We hope that the information contained in this manual will be of help to you. It is based on concrete data and on the best of our current knowledge.
Read the contents of this manual carefully, including warnings and recommendations.

Machine HOYER COMET RC (cones/cups)

Serial No.

Tetra Pak Hoyer A/S
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HOYER COMET RC

1 - MACHINE IDENTIFICATION DATA

Contents

1.1 Introduction

Thank you for buying a machine manufactured by Tetra Pak Hoyer.
We recommend you read this manual as it is essential for 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 gain familiarity with all parts of the machine.

1.2 Identification plate

For maintenance and service operations not described in this manual, or for any other problems 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.

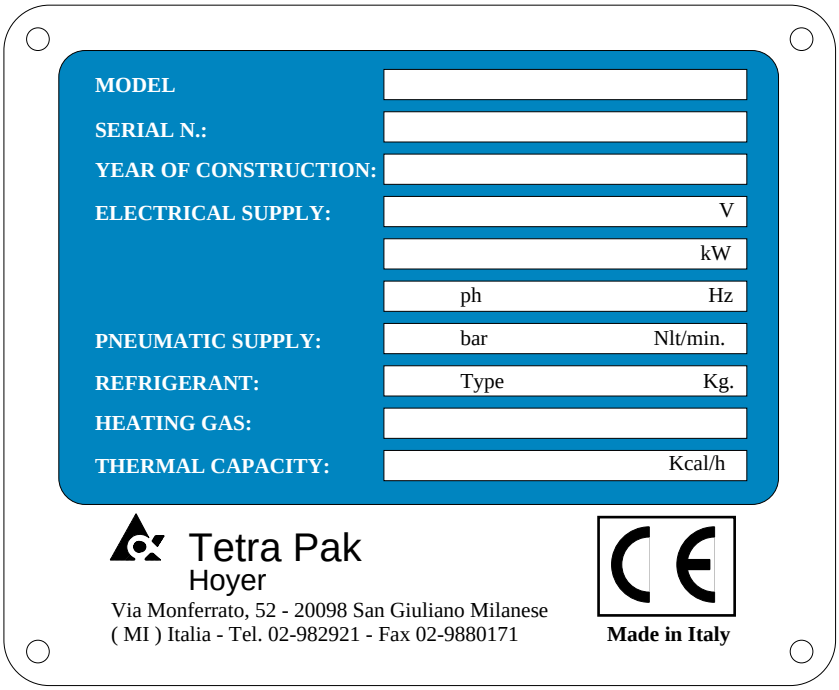

Fig. 1.1 - Identification plate

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 technical service under warranty to Tetra Pak Hoyer machines.

EUROPE and MIDDLE EAST:

Tetra Pak Hoyer A/S
Soeren Nymarks Vej 13
DK-8270 Hoejbjerg
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Tetra Pak Hoyer France
c/o Tetra Laval Service SARL
R.C.S. Versailles B403 276 223
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F-78340 Les Clayes-Sous-Bois
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Shanghai Overseas Chinese Mansion
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Phone: +86 21 6249 0860
Fax: +86 21 6249 9064

Tetra Pak Hoyer Service
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Fax: +63 2 8132866

SOUTH KOREA:

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140-210 Seoul
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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
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C.I.S.
Phone: +7 502 2242160
Fax: +7 502 2242162

HOYER COMET RC

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 together with the machine, that the **HOYER COMET RC (cones/ cups)** production unit has been designed and manufactured in accordance with the provisions of Directive 89/392/CE (Machinery Directive) and in line with the above mentioned standards applicable to this Directive.

2.2 Preliminary points

- The illustrations and drawings showing 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 change without advance warning.
- 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 the 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 the 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 the guards and safety covers are in position BEFORE starting the machine.
- NEVER leave tools, mechanical parts or other foreign materials on or inside the machine.
- If a malfunction occurs, press the emergency stop button.
- NEVER PLACE YOUR HANDS INSIDE THE MACHINE WHILE IT IS RUNNING.
- Proceed with the utmost care even when the main switch is in the OFF position as the power cables are still live.
- Turn off the air supply before disconnecting any pneumatic parts.
- 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 all the 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 air valve closed and a "work in progress" sign affixed to the machine.
- The user must make sure that all the instructions given in this manual are strictly observed.
- Users will be solely responsible for risks caused by tampering with the safety system.
- The safety of other plant used together with this machine, unless 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 the 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 also be observed.

2.5 Ambient operating limits

The machine is able to operate within the following ambient limits:

- Temperature: from 4°C to 40°C
- Humidity : from 20% to 95%.

☞ **NOTE**:

Our company will accept no responsibility for damage or injury caused by failure to comply with the above warnings.

HOYER COMET RC

3 - DESCRIPTION OF THE MACHINE AND TECHNICAL DATA

Contents

3.1 Description of the machine

The Hoyer Comet RC rotary filler is designed and built to provide the dependability and safety required of machinery for the production of ice cream cones and cups.
The Hoyer Comet RC rotary filler consists of a free-standing stainless steel structure on which the following components are mounted:

- in the lower part of the machine, mechanisms which command the rotation of the rotating table and the movement of the workstations;
- an ice cream bypass unit (*Pos. 1, Fig. 3.1*);
- a cone/cup feed unit (*Pos. 2, Fig. 3.1*);
- a dosing and filling unit (*Pos. 3, Fig. 3.1*);
- a lid pick-up unit (*Pos. 4, Fig. 3.1*);
- a lid sealing unit (*Pos. 4, Fig. 3.1*);
- a date stamping unit;
- an ejector unit (*Pos. 6, Fig. 3.1*).

A combination of mechanical and pneumatic movements is used to pick up an empty cone/cup from the magazine and put it in position in a slot on the rotating table. The table is jogged to bring the cone/cup into alignment with the operating units listed above, so that it can be filled, packaged and then ejected.

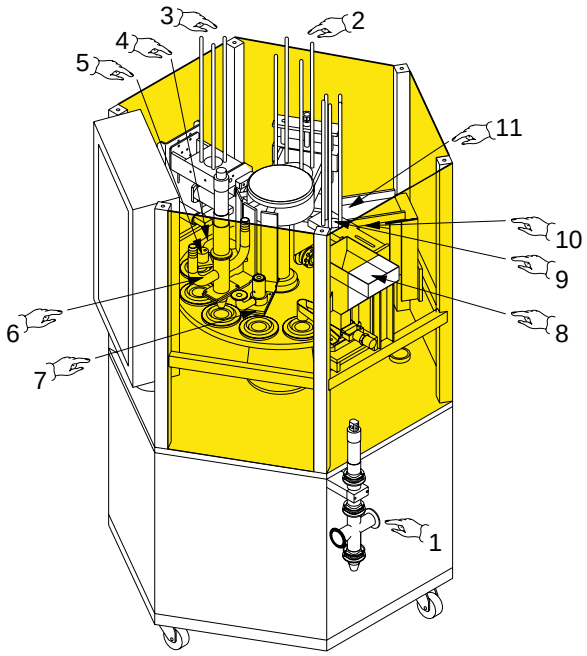

Fig. 3.1

3.2 Technical data

Main motor: 0,75 kW

Chocolate tub heater: 0.5 kW

Sprayer heater: 0.05 kW

Accessories: 0.15 kW

Total installed power: 3.5 kW

Compressed air:
Total consumption: 800 Nl/min
Inlet pressure: 6-7 bar
Connection diameter (inches): 1/2"

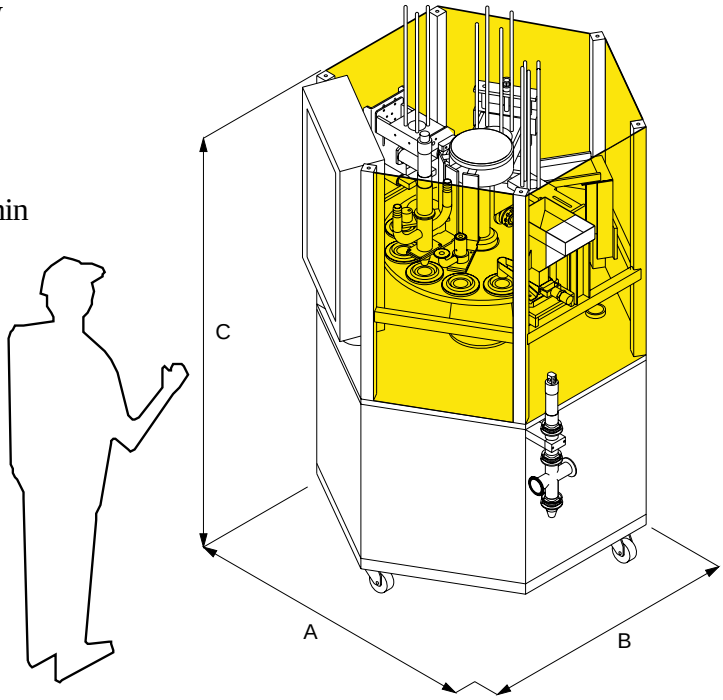

Fig. 3.2

Dimensions
A = 1050 mm
B = 1050 mm
C = 1800 mm

Total weight: approx. 375 kg

No. of operators: 1

The position of the operator during operation is illustrated in Fig. 3.2

Standard power supply: 380 V/ 50 Hz

Noise level: 70.5 dBA

Equivalent Weighted Acoustic Pressure A at 1 metre: 70.5 dBA – leq (A)

Max. Instantaneous Weighted Acoustic Pressure C in the workplace: less than 130 dB/20uPa

Max. Instantaneous Non-Weighted Acoustic Pressure in the workplace: Less than 140 dB/20uPa

3.3 Control panel

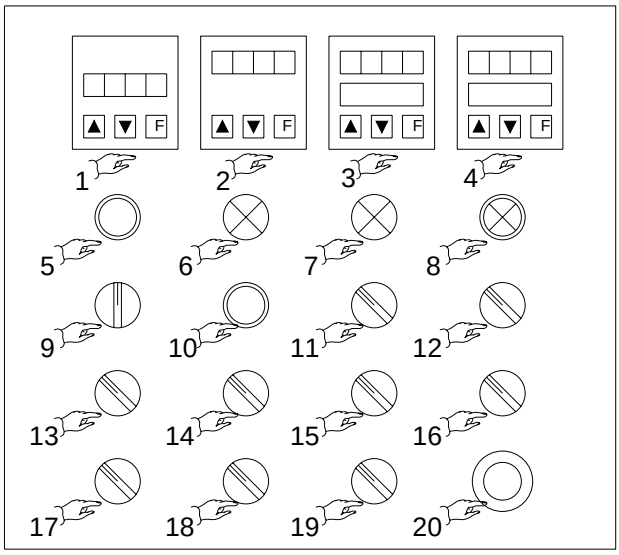

Fig.3.3

1 Stroke counter
2 Dosing time
3 Decoration time (optional)
4 Temperature of sealing head (optional)
5 Bypass on switch
6 Overload indicator light
7 No air supply indicator light
8 Reset button with light
9 Jog switch
10 Stop button
11 Cup feed switch
12 Cone/chewing gum feed switch
13 Chocolate pump switch
14 Dosing switch
15 Topping switch
16 Granule switch
17 Lid feed switch
18 Date stamping/decoration switch
19 Chocolate tub heating switch
20 Emergency button

HOYER COMET RC

4 - INSTALLATION

Contents

4.1 Transporting packages

The simplest way to move the crate in which the Hoyer Comet RC filler is supplied is to use a pallet truck or lift truck. The crate should be deposited as close to the place of installation as possible.

All information required to identify the contents of the crate is marked on the outside of the crate:

- addresses of buyer and sender
- dimensions: length – width – height
- gross weight, net weight, tare
- packing list plate

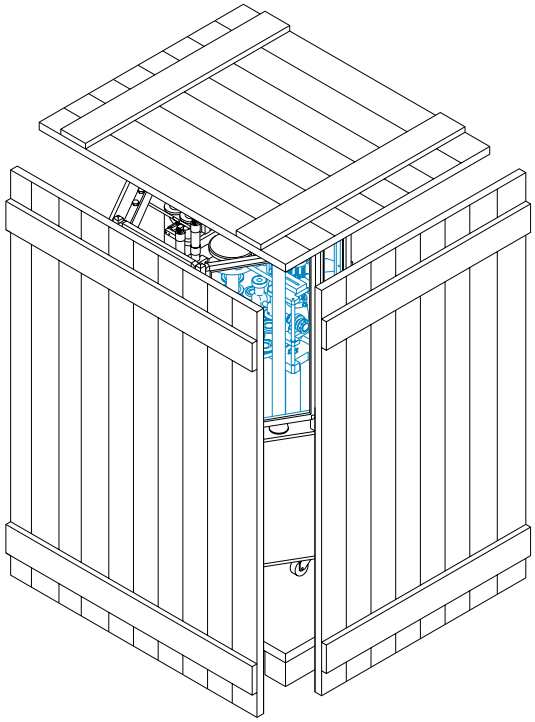

Fig. 4.1

4.2 Unpacking and delivery checks

When the crate has been positioned correctly, unpack as follows:

a. Remove the nails in 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. Remove the nails in 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 with unpacking until you are authorised to do so.

4.3 Transport and installation

The machine is assembled on wheels (*Pos. 1, Fig. 4.3*) so that it is easy for the operator to push it into place.

a. Put the machine in position in the production area, checking that there is sufficient space to allow removal of the guards and ease of access to internal machine parts.
b. Check the data shown on the plate to make sure that the machine is compatible with the factory power supply (*Fig. 4.2*).
c. The machine's components are protected electrically against short circuits (with appropriate safety devices). Connect up the electrical cable down-line of a master switch with thermal overload cutout and ultrarapid fuses of adequate amperage or an automatic magnetothermal circuit breaker of adequate size.
d. Connect the compressed air supply to the manifold and check that the pressure reducer is set to 6 bar.

IMPORTANT:

Connections must be made only by skilled technicians familiar with accident prevention legislation.

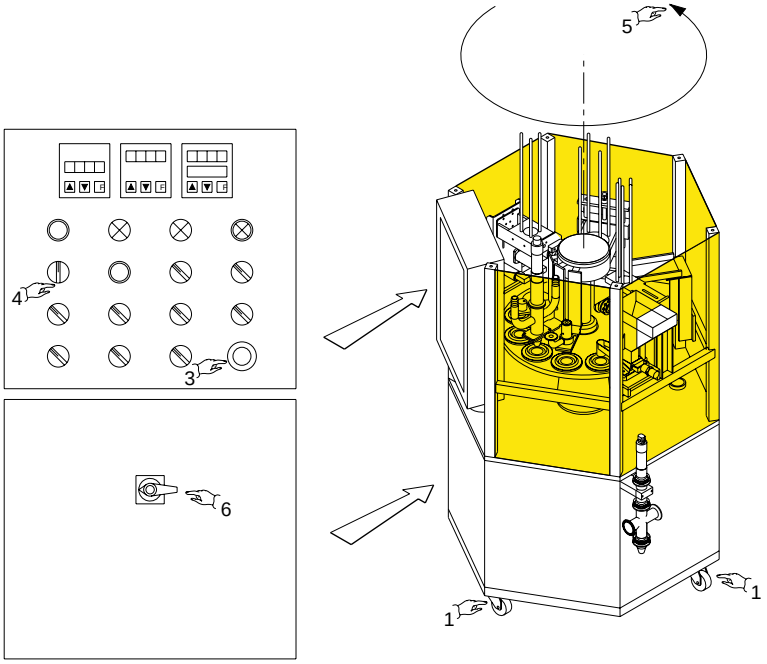

Fig. 4.2

4.3 Functional checks

Before starting up the machine, perform the following control procedures:

a. Check that the emergency button is released (*Pos. 3, Fig. 4.3*).
b. Turn on the main power switch (*Pos. 6, Fig. 4.3*).
c. Turn the switch (*Pos. 4, Fig. 4.3*) to start the motor. Check that the table turns in the correct direction (*Pos. 5, Fig. 4.3*). If not, invert the phases.

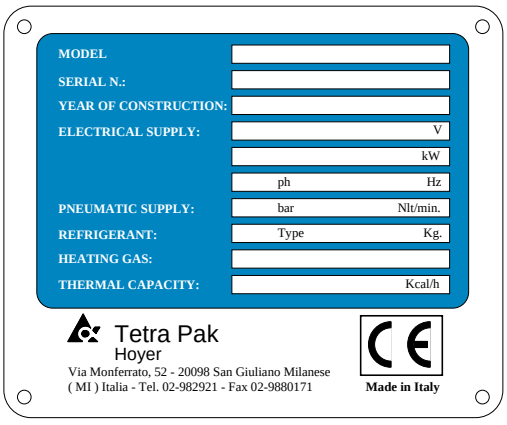

Fig. 4.3

HOYER COMET RC

5 - ADJUSTMENT PROCEDURES AND PRODUCT CHANGEOVER

Contents

5.1 Product changeover

The HOYER COMET RC CONE – CUP machine fills and seals containers (cones and cups).
It can produce cones and cups up to 100 mm in diameter.
Standard cone production involves use of the following stations:

- cone feed (*Pos. 1, Fig. 5.1*);
- gauge (*Pos. 3, Fig. 5.1*);
- chocolate spray (*Pos. 4, Fig. 5.1*);
- station for dosing ice cream or ice cream mixes (*Pos. 5, Fig. 5.1*) in one or two flavours;
- topping (*Pos. 6, Fig. 5.1*);
- granule (*Pos. 7, Fig. 5.1)*;
- lid feed (*Pos. 8, Fig. 5.1*);
- lid closure (*pos. 9, Fig. 5.1*);
- product ejector (*Pos. 10, Fig. 5.1*).

Standard cup production involves the use of the following stations:

- cup feed (*Pos. 2, Fig. 5.1*);
- station for dosing ice cream or ice cream mixes (*Pos. 5, Fig. 5.1*) in one or two flavours;
- lid feed (*Pos. 8, Fig. 5.1*);
- lid closure (*pos. 9, Fig. 5.1*);
- product ejector (*Pos. 10, Fig. 5.1*).

When changing to a cone format of a different size, it is necessary to replace the slot set, cone feed magazines, gauging pads, lid feed magazines, and crimpers.
When changing format from cones to cups, it is necessary to replace the slot set, assembled the cup feed with its suction cup holders in place, replace the lid feed magazines, replace the cone lid crimpers with lid presses, and replace the cone ejector (*Pos. 10, Fig. 5.1*) with the cup ejector (*Pos. 11, Fig. 5.1*), replacing the expulsion plates.

☞ **NOTE:**

If the machine is set up for cone and cup production, the topping and granule stations may be used to decorate standard cups.

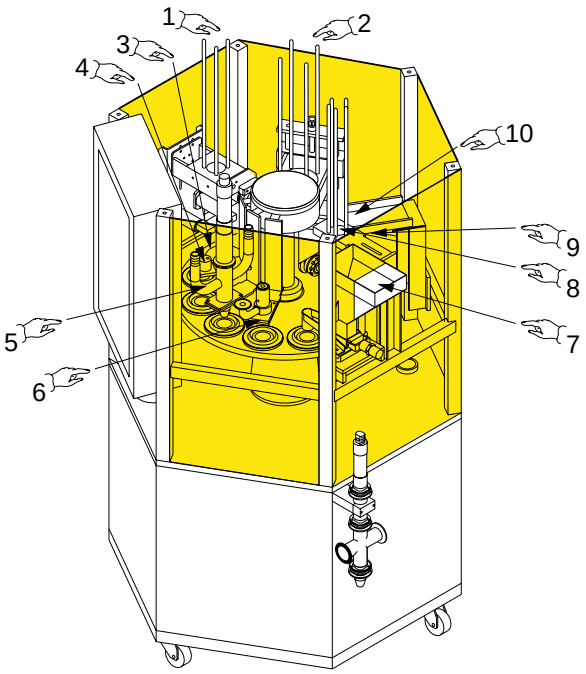

Fig. 5.1

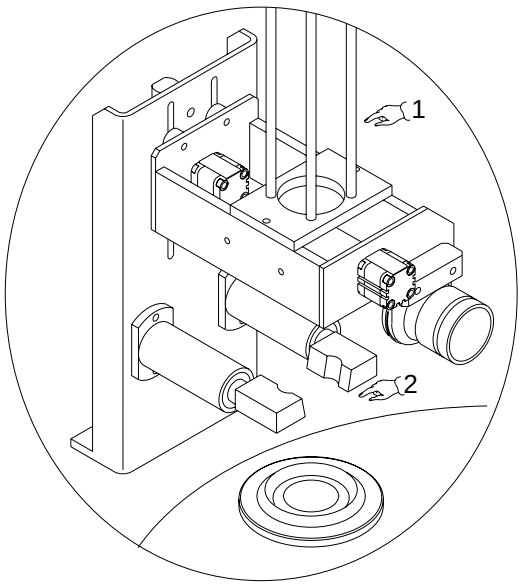

Fig. 5.2

5.2 Mechanical adjustment of the stations

5.2.1 Cone feed station adjustment

Turn on the cone feed station using the switch (*Pos. 12, Fig. 5.17*) on the control panel.
Work the jog switch (*Pos. 8, Fig. 5.17*) until the upper cone holder blades open.
With the machine stopped and the cone stop blades open, insert two cones into the magazine (*Pos. 1, Fig. 5.2*).
Check that the cone in the released position rests correctly in the calliper holes in the oscillating levers (*Pos. 2, Fig. 5.2*), then make sure that the cone in the released position is 5 mm below the stop blade.
Make sure that the oscillating cone release levers hold the cornets without exerting too much pressure.
If the distance is greater than 5 mm, lower the mobile part of the cone stop blade and magazine support. If the released cone is between the cone stop blades, raise the mobile part of the cone stop blade and magazine support to the correct height.
After these adjustments, make sure that the cone pusher plate just touches the edge of the cornet; if not, adjust its position.
At this point check that at low speed the cone is released immediately after the lamella chain has stopped.

5.2.2 Cup feed station adjustment

Work the jog switch (*Pos. 9, Fig. 5.17*) to position the suction cups at their maximum height.
Loosen the screws (*Pos. 1, Fig. 5.3a*) and check that the vacuum on sensor (*Pos. 2, Fig. 5.3a*) is in the correct position.
Next put a cup into the cup magazine and check that the blades (*Pos. 1, Fig. 5.3*) hold the cup in place without squashing it. Adjust the height of the cup feed by turning the knob (*Pos. 2, Fig. 5.3*) until the suction cup touches the bottom of the cup.
Carry out the procedure described above when changing product format.

NOTE:

If the machine is set up to produce different types of cups, make a note of the correct settings for each type to speed up changeover procedures.

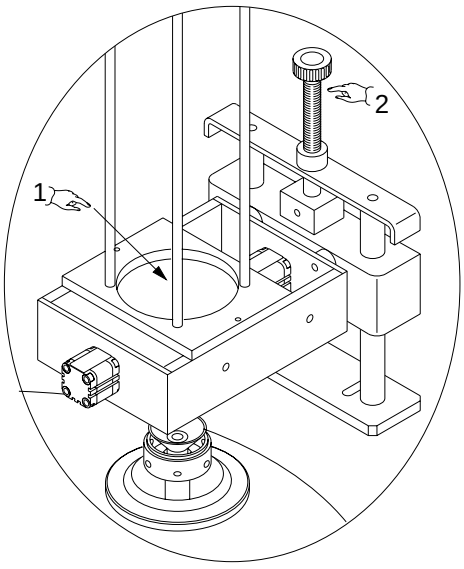

Fig. 5.3

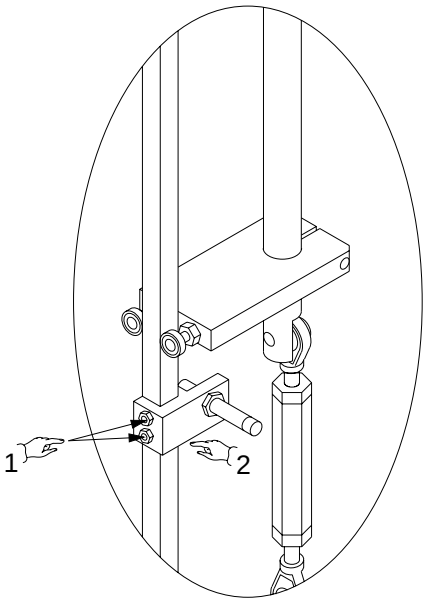

Fig. 5.3a

5.2.3 Gauging station adjustment

The gauging station serves to spread the mouth of the paper wrapped around the cones, which tends to fold over during feeding.

Loosen the screws (*Pos. 1/2, Fig. 5.4*) to adjust height and centring over the slot, then tighten the screws when finished.

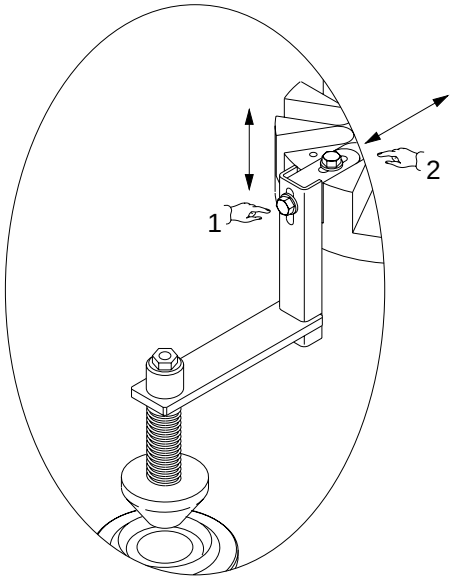

Fig. 5.4

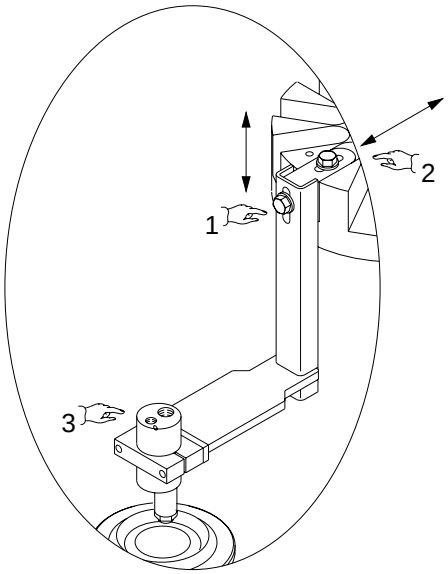

Fig. 5.5

5.2.4 Chocolate spray station adjustment

Loosen the screws (*Pos. 1/2, Fig. 5.5*) to adjust the height of the spray nozzle and centre it over the slot, then tighten the screws again when finished.

5.2.5 Ice cream doser/variegator station adjustment

Adjust doser/distributor height and centre it over the slot by loosening the screws (*Pos. 1/2, Fig. 5.6-5.6a*) to achieve the desired dosing/variegation position (turning clockwise to increase the stroke of the pneumatic cylinder or anticlockwise to decrease it).
Tighten the screws (*Pos. 1, Fig. 5.6-5.6a*) when finished.
The end of the dosing nozzles should normally be inside the container, below the lid position, when dosing, so that the ice cream decoration will not be damaged when the lid is pressed on.

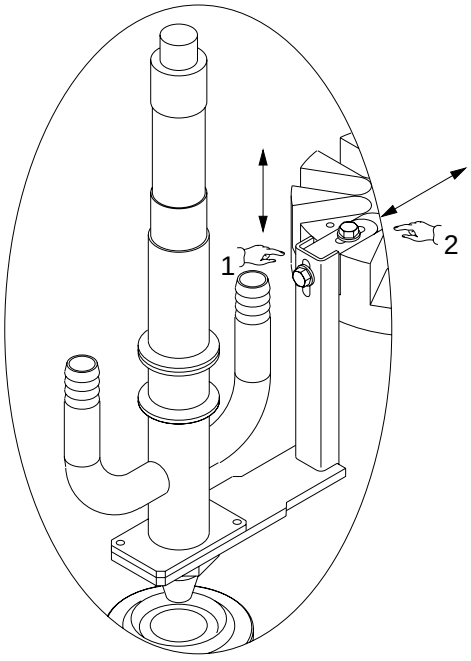

Fig. 5.6

5.2.6 Topping/pencil filler station adjustment

Loosen the screws (*Pos. 1/2*, *Fig. 5.7-5.7a*) to adjust topping/pencil filler height and centre it over the slot, then tighten the screws again when finished.
Turn on the chocolate heater thirty minutes before starting production using the switch (*Pos. 8, Fig. 5.17*).

☞ **NOTE:**

Make sure that there is water in the water jacket at all times to prevent the heaters from burning.

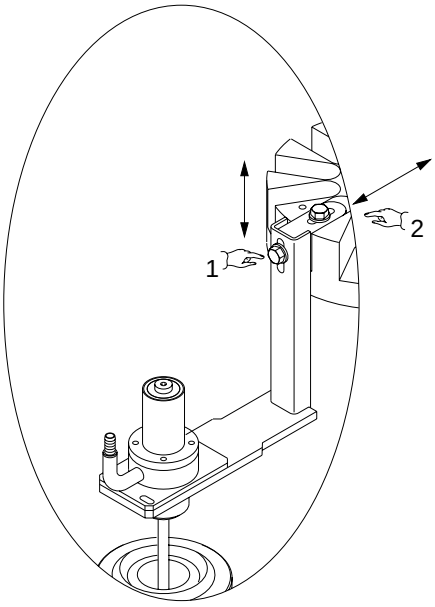

Fig. 5.6a

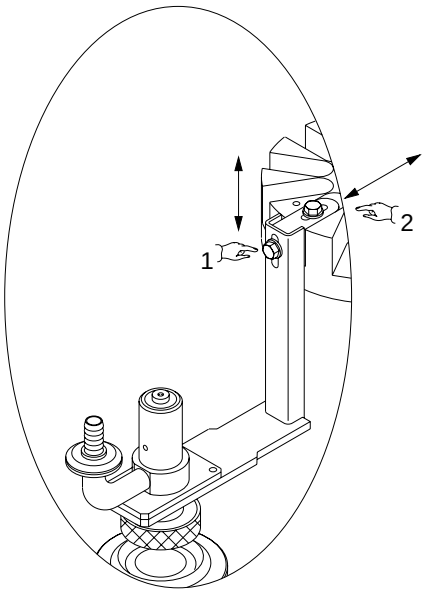

Fig. 5.7

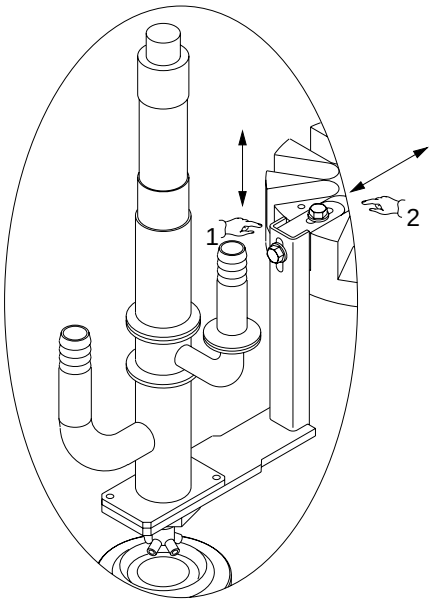

Fig. 5.7a

5.2.7 Granule station adjustment

Before beginning production, check that the hopper and dosing channels are completely dry.
Also check that the dosing channels are centred over the slots, and if not, adjust the position of the station by slackening the screws (*Pos. 1, Fig. 5.7*) on the fixing blocks.

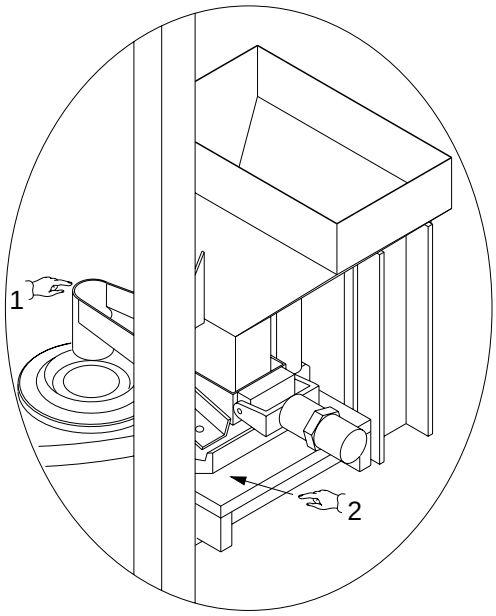

Fig. 5.8

5.2.8 Lid feed station adjustment

Make sure that the lid feed station is switched off (*Pos. 15, Fig. 5.17*) with the suction cups in the raised position.
Check that the suction cups (*Pos. 1, Fig. 5.9*) are in direct contact with the lids in the magazines. Adjust height and centring over the slot by loosening the screws (*Pos. 1/2, Fig. 5.9*) so as to raise the suction cups (*Pos. 1, Fig. 5.9*) so that they are in direct contact with the lids.
Tighten the screws (*Pos. 1/2, Fig. 5.9*) when finished.
With the machine at its slowest speed, check that when the lid feed station is activated, the suction cup mounting shaft drops down immediately after the slotted disk has stopped, and then check that it moves back up before the slotted disk is translated again.

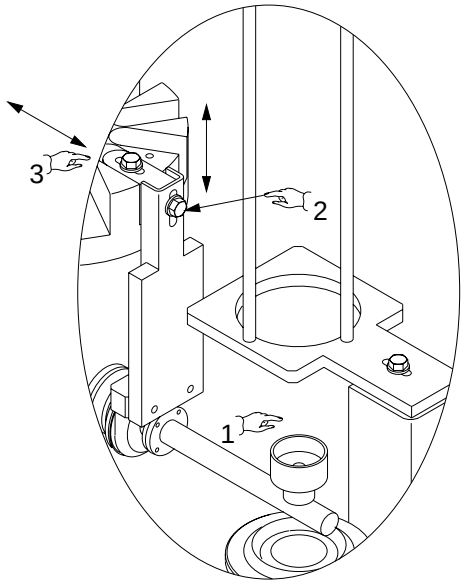

Fig. 5.9

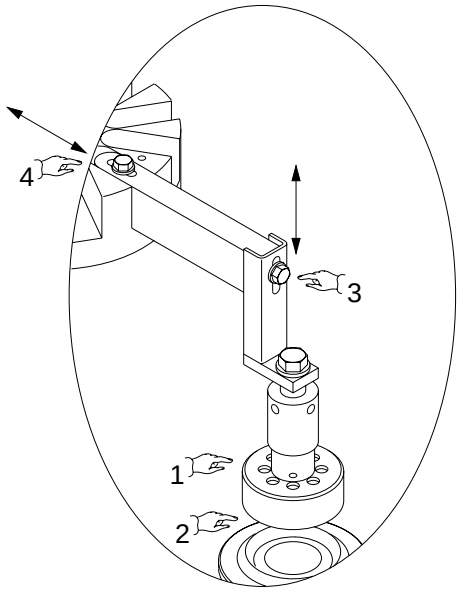

Fig. 5.10

5.2.9 Cone lid closing station adjustment

Check that the crimper (*Pos. 1, Fig. 5.9*) rests on the outside of the slot (*Pos. 2, Fig. 5.10*) and compresses the inner part of the lid in order to close off the cone perfectly. Loosen the screws (*Pos. 3/4, Fig. 5.10*) to adjust crimper height and centre it over the slots, tightening the screws again when finished.

5.2.10 Cup lid closing station adjustment

Check that the lid pressing plate (*Pos. 1, Fig. 5.11*) presses the lid in the cup in such a manner that it closes off the cup perfectly (*Pos. 2, Fig. 5.11*). If it is not closed off correctly, adjust plate height and centre it over the slot by loosening the screws (*Pos. 3/4, Fig. 5.11*), remembering to tighten them again afterwards.

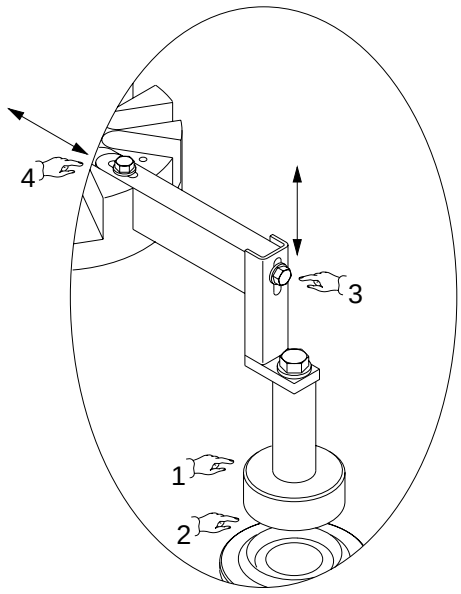

Fig. 5.11

5.2.11 Lid sealing station adjustment

The sealing head is fixed to the raise/lower slide. It can be centred over the lid by loosening the screw (*Pos. 1, Fig. 5.12*); tighten the screw again when finished.
Adjustment is important for correct sealing.
A control (*Pos. 4, Fig. 5.17*) on the operator control panel may be used to adjust the temperature of the sealing head (press "F" and then press + to increase temperature or – to decrease it).

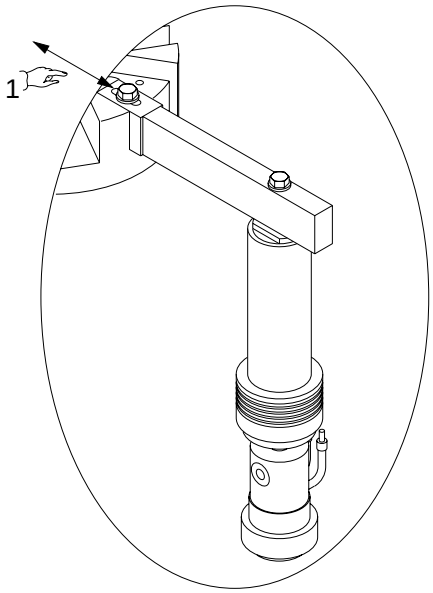

Fig. 5.12

5.2.12 Stamping station adjustment

The stamp is fixed to the raise/lower slide.
It can be centred over the lid by loosening the screw (*Pos. 1, Fig. 5.13*); tighten the screw again when finished.
Adjustment is important for correct stamping.

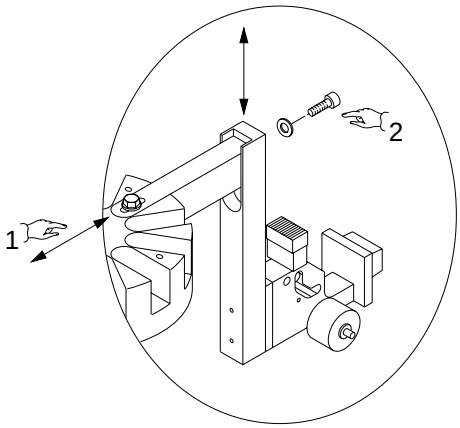

Fig. 5.13

5.2.13 Cone ejector station adjustment

Adjust the positions of the ejector bends (*Pos. 1, Fig. 5.14*) and the chute (*Pos. 2, Fig. 5.14*) so that the cones do not interfere with these parts when they are ejected.
The angle of the ejector bends (*Pos. 1, Fig. 5.14*) can be adjusted by slackening the fixing screws (*Pos. 3, Fig. 5.14*) and correcting the positioning of the cone on the chute.

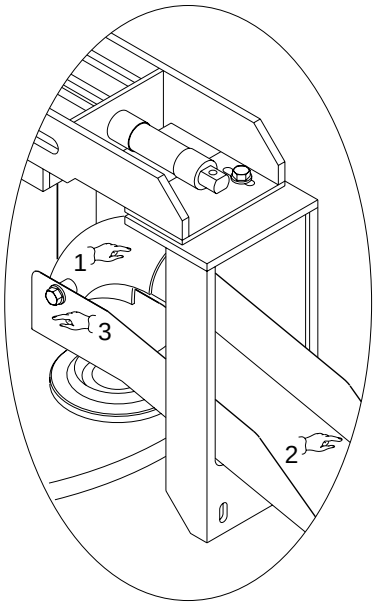

Fig. 5.14

5.2.14 Cup ejector station adjustment

Adjust the position of the ejector plates (*Pos. 1, Fig. 5.15*) and chute (*Pos. 2, Fig. 5.15*) so that when the cup is ejected it does not interfere with these parts. If it does, slacken the fixing screws and move the chute (*Pos. 2, Fig. 5.15*).
Check that the ejector plates (*Pos. 1, Fig. 5.15*) push the cup onto the product conveyor chute (*Pos. 2, Fig. 5.15*).

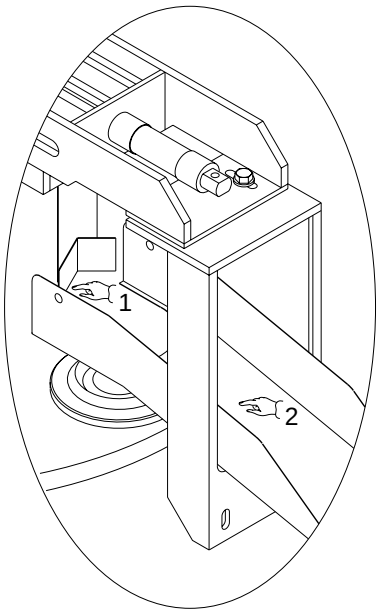

Fig. 5.15

5.3 Pneumatic setting

5.3.1 Granule adjustment

The flow of product to dose can be optimised by adjusting the angle of action of the vibrator; this is done by slackening the screws on the vibrator support bracket.
To increase or decrease the volume of product dosed, adjust the pressure regulator (*Pos. 1, Fig. 5.16*), turning it clockwise to increase the intensity of vibrations or anticlockwise to decrease.

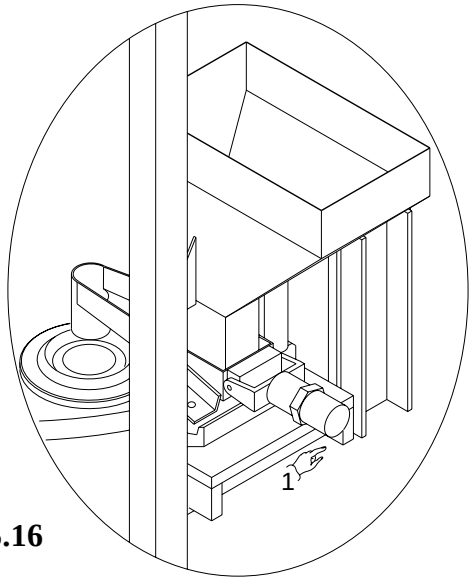

Fig. 5.16

5.3.2 Gauging– chocolate spray station adjustment

The spray angle can be modified by adjusting the pneumatic regulator.
The gauges are mounted on springs, enabling them to adjust themselves perfectly to the cone in the slot (even if the height of the chocolate dose is changed).

5.4 Settings on the control panel

a. Adjust temperature of sealing head (optional). Check that the emergency push button (*Pos. 20, Fig. 5.17*) is released. Turn the main switch to the ON position and set the desired sealing head temperature using the digital thermostat (*Pos. 4, Fig. 5.17*).
b. Set the dosing time using the appropriate control (*Pos. 2, Fig. 5.17*).
c. Set decorating time (optional) using the appropriate control (*Pos. 3, Fig. 5.17*).
d. Set the desired production using the appropriate control (*Pos. 2, Fig. 5.17*).

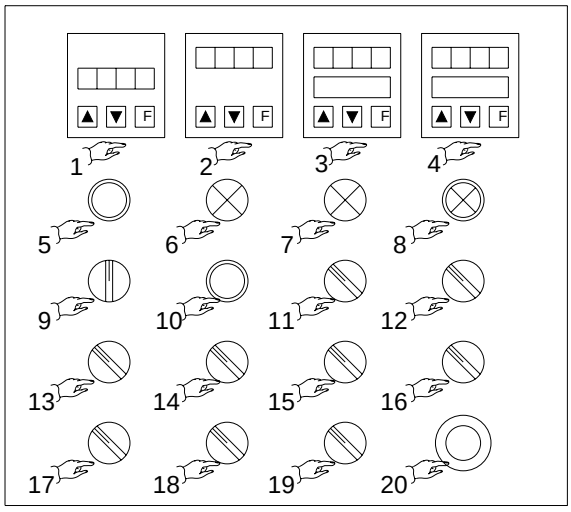

Fig. 5.17

5.5 Mechanical and pneumatic settings

a. Container pick-up device:
Adjust position of pick-up grippers.

b. Container magazine:
Adjust dowel and tighten lock nut.

c. Number of cycles per minute:
Adjust outer flywheel.

d. Air pressure:
- Open lower guard.
- Adjust gearmotor/filter knob.

e. Geometry of sealing heads:
Adjust fixing nuts.

f. Intervention time of pneumatic mechanisms:
- Open lower guard.
- Adjust cams (*Pos. 2, Fig. 5.18*) which activate pneumatic valves, rotating them anticlockwise to anticipate intervention start or clockwise to delay it.

Cam identification:

1. Cup feed (*Pos. 1, Fig. 5.18*)
2. Chewing gum doser/cone feed
3. Cone blades
4. Cone release
5. Chocolate pump
6. Dosing
7. Topping/decorator
8. Lower lids
9. Upper lids
10. Date stamp

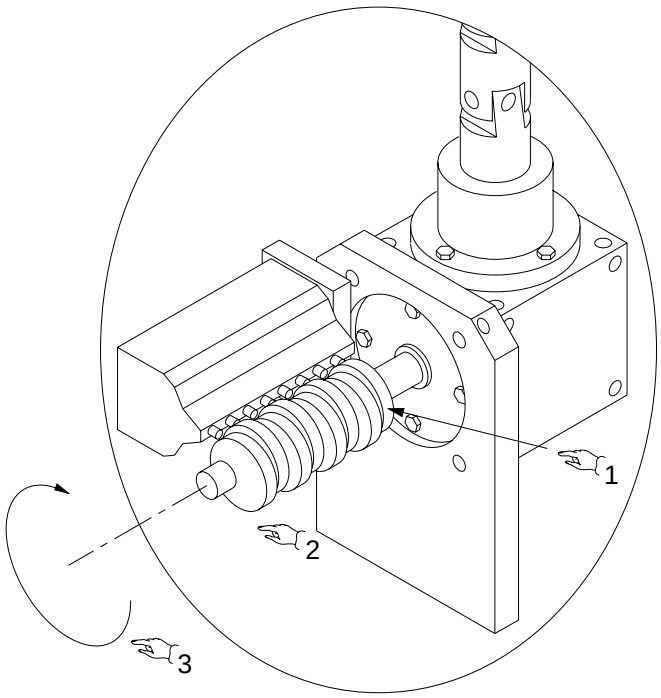

Fig. 5.15

HOYER COMET RC

6 - OPERATING PROCEDURES

Contents

6.1 Preliminary checks

Before starting up the machine, check that:

a. All panels and guards on the machine are fixed securely in place.
b. The machine has been thoroughly washed and cleaned. Cleaning and washing procedures are described in **CHAPTER 7 – CLEANING AND MAINTENANCE**.
c. The electric power supply cable has been connected up properly.
d. The compressed air supply is correct and the pressure reducer housed in the pneumatic panel is set to 6 bar.
e. The ice cream line clamps are properly tightened.
f. The ice cream bypass containers are in position.
g. The emergency stop buttons (*Pos. 20, Fig. 6.11*) are disengaged.
h. Connect the bypass valves to the freezers (*Pos. 1, Fig. 6.1*).
i. The compartments of the chocolate tank have been correctly filled and the chocolate is at the right temperature (between approximately 34ºC and 37ºC).
j. The containers have been correctly positioned in the feed magazines (*Pos. 1/2, Fig. 6.1*).
k. The granule hopper has been filled correctly (*Pos. 4, Fig. 6.1*).
l. The lids have been correctly positioned in the lid feed magazines (*Pos. 5, Fig. 6.1*).

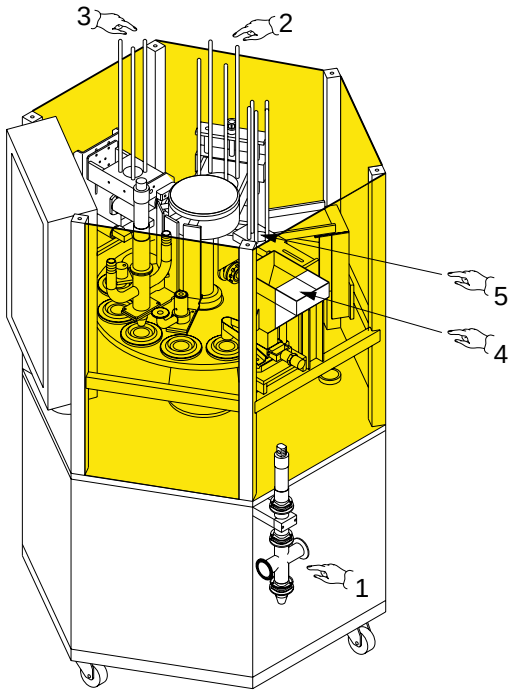

Fig. 6.1

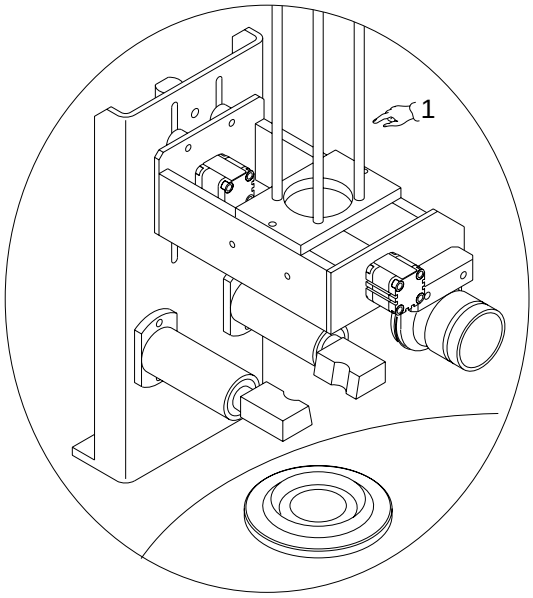

Fig. 6.2

6.2 Cone production equipment

6.2.1 Cone feed station

The function of the cone feeders (*Fig. 6.2*) mounted at the end of the machine is to deposit the cones in the slots in the lamellas. This action is synchronised with the movement of the trays.
The cone feeder consists of a magazine (*Pos. 1, Fig. 6.2*) in which cones must be placed manually, and a cone dispenser driver by pneumatic actuators.
The station is activated by the cone feed switch (*Pos. 11, Fig. 6.11*) on the control panel.

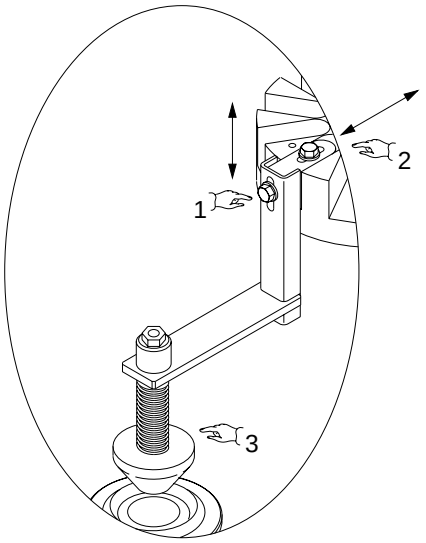

Fig. 6.3

6.2.2 Gauge station

The gauge is fixed on the up/down slide. Loosen the screws (*Pos. 1/2, Fig. 6.3*) to adjust its height and centred it over the slots, tightening the screws again afterwards.

6.2.3 Chocolate spray station

The sprayer is fixed on the up/down slide. Loosen the screws (*Pos. 1/2, Fig. 6.4*) to adjust its height and centred it over the slots, tightening the screws again afterwards.
Its travel must be adjusted to control the entry of the chocolate spray nozzle into the cone.
The station is turned on using the cone feed switch (*Pos. 13, Fig. 6.11*) on the control panel.

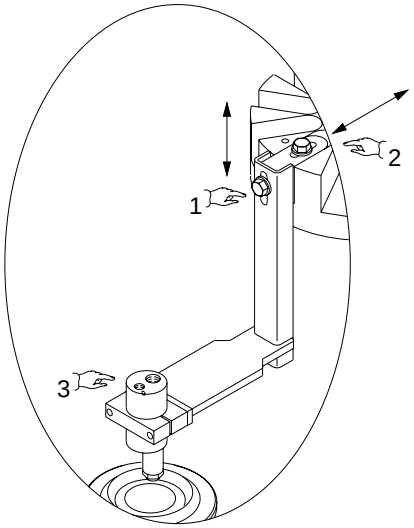

Fig. 6.4

6.2.4 Chocolate spray pump equipment

The temperature of the chocolate tank is kept under control (at approximately 34ºC to 37ºC) by electrical resistances which heat water contained in the jacket surrounding the tank.
The tank must be filled manually during production.
To start heating the chocolate, press the "heat chocolate tank" button (*Pos. 19, Fig. 6.11*).
To circulate the chocolate from the tank to the sprayers and back when the machine is stopped, work the "chocolate pump" switch (*Pos. 13, Fig. 6.11*).
The chocolate return route to the tank is necessary because the pipes are not heated, and the bypass prevents the chocolate from stopping in the pipe and solidifying.
During production, the dosage volume can be regulated by reducing or increasing the travel of the displacement pump by adjusting the limit switch screw (*Pos. 1, Fig. 6.5*).

Chocolate is fed into the cones by the spray nozzle.
The incoming chocolate is atomised by compressed air sent to the appropriate connection.
As the air carrying the chocolate comes into contact with the product, it must first be filtered through a microfilter, an odour filter and a sterile filter.
For hygiene reasons, the machine is supplied with a sealed sterile cartridge.
The customer is responsible for sterilisation of the line downstream of the filter.

IMPORTANT:

The water in the jacket must be heated for at least half an hour before use. The water is heated by pressing the appropriate button (*Pos. 19, Fig. 6.11*).

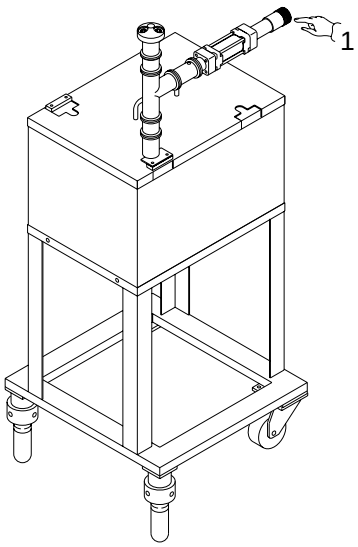

Fig. 6.5

6.2.5 Ice cream dosing station

The cones are filled with ice cream by a doser (*Pos. 1, Fig. 6.6*) fixed to the up/down slide (*Pos. 2, Fig. 6.6*).
Loosen screws (*Pos. 1/2, Fig. 6.6*) to adjust height and centre dosers over slot, tightening the screws again when finished.
The start and duration of dosing of ice cream into the chocolate-coated cones may be adjusted using the appropriate control (*Pos. 2, Fig. 6.12*) on the control panel (by pressing "F" and then + to increase the amount of dosing time or – to decrease it) to control the quantity of ice cream.

The quantity of ice cream required can be obtained by changing the speed of the freezer and, from the control panel, adjusting the start and duration of the dose.
It is also possible to balance the quantity of ice cream dosed by each dosing nozzle on the lines by adjusting the flow regulators assembled on the bypass.
The dosing station is activated using the "ice cream dosing" switch (*Pos. 14, Fig. 6.11*), which automatically closes the bypass.

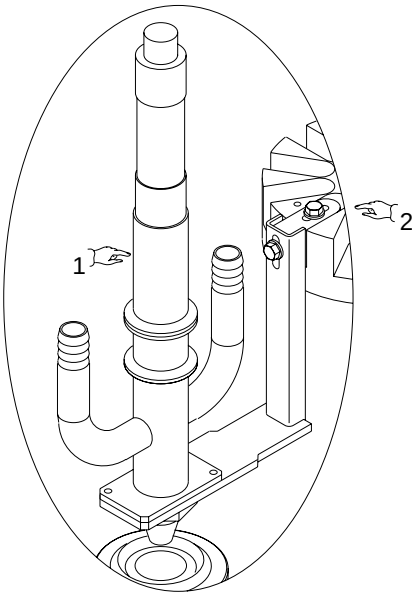

Fig. 6.6

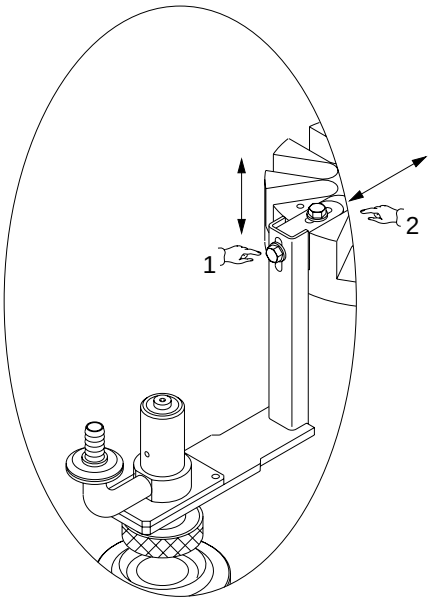

Fig. 6.6a

6.2.6 Topping station

The topping station allows the top of the ice cream cones to be covered with a liquid product.
The temperature of the chocolate tank is kept under control (at approximately 34ºC to 37ºC) by electrical resistances which heat water contained in the jacket surrounding the tank.
The tank must be filled manually during production.
To start heating the chocolate, press the "heat chocolate tank" button (*Pos. 19, Fig. 6.11*).
The station is started up using the "topping" switch (*Pos. 15, Fig. 6.11*).

Loosen the screws (*Pos. 1/2, Fig. 6.6a*) to adjust height and centre the topping dispenser over the slots, tightening the screws again afterwards.

IMPORTANT:

The water in the chocolate tank jacket must be heated for at least half an hour before use. The water heater is switched on using the appropriate switch (*Pos. 19, Fig. 6.11*).

6.2.6a Variegator station

The cones are variegated with ice cream by a doser *(Pos. 1, Fig. 6.6b)* fixed to the up/down slide (*Pos. 2, Fig. 6.6b)*.
The height and alignment with the slot are adjustable.
The start and duration of the variegation is controlled by the appropriate instrument on the control panel *(Pos. 2, Fig. 6.12)*. Press button "F" and then button + in sequence to increase the time, or button – to reduce it.
The quantity of decoration is controlled by changing the speed of the freezer and regulating the start and duration from the operator interface panel.
The quantity of ice cream can also be balanced by adjusting the flow regulators mounted on the bypass.
The variegator station is activated by the "Topping/ Variegator" selector *(Pos. 15, Fig. 6.11*) which automatically closes the bypass.

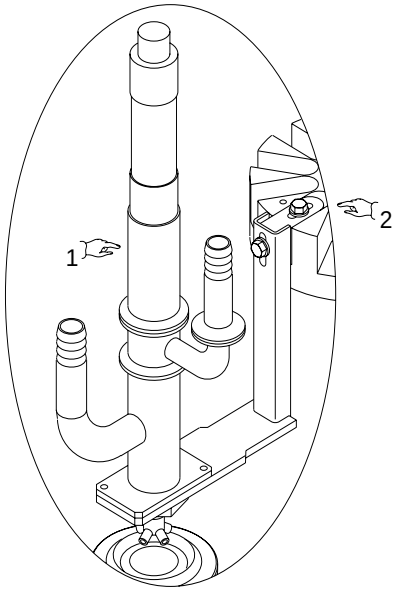

Fig. 6.6b

6.2.6b Pencil filler station

The pencil filler station consists of a nozzle *(Pos. 1, Fig. 6.6c)* activated by a pneumatic actuator connected to the feed tank by a hose.
The tank must be filled manually during production.
The height and alignment with the slot are adjustable.

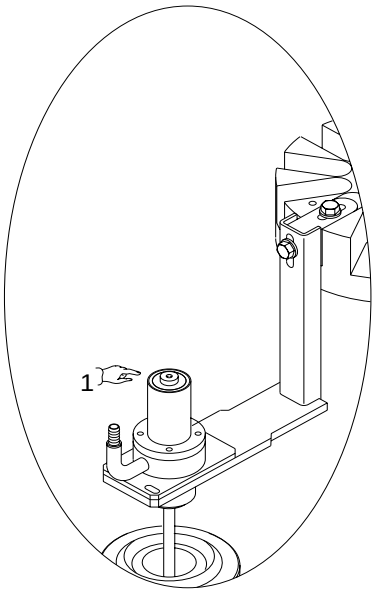

Fig. 6.6c

6.2.7 Granule station

This device, which is mounted on the structure, is used to spread nut granules, chocolate flakes or similar on the product. The unit consists of a hopper (*Pos. 1, Fig. 6.7*) connected to distribution channels (*Pos. 2, Fig. 6.7*) along which the product flows due to the effect of the vibration induced by a vibrator.
The quantity of product to feed is controlled by adjusting the start and duration of the dose on the timer housed in the control panel.
The quantity of granules can also be balanced as follows:

- slacken screws (*Pos. 3, Fig. 6.7*) using the wrench and move the adjustable baffles (*Pos. 4, Fig. 6.7*), lifting them to increase granule feed or lowering it to reduce feed.
  When finished, tighten the screws with the wrench.
- rotate the pressure regulator (*Pos. 5, Fig. 6.7*) clockwise to increase the working pressure of the vibrator in proportion to the quantity of granules fed, and anticlockwise to reduce it.

Adjust the position of the vibrator by varying its inclination with respect to the granule transfer channels.
The station is activated with the "granule" switch (*Pos. 16, Fig. 6.11*).

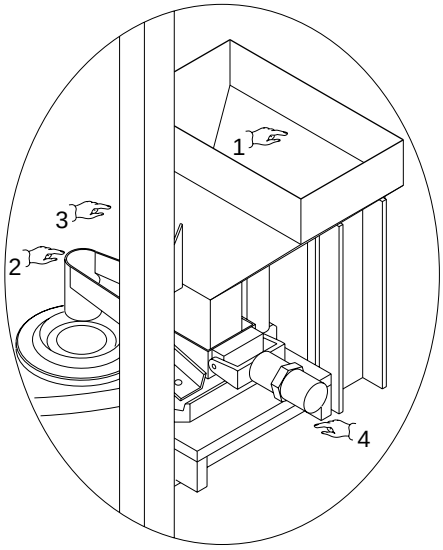

Fig. 6.7

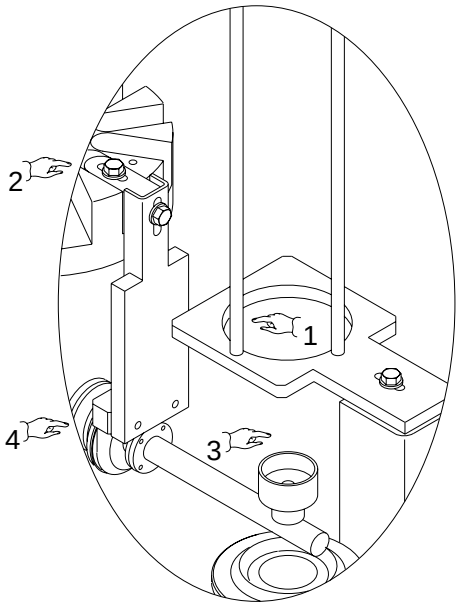

Fig. 6.8

6.2.8 Lid feed station

This station consists of lid magazines (*Pos. 1, Fig. 6.8*) mounted on a support fixed to the structure and a cross-member mounted on the up/down slide (*Pos. 2, Fig. 6.8*) which moves the lid pick-up suction cups.
During its upward travel, the suction cup support (*Pos. 3, Fig. 6.8*) is rotated 180º by a rotary actuator (*Pos. 4, Fig. 6.8*) which brings the suction cups into contact with the lids stacked in the magazines (*Pos. 1, Fig. 6.8*).
When the suction cups make contact with the lids, a vacuum is generated, allowing the lids to be picked up.
During downward movement, the suction cup support (*Pos. 3, Fig. 6.8*) is rotated 180º to position the lids over the cones. The vacuum switches off and the lids are released.
The station is activated using the "lids" switch (*Pos. 17, Fig. 6.11*). The vacuum control and rotation of the cylinder are adjusted by means of the associated cams.

6.2.9 Lid closing station

This station consists of a crimping tool (*Pos. 1, Fig. 6.9*) mounted on the up/down slide. Loosen screws (*Pos. 3/4, Fig. 6.9*) to adjust height and centre crimping tool over slot, tightening the screws again afterwards.
Correct adjustment is important to make sure that lids are closed properly.

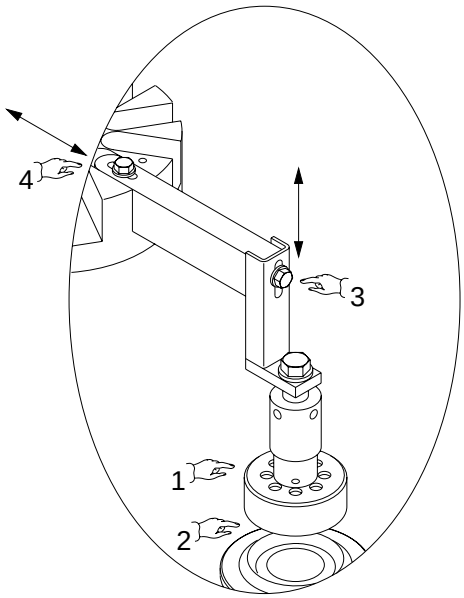

Fig. 6.9

6.2.10 Cone ejector station

This station is mounted underneath the lamellas. It is controlled by a cam on the main shaft and supports the pushers which eject the cones.
The upward movement allows the ejectors to lift the cones from the slots, so that they are deposited on the chute (*Pos. 1, Fig. 6.10*) by the ejector bend (*Pos. 2, Fig. 6.10*).
The adjustment of the positions of the chute and ejector bend is described in section **5.2, Mechanical adjustment.**

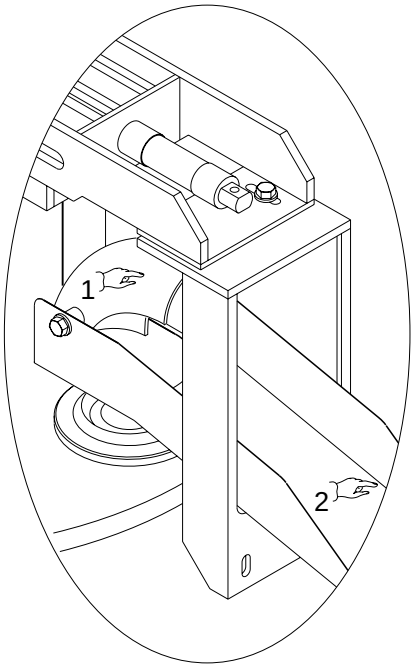

Fig. 6.10

6.2.11 Start-up

The start-up procedure is as follows:

a. Switch on the electric power supply to the machine by turning the main switch to "ON".
b. Turn off the cone feed unit using the switch (*Pos. 12, Fig. 6.11*).
c. Turn off the lid pick-up unit using the switch (*Pos. 17, Fig. 6.11*).
d. Put cones in the cone magazine.
e. Place an appropriate container underneath the bypass.
f. Start feeding ice cream mix from the freezer and wait until the ice cream coming from the bypass is of the required consistency.
g. Press the "START" button and turn on the doser switch (*Pos. 14, Fig. 6.11*), checking that the right quantity of product is dosed.
h. Turn on the cone feed unit with the switch (*Pos. 12, Fig. 6.11*).
i. Turn on the chocolate pump with the switch (*Pos. 13, Fig. 6.11*).
j. Turn on the topping unit with the switch (*Pos. 15, Fig. 6.11*).
k. Turn on the granule unit with the switch (*Pos. 16, Fig. 6.11*).
l. Turn on the lid unit with the switch (*Pos. 17, Fig. 6.11*).

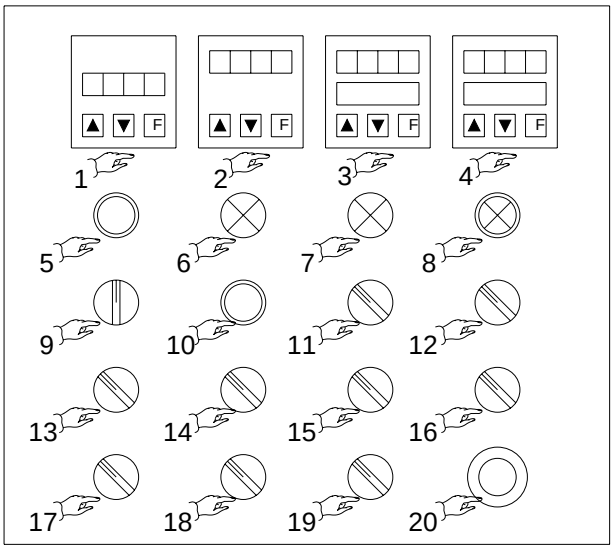

Fig. 6.11

IMPORTANT:

This description and diagram apply to a generic type of cone.
The procedure may vary depending on the type of product to be produced.

6.2.12 Emergency stop

In the event of malfunctioning of any component, press the emergency button (*Pos. 20, Fig. 6.11*) to turn off all the machine's electrical functions.
To prepare the machine for use again, first eliminate the cause of the malfunction, then turn the emergency button (*Pos. 20, Fig. 6.11*) anticlockwise and release it and press the reset button (*Pos. 8, Fig. 6.11*) on the control panel.

6.2.13 End of production

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

- Press the end of production button (*Pos. 9, Fig. 6.12*). All the operating stations in memory will stop automatically.

To stop the machine manually:

- To deactivate the stations, press the individual station buttons on the operator interface panel.

Cleaning and washing procedures are described in **CHAPTER 7 – CLEANING AND MAINTENANCE.**

6.3 Cup production equipment

6.3.1 Cup feed station

The function of the cup feeders (*Fig. 6.12*) mounted at the end of the machine is to deposit the cones in the slots in the lamellas. This action is synchronised with the movement of the trays.
The cup feeder consists of a magazine (*Pos. 1, Fig. 6.12*) in which cups must be placed manually, and a cup dispenser driver by pneumatic actuators.
The station is activated by the cup feed switch (*Pos. 11, Fig. 6.20*) on the control panel.
The timing of the movements can be modified by adjusting the corresponding cams.
The release and insertion of the cup in the slot takes place through a combination of movements: the pneumatic opening of the plates located at the lower end of the magazine; a mechanical movement, created by a cam mechanism, of a carriage carrying the suction cups which grip the bottom of the cups, and the action of the suction cups which, by means of the vacuum, grip the cups at the top dead centre position and then release them once they are in the slots.
Various types of adjustment are possible:

- adjustment of the height of the magazine support frame, in that the travel of the suction cup carriage is fixed, and as a result, the height of the magazines must be altered to move the bottom of the ice cream cup nearer to the suction cup by adjusting the screw (*Pos. 2, Fig. 6.12*);
- anticipation or delay of the action of the vacuum, by adjusting the position of the proximity sensor (*Pos. 1, Fig. 6.12a*);
- if cup diameter changes during a product changeover, it may be necessary to replace the suction cups with new suction cups of the diameter required.

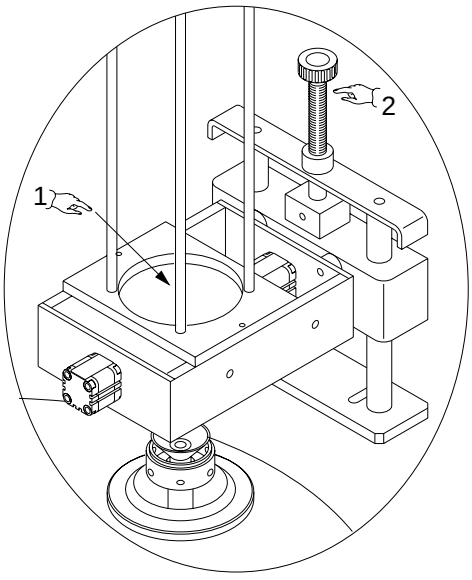

Fig. 6.12

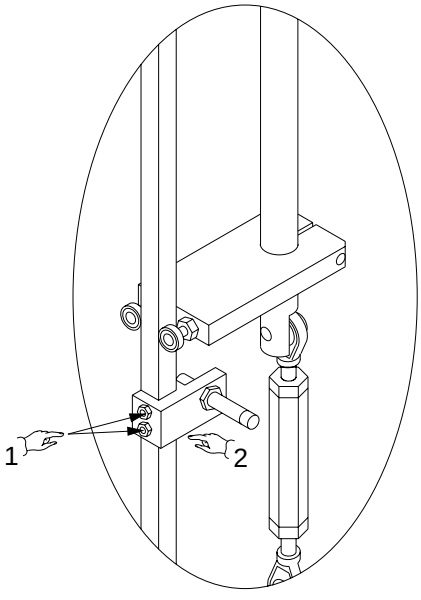

Fig. 6.12a

6.3.2 Ice cream dosing station

The cups are filled with ice cream by a doser (*Pos. 1, Fig. 6.13*) fixed to the up/down slide (*Pos. 2, Fig. 6.13*).
Loosen screws (*Pos. 1/2, Fig. 6.13*) to adjust height and centre dosers over slot, tightening the screws again when finished.
The start and duration of dosing of ice cream into the cups may be adjusted using the appropriate control (*Pos. 2, Fig. 6.18*) on the control panel (by pressing "F" and then + to increase the amount of dosing time or – to decrease it) to control the quantity of ice cream.
The quantity of ice cream required can be obtained by changing the speed of the freezer and, from the control panel, adjusting the start and duration of the dose.
It is also possible to balance the quantity of ice cream dosed by each dosing nozzle on the lines by adjusting the flow regulators assembled on the bypass.
The dosing station is activated using the "ice cream dosing" switch (*Pos. 14, Fig. 6.20*), which automatically closes the bypass.

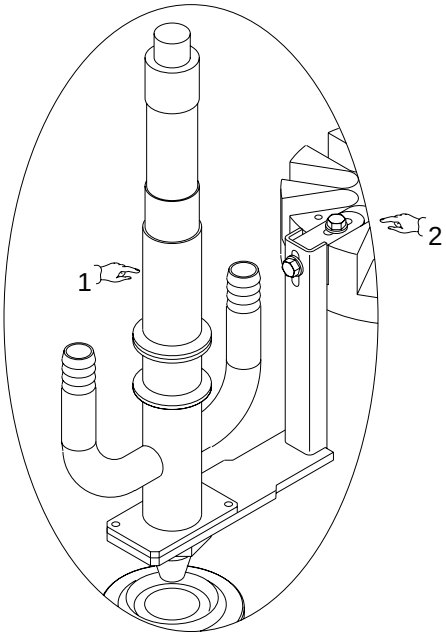

Fig. 6.13

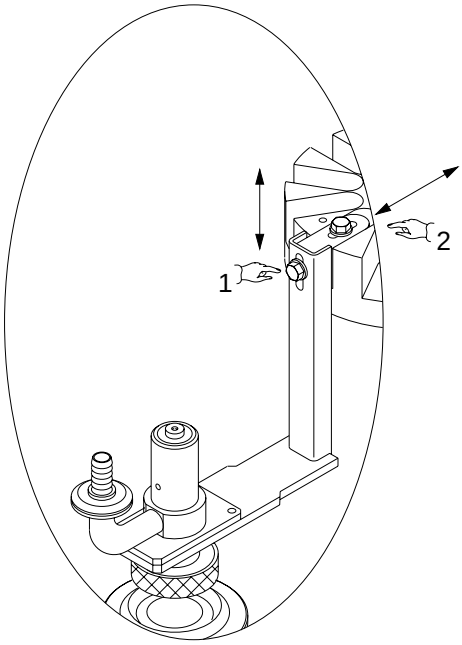

Fig. 6.13a

6.3.3 Topping station

The topping station allows the top of the ice cream cups to be covered with a liquid product.
The temperature of the chocolate tank is kept under control (at approximately 34ºC to 37ºC) by electrical resistances which heat water contained in the jacket surrounding the tank.
The tank must be filled manually during production.
To start heating the chocolate, press the "heat chocolate tank" button (*Pos. 19, Fig. 6.20*).
The station is started up using the "topping" switch (*Pos. 15, Fig. 6.20*).
Loosen the screws (*Pos. 1/2, Fig. 6.6a*) to adjust height and centre the topping dispenser over the slots, tightening the screws again afterwards.

IMPORTANT:

The water in the chocolate tank jacket must be heated for at least half an hour before use. The water heater is switched on using the appropriate switch (*Pos. 19, Fig. 6.20*).

6.3.3a Variegator station

The cones are variegated with ice cream by a doser *(Pos. 1, Fig. 6.13b)* fixed to the up/down slide (*Pos. 2, Fig. 6.13b)*.
The height and alignment with the slot are adjustable.
The start and duration of the variegation is controlled by the appropriate instrument on the control panel *(Pos. 2, Fig. 6.20)*. Press button "F" and then button + in sequence to increase the time, or button – to reduce it.
The quantity of decoration is controlled by changing the speed of the freezer and regulating the start and duration from the operator interface panel.
The quantity of ice cream can also be balanced by adjusting the flow regulators mounted on the bypass.
The variegator station is activated by the "Topping/ Variegator" selector *(Pos. 15, Fig. 6.20*) which automatically closes the bypass.

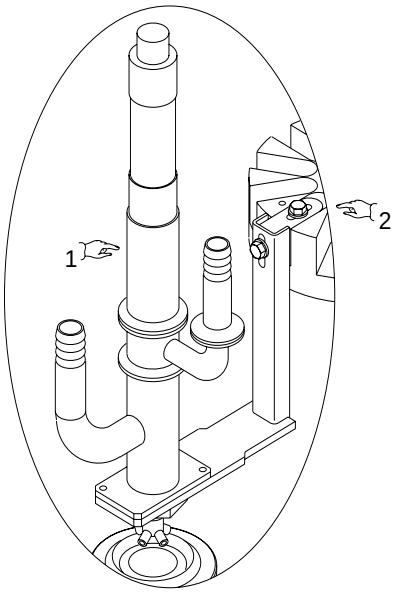

Fig. 6.13b

6.3.3b Pencil filler station

The pencil filler station consists of a nozzle *(Pos. 1, Fig. 6.13c)* activated by a pneumatic actuator connected to the feed tank by a hose.
The tank must be filled manually during production.
The height and alignment with the slot are adjustable.

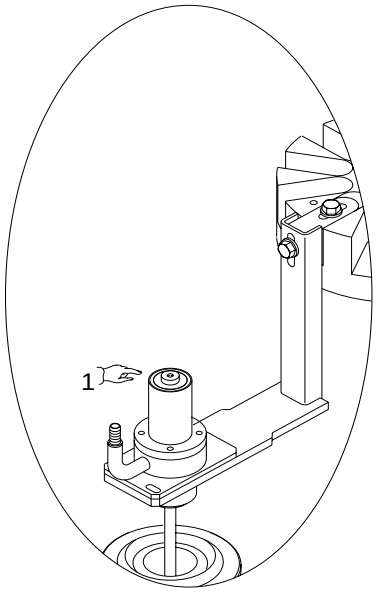

Fig. 6.13c

6.3.4 Granule station

This device, which is mounted on the structure, is used to spread nut granules, chocolate flakes or similar on the product. The unit consists of a hopper (*Pos. 1, Fig. 6.14*) connected to distribution channels (*Pos. 2, Fig. 6.14*) along which the product flows due to the effect of the vibration induced by a vibrator.
The quantity of product to feed is controlled by adjusting the start and duration of the dose on the timer housed in the control panel.
The quantity of granules can also be balanced as follows:

- slacken screws (*Pos. 3, Fig. 6.14*) using the wrench and move the adjustable baffles (*Pos. 4, Fig. 6.14*), lifting them to increase granule feed or lowering it to reduce feed.
  When finished, tighten the screws with the wrench.
- rotate the pressure regulator (*Pos. 5, Fig. 6.14*) clockwise to increase the working pressure of the vibrator in proportion to the quantity of granules fed, and anticlockwise to reduce it.

Adjust the position of the vibrator by varying its inclination with respect to the granule transfer channels.
The station is activated with the "granule" switch (*Pos. 16, Fig. 6.20*).

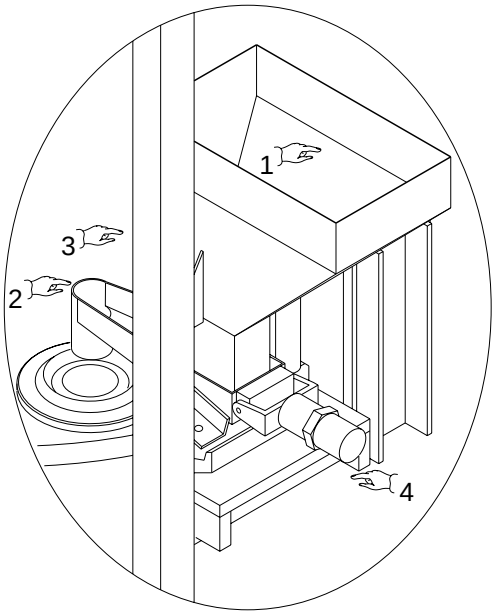

Fig. 6.14

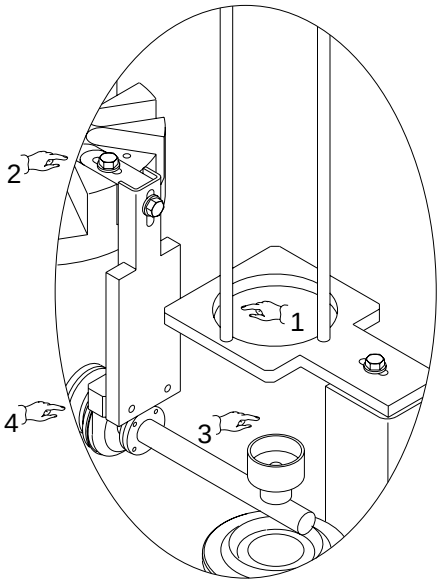

Fig. 6.15

6.3.5 Lid feed station

This station consists of lid magazines (*Pos. 1, Fig. 6.15*) mounted on a support fixed to the structure and a cross-member mounted on the up/down slide (*Pos. 2, Fig. 6.15*) which moves the lid pick-up suction cups.
During its upward travel, the suction cup support (*Pos. 3, Fig. 6.15*) is rotated 180º by a rotary actuator (*Pos. 4, Fig. 6.15*) which brings the suction cups into contact with the lids stacked in the magazines (*Pos. 1, Fig. 6.15*).
When the suction cups make contact with the lids, a vacuum is generated, allowing the lids to be picked up.
During downward movement, the suction cup support (*Pos. 3, Fig. 6.15*) is rotated 180º to position the lids over the cups. The vacuum switches off and the lids are released.
The station is activated using the "lids" switch (*Pos. 17, Fig. 6.11*). The vacuum control and rotation of the cylinder are adjusted by means of the associated cams.

6.3.6 Lid closing station

This station consists of a closing plate (*Pos. 1, Fig. 6.16*) mounted on the up/down slide. Loosen screws (*Pos. 3/4, Fig. 6.16*) to adjust height and centre crimping tool over slot, tightening the screws again afterwards.
Correct adjustment is important to make sure that lids are closed properly.

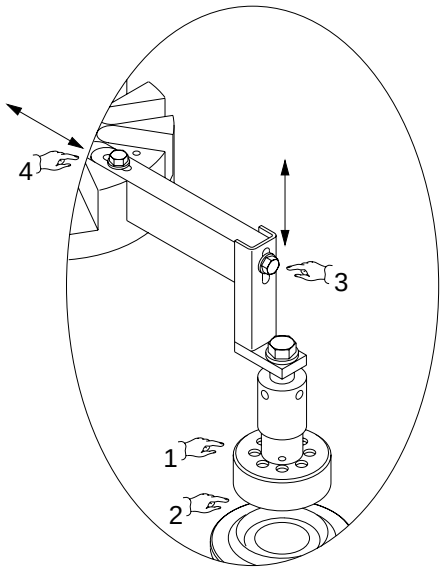

Fig. 6.16

6.3.7 Lid sealing station

This station consists of a sealing head fixed on the up/down slide. Loosen the screw (*Pos. 1, Fig. 6.17*) to centre it over the lid, then tighten the screw again.
Correct adjustment is important to ensure that lids are sealed properly.
The temperature of the sealing head may be adjusted using the appropriate control (*Pos. 4, Fig. 6.20*) on the control panel (by pressing "F" and then + to increase temperature or - to decrease it).

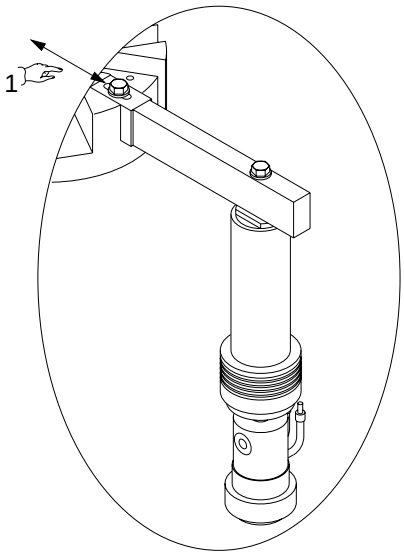

Fig. 6.17

6.3.8 Lid stamping station

The stamp is fixed to the up/down slide. Loosen the screw (*Pos. 1, Fig. 6.18*) to centre it over the lid, then tighten the screw again.
Correct adjustment is important to ensure that lids are stamped properly.
The stamping station is turned on using the "date stamp" switch (*Pos. 18, Fig. 6.20*).

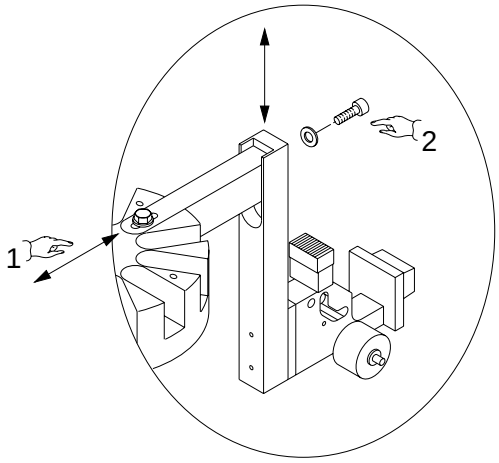

Fig. 6.18

6.3.9 Cup ejector station

The upward movement allows the ejectors to lift the cups from the slots (*Pos. 1, Fig. 6.19*), so that they are deposited on the chute (*Pos. 2, Fig. 6.19*) by the ejector bend (*Pos. 3, Fig. 6.19*).
Adjustment of the positions of the chute: if a product changeover involves changing to a cup of a different diameter, it may be necessary to change the forks that push the product onto the chute, change the diameter or shape of the ejection plates, and adjust the position of the chute lengthwise to convey the cup better.

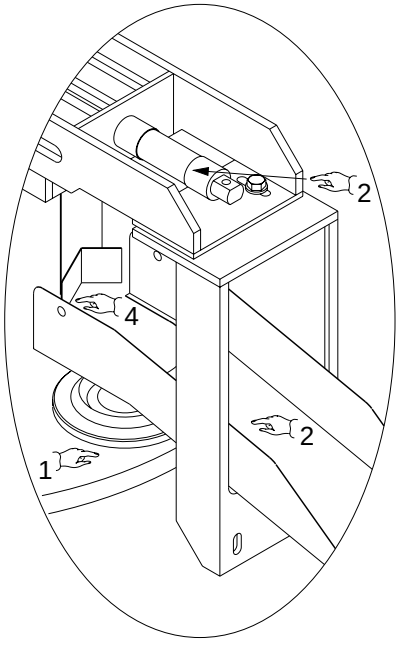

Fig. 6.19

6.3.10 Start-up

The start-up procedure is as follows:

a. Switch on the electric power supply to the machine by turning the main switch to "ON".
b. Turn off the cup feed unit using the switch (*Pos. 10, Fig. 6.20*).
c. Turn off the lid pick-up unit using the switch (*Pos. 15, Fig. 6.20*).
d. Put cups in the cup magazine.
e. Place an appropriate container underneath the bypass.
f. Start feeding ice cream mix from the freezer and wait until the ice cream coming from the bypass is of the required consistency.
g. Press the "START" button and turn on the doser switch (*Pos. 12, Fig. 6.20*), checking that the right quantity of product is dosed.
h. Turn on the cup feed unit with the switch (*Pos. 10, Fig. 6.20*).
i. Turn on the topping unit with the switch (*Pos. 14, Fig. 6.20*).
j. Turn on the granule unit with the switch (*Pos. 16, Fig. 6.20*).
k. Turn on the lid unit with the switch (*Pos. 15, Fig. 6.20*).

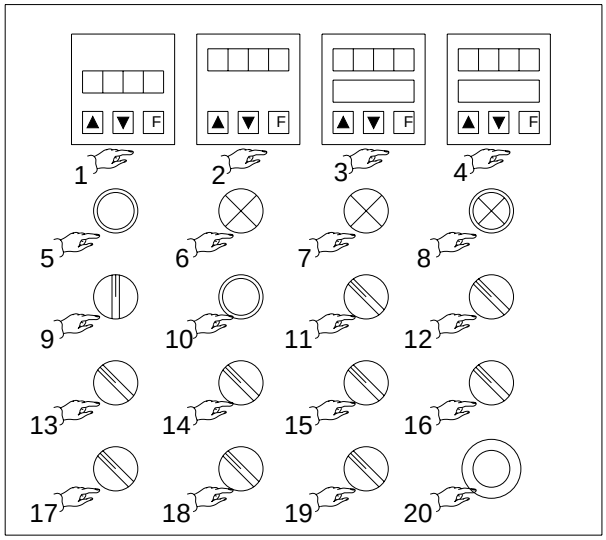

Fig. 6.20

IMPORTANT:

This description and diagram apply to a generic type of cup.
The procedure may vary depending on the type of product to be produced.

6.3.11 Emergency stop

In the event of malfunctioning of any component, press the emergency button (*Pos. 20, Fig. 6.20*) to turn off all the machine's electrical functions.
To prepare the machine for use again, first eliminate the cause of the malfunction, then turn the emergency button (*Pos. 20, Fig. 6.20*) anticlockwise and release it and press the reset button (*Pos. 7, Fig. 6.20*) on the control panel.

6.3.12 End of production

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

- Press the end of production button (*Pos. 10, Fig. 6.20*). All the operating stations in memory will stop automatically.

To stop the machine manually:

- To deactivate the stations, press the individual station buttons on the operator interface panel.

Cleaning and washing procedures are described in **CHAPTER 7 – CLEANING AND MAINTENANCE.**

HOYER COMET RC

7 - CLEANING AND MAINTENANCE

Contents

7.1 Cleaning and washing

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

The procedure for washing the production line 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	Descaler	Disinfectant
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)		

7.2 Regular maintenance

7.2.1 Beginning of the season

- Wash machine thoroughly as described in section **7.1 – Cleaning and washing**
- 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 buttons and emergency cables 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

- Wash the machine at the end of production as described in section **7.1 – Cleaning and washing, 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 oil level in lubricator bulb on vibrator or twister dosers.

7.3 Chocolate spray nozzle maintenance

At the end of the working cycle each day, use the dosing pump to pump warm water through the chocolate feed pipe.
At regular intervals and whenever necessary, dismantle the end of the chocolate spray nozzle (*Pos. 1, Fig. 7.1*) to restore it to proper functioning condition.

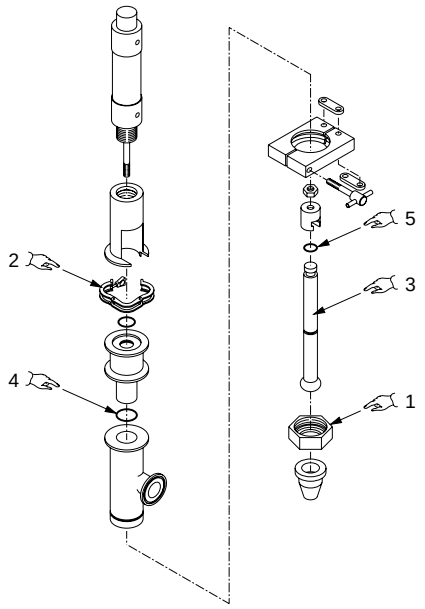

Fig. 7.1

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 will leak from the top of the doser.

5 - Wash using the recommended products shown in the table and reassemble.

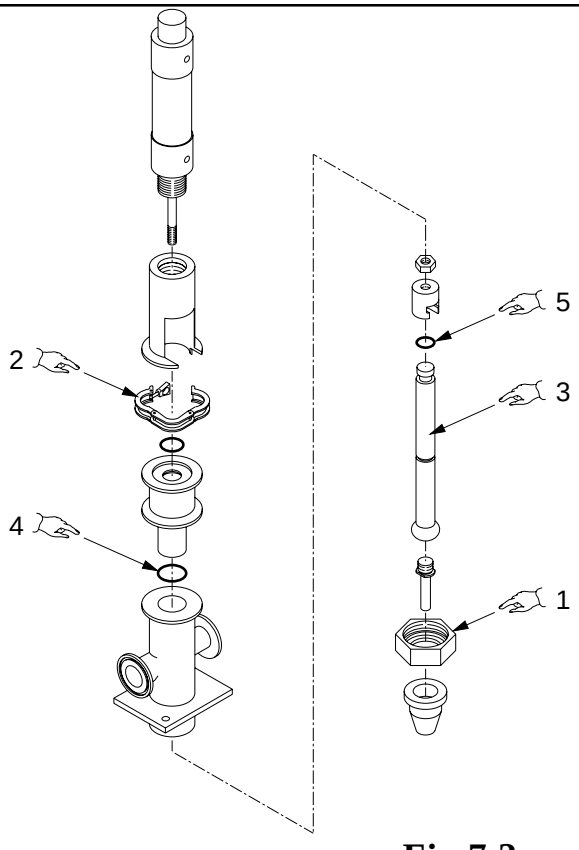

Fig.7.2

7.5 Spray nozzle unit air filter maintenance

- **Every 6 months**

- Replace sterilising filter.
- Replace activated carbon filter (the upper part of the dual filter).

IMPORTANT:

The new filter cartridge must be unwrapped only at the time of replacement. Handle with care.

- **Every 12 months**

- Replace the oil separation filter.
- Replace the high efficiency filter (the lower part of the dual filter).

IMPORTANT:

The new filter cartridge must be unwrapped only at the time of replacement. Handle with care.

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8 - TROUBLESHOOTING

Contents

8.1 Troubleshooting

Problem	Probable cause	Remedy
The machine does not start.	• No electric power.	• Check that the machine is plugged in. • Main switch is faulty.
The stations are not working.	• No compressed air.	• Check pressure switch setting. • Check for leakage of air from pneumatic system.
The cycle is interrupted.	• Overload.	• Check magnetothermal switch.
Cones/cups do not descend.	• Magazine has not been set up correctly.	• Check magazine settings.
Cones are not positioned correctly at the dosing station.	• Gauge has not been set up correctly.	• Check gauge settings.
Cones are not full enough or too full.	• Pneumatic cam activating dosing cylinder requires adjustment.	• Check opening.
Cone is not closed properly.	• Crimper is incorrectly positioned.	• Adjust crimper.

HOYER COMET RC

9 - SPARE PARTS FOR STANDARD MACHINE

Contents

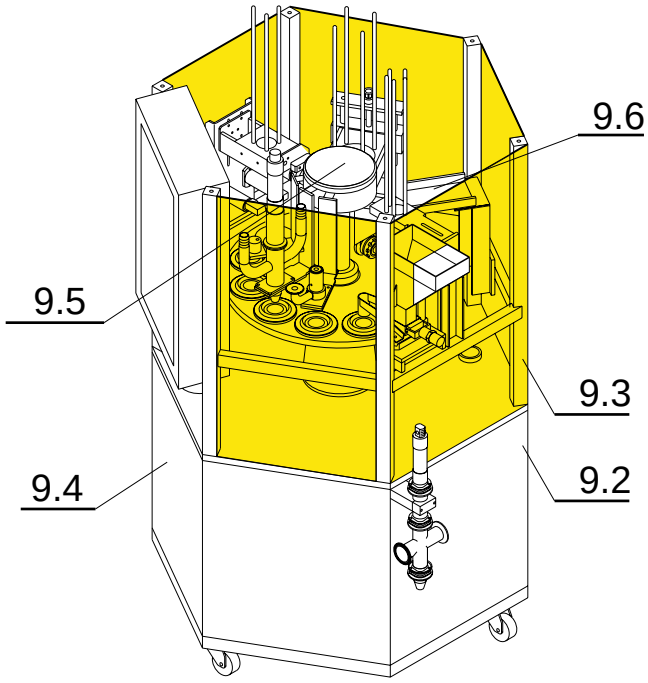

Fig. 9.1 - Lay-out

Structure - Fig. 9.2

Pos.	Code	Description	Q.ty
1	12042039	Rotary steel structure	1
2	R445002080	Wheel	4
3	12040360	Product ejector chute	1

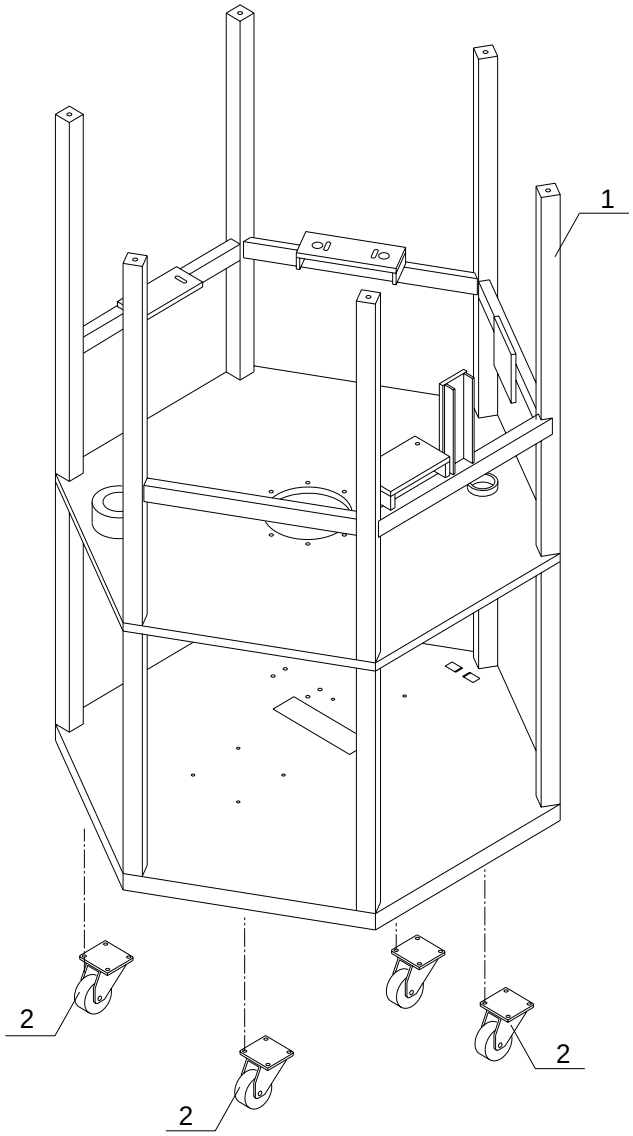

Fig.9.2 - STRUCTURE

Covers - Fig. 9.3

Pos.	Code	Description	Q.ty
1	12042098	Panel	3
2		Handle	3
3	12040303	Electrical control panel	1
4	12004718	Square	2
5	12040425	Square	8
6	12042097	Ejector panel	1
7	12042096	Granule panel	1
8	12042094	Control cabinet panel	1
9	12040302	Cover	1
10	12040304	Cover	1
11	12040305	Cover	1
12	12040307	Cover	3
13	17040043	Hinge	8
14	12040308	Electric power panel	1

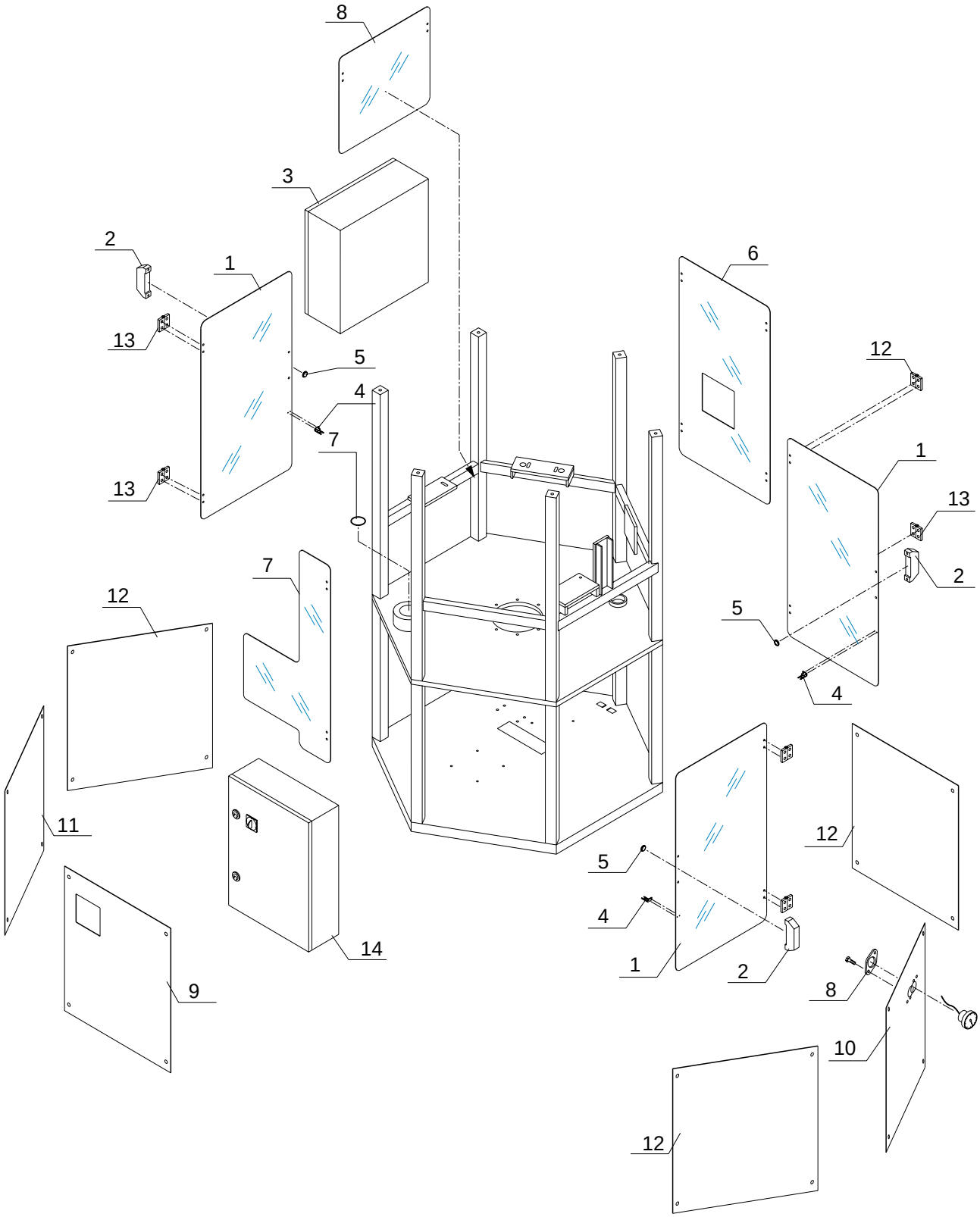

Fig.9.3 - COVERS

Motor drive - Fig. 9.4

Pos.	Code	Description	Q.ty
1	12040310	Crankshaft	1
2	336005845	Locking bushing	1
3	12040402	Universal joint	1
4	12040311	Return support	2
5	336012226	Hollow shaft return	1
6	326013075	6x20 key	1
7	12040320	Central anti-revolution shaft	1
8	12040339	Lower bearing support	1
9	12040313	Spacer 2	
10	12040325	Upper bearing support	1
11	336007056	Koyo UCF 206 support	2
12	336001423	Bearing 2	
13	336071185	Oil guard	1
14	336071156	Oil guard	1
15	326019025	25e circlip	1
16	12040314	Lever support	1
17	12040404	Lever 1	
18	336008105	Idle pin 1	
19	336078027	Right female coupling	2
20	336050012	Right M12 nut	1
21	12040346(?)	Tie rod 1	
22	12040346	Left nut 2	
23	336078028	Left female coupling	1
24	336078039	Left male coupling	1
25	12040351	Tie rod 1	
26	336078054	Right female coupling	1
27	12040316	Driven shaft	1
28	326013085	Key 2	
29	326013132	Key 1	
30	326013130	Key 2	
31	12040018	Eccentric	1
32	12040019	Adjustment flange	1
33	170040012	Reduction gear	1
34	12040404	Spacer 2	
35	17040013	Speed change gear	1
36	12040413	Flywheel shaft	1
37	12040434	Flywheel	1
38		Motor (depends on voltage)	1
39	17040034	Programmer 17040056	1
40	12040825	Cam 12	
41	17040042	Idle pin 1	
42	17040035	Maltese cross crank	1

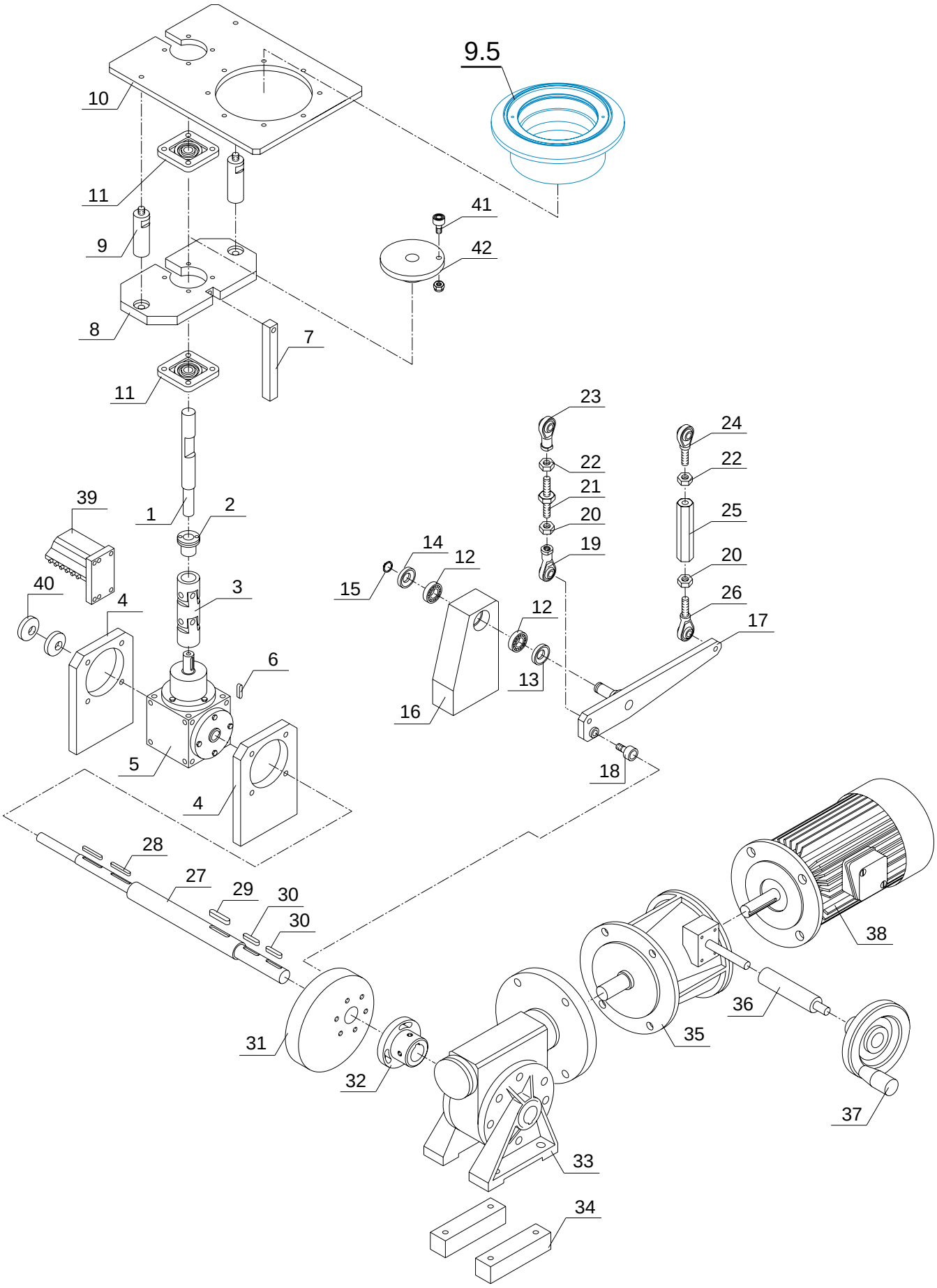

Fig.9.4 - MOTOR DRIVE

Vertical movement - Fig. 9.5

Pos.	Code	Description	Q.ty
1	12040326	Station support closing plate	1
2	336066034	O-ring seal	1
3	12040327	Station support plate	1
4	12043482	Brass	2
5	12042036	Slotted disk	1
6	17040010	Keyer	1
7	12042036	Slotted disk	1
8	12040331	Central disk support column	1
9	336071971	Seal ring	1
10	12040837	Spacer	1
11	12040833	Spacer	1
12	12040334	Central bearing support	1
13	336001400	Bearing	2
14	336066204	Seal	1
15	12040335	Maltese cross	1
16	12040336	Vertical shaft for central movement	1
17	12040322	Central shaft bolt	1
18	12040337	Central shaft rotation lock	1
19	326024213	Pin	24
20	336001345	Bearing	2
21	326019008	Circlip	2
22	12040338	Pin	1
23	326019150	150i circlip	1
24	12043481	Brass	1
26	336069702	40-50-7 scraper ring	2

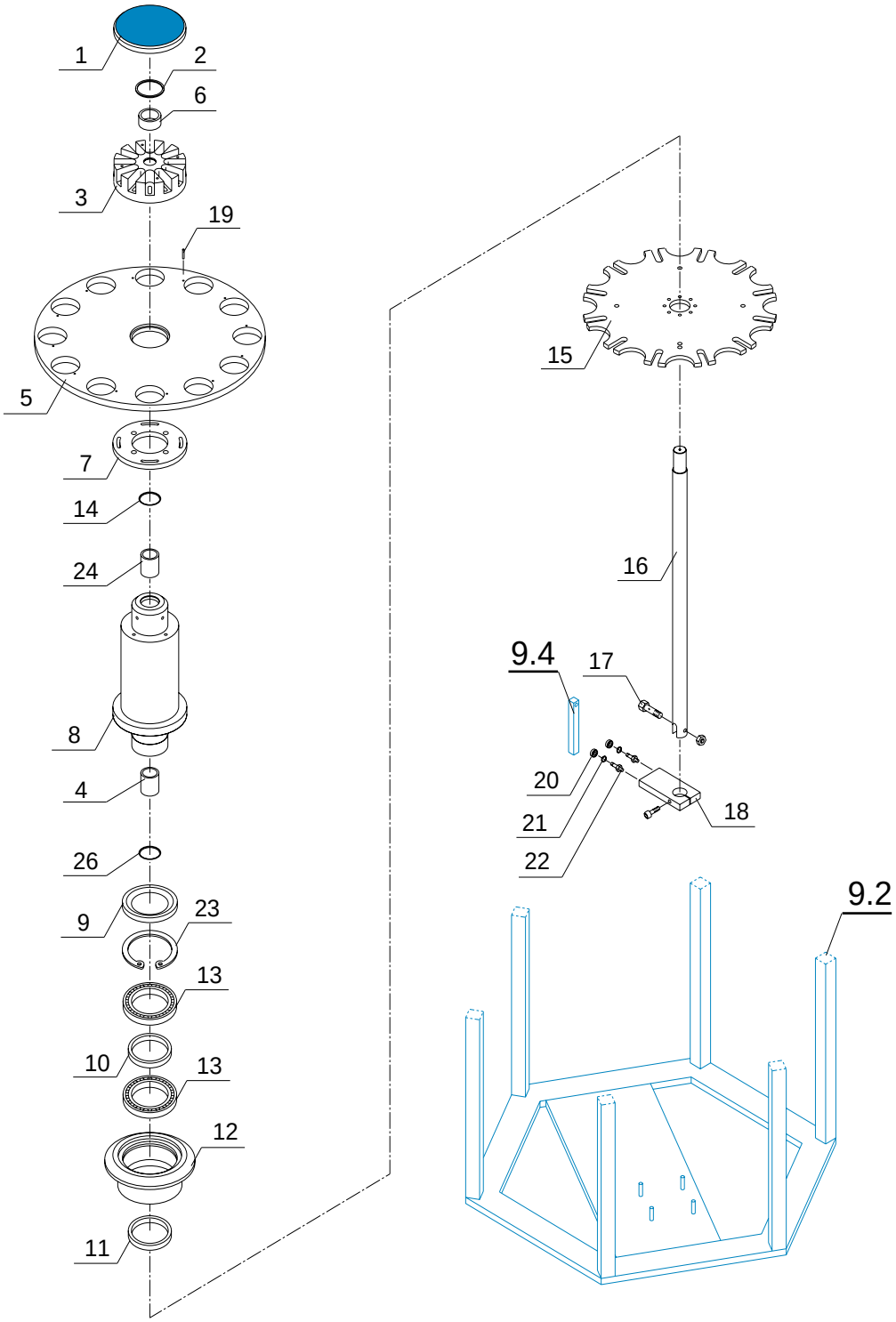

Fig.9.5 - VERTICAL DRIVE

Ejector - Fig. 9.6

Pos.	Code	Description	Q.ty
1	12040387	Anti-rotation bar	1
2	336069740	Scraper	2
3	12042085	Sleeve support plate	1
4	336005804	Brass	2
5	326015095	Lubricator	2
6	12040377	Feed and extraction guide column	1
7	12040338	Pin	1
8	336003980	Ring nut	1
9	12040379	Extraction shaft	1
10	326019008	Extraction shaft anti-rotation	1
11	326019008	Circlip	2
12	336001345	Bearing	2

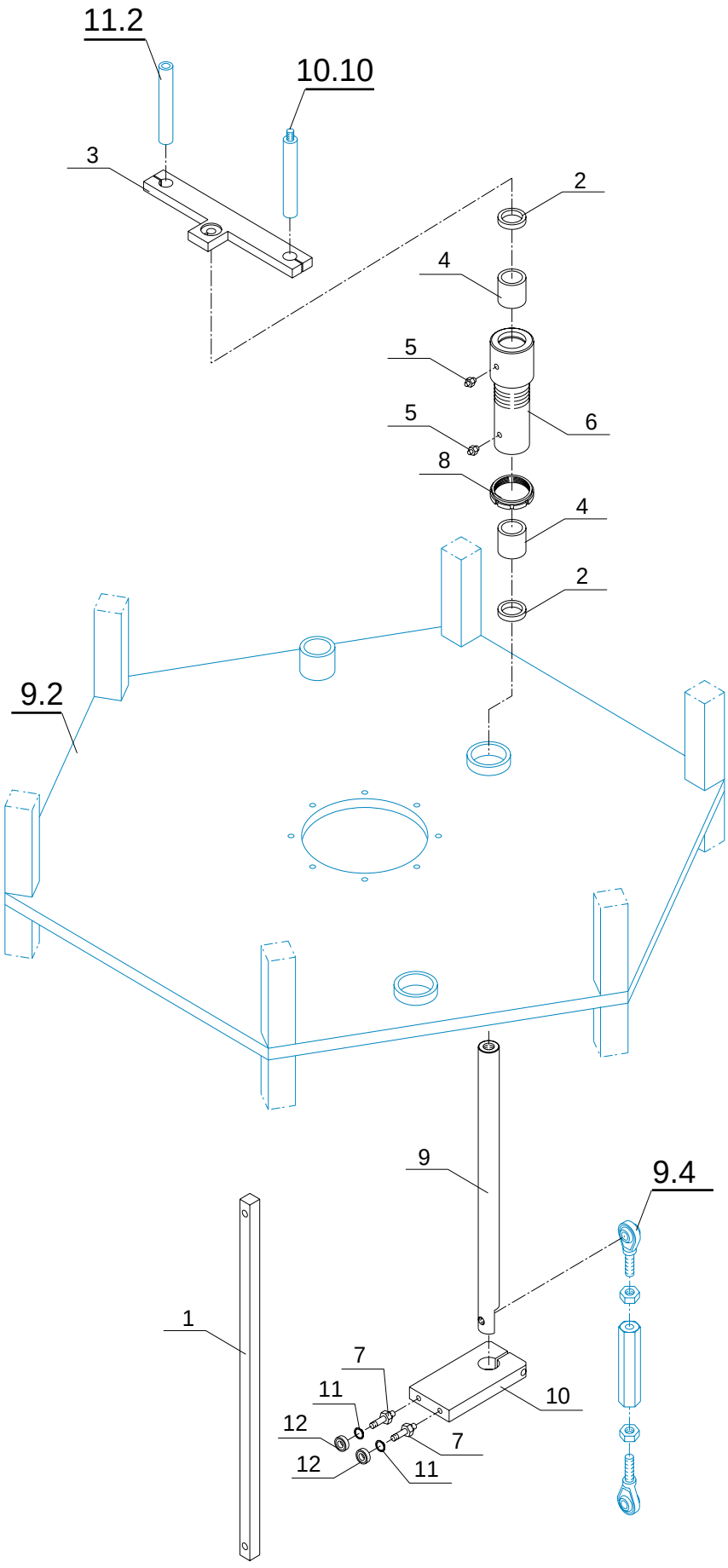

Fig.9.6 - EJECTOR

HOYER COMET RC

10 - SPARE PARTS FOR CONE PRODUCT

Contents

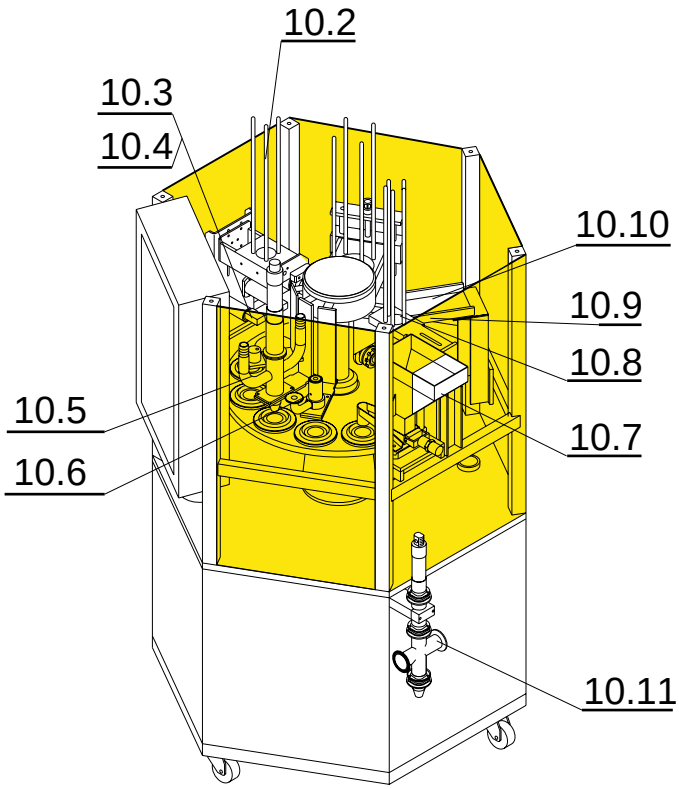

Fig. 10.1 - Lay-out

Cone feed - Fig. 10.2

Pos.	Code	Description	Q.ty
1	12042010	Support	1
2	12042002	Bearing bush	2
3	17000008	Cylinder	1
4	17000045	SGS coupling	1
5	12040104	Cylinder connection pin	1
6	12040097	Special pin for bushings	2
7	336005050	Bushing	2
8	12040095	Cone release movement connecting rod	1
9	12040094	Cone release movement lever	1
10	12040202	Release rod movement hinge	1
11	3326019015	E15 circlip	2
12	336001383	Bearing	4
13	12042004	Cone release rod	2
14	12042005	Right cone retainer hand	1
15	12042006	Left cone retainer hand	1
16	336071135	Corteco seal	2
17	12042001	Magazine support	1
18	540212003	Clutch	2
19	17000007	Cylinder	2
20	12040098	Magazine support spacer	4
21	12042007	Cone release blade guide	2
22	333001053	Actuator	1
23	12040096	Cornet removal blade	1
24	12042003	Blade control shaft	1

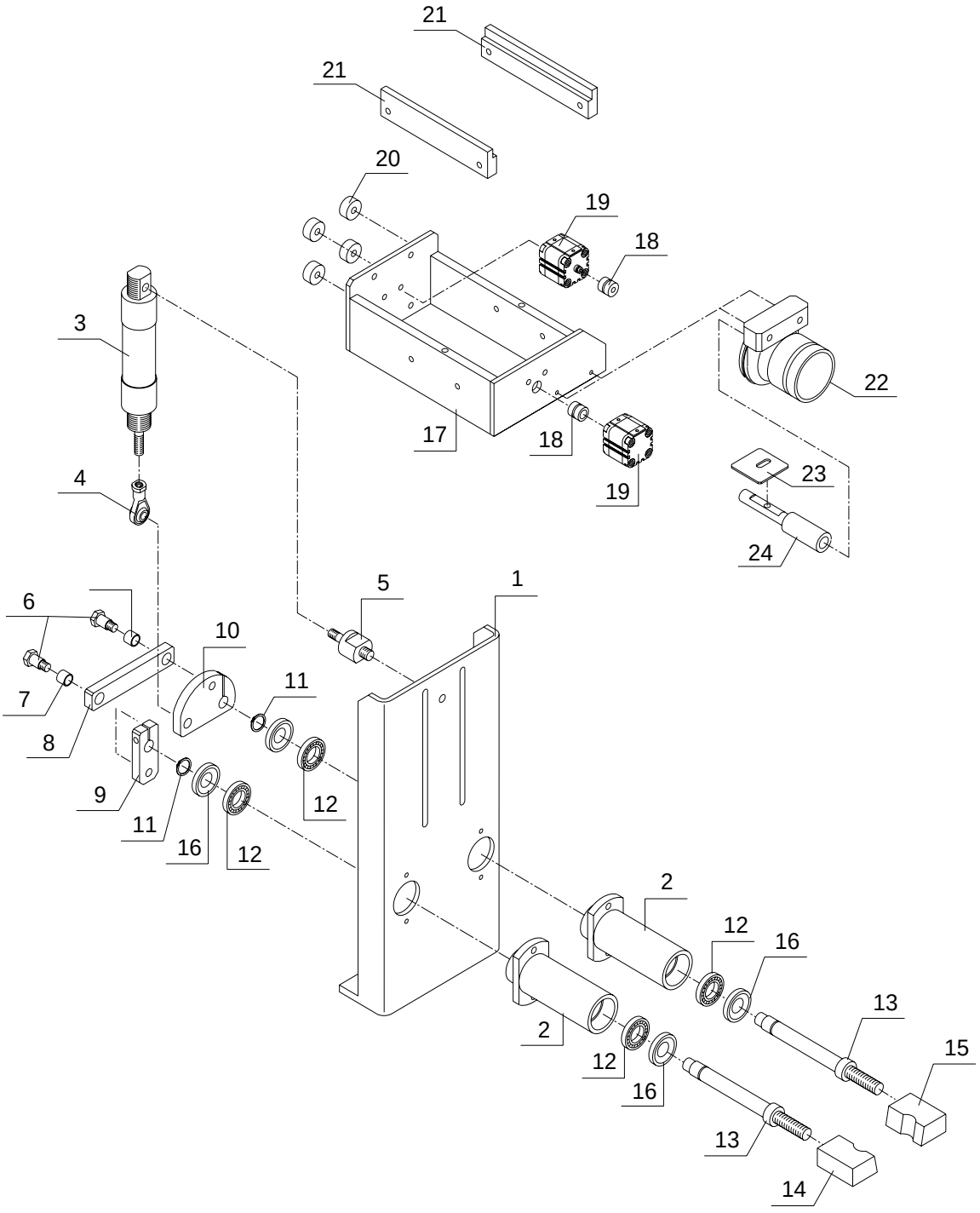

Fig.10.2 - CONE FEED

Gauge - Fig. 10.3

Pos.	Code	Description	Q.ty
1	540302006	Bushing	1
2	12042032	Support	1
3	D-FM0606	Spring	1
4	FM0605	Tie rod	1
5	12042028	Plate	1

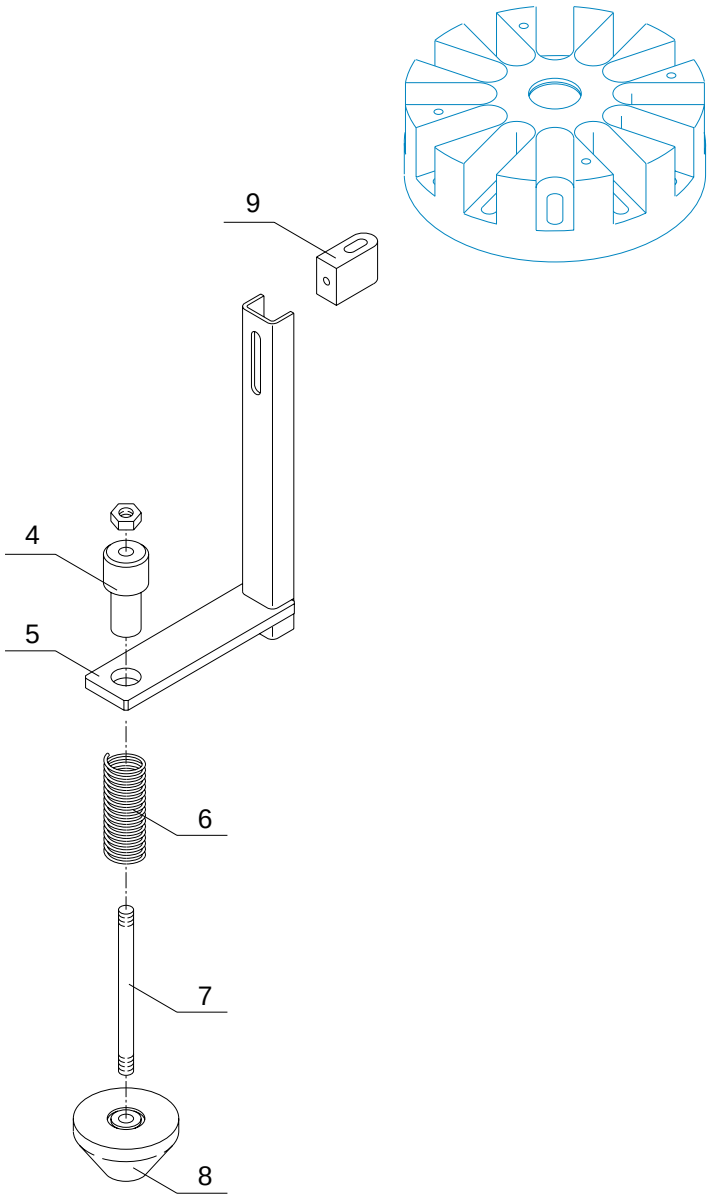

Fig.10.3 - GAUGE

Spray nozzle - Fig. 10.4

Pos.	Code	Description	Q.ty
1	011070112	Spray nozzle	1
2	HF75D08021	Support	1
3	12042027	Support	1
4	12042028	Plate	1

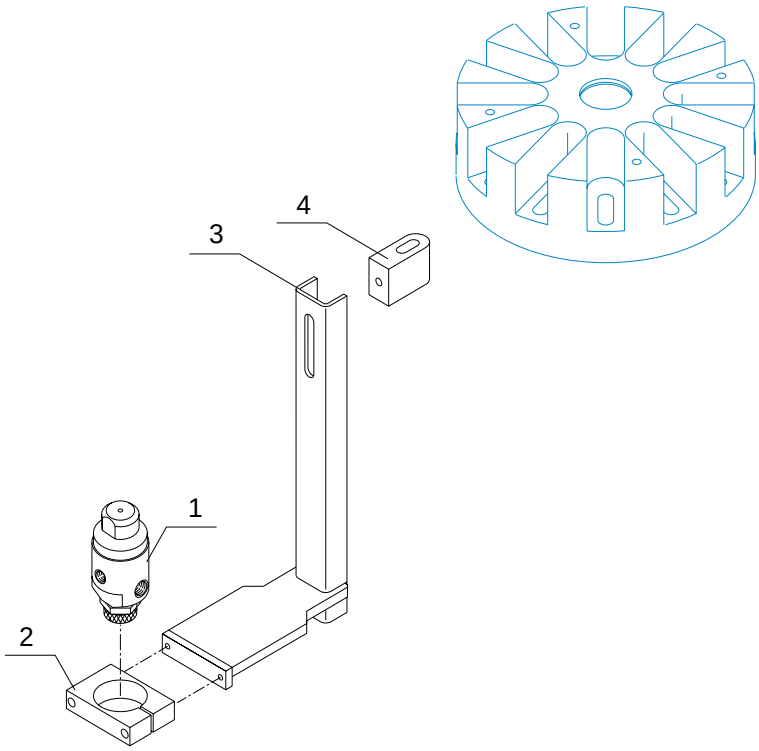

Fig.10.4 - SPRAY NOZZLE

Doser - Fig. 10.5

Pos.	Code	Description	Q.ty
1	17000010	Cylinder	1
2	12040213	Cylinder connection	2
3	016060219	2” clamp	1
4	336067042	O-ring seal 3081	1
5	12040210	Upper part of cylinder	1
6	336067051	O-ring seal 3118	1
7	12042030	Double doser body	1
8	12042035	Plate	1
9	12042026	Support	1
10	540204063	Standard smooth nozzle	1
11	12040027	Lifting joint	1
12	336067036	O-ring seal 119	1
13	12040948	Central piston	1
15	12040211	Nozzle locking nut	1
16		Hose connection	2
17		Seal	2
18		Clamp	2

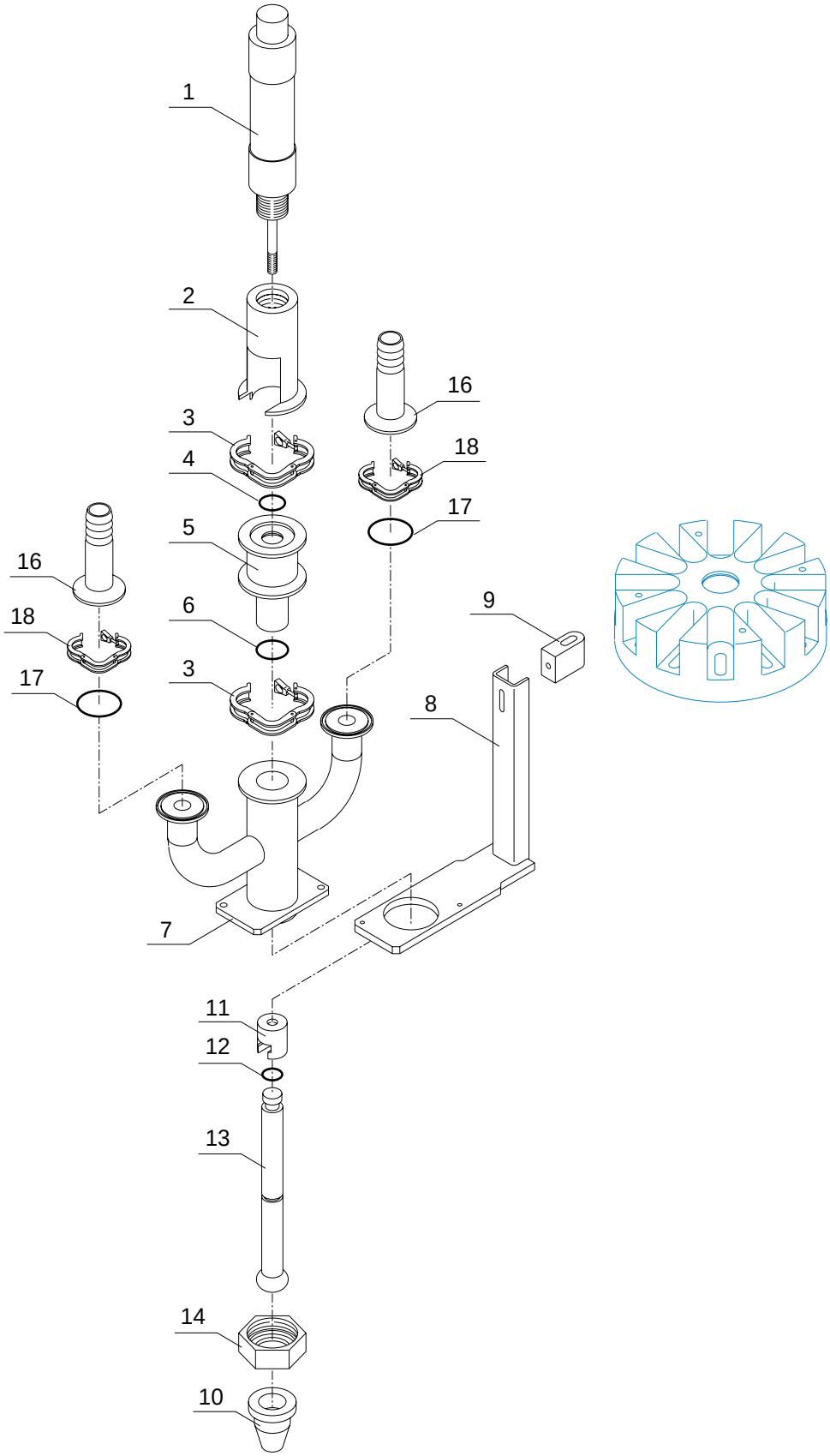

Fig.10.5 - DOSERS

Topping - Fig. 10.6

Pos.	Code	Description	Q.ty
1	12042028	Plate	1
2	12042035	Support	1
3	D01H00016A	Topping ring nut	1
4	D01H00016B	Topping disk	1
5	12042031	Topping nozzle	1
6	336067030	Seal	1
7	336069466	Seal	2
8	54204050	Pipette	1
9	018020575	Seal	1
10	016060218	Clamp	1
11	141040364	Hose connection	1
12	018060957	Hose clip	1
13	12040528	Valve body	1
14	540214001	Piston	1
15	336067020	Seal	1
16	540214002	Breech	1
17	336067100	Seal	1
18	336067045	Seal	1
19	336067030	Seal	1

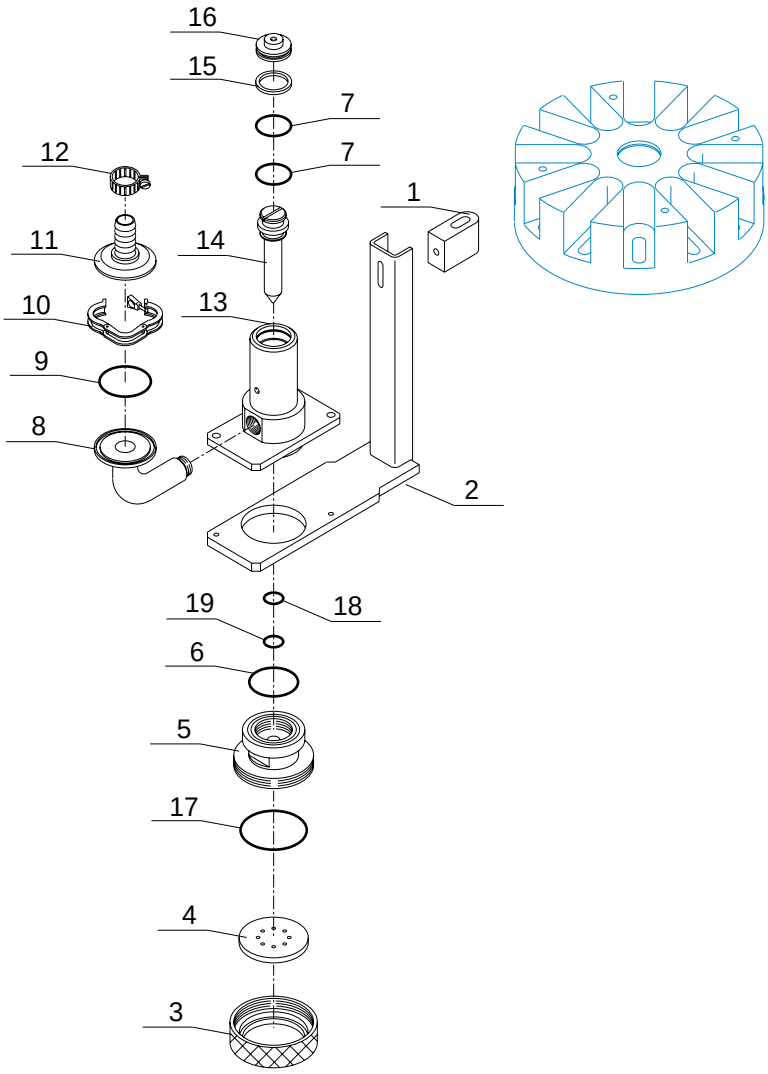

Fig.10.6 - TOPPING

Granule - Fig. 10.7

Pos.	Code	Description	Q.ty
1	12042016	Base plate	1
2	12042017	Vibrating channel	1
3	12042018	Hopper	1
4	540213009	Column	2
5	12042106	Flow control	1
6	540213015	Vibrator fork	1
7	17040027	Pneumatic vibrator	1
8	336055001	Vibration damper	1

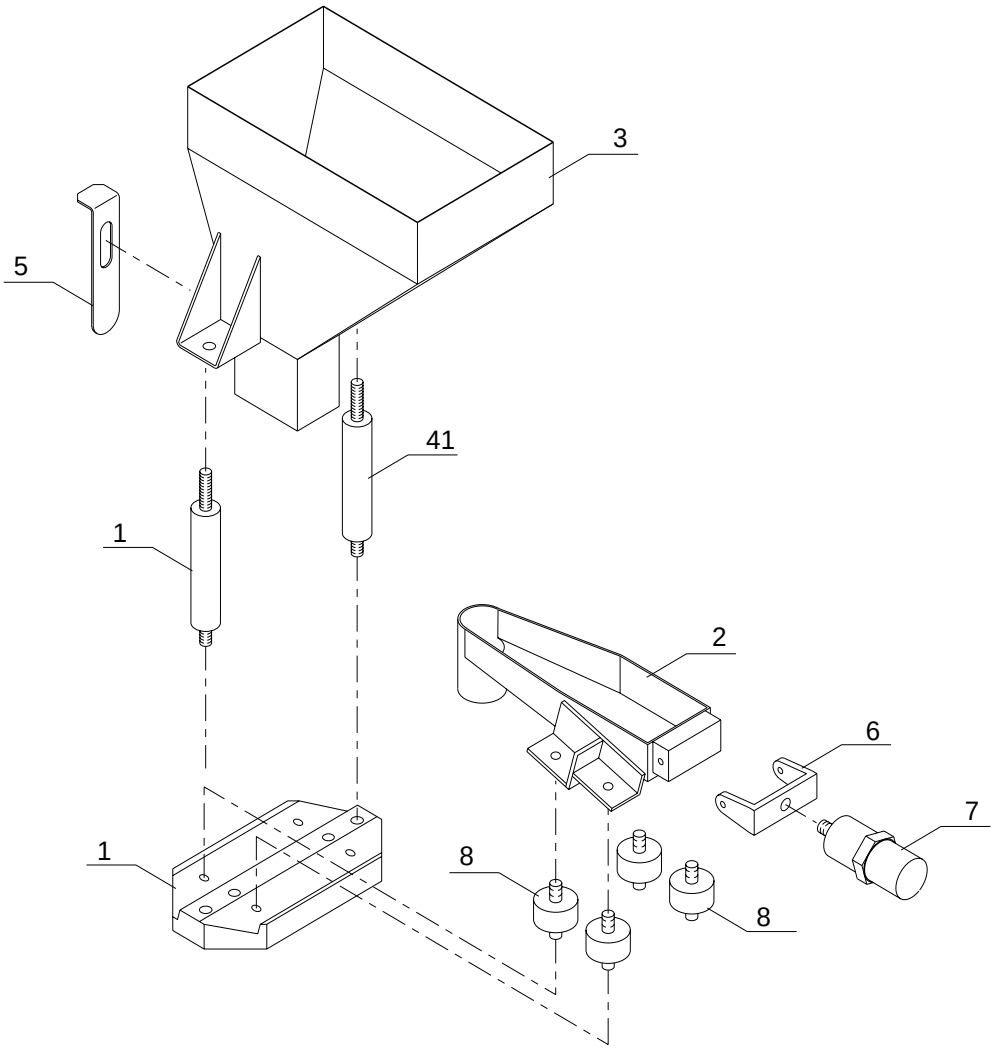

Fig.10.7 - GRANULE

Lid pick-up - Fig. 10.8

Pos.	Code	Description	Q.ty
1	12040243	Product guide rods	4
2	12042105	Suction cup support	1
3	12042038	Lid plate	1
4	12042034	Manifold shaft	1
5	12042037	Lid support	1
6	333001007	Rotating cylinder	1
7	12040401	Cylinder support	1
9		Suction cup (depending on format)	1

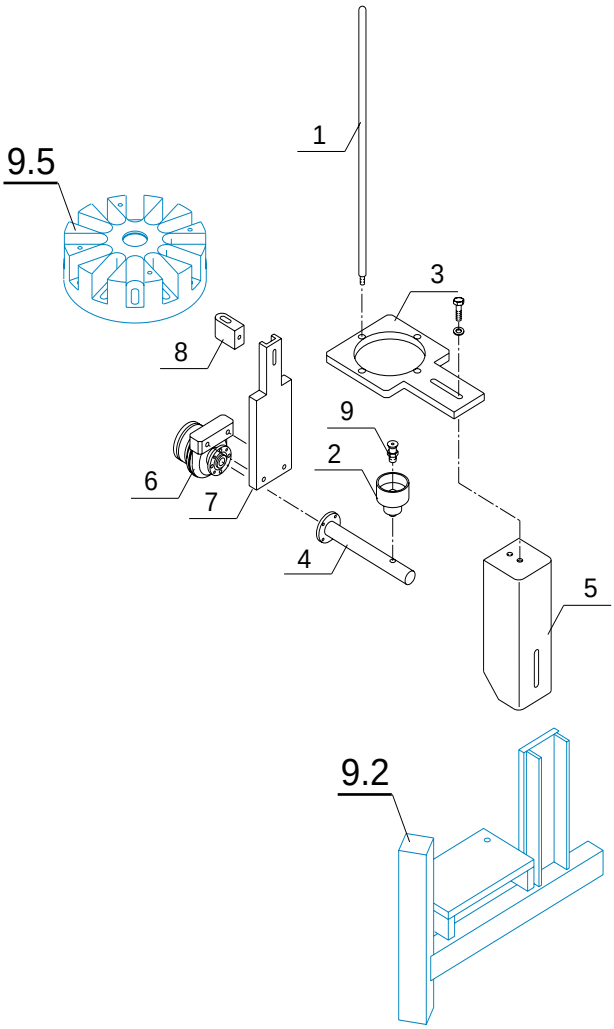

Fig.10.8 - LID PICK-UP

Lid closing - Fig. 10.9

Pos.	Code	Description	Q.ty
1	12042029	Plate	1
2	12042033	Support	1
3	D01L00067	Bushing*	1
4	FM50R45001	Spring*	1
5	D01L00061	Body*	1
6	12040247	Piston*	1

* for standard cones only

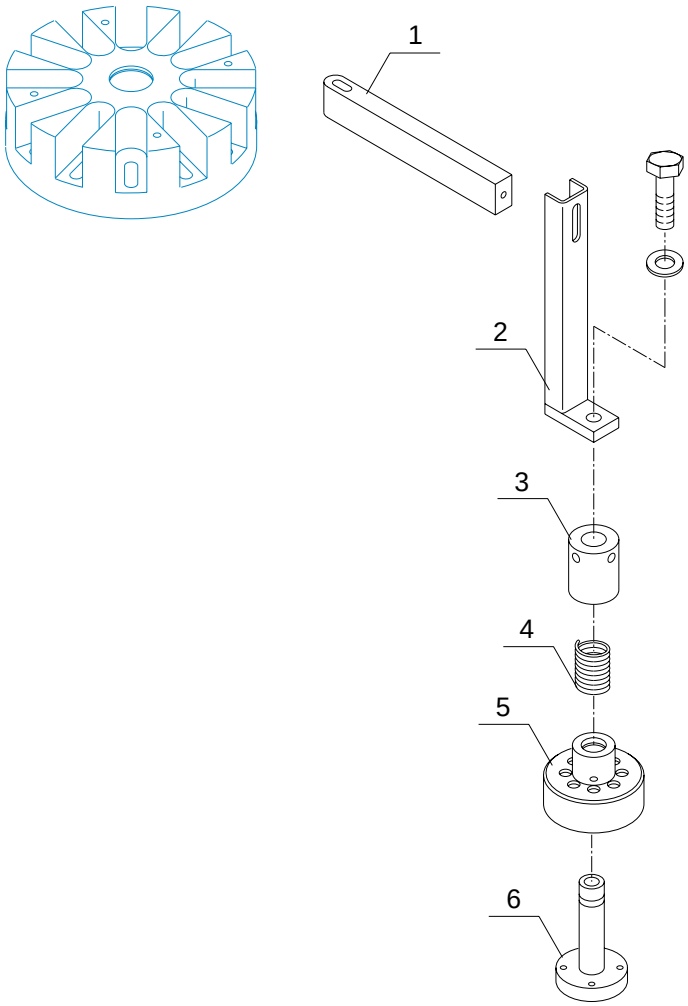

Fig.10.9 - LID CLOSING

Ejector - Fig. 10.10

Pos.	Code	Description	Q.ty
1	12042021	Support	1
2	12042025	Chute	1
3	12042022	Contrast	1
4	12041091	Extraction plate	1
4		Column	1

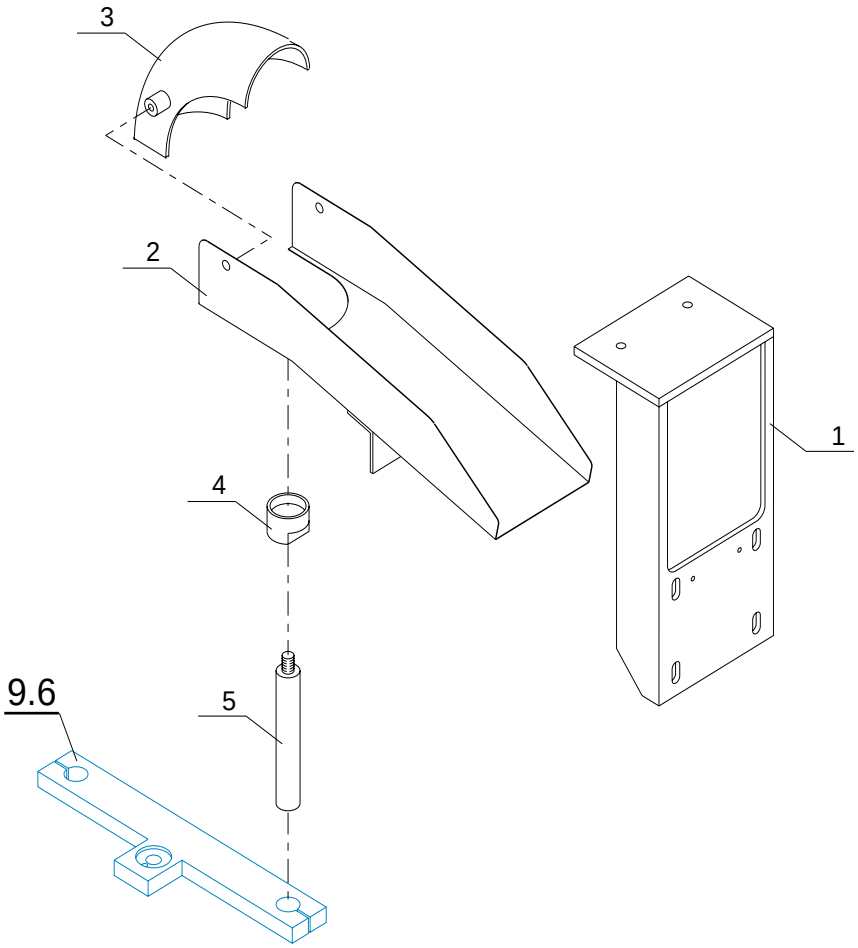

Fig.10.10 - EJECTOR

Bypass - Fig. 10.11

Pos.	Code	Description	Q.ty
1	17000010	Cylinder	1
2	016060218	1½”clamp connection	2
3	018020581	Clamp seal	2
4	12040389	Bypass valve body	1
5	12042102	Bypass valve support	1+1
6	12040391	Bypass nozzle	1
7	12040027	Doser piston connection joint	1
8	336067036	O-ring seal	2
9	12040392	Bypass piston	1
10	12040393	Pneumatic piston connection	1
11	016960222	Hose connection	2
12	016060222	Curve	1

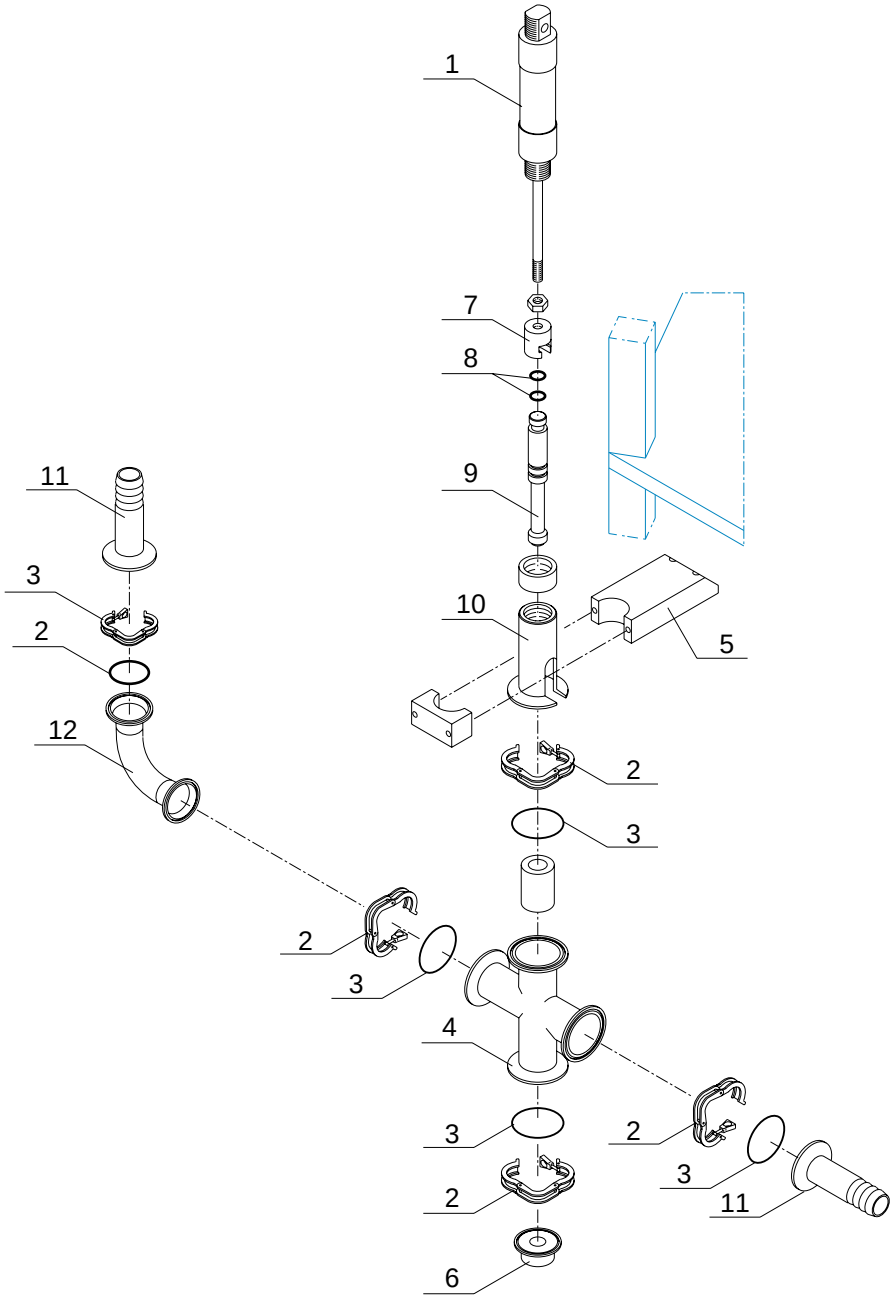

Fig.10.11 - BYPASS

Chocolate spray pump - Fig.10.12

POS.	CODE	DESCRIPTION	Q.TY
1	336057064	Flywheel	1
2	12040716	Threaded piece for adjustment	1
3	540643005	Cap	1
4	12040715	Joint	1
5	12040806	Nipple with two holes	1
6	12040709	Adjustment sleeve	1
7	17000309	Cylinder	1
8	12040712	Ring nut with connection	1
9	540204053	Clutch	1
10	17000310	Seal	2
11	12040714	Central piston	1
12	018020582	Seal	5
13	016060218	Clamp connection	5
14	12040713	Double sleeve	1
15	17000317	T-union	1
16	12040711	Spring	2
17	336003999	Ball	2
18	12040710	Spring container	2

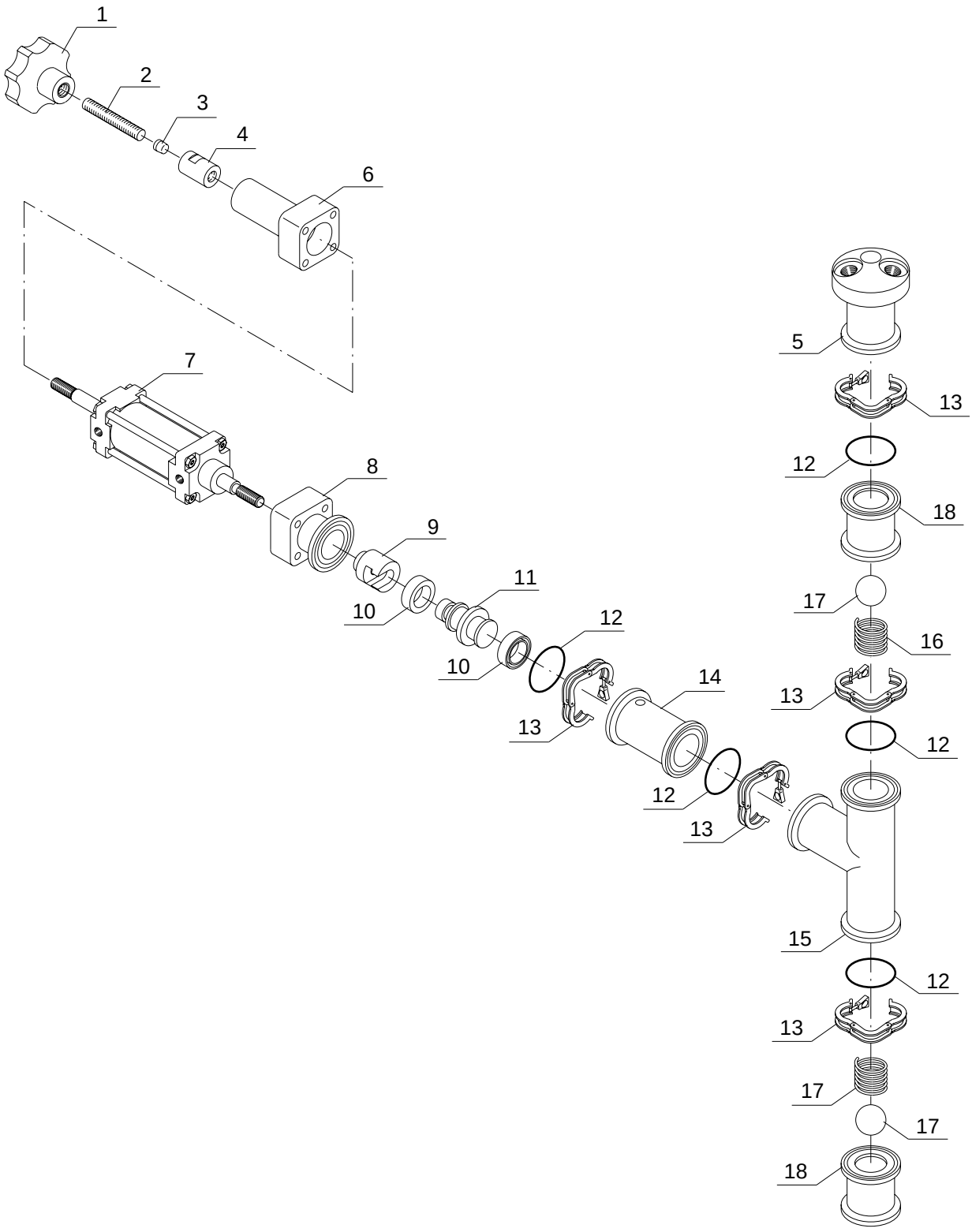

Fig. 10.12 - CHOCOLATE SPRAY PUMP

Chocolate tank - Fig. 10.13

POS.	CODE	DESCRIPTION	Q.TY
1	12040816	Tank support frame	1
2	016060218	Clamp	2
3	018020582	Seal	2
4	336054078	DM100 wheel	4
5	017975020	Heater	1
6	12040814	Chocolate tank	1
7	12040926	Chocolate dip tube	2
8	12040818	Tank lid	1
9	12040820	Chocolate filter mesh	1
10	12040819	Chocolate return outlet	2
11	016020003	A304 ball valve	1
12	017088239	BSA thermostat	1

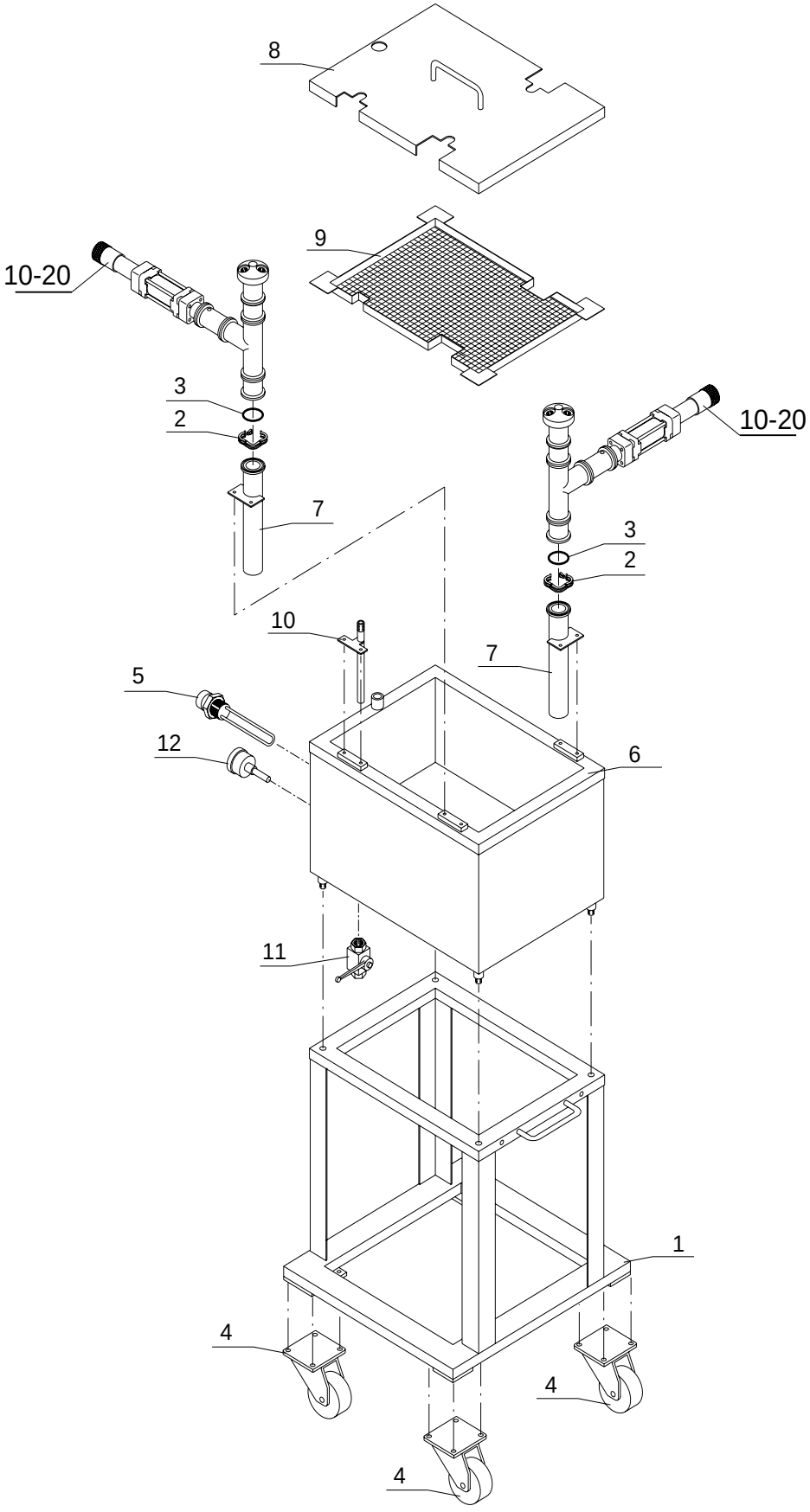

Fig. 10.13 - Chocolate tank

Fig. 10.13

Variegator - Fig. 10.14

POS.	CODE	DESCRIPTION	QTY.
1	141040364	Hose connection	1
2	016060218	Clamp	1
3	018020581	Seal	1
4	336067042	O-ring seal 3081	1
5	12040782	Upper half of variegator cylinder	1
6	336067051	O-ring seal 3118	1
7	540204050	Elbow	1
8	336067076	O-ring seal 119	1
9	12040949	Centre perforated piston	1
10	12040950	4-exit variegator	1

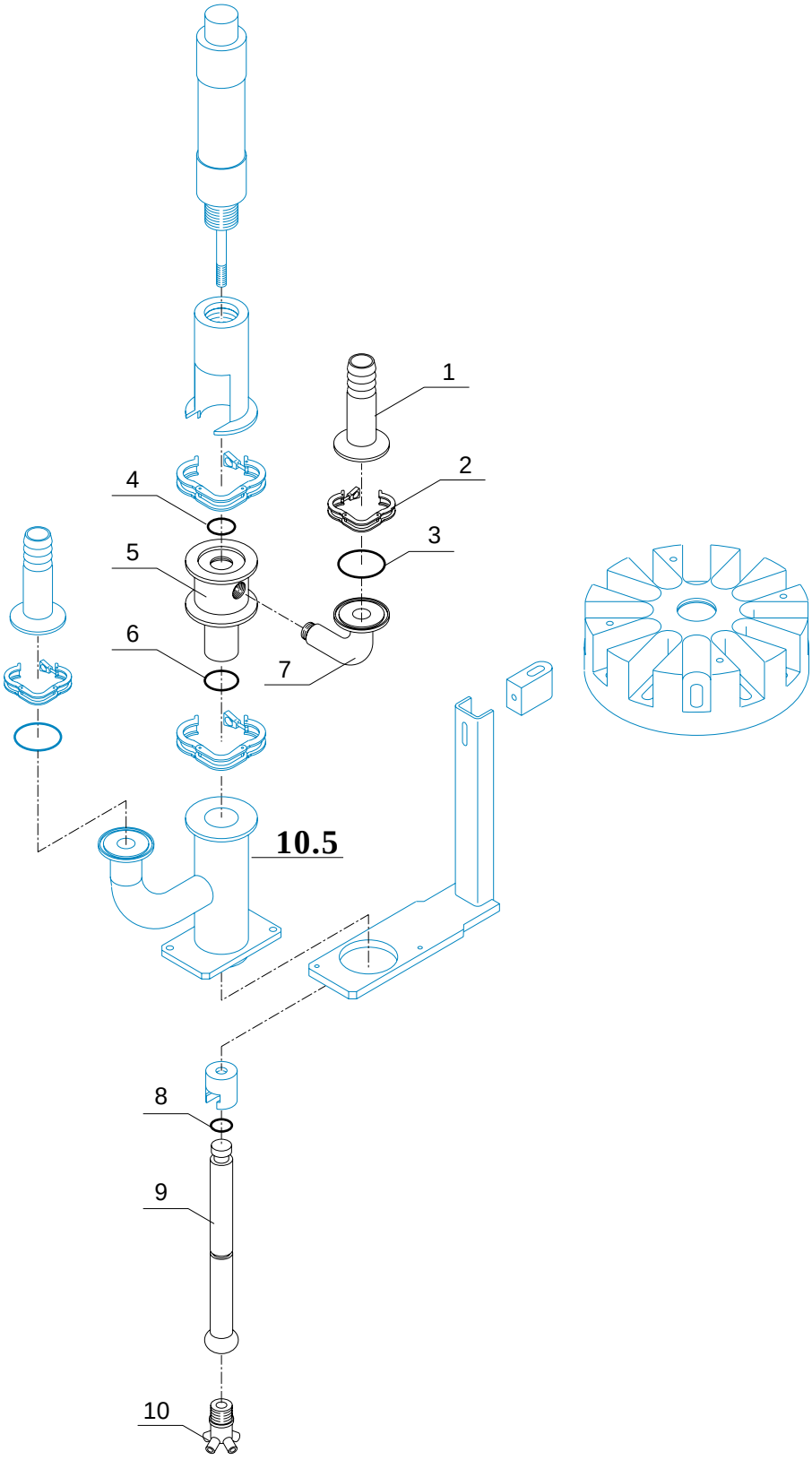

Fig. 10.14 - VARIEGATOR

Pencil filler - Fig. 10.15

POS.	CODE	DESCRIPTION	Q.TY
1	12042035	Support bracket	1
2	12042028	Block	1
3	12042234	Valve body	1
4	018060957	Clip	1
5	540214002	Endpiece	1
6	336069466	Seal	2
7	540214001	Piston	1
8	336067020	Seal	1
9	12041785	Upper part of body	1
10	336067045	Seal	1
11	336067048	Seal	1
12	336067030	Seal	1
13	12040539	Nozzle	1

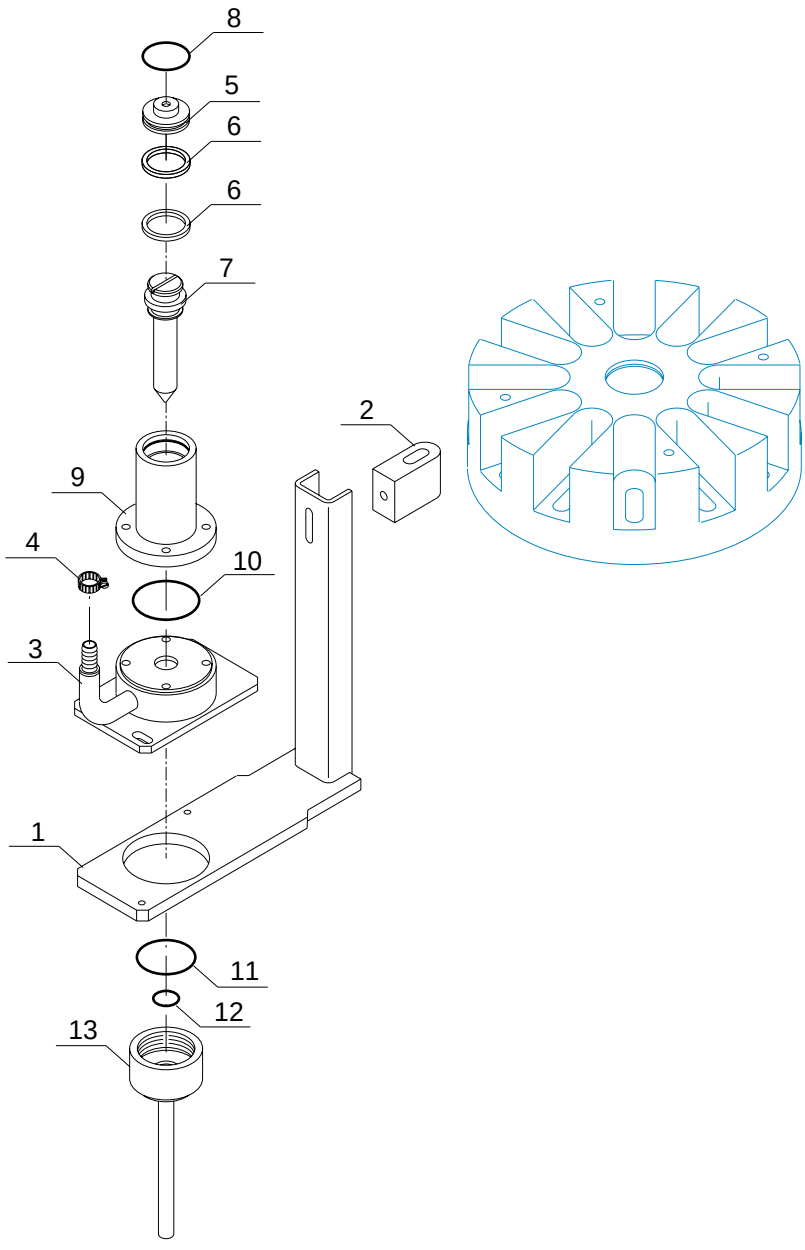

Fig. 10.15 - PENCIL FILLER

HOYER COMET RC

11 - SPARE PARTS FOR CUP PRODUCT

Contents

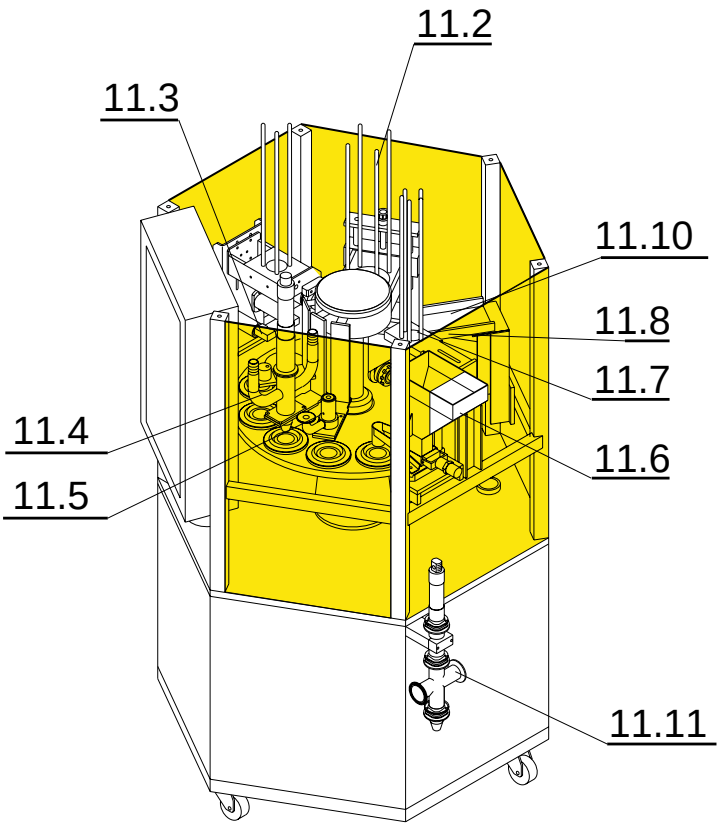

Fig. 11.1 - Lay-out

Cup feed - Fig. 11.2

Pos.	Code	Description	Q.ty
1	33605755	Flywheel	1
2	12042013	Upper adjustment plate	1
3	HL0111	Adjustment screw	1
4	540203006	Trimming washer	1
5	540203008	Screw bushing	1
6	540203005	Lifting block	1
7	540203007	Screw retainer	1
8	336005076	Bushing	2
9	12040086	Slide guide column	2
10	12042014	Support plate	1
11	12042015	Retainer blade guide	2
12	17000007	Cylinder	2
13	540212003	Clutch	2
14	12042086	Cup pick-up sleeve	1
15		Suction cup holder	1
16		Suction cup (depends on format)	1
17	12042011	Slide for vertical adjustment	1

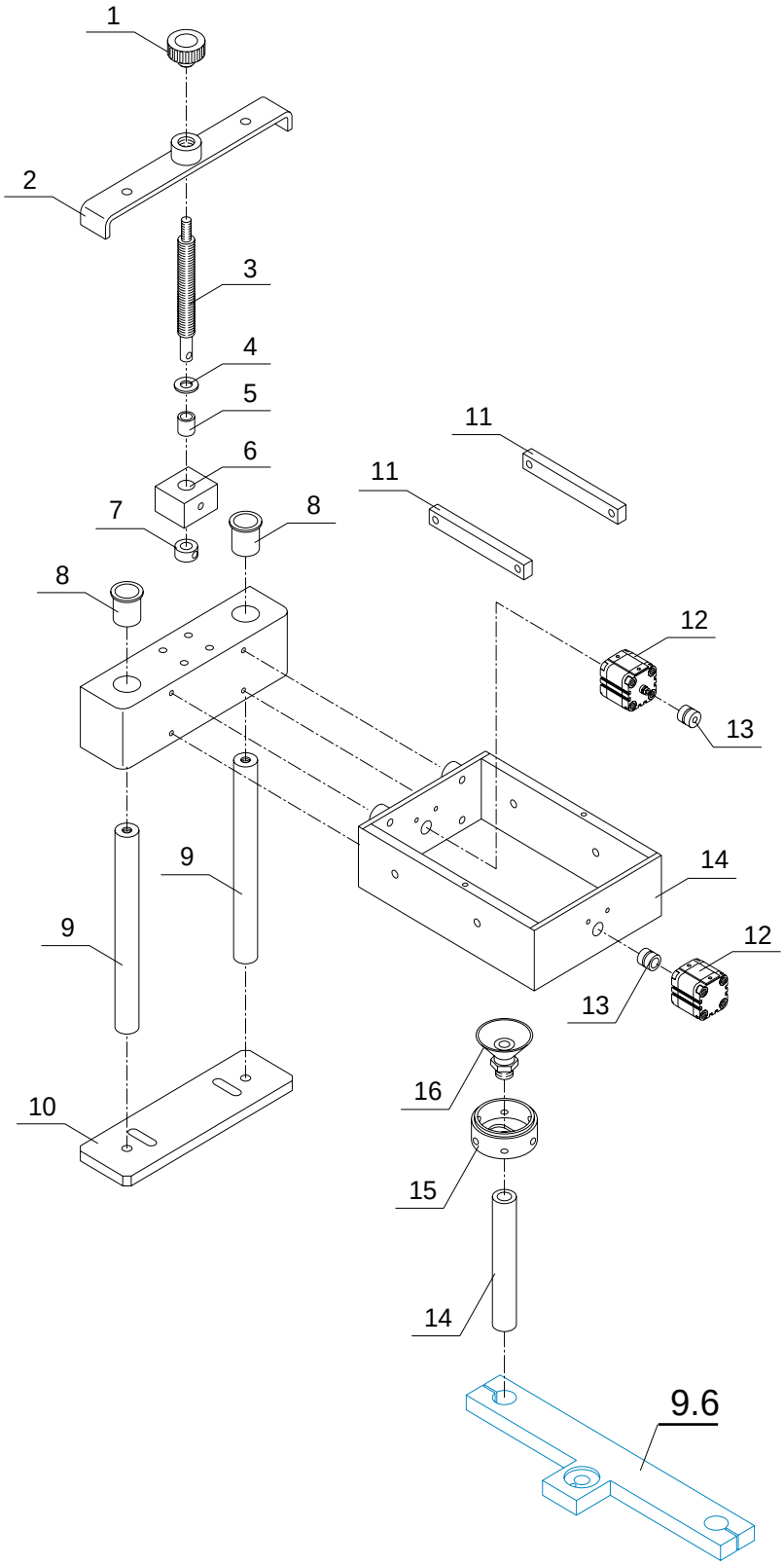

Fig.11.2 - CUP FEED

Chewing gum feed - Fig. 11.3

Pos.	Code	Description	Q.ty
1	12042123	Station support	1
2	12042120	Hopper	1
3	12042121	Inner hopper	1
4	12040779	Fulcrum axle	1
5	17000011	Cylinder	1
6		Circlip	1
7	12040780	Pin	1
8	17000045	Coupling	1
9	12040638	Shaker	2
10	12042122	Dispenser drawer	1
11	12041293	Spacer	1

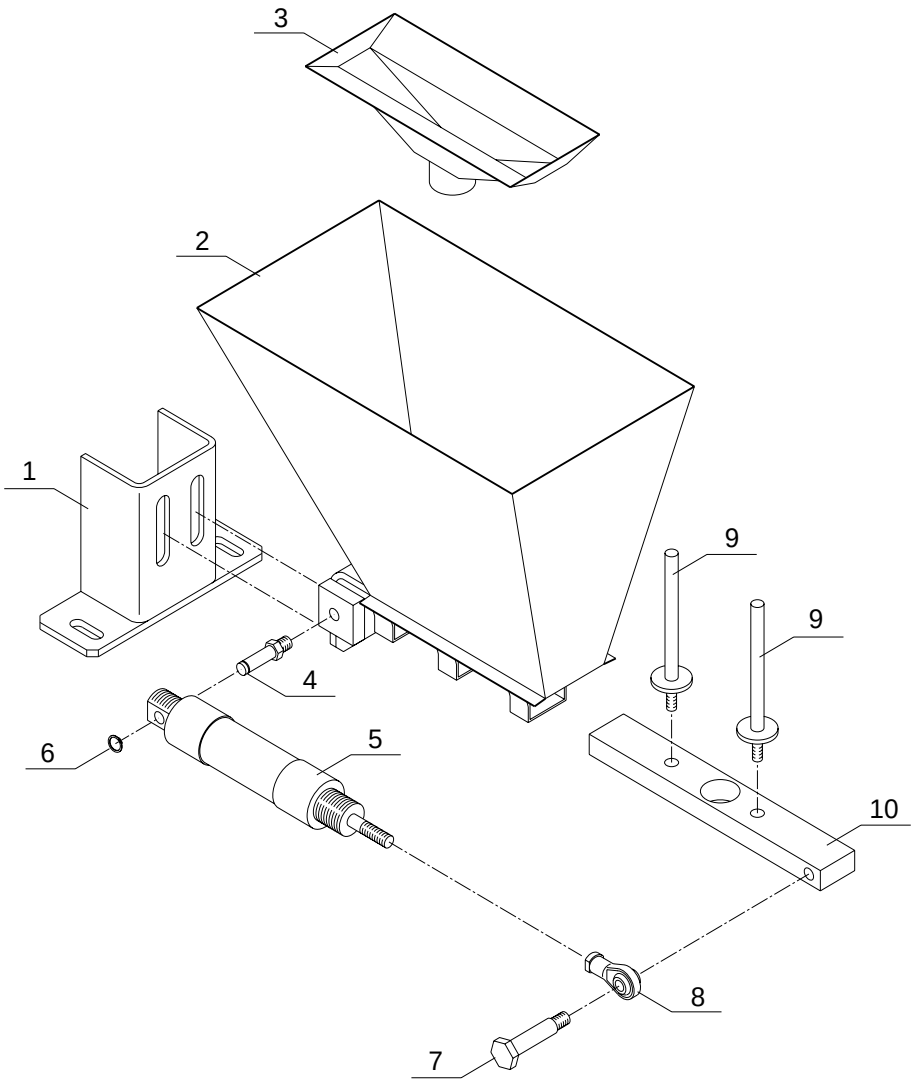

Fig.11.3 - CHEWING GUM FEED

Dosers - Fig. 11.4

Pos.	Code	Description	Q.ty
1	17000010	Cylinder	1
2	12040213	Cylinder connection	2
3	016060219	2” clamp	1
4	336067042	O-ring seal 3081	1
5	12040210	Upper part of cylinder	1
6	336067051	O-ring seal 3118	1
7	12042030	Double doser body	1
8	12042035	Plate	1
9	12042026	Support	1
10	540204063	Standard smooth nozzle	1
11	12040027	Lifting joint	1
12	336067036	O-ring seal 119	1
13	12040948	Central piston	1
15	12040211	Nozzle locking nut	1
16		Hose connection	2
17		Seal	2
18		Clamp	2

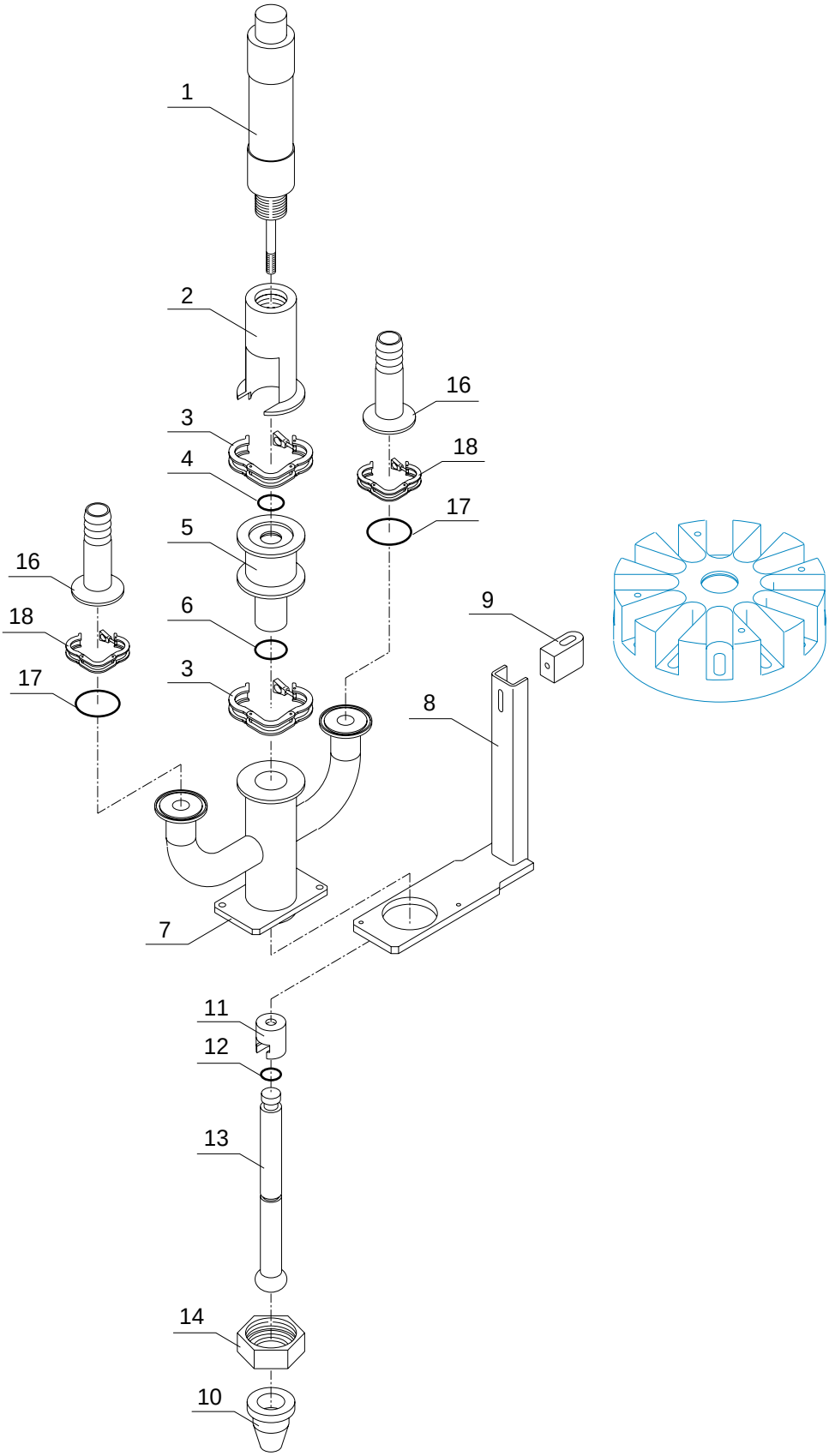

Fig.11.4 - DOSERS

Topping - Fig. 11.5

Pos.	Code	Description	Q.ty
1	12042028	Plate	1
2	12042035	Support	1
3	D01H00016A	Topping ring nut	1
4	D01H00016B	Topping disk	1
5	12042031	Topping nozzle	1
6	336067030	Seal	1
7	336069466	Seal	2
8	54204050	Pipette	1
9	018020575	Seal	1
10	016060218	Clamp	1
11	141040364	Hose connection	1
12	018060957	Hose clip	1
13	12040528	Valve body	1
14	540214001	Piston	1
15	336067020	Seal	1
16	540214002	Breech	1
17	336067100	Seal	1
18	336067045	Seal	1
19	336067030	Seal	1

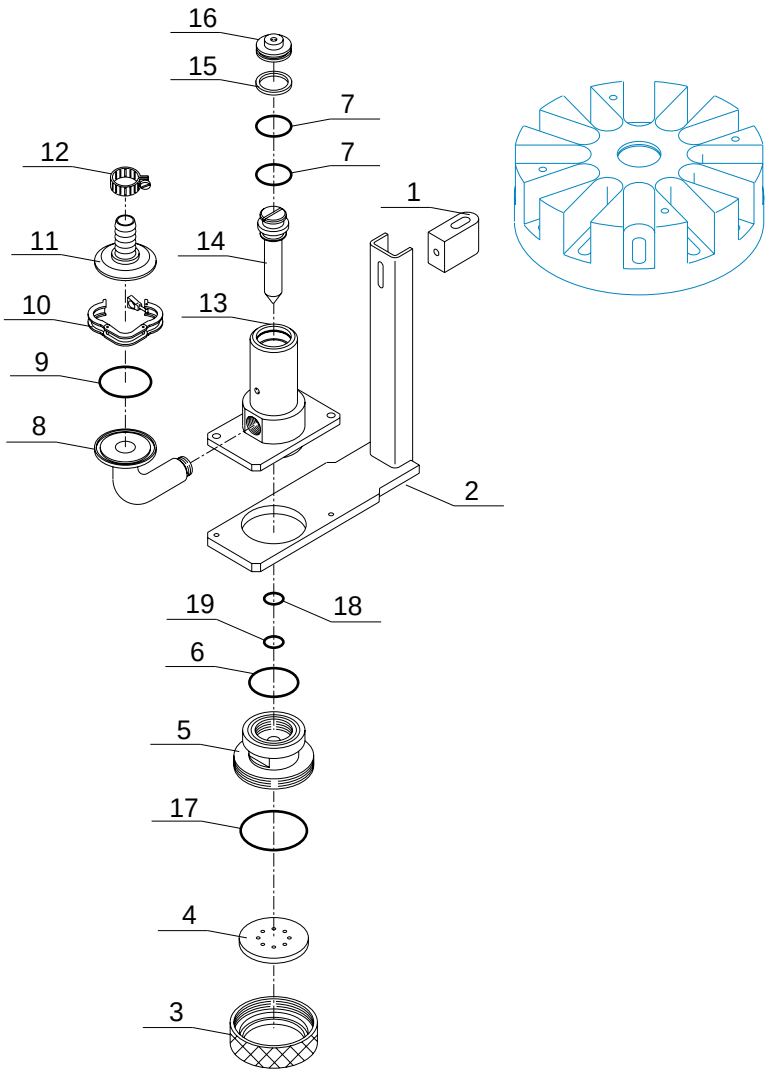

Fig.11.5 - TOPPING

Granule - Fig. 11.6

Pos.	Code	Description	Q.ty
1	12042016	Base plate	1
2	12042017	Vibrating channel	1
3	12042018	Hopper	1
4	540213009	Column	2
5	12042106	Flow control	1
6	540213015	Vibrator fork	1
7	17040027	Pneumatic vibrator	1
8	336055001	Vibration damper	1

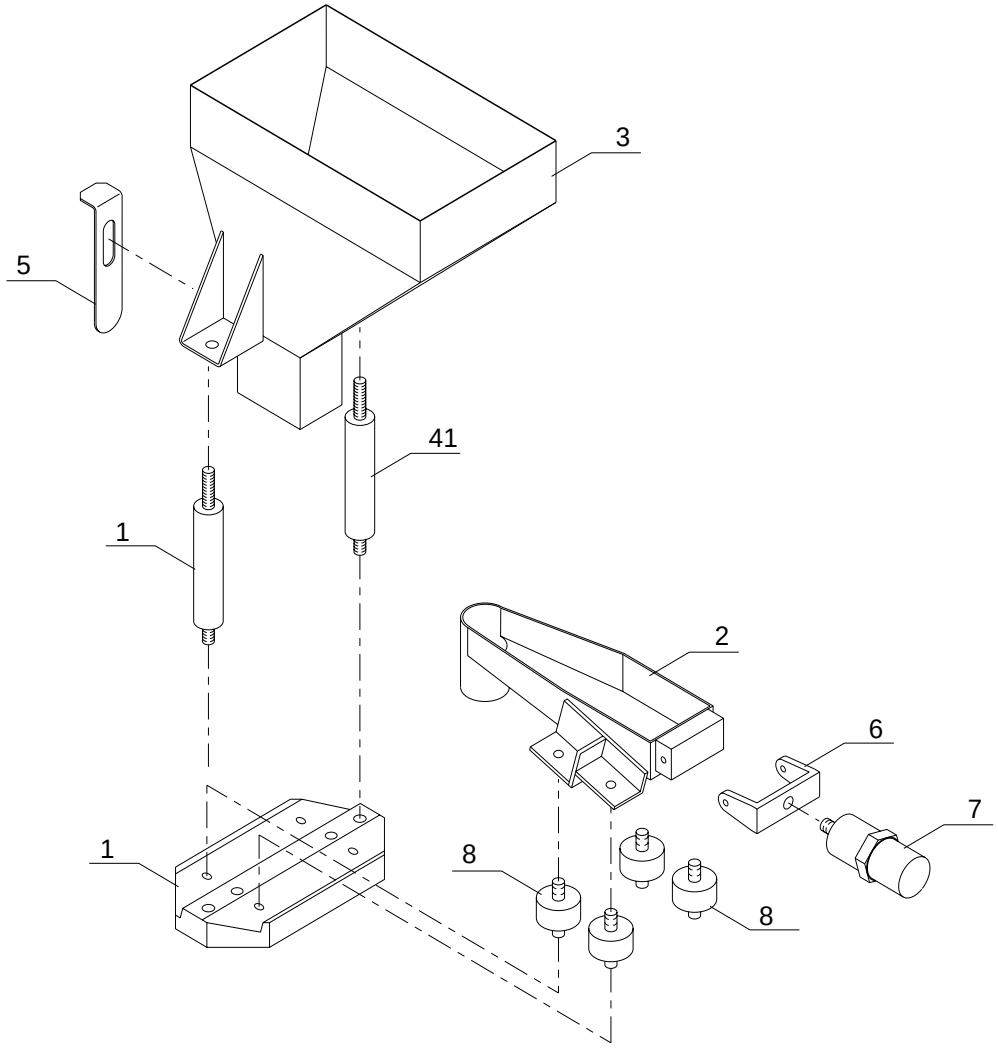

Fig.11.6 - GRANULE

Lid pick-up - Fig. 11.7

Pos.	Code	Description	Q.ty
1	12040243	Product guide rods	4
2	12042105	Suction cup support	1
3	12042038	Lid plate	1
4	12042034	Manifold shaft	1
5	12042037	Lid support	1
6	333001007	Rotating cylinder	1
7	12040401	Cylinder support	1
9		Suction cup (depending on format)	1

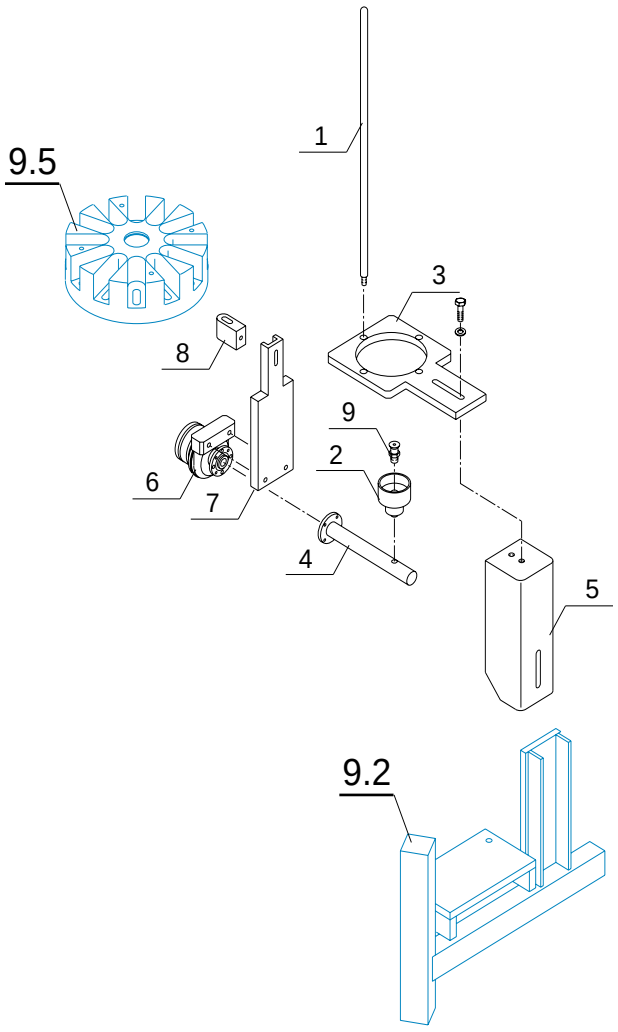

Fig.11.7 - LID PICK-UP

Lid closing - Fig. 11.8

Pos.	Code	Description	
1	12042029	Plate	1
2	12042033	Support	1
3		Plug (depends on format)	1

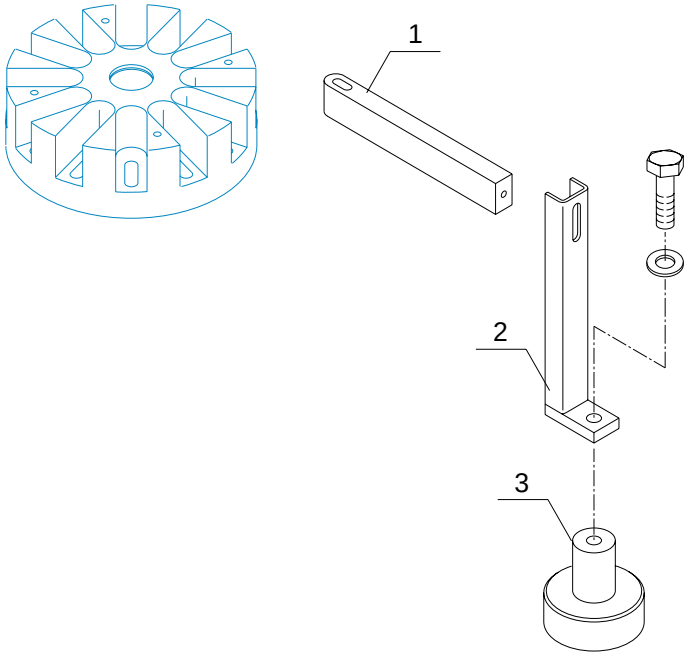

Fig.11.8 - LID CLOSING

Lid sealing - Fig. 11.8a

Pos.	Code	Description	Q.ty
1	120400985	Sealing head support	1
2	12042118	Threaded cap	1
3	12042116	Sliding pin	1
4	12042117	Guiding brass	1
5	12042115	Sleeve	1
6	12042114	Spring	1
7	12042113	Finned head	1
8	12042119	Insulation	1
9	12040367	Sleeve	1
10	D01PO0026	Sealing unit	1
11		Sealing plate (depends on format)	1

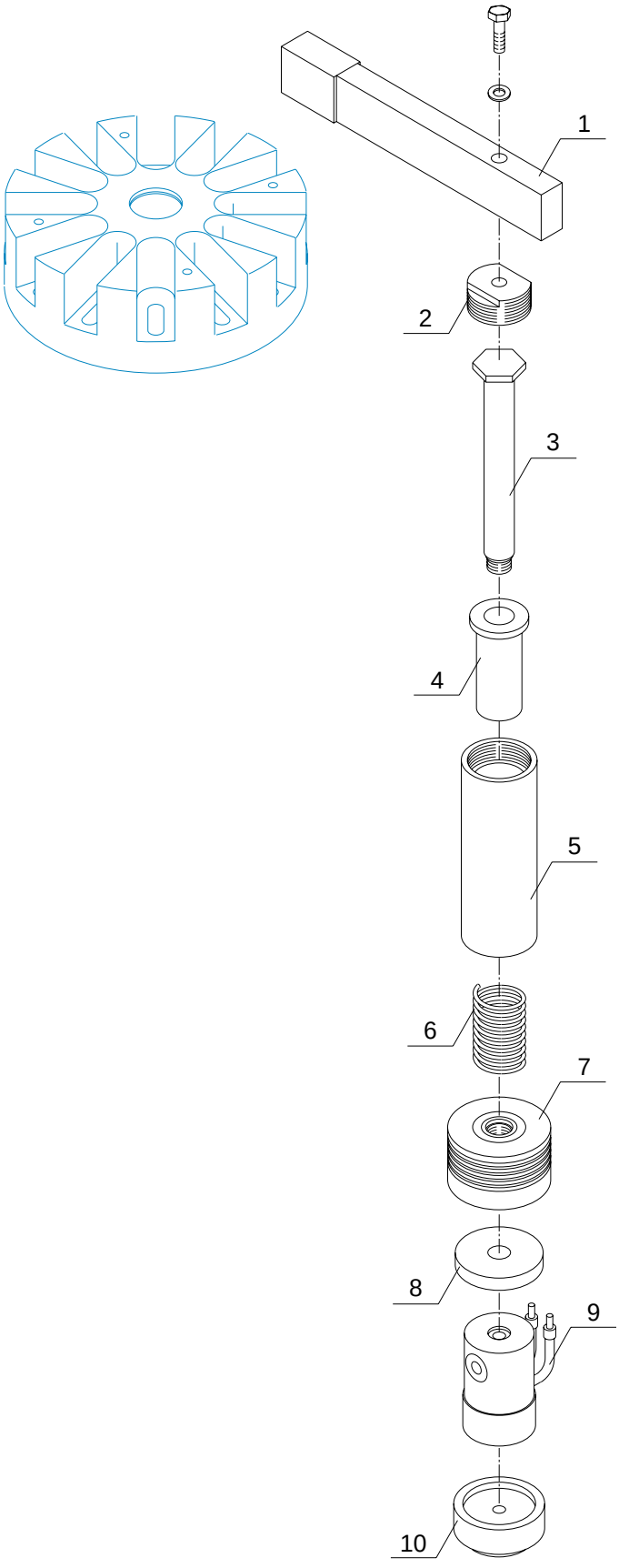

Fig.11.8a - LID SEALING

Ejector - Fig. 11.9

Pos.	Code	Description	Q.ty
1	12042021	Support	1
2	12042025	Chute	1
3	12042020	Cylinder support	1
4	17050058	Cylinder	1
5	12042019	Slide	1
6		Sleeve	1
7	12042024	Spacer	2
8	336003151	Idle pin	2
9	12042682	Blade	1

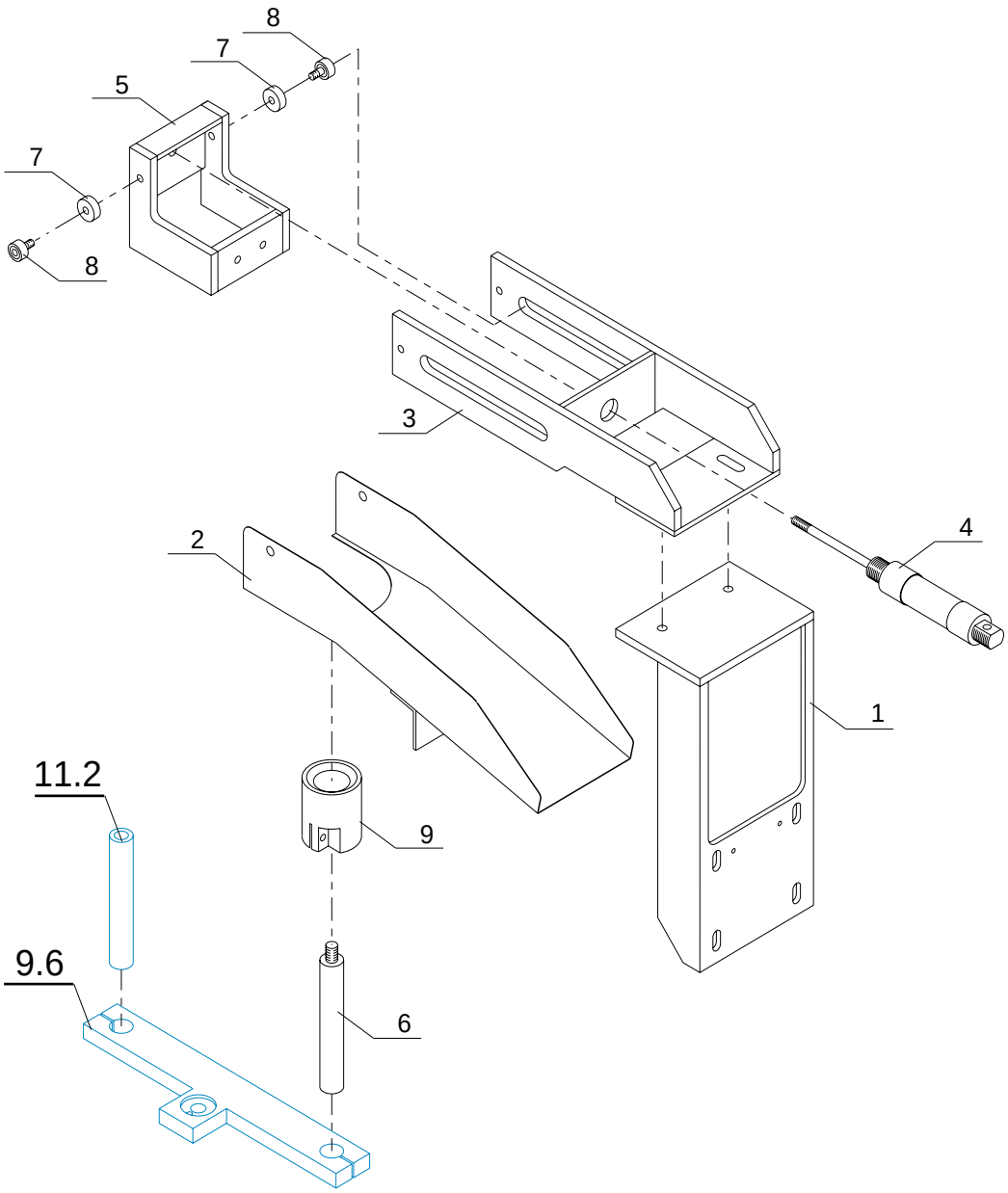

Fig.11.9 - EJECTOR

Date stamp - Fig. 11.10

Pos.	Code	Description	Q.ty
1	12040394	Support	1
2	12040395	Support	1
3-4	336090211	Stamp	1

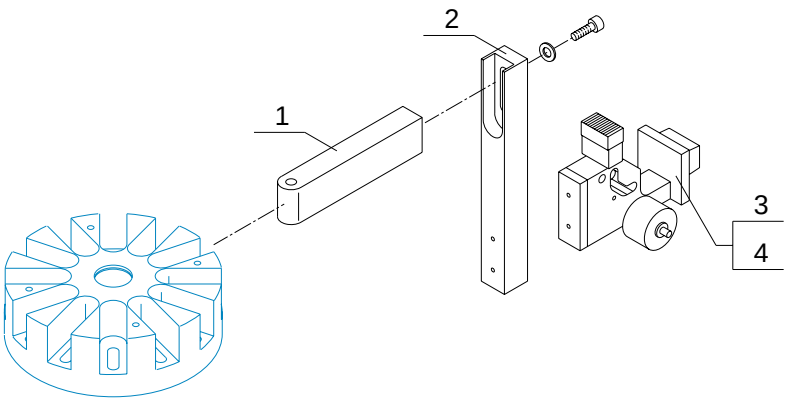

Fig.11.10 - DATE STAMP

Bypass - Fig. 11.11

Pos.	Code	Description	Q.ty
1	17000010	Cylinder	1
2	016060218	1½”clamp connection	2
3	018020581	Clamp seal	2
4	12040389	Bypass valve body	1
5	12042102	Bypass valve support	1+1
6	12040391	Bypass nozzle	1
7	12040027	Doser piston connection joint	1
8	336067036	O-ring seal	2
9	12040392	Bypass piston	1
10	12040393	Pneumatic piston connection	1
11	016960222	Hose connection	2
12	016060222	Curve	1

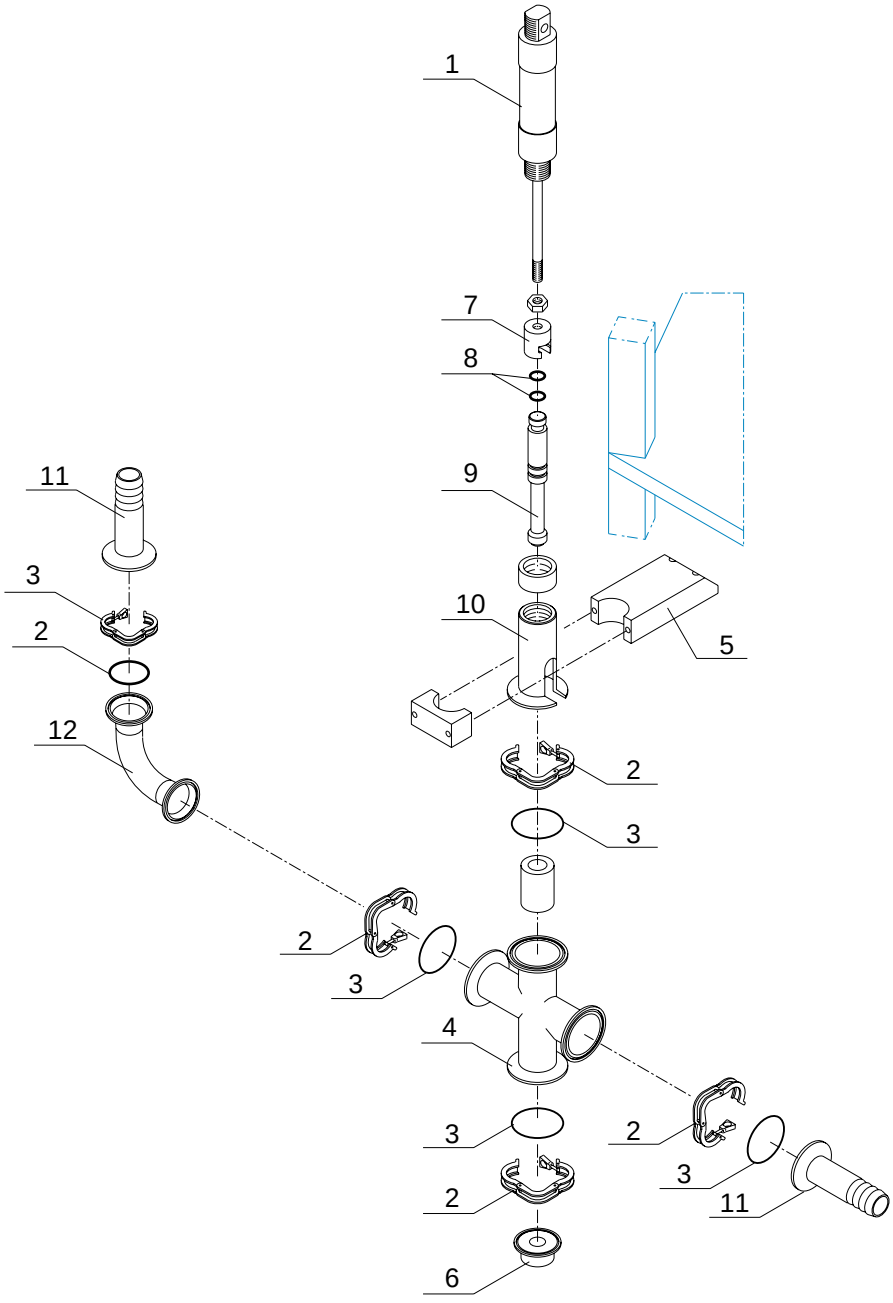

Fig.11.11 - BYPASS

Chocolate spray pump - Fig.11.12

POS.	CODE	DESCRIPTION	Q.TY
1	336057064	Flywheel	1
2	12040716	Threaded piece for adjustment	1
3	540643005	Cap	1
4	12040715	Joint	1
5	12040806	Nipple with two holes	1
6	12040709	Adjustment sleeve	1
7	17000309	Cylinder	1
8	12040712	Ring nut with connection	1
9	540204053	Clutch	1
10	17000310	Seal	2
11	12040714	Central piston	1
12	018020582	Seal	5
13	016060218	Clamp connection	5
14	12040713	Double sleeve	1
15	17000317	T-union	1
16	12040711	Spring	2
17	336003999	Ball	2
18	12040710	Spring container	2

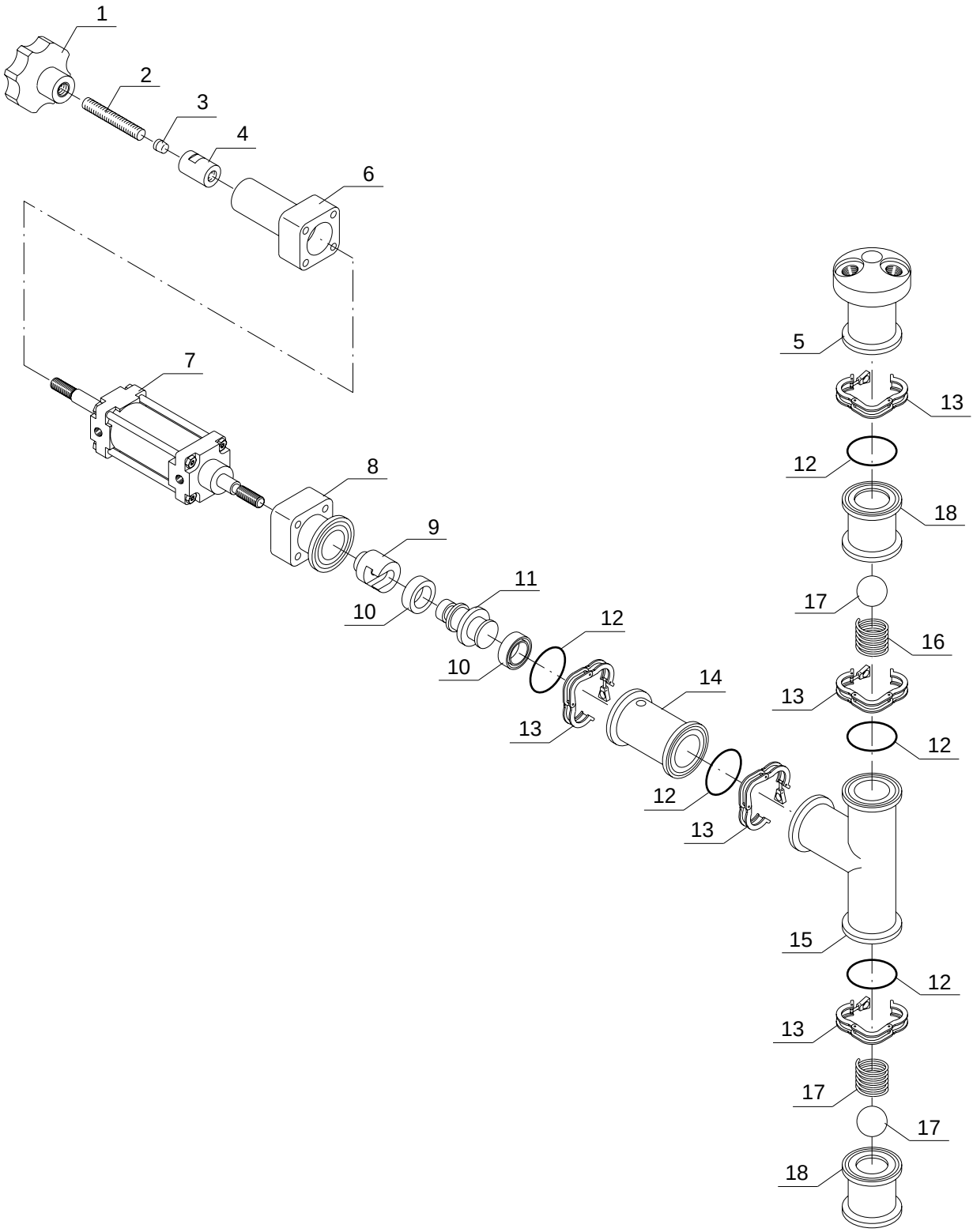

Fig. 11.12 - CHOCOLATE SPRAY PUMP

Chocolate tank - Fig. 11.13

POS.	CODE	DESCRIPTION	Q.TY
1	12040816	Tank support frame	1
2	016060218	Clamp	2
3	018020582	Seal	2
4	336054078	DM100 wheel	4
5	017975020	Heater	1
6	12040814	Chocolate tank	1
7	12040926	Chocolate dip tube	2
8	12040818	Tank lid	1
9	12040820	Chocolate filter mesh	1
10	12040819	Chocolate return outlet	2
11	016020003	A304 ball valve	1
12	017088239	BSA thermostat	1

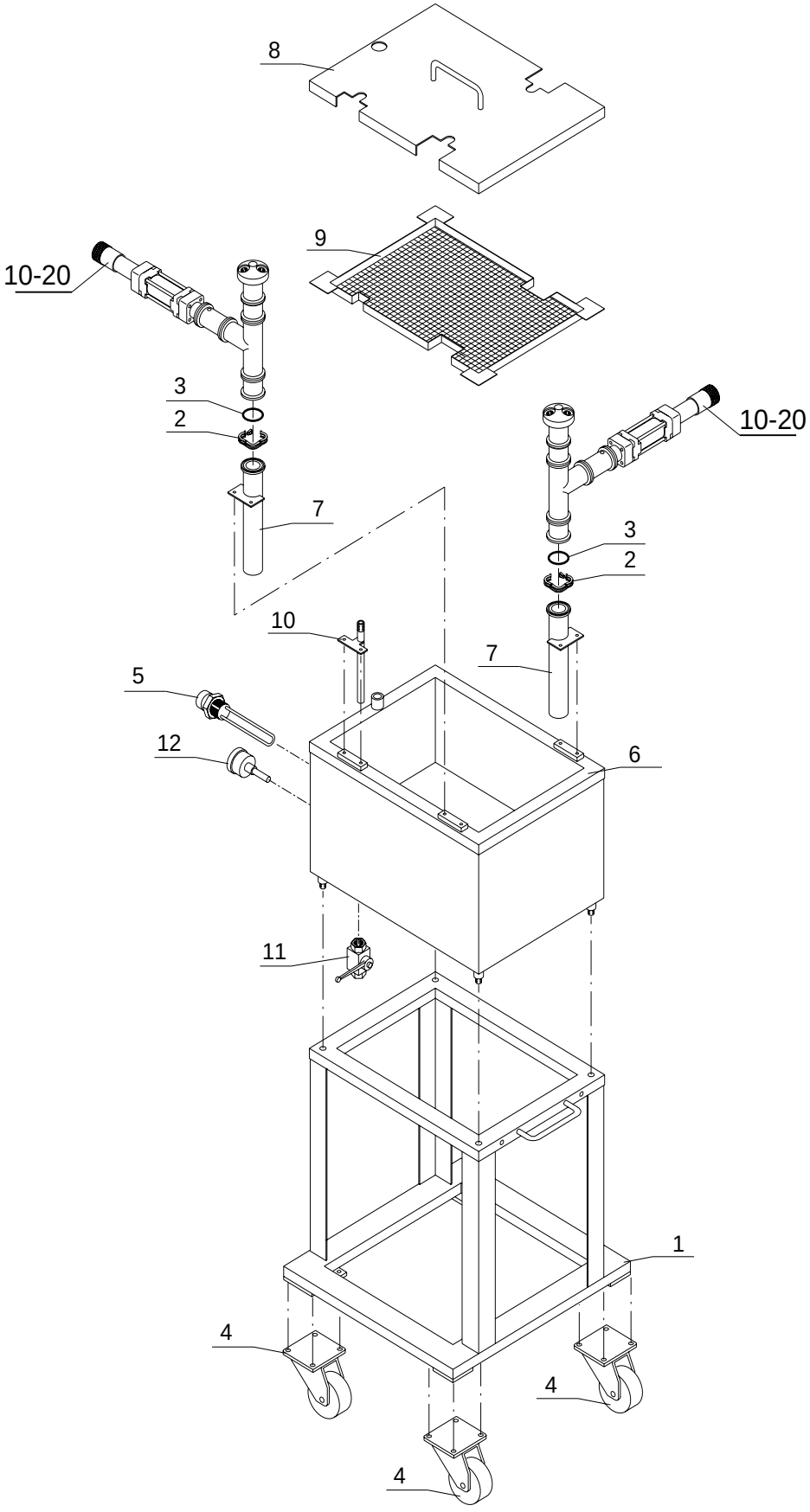

Fig. 10.19 - Chocolate tank

Fig. 11.13

Variegator - Fig. 11.14

POS.	CODE	DESCRIPTION	QTY.
1	141040364	Hose connection	1
2	016060218	Clamp	1
3	018020581	Seal	1
4	336067042	O-ring seal 3081	1
5	12040782	Upper half of variegator cylinder	1
6	336067051	O-ring seal 3118	1
7	540204050	Elbow	1
8	336067076	O-ring seal 119	1
9	12040949	Centre perforated piston	1
10	12040950	4-exit variegator	1

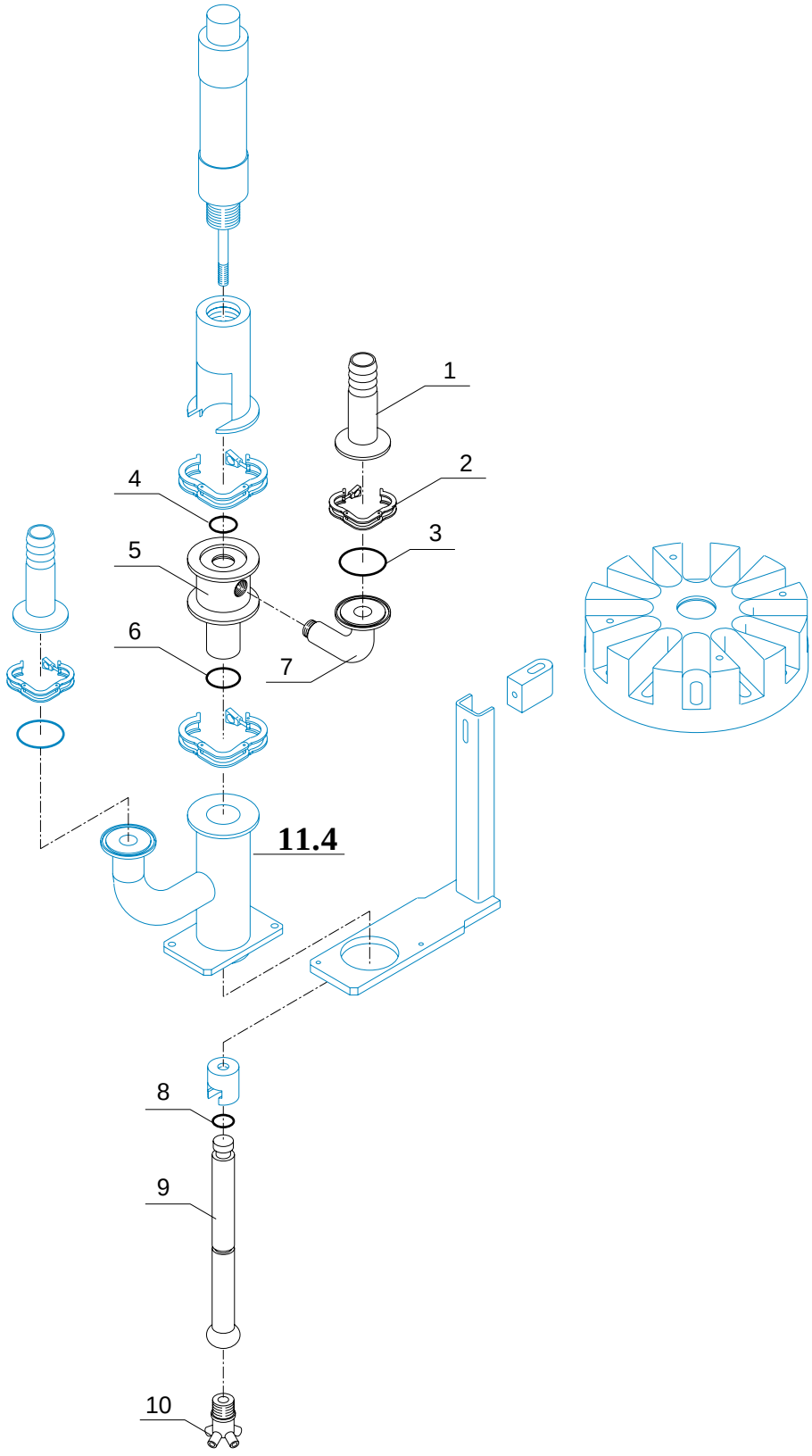

Fig. 11.14 - VARIEGATOR

Pencil filler - Fig. 11.15

POS.	CODE	DESCRIPTION	Q.TY
1	12042035	Support bracket	1
2	12042028	Block	1
3	12042234	Valve body	1
4	018060957	Clip	1
5	540214002	Endpiece	1
6	336069466	Seal	2
7	540214001	Piston	1
8	336067020	Seal	1
9	12041785	Upper part of body	1
10	336067045	Seal	1
11	336067048	Seal	1
12	336067030	Seal	1
13	12040539	Nozzle	1

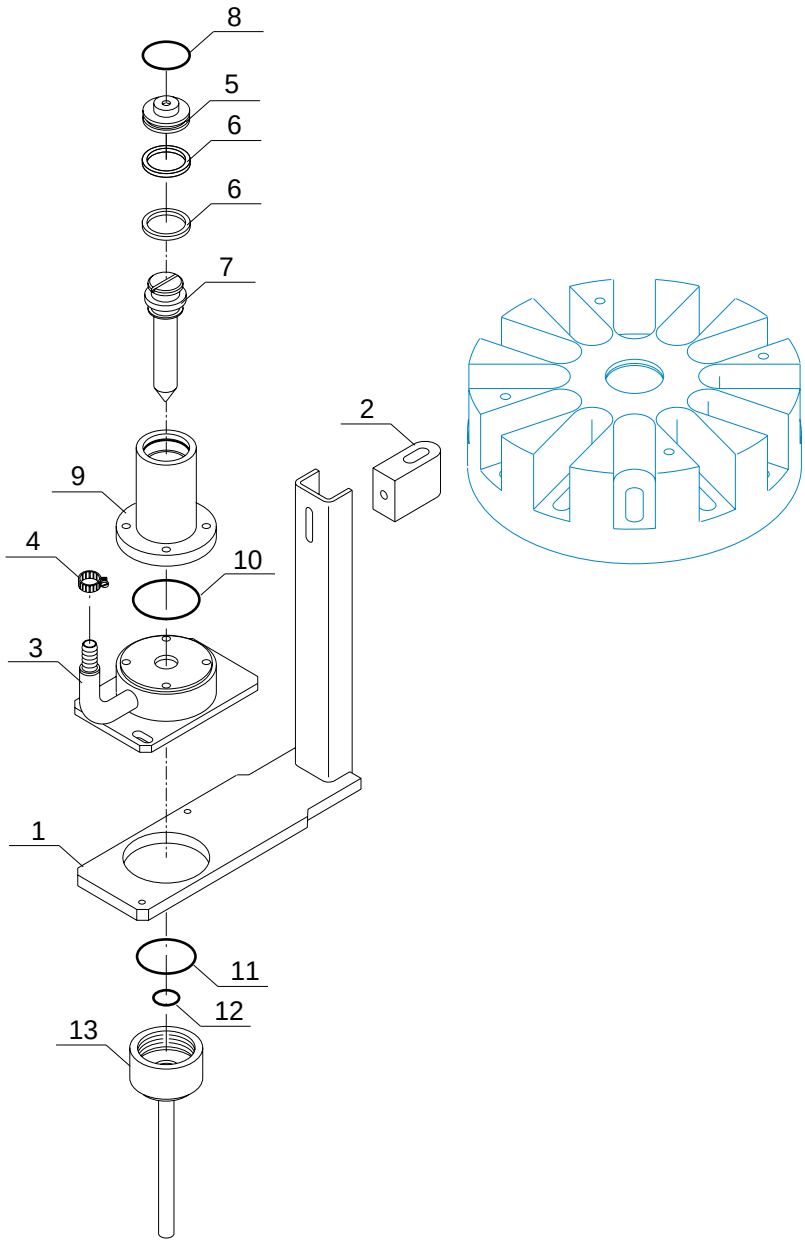

Fig. 11.15 - PENCIL FILLER