We hope that the information will be of help to you. It is based on concrete data and on the best of our current knowledge.
Read the contents of the manual carefully, including the warnings and recommendations. Also read the conditions of sale, including those governing the warranty.

Machine **HOYER COMET N**

Serial Number **M/221869**

Tetra Pak Hoyer S.p.A.
Via Monferrato, 54
20098 San Giuliano Milanese (Milano)
Italy
Telephone +39 2 98292.1
Telefax +39 2 9880171

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HOYER COMET N

1 - MACHINE IDENTIFICATION DATA

Contents

1.1 Introduction

Thank you for having chosen a Tetra Pax Hoyer machine.
We recommend that you read this manual carefully as it contains essential information regarding the installation, checking and maintenance operations required to keep your machine in perfect condition.

The manual contains tables, drawings and diagrams which will allow you to familiarise yourself with all parts of the machine.
Please let us know if any information is missing or is not sufficiently detailed. Your comments will be used to improve this manual.

1.2 Identification plate

For maintenance and service operations not described in this manual or for any other problem of a technical nature, our Service Department is at your complete disposal for information or to arrange for the necessary measures to be taken.
When contacting our Service Department, please quote the data given on the identification plate affixed to the machine and shown in Fig.1.1.

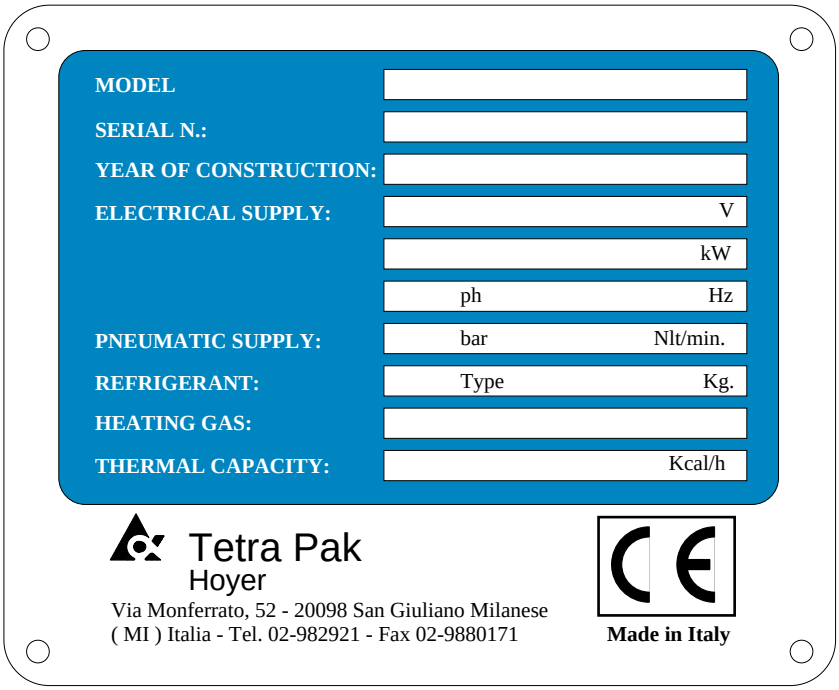


Fig. 1.1 - Identification plate

1.3 Service centres

If you have any requirement or problem that requires our assistance, please contact one of the following service centres, which are authorised to perform maintenance and provide technical service under warranty for Tetra Pak Hoyer machines.

EUMEA:

Tetra Pak Hoyer A/S
Soeren Nymarks Vej 13
DK-8270 Hoejbjerg
Denmark
Phone: +45 89 39 39 39
Fax: +45 86 29 22 00
Tlx: 6 87 70 alhoy dk

Tetra Pak Hoyer S.p.A.
Via Monferrato, 54
I - 20098 San Giuliano Milanese (Milan)
Italy
Phone: + 39 2 98 29 21
Fax: + 39 2 98 80 171

Tetra Pak Hoyer France
c/o Tetra Laval Service SARL
R.C.S. Versailles B403 276 223
P.O. Box 56
F-78340 Les Clayes-Sous-Bois
France
Phone: +33 1 30818184
Fax: +33 1 30818120

NORTH AMERICA:

Tetra Pak Hoyer Inc.
753 Geneva Parkway
P.O. Box 280
Lake Geneva, WI 53127
USA
Phone: +1 414 2497400
Fax: +1 414 2497500

SOUTH AMERICA:

Tetra Pak Hoyer Industria e Comércio Ltda.
Rua Napoleao de Barros, 1038
Cep04024-003 Sao Paulo-SP
Brazil
Phone: +55 11 573 9422
Fax: +55 11 549 5420

ASIA/PACIFIC:

Tetra Pak Hoyer Shanghai
Shanghai Overseas Chinese Mansion
Room 2105-2107
No. 129, Yan'an Xi Lu
200040 Shanghai
P.R. China
Phone: +86 21 6249 0860
Fax: +86 21 6249 9064

Tetra Pak Hoyer Service
3rd Floor, Molace Building
2231 Pasong Tamo Street
Makati, Metro Manila
Philippines
Phone: +63 2 8132848
Fax: +63 2 8132866

SOUTH KOREA:

Hoyer Ltd.
4fl. Dookyong Bldg.
66-1/9 Hannam-Dong
Yong San-Ku
140-210 Seoul
South Korea
Phone: +82 2 796 0362
Fax: +82 2 796 0365

THAILAND:

Tetra Pak Hoyer (Thai) Ltd.
1042 Soi Poosin, Sukhumvit Soi 66/1
Bangchak, Prakanong
Thailand
Phone: +66 2 3611680
Fax: +66 2 3612310

C.I.S.:

Tetra Pak Hoyer A/O
4th Rostovsky peureulok
Dom 1, stroenie 1
R-11921 Moscow
C.I.S.
Phone: +7 502 2242160
Fax: +7 502 2242162

HOYER COMET N

2 - GENERAL

Contents

2.1 Declaration of conformity

This machine has been manufactured in accordance with international standards and hygiene and sanitary legislation applicable to food machinery.
In particular Tetra Pak Hoyer certifies, through the Declaration of Conformity supplied with the machine, that the **HOYER COMET N** machine is designed and manufactured in accordance with the provisions of Directive 89/392/EC (Machinery Directive) and with the above-mentioned standards.

2.2 Preliminary points

- The illustrations and drawings of the machine are intended for general reference only and are not necessarily accurate in every detail;
- The machine dimensions and specifications given in this manual are not binding and may be changed without prior notice;
- The drawings and all other documents provided as a part of this machine remain the property of Tetra Pak Hoyer and must not be passed on to third parties without the written permission of Tetra Pak Hoyer.
- The manual includes instructions for all accessories mounted on the standard machine.
- **The machine is covered by warranty as laid down in the purchase contract. Any repair work not authorised by Tetra Pak Hoyer carried out during the warranty period will automatically invalidate the warranty.**

2.3 General safety rules

- THESE SAFETY RULES HAVE BEEN DRAWN UP IN YOUR INTEREST. Strict observance will reduce the risk of accident to yourself or to others.
- DO NOT attempt to move, install or operate the machine before reading and assimilating the contents of this manual. Ask your superior in case of doubt;
- make sure that all guards and safety covers are in place BEFORE starting the machine;
- NEVER leave tools, mechanical parts or other foreign materials on or inside the machine;
- in the event of a malfunction, press the emergency stop button.
- NEVER PUT YOUR HANDS INSIDE THE MACHINE WHEN IT IS IN OPERATION;
- exercise caution even when the main switch located on the tunnel is in the "OFF" position, as the supply conductors will still be live;
- shut off the compressed air supply before disconnecting any pneumatic component;
- make sure that all guards and safety covers are correctly in place BEFORE restarting the production cycle subsequent to maintenance or repair operations;
- proceed with caution at all times. Remember that you are responsible for your own safety and for that of your colleagues;
- make sure that applicable regulations are observed when moving or lifting the machine.

2.4 Special warnings

- All personnel operating the machine must be familiar with the general safety rules and must observe them strictly. Failure to follow these rules may result in personal injury or damage to machine components;
- maintenance work must be performed with the machine turned off. The main switch must be in the "OFF" position, the tunnel air valve closed and a “work in progress” sign affixed to the machine;
- the user must make sure that all the instructions given in the manual are scrupulously observed;
- users will be solely responsible for risks caused by tampering with the safety system;
- The safety of machines used in conjunction with the STICK PICK-UP, if not supplied directly by Tetra Pak Hoyer, is the responsibility of the customer.
- The pressure, speed, temperature and voltage limits and all instructions given are indispensable for correct operation of the machine and must always be complied with by the customer.
- Ambient conditions must be taken into consideration during installation.
- National legislation governing this type of machine must be observed.

2.5 Residual risks

The **Comet N** is a linear filling machine in automatic cycle of superior size for the production of cornets, cups, tubs and other containers filled with ice cream, sorbet and water ice, on more lines ranging from one to six according to the dimensions of the container to be processed and the production values to be reached.
The filling process takes place according to a pre-set cycle as laid down by the filling specifications agreed upon with the customer.
The machine includes a base unit for transferring the container along the motion axis of a conveyor belt and a sequence of stations fit for carrying out the required filling cycle with ice-cream and/or other ingredients.
The process includes:

- placing the container on a conveyor belt directly from an appropriate dispenser provided with a storage unit
- conveying the container placed on the conveyor belt, under the work stations
- completion of the filling cycle according to a predefined sequence with the expected simultaneous action of the different stations.
- closing and/or sealing the container with a protective film or an airtight lid.
- product ejection and discharge by means of conveyor or pick-up

The motion of the conveyor belt is intermittent and it is achieved by a suitable intermitter activated by an electric motor and an inverter. The stations are activated by cams controlled by the same main drive shaft, with reference to the approach phases of the former to the containers, whilst the dosing phases of the ice-cream and the liquid and solid ingredients (chocolate, nuts, biscuits, etc.) are operated pneumatically.
The issue of adapting the machine to suit the needs of the operator has brought about several problems that have been tackled in the following way:
- centralizing the controls on a single control board for the following functions:
- automatic cycle with dispenser feeding.
- completion of a plane of work at ergonomic height for set-up operations.
- ergonomic layout with the stations arranged along the machine’s axis near its frontal part.
- application of planning criteria to the work stations and their components such as the fillers and the dispensers which enable an easy maintenance and a quick format changeover.
- presence of fixed boards

The following residual risks arise from this kind of machine; they are highlighted as follows:
- Tray carrier belt.

The tray carrier belt, provided with a step to step

motion, presents a dragging hazard.
The travel low speed makes it compatible with the applied safety regulations.
For further safety, the residual risk is recalled in section **3.6 Instructions on ban and danger signals.**
- Extrusion, dosing, lid loading and sealing stations.
The operator's contact with the movement of the kinematic mechanisms is inhibited by fixed boards placed on the work front.
The lateral protection in connection with the trays is not allowed with this kind of process.
The residual risk is recalled in section **3.6 Instructions on ban and danger signals,** in chapter **6 Work stations,** and with a **crushing hazard signal** placed on the fixed protection.
- Lid/foil crimping/pressing stations.
The fixed protections placed on the work front inhibit the operator's contact with both the movement of the kinematic mechanisms and the high temperature of the pressing masses.
The lateral protection in connection with the trays is not allowed with this kind of process.
The residual risk is recalled in section **3.6 Instructions on ban and danger signals,** in chapter **6 Work stations,** and with a **crushing hazard signal and an extreme high temperature sign** placed on the fixed protection.
Product ejection belts.
The lateral protections of the kinematic mechanisms in connection with the trays and the release of products are not allowed with these cone/cup dispenser stations.
The residual risk is recalled in section **3.6 Instructions on ban and danger signals and** with a sign of **machine members in motion** placed on the fixed protection.
Power appliance panel
The doors of the power appliance panel can be opened with suitable kit tools.
The opening of the doors entails isolating the components downstream of the master switch.
Some components are subject to residual electric energy for a defined time.
After opening, do not touch the internal parts for at least 5 minutes.
A sign of
high-voltage components is placed on the door.

2.6 Ambient operating limits

The machine is suitable for operation in the following ambient conditions:
- Temperature : from 4°C to 40°C
- Humidity : from 20% to 95%.

☞ **NOTE**:

Tetra Pak Hoyer will accept no responsibility for damage or injury caused by failure to comply with the above warnings.

HOYER COMET N

3 - DESCRIPTION OF THE MACHINE AND TECHNICAL DATA

Contents

3.1 Description of the machine

The HOYER COMET N is a linear filling machine in automatic cycle of superior size for the production of cornets, cups, tubs and other containers filled with ice cream, sorbet and water ice, on more lines ranging from one to six according to the dimensions of the container to be processed and the production values to be reached.
The filling process takes place according to a pre-set cycle as laid down by the filling specifications agreed upon with the customer.
The machine includes a base unit for transferring the container along the motion axis of a conveyor belt and a sequence of stations fit for carrying out the required filling cycle with ice-cream and/or other ingredients.
The carpentry of the machine, its mechanical and commercial components are entirely reproduced in stainless steel or anticorrosive materials. All the parts that touch the product directly are entirely made of stainless material or substances that are approved for the food industry.
In order to avoid any accidental contact between the parts of the body and any element of the machine in motion, the machine is supplied with panels, protection boards, lids attached with screws and/or systems for which the use of suitable tools together with the operator's willingness are required to remove them.
The machine is composed of:
1. Steel structure *(Part.1 Fig.3.1)*. with adjustable feet *(Part.2 Fig.3.1)*..
2. Selective transmission controlled by an electric motor with inverter.
3. Intermittor with step to step feed.
4. Set of lamellas with pits designed for the type of container to be produced. The lamellas are supported by two longitudinal members which lead the belts driven/towed by the gearwheels.
5. Vacuum generator.
6. Pneumatic system.
7. Control panel with operation panel *(Part.3 Fig.3.1)*.
8. Operating stations.

HOYER COMET N is not designed to produce different kinds of products. For each product requires the "size" to be set on the operator's interface panel. Sizes are stored in the PLC that manages the operation of the machine.
For information on how to change and select a "size", see
paragraph 5.2.1 Setting working parameters

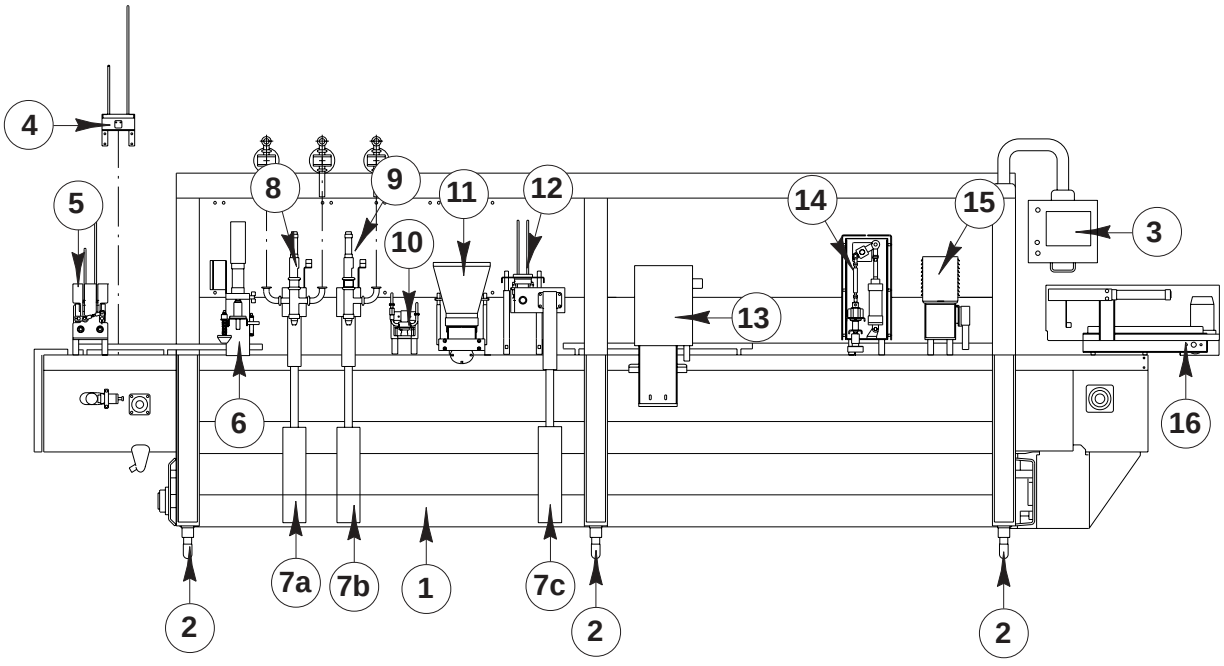


Fig. 3.1

3.2 Machine accessories

- Cup loading station *(Part 4 Fig.3.1)* - **See paragraph 6.1.1**
- Cone loading station *(Part 5 Fig.3.1)* - **See paragraph 6.1.2**
- Topping** *(Part 6-6a Fig.3.1)* - **See paragraph 6.1.7**
- Doser drive *(Part 7a-7b-7c Fig.3.1)* - **See paragraph 6.1.3**
- Ice-cream dosers (2 flavors)* *(Part 8 Fig.3.1)* - **See paragraph 6.1.5**
- Truffle dosers* *(Part 9 Fig.3.1)* - **See paragraph 6.1.6**
- Ice-cream dosers (1 flavor) *(Part 10a 10b Fig.3.1)* - **See paragraph 6.1.4**
- Chip doser** *(Part 11 Fig.3.1)* - **See paragraph 6.1.8**
- Cocoa doser ** *(Part 12 Fig.3.1)* - **See paragraph 6.1.9**
- Welding station (cups sealing) *(Part 13 Fig.3.1)* - **See enclosed manual**
- Product ejection station *(Part 14Fig.3.1)* - **See paragraph 6.1.10**

3.3 Operation

The motion of the conveyor belt is intermittent and it is achieved by a suitable intermitter activated by an electric motor and an inverter. The stations are activated by cams controlled by the same main drive shaft with reference to the approach phases of the cams to the containers, whilst the dosing phases of the ice cream, the liquid and solid ingredients (chocolate, nuts, biscuits, etc.) are operated pneumatically.

☞ **PLEASE NOTE:**

The machine is designed to produce different kinds of products. Operating procedures are described in paragraph **5.3.**

3.4 Products

Sono previsti i formati per la produzione delle seguenti prodotti coppe e coni:
The production of “SCH 1226” cup requires the use in sequence of the following stations:
- Cup loading station *(Part 4 Fig.3.1);*
- Ice-cream doser (2 flavor) *(Part.8 Fig.3.1);*
- Cover loading *(Part.12 Fig.3.1);*
- Cover sealing *(Part.14 Fig.3.1);*
- Product ejection station *(Part.16 Fig.3.1).*

The production of “SCH 1224” cup requires the use in sequence of the following stations:
- Cup loading station *(Part.4 Fig.3.1);*
- Ice-cream doser (2 flavor) *(Part.8 Fig.3.1);*
- Ice-cream doser (1 flavor “decoration”) *(Part.9 Fig.3.1)*
- Cover loading *(Part.12 Fig.3.1);*
- Cover sealing *(Part.14 Fig.3.1);*
- Product ejection station *(Part.16 Fig.3.1).*

The production of “SCH 1225” cup requires the use in sequence of the following stations:
- Cup loading station *(Part.4 Fig.3.1);*
- Ice-cream doser (2 flavor) *(Part.8 Fig.3.1);*
- Ice-cream doser (1 flavor “decoration”) *(Part.9 Fig.3.1)*
- Cover loading *(Part.12 Fig.3.1);*
- Welding station *(Part.13 Fig.3.1);*
- Product ejection station *(Part.16 Fig.3.1).*

The production of MAXI “SCH 1256” cones requires the use in sequence of the following stations:
- Cone loading station *(Part.5 Fig.3.1);*
- Calibrator and chocolate sprinkling *(Part.6 Fig.3.1);*
- Ice-cream doser (2 flavor) *(Part.8 Fig.3.1);*
- Topping *(Part.10 Fig.3.1);*
- Chip doser *(Part.11 Fig.3.1);*
- Cover loading *(Part.12 Fig.3.1);*
- Cover sealing *(Part.14 Fig.3.1);*
- Product ejection station *(Part.16 Fig.3.1).*

The production of MAXI "SCH 1254 cones requires the use in sequence of the following stations:
- Cone loading station *(Part 5 Fig.3.1)*
- Calibrator and chocolate spray *(Part 6 Fig.3.1)*
- Ice-cream dosers (2 flavors) *(Part 8 Fig.3.1)*
Ice-cream doser (1 taste, "icing") *(Part 9 Fig.3.1)*
- Topping *(Part 10 Fig.3.1)*
- Chip doser *(Part 11 Fig.3.1)*
- Cover loading *(Part 12 Fig.3.1)*
- Cover sealing *(Part 14 Fig.3.1)*
- Product ejection station *(Part 16 Fig.3.1)*

The production of MAXI "SCH 1255" cones requires the use in sequence of the following stations:
- Cone loading station *(Part 5 Fig.3.1)*
- Calibrator and chocolate sprinkling *(Part 6 Fig.3.1)*
- Ice-cream dosers (2 flavors) *(Part 8 Fig.3.1)*
- Topping *(Part 10 Fig.3.1)*
- Chip doser *(Part 11 Fig.3.1)*
- Cover loading *(Part 12 Fig.3.1)*
- Cover sealing *(Part 14 Fig.3.1)*
- Product ejection station *(Part 16 Fig.3.1)*

The production of MAXI "SCH 1276" cones requires the use in sequence of the following stations:
- Cone loading station *(Part 5 Fig.3.1)*
- Calibrator and chocolate sprinkling *(Part 6 Fig.3.1)*
- Ice-cream dosers (1 flavor "L/I") *(Part 9 Fig.3.1)*
- Topping *(Part 10 Fig.3.1)*
- Chip doser *(Part 11 Fig.3.1)*
- Cover loading *(Part 12 Fig.3.1)*
- Cover sealing *(Part 14 Fig.3.1)*
- Product ejection station *(Part 16 Fig.3.1)*

The production of STD "SCH 1257" cones requires the use in sequence of the following stations:
- Cone loading station *(Part 5 Fig.3.1)*
- Calibrator and chocolate sprinkling *(Part 6 Fig.3.1)*
- Ice-cream dosers (2 flavors) *(Part 8 Fig.3.1)*
- Chip doser *(Part 11 Fig.3.1)*
- Cover loading *(Part 12 Fig.3.1)*
- Cover sealing *(Part 14 Fig.3.1)*
- Product ejection station *(Part 16 Fig.3.1)*

The production of STD "SCH 1271" cones requires the use in sequence of the following stations:
- Cone loading station *(Part 5 Fig.3.1)*
- Calibrator and chocolate sprinkling *(Part 6 Fig.3.1)*
- Ice-cream dosers (2 flavors) *(Part 8 Fig.3.1)*
- Ice-cream dosers (1 flavor "icing") *(Part 9 Fig.3.1)*
- Topping *(Part 10 Fig.3.1)*
- Chip doser *(Part 11 Fig.3.1)*
- Cover loading *(Part 12 Fig.3.1)*
- Cover sealing *(Part 14 Fig.3.1)*
- Product ejection station *(Part 16 Fig.3.1)*

The production of STD "SCH 1258" cones requires the use in sequence of the following stations:
- Cone loading station *(Part 5 Fig.3.1)*
- Calibrator and chocolate sprinkling *(Part 6 Fig.3.1)*
- Ice-cream dosers (2 flavors) *(Part 8 Fig.3.1)*
- Topping *(Part 10 Fig.3.1)*
- Chip doser *(Part 11 Fig.3.1)*
- Cover loading *(Part 12 Fig.3.1)*
- Cover sealing *(Part 14 Fig.3.1)*
- Product ejection station *(Part 16 Fig.3.1)*

3.4.1 Changing the cup size

The geometrical shape and dimensions of cups "SCH 1226", "SCH 1224" e "SCH 1225" are the same.
The differences between cups "SCH 1226", "SCH 1224" and cup "SCH 1225" lies in the geometrical shape and in the material of the cover.
- To change the production from "SCH 1226" and "SCH 1224" cups to cup "SCH 1225", it is necessary to replace the storage areas *(Part 1 Fig.3.2)* of the cover loading station. For information on how to adjust this station, **see paragraph 6.1.10**.

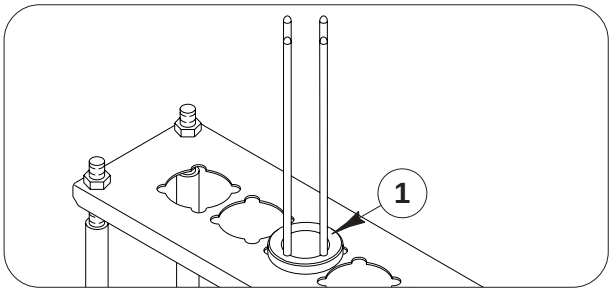


Fig. 3.2

3.4.2 Changing the size of cones

Cones MAXI "SCH 1256", "SCH 1254", "SCH 1255", "SCH 1276" and cones STD "SCH 1257" , "SCH 1271", "SCH 1258" differ because of the dimensions of the cones and of the cover.
To change the production between MAXI and STD cones, it is necessary to:
- Replace the shutters *(Part 1 Fig.3.3)*

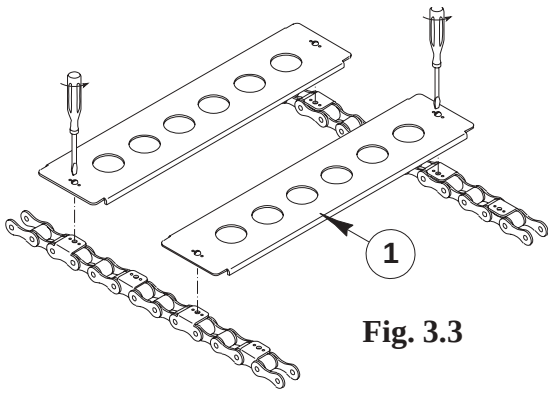


Fig. 3.3

- Replace the storage containers of the cone loading station
(Part 1 Fig.3.4)
- Replace the blades of the cone stopping blades (Part 2 Fig.3.4)
- Adjust the height of the cone storage containers crossbeam *(Part 3 Fig.3.4)*
- Replace the storage containers *(Part 1 Fig.3.5)* of the cover loading station
Replace the suction cups and the related holders *(Part 2 Fig.3.5)*
- Adjust the height of the crossbeam that supports the cover storage containers *(Part 3 Fig.3.5)*

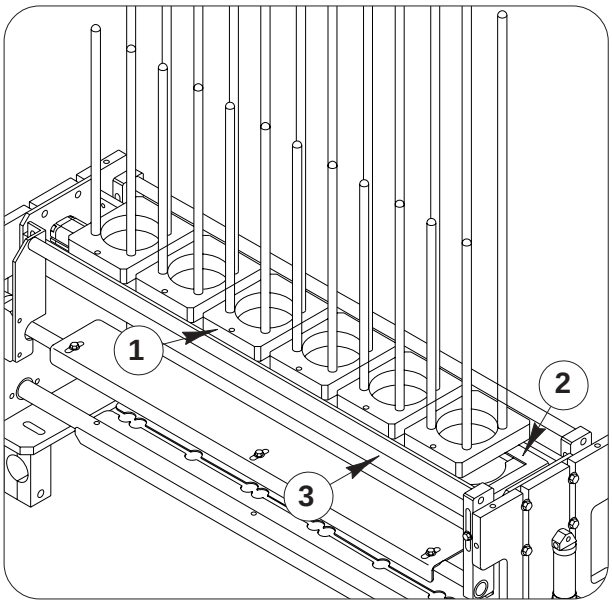


Fig. 3.4

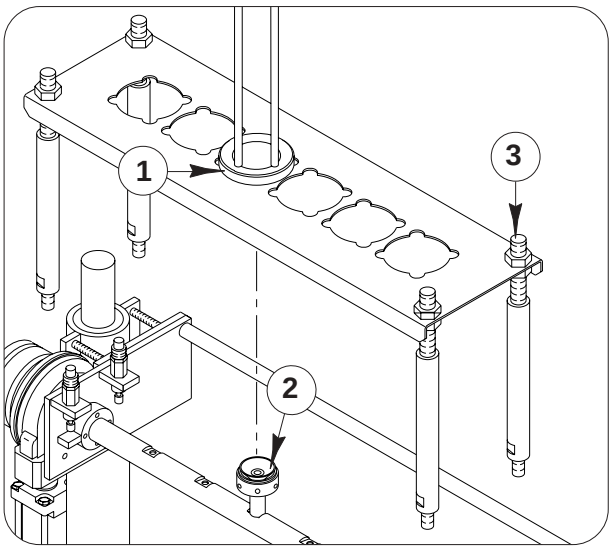


Fig. 3.5

- Replace the cover closing tools *(Part 1 Fig.3.6)*

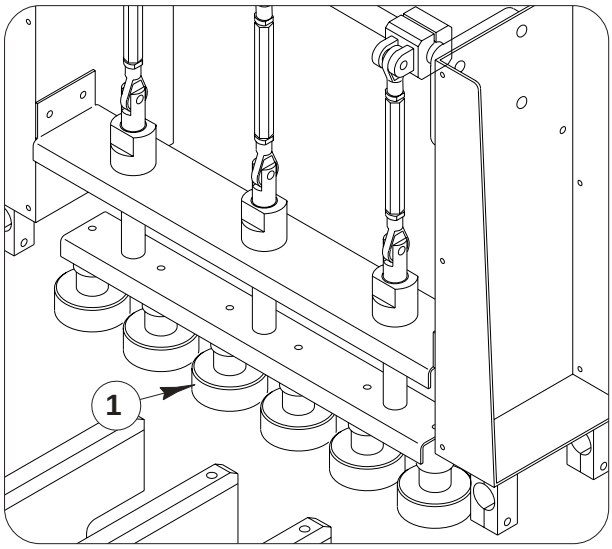


Fig. 3.6

WARNING!

The adjustments for the stations involved in the cone size change are described in paragraphs **6.1.2 - 6.1.10 - 6.1.12 - 6.1.15**

3.4.3 Formats with icings

To change the formats of products “SCH 1224”, “SCH 1225”, “SCH 1254” and “SCH 1271”, it is necessary to replace the nozzle *(Part 1 Fig.3.8)* with the icing plate *(Part 2 Fig.3.8)* on the ice-cream doser station *(Part 9 Fig.3.1)*

3.4.4 Changing the size of cones/cups

To replace cones and cups, it is necessary to replace the discharge station *(Part 1 Fig.3.9)* with the cup discharge unit *(Part 2 Fig.3.9)* on the frame of the discharge conveyor *(Part 3 Fig.3.9)*

WARNING!

The adjustments for the stations involved in the production change are described in paragraphs **6.1.14 - 6.1.15**

- Adjust the height of the ejection plates *(Part 1 Fig.3.7)*
- Replace and/or adjust the ejection curves *(Part 2 Fig.3.7)*
- Adjust the discharge conveyor *(Part 3 Fig.3.7)*

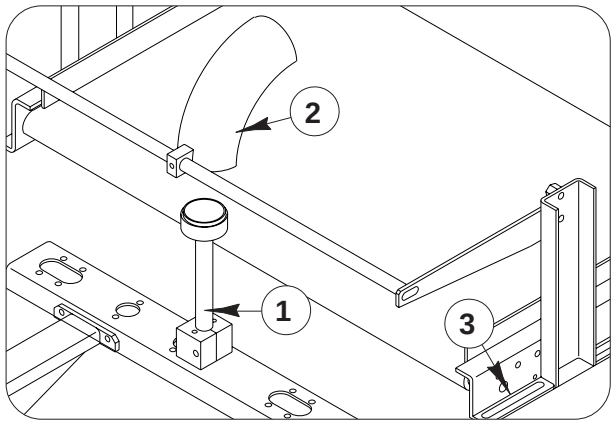


Fig. 3.7

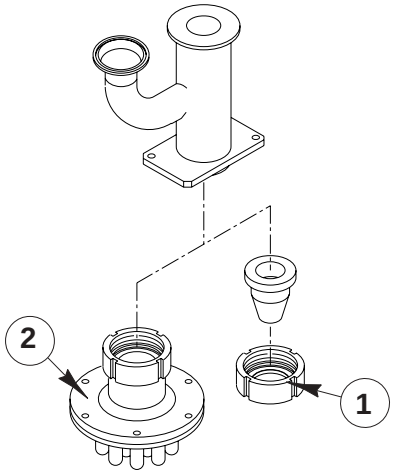


Fig. 3.8

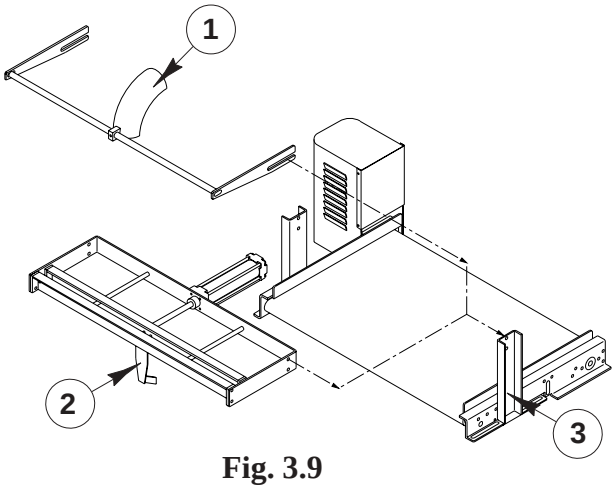


Fig. 3.9

3.5. Improper uses

Notwithstanding the equipment of the machine with several safety systems, the operators must pay attention in order not to cause potentially dangerous situations for their own and other people's safety.
The machine is designed and built for the exclusive use as indicated in chapter 3.1. Any other use is to be considered improper and therefore unreasonable. The builder cannot be considered responsible for any damage caused by improper, wrong or unreasonable uses.
All the people who operate the machine have to be trained suitably on the exact working methods and they must be informed on the nature and function of the safety devices.

3.6. Demolition and disposal

Useful information on the disposal of the machinery and its components.
The demolition must be carried out be specialized personnel equipped with personal and general prevention means in respect of the safety and environmental regulations.
Building materials:
- steel, stainless steel, aluminium, cast iron
- copper or silver for electric components
- rubber, nylon, PVC, resins and fibres.

No component is either toxic or harmful.
Special care is needed when disposing of the ratio motors since they are full of oil.
Do not abandon them in the environment and do not dispose of them as waste.

WARNING! Both machinery and components, at the end of their period of use are to be disposed of in respect of the regulations according to the issue in force in the country of use.

3.7 Technical data

Standard power supply
220 - 440 V / 3 Ph / 50-60 Hz
Installed power
Main motor: 3 kW
Conveyor motor: 0.18 kW
Total installed power: 5.5 kW

Net weight: 4000 Kg
Gross weight: 5000 Kg

Compressed air
Supply pressure: min 6 bar
Consumption: 1300 Nl/min
Diameter of the supply tube: 3/4" gas
Dimensions
See figure 3.2

Noise
Equivalent level of weighted acoustic pressure A at 1 meter: 67.5 dBA
Max. pressure of instantaneous weighted acoustic pressure C in workstations: below 130 dB/ 20uPa.

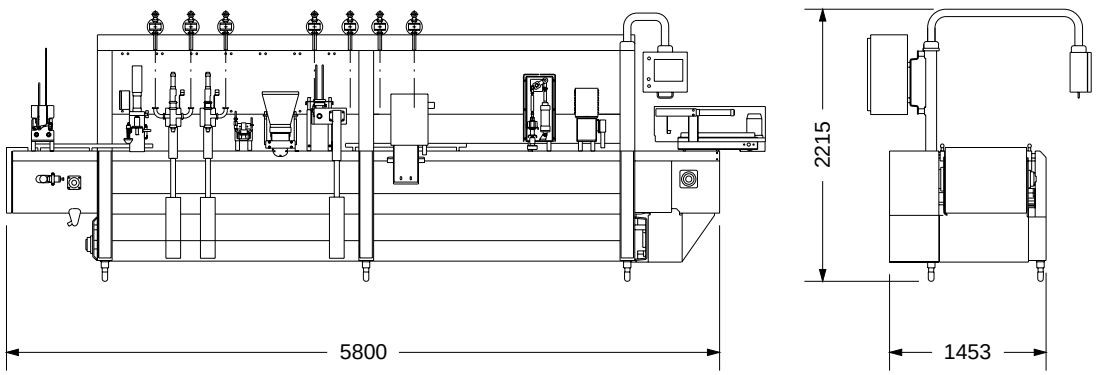


Fig. 3.10

3.8 Instructions on ban and danger signals

WARNING:

The tray-carrier belt is equipped with intermittent motion and it presents the dragging hazard.
Never put tools, mechanical parts or other material on the trays during the production cycle. Never intervene on trays in motion, by removing products or other.

WARNING :

The lateral protection of the kinematic mechanisms in connection with the trays is not allowed with these types of extrusion, dispensing, lid-loading and dispensing stations.
A **crushing hazard signal** is placed on the fixed protection.

WARNING:

The lateral protection of the kinematic mechanisms in connection with the trays and the delivery is not allowed with this type of cone/cup unloading stations.
A sign of **machine members in motion** is placed on the fixed protection.

WARNING :

The lateral protection of the kinematic mechanisms and the high temperature of the pressing masses in connection with the trays and their release is not allowed with this type of lid-foil sealing stations.
Signs of **crushing hazards and risk of extreme high temperature** are placed on the fixed protection.

WARNING :

The flaps of the power appliance panel can be opened with suitable tool kits.
The opening of the flaps entails isolating the components downstream of the master switch.
Certain components are subject to residual electric energy for a defined time.
After opening, do not touch the internal parts for at least 5 minutes.
A sign of **high-voltage components is** placed on the flap.

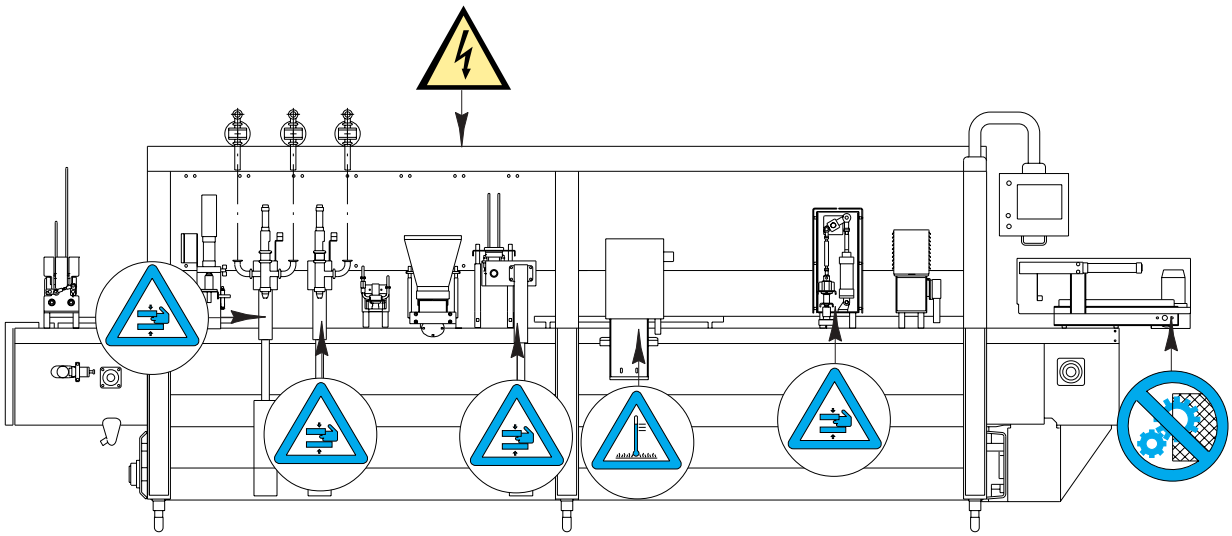


Fig. 3.11

HOYER COMET N

4 - INSTALLATION

Contents

4.1 Unpacking and delivery checks

The HOYER COMET N machine and the various operating stations are transported in special containers, generally wooden crates. Unpacking must be done near to the final installation position of the machine. The crates can be easily transported by a lift truck.
When the crate has been positioned correctly, unpack as follows:

a. Unnail the lid and remove it. Do the same thing with the side panels. Pay particular attention to the wooden spacer blocks located between the sides of the crate.
b. Remove the spare parts box and other components from the crate.
c. Unnail the wooden blocks that hold the machine in place during transport and remove the cellophane sheet.
d. Check that the contents of the crate correspond to the description given in the shipping documents.
e. Check that all the covers and panels have been correctly fitted and that there are no loose parts.
f. Visually inspect all the electrical components to make sure that they are not damaged.
g. If any part/component is missing, stop unpacking and immediately notify Tetra Pak Hoyer.
h. If the machine has been damaged during transit, notify the insurance company immediately. Do not proceed beyond unpacking until you are authorised to do so by the insurance company.

4.2 Transport and installation

The following measures must be adopted during the installation of the machine:

a. Position the machine at the place of production. Move the machine using a fork lift truck of suitable capacity checking that there is sufficient space to remove the guards and allow ease of access to the internal machine parts.
b. Adjust the feet until the machine is perfectly level both longitudinally and transversally.

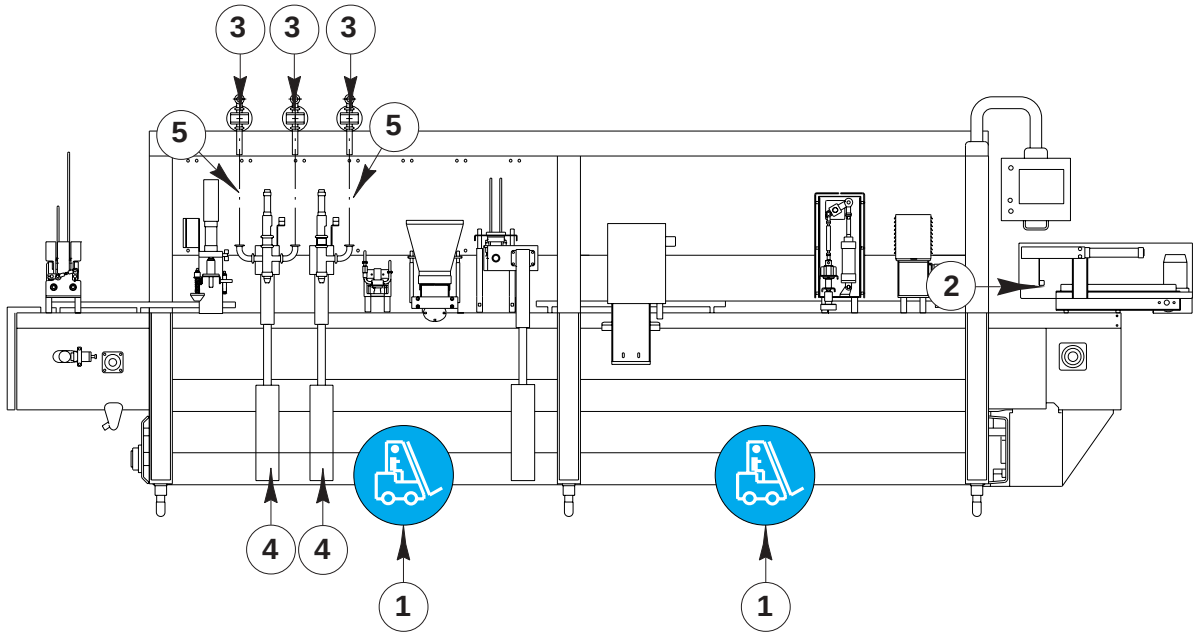


Fig. 4.1

4.3 Electrical connection (Refer to ALL. 1 Electric diagrams)

The machine's electrical system has been factory checked by Tetra Pak Hoyer engineers.
The machine's components are electrically protected against short-circuits.

WARNING:

The connection must be made exclusively by competent technicians familiar with accident prevention legislation.
It is recommended that the power is taken from a master switch fitted with thermal overload cutout and ultra-rapid fuses of adequate amperage.

WARNING:

The differential cutout switch must be class "A" and suitable for protecting inverter electronic power circuits.

- Check the data on the identification plate to ensure that the machine is compatible with the factory voltage.
- Connect the three phases to terminals R S T and the earth wire to the earth terminals in the electric panel.

For the minimum sections of the power supply cable, refer to the voltage and power values reported on the identification plate and the standards in force in the country of installation.

4.4 Checking the direction of rotation

After performing all the electric and pneumatic connections, it is necessary to perform the following checks:

- Make sure there is no foreign matter inside the machine that could prevent its operation.
- Release the emergency button.
- Rotate the main switch.
- Open the air supply.
- Press the Jog button and check that the shutters move from left to right *(Part 2 Fig.4.1)* looking at the machine from the operator's side.
- Press button Stop to stop the chain.

WARNING:

If the direction of rotation is incorrect, invert the phases on the terminal block.
This operation must be performed by qualified personnel only, familiar with laws regulating the prevention of industrial accidents.

4.5 Pneumatic connections (Refer to ALL. 2 Pneumatic diagrams)

onnect the machine to the supply of compressed air. The minimum working pressure is 6 bar.
If the pressure is below 4 bar, a special pressure switch calibrated by the manufacturer stops the functions of the machine.

For information on the consumption of air and on the dimensions of the supply pipe, **see 3.7 Technical specifications.**

4.6 Connection to the freezers

Make sure that the bypass valves of the ice-cream pipes *(Part 3 Fig.4.1)* are connected to the dosers *(Part 4 Fig.4.1)* as required.
Connect the ice-cream tubes from the freezers to the ice-cream dosers by means of the bypass valves *(Part 5 Fig.4.3)* located above the pneumatic valve.

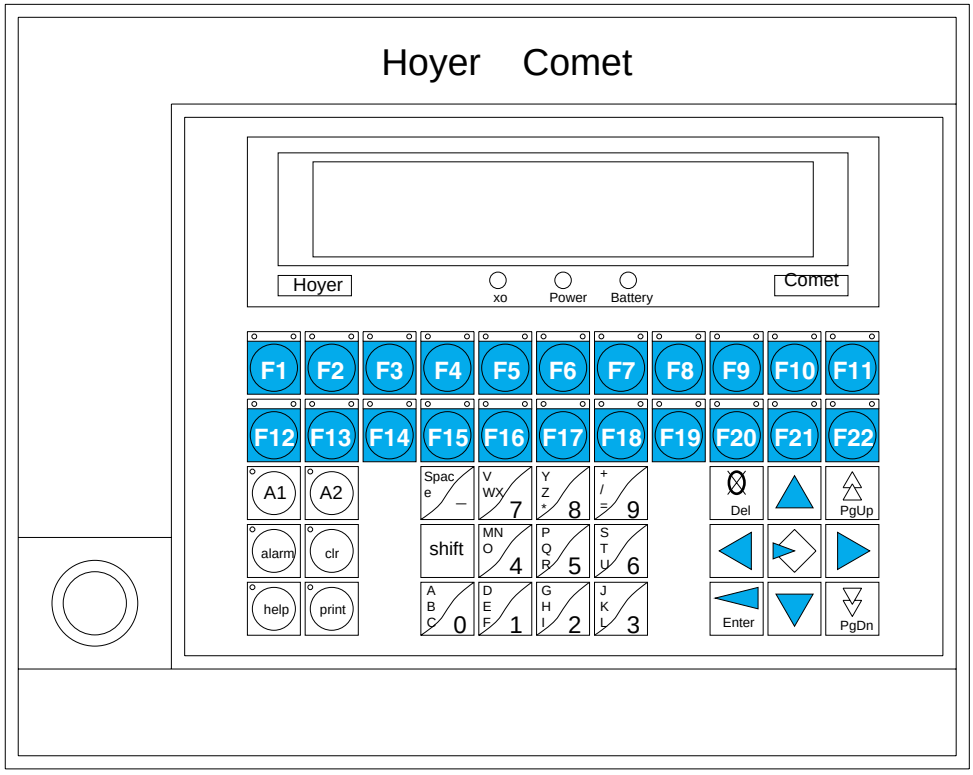
Before starting the freezers connected to the machine, place a container below the ice-cream bypass valve and another container on the opposite side of the machine, under the product collection slide.

Hoyer Comet N

5 - ADJUSTMENTS AND FORMAT CHANGE PROCEDURES

Contents

5.1 Control panel adjustments



F1 Start/Stop main motor

F2 Jog main motor

F3 Select auto/manual production cycle

F4 Start/Stop C.I.P. cycle and stations

F5 Data settings

F6 Select format

F7 Save data

F8 Apply data

F9 Advanced functions (for automatically starting productive cycle), password required “1 2 3 4” + Enter + F9

F10 Set C.I.P.

Reset

Start/stop cone feed (pag. 1)

Start/stop dry nut(pag. 2)

Start/stop cup feed (pag. 1)

Start/stop cocoa/ball dispenser (pag. 2)

Start/stop tube feed (pag. 1)

Start/stop foil dispenser (pag. 2)

Start/stop wafer feed (pag. 1)

Start/stop sealing unit (pag. 2)

Start/stop spraying chocolate (pag. 1)

Start/stop lid feed 1 (pag. 2)

Start/stop doser 1 (pag. 1)

Start/stop lid feed 2 (pag. 2)

Start/stop doser 2 (pag. 1)

Start/stop crimper (pag. 2)

Start/stop pencil filler (pag. 1)

Start/stop dater (pag. 2)

Start/stop topping (pag. 1)

Start/stop pick & place (pag. 2)

Not used (pag. 1)

Start/stop product ejection (pag. 2)

Not used (pag. 1)

Not used (pag. 2)

Back to previous page
Back to previous paragraph


Shift left


Apply change of value


Shift right

Confirm data

Go to next page
Go to next paragraph

Clear

Display alarm messages

Display help

Print

A1: Choco tank heaters sealing option

A2: Ice cream by-pass

Pos.1: Emergency stop

Pos. 2: Alphanumerical keypad

Pos. 3: Display

5.1.1 PLC settings

The functions of the Hoyer Comet N filling machine are PLC controlled. Use the control panel *(Fig. 5.1)* as described below to access the various PLC functions.

☞ **NOTE:**

The programme is factory set. Every time the machine is turned on, the following main page will appear on the control panel display, with the

logo.
The "POWER" led comes on indicating that the power is on. If the "BATTERY" led comes on this means the battery is low. If the "X O" led flashes, the PLC is not connected with the keypad.

F1: **START/STOP MAIN MOTOR**

Starts or stops the lamella belt motor. This key has two stable positions; Start and Stop.

F2: **JOG MAIN MOTOR**

Jog the lamella belt. To start the belt keep the key pressed. The belt will stop if F2 is released.

☞ **NOTE:**

The F2 key can be used only if the stations are not turned on using the key F4.

5.2.1 PLC settings

F3: **SELECT PRODUCTION CYCLE AUTO/MANUAL**

When the power is on, the led on the keypad display will flash if the machine is in manual mode.

SPEED	: ##
POSITION	: ###°
CYCLE	: MANUAL
CONE	CONE 2 FLAVOURS
(4 characters)	**(20 characters)**

Press pdown twice to display the machine's current status.

To put the machine in automatic mode press F3 the led will stay on without flashing, and the display will indicate that the machine is in automatic mode if you press pdown twice.

SPEED	: ##
POSITION	: ###°
CYCLE	: AUTO
CONE	CONE 2 FLAVOURS
(4 caratteri)	**(20 caratteri)**

F4: **START/STOP STATIONS AND CIP CYCLE**

Turn stations F12 through F22 on and off, in both automatic and manual mode.
This key is also used for the CIP wash cycle at the end of production.
To perform CIP washing, stop stations by pressing F4 (if F3 is on, this means that the machine is in automatic mode; press F4). Press F1 to stop the chain. Now enter the required wash time using the F5 key in the "**C.I.P. CYCLE**" page.

```
C.I.P. CYCLE                    P400

CYCLE                 : OFF
ON/OFF                : ## s. / ## s.
Duration              : ## min.
```

After setting cycle duration and frequency, press F7 + Enter + F8. Press F4 to begin washing. If washing settings have been previously stored, press F4.

F5: DATA SETTINGS

Press this key to display a series of video pages on all the stations on the machine.

Use the pdup / pdown keys to reach the station you wish to edit or enable automatic start.

Press ◆ to edit data. When you have finished editing data, press Enter to confirm.

Press F7 "**Save data**" and Enter to save the format in the operator panel and then press F8: "**Apply data**" to transfer the format to the PLC.

To go back to the first page of the dispaly, indicating encoder degrees and machine status, press Clr / Esc .

For further information see **5.2.2 Setting operating parameters.**

F6: SELECT FORMAT

Press this key to call up a video page containing formats provided by Tetra Pak Hoyer and those entered by the customer for production.

The following example will appear on the next page of the video:

```
DATA SETTINGS

CODE          : ####
DESCRIPTION   : ####################
                              1/31
```

F7: SAVE DATA

If you have modified required format, save it by pressing F7 and Enter, then press F8 to transfer the format to the PLC.

F8: APPLY DATA

Transfers to the PLC.

F9: ADVANCED FUNCTIONS

The advanced functions allow configuration of the machine with regard to the number of stations it comprises, associating a specific position to each station.

It is also possible to set the operating speed, the temperature of the foil sealing station, and the working parameters (position and speed) of the servomotor used to make the **JAPANESE CONE.**

To perform this operation (after pressing F9), the password 1, 2, 3, 4 + Enter + F9. A page will appear indicating "**STATION POSITIONS** P300" Enter the position numberof each station n the machine, starting from station 1, CONE FEEDER, as explained on the next page:

```
GROUPS POSITION

CONE DISPENSER:      1
CUP DISPENSER:       2
TUBE DISPENSER:      0
WAFFLE:              0
CHOCO SPRAYER:       4
                              1/15
```

Factory-set values, may change according to the station used.

To edit or enter new values, press  . Enter the required value using the numerical keypad, and confirm by pressing  .

Press  or  to move to the following or previous line and enter other positions.

Press  or  to shift from one page to the other.

Page 2/15 is accessed by pressing  , and displays the following stations:

GROUPS POSITION	
DOSER (1):	3
DOSER (2):	5
PENCIL FILLER:	8
TOPPING:	9
DRY NUT:	10
	2/15

Press  to access page 3/15.

GROUPS POSITION	
COCO/BALL DISPENSER:	11
FOIL DISPENSER:	11
SEALING:	12
LID DISPENSER 1:	14
LID DISPENSER 2:	15
	3/15

Press  to access page 4/15.

GROUPS POSITION	
CRIMPER:	18
DATER:	20
PICK&PLACE	
PRODUCT EJECTION:	21
	4/15

Press  to access page 5/15.

GROUPS POSITION	
LAST STATION:	22
POSITION CAM:	230°
	5/15

The LAST STATION parameter identifies the positions of the last station on the machine.
Because the machine is comprised of 15 steps, when it is used for cones or cups, its value normally is 15.
When the machine is equipped with a horizontal extraction device (optional) the relative number of the last station is 25.

Press  to access page 6/15.

PARAMETERS	
MAX SPEED:	50
ACTUAL SPEED:	
MOTOR SAFETY:	
	6/15

Preset value: 18 rpm.
Max value allowed: 50 rpm.
To edit follow the same procedure explained for station positions.
ACTUAL SPEED::real speed of the motor.
MOTOR SAFETY:Delay before the tripping of the thermal switch; this prevents an occurrence of an alarm for the starting torque.

Press  to access page 7/15.

DOSER (FLAME) SETUP	
POSIT. 0: 0.0 mm	SPEED: 0.0 mt/1
POSIT. 1: 0.0 mm	SPEED: 0.0 mt/1
POSIT. 2: 0.0 mm	SPEED: 0.0 mt/1
TX PARAMETERS (1= ON)	
	7/15

This page is used to provide parameters for the vertical movements of the doser station relative to the FLAME CONE. Data are entered as described for the previous pages.
POSIT. 0 is the lowest height reached by the doser when moving at the speed set by the SPEED parameter for descent. POSIT. 1 is the intermediate height reached by the doser when moving at the speed set for climb.
POSIT. 2 is the final height reached by the doser when climbing at the set speed.

Press pdown to access page 8/15.

SEALING UNIT 1

ACTUAL (°C): 20.0
SET POINT (°C): 85_0
HYSTERESIS (°C):
STATE: OFF

8/15

Data setting instructions are the same as those described earlier.
ACTUAL: Temperature detected on sealing plate No. 1
SET POINT: Required working temperature.
HYSTERESIS: Differential hysteresis value.
STATE: Sealing station status (ON= heating, OFF= required temperature reached).

Press pdown to access page 9/15.

SEALING UNIT 2

ACTUAL (°C): 20.0
SET POINT (°C): 85_0
HYSTERESIS (°C):
STATE: OFF

9/15

Data setting instructions are the same as those described earlier.
ACTUAL: Temperature detected on sealing plate No. 1
SET POINT: Required working temperature.
HYSTERESIS: Differential hysteresis value.
STATE: Sealing station status (ON= heating, OFF= required temperature reached).

Press pdown to access page 10/15.

SEALING UNIT 3

ACTUAL (°C): 20.0
SET POINT (°C): 85_0
HYSTERESIS (°C):
STATE: OFF

10/15

Data setting instructions are the same as those described earlier.
ACTUAL: Temperatre detected on sealing plate No. 1
SET POINT: Required working temperature.
HYSTERESIS: Differential hysteresis value.
STATE: Sealing station status (ON= heating, OFF= required temperature reached).
Once you have finished entering data press

SEALING UNIT 4

ACTUAL (°C): 20.0
SET POINT (°C): 85_0
HYSTERESIS (°C):
STATE: OFF

11/15

Data setting instructions are the same as those described earlier.
ACTUAL: Temperatre detected on sealing plate No. 1
SET POINT: Required working temperature.
HYSTERESIS: Differential hysteresis value.
STATE: Sealing station status (ON= heating, OFF= required temperature reached).
Once you have finished entering data press

SEALING UNIT 5

ACTUAL (°C): 20.0
SET POINT (°C): 85_0
HYSTERESIS (°C):
STATE: OFF

12/15

Data setting instructions are the same as those described earlier.
ACTUAL: Temperatre detected on sealing plate No. 1
SET POINT: Required working temperature.
HYSTERESIS: Differential hysteresis value.
STATE: Sealing station status (ON= heating, OFF= required temperature reached).
Once you have finished entering data press

SEALING UNIT 6
ACTUAL (°C): 20.0 SET POINT (°C): 85_0 HYSTERESIS (°C): STATE: OFF 15/15

Data setting instructions are the same as those described earlier.
ACTUAL: Temperatre detected on sealing plate No. 1
SET POINT: Required working temperature.
HYSTERESIS: Differential hysteresis value.
STATE: Sealing station status (ON= heating, OFF= required temperature reached).
Once you have finished entering data press

to go back to the first page of the function keys.

 : C.I.P. DATA SETTING

This key is exclusively used to set washing cycle parameters. This operation can be performed only when the machine is at a standstill. Therefore, if the machine was started in automatic mode, press  to stop the stations in sequence and  to stop the main motor.

The next page appears after pressing  .

C.I.P.
CYCLE: OFF ON/OFF: 00 sec. TIME: 0 min.

To set data proceed as follows:

- press  to make the cursor flash on the ON/OFF field and enter the valve opening time for inlet of the washing liquid.

- press  to shift the cursor to the TIME field and enter the total duration of the C.I.P. cycle.

Confirm by pressing  .

- press  to start all dosers on the machine.

The A2 key led will turn to green, showing that the bypass valve is closed. (The washing liquid will flow through the dosers only).
For the entire duration of the washing the C.I.P. page will be displayed and the CYCLE value will be displayed ON. At the end, once the set time has elapsed, that value will change from ON to OFF.
At the end of the washing cycle, to leave the C.I.P. page press  .

F11: RESET

Resets alarms, broken microswitches, inverter malfunctions, etc.

When an alarm occurs, an "ALARMS" page is diplayed on the panel, which indicates which alarm is present. If additional information is available for a given malfunction, the led of the help key will flash.

Press the key to display the information on the alarm.

Once the alarm is displayed, a technician must check and repair the problem as necessary. Press RESET on the display to remove the alarm from the display.

To use keys F12 through F22 use the 2 pages of the function keys. Access the first page by pressing clr, the second by pressing pdown.

To go back to the first page press pdup.

F12: START/STOP CONE FEED (Page 1)

Starts or stops loading cones if enabled by the current format.

F12: START/STOP DRY NUT (Page 2)

Starts or stops the dry product dispenser if enabled by the current format.

F13: START/STOP CUP FEED (Page 1)

Starts or stops loading cups if enabled by the current format.

F13:START/STOP COCOA/BALL DISPENSER (Page 2)

Starts or stops the cocoa or ball dispenser if enabled by the current format.

F14:START/STOP TUBE FEED (Page 1)

Starts or stops the tube loading if enabled by the current format.

F14: START/STOP FOIL DISPENSER (Page 2)

Starts or stops the foil dispenser if enabled by the current format.

F15 START/STOP WAFER FEED (Page 1)

Starts or stops loading wafers if enabled by the current format.

F15 START/STOP SEALING UNIT (Page 2)

Starts or stops foil sealing if enabled by the current format.

F16 START/STOP SPRAYING CHOCOLATE (Page 1)

Starts or stops spraying chocolate if enabled by the current format.

F16: START/STOP LID FEED 1 (Page 2)

Starts or stops loading lids 1 enabled by the current format.

F17: F17: START/STOP DOSER 1

Starts or stops doser 1 if enabled by the current format.

F17: START/STOP LID FEED 2 (Page 2)

Starts or stops loading lids 2 if enabled by the current format.

F18: START/STOP DOSER 2 (Page 1)

Starts or stops doser 2 if enabled by the current format.

F18: START/STOP CRIMPER (Page 2)

Starts or stops the crimper if enabled by the current format.

F19: START/STOP PENCIL FILLER (Page 1)

Starts or stops the pencil filler if enabled by the current format.

F19: START/STOP DATER (Page 2)

Starts or stops date stamp if enabled by the current format.

F20: START/STOP TOPPING (Page 1)

Starts or stops topping if enabled by the current format.

F20: START/STOP PICK & PLACE (Page 2)

Starts or stops the pick & place device if enabled by the current format.

F21: START/STOP PRODUCT EJECTION (Page 2)

Starts or stops product ejection if enabled by the current format.

: **NOT USED**

A1: **CHOCOLATE TANK RESISTANCES**

Enter all the resistances on the machine: the resistances in the chocolate spray tank, the topping tank, and the sprays are controlled by a thermometer in the tank and resistences of sealing unit.

A2: **ICE-CREAM BYPASS**

This push button works both manually and automatically. When enabled, it energizes the bypass valve that closes the bypass pipe and allows feeding of the ice-cream/mix in the dosers.

When the doser is ready (cooled to the required temperature) production may begin.

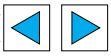
Displays the operations and checks to perform to cancel the alarm.

5.2.2 Setting operating parameters

FOREWORD

The Hoyer Comet N machine is comprised of working stations. Station settings are performed during machine testing.
The machine is equipped with a jog devicewhich mechanically transforms the continuous motion of the belt drive motor into a jogging motion, this allowing a jogging motion of the lamellas. The movement of the belt is therefore made up of a sequence of starts and stops. A special encoder detects the position of the lamellas after each step, and makes a full ratation (360°) at each step forward of the belt. The angular position of the lamella can therefore be identified and displayed, so all the commands to the stations may be performed. The commands, which raise and lower mechanical and pneumatic organs and open and close dosing valves, refer to encoder position. The encoder must be reset at each revolution in order to count positions at each step of the machine.
Encoder resetting (performed through the PLC and special sensor) is carried out when the lamella belt starts to stop by effect of the jogging device, therefore when the jogging device brings the belt to a stop.
In this manner the mechanical part of the machine and the electronic part, which carries out control and adjustment functions, are timed together (in phase). This timing is always carried out when the machine is assembled and must be repeated **ONLY** if the jogging device or the lamella belt is replaced/overhauled.

Instructions on the OPERATOR panel to edit and enter data

To edit or enter data in any page of the operator panel, select the page which includes the data to be edited and press  . A black cursor will flash over the first datum which can be edited in the page.
If you wish to edit this figure, enter the required value with the numerical keypad. If the value to enter includes more than one digit, as soon as the first digit is entered the cursor will move on to the second and so on until the last digit.
To shift among the digits in a value, use the arrows ().

To move on to the following value, press  .
Once you have entered all the values in the page, press  .
Then move on to the next page.
If the values entered and/or edited refer to a format, save the values in the operator panel by pressing  and confirm by pressing  . Then transfer the format to the PLC of the machine by pressing  .

a) To edit data of an existing format:

Press F5. The following page will be displayed:

```
DATA SETTING

CODE          : ----------
DESCRIPTION   :
                          1/22
```

Press F6 to select one of the recipes in the panel. The following page will be displayed:

```
STORED RECIPES

1          STANDARDS CONE*
2          STANDARDS CUPS**
```

* STANDARD CONES indicates, for example, the name of format No. 1 in use.
** More than one format may be set. They will be indicated by other phrases such as:
STANDARD CUPS which indicates, for example, the name of format No. 1 in use.

Using the arrows (pdup pdown) to select the recipe you wish to edit and press Enter. If for example you select recipe No. 1 STANDARD CONES, you will see:

```
DATA SETTING

CODE          : 1-------
DESCRIPTION   : STANDARD CONE
                          1/22
```

You may now shift from one page to the next by using the pdup pdown keys and edit data as described in "INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT AND ENTER DATA" by entering the figures you wish to edit in relation to the relevant station. Further details on the data to edit can be found at paragraph b)

Entering data for a new format.

Once you have finished editing the data, save the format in the operator panel by pressing F7.
You will read:

```
Overwrite ? (Enter =Yes Clr = No)
```

Confirm the operation by pressing Enter.
Transfer the data of the format stored in the PLC by pressing F8, you will now read:

```
Please wait, trasmission is running
```

You may now start the machine. The new data are set.

b) Entering data for a new format.
The following instructions are valid both when no format has yet been programmed, and when you wish to set an additional format, along with those previously stored in the panel.

Press F5. The following page, indicating the format in use, will be displayed :

```
DATA SETTING

CODE          : ----------
DESCRIPTION   :
                          1/22
```

The CODE field allows setting up to 4 characters max. We recommend you enter a numerical code (i.e. 1, 2, 3...) or letters (i.e. A,B,C,...) for the required formats.
The DESCRIPTION field allows writing a description of the format codified which can be no longer than 20 characters.

Press (diamond-shaped) and the cursor will flash in the CODE field. You may now enter a number of letters for the format you are creating by using the alphanumeric keypad on the panel. (For each key 3 letters and one number are possible. If you press the alphanumeric key more than once, first the letters and then the number will be cyclically activated). Shift to the DESCRIPTION field to enter the description of the format in the same manner. The following example may be useful:

EXAMPLE - If you wish to enter code B and a CONO2 description, proceed as follows:

1 - Press ABC/0 twice to display the letter B.

2 - Press ▼ to shift to the DESCRIPTION field

3 - Press ABC/0 three times to display the letter C.

4 - Press ▶. The cursor will shift to the right of the letter C.

5 - Press MNO/4 three times to display the letter O.

6 - Press ▶. The cursor will shift to the right of the letter O.

7 - Press MNO/4 twice to display the letter N.

8 - Press ▶. The cursor will shift to the right of the letter N.

9 - Press MNO/4 three times to display the letter O.

10 - Press ▶. The cursor will shift to the right of the letter O.

11 - Press GHI/2 four times to display the number 2.

You have now entered code B and the description CONO2, the data setting paged will therefore appear as follows:

DATA SETTING	
CODE	: B
DESCRIPTION	: CONO2
	1/22

Press Enter to confirm the code and the format description. Press F7 to save the new format, whose code and description are as described above, in the panel.

The following question will be displayed:

New index ? (Enter =Yes Clr = No)

Confirm the operation by pressing Enter.

A new format has thus been created. It is now possible to set the data of the working stations of the machine as described below.
Starting from page 1/22 which indicates the format in use.

DATA SETTING	
CODE	: B
DESCRIPTION	: CONO2
	1/22

move on to page 2/22 by pressing pdown.

The following page is displayed:

GENERAL PARAMETERS
###°
SAFETY CAM : ON=### OFF=###
2/22

This page displays the current position in machine degrees (###°-value at top right) and the parameters relative to the safety cam (SAFETY CAM).

The safety cam represents the angular interval during which, for safety reasons, it is impossible to perform vertical movements of the stations, as the lamella belt, by effect of the jogging device, is moving.
Outside this interval, the belt is still, and all movements and operations associated to the working stations on the machine are possible.

If a working station which performs vertical movements is not in the highest position within the safety cam, the machine inverter immediately stops the belt.

We recommend you do not modify the ON and OFF interval of the safety cam, or the machine will stop.

NOTE: All the parameters expressed in degrees refer to the angular position of the machine.
The settings relative to the vertical movement of each station must be performed so the station moves downward while the belt is not moving.

Go to page 3/22 by pressing pdown.

The following page is displayed:

CONE DISPENSER
###°
CONSENT : #
START : ###°
CONE RELEASE : ON=### OFF=###
CONE DOWNLOAD : ON=### OFF=###
WAFER CONTROL : ON=### OFF=###
CONE BLOW : ON=### OFF=###
3/22

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the CONE DISPENSER station is required.
START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

CONE RELEASE: Parameters relative to the cylinders that control the opening/closure of the cone-stop blades. Set ON and OFF values.
CONE DOWNLOAD: Parameters relative to the enabling/disabling of the rotational actuator which aids separation of the wafers. Set ON and OFF values.
WAFER CONTROL: Parameters relative to the opening/closure of the cone magazine which allows the cones to fall into the lamella slots.
Set ON and OFF values.
CONE BLOW: Parameters relative to the opening/closure of the valve that blows air into the cone magazine to aid cones to leave the stack. This action normally occurs after the blades release the cone. Set ON and OFF values.

Current position: A degree field (###º) makes it possible to display the current machine position in order to enter suitable data.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 4/22 by pressing 


```
                CUP DISPENSER
                                        ###°
CONSENT                 :       #
START                   :       ###°
CUP RELEASE             : ON=###    OFF=###
CUP VACUUM              : ON=###    OFF=###
CUP BLOW VACUM          : ON=###    OFF=###
CUP BLOW                : ON=###    OFF=###

                                          4/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the CUP DISPENSER station is required.
START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

CUP RELEASE: Parameters relative to the cylinders that control the opening/closure of the cup-stop blades. Set ON and OFF values.
CUP VACUUM: Parameters relative to the enabling/disabling of the vacuum on suction cups. Set ON and OFF values.
CUP BLOW VACUUM: Parameters relative to the enabling/diabling of the air blow which allows detaching the cup from the suction cup. The blow must occur when the cup is placed in the lamella slot.
Set ON and OFF values.
CUP BLOW: Parameters relative to the opening/closure of the valve that blows air into the cup magazine to aid cups to leave the stack. This action normally occurs after the blades release the cups. Set ON and OFF values.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 5/22 by pressing 

The following page is displayed:

```
                TUBE DISPENSER
                                        ###°
CONSENT                 :       #
START                   :       ###°
TUBE RELEASE            : ON=###    OFF=###
TUBE GRIPPER            : ON=###    OFF=###
TUBE DOWN  : ON=###     OFF=###

                                          5/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the TUBE DISPENSER station is required.

START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

TUBE RELEASE: Parameters relative to the cylinders that control the opening/closure of the

cup-stop blades. Set ON and OFF values.

TUBE GRIPPER: Parameters relative to the cylinders that control the exit/return of the tube-holding forks, which remove the tubes from the magazine. Set ON and OFF values.

TUBE DOWN: Parameters relative to the upwards/ downwards movement of the station to bring the tubes within the slots. Set ON and OFF values.
To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 6/22 by pressing pdown.

The following page is displayed:

```
                    WAFFLE
                                              ###°
   CONSENT              :      #
   START                : ###°
   SLIDE                : ON= ###°    OFF= ###°
   VACUUM                     : ON= ###°    OFF=
###°
   STOP                 : ON= ###°    OFF= ###°

                                          6/22
```

The following items are shown:

CONSENT: If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the WAFFLE DISPENSER station of required.

START : Angular value of the ON/OFF commands whose value is greater than the start cam. This value is used to define priority of the ON/OFF commands to be implemented.

SLIDE: Parameters relative to the cylinders that move the carriage bearing the suction cups to aloow the waffles to slide into the slots in the lamellas. Set ON and OFF values.

VACUUM: Parameters relative to the enabling/ disabling of the vacuum in the suction cups. Set ON and OFF values.

STOP: Parameters relative to disabling the movement of the carriage bearing the suction cups. Set ON and OFF values.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

To go page 7/22 by pressing pdown.
The following page is displayed:

```
                  CHOCO SPRAYER
                                          ###°
CONSENT           :      #
START             :      ###°
SPRAYER DOWN      : ON=###    OFF=###
SPRAYER OPEN      : ON=###    OFF=###
SPRAYER PUMP      : ON=###    OFF=###
PUMP OFF TIME     : ON=#.## SEC.

                                          7/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the CHOCO SPRAYER station is required.
START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.
SPRAYER DOWN: Parameters relative to downwards/upwards movement of the station to bring the sprays towards the cones. Set ON and

OFF values.

SPRAYER OPEN: Parameters relative to the moment when beginning of chocolate spraying within the wafer is required. Set ON and OFF values relative to the opening/closure of the sprays.

SPRAYER PUMP: Parameters relative to moment when the volumetric pump for chocolate must be activated. Set ON and OFF values relative to the pumping/suction of volumetric cylinders.
PUMP OFF TIME: ON/OFF time of the volumetric pump. When the machine is still it is necessary to continue pumping chocolate through the chocolate pipes to avoid that the chocolate solidify. Set the PUMP OFF TIME to a value different from zero to obtain pumping action. If the time is set to zero, this function is disabled.
NOTE: When the choco-sprayer station is used, resistances for heating chocolate must be started by pressing A1.
To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 8/22 by pressing 

The following page is displayed:

```
                DOSER 1
                                    ###°
START           : ###° CONSENT: #
DOSER DOWN      : ON=###°   OFF=###°
DOSER OPEN      : ON=###°   OFF=###°
TWISTER         : ON=###°   OFF=###°
CHOCO RELEASE   : ON= #     OFF=###°

                                  8/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the DOSER (1) station is required.

START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.
DOSER DOWN: Parameters relative to the downwards/upwards movements of the station to bring the dosing nozzles towards the cones (or cups). Set ON and OFF values. If using a volumetric doser, set both values to zero degrees to disable this command.

DOSER OPEN: Parameters relative to the opening/closure of the doser that fills the containers (cones or cups or tubes). Set ON and OFF values. If using a volumetric doser, set both values to zero degrees to disable this command.

TWISTER: If the station performs dosing with nozzle rotation (TWISTER), set rotation ON/OFF in this field. Otherwise, set the values to zero degrees.

CHOCO RELEASE: Parameters relative to releasing chocolate into the product (if the product is a JAPANESE CONE). Set ON and OFF values.

ON: Turns the volumetric doser on. It is turned off automatically by a sensor placed on the doser cylinder.

Go to page 9/22 by pressing 

The following page is displayed:

```
                DOSER 1
                                    ###°

VOLUMETRIC      : (0/1) #   ON=###°
INDRAMAT        : (0/1) #

HEATING         : ON= #     OFF=###°

                                  9/22
```

The following items are shown:

VOLUMETRIC: If the station performs volumetric dosing, enter 1 in this field, otherwise enter 0.

ON: Turns the volumetric doser on. It is turned off automatically by a sensor placed on the doser cylinder.

INDRAMAT: If the machine is equipped with flame cone rotating dosage, enter 1 in this field, otherwise enter 0.
(See settings described on page 7/10, which can be accessed by pressing F9).
HEATING: Parameters relative to heating of fillers heads. Set ON and OFF values. On= time of heating. Off=time of not heating .

To enter oredit data follow the indications in **"INSTRUCTIONS ON USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 10/22 by pressing pdown

The following page is displayed:

DOSER (2)

	###°	
START	: ###° CONSENT: #	
DOSER DOWN	: ON=###°	OFF=###°
DOSER OPEN	: ON=###°	OFF=###°
TWISTER	: ON=###°	OFF=###°
VOLUMETRIC	: (0/1) #	ON=###°
INDRAMAT	: ON= #	

10/22

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the DOSER (2) station is required.
START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.
DOSER DOWN: Parameters relative to the downwards/upwards movement of the station to bring the dosing nozzles close to the cones (or cups). Set ON and OFF values. If using a volumetric doser, set both values to zero degrees to disable this command.

DOSER OPEN: Parameters relative to the opening/closure of the doser that fills the containers with ice-cream (cones, cups or tubes). Set ON and OFF values. If using a volumetric doser, set both values to zero degrees to disable this command.

TWISTER: If the station is equipped for dosing with nozzle rotation (TWISTER), enter rotation ON/OFF, otherwise set values to zero degrees.

VOLUMETRIC: If the station is equipped for volumetric dosing, enter 1 in this field, otherwise enter 0.

ON: Enables the volumetric doser, which is turned off automatically by a sensor placed on the volumetric doser cylinder.

INDRAMAT: If the machine performs CONE FLAME rotating dosage, enter 1 in this field, otherwise enter 0.
(See settings performed on page 7/10 which can be accessed by pressing F9).

To enter of edit data follow the indications in "INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT AND ENTER DATA".

Go to page 11/22 by pressing pdown

The following page is displayed:

```
                PENCILL FILLER
                                    ###°
CONSENT          :      #
START            :      ###°
FILLER DOWN      : ON=###    OFF=###
FILLER OPEN :      ON=###    OFF=###
                                    11/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the PENCIL FILLER station is required.

START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

FILLER DOWN: Parameters relative to downwards/upwards movement of the station to bring the filler nozzles inside the cones (or the cups). Set ON and OFF values.
FILLER OPEN: Parameters relative to the opening/closure of doser that fills the cones.

To set or edit the data, follow the instructions provided in **“INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA”.**

Go to page 12/22 by pressing pdown

The following page is displayed:

```
                   TOPPING
                                    ###°
CONSENT          :      #
START            :      ###°
TOPPING DOWN     : ON=###    OFF=###
TOPPING OPEN     : ON=###    OFF=###
TOPPING PUMP     : ON=###    OFF=###
PUMP OFF TIME    : #.## SEC.

                                    12/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the TOPPING station is required.
START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

TOPPING DOWN: Parameters relative to downwards/upwards movement of the station (optional) to bring the topping spouts above the cones (or the cups). Set ON and OFF values.
TOPPING OPEN: Specifies the opening/closure interval for the topping spouts that release the product (chocolate/syrup) on the cones (or the cups).
TOPPING PUMP: Parameters relative to the moment when the positive-displacement pump for topping must be enabled. Set ON and OFF values relative to pumping/suction of the positive-displacement cylinders.

PUMP OFF TIME: ON/OFF times of the positive-displacement pump. When the machine is still the chocolate/syrup must continue to be pumped through the pipes to avoid solidification. For this reason, set the PUMP OFF TIME to a value different from zero to obtain pumping. IF time is set to zero, this function is disabled.

NOTE: When the topping station is used for chocolate, it is necessary to turn on the chocolate heating resistances by pressing A1.

To set or edit the data, follow the instructions provided in **“INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA”.**

Go to page 13/22 by pressing pdown.

The following page is displayed:

```
                    DRY NUT
                                        ###°
CONSENT             :       #
START               :       ###°
DRY NUT OPEN        :ON=###     OFF=###

                                        13/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the DRY NUT station is required.

START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

DRY NUT OPEN: Specifies the on/off interval of the pneumatic vibrator that allows the dry nut topping to fall on the ice-cream.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 14/22 by pressing 

.

The following page will be displayed:

```
                  COCO/BALL DISPENSER
                                        ###°
CONSENT             :       #
START               :       ###°
DISPENSER OPEN      : ON=###    OFF=###
STEP-STEP           :         #

                                        14/22
```

The following items are shown:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the DRY NUT station is required.

START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

DISPENSER OPEN: Specifies the on/off interval of the pneumatic vibrator that allows the coco/ball topping to fall on the ice-cream.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 15/220 by pressing 

.

The following page will be displayed:

```
                    FOIL DISPENSER
                                        ###°
CONSENT             : #
START               : ###°
FOIL DOWN           : ON=###°   OFF=###°
FOIL ROTATION       : ON=###°   OFF=###°
FOIL VACUUM         : ON=###°   OFF=###°
FOIL BLOW           : ON=###°   OFF=###°

                                        15/22
```

Referring to the instructions provided in paragraph 6 "Lid/foil dispenser station", set the following parameters on this page:

CONSENT: If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the FOIL DISPENSER station of required.

START : Angular value of the ON/OFF commands whose value is greater than the start cam. This value is used to define priority of the ON/OFF commands to be implemented.

FOIL ROTATION: This parameters is usually not used. If set with angular values different from 0, it rotates the foils according to the ON and OFF values entered. If the ON and OFF values are set to zero (STANDARD SETTING), foil rotation will be controlled during the downward movement, with suction cups oriented down, by a special external sensor mounted on the station. During the upward movement of the station, a second sensor will command foil rotation in the opposite direction to reorient the suction cups upwards.

FOIL VACUUM: The ON and OFF parameters refer to the beginning of the vacuum.
Set vacuum ON to occur before lowering begins, while the station is rising back up toward the foil magazine. The vacuum should go off when the pieces of foil are over the containers.

FOIL BLOW: These settings may be set if turning the vacuum off is not sufficient to detach the foils from the suction cups. Set the ON and OFF values. If both ON and OFF are set to zero, there will be no blow.

Go to page 16/22 by pressing pdown
The following page is displayed:

SEALING			
			###°
CONSENT	:	#	
START	:	###°	
SEALING DOWN	:	ON=###	OFF=###°
			16/22

The following parameters for the foil sealing device are shown on this page:

CONSENT : If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the **SEALING** station is required.

START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

SEALING DOWN: Set ON values (downward movement) and OFF values (upward movement).

To set or edit the data, follow the instructions provided in "INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA". Go to page 17/22 by pressing pdown
The following page is displayed:

LID DISPENSER 1			
			###°
CONSENT	: #	START=###°	
LID RELEASE	:	OFF=###°sec.	
LID DOWN	: ON=###°	OFF=###°	
LID ROTATION	: ON=###°	OFF=###°	
LID VACUUM	: ON=###°	OFF=###°	
LID BLOW	: ON=###°	ON=###°	
			17/22

The following is parameters for the lid dispenser device are shown on this page:

traverse) to bring the lids to the containers. Set ON and OFF values.

LID DOWN: Set ON values (downward movement) and OFF values (upward movement).

LID ROTATION: This parameter is normally not used. If set with angular values different from 0, it rotates the lids according to the ON and OFF values set. If ON and OFF values are set to zero, (STANDARD SETTING), lid rotation will be controlled during station downwards movement by a special external sensor placed on the station, orienting the suction cups down. During the upwards movement of the station a second sensor will command lid rotation in the opposite direction to orient the suction cups upwards again.

LID VACUUM: ON and OFF parameters refer to the beginning of the vacuum.

Set vacuum activation so that it occurs before the downward movement begins, specifically when the station is moving up to the lid magazine. Vacuum must be disabled when the lids are above the containers.

LID BLOW: These parameters may be set if disabling of the vacuum is not sufficient, in order to allow detachment of the lids from the suction cups. Set ON and OFF values. If ON=0 and OFF=0 are set, no blow will occur.
These parameters may also be used if opening/ closure of the slave cylinders need to be controlled by a cam control rather than by a time control. In this case the blow function is not used.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 18/22 by pressing pdown.
The following page will be displayed:

```
                LID DISPENSER 2
                                        ###°
CONSENT                 : #
START=###°
LID RELEASE :           ON=###°   OFF=###°
LID DOWN                : ON=###°   OFF=###°

                                        18/22
```

Referring to the instructions provided in paragraph 6 "Lid/foil dispenser station", set the following parameters on this page:

CONSENT: If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the FOIL DISPENSER station of required.

START : Angular value of the ON/OFF commands whose value is greater than the start cam. This value is used to define priority of the ON/OFF commands to be implemented.

LID RELEASE: This parameter is to be set only if cup lids are to be dispensed, otherwise the value of 0,00 sec. should not be edited. If this is the case, a special proximity sensor placed on the cylinder for upwards movement of the station controls the beginning of slave cylinder opening (Part. 8, Fig. 6.13) used to hold/release the lids. The time that can be set in this field represents the delay of cylinder closure, i.e. the duration of cylinder opening.

LID DOWN: Parameters relative to downwards/ upwards movement of the station. Set ON values (downward movement) and OFF values (upward movement).

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 19/22 by pressing pdown.
The following page will be displayed:

```
                    CRIMPER
                                            ###°
CONSENT             :           #
START               :         ###°
CRIMPER DOWN  :  ON=###     OFF=###°

                                            19/22
```

The following parameters for the crimper are shown on this page:

CONSENT: If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the CRIMPER station of required.

START: Angular value that allows enabling of the station during automatic start, and disabling during automatic stop. The value must always be lower than or equal to the lowest of the values set on this page.

CRIMPER DOWN: Parameters relative to

upwards/downwards movement of the station towards the containers. Set ON and OFF values.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 20/22 by pressing pdown.
The following page will be displayed:

```
                    DATER
                                        ###°
CONSENT: #;START;CAMM:###°;SPEED:###%
DATER START:###°  HOMING NOT DONE
###mm ###mm ###mm ###mm ###mm ###mm
###mm ###mm ###mm ###mm ###mm ###mm
                                      20/22
```

The following parameters for the stamping are shown this page:

CONSENT: If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the DATER station of required.

START : Angular value of the ON/OFF commands whose value is greater than the start cam. This value is used to define priority of the ON/OFF commands to be implemented.

SPEED:speed at which the printing head must run

DATER START : actual opening of the printing head; it is necessary to enter the start and end values.

###mm (1st row): position in mm of the printing head for each row during forward printing;
###mm (2nd row): position in mm of the printing head for each row during the return printing;
Go to page 21/22 by pressing pdown.
The following page will be displayed:

```
                  PICK & PLACE
                                        ###°
CONSENT                 : #
START             : ###°
LIFT EJECTION : ON= ###°   OFF= ###°


                                      21/22
```

The following parameters for the pick & place device are shown on this page:

CONSENT: If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the PICK & PLACE station of required.

START CAM: Angular value of the ON/OFF commands whose value is greater than the start cam. This value is used to define priority of the ON/OFF commands to be implemented.

LIFT EJECTION: Parameters relative to the downwards/upwards movement of the station toward. Set ON and OFF values.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

Go to page 2/22 by pressing pdown.

The following page will appear:

```
                 PRODUCT EJECTION
                                        ###°
CONSENT          :          #
START            :        ###°
EJECTION         : ON=###      OFF=###°


                                      22/22
```

The following parameters for this station are shown on this page:
CONSENT: If this value is set to 1, it allows automatic operation of the station.
Set this value to 1 if automatic operation of the PICK & PLACE station of required.

START CAM: Angular value of the ON/OFF commands whose value is greater than the start cam. This value is used to define priority of the ON/OFF commands to be implemented.**EJECTION :** Parameters relative to the downwards/upwards movement of the station toward containers. Set ON and OFF values.

To set or edit the data, follow the instructions provided in **"INSTRUCTIONS ON THE USE OF THE OPERATOR PANEL TO EDIT OR ENTER DATA".**

5.3 Operating procedures

5.3.1 Preliminary controls

Perform the following checks before starting up the machine:

a) Make sure that all the machine's panels and protective guards are solidly fixed in place.
b) Check that the machine has been thoroughly washed and cleaned. Cleaning and washing procedures are described in **CHAPTER 7 - CLEANING AND MAINTENANCE.**
c) Check that the power supply cable is correctly connected to the power grid.
d) Check that the compressed air supply is correct and that the pressure reducer in the pneumatic panel is set to 6 bar.
e) Check that clamp closures on the ice cream line have been tightened sufficiently.
f) Check that the ice cream bypass containers are in place.
g) Check that the emergency controls have been released.
h) Connect up the freezer bypass valves.
i) Check that the containers are correctly positioned in the feed magazines.
j) Check that the lids have been correctly positioned in the feed magazines.
k) Check that the various distributors are correctly fed.

5.3.2 Starting production (with recipes already entered)

Proceed as follows to start up the machine:

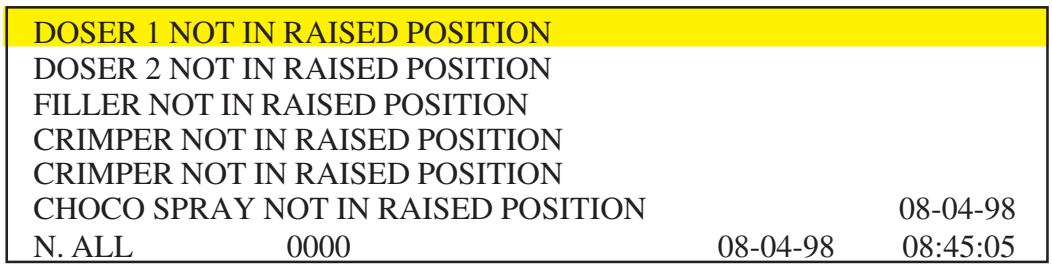
a. Turn on the power to the machine by turning the main switch to the "ON" position. Current alarms will appear on the display.

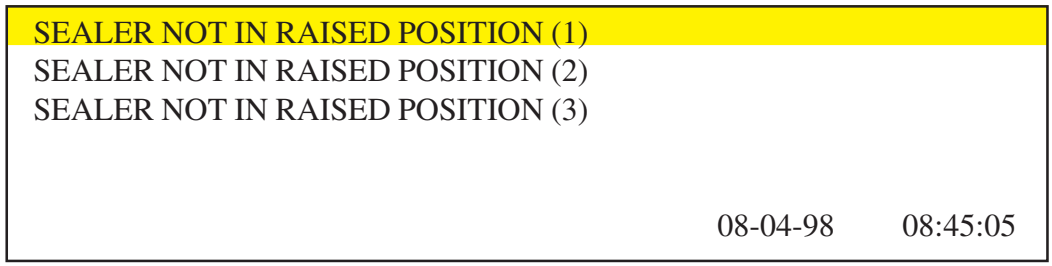
ALARMS			
EMERGENCY ON			
ELECTRONIC SAFETY JOINT			
N. ALL	0000	08-04-98	08:45:05

To display alarm pages, press alarm *(Fig. 5.1)*

press pdown *(Fig. 5.1)*.to view successive alarm pages.

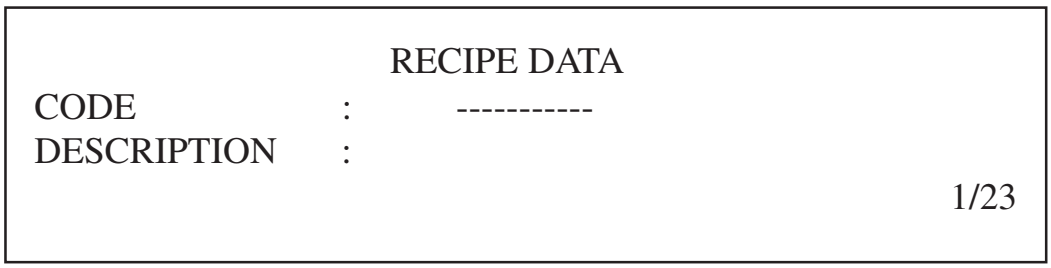
EMERGENCY			
CTD INVERTER PROTECTION TRIPPED			
1TH INVERTER THERMAL PROTECTION TRIPPED			
AUTOGUARD SAFETY DEVICE			
NO EXTERNAL CONSENT			
LOW COMPRESSED AIR PRESSURE			
N. ALL	0000	08-04-98	08:45:05



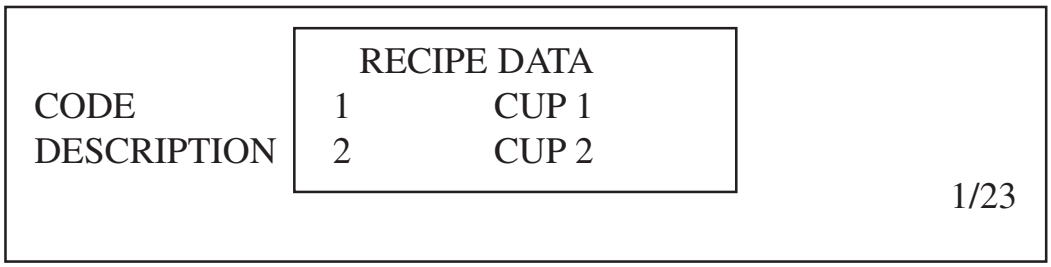


b. Press F11 (fig.*5.1*) to reset current alarms.
The start-up page will now appear.

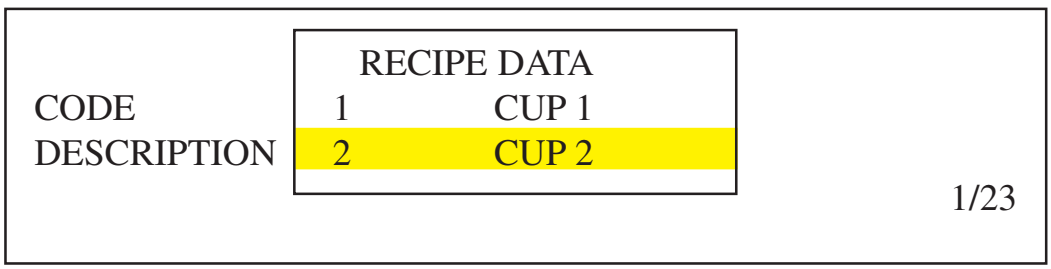
c. Press F5 (Fig. *5.1*) to set the production recipe.



d. Press F6 *(Fig. 5.1)* to view the recipes entered.



e. Press ▲ or ▼ *(Fig. 5.1)* to choose the desired recipe.



f. Press Enter *(Fig. 5.1)*. to confirm the choice of recipe.

```
        RECIPE DATA
CODE              1          CUP 1
DESCRIPTION       2          CUP 2
                                                1/23
```

g. Press F7 *(Fig. 5.1)*. to save the data.

```
OVERWRITE ? (Enter = YES      Clr = NO)          :
```

h. Press Enter *(Fig. 5.1)*. to confirm that you wish to save.

```
SPEED                :              50
POSITION             :              0°
CYCLE                :          MANUAL
   1      1       CUP
```

i. Press F8 *(Fig. 5.1)*.to send the selected recipe to the PLC. A message will appear over the page "please wait transmission is running"

```
SPEED                :              50
POSITION             :              0°
CYCLE                :          MANUAL
   1      1       CUP
```

l. Position a container under the bypass valve outlet.

m. Position a container under the doser outlet chute.

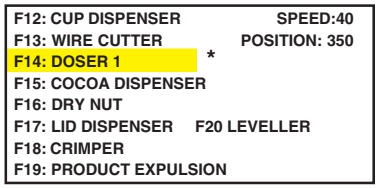
n. Start sending ice cream from the freezer.

o. Wait until the ice cream coming out of the bypass reaches the desired consistency.

p. Position the bypass valve so that ice cream is sent to the dosers by pressing A2 (Fig.5.1).

q. Wait until the ice cream coming out of the dosers reaches the desired consistency.

r. Press clr *(Fig. 5.1)* to view the first page of function keys. Press F16 or F17 *(Fig. 5.1)*, depending on the doser to use, to start the lamellas moving in synchrony with dosing. When ice cream volume and consistency is correct, press the automatic production key F3 *(Fig. 5.1)*. and the machine will begin the production cycle automatically.
If you select the manual production cycle, turn on individual stations by pressing the station on buttons.



s. Starting up the machine in manual mode: While F3 is flashing, press F1 to start belt movement, then press F4. Turn on the necessary stations using the corresponding buttons. Normally, you should press F12 (cone dispenser) or F13 (cup dispenser) first and then the subsequent stations. In any case, it is a good idea to turn on the CRIMPER (F19) and PRODUCT EJECTION (F21) stations ahead of time if producing cups. If making cones, press only CRIMPER (F19). When all required stations have been turned on, press F3 to switch from manual to automatic mode. To turn on the stations mentioned above, press clr to view the function key page and then pdown to go on to the next page.
Press the necessary buttons.

t. Starting up the machine in automatic mode: While F3 is flashing, press F1 and, F3, F4 in order..
The stations required will come on in order.

5.3.3 Emergency stop

In the event of malfunctioning of a component, press the emergency pushbuttons (Part 1, Fig. 5.1) to turn off all the machine's electrical functions. There is a raised red emergency pushbutton on the operator panel, and an emergency pushbutton on a rope on the operator side of the machine.
To prepare the machine to resume operation after having eliminated the problem, turn the emergency pushbutton (Part 1, Fig. 5.1) anti-clockwise and release it and then press reset F11 *(Fig. 5.1)* on the operator panel or press the blue reset button on the emergency pushbutton on the operator side of the machine (Fig. 5.1) and then press the reset button F11 *(Fig. 5.1)*.

5.3.4 End of production

Proceed as follows to stop the machine when in automatic mode:

- Press the end of production button, F4 *(Fig. 6.2)*. All operating stations in memory will stop automatically.

To stop the machine when in manual mode:
- Turn off stations by pressing individual buttons on the operator interface panel.

- Or, press F4. In this case, all stations in operation will stop in their resting position at the same time.
- When the stations have stopped, press F1 to stop the lamellas.

Cleaning and washing procedures are described in **CHAP. 7 - CLEANING AND MAINTENANCE**.

5.3.5 Product changeover

To change the size of the cup, perform the following procedure:
a)If no mechanical parts have to be replaced:

-Select the recipe setting page by pressing F6 (see paragraph 5.2.1 and 5.3.2, points d,e,f)
- Select the recipe that has to be produced, then press Enter.
-Press F9 to confirm the new selection.

b) If mechanical parts have to be replaced:
-Turn the machine off following the procedure described in paragraph 5.3.4.
- Replace the old station with a new one, storing the position of the new station (i.e. Cone or Cup loading). Replace also the remaining mechanical parts and perform the required replacements (see Chapter 6).
-Turn the machine on and perform the following phases:

- Perform the preliminary checks **(see paragraph 5.3.1)**- Perform the preliminary checks **(see Chapter 5.3.1)**
- Set the positions of the stations **by selecting page Group positions (see paragraph 5.2.1 pages 2/15).** Select the removed station and configure value “0” in the corresponding position. Select the new station and type the related position number. Press F9 to confirm the changes and store them.
-Set the positions of the stations by selecting page Group positions (see paragraph 5.2.1 pages 2/15). Select the removed station and configure value 0 in the corresponding position. Select the new station and type the related position number. Press F9 to confirm the changes and store them.
- Then, perform the procedure described in point a).-Then, perform the procedure described in point a).
- Perform the procedure described in chapter Starting production **(see paragraph 5.3.2).**

5.4 Turning on stations manually one by one

Individual stations may be turned on manually from **the function key pages.**

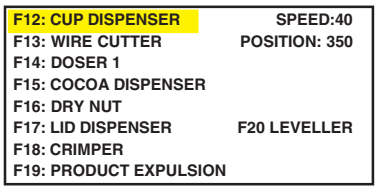
To turn on individual stations in manual mode, go to the **function key pages** and proceed as follows:

- press 

(Fig. 5.1) on the control panel to view the **first function key page;**

- press the key (such as 

(Fig. 5.1) for cup



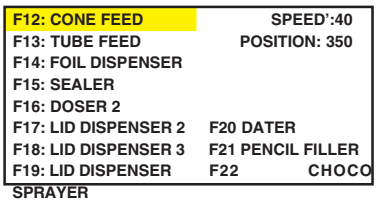
dispenser) to turn on the station;

- if the station you want to turn on does not appear on the **first function key page,** press 

(Fig. 5.1) on the control panel to view the **second function key page;**

- press the key (such as 

(Fig. 5.1) for cone dispenser) to turn on the station.



5.5 List of alarms and help pages

0-EMERGENCY
- RELEASE EMERGENCY PUSH BUTTON
- CHECK EXTERNAL EMERGENCY CIRCUIT
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/0

1-INVERTER OVERLOAD
- CHECK MAIN MOTOR INVERTER
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/1

2-INVERTER OVERLOAD (THERMAL RELAY)
- CHECK THERMAL RALAY 3Q1 (INVERTER)
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/2

3-AUTOGUARD SAFETY
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/3

4-NO EXTERNAL CONSENT
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/5

5-AIR PRESSURE
- CHECK PRESSURE SWITCH 12S2
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/6

6-CHAIN OVERLOAD (THERMAL RELAY)
- CHECK THERMAL RELAY 3F1 (CHAIN DRIVE)
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/7

7-BELT OVERLOAD (THERMAL RELAY)
- CHECK THERMAL RELAY 3F2 (BELT DRIVE)
- PRESS RESET BUTTON (F11)
- CHECK INPUT I:1/9

8-EMERGENCY PUSH BOTTON
- RELEASE EMERGENCY PUSH BOTTON
- CHECK INPUT I:1/10
- PRESS RESET BUTTON (F11)

9-SAFETY GUARD 1
- RESEALSE SAFETY GUARD 1
- CHECK INPUT I:1/11
- PRESS RESET BUTTON (F11)

10-CHAIN SAFETY
- CHECK SENSOR 12S3
- CHECK INPUT I:1/14
- PRESS RESET BUTTON (F11)

11-LID PRESSING NOT HIGH
- CHECK THE POSITION OF LID PRESSING
- CHECK SENSOR 14S1 - 14S2
- CHECK INPUT I:3/0 - I:3/1
- PRESS RESET BUTTON (F11)

12-LID PRESSING NOT HIGH
- CHECK THE POSITION OF LID PRESSING
- CHECK SENSOR 14S3 - 14S4
- CHECK INPUT I:3/2 - I:3/3
- PRESS RESET BUTTON (F11)

13-SAFETY GUARD 2
- RELEASE SAFETY GUARD 2
- CHECK INPUT I:1/12
- PRESS RESET BUTTON (F11)

14-SEALING UNIT NOT HIGH (1)
- CHECK THE POSITION OF SEALING UNIT 1
- CHECK SENSOR 12S13
- CHECK INPUT I:1/24
- PRESS RESET BUTTON (F11)

15-SEALING UNIT NOT HIGH (2)
- CHECK THE POSITION OF SEALING UNIT 2
- CHECK SENSOR 12S14
- CHECK INPUT I:1/25
- PRESS RESET BUTTON (F11)

16-SEALING UNIT NOT HIGH (3)
- CHECK THE POSITION OF SEALING UNIT 3
- CHECK SENSOR 12S15
- CHECK INPUT I:1/26
- PRESS RESET BUTTON (F11)

17-ENCODER RESET NOT DONE
- CHECK ENCODER WIRING
- CHECK BOARD HSCE
- PRESS RESET BUTTON (F11)

18-ENCODER FAULT
- CHECK ENCODER WIRING
- CHECK BOARD HSCE
- PRESS RESET BUTTON (F11)

19-LID VACUUM OFF
- CHECK LID POSITION
- CHECK SENSOR 24SP5
- CHECK INPUT I:2/00
- PRESS RESET BUTTON (F11)

20-PLC BATTERY LOW
- DO NOT CUT THE MAIN POWER
- AND CHANGE THE PLC BATTERY
- THEN CHECK THE PARAMETERS ON
- THE OPERATOR DISPLAY

21-CALIBRATOR NOT HIGH
- CHECK THE POSITION OF CALIBRATOR
- CHECK SENSOR 12S10
- CHECH INPUT I:1.21
- PRESS RESET BUTTON (F11)

22-SAFETY GUARD 3
- RELEASE SAFETY GUARD 3
- CHECK INPUT I:1/13
- PRESS RESET BUTTON (F11)

23-INDRAMAT PARAMETERS TRANSMISSION ERROR

24-LID DISPENSER BELT THERMAL RELAY
- CHECK THERMAL RELAY 3Q2
- CHECK INPUT I:1/26
- PRESS RESET BUTTON (F11)

25-LID PRESSING NOT HIGH
- CHECK THE POSITION OF LID PRESSING
- CHECK SENSOR 14S5 - 14S6
- CHECK INPUT I:3/4 - I:3/5
- PRESS RESET BUTTON (F11)

26-SEALING UNIT NOT HIGH (4)
- CHECK THE POSITION OF SEALING UNIT 4
- CHECK SENSOR 12S16
- CHECK INPUT I:1/27
- PRESS RESET BUTTON (F11)

27-SEALING UNIT NOT HIGH (5)
- CHECK THE POSITION OF SEALING UNIT 5
- CHECK SENSOR 12S17
- CHECK INPUT I:1/28
- PRESS RESET BUTTON (F11)

28-SEALING UNIT NOT HIGH (6)
- CHECK THE POSITION OF SEALING UNIT 6
- CHECK SENSOR 12S18
- CHECK INPUT I:1/29
- PRESS RESET BUTTON (F11)

29-SAFETY MOTOR TWISTER 1
- CHECK THE TWISTER 1 INVERTER
- CHECK INPUT I:1/31
- PRESS RESET BUTTON (F11)

30-WAFFLE NOT HIGH
- CHECK THE POSITION OF WAFFLE
- CHECK SENSOR 14S7 - 14S8
- CHECK INPUT I:3/14
- PRESS RESET BUTTON (F11)

31-INK JET DRIVE CIRCUIT BRAKER

32-INK JET DRIVE NOT OK (Ith)

33-INK JET DRIVE NOT OK (Ctd)

34-INK JET ENCODER RESET NOT DONE

35-INK JET ENCODER FAULT

36-LOW LEVEL GREASE TANK

37-OVEROPRESSURE IN LUBRICATION CIRCUIT

HOYER COMET N

6 - OPERATING STATIONS

Contents

6.1 Description of operating stations

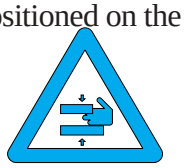
6.1.1 Bulk container feed station

The bulk container feeders *(Fig. A.1)*, assembled at the end of the machine, serve to deposit bulk containers into the slots in synchrony with the movement of the trays.
The feeder is composed of magazines *(Pos. 1, Fig. A.1)* into which containers must be loaded manually, and of a bulk container dispenser operated by pneumatic cylinders *(Pos. 2, Fig. A.1)*.
The action of releasing the container and inserting it into the slot in the lamella takes place by combining the pneumatic movement opening the blades positioned at the lower end of the magazine with the mechanical movement (commanded by a cam) of a carriage holding suction cups which grip the bottom of the containers at the upper dead point and release them in position in the lamella. To enable the station in manual mode, press the button 

(Page 1).

WARNING:

The construction of the _bulk container feeding station does not permit protection of moving parts at the sides in the tray area. A **crushing hazard** sign is positioned on the fixed guard.



Adjustment

Intervention times may be altered by adjusting the corresponding cams.
This applies to the container release command and to activation/deactivation of the vacuum, which must always take place before the suction cup support carriage is at its upper dead point.
The vacuum must be released when the bulk container is positioned in the slot in the lamella, before the suction cup carriage reaches its lower dead point.
For timing and cam settings, refer to point **5.2.1, Setting working parameters**

A number of different mechanical adjustments are possible:

- By slackening the lock nuts *(Pos. 7, Fig. A.1)* and adjusting the knob *(Pos. 3, Fig. A.1)* you may adjust the height of the magazine holder frame *(Pos. 1, Fig. A.1)*; the suction cup trolley's stroke is invariable, so you must adjust magazine height to align the bottom of the containers with the suction cups;
- height of the suction cup holder stems *(Pos. 4, Fig. A.1)* in relation to the decrease in container height.

Replacement for format changes

Changes in bulk container geometry require replacement of the magazines *(Pos. 1, Fig. A.1)*, *the blades (Pos. 5, Fig. A.1)* and, possibly, of the suction cups *(Pos. 6, Fig. A.1)*.
Consult the spare parts catalogue for correct identification of parts.

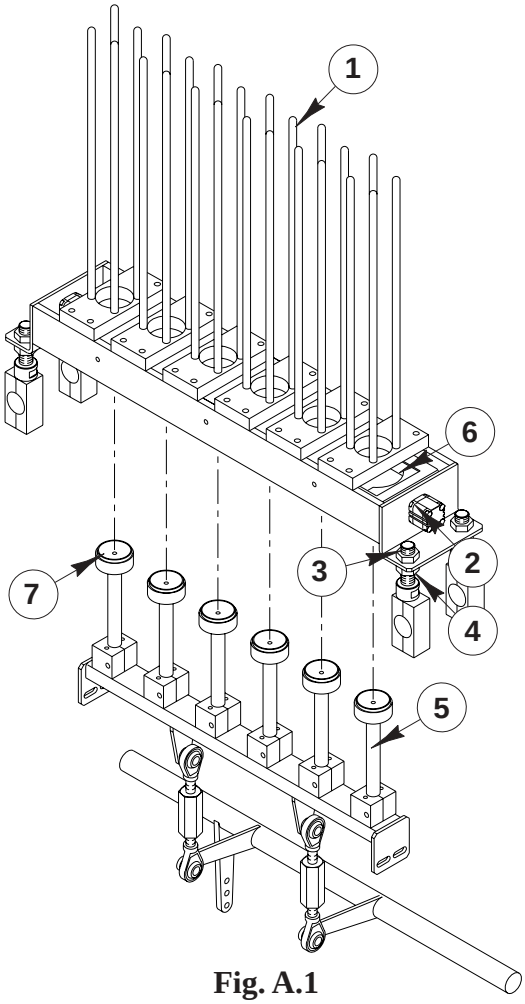


Fig. A.1

6.1.2 Cone dispenser station

The function of the cone dispensers (*Fig.A.3)* is that of placing the cones inside the pits mounted on the lamellas; the dispensers are assembled at one end of the machine and are synchronized with the motion of the trays.
The station is composed of magazines *(Pos.1, Fig. A.3)*, in which the cones are to be loaded manually, and of a cone dispenser activated by pneumatic actuators *(Pos.2, Fig. A.3)*.
For details on how to activate the station on a manual cycle. To enable the station in manual mode, press the button (Page 1).

Adjustment

Press the make-ready operation button (see Chapter 5), until the upper cone stop blades open.
Press the emergency button on the control panel to turn off the air feed.
When the machine is not working and the cone-stop blades are open *(Part.3, Fig. A.3)* put two cones in the magazine.
Check that the cone in the release position rests correctly in the calibrated holes of the rocking levers *(Part.4, Fig. A.3)*, then make sure that the cone in the release position is 5 mm below the cone-stop blade.
Make sure that the cone release rocking levers hold the wafers without exerting too much pressure on them.
If the distance is greater, lower the cone magazines *(Part.1, Fig.A.3) by loosening the clamp screws (Part.5, Fig.A.3)* of the magazine holder crosspiece; if the cone in the release position is inside the cone-stop blades, raise the cone magazine holders to the required distance.
For details on how to activate the station, refer to **Chapter 5.**

WARNING:

The lateral protection of the kinematic mechanisms in connection with the trays is not allowed with this kind of cone dispenser stations.
A sign of **a crushing hazard signal** is placed on the fixed protection.

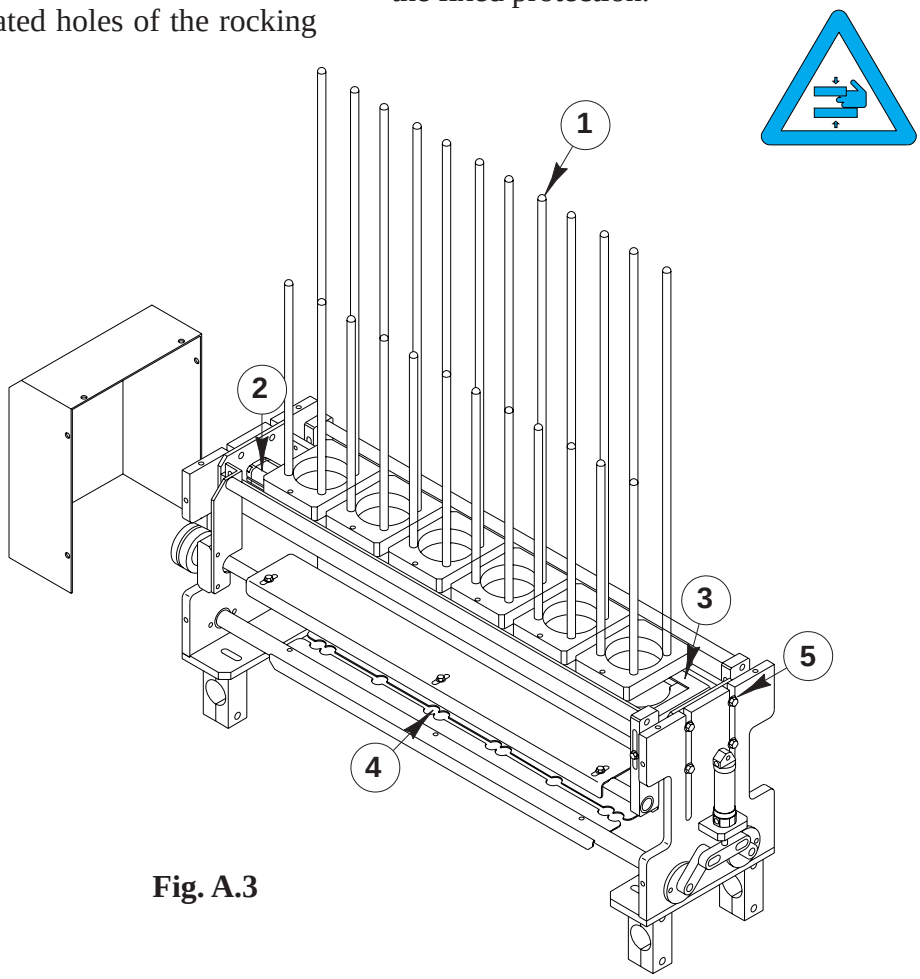


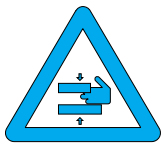
Fig. A.3

6.1.3 Calibration and chocolate sprayer station

A fixed structure *(Part. 1, Fig. A.4)* supports a pneumatic actuator *(Part. 2, Fig. A.4)* which controls the upward and downward movement of the mobile frame *(Part. 3, Fig. A.4)*.
The calibrators *(Part. 4, Fig. A.4)* are mounted on the front of the frame, whilst the chocolate sprayers are assembled on its rear part *(Part. 5, Fig. A.4)*.
The cone calibration is necessary for spreading the mouth of the paper wrapped around the wafer which tends to fold over during the feeding phase.
The calibrators are attached on springs so that they can adapt perfectly to the cone inside the pit (even if the height of the chocolate dosing is changed).
The chocolate sprayer is used to make the wafer water-resistant.
To enable the station in manual mode, press the button (Page 1).

WARNING

The lateral protection of the kinematic mechanisms in connection with the trays is not allowed with these kinds of calibration and spray stations.
There is a **crushing hazard signal** placed on the fixed protection.



Adjustments

The height of the mobile frame can be adjusted by loosening the screw *(Part. 6, Fig. A.4)* and by turning the ring nut *(Part. 7, Fig. A.4)* clockwise to increase the stroke of the pneumatic actuator, or anticlockwise to decrease it.
Tighten the screw *(Part. 6, Fig. A.4)* at the end of the operation.
Operate on the pressure regulator *(Part. 8, Fig. A.4)*, to modify the spraying angle and the spraying distance.
Act on the sprayer's regulation screw *(Part. 9, Fig. A.4)*, to adjust its flow (See table).
The global flow rate of chocolate can be regulated by adjusting the flow regulator *(Pos.10, Fig. B.3)* of the feed pipe.
The beginning and the motion duration of the mobile frame and the spraying time which has to take place during the lamellas' stop phase can be adjusted through the operation panel that is interfaced with the PLC. Refer to **"Setting the work parameters"**.

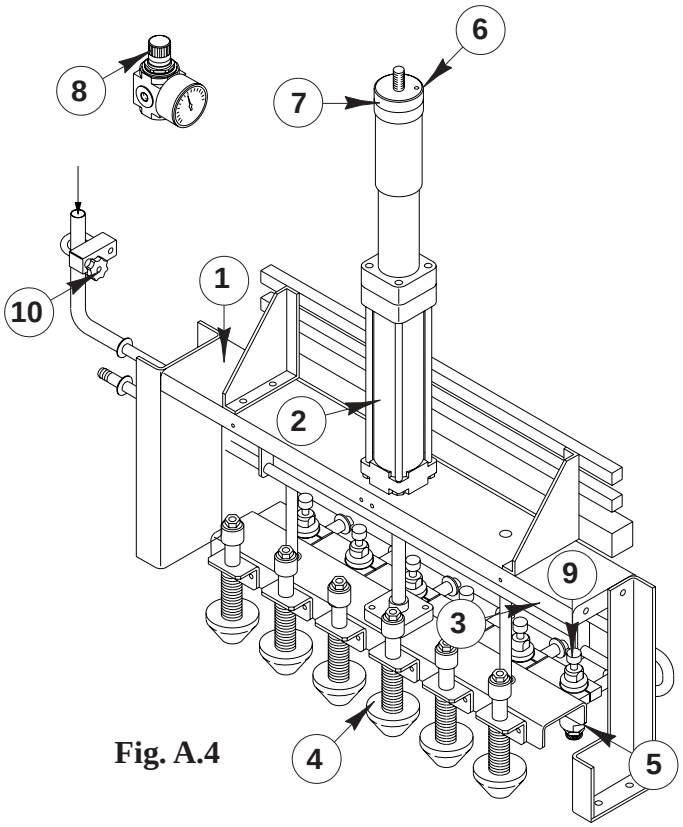
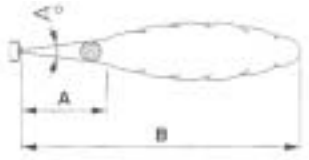


Fig. A.4



Model	Pressione H_2O (l/h) Pressure H_2O (l/h)	Spruzzo con H= 20 cm Spray H= 20 cm				Air	
		Air bar		A cm	B cm	Air press. (bar)	Air l/min.
B8-S15	27	2.0	20	51	6.7	2.0	144
	30	3.0	20	53	7.0	3.0	190
	31	4.0	21	58	7.6	4.0	240
	31	5.6	22	63	8.2	5.6	315

6.1.4 Chocolate spray pump equipment

A frame with wheels *(Pos.1, Fig. A.5)* supports the thermo-regulated chocolate tank *(Pos.2, Fig. A.5)* by means of a thermostat *(Pos.3, Fig. A.5)*.
The inside temperature of approx 34¡ to 37¡ is ensured by the water contained in the jacket/air space which is heated by electrical resistances *(Pos.4, Fig. A.5)*.
The flow rate of the positive-displacement pump can be adjusted by loosening the screw with the wrench and by turning the ring nut *(Part.5 Fig.A.5)* anticlockwise to increase the stroke of the pneumatic actuator, or clockwise to decrease it.
Tighten the screw with the wrench at the end of the operation.
During production, the tank has to be filled manually.
To activate the chocolate heating, press the "chocolate tank heater" button *A1 (See* **Chap.5***)*.
For details on how to start the station on a manual cycle, proceed as shown in Charter 5.
The chocolate return route to the tank is necessary because the pipes are not heated; hence the re-cycling bypass prevents the chocolate from stopping and solidifying inside the pipe. This is achieved by carrying out continuous pumping cycles whose ON/OFF intervals can be set in the CHOCO SPRAYER page (See Chapter 5 for details). This cycle is carried out even when the machine is not operating. To turn off the valve which controls the pump, set the PUMP OFF TIME value to zero.
During production, the dosing volume is regulated by increasing or decreasing the travel of the positive-displacement pump and by regulating the opening times of the spray nozzles through the programmer.
Time adjustment is achieved by modifying the degrees on the related cam.
To perform such an adjustment refer to and compare with **5.2.1 Setting the work parameters**.
The chocolate is fed in the cone wafers by means of sprayers.
The incoming chocolate is atomized by the action of compressed air which is sent to the appropriate connection.
The customer is responsible for sterilization of the line downstream of the filter.

WARNING

The water in the air space must be heated at least half an hour before use. **See Chapter 5**.

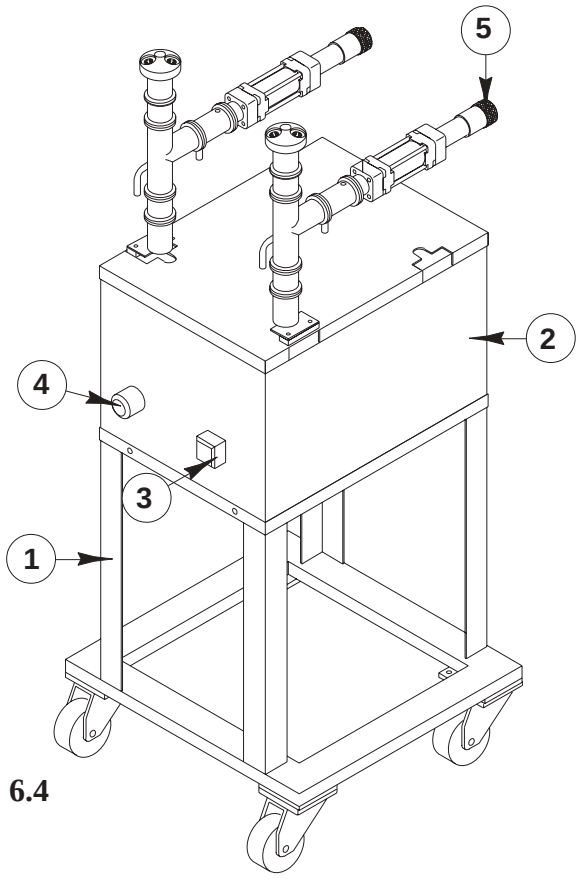


Fig. 6.4

Fig. A.5

6.1.5 Dispenser Handling Station

The filling of the containers with ice cream takes place through time elapse fillers assembled on a mobile frame.
The handling of the mobile frame *(Pos. 1, Fig. B.5)* is achieved by an articulated quadrilateral *(Pos. 2, Fig. B.5)* controlled by a cam *(Pos. 3, Fig. B.5)*.
The articulated quadrilateral is connected to two pneumatic actuators.
The function of the actuator (*Pos. 4, Fig. B.5).* is to get the drive roller *(Pos. 5, Fig. B.5)* adhere to the cam (when deactivated, the motion of the mobile frame stops).
The function of the actuator (*Pos. 6, Fig. B.5)* is that of bearing the mobile frame load during the upward stroke (the pressure of the actuator can be adjusted by means of a governor *(Pos. 7, Fig. B.5)*).
During the downward stroke the pneumatic actuator
(Pos. 6, Fig. B.5) is connected when discharging by a release pneumatic valve which makes the motion of the mobile frame much smoother.
The position of the mobile frame can be adjusted in height by loosening the screw nut *(Pos. 8, Fig. B.5)* with the wrench and by acting on the tie rod *((Pos. 9, Fig. B.5)*.
Tighten the screw nut *(Pos. 8, Fig. B.5)* with the wrench at the end of the operation.

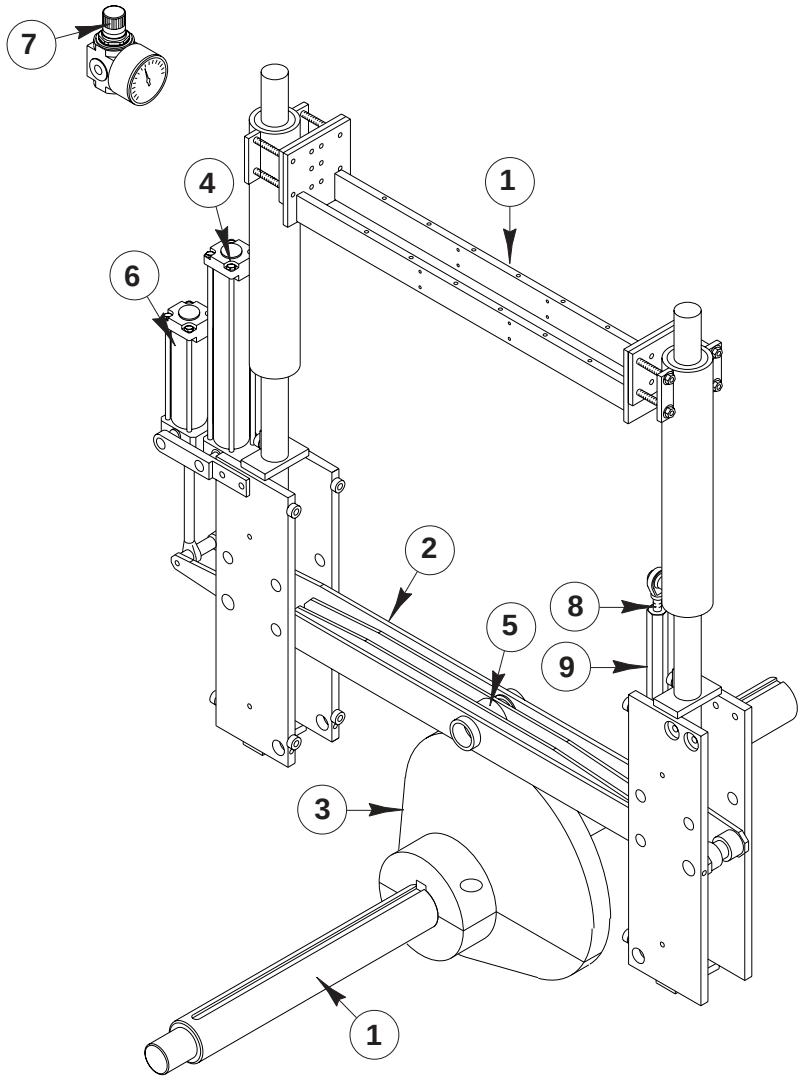


Fig. B.5

6.1.6 Ice cream fillers (1 flavour)

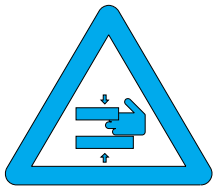
The containers are filled with ice cream by means of fillers *(Pos.1, Fig. B.6)* which are activated by pneumatic actuators.
The fillers are mounted on a mobile frame.
The upward and downward movements of the mobile frame are achieved through an articulated quadrilateral controlled by a cam (See Dispenser Handling Station).
Usually, when in the filling position, the end part of the dosage nozzles should be inside the container placed under the lid's positioning level in order not to damage the ice cream decoration after pressing the lid.
The required quantity of ice cream can be obtained by modifying the speed of the freezer appropriately, and by adjusting the beginning and the duration of the filling phase on the operator interface panel.

To enable the station in manual mode, press the button 

(Page 1).

WARNING

The lateral protection of the kinematic mechanisms in connection with the trays is not allowed with this kind of ice cream filling stations.
A **crushing hazard signal** is placed on the fixed protection.



Adjustments

Through the control panel which is interfaced with the PLC unit, the beginning and the duration of the mobile frame's motion can be adjusted with the dispensing time which has to take place when the lamellas stop. Refer to **5.2.2 Setting the work parameters**.
Moreover, the quantity of ice cream to be dispensed from each individual dispenser can be balanced among the lines by adjusting the flow regulators *(Pos.2, Fig. B.6)*.

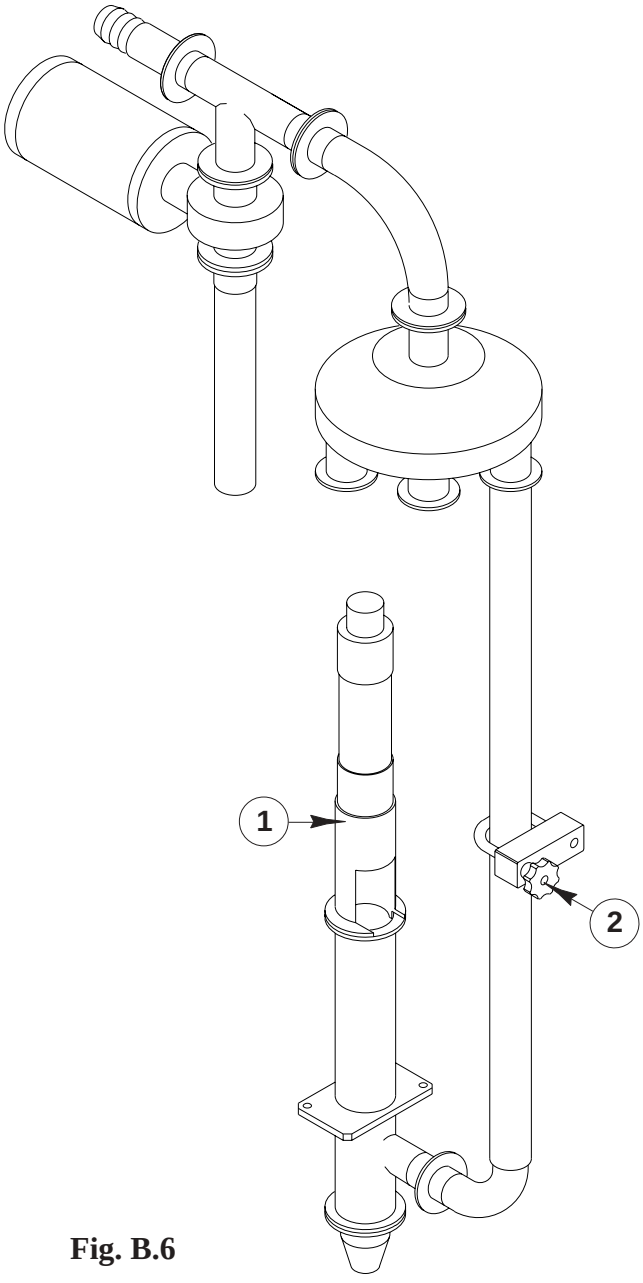


Fig. B.6

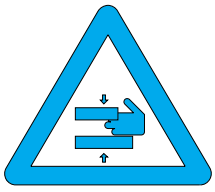
6.1.7 Ice cream fillers (2 flavours)

The containers are filled with ice cream by means of fillers *(Pos.1, Fig. B.7)* which are activated by pneumatic actuators.
The fillers are mounted on a mobile frame.
The upward and downward movements of the mobile frame are achieved through an articulated quadrilateral controlled by a cam (See Dispenser Handling Station).
Usually, when in the filling position, the end part of the dosage nozzles should be inside the container placed under the lid's positioning level in order not to damage the ice cream decoration after pressing the lid.
The required quantity of ice cream can be obtained by modifying the speed of the freezer appropriately, and by adjusting the beginning and the duration of the filling phase on the operator interface panel.

To enable the station in manual mode, press the button (Page 1).

WARNING

The lateral protection of the kinematic mechanisms in connection with the trays is not allowed with this kind of ice cream filling stations.
A **crushing hazard signal** is placed on the fixed protection.



Adjustments

Through the control panel which is interfaced with the PLC unit, the beginning and the duration of the mobile frame's motion can be adjusted with the dispensing time which has to take place when the lamellas stop. Refer to **5.2.2 Setting the work parameters**.
Moreover, the quantity of ice cream to be dispensed from each individual dispenser can be balanced among the lines by adjusting the flow regulators *(Pos.2, Fig. B.7)*.

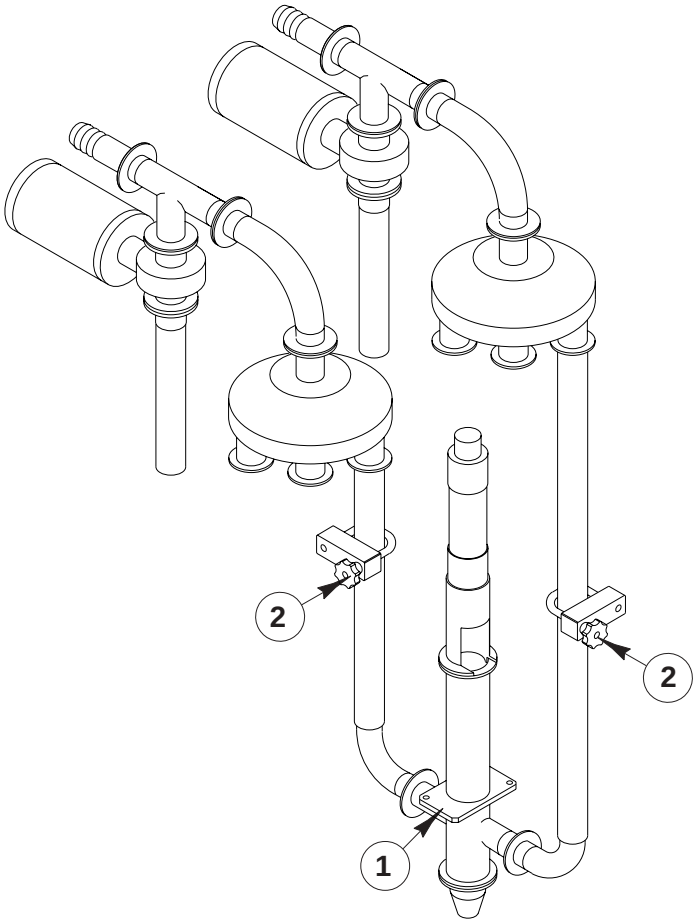


Fig. B.7

6.1.8 Topping

The topping station comprises nozzles *(Pos.1, Fig. B.10)* supplied by manifolds *(Pos.2-3, Fig. B.10)* and connected to the power supply by means of flexible pipes, controlled by pneumatic actuators *(Pos.4, Fig. B.10)*.
The operator's panel, interfaced with a PLC, enables to set the start and end of the dispensing that must occur when the shutters are idle.
To circulate the chocolate from the tank to the sprayer and return it back to the tank when the machine is idle, perform the operations described in **Chapter 5**.
Returning the chocolate to the tank is essential because the bypass prevents the chocolate from stopping inside the pipe and solidifying due to the high temperature of the pipes. This operation can be performed by always carrying out pumping cycles with settable ON/OFF cycle. For more information, see **Chapter 5**. This cycle can also be performed when the machine is idle. To disable the valve that controls the pump, set value PUMP OFF TIME to zero.
During production, the dosing volume can be adjusted by reducing or increasing the flow rate of the pump and by adjusting the opening time of the spraying nozzles by means of a programmer.
To adjust the time settings, it is sufficient to change the degree on the corresponding cam, as explained in **Chapter 5**.
To enable the station in manual mode, press buttons Topping F14 (Page 1).

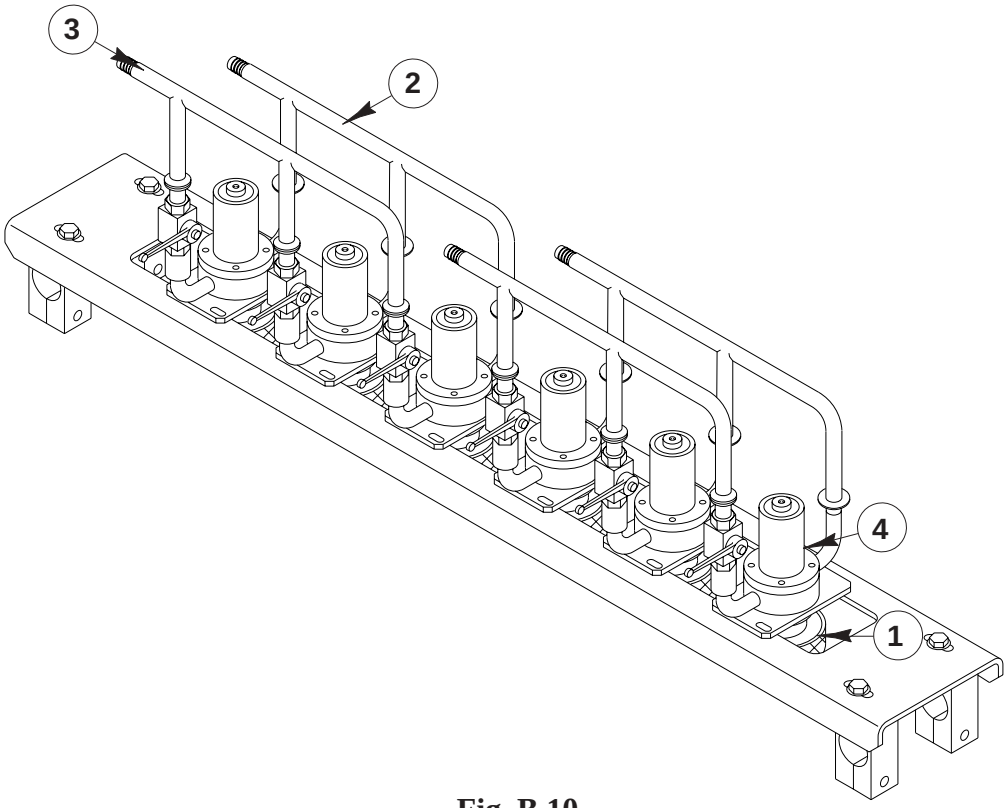


Fig. B.10

6.1.9 Chip doser

This device, fitted on the frame, is used to distribute chips of nuts, chocolate or of other ingredients on the product. The doser comprises a hopper *(Pos.1, Fig. B11)* connected to distribution channels *(Pos.2, Fig. B.11)* where the product flows due to the thrust of vibrations applied by the vibrator to the channels *(Pos.3, Fig. B.11)* .

The quantity of dosed product can be set by appropriately adjusting the start and duration of the dosing with a programmer, as described in **Chapter 5.**

To enable the station in manual mode, press buttons Topping F13 (Page 2).

Adjustments

Before starting production, check that the hopper and dosing channels are completely dry.

It is sufficient to adjust the angle of operation of the vibrator, loosen the screws of the rod that supports the vibrator *(Pos.3, Fig. B.11)* to optimize the flow of the product that has to be dosed.

To increase or reduce the dosing volume, it is necessary to adjust the pressure regulator *(Pos.4, Fig. B.11)*: clockwise to increase the intensity of vibration and counterclockwise to reduce it.

This operation can be performed by means of the cam on the operator's panel.

For more information, see **Chapter 5.**

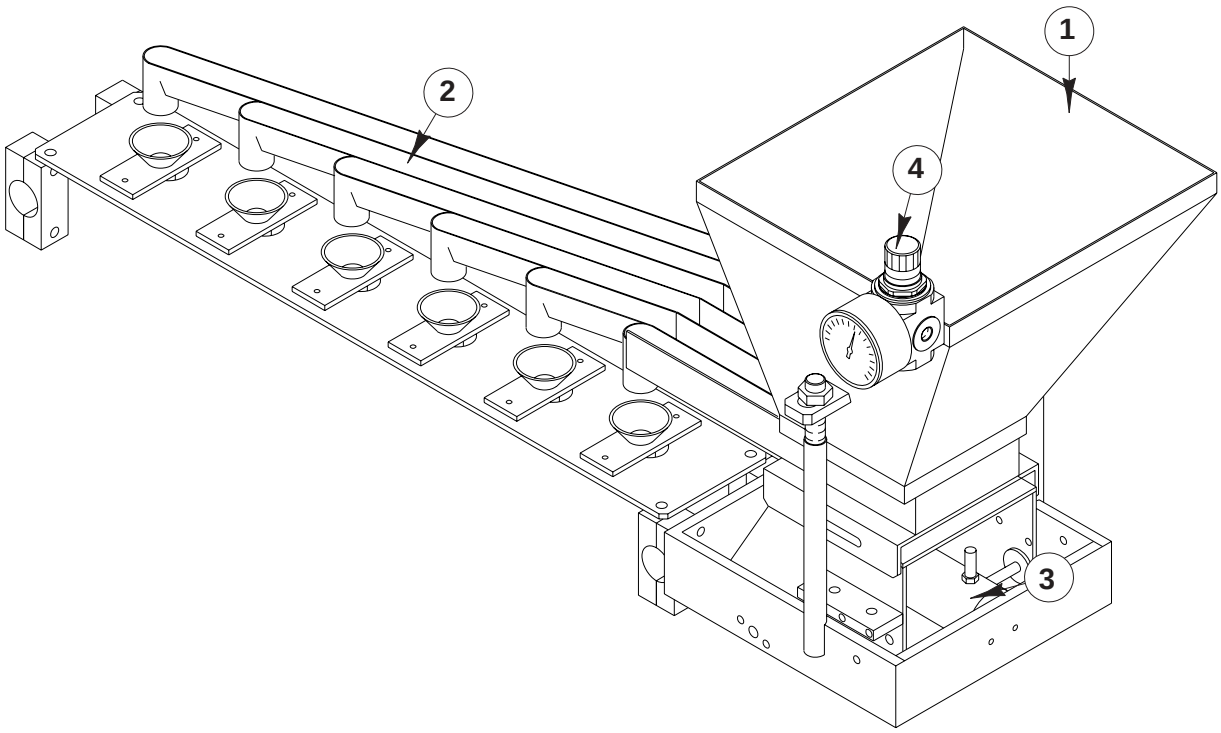


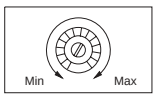
Fig. B.11

6.1.8 Lid/alu-foil dispenser

This device is composed of lid/foil units *(Part.1, Fig.C.3)* assembled on a holder fixed to the structure, and of a mobile frame *(Part.2, Fig.C.3)*.
The handling of the mobile frame is achieved by means of an articulated quadrilateral
(Pos. 3, Fig. C.3) that is controlled by a cam *(Pos. 4, Fig. C.3)*.
The articulated quadrilateral is connected to two pneumatic actuators
The function of the actuator (*Pos. 5, Fig. C.3)*. is to get the drive roller *(Pos. 6, Fig. C.3)* adhere to the cam (if deactivated the movement of the mobile frame stops).
The function of the actuator (*Pos. 7, Fig.C.3)*. is that of bearing the load of the mobile frame during the upward phase (the pressure of the actuator can be adjusted by means of the governor *(Pos. 8, Fig. C.3)*).
During the downward phase the pneumatic actuator *(Pos. 7, Fig. C.3)* in the unload mode is connected to the release pneumatic valve which makes the movement of the mobile frame much smoother.
Assuming that, initially, the station is located in a high position, the operation sequence is the following:
a) Activation of the suction cups vacuum controlled by the cam.
b) Suction pressure control by means of a vacuum detector which indicates the correct picking of lids. If there is no vacuum, this means that one or more lids/foils are not attached safely to their respective suction cup. Under these conditions the station does not move down, the vacuum turns off to be turned on again in the next cycle. However, if the vacuum detector indicates that there is a vacuum in the suction cups, the down stroke of the station may take place.

PLEASE NOTE:

The threshold of the vacuum detector can be set by adjusting a screw located on the pneumatic panel.



If the station happens to move down even without picking up the lids/foils, adjust the vacuum detector by increasing the threshold (rotate towards MAX) until the station makes no downward motion in the absence of lids. However, if in the presence of lids the station moves down, decrease the threshold (rotate towards MIN).
c) A cam controls the downward stroke of the mobile crosspiece.
d) The suction cup holder is rotated by 180 degrees downwards by means of the rotating actuator *(Part.9, Fig.C.3)*.
e) The lid/foil vacuum is turned off by a cam so that the lids/foils are released.
f) The mobile crosspiece moves back to its starting position.
g) The suction cup holder is rotated by 180 degrees upwards.
For details on how to activate the station, see **Chap.5.**

Adjustments

For setting the information on the cams, refer to **Chapter 5. Setting the work parameters**.
Several different mechanical adjustments are possible:
- By loosening the stop nuts *(Pos. 10, Fig. C.3)* and by acting on the lock nuts *(Pos. 11, Fig. C.3)* the positioning of the magazine holder frame is achieved in height *(Pos. 1, Fig.C.3)*.
- By loosening the stop nuts *(Pos. 12, Fig. C.3)* and by acting on the lock nuts *(Pos. 13, Fig. C.3)* the positioning of the mobile frame is achieved in height *(Pos. 2, Fig.C.3)*.

WARNING

The lateral protection of the kinematic mechanisms in connection with the trays is not allowed with lid dispenser stations.
A **crushing hazard signal** is placed on the fixed protection..

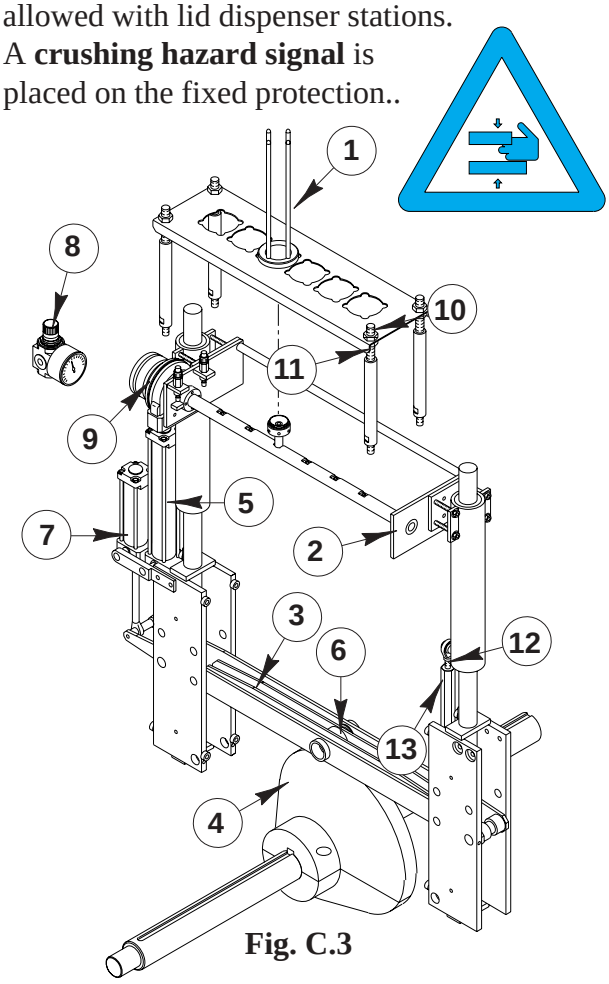


Fig. C.3

6.1.9 Cup lid sealing station

This station uses buffer tools *(Part.1, Fig.D.2)* that enable the pressing of the lid under the edge of the container. The buffer tools are assembled on the mobile crosspiece *(Part.2, Fig.D.2)* and they are controlled by a system of levers activated by a pneumatic actuator *(Part.3, Fig.D.2).*
The downward movement brings these tools *(Part.1, Fig.D.2)* in contact with the cones or the cups, and the related lids, which were to be placed previously, in order to press them.
To enable the station in manual mode, press the button (Page 1).

WARNING:
The lateral protection of the kinematic mechanisms in connection with the trays is not allowed with this kind of lid sealing stations.
A **crushing hazard signal** is placed on the fixed protection.

Adjustments
The process is controlled by means of a cam through the operation panel. See **Chapter 5. Setting the work parameters**.
The position of each crimping/pressure tool is adjusted one by one by operating on the screw nut and on the lock nut that fix it to the mobile crosspiece.
The purpose of the counterplates *(Part.4, Fig.D.2)* that are placed under the lamella is that of creating a reaction force to produce the right pressure so that the lid may be inserted correctly.
The detail that is assembled on the counterplate *(Part.5, Fig.D.2)* can be replaced if worn.

Replacements for format changeover

If the cup diameter is different from the previous one at format changeover, it is necessary to replace the buffer tool *(Part. 1, Fig. D.2)*

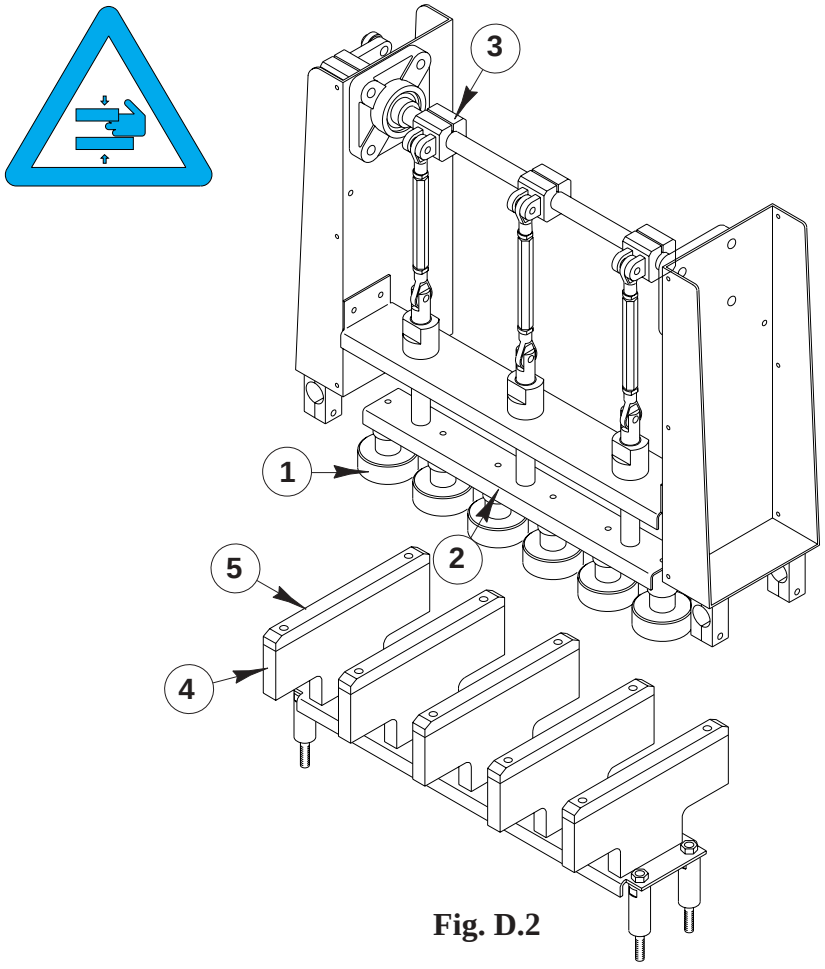


Fig. D.2

6.1.12 Cover welding station

This device is constituted by welding heads *(Part 1, Fig.D.3)* fitted on the mobile upright *(Part 2, Fig.D.3)* , which is driven by a system of levers *(Part 3, Fig.D.3)* and controlled by pneumatic actuators *(Part 4, Fig.D.3)*.
The lowering movement caused by the pneumatic actuators *(Part 4, Fig.D.3)* places the welding heads *(Part 1, Fig.D.3)* in contact with the cups and covers that have to be welded.

To enable the station in manual cycle, press the button F17 (Page 2).

Adjustments
The operating mode and temperature of welding heads can be set on the operator's panel, as explained in **Chapter 5. Setting working parameters**.
The backplates *(Part 5, Fig.D.3)* placed under the shutter are used to create a reaction to the pressing tool that is necessary to firmly seat the cover.
The component fitted on the backplate *(Part 6, Fig..D.3)* can be replaced when worn.

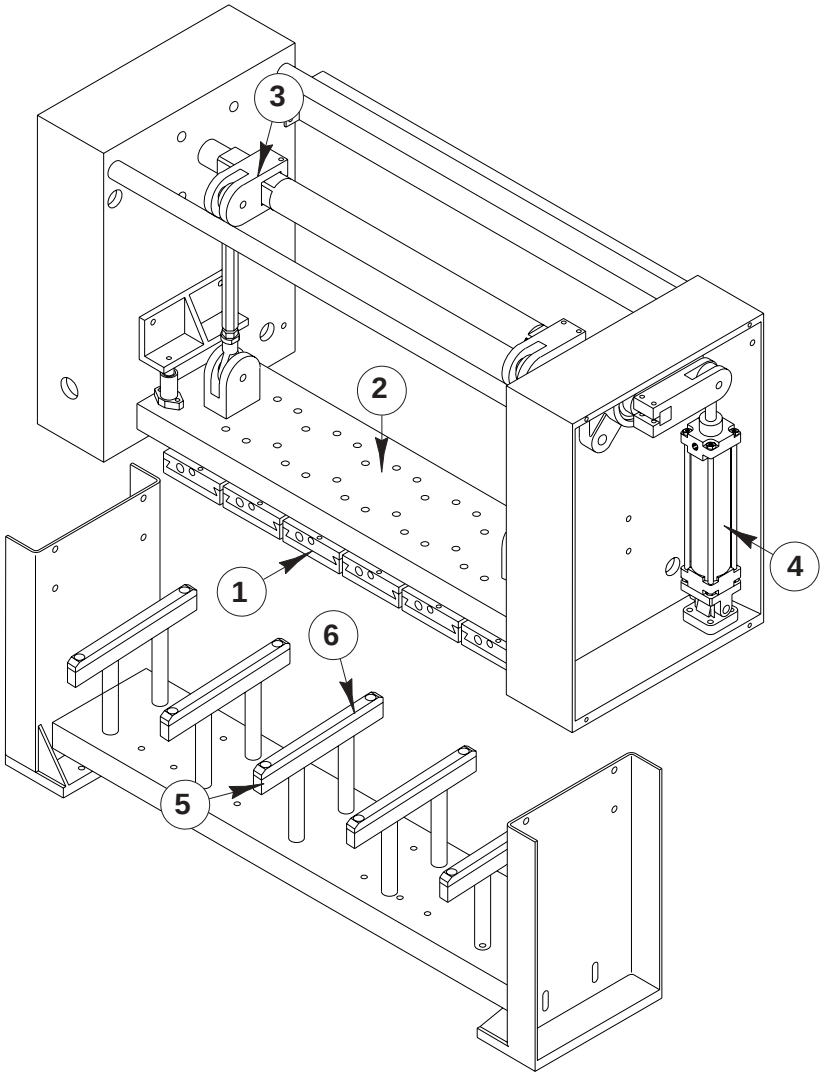


Fig. D.3

6.1.10 Marking with Ink-Jet

This device which is assembled on the structure is needed to mark the lid of the product with alphanumeric symbols. It consists of a marking head *(Pos.1, Fig. M.1)* handled through a timing belt *(Pos.2, Fig. M.1)* controlled by a ratio motor *(Pos.3, Fig. M.1)* which is activated by an inverter.
The encoder *(Pos.4, Fig. M.1)* takes the position of the marking head and transfers the data to the PLC.

Adjustments
The process is regulated by means of a cam through the operation panel. See **Chapter 5. Setting the work parameters**.
To enable the station in manual mode, press the button (Page 1).

WARNING:
For the maintenance and operating instructions of the marking head, see the attached handbook.

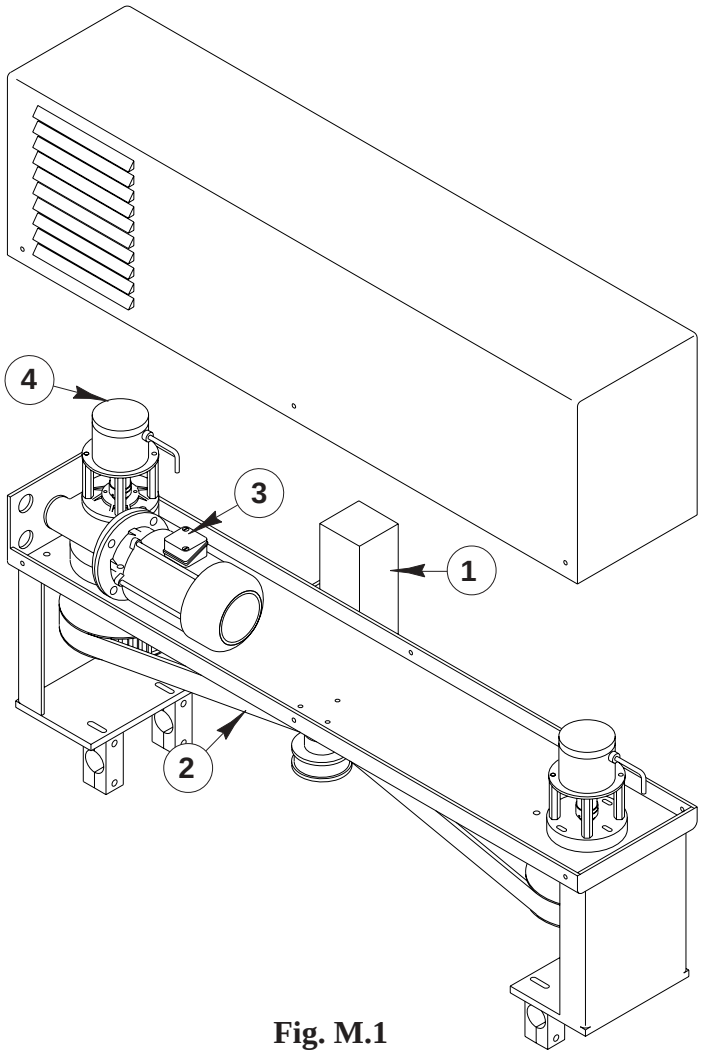
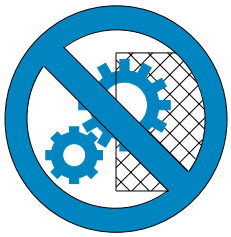


Fig. M.1

6.1.7 Bulk ejection station

This device, assembled underneath the lamellas and controlled by a mechanical cam, supports the thrusting devices which eject the cups.
The upward movement allows the ejectors *(Part. 1, Fig. E.1)* to lift the cups from the lamellas to be unloaded unto the unloading belt by a pneumatic cylinder *(Part. 2, Fig. E.1)* controlling the transfer tools *(Part. 3, Fig. E.1)* and sent for unloading.

WARNING: The construction of the cup feeding station does not permit protection of moving parts at the sides in the tray and unloading areas.
A **moving parts** sign is positioned on the fixed guard.



Adjustment
The action of the mechanism may be adjusted through cams using the operating panel.
Refer to point **5.2.1, Setting working parameters.**
Adjust the position of the transfer tools and product conveyor belt so that cups do not interfere with these parts during ejection, moving the belt by slackening the anchoring screws if necessary.
Check that the transfer tools push the cup onto the product conveyor belt.

Replacement for format changes

If format changes involve a different cup diameter, it will be necessary to change the transfer tools"*(Part. 3, Fig. E.1)* that push the product onto the belt, and the diameter or shape of the ejector plates *(Part. 1, Fig. E.1)* and adjust belt position along the longitudinal axis to convey the cup in the best possible way.
Consult the spare parts catalogue for correct identification of parts.

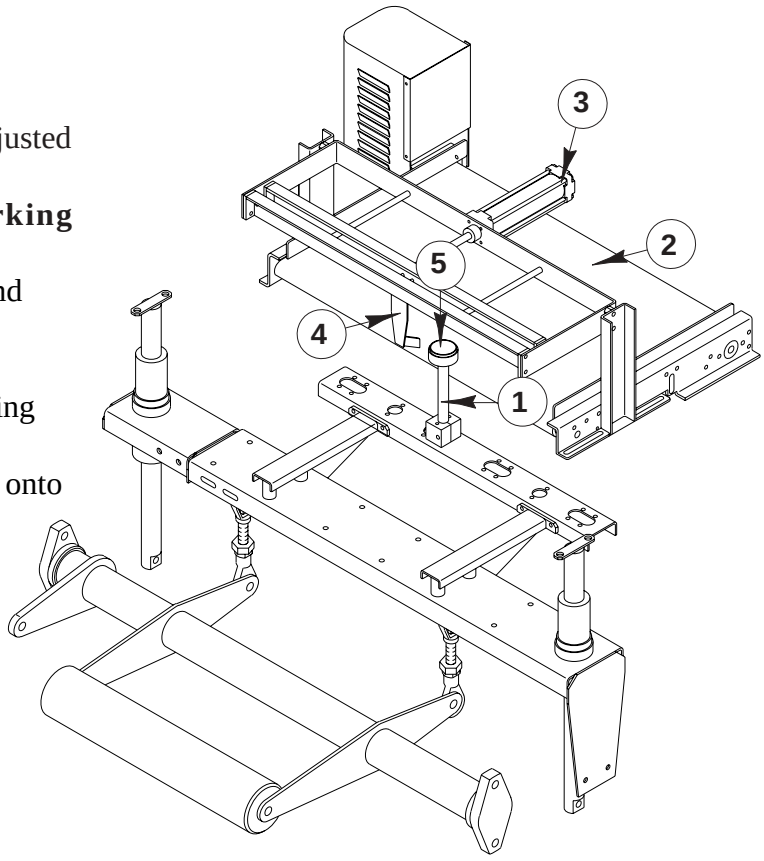


Fig. E.1

6.1.15 Cone ejection station

This device, fitted below the shutters and driven by a mechanical cam, supports the pushers that eject the cones.
The lifting movement enables the ejectors *(Part 1, Fig. E.2)* to lift the cones of the shutters, place them on the discharge conveyor *(Part 2, Fig. E.2)* by means of ejection curves *(Part 3, Fig. E.2)* and send them to the discharge.

Adjustments

Adjust the position of the ejection curves *(Part 3, Fig. E.2),* on the discharge plate *(Part 4, Fig. E.2)* and on the product conveyor, so that the cone does not interfere with the above-described components during ejection.
It is possible to adjust the angle of ejection curves *(Part 3, Fig. E.2)* and the fixing screw *(Part 5, Fig. E.2)* to facilitate the correct positioning of the cone on the conveyor.

Replacements for size changes

If the cone size is different from the previous one at the time the size is changed, it is sometimes necessary to change the ejection curves *(Part 3, Fig. E.2)* that push the product on the conveyor, along with the diameter and shape of the ejection plates *(Part 4, Fig. E.2))* and set the position of the conveyor along the longitudinal axis in order to improve the conveyance of the cup.
For a correct identification of the components, see the catalogue of spare parts.

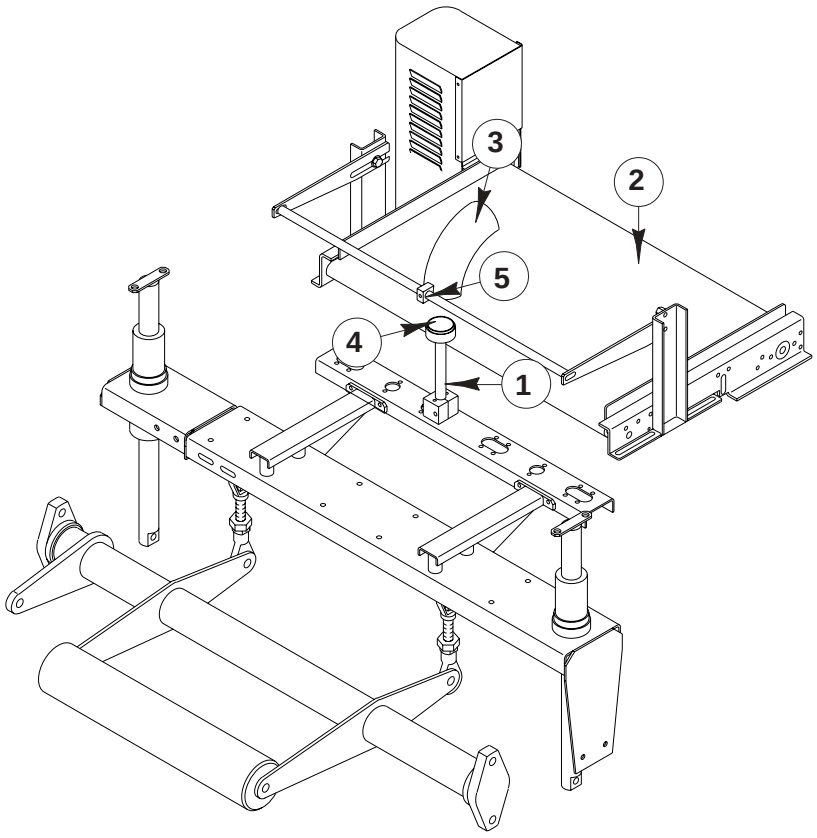


Fig. E.2

HOYER COMET N

7 - CLEANING AND MAINTENANCE

Contents

7.1 Washing procedure

Before washing the machine, make sure that the main switch is turned to OFF.

The procedure for washing the filling machine is as follows:

a- Prewash with hot water (50ºC).

b- Detergent wash. Use a foaming alkaline detergent or gel detergent which is a powerful fat emulsifier in a concentration of 2% to 10%, depending on how dirty the machine is and on the hardness of the water supply.

c- Rinse with water. Wait 10 minutes and then rinse thoroughly to remove the dirt emulsified by the detergent.

d- Descaling wash. Use an acidic descaler with low viscosity containing a mixture of wetting agents and emulsifiers in a concentration of 2% to 3%. It should remain in contact for at least 15 – 20 minutes.

e- Rinse with water.

f- Disinfectant wash. Use an appropriate disinfectant diluted in water, in a concentration of 1 – 1.2%. It should remain in contact for at least 15 – 20 minutes.

g- Rinse with water.

Important:

Do not use water under high pressure.

7.1.1 Recommended products

Detergent	Disinfectant	Descaler
SU928 (Diversey Lever)	P3-topax 52 (50/60°) (Henkel Ecolab)	P3-topax 99 (60°) (Henkel Ecolab)
SU616 (Diversey Lever)		
P3-topax 17 (60°) (Henkel Ecolab)		

7.1.2 C.I.P. washing

The C.I.P. washing cycle performs cycles of dispenser opening and closing by keeping the by-pass valve shut for the entire washing time.
The dispenser opens with the crosspiece in the downward position and it closes with the crosspiece in the upward position.
The duration of the washing and the opening/closing frequency of the dispenser can be set up to a maximum of 60 minutes with intervals of maximum 60 seconds.
The C.I.P. washing envisages the following phases:

a- Unblock the clamp lockups *(Pos.1, Fig.7.1)* and remove the nozzles *(Pos.2, Fig.7.1)*.

b- Fix the exhaust manifold *(Pos.3, Fig.7.1)* to the dispensers with clamp lockups *(Pos.1, Fig.7.1)*.

c- Connect the delivery side and the return of the detergent liquid to the by-pass valves *(Pos.4/5, Fig.7.1)* and to the exhaust manifold *(Pos.6, Fig.7.1)*.

d- Press the right button (see Chapter 5) to display the page.

C.I.P.

CYCLE : OFF

e-Display the page of the washing parameters (see Chapter 5)

C.I.P.

DISPENSER OPENING	0,00 SEC
DISPENSER PAUSE	0,00 SEC
BY-PASS ADVANCE	0,00 SEC
BY-PASS OPENING	0,00 SEC
CYCLE DURATION	0,00 MIN

f-Enable data modification (see Chapter 5). After the change has occurred, press the button Enter to confirm the data.

g-Save the data and save the washing parameters in the operating panel, then "**Activate the data**" to transfer the PLC format by following the instructions shown in Chapter 5.
Display the page

C.I.P.
CYCLE : OFF
and proceed as described in Chapter 5 to activate the washing cycle:

C.I.P.
CYCLE : ON

After the change has occurred, confirm the data as described in Chapter 5.
Then save the data and the washing parameters in the operating panel, and afterwards activate the dosed to transfer the cycle in the PLC.

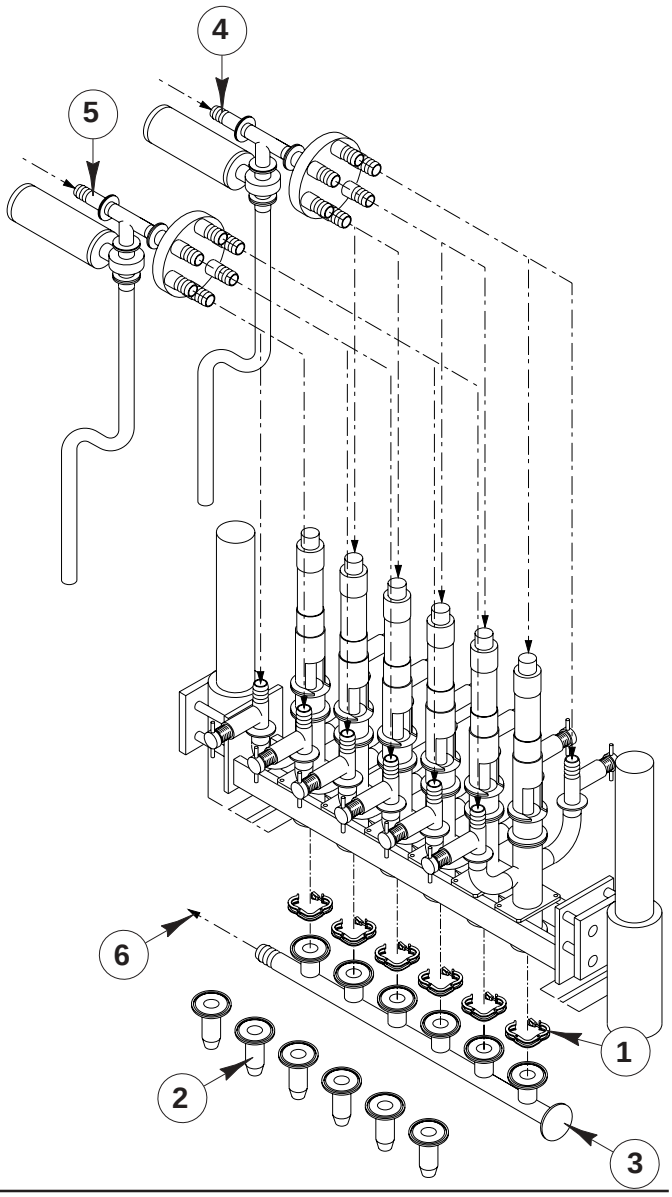


Fig. 7.1

7.2 Regular maintenance

7.2.1 Beginning of the season

- **Wash machine thoroughly as described in section** 7.1. – Washing procedure
- dismantle dosers and pipes, wash and disinfect thoroughly;
- check the condition of the seals, and replace if necessary;
- lubricate seals;
  material required: vaseline oil
- check that the emergency button and emergency devices are working correctly;
- inspect the machine and tighten any screws that may have come loose;
- check that there is no leakage at connection points;
- check the functioning of all moving parts, and replace if necessary.

7.2.2 Daily maintenance

- **Wash the machine at the end of production as described in section** 7.1. – Washing procedure, **points** a, b, c, d **and** e**.**
- dismantle dosers and pipes, wash and disinfect thoroughly;
  material required: water – detergent – disinfectant
- lubricate seals, dry components and lubricate them with neutral vaseline before reassembling them;
  material required: vaseline oil
- check the oil level in the vibrator or twister doser lubricator container.

7.4 Doser maintenance

Periodically check the efficiency of the dosers.
Proceed as follows:
1 - Shut off the compressed air supply;
2 - Slacken the screws holding the doser retaining bar;
3 - Remove the doser;
4 - Dismantle the doser:
- unscrew the bottom ring nut (*Pos. 1, Fig. 7.2*);
- open the clamp joining the lower and upper parts (*Pos. 2, Fig. 7.2*);
- extract the doser piston shaft (*Pos. 3, Fig. 7.2*).

With the doser dismantled, check the efficiency of the O-rings (*Pos. 4-5, Fig. 7.2*) on the stem.
If they are worn, ice cream mix will leak from the top of the doser.
5 - Wash using the recommended products shown in the table and reassemble.

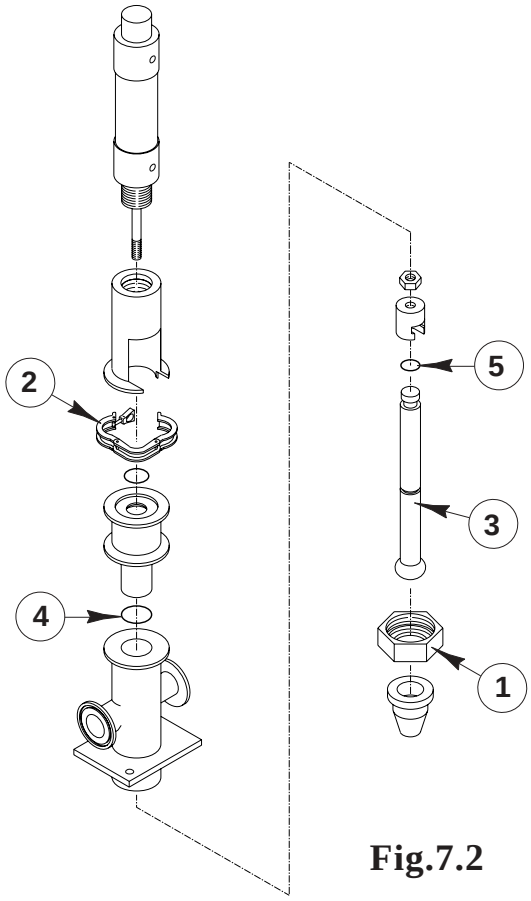


Fig.7.2

7.4 Topping maintenance

Every day, at the end of the work cycle, send lukewarm water through the feed pipe through the metering pump.
Periodically, and whenever it is necessary, remove the dispenser terminals *(Pos.1, Fig.7.3)* as well as the cap *(Pos.2, Fig.7.3)*.
When the dispenser has been taken out, check the efficiency of the gaskets (*Pos.4-5-6, Fig.7.3)*.
Wash with proper products (Refer to the washing table), reassemble.

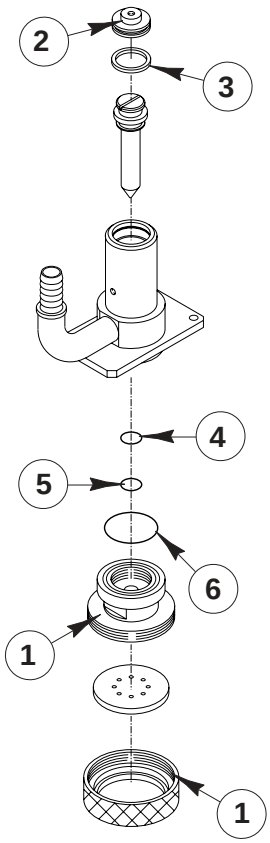


Fig. 7.3

7.5 Adjusting lamella chain tension

Periodically check the tension of the lamella chain as follows:

1 - Slacken the locking nut (*Pos. 1, Fig. 7.4*) and adjust the tension screw (*Pos. 2, Fig. 7.4*) to obtain the correct working tension;

2 - Tighten the locking nut (*Pos. 1, Fig. 7.4*).

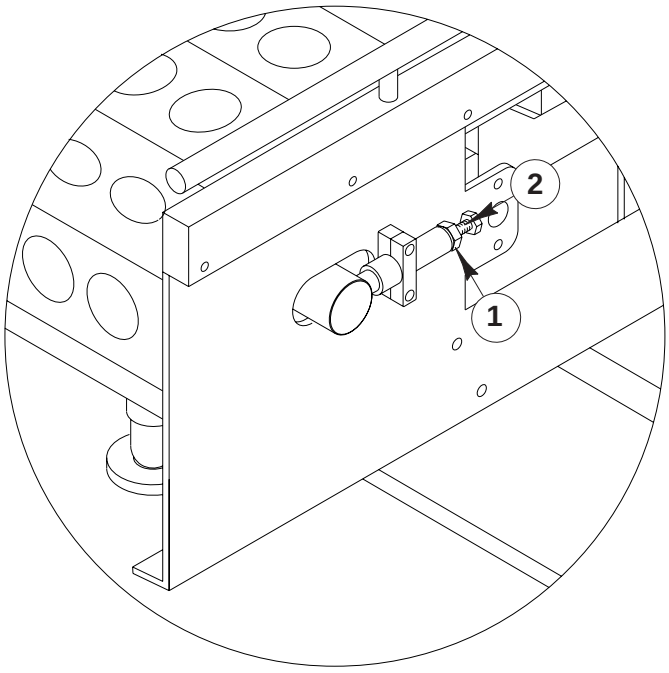


Fig.7.4

7.6 List of lubricants

Component	Supplier	Type
1-Shutter motorized reduction gear	Agip	Blasia 320 (ISO 3448)
2-Transport jogger	Agip	Blasia 320 (ISO 3448)
3-Servodriven doser reduction gear	Mobil	HD 85 W 90-A
4-Rotating supports	NILS	Atomic T 4938 Longlife grease EP Low temp.
4-Linear moving skids	NILS	Atomic T 4938 Longlife grease EP Low temp.

7.7 Summarized table of maintenance operations

*** = Scheduled operation**

Component	Lub.	Frequency of operation				Ref.
		End of shaft	Weekly	Monthly	Start of season	
Standard machine		A*		-	-	7.2.2
Standard machine (moving components)	4	-	C*	E*	-	---
Standard machine (motor reduction gear)	1	-	-	B*	D*	---
Standard machine (conveyor switch)	2	-	-	B*	D*	---
Doser (components)	-	A*	-	E*	-	---
Doser (moving components)	4	-	C*	-	-	---
Topping	-	A*	-	E*	-	---
Cover loadin	4	A*	C*	-	-	---
Pressure fittings	4	A*	C*	-	-	---
Welding	4	A*	C*	-	-	---
Loading conveyor	4	A*	C*	-	-	---

A = Operation: cleaning
B = Operation: level retopping
C = Operation: lubrication
D = Operation: oil replacement
E = Operation: functional check

HOYER COMET N

8 - Trouble shooting

Contents

8.1 Trouble shooting

PROBLEM	CAUSE	SOLUTION
No power.	- No power supply	- Verify electrical connections.
	- Main power switch damaged.	- Verify main switch.
Machine doesn't start or stops unexpectedly.	- Incorrect power supply .	- Verify voltage of the power supply.
	- Overload on the lamella's transferring chain.	- Verify the presence of obstructions in the chain transmission and free movement.
	- Pneumatic supply.	- Check the pneumatic system.
	- Thermal regulation on the engine not intervened.	- Rearm the relay in the electrical control panel.
	- Maximum production capacity not reached.	- Check for correct settings on the inverter or for malfunctioning.
	- Excessive wear of mechanical parts.	- Check wears on the chain slideways and replace them if necessary
Cycle doesn't start	- Absence of compressed air.	- Check the efficiency of the pneumatic system and of the pressure gauge.
	Problem on the PLC for input/ output of digital and/or analogue signals.	- Check on the display which alarm has been activated.
Cycle interrupted	- Absence of electrical input signals on PLC.	- Check end of run efficiency.
		- Verify on the PLC which alarm has been activated.

PROBLEM	CAUSE	SOLUTION
Malfunctioning in the rise and descent of the stations	- Malfunctioning of the pneumatic system - Malfunctioning of the PLC - Malfunctioning of the rise and descent slides	- Verify operation of pneumatic valves and cylinders. - Verify on LED signal flow from valve coils and PLC. - Verify on LED end-of-run signal exchange with PLC. - Check the free movement of slides on guide rails, verify the bushes and replace them if necessary.
Chain not synchronized with the station	- Loose chain.	- Verify chain tension and modify if necessary. - Rotate the crown gear on circumferential slot hole with reference to dispenser/ejector cam movement. - Verify the correct position of the lamellas during the halt phase of the indexing system .
Irregular and noisy operation	- Chain tension.	- Verify chain tension and modify if necessary.
Irregular and/or clicking movement of the suction-cup and ejection holder trays	- Poor condition of: - Lever ball bearings - bushes - cams - cam contacting wheel	- Verify condition and replace if necessary a worn out/damaged component.

PROBLEM	CAUSE	SOLUTION
Incorrect release of cones on the support	- Incomplete adjustment of the station: - Height of storage container - Extraction timing	-Align the station to the pit. - Check the orientation of the “wafer pusher” plates when the blades open.. - Verify that the stack of cones falls correctly on the hands when the blades open, otherwise adjust the height of the storage container, setting the distance between the hands and measuring blades slightly above the height of the cones.
Incorrect loading of cups on the support	- Software parameters - Incomplete adjustment of the station: - Height of storage container - Insufficient vacuum	- Verify that the parameters are correctly set when the cup stopping blades open. - Check the operation of the vacuum generator and the efficiency of the suction cup. - Verify that the fittings are correctly sealed. - Check that the cups fall correctly on the extraction cup: the blades should close on the next cup rim. If this does not occur, set the blades to a higher position on the storage container.
Unforeseen misplacement of the container outside the support at the end of the loading phase	- Excessive vacuum setting	- Change the length of the vacuum phase within the cycle.
Absence of chocolate spray	- Failure of spraying system (small tank + pump). - Failure of chocolate spraying system	- Verify that are no occlusions within the plant. - Verify that the small tank heating resistances are operating correctly. - Verify that there is enough water in the interspace of the small tank and add more water if required. - Wash the nozzle to remove residuals of chocolate if present. - Check the efficiency of the taps. - Check the operation of the pneumatic air valve that sprinkles the chocolate. - Verify that the sanitizing air filter is not clogged.

PROBLEM	CAUSE	SOLUTION
	- Malfunctioning in the chocolate pump	- Check stroke and tightness of the pneumatic cylinder gaskets of alternating pump. - Regulate cylinder stroke. - Verify settings for cylinder stroke. - Verify operation of the solenoid valve for the start up of the pump cylinder. - Verify electrical and pneumatic cables. - Verificare integrità regolatori di portata. - Verify flow rate regulators correct operation of the ball valves.
Spruzzo cioccolato fuoriesce dal cono	- Position of the tray - Excessive air sprayed - Absence of action of the rise/ descent sprayer slide	- Regulate end-of-run lower trolley position so that spray is inside the cone and regulate cylinder stroke ring. - Regulate air flow on entry so as to modify spraying angle. - Verify the movement of the pneumatic tray and replace bushes if necessary. - Verify correct operation of the pneumatic valve. - Verify efficiency of the pneumatic system flow regulators.
Quantità gelato dosata non corretta	- Incomplete regulation of the dozers - Incomplete regulation of flow throttles	- Verify settings of parameters for filling cycles. - Regulate spraying slotters.

PROBLEM	CAUSE	SOLUTION
Incorrect filling	- Regulate dosing cycles	- Verify cycle parameters.
	- Incorrect settings of dozers	- Modify opening/closing dozer values.
	- Incorrect operation of the dosing cylinders	- Verify efficiency of the dozers and replace them if necessary.
Irregular application of dry ingredients on the products	- Malfunctioning of the vibrator	- Verify operation of the compressed air device
		- Check airflow passage with regulator
		- Verify fixing on anti-vibration plugs and tightness of screws.
Absence of topping	- Malfunctioning of the topping supply system (pump + small tub)	- Verify condition of liquidity/ flow of chocolate.
		- Verify correct operation of the tub warming resistors.
		- Verify presence of water in the tub cavity and fill if necessary.
		- Check that the holes in the topping plates are free and not occluded with chocolate.
	- Malfunctioning of the pneumatic pump cylinder	- Verify cylinder stroke and gasket efficiency.
		-Verificare efficienza elettrovalvola e impianto pn,eumatico.
		- Verificare regolazione ed integrità regolatore di flusso.

PROBLEM	CAUSE	SOLUTION
Leakage of topping	- Malfunctioning of the topping nozzle	- Eliminate the obstruction in the nozzle closure (between the pin and the o ring) - Unblock the opening flow pin. - Verify the electro valve that controls topping. - Check for correct assembly of the nozzle ring.
Covers are not correctly placed on the container	- Empty generator	- Verify cycle settings. - Verify operation of the empty generator and replace if necessary. - Check the efficiency of the vacuum set-up by shutting the air flow on suction cups.
	- Dispenser	- Check piling of lids by regulating the guide lanes. - Regulate protrusion of screws of the support columns on magazine base. - Verify contact between suction cup and lid.
Incorrect chamfering	- Springs	- Verify operation of compression springs in final pressing. - Verify caulking tool pressure.
	- Lamellas	- Check alignment.
Irregular discharge of the products on the conveyor	- Malfunctioning of pneumatic pusher	- Verify cylinder efficiency and gasket tightness. - Verify parameter settings. - Verify operation of the solenoid valve of the pneumatic system.
	- Incomplete regulation of the ejection plates	- Regulate alignment of plates with respect to slide plane of the conveyor belt.

HOYER Comet N ***N.COMMESSA M/221869***

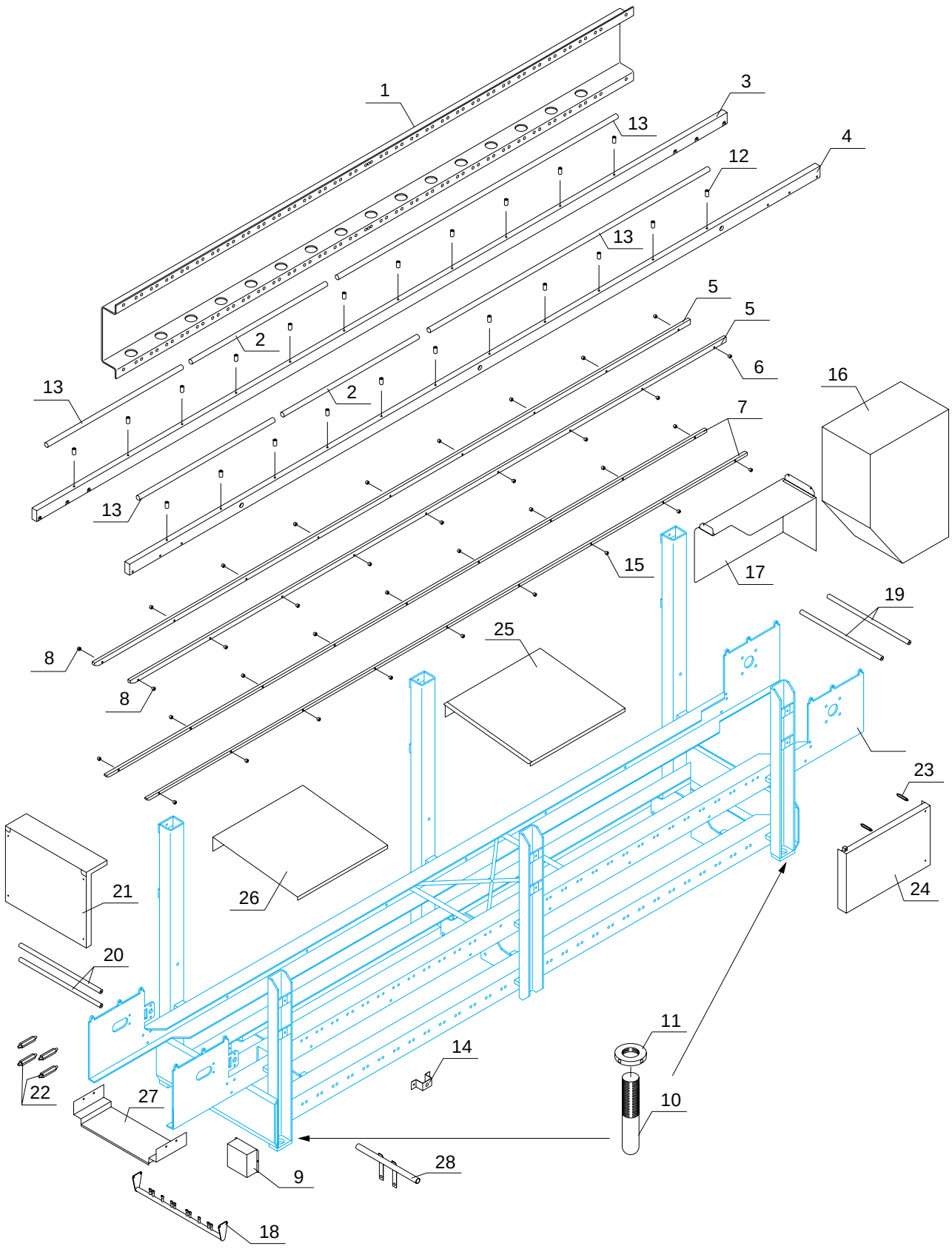
9 - PARTI DI RICAMBIO - *LIST OF SPARE PARTS - PIECES DE RECHANGE*

Indice - *Contents - Sommaire*

Struttura **1/2** **13040004**

Structure - Structure

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12041009	1	Supporto	Support	Support
2	12041474	2	Guida	Guide	Guide
4	12041011	1	Longherina		
5	12041015	2	Guida	Guide	Guide
6	12041016	16	Distanziale	Spacer	Entretoise
7	12041017	2	Guida	Guide	Guide
8	12041018	2	Distanziale	Spacer	Entretoise
9	VK50B01009	1	Carter	Casing	Carter
10	12000002	6	Piede	Foot	Pied
11	12060624	6	Ghiera	Ring nut	Bague
12	12040012	16	Distanziale	Spacer	Entretoise
13	12041019	4	Guida	Guide	Guide
14	VK50B01011	1	Supporto	Support	Support
15	12042770	18	Distanziale	Spacer	Entretoise
16	12040737	1	Carter	Casing	Carter
17	12040738	1	Carter	Casing	Carter
18	12041080	1	Tubo	Hose	Tube
19	12041140	2	Tirante	Tie rod	Entretoise
20	12041472	2	Tirante	Tie rod	Entretoise
21	12041473	1	Carter	Casing	Carter
22	12040746	4	Distanziale	Spacer	Entretoise
23	12041766	2	Distanziale	Spacer	Entretoise
24	12041769	1	Carter	Casing	Carter
25	12042310	1	Copertura	Cover	Couverture
26	12042311	1	Copertura	Cover	Couverture
27	12042638	1	Protezione	Protection	Protection
28	12042772	1	Tubo	Hose	Tube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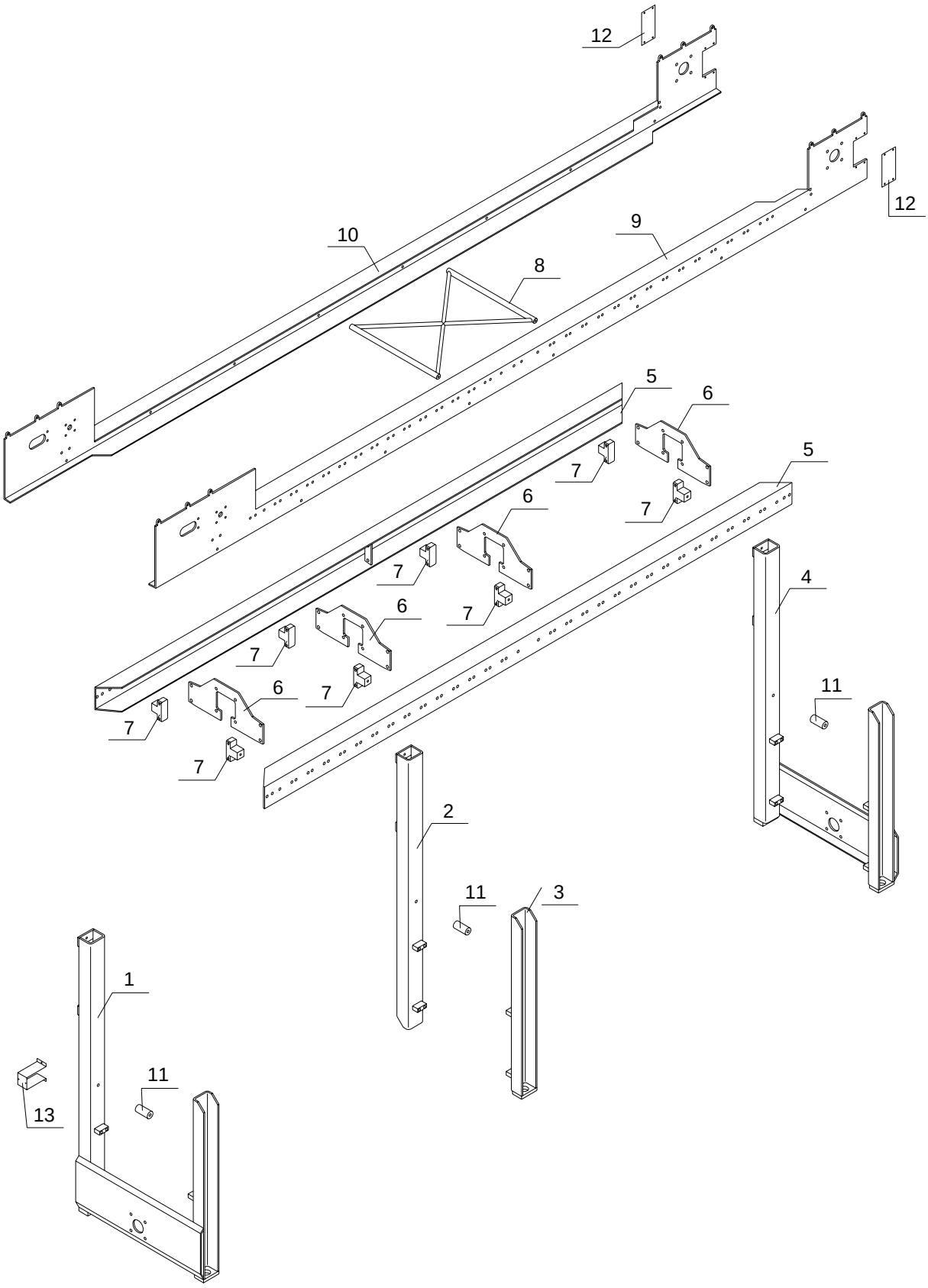
Struttura **2/2** **13040004**

Structure - Structure

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12041003	1	Testata	Head	Tête
2	12041006	1	Profilo	Form	Profilé
3	12041005	1	Profilo	Form	Profilé
4	12041004	1	Testata	Head	Tête
5	12041007	2	Longherone	Arbor	Longeron
6	12041008	4	Piastra	Plate	Plaque
7	12041014	8	Fissaggio	Anchor	Fixation
8	12041013	1	Traliccio	Framework	Treillis
9	12041002	1	Spalla	Shoulder	Epaulement
10	12041001	1	Spalla	Shoulder	Epaulement
11	12041012	3	Distanziale	Spacer	Entretoise
12	12042561	2	Piastra	Plate	Plaque
13	12042771	1	Sostegno	Support	Support



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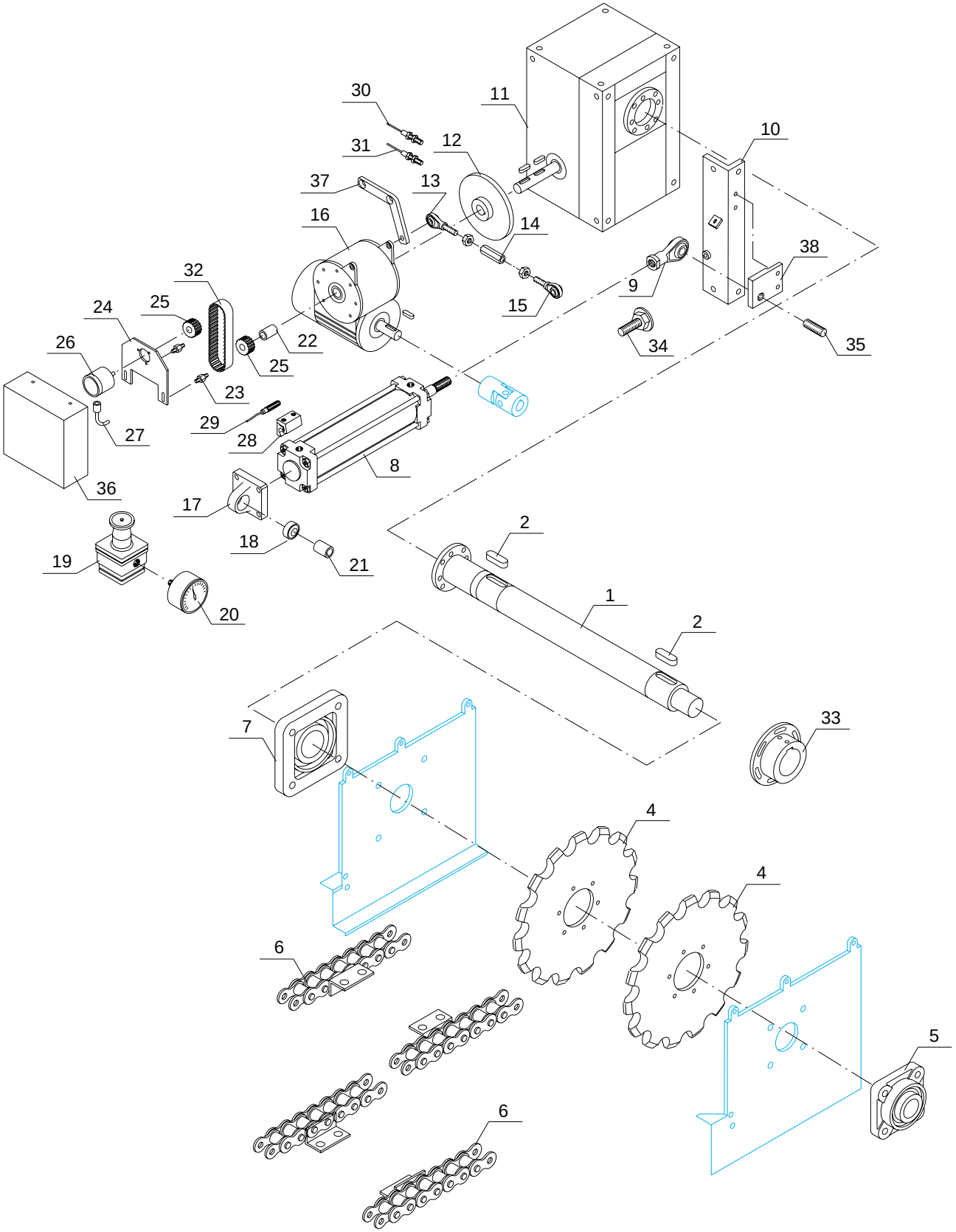
Motor drive P140 - Motorisation P140

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12040266	1	Albero	Shaft	Arbre
2	326013687	2	Chiavetta	Key	Clavette
4	12041901	2	Ruota	Wheel	Roue
5	17040019	1	Supporto	Support	Support
6	12040194	-	Catena	Chain	Chaîne
7	17040024	1	Supporto	Support	Support
8	17000170	1	Cilindro	Cylinder	Cylindre
9	17000759	1	Testa a snodo	Coupling head	Tête articulée
10	12043371	1	Supporto	Support	Support
11	17040017	1	Intermittore	Indexing gear unit	Intermetteur
12	12040273	1	Disco	Disc	Disque
13	17000752	1	Testa a snodo	Coupling head	Tête articulée
14	12040274	1	Tirante	Tie rod	Entretoise
15	17000755	1	Testa a snodo	Coupling head	Tête articulée
16	17040151	1	Riduttore	Reduction gear	Réducteur
17	17000291	1	Supporto	Support	Support
18	17000292	1	Snodo	Coupling	Articulation
19	17000642	1	Riduttore	Reduction gear	Réducteur
20	17000176	1	Manometro	Manometer	Manomètre
21	541315011	1	Distanziale	Spacer	Entretoise
22	12041139	2	Distanziale	Spacer	Entretoise
23	12042798	4	Perno	Pin	Axe
24	VK50C08001	1	Piastra	Plate	Plaque
25	VK50C20001	2	Puleggia	Pulley	Poulie
26	17000120	1	Encoder	Encoder	Codeur
27	17000121	1	Cavo	Cable	Cable
28	17000056	1	Fissaggio	Anchor	Fixation
29	17000054	1	Finecorsa	Limit switch	Fin de course
30	17001055	1	Proximity	Proximity sensor	Capteur de proximité
31	017035932	1	Proximity	Proximity sensor	Capteur de proximité
32	336019996	1	Cinghia	Belt	Courroie
33	12041902	2	Mozzo	Hub	Tronqué
34	12041822	1	Regolatore	Regulator	Régulateur
35	12041823	1	Perno	Pin	Axe
36	12042740	1	Carter	Casing	Carter
37	12042799	1	Aggancio	Coupling	Accrochage
38	12043372	1	Piastra	Plate	Plaque

6a	12040195	210 mm step chain assembly	2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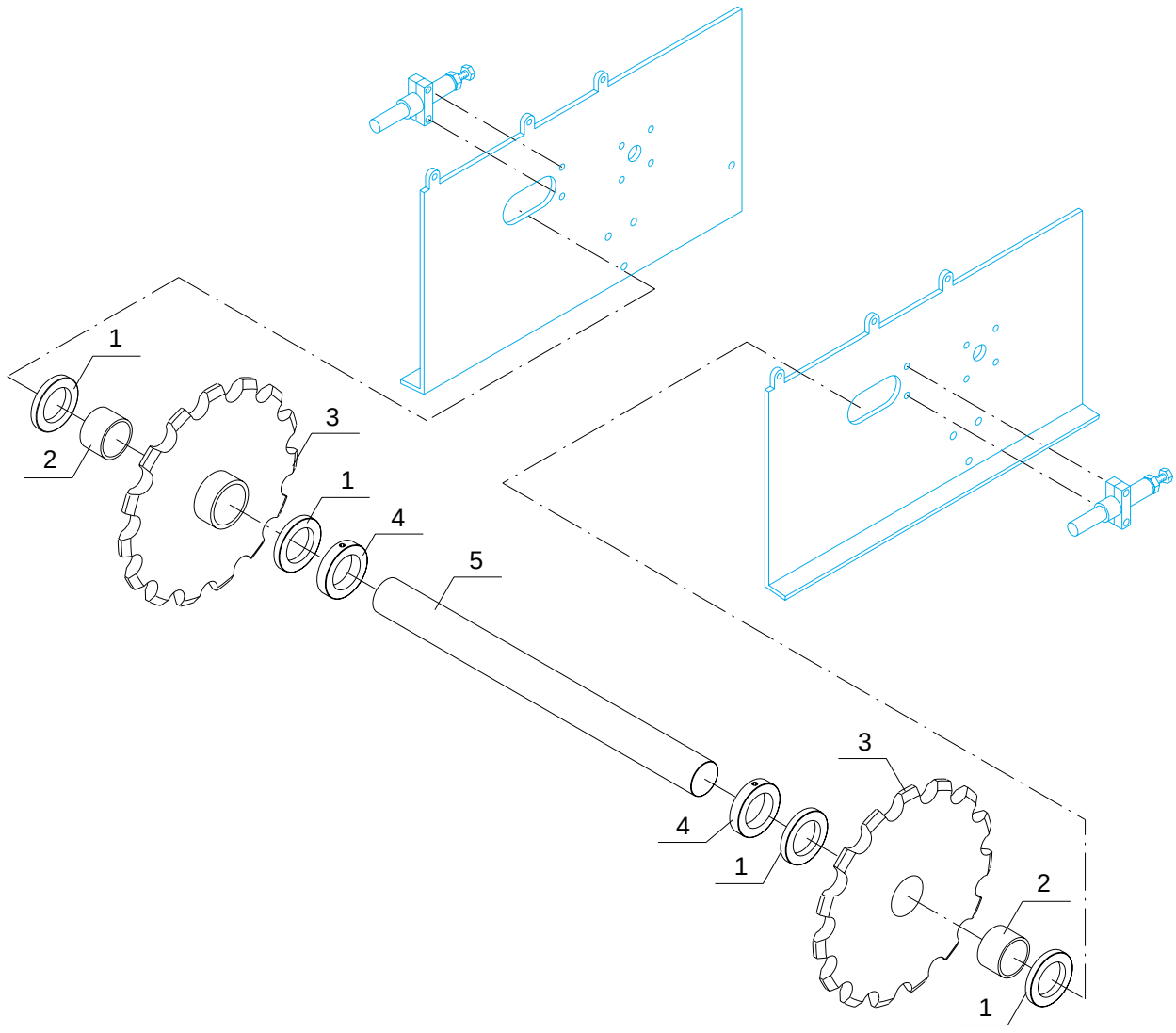
Motorizzazione P140 **2/4** **13400324**

Motor drive P140 - Motorisation P140

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12040262	2	Rondella	Washer	Rondelle
2	17000144	2	Bussola	Bush	Douille
3	12040264	2	Ruota	Wheel	Roue
4	12040263	2	Anello	Ring	Anneau
5	12040261	1	Albero	Shaft	Arbre



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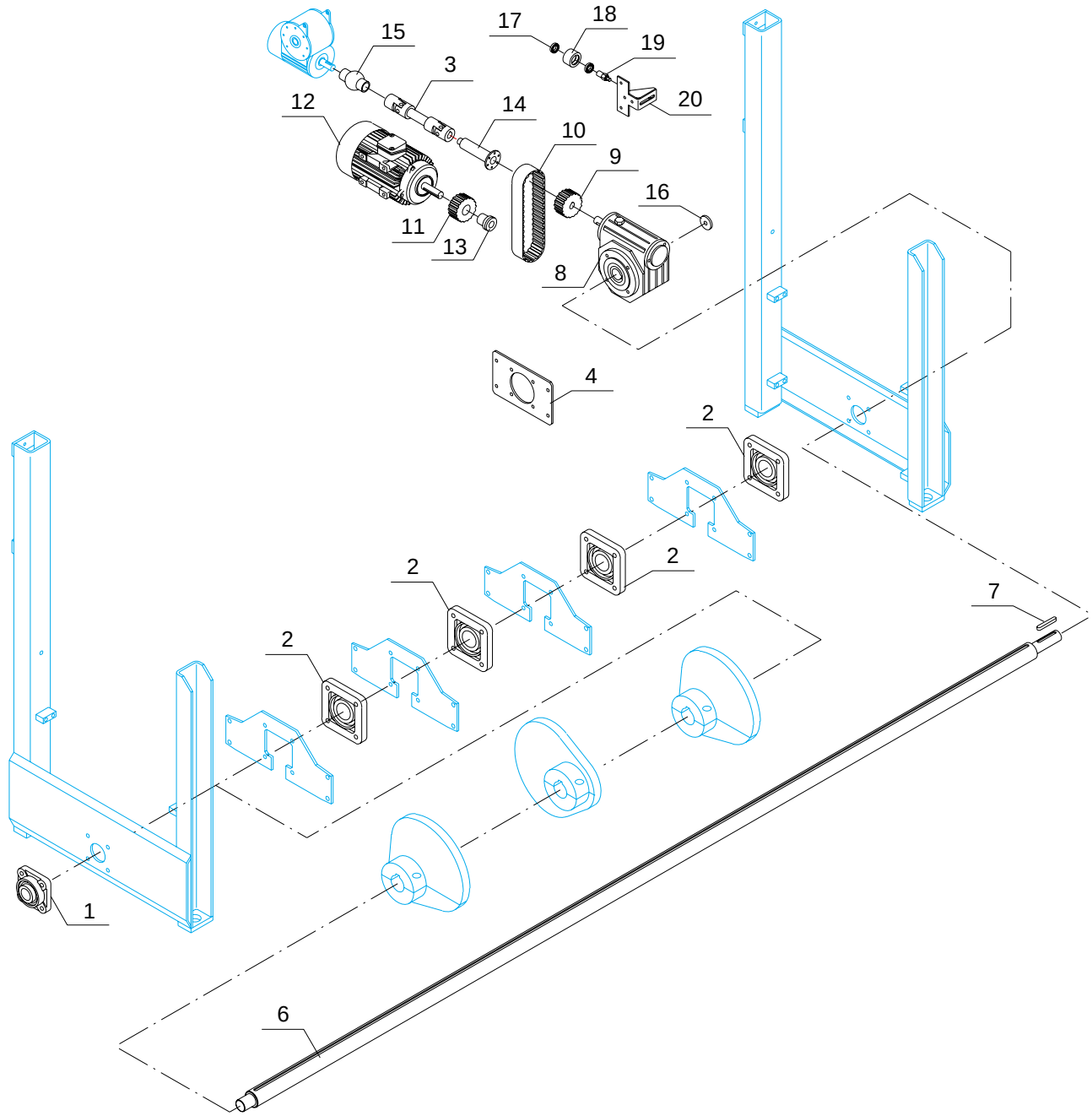
Motor drive P140 - Motorisation P140

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17040019	1	Supporto	Support	Support
2	17040024	4	Supporto	Support	Support
3	12042800	1	Giunto	Anchor	Fixation
4	12042794	1	Piastra	Plate	Plaque
7	326013200	1	Chiavetta	Key	Clavette
8	17040152	1	Riduttore	Reduction gear	Réducteur
9	12042797	1	Puleggia	Pulley	Poulie
10	17040123	1	Cinghia	Belt	Courroie
11	336026884	1	Puleggia	Pulley	Poulie
12	014045632	1	Motore	Motor	Moteur
13	336006294	1	Bussola	Bush	Douille
14	12042793	1	Giunto	Joint	Joint
15	336072390	3	Cuffia	Guard	Couvercle
16	D-FM3146A	1	Rondella	Washer	Rondelle
17	336001423	2	Cuscinetto	Bearing	Roulement
18	12041903	1	Tendicinghia	Belt tightener	Tendeur de courroie
19	12041905	1	Perno	Pin	Axe
20	12041904	1	Piastrina	Plate	Plaquette
21	12042796	1	Albero	Shaft	Arbre



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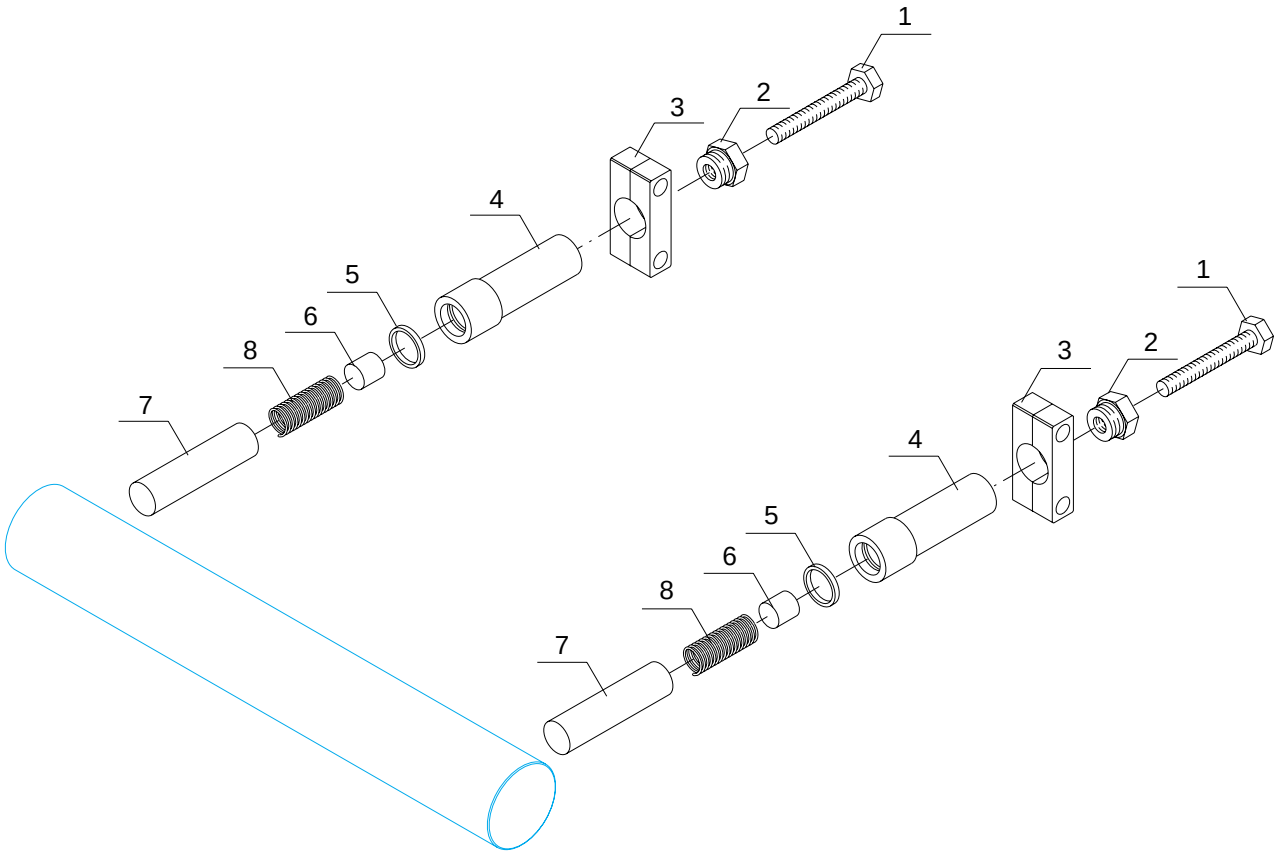
Motorizzazione P140 **4/4** **13400324**

Motor drive P140 - Motorisation P140

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	326003124	2	Vite	Screw	Vis
2	12040058	2	Fondello	End piece	Fond
3	12040042	2	Supporto	Support	Support
4	12040053	2	Corpo tenditore	Tensioner body	Corps tendeur
5	336067155	2	Guarnizione	O-ring	Joint
6	12040057	2	Cappellotto	Cap	Capot
7	12040059	2	Pistone	Piston	Piston
8	12040056	2	Molla	Spring	Ressort



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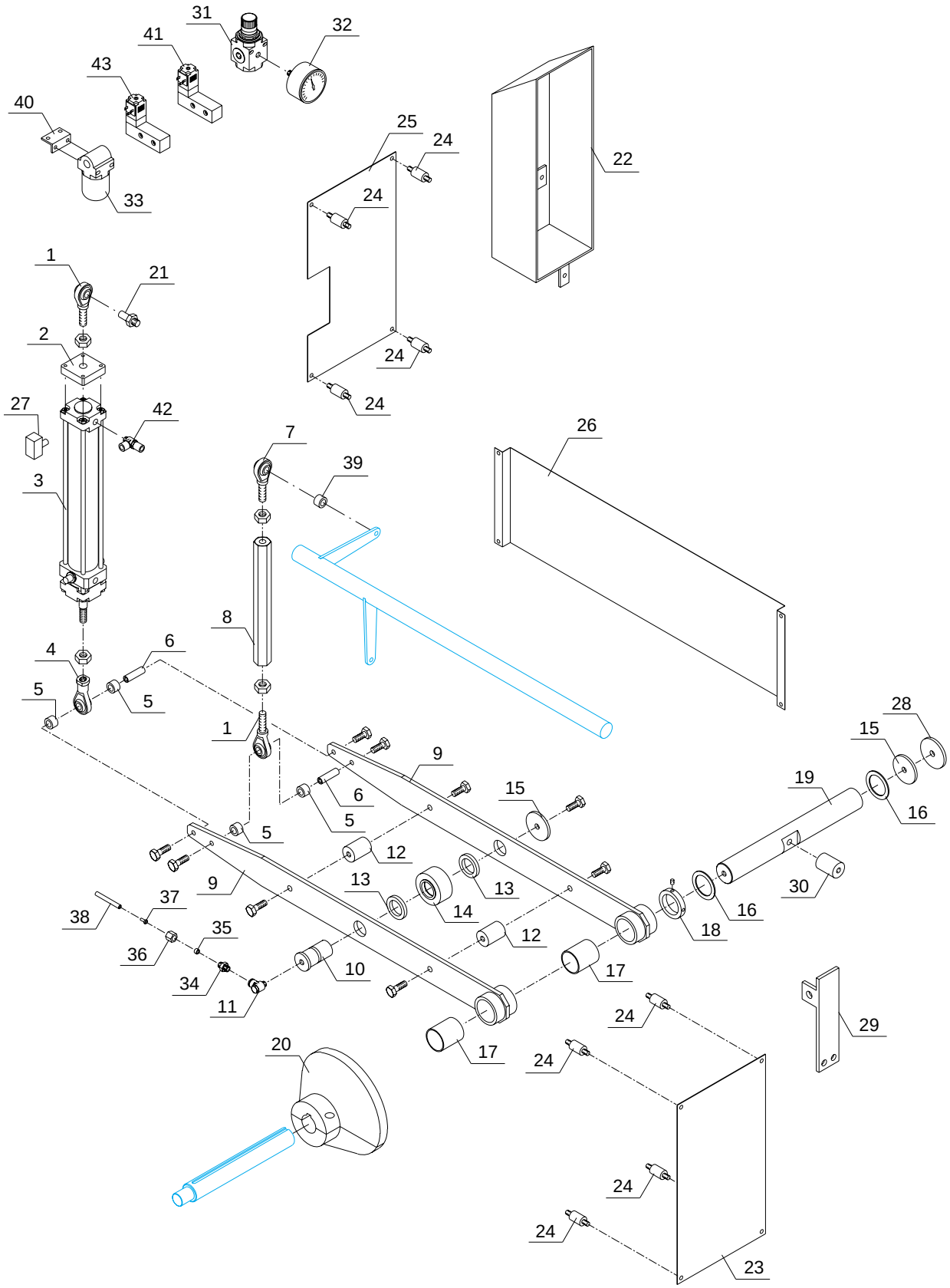
POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17000755	2	Testa a snodo	Coupling head	Tête articulée
2	12041330	1	Piastra	Plate	Plaque
3	17000158	1	Cilindro	Cylinder	Cylindre
4	17000753	1	Testa a snodo	Coupling head	Tête articulée
5	12041030	4	Distanziale	Spacer	Entretoise
6	12041031	2	Tirante	Tie rod	Entretoise
7	17000752	1	Testa a snodo	Coupling head	Tête articulée
8	12041033	1	Tirante	Tie rod	Entretoise
9	12041026	2	Leva	Lever	Levier
10	12041028	1	Asse	Axle	Axe
11	018046031	1	Terminale	Terminal	Terminal
12	12041023	3	Distanziale	Spacer	Entretoise
13	12041029	2	Distanziale	Spacer	Entretoise
14	336003545	1	Rotella	Wheel	Roue
15	12041027	2	Rondella	Washer	Rondelle
16	12041025	1	Rondella	Washer	Rondelle
17	17000421	2	Boccola	Bush	Bague
18	12041024	1	Rondella	Washer	Rondelle
19	12041022	1	Asse	Axle	Axe
20	12042678	1	Camma	Cam	Came
21	12041824	1	Perno	Pin	Axe
22	12041882	1	Carter	Casing	Carter
23	12041739	1	Carter	Casing	Carter
24	12041752	8	Distanziale	Spacer	Entretoise
25	12042315	1	Carter	Casing	Carter
26	12042318	1	Carter	Casing	Carter
27	011045494	1	Scarico rapido	Fast air discharge	Décharge air rapide
28	D-FM3146A	1	Rondella	Washer	Rondelle
29	12041898	1	Piastra	Plate	Plaque
30	12041590	1	Distanziale	Spacer	Entretoise
31	17000642	1	Riduttore	Reduction gear	Réducteur
32	17000176	1	Manometro	Manometer	Manomètre
33	17000799	1	Filtro	Filter	Filtre
34	018046038	1	Terminale	Terminal	Terminal
35	018046021	1	Monocono	Monocone	Monoglace
36	018046020	1	Dado	Nut	Ecrou
37	018046029	1	Boccola	Bush	Bague
38	018046005	1	Tubo	Hose	Tube
39	12041037	1	Distanziale	Spacer	Entretoise
40	12042674	1	Squadretta	Bracket	Equerre
41	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne
42	17000146	1	Valvola	Valve	Vanne
43	333004076	1	Valvola	Valve	Vanne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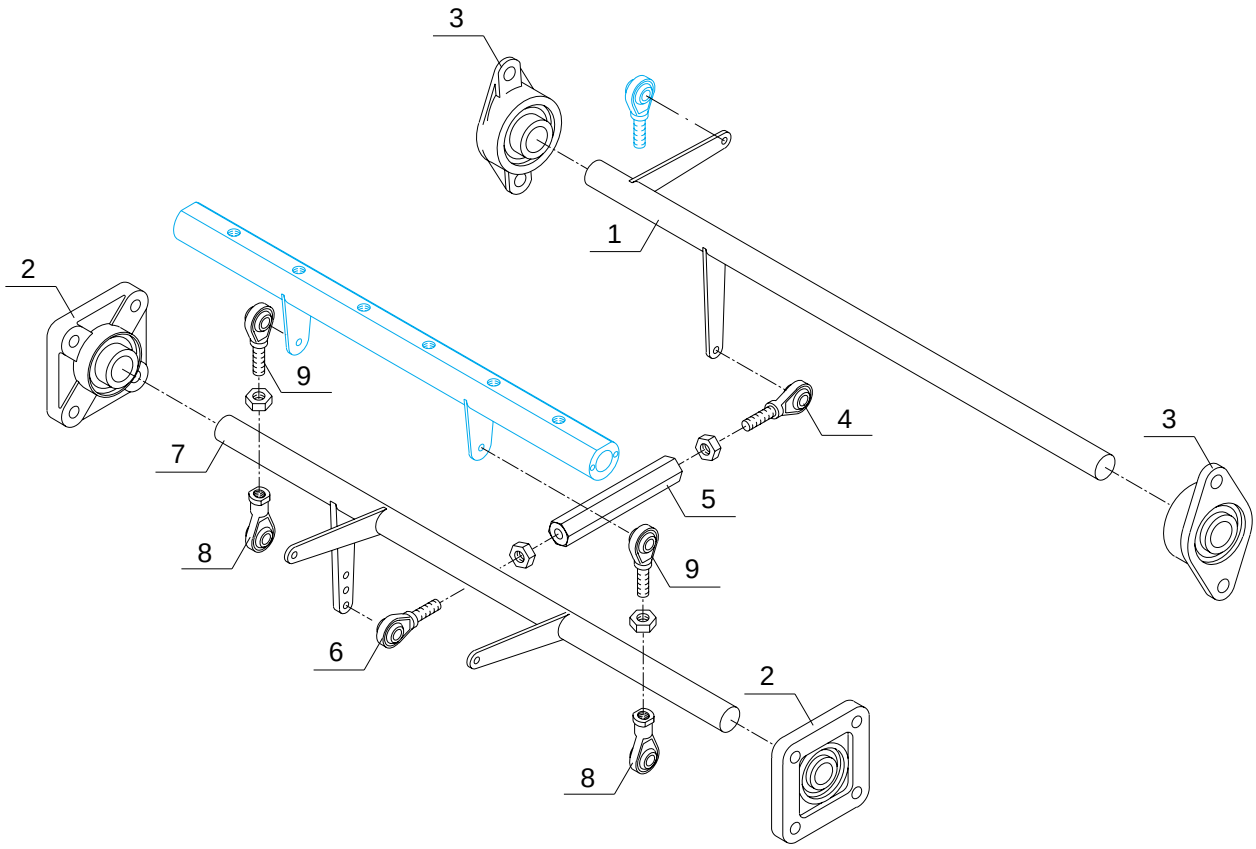
Cup dispenser - Alimentation gobelets

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12041044	1	Leverismo	Lever	Levier
2	336007057	2	Supporto	Support	Support
3	336007106	2	Supporto	Support	Support
4	17000752	1	Testa a snodo	Coupling head	Tête articulée
5	12041045	1	Tirante	Tie rod	Entretoise
6	17000755	1	Testa a snodo	Coupling head	Tête articulée
7	12042677	1	Fulcro	Fulcrum	Point d'appui
8	17000757	2	Testa a snodo	Coupling head	Tête articulée
9	17000756	2	Testa a snodo	Coupling head	Tête articulée



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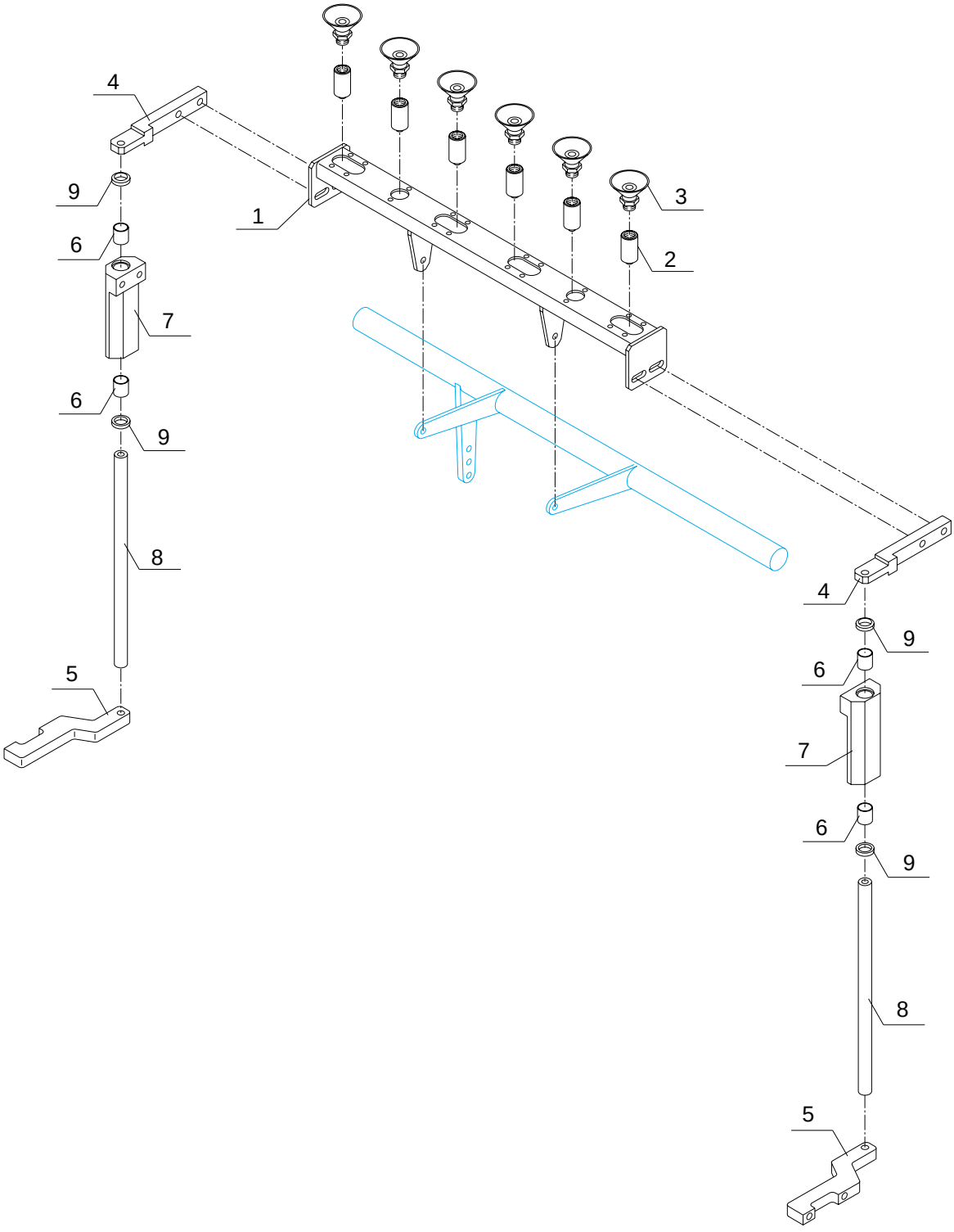
Alimentazione coppe **3/4** **13040657**

Cup dispenser - Alimentation gobelets

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12042631	1	Traversa	Crosspiece	Traverse
2		-	Porta ventosa (*)	Cup-holder	Porte-ventouse
3		1	Ventosa (*)	Suction cup (*)	Ventouse (*)
4	12041039	2	Supporto	Support	Support
5	12041035	2	Forcella	Fork	Fourche
6	17000410	4	Boccola	Bush	Bague
7	12041043	2	Guida	Guide	Guide
8	12041036	2	Colonnina	Column	Colonne
9	17000800	4	Raschiatore	Scraper	Racleur



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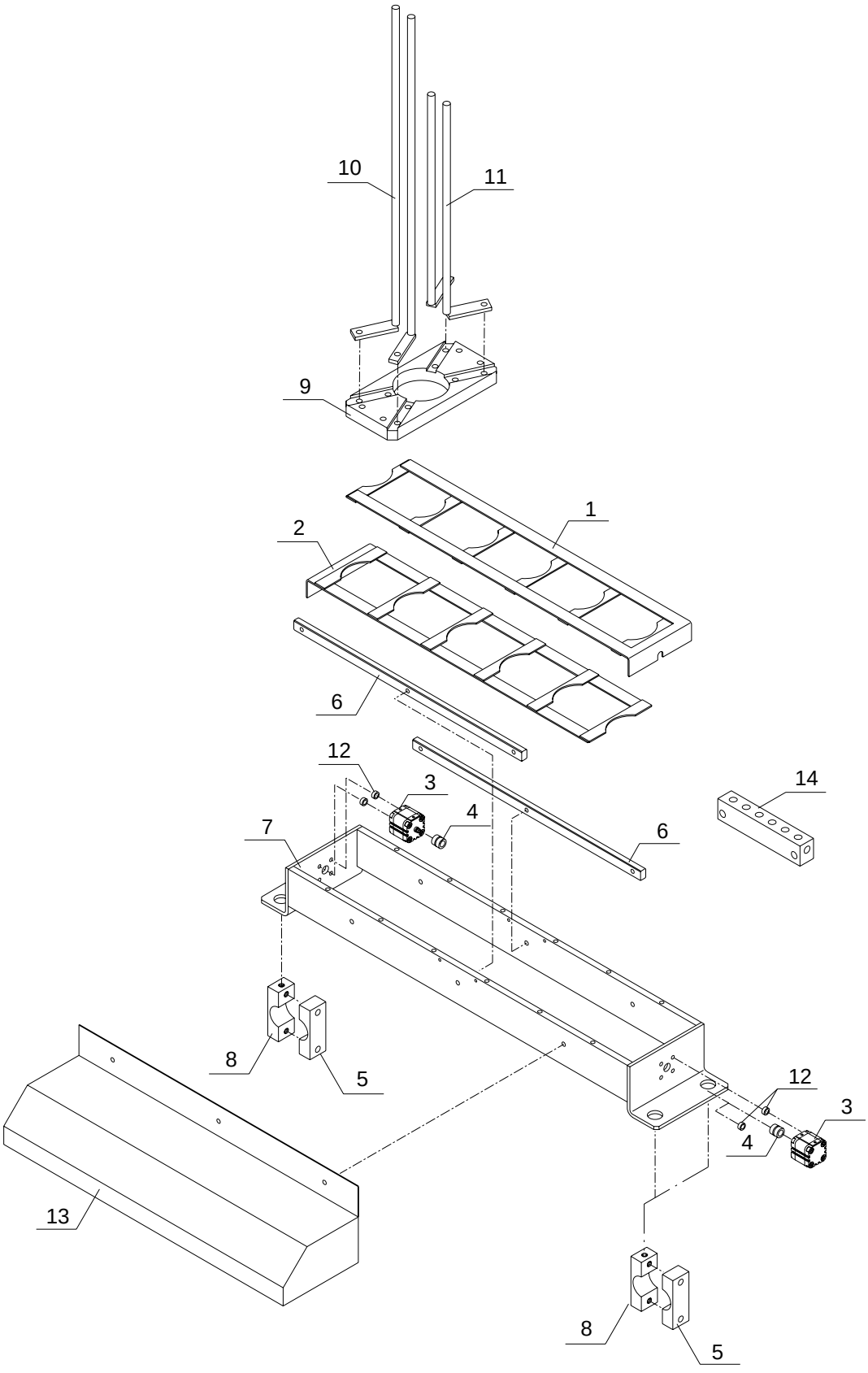
Alimentazione coppe **4/4** **13040657**

Cup dispenser - Alimentation gobelets

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1		1	Lama (*)	Blade (*)	Lame (*)
2		1	Lama (*)	Blade (*)	Lame (*)
3	17000007	2	Cilindro	Cylinder	Cylindre
4	540212003	2	Innesto	Coupling	Intercalaire
5	12040078	4	Morsetto	Washer	Rondelle
6	12041086	2	Pattino	Guide	Guide
7	12041085	1	Supporto	Support	Support
8	12040079	4	Morsetto	Washer	Rondelle
9		6	Magazzino	Magazine	Magasin
10		12	Asta	Rod	Tige
11		12	Asta	Rod	Tige
12	12042483	4	Distanziale	Spacer	Entretoise
13	12042357	1	Carter	Casing	Carter
14	12042632	1	Distributore	Distributor	Distributeur



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CARICO CONI **1/2** **13040984**

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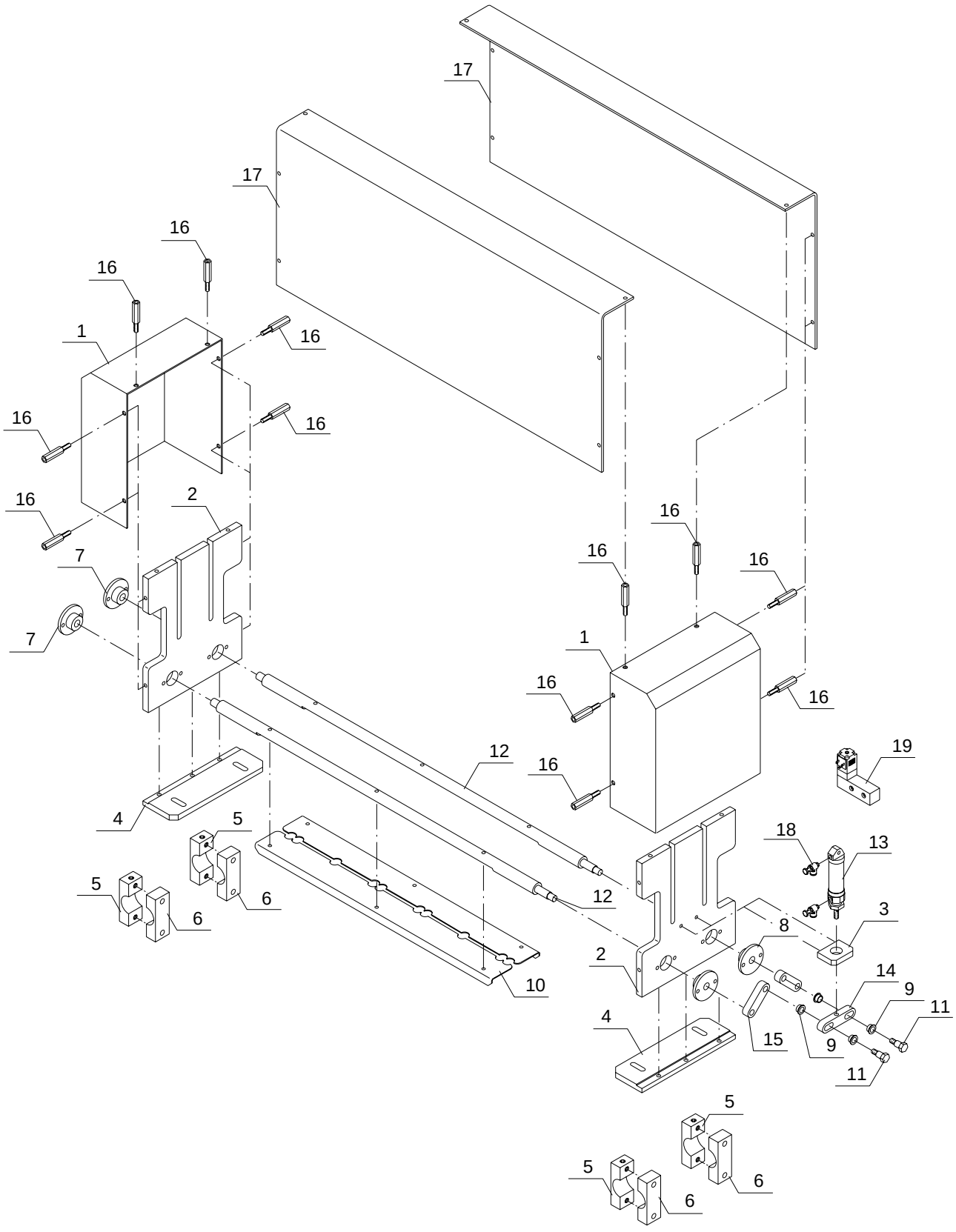
POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12045834	2	Carter	Casing	Carter
2	12045802	2	Piastra	Plate	Plaque
3	12045825	1	Piatto	Plate	Plateau
4	12045832	2	Piastra	Plate	Plaque
5	12040078	4	Morsetto	Washer	Rondelle
6	12040079	4	Morsetto	Washer	Rondelle
7	12045821	4	Supporto	Support	Support
8	12045822	2	Supporto	Support	Support
9	17000932	4	Boccola	Bush	Bague
10	12045824	8	Manina	Gripper	Pince de prise
11	12043737	2	Perno	Pin	Axe
12	12045823	2	Albero	Shaft	Arbre
13	17000899	1	Cilindro	Cylinder	Cylindre
14	12043736	1	Glifo		
15	12043735	2	Leva	Lever	Levier
16	12042567	12	Distanziale	Spacer	Entretoise
17	12045838	2	Carter	Casing	Carter
18	17000206	2	Regolatore	Regulator	Régulateur
19	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne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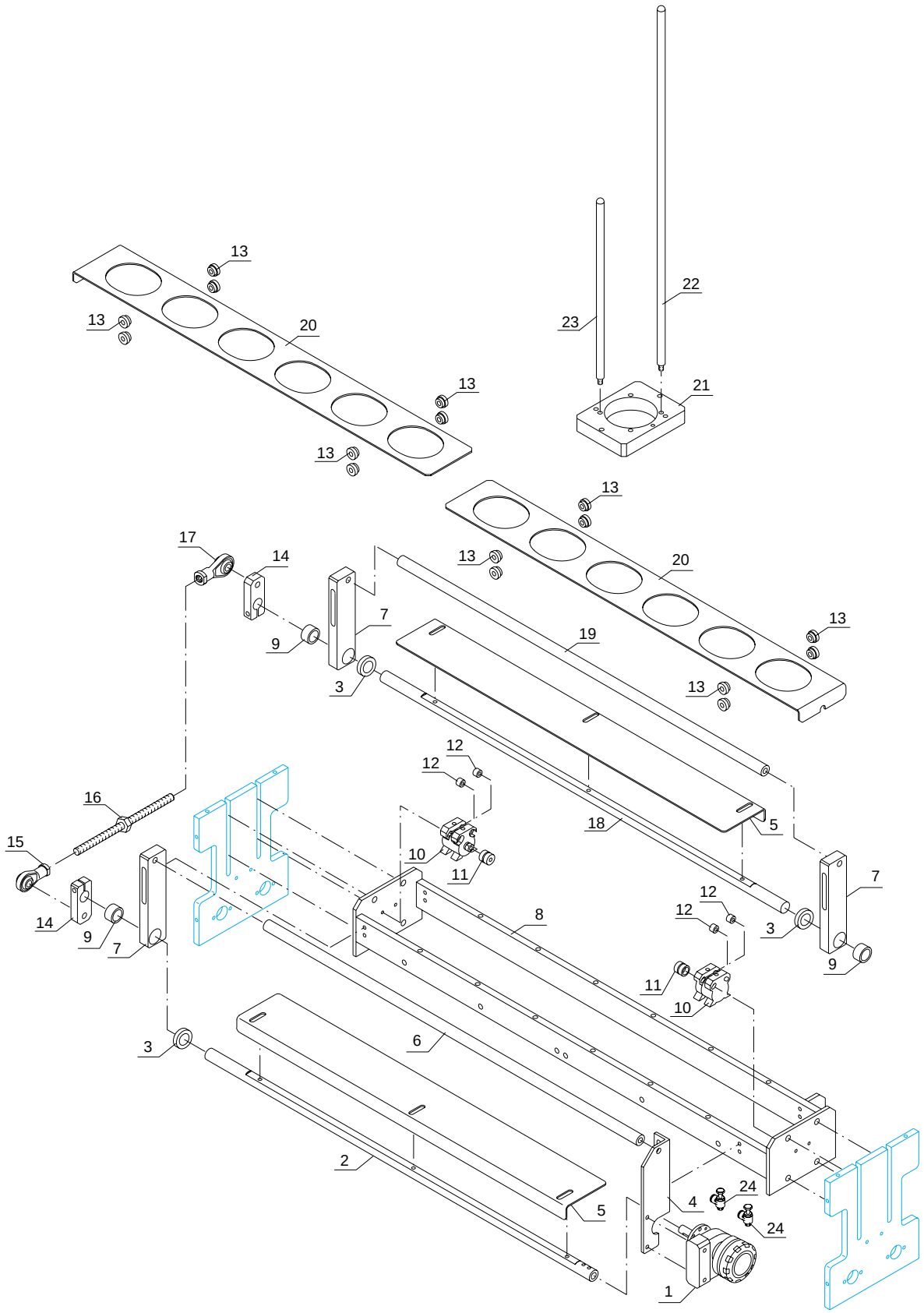
POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	333001053	1	Attuatore	Actuator	Actionneur
2	12045805	1	Asse	Axle	Axe
3	12040925	3	Rondella	Washer	Rondelle
4	12045613	1	Supporto	Support	Support
5	12045807	2	Paletta	Blade	Palette
6	12045804	1	Tirante	Tie rod	Entretoise
7	12045606	3	Supporto	Support	Support
8	12045801	1	Telaio	Frame	Châssis
9	17000080	3	Boccola	Bush	Bague
10	17000007	2	Cilindro	Cylinder	Cylindre
11	540212003	2	Innesto	Coupling	Intercalaire
12	12042483	4	Distanziale	Spacer	Entretoise
13	12043730	16	Nottolino	Guide	Guide
14	12040808	2	Leva	Lever	Levier
15	17000757	1	Testa a snodo	Coupling head	Tête articulée
16	12044575	1	Tirante	Tie rod	Entretoise
17	17000832	1	Testa a snodo	Coupling head	Tête articulée
18	12045806	1	Asse	Axle	Axe
19	12045803	1	Tirante	Tie rod	Entretoise
20		2	Lama	Blade (*)	Lame (*)
21		2	Magazzino	Magazine	Magasin
22		4	Asta	Rod	Tige
23		4	Asta	Rod	Tige
24	17000219	2	Regolatore	Regulator	Régulateur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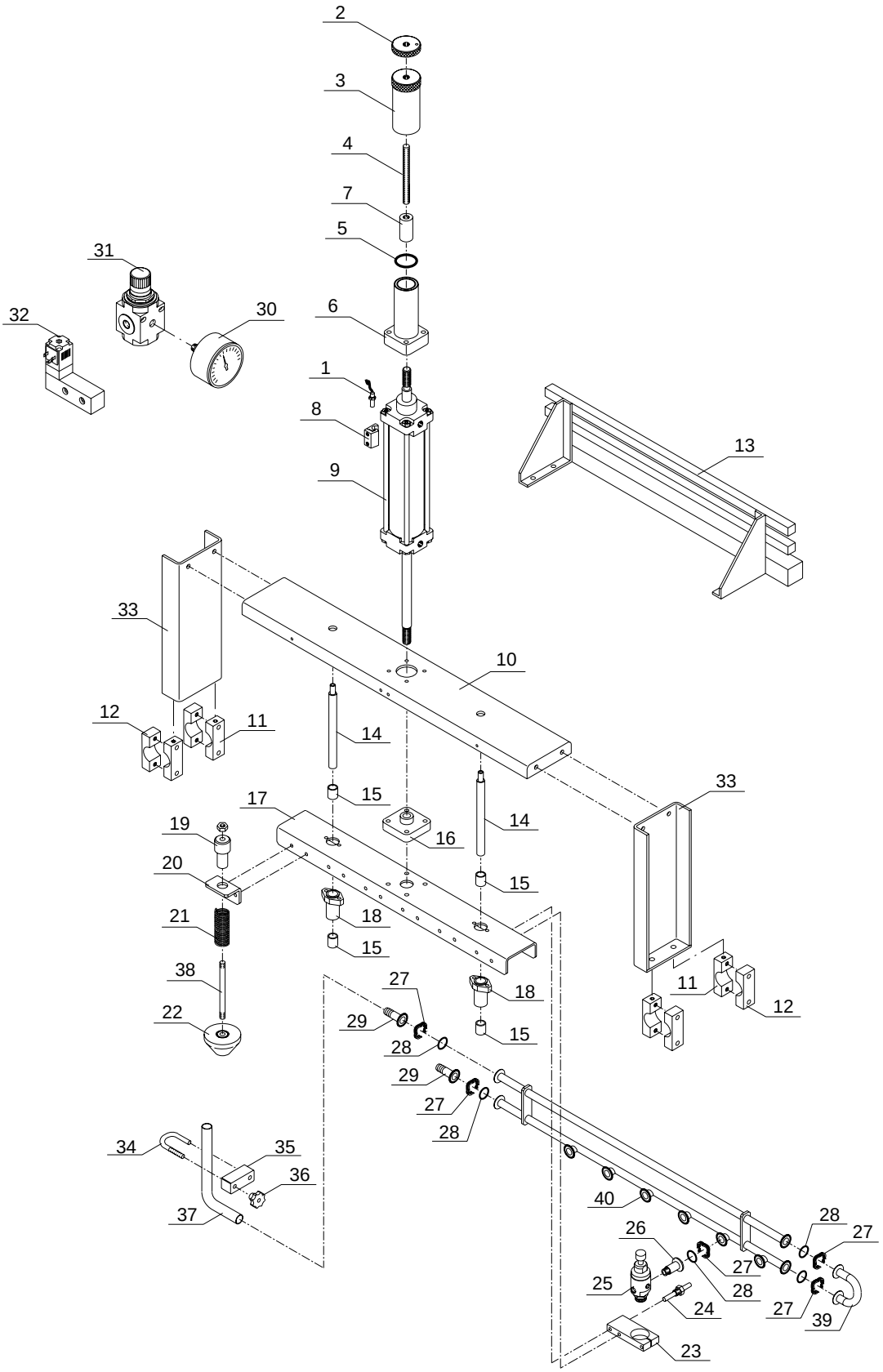
Calibratore spruzzo **1/1** **13040974**

Calibration - Chocolate spray - Calibrage - Pulvérisation choc.

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17000054	1	Finecorsa	Limit switch	Fin de course
2	12040074	1	Ghiera	Ring nut	Bague
3	12040075	1	Ghiera	Ring nut	Bague
4	541120121	1	Filettato	Screw	Filetage
5	336067091	1	Guarnizione	O-ring	Joint
6	12042696	1	Manicotto	Sleeve	Manchon
7	341690101	1	Giunto	Joint	Joint
8	17000056	1	Fissaggio	Anchor	Fixation
9	17000236	1	Cilindro	Cylinder	Cylindre
10	12042691	1	Traversa	Crosspiece	Traverse
11	12040078	3	Morsetto	Washer	Rondelle
12	12040079	3	Morsetto	Washer	Rondelle
13	12045643	1	Collettore	Manifold	Collecteur
14	12042692	2	Colonnina	Column	Colonne
15	336005056	4	Boccola	Bush	Bague
16	17000053	1	Fissaggio	Anchor	Fixation
17	12042690	1	Traversa	Crosspiece	Traverse
18	12040970	2	Cannotto	Sleeve	Fourreau
19	540302006	6	Bussola	Bush	Douille
20	12040219	6	Staffa	Bracket	Etrier
21	D-FM0606	6	Molla	Spring	Ressort
22	D-FM0607	6	Tampone	Pad	Tampon
23	12045046	6	Supporto	Support	Support
24	17040697	6	Resistenza	Resistance	Résistance
25	17001241	1	Spruzzatore	Sprayer	Gicleur
26	12045056	6	Raccordo	Union	Raccord
27	016060215	10	Clamp	Clamp	Clamp
28	018020586	10	Guarnizione	O-ring	Joint
29	12041889	2	Portagomma	Hose connection	Porte-caoutchouc
30	17000176	1	Manometro	Manometer	Manomètre
31	17000168	1	Riduttore	Reduction gear	Réducteur
32	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne
33	12045644	2	Spalla	Shoulder	Epaulement
34	12060280	1	Perno	Pin	Axe
35	12060283	1	Blocchetto	Block	Bloc
36	336057033	1	Volantino	Flywheel	Petit volant
37	17000278	Mt 5	Tubo	Hose	Tube
38	D-FM0605	6	Tirante	Tie rod	Entretoise
39	12045058	1	Curva	Elbow	Coude
40	12045642	1	Collettore	Manifold	Collecteur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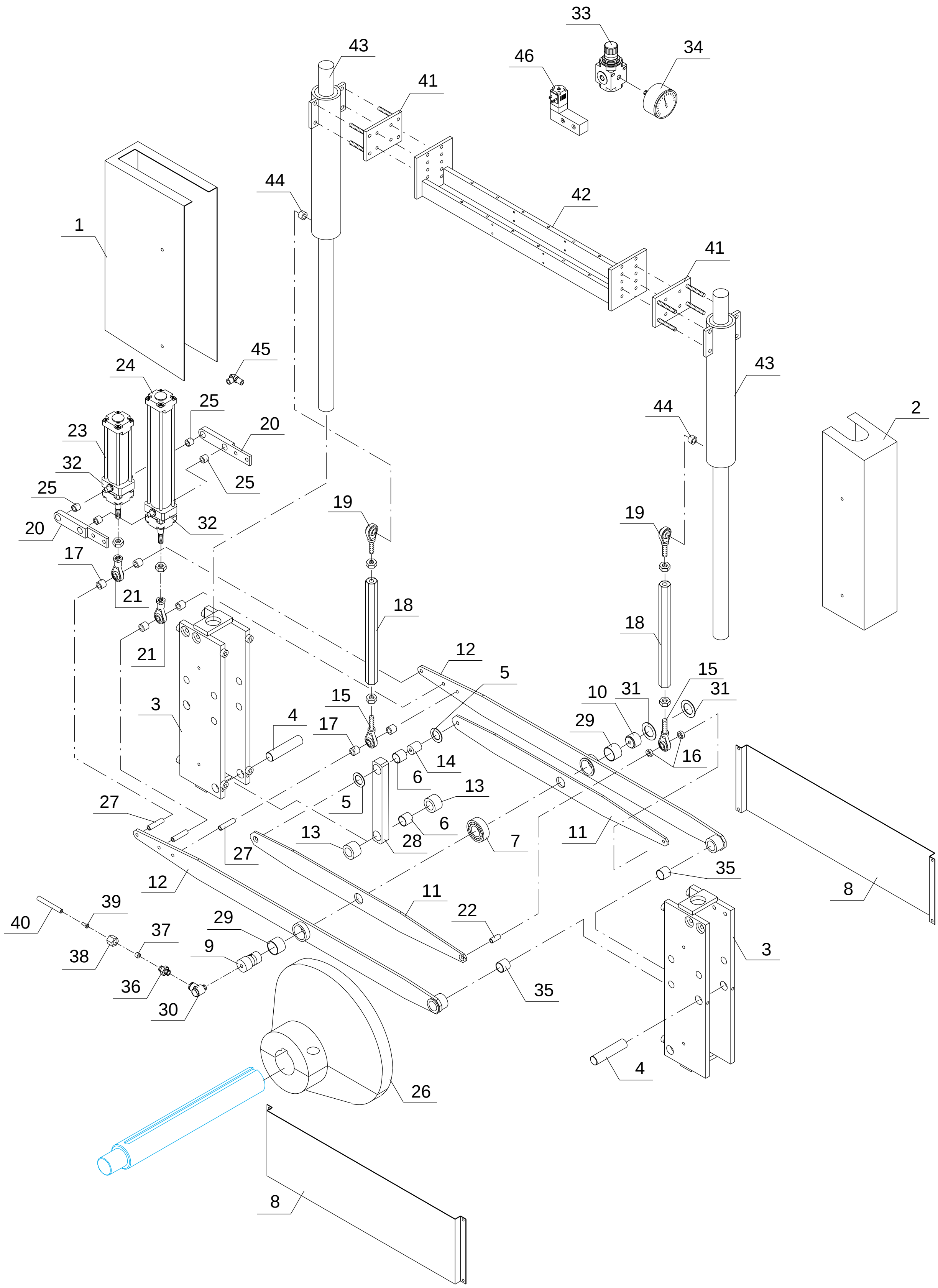
Movimento stazioni **1/1** **13040503**

Station movement - Mouvement stations

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12040517	1	Carter	Casing	Carter
2	12040518	1	Carter	Casing	Carter
3	12040506	2	Supporto	Support	Support
4	12040511	2	Perno	Pin	Axe
5	12040503	4	Ralla	Washer	Crapaudine
6	17000634	4	Boccola	Bush	Bague
7	336003545	1	Rotella	Wheel	Roue
8	12042312	2	Protezione	Protection	Protection
9	12040504	1	Perno	Pin	Axe
10	12040505	1	Asse	Axle	Axe
11	12040501	2	Leva	Lever	Levier
12	12040500	2	Leva	Lever	Levier
13	12040514	2	Distanziale	Spacer	Entretoise
14	12040510	1	Tirante	Tie rod	Entretoise
15	17000752	2	Testa a snodo	Coupling head	Tête articulée
17	12040508	6	Distanziale	Spacer	Entretoise
18	12040515	2	Tirante	Tie rod	Entretoise
19	17000755	2	Testa a snodo	Coupling head	Tête articulée
20	12040516	2	Supporto	Support	Support
21	17000753	2	Testa a snodo	Coupling head	Tête articulée
22	12040512	1	Fulcro	Fulcrum	Point d'appui
23	17000158	1	Cilindro	Cylinder	Cylindre
24	17000157	1	Cilindro	Cylinder	Cylindre
25	17000163	4	Boccola	Bush	Bague
26	12040523	1	Camma	Cam	Came
27	12040509	3	Tirante	Tie rod	Entretoise
28	12040507	1	Biella	Connecting rod	Bielle
29	17000161	2	Bussola	Bush	Douille
30	018046031	1	Terminale	Terminal	Terminal
31	011045494	1	Scarico rapido	Fast air discharge	Décharge air rapide
32	011045919	1	Silenziatore	Silencer	Atténateur de bruit
33	17000642	1	Riduttore	Reduction gear	Réducteur
34	17000176	1	Manometro	Manometer	Manomètre
35	17000160	2	Bussola	Bush	Douille
36	018046038	1	Terminale	Terminal	Terminal
37	018046021	1	Monocono	Monocone	Monoglace
38	018046020	1	Dado	Nut	Ecrou
39	018046029	1	Boccola	Bush	Bague
40	018046005	1	Tubo	Hose	Tube
41	12042559	2	Contropiastra	Counterplate	Contre plaque
42	12042581	1	Telaio	Frame	Châssis
43	13040217	2	Colonna	Column	Colonne
44	12040513	2	Distanziale	Spacer	Entretoise
45	17000146	1	Valvola	Valve	Vanne
46	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne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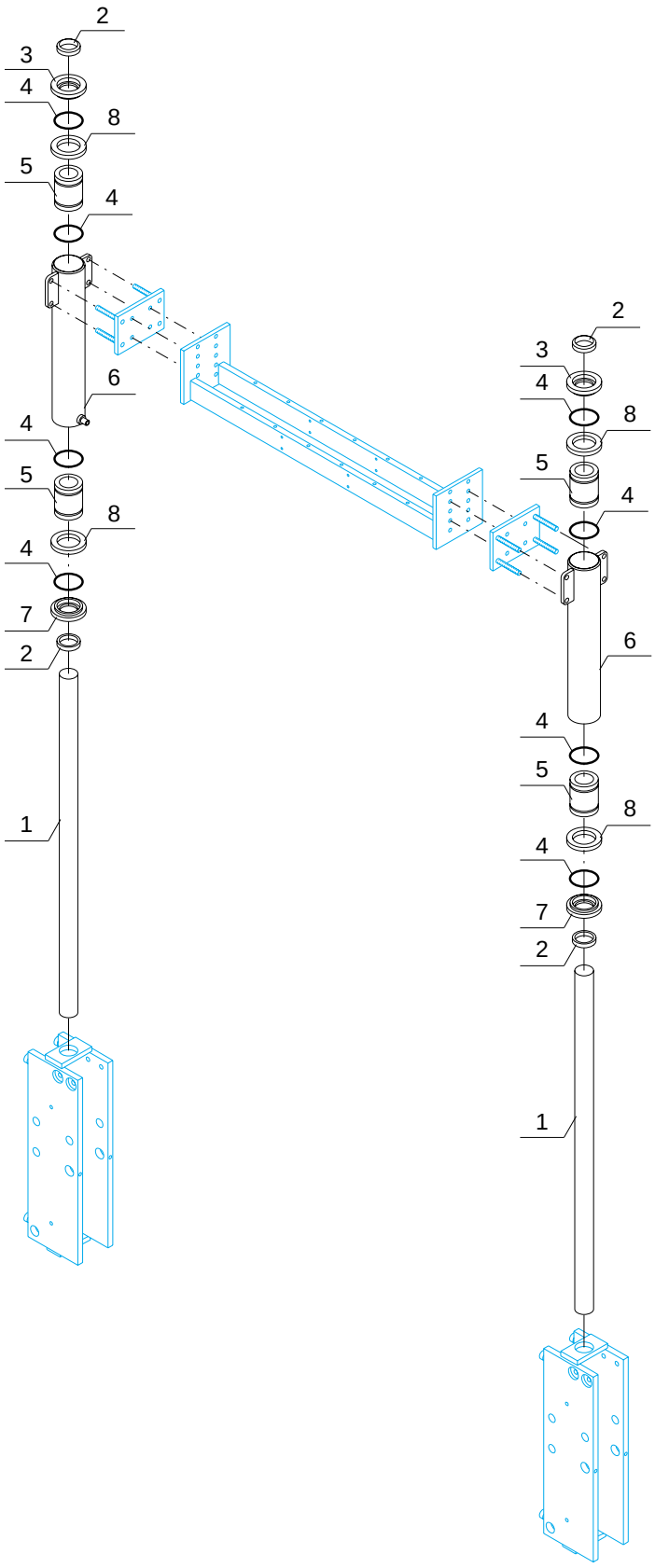
Colonna movimento stazioni **1/1** **13040217**

Station movement column - Colonne mouvement stations

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12040545	2	Colonna	Column	Colonne
2	336069702	4	Raschiatore	Scraper	Racleur
3	12040546	2	Chiusura	Closing system	Fermeture
4	336067107	8	Guarnizione	O-ring	Joint
5	5506,9006	4	Boccola	Bush	Bague
6	12040544	2	Cannotto	Sleeve	Fourreau
7	12040547	2	Chiusura	Closing system	Fermeture
8	12040548	2	Distanziale	Spacer	Entretoise



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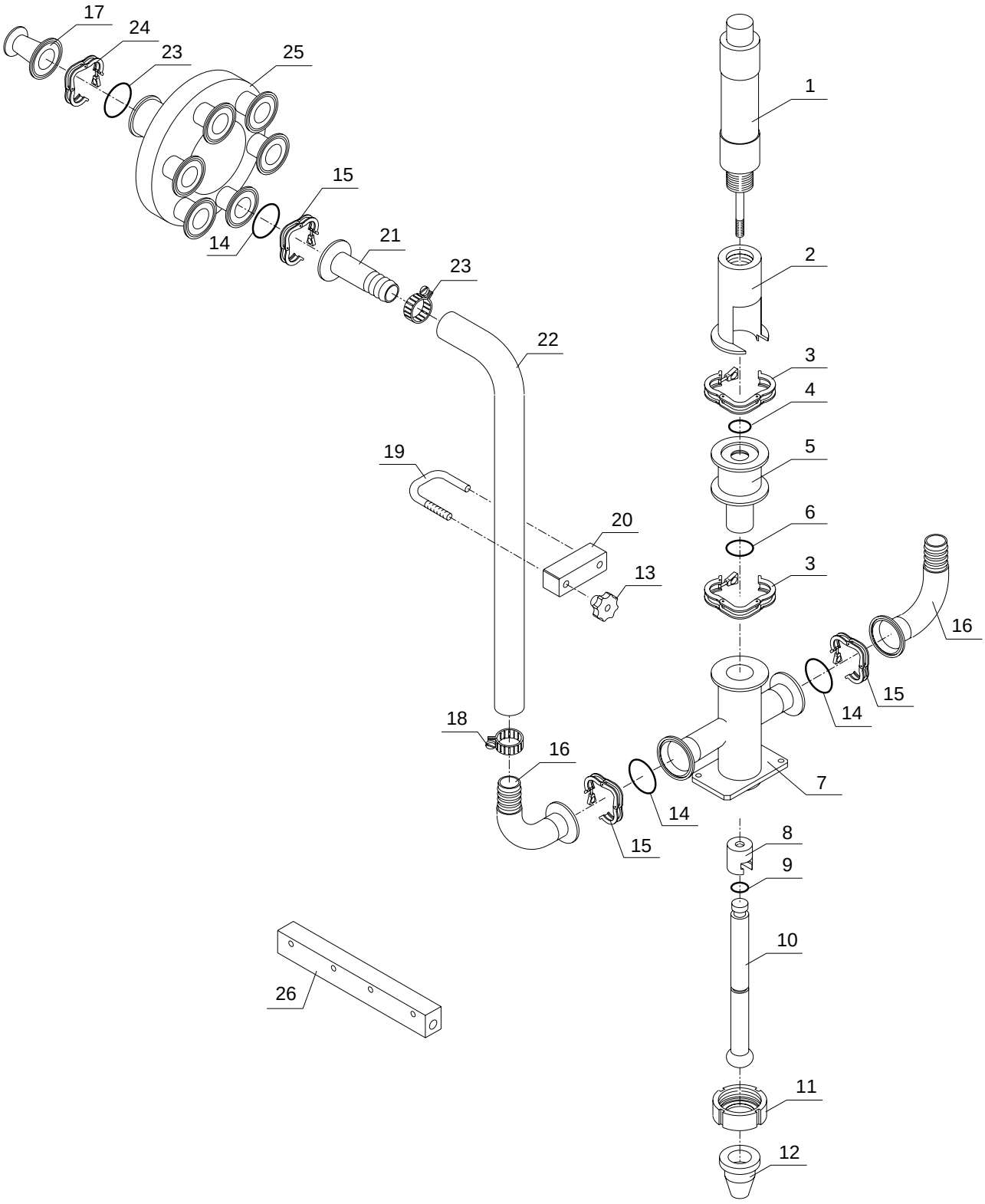
Set dosatori stand. 2 gusti **1/1** **13040895**

Time-elapse filler 2 flavours - Dosage bi-parfums

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17000010	6	Cilindro	Cylinder	Cylindre
2	12042570	6	Attacco per cilindro	Cylinder connection	Raccord pour cylindre
3	016060219	12	Chiusura clamp 2"	Clamp lockup	Fermeture clamp
4	336067042	6	Guarnizione	O-ring	Joint
5	12042571	6	Parte superiore dosatore	Upper part of the doser	Partie supérieure du doseur
6	336067051	6	Guarnizione	O-ring	Joint
7	12040209	6	Corpo	Body	Corps
8	12040027	6	Giunto	Anchor	Fixation
9	336067036	6	Guarnizione	O-ring	Joint
10	12040948	6	Dosatore	Doser	Doseurs
11	12040211	6	Ghiera	Ring nut	Bague
12	540204063	6	Ugello	Nozzle	Tuyau
13	336057033	12	Volantino	Handwheel	Petit volant
14	018020581	24	Guarnizione clamp	Clamp gasket with edge	Garniture clamp avec bord
15	016060218	24	Chiusura clamp 1"	Clamp lockup	Fermeture clamp
16	540204085	12	Curva	Elbow	Coude
17	17000975	2	Riduzione	Reduction	Réducteur
18	018060961	24	Fascetta	Hose clamp	Collier acier
19	12060281	12	Perno	Pin	Axe
20	12060282	12	Morsetto	Washer	Rondelle
21	016960007	12	Portagomma clamp	Hose-holder clamp	Porte-tuyau clamp
22	17000279	16 m.	Tubo	Hose	Tube
23	018020584	1	Guarnizione	O-ring	Joint
24	016060220	2	Chiusura Clamp	Clamp lockup	Fermeture clamp
25	12043683	2	Tettarella	Nipple	Gicleur
26	CM50E50002	2	Distributore	Distributor	Distributeur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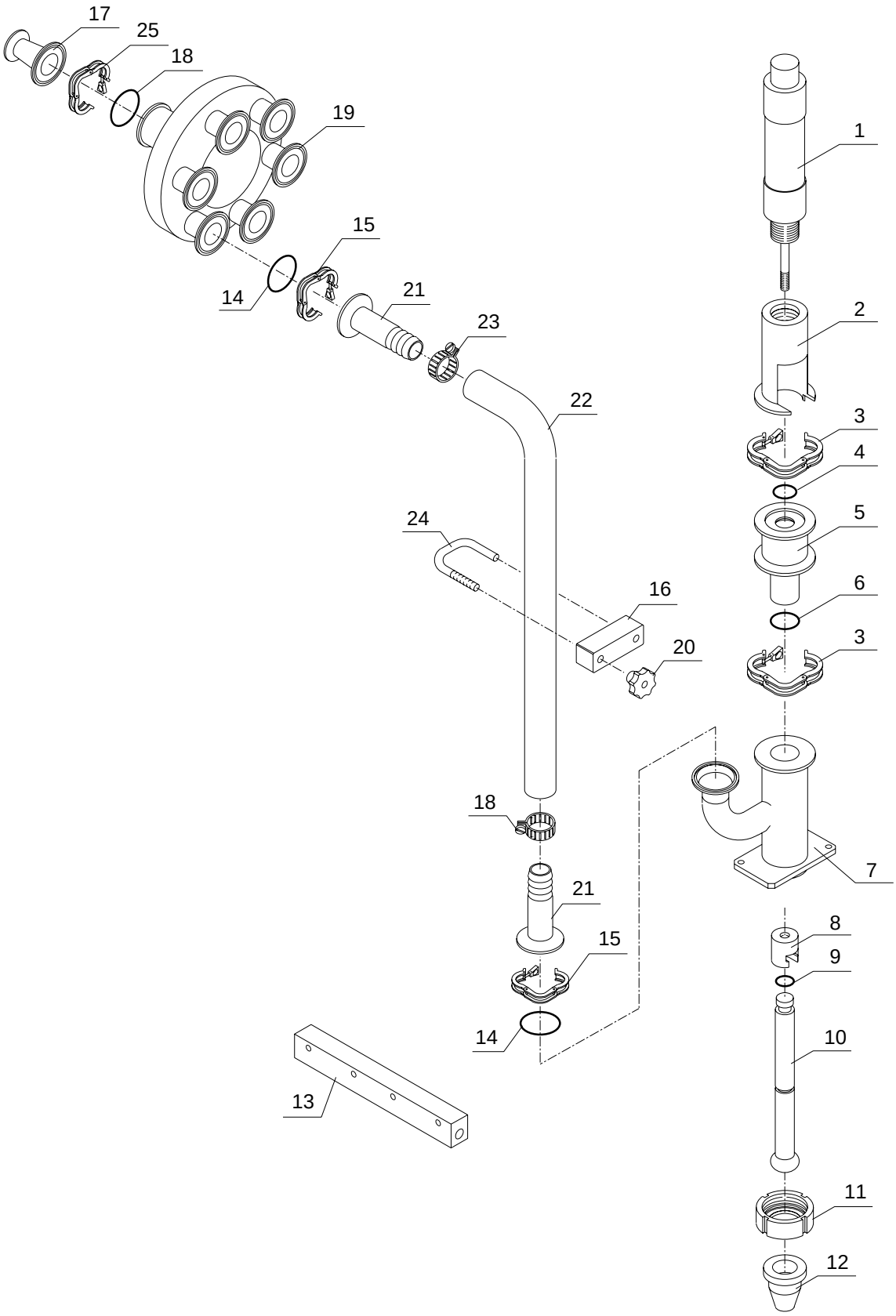
Set dos. std 1 gusto **1/1** **13040889**

Time-elapse filler 1 flavour - Dosage mono-parfum

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17000010	6	Cilindro	Cylinder	Cylindre
2	12042570	6	Attacco per cilindro	Cylinder connection	Raccord pour cylindre
3	016060219	12	Chiusura clamp 2"	Clamp lockup	Fermeture clamp
4	336067042	6	Guarnizione	O-ring	Joint
5	12042571	6	Parte superiore dosatore	Upper part of the doser	Partie supérieure du doseur
6	336067051	6	Guarnizione	O-ring	Joint
7	12040212	6	Corpo	Body	Corps
8	12040027	6	Giunto	Anchor	Fixation
9	336067036	6	Guarnizione	O-ring	Joint
10	12040948	6	Dosatore	Doser	Doseurs
11	12040211	6	Ghiera	Ring nut	Bague
12	540204063	6	Ugello	Nozzle	Tuyau
13	CM50E50002	2	Distributore	Distributor	Distributeur
14	018020581	24	Guarnizione clamp	Clamp gasket with edge	Garniture clamp avec bord
15	016060218	24	Chiusura clamp 1"	Clamp lockup	Fermeture clamp
16	12060282	4	Morsetto	Washer	Rondelle
17	17000975	1	Riduzione	Reduction	Réducteur
18	018020584	1	Guarnizione	O-ring	Joint
19	12043683	1	Volantino	Flywheel	Petit volant
20	336057033	6	Volantino	Flywheel	Petit volant
21	016960007	12	Portagomma clamp	Hose-holder clamp	Porte-tuyau clamp
22	17000279	9 m	Tubo	Hose	Tube
23	018060961	24	Fascetta	Hose clamp	Collier acier
24	12060281	6	Perno	Pin	Axe
25	016060220	1	Chiusura Clamp	Clamp lockup	Fermeture clamp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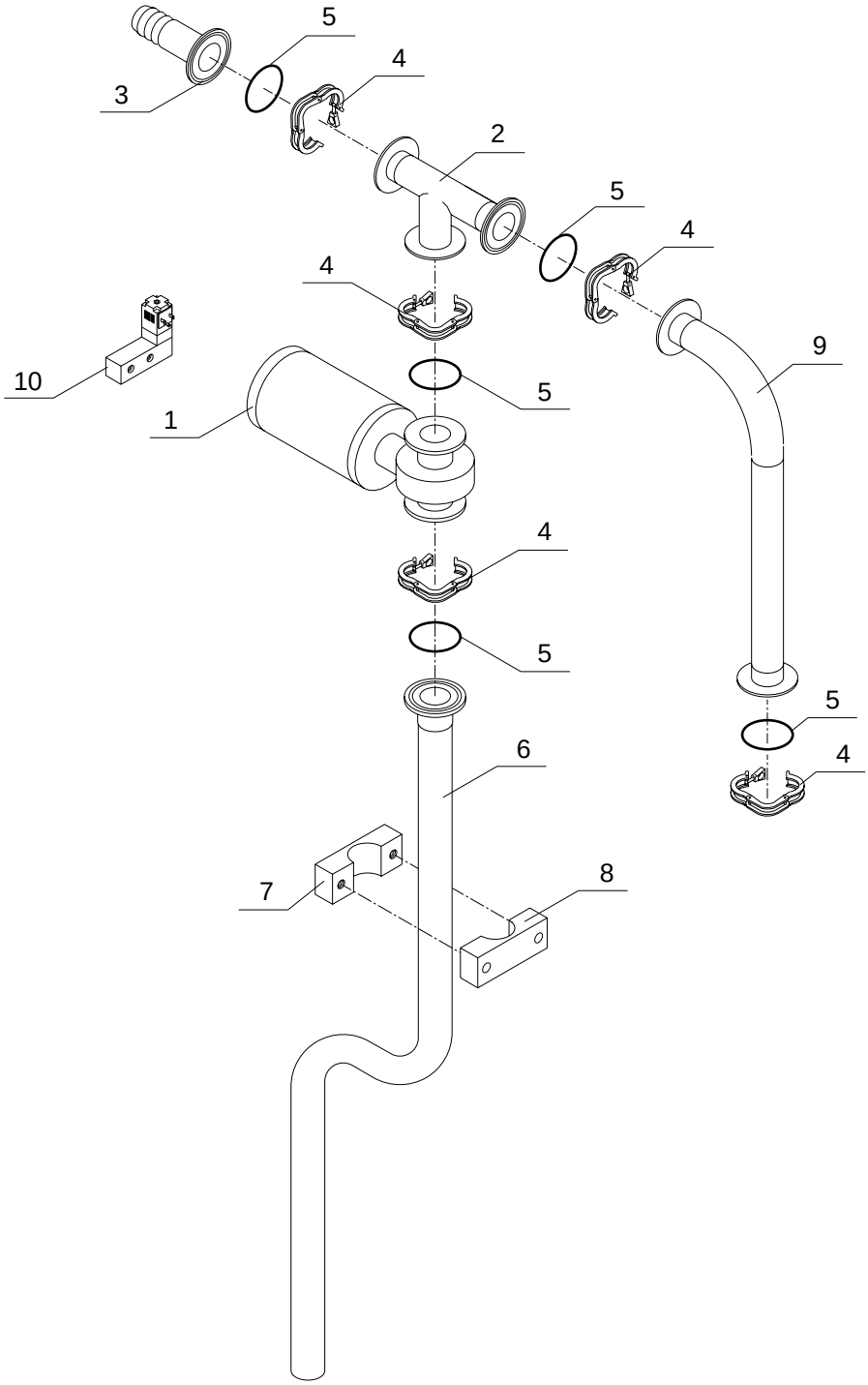
By-pass **1/1** **13040332**

By-pass - By-pass

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17040009	1	Valvola	Valve	Vanne
2	17000377	1	Raccordo	Union	Raccord
3	541110008	1	Portagomma	Hose connection	Porte-caoutchouc
4	016060219	5	Chiusura clamp 2"	Clamp lockup	Fermeture clamp
5	018020583	5	Guarnizione 2"	O-ring	Joint
6	12040527	1	Tubo	Hose	Tube
7	12040524	2	Cravatta	Tie	Etau
8	12040525	2	Cravatta	Tie	Etau
9	12042640	1	Tubo	Hose	Tube
10	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne



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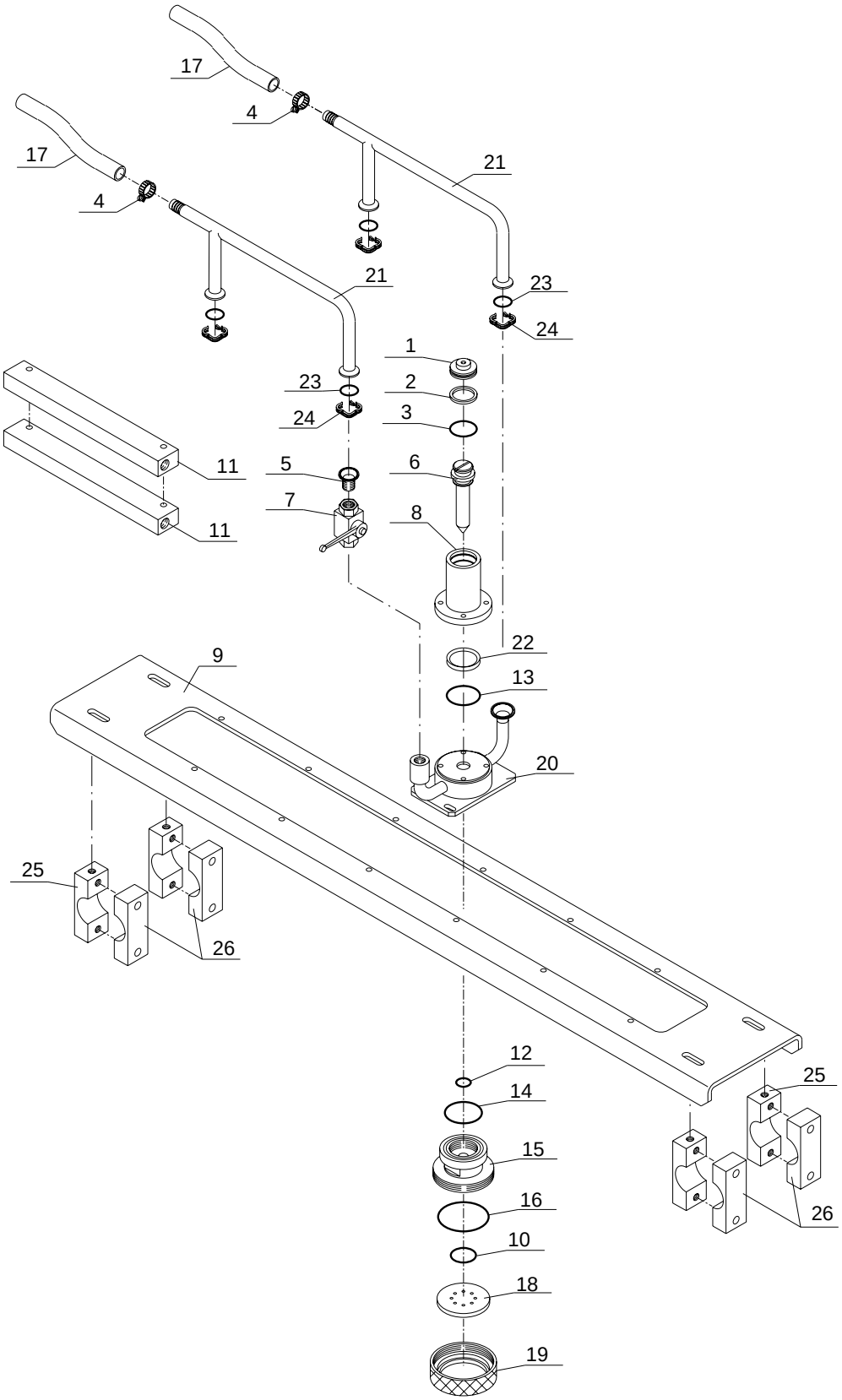
Topping - 6 file **1/1** **13040042**

Topping device - Dispositif pour le dosage du chocolat

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	540214002	6	Culatta	Bottom	Culasse
2	336067020	6	Guarnizione	O-ring	Joint
3	336069466	6	Guarnizione	O-ring	Joint
4	018060957	8	Fascetta	Hose clamp	Collier acier
5	12041632	6	Raccordo	Union	Raccord
6	540214001	6	Pistone	Piston	Piston
7	016030065	6	Rubinetto	Cock	Robinet
8	12041785	6	Valvola	Valve	Vanne
9	12041155	1	Telaio	Frame	Châssis
10	12042289	6	Guarnizione	O-ring	Joint
11	CM50E50002	2	Distributore	Distributor	Distributeur
12	336067030	6	Guarnizione OR	Seal	Joint torique OR
13	336067048	6	Guarnizione OR	Seal	Joint torique OR
14	336067092	6	Guarnizione	O-ring	Joint
15	12042031	6	Ugello	Nozzle	Tuyau
16	336067100	6	Guarnizione	O-ring	Joint
17	17000278	3m	Tubo	Hose	Tube
18	D01H00016B	6	Disco	Disc	Disque
19	D01H00016A	6	Ghiera	Ring nut	Bague
20	12041786	6	Valvola	Valve	Vanne
21	12041629	4	Collettore	Manifold	Collecteur
22	17040639	6	Guarnizione	O-ring	Joint
23	018020586	12	Guarnizione	O-ring	Joint
24	016060215	12	Clamp	Clamp	Clamp
25	12040078	4	Morsetto	Washer	Rondelle
26	12040079	4	Morsetto	Washer	Rondelle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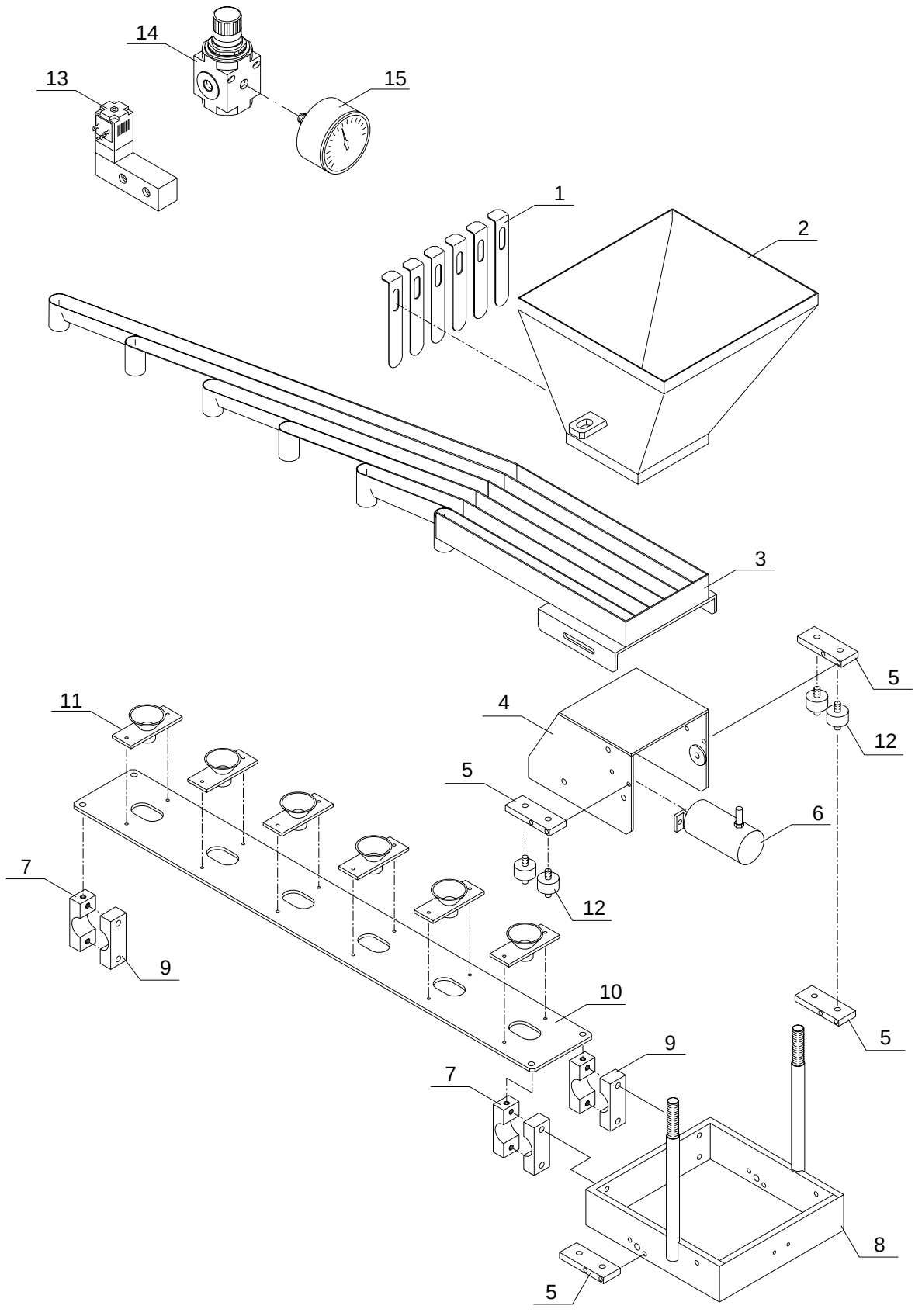
Granella **1/1** **13040046**

Dry ingredient dispenser - Distributeur d'ingrédients secs

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	D01G00027	6	Regolatore	Regulator	Régulateur
2	12042594	1	Tramoggia	Hopper	Trémie
3	12042593	1	Canalina	Channel	Conduite
4	12042943	1	Supporto	Support	Support
5	12042898	4	Blocchetto	Block	Bloc
6	336091100	1	Vibratore	Vibrator	Vibrateur
7	12040079	3	Morsetto	Washer	Rondelle
8	12040646	1	Supporto	Support	Support
9	12040078	3	Morsetto	Washer	Rondelle
10	12040993	1	Supporto	Support	Support
11	12042645	6	Imbuto	Funnel	Entonnoir
12	015010825	4	Ammortizzatori	Shock absorber	Amortisseur
13	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne
14	17000168	1	Riduttore	Reduction gear	Réducteur
15	17000176	1	Manometro	Manometer	Manomètre



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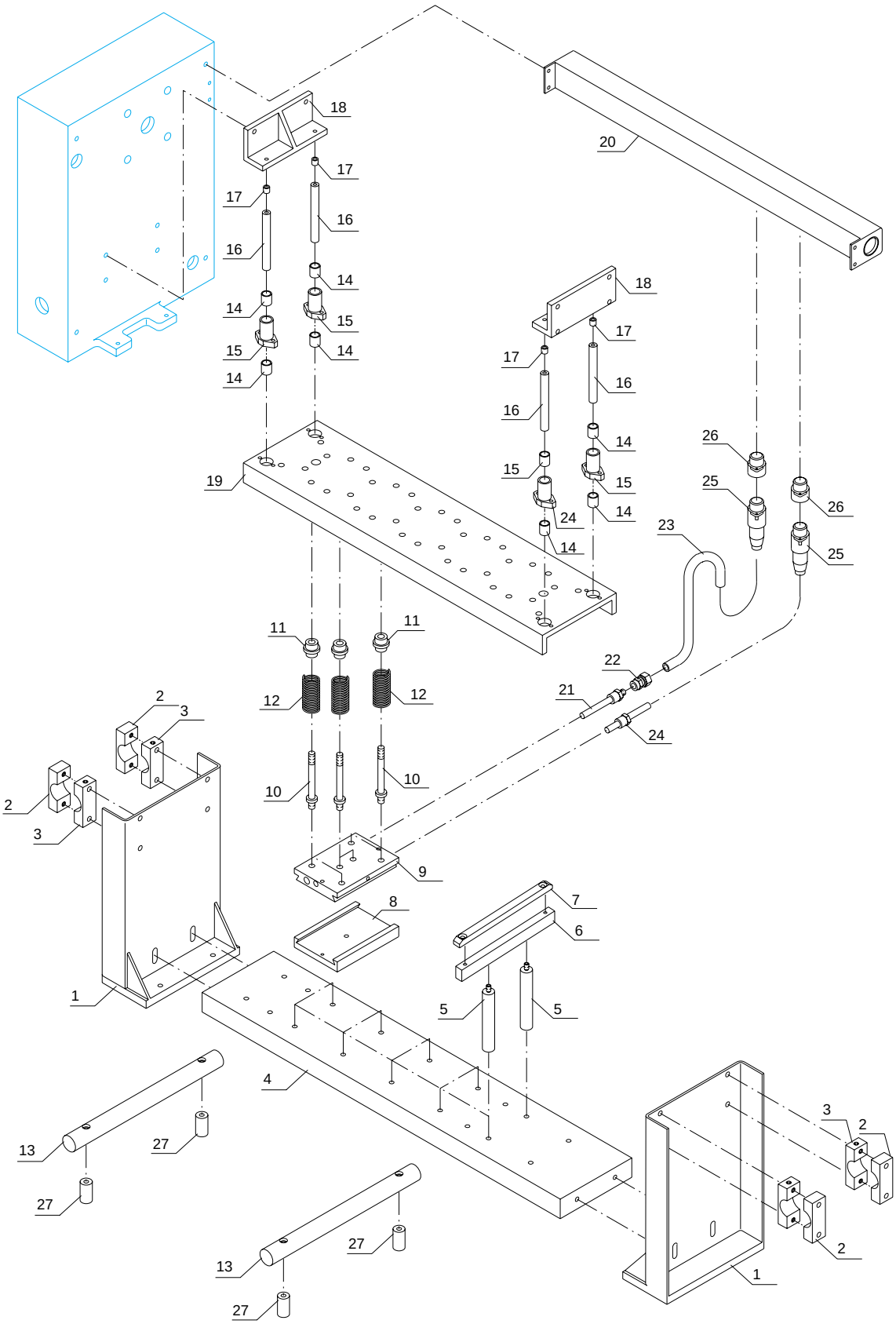
Dispositivo saldatura foglietti **1/2** **13040462**

Heat sealing station for alu-foil - Station de scellage opercules

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12044402	1	Profilo	Form	Profilé
2	12040078	6	Morsetto	Washer	Rondelle
3	12040079	6	Morsetto	Washer	Rondelle
4	12044359	1	Traversa	Crosspiece	Traverse
5	12044130	10	Colonnina	Column	Colonne
6	12043699	5	Piatto	Plate	Plateau
7	12042828	5	Pattino	Guide	Guide
8	12044173	6	Piastra	Plate	Plaque
9	12040973	6	Piastra	Plate	Plaque
10	12044400	24	Tirante	Tie rod	Entretoise
11	12044401	24	Bussola	Bush	Douille
12	17040638	24	Molla	Spring	Ressort
13	12041474	2	Guida	Guide	Guide
14	336005056	8	Boccola	Bush	Bague
15	12040970	4	Cannotto	Sleeve	Fourreau
16	12044357	4	Colonnina	Column	Colonne
17	12044926	4	Distanziale	Spacer	Entretoise
18	12044358	2	Piastra	Plate	Plaque
19	12044347	1	Traversa	Crosspiece	Traverse
20	12044407	1	Tubo	Hose	Tube
21	017075168	24	Resistenza	Resistance	Résistance
22	016960075	6	Raccordo	Union	Raccord
23	12041801	6	Tubo	Hose	Tube
24	17000779	6	Termocoppia	Thermocouple	Thermocouple
25	017050005	12	Spina	Pin	Goupille
26	017050052	12	Pannello	Panel	Panneau
27	12040012	4	Distanziale	Spacer	Entretoise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Dispositivo saldatura foglietti **2/2** **13040462**

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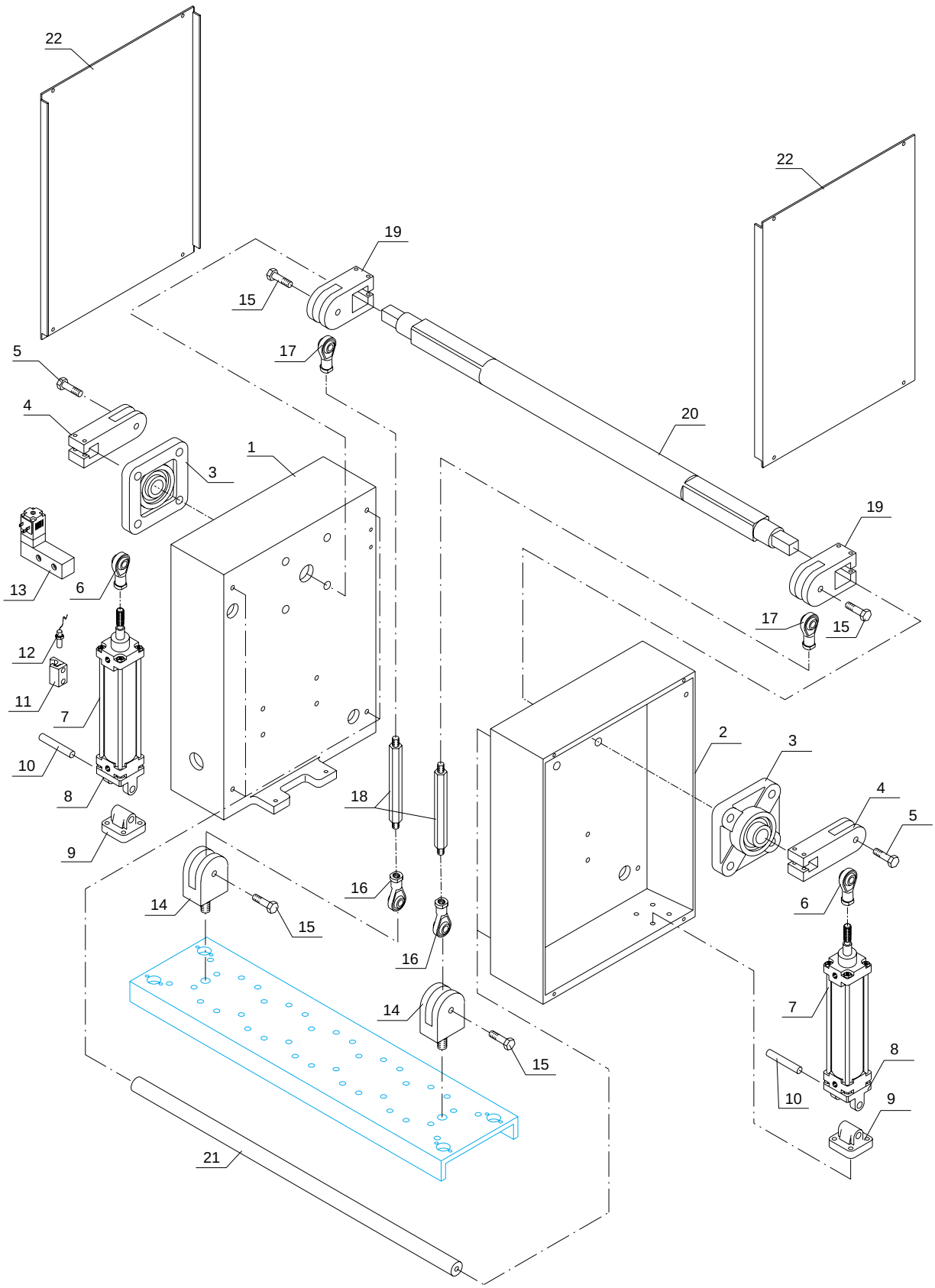
POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12044405	1	Spalla	Shoulder	Epaulement
2	12044404	1	Spalla	Shoulder	Epaulement
3	17001072	2	Supporto	Support	Support
4	12044355	2	Leva	Lever	Levier
5	12044352	2	Perno	Pin	Axe
6	17000753	2	Testa a snodo	Coupling head	Tête articulée
7	17000013	2	Cilindro	Cylinder	Cylindre
8	12040861	2	Fissaggio	Anchor	Fixation
9	12040862	2	Supporto	Support	Support
10	12044408	2	Perno	Pin	Axe
11	17000055	2	Fissaggio	Anchor	Fixation
12	17000054	2	Finecorsa	Limit switch	Fin de course
13	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne
14	12044339	2	Forcella	Fork	Fourche
15	12044353	4	Perno	Pin	Axe
16	17000752	2	Snodo	Coupling	Articulation
17	17000755	2	Snodo	Coupling	Articulation
18	12044338	2	Tirante	Tie rod	Entretoise
19	12044354	2	Forcella	Fork	Fourche
20	12044356	2	Albero	Shaft	Arbre
21	12044403	4	Tirante	Tie rod	Entretoise
22	12044409	2	Carter	Casing	Carter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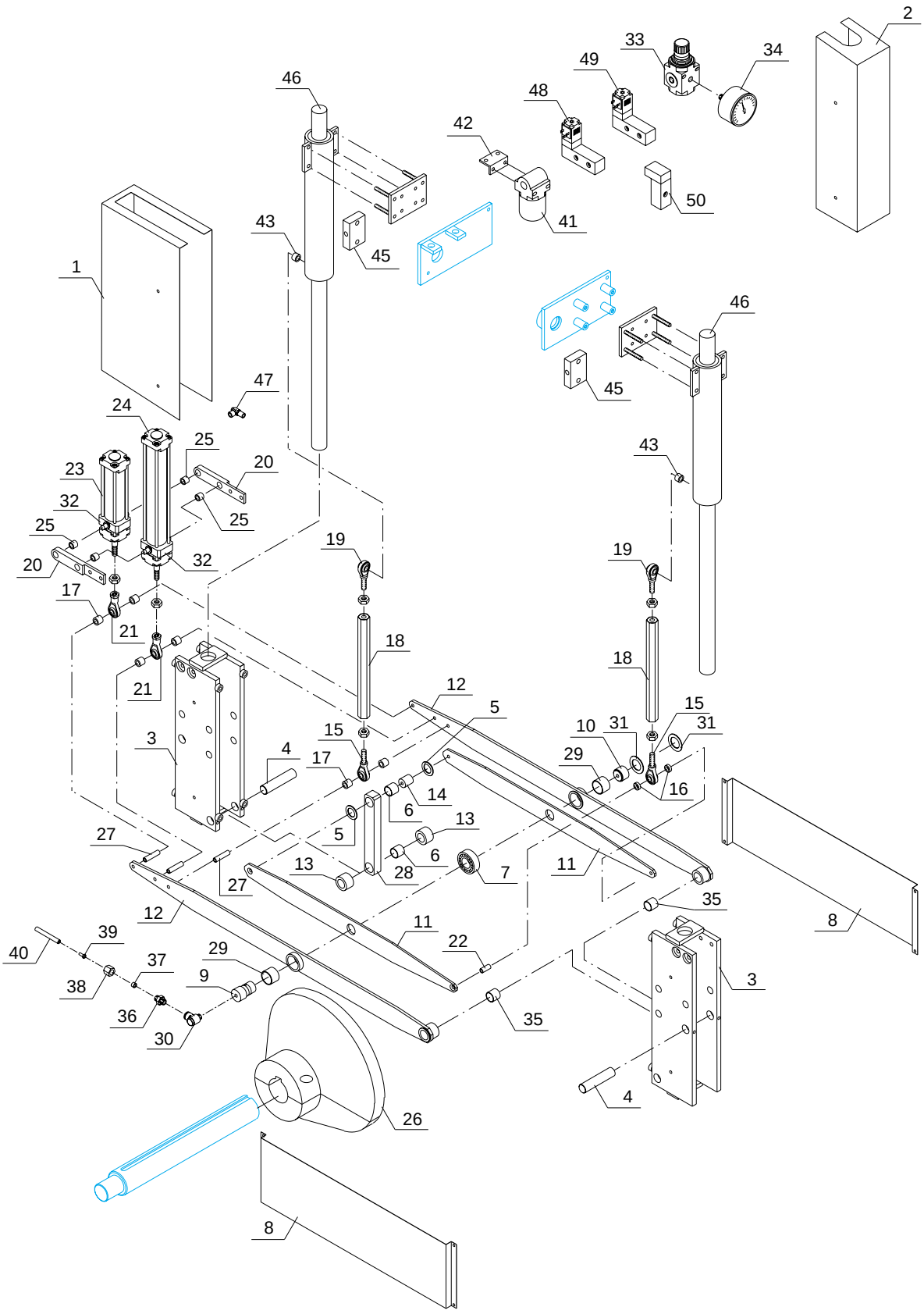
Carico coperchi 2/4/6 file p=140 **1/2** **13040059**

Lid/alu foil dispensing station - Station de distribution des couvercles/opercules

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12040517	1	Carter	Casing	Carter
2	12040518	1	Carter	Casing	Carter
3	12040506	2	Supporto	Support	Support
4	12040511	2	Perno	Pin	Axe
5	12040503	4	Ralla	Washer	Crapaudine
6	17000634	4	Boccola	Bush	Bague
7	336003545	1	Rotella	Wheel	Roue
8	12042312	2	Protezione	Protection	Protection
9	12040504	1	Perno	Pin	Axe
10	12040505	1	Asse	Axle	Axe
11	12040501	2	Leva	Lever	Levier
12	12040500	2	Leva	Lever	Levier
13	12040514	2	Distanziale	Spacer	Entretoise
14	12040510	1	Tirante	Tie rod	Entretoise
15	17000752	2	Testa a snodo	Coupling head	Tête articulée
17	12040508	6	Distanziale	Spacer	Entretoise
18	12041428	2	Tirante	Tie rod	Entretoise
19	17000755	2	Testa a snodo	Coupling head	Tête articulée
20	12040516	2	Supporto	Support	Support
21	17000753	2	Testa a snodo	Coupling head	Tête articulée
22	12040512	1	Fulcro	Fulcrum	Point d'appui
23	17000158	1	Cilindro	Cylinder	Cylindre
24	17000157	1	Cilindro	Cylinder	Cylindre
25	17000163	4	Boccola	Bush	Bague
26	12040537	1	Camma	Cam	Came
27	12040509	3	Tirante	Tie rod	Entretoise
28	12040507	1	Biella	Connecting rod	Bielle
29	17000161	2	Bussola	Bush	Douille
30	018046031	1	Terminale	Terminal	Terminal
31	D-FM3146A	1	Rondella	Washer	Rondelle
32	17000164	2	Kit oscillante	Oscillating Kit	Boîte de oscillante
33	17000642	1	Riduttore	Reduction gear	Réducteur
34	17000176	1	Manometro	Manometer	Manomètre
35	17000160	1	Bussola	Bush	Douille
36	018046038	1	Terminale	Terminal	Terminal
37	018046021	1	Monocono	Monocone	Monoglace
38	018046020	1	Dado	Nut	Ecrou
39	018046029	1	Boccola	Bush	Bague
40	018046005	1	Tubo	Hose	Tube
41	17000799	1	Filtro	Filter	Filtre
42	12042674	1	Squadretta	Bracket	Equerre
43	12040513	2	Distanziale	Spacer	Entretoise
44	12045227	2	Contropiastra	Counterplate	Contre plaque
45	12043390	2	Tassello	Expansion plug	Cheville
46	13040217	2	Colonna	Column	Colonne
47	17000146	1	Valvola	Valve	Vanne
48	17000082	3	Elettrovalvola	Solenoid valve	Electrovanne
49	333004076	1	Valvola	Valve	Vanne
50	17000608	1	Vacuostato		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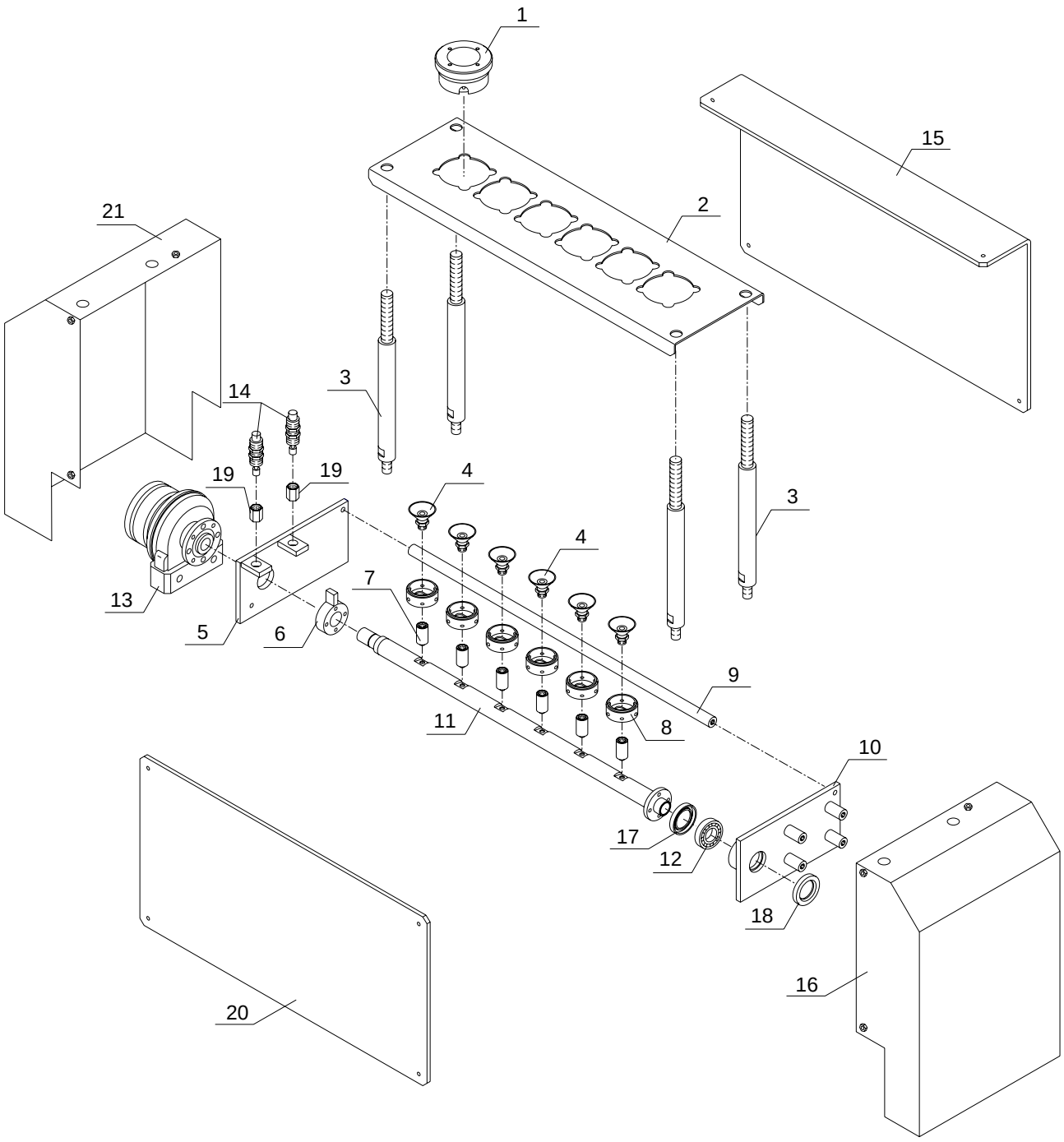
1/2 - 13040059

Carico coperchi 2/4/6 file p=140 **2/2** **13040059**

Lid/alu foil dispensing station - Station de distribution des couvercles/opercules

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1		4	Magazzino	Magazine	Magasin
2	12040532	1	Barella sostegno	Support	Soutien
3	12040536	4	Colonnina	Column	Colonne
4	011045990	4	Ventosa (*)	Suction cup (*)	Ventouse (*)
5	12040530	1	Piastra	Plate	Plaque
6	12040534	1	Fermo	Stop	Arrêt
7	12040253	4	Porta ventosa (*)	Cup-holder	Porte-ventouse
8	12040252	4	Porta ventosa (*)	Cup-holder	Porte-ventouse
9	12040535	1	Distanziale	Spacer	Entretoise
10	12040531	1	Piastra	Plate	Plaque
11	12040533	1	Albero	Shaft	Arbre
12	336001448	1	Cuscinetto	Bearing	Roulement
13	333001020	1	Palmola	Palmola	Palmola
14	333003207	1	Freno idraulico	Hydraulic brake	Frein hydraulique
15	12042688	1	Pannello	Panel	Panneau
16	12042686	1	Carter	Casing	Carter
17	336071267	1	Corteco	Corteco seal	Corteco
18	336071180	1	Corteco	Corteco seal	Corteco
19	12041494	2	Fermo	Stop	Arrêt
20	12042364	1	Pannello	Panel	Panneau
21	12042687	1	Carter	Casing	Carter



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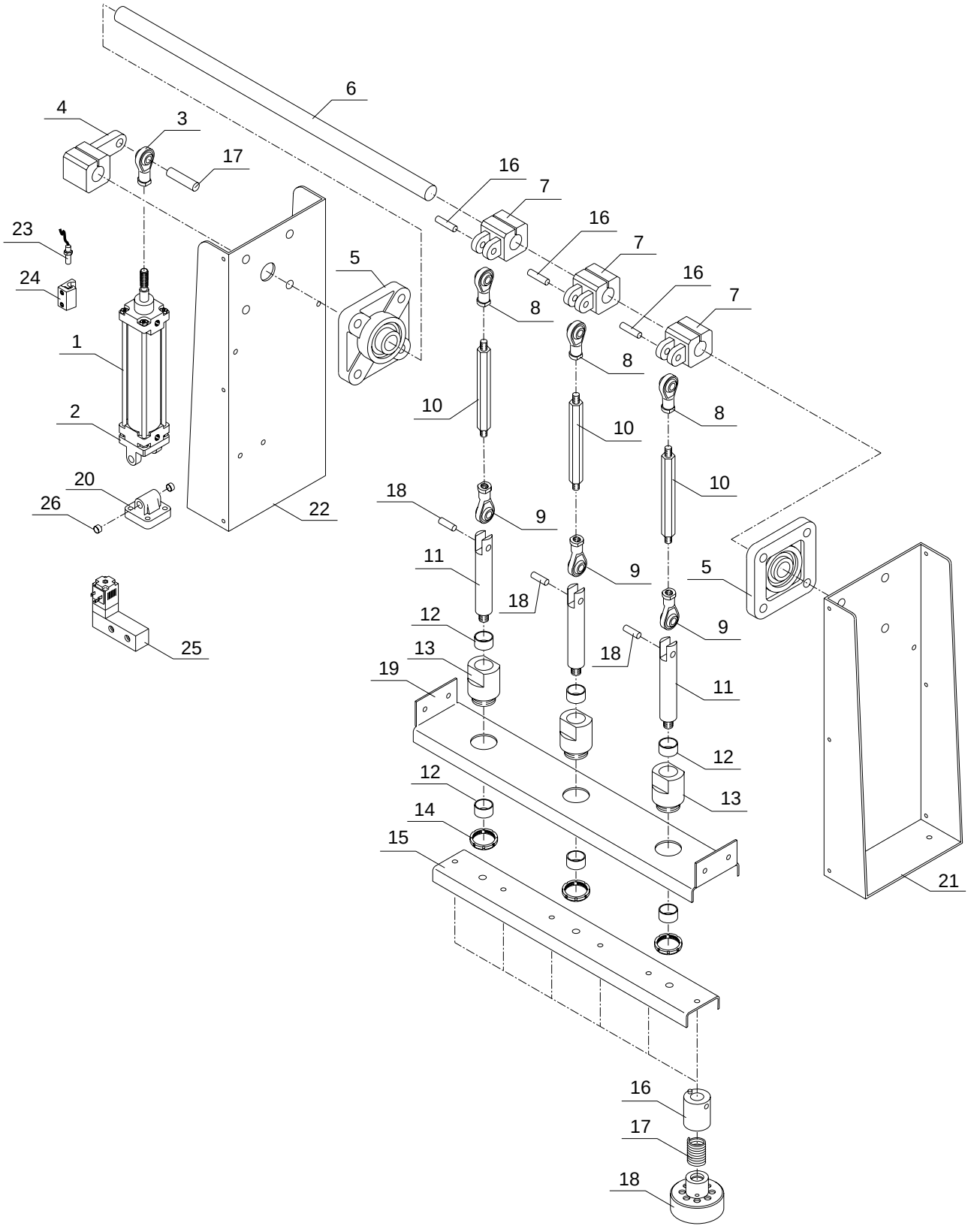
Aggraffatore **1/2** **13040698**

Lid closing station - Station de fermeture des couvercles

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17000230	1	Cilindro	Cylinder	Cylindre
2	12043800	1	Flangia	Flange	Bride
3	17000374	1	Testa a snodo	Coupling head	Tête articulée
4	12042906	1	Leva	Lever	Levier
5	17000018	2	Supporto	Support	Support
6	12042912	1	Albero	Shaft	Arbre
7	12042907	3	Leva	Lever	Levier
8	17000891	3	Testa a snodo	Coupling head	Tête articulée
9	17000892	3	Testa a snodo	Coupling head	Tête articulée
10	12042902	3	Tirante	Tie rod	Entretoise
11	12042900	3	Tirante	Tie rod	Entretoise
12	17000600	6	Boccola	Bush	Bague
13	12042908	3	Bussola	Bush	Douille
14	12043254	3	Ghiera	Ring nut	Bague
15	12042909	1	Traversa	Crosspiece	Traverse
16	12042901	3	Perno	Pin	Axe
17	12042903	3	Perno	Pin	Axe
18	12042904	1	Perno	Pin	Axe
19	12042910	1	Traversa	Crosspiece	Traverse
20	17000920	1	Supporto	Support	Support
21	12042913	1	Mensola	Bracket	Console
22	12042914	1	Mensola	Bracket	Console
23	17000054	1	Finecorsa	Limit switch	Fin de course
24	17000055	1	Fissaggio	Anchor	Fixation
25	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne
26	17000346	2	Boccola	Bush	Bague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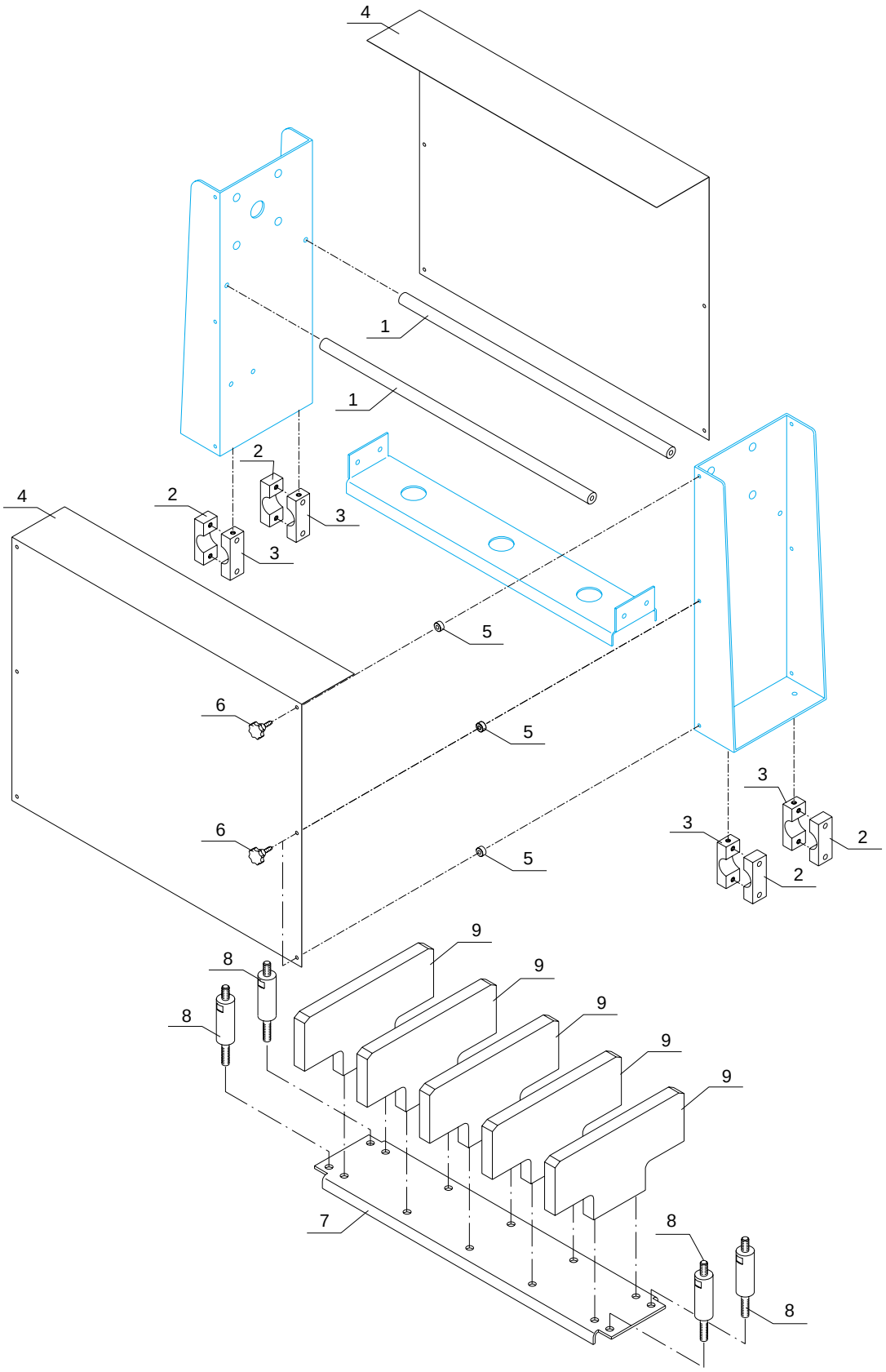
Aggraffatore **2/2** **13040698**

Lid closing station - Station de fermeture des couvercles

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12042911	2	Distanziale	Spacer	Entretoise
2	12040079	4	Morsetto	Washer	Rondelle
3	12040078	4	Morsetto	Washer	Rondelle
4	12042916	2	Copertura	Cover	Couverture
5	12042905	12	Distanziale	Spacer	Entretoise
6	17040627	12	Volantino	Flywheel	Petit volant
7	12040641	1	Profilo	Form	Profilé
8	12041405	4	Colonna	Column	Colonne
9	VK50R08001	5	Polizene	Polyzene	Parois



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Movimento marcatore **1/1** **13040947**

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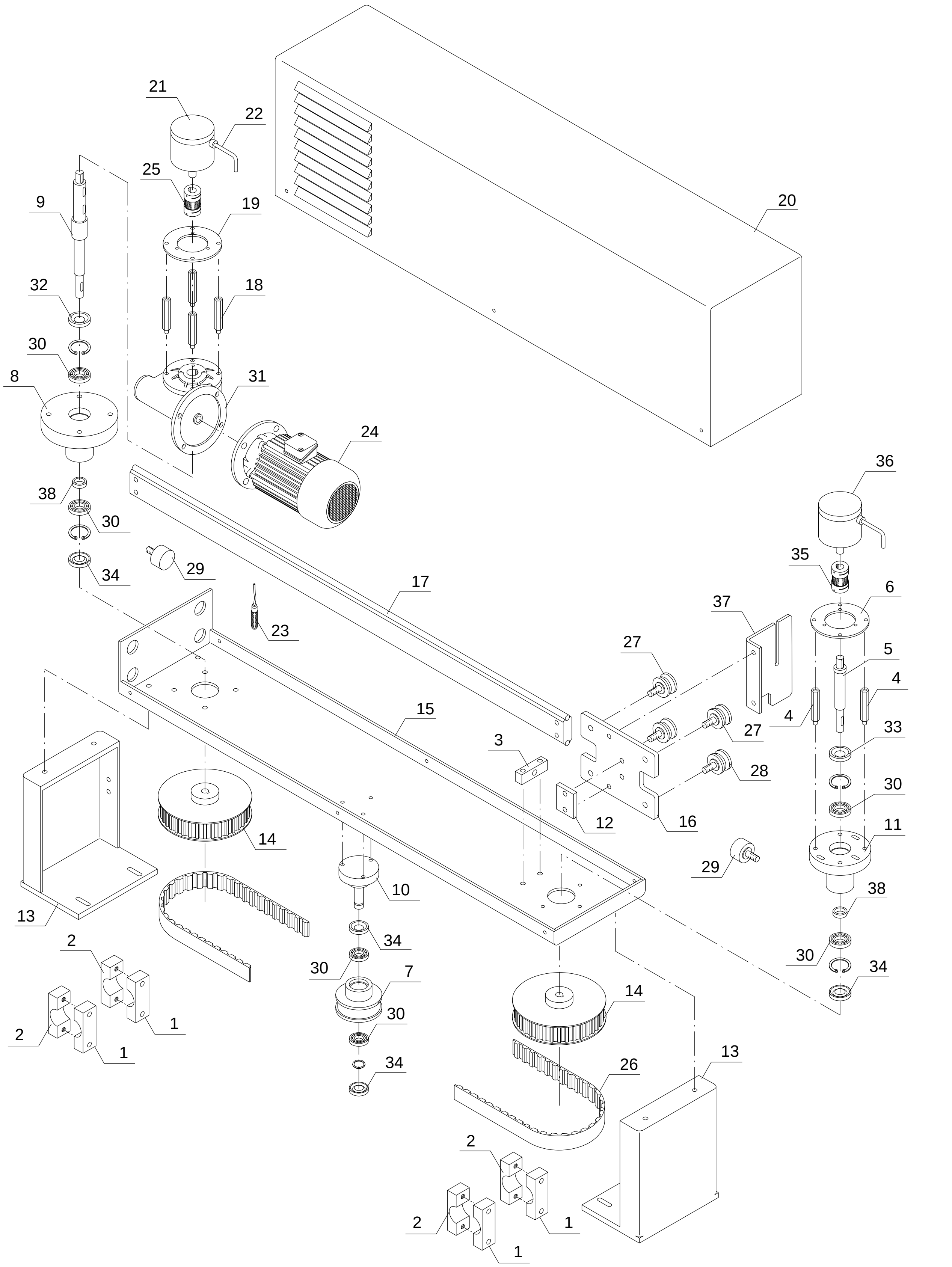
POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12040078	4	Morsetto	Washer	Rondelle
2	12040079	4	Morsetto	Washer	Rondelle
3	12041459	1	Blocchetto	Block	Bloc
4	12043241	4	Colonnina	Column	Colonne
5	12044415	1	Alberino		
6	12044417	1	Flangia	Flange	Bride
7	12044423	1	Puleggia	Pulley	Poulie
8	12044426	1	Bussola	Bush	Douille
9	12044427	1	Alberino		
10	12044429	1	Perno	Pin	Axe
11	12044431	1	Bussola	Bush	Douille
12	12044433	1	Piastra	Plate	Plaque
13	12045075	2	Spalla	Shoulder	Epaulement
14	12045076	2	Puleggia	Pulley	Poulie
15	12045077	1	Traversa	Crosspiece	Traverse
16	12045078	1	Piastra	Plate	Plaque
17	12045079	1	Guida	Guide	Guide
18	12045082	4	Colonnina	Column	Colonne
19	12045083	1	Flangia	Flange	Bride
20	12045088	1	Carter	Casing	Carter
21	17000120	1	Encoder	Encoder	Codeur
22	17000121	1	Cavo	Cable	Cable
23	17001055	1	Proximity	Proximity sensor	Capteur de proximité
24	17001124	1	Motore	Motor	Moteur
25	17001199	1	Giunto	Joint	Joint
26	17001274	1	Cinghia	Belt	Courroie
27	17001275	2	Rullo	Roller	Rouleau
28	17001276	2	Rullo	Roller	Rouleau
29	17001277	2	Paracolpi		
30	336001383	6	Cuscinetto	Bearing	Roulement
31	336010034	1	Riduttore	Reduction gear	Réducteur
32	336069348	1	Corteco	Corteco seal	Corteco
33	336071115	1	Corteco	Corteco seal	Corteco
34	336071121	4	Corteco	Corteco seal	Corteco
35	336072910	1	Giunto	Joint	Joint
36	17040085	1	Encoder	Encoder	Codeur
37	12045089	1	Supporto	Support	Support
38	12044416	2	Distanziale	Spacer	Entretoise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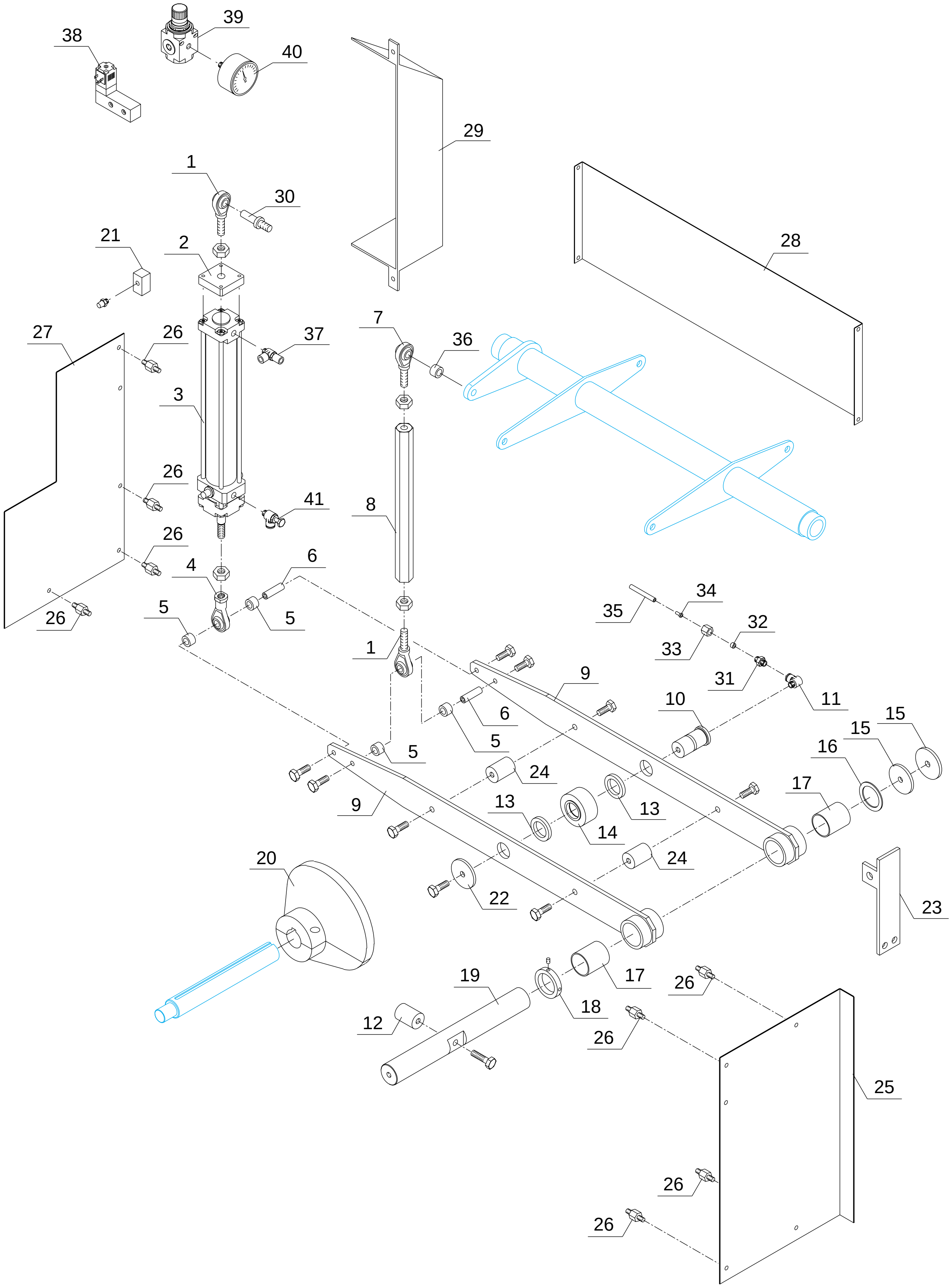
Espulsione verticale **1/3** **13040656**

Vertical ejection - Ejection verticale

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	17000755	2	Testa a snodo	Coupling head	Tête articulée
2	12041330	1	Piastra	Plate	Plaque
3	17000158	1	Cilindro	Cylinder	Cylindre
4	17000753	1	Testa a snodo	Coupling head	Tête articulée
5	12041030	4	Distanziale	Spacer	Entretoise
6	12041031	2	Tirante	Tie rod	Entretoise
7	17000752	1	Testa a snodo	Coupling head	Tête articulée
8	12041057	1	Tirante	Tie rod	Entretoise
9	12041026	2	Leva	Lever	Levier
10	12041028	1	Asse	Axle	Axe
11	018046031	1	Terminale	Terminal	Terminal
12	12041590	3	Distanziale	Spacer	Entretoise
13	12041029	2	Distanziale	Spacer	Entretoise
14	336003545	1	Rotella	Wheel	Roue
15	12041027	2	Rondella	Washer	Rondelle
16	12041025	1	Rondella	Washer	Rondelle
17	17000421	2	Boccola	Bush	Bague
18	12041024	1	Rondella	Washer	Rondelle
19	12041102	1	Asse	Axle	Axe
20	12045174	1	Camma	Cam	Came
21	011045494	1	Scarico rapido	Fast air discharge	Décharge air rapide
22	D-FM3146A	1	Rondella	Washer	Rondelle
23	12041835	1	Piastra	Plate	Plaque
24	12041023	2	Distanziale	Spacer	Entretoise
25	12041739	1	Carter	Casing	Carter
26	12041752	8	Distanziale	Spacer	Entretoise
27	12042315	1	Carter	Casing	Carter
28	12042318	1	Carter	Casing	Carter
29	12041882	1	Carter	Casing	Carter
30	12041838	1	Perno	Pin	Axe
31	018046038	1	Terminale	Terminal	Terminal
32	018046021	1	Monocono	Monocone	Monoglace
33	018046020	1	Dado	Nut	Ecrou
34	018046029	1	Boccola	Bush	Bague
35	018046005	1	Tubo	Hose	Tube
36	12041037	1	Distanziale	Spacer	Entretoise
37	17000146	1	Valvola	Valve	Vanne
38	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne
39	17000642	1	Riduttore	Reduction gear	Réducteur
40	17000176	1	Manometro	Manometer	Manomètre
41	17000225	2	Regolatore	Regulator	Régulateur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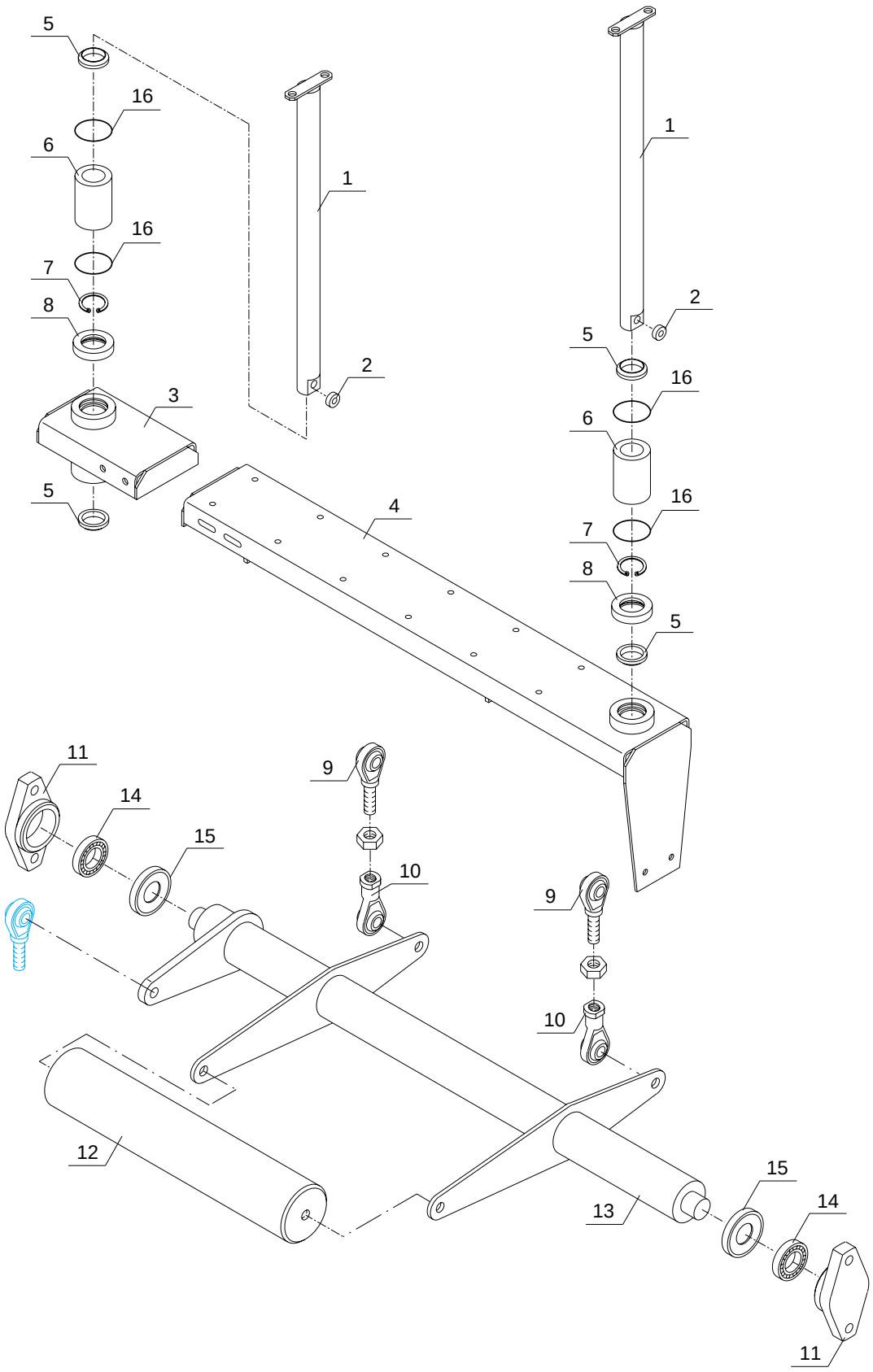
Espulsione verticale **2/3** **13040656**

Vertical ejection - Ejection verticale

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12041050	2	Colonna	Column	Colonne
2	12041049	2	Distanziale	Spacer	Entretoise
3	12041825	1	Regolazione	Regulator	Régulateur
4	12041056	1	Traversa	Crosspiece	Traverse
5	336069741	4	Raschiatore	Scraper	Racleur
6	5506,9003	2	Bussola	Bush	Douille
7	326019040	2	Seeger	Seeger	Seeger
8	12041054	2	Tappo	Cap	Bouchon
9	17000754	2	Testa a snodo	Coupling head	Tête articulée
10	17000755	2	Testa a snodo	Coupling head	Tête articulée
11	12042628	2	Supporto	Support	Support
12	12041332	1	Contrappeso	Counterweight	Contrepoids
13	12042629	1	Leverismo	Lever	Levier
14	336002218	2	Cuscinetto	Bearing	Roulement
15	336071350	2	Corteco	Corteco seal	Corteco
16	336067054	4	Guarnizione OR	Seal	Joint torique OR



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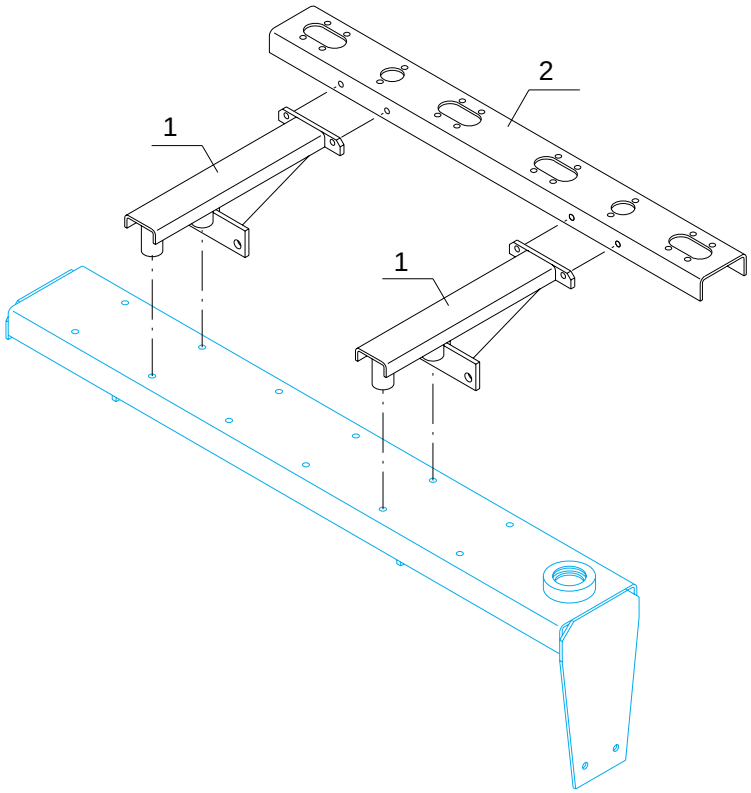
Espulsione verticale **3/3** **13040656**

Vertical ejection - Ejection verticale

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12041334	2	Supporto	Support	Support
2	12041881	2	Porta espulsori	Expeller holder	Porte-éjecteur



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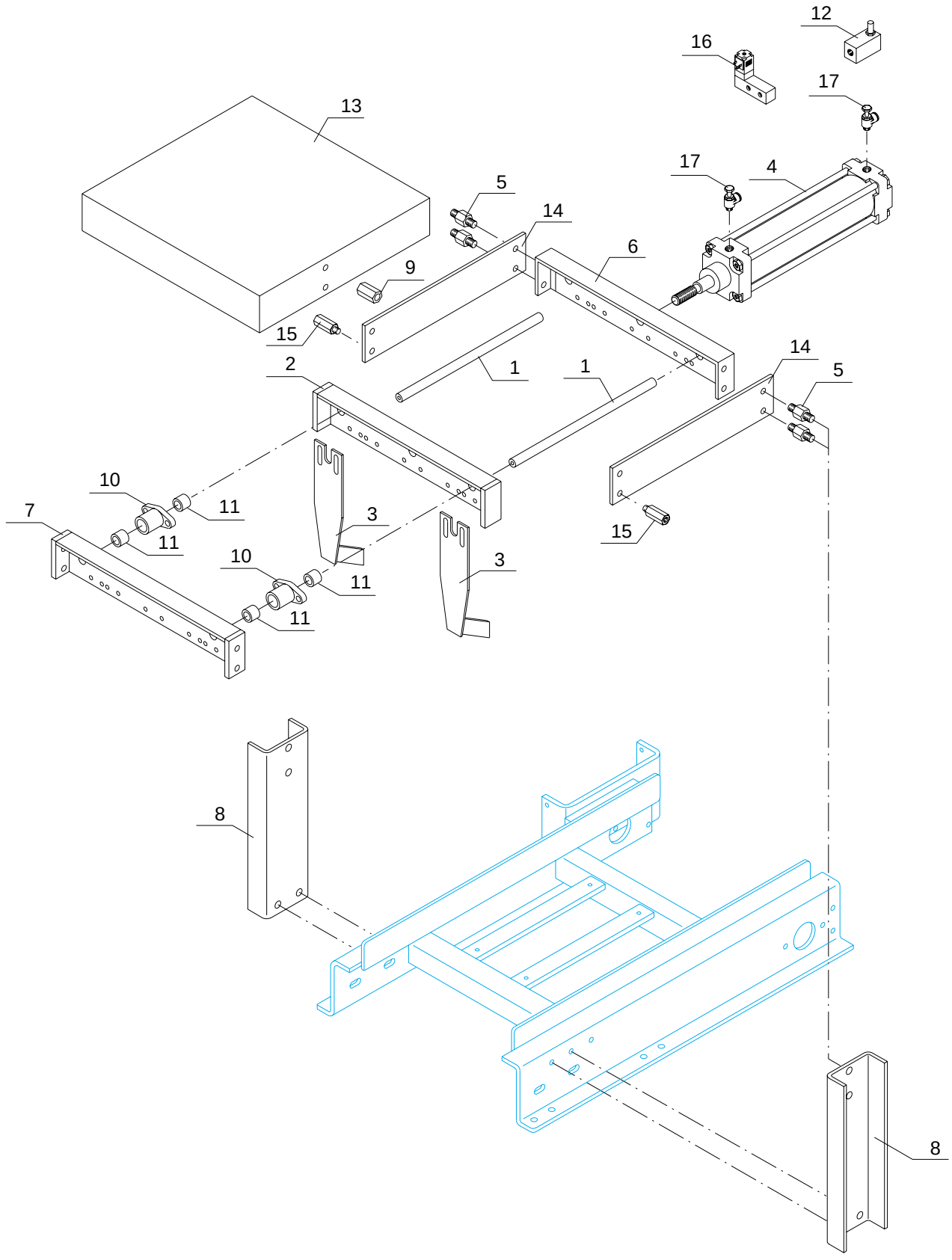
Scarico coppe - 6 file **1/1** **13040535**

Cup ejection device - Station d'ejection coupes

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12041774	2	Colonnina	Column	Colonne
2	12041884	1	Traversa	Crosspiece	Traverse
3		6	Blade (*)	Palette (*)	Palette (*)
4	17000014	1	Cilindro	Cylinder	Cylindre
5	12040155	4	Perno	Pin	Axe
6	12042351	1	Forcella	Fork	Fourche
7	12041883	1	Traversa	Crosspiece	Traverse
8	12040152	2	Sostegno	Support	Support
9	12041434	2	Colonnina	Column	Colonne
10	12040970	2	Canotto	Sleeve	Fourreau
11	336005056	4	Boccola	Bush	Bague
12	011045494	1	Scarico rapido	Fast air discharge	Décharge air rapide
13	12041435	1	Carter	Casing	Carter
14	12042350	2	Piatto	Plate	Plateau
15	12042534	2	Distanziale	Spacer	Entretoise
16	17000082	1	Elettrovalvola	Solenoid valve	Electrovanne
17	17000225	2	Regolatore	Regulator	Régulateur



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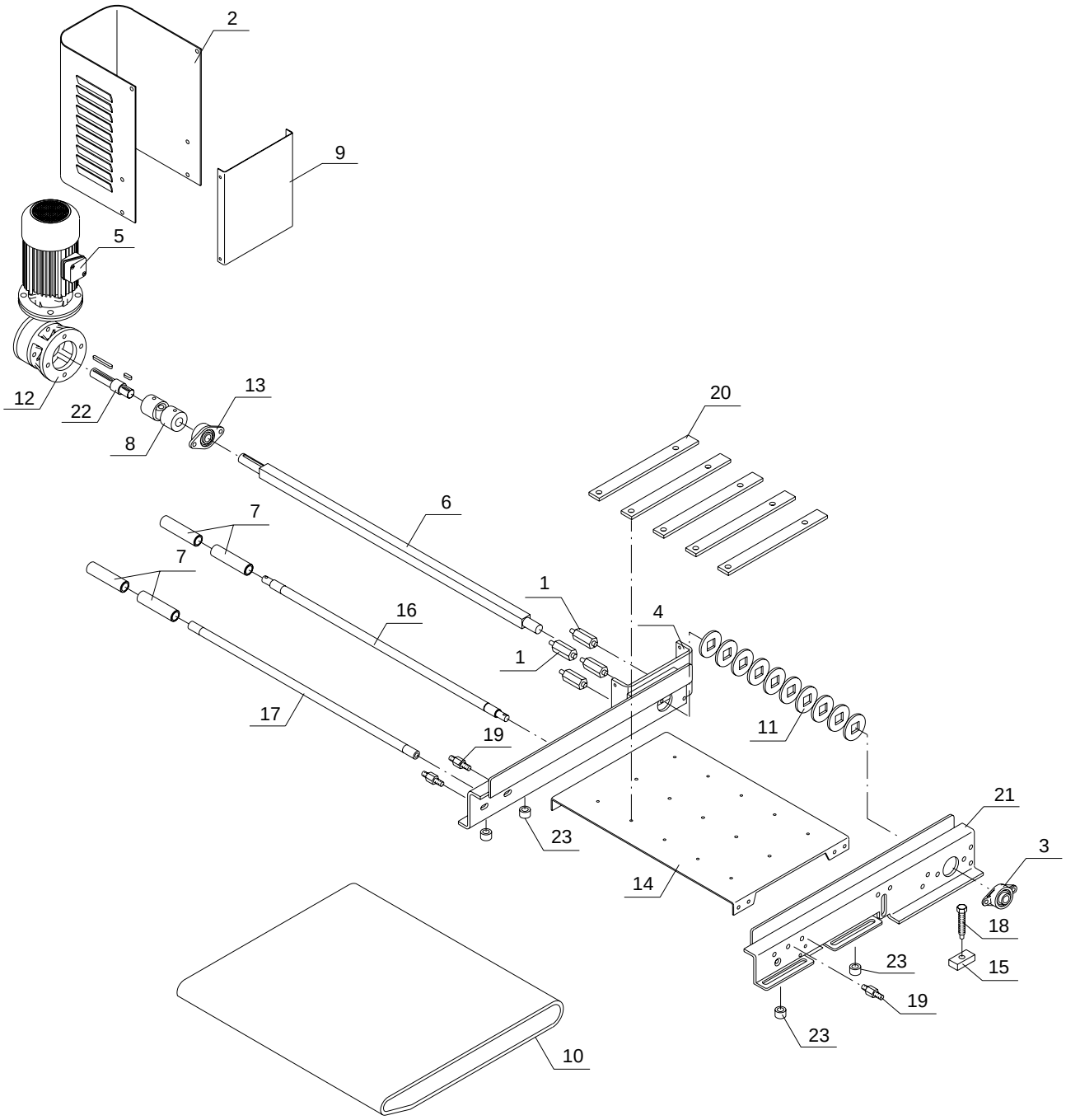
Nastro scarico **1/1** **13040573**

Outlet belt conveyor - Tapis de déchargement

POS.	COD.	Q.TA'	DESCRIZIONE	DESCRIPTION	DESCRIPTION
1	12042610	4	Colonnina	Column	Colonne
2	12042530	1	Carter	Casing	Carter
3	17000048	1	Supporto	Support	Support
4	12042612	1	Spalla	Shoulder	Epaulement
5	014040040	1	Motore	Motor	Moteur
6	12042528	1	Albero	Shaft	Arbre
7	12042611	12	Boccola	Bush	Bague
8	17040149	1	Giunto	Anchor	Fixation
9	12042606	1	Chiusura	Closing system	Fermeture
10	17040137	1	Nastro	Belt	Tapis
11	17040138	10	Pignone	Pinion	Pignon
12	17000826	1	Riduttore	Reduction gear	Réducteur
13	17000049	1	Supporto	Support	Support
14	12042604	1	Lamiera	Plate	Tôle
15	12041459	2	Blocchetto	Block	Bloc
16	12042608	1	Tenditore	Tightener	Tendeur
17	12042536	1	Penna	Peen	Panne
18	12041460	2	Perno	Pin	Axe
19	12040155	4	Perno	Pin	Axe
20	12042605	5	Pattino	Guide	Guide
21	12042529	1	Telaio	Frame	Châssis
22	12042609	1	Albero	Shaft	Arbre
23	541605021	4	Distanziale	Spacer	Entretoise



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Comet N
Serial number
ANNEXES

ANNEX.1 **Electric diagram (Drawing ----------)**

ANNEX.2 **Pneumatic diagram (Drawing ----------)**

ANNEX.3 **Product technical diagram (N. ----------)**