USER AND SAFETY MANUAL
MODEL 610/610AE

This manual is intended to provide the information and instructions necessary for the safe use, maintenance, and handling of the pulley, hereinafter referred to as the equipment.

Before using the equipment, the user must read and fully understand this manual, paying particular attention to the included safety instructions and warnings.

This manual forms an integral part of the equipment and must be retained throughout its service life, ensuring its availability and proper condition.

In the event of transfer or change of ownership, this documentation must be handed over to the new user.

TAGA PROYECTOS ESCÉNICOS, S.L. reserves the right to make changes to the content of this document without prior notice and declines any responsibility for possible transcription errors.

DECLARATION OF CONFORMITY

CE IN ACCORDANCE WITH MACHINERY DIRECTIVE 2006/42/EC

COMPANY: TAGA PROYECTOS ESCENICOS, S.L.

ADDRESS: C/ Míster Lodge 21, P2 1° B, 28229 Villanueva del Pardillo, Madrid, Spain

Declares under its sole responsibility that the following product:

PRODUCT: Pulley – Block Pulley

BRAND/MODEL: TAGA / 610–610 AE

SERIAL No.: INCLUDED IN INVOICE

MAXIMUM LOAD: 250 kg (2.45 kN)

Is in conformity with:

Directiva de Máquinas 2006/42/CE

UNE-EN ISO 12100:2012. Seguridad de las máquinas. Principios generales para el diseño, la evaluación del riesgo y la reducción del riesgo

UNE-EN 17206:2020. Maquinaria para escenarios y otras áreas de producción — Requisitos de seguridad e inspecciones

Signed on behalf of TAGA PROYECTOS ESCÉNICOS, S.L.

Name: Juan Altimir Alonso

Position: Director

Villanueva del Pardillo (Madrid), 13/03/2026

1. CHARACTERISTICS

- Pulley with a sheave of 158 mm outer diameter.
- The maximum load applied to the system shall not exceed 250 kg (2.45 kN).
- Fixing system with multiple mounting options to structures. Installation shall be carried out, at a minimum, using M10 bolts in accordance with DIN 931/933, property class 8.8.

2. GENERAL PRECAUTIONS

The equipment shall be used exclusively by qualified, trained, and authorized personnel, or under the direct supervision of a competent person.

Before each use, the user shall verify that the equipment is in proper working condition.

The fixing elements used shall be suitable for the application and, in no case, of a property class lower than 8.8.

The equipment shall be used only in accordance with the instructions provided in this manual.

Any improper use may result in risks to persons and property.

Any modification, alteration, or intervention on the equipment without the express written authorization of TAGA PROYECTOS ESCÉNICOS, S.L. shall invalidate this manual and the associated EC Declaration of Conformity, in accordance with Royal Decree 1644/2008.

3. WARNINGS

Operations involving the use of the equipment entail an inherent risk. The user is responsible for their actions, decisions, and personal safety.

Before using the equipment, the user must:

- Read and understand all instructions for use.
- Receive specific training for its operation.
- Become familiar with the equipment, its characteristics, and its limitations.
- Understand and accept the risks associated with its use.

Failure to follow these instructions may result in serious or irreversible injury.

It is recommended that a competent and qualified person carries out a thorough inspection of the equipment at least once every 12 months.

The results of such inspection shall be recorded in the corresponding inspection record or log, including at least:

- Equipment model.
- Name and address of the manufacturer.
- Serial number or individual identification.
- Dates of manufacture, purchase, and first use.
- Dates of periodic inspections.
- Detected defects and observations.

The inspection record shall also include the name and signature of the person responsible for the inspection.

4. USE

4.1 BEFORE USE

The equipment shall be used in accordance with the provisions of this manual and in compliance with Royal Decree 1644/2008 (Directive 2006/42/EC).

Before use, the user shall ensure that the lifting unit and its supporting structure are capable of withstanding the total intended load, and that the equipment has successfully passed the required inspections and maintenance operations.

Operations involving the use of the equipment entail an inherent risk, and the user is responsible for their actions, decisions, and safety.

Before using the equipment, it is necessary to:

- Read and understand this manual.
- Verify the compatibility of all system components.
- Check the maximum permissible loads.
- Have received specific training for its use.
- Be familiar with the equipment’s characteristics, limitations, and associated risks.

Failure to comply with these instructions may result in serious or irreversible injury.

Before each use, the general condition of the equipment shall be checked, paying particular attention to:

- The condition of the fixing elements.
- The absence of impacts, cracks, or deformations in the anchoring system.

4.2 USE PRECAUTIONS

The fixing assembly, as well as all installed components, shall have a load capacity equal to or greater than that of the lifting unit.

Before use, the compatibility of the equipment with the rest of the system components shall be verified.

The pulley shall be used exclusively with certified lifting cables of 5–6 mm diameter.

It shall be ensured that the lifting unit and the supporting structure are capable of withstanding the total intended load (equipment weight plus load). Lifting operations involve risks and shall only be carried out by qualified and properly trained personnel.

Under no circumstances shall the maximum permissible load of the most unfavorable element in the system be exceeded.

During use, all fixing elements shall be correctly positioned and properly secured.

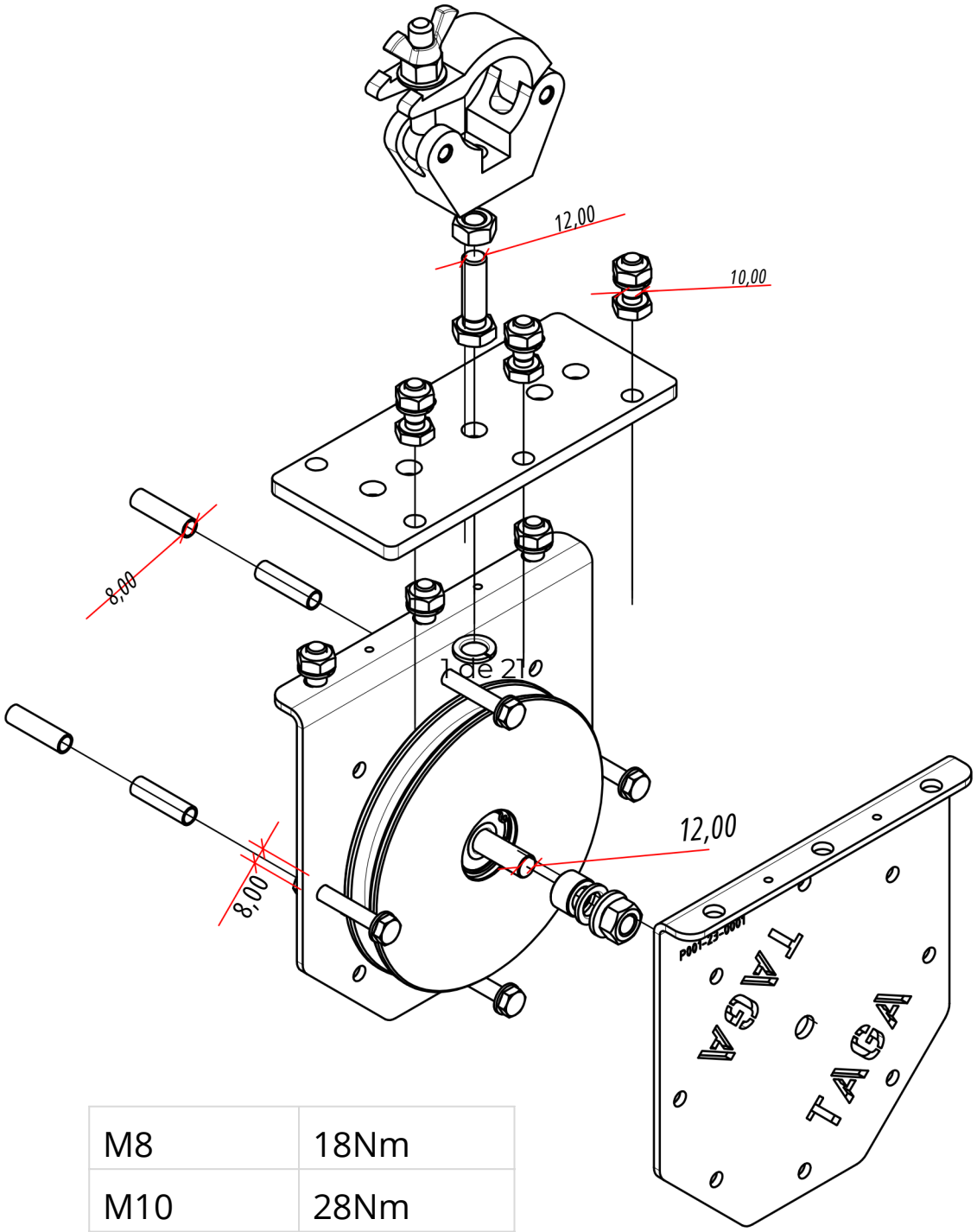
During installation, the operator shall position themselves in such a way that a potential failure does not pose a risk to their safety or to their surroundings.

The following actions are prohibited:

- Adding additional load to an already lifted load.
- Lifting loads abruptly or with sudden movements.

Fixings

- Verify compatibility between the fixing system and the structure (dimensions, material, and condition).
- Ensure correct installation of the fixing system.
- Ensure proper tightening of all bolts.



M8	18Nm
M10	28Nm
M12	41Nm

Lista de Piezas		
ELEMENTO	NOMBRE	UNIDADES
1	BASE GRAPA	1
2	DIN 933 - M10 x 25	6
3	DIN 934 - M10	6
4	GRAPA DOUGHTY 750KG	1
5	POLEA 610	1
6	DIN 128 - A12	1
7	DIN 933 - M12 x 40	1
8	DIN 934 - M12	1
9	DIN 128 - A10	6

4.3. SCOPE OF USE

The pulley is designed for guiding and changing the direction of lifting cables. Due to its operation, the applied load and the resultant force acting on the pulley are not equivalent.

The resultant force corresponds to the combination of forces transmitted by the cable strands and depends on the angle formed between the incoming and outgoing cable sections.

Depending on this angle, the maximum permissible load shall be adjusted in order not to exceed the allowable resultant force on the pulley.

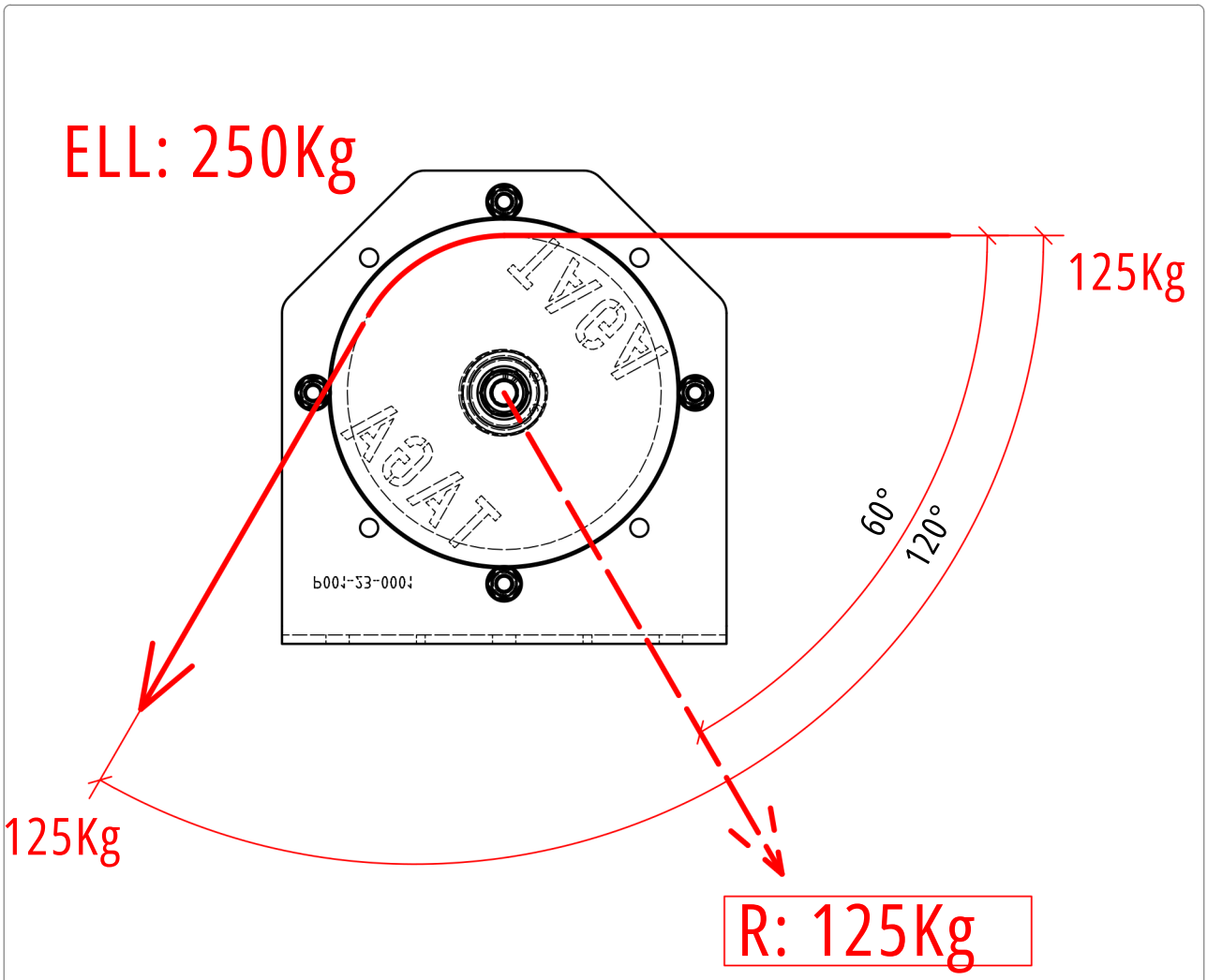
Resultant force calculation

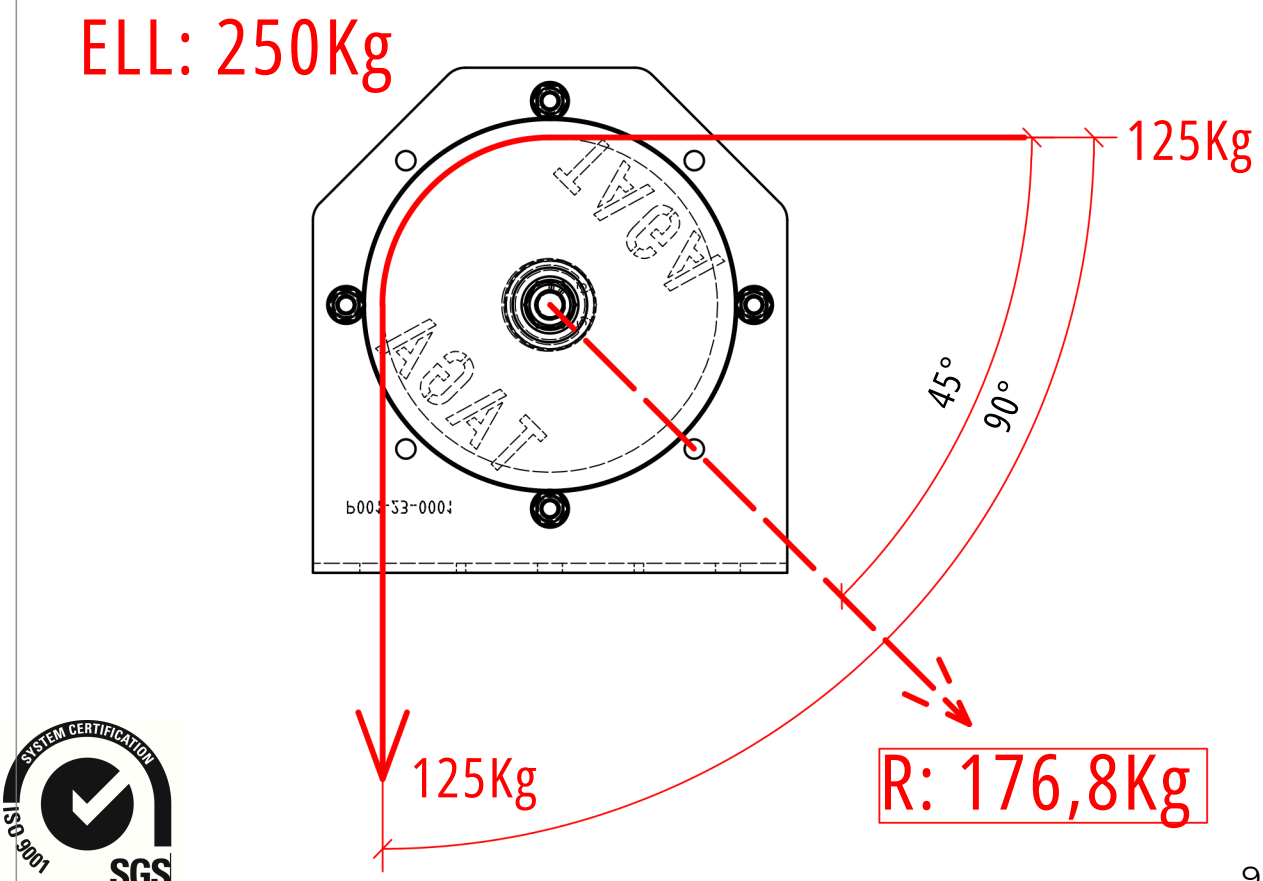
The relationship between the applied force and the resultant force can be determined using the following expression:

$$FR = FA \cdot \frac{\sin(\alpha)}{\sin(\alpha/2)}$$

Where:

- FR: resultant force acting on the pulley.
- FA: applied force (load).
- α: angle formed between the two cable strands.


ELL: 250Kg
125Kg
60°
120°
125Kg
R: 125Kg


ELL: 250Kg
125Kg
45°
90°
125Kg
R: 176,8Kg

ANGLE	MULTIPLIER	WLL	RESULTANT (MAXIMUM)	APPLIED FORCE
180	0,00	250 kg	250 kg	0 Kg
170	0,17	250 kg	250 kg	1470,5 Kg
160	0,35	250 kg	250 kg	714,3Kg
150	0,52	250 kg	250 kg	480,7Kg
140	0,68	250 kg	250 kg	367,6Kg
130	0,85	250 kg	250 kg	294,11 kg
120	1	250 kg	250 kg	250 kg
110	1,15	250 kg	250 kg	217,3 kg
100	1,30	250 kg	250 kg	192,3 kg
90	1,41	250 kg	250 kg	177,3 kg
80	1,53	250 kg	250 kg	163,4 kg
70	1,64	250 kg	250 kg	152,4 kg
60	1,73	250 kg	250 kg	144,5 kg
50	1,81	250 kg	250 kg	138,1 kg
40	1,88	250 kg	250 kg	132,9 kg
30	1,93	250 kg	250 kg	129,5 kg
20	1,97	250 kg	250 kg	126,9 kg
10	1,99	250 kg	250 kg	125,6 kg
0	2,00	250 kg	250 kg	125 kg

5. INSPECTION AND DISPOSAL

ITEMS TO BE CHECKED	METHODS CRITERIA	ACTIONS TO BE TAKEN
Check for signs of corrosion	Ensure that no visible cracks are present; if in doubt, inspect using penetrant testing or crack detection methods.	Repair or replace
Check for impacts or deformations		
Check for the presence of cracks		
Check overall external condition		
Check bolts and nuts	Verify proper condition and secure fastening	Replace with a new component if bolts, nuts, or threads are deformed

Periodic inspections shall be carried out at least once per year.

During the inspection, the following shall be verified:

- The correct condition of the anchoring system.
- The absence of visible damage, cracks, or deformations.
- The proper condition of fixing and load-bearing elements, ensuring they are not deteriorated and function correctly.
- The correct identification of the equipment through its labeling, ensuring that the information is legible and sufficient to prevent exceeding the maximum permissible load.

If the equipment shows signs of wear, ageing, or deterioration that may compromise its safety, it shall be immediately removed from service.

The user shall be responsible for ensuring its proper disposal or replacement.

The equipment shall be removed from service in the following cases:

- When bolt holes show excessive play or deformation.
- When the system presents deformations that prevent proper anchoring to the structure across the full contact surface.

6. PRECAUTIONS

It is recommended to protect the equipment from impacts or drops that may compromise its integrity.
Exposure to high temperatures shall be avoided, especially during processes such as welding, which may affect its properties.
The equipment shall not come into contact with chemical substances incompatible with its materials.
Cleaning with high-pressure water is not recommended, as it may cause damage to its structure.

7.STORAGE

The equipment shall not be stored under direct exposure to sunlight in order to prevent deterioration.

Storage in humid environments or when the equipment is wet shall be avoided to prevent potential damage to its structure.

Contact with corrosive substances during storage shall also be avoided, as they may cause degradation of its components.

8. MODIFICATIONS AND REPAIRS

Any intention to modify or repair the pulley must be previously communicated to the manufacturer at info@taga.es.
All applicable regulations and procedures shall be complied with at all times to ensure the safety and proper functioning of the equipment.

9. INTENDED USE AND LIMITATIONS OF USE

INTENDED USE
The pulley model 610/610AE is designed for the deflection and guiding of lifting cables in stage installations and similar structures.

It is intended for:

- Load lifting systems using cables.
- Fixed or temporary installations on suitable structures.
- Use with certified steel cables of 5–6 mm diameter.

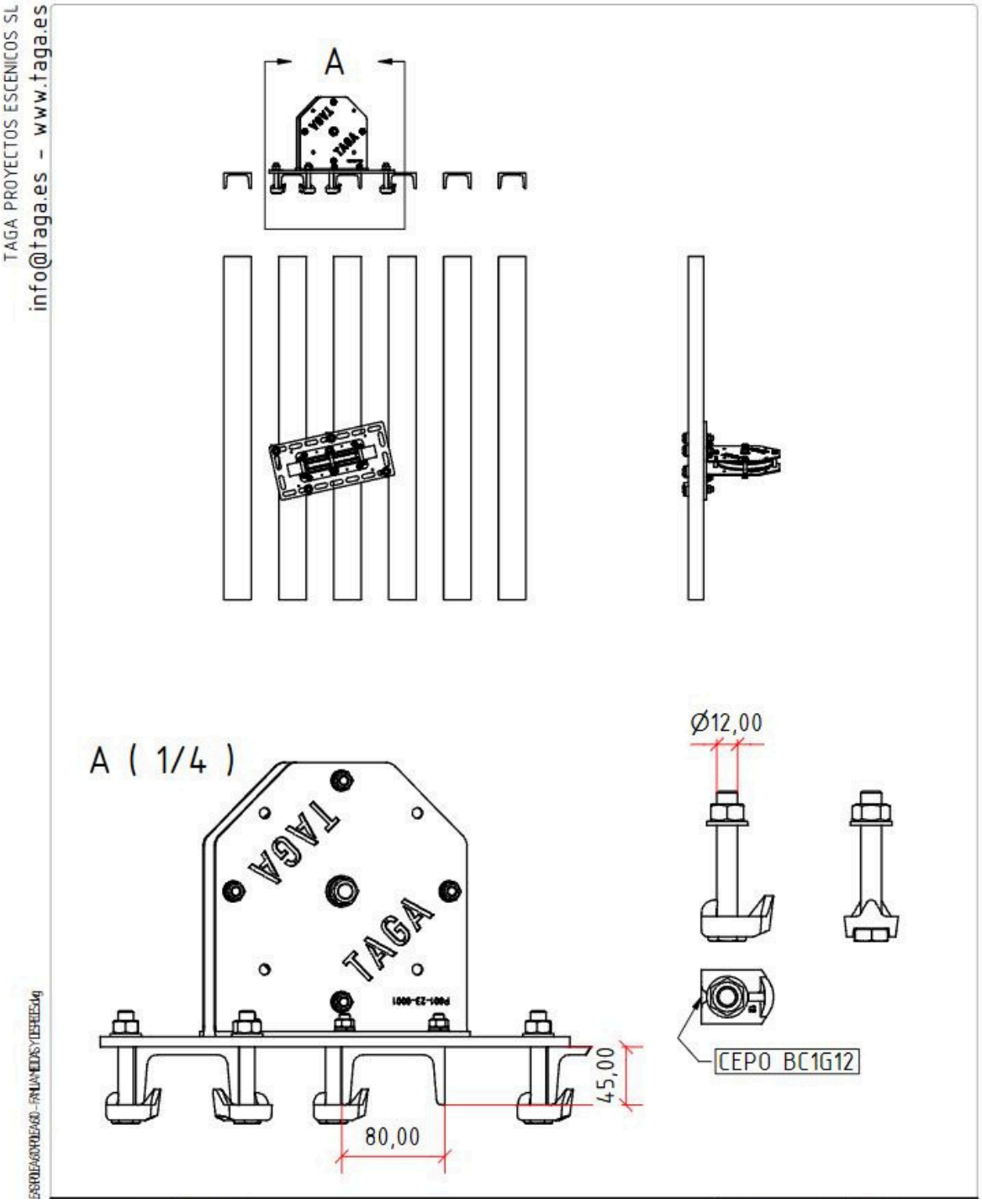
The equipment shall always be used within the load limits specified in this manual and in accordance with the indicated configurations.

LIMITATIONS OF USE / FORESEEABLE MISUSE
The following uses are strictly prohibited:

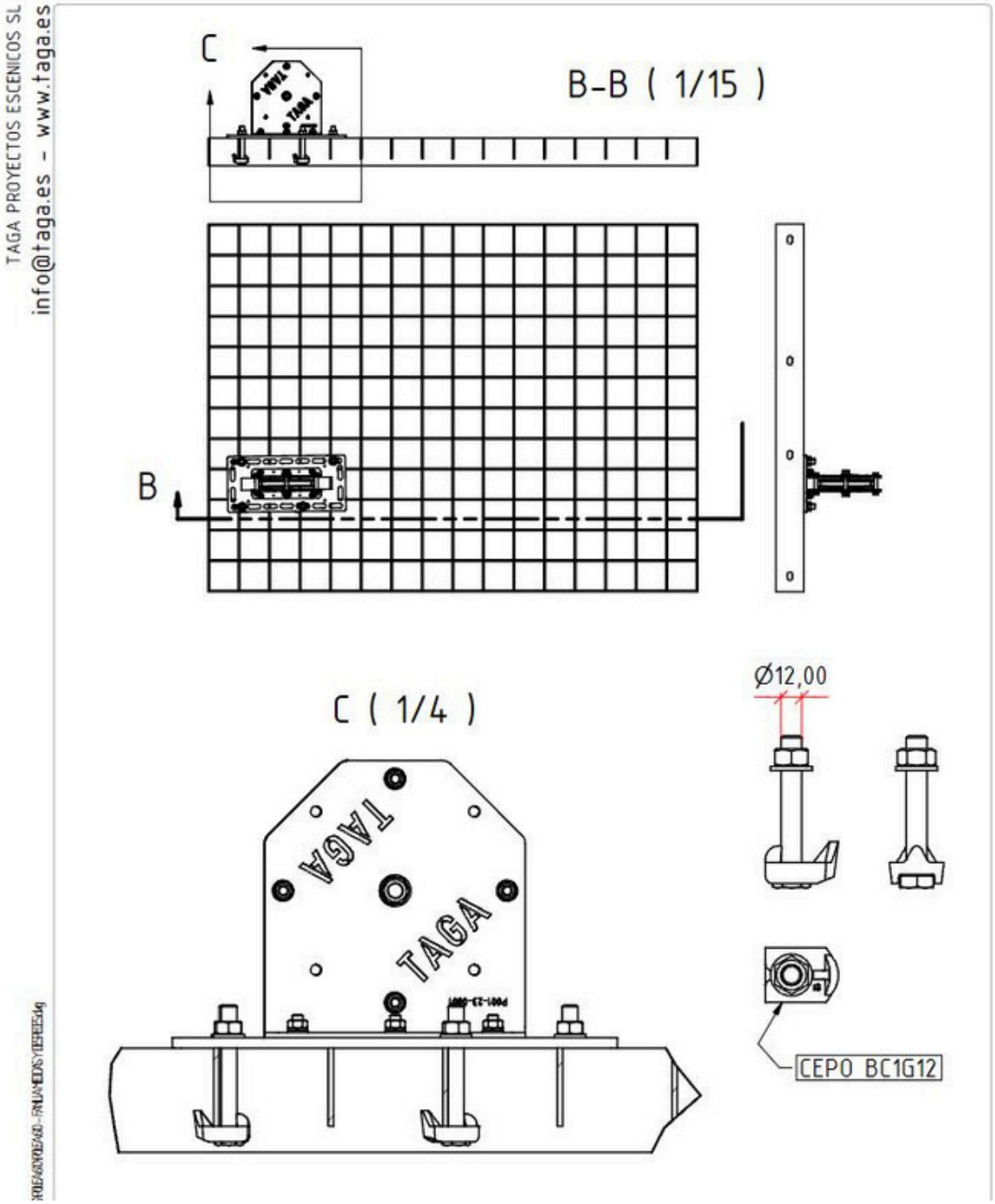
- Lifting of persons.
- Exceeding the maximum load or the allowable resultant force.
- Applying dynamic loads or impact forces.
- Using incompatible cables.
- Modifying the equipment without authorization.
- Using the equipment if damaged or outside the specified conditions.

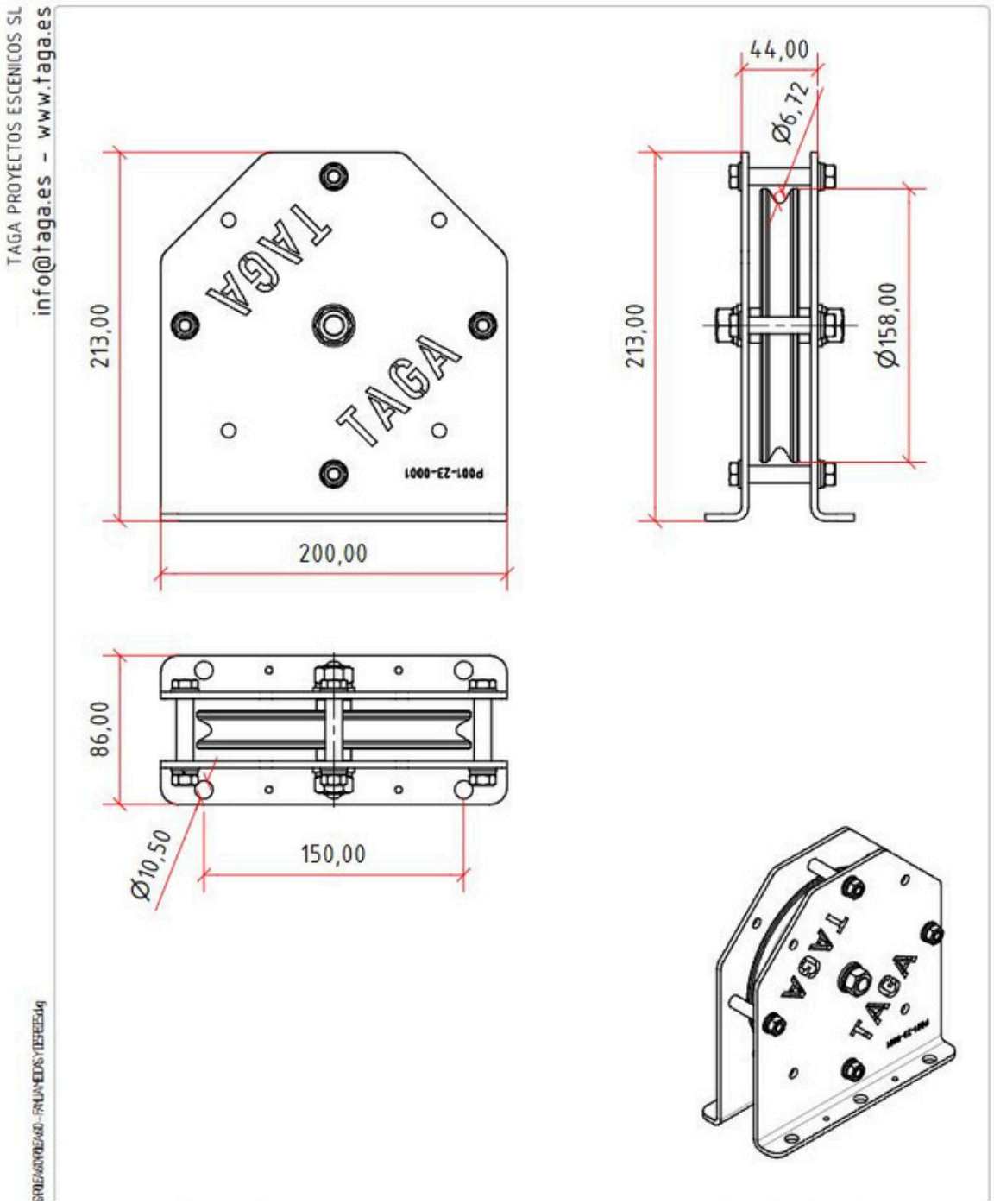
Improper use may result in serious risks to persons and property.

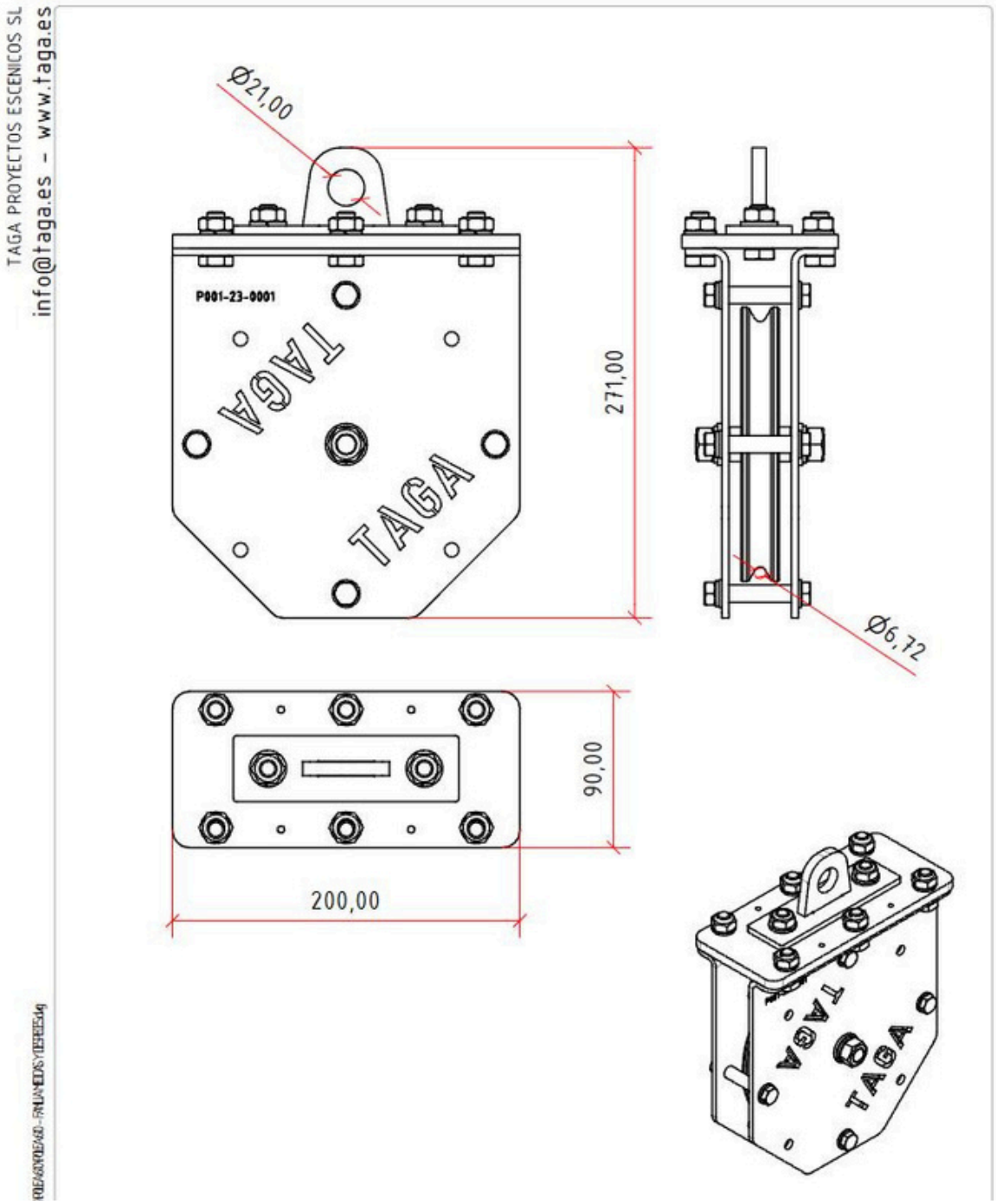
10.GRID FIXINGS



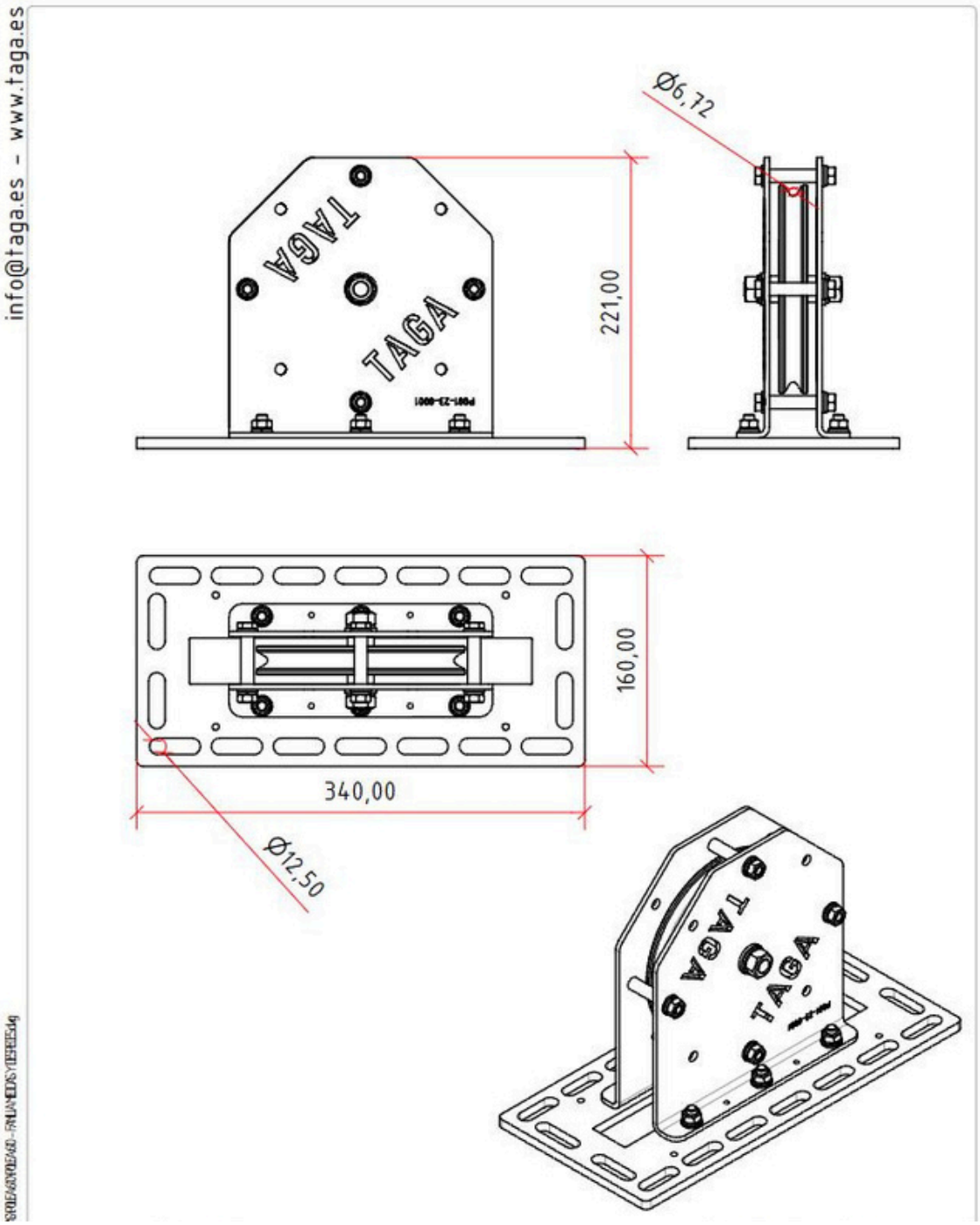
11. DRAWINGS AND DETAILS




TAGA PROYECTOS ESCENICOS SL
info@taga.es - www.taga.es
213,00
200,00
TAGA
TAGA
P001-23-0001
44,00
Ø6,72
213,00
Ø158,00
86,00
Ø10,50
150,00
TAGA
TAGA

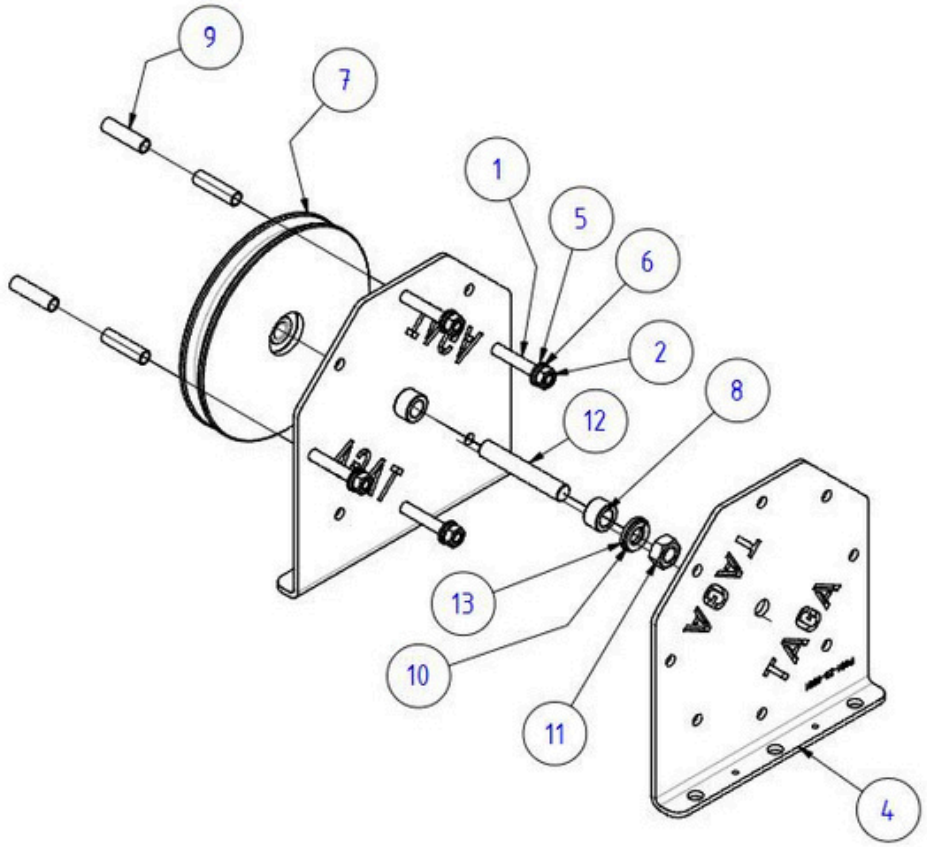

TAGA PROYECTOS ESCENICOS SL
info@taga.es - www.taga.es
Ø21,00
P001-23-0001
TAGA
TAGA
271,00
Ø6,72
90,00
200,00
TAGA
TAGA

TAGA PROYECTOS ESCENICOS SL
info@taga.es - www.taga.es



TAGA PROYECTOS ESCENICOS SL
info@taga.es - www.taga.es
Ø50,80
P001-23-0001
TAGA
TAGA
336,97
Ø6,72
200,00
90,00
TAGA
TAGA

TAGA PROYECTOS ESCENICOS SL
info@taga.es - www.taga.es



Lista de Piezas		
ELEMENTO	NOMBRE	UNIDADES
1	DIN 931-1 - M8 x 55	4
2	DIN 934 - M8	4
3	EJE TIRO	1
4	CACHA 610	2
5	DIN 125 - A 8,4	8
6	DIN 127 - A 8	4
7	ROLDANA 160X22 C6 UNE-EN17206	1
8	CASQUILLO TOPE ROLDANA SELFOIL A-12X20X12	2
9	CASQUILLO GUIA-CABLE 10X36	4
10	DIN 128 - A12	2
11	DIN 934 - M12	2
12	EJE PASANTE 12-74 44-15R	1
13	DIN 125 - A 13	2

Document:
POLEA 610 V2026.03

Documento Revision:
0