

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.

No part of this manual may be reproduced or transmitted to third parties without the prior written permission of TETRAPAKHOYER.

Machine ..... HOYER COMET C .....

Serial Number .....



**Tetra Pak Hoyer A/S**  
Soeren Nymarks Vej, 13  
DK 8270 Hoejbjerg  
Denmark  
Telephone + 45 89 393939  
Telefax + 45 86 292200  
Telex 68770 Alhoy DK

**Tetra Pak Hoyer Inc.**  
753 Geneva Parkway  
P.O. Box 280  
Lake Geneva, WI 53147  
U.S.A.  
Telephone +1 414 2497400  
Telefax +1 414 2497500

**Tetra Pak Hoyer S.p.A.**  
Via Monferrato, 52  
20098 San Giuliano Milanese (Milano)  
Italy  
Telephone +39 2 98292.1  
Telefax +39 2 9880171

**1 Machine identification data**

---

**2 General**

---

**3 Description of the machine and technical data**

---

**4 Installation**

---

**5 Set-up procedures**

---

**6 Operating procedures**

---

**7 Cleaning and maintenance**

---

**8 Troubleshooting**

---

**9 Spare parts catalogue**

---

 **NOTE:**

All the drawings show the machine and stations for production on two lanes.  
If the dimensions of the product allow, production on three lanes is also possible.

## **HOYER COMET C**

### **1 - MACHINE IDENTIFICATION DATA**

#### **Contents**

---

1.1	Introduction .....	1-2
1.2	Identification plate .....	1-2
1.3	Service centres .....	1-3

## 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.



Please let us know if any explanation has been left out or is not sufficiently detailed. We will use your comments to improve the functional nature of this manual.

## 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.

MODEL	<input type="text"/>
SERIAL N.:	<input type="text"/>
YEAR OF CONSTRUCTION:	<input type="text"/>
ELECTRICAL SUPPLY:	<input type="text"/> V
	<input type="text"/> kW
	<input type="text"/> ph <input type="text"/> Hz
	<input type="text"/> bar <input type="text"/> Nlt/min.
PNEUMATIC SUPPLY:	<input type="text"/>
REFRIGERANT:	Type <input type="text"/> Kg.
HEATING GAS:	<input type="text"/>
THERMAL CAPACITY:	<input type="text"/> Kcal/h

Tetra Pak  
Hoyer  
Via Monferrato, 52 - 20098 San Giuliano Milanese  
(MI) Italia - Tel. 02-982921 - Fax 02-9880171  
Made in Italy

**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  
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, 52  
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

#### **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 C**

### **2 - GENERAL**

#### **Contents**

---

2.1	Declaration of conformity .....	2-2
2.2	Preliminary points .....	2-2
2.3	General safety rules .....	2-2
2.4	Special warnings .....	2-3
2.5	Ambient operating limits .....	2-3

## 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 C** 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 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 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 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 C**

### **3 - DESCRIPTION OF THE MACHINE AND TECHNICAL DATA**

#### **Contents**

---

3.1	Description of the machine .....	3-2
3.2	Operation .....	3-2
3.3	Technical data .....	3-3
3.4	Programming and control panel .....	3-4

### 3.1 Description of the machine

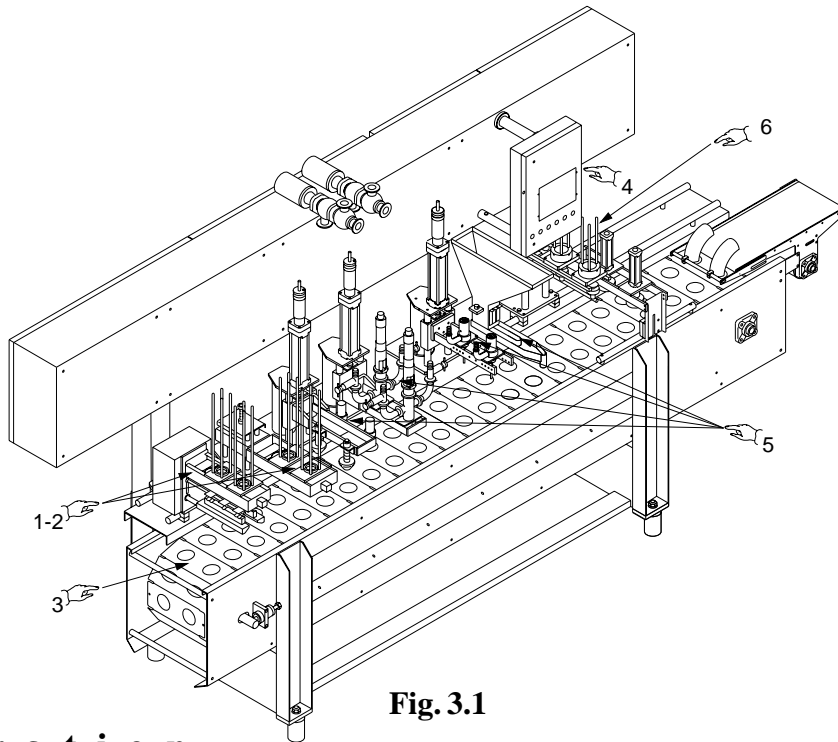
The HOYER COMET C is a machine used for filling a variety of ice-cream containers.

The structure of the machine, the mechanical components and the commercial components are all fabricated in stainless steel or corrosion proof materials. All the parts directly in contact with the product are in corrosion proof material or other materials approved for use in the food industry.

In order to prevent accidental contact between parts of the body and any moving parts in the machine, the machine itself has been fitted with protective panels and shields, screw-down covers and/or systems requiring special tools and the deliberate action of the operator to remove them.

The machine consists of:

1. Steel structure with adjustable feet.
2. Mechanical transmission system driven by an electric motor fitted with an inverter.
3. Indexing gear unit for jog feed.
4. Set of lamellas with slots (*Part.3 Fig.3.1*) specifically designed to hold the type of container in production. The lamellas are supported by two members which guide the chains driven by the gear wheels.
5. Vacuum generator.
6. Pneumatic system.
7. Control panel with operator interface program (*Part.4 Fig.3.1*).
8. Various operating stations.



**Fig. 3.1**

### 3.2 Operation

- A stack of empty containers and a stack of covers are placed manually in the relative magazines (*Part.1 e Part. 2, Fig.3.1*).
- The lamellas, with the appropriate slots (*Part.3 Fig.3.1*), move forward with a jogging action. During the standstill period, an empty container per line is placed in the slot.
- The lamella (*Part.3 Fig.3.1*) with the empty containers is jogged forward once (a number of times) and stops under the dosing stations (*Part.5 Fig.3.1*). The dosers fill the containers with the required quantity of ice-cream, chocolate and granules.
- The lamella with the full containers is jogged forward once (a number of times) and stops under the lid feed station (*Part.6 Fig.3.2*). One lid per row is positioned over the containers. At the next station, the lids are pressed onto the container. (An ink-jet date stamping station is also available on request.).
- At the end of the conveyor, the sealed containers are ejected by an electrically powered combined lifting, extraction and transfer system.

### 3.3 Technical data

**Standard power supply:**

220 - 440 V / 3 Ph / 50-60 Hz

**Installed power**

Main motor: 0.75 kW  
Belt motor: 0.37 kW  
Total installed power: 3.5 kW

**Dimensions**

A (length) = 4050 mm  
B (width) = 1170 mm  
C (height) = 1970 mm

**No. of operators: 2**

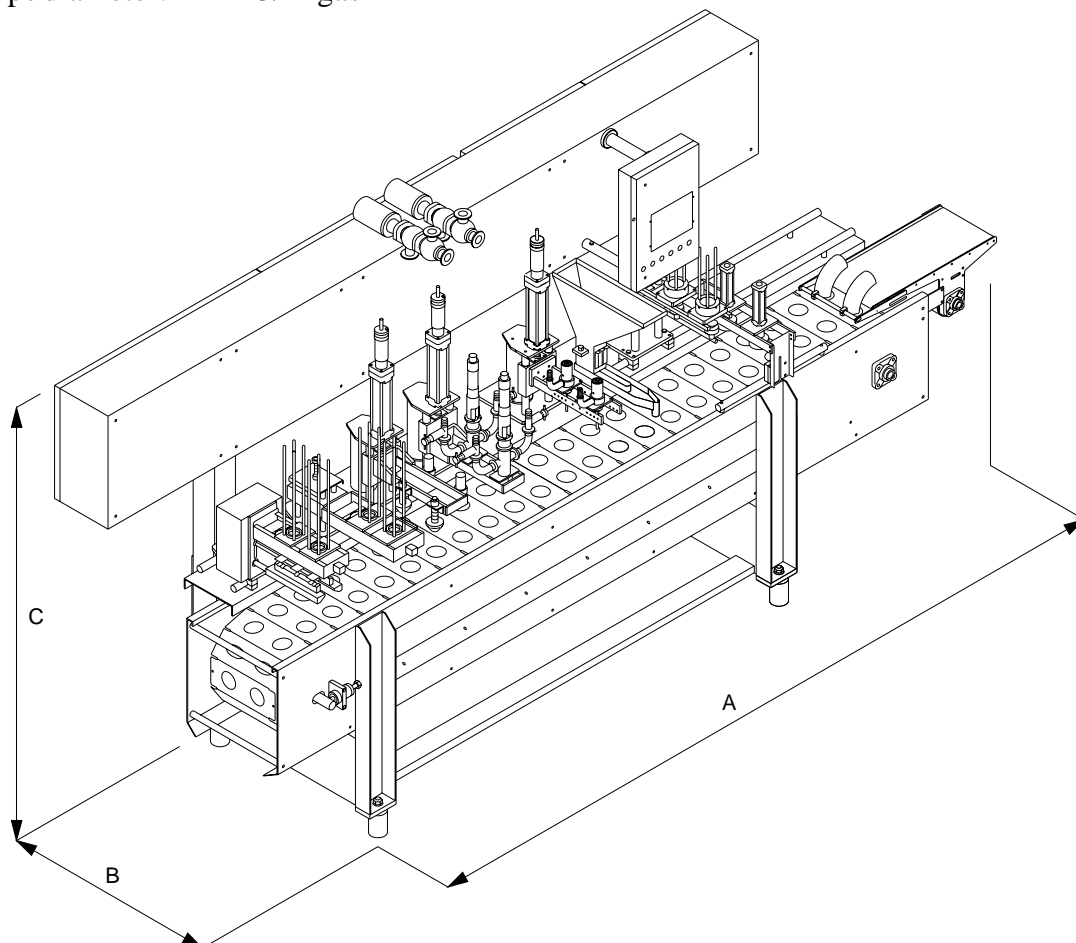
**Net weight:** 1300 Kg

**Gross weight:** 1900 Kg

**Compressed air**

Inlet pressure: 6 bar minimum  
Consumption: 1300 Nl/min  
Inlet pipe diameter: 3/4" gas

Equivalent A-weighted sound pressure level at 1 metre: 67.5 dBA  
Maximum instantaneous C-weighted sound pressure level at the work stations: lower than 130 dB/20uPa

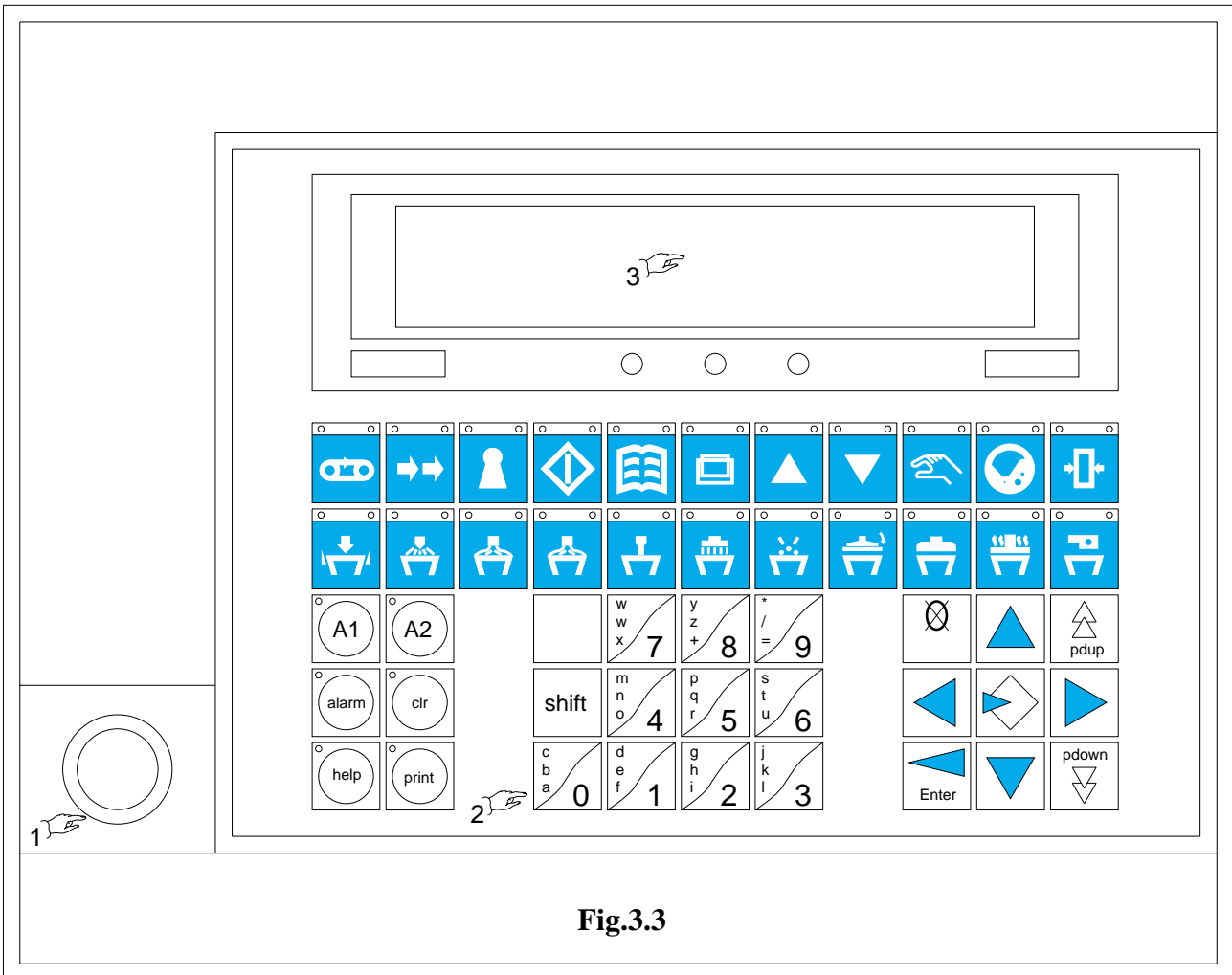











**Fig. 3.2**

**NOTA:**

Fig. 3.2 shows a machine for the production of cones or cups.

### 3.4 Programming and control panel



- |   |                                      |   |  |
|---|--------------------------------------|---|--|
|  | Start/Stop main motor                |  | Select format  |
|  | Jog main motor                       |  | Save data  |
|  | Select production cycle Auto/Manual  |  | Apply data   |
|  | Start/Stop stations and C.I.P. cycle |  | Position stations (for automatic start-up of the production cycle), password "1 2 3 4" |
|  | Data settings                        |   |  |



Set C.I.P. data



Reset



Start/Stop loading cones-cups



Start/Stop spraying chocolate



Start/Stop doser 1



Start/Stop doser 2



Start/Stop pencil filler



Start/Stop topping



Start/Stop granule



Start/Stop loading sheets



Start/Stop pressing sheets



Start/Stop sealing resistance



Start/Stop date stamp



Shift to the previous paragraph



Go to the previous page



Shift on the left



Activate value modification



Shift on the right



Confirm data



Shift to the next paragraph



Go to the next page



Display alarm messages



Clear



Display help



Print

**A1:** Chocolate tank resistances  
Optional sealing resistances

**A2:** Ice-cream bypass

**Pos.1:** Emergency push-button

**Pos. 2:** Alphanumeric keyboard

**Pos. 3:** Display

## HOYER COMET C

### 4 - INSTALLATION

#### Contents

---

4.1	Unpacking and delivery checks .....	4-2
4.2	Transport and installation .....	4-2
4.3	Electrical connection .....	4-3
4.4	Pneumatic connection .....	4-3
4.5	Checking direction of rotation .....	4-4
4.6	Freezer connections .....	4-4

## 4.1 Unpacking and delivery checks

The HOYER COMET C 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.

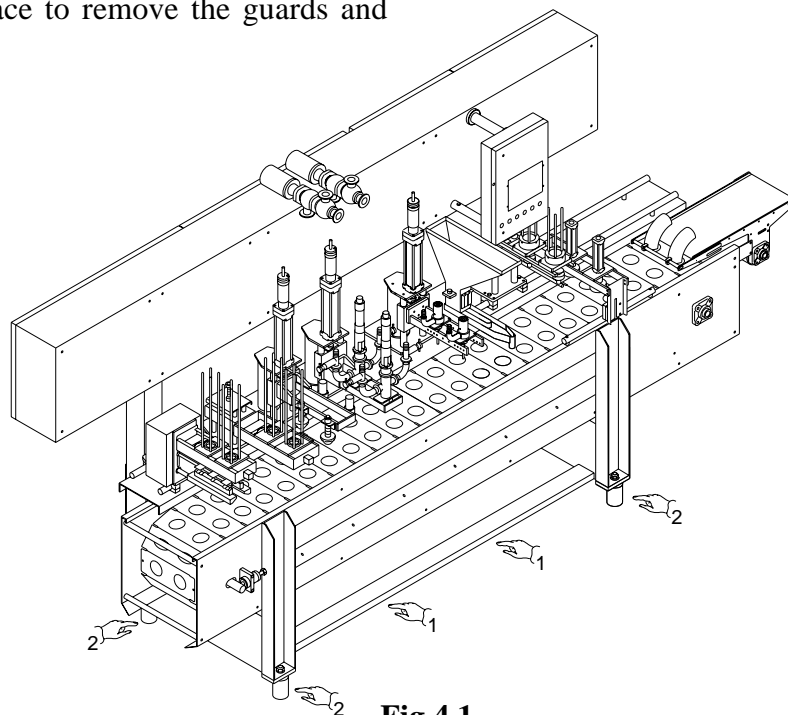
When the crate has been positioned correctly, unpack as follows:

- 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 (*Part.1 Fig.4.1 fork positions*), checking that there is sufficient space to remove the guards and allow ease of access to the internal machine parts.
- b. Adjust the feet (*Part.2 Fig.4.1*) until the machine is perfectly level both longitudinally and transversally.



**Fig.4.1**

### 4.3 Electrical connection

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 (Fig.4.2) 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 (Fig.4.2) and the standards in force in the country of installation.

MODEL		
SERIAL N.:		
YEAR OF CONSTRUCTION:		
ELECTRICAL SUPPLY:		V
		kW
	ph	Hz
PNEUMATIC SUPPLY:	bar	Nlt./min.
REFRIGERANT:	Type	Kg.
HEATING GAS:		
THERMAL CAPACITY:	Kcal/h	


  
 Via Monferrato, 52 - 20098 San Giuliano Milanese (MI) Italia - Tel. 02-982921 - Fax 02-9880171  
**Made in Italy**

**Fig. 4.2**

### 4.4 Pneumatic connection

Connect the machine to the compressed air supply. The minimum working pressure is 6 bar. If the pressure is less than 4 bar, a factory-set pressure switch will disable the machine's functions.

Refer to **CHAPTER 3 - DESCRIPTION OF THE MACHINE AND TECHNICAL CHARACTERISTICS** for air consumption and pipe sizes.



## 4.5 Checking the direction of rotation

After having made the electrical and pneumatic connections, check the direction of rotation of the machine as follows:

- Make sure that there are no foreign bodies which may prevent the machine from operating.
- Release the emergency stop button.
- Rotate the main switch.
- Slowly turn on the air supply.
- Press the jog button and check that the lamellas move from left to right (*Part.2 Fig.4.3*) when looking at the machine from

the operator's side.

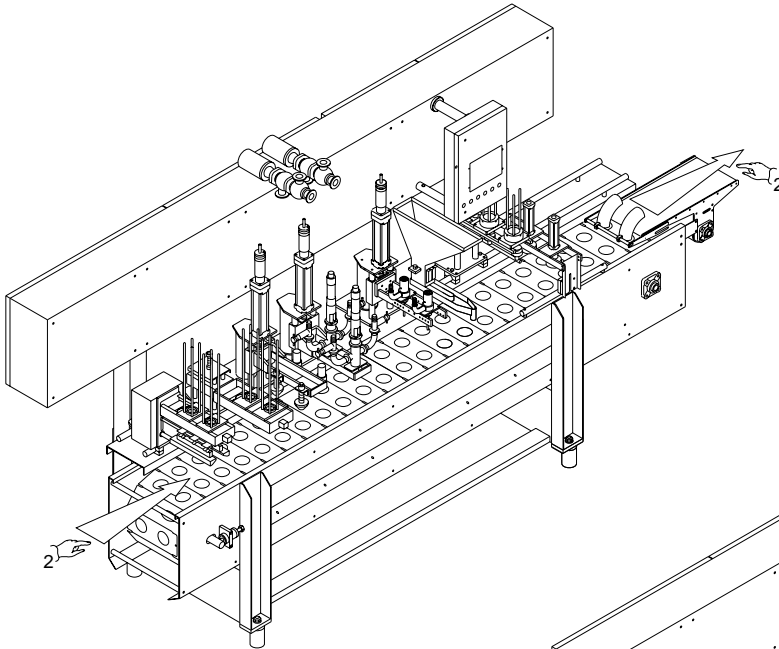
- Press the stop to stop the chain.



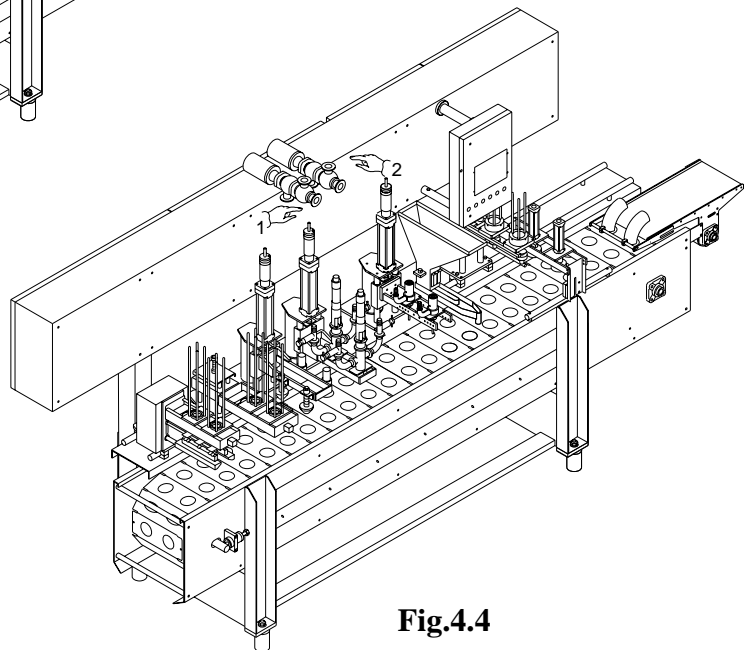
### WARNING:

If the direction of rotation is incorrect, invert the two phases at the terminal board.

This operation must be carried out exclusively by competent technicians familiar with accident prevention legislation.



**Fig.4.3**



**Fig.4.4**

## 4.6 Freezer connection

Make sure that the ice-cream pipes from the bypass valve (*Part.1/2 Fig.4.4*) to the dosers are connected as required.

Connect the ice-cream pipes from the freezers to the ice-cream dosers through the bypass valves (*Part.1/2 Fig.4.4*) located above the pneumatic panel.

Before starting-up the freezers connected to the machine, place a container under the ice-cream bypass outlet pipe and another under the product collection chute.

## HOYER COMET C

### 5 - ADJUSTMENTS AND FORMAT CHANGE PROCEDURES

#### Contents

---

5.1	Control panel adjustments .....	5-2
5.2	Product change .....	5-8
5.3	Mechanical and pneumatic adjustments .....	5-9
5.3.1	Container feed station adjustment .....	5-9
5.3.1a	Cone feed station adjustment .....	5-9
5.3.1b	Cup feed station adjustment .....	5-9
5.3.2	Gauging - chocolate spray station adjustment (cones) .....	5-10
5.3.2a	Adjustment of the rate of flow of the chocolate spray pump .....	5-10
5.3.3	Ice cream doser - optional decorator station adjustment .....	5-11
5.3.3a	Optional rotating doser station adjustment .....	5-11
5.3.4	Topping station adjustment .....	5-12
5.3.5	Optional pencil filler station adjustment .....	5-12
5.3.6	Granule station adjustment .....	5-12
5.3.7	Lid feed station adjustment .....	5-13
5.3.7a	Optional flame product lid feed station adjustment .....	5-13
5.3.8	Cone lid closure station adjustment .....	5-14
5.3.9	Cup lid closure station adjustment .....	5-14
5.3.10	Cone ejector station adjustment .....	5-15
5.3.11	Cup ejector station adjustment .....	5-15
5.3.12	Tube feed and gauge station adjustment .....	5-16
5.3.13	Volumetric dosing station adjustment .....	5-16
5.3.14	Ink-jet stamp station adjustment .....	5-17

## 5.1 Control panel adjustments

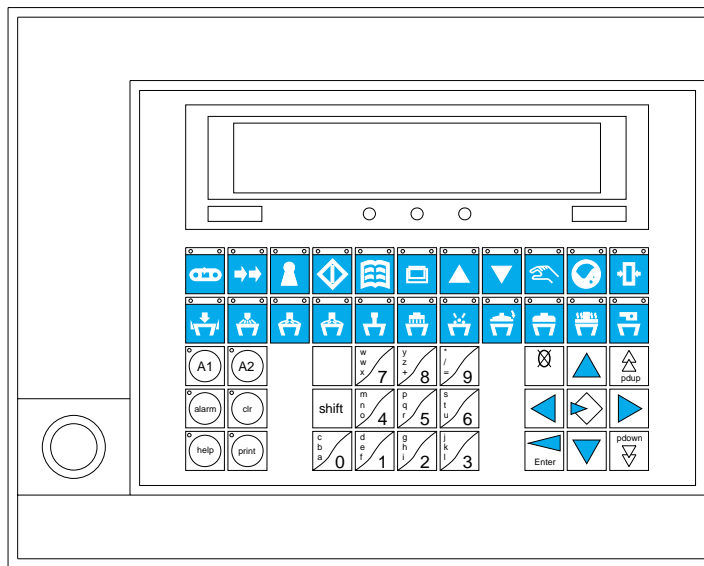


Fig. 5.1

### 5.1.1 PLC settings

The various functions of the production line are controlled by a PLC. Use the keypad (Fig. 5.1) to programme the PLC as described below.

 **NOTE:**

The programme is set in the factory. Every time the control panel is turned on, the main screen with the text COMET C, the encoder degrees and machine status will be displayed. Two led's come on: the "POWER" led indicating that the power is on and the "BATTERY" led which will come on when the battery is low. The "XO" led will flash if there is no communication between the keypad and the PLC.


 **: START/STOP MAIN MOTOR**

Starts or stops main motor.

 **: JOG MAIN MOTOR**

Jogs or stops the step-by-step chain.

 **NOTA:**


Only if stations are not turned on using the .

 **: 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.

Press this key to display the machine's current status on the display.

To put the machine in automatic mode, press



; the led will stay on without flashing and the display will indicate that the machine is in automatic mode.


 **NOTE:**


The keys at the top (F1 through F11) are for functions to be added to the machine.

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

Turns stations F12 through F22 on and off. This key is also used for the CIP washing cycle at the end of production.



To perform CIP washing, stop the stations by pressing the  key, then enter the required wash time using the  key.



After setting the duration press  key to begin washing.




If duration is already stored in memory, press .

### : DATA SETTINGS

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

Use the   keys to reach the station you wish to edit or enable for automatic start.

Press the  key to enable data editing. When you have finished editing data, press  to confirm.

Press the  key “**Save data**” and  to save the format in the operator panel and then press  key: “**Apply data**” to transfer the format to the PLC.

Press CLR to go back to the first page of the display, indicating encoder degrees and machine status.




### : 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:

CODE:	1
DESCRIPTION:	STANDARD CONE




### : SAVE DATA

After entering the required format, save it by pressing  and then , next press  to transfer the format to the PLC.


### : APPLY DATA


Transfers data to the PLC.


### : POSITION STATIONS (for setting maximum speed and the temperature of the optional sealing heads)

Enter the password and scroll through the pages using the  key until you reach the sealing head 1...2...3 page, then change the set point of the resistance if necessary by pressing , then press  to store in memory.

### : SET C.I.P. DATA

To perform CIP washing, stop the stations by pressing ,


then enter wash time settings if they have not already been entered using the  key.

After setting wash time, press  to begin washing.

### : RESET

Resets alarms, broken microswitches, inverter malfunctions, etc.

When an alarm is displayed, the technician must check and repair the problem as necessary. Press

RESET  on the display to remove the alarm from the display.



**: START/STOP LOADING CONES/  
CUPS**

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



**: START/STOP SPRAYING CHOCOLATE**

Starts or stops the chocolate spray device if enabled by the current format.



**: START/STOP DOSER 1**

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



**: START/STOP DOSER 2**

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



**: START/STOP PENCIL FILLER**

Starts/stops pencil filler if enabled by the current format



**: START/STOP TOPPING**

**(chocolate/jam)**

Starts/stops topping if enabled by the current format.



**: START/STOP GRANULE**

Starts/stops granule station if enabled by the current format.



**: START/STOP LOADING LIDS**

Starts/stops the lid loading station if enabled by the current format.



**: START/STOP PRESSING LIDS**

Starts/stops the lid press if enabled by the current format.



**: START SEALING RESISTANCE  
(OPTIONAL)**

Starts/stops sealing resistance if enabled by the current format.



**: START/STOP DATE STAMP (OPTIO-  
NAL)**

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

**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 thermometers in the tank and on the lid sealing station.

**A2: ICE CREAM BY-PASS**

This push button works automatically and manually. When enabled, it energises the by-pass valve that closes/opens the ice cream/mix by-pass in the dosers.

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



**HELP**

Displays operations and controls to use when an alarm has been triggered.

**STANDARD PROGRAM FOR CONE FORMAT**

**Page 3/23 CONE DISPENSER**

CONSENT:	1	
CONE RELEASE:	ON: 280	OFF: 325
CONE DOWNLOAD:	ON: 355	OFF: 200
WAFER CONTROL:	ON: 060	OFF: 150
CONE BLOW:	ON: 035	OFF: 055

**Page 4/23 CHOCO SPRAYER**

CONSENT:	1	
SPRAYER DOWN:	ON: 330	OFF: 080
SPRAYER OPEN:	ON: 350	OFF: 060
SPRAYER PUMP:	ON: 010	OFF: 100

**Page 6/23 DOSER 1**

CONSENT:	1	
DOSER DOWN:	ON: 330	OFF: 080
DOSER OPEN:	ON: 025	OFF: 070

**Page 9/23 TOPPING 1**

CONSENT:	1	
TOPPING OPEN:	ON: 340	OFF: 070

**Page 10/23 DRY NUT 1**

CONSENT:	1	
DRY NUT OPEN:	ON: 000	OFF: 070

**Page 11/23 LID DISPENSER**

CONSENT:	1	
LID DOWN:	ON: 310	OFF: 110
LID ROTATION:	ON: 355	OFF: 140
LID VACUUM:	ON: 240	OFF: 105
LID BLOW:	ON: 000	OFF: 000

**Page 12/23 CRIMPER**

CONSENT:	1	
CRIMPER DOWN:	ON: 010	OFF: 060

To save the data entered in the recipe, press “ENTER” >  > “ENTER” > : the data is now memorised in the recipe.

**STANDARD PROGRAM FOR CUP FORMAT**

**Page 1/23 DATA SETTING**

CODE: 1  
DESCRIPTION: STANDARD CUP

**Page 2/23 GENERAL PARAMETERS**

SAFETY CAM: ON: 220 OFF: 330

**Page 4/23 CUP DISPENSER**

CONSENT: 1  
CUP RELEASE: ON: 060 OFF: 130  
CUP VACUUM. ON: 010 OFF: 190  
CUP BLOW: ON: 000 OFF: 000

**Page 6/23 DOSER 1**

CONSENT: 1  
DOSER DOWN: ON: 330 OFF: 080  
DOSER OPEN: ON: 025 OFF: 070

**Page 9/23 TOPPING 1**

CONSENT: 1  
TOPPING OPEN: ON: 340 OFF: 070

**Page 10/23 DRY NUT 1**

CONSENT: 1  
DRY NUT OPEN: ON: 000 OFF: 070

**Page 11/23 LID DISPENSER**



CONSENT: 1  
LID DOWN: ON: 310 OFF: 110  
LID ROTATION: ON: 355 OFF: 140  
LID VACUUM: ON: 240 OFF: 105  
LID BLOW: ON: 000 OFF: 000

**Page 12/23 CRIMPER**

CONSENT: 1  
CRIMPER DOWN: ON: 010 OFF: 060

**Page 15/23 CUP EJECTION**

CONSENT: 1  
CUP EJECTION: ON: 075 OFF: 260

To save the data entered in the recipe, press  
“ENTER” >  > “ENTER” > : the data is  
now memorised in the recipe.



## 5.2 Product change

The HOYER COMET C CONE – CUP machine fills and seals containers (cones and cups).

It can produce six rows of cones, cups or tubes up to 80 mm in diameter or two rows of cones, cups or tubes up to 115 mm in diameter.

Standard cone production involves use of the following stations:

- cone feed (*Part. 1, Fig. 5.2*);
- gauge and chocolate spray (*Part. 3, Fig. 5.2*);
- one or more stations for dosing ice cream or ice cream mixes (*Part. 4, Fig. 5.2*) in one or two flavours;
- topping (*Part. 5, Fig. 5.2*);
- granule (*Part. 6, Fig. 5.2*);
- lid feed (*Part. 7, Fig. 5.2*);
- lid closure (*Part. 8, Fig. 5.2*);
- product ejector (*Part. 10, Fig. 5.2*);
- product ejector belt (*Part. 9, Fig. 5.2*);

Standard cup production involves the use of the following stations:

- cup feed (*Part. 2, Fig. 5.2*);
- stations for dosing ice cream or ice cream mixes (*Part. 4, Fig. 5.2*) in one or two flavours;
- lid feed (*Part. 7, Fig. 5.2*);
- lid closure (*Part. 8, Fig. 5.2*);
- product ejector (*Part. 11, Fig. 5.2*);
- product ejector belt (*Part. 9, Fig. 5.2*).

When changing to a cone/cup format of a different size, it is necessary to replace the slot set, cone feed magazines, gauging pads, lid feed magazines, and crimpers.

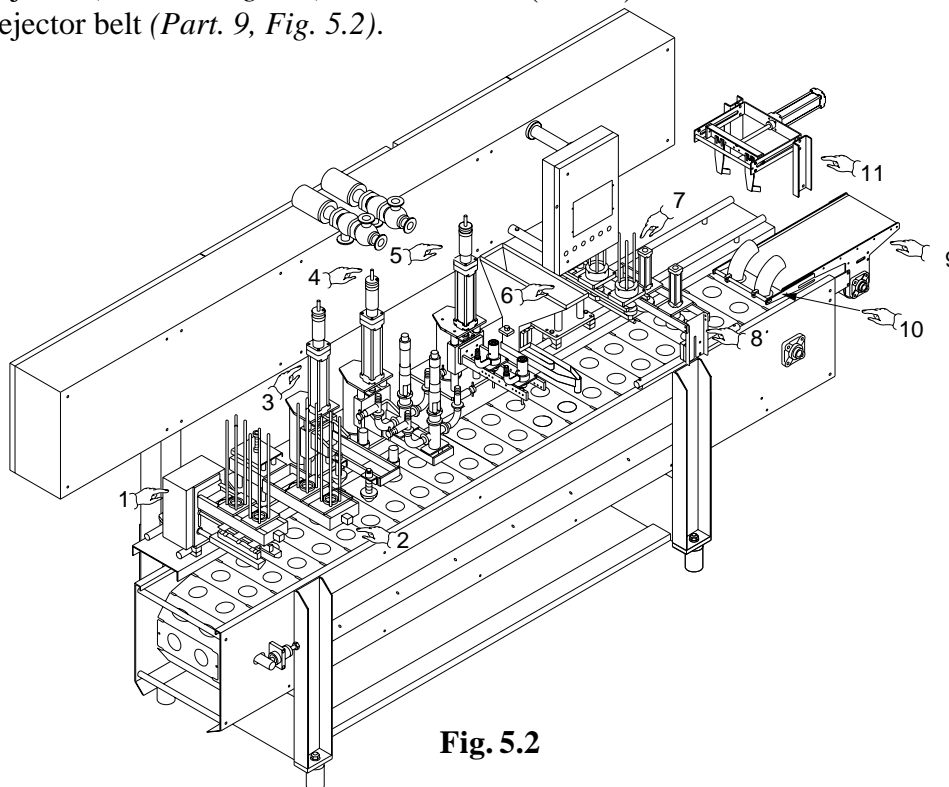
The HOYER COMET C CONE – CUP machine may be equipped with the following optional devices in addition to or in place of the standard stations:

- Chocolate sprayers for cups;
- Doser for two concentric flavours;
- Decorator;
- Pencil filler;
- Rotary dosing device;
- Lid feed for flared products;
- Lid sealing station;
- Date stamp.

 **NOTE:**

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

As the machine is controlled by an operator interface programme, a different operating programme must be established for each product (format).



**Fig. 5.2**

## 5.3 Mechanical and pneumatic adjustments

### 5.3.1 Container feed station adjustment

#### 5.3.1a Cone feed station adjustment

Press the emergency button to turn off the compressed air supply on the control panel.

With the cone stop blades open, insert two cones in the magazine (*Part.1, Fig. 5.3a*).

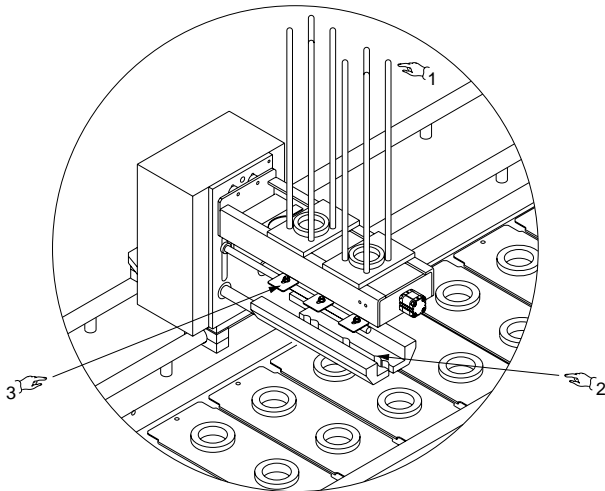
Check that the cone in the released position rests correctly in the calliper holes of the oscillating levers (*Part.2, Fig. 5.3a*), then check that the cone in the released position is 5 mm below the cone stop blade.

Make sure that the oscillating cone release levers hold the cornets without exerting too much pressure.

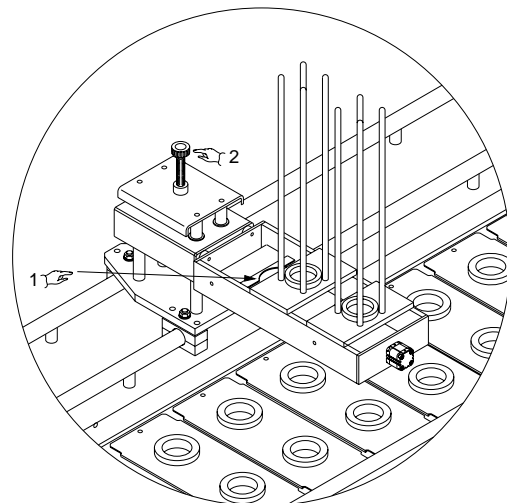
If the distance is too great, lower the moveable part of the cone stop blade support and magazines; if the released cone is between the cone stop blades, raise the cone magazines to the required distance.

After performing this adjustment, check that the plate that pushes the cones grazes the edge of the cornet; if it does not, adjust the position of the plate (*Part.3, Fig. 5.3a*).

At this point check that at low speed the cone is released immediately after the lamella chain has stopped.




**Fig. 5.3a**



**Fig. 5.3b**

#### 5.3.1b Cup feed station adjustment

Use the jog command  (*Fig. 5.1*), to position the suction cups at their maximum height.

Then place an ice cream cup in the magazine and check that the blades (*Part. 1, Fig. 5.3b*) hold the cup without squashing it. Adjust the height of the cup feed by turning the knob (*Part. 2, Fig. 5.3b*) so that the suction cups touch the bottom of the container.

Follow the above procedure when changing format.

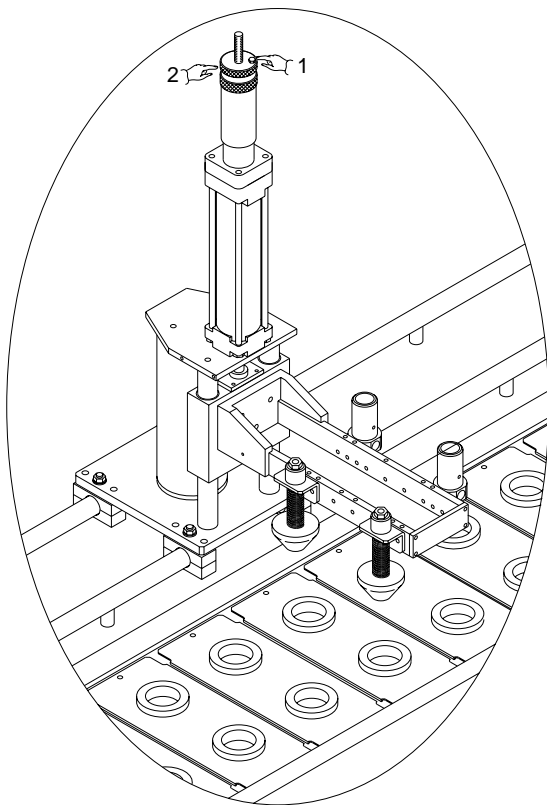
 **NOTE:**

If the machine is set up to produce different types of cups, it is advisable to make a note of the different adjustments in order to make format changes easier and quicker.

### 5.3.2 Cone gauging – chocolate spray station adjustment

The cone gauging station is necessary for spreading the mouth of the paper wrapped around the cones, which tends to fold over during feeding.

The height of the spray nozzle can be adjusted by slackening the screw (*Part. 1, Fig. 5.4*) and rotating the ring nut (*Part. 2, Fig. 5.4*) clockwise to increase the stroke of the pneumatic actuator or anticlockwise to reduce it.

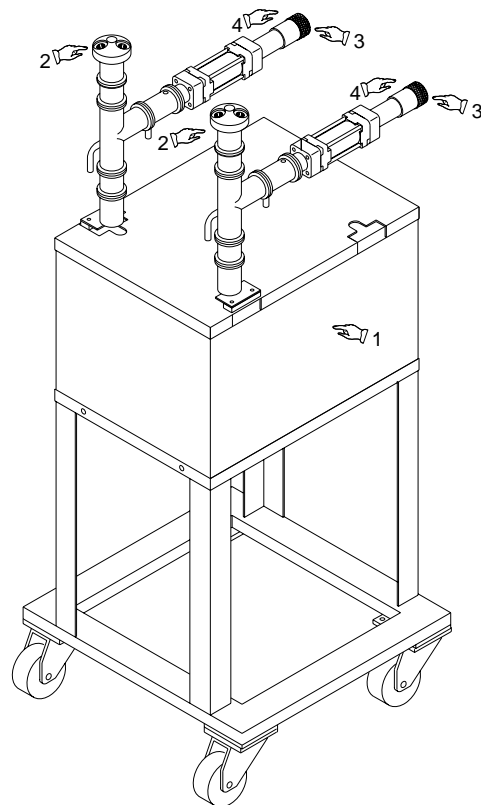


**Fig. 5.4**

At the end of the adjustment, tighten the screw (*Part. 1, Fig. 5.4*).

Use the pneumatic control to change spraying angle.

The gauges are mounted on springs so that they will fit the shape of the cone inside the slot perfectly (even if chocolate spray height is changed).



**Fig. 5.4a**

#### 5.3.2a Adjustment of the rate of flow of the chocolate spray pump

The chocolate spray pump is assembled on a temperature-controlled tank (*Part. 1, Fig. 5.4a*) located outside of the filling machine and connected to the chocolate spray nozzles by hoses from the distributor (*Part. 2, Fig. 5.4a*).

The rate of flow of the pump may be adjusted by loosening the lock nut (*Part. 3, Fig. 5.4a*) and turning the ring nut (*Part. 4, Fig. 5.4a*) clockwise to increase the stroke of the pneumatic actuator or anticlockwise to decrease it.

Tighten the lock nut (*Part. 3, Fig. 5.4a*) when finished.

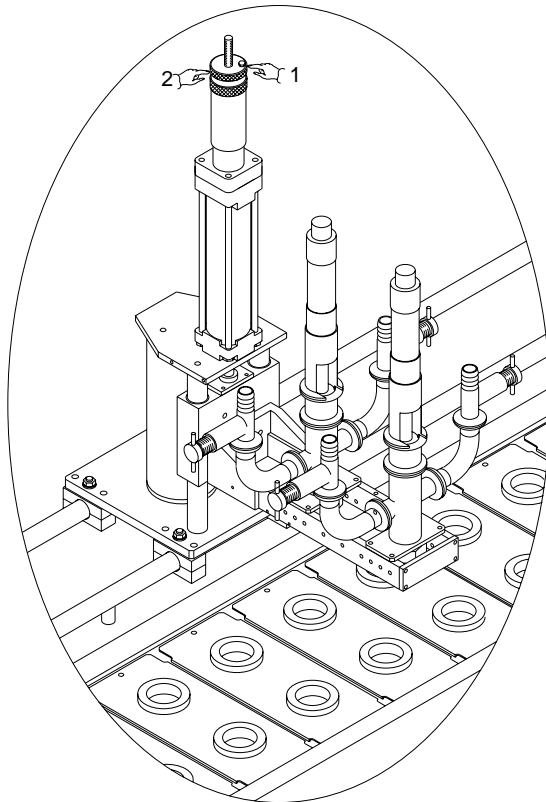
Turn the resistance on by pressing button A1 (*Fig. 5.14*) thirty minutes before beginning production to heat chocolate.

**NOTE:**

Make sure that there is water in the water jacket before turning on the chocolate heating resistance, otherwise the resistance will burn.

### 5.3.3 Ice cream doser/optional decorator station adjustment

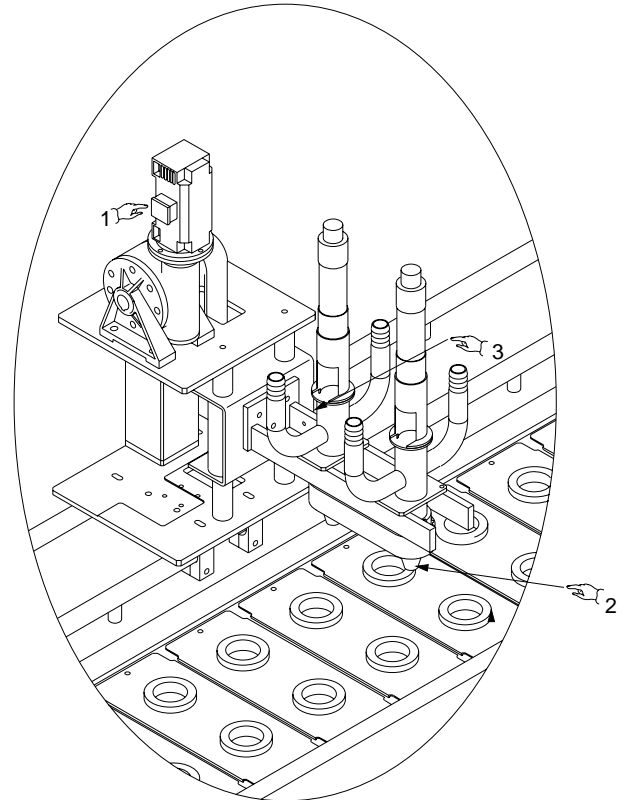
To adjust doser/decorator height, slacken the screw (*Part. 1, Fig. 5.5*) and turn the ring nut (*Part. 2, Fig. 5.5*) until the required dosing position is reached, turning it clockwise to increase the stroke of the pneumatic actuator or anticlockwise to decrease it.



**Fig. 5.5**

At the end of the adjustment, tighten the screw (*Part. 1, Fig. 5.5*).

The normal position of the end part of the dosing nozzles when in the dosing position should be inside the container below the lid positioning level in order not to cause damage to the ice cream decoration after pressing the lid.



**Fig. 5.5a**

#### 5.3.3a Optional rotating doser station adjustment

Dosers are moved by a servomotor (*Part. 1, Fig. 5.5a*), connected to the raise/lower slide by a toothed belt.

Raising and lowering speed is controlled by the PLC.

Doser nozzles (*Part.2, Fig. 5.5a*) are rotated by a pneumatic motor (*Part. 3, Fig. 5.5a*) and a toothed belt.

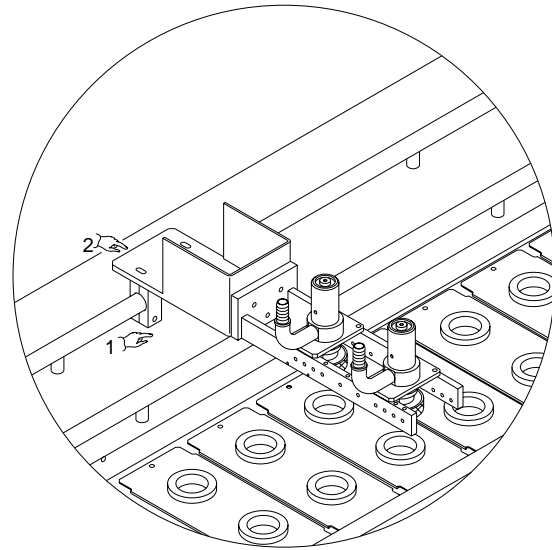
Adjust the flow control on the pneumatic motor to adjust nozzle rotation speed.

Rotation time is controlled by the PLC.

### 5.3.4 Topping station adjustment

Check that the dosing nozzles are centred over the slots. If not, loosen fixing blocks (*Part. 1/2, Fig. 5.6*) and correct station position.

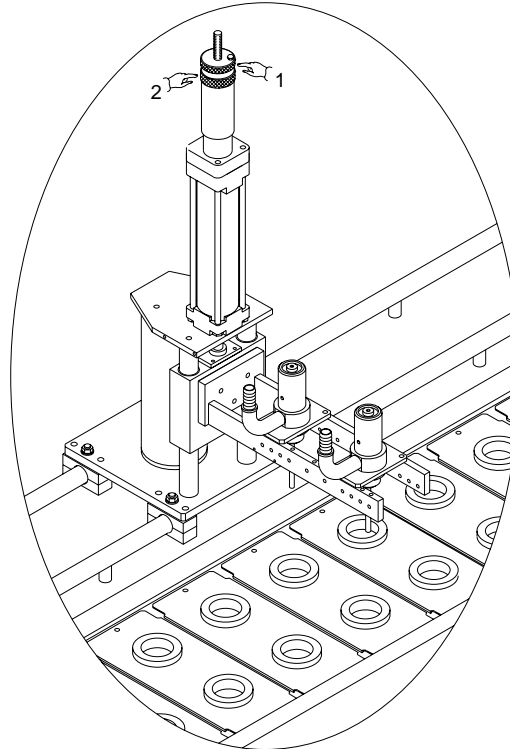
**Fig. 5.6**



### 5.3.5 Optional pencil filler station adjustment

To adjust height, slacken the lock nut (*Part. 1, Fig. 5.7*) and adjust the ring nut (*Part. 2, Fig. 5.7*) until the required position is reached, turning it clockwise to increase the stroke of the pneumatic actuator or anticlockwise to decrease it.

At the end of the adjustment, tighten the lock nut (*Part. 1, Fig. 5.7*).



**Fig. 5.7**

### 5.3.6 Granule station adjustment

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

Also check that the dosing channels are positioned at the centre of the slots. If not, move the station by slackening screws (*Part. 1, Fig. 5.8*) on the fixing blocks.

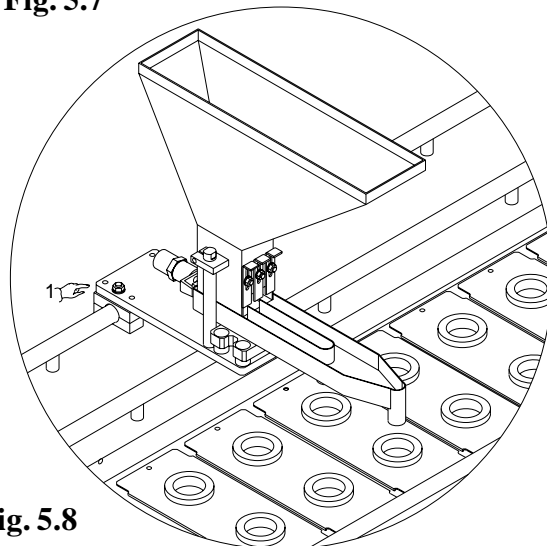
The flow of product to dose can be optimised by adjusting the angle of action of the vibrator. This is done by slackening the screws on the vibrator support.

To increase or reduce the volume of product dosed, turn the pressure regulator clockwise to increase the intensity of the vibrations or anticlockwise to decrease it.


It is also possible to adjust the insertion “time” of the vibrator for each cycle by changing the relative parameters, indicated as the start and finish angle on a 360° cycle.

The flow through individual channels may be adjusted using the blades.

**Fig. 5.8**



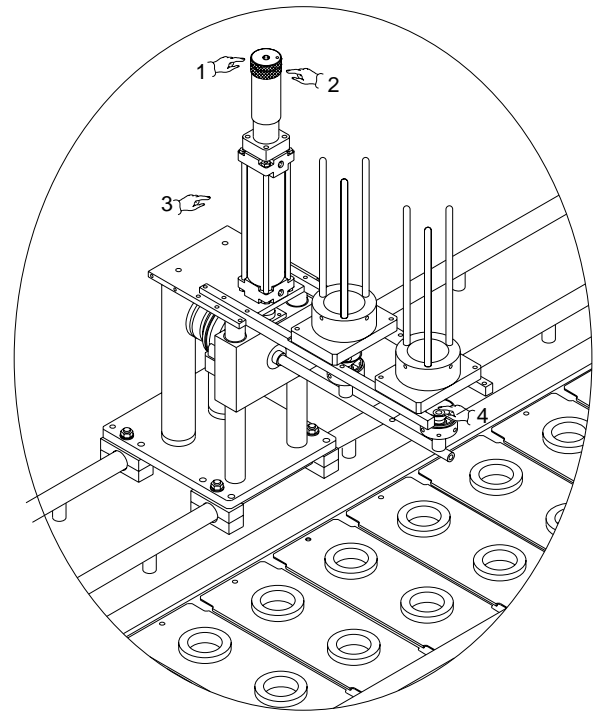
### 5.3.7 Lid feed station adjustment

Make sure that the lid feed station is switched off (button  (Fig. 5.14) in OFF position) with the suction cups in the raised position.

Check that the suction cups (Part. 1, Fig. 5.9) are in direct contact with the lids inside the magazines. If not, turn the lifting cylinder rod (Part. 2, Fig. 5.9) clockwise (within the block) in order to raise the suction cups (Part. 1, Fig. 5.9) until they are in direct contact with the lids. To adjust height, loosen the lock nut (Part. 1, Fig. 5.9) and turn the ring nut (Part. 2, Fig. 5.9) to correct position (turning it clockwise to increase the stroke of the pneumatic actuator or anticlockwise to decrease it).

Tighten the lock nut (Part. 1, 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 lamella chain has stopped, and then check that it moves back up before the chain starts moving again..



**Fig. 5.9**

### 5.3.7a Optional flame product lid closing stationa adjustment

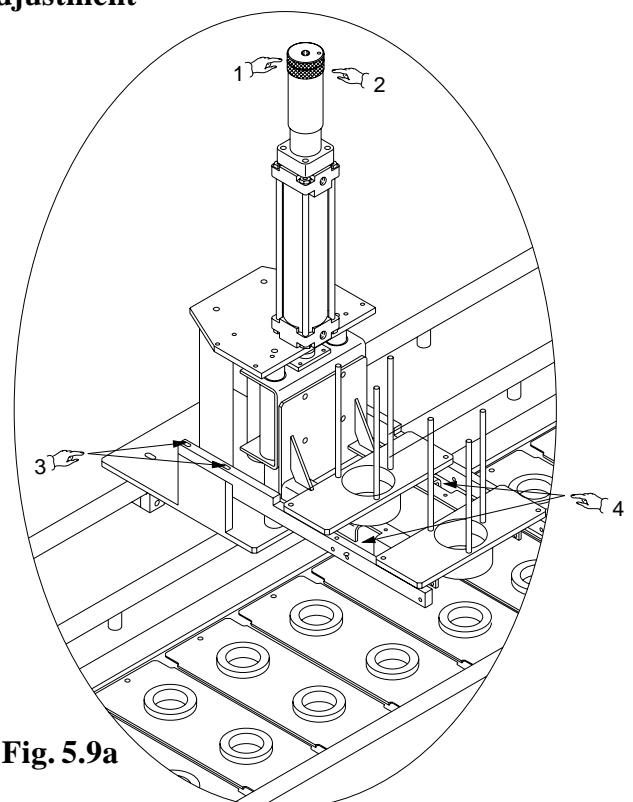
To adjust height, loosen the lock nut (Part. 1, Fig. 5.9a) and turn the ring nut (Part. 2, Fig. 5.9a) to correct the position (turning it clockwise to increase the stroke of the pneumatic actuator or anticlockwise to decrease it).

Tighten the lock nut (Part. 1, Fig. 5.9a) when finished.

To centre the station so that lid magazines are aligned with slots loosen the screws holding the magazine supports in place and adjust position using the slots (Part. 3, Fig. 5.9a).

Tighten the screws holding the supports in place when finished.

Adjust the position of the lid pick-up gripper control actuator holder supports (Part. 4, Fig. 5.9a).



**Fig. 5.9a**

### 5.3.8 Cone lid closing station adjustment

Check that the crimper (*Part. 1, Fig. 5.10*) rests on the outside of the slot (*Part. 2, Fig. 5.10*) and compresses inside of it in order to close off the cone perfectly.

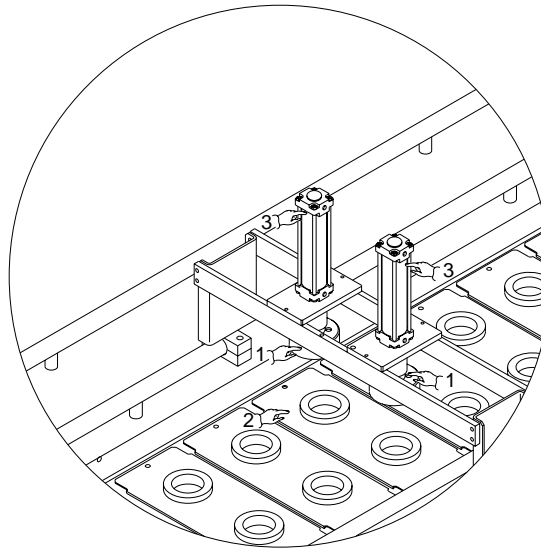
If the cone is not closed off correctly, lower the crimper (*Part. 1, Fig. 5.10*) by rotating it clockwise after having slackened the nut

anchoring it to the cylinder stem (*Part. 3, Fig. 5.10*).

If the closure is too accentuated, rotate the crimper (*Part. 1, Fig. 5.10*) anticlockwise until the correct type of closure is obtained.

On completion of the adjustment, remember to tighten the crimper lock nut.

**Fig. 5.10**



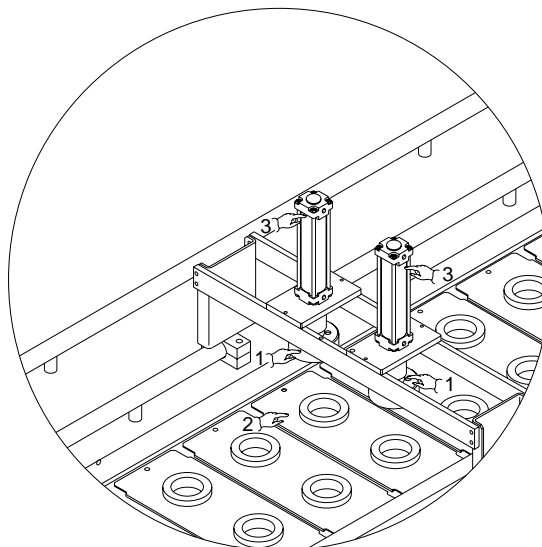
### 5.3.9 Cup lid closing station adjustment

Check that the lid pressing plate (*Part. 1, Fig. 5.11*) compresses the lid in the cup in such a way that it closes off the cup perfectly. If the closure is not correct, lower the plate by rotating it clockwise after having slackened the lock nut fixing it to the cylinder stem (*Part. 3, Fig. 5.11*).

If the closure is too accentuated, rotate the plate (*Part. 1, Fig. 5.11*) anticlockwise until the correct closure is obtained.

On completion of the adjustment, remember to tighten the plate lock nut .

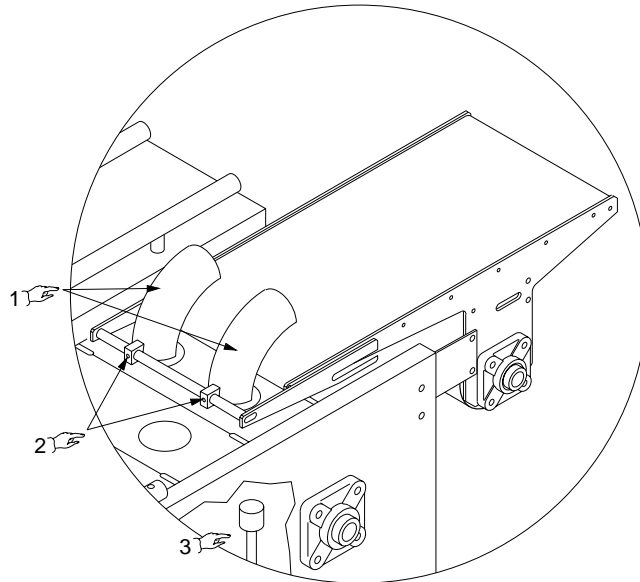
**Fig. 5.11**



### 5.3.10 Cone ejector station adjustment

Adjust the position of the ejector elbows (*Part. 1, Fig. 5.12*), the ejector plate (*Part. 3, Fig. 5.12*) and the product conveyor belt so that the cone does not get in the way of moving parts during ejection.

Then adjust the angle of the ejection elbows (*Part. 1, Fig. 5.12*) by adjusting the screws holding them in place (*Part. 2, Fig. 5.12*) so as to facilitate correct positioning of the cone on the belt.



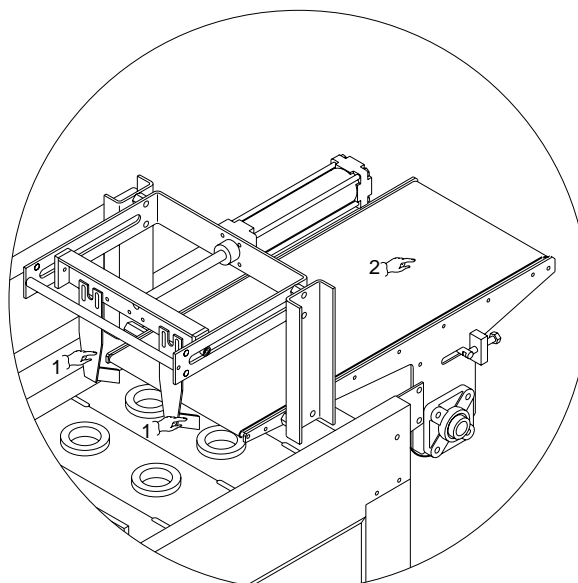
**Fig. 5.12**

### 5.3.11 Cup ejector station adjustment

Adjust the position of the ejector plates (*Part. 1, Fig. 5.13*) and the product conveyor belt (*Part. 2, Fig. 5.13*) so that the cup does not get in the way of moving parts during ejection; if this happens, move the belt (*Part. 2, Fig.*

*5.13*) by loosening the screws holding it in place.


Check that the ejector plates (*Part. 1, Fig. 5.13*) push the cup onto the product conveyor belt (*Part. 2, Fig. 5.13*).



**Fig. 5.13**



### 5.3.12 Tube feed and gauge station

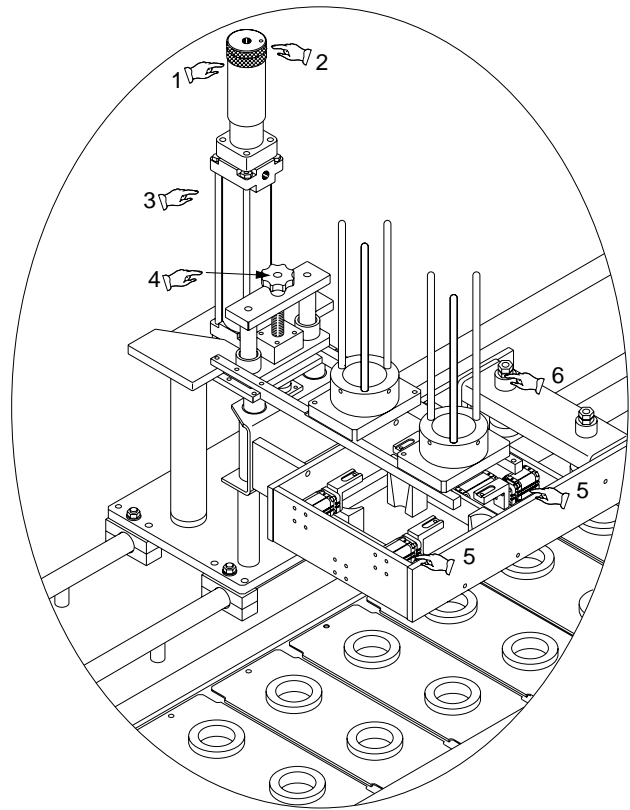
Use the jog command  (Fig. 5.1) to position the container pick-up unit at its maximum height. Then place two containers in the magazine and check that the blades hold the container without squashing it. Adjust the height of the container feed using the knob (Part. 4, Fig. 5.14).

To adjust the maximum height of the container pick-up unit (Part. 5, Fig. 5.14), loosen the lock nut (Part. 1, Fig. 5.14) and adjust the ring nut (Part. 2, Fig. 5.14) until the desired position is obtained, turning it clockwise to increase the stroke of the pneumatic actuator (Part. 3, Fig. 5.14) and anticlockwise to decrease it.

Use nuts and lock nuts (Part. 4, Fig. 5.14) to adjust gauging cones.

The gauges are mounted on springs so that they will fit the shape of the container inside the slot perfectly (even if pick-up height is changed).

Follow the above procedure when changing format.



**Fig. 5.14**

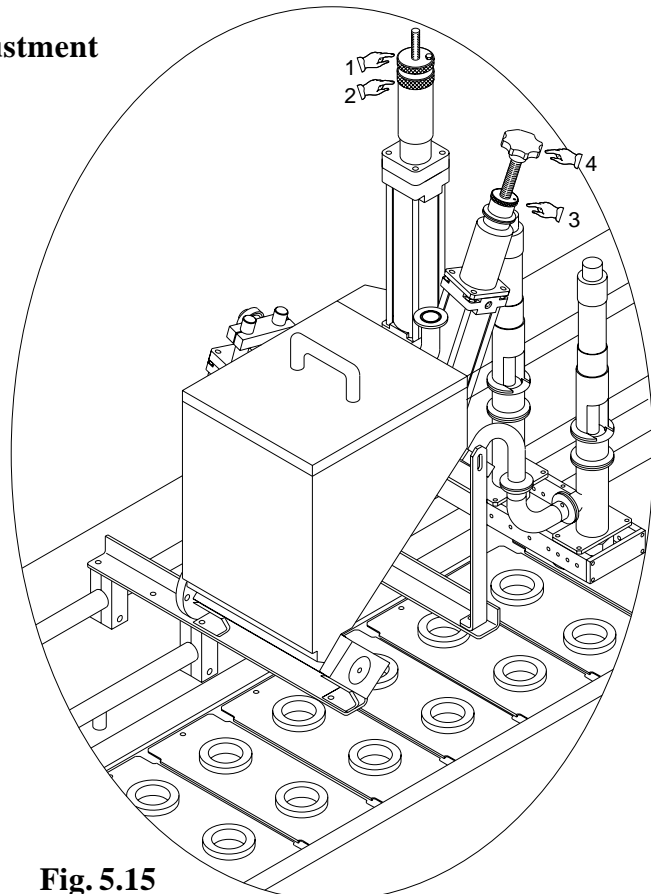
### 5.3.13 Volumetric ice cream dosing station adjustment

To adjust doser height, slacken the lock nut (Part. 1, Fig. 5.15) and adjust the ring nut (Part. 2, Fig. 5.15) until the required position is reached, turning it clockwise to increase the stroke of the pneumatic cylinder or anticlockwise to decrease it.

At the end of the adjustment, tighten the lock nut (Part. 1, Fig. 5.15).

The normal position of the end part of the dosing nozzles when in the dosing position should be inside the container below the lid positioning level in order not to cause damage to the ice cream decoration after pressing the lid.

To adjust dosage volume, slacken the locking ring nut (Part. 3, Fig. 5.15) and turn the knob (Part. 4, Fig. 5.15) clockwise to increase volume or anticlockwise to decrease it.

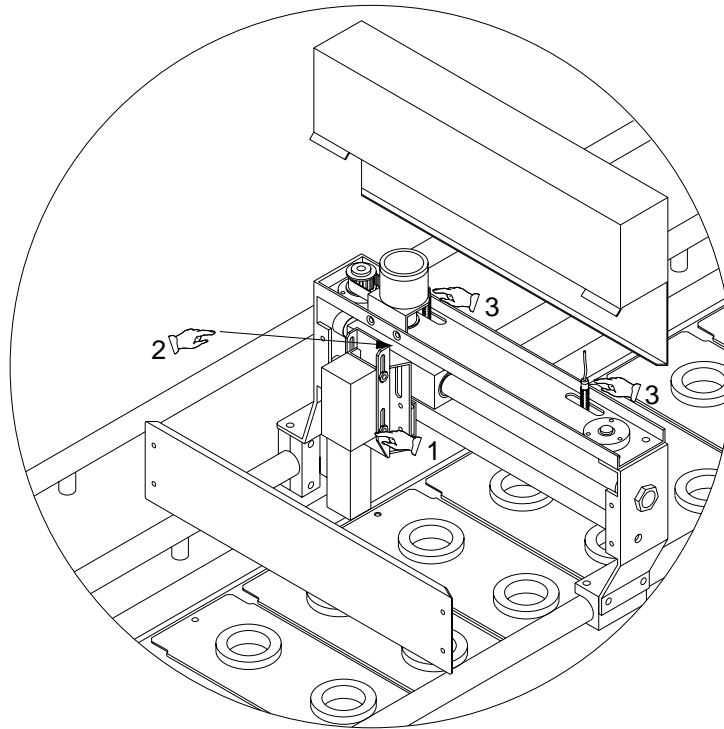


**Fig. 5.15**

### 5.3.14 Ink-jet stamp station adjustment

To adjust the height of the stamp head, loosen the screws holding it in place (*Part. 1/2, Fig. 5.16*) and adjust the position of the stamp head.

Check that the limit switch (*Part. 3, Fig. 5.16*) is in the correct position.



**Fig. 5.16**

## HOYER COMET C

### 6 - OPERATING PROCEDURES

#### Contents

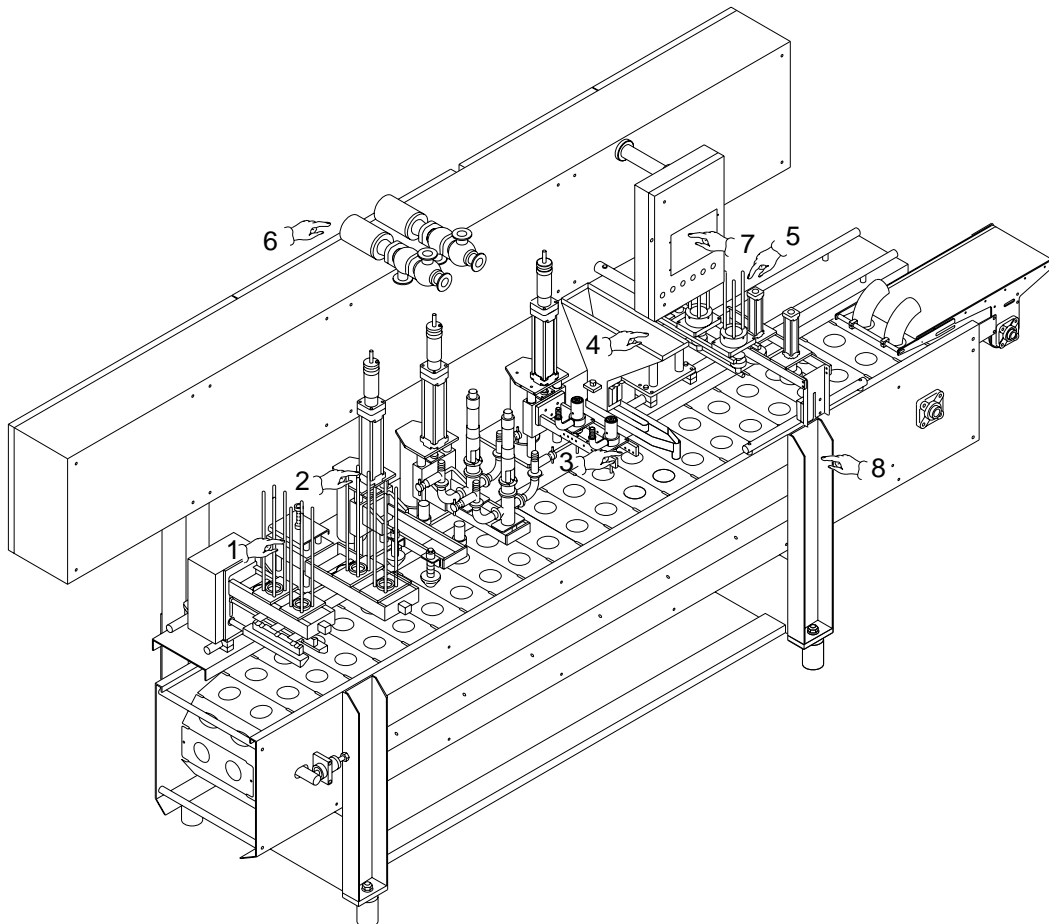
---

6.1	Preliminary checks .....	6-2
6.2	Start of production .....	6-3
6.2.1	Emergency stop .....	6-6
6.3	End of production .....	6-7
6.4	Description of work stations .....	6-8
6.4.1	Cone feed station .....	6-8
6.4.2	Gauge and chocolate spray station .....	6-8
6.4.3	Chocolate spray pump equipment .....	6-9
6.4.4	Ice cream dosing station .....	6-10
6.4.5	Ice cream decoration station (optional) .....	6-11
6.4.6	Pencil filler station (optional) .....	6-12
6.4.7	Topping station .....	6-13
6.4.8	Granule station .....	6-14
6.4.9	Lid feed station .....	6-15
6.4.10	Lid closing station .....	6-15
6.4.11	Cone ejector station .....	6-16
6.4.12	Cup feed station .....	6-16
6.4.13	Lid sealing station (optional) .....	6-17
6.4.14	Date stamp station (optional) .....	6-17
6.4.15	Cup ejector station (optional) .....	6-18
6.4.16	Flame cone chocolate spray station (optional) .....	6-18
6.4.17	Rotary dosing station (optional) .....	6-19
6.4.18	Flame cone lid feed station (optional) .....	6-20
6.4.19	Tube feed and gauging station (optional) .....	6-20
6.4.20	Volumetric dosing station (optional) .....	6-21
6.4.21	Lid sealing station (optional) .....	6-22
6.4.22	Ink jet stamp station .....	6-22

## 6.1 Preliminary controls

Perform the following checks before starting the machine:

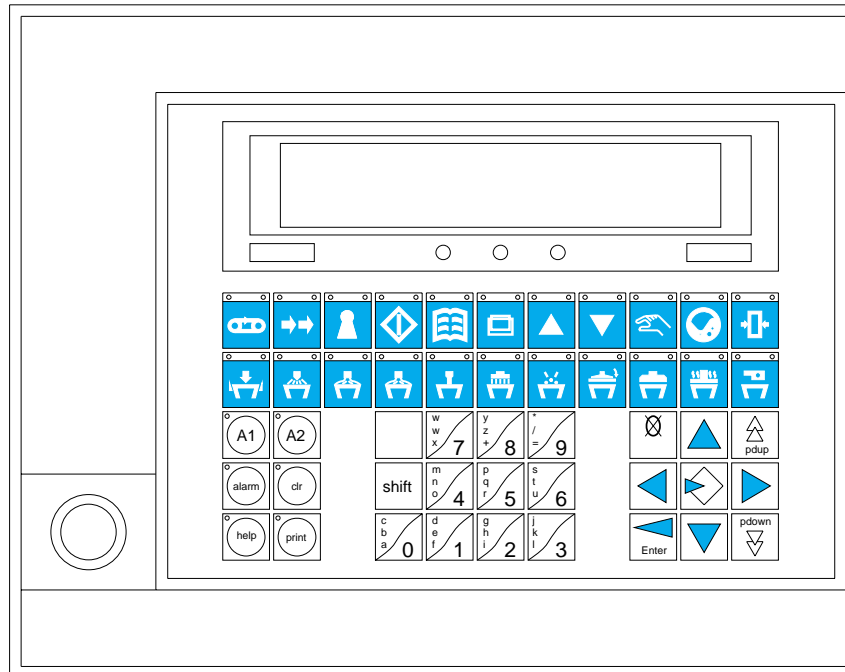
- a. Make sure that all the panels and guards in the machine are fixed securely in place.
- b. Make sure that the machine has been thoroughly washed and cleaned. The cleaning and washing procedures are described in **CHAPTER 7 - CLEANING AND MAINTENANCE**.
- c. Make sure that the electrical power supply cable is correctly connected.
- d. Make sure that the compressed air supply is correct and that the pressure reducer housed in the pneumatic panel is set to 6 bar.
- e. Make sure that the ice cream line clamps are properly tightened.
- f. Make sure that the ice cream bypass containers are in position.
- g. Make sure that the emergency stop buttons (*Part. 7/8 Fig. 6.1*) are disengaged.
- h. Connect the bypass valves to the freezers (*Part. 6 Fig. 6.1*).
- i. Make sure that the compartments of the chocolate container (*Part. 3 Fig. 6.1*) have been correctly filled and that the chocolate is at the right temperature (between approximately 34°C and 37°C).
- l. Make sure that the containers have been correctly positioned in the feed magazines (*Part. 1/2 Fig. 6.1*).
- m. Make sure that the granule hopper has been filled correctly (*Part. 4 Fig. 6.1*).
- n. Make sure that the lids have been correctly positioned in the lid feed magazines (*Part. 5 Fig. 6.1*).



**Fig. 6.1**

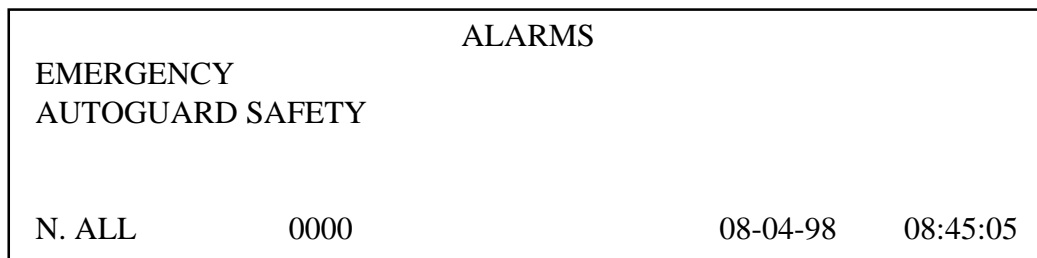
## 6.2 Start of production


**Fig. 6.2**

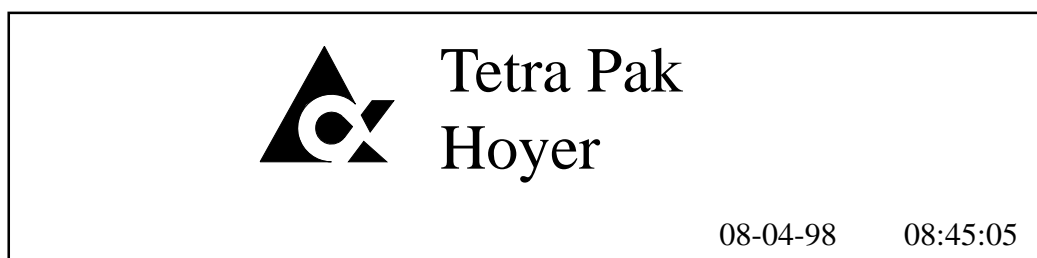



Proceed as follows to start the machine:

- a. Switch on the electric power supply to the machine by turning the main switch to the “ON” position. Current alarms will appear on the display.




- b. Press the chocolate tank heater button A1 (Fig. 6.2).
- c. Press  (Fig. 6.2). to call up the start-up page.




- d. Press  (Fig. 6.2) to call up the start-up page.



SPEED	:	50
POSITION	:	0°
CYCLE	:	MANUAL
1		

- e. Press  (Fig. 6.2) to call up the production recipe function.


DATA SETTING		
CODE	:	-----
DESCRIPTION	:	
		1/23

- f. Press  (Fig. 6.2) to call up the recipes stored in memory.


			<table border="1"> <tr> <td colspan="2" style="text-align: center;">STORED RECIPIES</td> </tr> <tr> <td>1</td> <td>CONE</td> </tr> <tr> <td>2</td> <td>CUP</td> </tr> </table>	STORED RECIPIES		1	CONE	2	CUP
STORED RECIPIES									
1	CONE								
2	CUP								
CODE									
DESCRI									
		1/23							

- g. Press  or  (Fig. 6.2) to select the desired recipe.


			<table border="1"> <tr> <td colspan="2" style="text-align: center;">STORED RECIPIES</td> </tr> <tr style="background-color: yellow;"> <td>1</td> <td>CONE</td> </tr> <tr> <td>2</td> <td>CUP</td> </tr> </table>	STORED RECIPIES		1	CONE	2	CUP
STORED RECIPIES									
1	CONE								
2	CUP								
CODE									
DESCRI									
		1/23							

- h. Press  (Fig. 6.2) to confirm the selected recipe.


DATA SETTING	
CODE	: 1
DESCRIPTION	: CONE
1/23	

- i. Press  (Fig. 6.2) to save data.

Overwrite ? (Enter = Yes    Clr = No)	:
---------------------------------------	---

- l. Press  (Fig. 6.2) to confirm that you wish to save.


SPEED	:	50
POSITION	:	0°
CYCLE	:	MANUAL
1    1    CONE		

- m. Press  (Fig. 6.2) to activate the selected recipe.

SPEED	:	50
POSITION	:	0°
CYCLE	:	MANUAL
1    1    CONE		

- n. Place a suitable container under the bypass valve drain.
- o. Place a suitable container under the doser discharge chute.
- p. Start feeding ice cream from the freezer.
- q. Wait until the ice cream coming from the bypass is of the required consistency.
- r. Position the bypass valves to feed the dosers by pressing button A2 (Fig. 6.2).
- s. Wait until the ice cream coming from the bypass is of the required consistency.


- t. Press the run and doser start-up buttons (Fig. 6.2). The lamellas will start moving in synchrony with the dosing when ice cream consistency and volume are correct.



Press the automatic production start button  (Fig. 6.2). The machine will start the production cycle automatically.

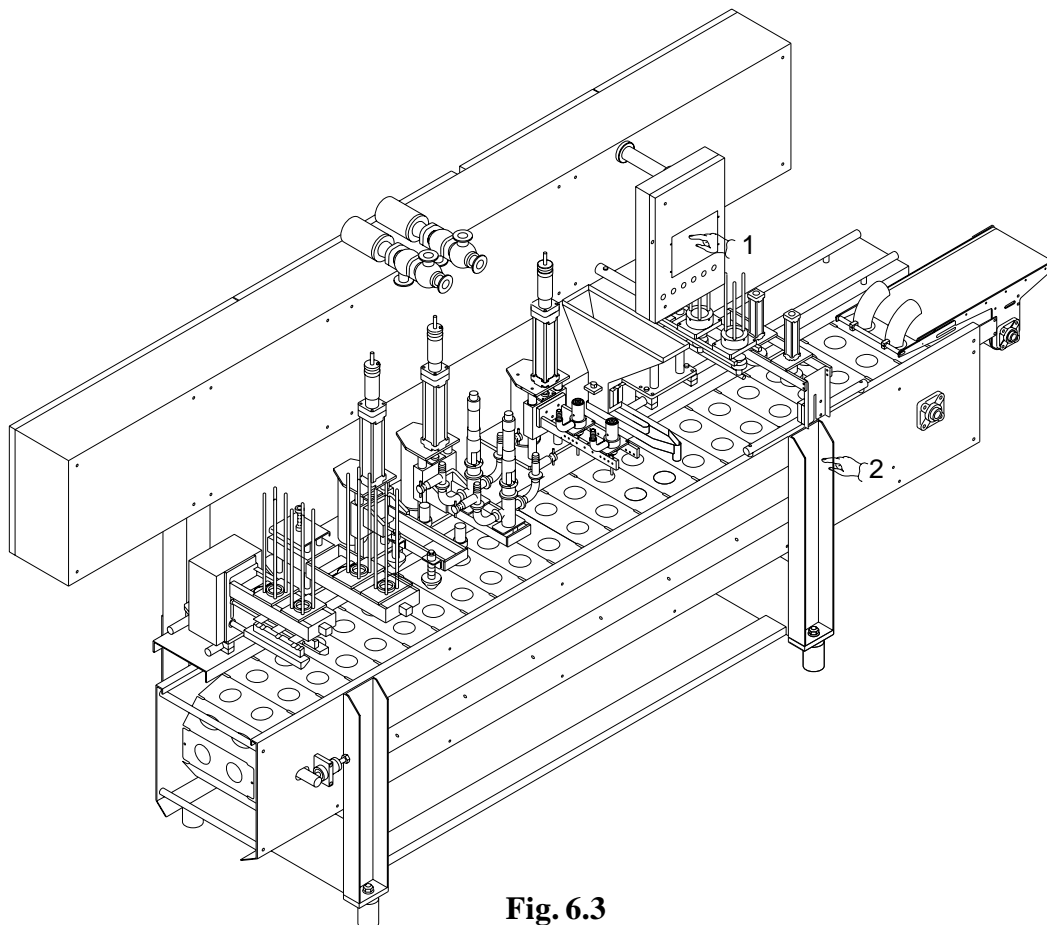
If the manual production cycle is selected, start each individual station with the relevant station enable buttons.

### 6.2.1 Emergency stop

If any component malfunctions, press the emergency stop button (Part. 1/2, Fig. 6.3) to disable all the machine's electrical functions.

To reset the machine, first remedy the cause of the malfunction, rotate the emergency stop button  (Part. 1, Fig. 6.3) anticlockwise and release

it, then press the reset button  (Fig. 6.2) on the operator interface panel or press the button on the cord emergency stop switch (Part. 2, Fig. 6.3) and then press the reset button  (Fig. 6.2).




**Fig. 6.3**



## 6.3 End of production

---

To stop the machine in automatic cycle mode, proceed as follows:

- Press the end of production button  (Fig. 6.2). 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.**

## 6.4 Description of work stations

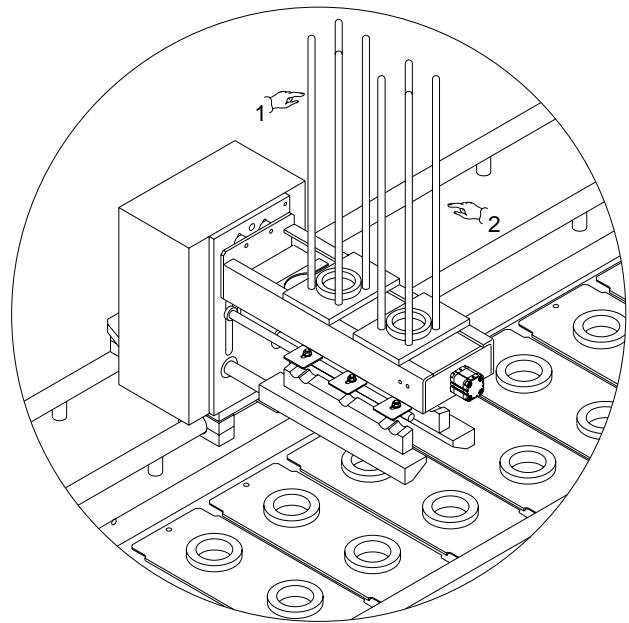
### 6.4.1 Cone feed station

The function of the cone feeders (*Fig. 6.4*) 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 magazines (*Pos. 1, Fig. 6.4*), in which the cones must be placed manually, and a cone dispenser driven by pneumatic actuators.

The station is activated by the cone feed button



(*Fig. 6.2*) on the control panel.



**Fig. 6.4**

### 6.4.2 Gauge and chocolate spray station


A fixed structure supports a pneumatic actuator which controls the up and down movement of the mobile frame. The travel of the pneumatic actuator can be adjusted by slackening the screw (*Part. 1 Fig. 6.5*) and rotating the ring nut (*Part. 3 Fig. 6.5*) clockwise to increase the travel of the pneumatic actuator and anticlockwise to shorten it.

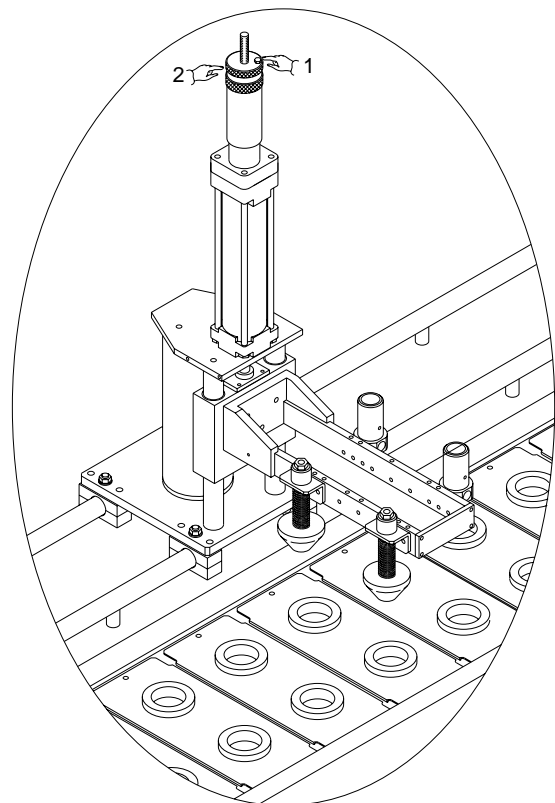
At the end of the adjustment, tighten screws (*Part. 2 Fig. 6.5*).

The travel of the pneumatic actuator must be adjusted to control the entry of the chocolate sprayer nozzle into the cone.

Two gauges (*Pos. 3/4, Fig. 6.5*) are mounted on the front of the frame and two chocolate sprays (*Pos. 5, Fig. 6.5*) on the rear.

The station is activated by the “chocolate spray”

button on the control panel  (*Fig. 6.2*).



**Fig. 6.5**

### 6.4.3 Chocolate spray pump equipment

A frame on wheels (*Pos. 1, Fig. 6.6*) supports the thermostatically controlled chocolate tank (*Pos. 2, Fig. 6.6*), kept at a temperature of approximately 34°C to 37°C by water contained in the jacket which is heated by electrical resistances.


The rate of flow of the displacement pump may be adjusted by slackening the screws (*Part. 3, Fig. 6.6*) using a wrench and turning the ring nut (*Part. 4, Fig. 6.6*) clockwise to increase the stroke of the pneumatic actuator or anticlockwise to decrease it.

Tighten the screw (*Part. 3, Fig. 6.6*) with the wrench when finished.

During production, the tank must be filled manually.

To start heating the chocolate, press the “heat chocolate tank” button *A1* (*Fig. 6.2*).

To circulate the chocolate from the tank to the sprayers and back when the machine is stopped,

press the “chocolate spray” button  (*Fig. 6.2*).

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 and adjusting the spray nozzle opening time on the programmer.

Time is adjusted by modifying the degrees on the cam.

The chocolate is fed into the cones by the spray nozzle.

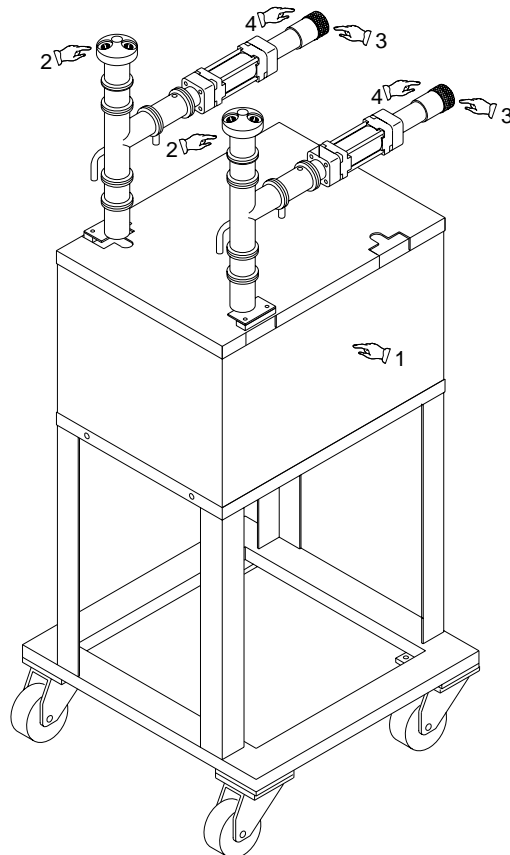
The incoming chocolate is atomised by compressed air sent to the appropriate connection.

The customer is responsible for sterilisation of the line downstream of the filter.



**WARNING:**

The water in the jacket must be heated at least half an hour before use. The water is heated by pressing button *A1* (*Fig. 6.2*).



**Fig. 6.6**

#### 6.4.4 Ice cream dosing station

The cones are filled with ice cream by dosers (*Pos. 1, Fig. 6.7*) activated by pneumatic actuators (*Pos. 2, Fig. 6.7*).

The mobile frame is raised and lowered by a pneumatic actuator (*Pos. 3, Fig. 6.7*) on a stationary structure. The travel of the pneumatic actuator can be adjusted by slackening the screw (*Part. 4 Fig. 6.7*) using the wrench and then adjusting the ring nut (*Part. 5 Fig. 6.7*), turning it clockwise to increase the travel of the pneumatic actuator or anticlockwise to decrease it.

At the end of the operation tighten the screw (*Part. 4 Fig. 6.7*) using the wrench.

The start and duration of the mobile frame movement, which must be synchronised with the stop phase of the lamellas, can be adjusted from

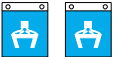
the control panel which is interfaced with the PLC.

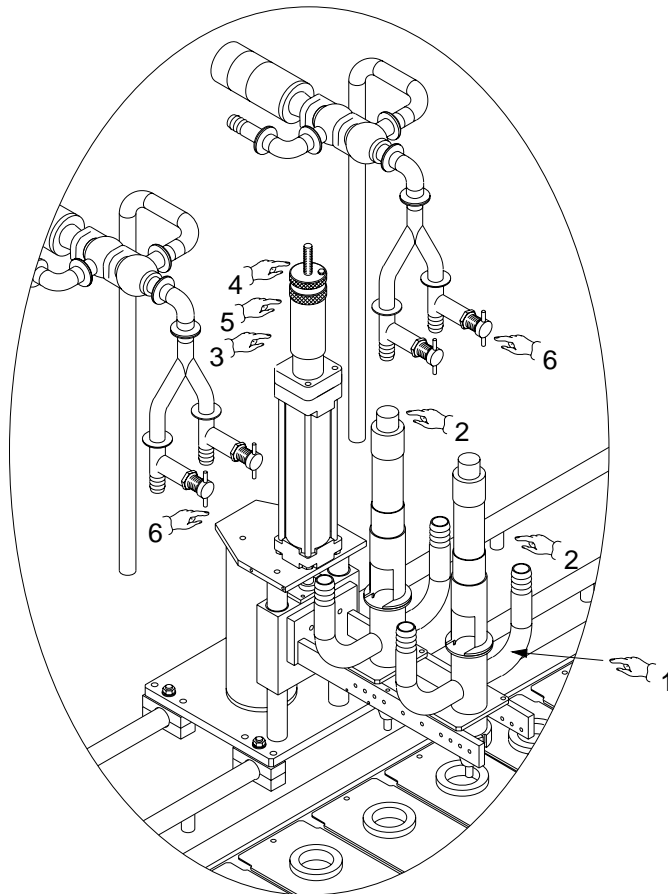
Two dosers (*Pos. 1 Fig. 6.7*) are mounted on the frame. These dosers feed the required quantity of ice cream into the cones which have already been sprayed with chocolate.

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 (*Pos. 6 Fig. 6.7*).

The dosing station is activated by pressing the

“ice cream doser” buttons  (*Fig. 6.2*) which automatically close the bypass.



**Fig. 6.7**

### 6.4.5 Ice cream decoration station (optional)

Ice cream cones are decorated by dosers (*Pos. 1, Fig. 6.8*) driven by pneumatic actuators (*Pos. 2, Fig. 6.8*).

The mobile frame is raised and lowered by a pneumatic actuator (*Pos. 3, Fig. 6.8*) on a stationary structure. The travel of the pneumatic actuator can be adjusted by slackening the screw (*Part. 4 Fig. 6.8*) using the wrench and then adjusting the ring nut (*Part. 5 Fig. 6.8*), turning it clockwise to increase the travel of the pneumatic actuator or anticlockwise to decrease it.

At the end of the operation tighten the screw (*Part. 4 Fig. 6.8*) using the wrench.

The beginning and duration of movement of the mobile frame while the lamellas are stationary

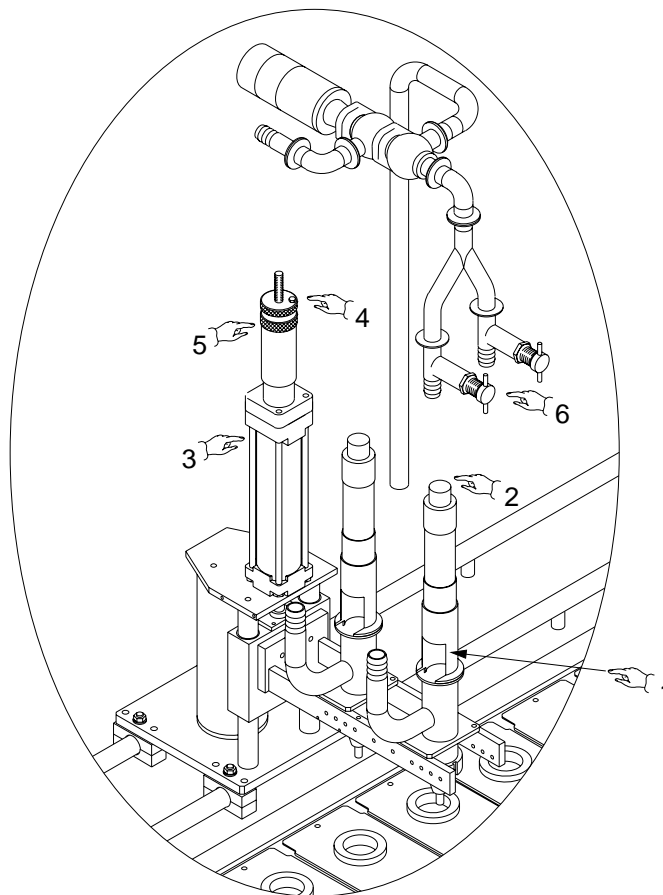
may be set using the operator control panel which interfaces with the PLC.

Two decorators assembled on the frame (*Pos. 1, Fig. 6.8*) dose the required quantity of decorating ice cream. Freezer speed can be changed and dosing start and duration adjusted on the operator interface panel to obtain the required quantity of ice cream.

The quantity of ice cream dispensed by each doser in the rows may be balanced by adjusting the flow regulators (*Pos. 6, Fig. 6.8*). The dosing station is activated using the “ice cream doser” buttons



(*Fig. 6.2*) which automatically close the by-pass.



**Fig. 6.8**


### 6.4.6 Stazione pencil filler (optional)

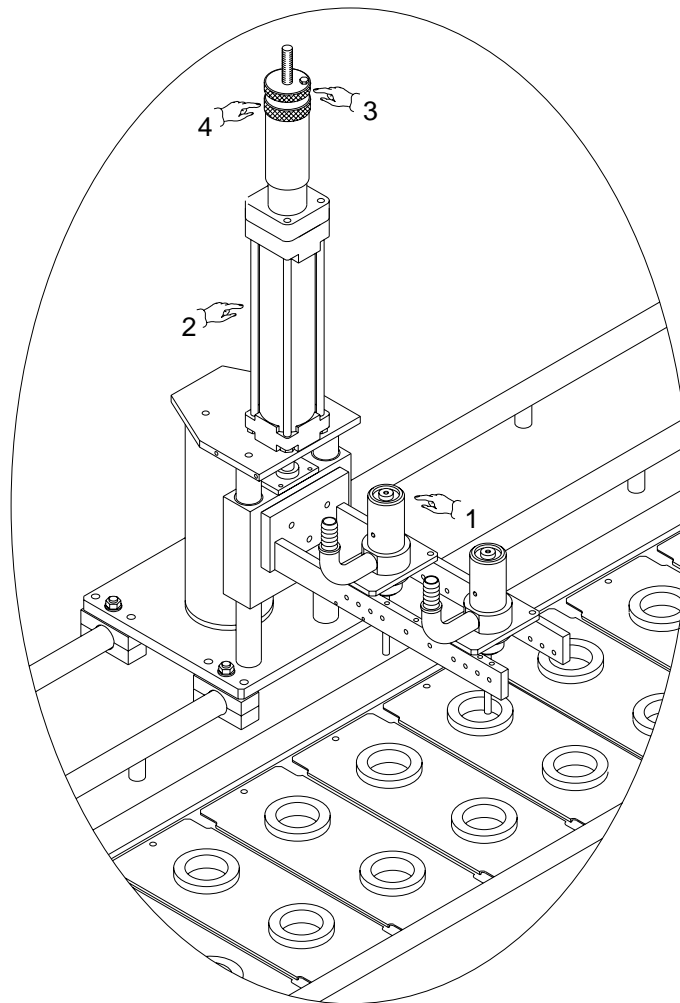
The pencil filler station consists of nozzles (*Pos. 1, Fig. 6.9*) connected through hoses to an optional feed tub and driven by pneumatic actuators (*Part. 2, Fig. 6.9*).

The mobile frame is raised and lowered by a pneumatic actuator (*Pos. 3, Fig. 6.9*) on a stationary structure. The travel of the pneumatic actuator can be adjusted by slackening the screw (*Part. 4 Fig. 6.9*) using the wrench and then adjusting the ring nut (*Part. 5 Fig. 6.9*), turning it clockwise to increase the travel of the pneumatic actuator or anticlockwise to decrease it.

At the end of the operation tighten the screw (*Part. 4 Fig. 6.9*) using the wrench.

The beginning and duration of movement of the mobile frame while the lamellas are stationary may be set using the operator control panel which interfaces with the PLC.

Two nozzles assembled on the frame dose the required quantity of product into the filled cones. Freezer speed can be changed and dosing start and duration adjusted on the operator interface panel to obtain the required quantity of product. The pencil filler station is activated using the “ice cream doser” button  (*Fig. 6.2*) which automatically close the by-pass.



**Fig. 6.9**

### 6.4.7 Topping station


The topping station consists of nozzles connected through hoses to an optional feed tub and driven by pneumatic actuators.

The station consists of topping dosing nozzles (*Part. 2, Fig. 6.10*) mounted on a stationary structure (*Part. 1, Fig. 6.10*). The rate of flow of the displacement pump can be adjusted by slackening the screw (*Part. 3 Fig. 6.10*) using the wrench and then adjusting the ring nut (*Part. 4, Fig. 6.10*), turning it clockwise to increase the travel of the pneumatic actuator or anticlockwise to decrease it.

At the end of the operation tighten the screw (*Part. 3, Fig. 6.10*) using the wrench.

The tub must be filled manually during operation.

To start heating the chocolate, press the “heat chocolate tank” button *A1* (*Fig. 6.2*).

To circulate the chocolate from the tank to the sprayers and back when the machine is stopped, press the “chocolate spray” button  (*Fig. 6.2*).

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 using the limit switch screw and by adjusting the spray nozzle opening time on the programmer.

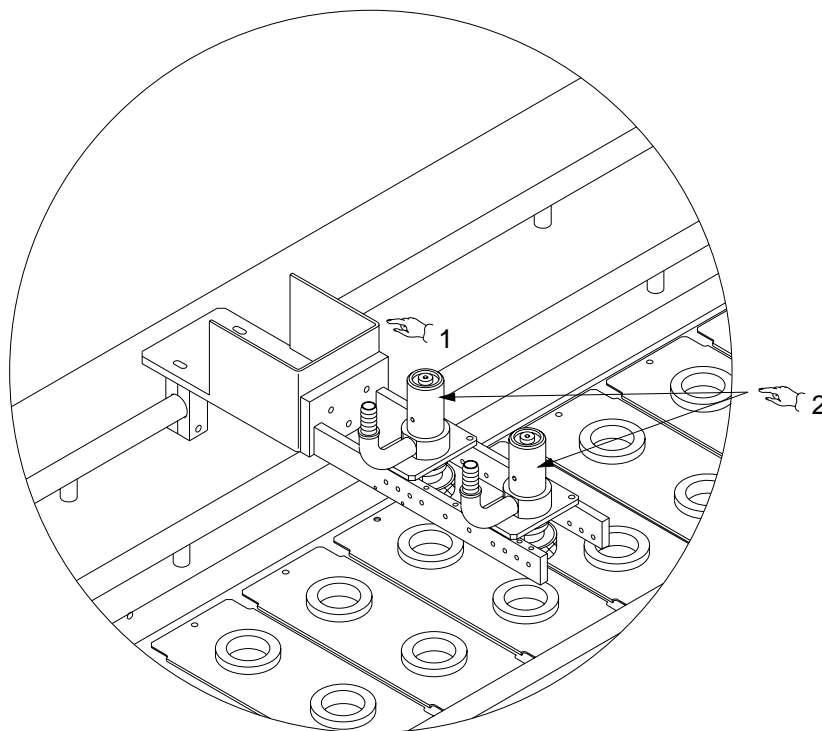
Time is adjusted by modifying the degrees on the cam.

The chocolate is fed into the cones by a gravity spray nozzle.



#### **WARNING:**

The water in the jacket must be heated at least half an hour before use. The water is heated by pressing button *A1* (*Fig. 6.2*).



**Fig. 6.10**

### 6.4.8 Granule station

This device, which is mounted on the structure, is used to spread nut granules, chocolate flakes or similar onto the product. The unit consists of a hopper (*Part. 1, Fig. 6.11*) connected to distribution channels (*Part. 2, Fig. 6.11*) along which the product flows due to the effect of the vibration induced by a vibrator.

The quantity of product to feed is obtained by suitably adjusting the start and duration of the dose on the programmer.

The quantity of granules can also be balanced as follows:

- slacken screws (*Part. 3, Fig. 6.11*) using the wrench and move the adjustable baffles (*Part. 3, Fig. 6.11*); lifting them increases the granule

feed while lowering them reduces the feed.

At the end of the adjustment, tighten the screws (*Part. 3 Fig. 6.11*) using the wrench;

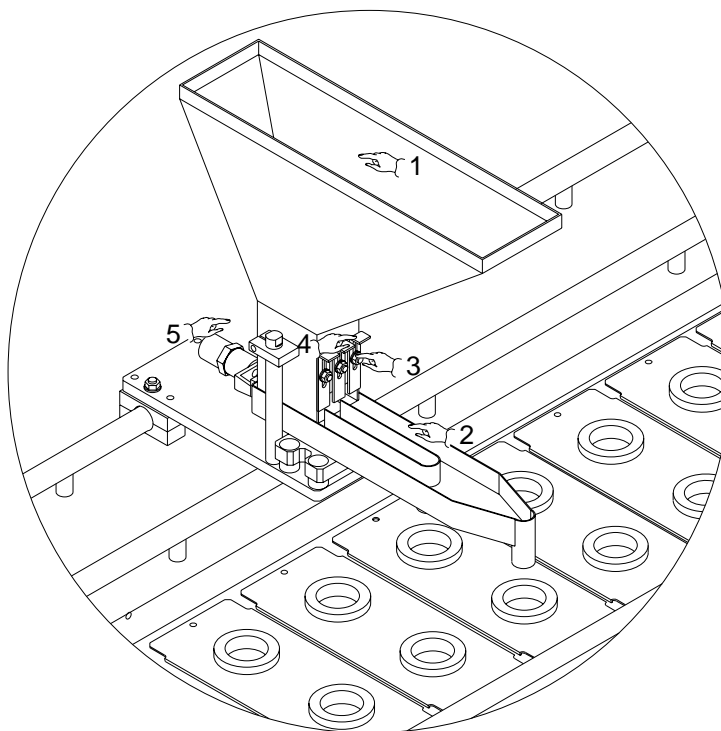
- turn the pressure regulator (*Part. 5 Fig. 6.11*) clockwise to increase the working pressure of the vibrator and therefore the quantity of granules fed, or turn it anticlockwise to reduce the quantity.

Adjust the position of the vibrator by varying its inclination with respect to the granule transfer channels.

The station is activated by pressing the button



(*Fig. 6.2*).



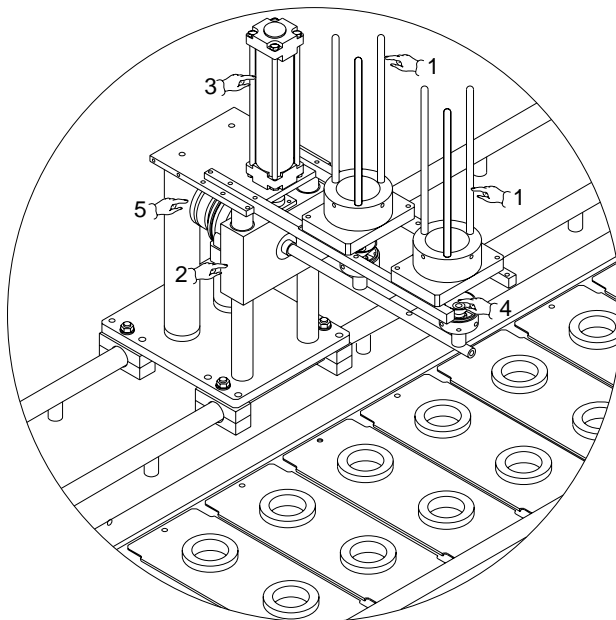
**Fig. 6.11**



### 6.4.9 Lid feed station

This station consists of lid magazines (*Part. 1, Fig. 6.12*) mounted on a support fixed to the structure and a mobile cross-member (*Part. 2, Fig. 6.12*), controlled by a pneumatic actuator (*Part. 3, Fig. 6.12*), which moves the lid pick-up suction cups.


During its upward travel, the suction cup support (*Part. 4, Fig. 6.12*) is rotated 180° by a rotary actuator (*Part. 5, Fig. 6.12*) which brings the suction cups into contact with the lids stacked in the magazines (*Part. 1, Fig. 6.12*).

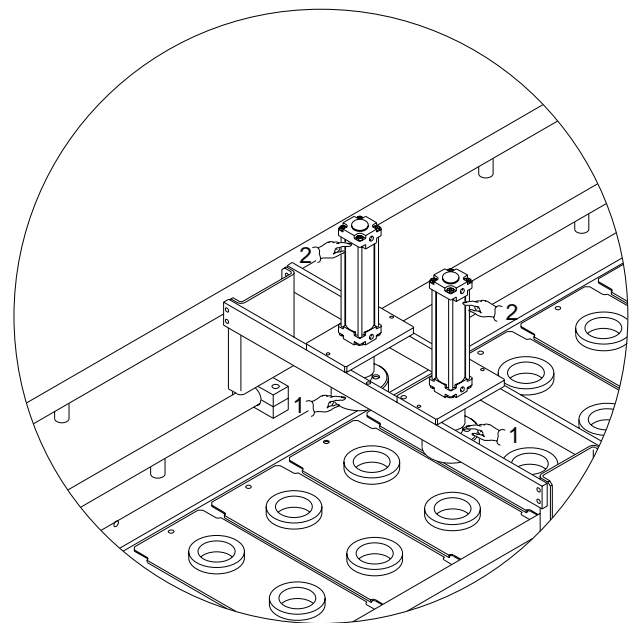


**Fig. 6.12**

When the suction cups make contact with the lids, a vacuum is generated allowing the lids to be picked up.

During the downward movement, the suction cup support (*Part. 4, Fig. 6.12*) is rotated 180° to position the lids over the cones. The vacuum switches off and the lids are released.

The station is activated by pressing the button  (*Fig. 6.2*). The vacuum control and the rotation of the cylinder are adjusted by means of the associated cams.




**Fig. 6.13**

### 6.4.10 Lid closing station

This station consists of crimping tools (*Part. 1, Fig. 6.13*) mounted on the structure and controlled by pneumatic actuators (*Part. 2, Fig. 6.13*).

The downward movement induced by the pneumatic actuators (*Part. 2, Fig. 6.13*) brings the crimping tools (*Part. 1, Fig. 6.13*) into contact with the cones and lids, allowing the lids to be fixed in position.

The process is activated by pressing the button  (*Fig. 6.2*) and adjusted by means of cams

through the operator interface, with the appropriate inputs in the electronic programmer.

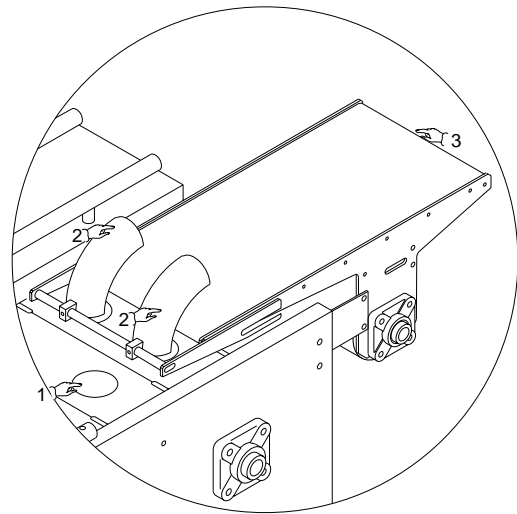
The position of each crimping tool is adjusted independently of the others by adjusting the nut and lock nut anchoring it to the stem of the cylinder.

### 6.4.11 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 (*Part. 1, Fig. 6.14*) in the lamellas enabling them to be ejected onto the belt (*Part. 2, Fig. 6.14*) by ejector elbows (*Part. 3, Fig. 6.14*).

The procedure for adjustment of the position of the belt and ejector elbows is described in section **5.3, Mechanical adjustments**.




**Fig. 6.14**

### 6.4.12 Cup feed station

The cup feeders (*Fig. 6.15*) mounted at the end of the machine feed the cups into the slots in the lamellas in synchrony with the movement of the trays.

The station consists of magazines (*Pos. 1/2, Fig. 6.15*), into which the cups are loaded manually, and a cup dispenser driven by pneumatic actuators (*Pos. 3, Fig. 6.15*).

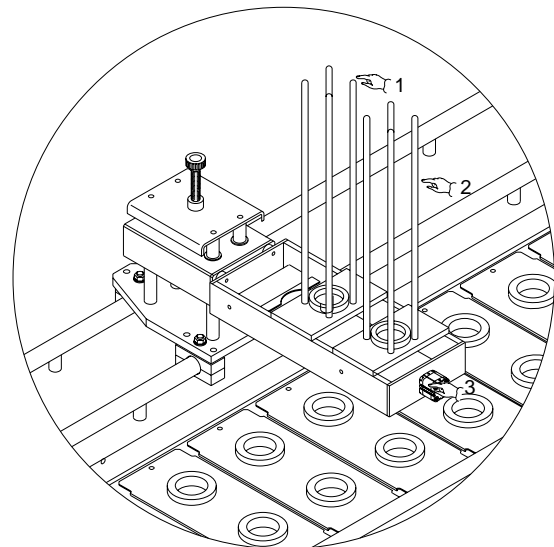
The station is activated by pressing the cup feed button  (*Fig. 6.2*) on the control panel.

The timing of the movements can be modified by adjusting the corresponding cams.

The release and the insertion of the cup in the slot take place with 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 the 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.




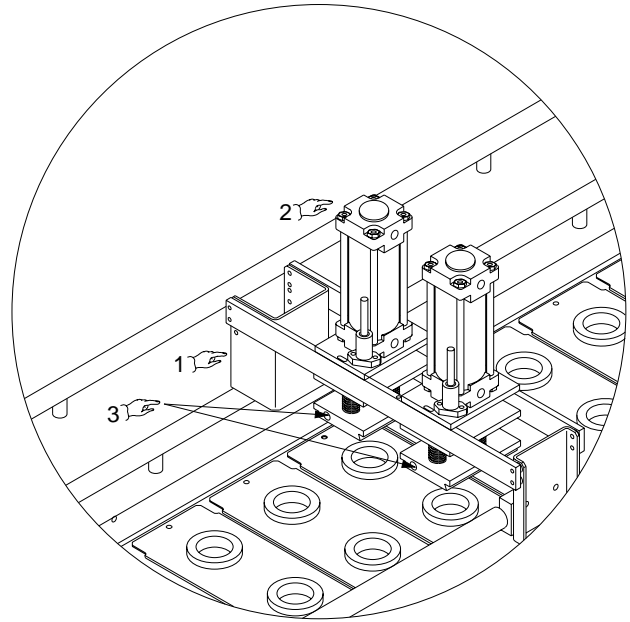
**Fig. 6.15**

### 6.4.13 Lid sealing station (optional)

This station consists of sealing heads (*Part. 3, Fig. 6.16*) mounted on the structure (*Part. 1, Fig. 6.16*) and controlled by pneumatic actuators (*Part. 2, Fig. 6.16*).

The downward movement induced by the pneumatic actuators (*Part. 2, Fig. 6.16*) brings the sealing heads (*Part. 3, Fig. 6.16*) into contact with the cups and lids, sealing them.


The process is activated by pressing the  button (*Fig. 6.2*) and adjusted by means of cams through the operator interface, with the appropriate inputs in the electronic programmer. The position of each sealing head is adjusted independently of the others by adjusting the nut and lock nut anchoring it to the stem of the cylinder.

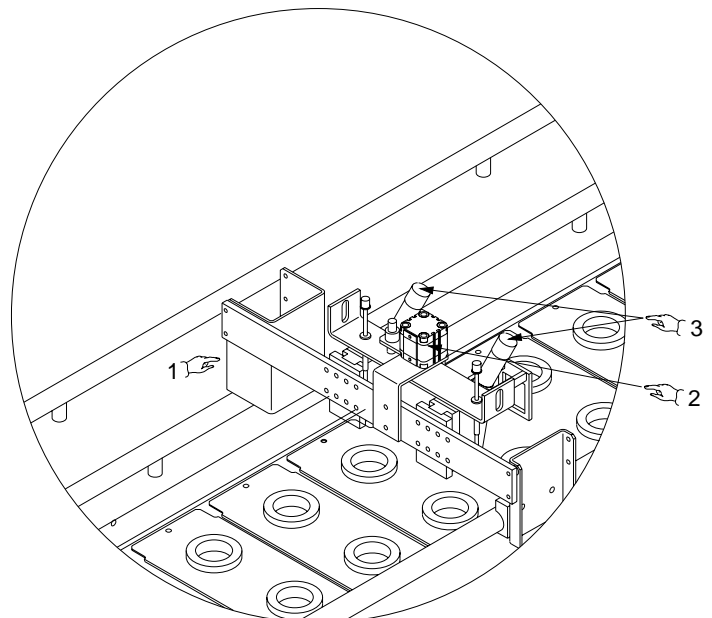


**Fig. 6.16**

### 6.4.14 Date stamp station (optional)

This station consists of stamps (*Part. 3, Fig. 6.17*) mounted on the structure (*Part. 1, Fig. 6.17*) and controlled by pneumatic actuators. Two feeler pins controlled by a pneumatic actuator (*Part. 2, Fig. 6.17*) detect lid presence and enable stamping.

The station is activated using the  button (*Fig. 6.2*) and adjusted by means of cams through the operator interface, with the appropriate inputs in the electronic programmer.



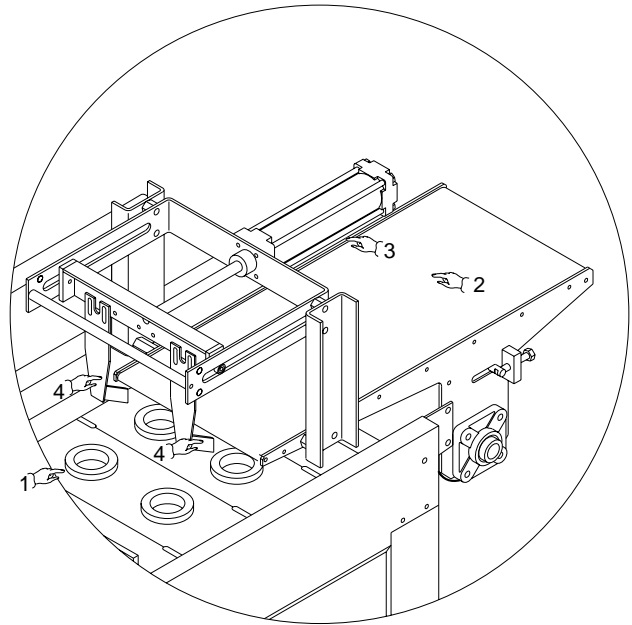
**Fig. 6.17**

### 6.4.15 Cup ejector station

This station is mounted underneath the lamellas. It is controlled by a cam and supports the pushers which eject the cups.

The upward movement allows the ejectors to lift the cups from the slots on the lamellas (*Part. 1, Fig. 6.18*) and eject them onto the belt (*Part. 2, Fig. 6.18*) by means of pneumatic actuators (*Part. 3, Fig. 6.18*) which control two pick-up tools (*Part. 4, Fig. 6.18*), sending them to the ejector. Belt position adjustment:

Following product changeover to a different cup diameter, it may be necessary to change the forks used to push the product onto the belt, change to an the ejector plate of a different diameter and shape, and adjust the longitudinal axis of belt position to optimise cup conveyance.



**Fig. 6.18**


### 6.4.16 Flame cone chocolate spray station (optional)

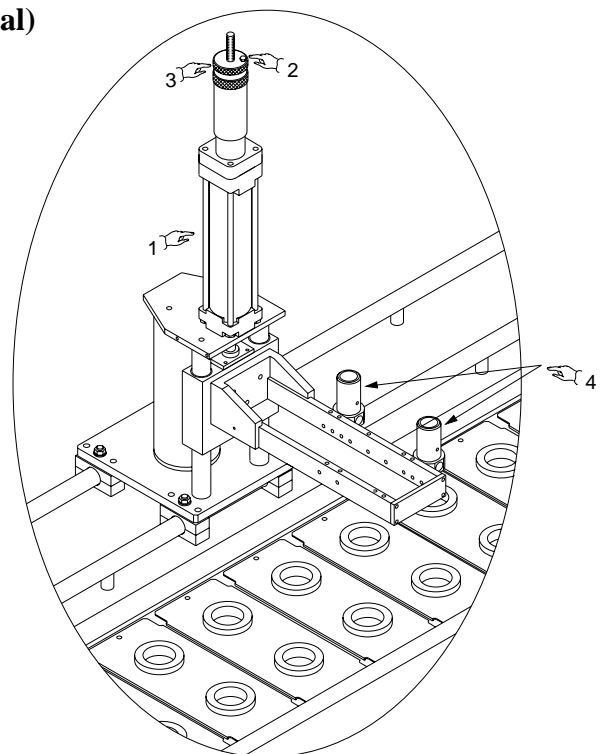
A fixed structure supports a pneumatic actuator (*Part. 1, Fig. 6.19*) which controls the up and down movement of the mobile frame. The travel of the pneumatic actuator can be adjusted by slackening the screw (*Part. 2, Fig. 6.19*) and rotating the ring nut (*Part. 3 Fig. 6.19*) clockwise to increase the travel of the pneumatic actuator and anticlockwise to shorten it.

At the end of the adjustment, tighten screws (*Part. 2 Fig. 6.19*).

The travel of the pneumatic actuator must be adjusted to control the entry of the chocolate sprayer nozzle into the cone.

Two chocolate sprays (*Pos. 4, Fig. 6.19*) are mounted on the rear of the frame.

The station is activated by the “chocolate spray” button on the control panel  (*Fig. 6.2*).



**Fig. 6.19**

### 6.4.17 Rotary dosing station (optional)

Cups are filled with ice cream by dosers (*Pos. 3, Fig. 6.20*) driven by pneumatic actuators (*Pos. 4, Fig. 6.20*).

A fixed structure (*Pos. 1, Fig. 6.20*) supports a servomotor (*Pos. 2, Fig. 6.20*) which controls the up and down movement of the mobile frame. The start and duration of the mobile frame movement, which must be synchronised with the stop phase of the lamellas, can be adjusted from the control panel which is interfaced with the PLC.


Two dosers (*Pos. 3, Fig. 6.20*) equipped with rotating nozzles (*Pos. 4, Fig. 6.20*) are mounted on the frame. These dosers feed the required

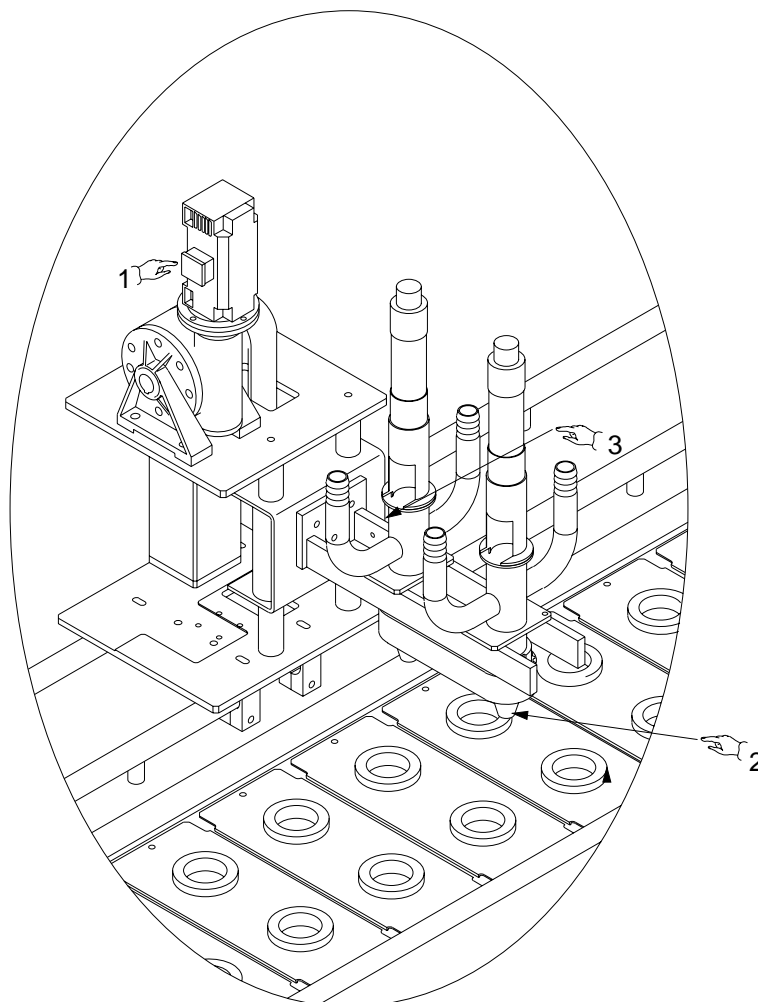
quantity of ice cream into the cups.

The quantity of ice cream required can be obtained by changing the speed of the freezer and, from the operator interface 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 (*Pos. 6, Fig. 6.20*).

The dosing station is activated by pressing the

“ice cream doser” buttons  (*Fig. 6.2*) which automatically close the bypass.



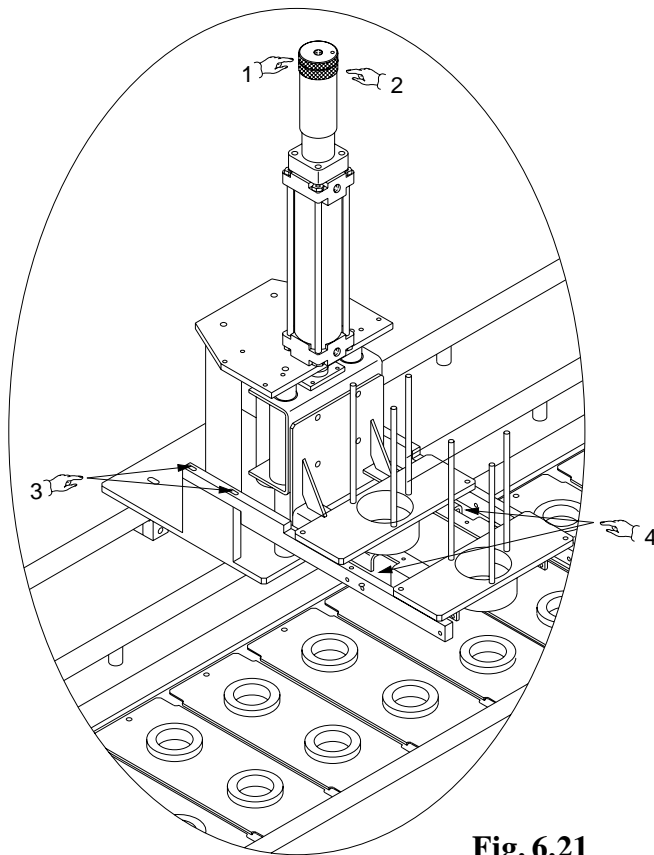
**Fig. 6.20**

### 6.4.18 Flame cone lid feed station (optional)

This station consists of lid magazines mounted on a support fixed to the structure and a mobile cross-member controlled by a pneumatic actuator (*Part. 1, Fig. 6.21*), which moves the lid grippers (*Part. 4, Fig. 6.21*).

The pick-up movement of the grippers (*Part. 4, Fig. 6.21*) is achieved by pneumatic micro-cylinders.

The stationary structure supports a pneumatic actuator (*Part. 2, Fig. 6.21*) which controls the



**Fig. 6.21**

### 6.4.19 Tube feed and gauge station (optional)


This station consists of tube magazines mounted on a mobile support assembled on the structure and of a mobile cross-member controlled by a pneumatic actuator (*Part. 3, Fig. 6.22*) which moves the tube dispensers and gauges (*Part. 5/6, Fig. 6.22*).

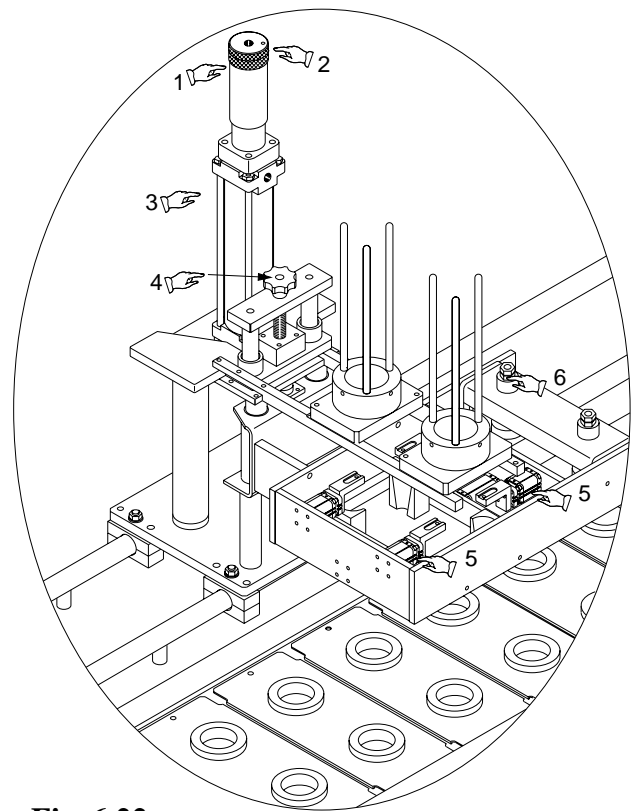
To adjust the maximum height of the container pick-up unit (*Part. 5, Fig. 6.22*), loosen the lock nut (*Part. 1, Fig. 6.22*) and then adjust the ring nut (*Part. 2, Fig. 6.22*) to obtain the optimum position, turning it clockwise to increase the

upward and downward movement of the mobile crosspiece.

The travel of the pneumatic actuator can be adjusted by slackening the screw (*Part. 1, Fig. 6.21*) and rotating the ring nut (*Part. 3 Fig. 6.21*) clockwise to increase the travel of the pneumatic actuator and anticlockwise to shorten it.

At the end of the adjustment, tighten the screw (*Part. 2 Fig. 6.21*).

The station is activated by pressing the  button (*Fig. 6.2*).




**Fig. 6.22**

travel of the pneumatic actuator (*Part. 3, Fig. 6.22*) or anticlockwise to decrease it.

To adjust the gauging cones, adjust the nuts and lock nuts (*Part. 4, Fig. 6.22*).

The gauges are mounted on springs so that they will adapt perfectly to the shape of the container in the slot (even if pick-up height is changed). Carry out the above procedure during format changes.

The station is activated by pressing the  button (*Fig. 6.2*).



### 6.4.20 Volumetric dosing station (optional)


This station consists of a hopper assembled on the structure on which is mounted a level control, a pneumatically controlled rotary dispenser and a dosing cylinder. A mobile cross-member controlled by a pneumatic actuator supports and moves the dosers.

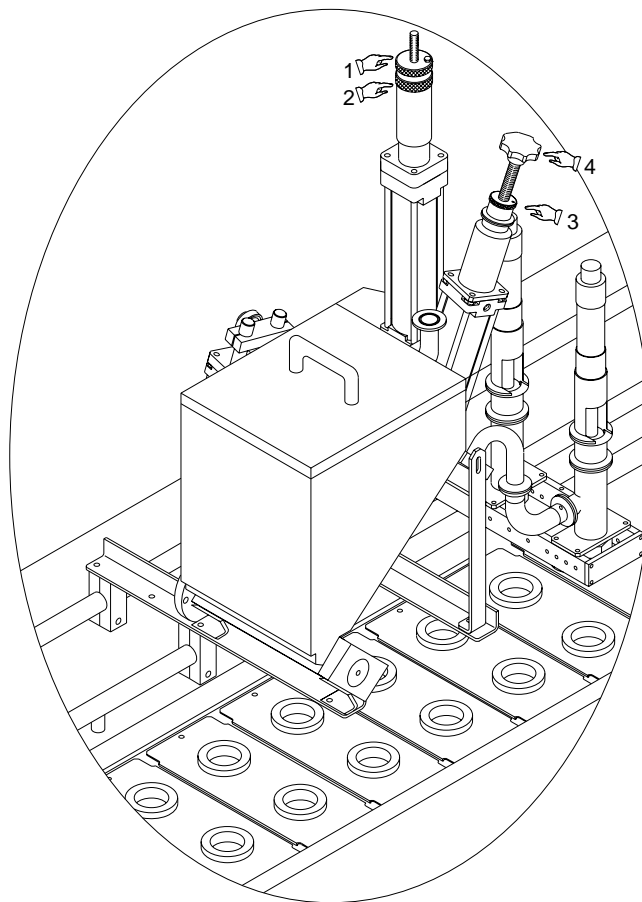
The position of the dosers may be adjusted by slackening the lock nut (*Part. 1, Fig. 6.23*) using the wrench and then adjusting the ring nut (*Part. 2, Fig. 6.23*), turning it clockwise to increase the travel of the pneumatic actuator or anticlockwise to decrease it.

Tighten the lock nut (*Part. 1, Fig. 23*) when finished.

The normal position of the end part of the dosing nozzles when in the dosing position should be inside the container below the lid positioning level in order not to cause damage to the ice cream decoration after pressing the lid.

To adjust dosage volume, slacken the lock nut (*Part. 3, Fig. 6.23*) and turn the knob (*Part. 4, Fig. 6.23*) clockwise to increase volume or anticlockwise to decrease it.


The station is activated by pressing the  button (*Fig. 6.2*).

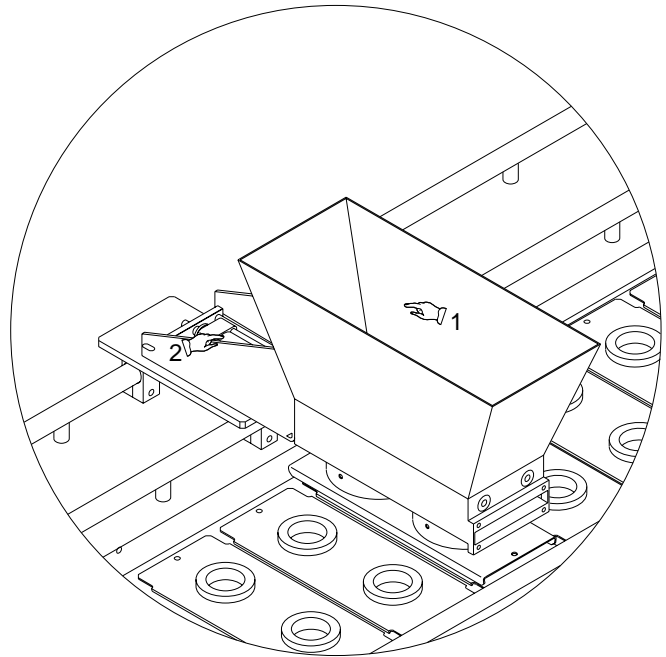


**Fig. 6.23**

### 6.4.21 Cocoa dispenser station (optional)

This device assembled on the structure sprinkles cocoa powder or a similar substance on top of the product. It consists of a hopper (*Pos. 1, Fig. 6.24*) containing powder which is dispensed by a movement controlled by a pneumatic actuator (*Pos. 2, Fig. 6.24*).


The station is activated by pressing the  button (*Fig. 6.2*).

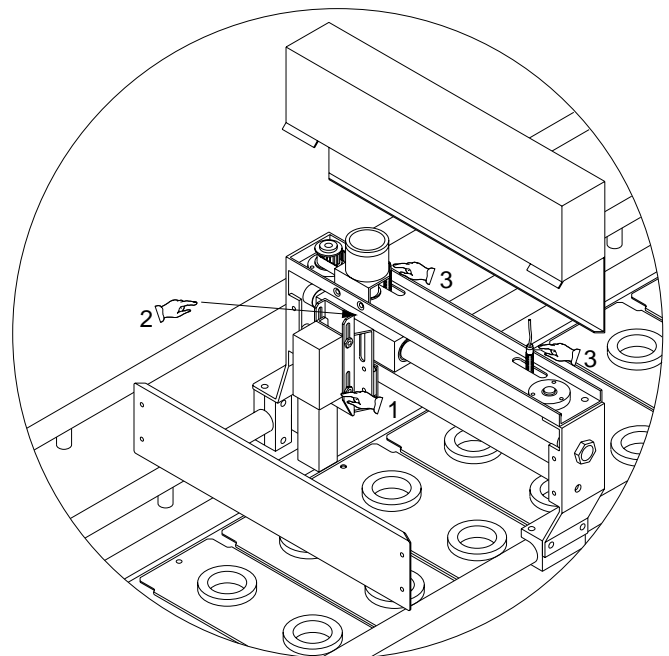


**Fig. 6.24**

### 6.4.22 Ink jet stamp station

This device assembled on the structure stamps letters and numbers on product lids. It consists of a stamp head (*Pos. 1, Fig. 6.25*) controlled by a pneumatic actuator (*Pos. 2, Fig. 6.25*). Please refer to the enclosed manual for stamp head use and maintenance instructions.

The station is activated by pressing the  button (*Fig. 6.2*).



**Fig. 6.25**



## **HOYER COMET C**

### **7 - CLEANING AND MAINTENANCE**

#### **Contents**

---

7.1	Cleaning and washing .....	7-2
7.1.1	Recommended products .....	7-2
7.2	Routine maintenance .....	7-2
7.2.1	Beginning of the season .....	7-2
7.2.2	Daily .....	7-2
7.3	Chocolate spray nozzle maintenance .....	7-3
7.4	Doser maintenance .....	7-3
7.5	Topping maintenance .....	7-4
7.6	Pencil filler maintenance .....	7-4
7.7	Lamella drive chain tension .....	7-5
7.8	Belt tension .....	7-5

## 7.1 Cleaning and washing

Make sure that the main switch is OFF before washing the machine.

The filling machine washing operations comprise the following stages:

- a- Prewash with hot water (50°).
- b- Detergent wash. Use a foam-forming alkaline detergent or gel with high fat-emulsifying power. Concentration may vary between 2% and 10% according to the amount of dirt and the hardness of the water used.
- c- Rinse with water. Wait for at least 10 minutes then rinse thoroughly to remove the saponified and emulsified dirt.

- d- Descaling wash. Use a low-viscosity acid descaler containing a mixture of wetting and emulsifying agents. Concentration may vary between 2% and 3%. The minimum recommended contact time is 15 - 20 minutes.
- e- Rinse with water.
- f- Disinfectant wash. Use a suitable disinfectant diluted in water. Concentration may vary between 1% and 1.2%. The minimum recommended contact time is 15 - 20 minutes.
- g- Rinse with water.



**Warning:**

Do not use high-pressure water jets.

### 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 Manutenzione ordinaria

### 7.2.1 Beginning of the season

- wash the machine thoroughly; see paragraph **7.1 - Cleaning and washing**
- remove the dosers and pipes then thoroughly wash and disinfect;
- check the condition of the seals and replace if necessary;
- lubricate the seals;  
*material required:* vaseline oil;
- check that the emergency stop buttons and cords work correctly;
- perform a general inspection and tighten all loose screws;
- make sure that none of the connections leak;
- check that all moving parts work correctly and replace if necessary;

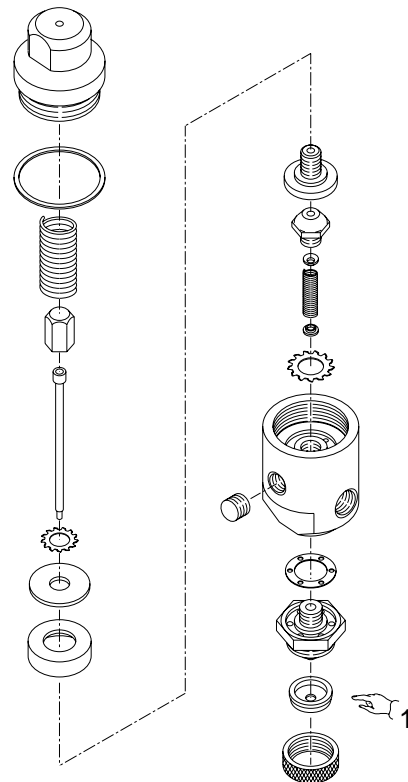
### 7.2.2 Daily

- wash the machine at the end of the production shift; see paragraph **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 the seals, then dry the various components and lubricate them using neutral vaseline before refitting.  
*material necessary :* vaseline oil
- check the oil level in vibrator lubricator glass or twister dosers.

### 7.3 Chocolate spray nozzle maintenance

Each day, at the end of the working cycle use the dosing pump to pump warm water through the chocolate feed pipe.

Periodically, and when required, dismantle the end of the chocolate spray nozzle (*Pos.1, Fig.7.1*) to restore its correct operation.



**Fig. 7.1**

### 7.4 Doser maintenance

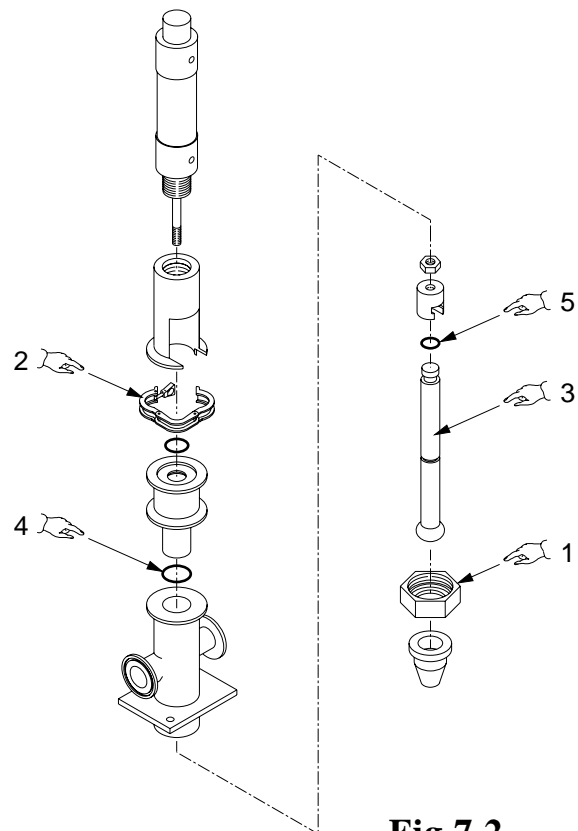
Periodically check the efficiency of the dosers. Proceed as follows:

- 1 - Shut-off the compressed air supply;
- 2 - Slacken the screws holding the doser retaining bar;
- 3 - Remove the doser;
- 4 - Dismantle the doser:
  - by unscrewing the bottom ring-nut (*Pos.1, Fig.7.2*);
  - opening the joining clamp between the lower and upper parts (*Pos.2, Fig.7.2*);
  - extracting 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 worn, ice-cream will leak from the top of the doser.

- 5 - Wash using the recommended products (see washing table) and reassemble.



**Fig.7.2**

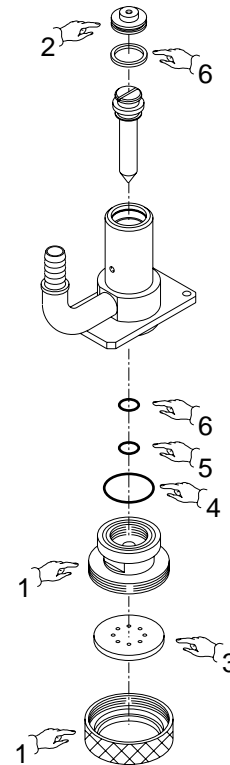
## 7.5 Topping maintenance

Each day, at the end of the working cycle use the dosing pump to pump warm water through the chocolate feed pipe.

Periodically, and when required, dismantle the ends of the doser (*Pos.1, Fig.7.3*) and the cover (*Pos.2, Fig.7.3*).

With the doser dismantled, check the efficiency of the O-rings (*Pos.4-5-6, Fig.7.3*).

Wash using the recommended products (see washing table), and reassemble.



**Fig. 7.3**

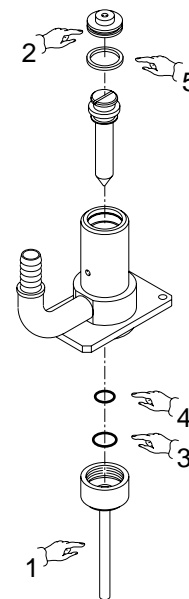
## 7.6 Pencil filler maintenance

Each day, at the end of the working cycle use the dosing pump to pump warm water through the feed pipe.

Periodically, and when required, dismantle the doser nozzle (*Pos.1, Fig.7.4*) and the cover (*Pos.2, Fig.7.4*).

When the doser dismantled, check the efficiency of the O-rings (*Pos.3-4-5, Fig.7.4*).

Wash using the recommended products (see washing table), and reassemble.



**Fig.7.4**

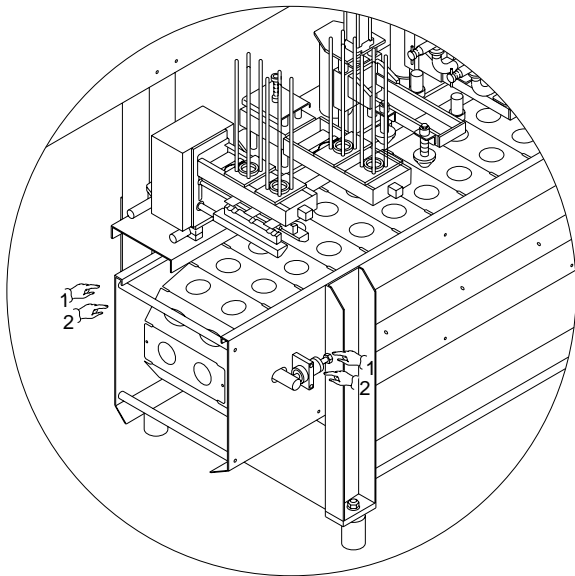
## 7.7 Lamella drive chain tension

---

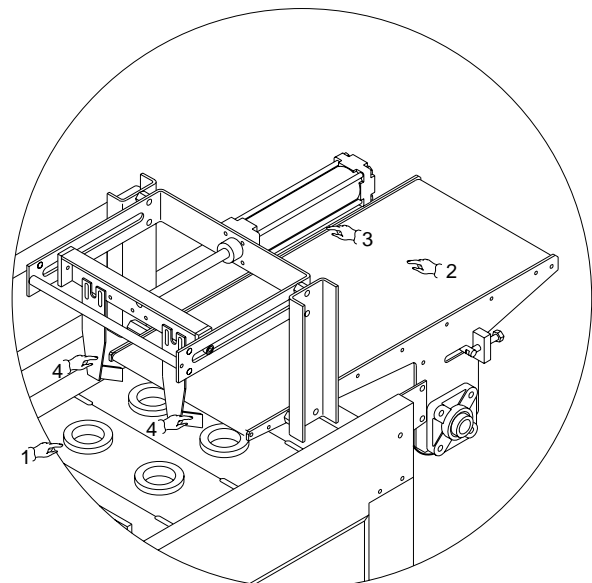
Periodically check the tension of the lamella drive chain. Proceed as follows:

1 - Unscrew the lock-nut (*Pos.1, Fig.7.5*) and adjust the tensioning screw (*Pos.2, Fig.7.5*)

until the correct working tension is obtained;  
2 - Tighten the lock-nut (*Pos.1, Fig.7.5*).



**Fig.7.5**



**Fig. 7.6**

## 7.8 Belt tension

---

Periodically check the tension of the smooth conveyor belt. Proceed as follows:

1 - Unscrew the lock-nut (*Pos.1, Fig.7.6*) and adjust the tensioning screw (*Pos.2, Fig.7.6*)

until the correct working tension is obtained;  
2 - Tighten the lock-nut (*Pos.1, Fig.7.6*).

## HOYER COMET C

### 9 - SPARE PARTS CATALOGUE

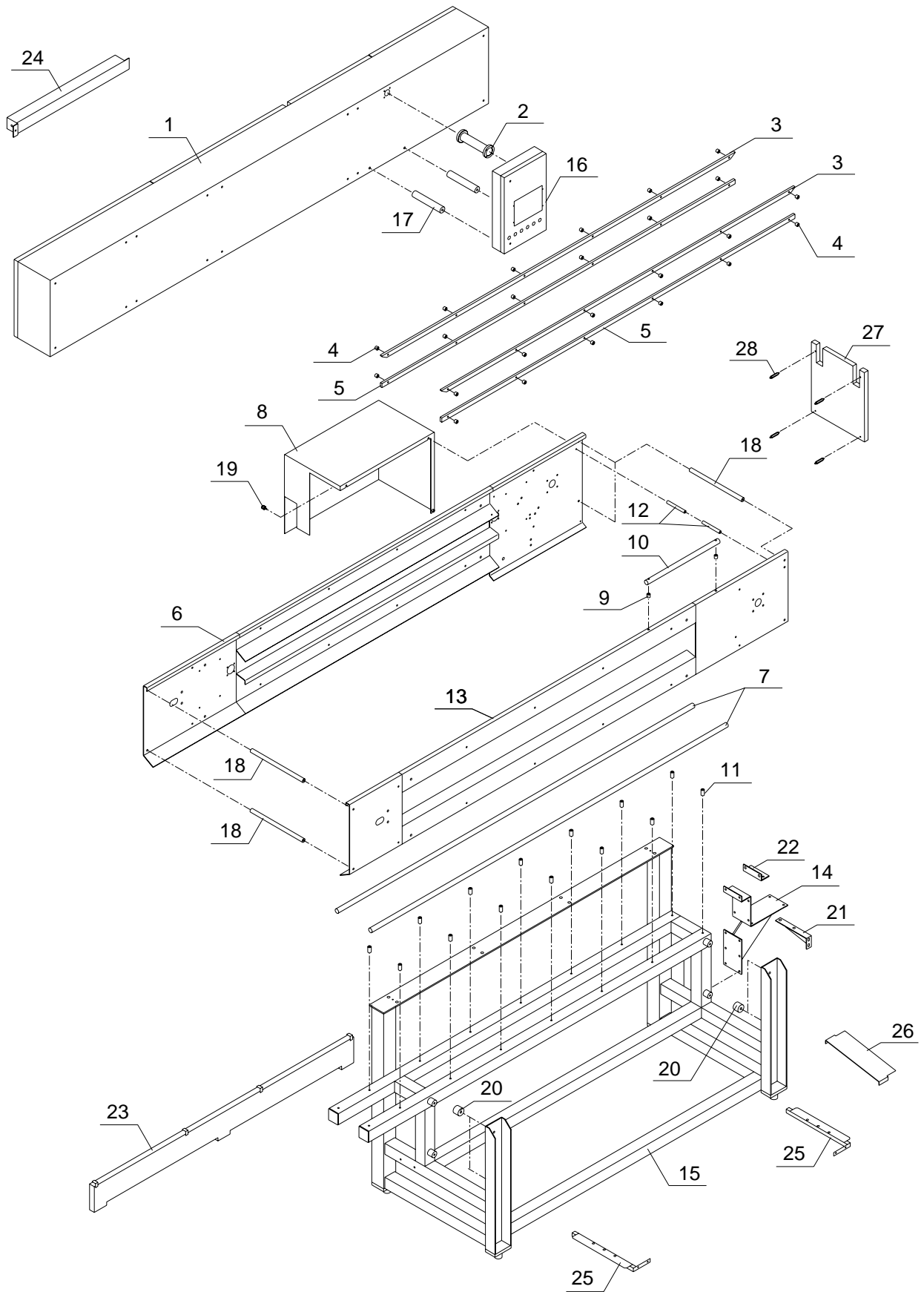
#### Contents

---

9.1	Structure .....	9-2
9.2	Motor drive .....	9-4
9.3	Ejector .....	9-6
9.4	Feed.....	9.8
9.5	Tensioner .....	9-10
9.6-7	Cone feed.....	9-12/14
9.8	Cup feed .....	9-16
9.9	Station movement .....	9-18
9.10	Gauge and chocolate spray station .....	9-20
9.11	Two-flavour dosers .....	9-22
9.12	Concentric two-flavour doser .....	9-24
9.13	Decorator .....	9-26
9.14	Rotating doser .....	9-28
9.15-16	Flame cone doser movement .....	9-30/32
9.17	By-pass .....	9-34
9.18	Topping station .....	9-36
9.19	Granule station .....	9-38
9.20	Lid feed .....	9-40
9.21	Dome-shaped lid feed .....	9-42
9.22	Lid feed .....	9-44
9.23-24	Flame cone lid feed .....	9-46/48
9.25	Cone/dome-shaped lid closing station .....	9-50
9.26	Cup lid closing station .....	9-52
9.27	Lid sealing station .....	9.54
9.28-29	Tube feed .....	9-56/58
9.30	Tube gauge .....	9-60
9.31-33	Volumetric doser .....	9-62/66
9.34-35	Ink-jet stamp .....	9-68/70
9.36	Date stamp .....	9-72
9.37	Pencil filler .....	9-74
9.38	Cone ejector belt .....	9-76
9.39.40	Cup ejector belt .....	9-78/80
9.41	Chocolate tank .....	9-82
9.42	Chocolate spray pump .....	9-84
9.43	Chewing gum dispenser.....	9-86
9.44	Cocoa dispenser .....	9-88

**Structure - Fig. 9.1**

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040002	Electro-pneumatic panel	1
2	12040003	Panel connection tube	1
3	12040014	Chain guide	2
4	12040013	17 mm chain guide spacer	24
5	12040015	Lower chain guide	2
6	12040008	Motor LH side panel	1
7	12040017	Station support bar	2
8	12040004	Motor casing	1
9	12040019	Bar spacer	2
10	12040018	External support bar	1
11	12040012	38 mm spacer	14
12	12040006	Spacer	2
13	12040009	Outer RH panel	1
14	12040010	Indexing gear unit support bracket	1
15	12040001	Load bearing frame	1
16	12040020	Control panel	1
17	12040023	Panel support bar	2
18	12040016	End spacer	4
19	12040005	Casing support pin	2
20	12040007	40 mm spacer	4
21	12040923	Indexing gear unit support bracket corner piece	1
22	12040924	Indexing gear unit support bracket corner piece	1
23	12040921	Cable duct	1
24	12040293	Air tank	1
25	12040668	Washing/drying hose	2
26	12040669	Washing cover	1
27	12040745	Rear casing	1
28	12040746	Casing spacer	8

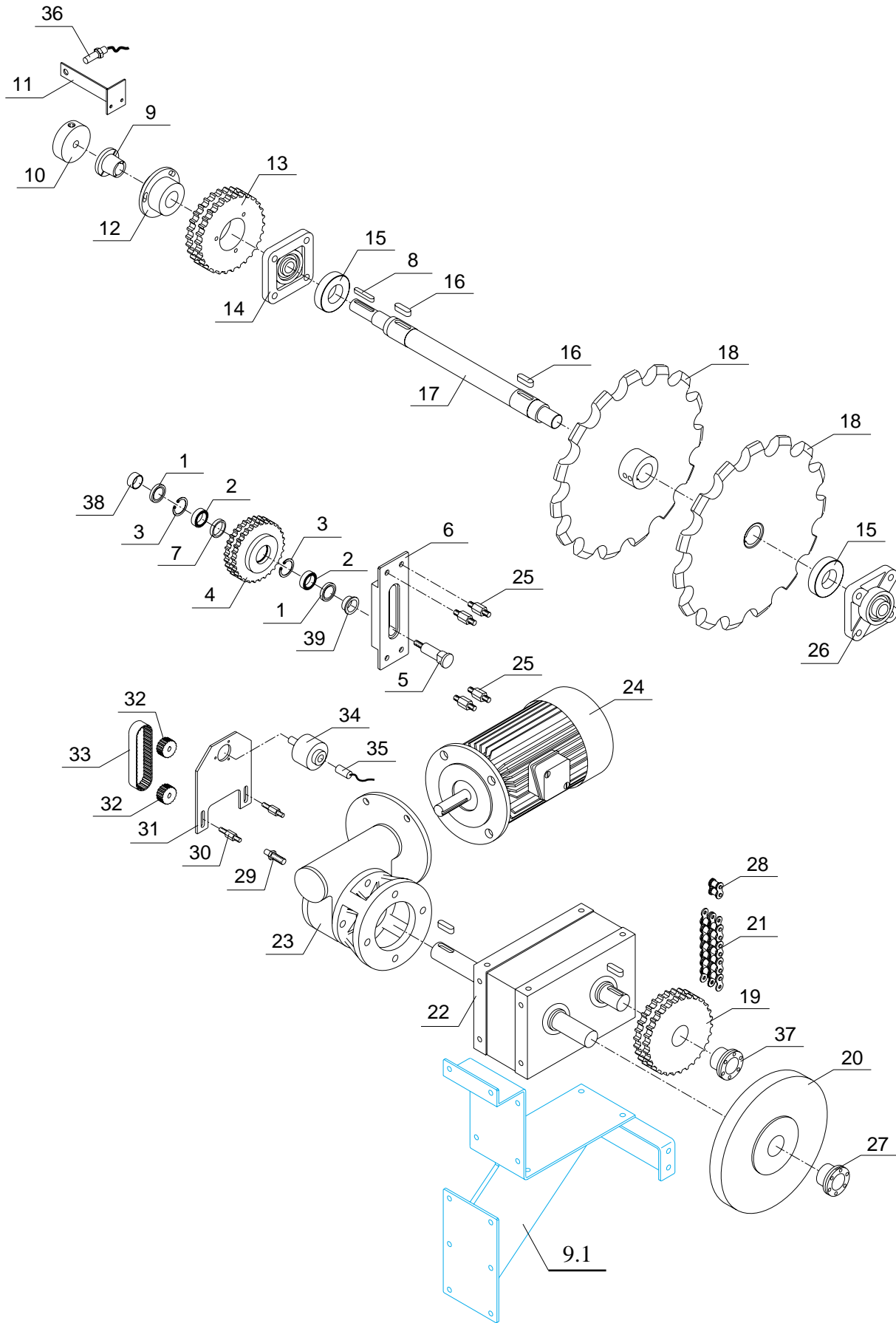


**Fig. 9.1 - Structure**



**Motor drive - Fig. 9.2**

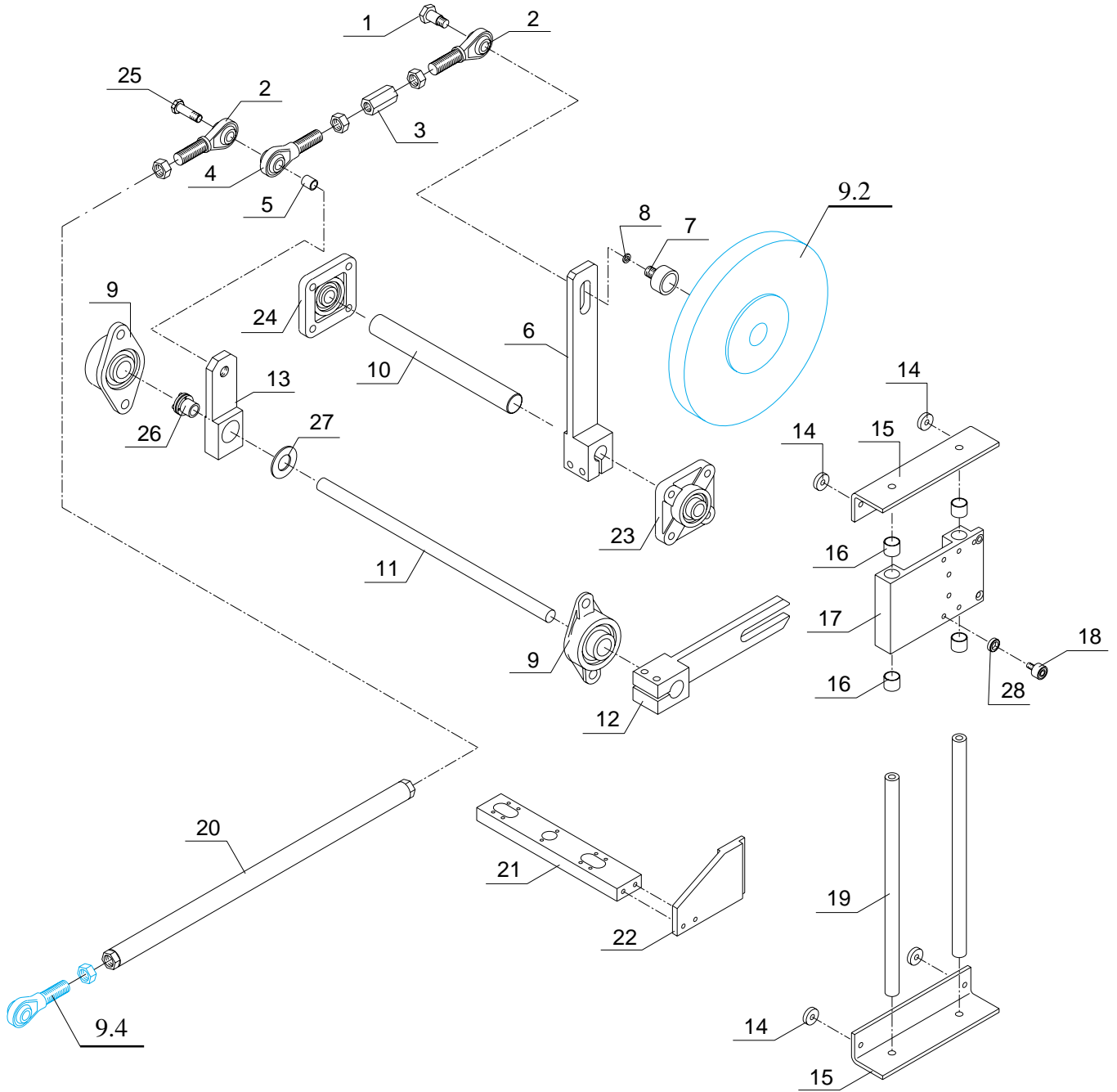
POS.	CODE	DESCRIPTION	Q.TY
1	336071173	Corteco seal	2
2	336001306	Bearing	2
3	326019137	Circlip	2
4	12040064	Gear wheel	1
5	12040033	Tensioning pin	1
6	12040032	Tensioner support	1
7	12040030	Tensioning pin spacer	1
8	326013111	Key	1
9	120400069	Tapered bush	1
10	12040072	Proximity washer	1
11	12040294	Proximity support	1
12	12040070	Plate for tapered bush	1
13	12040071	Motor gear wheel for pitch 140	1
14	17000015	Support UCF-R-55206R	1
15	12040051	Backing washer	2
16	326013156	Key	2
17	120040049	Chain motor shaft	1
18	12040043	Drive wheel	2
19	12040024	Indexing gear unit pinion	1
20	12040050	Load/Unload cam	1
21	33617058	Chain	1.15
22	12040068	Indexing gear unit	1
23	336010189	Reduction gear	1
24	014940024	Motor	1
25	12040067	Tensioner spacer	4
26	17000016	Support UCF-R-50206R	1
27	336005845	ETP 20 bush	1
28	336017346	3/4" mesh	1
29	12041182	Pulley pin	1
30	12041181	Encoder plate spacer	1
31	12041179	Encoder plate	1
32	VK50C20001	Encoder pulley	2
33	17040059	Belt 6-T2.5/480	1
34	17000120	Encoder H11220/1024	1
35	17000121	Encoder cable	1
36	017035921	Proximity sensor XS1-N12PA340	1
37	12040025	Motor gear bush	1
38	12040041	Tensioner pin spacer	1
39	12040040	Tensioner pin spacer	1
13a	12040284	Motor gear wheel for pitch 210	1



**Fig. 9.2 - Motor drive**

## Ejector - Fig. 9.3

POS.	CODE	DESCRIPTION	Q.TY
1	12040060	Uniball anchor pin	1
2	17040020	Coupling	2
3	12040020	Tie bolt	1
4	17040021	Coupling	1
5	12040066	Spacer	1
6	12040036	Kinematic motion rod	1
7	336008106	Idler pin	1
8	12040031	Roller spacer	1
9	17000048	UFL-2-59204Z kojo support	2
10	12040047	Load side shaft	1
11	12040203	Unload side shaft	1
12	12040278	Carriage lever	1
13	12040207	Double lever	1
14	12040281	Fixing spacer	4
15	12040280	Guide fixing bracket	2
16	17040410	Bush	4
17	12040279	Unload side carriage	1
18	336003151	Idler pin	1
19	12040279	Guide column	2
20	12040038	Lever tie rod	1
21	12040092	Crosspiece	1
22	12040813	Carriage extension	1
23	17060017	UCF-R 50205 AR support	1
24	17000018	UCF-R 55205 AR support	1
25	12040065	Uniball pin	1
26	336005845	EPT 20 bush	1
27	12040708	Backing washer	1
28	12040295	Lever/roller spacer	1

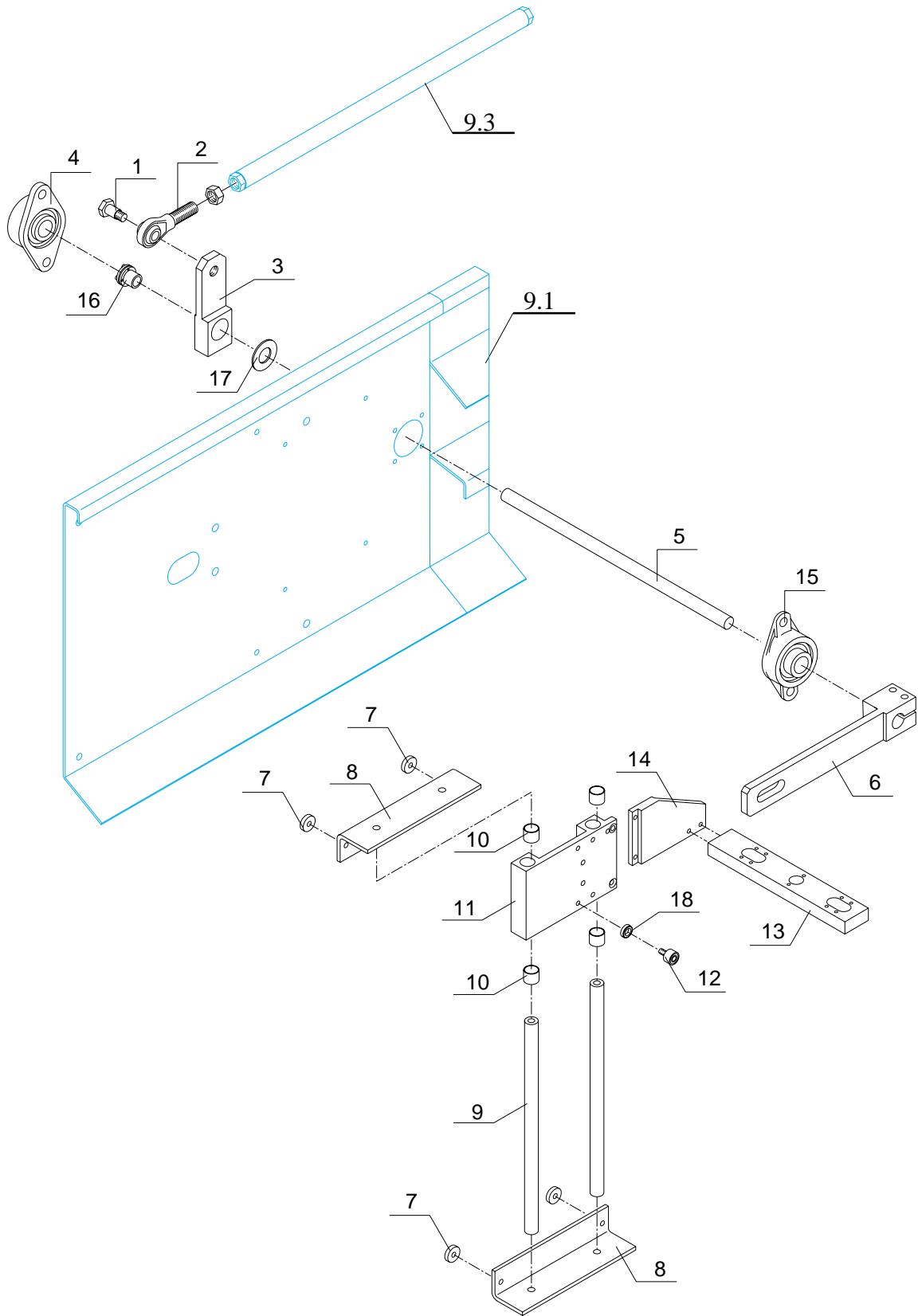


**Fig. 9.3 - Ejector**

**Feed - Fig. 9.4**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040060	Uniballfixingpin	1
2	17040020	Coupling	1
3	12040207	Lever	1
4	17000049	UFL-Z 54204 support	1
5	12040205	Load side shaft	1
6	12040204	Lever	1
7	12040281	Fixingspacer	4
8	12040280	Guidefixingbracket	2
9	12040279	Guidecolumn	2
10	17000410	Bush	4
11	12040277	Load side carriage	1
12	336003151	Idlerpin	1
13	12040092	Crosspiece	1
14	12040836	Carriageextension	1
15	17000048	UFL-Z-59204 support	1
16	336005845	ETP 20 bush	1
17	12040708	Backing washer	1
18	12040295	Lever/roller spacer	1

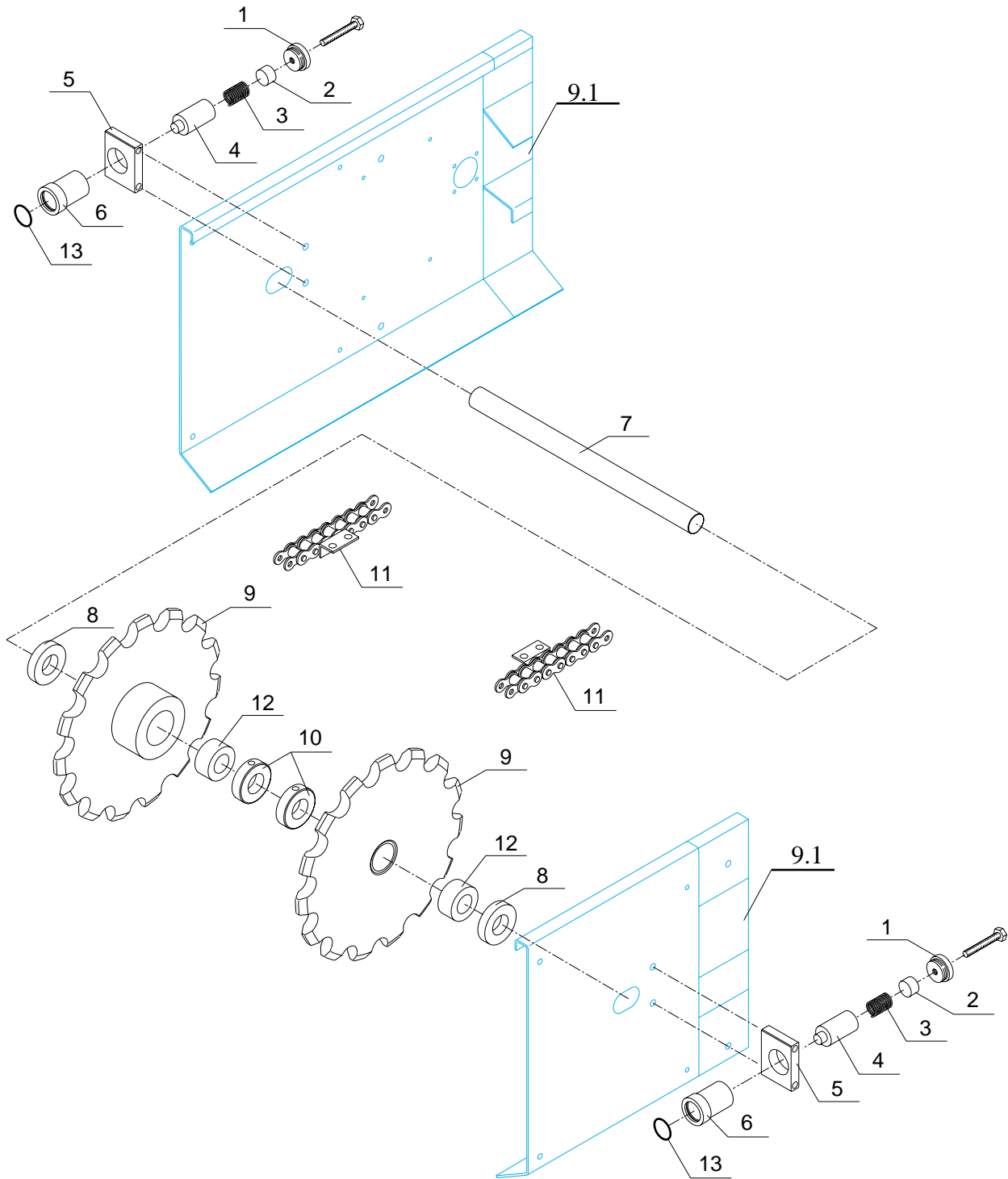


**Fig. 9.4 - Feed**

**Tensioner - Fig. 9.5**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040058	Tensioner end piece	2
2	12040057	Spring cap	2
3	12040056	Tensioning spring	2
4	12040059	Tensioning piston	2
5	12040042	Support	2
6	12040053	Tensioner body	2
7	12040048	Driven shaft	1
8	12040051	Backing washer	2
9	12040044	Driven wheel	2
10	12040052	Stop ring	2
11	12040190	Chain for pitch 140	<del>x</del> 2
11a	12040192	210 link chain for pitch 210	2
12	336005051	Bush	2
13	336067092	O-ring 144	2

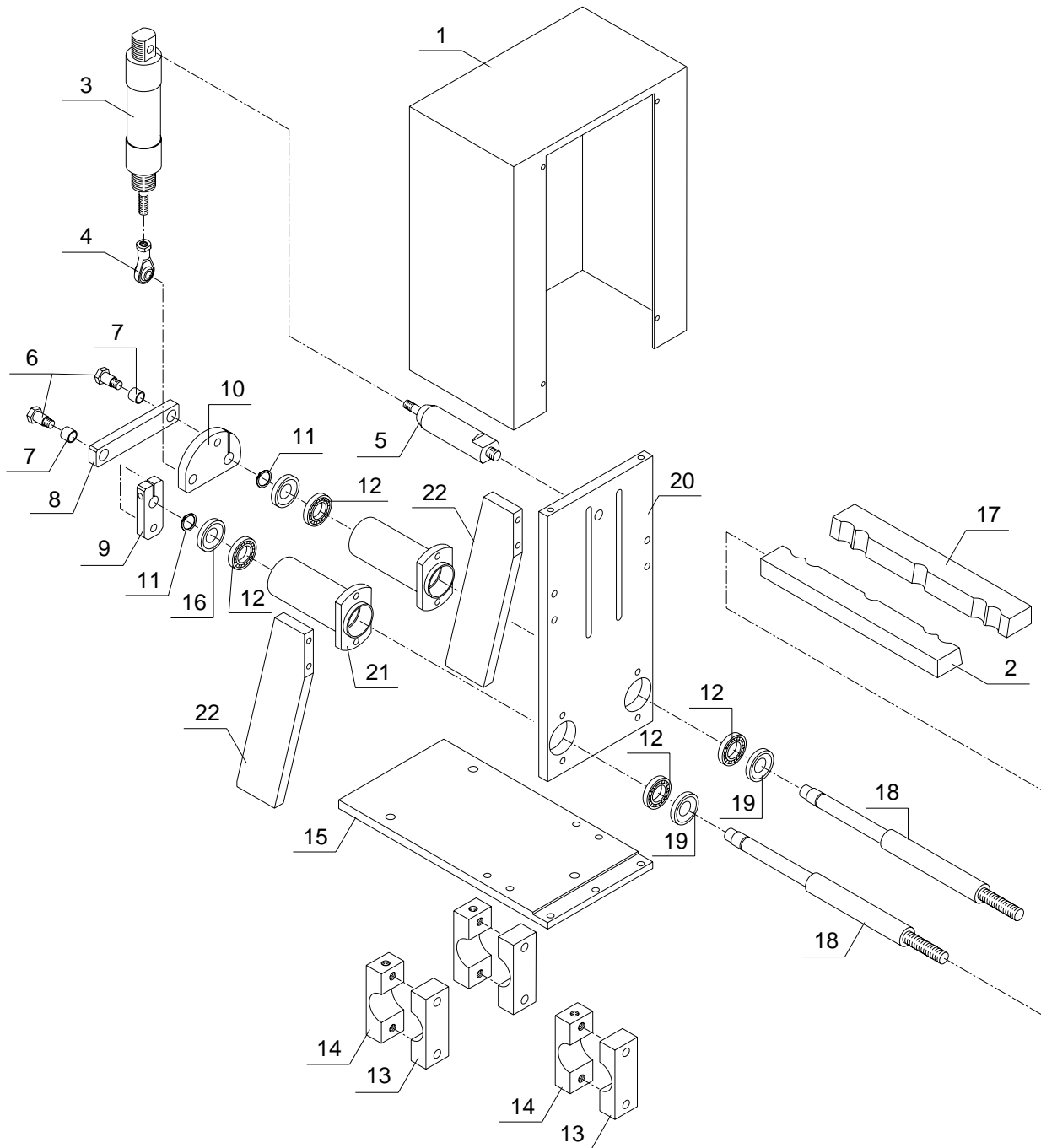


**Fig. 9.5 - Tensioner**



**Cone feed - Fig. 9.6**

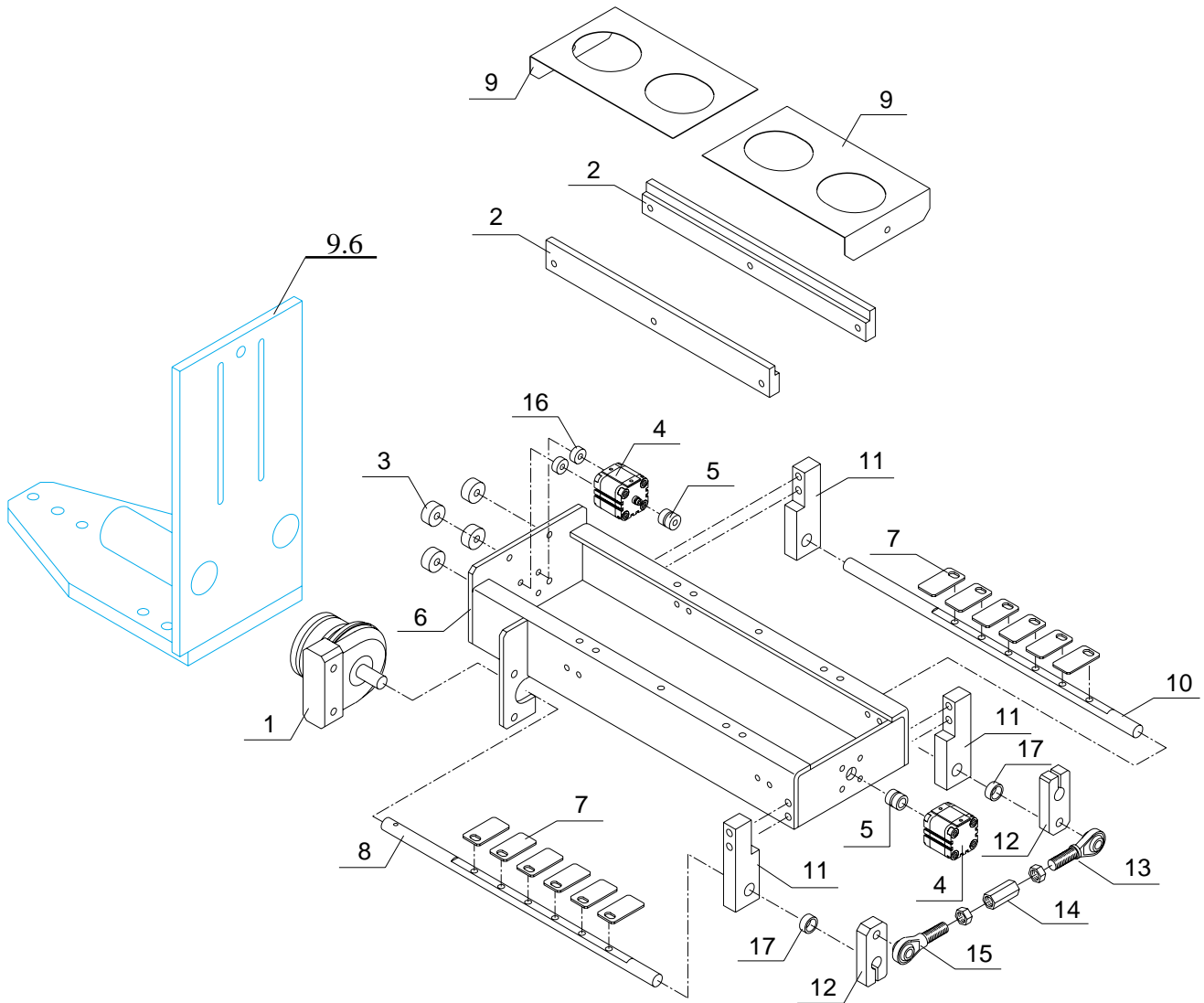
POS.	CODE	DESCRIPTION	Q.TY
1	12040827	Cone feed kinematic motion casing	1
2	12040201	Left cone stop bar	1
3	17000008	Cylinder	1
4	17000045	SGS coupling	1
5	12040104	Cylinder connecting pin	1
6	12040097	Special pin for bush	2
7	336005050	Bush	2
8	12040095	Cone release movement connecting rod	1
9	12040094	Cone release movement lever	1
10	12040202	Release rod movement hinge	1
11	326019015	E15 circlip	2
12	336001383	Bearing	4
13	12040079	Upper clamp	3
14	12040078	Lower clamp	3
15	12040224	Base plate	1
16	336071135	Corteco seal	2
17	12040197	Right cone stop bar	2
18	12040106	Cone release rod	2
19	<del>33607114</del> 336071114	Seal	2
20	12040223	Vertical plate	1
21	12040225	Bearing bush	2
22	12040226	Reinforcing plate	2



**Fig. 9.6 - Cone feed**

**Cone feed - Fig. 9.7**

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	333001053	Actuator	1	1
2	12040099	Cone release blade guide	2	2
3	12040098	Magazine support spacer	4	4
4	17000007	Cylinder	2	2
5	540212003	Coupling	2	2
6	12040200	Magazine support frame	1	1
7	12040096	Cone release blade	4	6
8	12040101	Blade control shaft	1	1
9		Blade – two lanes (depending on format)	2	-
9a		Blade – three lanes (depending on format)	-	2
10	12040809	Blade control shaft	1	1
11	12040807	Blade shaft support	3	3
12	12040808	Blade lever	2	2
13	17000239	Coupling	1	1
14	12040810	Tie rod	1	1
15	17000405	Coupling	1	1
16	12040198	Cylinder spacer	2	2
17	12040925	Stop washer	2	2

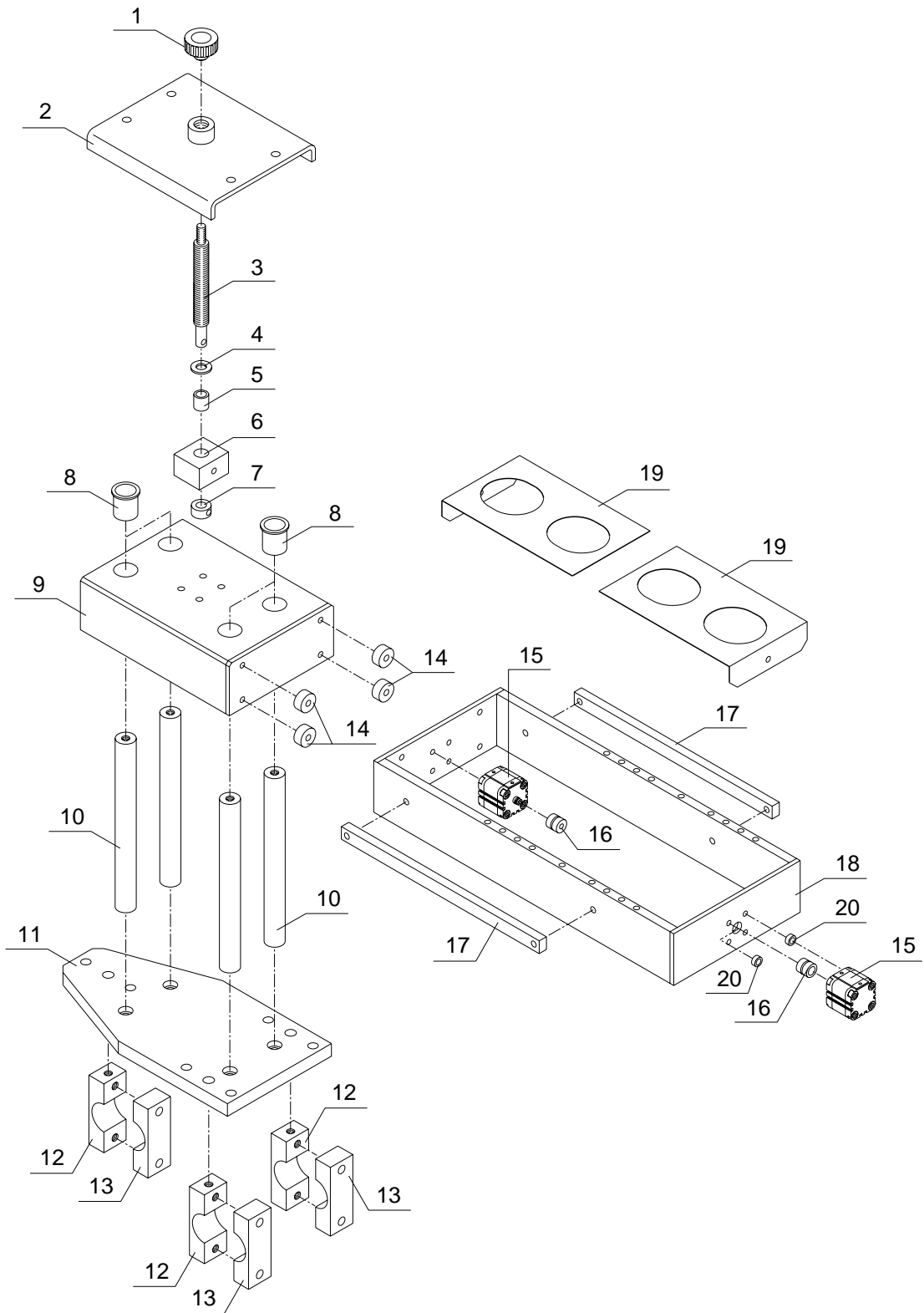


**Fig. 9.7 - Cone feed**

**Cup feed - Fig. 9.8**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	336057055	Handwheel	1
2	12040088	Upper adjusting plate	1
3	HL0111	Adjusting screw	1
4	540203006	Thrust washer	1
5	540203008	Screw bush	1
6	540203005	Lifting block	1
7	540203007	Screw stop	1
8	336005076	Bush	4
9	12040087	Vertical adjustment slide	1
10	12040086	Slide guide column	4
11	12040085	Support plate	1
12	12040079	Upper clamp	3
13	12040078	Lower clamp	3
14	12040089	Frame support spacer	4
15	17000007	Cylinder	2
16	540212003	Coupling	2
17	12040091	Stop blade guide	2
18	12040090	Magazine support frame	1
19		Blade for two lanes (depending on format)	2
19a		Blade for 3 lanes (depending on format)	2
19b		Blade for 1 lane (depending on format)	2
20	12040198	Cylinder spacer	2

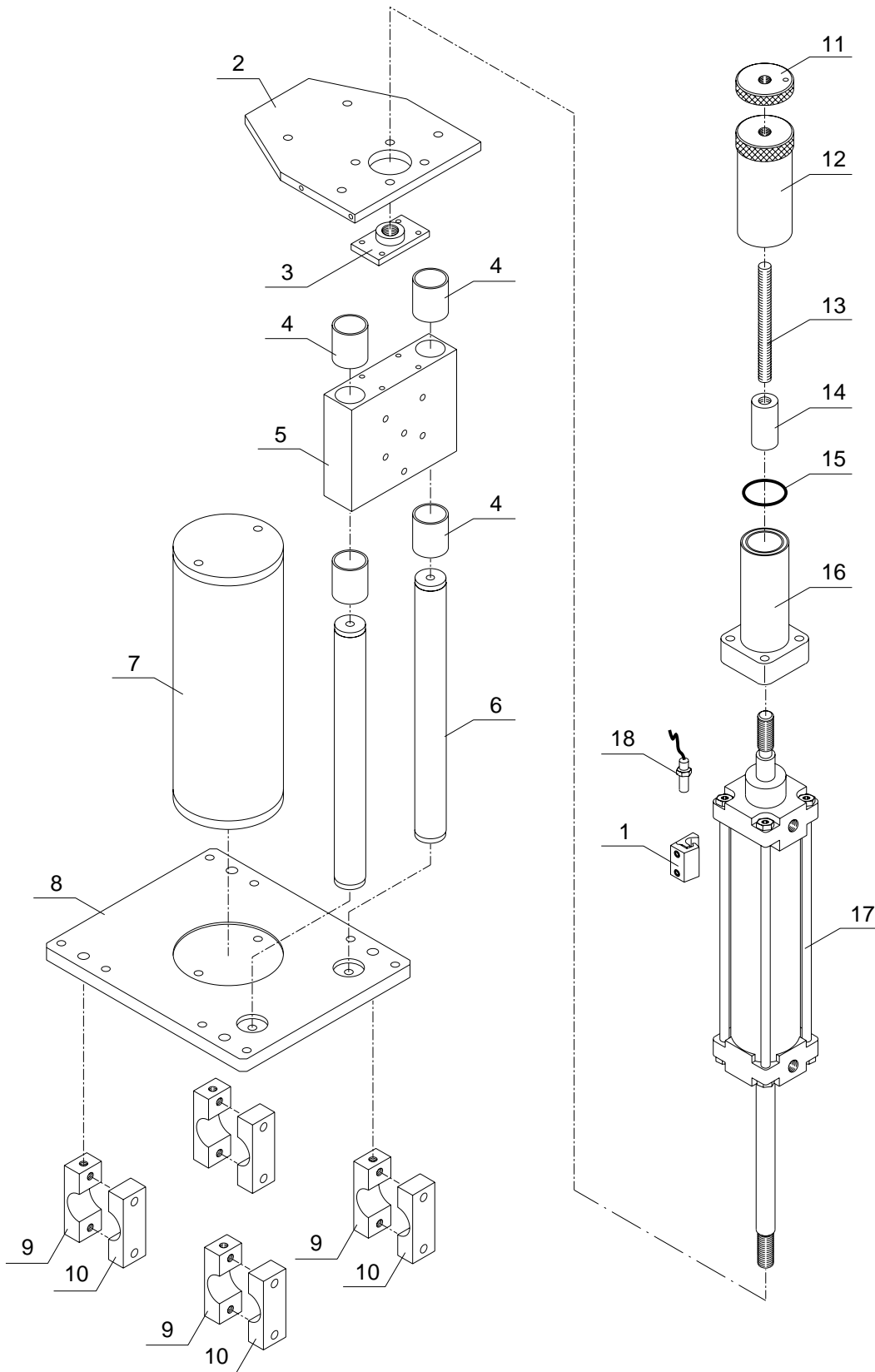


**Fig. 9.8 - Cup feed**

**Station movement - Fig. 9.9**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	17000056	Anchor	1
2	12040076	Support plate	1
3	17000053	Anchor	1
4	17000384	Bush	4
5	12040083	Frame mounting slide	1
6	12040080	Slide guide column	2
7	12040081	Support column	1
8	12040077	Base plate	1
9	12040079	Upper clamp	4
10	12040078	Lower clamp	4
11	12040075	Lock nut	1
12	12040074	Cylinder travel adjusting nut	1
13	541120121	Adjusting screw	1
14	341690101	Cylinder joint	1
15	336067091	O-ring OR 4150	1
16	12040073	Cylinder mounting sleeve	1
17	17000009	Cylinder	1
18	17000054	DSM3N225 limit switch	1

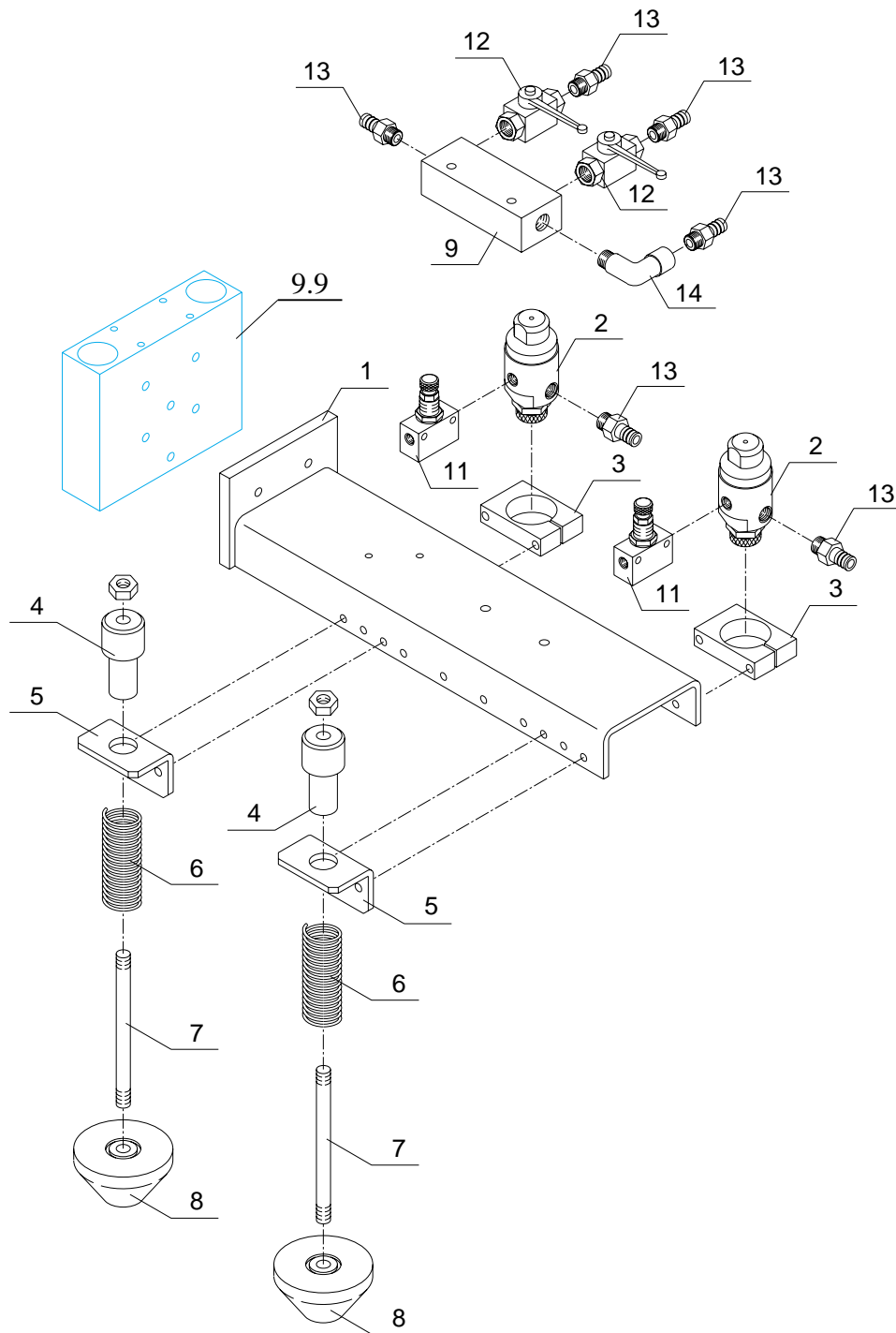


**Fig. 9.9 - Station movement**



**Gauge and chocolate spray station - Fig. 9.10**

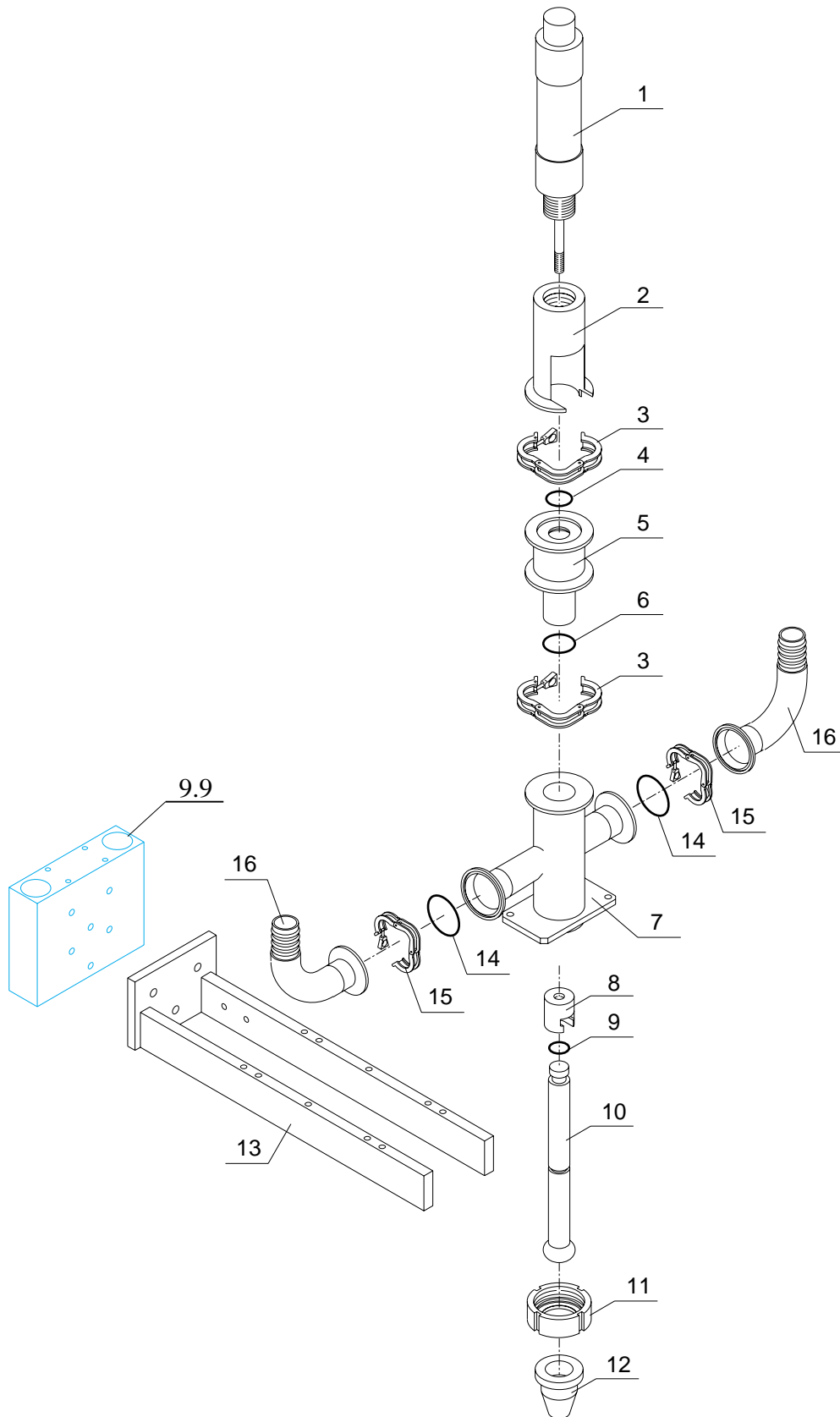
POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	12040109	Support frame	1	1
2	011070112	Sprayer	2	3
3	HF75D08021	Sprayer support	2	3
4	540302006	Gauge guide bush	2	3
5	12040219	Gauge support bracket	2	3
6	D-FM0606	Spring	2	3
7	D-FM0605	Tie rod	2	3
8	D-FM0607	Cone enlarger pad	2	3
9	12040221	Distributor	1	-
	12040222	Distributor	-	1
10	017057169	Resistance diam. 6.5x50 20 W 40 V	2	3
11	011045253	RFU 1/8" control	2	3
12	016030065	1/4" M-F cock	2	3
13	016061062	1/4" rubber seal support	7	9
14	016061032	1/4" FF elbow	1	1



**Fig. 9.10 - Gauge and chocolate spray station**

**Two-flavour doser - Fig. 9.11**

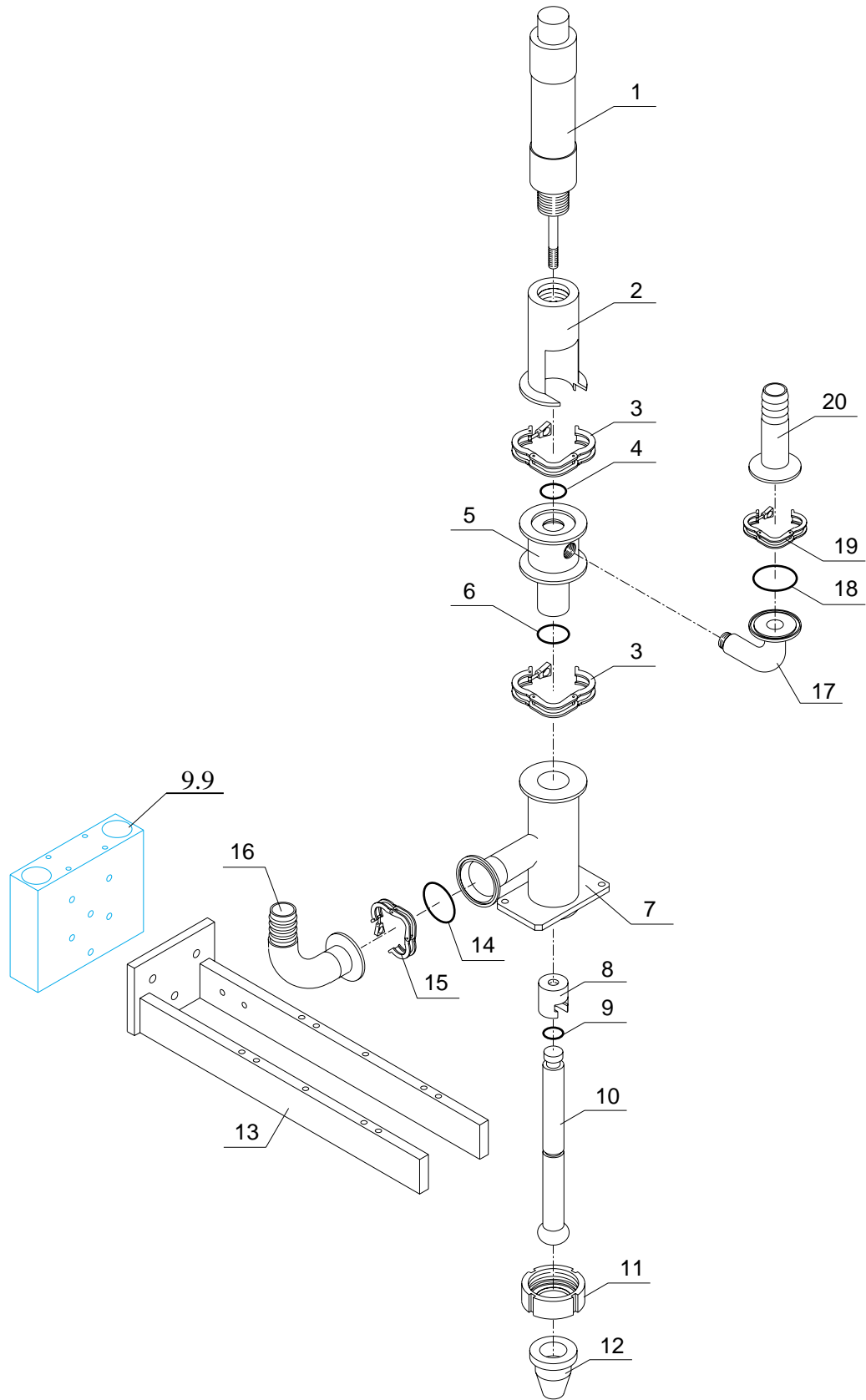
POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	17000010	Cylinder	2	3
2	12040213	Cylinder connection	2	3
3	016060219	2" A304 clamp	2	3
4	336067042	O-ring 3081	4	6
5	12040210	Upper cylinder component	2	3
6	336067051	O-ring 3118	2	3
7	12040209	Dual body	2	3
8	12040027	Joint	2	3
9	336067036	O-ring 119	2	3
10	12040948	Central piston	2	3
11	12040211	Ring nut	2	3
12	540204063	Nozzle	2	3
13	12040110	Support frame	1	1
14	018020581	1" clamp seal	4	6
15	016060218	Clamp	4	6
16	540204085	Elbow with rubber seal support	4	6



**Fig. 9.11 - Two-flavour doser**

**Concentric two-flavour doser - Fig. 9.12**

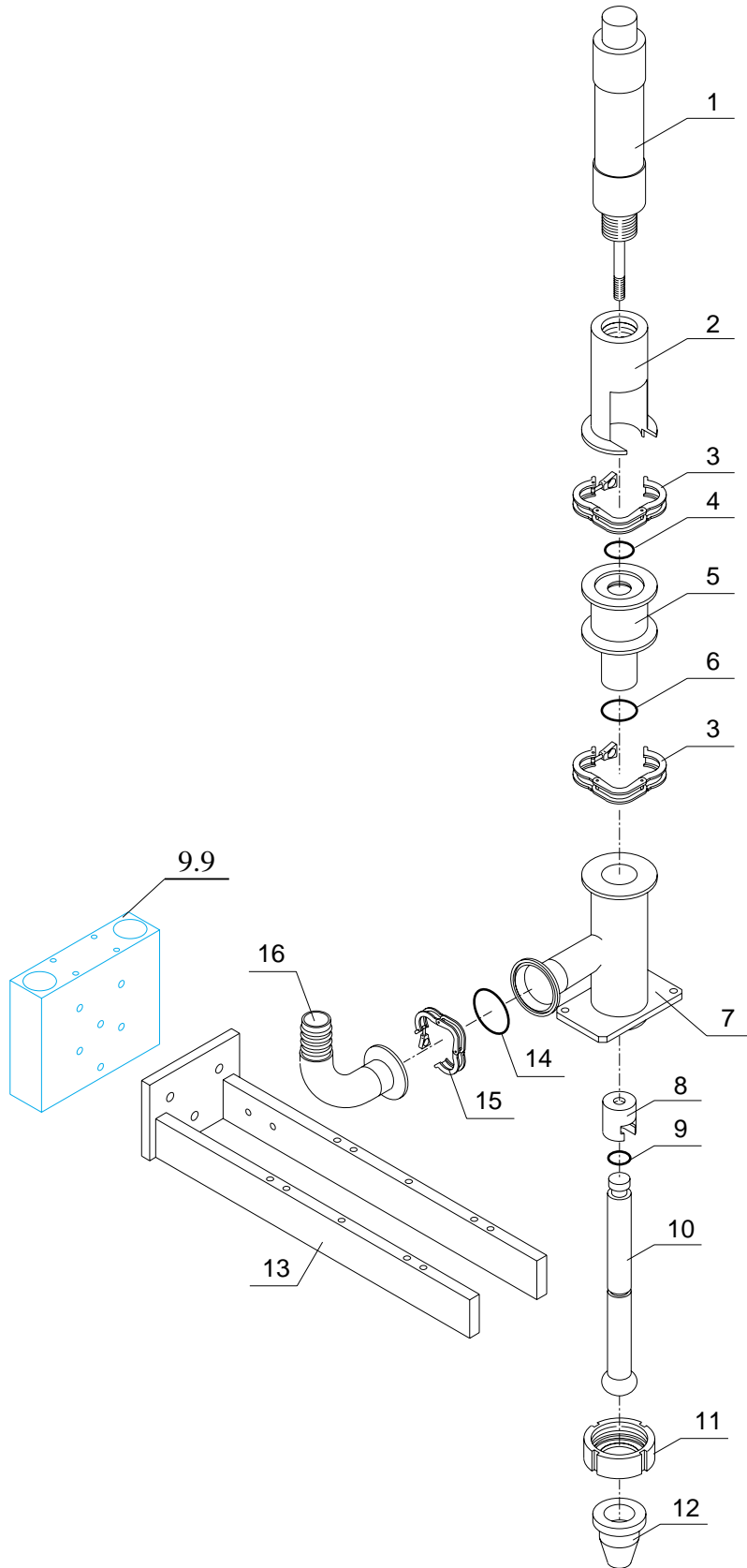
POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	17000010	Cylinder	2	3
2	12040213	Cylinder connection	2	3
3	016060219	2" A304 clamp	2	3
4	336067042	O-ring 3081	4	6
5	12040782	Upper half of variegator cylinder	2	3
6	336067051	O-ring 3118	2	3
7	12040212	Doser body	2	3
8	12040027	Joint	2	3
9	336067036	O-ring 119	2	3
10	12040949	Centre perforated piston	2	3
11	12040211	Lock nut	2	3
12	540204063	Nozzle	2	3
13	12040110	Support frame	1	1
14	018020581	1" clamp seal	2	3
15	016060218	Clamp	2	3
16	540204085	Elbow with host connection	2	3
17	54204050	Elbow	2	3
18	018020581	Seal	2	3
19	016060218	Clamp	2	3
20	141040364	Rubber seal support	2	3



**Fig. 9.12 - Concentric two-flavour doser**

**Decorator - Fig. 9.13**

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	17000010	Cylinder	2	3
2	12040213	Cylinder connection	2	3
3	016060219	2" A304 clamp	2	3
4	336067042	O-ring 3081	4	6
5	12040210	Upper cylinder half	2	3
6	336067051	O-ring 3118	2	3
7	120401	Decorator body	2	3
8	12040027	Joint	2	3
9	336067036	O-ring 119	2	3
10	12040948	Central perforated piston	2	3
11	12040211	Lock nut	2	3
12	540204063	Nozzle	2	3
13	12040110	Support frame	1	1
14	018020581	1" clamp seal	2	3
15	016060218	Clamp	2	3
16	540204085	Elbow with rubber seal support	2	3



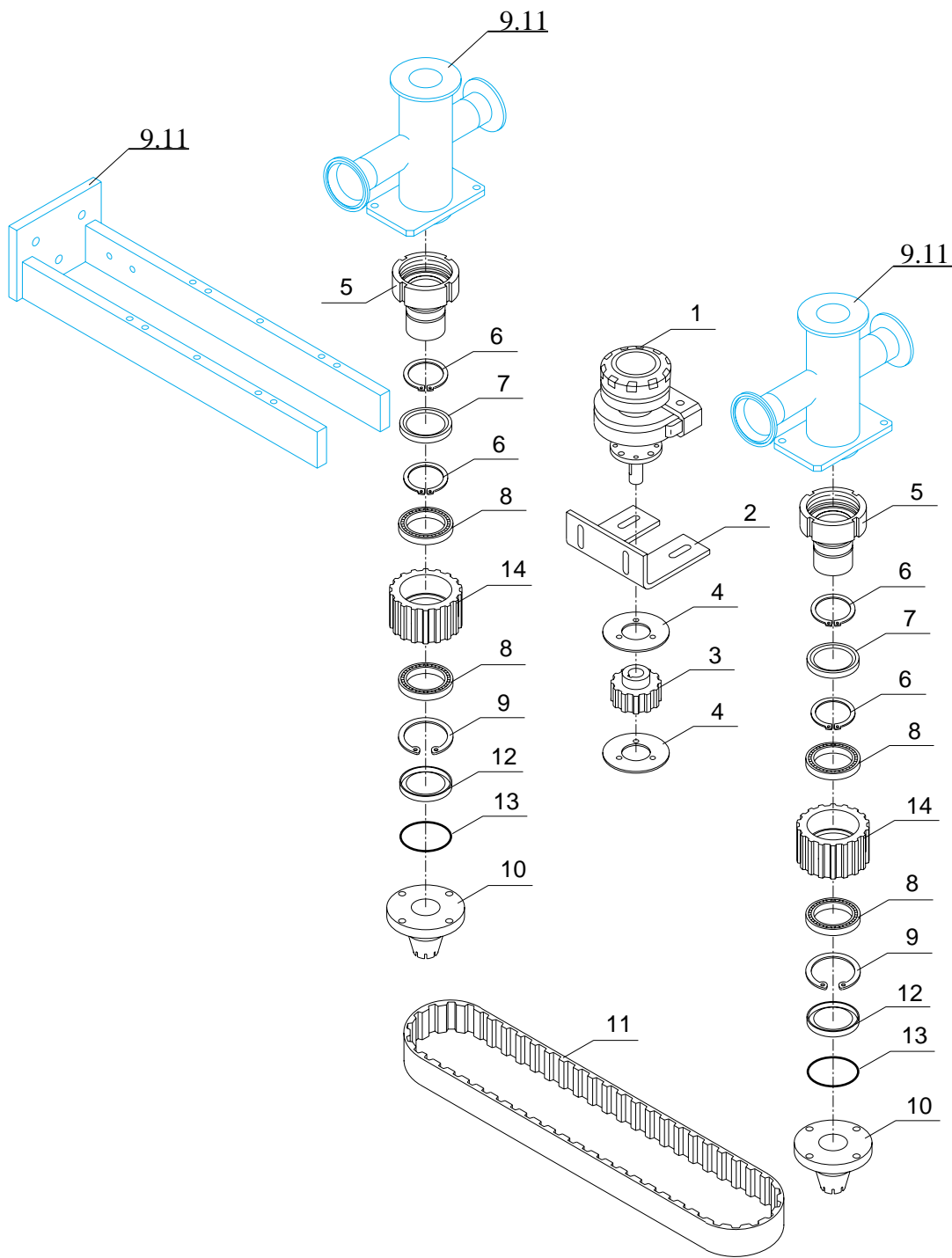
**Fig. 9.13 - Decorator**



**Rotating doser - Fig. 9.14**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	333001007	Actuator	1
2	12041154	Support bracket	1
3	12040870	Driving pulley	1
4	12040974	Flange	2
5	12041183	Bush	2
	300ml bush		2
6	326019035	Circlip	4
7	17040061	Sealring	2
8	17040060	Bearing	4
9	326019147	Circlip	2
10		Rotating nozzle (grooved 6-notch model)	2
	12040875	300ml rotating nozzle	2
11	336019995	Belt	1
12	336071295	Sealring	2
13	336067050	Seal	2
14	12040869	Driven pulley	2

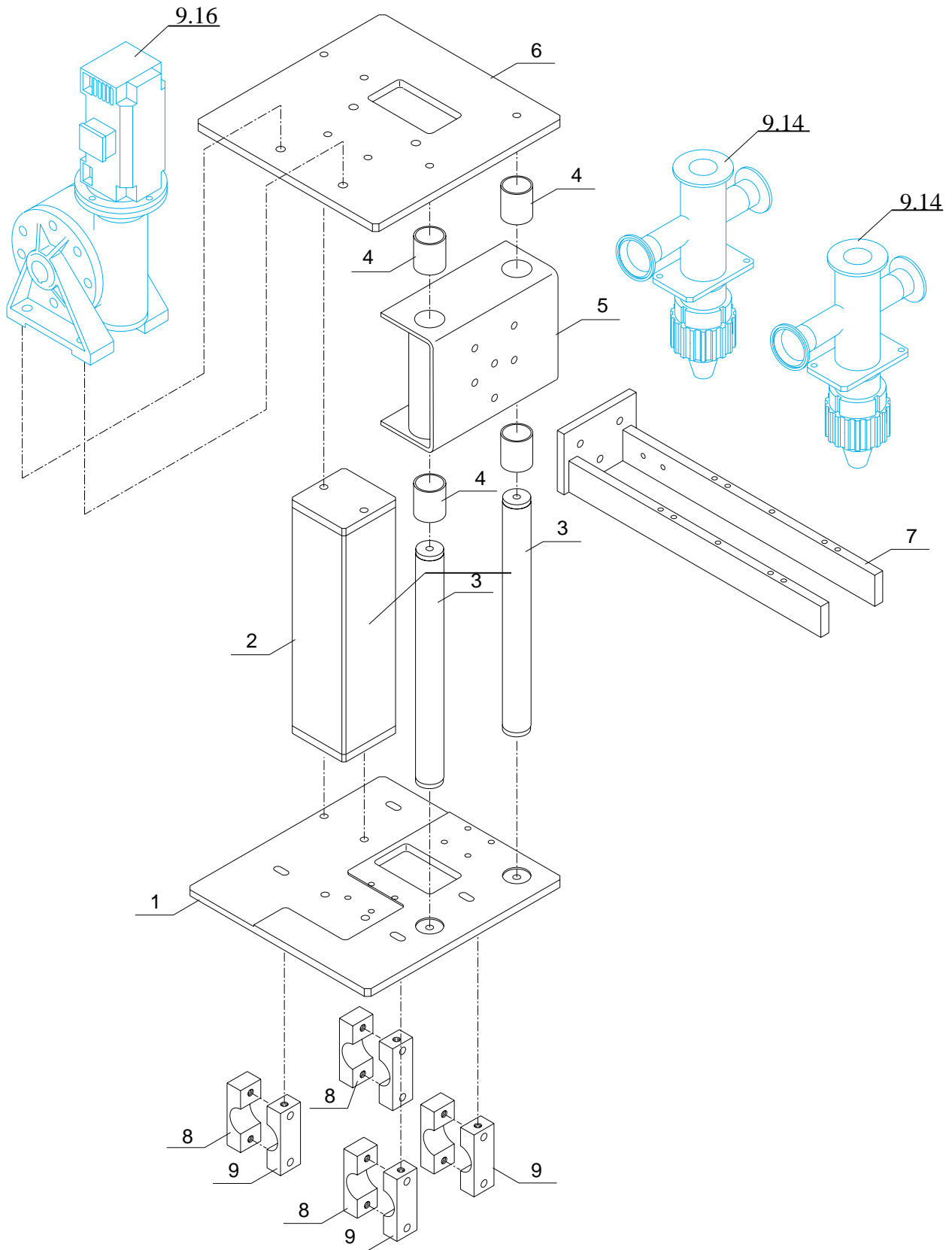


**Fig. 9.14 - Rotating doser**

**Flame cone doser movement - Fig. 9.15**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040878	Base	1
2	12040903	Centralcolumn	1
3	12040080	Guidecolumn	2
4	17000384	Bush	4
5	12040907	Slide	1
6	12040881	Upperplate	1
7	12040110	Frame	1
8	12040079	Upperclamp	4
9	12040078	Lowerclamp	4

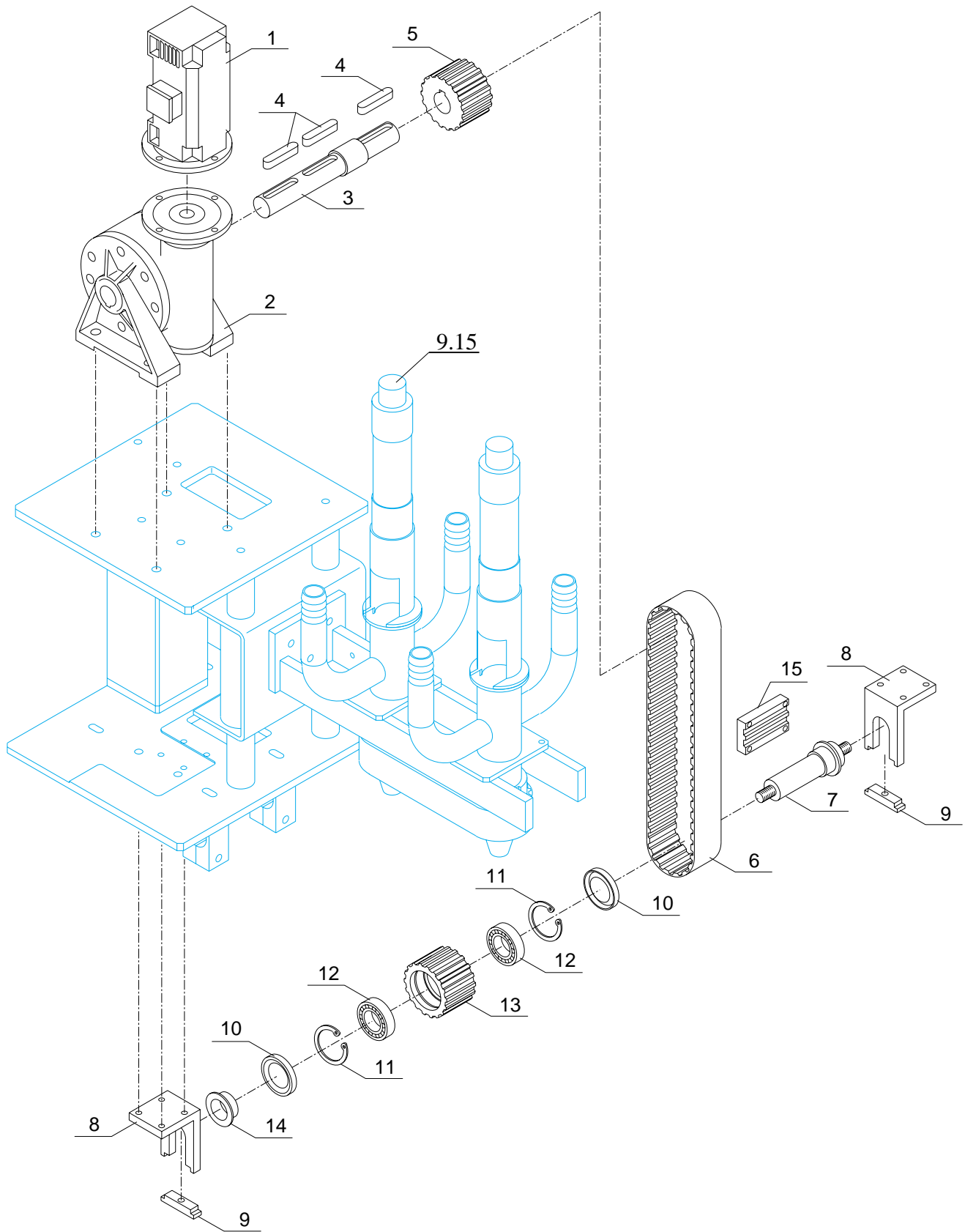


**Fig. 9.15 - Flame cone doser movement**

## Flame cone doser movement - Fig. 9.16

---

POS.	CODE	DESCRIPTION	Q.TY
1	17060007	Servomotor	1
2	17000397	Reduction gear	1
3	12040902	Shaft	1
4	326013109	Key	1
5	336026882	Pulley	1
6	17000395	Belt	1
7	12040905	Tensioning pin	1
8	12040904	Plate	2
9	12060293	Plate	2
10	336071190	Seal ring	2
11	326019147	Circlip	2
12	336001030	Bearing	2
13	12040895	Driven pulley	1
14	12040906	Spacer	2
15	17000396	Belt anchoring plate	1

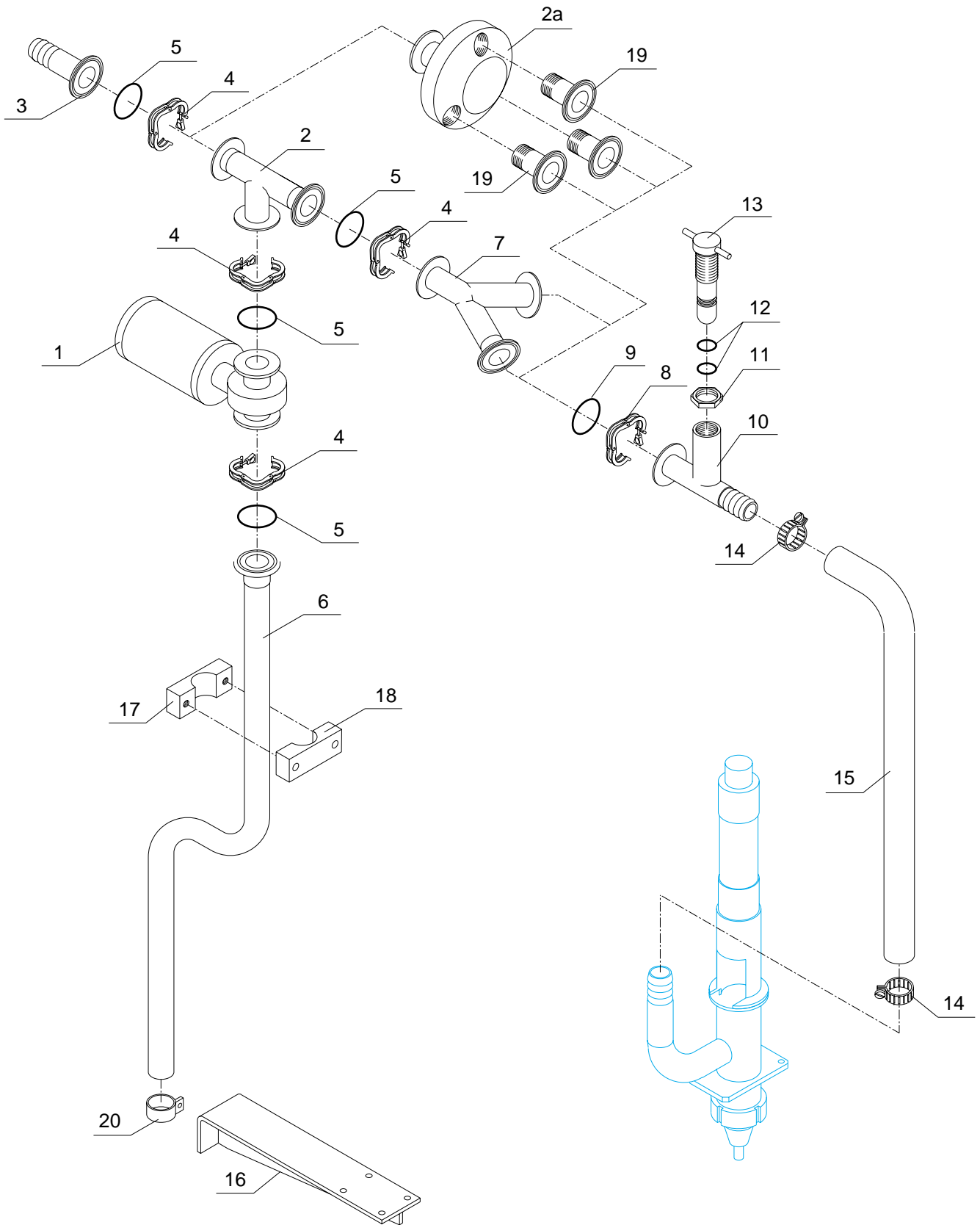


**Fig. 9.16 - Flame cone doser movement**

**By-pass - Fig. 9.17**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	17040009	Pneumatic valve	1
2	17000317	Union tee	1
2a	D01E00115	3-way distributor	1
3	141040344	Rubber seal support	1
4	016060218	Clamp	7
5	018020582	Seal	7
6	17000279	Pipe	1
7	540303018	Union Y	1
8	016060218	Clamp	2
9	018020582	Seal	2
10	542320022	Balancing body	2
11	542320029	Lock nut	2
12	336067038	Seal	4
13	542320023	Equaliser cock	2
14	018060961	Hose clip	4
15	1700279	Hose	2
16	12040936	Bracket	1
17	12040524	Fixed tie	1
18	12040525	Tie	1
19	D01E00115	Clamp connection	3
20	016060930	Hose support	1

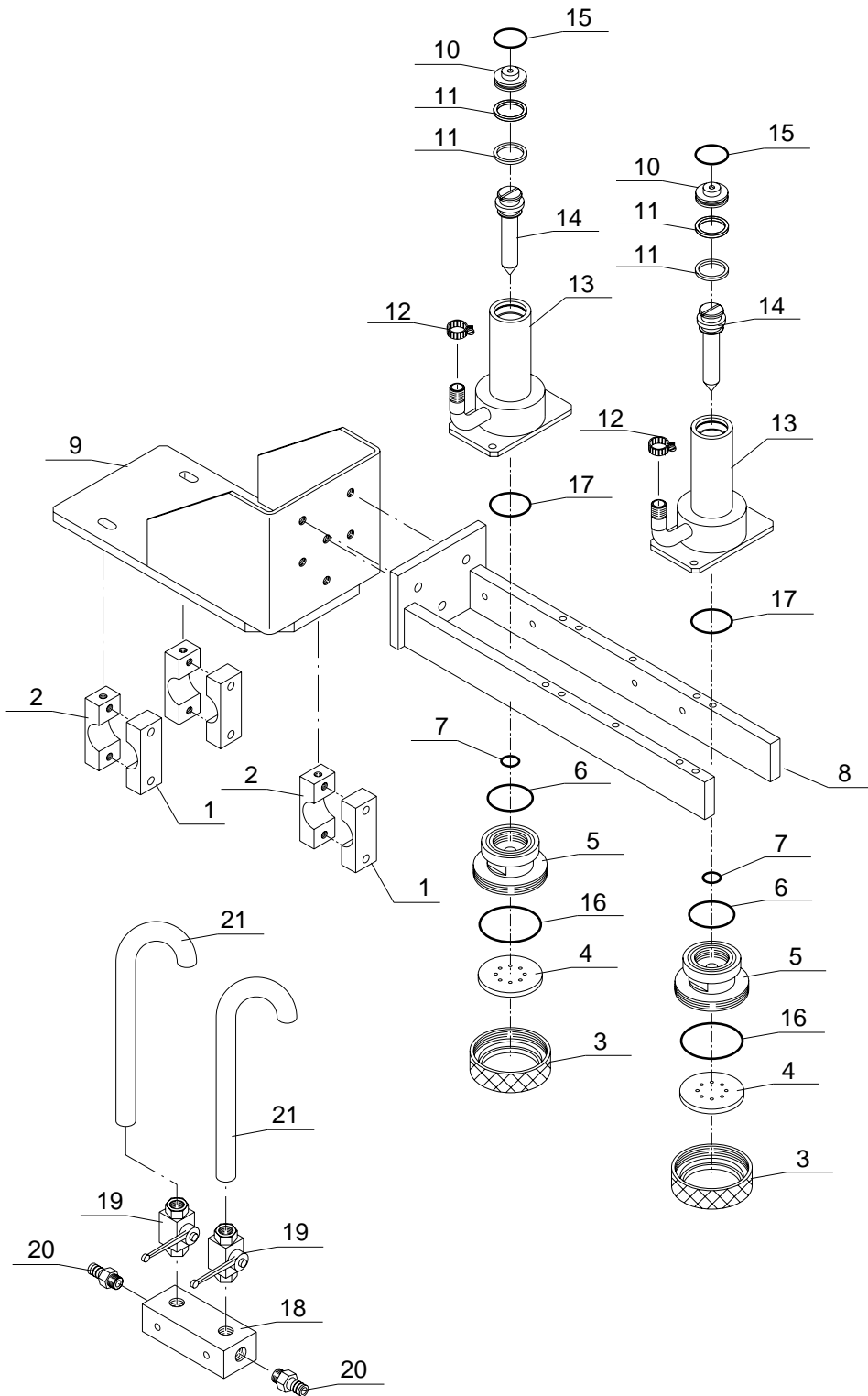


**Fig. 9.17 - By-pass**



**Topping station - Fig. 9.18**

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	12010078	Lower clamp	3	3
2	12040079	Upper clamp	3	3
3	D01H00016A	Topping ring nut	2	3
4	D01H00016A	Topping disk	2	3
5	12042031	Topping nozzle	2	3
6	3360067092	O-ring 144	2	3
7	3360067030	O-ring 112	2	3
8	12040110	Doser mounting	1	1
9	12040823	Base	1	1
10	540214002	Bottom	2	3
11	336069466	Seal	2	3
12	018060957	Clamp	2	3
13	12041127	Valve body	2	3
14	540214001	Piston	2	3
15	336067020	O-ring 2093	2	3
16	336067100	O-ring 153	2	3
17	336067045	O-ring 3056	2	3
18	12040221	2-lane distributor	1	-
	12040222	3-lane distributor	-	1
19	016030065	1/4" G cock	2	3
20	016061062	1/4" G hose connection	2	2
21	17000278	1/2" silicon tube	m 3	m 4,5

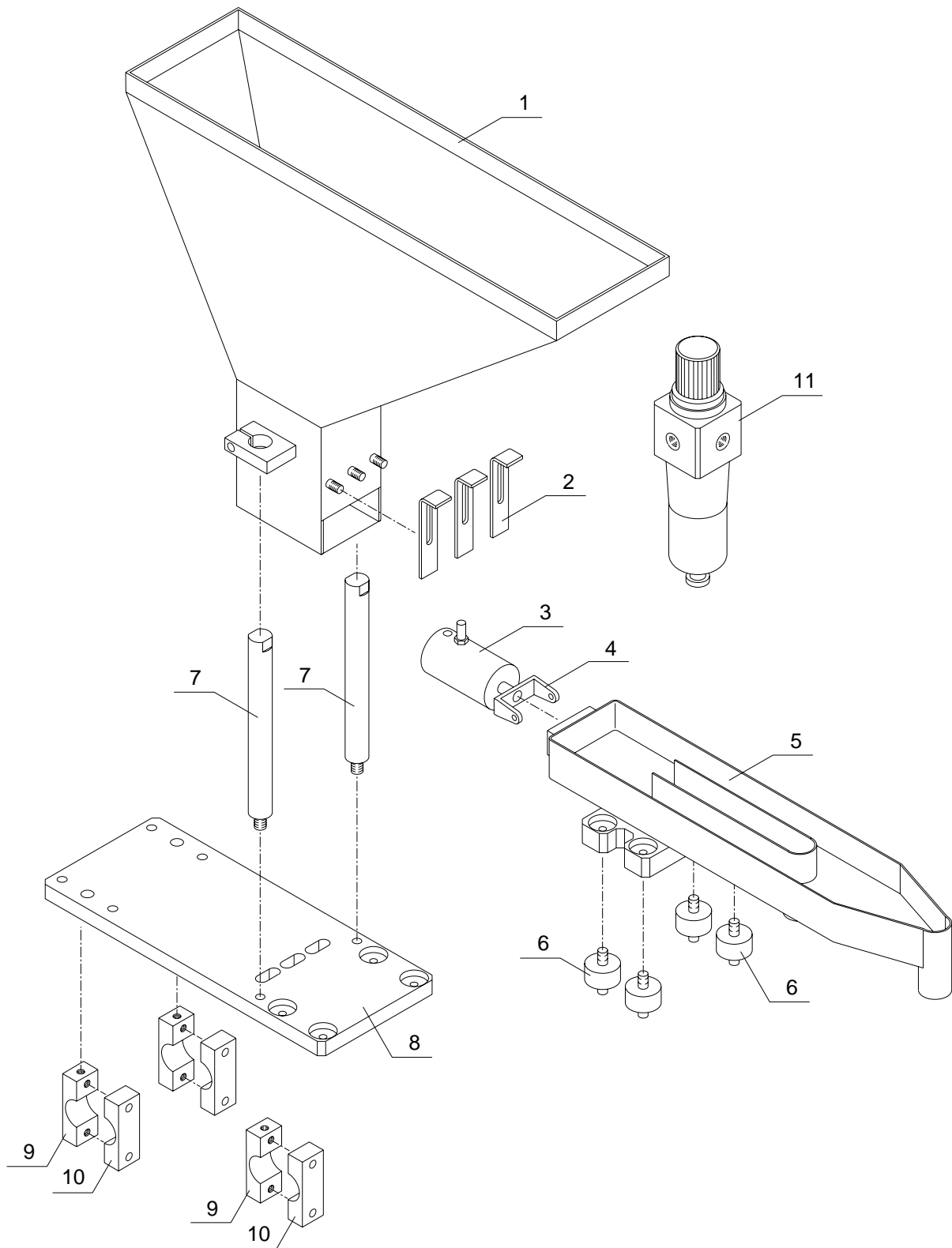


**Fig. 9.18 - Topping station**

**Granule station - Fig. 9.19**

---

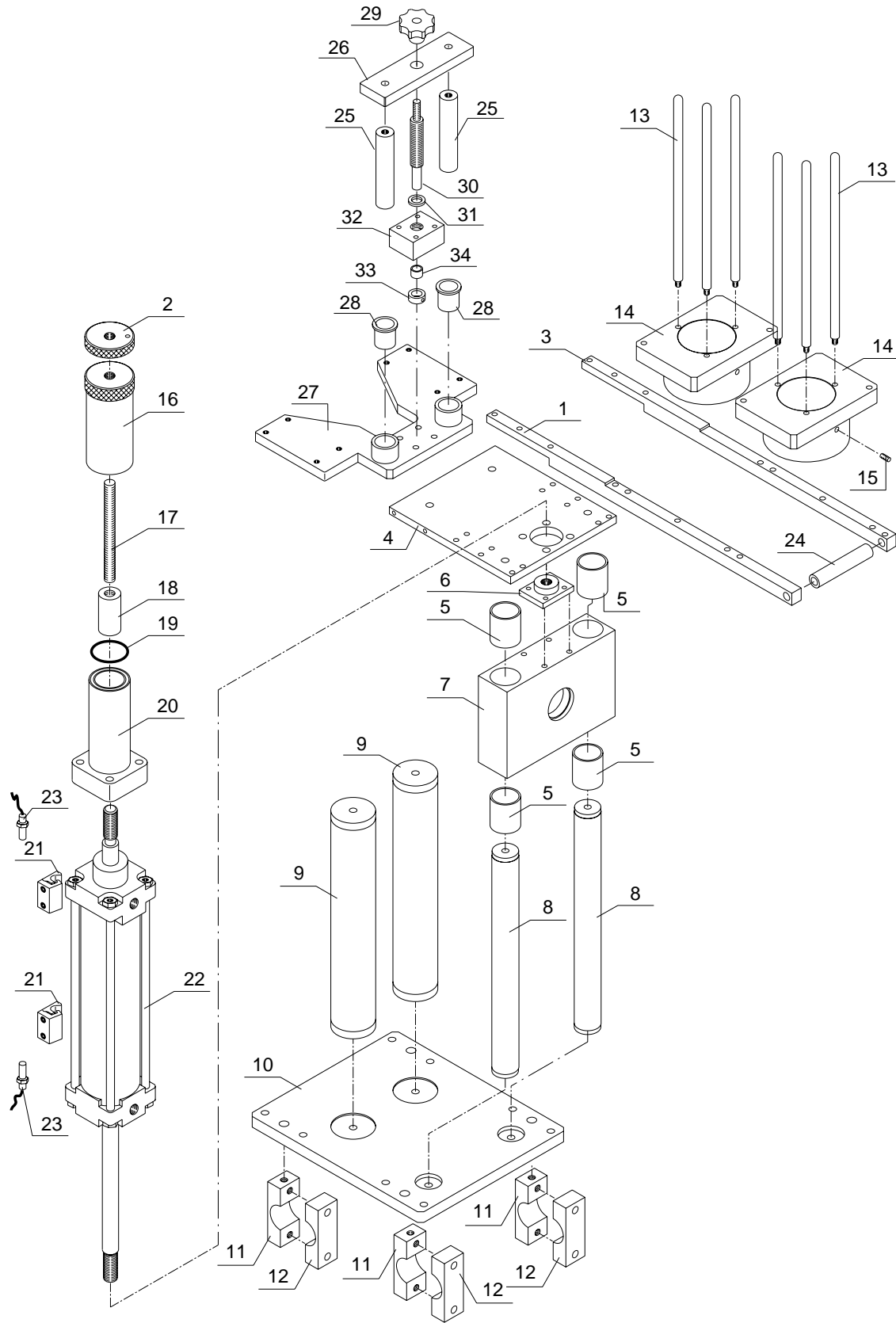
POS.	CODE	DESCRIPTION	Q.TY	
			2Lanes	3Lanes
1	12040116	Granule hopper	1	1
2	12040117	Flow controller	3	3
3	17040027	Pneumatic vibrator	1	1
4	540213015	Vibrator fork	1	1
5	12040121	Two-lane granule channel	1	-
5a	12040919	Three-lane granule channel	-	1
6	336055001	Vibration damper	4	4
7	540309008	Column	2	2
8	12040115	Support plate	1	1
9	12040079	Upper clamp	3	3
10	12040078	Lower clamp	3	3
11	17060013	Filter-reducer 4/18344	1	1



**Fig. 9.19 - Granule station**

**Lid feed - Fig. 9.20**

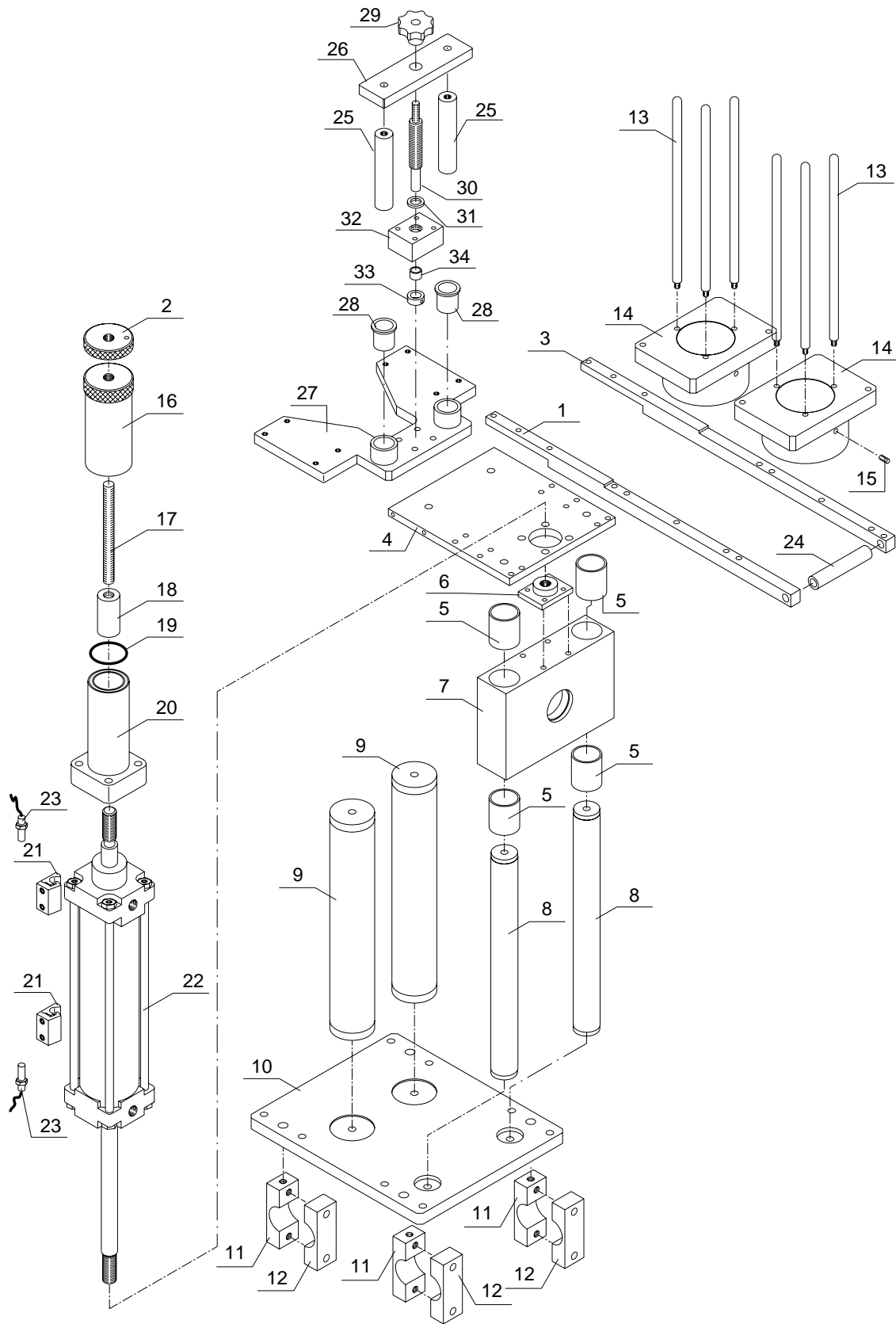
POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	12040133	Left hand magazine support plate	1	1
2	12040665	Lock nut		1
3	12040134	Right hand magazine support plate	1	1
4	12040125	Upper plate	1	1
5	17000384	Bush	4	4
6	17000052	Anchor	1	1
7	12040128	Frame anchor slide	1	1
8	12040127	Slide guide column	2	2
9	12040126	Plate support column	2	2
10	12040123	Base	1	1
11	12040078	Lower clamp	4	4
12	12040079	Upper clamp	4	4
13		Lid guide rod (depending on format)	6	9
14		Lid magazine (depending on format)	2	3
15	D-FM0847	Lid stop dowel	6	9
16	12040661	Cylinder travel adjusting nut	1	1
17	12040664	Adjustment screw	1	1
18	12040663	Cylinder joint	1	1
19	336067082	O-ring 4100	1	1
20	12040662	Cylinder mounting sleeve	1	1
21	17000055	Anchor	2	2
22	17000012	Cylinder	1	1
23	17000054	Limit switch DSM3N225	2	2
24	12040721	Tie rod	1	1
25	12041379	Guide column	2	2
26	12041378	Upper plate	1	1
27	12041380	Plate support plate	1	1
28	336005076	Bush	2	2
29	336067055	Flywheel	1	1
30	12041381	Adjustment screw	1	1
31	540203006	Clearance washer	1	1
32	540203005	Lifting block	1	1
33	540203007	Screw stop	1	1
34	540203008	Screw bush	1	1



**Fig. 9.20 - Lid feed**

**Dome-shaped lid feed - Fig. 9.21**

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	12040133	Left hand magazine support plate	1	1
2	12040665	Lock nut		1
3	12040134	Right hand magazine support plate	1	1
4	12040125	Upper plate	1	1
5	17000384	Bush	4	4
6	17000052	Anchor	1	1
7	12040128	Frame anchor slide	1	1
8	12041386	Slide guide column	2	2
9	12041385	Plate support column	2	2
10	12040123	Base	1	1
11	12040078	Lower clamp	4	4
12	12040079	Upper clamp	4	4
13		Lid guide rod (depending on format)	6	9
14		Lid magazine (depending on format)	2	3
15	D-FM0847	Lid stop dowel	6	9
16	12041383	Cylinder travel adjusting nut	1	1
17	12041382	Adjustment screw	1	1
18	12040663	Cylinder joint	1	1
19	336067082	O-ring 4100	1	1
20	12041384	Cylinder mounting sleeve	1	1
21	17000055	Anchor	2	2
22	17000012	Cylinder	1	1
23	17000054	Limit switch DSM3N225	2	2
24	12040721	Tie rod	1	1
25	12041379	Guide column	2	2
26	12041378	Upper plate	1	1
27	12041380	Plate support plate	1	1
28	336005076	Bush	2	2
29	336067055	Flywheel	1	1
30	12041381	Adjustment screw	1	1
31	540203006	Clearance washer	1	1
32	540203005	Lifting block	1	1
33	540203007	Screw stop	1	1
34	540203008	Screw bush	1	1



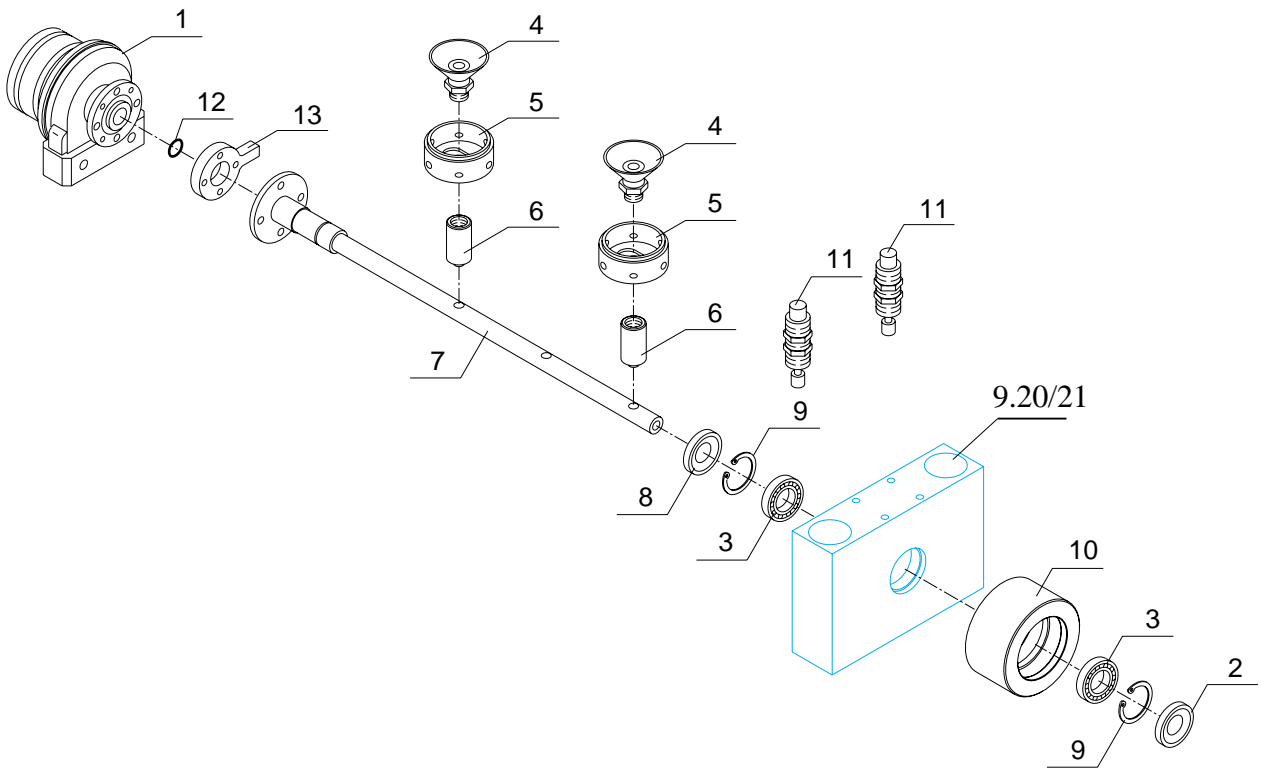
**Fig. 9.21 - Dome-shaped lid feed**



**Lid feed - Fig. 9.22**

---

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	333001007	Actuator	1	1
2	336007150	Corteco seal	1	1
3	336001463	Bearing	2	2
4		Suction cup (according to format)	2	3
5		Suction cup holder (according to format)	2	3
6		Suction cup mounting extension (according to format)	2	3
7	12040130	Suction cup support shaft	1	1
8	336071250	Corteco seal	2	2
9	326019135	I35 circlip	2	1
10	12040129	Bearing sleeve	1	2
11	333003207	YSR 12/12-C hydraulic brake	2	2
12	336067030	O-ring 112	1	1
13	12040124	Limitswitch flange	1	1



**Fig. 9.22 - Lid feed**

**Flame cone lid feed - Fig. 9.23**

---

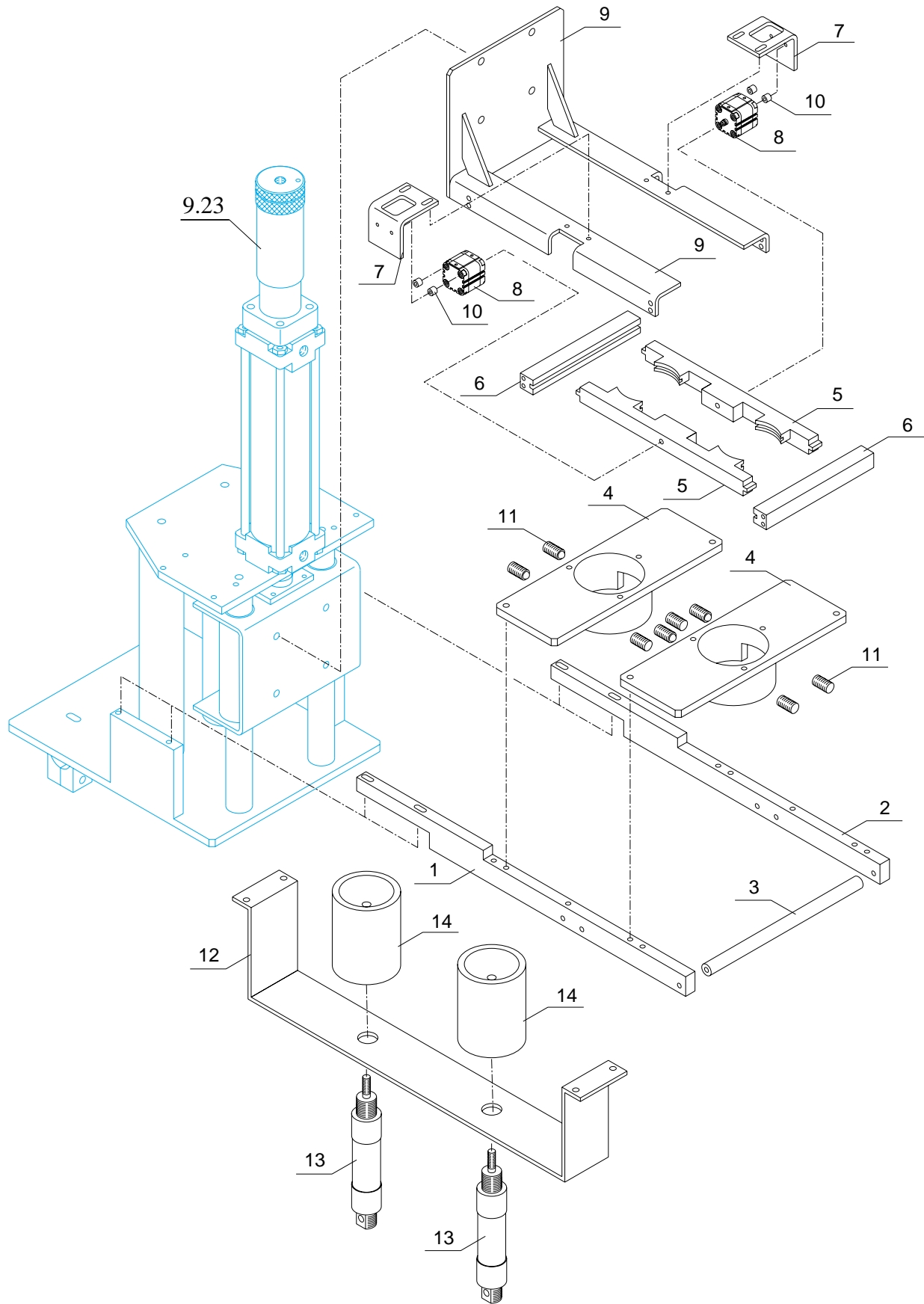
<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040125	Upper plate	1
2	17000052	Anchor	1
3	17000384	Bush	4
4	12040126	Column	2
5	12040127	Column	2
6	12040912	Base	1
7	12040078	Lower clamp	4
8	12040079	Upper clamp	4
9	12040665	Locking ring nut	1
10	12040662	Adjustment sleeve	1
11	12040664	Adjustment screw	1
12	12040663	Cylinder joint	1
13	336067082	Seal	1
14	12040661	Adjustment sleeve	1
15	17000012	Cylinder	1
16	12040908	Slide	1
17	17000055	DSM3N225 limit switch	1
18	17000054	SQ 32-40P limit switch anchor	1



## Flame cone lid feed - Fig. 9.24

---

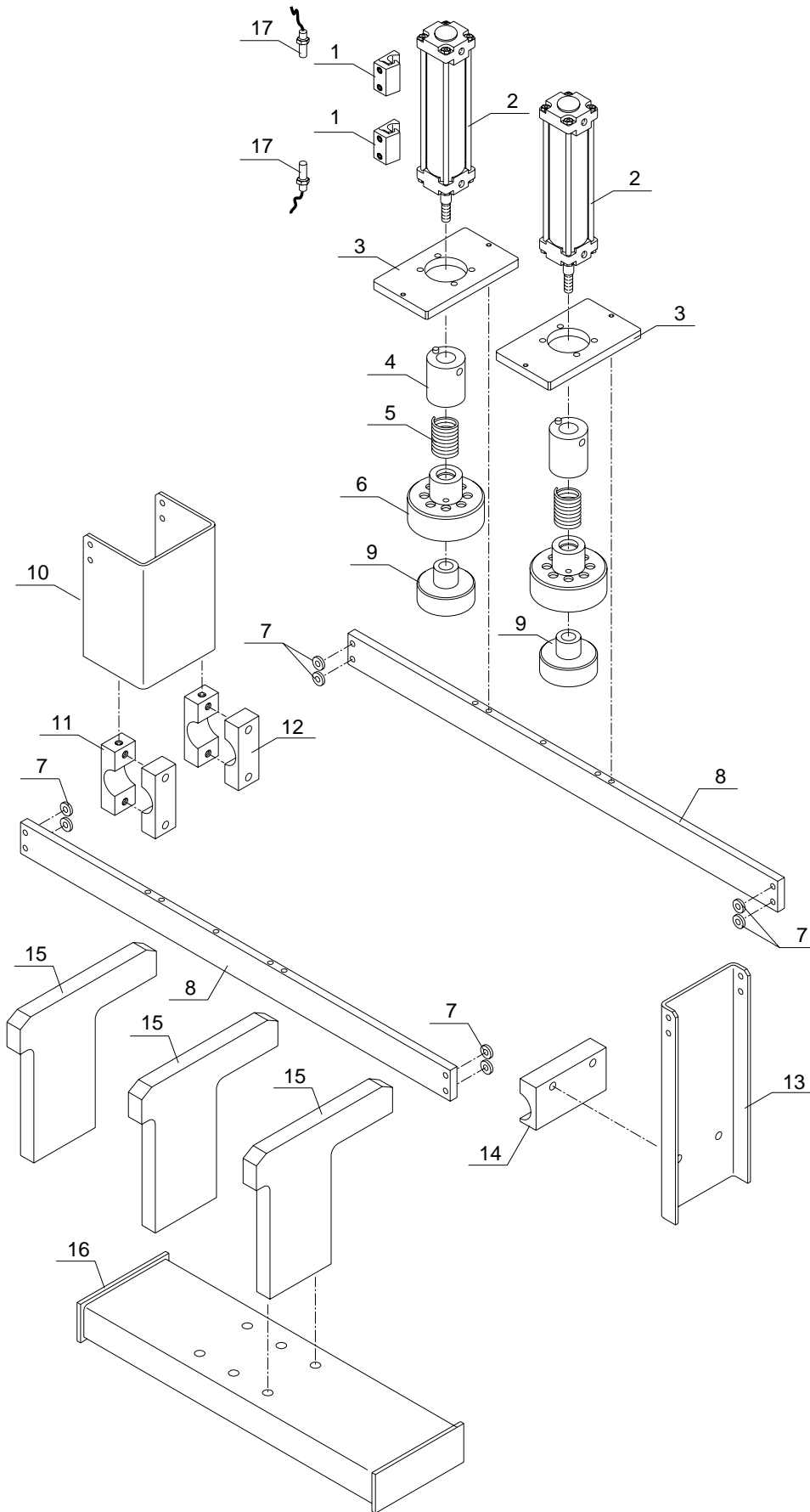
<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040133	Right hand support plate	1
2	12040134	Left hand support plate	1
3	12040915	Tie rod	1
4		Lid magazine (depending on format)	2
5		Lid blade (depending on format)	2
6	12040916	Antirotation guide	2
7	12040913	Bracket	2
8	17000007	Actuator	2
9	12040911	Gripper frame	1
10	12040198	Cylinder spacer	4
11	336032012	Spring press	8
12	12041084	Bracket	1
13	17000020	Cylinder	2
14		Sleeve (depending on format)	2



**Fig. 9.24 - Flame cone lid feed**

**Cone/dome-shaped lid closing station - Fig. 9.25**

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	17000055	Anchor	4	6
2	17000013	Cone cylinder	2	3
	17000077	Dome-shaped cylinder	2	3
3	12040173	Cylinder support plate	2	3
4		Bush (according to format)	2	3
5		Beader spring (according to format)	2	3
6		Body (according to format)	2	3
7	12040174	Spacer	8	8
8	12040172	Support bar	2	2
9		Pad (according to format)	2	3
10	12040175	Cone lid beader end piece	1	1
10a	12041432	Dome-shaped lid beader end piece	1	1
11	12040079	Upper clamp	1	1
12	12040078	Lower clamp	1	1
13	12040177	Cone beader end piece	1	1
13a	12041433	Dome-shaped product beader end piece	1	1
14	12040179	Station fixing clamp	2	2
15	12040720	Contrast polyzene	3	3
16	12040719	Contrast cross-piece	1	1
17	17000054	DSM3N225 limit switch	4	6

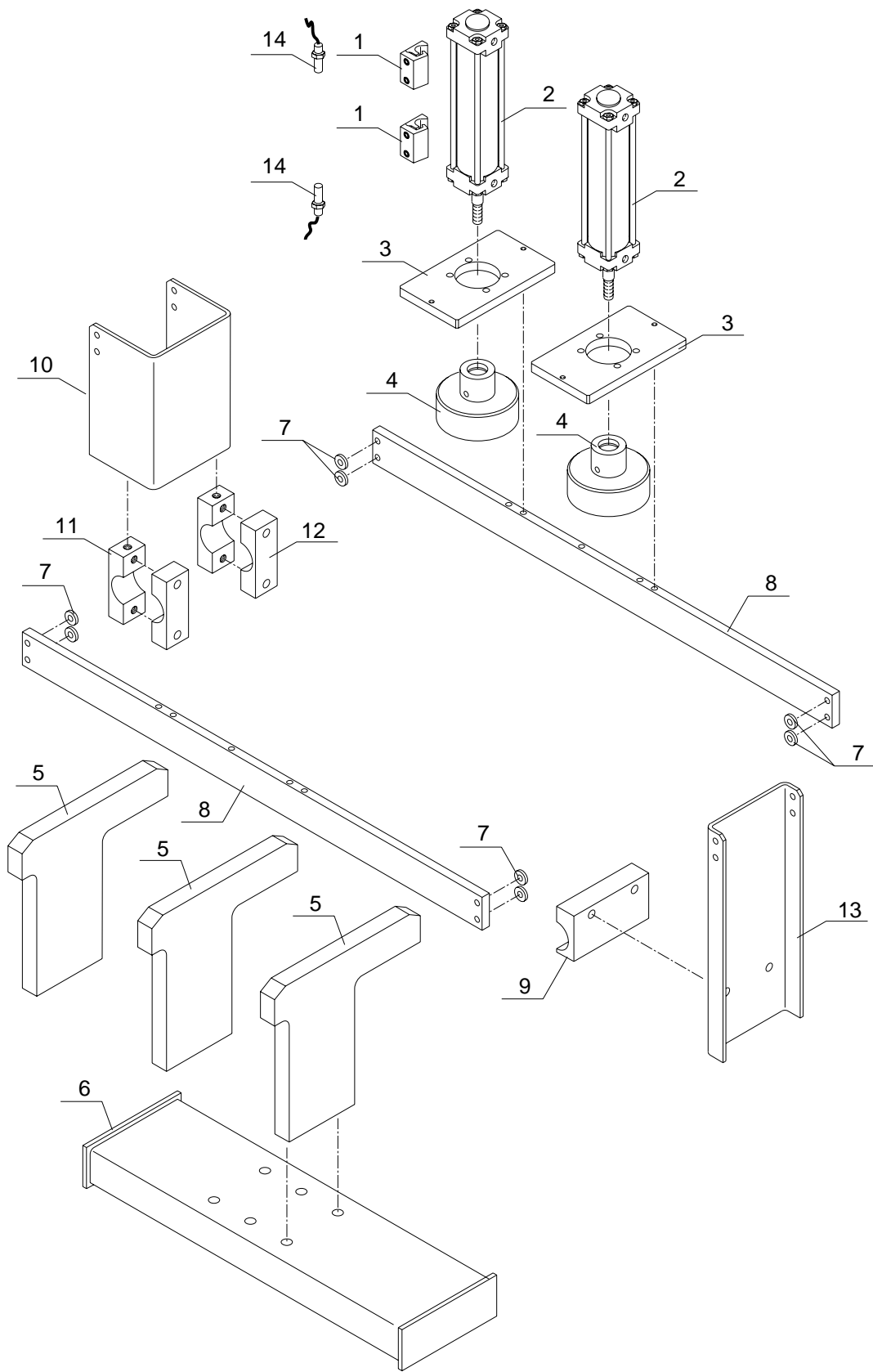


**Fig. 9.25 - Cone/dome-shaped lid closing station**



**Cup lid closing station - Fig. 9.26**

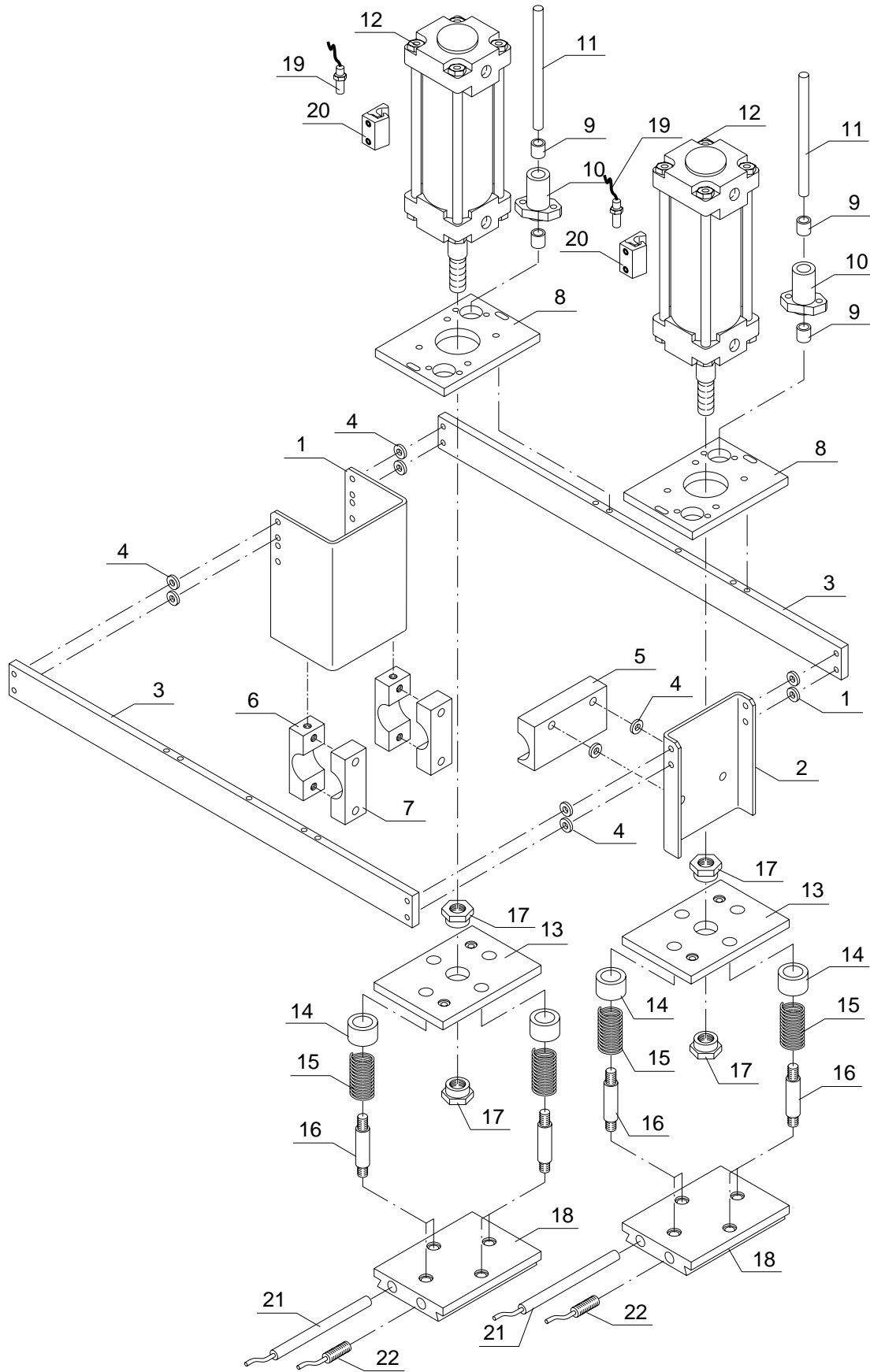
POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	17000055	Fixing	4	6
2	17000013	Cylinder	2	3
3	12040173	Cylinder support plate	2	3
4		Pad (depending on format)	2	3
5	12040720	Contrast polyzene	3	3
6	12040719	Contrast cross-piece	1	1
7	12040174	Spacer	8	8
8	12040172	Support bar	2	2
9	12040179	Station fixing clamp	2	2
10	12040175	Bead end piece	1	1
11	12040079	Upper clamp	1	1
12	12040078	Lower clamp	1	1
13	12040177	Bead end piece	1	1
14	17000054	DSM3N225 limit switch	4	6



**Fig. 9.26 - Cup lid closing station**

**Lid sealing station - Fig. 9.27**

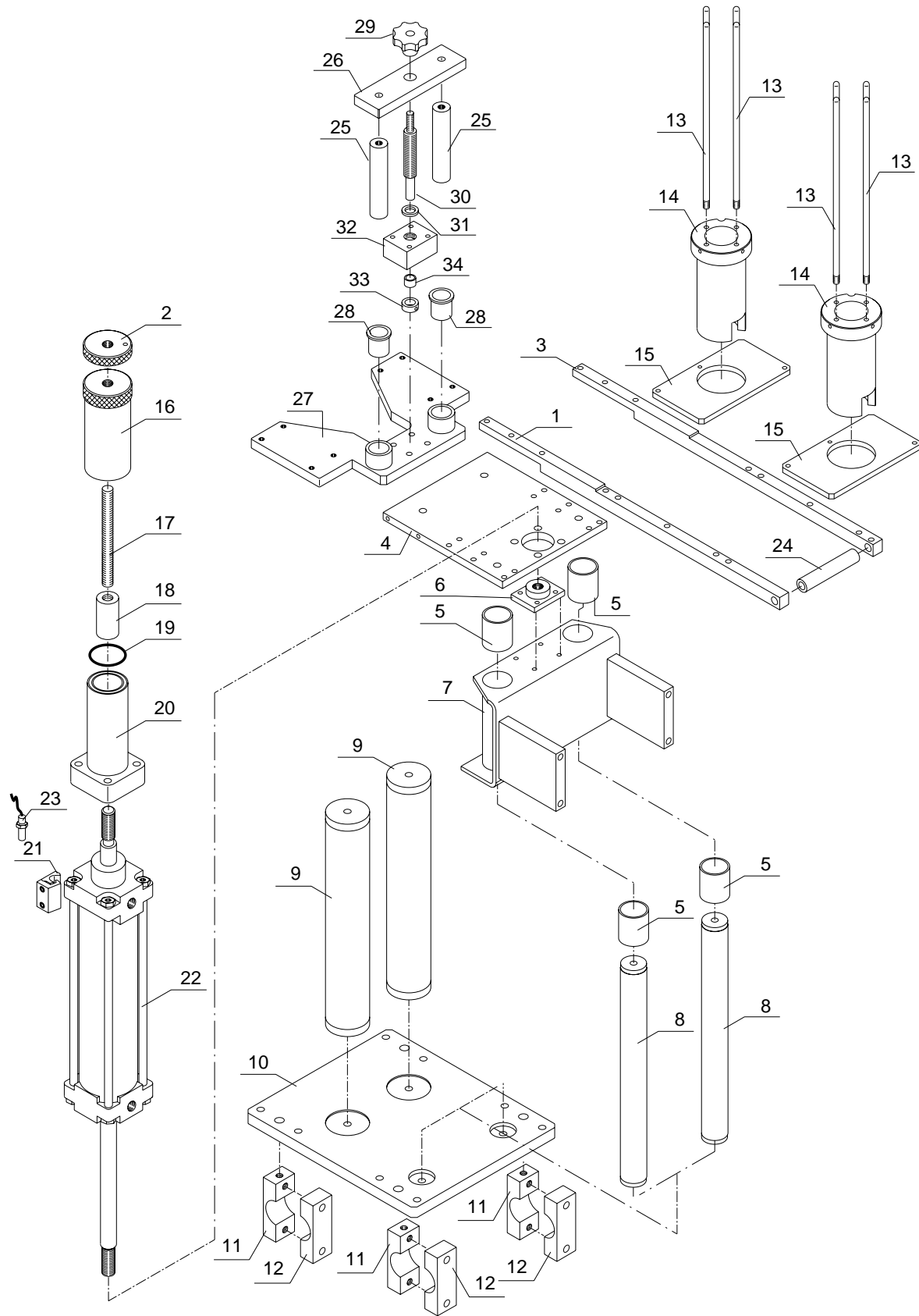
POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	12040177	Inner end piece	1	1
2	12040175	Outer end piece	1	1
3	12040172	Support bar	2	2
4	12040174	Spacer	10	10
5	12040179	Clamp	1	1
6	12040078	Lower clamp	2	2
7	12040079	Upper clamp	2	2
8	12040971	Support plate	2	3
9	336085056	Bush	4	6
10	12040970	Sleeve	2	3
11	540313052	Antirotation guide	2	3
12	17000271	Cylinder	2	3
13	12040972	Intermediate plate	2	3
14	540313028	Spacer	8	12
15	540313057	Spring	8	12
16	540313029	Tie rod	8	12
17	540313051	Lock nut	4	6
18	12040973	Sealer support plate	2	3
19	17000054	Limitswitch	2	3
20	17000055	Limitswitch anchor	2	3
21	017075168	Resistance	2	3
22	017988037	Thermocouple	2	3



**Fig. 9.27 - Lid sealing station**

**Tube feed - Fig. 9.28**

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	12040133	Left hand magazine support plate	1	1
2	12040665	Lock nut		1
3	12040134	Right hand magazine support plate	1	1
4	12040125	Upper plate	1	1
5	17000384	Bush	4	4
6	17000052	Anchor	1	1
7	12041484	Gripper support holder slide	1	1
8	12040127	Slide guide column	2	2
9	12040126	Plate support column	2	2
10	12040123	Base	1	1
11	12040078	Lower clamp	4	4
12	12040079	Upper clamp	4	4
13	12040242	Long rod	8	12
	12040243	Short rod	8	12
14	12041480	Lid magazine	2	3
15	12041481	Magazine holder plate	2	3
16	12040661	Cylinder travel adjusting nut	1	1
17	12040664	Adjustment screw	1	1
18	12040663	Cylinder joint	1	1
19	336067082	O-ring 4100	1	1
20	12040662	Cylinder mounting sleeve	1	1
21	17000055	Anchor	2	2
22	17000012	Cylinder	1	1
23	17000054	Limit switch DSM3N225	2	2
24	12040721	Tie rod	1	1
25	12041379	Guide column	2	2
26	12041378	Upper plate	1	1
27	12041380	Plate support plate	1	1
28	336005076	Bush	2	2
29	336067055	Flywheel	1	1
30	12041381	Adjustment screw	1	1
31	540203006	Clearance washer	1	1
32	540203005	Lifting block	1	1
33	540203007	Screw stop	1	1
34	540203008	Screw bush	1	1

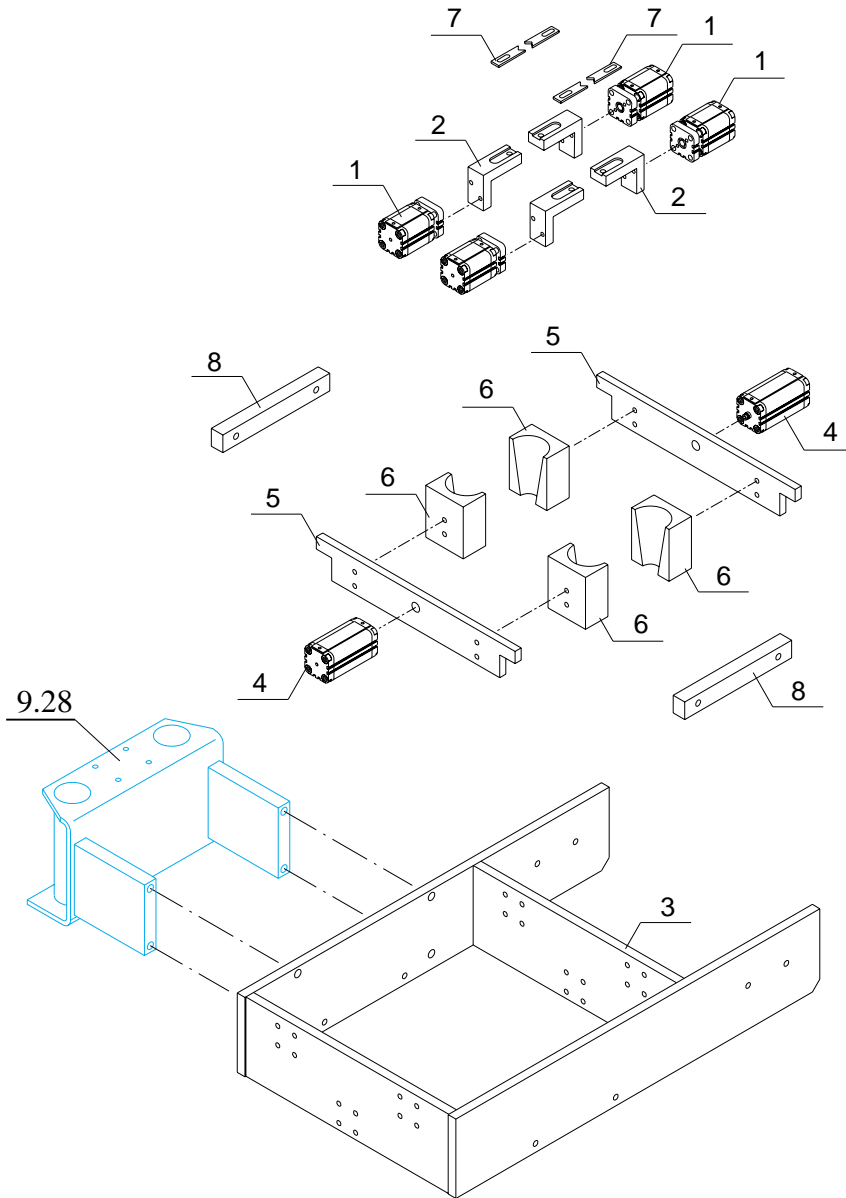


**Fig. 9.28 - Tube feed**

**Tube feed - Fig. 9.29**

---

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	17040039	Cylinder	4	6
2	12041338	Gripper support	4	6
3	12041485	Frame	1	1
4	17040067	Cylinder	4	6
5	12041482	Plate	2	2
6	FM75D05141	Jaw	4	6
7		Pick-up gripper (depending on format)	4	6
8	12041483	Anti-rotation device	2	2



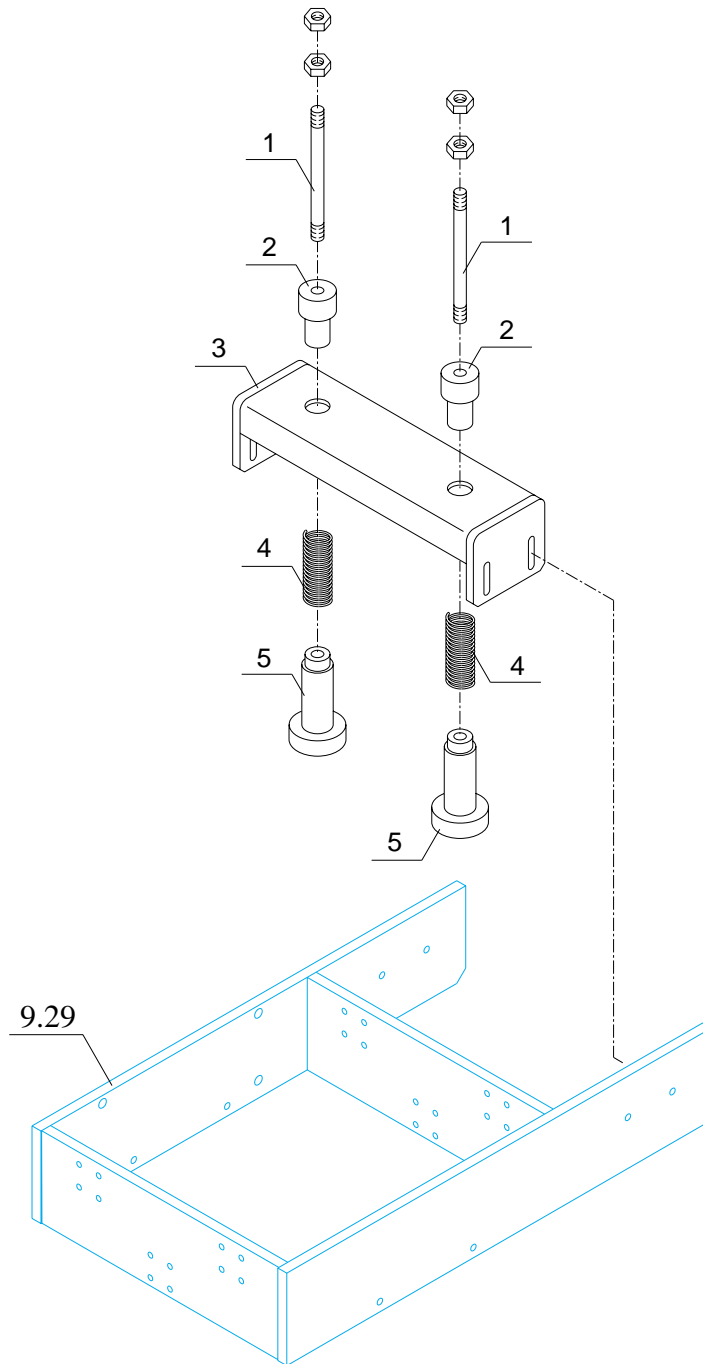
**Fig. 9.29 - Tube feed**



**Tube gauge - Fig. 9.30**

---

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	FM0605	Tierod	2	4
2	540602006	Bush	2	4
3	12041486	Gauge support	1	1
4	FM0606	Spring	2	4
5	12040408	Pad	2	4

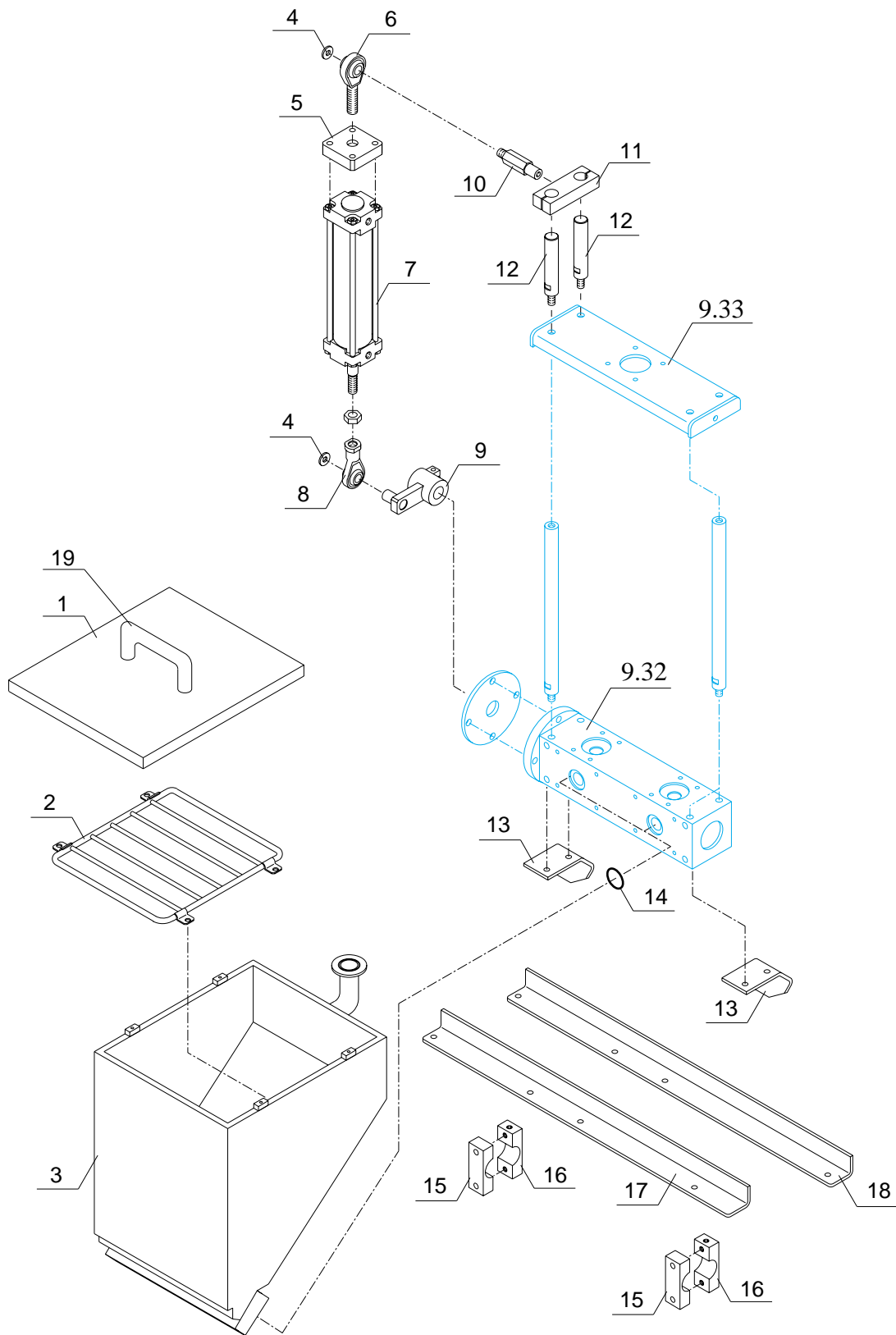


**Fig. 9.30 - Tube gauge**

**Volumetric doser - Fig. 9.31**

---

POS.	CODE	DESCRIPTION	Q.TY
1	12041445	Hopper cover	1
2	12041446	Guard mesh	1
3	12041444	Hopper	1
4	12041226	Washer	2
5	12041225	Plate	1
6	17000063	Coupling head	1
7	17000378	Cylinder	1
8	333001647	Coupling head	1
9	12041221	Shaft movement lever	1
10	12041224	Cylinder support pin	1
11	12041223	Cylinder seal clamp	2
12	12041203	Clamp support shaft	2
13	12041208	Bracket	2
14	336067082	O-ring 4100	2
15	12040078	Lower clamp	2
16	12040079	Upper clamp	2
17	12041447	Front support bracket	1
18	12041448	Rear support bracket	1
19	3360057086	Handle	1

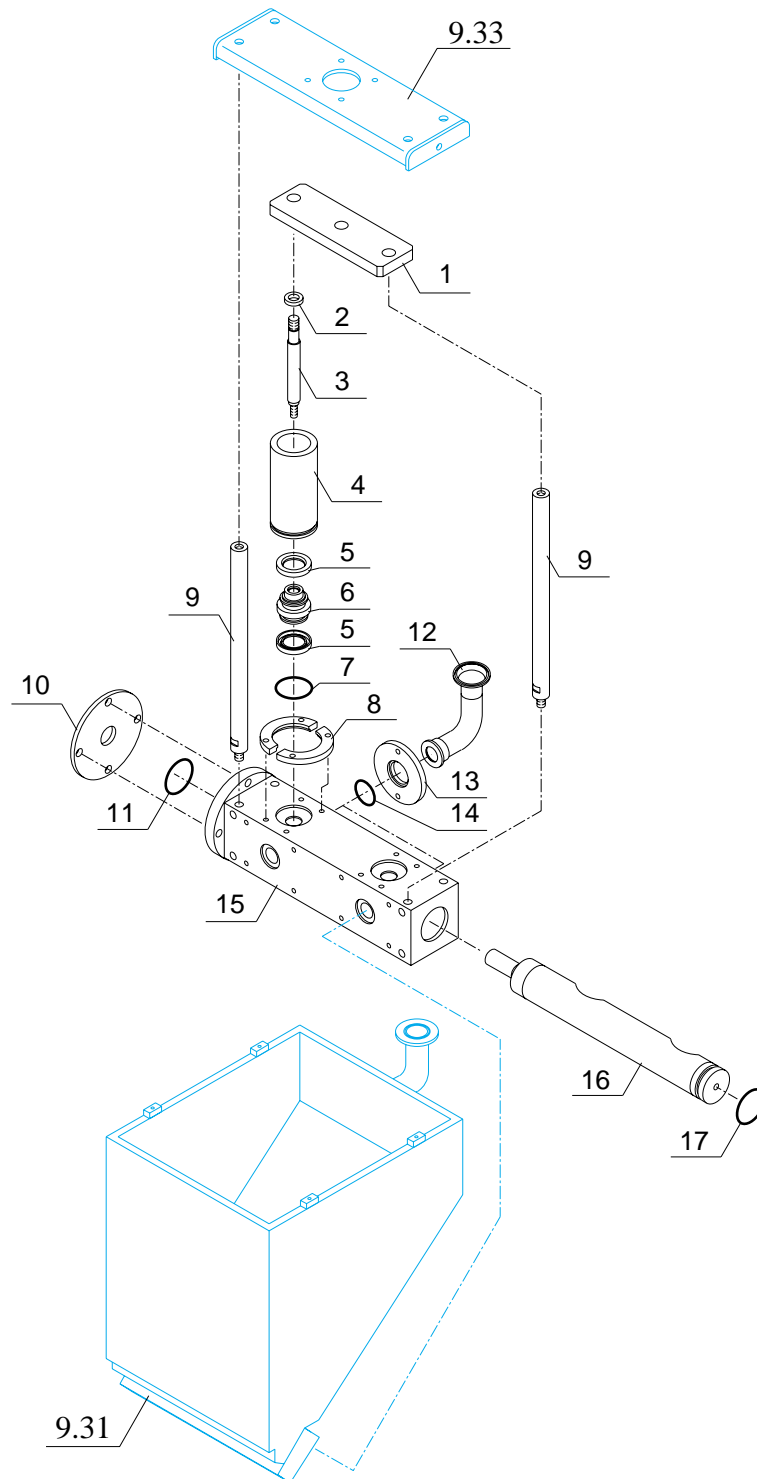


**Fig. 9.31 - Volumetric doser**

**Volumetric doser - Fig. 9.32**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12041443	Plate	1
2	12041213	Washer	2
3	12041212	Stem	2
4	12041210	Cylinder	2
5	336069471	Seal	4
6	12041211	Doserpiston	2
7	336067059	O-ring 3168	2
8	12041214	Half-rings	2
9	12041204	Shaft	4
10	1204122	Shaft seal disk	1
11	336067091	O-ring	1
12	12041215	Union	2
13	12041216	Union anchoring	2
14	336067082	Seal	2
15	12041440	Distributor body	1
16	12041441	Distributor shaft	1
17	336067255	O-ring	1

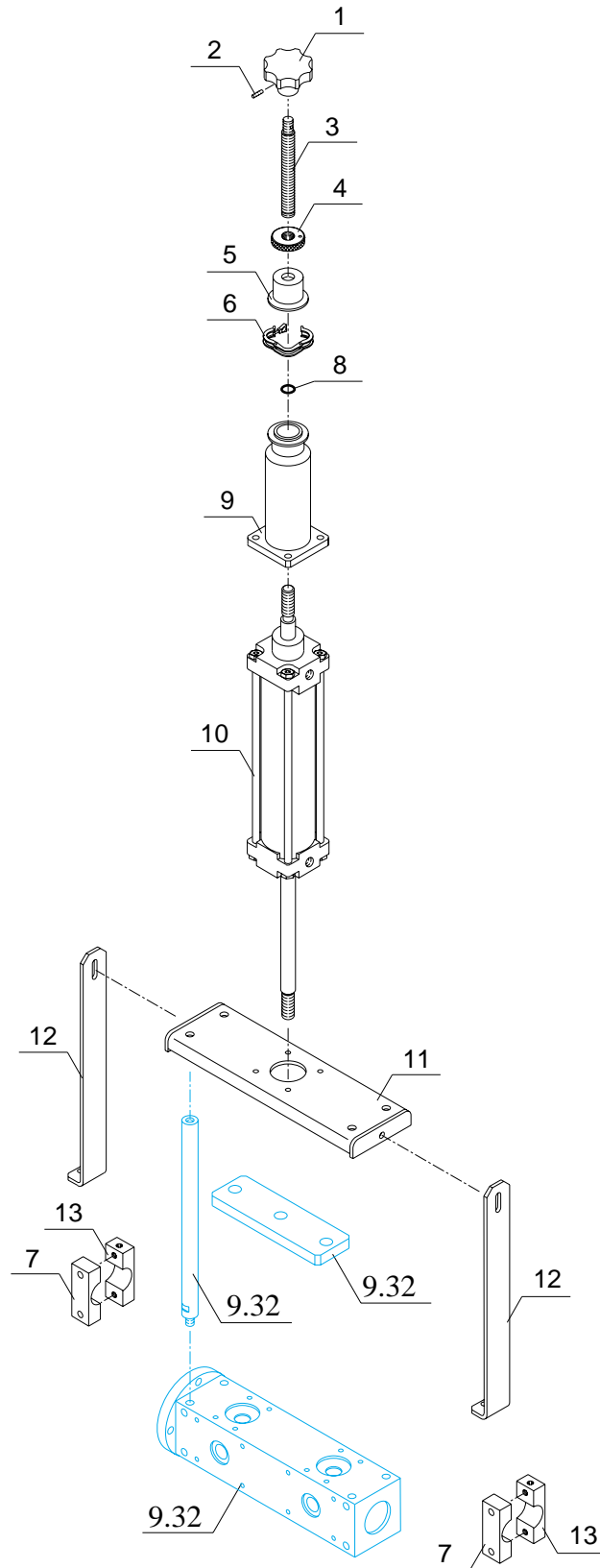


**Fig. 9.32 - Volumetric doser**

**Volumetric doser - Fig. 9.33**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	336057062	Flywheel	1
2	326024250	Elastic pin 4x16	1
3	12041218	Adjustment screw	1
4	341657001	Ringnut	1
5	341690023	Terminal	1
6	016060218	Clamp	1
7	12040078	Lower clamp	2
8	326019014	Elastic pin	1
9	12041217	Cylinder adjustment component	1
10	17000067	Cylinder	1
11	12041442	Plate	1
12	12041207	Plate	2
13	12040079	Upper clamp	2



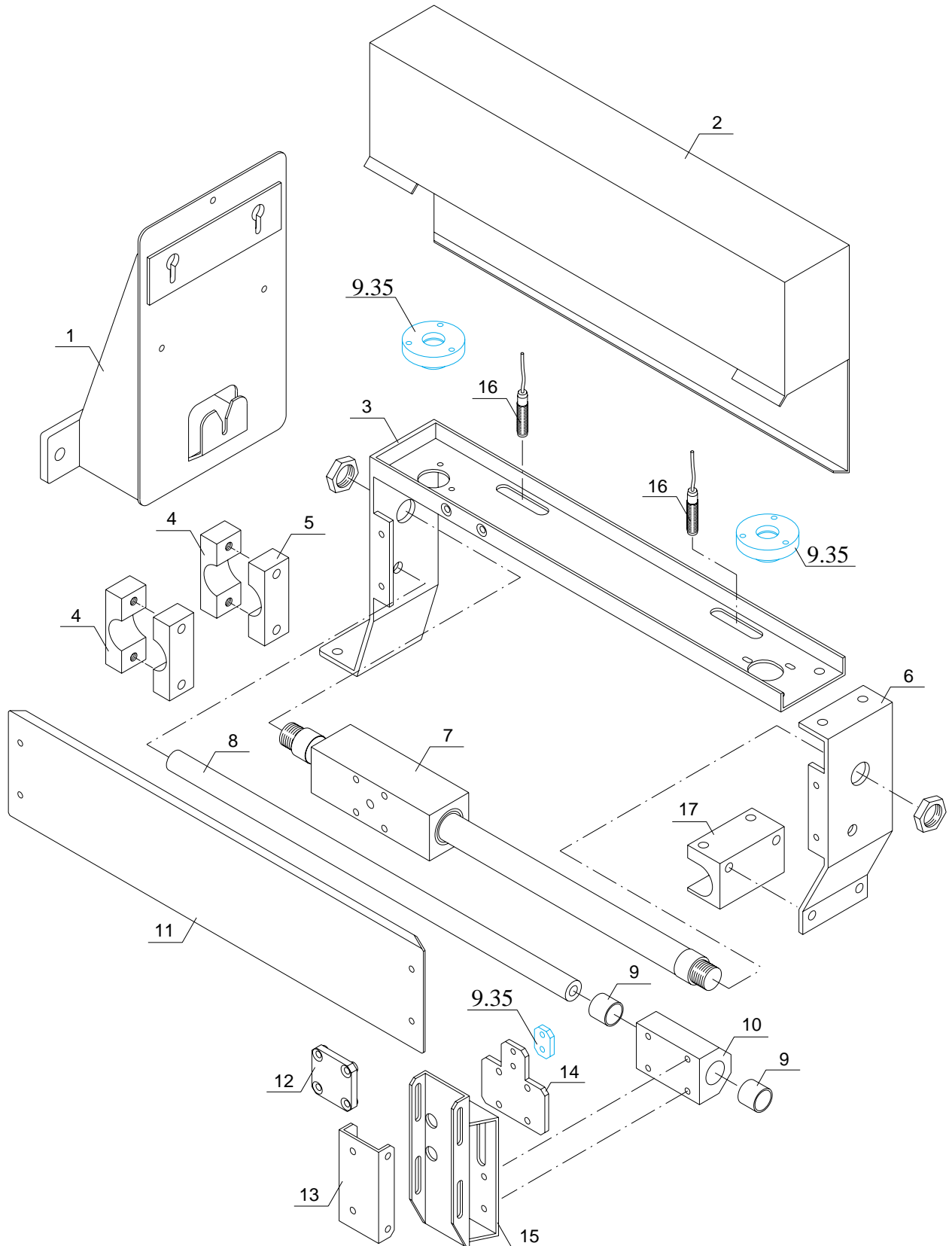
**Fig. 9.33 - Volumetric doser**



### **Ink-jet stamp - Fig. 9.34**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12041516	Station support	1
2	12041515	Protective casing	1
3	12041500	Supporting crosspiece	1
4	12040079	Upper clamp	4
5	12040078	Lower clamp	4
6	12041501	Side support	1
7	17040083	Cylinder	1
8	12041503	Guide rod	2
9	17000432	Bush	2
10	12041504	Sliding block	1
11	12041502	Front strip	1
12	12041507	Anchor plate	1
13	12041506	Stamp connection	1
14	12041508	Belt connection plate	1
15	12041505	Stamp support	1
16	017035832	Proximity sensor	2

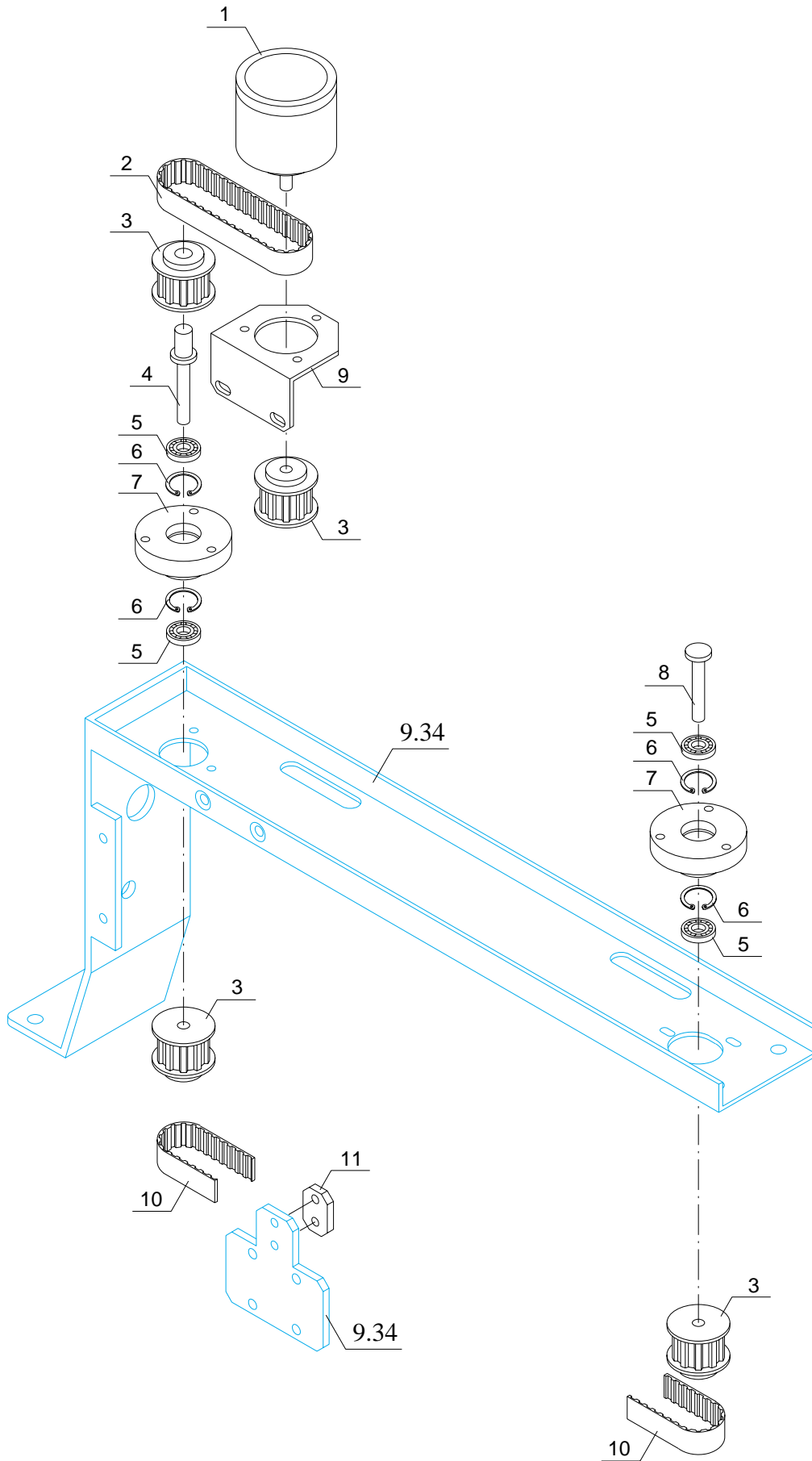


**Fig. 9.34 - Ink-jet stamp**

**Ink-jet stamp - Fig. 9.35**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	17040085	Encoder	1
2	336019926	Belt	1
3	12041513	Pulley	4
4	12041511	Pin for pulley with encoder	1
5	336001302	Bearing	4
6	326019120	Circlip	4
7	12041510	Belt flange	2
8	12041512	Return pulley pin	1
9	12041514	Encoder support	1
10		Belt	1
11	12041509	Belt stop plate	1

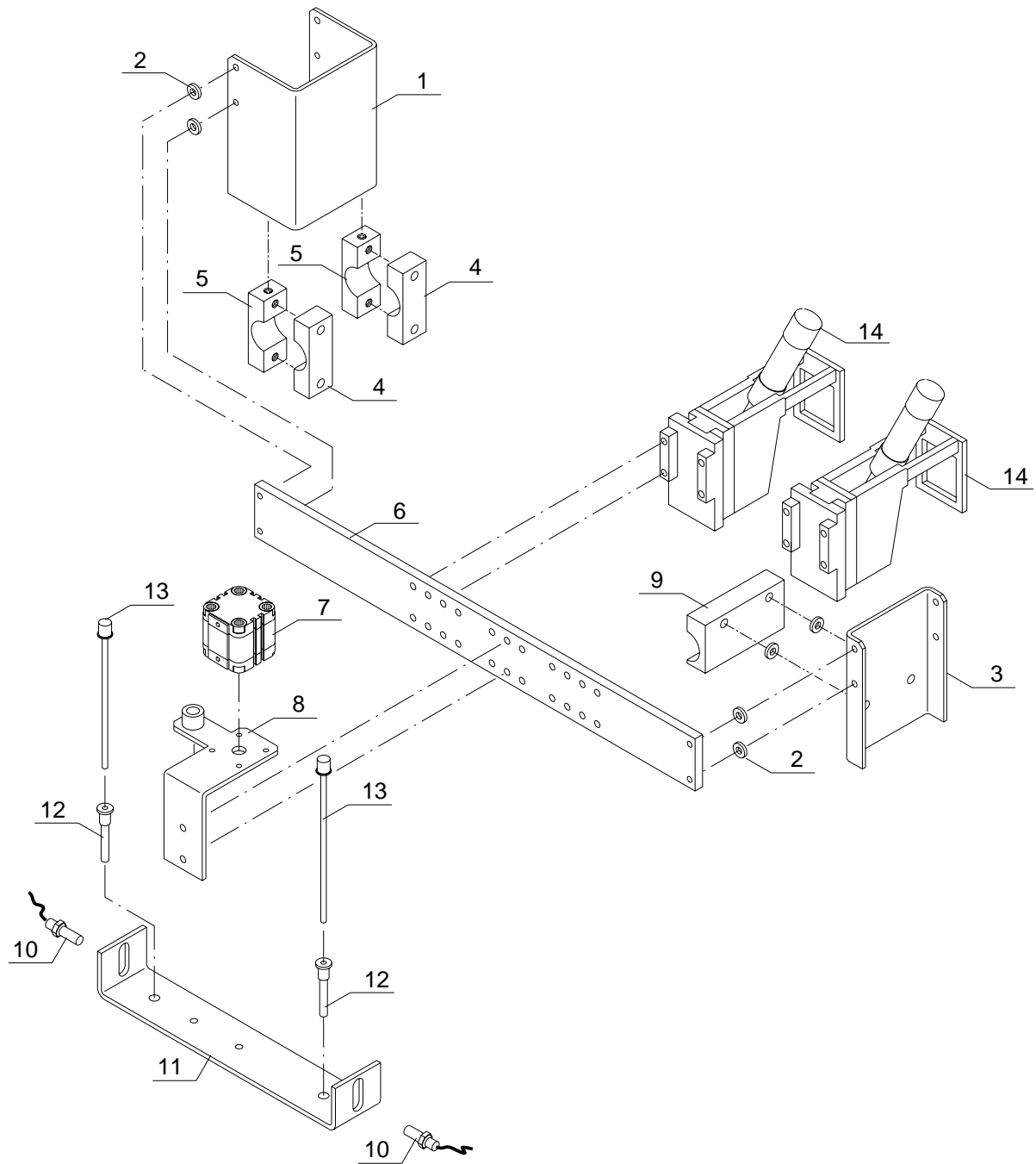


**Fig. 9.35 - Ink-jet stamp**

**Date stamp - Fig. 9.36**

---

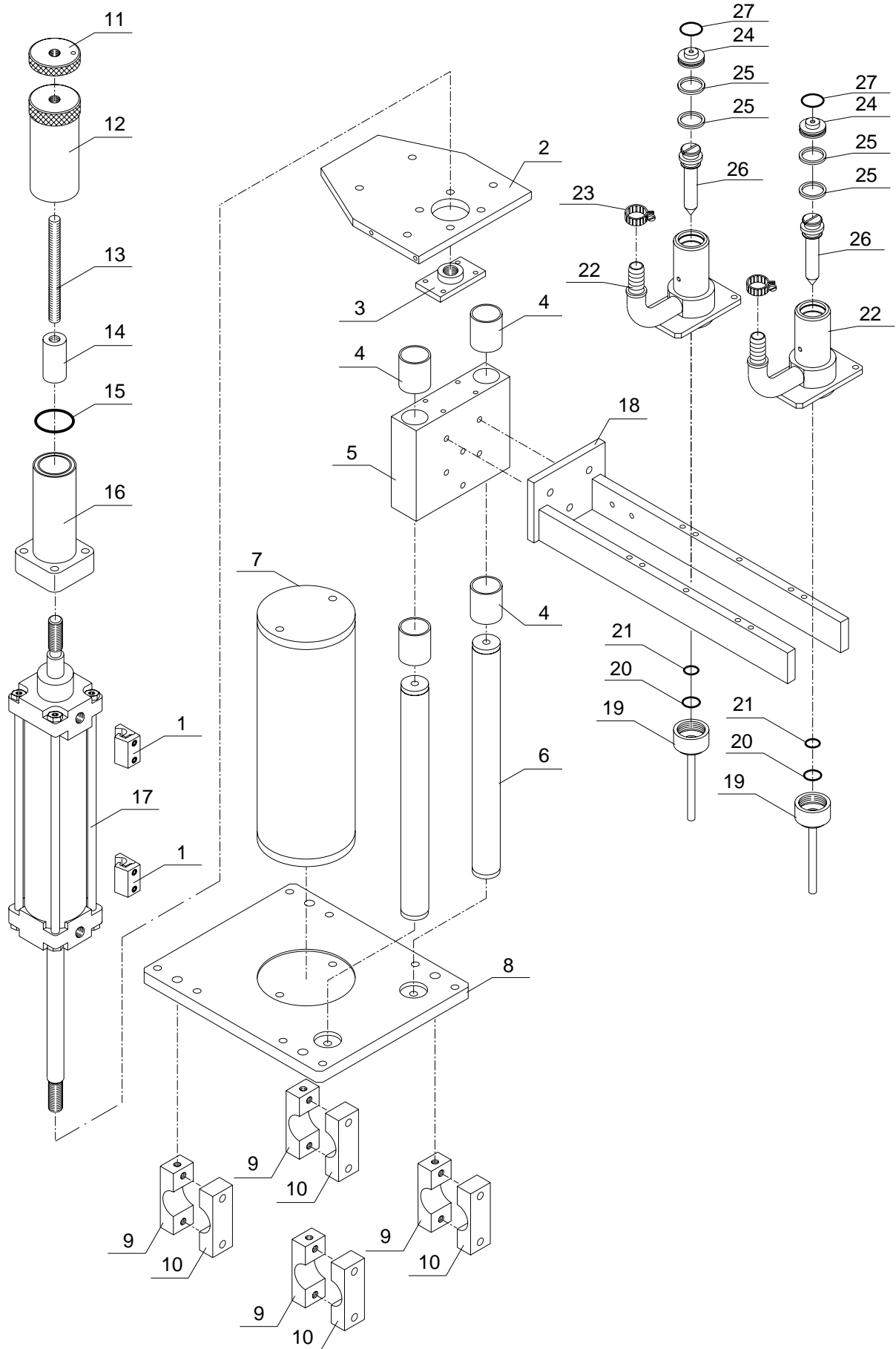
POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	12040687	Inner end piece	1	1
2	12040174	Spacer	6	6
3	12040686	Outer end piece	1	1
4	12040079	Lower clamp	2	2
5	12040078	Upper clamp	2	2
6	12040688	Support bar	1	1
7	17000270	Cylinder	1	1
8	12041278	Bracket	2	2
9	12040179	Clamp	1	1
10	017035921	Proximity sensor	2	3
11	12041279	Feeler pin bracket	1	1
12	CM50T41001	Guide bush	2	3
13	12040940	Cone feeler pin	2	3
14	336090206	Stamp	2	3



**Fig. 9.36 - Date stamp**

**Pencil filler - Fig. 9.37**

POS.	CODE	DESCRIPTION	Q.TY	
			2 Lanes	3 Lanes
1	17000056	Anchor	2	2
2	12040076	Support plate	1	1
3	17000053	Anchor	1	1
4	336005055	Bush	4	4
5	12040083	Frame fixing slide	1	1
6	12040080	Slide guide column	2	2
7	12040081	Support column	1	1
8	12040077	Base plate	1	1
9	12040079	Upper clamp	4	4
10	12040078	Lower clamp	4	4
11	12040075	Lock nut	1	1
12	12040074	Cylinder travel adjusting nut	1	1
13	541120121	Adjustment screw	1	1
14	341690101	Cylinder joint	1	1
15	336067370	O-ring 4143	1	1
16	12040073	Cylinder mounting sleeve	1	1
17	17000009	Cylinder	1	1
18	12040109	Support frame	1	1
19	12040539	Nozzle	2	3
20	336067030	Seal	2	3
21	336067014	Seal		
22	12041127	Valve body	2	3
23	018060957	Clip	2	3
24	540214002	Bottom	2	3
25	336067020	Seal	4	6
26	540214001	Piston	2	3
27	336067020	Seal	2	3

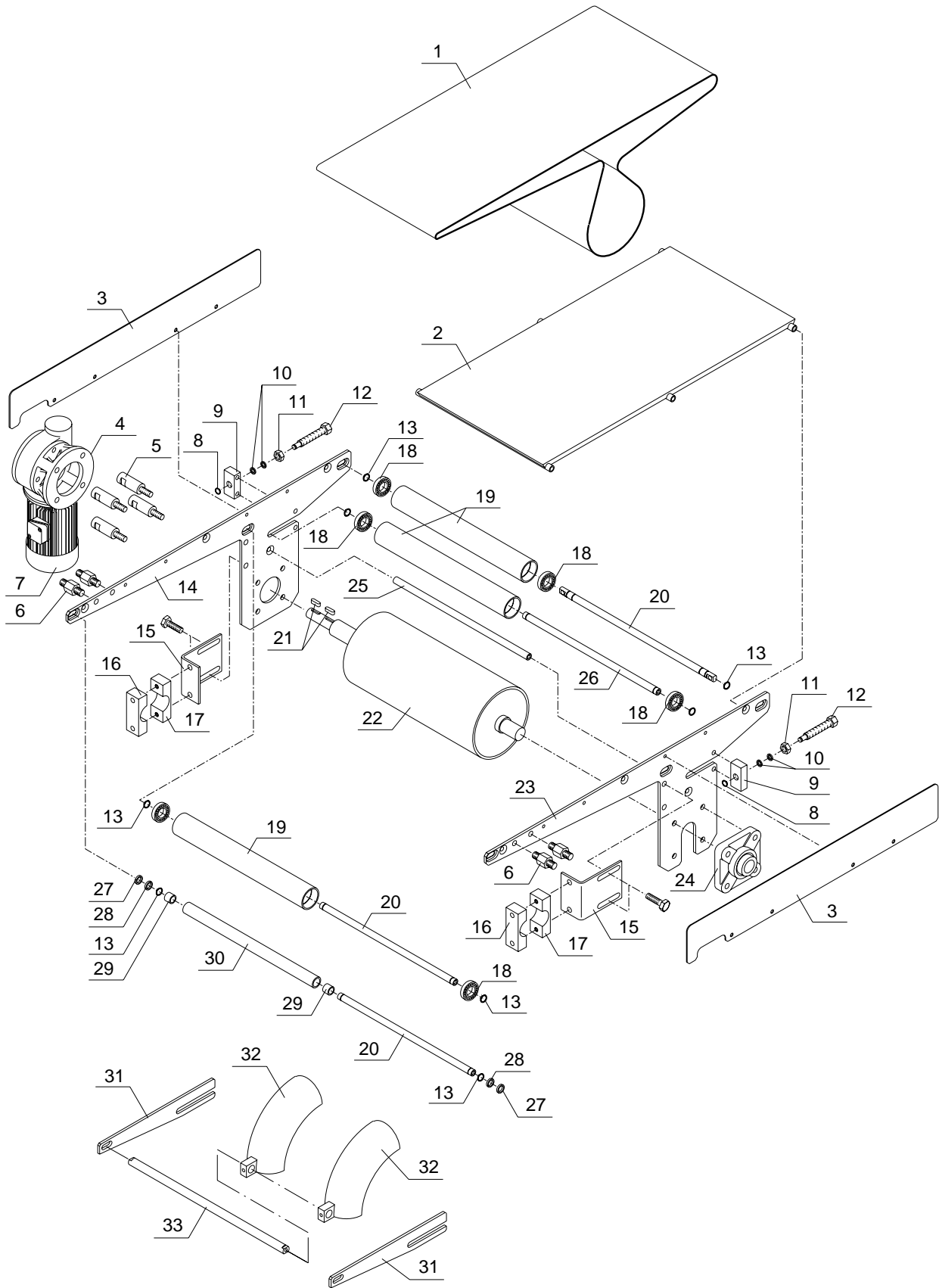


**Fig. 9.37 - Pencil filler**



**Cone ejector belt - Fig. 9.38**

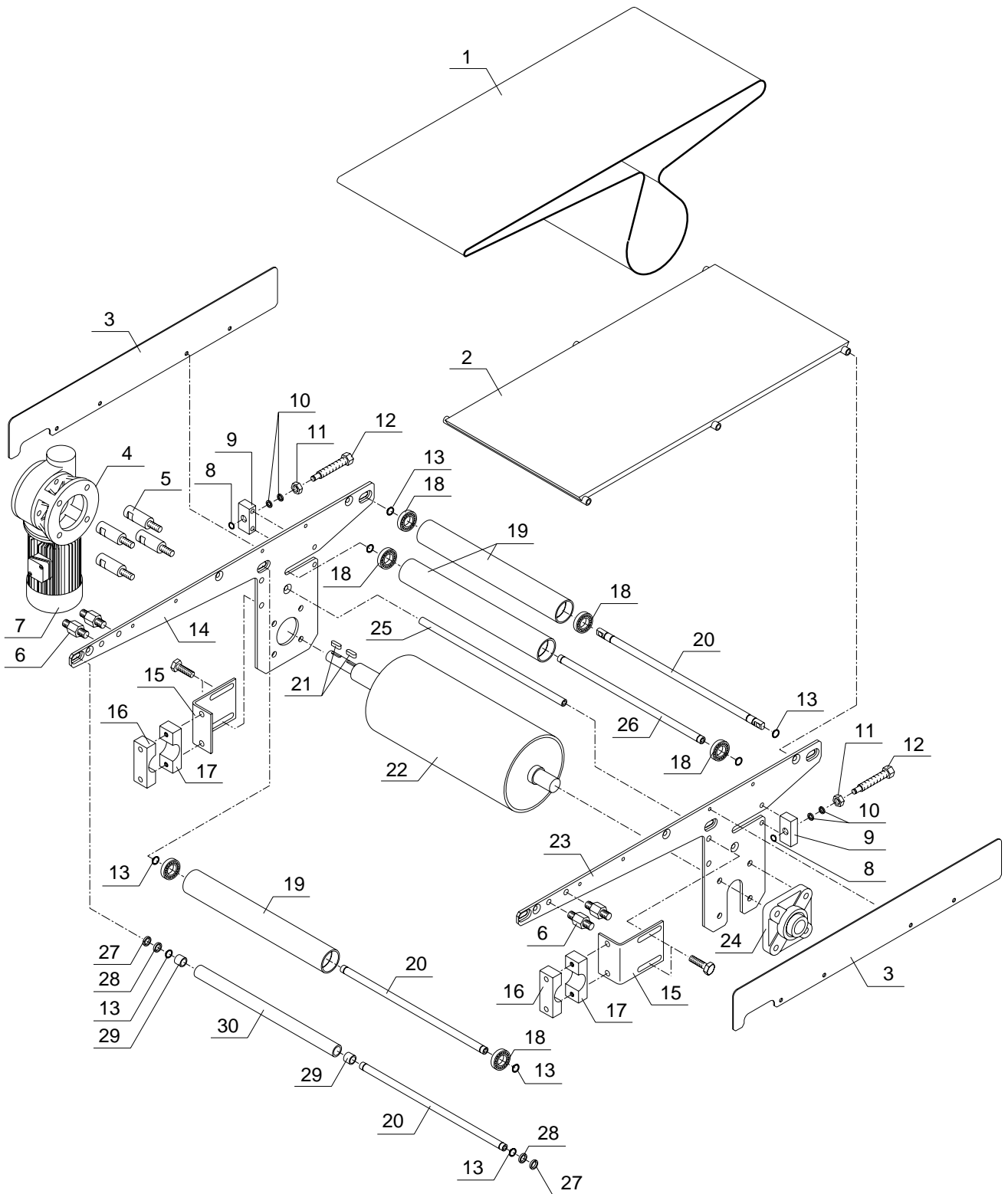
POS.	CODE	DESCRIPTION	Q.TY
1	336020508	Belt	1
2	12041452	Belt support plate	1
3	12041463	Guard panel	2
4	17000367	Reduction gear	1
5	12040233	Reduction gear column	4
6	12040155	I-beam pin	4
7	17000113	Motor ST63 4P 0.18 kW B5	1
8	326019008	Circlip	2
9	12041459	Tension block	2
10	12041462	Pin washer	2
11	12041461	Retainer nut	2
12	12041460	Tensioning pin	2
13	326019012	Circlip	8
14	12041451	Motor side shoulder	1
15	12040236	Bracket	1
16	12040234	Rear support	2
17	12040235	Front support	2
18	17000496	Bearing	6
19	12041455	Return roller	3
20	12041457	Return roller axle	3
21	326013075	Key 6x6x20	2
22	12041454	Driving roller	1
23	12041450	Shoulder	1
24	17000017	Flange support UCF-R50205AR	1
25	12041453	Shoulder connection crosspiece	1
26	12041458	Tensioner roller axle	1
27	17000499	Shoulder ring	2
28	17000498	Seal ring	2
29	17000497	Roller cage	2
30	12041456	Return roller	1
31	12040219	Guide bracket	2
32	12040289	Cone ejector guide	2
33	12014730	Bracket tie rod	1



**Fig.9.38 - Cone ejector belt**

**Cup ejector belt - Fig. 9.39**

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	336020508	Belt	1
2	12041452	Belt support plate	1
3	12041463	Guard panel	2
4	17000367	Reduction gear	1
5	12040233	Reduction gear column	4
6	12040155	I-beam pin	4
7	17000113	Motor ST63 4P 0.18 kW B5	1
8	326019008	Circlip	2
9	12041459	Tension block	2
10	12041462	Pin washer	2
11	12041461	Retainer nut	2
12	12041460	Tensioning pin	2
13	326019012	Circlip	8
14	12041451	Motor side shoulder	1
15	12040236	Bracket	1
16	12040234	Rear support	2
17	12040235	Front support	2
18	17000496	Bearing	6
19	12041455	Return roller	3
20	12041457	Return roller axle	3
21	326013075	Key 6x6x20	2
22	12041454	Driving roller	1
23	12041450	Shoulder	1
24	17000017	Flange support UCF-R50205AR	1
25	12041453	Shoulder connection crosspiece	1
26	12041458	Tensioner roller axle	1
27	17000499	Shoulder ring	2
28	17000498	Seal ring	2
29	17000497	Roller cage	2
30	12041456	Return roller	1

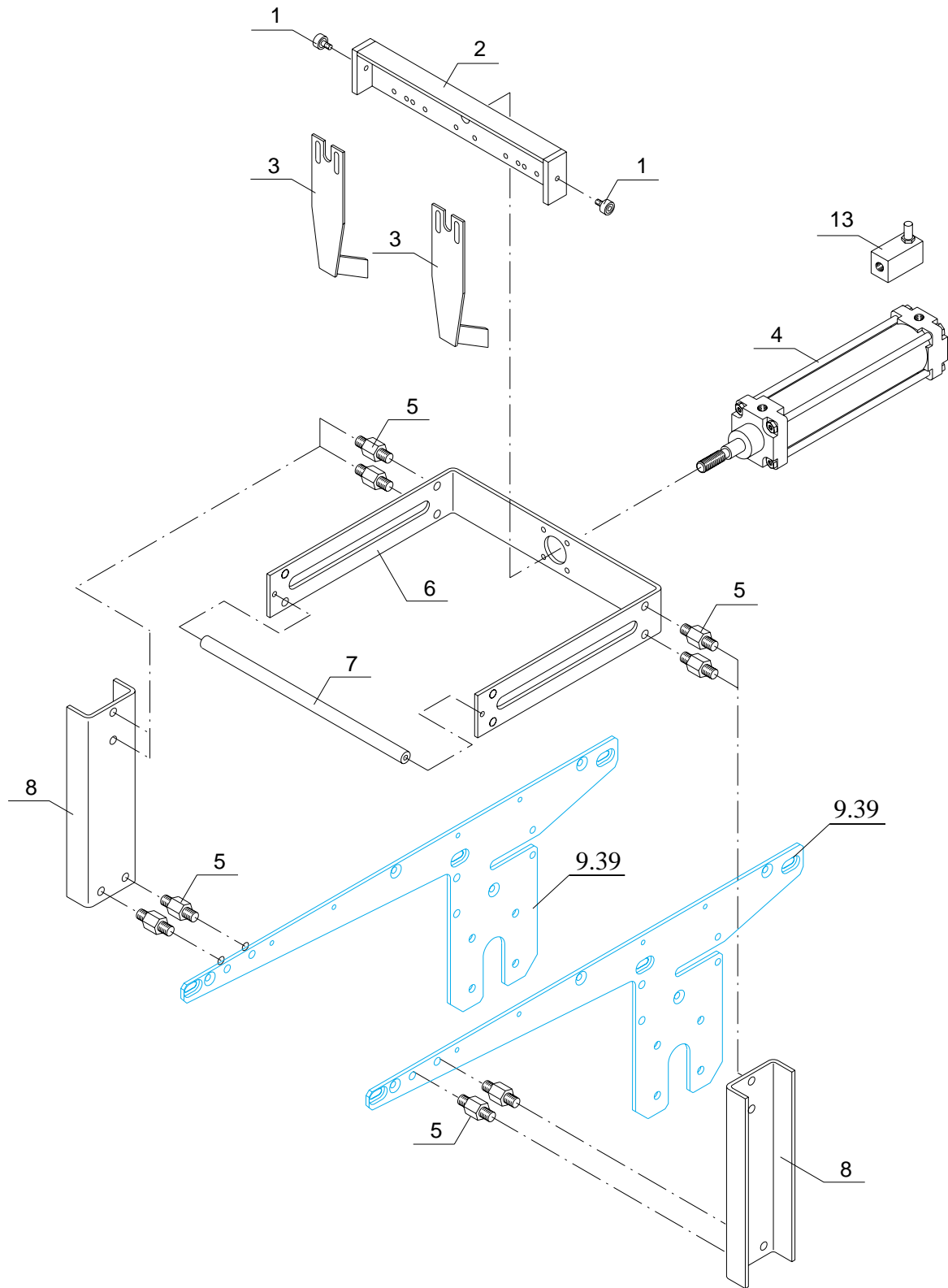


**Fig.9.39 - Cup ejector belt**

### Cup ejector belt - Fig. 9.40

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	33603151	Idlerpin	2
2	12040153	Blade holder crosspiece	1
3		4-lane cupejector blade (according to format)	2
3a		6-lane cupejector blade (according to format)	3
4	17000014	Cylinder	8
5	12040155	I-beampin	1
6	12040151	Cylinder support fork	1
7	12040154	Tierod	1
8	12040152	Fork support	2
9	12040236	Bracket	1
10	12040552	Bracket	1
11	12040235	Front support	2
12	12040234	Rear support	2
13	011045494	Rapidejector	1

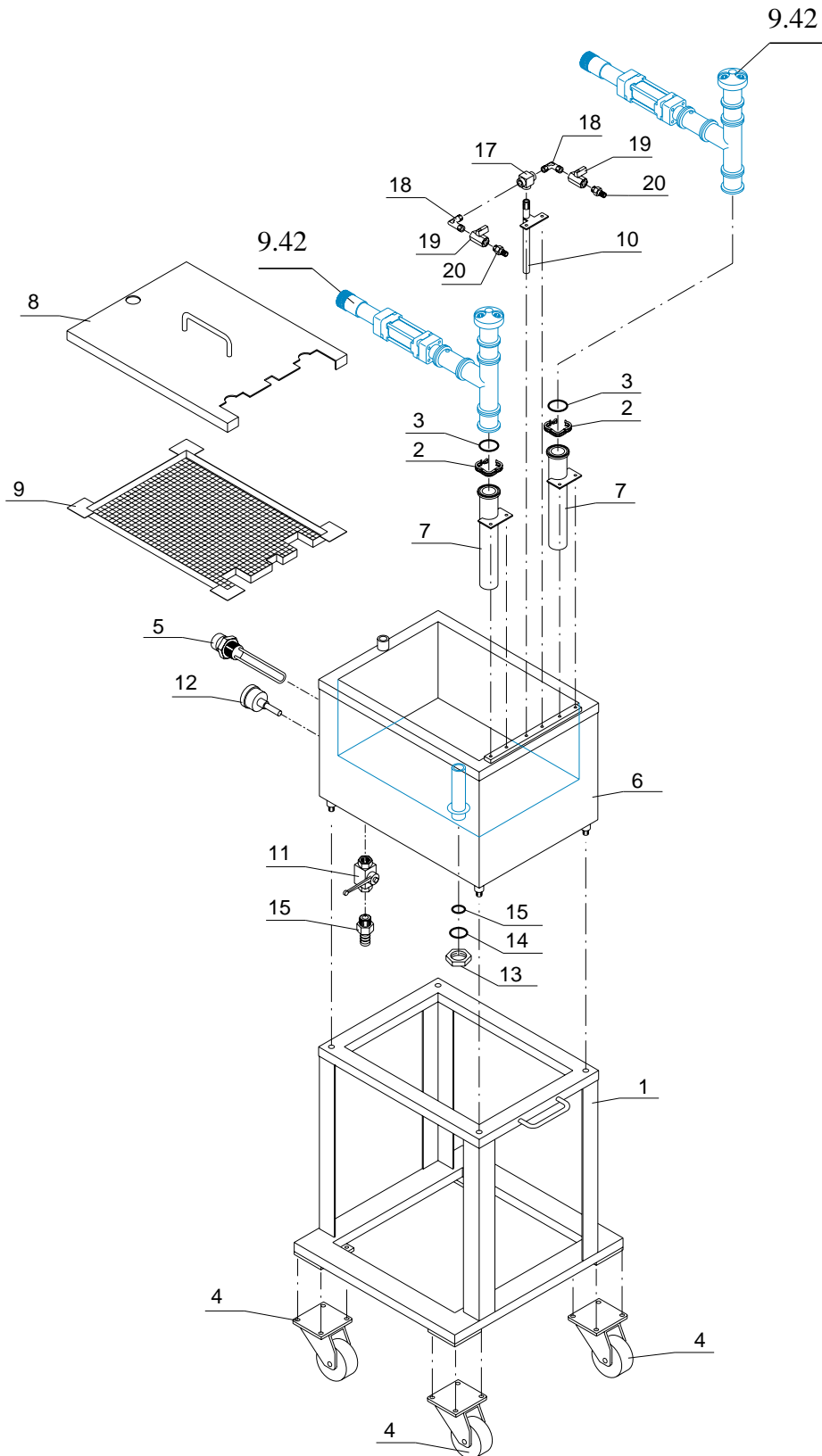


**Fig.9.40 - Cup ejector belt**

**Chocolate tank - Fig. 9.41**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040816	Tank support frame	1
2	016060218	Clamp	2
3	018020582	Seal	2
4	336054078	Wheel DM100	4
5	01797020	Resistance	1
6	12040814	Chocolate tank	1
7	12040926	Chocolate dipping tube	2
8	12040818	Tank cover	1
9	12040820	Chocolate filter mesh	1
10	12040819	Chocolate return outlet	2
11	016020003	Ball valve A304	1
12	017088239	BSA thermostat	1
13	ML8061006	Special nut	1
14	336067089	Seal	1
15	336067054	Seal	1
16	016061064	Rubber seal support	1
17	016061042	1/4" FFF TE	1
18	016061032	1/4" Elbow	2
19	016030065	1/4" Cock	2
20	016061062	1/4" Rubber seal support	2



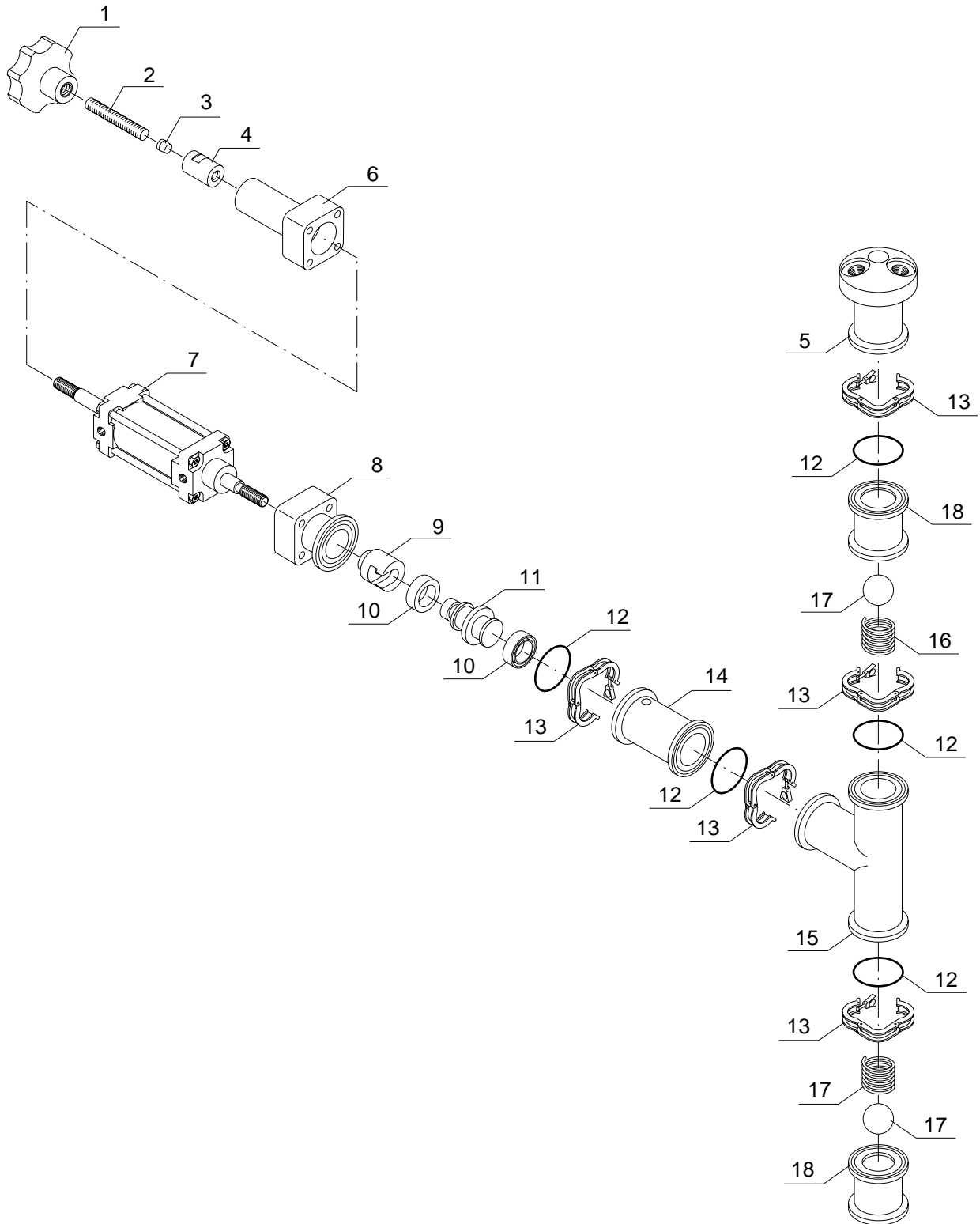
**Fig. 9.41 - Chocolate tank**



## Chocolate spray pump - Fig. 9.42

---

POS.	CODE	DESCRIPTION	Q.TY
1	336057064	Flywheel	1
2	12040716	Adjustment screw	1
3	540643005	Cap	1
4	12040715	Joint	1
5	12040806	Nipple with two outlets	1
6	12040709	Adjustment sleeve	1
7	17000309	Cylinder	1
8	12040712	Ring nut with connection	1
9	540204053	Coupling	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	Union tee	1
16	12040711	Spring	2
17	336003999	Ball	2
18	12040710	Spring container	2

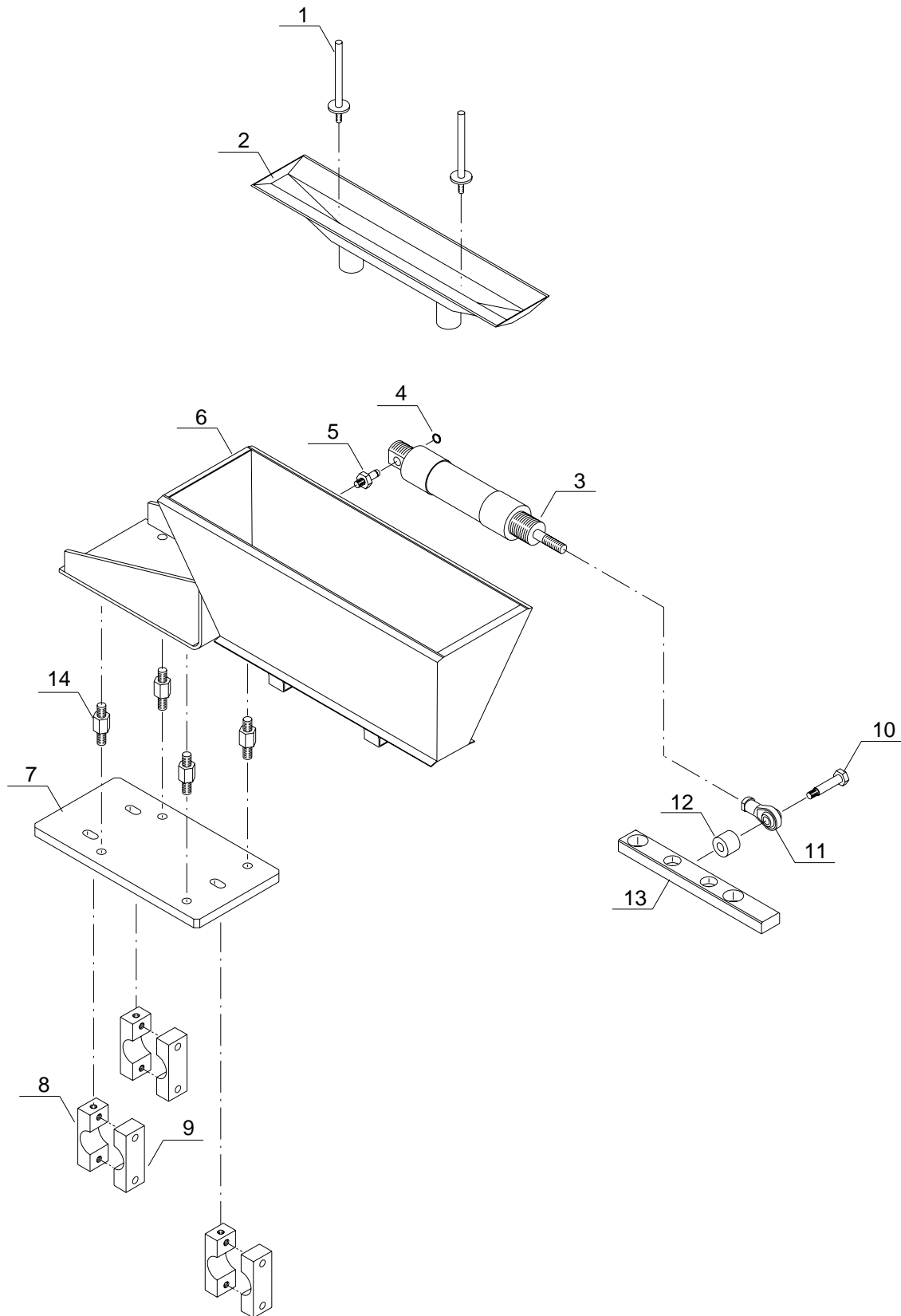


**Fig. 9.42 - Chocolate spray pump**

### **Chewing gum dispenser - Fig. 9.43**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040633	Chewing gum shaker	2
2	12040777	Inner hopper component	1
3	17000011	Cylinder	1
4		Circlip	1
5	12040779	Cylinder pin	1
6	12040776	Chewing gum dosing hopper	1
7	12040742	Feed unit support plate	1
8	12040078	Lower clamp	3
9	12040079	Upper clamp	3
10	12040780	Uniball pin	1
11	17000045	Coupling head	1
12			1
13	12040778	Chewing gum shaker	1
14	12040155	I-beam pin	4

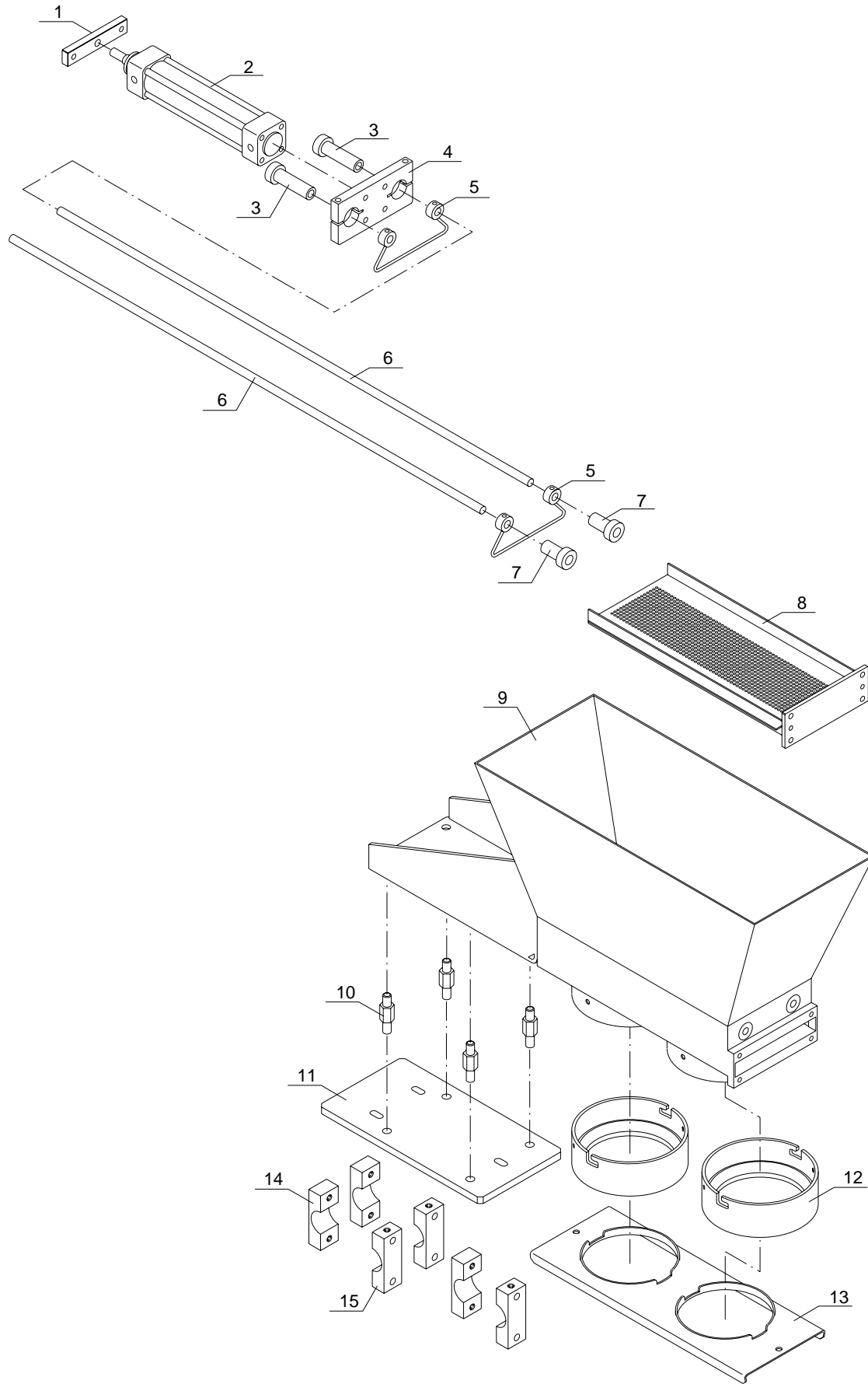


**Fig. 9.43 - Chewing gum dispenser**

**Cocoa dispenser - Fig. 9.44**

---

<b>POS.</b>	<b>CODE</b>	<b>DESCRIPTION</b>	<b>Q.TY</b>
1	12040756	Rear plate	1
2	17000331	Cylinder	1
3	12040752	Rear bush	2
4	12040755	Cylinder plate	1
5	12041270	Front bush	2
6	12040753	Movement axle	2
7	12041270	Front bush	2
8	12040751	Dosing sieve	1
9	12040749	Cocoa hopper	1
10	CM50J39050	Lane I-beam pin	4
11	12040742	Cocoa unit support plate	1
12	12040750	Dosing ring nut	2
13	12040260	Lamella	1
14	12040078	Lower clamp	3
15	12040079	Upper clamp	3



**Fig. 9.44 - Cocoa dispenser**