

# **TECHNICAL GUIDE**

## **LIFTING TOWER AT-05**



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## 1. INTRODUCTION

This instruction manual has been drafted pursuant Machinery Directive 89/392/CEE requisites and subsequent amendments.

The instruction manual is an integral part of the Lifting Tower to be consulted before, during and after tower start-up, likewise whenever deemed necessary, respecting the contents for each and all the parts thereof.

This is the only way to achieve the basic objectives established in the manual base such as preventing accident risks and maximum optimisation possible for the lifting tower features.


This manual has taken extreme care regarding safety and accident prevention at work while using the machine highlighting information of particular interest to the user.

**ATTENTION: PRIOR TO USING THE LIFTING TOWER, READ THIS MANUAL CAREFULLY**

## 2. GENERAL DATA

### 2.1.- Technical Data

Name	LIFTING TOWER
Model	AT-05
Technical characteristics	<p>Maximum height: 5,40m.  Minimum height: 1,76m.  Maximum load: 250kg.  Minimum load: 25kg.  Material: Aluminium AL Si 6082 / T6.  Open base area: 1,62 x 1,64m.  Closed base area: 0,48 x 0,48m.  Weight: 98kg.  Winch: 900kg. maximum load with automatic load retention brake.  Cable: Steel as per DIN 3060. Resistance 1770 N/mm<sup>2</sup> torsion resistance.  Cable diameter: 6mm.  Fixation of tower sections to working height with safety pins.  Leg anchorage with safety pins.  Bubble level to adjust tower vertical position.</p>

Equipment description	<p>Lifting tower AT-05 designed to vertically raise structures and lighting and sound equipment to different heights.</p> <p>Tested by skilled personnel having passed all the operating, maximum load and dimension inspections.</p>
Company	ROLLSPEED, S.L. (FENIX)
Address	Camino Alquerieta, 10 / 46470 - Massanassa, Valencia (Spain)
Picture	

## 2.2. - Applicable regulations

- Directives 89/392/CE and 98/37/CE on machinery and their amendments.
- BGV C1 (GUV 6.175).
- BGG 912 (GUV 66.15, GUV G-912).
- DIN 3060.
- DIN 2394.

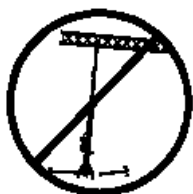
### 3. GENERAL SAFETY RULES



The lifting tower is an industrial element designed to raise loads vertically, it must NEVER be used as a platform elevator for people.



Only place the lifting tower on firm flat grounds checking it is in vertical position. Do not use wedges or any strange elements to balance the hoist.



Check legs are correctly assembled and secured by their safety pins.



Never raise a load without first checking it is correctly supported and centred on the appropriate lifting tower supports, so the load only acts vertically.



Never surpass the maximum load capacity indicated on the lifting tower label of characteristics and this instruction manual.

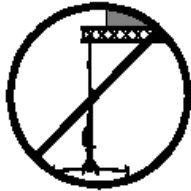


If there is a likelihood of strong wind or gusts, place the lifting tower on the ground and secure it with the aid of straps.

Never fix a strap over a vehicle or any other element which might move.



Never use a ladder over the lifting tower or leaning against it for any kind of work.



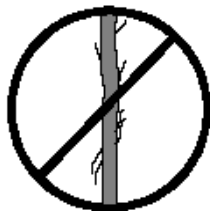
Beware of any kind of projection above the lifting tower like cornices, balconies, luminous signs, etc. It is very important to avoid the presence of cables below the lifting tower working height.



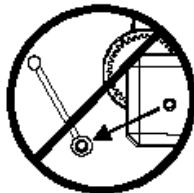
Never move the lifting tower when the load is raised. It is inadvisable to make any kind of movement, even small positioning adjustments.



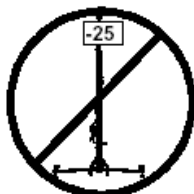
Never use the lifting tower over any mobile surface or vehicle.



Before using the lifting tower, check the cable state, which must not present any broken threads or compression. NEVER EVER use defective cables and change cable if in doubt. Only use steel cable as per DIN 3060. Quality 1770 N/mm<sup>2</sup> torsion resistant.



Fix the lever when the load is raised.



Minimum load for brake function without problems is 25kg. Brake will not function without this minimum load.



Neither grease nor lubricate the winch brake mechanism. Brake disks were greased with a special heat and pressure resistant grease. No other products must be used to prevent negative influence on brake functioning.



All sections must be lowered to transport the lifting tower.

#### 4. HOW TO USE

1. Place the lifting tower over a firm and flat surface in its work site.
2. Remove the outriggers (**P**) from their transport supports and fully insert them into their positions (**T**) checking that they are fixed by the pins (**E**).
3. Adjust the outrigger stabilisers (**PL**) by turning the cranks (**L**) to level the lift. Ensure it is in a vertical position.
4. Place the forklifts (**B**) in a horizontal position and secure them with the pins (**S**).
5. Place the load as close to the tower as possible.
6. Elevation: Turn the winch crank (**M**) clockwise to lift the load until the wished position, checking that safety pins (**K**) are activated.
7. Lowering: release the safety pins (**K**). To release them, turn the winch in the appropriate way to elevate the carriage. In the normal working position, the load's weight does not allow to release the pins. Once the safety pin (**K**) is unblock, turn the winch crank (**M**) opposite clockwise until lowering the load, profile **1** is completely down. Release the safety pins (**K**) and keep on lowering the lifting tower until the second profile is completely down. Finally, unblock the safety pin (**K**) and continue lowering the tower until the lifting tower is completely folded as its maximum folded height.
8. For the lifting towers' transport is necessary to fold the machine lowering completely all the profiles. Once the lifting tower is folded it is very important to block the lifting carriage with its transport support (**Q**).

## **5. MAINTENANCE**

1. Periodically check cable state. Should cable present broken threads or crushing, replace immediately with a new one. Never use the lifting tower with cables in bad condition. Only use steel cable DIN 3060 torsion resistant.
2. The lifting tower is supplied fully greased from factory. Nevertheless, periodical greasing recommended as per use, the cogged crown of the winch, bearings of the actioning shaft and bushing, lever thread and sections.

### **WARNING:**

#### ***DO NOT GREASE OR LUBRICATE BRAKE MECHANISM***

Brake disks were greased with a special heat and pressure resistant grease. No other product must be used to prevent negative influence on brake functioning.

3. Lifting tower AT-05, must be checked by an expert once a year minimum as per its use.
4. Only original spares must be used to ensure continued safe use. The user loses all guarantee rights if spares other than the originals are incorporated or modifies the product in any way.
5. To request any spare ask the manufacturer.



## **6. SPECIFIC RISKS**

### **Brake system failure**

May occur due to brake system deficiencies or bad installation. If it stops working it could cause a serious risk of loss of raised load control and injure users or hit materials close to the tower.

### **Loss of stability**

If the tower is placed on sloping ground or a surface that is not completely flat there is a loss of stability risk which would lead to a 90° overturn with risk of serious injuries for workers.

### **Objects dropping to a different level**

As an elevation element, working high up means there is a serious risk of raised objects dropping to a different level, either due to securing mechanism failure, part wear, dirt, etc., or incorrect use of the tower (E.g.: for elements over the maximum load allowed). Sudden drop of raised material implies a serious risk for the worker.

### **Knocks and/or contusions due to objects**

This risk only occasionally causes an accident to the worker running the operation, given his location during the elevation process; the risk of knocks from a raised element is more likely to affect people walking by or whose workplace is close to the lifting tower.

Its origin may be due to loss of stability, malfunctioning of structural elements, safety systems, securing systems, etc.

## **7. PREVENTION SYSTEMS**

### **Brake system failure**

Have a winch as per standard BGV C1 (GUV 6,15).

### **Loss of stability**

Maintenance of lifting tower stability must basically be as per the following measures:

- Professionalization, training and risk awareness of lifting tower users.
- Equip with different safety devices and advice from the manufacturer to reinforce stability, like:
  - Safety pins which secure the lifting tower once raised.
  - Bubble level to help vertical adjustment.
  - Marking maximum load that the lifting tower can raise.
  - Maximum slope specification which the lifting tower can access safely.

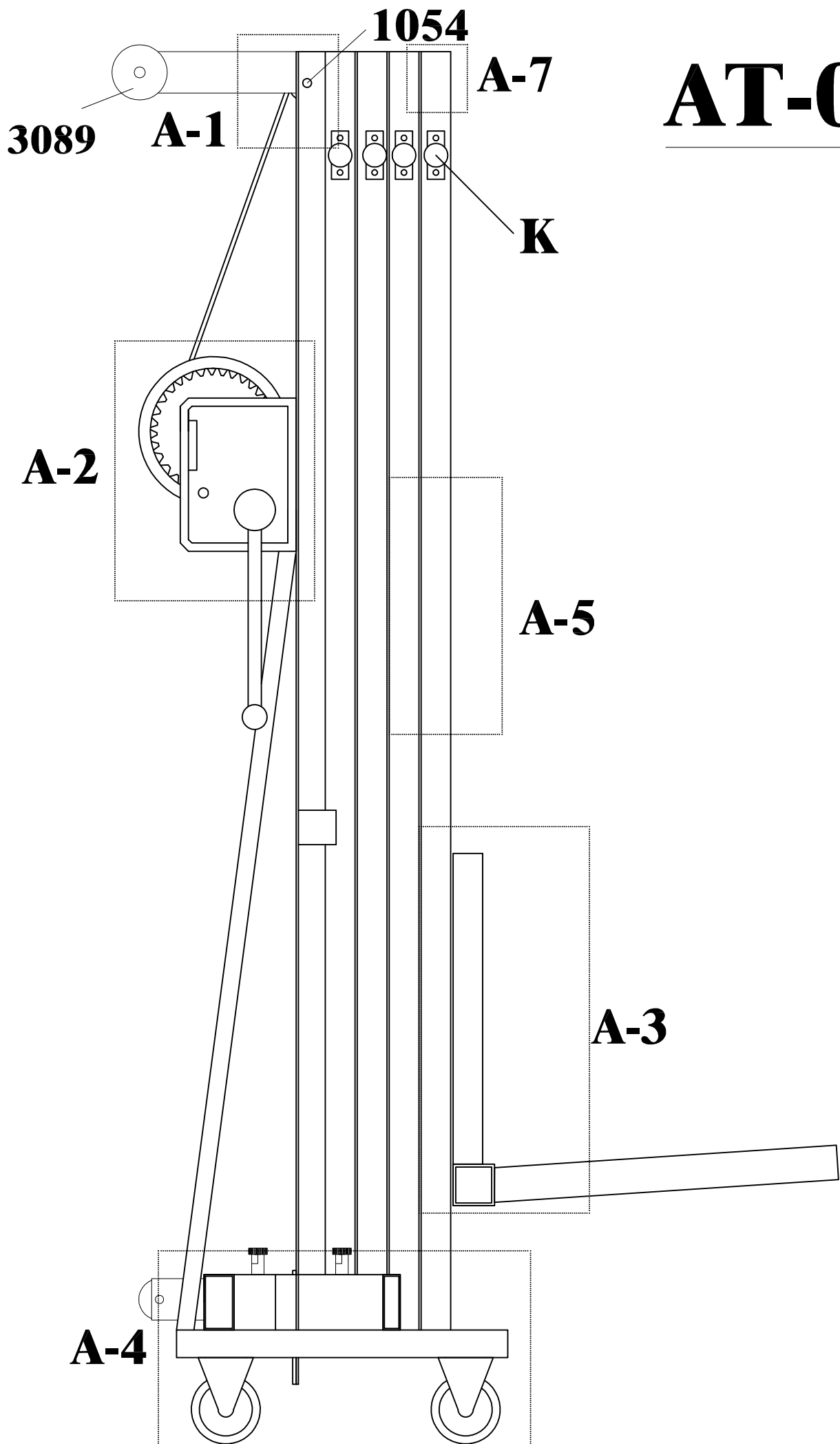
### **Objects falling to a different level, knocks and/or contusions from objects**

The risk of objects falling to a different level can be prevented using homologated safety elements, e.g., a safety pin which fixes the interior section of the lifting tower to working position, so the cable does not support load and guaranteeing impossibility of a drop. In the event of cable breakage, brake functions automatically. Furthermore, if steel elements have been zinc coated this protects the entire unit from oxidation and corrosion.

These risks can also be minimised with correct lifting tower maintenance. The user must perform periodical inspections on safety elements and make the necessary repairs on detecting deficiencies.

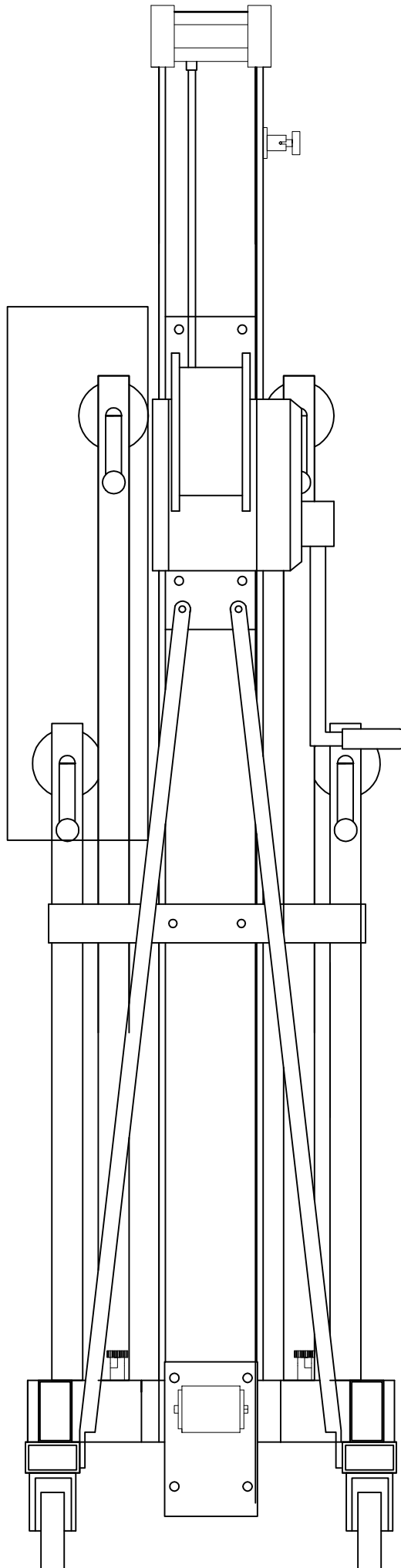
Furthermore, the consequences of these risks can be reduced limiting access area to the lifting tower and with correct training of personnel.

# AT-05



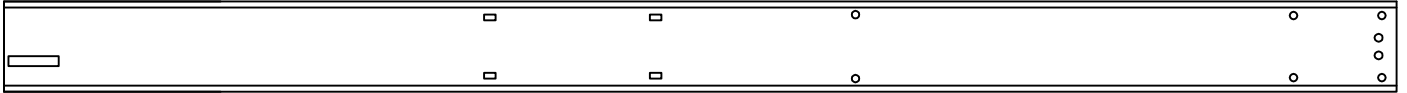
# AT-05

**A-6**



# AT-05

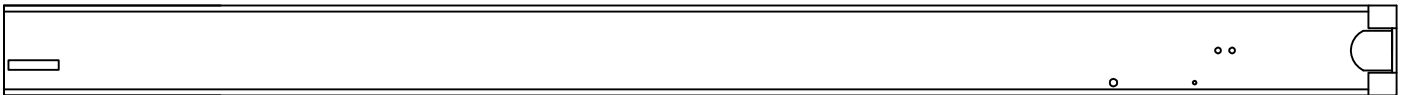
**2305**



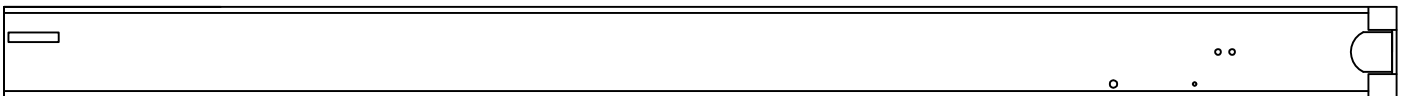
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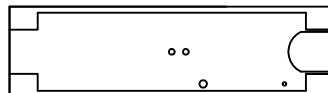
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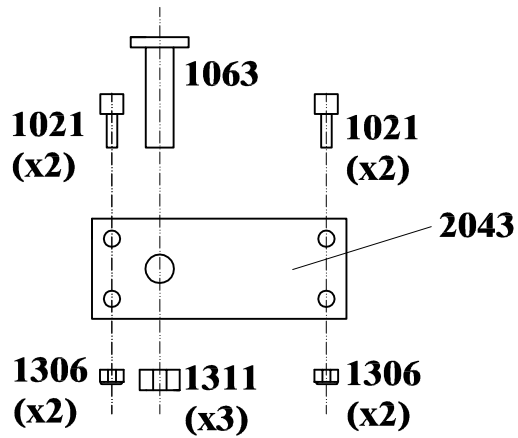
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**2304**

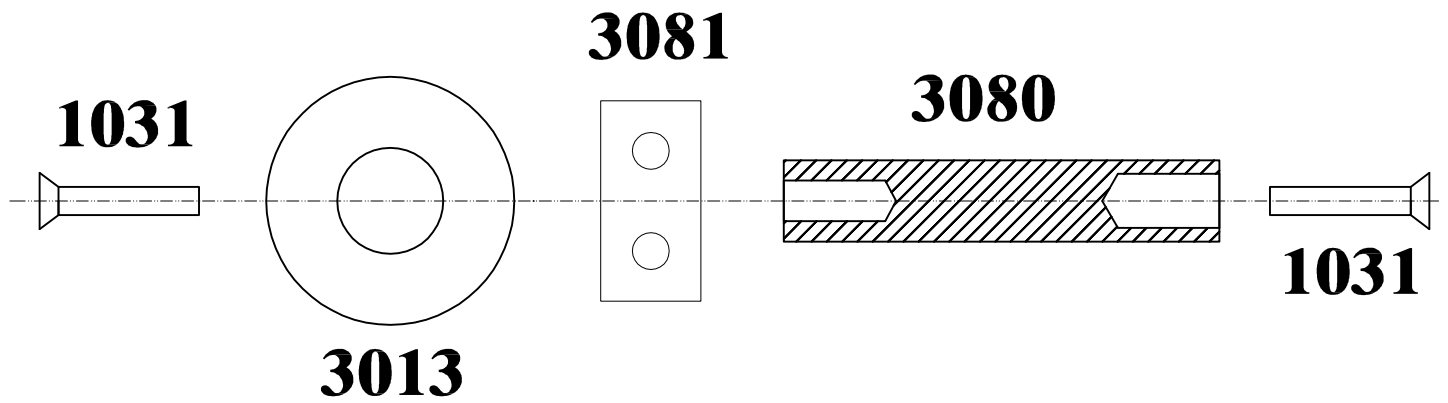


**A-7**

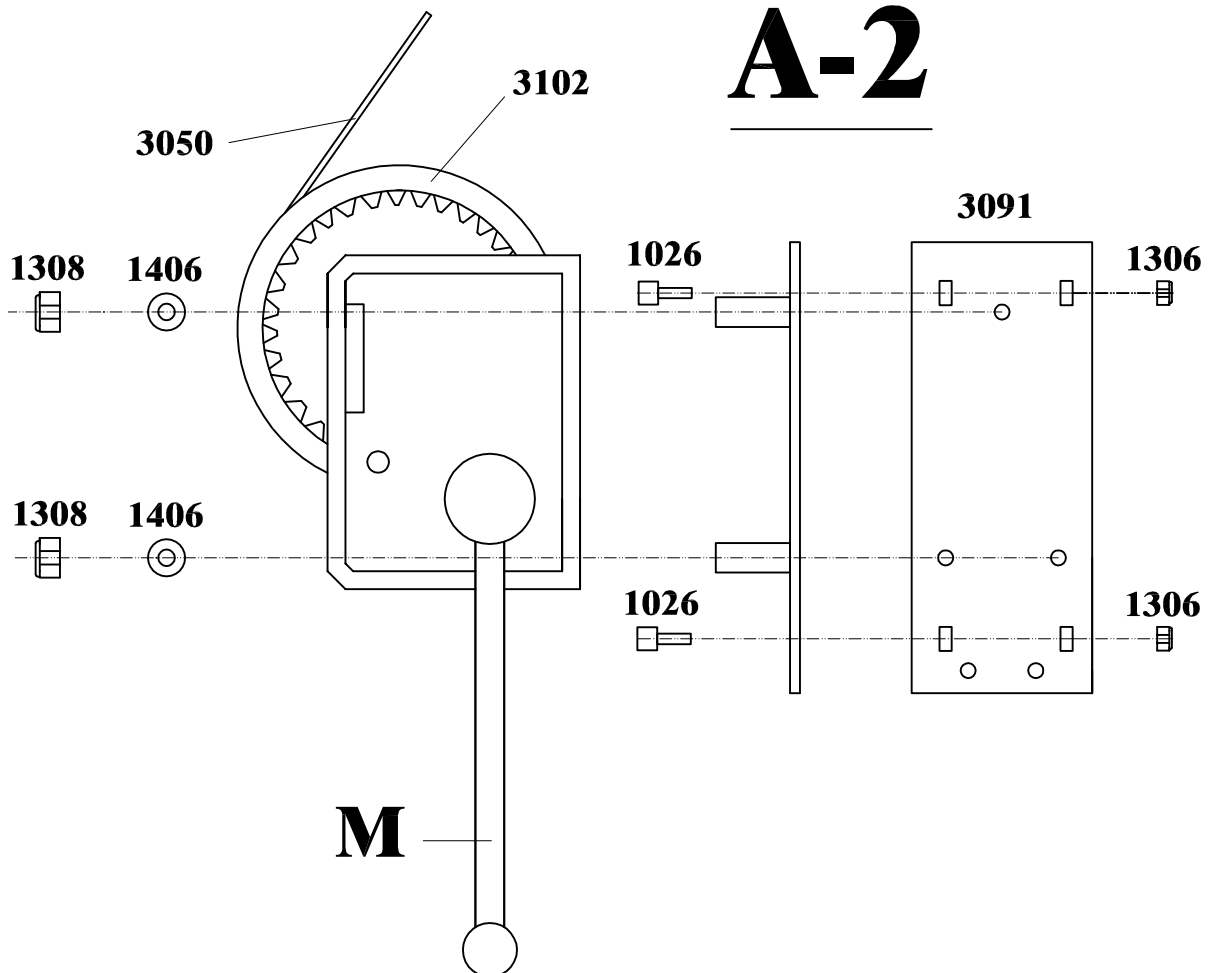


**AT-05**

**A-1**

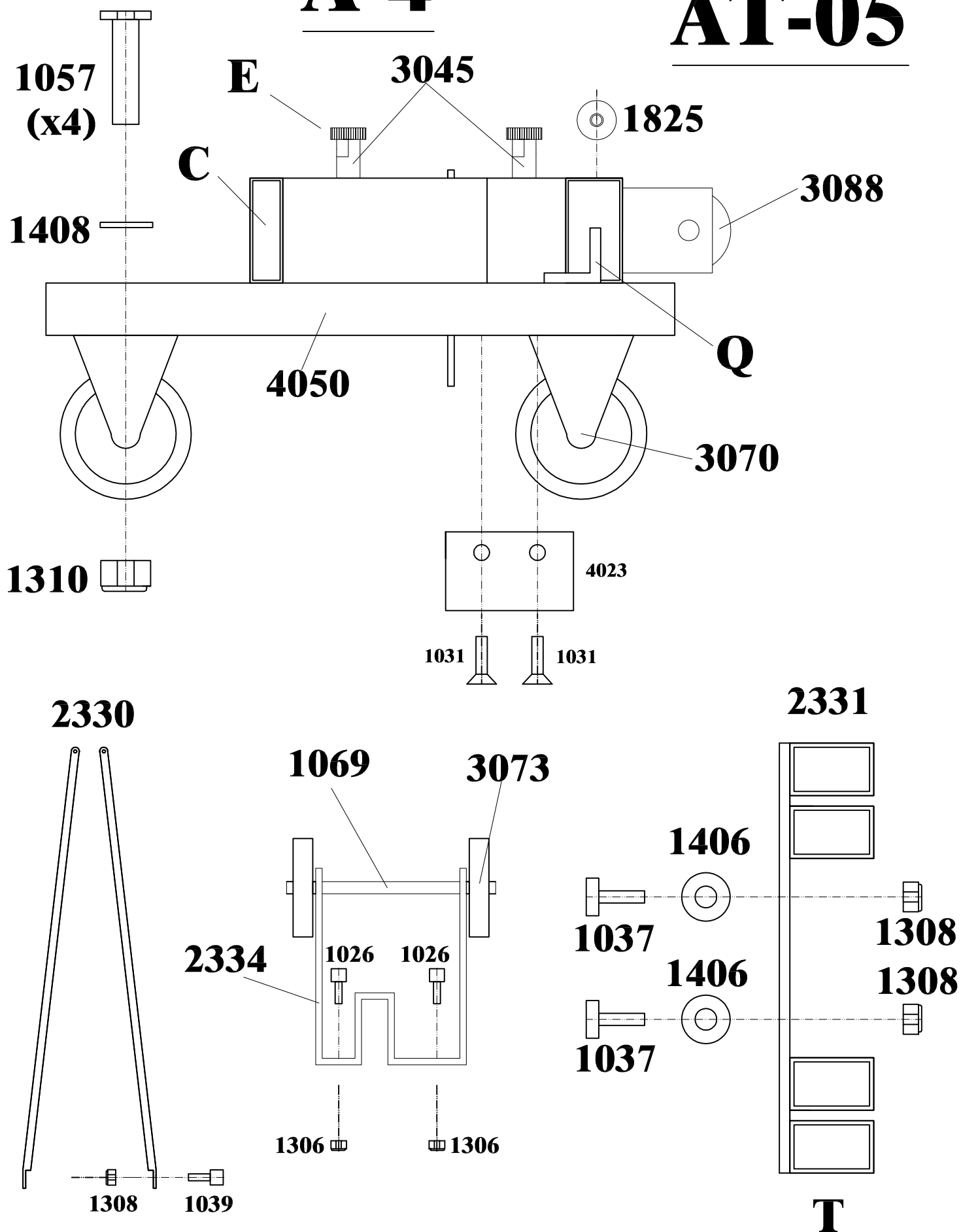


**A-2**

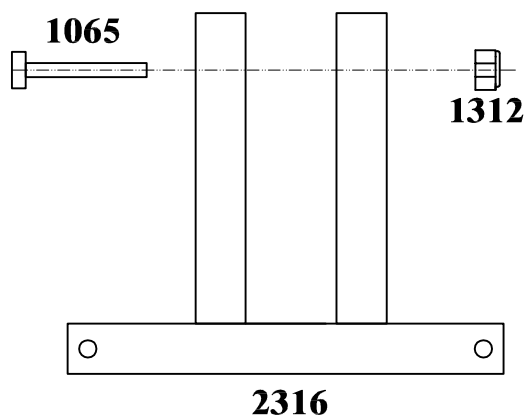


**A-4**

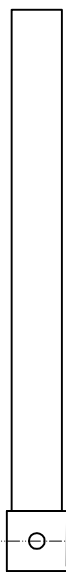
# AT-05



# A-3

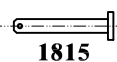


## **B**

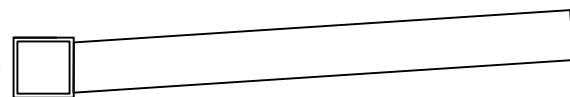


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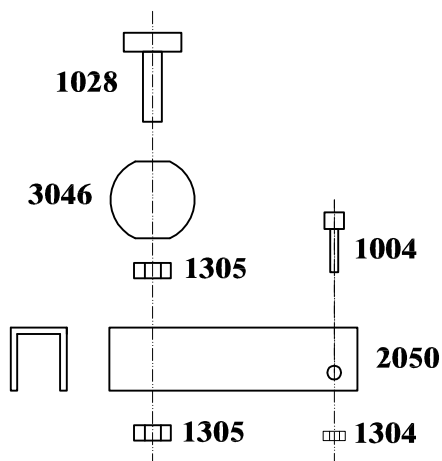
## **S**



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# A-6



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## **L**

## **PL**



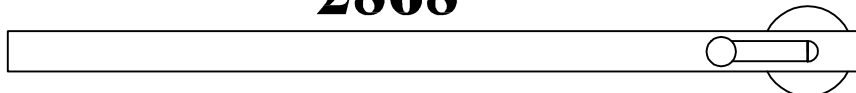
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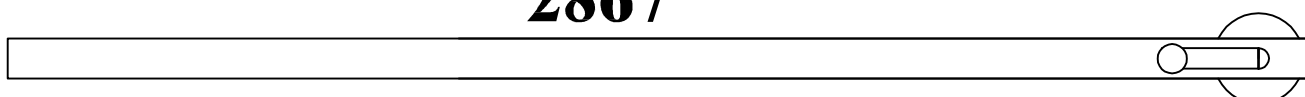
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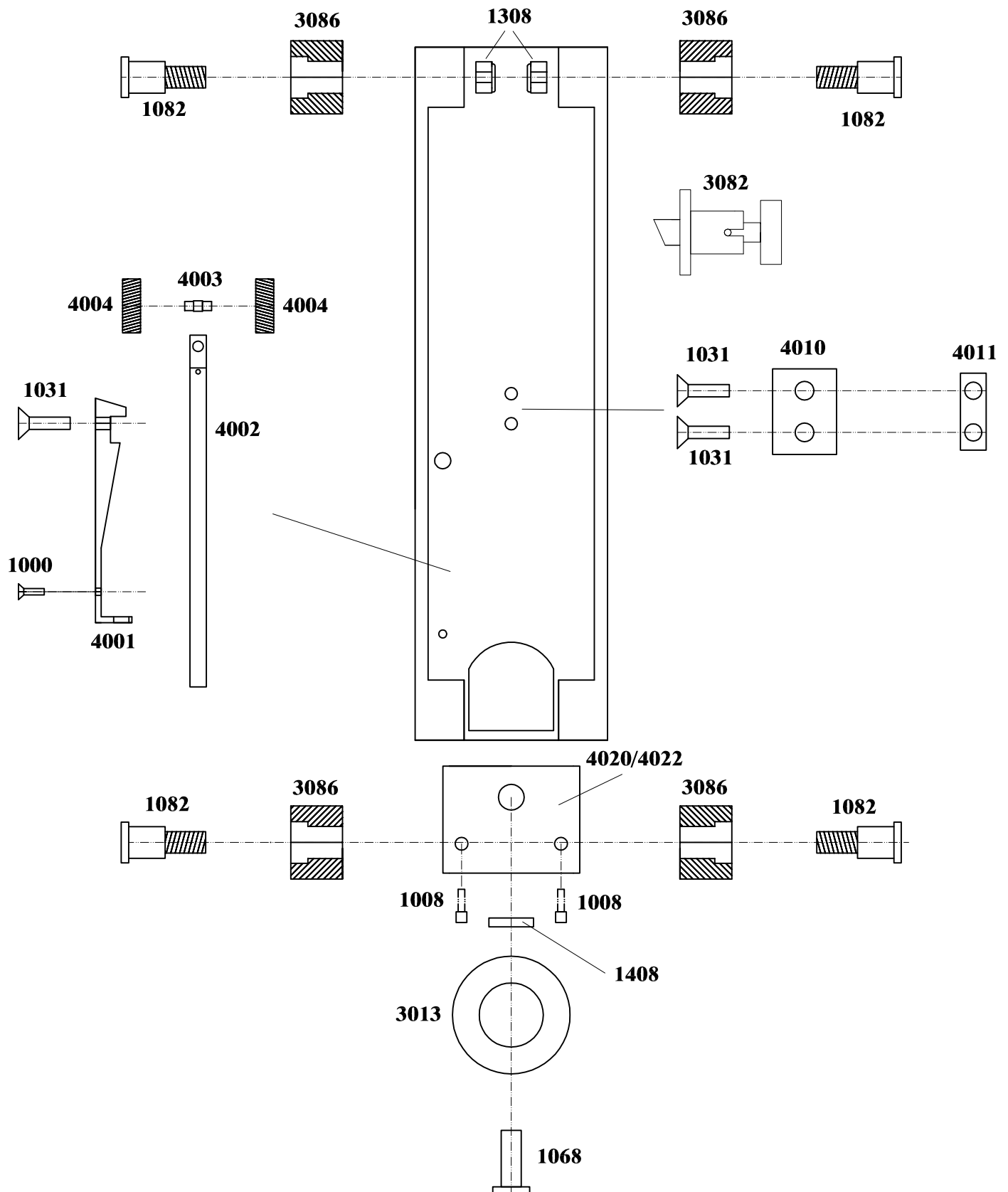
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# A-5

# AT-05



REF.	Descripción / Description / Beschreibung / Description
1000	Tornillo / Screw / Schraube / Vis
1004	Tornillo / Screw / Schraube / Vis
1008	Tornillo / Screw / Schraube / Vis
1011	Tornillo / Screw / Schraube / Vis
1021	Tornillo allen / Allen key / Inbus / Vis allen
1026	Tornillo / Screw / Schraube / Vis
1028	Tornillo / Screw / Schraube / Vis
1031	Tornillo / Screw / Schraube / Vis
1037	Tornillo allen / Allen key / Inbus / Vis allen
1039	Tornillo allen / Allen key / Inbus / Vis allen
1054	Tornillo / Screw / Schraube / Vis
1057	Tornillo / Screw / Schraube / Vis
1063	Tornillo hexagonal / Hexagonal screw / sechseckig / Vis hexagonal
1065	Tornillo / Screw / Schraube / Vis
1068	Tornillo / Screw / Schraube / Vis
1069	Eje porta-rodillo / Roller-holder axis / Rolle Achse / Rouleau axe
1082	Tornillo / Screw / Schraube / Vis
1304	Tuerca / Nut / Mutter / Écrou
1305	Tuerca / Nut / Mutter / Écrou
1306	Tuerca / Nut / Mutter / Écrou
1308	Tuerca / Nut / Mutter / Écrou
1310	Tuerca / Nut / Mutter / Écrou
1311	Tuerca / Nut / Mutter / Écrou
1312	Tuerca / Nut / Mutter / Écrou
1406	Arandela / Washer / Dichtung / Rondelle
1408	Arandela / Washer / Dichtung / Rondelle
1813	Pasador R / R clip / R Clip / Goupille R
1815	Pasador recto / Straight clip / Clip / Goupille
1825	Nivel burbuja / Bubble level / Waserwaage / Niveau de boussole
2043	Pletina sujetacable / Cable holder plate / Kabelhalterplatte / Serre-câble
2050	Maneta / Hand crank / Handkurbel / Levier
2304	Carro / Carriage / Fahrwerk / Chariot
2305	Barra / Bar / Leiste / Barre
2306	Barra / Bar / Leiste / Barre
2307	Barra / Bar / Leiste / Barre
2308	Barra / Bar / Leiste / Barre
2315	Brazo / Fork / Zweig / Fourche
2316	Porta-brazo / Fork-holder / Zweig / Fourche
2330	Tirantes / Base profile strut / Basisstütze / Supports de base
2331	Portapatas / Outrigger support / Stützfuss / Rongepieds
2334	Asa poliamida / Polyamide handle / Polyamide griff / Polyamide anse
2867	Pata / Leg / Abschnitt / Pieds
2868	Pata / Leg / Abschnitt / Pieds
3013	Polea / Pulley / Scheibe / Poulie
3042	Plato poliamida / Polyamid plate / Polyamidplatte / Plaque de polyamide
3045	Gatillo seguridad / Safetypin / Sicherheitsanschlag / Goupille de sécurité
3046	Pomo baquelita grande / Hand crank big / Handkurbelkugel / Grande bakélite bouton
3050	Cable / Cable / Kabel / Cable
3064	Varilla roscada / Threaded bar / Stab / Filetage baguette
3070	Rueda / Wheel / Rad / Roue
3073	Rueda asa / Wheel handle / Rad griff / Roue anse
3080	Eje hierro / Iron axis / Eisenachse / Axe en fer
3081	Refuerzo aluminio / Aluminium reinforce / Aluminiumverstärkung / Renforcement aluminum
3082	Gatillo seguridad / Safetypin / Sicherheitsanschlag / Goupille de sécurité
3086	Polea nylon / Pulley nylon / Nylonscheibe / Polie nilon
3088	Rodillo poliamida / Polyamide roller / Polyamide rolle / Polyamide rouleau
3089	Asa poliamida completa / Polyamide complete handle / Polyamide griff / Polyamide anse complet
3091	Plancha cabestrante / Winch plate / Eisenwinde / Plaque du treuil
3102	Cabestrante 900kg / Winch 900kg / Winde 900kg / Treuil 900kg
4001	Base Al. péndulo / Pendulum basis Al. / Pendelbasis Al. / Base pendule Al.
4002	Varilla péndulo / Pendulum rod / Pendelstab / Baguette pendule
4003	Eje péndulo / Pedulum axis / Pendelachse / Axe pendule
4004	Rueda péndulo / Pedulum wheel / Pendelrad / Roue pendule
4010	Pletina Al. tope / Top plate / obere Platte / Platine Al. superieur
4011	Pletina Al. tope / Top plate / obere Platte / Platine Al. superieur
4020	Portapoleas hierro / Iron pulley / Eisenscheibe / Support fers
4022	Sujetatope hierro / Iron / Eisen / Fixe fers
4023	Tope inferior / Bottom support / Grund / Tope inferieur
4050	Base de hierro / Iron basis / Eisenbasis / Base de fer