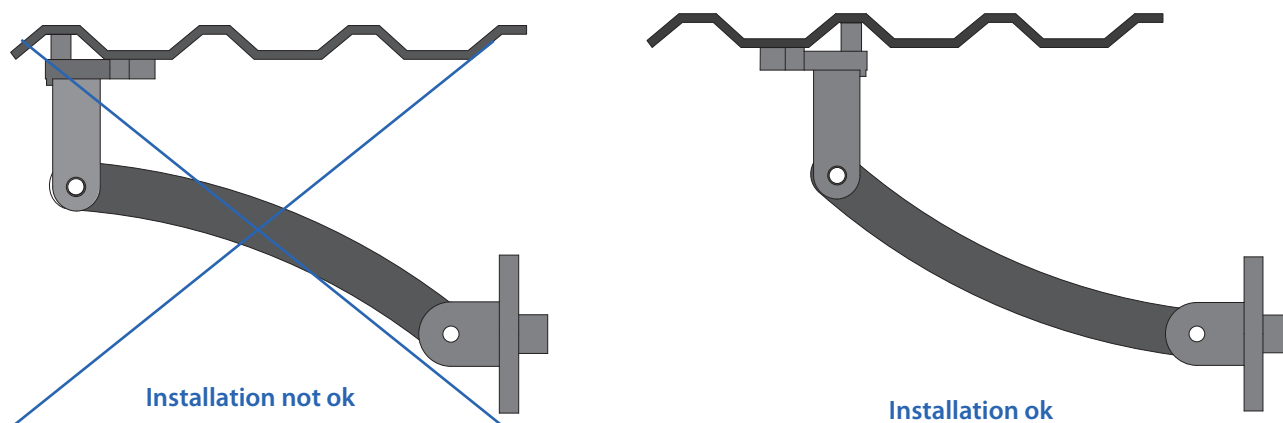
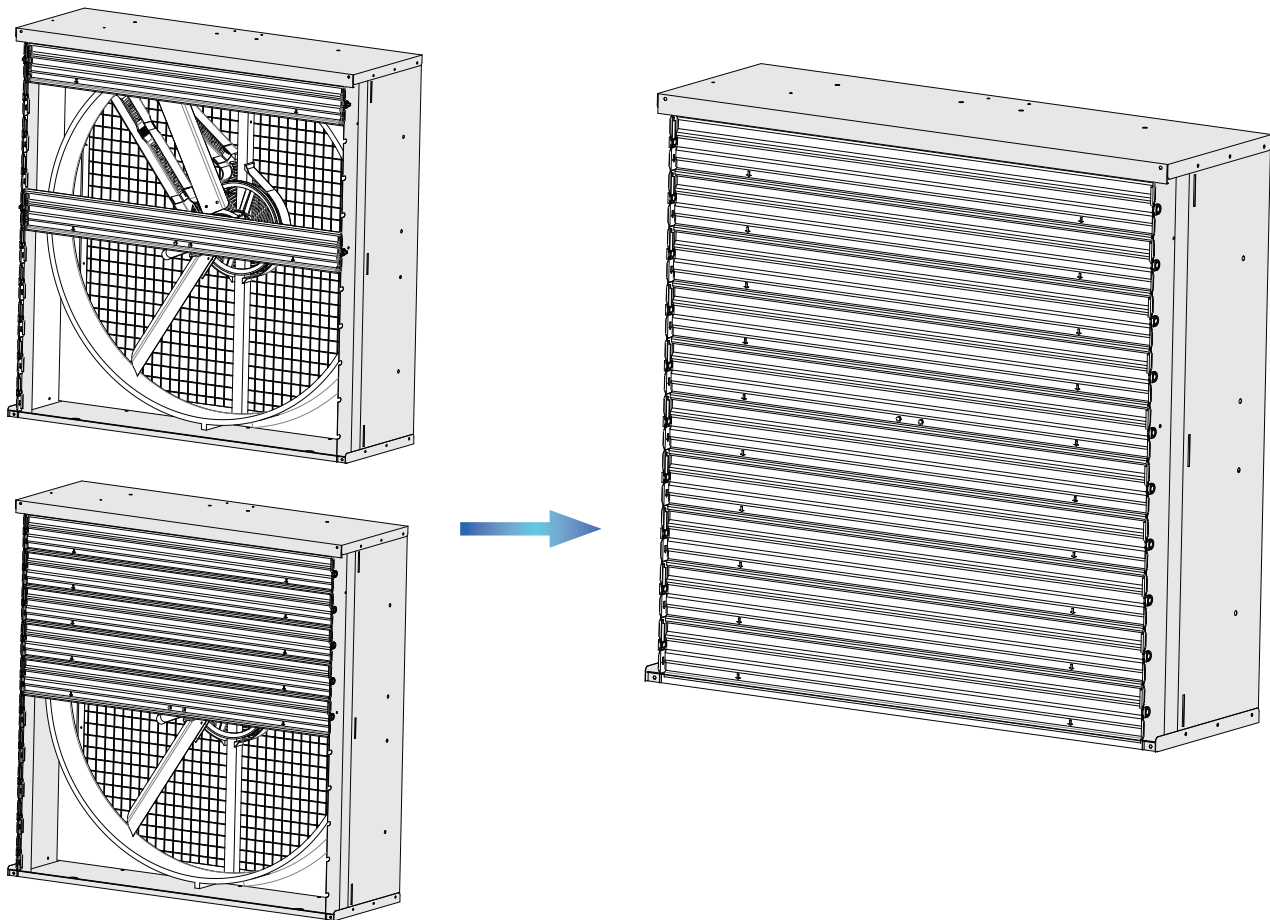


Fig. 115. Position of the centrifuge CORRECT AND INCORRECT.

- Step 9

Repeat the step 7 with each blade [01], begin with the upper blade and then the one below (Fig 116). During the assembly process, make sure the blades overlap one over the other.

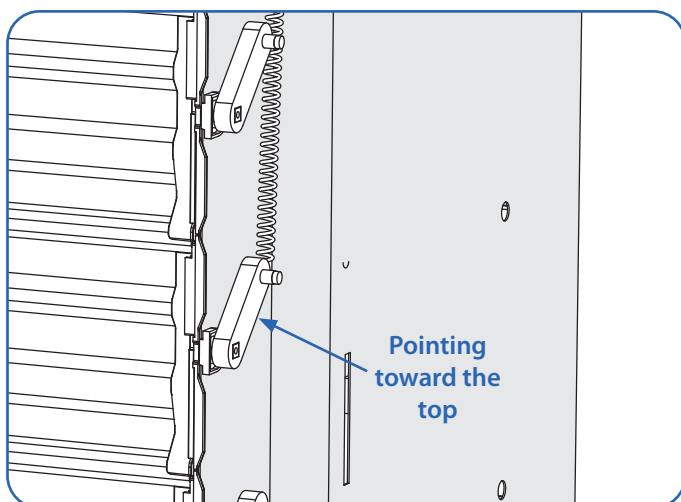


**Fig. 116.** Inserción de las lamas en el ventilador. El orden de montaje de las lamas será de arriba hacia abajo.

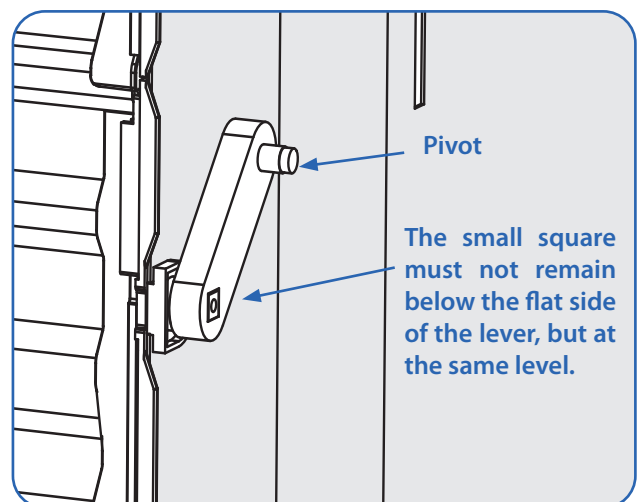
• Paso 10

On each pincer blade, put some pressure on a lever blade [14], in such a way that while having all the blades closed, the levers must face towards the upper part (Fig. 117)

The lever blade and the closing device of the pincer blade must be linked as it is shown on the (Fig. 118); they shall remain at the same level as the level of the small square of the pincer blade regarding the edge of the lever blade. Hold the closing blade device with one's hand and do not tighten too much in order to insert the lever.



**Fig. 117.** Put some pressure on the levers of the pincer blades.



**Fig. 118.** The lever and the pincer shall remain at the same height.

Once we have put all the levers, hold them with a self – drilling screw DIN7504-K 4,8x16 ZN [15]. These screws link the pincer blade to the lever blade. Notice how on the 5<sup>a</sup> blade and before putting the screw M4,8x16 Din7504-K, the rod has been already assembled (one on each side of the central blade) (Fig 119). The rods have a guide hole in order to insert the pivot of the lever blade. Do not put too much pressure on it since we are talking about plastic parts. After screwing on the screw M4,8 DIN 7504-K corresponding to this 5<sup>a</sup> blade (Fig. 120).



DO NOT ASSEMBLE BELOW 12° C IN ORDER TO PREVENT THE PARTS FROM BREAKING

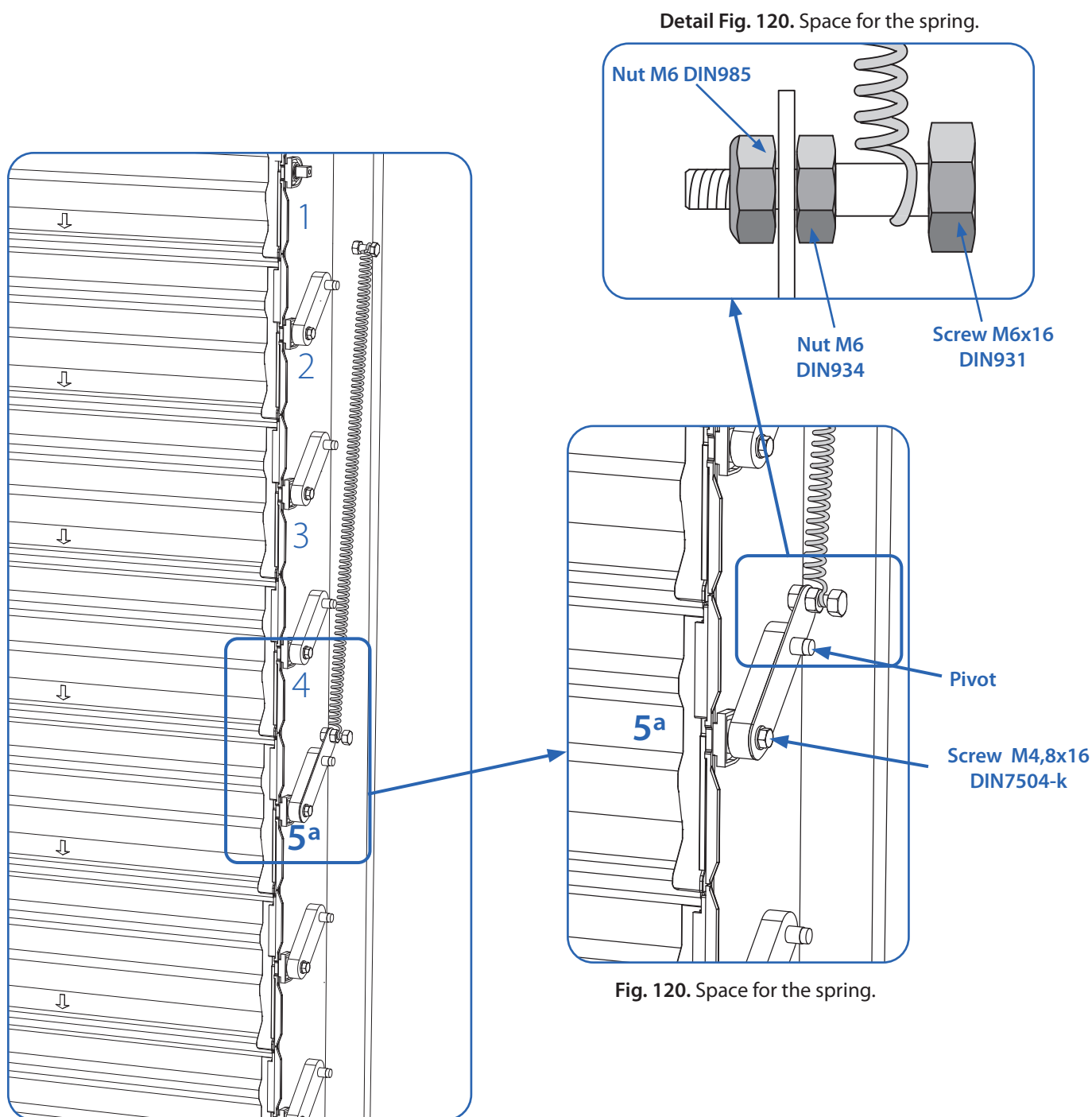


Fig. 119. Finish by assembling the springs.

- Step 10

Link all the levers by means of the guides [19] on the pivots of each lever

We must put the guides in such a way that the hole marking the position remains near the fan upper part (Fig. 124 and Fig.123), (this hole has application letting the shutter blocking pin get through). Please refer to the following manual section.

When linking all the blades, we must make sure the upper blade always overlaps the following lower blade, and that this allows all the blades moving at the same time. We must put the guide while the blades are closed, under these conditions, the levers face upwards.

In order to prevent the guides from coming out of the levers, put some retention washers [18]. Regarding their position, use a pipe wrench helping to insert them in the lever (Fig. 121), move one's hand in a circular way so that we may insert the washer in the lever as if it was a nut we are trying to tighten. In order not to bend the components, we must use some kind of wooden supplement so as to offset the force exerted at the time of tightening.

The retention washers [18] must remain adjusted to the blade guide, and not on the end of the plastic pivot of the lever.

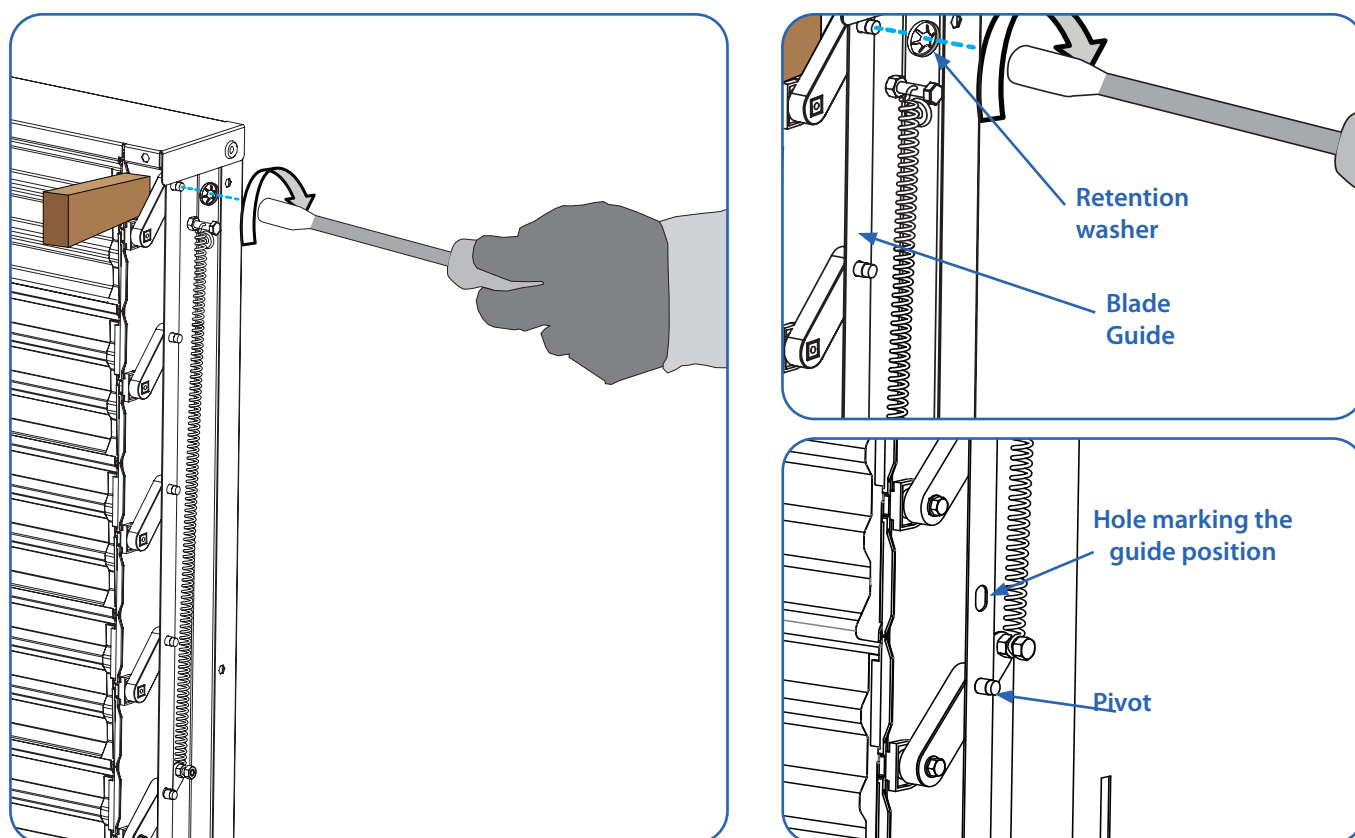


Fig. 121. Put the guide and hold it with some retention washers.



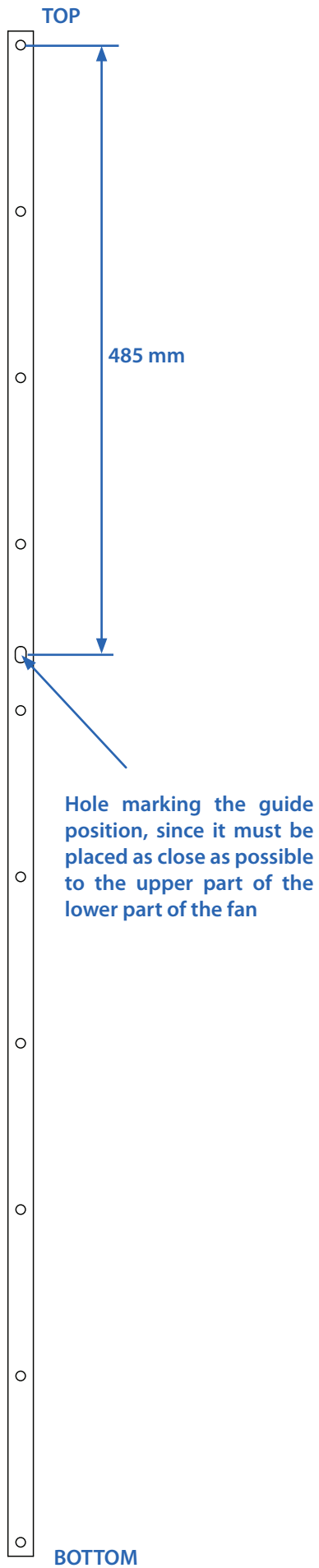


Fig. 122. Position of the guide.

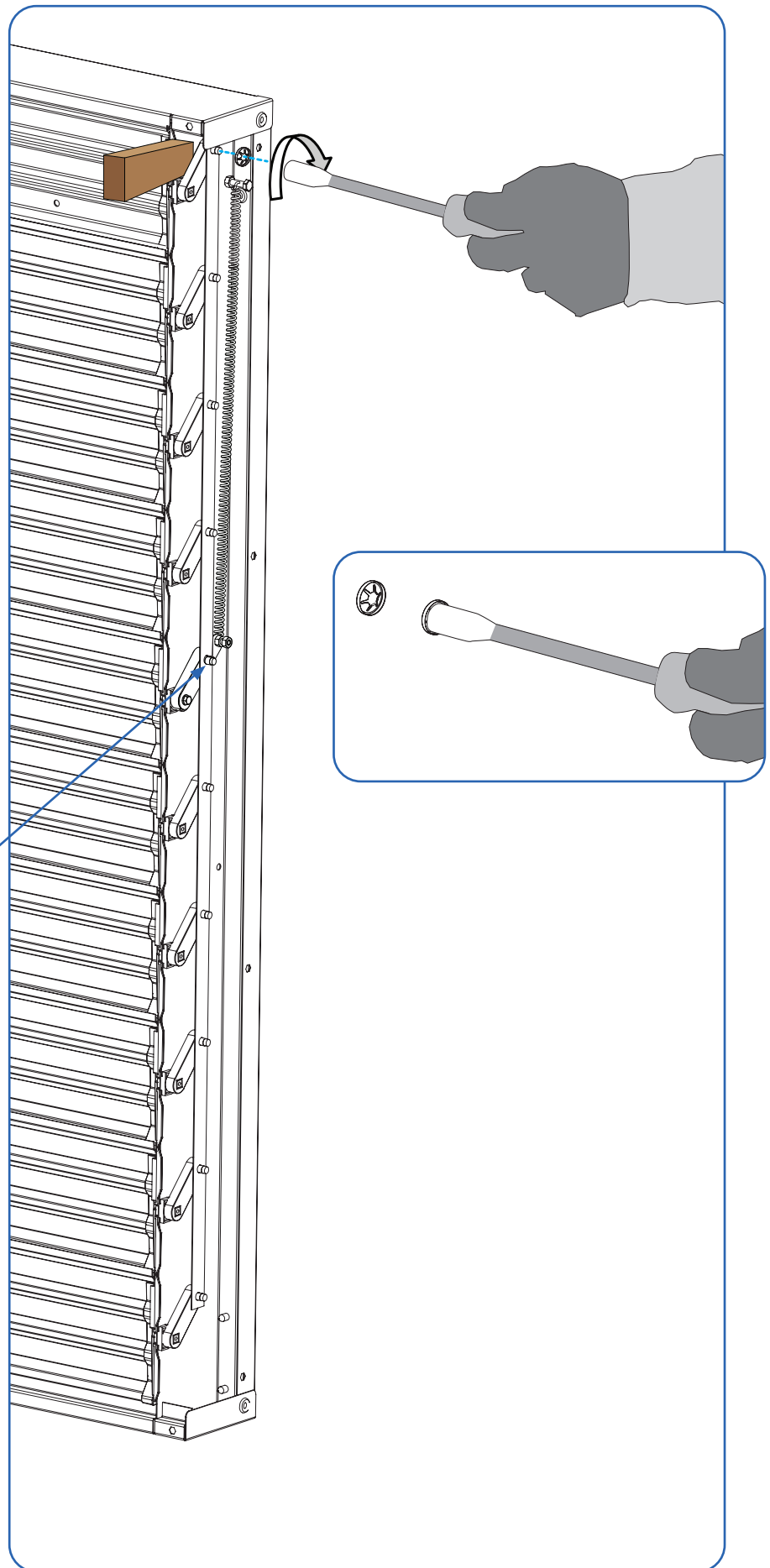


Fig. 123. Position of the guide on the fan.

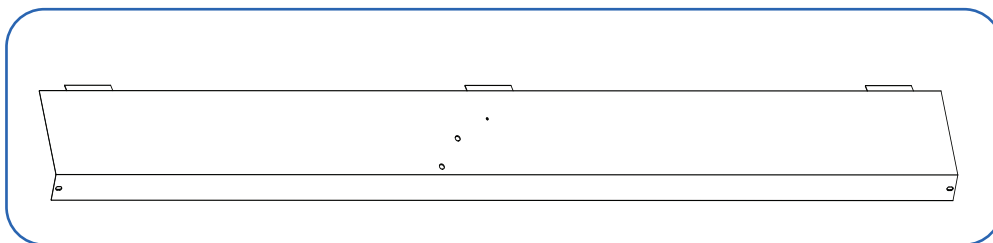
## 11. Assembly Lateral Lid

Required material :

**01** Right lateral lid

Mod EX-50: 01 Unit  
EST-TAPA-DCHA-50-V4

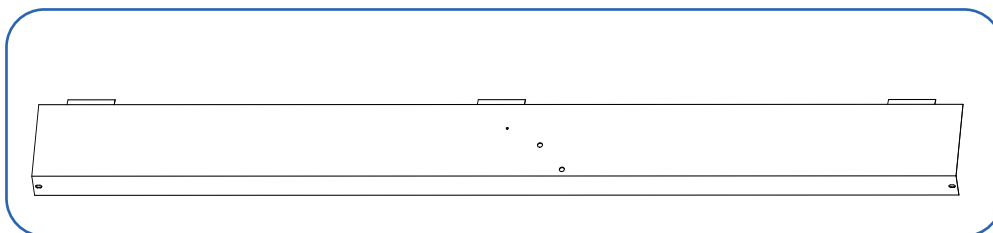
Mod EX-36: 01 Unit  
EST-TAPA-DCHA-36-V4



**02** Left lateral lid

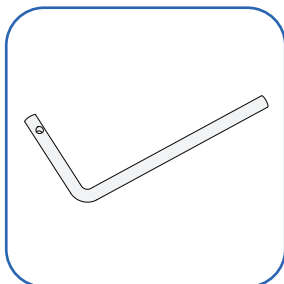
Mod EX-50: 01 Unit  
EST-TAPA-IZDA-50-V4

Mod EX-36: 01 Unit  
EST-TAPA-IZDA-36-V4



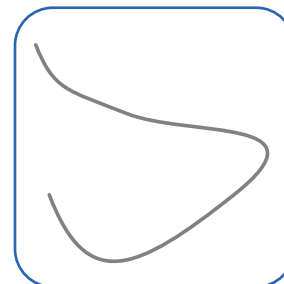
**03** Pin for fixed aperture shutter

02 Units  
EST-PASADOR-SEGU-V4



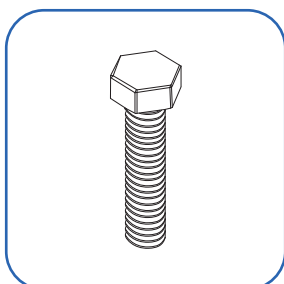
**04** Rope

02 Units  
EST-CUERDA-V4



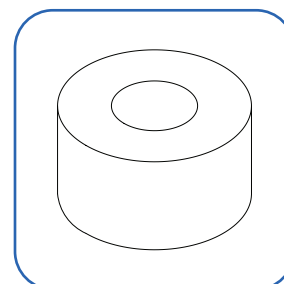
**05** Screw M5X20  
DIN933 ZN

04 Units  
TOR-TOR-D933-M5X20-ZN



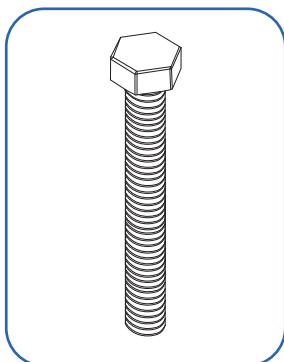
**06** Space bar

02 Units  
MOT-ESPACIADOR-M8



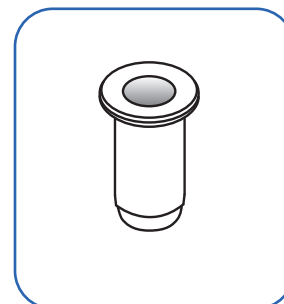
**07** Screw M5X40  
DIN933 ZN

02 Units  
TOR-TOR-D933-5X40-ZN



**08** Rivetable Nut  
M5x13,5 ZN

02 Units  
TOR-TUER-RE-5X13-ZN



- Step 1

Link the pins [03] to the ropes [04]. In order to carry out this operation, insert one of the rope ends through the pin hole, afterwards, tie a knot with the rope in such a way that the knot cannot get through the pin hole (Fig. 124). Repeat this operation with both pins. It is convenient to burn the rope end in order to prevent it from getting loose.

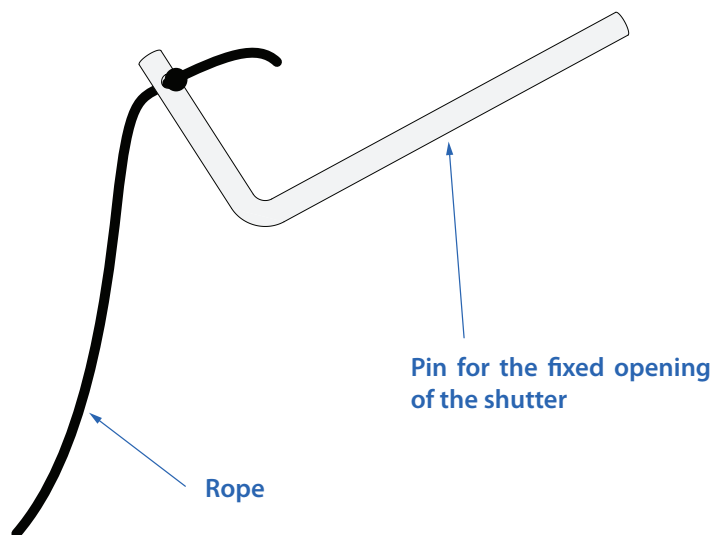


Fig. 124. Tie the pins with the ropes

- Step 2

Tie the pins [03] and the lids [01] and [02]. The lids may be identified as right and left thanks to the two holes located half way; the smallest ones always remain below and work to let the rope get through the pin. The biggest one is used for the pin. Take the end of one of the ropes with no knot and insert it from the external side of the lid through the smallest hole. (Fig 125). Then, tie a knot with the rope through the lid internal part; in such a way that the rope doesn't come out of the hole and the pin remains hanging from the lid (Fig. 127). Repeat the same operation on the two side lids. It is convenient to burn the rope end in order to prevent it from getting loose.

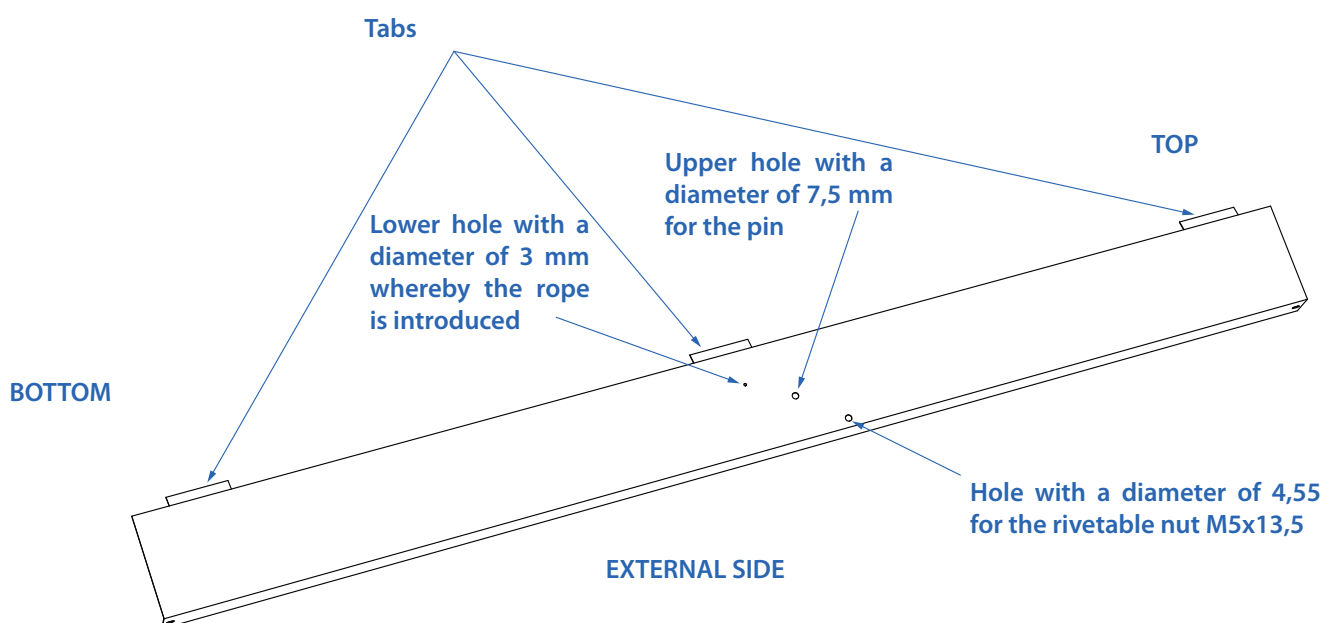


Fig. 125. Insert the end of the rope with no knot through the lower hole from the external side of the lid.

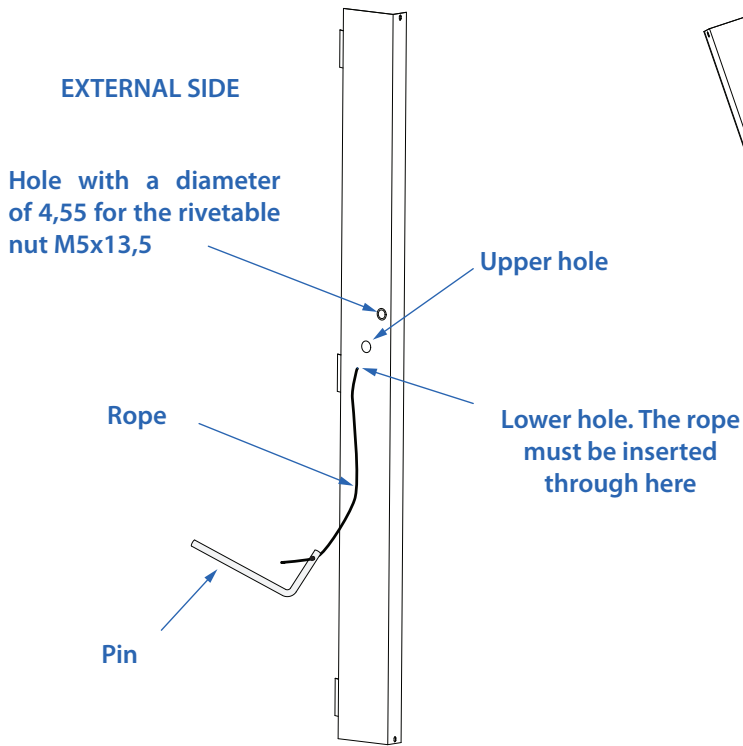


Fig. 126. Side lid seen from the external side.

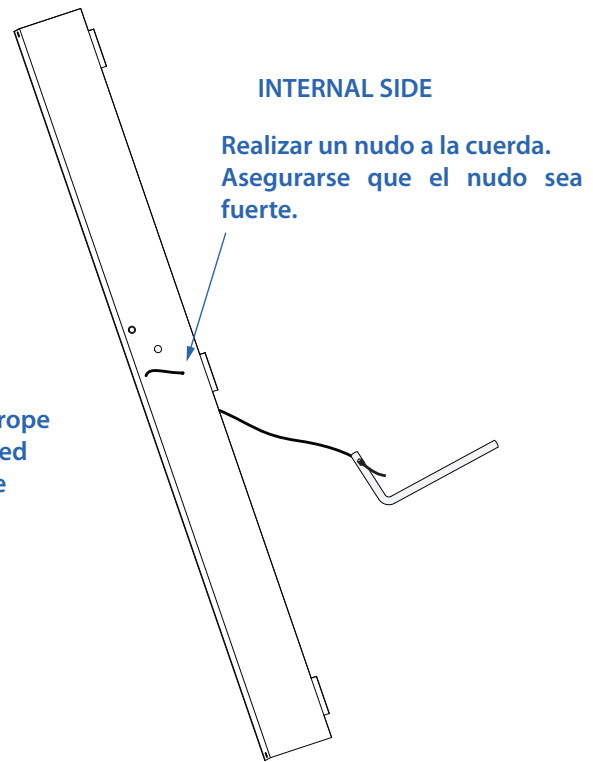


Fig. 127. Side lid seen from the internal side.

• Step 3

Before assembling the fan lids, we must put the rivetable nuts M5x13,5 [08] on the holes with a diameter of 4.5 mm. Then let's assemble the fan lids. This operation is carried out by inserting the tabs of the lids inside the holes located on the fan sides (Fig. 128). Take care to position the corresponding lids, since these ones have a determined position. Notice how the hole used to insert the pin remains closer to the fan roof than to the floor (Fig. 125).

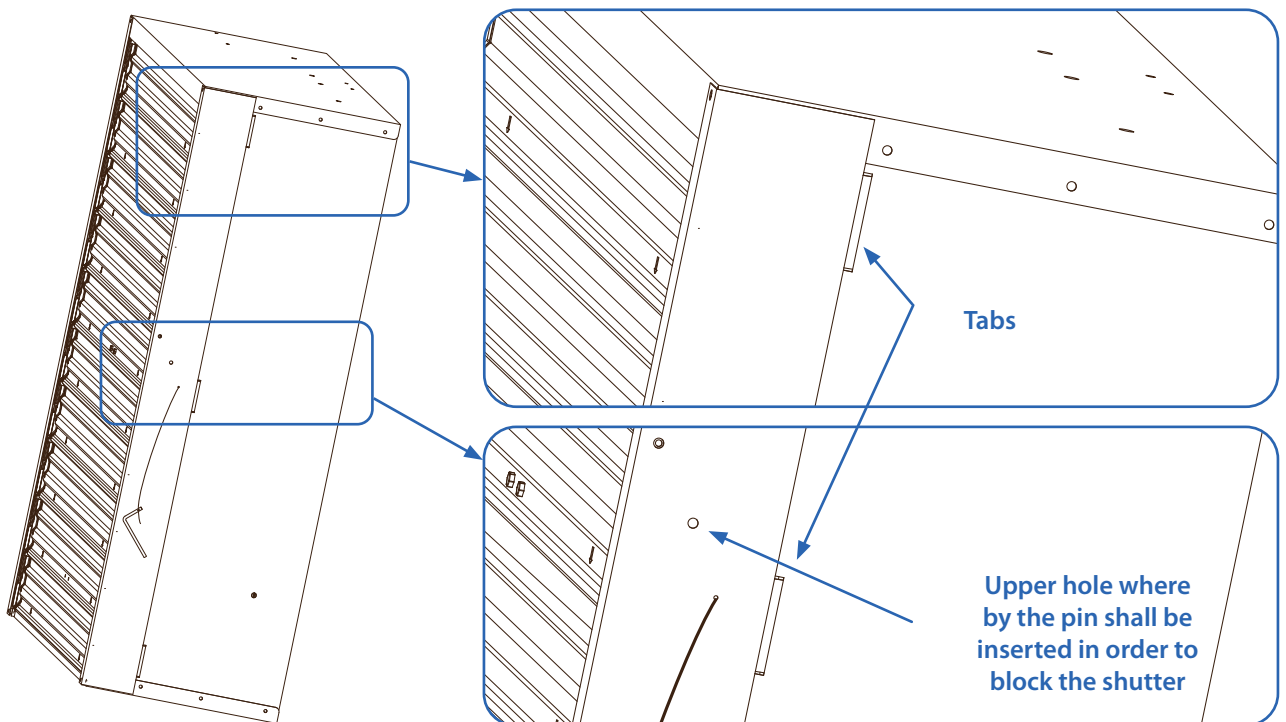


Fig. 128. Assemble the fan lids. Insert the tabs of the side lids through the holes

• Step 4

Let's thread a screw M5x40 Din 933 [07] on one side on the corresponding rivet nut of M5x13.5 [09] located some centimetres over the pin hole. This screw must be screwed on until the head is even with the sheet. So that it can work fine. By doing this, we prevent the sheet holding the blades from getting bended or moved from its original position, for example in case of vibrations. The manipulation or extraction of this screw automatically implies the cancellation of the product warranty.

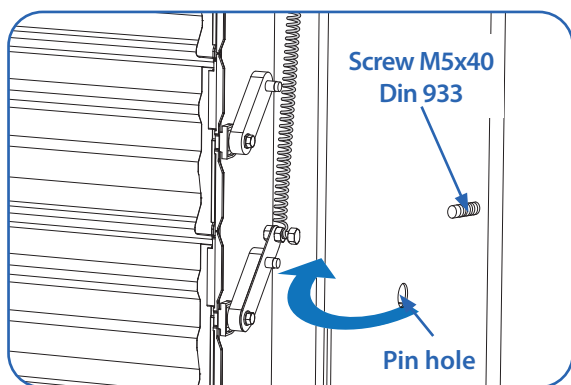


Fig. 129. Tapa lateral abierta

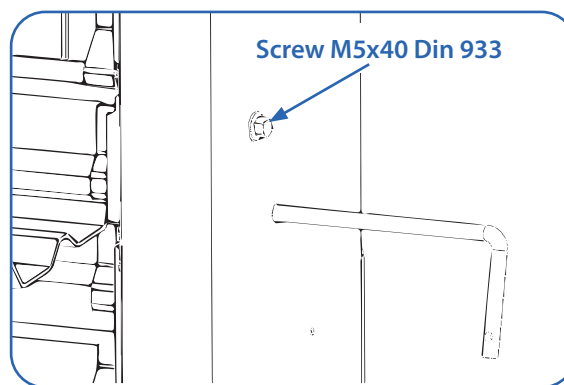


Fig. 130. Tapa lateral cerrada

**We recommend applying a fixing drop for threads with the purpose of preventing the screw from getting loose**

• Step 5

Screw on the fan lids. First, put the two space bars [06] on the two rivet nuts of the floor, in the space remaining between the floor and the lids, and where we will thread the screws later on. This is done in order to prevent the lid from getting deformed due to the screw pressure. Once we have positioned the space bars, thread the four screws M5x20 [05] on the four corners of the fan (Fig. 131).

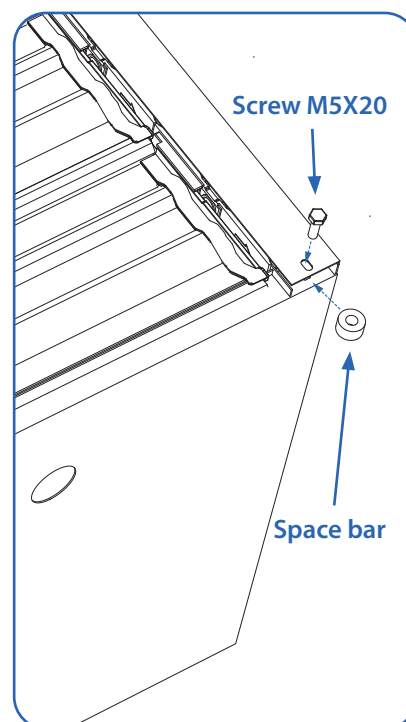
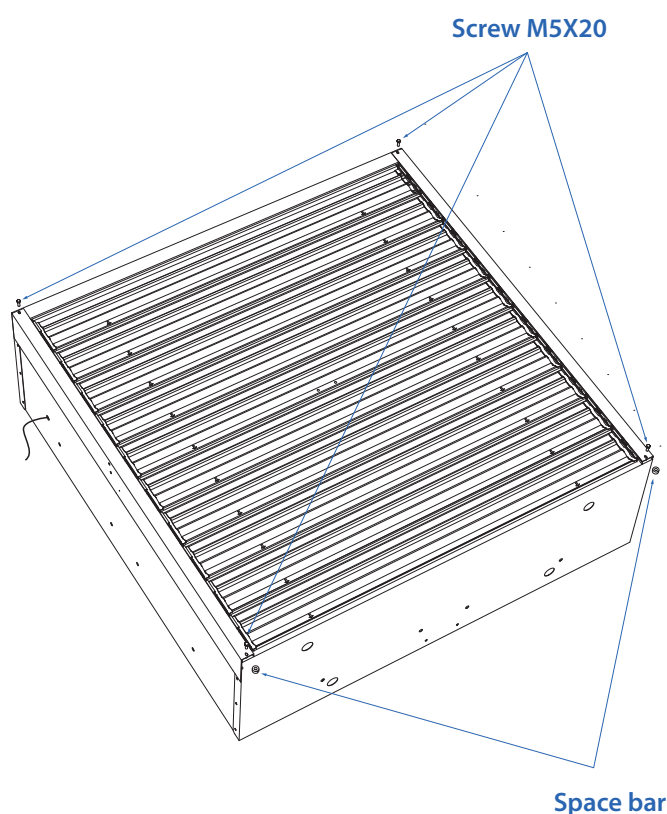


Fig. 131. Put the space bars on the holes of the fan lower part. Then, screw on the fan side lids.

## 12. Placing of the stickers

Required Material:

**01** The Voltage Label

01 Unit



**02** Position label "UP-DOWN"

02 Units



**03** Caution stickers

02 Units



**04** The label "do not open the blades"

01 Unit



**05** The label "do not open the blades"

02 Units

The voltage label [01] should be placed beside the motor cable outlet.

Let's put the position label "UP-DOWN" on the sides of the fan [02].

The two yellow caution stickers [03] should be placed on the side parts.

Let's place the label "do not open the blades" on the central blade beside the centrifuge fixing [04].

ALL THE ADHESIVES ARE REQUIRED, SINCE THEY INDICATE SAFETY REGARDING THE CLIENT AND PROTECTION REGARDING THE PRODUCT.

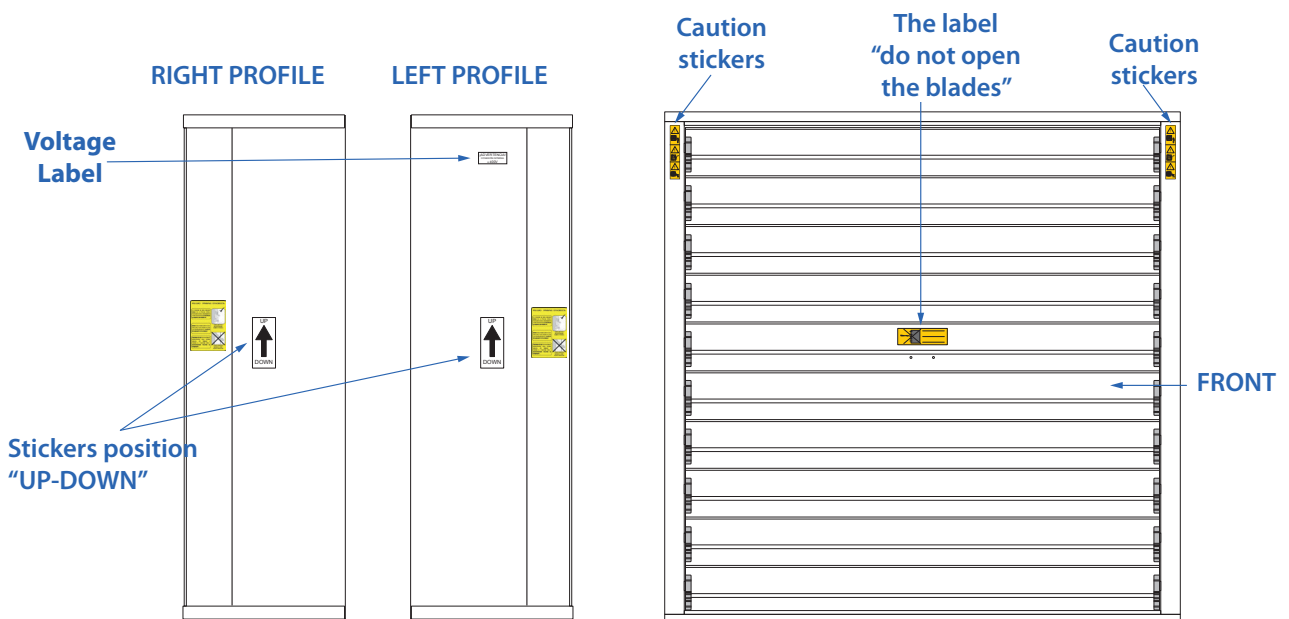


Fig. 132. Put the labels on the indicated position.

## 13. Installation instructions

In case the fan ought to be placed inside a wall hole, and in order to guarantee the perfect operation of the shutter as well as also to avoid any block or imbalance. It is essential to observe the hole measures, which must be below the measures of the fan, plus 10 mm of space around it (Fig. 133).

Do not apply any product such as cement or assembling foam to cover the holes between the fan and the wall, since these could exert some pressure force on the walls and this may exert some pressure on the shutter, making its correct opening and closing actions very difficult.

No projection, bulge or imperfection should exist on the base and where the fan leans on, since these could make the shutter close badly or even cause a disequilibrium of the whole set (Fig.135) and (Fig.136).

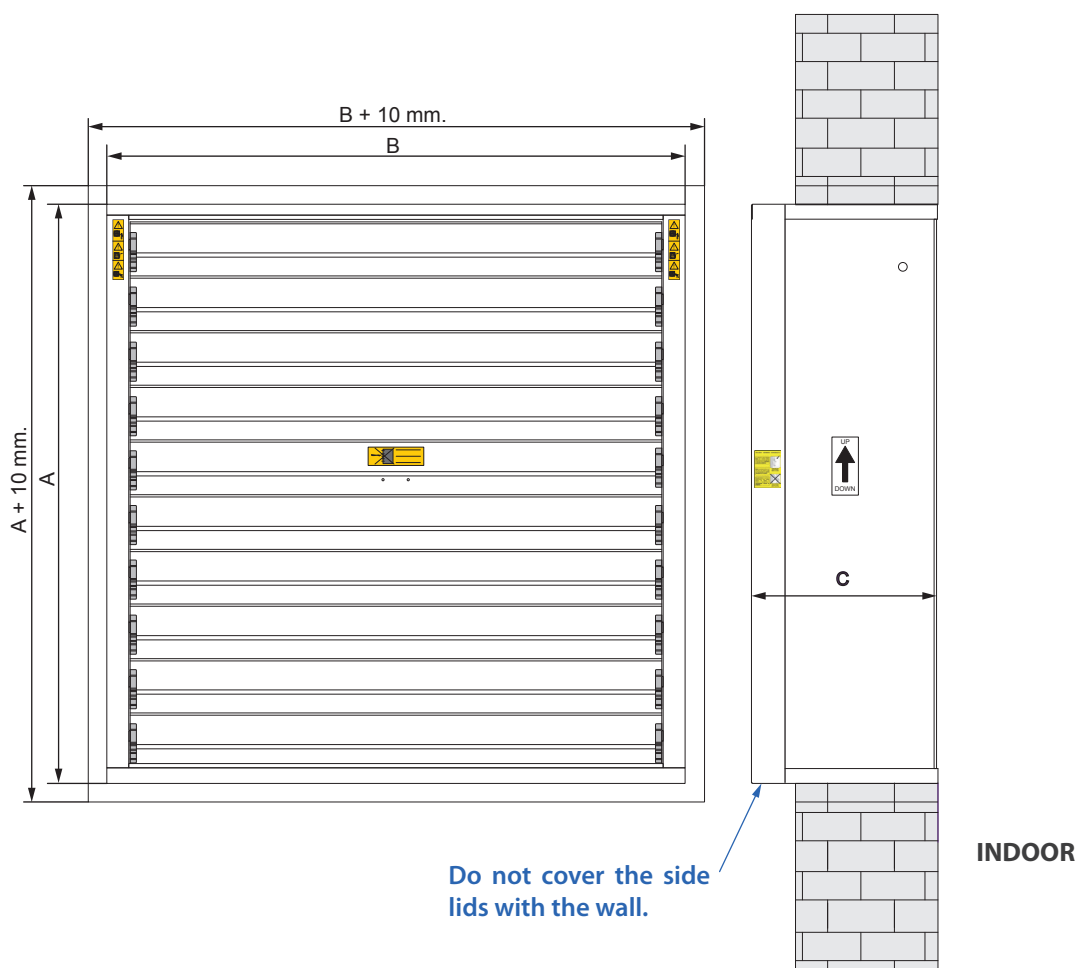


Fig. 133. Dimension of the fan and the installation hole

	A	B	C	Kg
Ventilador EX-36	1090	1090	450	±65
Ventilador EX-50	1380	1380	450	±85

Fig. 134. Table of the dimension of the fans EX.

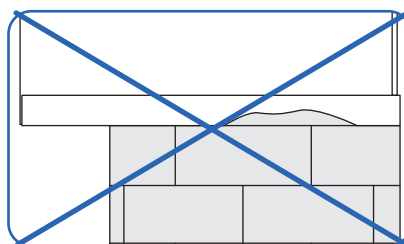


Fig 135. Installation NOT OK

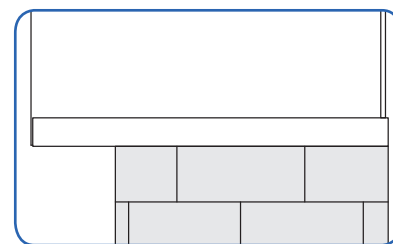


Fig. 136. Installation OK

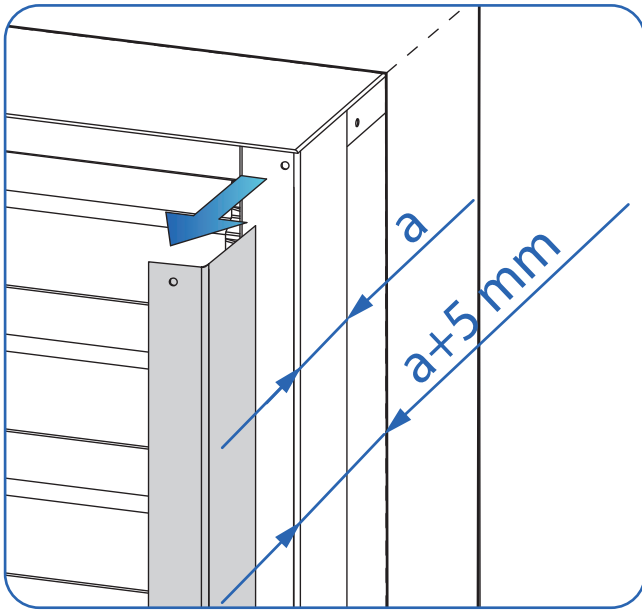


Fig. 137. Installation with the fan outside the wall hole.

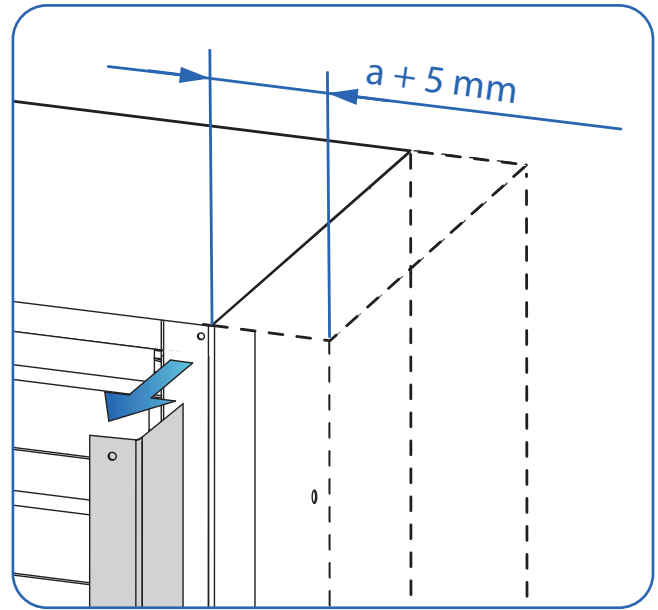


Fig. 138. Installation with the fan inside the isolating wall hole.

During the installation of the fan, we must bear in mind the distance from the wall till the fan edge. There are two lids on the sides of the fan. These lids must be free and easily accessible, since once dismantled, we have access to the shutter blades.

The fan must stand above the wall at a convenient distance for the correct manipulation of the lids. This distance must be at least 5 mm over the lid size (Fig. 137). If by any construction reason, we don't have this space available we may leave some space between the wall and the fan sufficiently big in order to manipulate the lid (Fig. 138). If you choose the second option, take care not to apply the insulating material between the fan and the wall so as not to glue the lids and render them useless.

If we put two fans together, bear in mind the same consideration, leave some space between them (around 5 mm) in order to manipulate the side lids. The insulating material must be applied at a distance long enough so as not to glue the side lids and this way, render them useless (Fig 139).

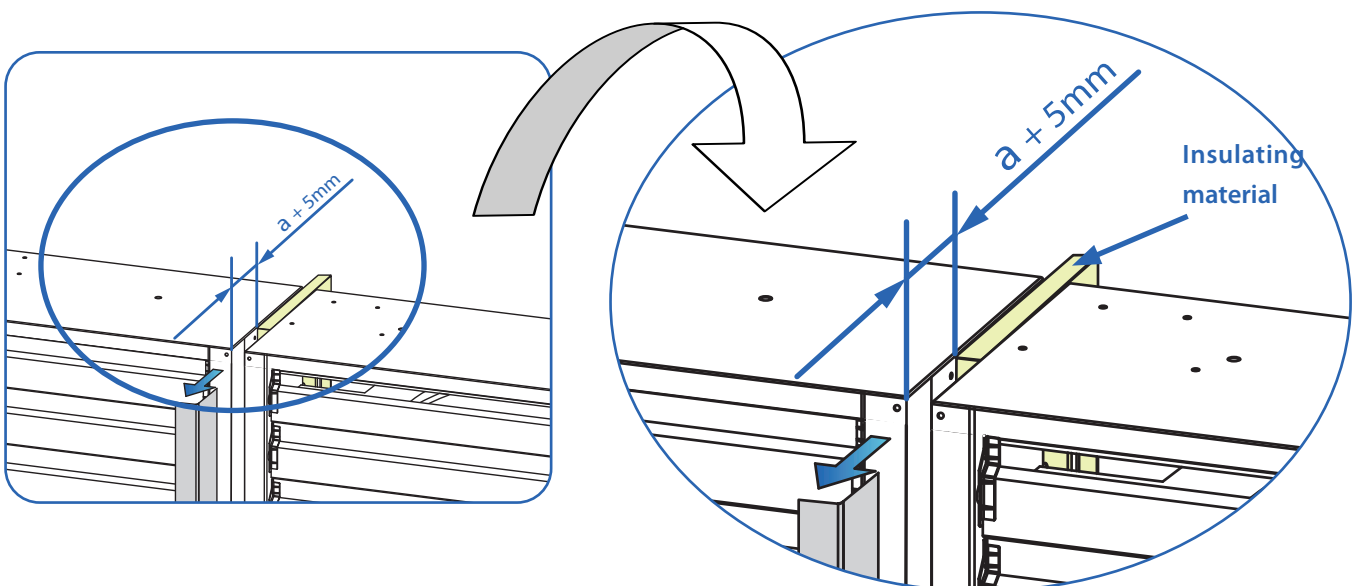


Fig. 139. Distance installation between two fans.



In case of fixing the fans outside the building wall, some strong supports leaning on the entire fan surface are required. The correct thing to do is putting the fans over a small wall so that the fan surface lies on it perfectly. (Fig.140). (Option A, option B). In case of putting the fans on two supports or squares, it is required for them to be robust, wide and with a nerve or flat metal sheet working as a base for the fan in order to prevent any deformation when the fan lies on it. These supports should be placed on the fan ends, not in the middle (Fig 141) and (Fig 142).

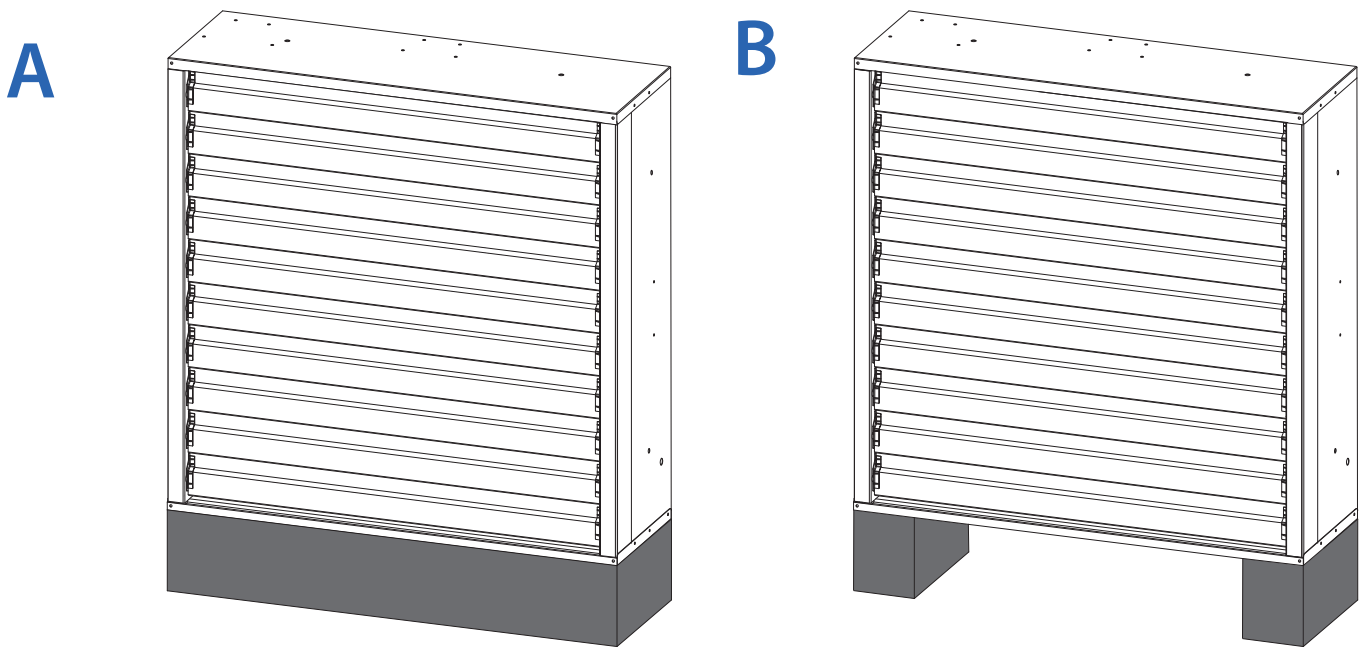


Fig. 140. Installation outside the building, over the small wall.

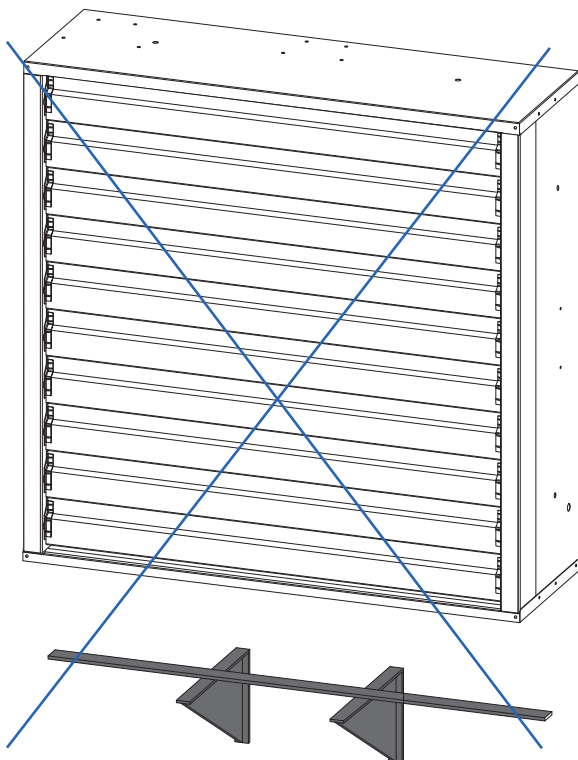


Fig. 141. Installation outside the building, over some supports

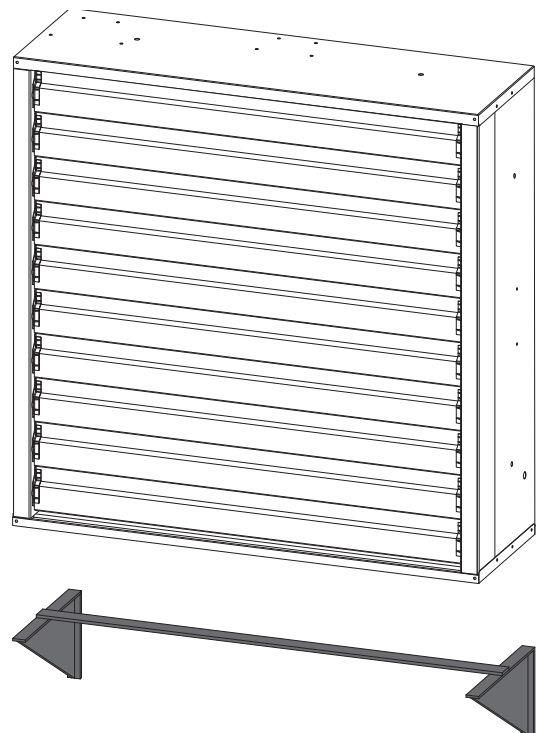
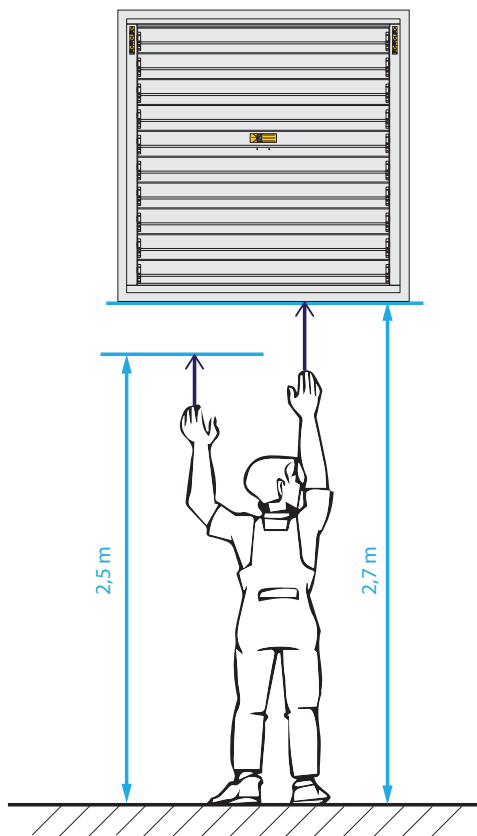



Fig. 142. Installation outside the building, over some supports



 **The placement of the grid no protection can result in serious damage entrapment.**



Grid position picture for orientation purposes.

• **INFORMATION NOTE**

For fans that are installed at a height less than 2.7 m from the ground (with reference to bottom / or / base of the fan), will be necessary to install indoor and outdoor protection grid in order to avoid uncontrolled entrapment between fan blades.

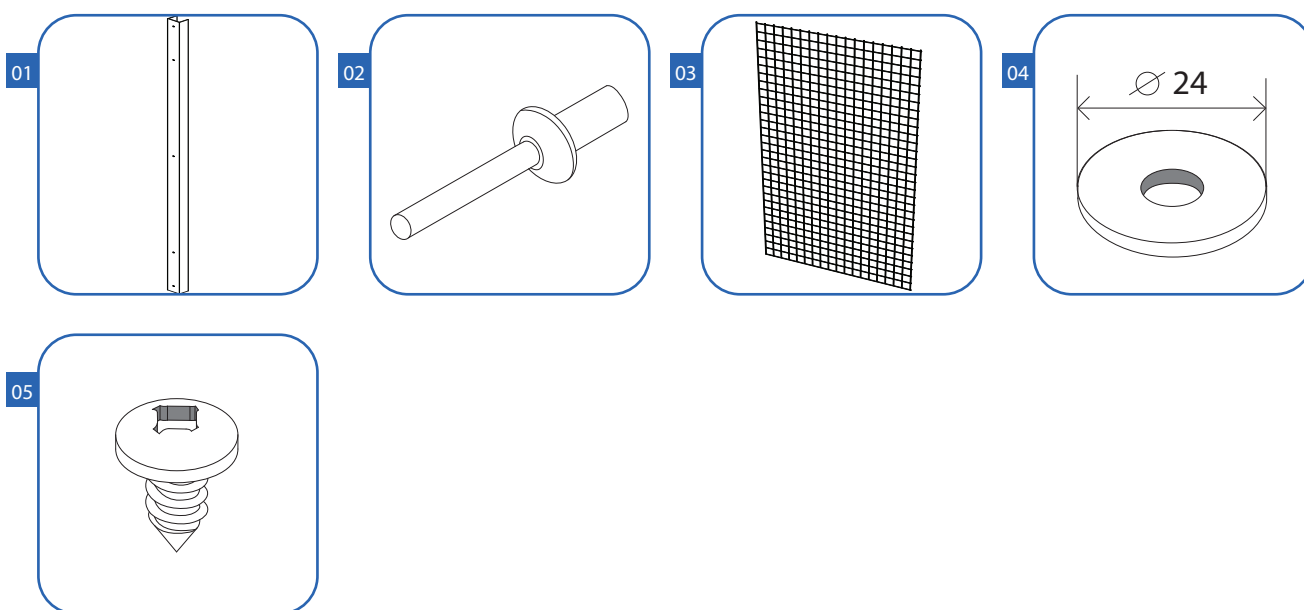
This protection grid will be supplied by EXAFAN on the request and additional costs will be applied.

## 14. Assembly annex mesh – mesh

The assembly of the two fans MESH – MESH is similar to the assembly of the conventional fans, except for the centrifuge position and the placing of the shutter of the fan that are not assembled in this model.

The assembly of the centrifuge is completely suppressed and the front shutter should be replaced by a mesh. The way how to place it is explained later on.

### • Required material



**01** 01 Unit  
 Front reinforcement bar  
 Ref. EXAFAN: EST-REFUER-50-MM  
 (Mod. EX-36: 01 Unit. EST-REFUER-36-MM)

**02** 02 Unit  
 Rivet made of aluminum  $\varnothing 6.4 \times 12,5$ mm. ZN  
 Ref. EXAFAN: TOR-REM-ALU-6.4/12.5

**03** 02 Units  
 Mesh  
 Ref. EXAFAN: 02 Units. EST-MALLA-50-MM  
 (Mod. EX-36: 01 Unit. EST-MALLA-36-MM)

**04** 19 Units  
 Washer M7 DIN9021 ZN Special  $\varnothing 24$   
 Ref. EXAFAN: TOR-ARAN-D9021-7Z-E

**05** 19 Units  
 Metal sheet screw 6,3x13 ZN  
 Ref. EXAFAN: TOR-TIRAF-CHAPA

• Step 1

Assemble the front reinforcement bar to the fan by means of two rivets made of aluminum  $\text{Ø}6.4 \times 12,5\text{mm}$ . ZN (one on the roof and the other one on the fan base), in the position indicated on the figure 1.

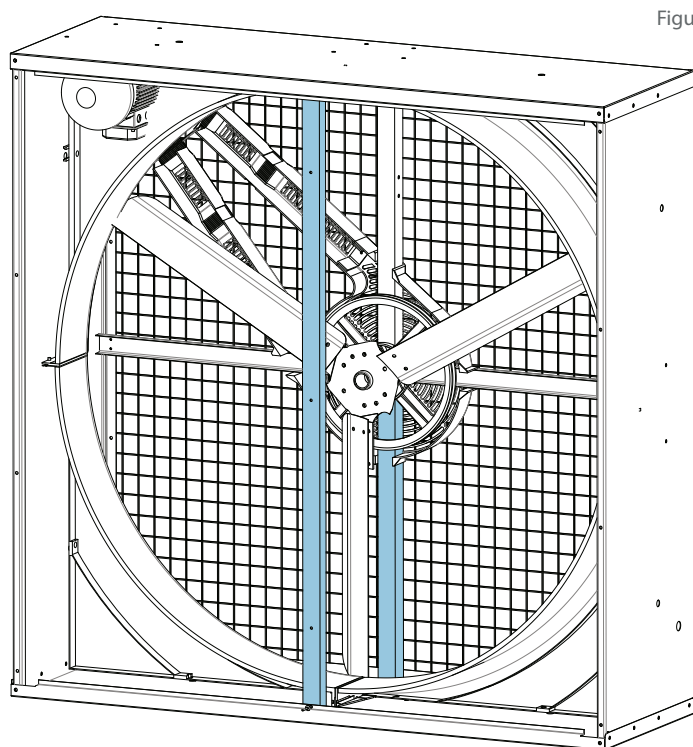
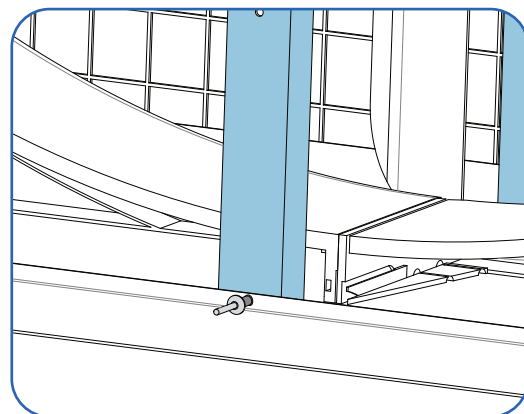


Figure 1



• Step 2

Once we have assembled the bar, put the mesh and fix to the structure by means of 19 metal sheet screws and the washers M7 DIN9021, three of them on the reinforcement bar in order to link both meshes. The figure 2 indicates where they should be assembled.

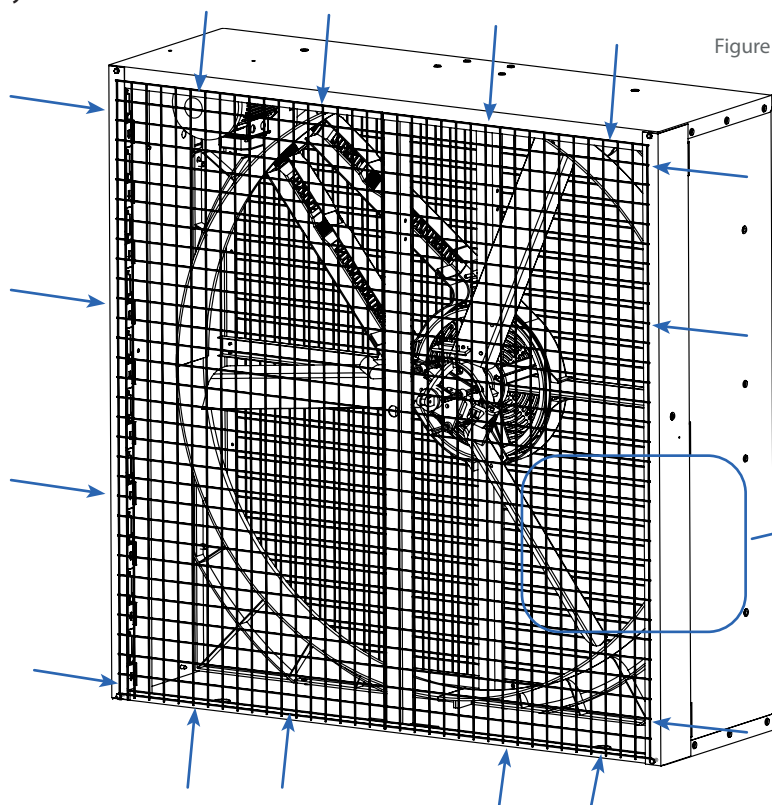
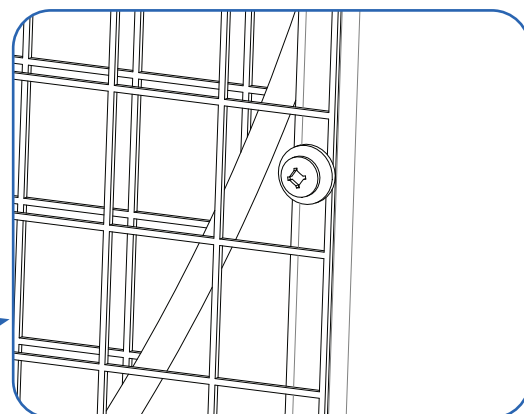


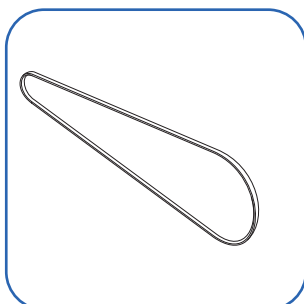
Figure 2



## 15. Spare parts

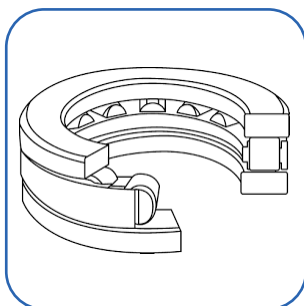
### Trapezoidal belt TYPE A:

Length: Please refer to the mark on the belt.



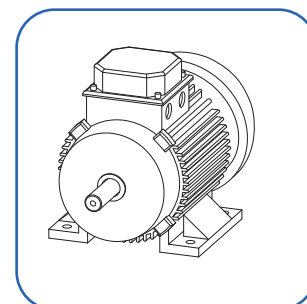
### Bearing of the bushing

Angular contact of two rows (633313C) SKF



### Motor:

Please refer to the motor features panel.



Regarding the remaining spare parts, please get in touch with the Technical Service Department.

### SERVICIO DE ATENCIÓN TELEFÓNICA

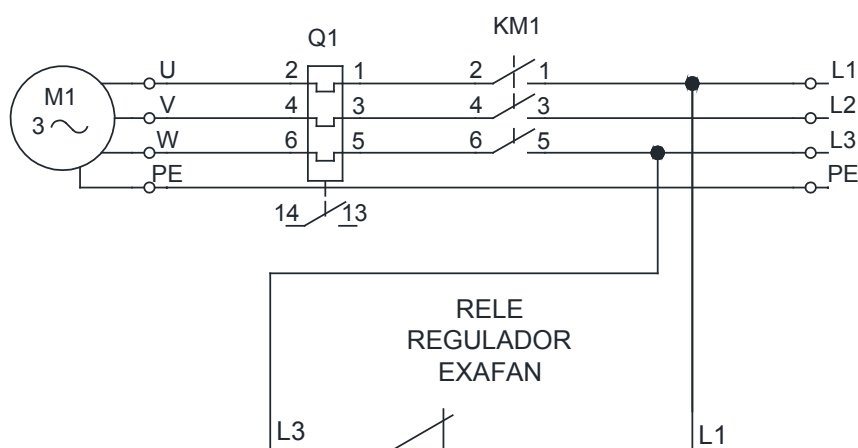
#### HORARIO 24 h

07:00 a 15:00 al **976 69 45 30**

15:00 a 07:00 al **629 38 58 78**

✉ sat@exafan.com

## 16. Electric wiring diagram



### Technical specifications

Model	Flow (0 Pa)		Fan	Motor III			Sonund Level	Approx. Weight
	m <sup>3</sup> / h	CFM		CV	Kw	TENSION		
EX36"- 0.5	19.100	11.240	915	0.5	0.38	230-400 v	62	65
EX36"- 0.75	21.600	12.690	915	0.75	0.55	230-400 v	62	65
EX50"-1	38.600	22.700	1.270	1	0.76	230-400 v	67	85
EX50"-1.5	41.900	24.600	1.270	1.5	1.1	230-400 v	69	85
EX50"-2	45.300	26.600	1.270	2	1.5	230-400 v	70	86

## 17. Accessories

### 17.01. Lid

We offer the possibility of placing the lid beside the fan EX50 at the time of its installation. This lid protects the fan the same way it helps to keep the temperature in case the weather conditions outside are not adequate.

#### Previous wall hole

In case of installing the fan beside the lid, it is necessary to cut differently as to what is usual in the case of an installation in a fan normal hole. In order to guarantee the perfect operation of the shutter, and avoid any obstruction and malfunction. It is essential to observe the hole measures<sup>(1)</sup>.

The following different cuts ought to be made when making the hole for the installation:

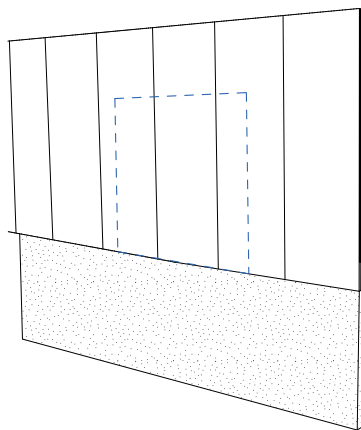
- **Sandwich Panel:** Cut of 1350 x 1350 mm from the concrete limit. Keep the cut of the sandwich panel, since it will be reused to manufacture the lid.

(1) Do not use products such as cement or assembly foam in order to close the holes between the fan and the wall, since they can cause some pressure forces on the wall and press on the fan as a consequence.

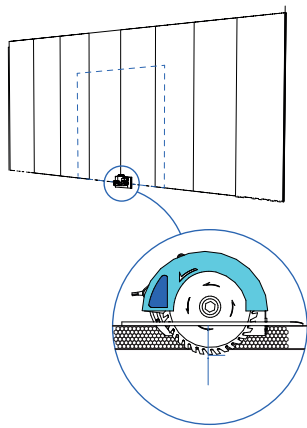
No protrusion, bump, or imperfection on the base where the fan is going to be placed should exist, as they could unbalance the whole set.

The first thing to do is to make the hole on the sandwich panel. In order to make these holes, the steps to follow are:

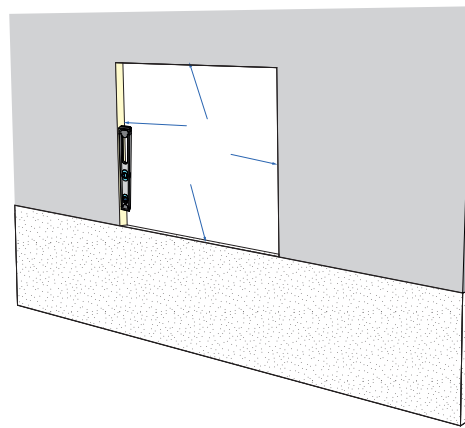
- Mark the hole perimeter we have to make on the sandwich wall (Fig. 144). The measures must be of between 1350 x 1350 mm.
- The cut must be made with a circular saw and whose cut is 100 mm at a 90° angle (Fig. 145). This cut must be as straight and clean as possible. Use a leveler in order to check whether the cut was made correctly (Fig 146).



**Fig. 144.** Diagram of the hole and lid measures.



**Fig. 145.** Cut the sandwich panel with a circular saw.



**Fig. 146.** Level correctly.

## Lid assembly

1. Let's start with the lid assembly process by recovering the portion of the sandwich panel previously cut on the wall. In case the installation hole has been made correctly, the portion measures will be around 1350 x 1350 mm.
2. Let's place around some "U form" profiles made of PVC and miter cut at a 45° angle (by means of a miter saw).



BEFORE PLACING THE PROFILES, COVER THE SURFACE WITH A SILICONE LAYER ON THE INTERNAL SIDES IN ORDER TO SECURE THE POSITION OF THE PANELS (FIG. 149)

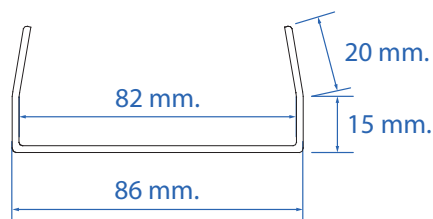


Fig. 147. Measures of the profile in "U" form made of PVC.

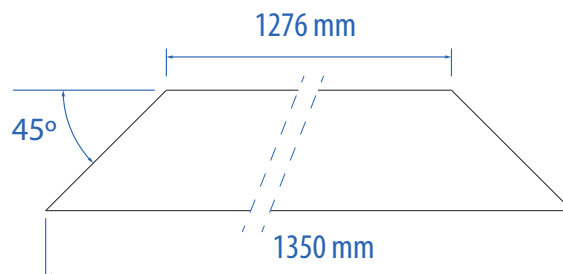


Fig. 148. Cut of the profile made of PVC for the upper and lower part of the lid.

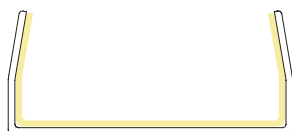


Fig. 149. Put some silicone inside the profiles.

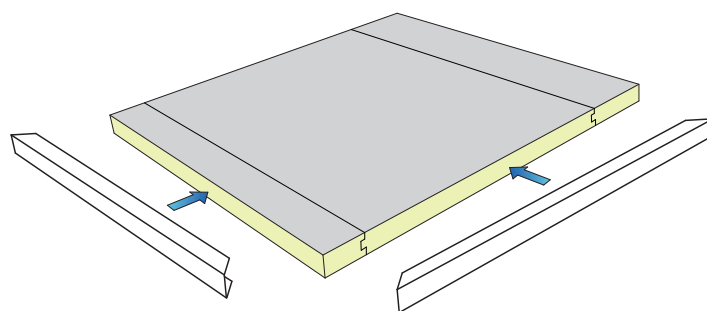


Fig. 150. Put the profiles made of PVC on the lid, and rivet them.

3. Drill some holes in order to insert the rivets with a drill bit  $\varnothing 5$  mm (Fig. 151, 152)
4. Once the profiles and panels are already drilled, rivet them by means of the standard STAINLESS STEEL rivets of  $\varnothing 4 \times 10$  mm through both sides of the sandwich panel. The number of rivets increases to 40.



MAKE THE HOLES 20 MM FROM THE EDGE

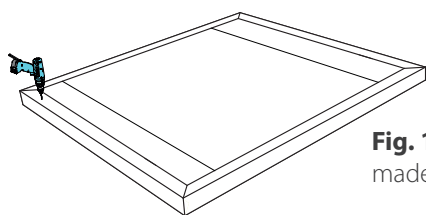


Fig. 151. Drill the profiles made of PVC.

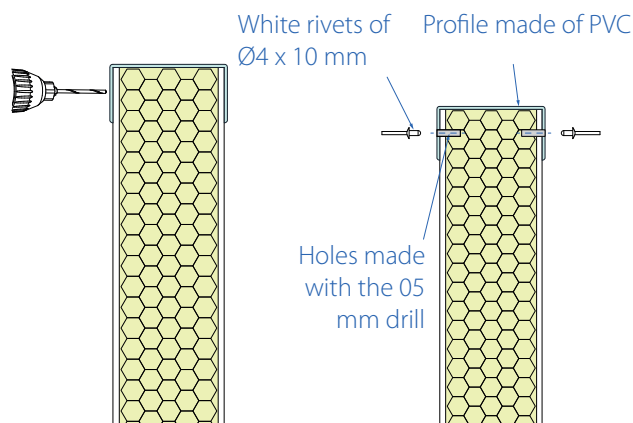


Fig. 152. Holes made on the PVC profile and on the sandwich panel.

Fig. 153. Detail of the riveted profile made of PVC.

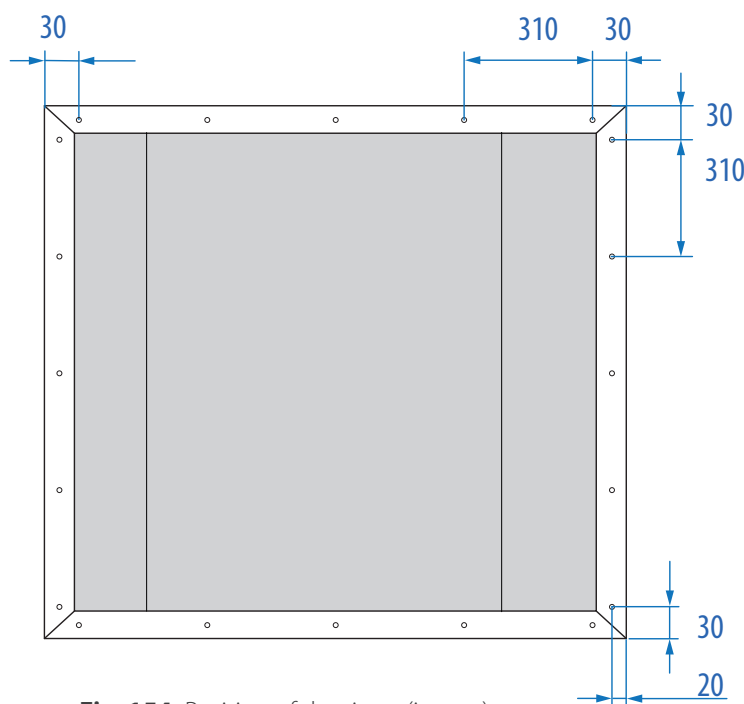
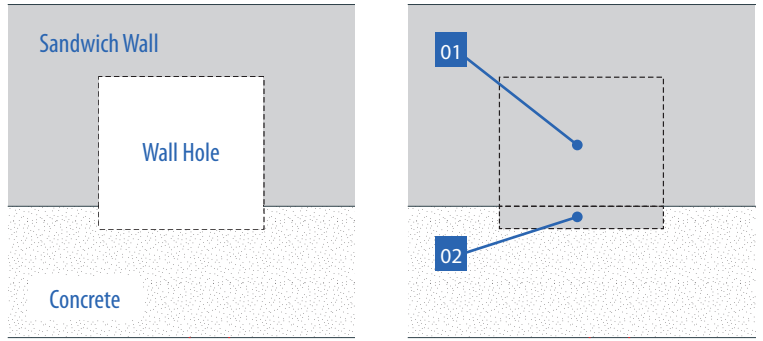


Fig. 154. Position of the rivets (in mm).

If the hole for the fan installation is made in sandwich panel and concrete wall, the cut of the sandwich panel will not be enough to cover the entire hole.

- An extra piece of sandwich panel will be needed to complete the lid dimensions (Fig. 154-a).



01 Sandwich wall cutout for the lid.

02 Extra piece of sandwich panel for the lid.

Fig.154-a. Sandwich wall cutouts for the lid.



PERIMETRAL "U" PROFILES MUST BE MOUNTED IN THE HOLLOW IN ORDER TO PROTECT THE EDGE OF THE SANDWICH WALL AGAINST EXTERNAL AGENTS. THESE PROFILES MUST BE SUPPLIED BY THE CUSTOMER. EXAFAN DOES NOT SUPPLY THEM.

- Join both parts through a "H" profile (Fig. 154-b).
- Let's place around some "U form" profiles made of PVC and miter cut at a 45° angle (by means of a miter saw). Exceed the "H" profile when placing it (Fig. 154-c).

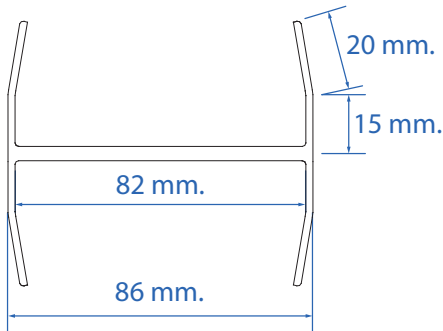


Fig.154-b. Dimensions of the "H" profile made of PVC.

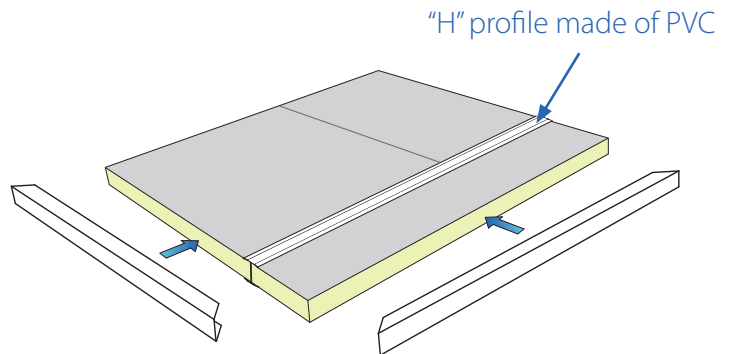


Fig. 154-c. Put the profiles made of PVC on the lid, and rivet them.



THE "U" PROFILES MUST LIGHTLY FLUSH ON THE "H" PROFILE EXTREME



THE PROFILE IN "H" IS ONLY PLACED IN CASE OF 3 PIECES, IF THE LID MUST BE LEFT

- Repeat points 3 and 4. In this case, the number of rivets increases to 60 (Fig. 154-d).



MAKE THE HOLES 20 MM FROM THE EDGE

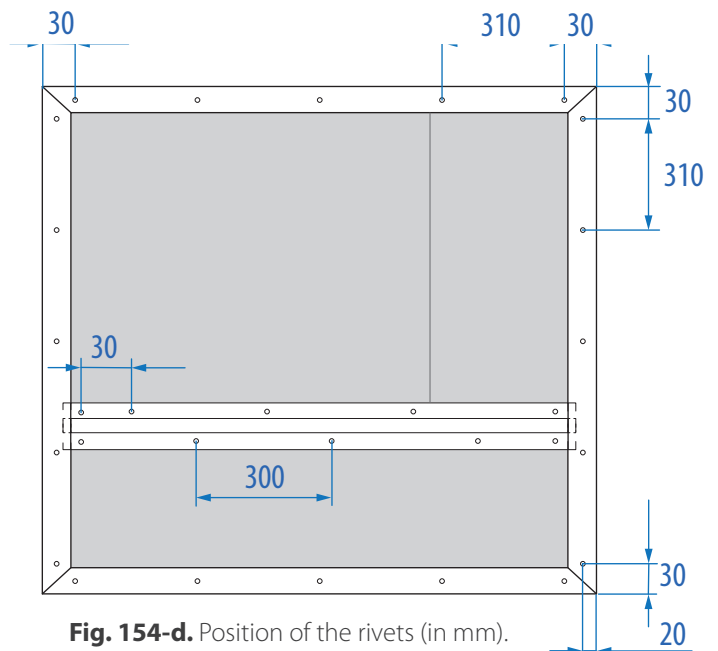


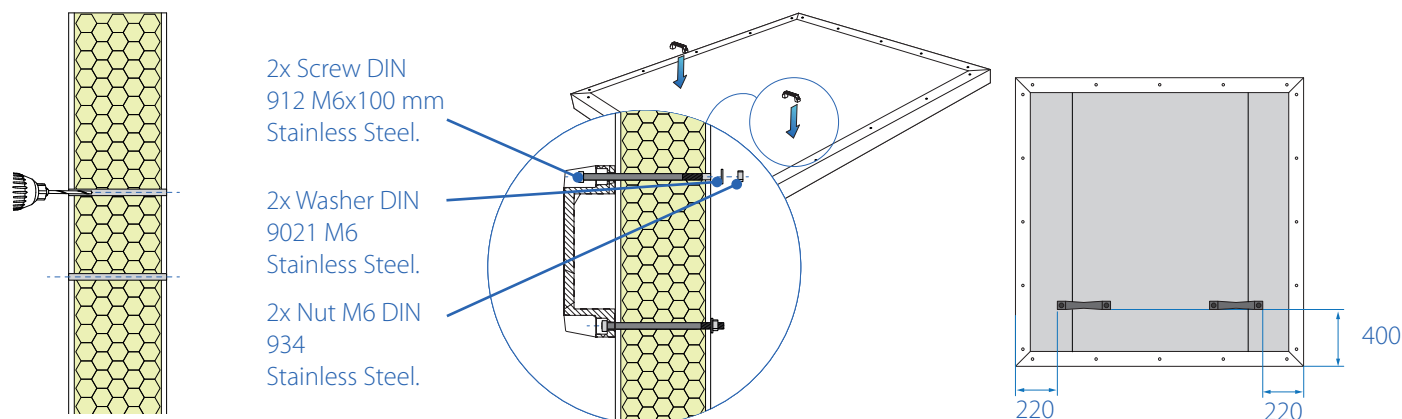
Fig. 154-d. Position of the rivets (in mm).



- Once the lids have been completely riveted, let's proceed to install some tight handles in order to facilitate the use of lids so as to remove or place them easily.

In order to install these handles, we have to make some through holes on the sandwich panel of the lid with a 08 mm drill (Fig. 155) according to the holes measure (premark).

These handles are assembled with two screws DIN 912 M6 100 mm long, one threaded end of 24 mm with a stainless steel nut DIN 934 M6, and a stainless steel washer DIN 9021 M6 on each side of the sandwich panel (Fig. 156).



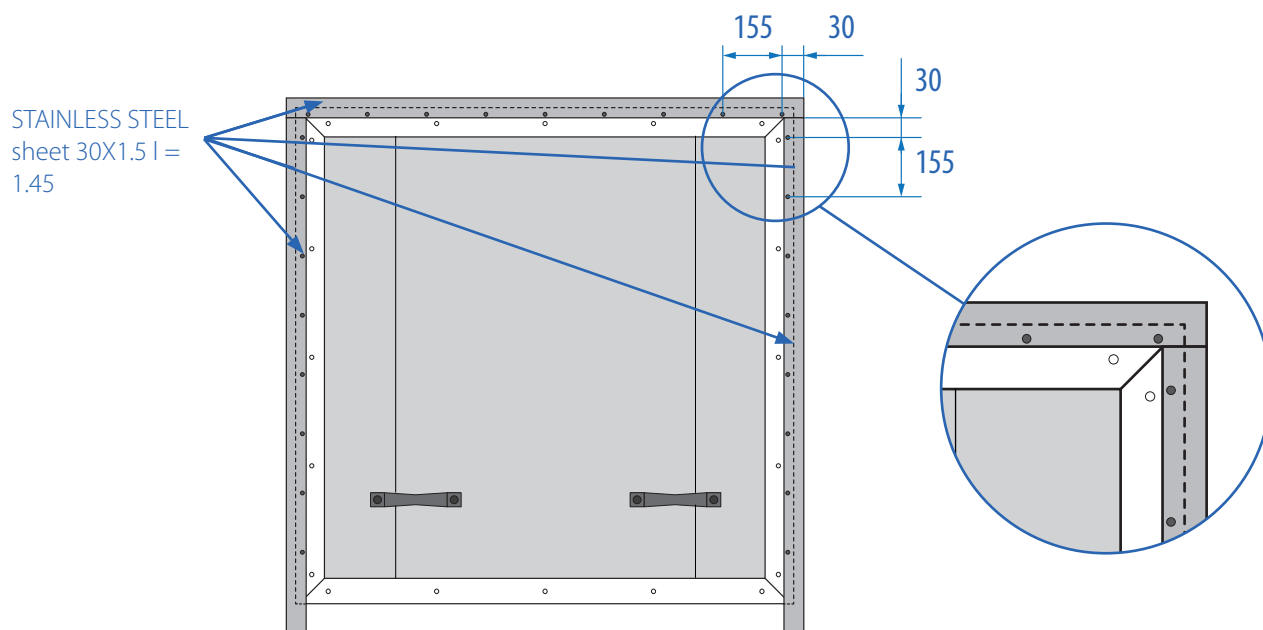
**Fig. 155.** Make the through holes on the sandwich panel.

**Fig. 156.** Layout on how to install the braces.

- Once the entire profile made of PVC has been riveted, and therefore, we have finished its installation, we have to couple a stainless steel sheet on the side of the braces. This sheet has the following dimension 1450 x 30 x 1.5 mm and we have to place 3 sheets: one on the upper frame, and the other two on the side frames.

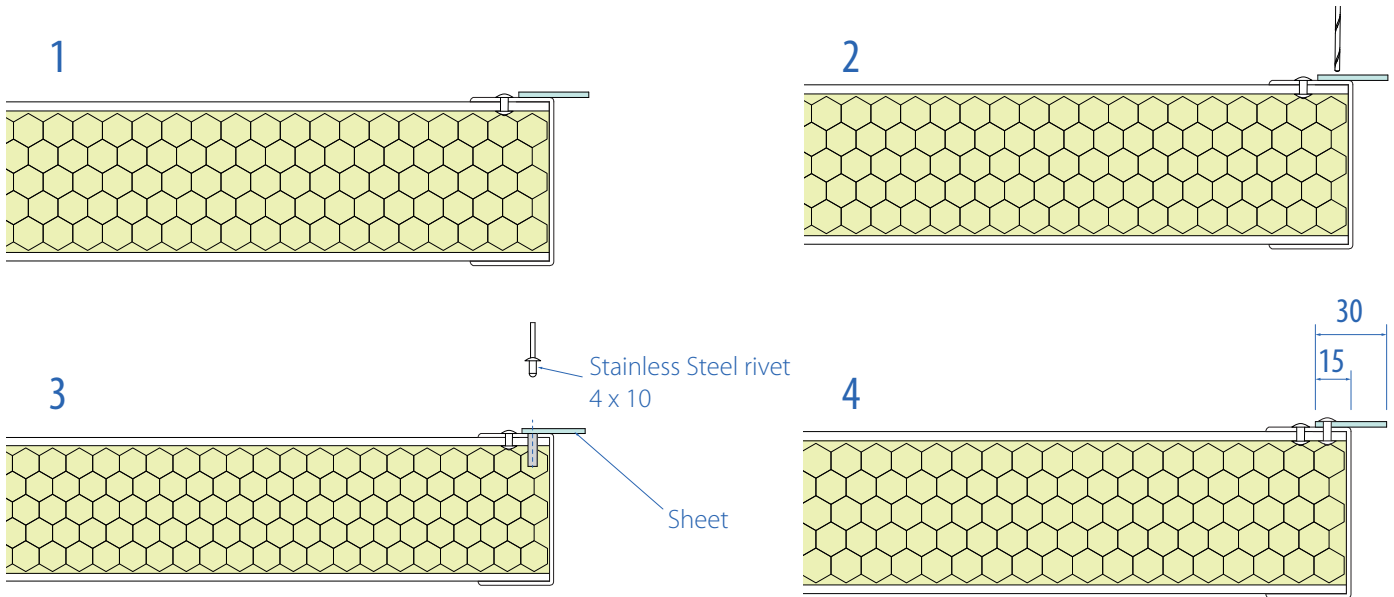
First, place the upper profile and then the lateral profiles. These profiles should not be cut considering a 45° angle, but should be assembled straightforward, as it is shown in Fig. 157.

In order to install these profiles on the lid, make 25 holes of Ø5 mm. every 155 mm more or less, as it is shown in Fig. 157. On the upper frame sheet, make 9 holes while 8 on each lateral one.



**Fig. 157.** Position of the sheets.

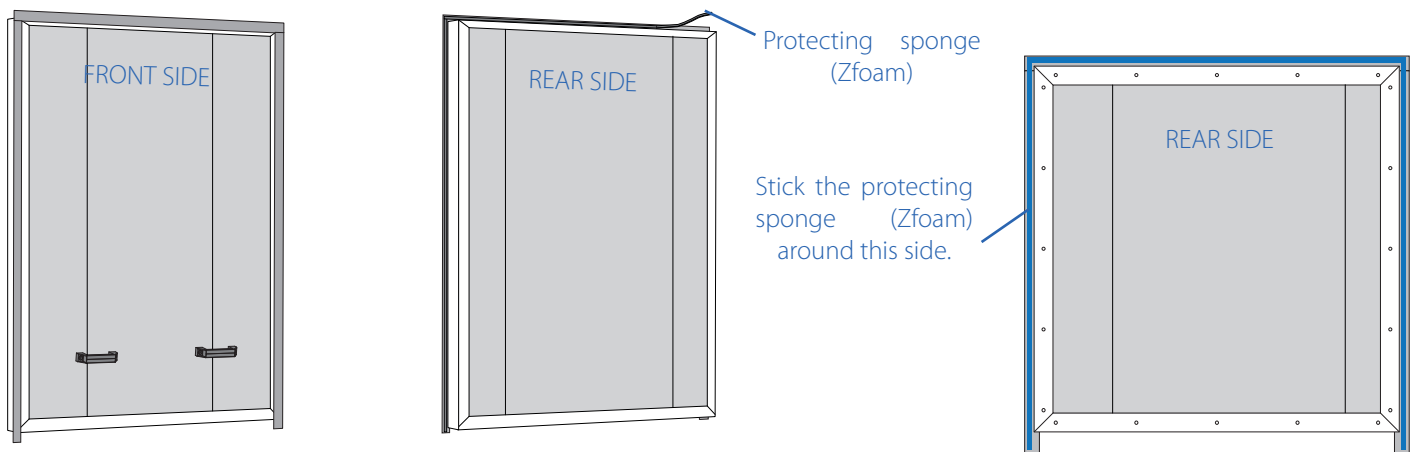
Once the holes have been made, let's rivet the metal sheets to the lid profile with some stainless steel rivets of 4 x 10 mm. IT IS VERY IMPORTANT for the metal sheet, which is 30 mm wide, to remain 15 mm below the profile made of PVC and 15 mm over it.



**Fig. 158.** Positioning of the metal sheets on the lid.

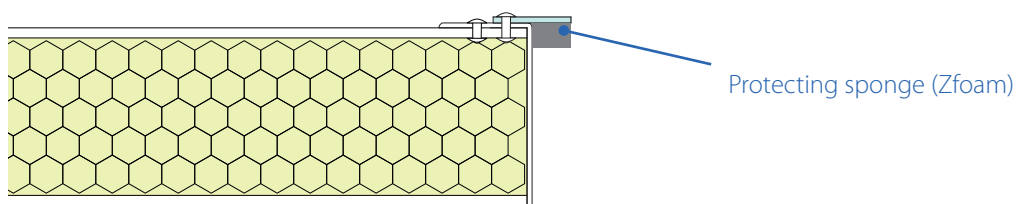
7. In order to complete the sheet assembly process, place a protecting sponge strip 3 mm thick (Zfoam) around the lid outline (formed by the metal sheets, upper and side frame).

This sponge must be placed on the lid rear part, the one beside the wall.



**Fig. 159.** Lid whit the sheets.

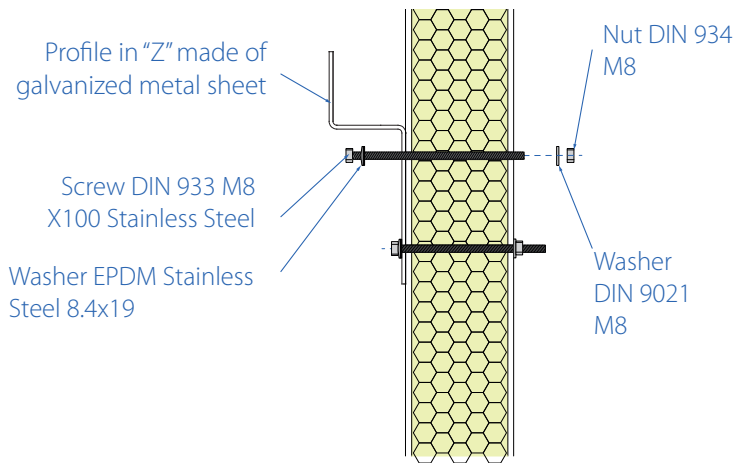
**Fig. 160.** Position of the protecting sponge strip.



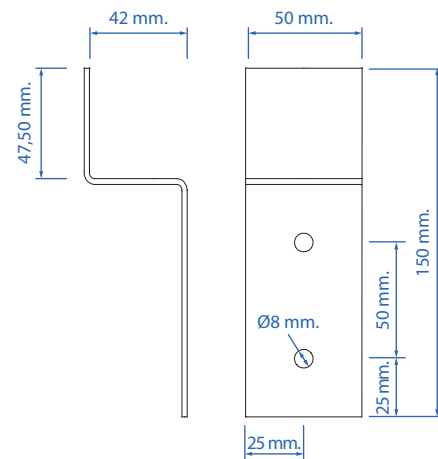
**Fig. 161.** Position of the protecting sponge strip.

## SANDWICH WALL

8. In order to install these profiles on the sandwich wall, make some through holes on the sandwich wall the same way it is explained on how to install the handles (Fig. 156), but according to the measure marked by the profile holes "Z" as it is indicated in Fig. 163. The profiles in "Z" should be placed beside the air inlet hole frame (profile made of PVC). These profiles must be assembled by means of two screws DIN 933 M8 100 mm long, with a STAINLESS STEEL washer EDPM 8.4x19 on the external side and with a STAINLESS STEEL nut DIN934 M8, and a STAINLESS STEEL washer DIN9021 M8 on the internal side of the sandwich panel (Fig. 162).



**Fig. 162.** Screws and bolts to fix the profiles "Z" made of a galvanized meal sheet.



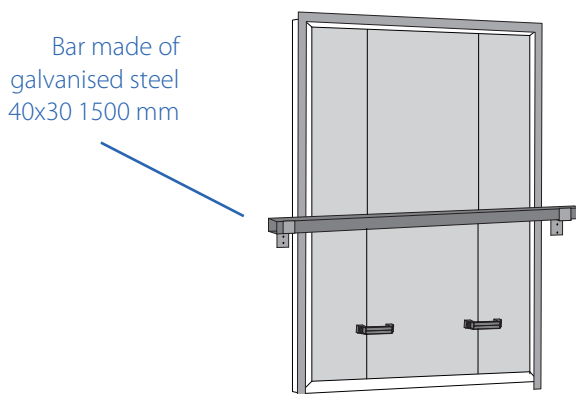
**Fig. 163.** Profile "Z" on the sandwich wall.

## CONCRETE WALL

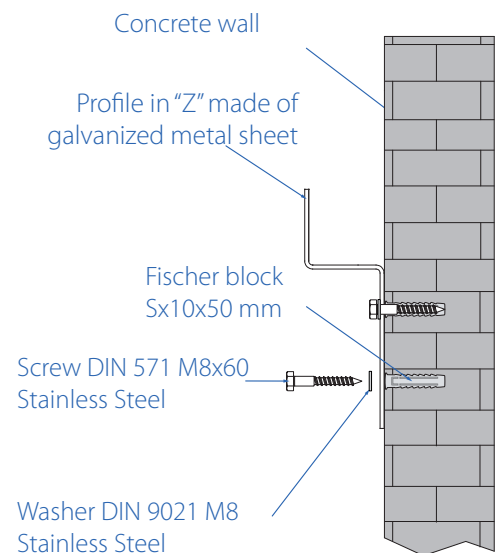
8. In order to install these profiles on the concrete wall, make some holes on the wall the same way it is explained on how to install the handles (Fig. 156), but according to the measure marked by the profile holes "Z" as it is indicated in Fig. 163.

The profiles in "Z" should be placed beside the air inlet hole frame (profile made of PVC). These profiles must be assembled by means of two screws DIN 571 M8 60 mm long, with two STAINLESS STEEL washers DIN 9021 M8 and two Fischer blocks Sx10x50 mm (Fig. 163).

9. Finally, it will be necessary to use a bar made of galvanised steel of 40x30 and 1500 mm long in order to lock and secure the lid position.



**Fig. 164.** Set "Z" and bar made of galvanised steel.



**Fig. 163.** Screws and bolts to fix the profiles "Z" made of a galvanized meal sheet.



**TAKE CARE THAT THE HINGED HANDLES / BRACES DO NOT HIT THE LOCKING SQUARE PROFILE.**

## 18. Maintenance

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- Make sure the electric power is off before carrying out any of the maintenance operations indicated.
- The fan natural movements may cause some mismatch and make little noise due to the common wearing of some screws. Check the screws and bolts of the fan by tightening all of them again. Repeat this operation at least once a year.
- Clear the fan on a regular basis
- The fan does not need any greasing. The bearings are sealed and have been previously greased in order to avoid any noise or operation problem.
- The shaft pulley of the motor must be adequately aligned to the central pulley. An incorrect alignment, as well as an inadequate tension of the activation belts, will surely damage the bearings and cause an excessive vibration.
- Check the motor operation according to its application on a regular basis; make sure that the air flows with no obstacle.
- When cleaning the fan, do not use pressurized water towards the mobile parts of the centrifuge or the motor.
- DO NOT APPLY ANY CORROSIVE PRODUCT, OXYDANT, PEROXYDE OR BYPRODUCT THAT COULD DAMAGE THE SHEET.
- It is necessary to clean the motor cooling blades every once a while. If the motor does not cool, then it will overheat, and this will shorten the motor useful life, and the bearings could get broken (Please refer to Fig. 36)
- We recommend cleaning minimum at least in every breeding period or if you also notice excessive dirtiness.
- As times goes by, we recommend tensioning the belt, therefore, please dismantle it and move the motor towards the external part of the fan. Then, insert it in the pulley again. (Refer to Fig. 60 and 61). In case of requiring a belt spare part, take a look at the inscription reference located on the belt band.
- Check the belt every once in a while or at the beginning of each breeding period, and in case you notice a deformation or there is a cut somewhere, replace it.
- Do not apply any chemical product or solvent to the belt since this could reduce its useful life.
- If the fan has a tensor, proceed to grease it every three months more or less.

## 19. Problems and solutions

### The fan does not turn on

1. Check the fuses or thermal switches and restore them if possible.
2. Cut the current and check all the electrical connections.
3. Make sure that the electric connections are correct.

### The fan makes noise

1. Operate the fan during several days at a medium or high speed. Try to diagnose where the noise comes from by listening very carefully and from several and different points (blades, motor, etc.).
2. Check whether all the fan screws are correctly tightened. Otherwise, tighten them again and check if the noise has been reduced.
3. Make sure the cables and / or links are not hitting the lower or upper canopy. Leave a minimum distance of 2 cm between the canopy and the motor in order to avoid any friction.
4. Check whether the screws are well tightened.

### The fan vibrates

1. Make sure the assembly support is perfectly fixed to the light registration and with no movement. Tighten the screws if necessary.
2. Check the blade screws as well as the motor and tighten again if necessary.

## 20. Technical assistance

### Before getting in touch with the technical assistance service:

Follow this manual from the very beginning in case you have skipped a step or any recommendation, read the section regarding problems and solutions carefully. If after this first step, the fan does not work or it does in a untypical way, unplug it from the power supply and get in touch with our Technical Assistance Service where we will assist you with pleasure.

Any manipulation of the product by strange people to EXAFAN S.A.U. would make us cancel the warranty.



## 21. CE Declaration of Conformity



On behalf of the company: EXAFAN S.A.U.

Located in: Pol. Industrial Río Gállego, C / D, Parcela 10  
50840 San Mateo de Gállego, Zaragoza  
España

It declares under its own responsibility that:

Product: EXHAUST FAN 50/60 HZ, DIAMETRE 36", 50" AND 50" Cone,  
PROPELLER MADE OF STAINLESS OR GALVANIZED STEEL.  
Manufactured in Spain by EXAFAN S.A.U.  
Trademark: EXAFAN  
Model: EX36"/ EX50"/ EX50" Cone

Whenever they are installed, maintained and used for the applications they were planned to, and as long as we observe the required installation standards and instructions given by the supplier, these comply with the requirements of the following European Directives

- Directive 2006/42/EC - Related to machines.
- Directive 2009/125/EC -Ecologic Design Directive.
- Directive 2014/35/EU - Low Voltage Directive.
- Directive 2014/30/EU - Electromagnetic Compatibility Directive.

Therefore, this equipment is marked "CE".

Made in San Mateo de Gállego, to November 28, 2022.

Signed by: Mr. Juan Pascual Nadal

Position: MANAGER

## 22. Warranty certificate

### Warranty / Conditions

Along with this equipment, we enclose the instructions manual including our equipment warranty general conditions. To make use of the guarantee, it will be ESSENTIAL REQUIREMENT to attach the original of the purchase invoice that identifies the model of the appliance.

### Jurisdiction / Conditions

Regarding any legal claim whatsoever, both parts expressly renounce to the corresponding regional code of laws but instead submit to the court based in Saragossa City. The Spanish law is the regulation to be applied regarding the sales contract.

### General clauses / Conditions

EXAFAN S.A.U. guarantees its products against any material defect affecting the product during a certain period of time with the exception later on indicated.

The warranty period will begin at the receipt of the merchandise by the buyer, it will last 12 months, except for the EU model fans and slats for pigs whose warranty period will last 36 months.

During the warranty period, EXAFAN S.A.U. will repair, replace or supply any product considered to be faulty by EXAFAN S.A.U. as long as it does not comply with its functionality and is not adequate to the expected use. The available choice between the different options will exclusively correspond to EXAFAN S.A.U. The replaced faulty product according with this clause, will remain at EXAFAN S.A.U. disposal.

The warranty excludes:

- Any faulty product due to natural wearing, conservation or negligent and / or contrary use of the product safety or technical applicable regulation.
- Damages affecting Product physical appearance or aesthetics only, without jeopardizing its functionality, including but not limited to stain or rusting on Product surfaces due to environmental condition in the farm.
- Faults and / or defects caused by inconvenient handling and / or assembly by the buyer or because of modifications or repairs carried out without EXAFAN's S.A.U. written authorization.
- Defects caused by materials, energy or services used by the buyer, or defects caused by a design imposed by him.
- Breakdowns caused by fortuitous reasons, force majeure (atmospheric or geologic phenomena), disasters or any other kind of natural catastrophe.

### Intellectual property / Conditions

EXAFAN reserves the exclusive right of the plans, concepts, designs, assembly instructions, etc., ownership regarding all the goods delivered by itself as well as the right to modify the design, size, materials and technical manuals of its products without previous notice.

### Conditions and limits / Conditions

The product must be installed and used according to the h given by EXAFAN S.A.U.

This warranty may be cancelled if any part of the system has not been delivered by EXAFAN S.A.U.

EXAFAN S.A.U. is not responsible for any possible product failure caused by an interconnection to other elements not having been improved by EXAFAN S.A.U.

The product must be purchased and installed by a distributor authorised by EXAFAN S.A.U. or under EXAFAN S.A.U.'s staff supervision.

Wrong operation or problem caused by an improper use, abuse, negligence, alteration, accident or even incorrect maintenance, are not included in this warranty.

The warranty shall not be applied neither to the inconveniences, waste of time, production loss, low performance or loss of the animals, neither to any other damage or loss because of a faulty part, nor the manpower required for such a change

The present warranty is only applicable to the systems used to grow poultry and pigs.

It is possible to use products to clean and disinfect as long as it is according to the indications provided by the suppliers or manufacturer given they are not excluded from the operation mode.

Every transportation involved in the warranty management process is under the buyer's responsibility; the freight and mileage cost required to make such repair will be on the buyer's account.

Every exception applicable to the present warranty should be approved and written by an executive belonging to the firm. EXAFAN S.A.U. reserves the right to modify its models or technical features of its products at any moment and whenever it feels like without previous notice and without any obligation to improve the old models

This warranty has no value if it is not returned signed and stamped by the distributor.



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Zaragoza - Spain

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