



PESCE

PESCE srl
via gambalera, 184 z.i.d5
15100 spinetta marengo
alessandria, italy
tel +39 0131 216411
fax +39 0131 214600
info@pescesrl.com
www.pescesrl.com

AUTOMAZIONE DELL'ORIENTAMENTO AUTOMATIC ORIENTATION AUTOMATION DE L'ORIENTATION AUTOMATISCHE ORIENTIERUNG

OPERATION AND ORDINARY MAINTENANCE MANUAL

CENTRIFUGAL FEEDER

mod. AC10SN/A

MANUAL CODE

AC10SN/A Rev.B

SERIAL NO.

YEAR

***Centrifugal feeder
mod.AC10SN/A***

ATTENZION !

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via gambalera, 184 z.i. d5

15100 spinetta marengo
alessandria, italy

tel +39 0131 216411
fax +39 0131 214600

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1. GENERAL INFORMATION

1.1 Introduction



ATTENZION !

Before carrying out any operation on the machine and/or packaging of the different parts, read all the instruction manual carefully. This manual contains important information for the safety of the persons in charge of ordinary maintenance, of the persons in charge of the utilisation and operation of the machine.

This manual refers to the machine whose serial number is indicated in the title page.

Pesce S.r.l. reserves the right to make technical changes to the machines and the manuals without further notice.

Reserved property; no reproduction is allowed. Pesca S.r.l. protects its rights on the drawings and on the technical documentation according to the law.

The request of other copies of this manual must be sent to the customer engineering service of Pesca S.r.l. .

1.2 Retention of the manual



ATTENZION !

This manual constitutes an integral part of the machine and must always accompany the machine, also in case of sale. It must always be kept near the machine, in a place that is easily accessible by, and known to, the personnel.

The operator and the maintenance man must be able to find it and consult it quickly at any moment.



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1.3 Information search and reference method

The information and instructions are collected and organised by chapters and paragraphs and can be easily found by referring to the table of contents.

The information following a warning signal, a requirement and a ban must be carefully read. The notes essential for the health and safety of the operators are indicated in a box, displayed with warning signals, requirements and/or bans and in italics as shown below.



ATTENZION !

In particular, it is recommended that chapter 3 - SAFETY MECHANISMS, which contains important safety information and warnings, is carefully and repeatedly read.

1.4 Guarantees

Pesce S.r.l. is responsible for the machine in its original configuration. Any intervention that changes the configuration or operation cycle of the machine must be executed or authorised by the Engineering Department of Pesca S.r.l.

Pesce S.r.l. is not responsible for the consequences deriving from the utilisation of non-original spare parts.



ATTENZION !

All the servicing operations under guarantee, extraordinary maintenance and repair do not pertain to the operator or to the maintenance men but are reserved to the specialised technicians of the machine's manufacturer. Therefore, the said operations are not described in this manual.



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1.5 Machine identification data

The machine can be identified by means of an CE rating plate. The rating plate is placed on the external structure, over the exit head.

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MODELLO <i>model</i>	_____
MATR. <i>s.number</i>	_____
ANNO <i>year</i>	_____
O.D.V. <i>order n°</i>	_____
POSIZIONE <i>item</i>	_____



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1.6 Improper use

Predicted use

Machine has been designed and constructed for the realization of products having characteristics indicated in the technical specifications.

Machine works in safety condition if:

- it is used according to the conditions and within the bounds arranged and indicated in this booklet;
- it is used rightly following the procedures described in this booklet;
- it is subjected to an ordinary maintenance according to the directions given by this booklet.



ATTENTION !

Pesce srl declines any responsibility deriving from an improper or non-set use of machine.

Non-set or non-allowed use

No other use is predicted if it is not authorized specifically by the constructor. So the constructor is exempt from every responsibility deriving from a non-observance of this directions.

Improper or wrong use

Constructor is not responsible for consequences deriving from an improper or wrong use of the machine.

More frequent cases of that use are normally due to:

- Insufficient preparation of staff in charge
- Tiredness (above all during the night shift) or distraction
- Negligence due to superficiality or wrong habits

We remind you that it's necessary to entrust expert personnel with surveillance and management, who is well-trained and able to:

- Use correctly the machine in normal working conditions
- Meet with possible emergencies.



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2 CHARACTERISTICS

2.1 Machine description

The AC10 centrifugal feeder produced by Pesce S.r.l. is a machine designed and realised for positioning cylindrical-shaped parts using the principle of the centrifugal force.

The parts to be positioned must have the following characteristics:

- they must be made in aluminium or plastic
- the diameter must be greater than the height

AC10 consists of a fixed plate on which a stainless steel sheet band is fixed. Under the fixed plate, a reduction motor is installed in the middle, which, by means of a flanged shaft, allows the rotation of a bakelite plate, placed inside the centrifugal feeder.

The pieces loaded in the feeder fall on the rotating plate and, through centrifugal force, are pushed on the inside wall of the band, on which a fixed head allows the parts to exit. The required selection and the orientation occur inside the head (which is designed according to the piece to be fed). A pneumatically-operated unit of piece recirculation occurs preventing them from entering into the selection head when there is no feed request.

The misoriented pieces are recovered by means of an air blow that conveys them in a stainless steel pipe, properly configured for returning them inside the feeder.



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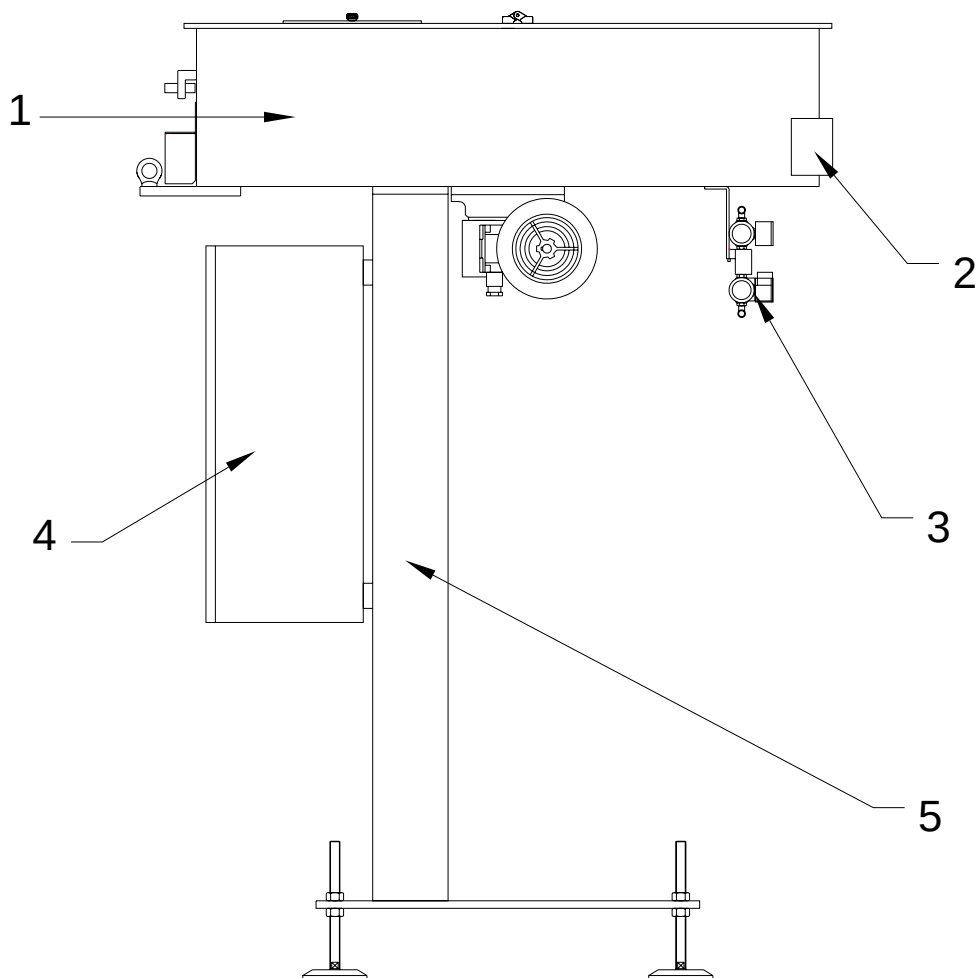
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2.2 Main devices

The machine can be divided in the parts indicated in the following figures:



1	Feeder body
2	Selection head
3	Pneumatic sistem
4	Electric installation
5	Bedplate

2.2.1 Feeder body

The feeder body consists of a fixed plate on which a stainless steel sheet band is screwed.

Under the fixed plate, a reduction motor is installed in the middle, which, by means of a flanged shaft, allows the rotation of a plate, placed inside the body of the feeder.

The pieces loaded in the feeder fall on the rotating plate and, through centrifugal force, are pushed on the inside wall of the band, on which a fixed head allows the parts to exit (see chapter 2.2.2 - SELECTION HEAD).

The piece recirculation switch intervenes preventing them from entering into the selection head when there is no feed request.

The misoriented pieces are recovered by means of an air blow that conveys them in a stainless steel pipe, which puts them in circulation in the centrifugal feeder.

Two semicircles in transparent PVC and acting as a cover are placed and hinged on the upper part of the feeder body in order to prevent the pieces from exiting during the operation. A micro switch is provided as an accident-prevention safety.

In order to allow the best operation of the centrifugal feeder, a device indicating the quantity of parts present is installed inside it, for any request of automatic supply with external feeding devices (hoppers or elevators).

2.2.2 Selection head

This device is placed at the exit of the feeder body: it is made of an electrically welded structure and its function is to position the parts. Two air jets are placed over it: the first one is used to insert in the recovery pipe the parts that are not correctly positioned; the second jet increases the speed of the part that comes out of the selection head correctly.



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2.2.3 Pneumatic system

The pneumatic system is controlled by a control unit placed in the bedplate of the machine, in which the elements for preparing the air (filters and pressure regulators), the elements controlling the utilisation (air blow solenoid valve and a solenoid valve that controls the pneumatic cylinder of the recirculation device that regulates the flow of the parts in the feed channel) and the manifold for the air blows are assembled.

2.2.4 Electric panel

The electric panel comprises the power section and the control section. The power section comprises all the equipment required for the electric operation of the utilisations (electromagnetic switches, relays, etc...) and the members processing the signals coming from the controls on the machine or on the keypad. The control section is the element through which the operator controls the operation of the machine (the machine can be operated manually or automatically).

2.2.5 Bedplate

The bedplate consists of a supporting column: the lower part is made of a base plate, while the upper part consists of a plate on which the feeder body is fixed. The base plate is equipped with four levelling feet for laying and levelling on the ground



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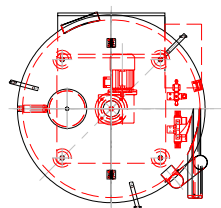
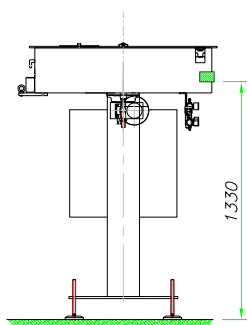
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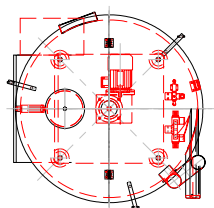
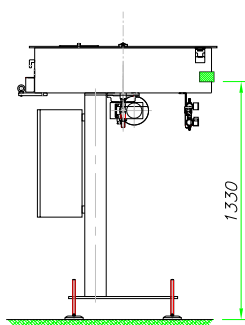
2.3 Lay-out

The following pages show the six possible lay-outs of the centrifugal feeder.

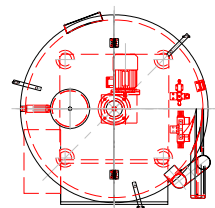
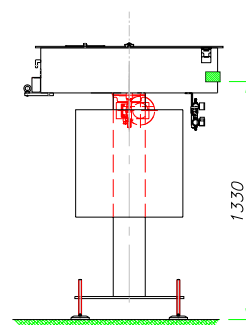
LAYOUT 1



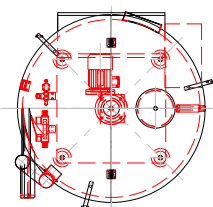
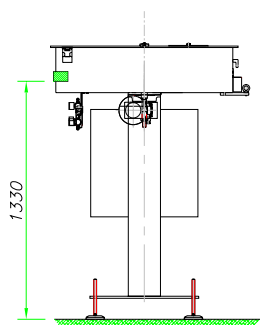
LAYOUT 2



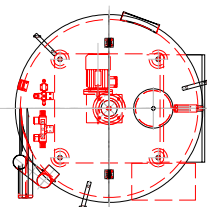
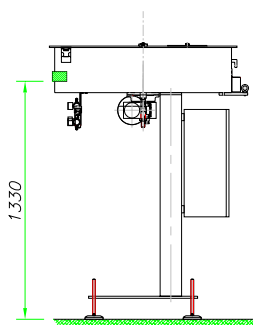
LAYOUT 3



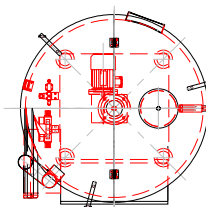
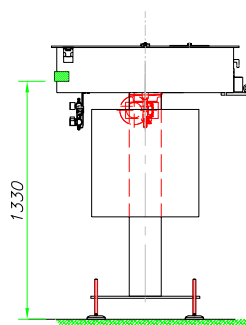
LAYOUT 4



LAYOUT 5



LAYOUT 6





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2.4 Technical characteristics

2.4.1 Specifications

Installed electric power (at 380 V – 50 Hz)	Kw	0.27
Absorbed electric power	Kw	0.17
Electric motor power	Kw	0,246
Air, pressure of utilisation	MPa	0.5
Operative temperature	° C	5 ÷ 40
Operating humidity without condensate	%	30 ÷ 80
Machine weight	Kg	≈ 290

2.4.2 Allowed variations of the indicated quantities

ELECTRIC		
Voltage	V	+/- 10 %
Frequency	Hz	+/- 2 %
PNEUMATIC		
Minimum pressure	MPa	0.40
Maximum pressure	MPa	0.55

2.4.3 Utilisation characteristics

Product characteristics

The machine can process parts in thermoplastic material or in aluminium in compliance with the dimensions previously agreed upon with the PESCE S.r.l. engineering department.

Producing capacity

It mainly depends on the type of part and on its dimensions.



ATTENTION!

A different position of the machine corresponds to every part: the utilisation of special parts is required in order to optimise the producing and functional capacity of the centrifugal feeder.



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alessandria, italy

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2.4.4 Sound emissions

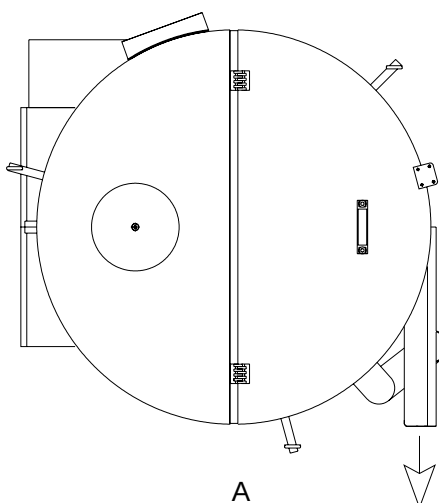
The level of weighted sound pressure A was measured in the following conditions:

- operating conditions: at full load
- type of operation: part positioning
- test environment: manufacturing establishment

The tests have been carried out on 1 point of the machine at a height equal to 1.5 m and at a distance equal to 1.5 m.

The results are set below:

Position	L_{pA}
A	85 dB(A)



ATTENTION !

IT'S RECOMMENDED THE USE OF INDIVIDUAL ACOUSTIC PROTECTIONS



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3. SAFETY INSTRUCTION

3.1 Safety devices

Loading unit has been designed and constructed with an exterior waxing such as to cover every moving part , so that assumes a complete security , if no fixed guard is tamped.

To assure a further safety electric devices , that forbid the movement of the apron , are placed on open able covering .



ATTENTION !

Pesce srl declines all responsibility for tampering or non- utilization of security devices.

3.2 Use safety , adjustment and maintenance



It's forbidden to carry out any control operation on moving machine members.
Workers must be informed about this prohibition through visible warning.



Before execute any operation on the machine , maintenance man will have to cut off electric tension .



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During the intervention , it's prohibited to go up or lean against machine's parts different to stairs or service platform ; some parts , like protection or external structures , aren't designed to support the weight of a person and they could cede , causing damages to people or to the machine.



ATTENTION: DANGER!



Electric motors , during the working , can reach temperatures , that will be able to cause slight burns. It's advisable to intervene on motors with appropriate precautions .



To guarantee the efficiency of the machine and for its correct working it's necessary to follow the Pesce srl ' indications, making the periodical maintenance of the machine in the way and time set.

3.3 Remaining danger or risks

During the design phase all the areas at risk have been calculated and consequently all the necessary precautions have been taken to avoid risks to persons and damages to machines.

To guarantee the health and the safety to the personnel, specially provided safety devices have been installed on the machine.

Most common safety devices used on Pesce srl 's machine are:

- Safety switch for all mobile protections that can be opened by operators and/or maintenance men;
- Fixed protections blocked with screws;
- Sump for the cover of moving parts;
- Photoelectric barriers;
- Electric devices for the survey of feeding anomalies and electric devices malfunctioning;
- Devices for the emergency stop.



ATTENTION!

To guarantee the operators safety verify periodically the condition and the functioning of safety devices.

Even though machine is provided with safety systems , the following risks persist. They are eliminable or reducible by the correspondent precaution:

- Risk of circuit breakdown for the safety circuit of emergency stop and of protection control with a possible lowering of safety level of the same.



ATTENTION: DANGER!

As a result of damages or breakdowns , the safety devices that handle the emergency stop and the protection control can lose their efficiency. Verify regularly the functioning condition of circuits.

- Risk of breaking or damaging, with a possible lowering of safety level, of components of electric equipment due to a short-circuit.



ATTENTION!

Before executing the connection to the electric net of plant, verify that the distribution of electric energy corresponds to the required requirement, in contrary case install appropriate limiting devices.

- Risk of collision, crushing, shearing deriving from the start of some sudden movements, in case of maintenance activity doing directly on machines.



ATTENTION: DANGER!

Before making any operation of maintenance, operator has to respect the following procedure:

- *Positioning the main switch on OFF and block it with a padlock;*
- *Affix the notice "MACHINE IN MAINTENANCE- DON'T CONNECT THE FEEDING" next to the main switch;*
- *Make the closing/exhaust of compressed air of system intervening on the appropriate valve and verify on the manometer the really pressure lack.*
- Risk of crushing, dragging, cutting off, laceration during adjustment and setting-up operations made by two or more operators.



ATTENTION: DANGER!

It is severely prohibited start the machine if the accident-prevention protections are not installed or regulated. It is severely prohibited evade, violate or exclude the interblock devices.



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4. INSTALLATION

4.1 Transportation and lifting

Prepare a lifting means with a radius of action and a capacity in line with the dimensions and weight to be borne; protect further the points of contact between the belts and the machine with cardboard or cloths.

Settle the load by shifting it with short movements until it reaches the best stability condition, make sure that the way is free of people and things; lift slowly and handle with the utmost care.

The machine can be handled in two ways:

- with fork lift truck
- eyebolt utilization

A) LIFTING WITH FORK LIFT TRUCK

Insert the forks under the fixed plate making sure not to damage the pneumatic reduction motor group. Lift horizontally and very slowly.

It is advisable to wrap up the forks with cloths and/or cardboard before lifting in order not to damage the structure of the centrifugal feeder.

B) LIFTING BY MEANS OF EYEBOLTS

Use belts or cables suitable for lifting the weight of the feeder. Hook the above-mentioned elements to the eyebolts before lifting. Lift horizontally and very slowly.



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ATTENTION !

The manufacturer accepts no responsibility for damages to things or persons caused by the non-observance of the safety standards in force, relative to the lifting and handling of materials inside the factory of the user.

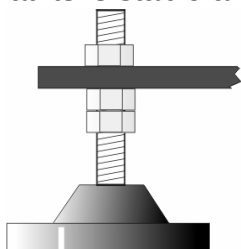
The lifting and handling operations must be carried out by qualified personnel authorised for this kind of operations.

No one must be near the overhung load and/or in the radius of action of the lifting means during the lifting and handling phase of the machine.

- *Follow the instructions for the lifting operations indicated in chapter 3 – SAFETY MECHANISMS*
- *During handling, the load must remain perfectly horizontal regardless of the type of equipment with which the handling is carried out.*

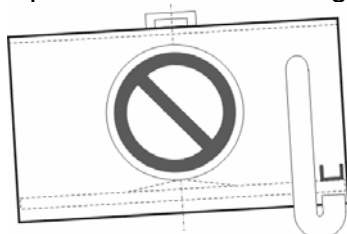
4.2 Positioning

The installation of the centrifugal feeder must occur in the chosen place making sure that its is stable and level. This is possible by regulating the screws of the levelling feet.

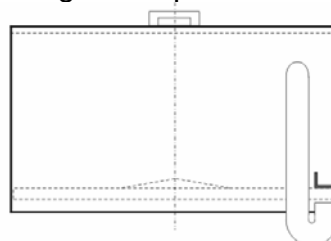


CHECK THE PROPER LEVELLING!

However, a special attention must be given to the levelling of the machine in order to avoid the faulty operation of the feeding and positioning of the parts.



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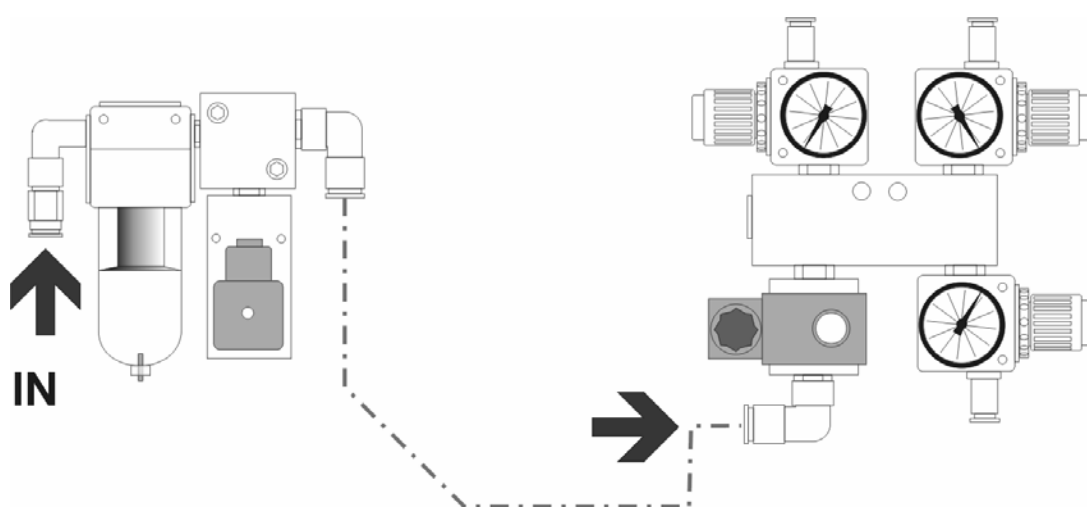
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4.3 Connection of the compressed air

Connect the air preparation unit, provided with a special quick-release fitting placed in the pneumatic control unit, with the compressed air feeding system by means of a flexible pipe whose characteristics are indicated in paragraph 2.5.1 – SPECIFICATIONS.





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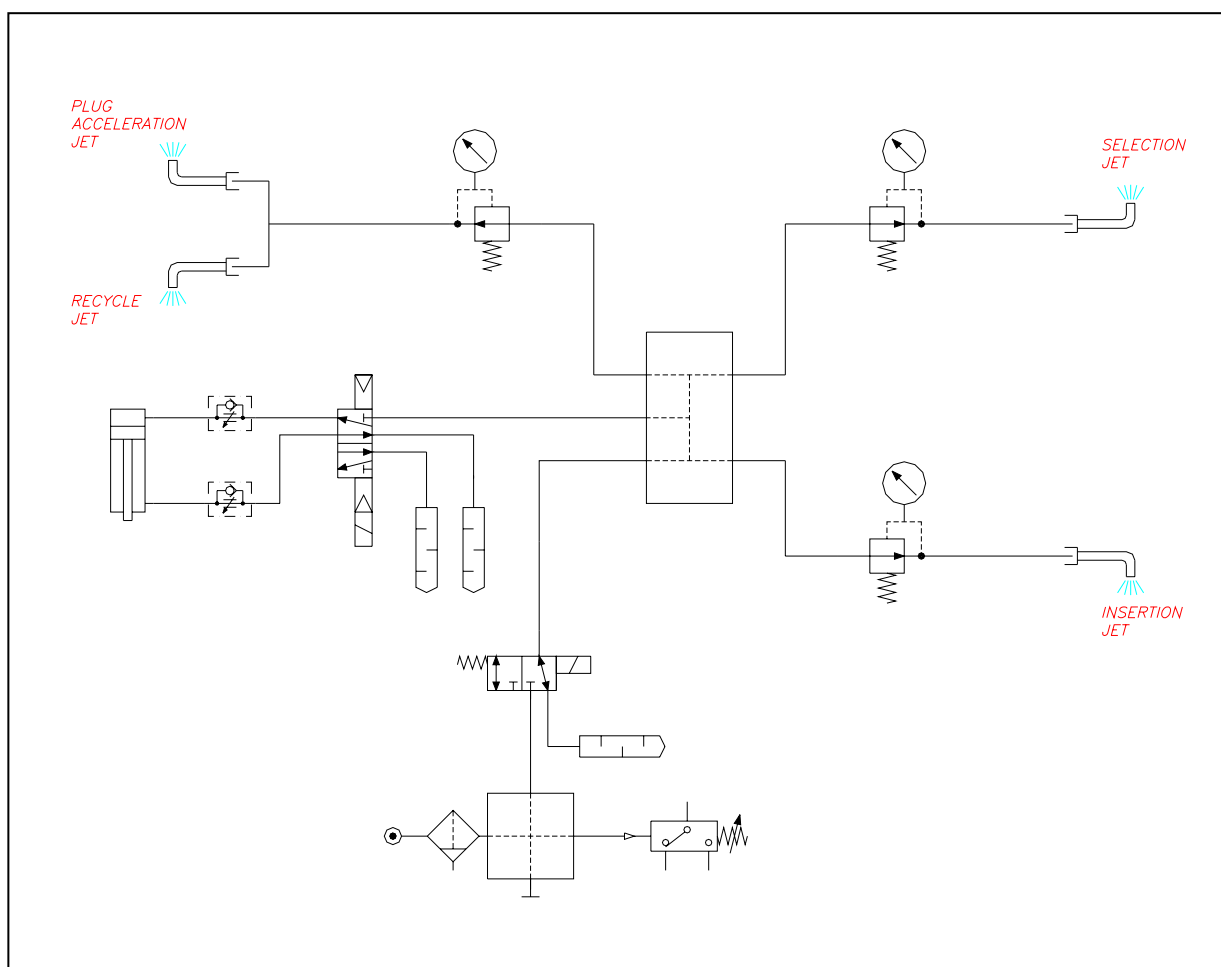
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This page represents the entire pneumatic system installed on the machine.





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4.4 Connection of the electric cables



ATTENZION !

After carrying out the machine testing, the cables are prepared for the shipment, disconnected from the box and properly rolled up inside the machine.

- Loosen the rolls of electric cables
- Connect the cables to the electric cabinet

The power supply cable must be inserted in the box and connected to the terminal board in the points marked with RST and earthed. The rating plate and the fastening screw for the earthing of the machine is in the lower plate of the bedplate.



ATTENTION !

The power supply cable is not equipped with the machine; its characteristics and dimensions must be taken from paragraph 2.5.1 – SPECIFICATIONS.



ATTENTION !

The connection between the machine and the external protection circuit (earthed circuit) must be carried out. Connect to the external protection circuit the copper bar placed inside the main electric panel of the machine; the connecting point is marked PE (EN60445).

Connect also to the external protection circuit the connection points present on the structure of the machine.



ATTENTION !

Failure to earth the indicated parts may cause serious hazards to the machine and to the operator.



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5. START

5.1 Overview



ATTENZION !

These operations pertain exclusively to the manufacturer's specialised technicians, in charge of starting the machine as indicated in chapter 1 – GENERAL INFORMATION.

Should they be carried out by other persons, they may create dangerous situations and cause serious damages to persons and/or to the machine itself.

For references to control keys, see chapter 6 – USING THE MACHINE.

The initial start of the machine requires specialist skills in the mechanical and electric field. The operator and the maintenance men of the Customer must only be present at the operations of putting into operation (since they are useful to understand the operation of the machine, the regulation of the auxiliary and accessory equipment, of the protections and safety devices used) and at the testing in order to check the regulations carried out.

5.2 Preliminary checks

CONDITIONS:

- the machine is delivered already tested, hence the checks to be carried out concern only possible damages caused during transportation or installation.

PROCEDURE (for references to the controls see chapter 6 – USING THE MACHINE):

- check that there is no obstacle to the normal operation of the kinematic motion by operating the manual control
- turn on the electric control cabinet by operating the main switch QS1
- activate the compressed air and check that the main pressure gauge indicates a pressure value proper to the operation: the exact value is indicated in paragraph 2.5.4 – SPECIFICATIONS
- check the proper rotation of the motor. If the rotation is not correct, intervene on the connection of the two phases of the electric cable connecting to the electric panel, disconnect the wires from the clamps R and S and connect them in reverse order



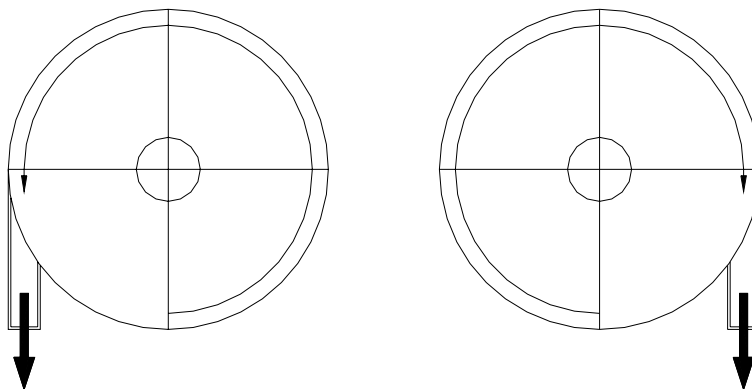
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- insert some parts in the feeder to ascertain the proper operation of the exit head: the parts positioned in a proper way shall exit from the head while those not positioned properly shall be recovered from the inside tank. For the regulations of the air jets, refer to chapter 7.1 – AIR BLOW REGULATION

5.3 Everyday start

For references to the controls see chapter 6 – USING THE MACHINE).

The machine is designed for manual and automatic operation:

- the SA100 selector in “manual” position, sets the machine in manual operation
- the SB8M run and SB8A stop buttons control the manual operation
- the SA100 selector in “automatic” position sets the machine in automatic operation, in line with the machine downstream
- the SA7 selector enables the upstream feeding operation
- by means of the SB101 button, restore the alarm causes and set the machine operation
- the SB8M button starts the automatic cycle if the machine is designed to operate “local” through the SA30 selector in local position
- the SB8A button stops the automatic cycle if the machine is designed to operate “local” through the SA30 selector in local position
- check for lit red warning LEDs; if necessary, eliminate the cause and restore the machine with the SB101 button



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6. USING THE MACHINE



ATTENTION !

Follow the instructions indicated in this manual and work according to the safety standards.

6.1 Electric panel

The electric panel consists of a power section that comprises all the parts required for the electric operation of the utilisations (contactors, relays, etc...) and of a logic section containing the members processing the signals coming from the controls placed on the machine or from the keypad.

The control section contains a control keyboard that is the element through which the operator controls the operation of the machine.

The alarm causes and the most important phases of the machine cycle are displayed on the synoptic.



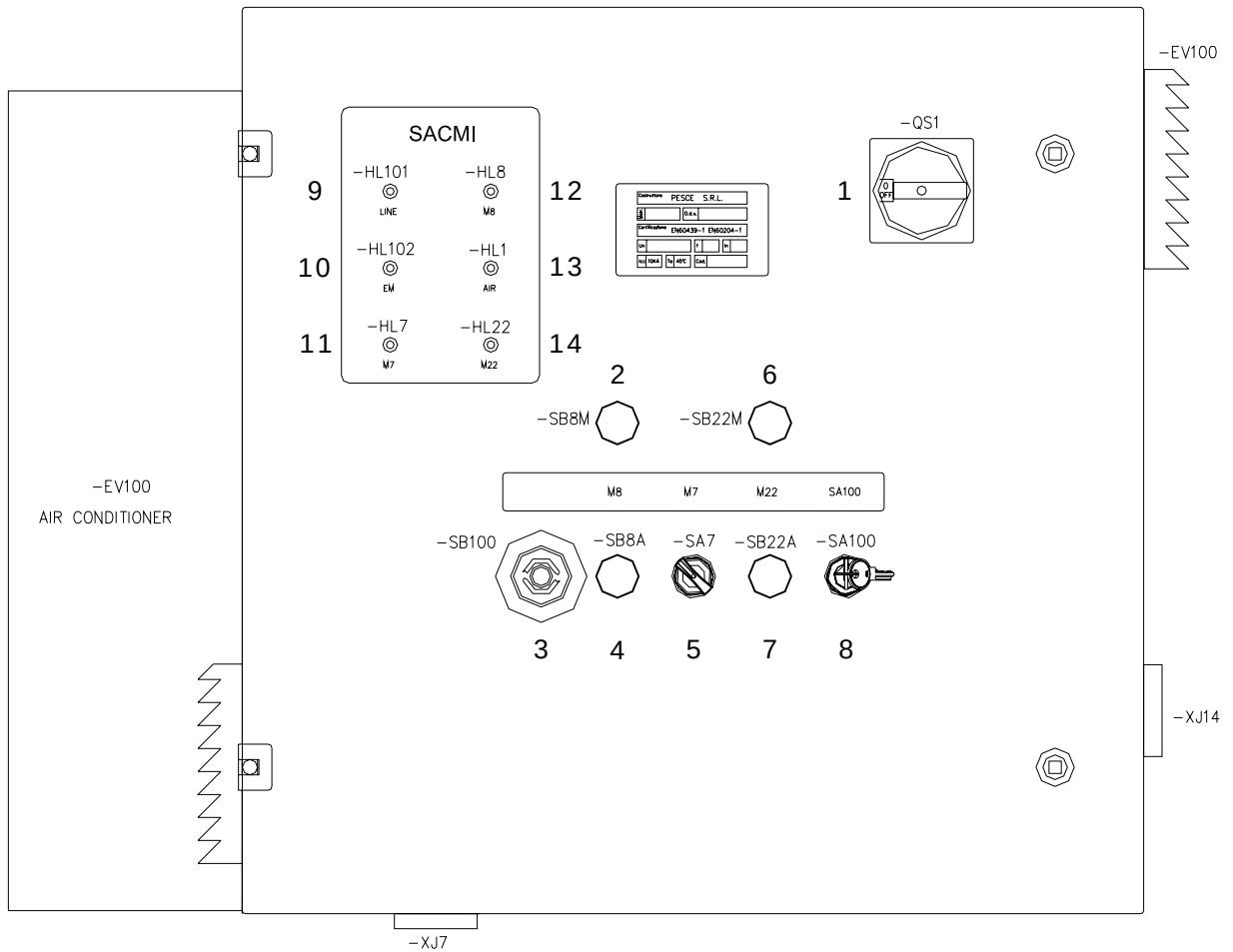
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Number	Name	Description
1	MAIN SWITCH (code QS1)	Set to "I" (ON) to turn the power of the machine on. The pilot light [9] lights up
2	RUN button (code SB8M; green or white)	Press the button to start the working cycle of the centrifugal feeder (together with selector [8] on manual position). The green pilot light [12] must light up
3	Emergency button (code SB100)	Press the button to immediately stop the movements of the machine. The red pilot light [10] lights up
4	STOP button (code SB8A; red or black)	Press the button to stop the working of the machine (together with selector [8] on manual position).
5 (optional unit)	SA7 selector (code SA7)	Motor inclusion selector M7 (together with selector [8] on manual position).
6 (optional unit)	RUN button M22 (code SB22A; red or black)	Press the button to run the Jet-stream downstream (together with selector [8] on manual position).
7 (optional unit)	STOP button M22 (code SB22A; red or black)	Press the button to stop the Jet-stream downstream (together with selector [8] on manual position).
8	MANUAL/AUTOMATIC key selector (code SA100)	Turn the selector to the left for manual operation (sensors disabled); turn the selector to the right for automatic operation (sensors enabled)
9	LINE pilot light (green)	The pilot light is turned on when the machine is live
10	EMERGENCY pilot light (red)	When the pilot light is turned on, the machine stops due to EMERGENCY or due to the intervention of the thermal protection of the motors.
11	M7 pilot light (green)	When it is turned on, the motor, hopper, vibrator or elevator is working (optional)
12	AUTOMATIC RUN pilot light (green)	When it is turned on, the machine is working.
13	AIR PRESSURE pilot light (red)	The pilot light is turned on when there is no air in the pipes or the pressure is at the minimum level.
14	M22 JET STREAM pilot light (green)	When the pilot light is turned on, the blower is working downstream (optional).



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6.2 Manual operation

If the machine is set to work in manual mode (SA100 selector in MANUAL position), it is possible to operate one by one the motors whose control buttons are present on the push-button panel.

6.3 Automatic operation

Turn the SA100 selector on AUTOMATIC to set the machine in automatic operation.

The machine receives the input signal to START or to STOP from the machine downstream.



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7. REGULATIONS

The described regulation operations must be carried out when the operator deems it necessary following a faulty operation and after maintenance interventions, part replacement, etc... carrying out what is indicated in the safety regulations.



ATTENZIONE !

The operations must be carried out when the machine is idle and with the required precautions described in the introduction. In particular, near the danger signals indicating burns, use protection gloves.

Before accessing the electric cabinet, the wiring boxes and wherever there is a danger signal of electric burn, it is necessary to turn off the machine.

7.1 Air blow regulations



ATTENZIONE !

This operation must be carried out when the machine is working, hence comply with all the required precautions.

To regulate the air blows, proceed as follows:

- detect the pressure on the pressure gauges 1, 2 and 3 that control the air blows of the exit channel; check that the values correspond to those on the rating plates placed on each pressure gauge
- if it is necessary to regulate the pressure, loosen the screws placed on each knob, carry out the regulations by turning the A, B, C knobs and lock the screws again.



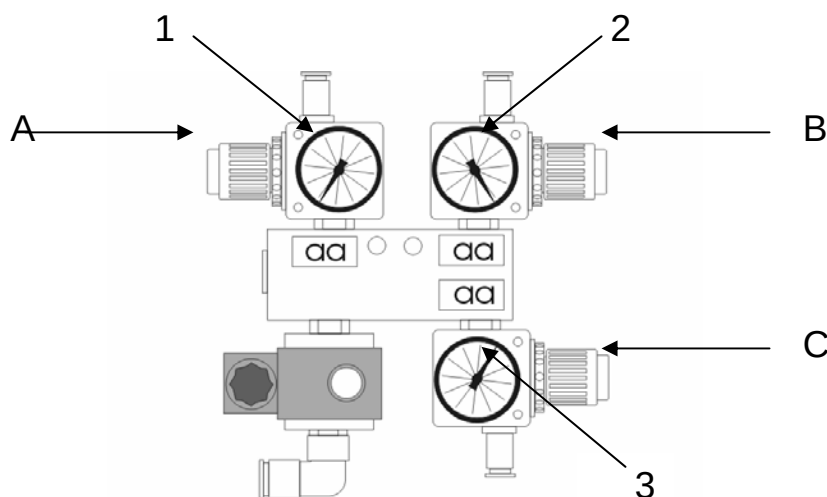
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tel +39 0131 216411
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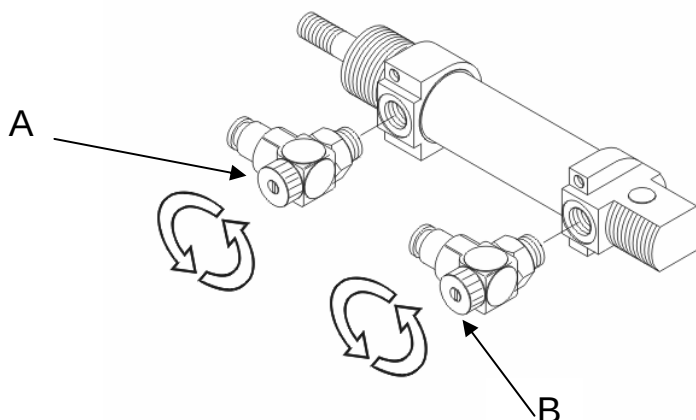
7.2 Recirculation switch

The movement of this device is carried out by a pneumatic cylinder controlled by the intervention of a photoelectric cell placed on the exit channel.

Make sure that the movement of the cylinder rod is not too quick, causing noise and strong blows. In case of regulation, carry out the following procedures:

- release the flow regulators by unscrewing the lock nuts
- adjust the pressure (clockwise, the movement slows down; counter-clockwise the movement speeds up)
- lock the lock nuts

The opening movement is regulated by operating the A ring nut, while the cylinder closing movement is regulated by operating the B ring nut.





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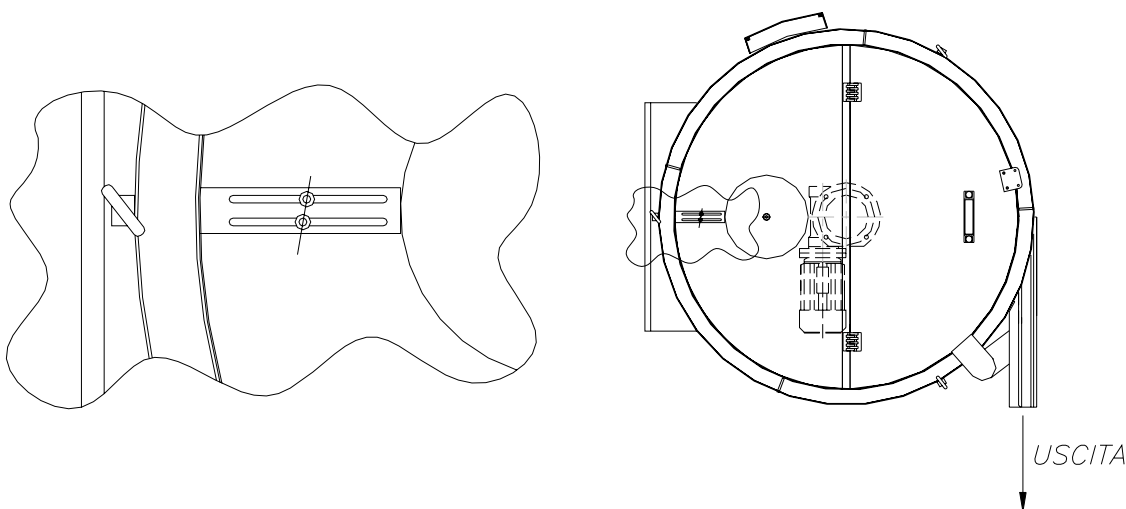
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7.3 Dipstick regulation

The regulation of this element is necessary for setting the quantity of parts inside the body of the feeder.

In order to increase or decrease the above-mentioned quantity, proceed as follows:

- release the locknuts of the dipstick
- translate the dipstick (outwards the body of the feeder to increase the quantity of parts; towards the centre to decrease such quantity)
- lock the dipstick by tightening the locknuts, as shown in the figure



ATTENTION !

Check the position of the dipstick: it must be positioned as in the figure.



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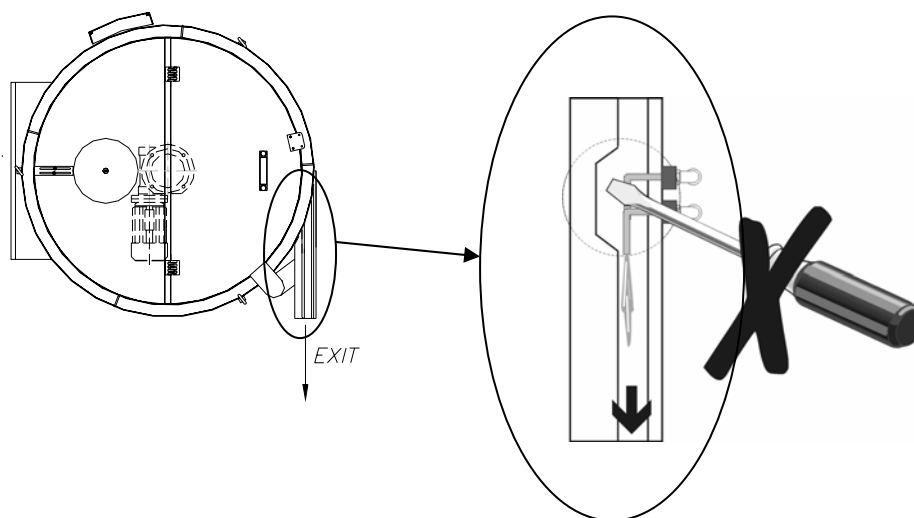
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7.4 Replacing the feeding head

This operation is carried out if the head is damaged or if the size of the plug is changed.

The proper procedure for replacing the head is the following:

- disconnect the two air pipes that feed the jets placed on the head
- loosen the screws that fix the blowing channel to the head
- loosen the three screws that fix the head to the feeder body
- remove the head and replace it
- retighten the fastening screws of the head to the feeder body and then those of the blowing channel
- reconnect the air pipes to the jets



ATTENTION !

Do not use metallic tools to free any jammed piece. Intervene manually since the operation is not dangerous when the feeder is idle.



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8. MAINTENANCE



ATTENZION !

The maintenance must be entrusted exclusively to qualified personnel who is acquainted with the machine and with the system in general, as indicated in chapter 3 – SAFETY MECHANISMS.

Take all the required precautions in order to avoid the incidental start of the machine:

- switch of the general board set to OFF
- safety key removed

Consider the main possible risks and the safety instructions contained in chapter 3 – SAFETY MECHANISMS.

The maintenance operations are divided in:

- periodical ordinary maintenance (pertaining to the Customer's maintenance men)
- extraordinary maintenance (pertaining to the manufacturer's maintenance men or to the customer's specially-trained personnel)

Examples of ordinary maintenance intervention are mentioned below:

- lubrication and cleaning of the mechanical parts
- replacement and cleaning of the pneumatic valves
- fuse replacement in the electric panel

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8.1 Periodic operations

8.1.1 Periodic maintenance table

Unit and intervention points	Type of intervention	Every hour	Time of intervention
MOTOR DRIVE			
Reduction unit	none	-	-
PNEUMATIC SYSTEM			
Filter	Condensate discharge	60	1'
Filter	Cleaning	180	2'
FEEDER BODY			
Inside	Cleaning	360	10'
Exit channel	Cleaning	360	2'
Recirculation channel	Cleaning	360	2'
SAFETY DEVICES			
Micro switches	Verification	180	2'
Photoelectric cells	Cleaning	180	2'

8.1.2 Cleaning of metallic parts

In order to clean the inside of the feeder body, the exit channel and all the metallic parts, you can use compressed air and specific degreasers for the type of material.



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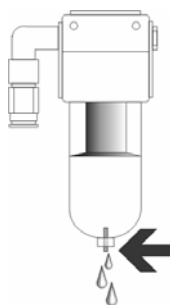
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8.1.3 Cleaning of pneumatic parts

It is advisable to drain the condensate from the air filter cup by using the needle shown in the figure every week.



It is also possible to clean the air filter if it is dirty inside: unscrew the filter cup, remove it, clean it and screw it back in the proper position.

8.1.4 Cleaning of electric parts

The cleaning of the electric parts (photoelectric cells, optical fibres) and checking the (mechanical) operation of the micro switches, ensures the proper operation of the machine.

8.1.5 Characteristics of the lubricants

The BONFIGLIOLI VF series reduction unit installed on the machine uses a permanent lubrication with synthetic oil. The reduction unit is not provided with the charging, level and discharging plugs since it already contains the correct quantity of oil. For this reason, no maintenance is required.

8.2 Extraordinary maintenance operations

Extraordinary maintenance operations, which are not comprised in the table of the periodic operations in chapter 8.1.1 – PERIODIC MAINTENANCE TABLE, must pertain exclusively to the manufacturer's maintenance men or to the customer's personnel specially-trained for carrying out the specific instructions of the manufacturer.



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8.3 Troubleshooting

Each time the machine stops, a red LED appears on the display of the control unit. Should the safety devices turn on, the machine can be restored as described in chapter 6 – USING THE MACHINE. With the help of the table indicated below, you can find the possible faults, causes and solutions.

FAULT	CAUSE	ACTION
Feeding unit: capsule does not exit	Deformed capsules in the container	Removal of the deformed capsules
	Insufficient compressed air	Controlling the system pressure
		Controlling and, if necessary, setting the air blow capacity regulators
Exit channel: capsule clogging	Insufficient compressed air	Controlling the system pressure
		Controlling and, if necessary, setting the air blow capacity regulators
Exit channel: overturned capsules	Insufficient compressed air	Controlling the system pressure
		Controlling and, if necessary, setting the air blow capacity regulators
The feeder does not start	Lack or insufficiency of compressed air	Controlling the system pressure
	Open door	Close the door
	Emergency button on	Turn the emergency button off



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9. DISMANTLING

9.1 Termination of use

When you decide not to use the machine anymore and to dismantle it, put it out of use as follows:

- turn off the power line section of the machine by means of the factory switch
- remove the power supply cable fixed to the terminal board of the electric cabinet.
- disconnect the connection cables between the cabinet and the machine by removing the connectors
- remove the connection of compressed air between the control unit and the factory mains
- clean all the machine carefully, with a special attention to the working parts, and, if necessary, carry out a protection lubrication.
- close all the doors of the electric cabinet and of the machine in order to avoid any damages due to tampering or dust, etc...
- insert the safety devices

9.2 Machine dismantling

Dismantle the different parts of the machine in compliance with the safety regulations in force and following the specific instructions indicated in chapter 4 – INSTALLATION of this manual, especially for what concerns lifting, positioning and the relative safety warnings indicated in paragraph 3.2 – HANDLING RULES.



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9.3 Waste disposal

This paragraph describes the different types of waste that can be generated during the life of the centrifugal feeder, like:

- plastic / metal parts deriving from the beginning or the end of the production.
- Cloths or paper soaked in diluents / oils or substances used for cleaning the different parts.



ATTENTION !

If this waste is dispersed in the environment, it may cause damages.

Waste disposal must be carried out according to law regulations in force in the location or country where the machine is installed.

9.3.1 Special waste

The following elements must be considered special waste:

- residues deriving from industrial, agricultural, craft, commercial and service activities that are not declared similar to urban waste for what concerns quality and quantity
- damaged and obsolete machineries and equipment
- motor vehicles and their unserviceable parts

9.3.2. Noxious and toxic waste

Noxious and toxic waste materials contain or are contaminated by the substances indicated in the enclosure of PRD 915/82 of implementation of the 75/442/EEC and 78/319/EEC Directives.

9.3.3 Temporary stocking

The temporary stocking of toxic and noxious waste materials is allowed according to the their expected disposal through final treatment and/or stocking. The laws in force in the country of the user with regard to the protection of the environment must be observed.

9.3.4 Container characteristics

Fixed and mobile containers, intended to contain the toxic and noxious waste, must have proper resistance requirements with reference to the chemical and physical properties and to the danger characteristics of the contained waste.

The containers in which the products are stored, dangerous or harmful materials, must indicate or be countersigned like those shown in the following figures, in order to reveal the nature of their contents.



9.3.5 Registration obligations

According to what is provided for by PRD of August 23rd, 1982, concerning the implementation of the 75/439/EEC Directive relative to the elimination of the drained oils, the loading/unloading registers must be kept by all the companies that obtain special or toxic-noxious waste materials deriving from industrial and artisan works.

9.3.6 Disposal

The collection of special and/or toxic-noxious waste must be entrusted through contract to expressly authorised companies and who actually transports the materials must possess the prescribed authorisation and must be registered at the haulage contractor roll.



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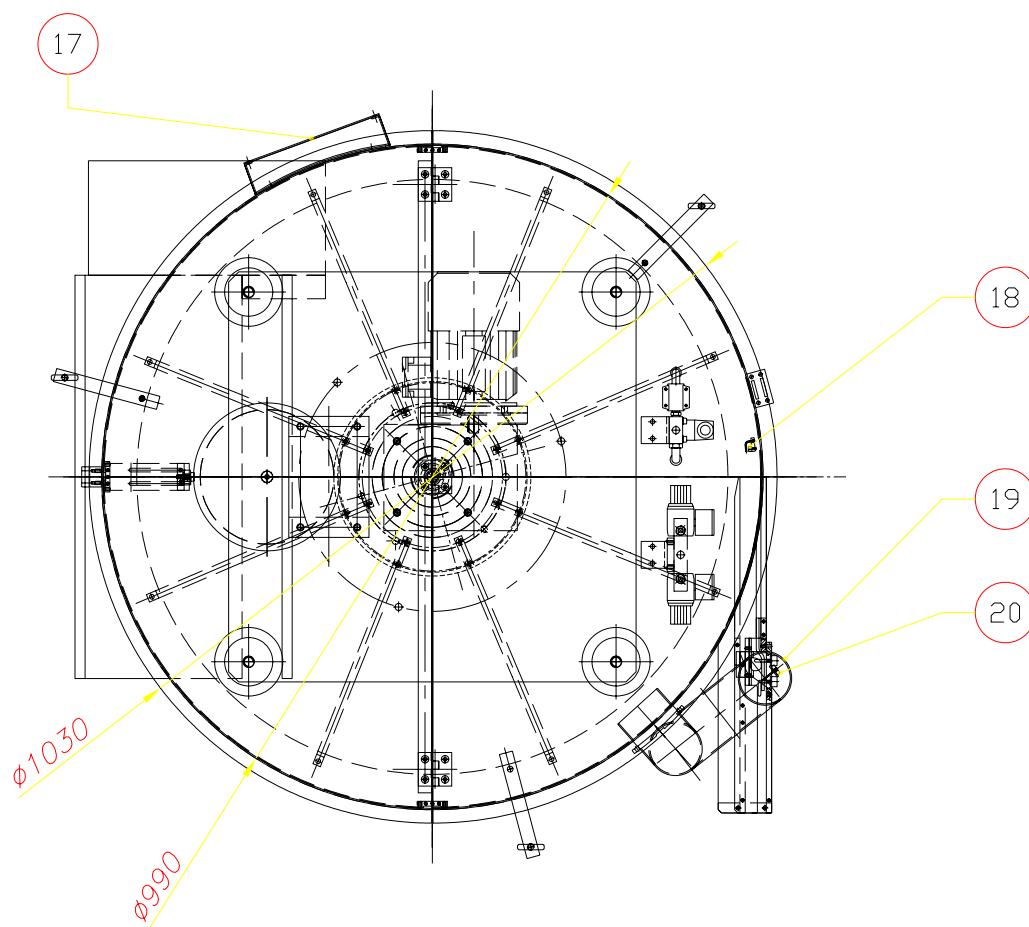
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10. SPARE PARTS

10.1 Feeder body spare parts



10SPARE PARTS: PICTURE 1



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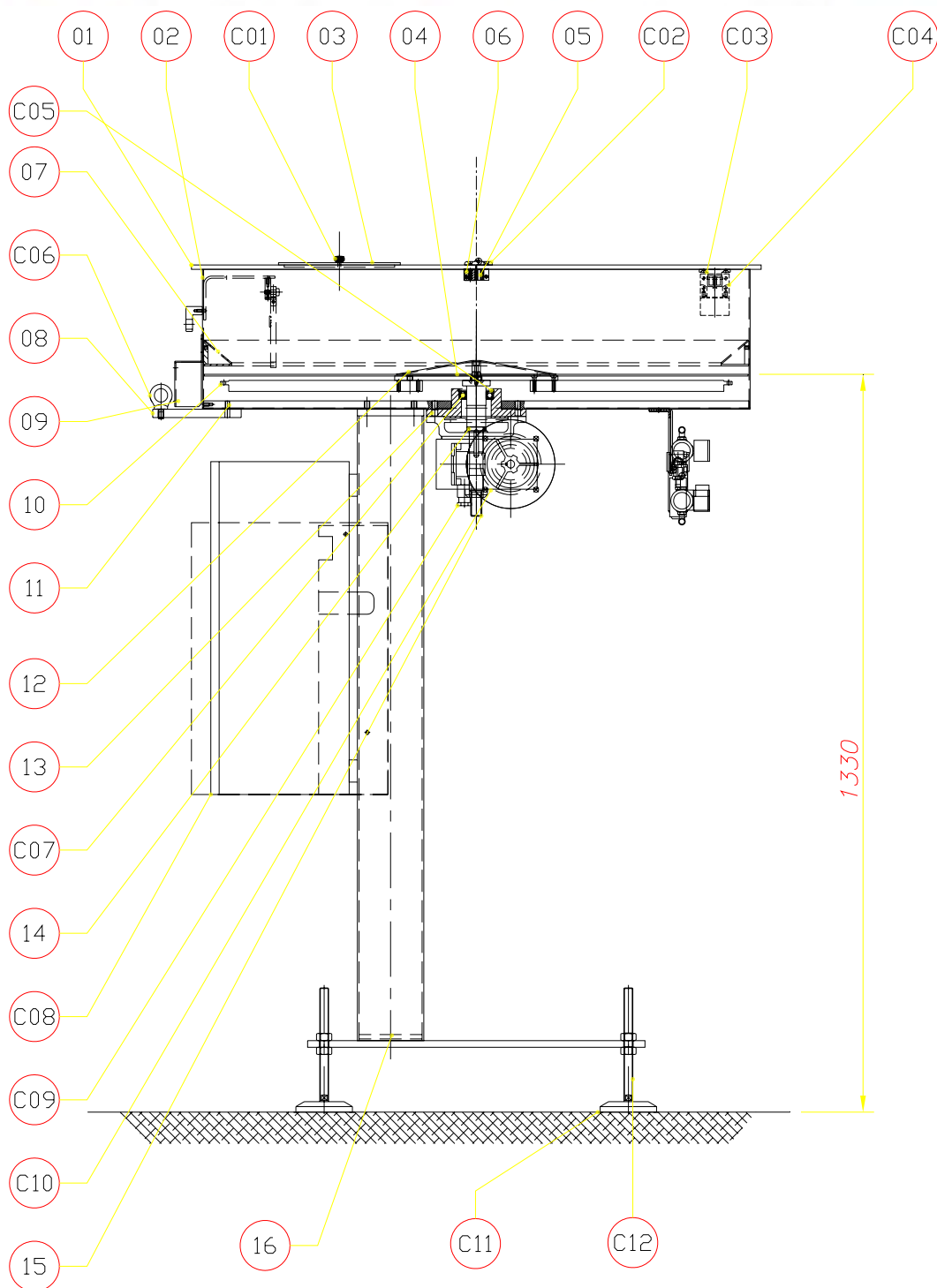
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alessandria, italy

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fax +39 0131 214600

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10.SPARE PARTS :PICTURE 2



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List with reference to plate 1 and 2:

Ref.	Code	Description
1	PR02200236-0	COVERING/CARTER
2	PR00800001-B	BAND
3	S301-01-023	COVERING DISK
4	PR00300016-0	ROTETING DISK
5	PR01600071-0	FIXED COVERING FXING PLUG
6	S502-5-16-003-A	COVERING PANEL
7	PR02400001-A	AC10SN COVERING RING
8	PR02500165-A	EYEBOLT BEARING
9	PR02400014-A	AC10 DISCHARGE BOX
10	PR00600012-0	SPOKE FOR AC10
11	PR00300063-0	FIXED DISK AC10
12	PR02400002-A	BOTTOM
13	PR00200002-0	FLANGE
14	PR02500166-0	SPACER XMUSHROOM
15	PR00900002-0	FLANGED SHAFT
16	PR01300130-0	COLUMN
17	PR02200110-0	DISCHARGE BOX COVERING
18	GETINS-AC	INSERTION JET
19	PR02400046-0	Ø80 RECOVERY PIPE
20	GETREC-AC	RECOVERY JET
C01	ELE2211	BT.1193/18 FP-M5 KNURLED CONTROL KNOB
C02	CER-A1645676302	180° ALUMINIUM HINGE
C03	AZ15/16-B3	SENSOR/PHOTOELECTRIC CELL
C04	AZ15ZVRK	MICRO SAFETY-STOP RUNNING CAM M20
C05	SEE-I62	INSIDE SEEGER D.62
C06	GOLF-MM10	MALE EYEBOLT M10
C07	CU6007-2RS	BEARING 6007-2RS1
C08	MC03600001-0	ELECTRIC PANEL
C09	CCMO33022	MOTOR HP 0,33 4 POLESI B5 GR=71
C10	CCRI63W002	REDUCER W63U/FC-I38-PAM71-B5
C11	FISC-M10	PLUGS (FISCHER TYPE) M10 PKE109
C12	PIE-38/7116	FOOT



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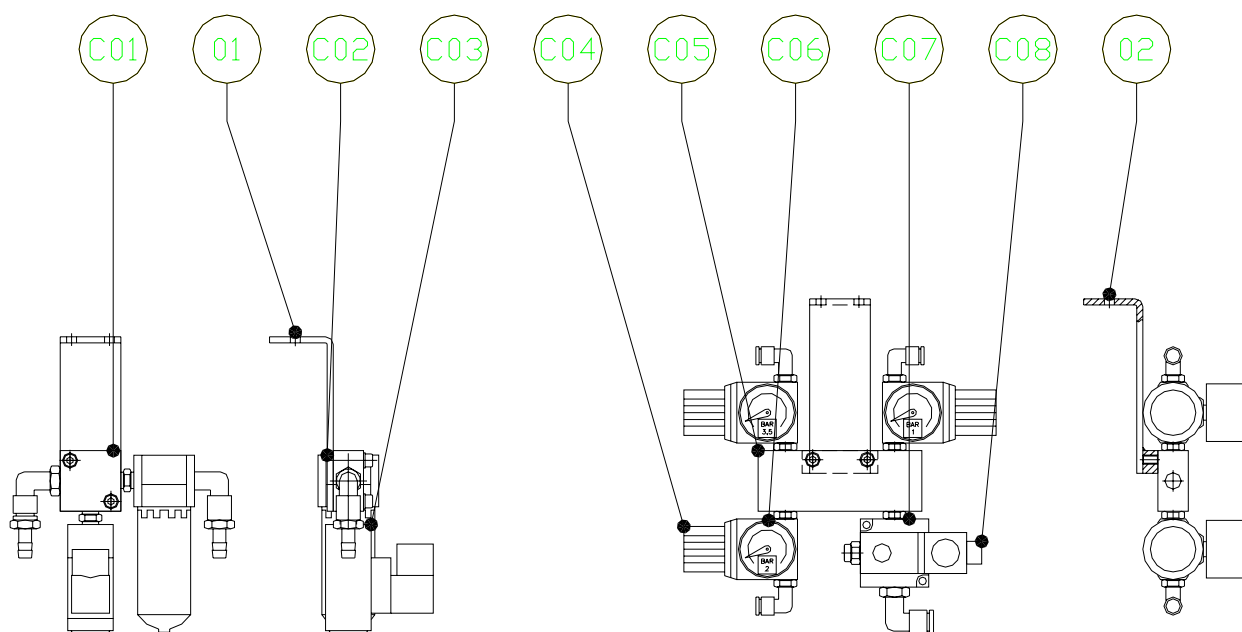
15100 spinetta marengo
alessandria, italy

tel +39 0131 216411
fax +39 0131 214600

info@pescesrl.com
www.pescesrl.com

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Peumatic system:



Ref	Code	Description	Qty
01	S301-01-034-A	DISTRIBUTION CLAMP	1
02	S301-01-035	DISTRIBUTION CLAMP	1
C1	DIE325-5	DISTRIBUTION FRAME ART.325-T5	1
C2	SMC120010	AIR FILTER	1
C3	FEPEV-1/4-B	PRESSURE TRANSDUCER	1
C4	SMC2028775	PRESSURE REGULATOR	3
C5	DIE-322 1/4	DISTRIBUTION FRAME ART.322 1/4	1
C6	FMTB120417	MANOMETER	3
C7	SMC2006496	ELECTROMAGNETIC VALVE	1
C8	SMC2005970	CONNECTOR FOR EVT317	1

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15100 spinetta marengo
alessandria, italytel +39 0131 216411
fax +39 0131 214600info@pescesrl.com
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10.2 Selection head spare parts:

List with refence to picture 3:

Pos	Code	Description	Q.ty	Builder
1	BA-TESTL-SP5	HEAD BASE	1	PESCE
2	SP-DX-CONT-T	CONTROL EDGE	1	PESCE
3	SP-DX-ESTRAZ-T	EXTRACTION EDGE	1	PESCE
4	SP-SX-CONT-T	CONTROL EDGE	1	PESCE
5	SP-LAT-T	CONTROL EDGE	1	PESCE
6	PIAT-SEL-T	SELECTION PLATE	1	PESCE
7	COP-TEST-L	HAED COVERING	1	PESCE
8	S30401008	PROP	1	PESCE
9	S30401009	COVERING CONTRAST	1	PESCE
10	S30401010	GRAVER CONTRAST	1	PESCE
11	UNG-SEL-TESTL	SELCTION GRAVER	2	PESCE
12	GETSEL-AC	SELECTION JET	2	PESCE
13	S304102013A	SPACER	1	PESCE
14	S304102014A	FIXING PLAQUE	1	PESCE
15	S304102015A	ANCHOR PLATE	1	PESCE
16	S304102016A	HEAD COVERING PLATE	1	PESCE

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15100 spinetta marengo
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tel +39 0131 216411
fax +39 0131 214600

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www.pescesrl.com

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10.3 Dipstick spare parts:

List with reference to picture 4:

Pos.	Code	Description	Q.ty	Builder
1	S30301001	BAR	1	PESCE
2	S30301002	CATCH	1	PESCE
3	S30301003	ARTICULATED JOINT	1	PESCE
4	SOA-ALIV-F	BEARING	1	PESCE
5	SU-ALIV	PROP	1	PESCE
6	TAS-ALIV-F	PLUG	1	PESCE
C1	VIT-8X10	SCREW	1	
C2	FAIM/BP-OE	PHOTOELECTRIC CELL	1	DIELL

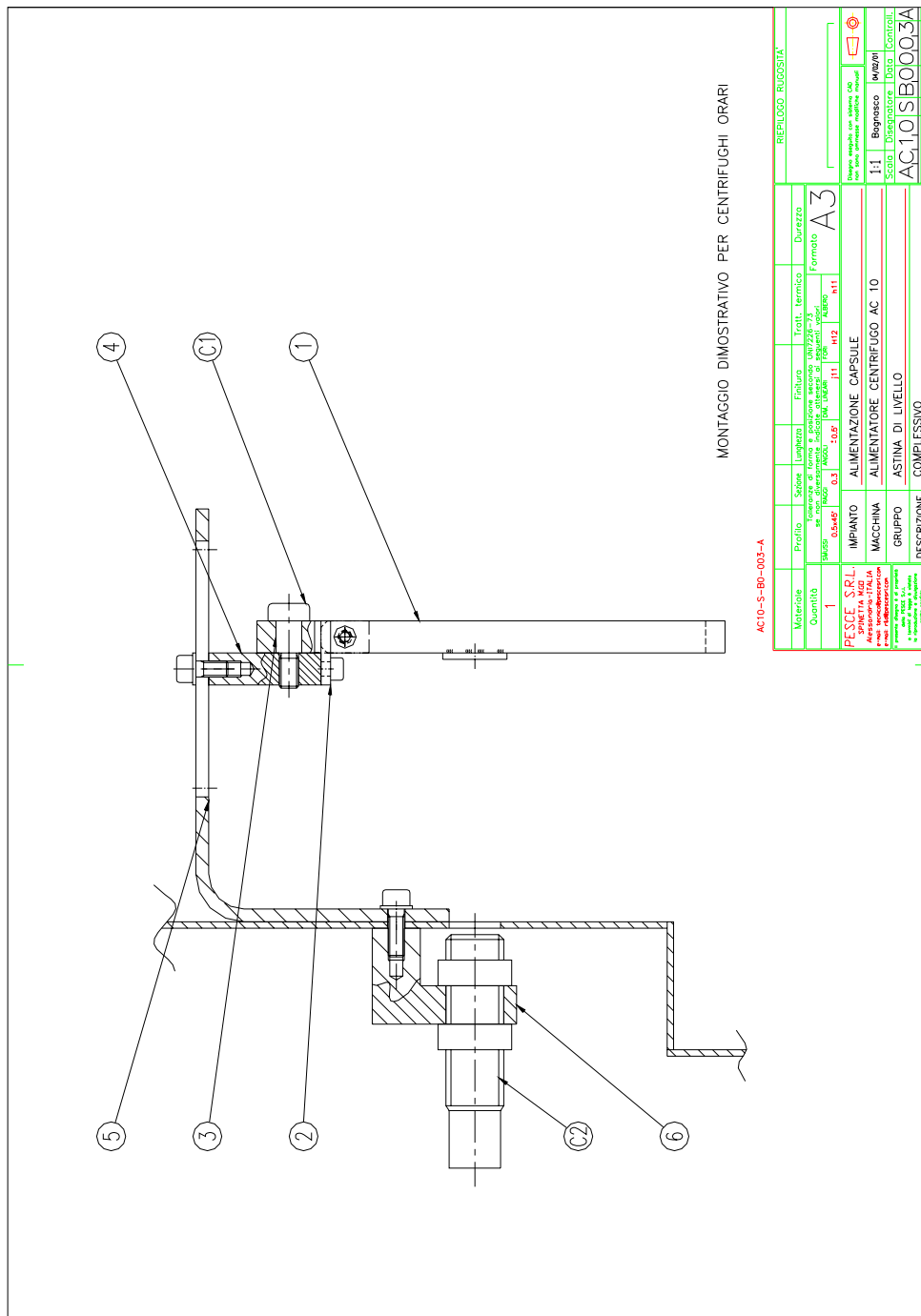


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10.SPARE PARTS: PICTURE 4



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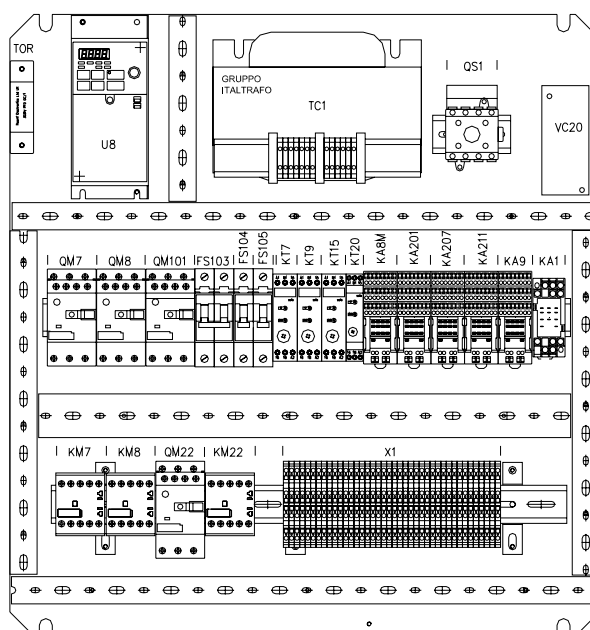
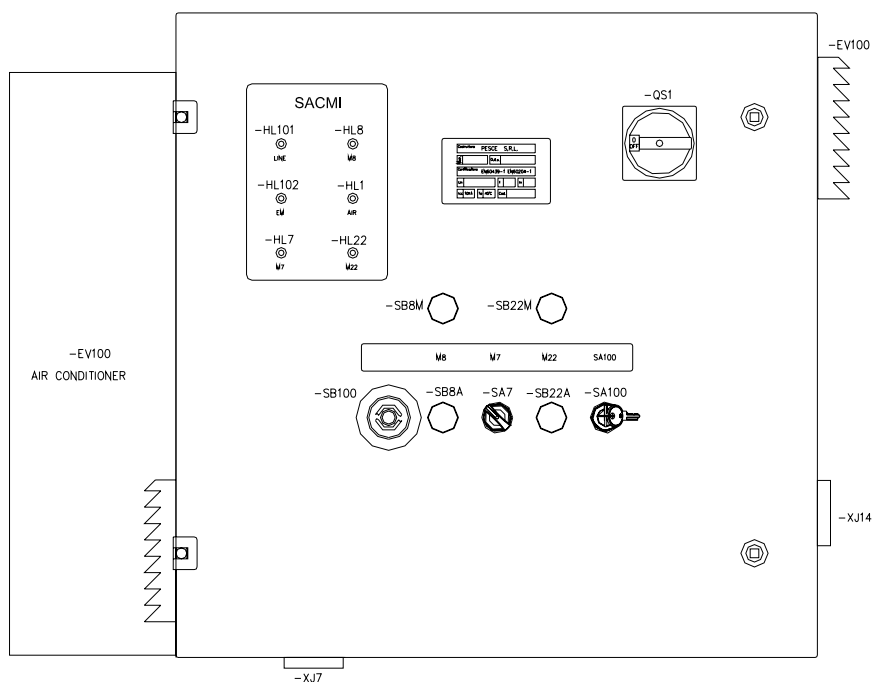
15100 spinetta marengo
alessandria, italy

tel +39 0131 216411
fax +39 0131 214600

info@pescesrl.com
www.pescesrl.com

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10.4 Electric components spare parts:



10.SPARE PARTS:PICTURE 5



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via gambalera, 184 z.i. d5

15100 spinetta marengo
alessandria, italy

tel +39 0131 216411
fax +39 0131 214600

info@pescesrl.com
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List of references to picture 5:

model	Description	Note	Pos.	Brand / Forn.	Alrticle code
QS1	MAIN SWITCH DOORBLOCK	16 A	2/2	SONTHEIMER	NLT16/3V/Z33/Z45
TC1	TRANSFORMER	Note2 1150 VA Note 3 1810 VA	2/3	GRUPPO ITALTRAFO	FA502/1 FA502/20
VC20	RECTIFIER BOARD	24 Vdc / 4 A	2/3	ELEKTROIMPIANTI	SCH1
QM7	SWITCH THERMAL MAGNETO THREE-POLE ELEVATOR PRECAUTION (Note 1) (Note 4)	THERMAL MAGNETO CONTACTS AUX	3/7	SIEMENS	3RV1011 3RV19011E
QM22	SWITCH THERMAL MAGNETO THREE-POLE PROTEZIONE JET STREAM (Note 1) (Note 6)	THERMAL MAGNETO CONTACTS AUX	4/7	SIEMENS	3RV1011 3RV19011E
QM8	SWITCH THERMAL MAGNETO THREE-POLE INVERTER PRECAUTION (Note 1)	THERMAL MAGNETO CONTACTS AUX	3/2	SIEMENS	3RV1011 3RV19011E
QM101	SWITCH THERMAL MAGNETO THREE-POLE TRANSFORMER PRECAUTION (Note 1)		2/3	SIEMENS	3RV1011
FS103	SWITCH THERMAL MAGNETO BIPOLAR CONDITIONER PRECAUTION (Note 2)	6 A	3/4	SIEMENS	5SY6206-7BB
FS104	SWITCH THERMAL MAGNETO UNIPOLAR CONTROL SHELTER 24Vdc	4 A	2/4	SIEMENS	5SY6104-7BB
FS105	SWITCH THERMAL MAGNETO UNIPOLAR CONTROL SHELTER 110Vac	4 A	2/5	SIEMENS	5SY6104-7BB
KT7	T SIGNAL UPSTREAM TIMER (Note 4) (Note 1)	24/240 Vac 24/48 Vdc	8/7	SAIA	KOP160J7MWVPN00
KT9	PIECES REQUEST TIMER (Note 1)	24/240 Vac 24/48 Vdc	8/2	SAIA	KOP160J7MWVPN00
KT15	ELEVATOR TIMER (Note4) (Note 1)	24/240 Vac 24/48 Vdc	8/6	SAIA	KOL160J7MWVPN00
KT20	SELECTION BLOW STOP TIMER (Note 1)	24/240 Vac 24/48 Vdc	8/1	SAIA	KOL360H7MRVPN00
KA8M	AUXILIARY RELE' CENTRIFUGAL STARTER	RELE' 110 Vac MY4 BASE	6/1	OMRON	MY4 110/120VAC PYF-14S
KA201	AUXILAIRY RELE' AUTOMATIC START	RELE' 110 Vac MY4 BASE	6/3	OMRON	MY4 110/120VAC PYF-14S

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via gambalera, 184 z.i. d5

15100 spinetta marengo
alessandria, italy

tel +39 0131 216411
fax +39 0131 214600

info@pescesrl.com
www.pescesrl.com

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... follow the picture 5 reference table:

model	description	Note	Pos.	Brand	Article code
KA207	AUXILIARY RELE' UPSTREAM SIGNAL	RELE' 110 Vac MY4 BASE	7/6	OMRON	MY4 110/120VAC PYF-14S
KA211	AUXILAIRY RELE' CENTRIFUGAL STARTER PERMISSION	RELE' 110 Vac MY4 BASE	6/4	OMRON	MY4 110/120VAC PYF-14S
KA9	AUXILAIRY RELE' CENTRIFUGAL START ER	RELE' 110 Vac MY4 BASE	7/3	OMRON	MY4 110/120VAC PYF-14S
KA1	AUXILAIRY RELE' READY INVERTER	RELE' 24 Vdc MY3 BASE	8/4	OMRON	MY3 24VDC PYF11A
KM7	ELEVATOR CONTACTOR (note4)	CONTACTOR FILTER	6/5	SIEMENS	3RT1015-1AF01 3RT1916-1CC00
KM8	INVERTER CONTACTOR	CONTACTOR FILTER	7/5	SIEMENS	3RT1015-1AF01 3RT1916-1CC00
KM22	JET STREAM CONTACTOR (note6)	CONTACTOR FILTER	6/7	SIEMENS	3RT1015-1AF01 3RT1916-1CC00
SA100	CYCLE KEY SELECTOR	HEAD 3 POSITION CONTACT 2 NO BEARING	6/1	TELEMECANIQUE	ZB5-AG3 ZBE-203 ZB5-AZ009
SB100	EMERGENCY BUTTON	BUTTON CONTACT 2 NC CONTACT 1NO+1NC BEARING	2/5	TELEMECANIQUE	ZB5-AS54 ZBE-204 ZBE-205 ZB5-AZ009
SB8A	CENTRIFUGAL MANUAL STOP BUTTON	BLACK BUTTON CONTACT 1NC BEARING	6/1	TELEMECANIQUE	ZB5-AA2 ZBE-102 ZB5-AZ009
SB8M	CENTRIFUGAL MANUAL START BUTTON	WHITE BUTTON CONTACT 1NO BEARING	6/1	TELEMECANIQUE	ZB5-AA1 ZBE-101 ZB5-AZ009
SB22A	JET STREAM MANUAL STOP BUTTON (note6)	BLACK BUTTON CONTACT 1NC BEARING	6/7	TELEMECANIQUE	ZB5-AA2 ZBE-102 ZB5-AZ009
SB22M	JET STREAM MANUAL START BUTTON (Nota 6)	WHITE BUTTON CONTACT 1NO BEARING	6/7	TELEMECANIQUE	ZB5-AA1 ZBE-101 ZB5-AZ009
SA7	ELEVATOR MANUAL START SELECTOR (note4)	HEAD 2 POSITIONS CONTACT 1NO BEARING	6/5	TELEMECANIQUE	ZB5-AD2 ZBE-101 ZB5-AZ009
HL102	EMERGENCY LIGHT/ANOMALIY	RED LED 110 Vac	2/7	DETAS	701101
HL101	NETWORK PRESENCE LIGHT	GREEN LED 110 Vac	5/1	DETAS	701102
HL8	CENTRIFUGAL STRAT LIGHT	GREEN LED 110 Vac	6/2	DETAS	701102
HL1	AIR LACK LIGHT	RED LED 110 Vac	5/2	DETAS	701101
HL7	ELEVATOR LIGHT	GREEN LED 110 Vac	6/6	DETAS	701102
HL22	JET STREAM MOTOR LIGHT	GREEN LED 110 Vac	6/8	DETAS	701102

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PESCE srl
via gambalera, 184 z.i. d5

15100 spinetta marengo
alessandria, italy

tel +39 0131 216411
fax +39 0131 214600

info@pescesrl.com
www.pescesrl.com

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... follow the picture 5 reference table:

Model	Description	Note	Pos.	Brand	Article code
EV100	FAN (note3)	FILTER FAN	2/4	PAMOCO FANDIS	PAPST 4600 A12KRG
EV100	AIR CONDITIONER (note 2)	230V/50-60Hz	3/4	MKS	MKP-034-0TH
U8	CENTRIFUGALINVERTER	230V/50-60Hz	3/2	OMRON	3G3MV – AB002
Z8	NETWORK FILTER INVERTER		3/2	OMRON / RAMSI	3G3MV PFI 1010 E
TOR	CENTRIFUGAL TOROID			OMRON / RAMSI	3G3IV PF0 0C/1
Z7A	LEVATOR FILTER IN SIDE THE PANEL (note 4)		3/8	MURR ELEKTRONIK	23050
Z7B	MOTOR ELEVATOR FILTER (note4)		3/8	MURR ELEKTRONIK	23050
Z22	JET STREAM FILTER (note6)		4/8	MURR ELEKTRONIK	23050
SP1	AIR MANOSTAT		5/2	FESTO	PEV-1/4-B
SQ15	LEVEL PHOTOELECTRIC CELL PIECES INNER THE CENTRIFUGAL		8/7	MICRODETECTOR	FAIM/BP-0E
SQ7	UPSTREAM SIGNAL PHOTOELECTRIC CELL (note 4)	PHOTOELECTRIC CELL FLOODLIGHT	8/8	MICRODETECTOR	FAIM/BP-0E R1
SQ35	GUARD SAFETY SWITCH		7/5	SCHMERSAL	AZ15ZVRK-M20
YV9	BLOW ELECTROMAGNETIC VALVE		8/5	FESTO	HEE-1/4-D-MINI-24
EV3	RECIRCULATION ELECTROMAGNETIC VALVE	OPTIONAL	8/3	SMC	SY5120-5Y0-01F-Q
XJ14	CONNECTORS OR SIGNALS	WITH 42 POLES CONTAINER PUSH ROD Nr. 18		WEIDMULLER	1651170000 1206100000 1601750000
XJ7	ELEVATOR CONNECTOR ON PANEL (note 5)	FRUIT 6 POLES CONATINER	3/7	WEIDMULLER	1200200000 1806100000
XJ7	ELEVATOR CONNECTOR PLUG (note 5)	FRUIT 6 POLES CONTAINER		WEIDMULLER	1200000000 1652660000
X1	TERMINAL BOARD PANEL	NORMAL Nr. 39 WITH DIODE Nr. 1		WEIDMULLER	1674300000 1690030000
AC10S B	ELECTRIC PANEL			HAWA	

NOTE. 1 – For the setting compare the tables in the electric scheme.

NOTE 2 – only with conditioner option.

NOTE 3 – without conditioner option.

NOTE 4 only with Elevator / Belt / Hopper option.

NOTE 5 – only with Elevator / external hopper option.

NOTE 6 – only with Jet Stream option.