

# COMPRESSED AIR DISTRIBUTION UNITS

Instruction Manual





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## GENERAL OPERATION DATA

	Common Characteristics
Insulation class	Class I
Use instructions	Alternating operation with physical absorption dryer
Operation temperature	from + 5 °C to + 35 °C
Motor revolution speed	at 50 Hz 1400 rpm at 60 Hz 1600 rpm

~	Alternating Current	IEC 417-5032
3N ~	Three-phase alternating current with neutral	IEC 335-1
⊕	Earth (operation)	IEC 417-5019
PE	Protective conductor	CEI EN 60439-1
N	Neutral conductor	IEC 446
⚡	Dangerous Voltage	IEC 417-5036
○	Open (disconnection from power supply mains)	IEC 417-5008
I	Closed (disconnection from power supply mains)	IEC 417-5007

The manufacturer is available to provide spare parts, documentation, instructions and anything else that may be useful. **The device is under warranty for 3 years from the date of sale, provided that it is returned to the manufacturer with the warranty card showing date of sale, seller and name of user/customer.** The warranty and manufacturer's liability shall lapse if the devices and/or systems are tampered with for interventions of any kind

made by unqualified persons not authorized by the manufacturer.

Our equipment is distributed in 60 countries. In each of these countries we have an importer with a qualified technical service for installation and maintenance of our equipment.

Made by ESAM s.p.a. - PARMA - ITALY

# PRECAUTIONS

## RECOMMENDED PRECAUTIONS

Before removing the equipment from its packaging, check the outside of the package and the impact indicator; if the indicator is red or the package damaged, accept it with reservation of checking the unit.

The packaging frame is wood treated with ISPM-15 fumigation.

This treatment is certified by the code stamped on the wood frame. The packaging can be recycled; if not used, dispose of it in accordance with current regulations. Remove the screws that secure the wood panels together, possibly using a pneumatic screwdriver, starting with the top. The unit is secured to the pallet. An illustration of the compressor is under the address and includes machine dimensions and weight. Keep the stoppers that close all the external/internal communication points, so that you may use them when moving the compressor.

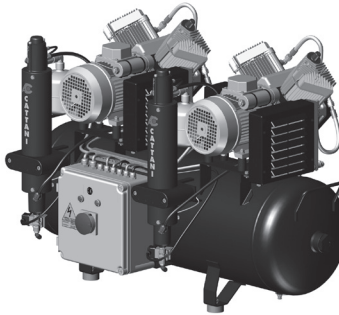


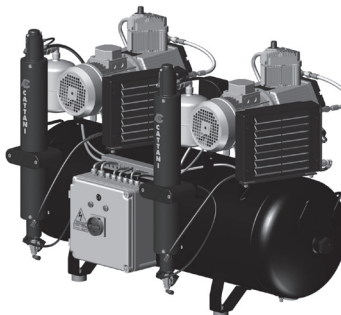
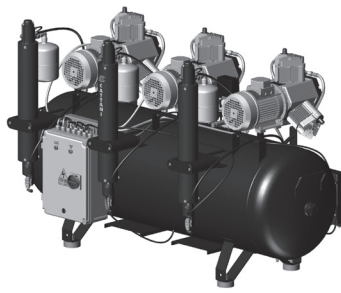
# RATED ELECTRICAL CHARACTERISTICS

## COMPRESSORS WITH SILICA GEL DRYER

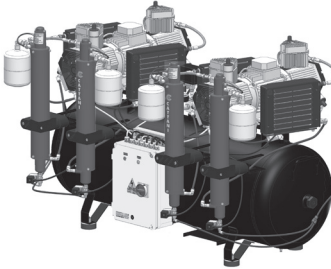
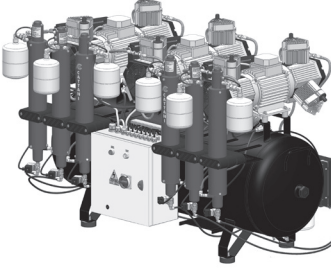
Sound pressure level detected according to ISO 3746-1979 (E).  
Parameters: d = 1.5 - background noise <38 dB(A) - instrument

Bruel & Kjaer type 2232.

Tandem 2-cylinder compressor	AC 400 - tandem 2-cylinder compressor with two air dryers	Recommended for 4-5 dental units
Item 013430 (230V / 50Hz 1~) Item 013431 (240V / 50Hz 1~)	230 V - 2,4 kW - 15,4 A total 240 V - 2,5 kW - 14,2 A total	
Item 013435 (400V / 50Hz 3~)	400 V - 3 kW - 7,2 A total	
Item 013407 (220V / 60Hz 1~) Item 013440 (110V / 60Hz 1~)	220 V - 3 kW - 18,4 A total 110 V - 2,6 kW - 34,4 A total	
	100 litre tank. Air output with supply at 5 bar 320 N l/min. Sound pressure level: 73 dB (A). Dimensions: L= 1155 mm D= 550 mm H= 745 mm. Net Weight= 112 kg Gross weight= 139 kg	
	<b>AC 400 Q - tandem 2-cylinder compressor with two air dryers and sound reducing plastic cover</b>	
Item 013451 (230V / 50Hz 1~) Item 013450 (400V / 50Hz 3~) Item 013446 (380V / 60Hz 3~)	Sound pressure level: 63.8 dB (A). Dimensions: L= 1160 mm D= 650 mm H= 890 mm. Net Weight= 135 kg Gross weight= 173 kg	

Tandem 3-cylinder compressor	AC 600 - tandem 3-cylinder compressor with two air dryers	Recommended for 6-9 dental units
Item 013530 (230V / 50Hz 1~) Item 013531 (240V / 50Hz 1~)	230 V - 3 kW - 20,4 A total 240 V - 3 kW - 18,4 A total	
Item 013535 (400V / 50Hz 3~)	400 V - 3 kW - 7,4 A total	
Item 013538 (380V / 60Hz 3~)	380 V - 3,5 kW - 9,4 A total	
	150 litre tank. Air output with supply at 5 bar 476 N l/min. Sound pressure level: 74 dB (A). Dimensions: L= 1320 mm D= 590 mm H= 890 mm. Net Weight= 137 kg Gross weight= 173 kg	
	<b>AC 600 Q - tandem 3-cylinder compressor with two air dryers and sound reducing plastic cover</b>	
Item 013550 (400V / 50Hz 3~) Item 013546 (380V / 60Hz 3~)	Sound pressure level: 70.4 dB (A). Dimensions: L= 1320 mm D= 770 mm H= 1040 mm. Net Weight= 169 kg Gross weight= 200 kg	
3-Cylinder triple head compressor	AC 900 - 3-cylinder triple head compressor with three air dryers	Recommended for 13-15 dental units - 55 N l/min per chair
Item 013599 (400V / 50Hz 3~)	400 V - 4,5 kW - 11,1 A total	
Item 013577 (380V / 60Hz 3~)	380 V - 5,25 kW - 14,1 A total	
	300 litre tank. Air output with supply at 5 bar 714 N l/min. Sound pressure level: 75 dB (A). Dimensions: L= 1800 mm D= 810 mm H= 1000 mm. Net Weight= 260 kg Gross weight= 286 kg	

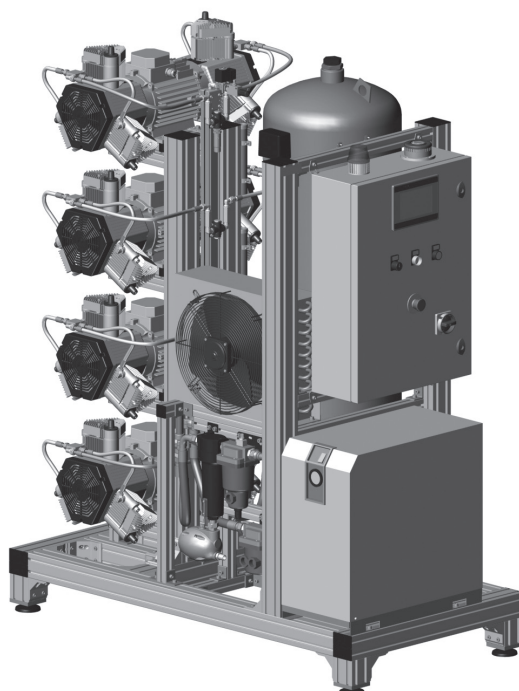


6-Cylinder twin head compressor	AC 1200 - 6-cylinder twin head compressor with four air dryers	Recommended for 15-17 dental units - 55 N l/min per chair
Item 013595 (400V / 50Hz 3~)	400 V - 6,5 kW - 15 A total	
Item 013588 (380V / 60Hz 3~)	380 V - 7,6 kW - 18,5 A total	
	300 litre tank. Air output with supply at 5 bar 952 N l/min. Sound pressure level: 81 dB (A). Dimensions: L= 1800 mm D= 880 mm H= 1100 mm. Net Weight= 303 kg Gross weight= 350 kg	
6-Cylinder triple head compressor	AC 1800 - 6-cylinder triple head compressor with six air dryers	Recommended for 20-25 dental units - 55 N l/min per chair
Item 013594 (400V / 50Hz 3~)	400 V - 9,75 kW - 22,6 A total	
Item 013589 (380V / 60Hz 3~)	380 V - 11,4 kW - 27,8 A total	
	300 litre tank. Air output with supply at 5 bar 1428 N l/min. Sound pressure level: 82.50 dB (A). Dimensions: L= 1800 mm D= 1100 mm H= 1100 mm. Net Weight= 394 kg Gross weight= 441 kg	

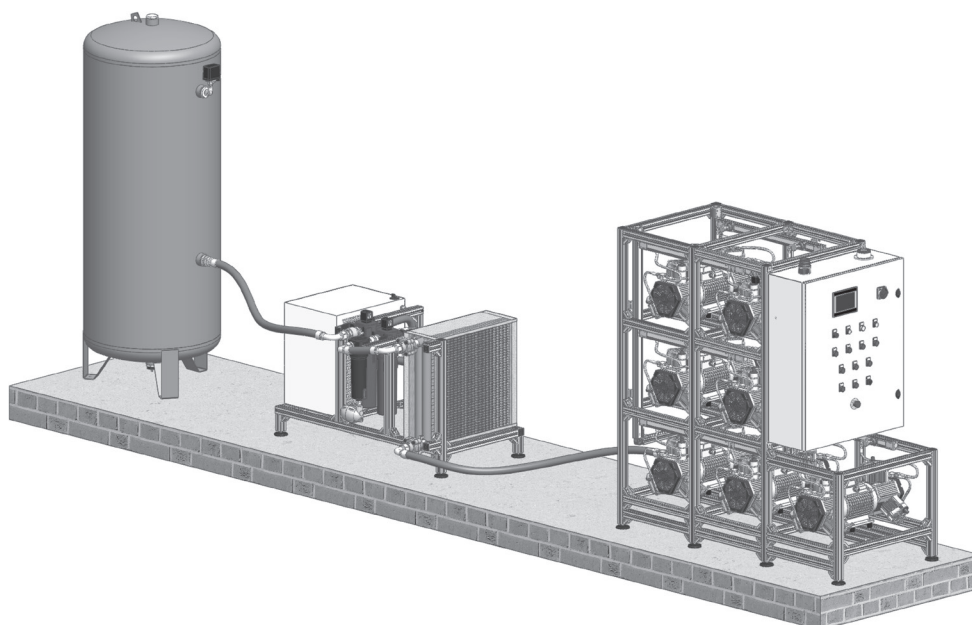


# RATED ELECTRICAL CHARACTERISTICS OF BLOK-JET - COMPRESSED AIR DISTRIBUTION UNITS WITH REFRIGERATED DRYING

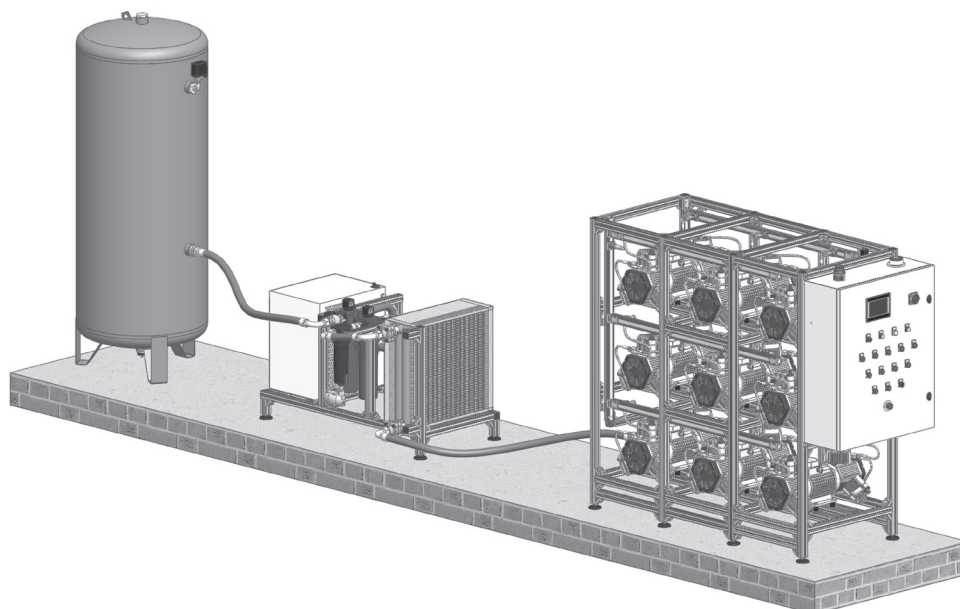
Blok-Jet 6-cylinder four heads	ACB400 - aluminium section frame with 4 independent 6-cylinder heads (three phase) and control unit with PLC and Touch Screen	Recommended for 30-35 dental units
Item 010656 (400V / 50Hz)	Three phase motors 50 Hz - 13 kW total output 31 A. Air flow at 5 bar 1680 N l/min at frame outlet.	
Item 010657 (380V / 60Hz)	Three phase motors 60 Hz - 15.2 kW total output 37 A. Air flow at 5 bar 1848 N l/min at frame outlet.	
	<p><b>Compressed air filtering and drying line</b>            Air/air exchanger for four 6-cylinder heads that takes            the air from the compressed air production unit from            approx. 100 °C to room temperature + 5 °C.            Refrigerated dryer with electronic condensate drain.            Dew point under pressure + 3 °C.            Operating room temperature: min. + 5 °C / max + 35 °C.</p> <p><b>200 litre air tank (EC) - internally treated</b>            Sound pressure level: ..... dB (A)            Approximate dimensions L= 1550 mm D= 760 mm H= 2000 mm.</p>	



Compressed air production unit	<b>ACB700 - aluminium section frame with 7 independent 6-cylinder heads (three phase) and control unit with PLC and Touch Screen</b>	<b>Recommended for 50 to 55 surgeries</b>
Item 010628 (400V / 50Hz)	Three phase motors 50 Hz - 22.75 kW total output 52.4 A. Air flow at 5 bar 2940 N l/min at frame outlet.	
Item 010629 (380V / 60Hz)	Three phase motors 60 Hz - 26.6 kW total output 64 A. Air flow at 5 bar 3234 N l/min at frame outlet.	
	Sound pressure level: ..... dB (A) Approximate dimensions L= 1850 mm D= 800 mm H= 2000 mm.	
Item 169048 (for 50Hz frame) Item 169047 (for 60Hz frame)	<b>Compressed air filtering and drying line</b> Air/air exchanger for four 6-cylinder heads that takes the air from the compressed air production unit from approx. 100 °C to room temperature + 5 °C. Refrigerated dryer with electronic condensate drain. Dew point under pressure + 3 °C. Operating room temperature: min. + 5 °C / max + 35 °C. Approximate dimensions: L= 850 mm D= 950 mm H= 900 mm.	
Item 199748	<b>900 litre air tank (EC) - internally treated</b> Approximate dimensions: D=800 mm H=2225 mm	



Compressed air production unit	<b>ACB900 - aluminium section frame with 9 independent 6-cylinder heads (three phase) and control unit with PLC and Touch Screen</b>	<b>Recommended for 65 surgeries</b>
Item 010638 (400V / 50Hz)	Three phase motors 50 Hz - 29.25 kW total output 67.6 A. Air flow at 5 bar 3780 N l/min at frame outlet.	
Item 010637 (380V / 60Hz)	Three phase motors 60 Hz - 34.2 kW total output 82.5 A. Air flow at 5 bar 4167 N l/min at frame outlet.	
	Sound pressure level: 81 dB (A). Approximate dimensions: L= 2200 mm D= 800 mm H= 2000 mm.	
Item 169063 (for 50Hz frame) Item 169049 (for 60Hz frame)	<b>Compressed air filtering and drying line</b> Air/air exchanger for nine 6-cylinder heads that takes the air from the compressed air production unit from approx. 100 °C to room temperature + 5 °C. Refrigerated dryer with electronic condensate drain. Dew point under pressure + 3 °C. Operating room temperature: min. + 5 °C / max + 35 °C. Approximate dimensions: L= 850 mm D= 950 mm H= 900 mm.	
Item 199748	<b>900 litre air tank (EC) - internally treated</b> Approximate dimensions: D=800 mm H=2225 mm	



# INTRODUCTION

## SIGNS AND WARNINGS

# OIL-LESS COMPRESSOR AND COMPRESSED AIR DRYING SYSTEMS

### INTRODUCTION

The presentation that follows describes the equipment and systems for users and technicians; it covers operation and maintenance as well as the hazards and precautions **that must be considered**

**for the purpose of prevention.**

### SIGNS AND WARNINGS



Please read through the manual before installation



Electrical shock hazard: even 230 V ~ can cause death



High temperature



Generic danger sign



Obligatory direction of flow or rotation

It is not always possible to express with a sign all the hazards and relevant instructions; users are therefore required to read the warnings and comply with them.

Failing to observe a danger sign or warning can cause personal injury or damage the machine.

Do not remove the guards, do not alter the machines or their operation and, most importantly, do not perform welds or other work of any kind, especially

on the tank.

Only competent, authorized personnel should carry out technical work on the compressor . Working on a charged compressor can result in serious injury. Despite our best efforts, danger warnings may not be exhaustive; if you find that this is the case, please arrange for any danger sources that we may have overlooked to be indicated and kindly notify us.

### OIL-LESS COMPRESSOR AND COMPRESSED AIR DRYING SYSTEMS

**When clean, hygienic, sterile or medical air is needed, you must use the compressor without oil with filtration system and air drying.**

The emulsion of water and oil, produced by a normal lubricated compressor, will notably affect the efficiency of the dentist's rotary instruments; in addition, given that the air is also used to dry up preparations before cementation, traces of this emulsion can also prevent proper cementation.

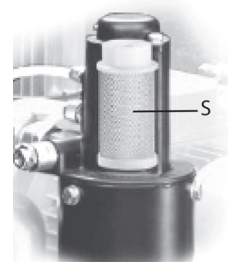
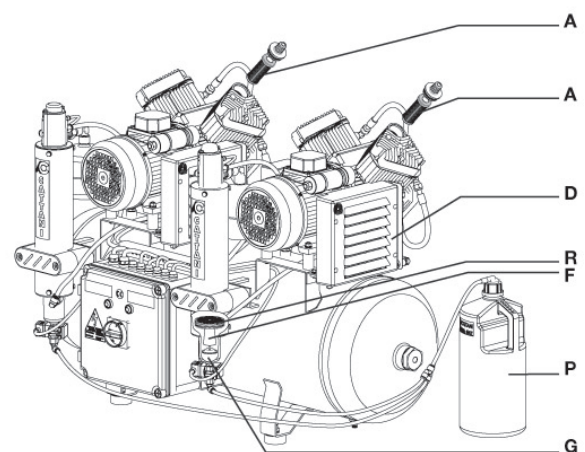
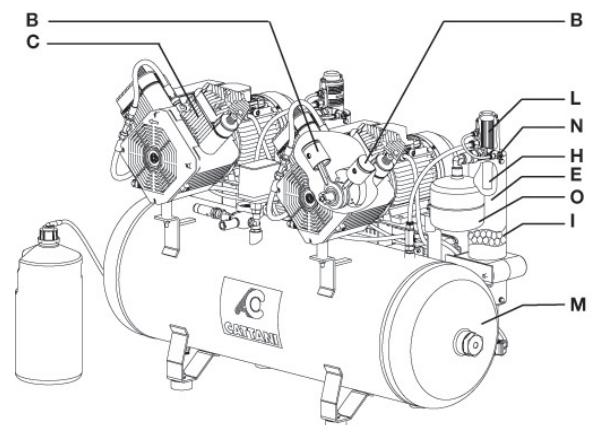
This problem becomes more serious when the air is used in a sterile environment. A sterilizing filter

can be inserted only if the air is dry. The use of oil compressors, combined with filtering systems to trap moisture and emulsified oil, is less safe, more complicated and will probably end up being more expensive than an oil-less compressor.

# OPERATION OF COMPRESSOR WITH SILICA GEL DRYER

## OPERATION OF COMPRESSOR WITH SILICA GEL DRYER

Air enters the cylinder through a filter (A), undergoes an initial filtration which removes airborne dust, improves its quality and protects piston and cylinder. The piston (B) travels inside the cylinder (C) without lubrication; the material that covers the piston and the cylinder liner are compatible and, despite the relative motion, will not be subject to appreciable wear. In the cylinder air is compressed and heated (to about 100°C), it is then necessary to pass it through the air-to-air exchanger (D) where, at an ambient temperature of about 20°C, the  $\Delta T$  will remain at approx. 5 °C. The compressed air must be cooled in order to reach the dew point, which is a necessary condition for condensation of the water vapour present in the air. In the drying column (E) the cooled air passes through the cyclone (F) where it deposits the first drops of dew that are collected in the tank (G). Above the cyclone, air passes through the filter disc (R) then it passes through a silica gel mix (I) with high adsorbent power, where residual moisture is removed. After leaving the drying column, air passes through two filters: the first one is sintered bronze (H), the second one polyester (L); the polyester filter (L) may be replaced with a Balston sterilizing filter with 99.9999 % efficiency on 0.01  $\mu m$  particles or with an antibacterial HEPA filter with 99.99 % efficiency on 0.01  $\mu m$  particles. The tank is lined with an anti microbial surface comprised of silver ion to ensure hygienic storage of compressed air. While the tank is filling, air also enters the small tank (O) through a selective valve (N). At the end of each charge, the dry air in the small tank counter-flows through the drying column to regenerate the silica gel. This occurs because this return air drags with it all of the water previously removed from the incoming air and conveys it into the bottle (P). The entire process described above takes place automatically.





# BLOK-JET WITH REFRIGERATED DRYER

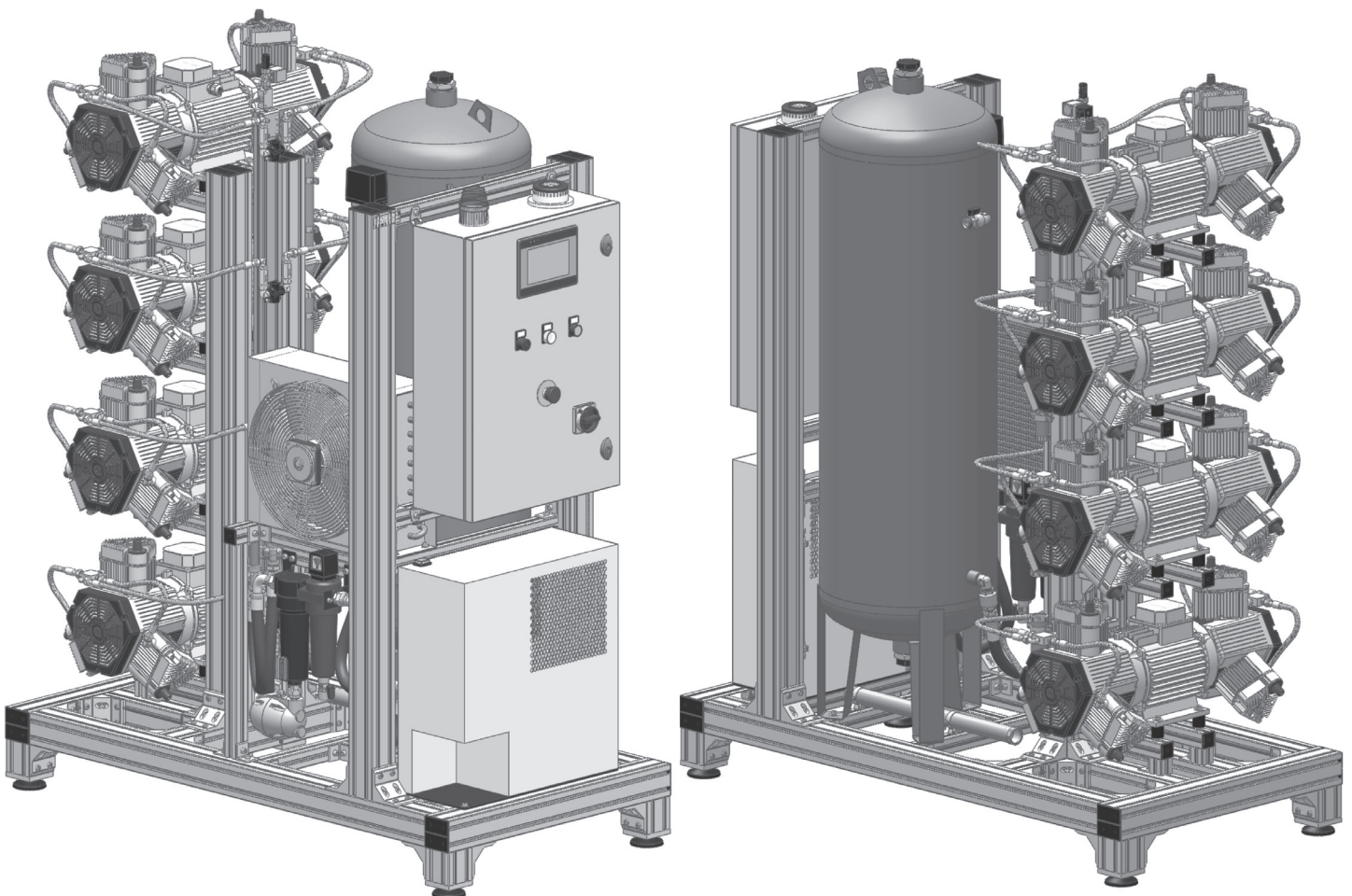
## BLOK-JET WITH REFRIGERATED DRYER

With the refrigerated dryer, air is first cooled by an air/air exchanger and sent through a condensate drain, where the water that has separated from the air due to the sudden thermal change (approximately 80°C) is deposited. The compressed, partially dehumidified air first goes through the refrigerated circuit (where it separates from residual humidity) and then through two filters: the first one (1R)\* with filtering efficiency 99.95%, the second one (2R)\*\* with 99.9999% efficiency; after the second filter, the

air goes into the collection tank to be used.

\* (PRE) filter Zander model GLVLH

\*\* (POST) filter Zander model GL7XLH

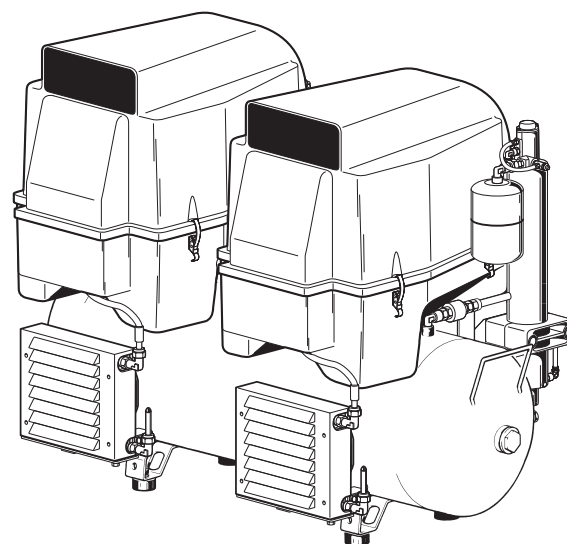


# MODEL SELECTION AND DISTRIBUTION MAINS

## MODEL SELECTION AND DISTRIBUTION MAINS

Selection of the oil-less compressor will be in accordance with the type of rotary instruments used by the dentist and with the overall demand of compressed air in the surgery, clinic or hospital (page 6). A compressor cylinder produces approx. 60 l/min at a pressure of 5 bar, while the instruments used continuously by a dentist do not normally exceed a consumption of 50/60 l/min of air at a pressure of 2/3 bar. The capacity of the compressor should exceed consumption to allow for the end-of-charge pauses needed for regeneration of the drying column. Charge losses along the distribution line are generally due to the absence of a closed loop layout and to excessively small pipe sections; we want to stress the importance of these characteristics which are often overlooked. The closed-loop layout keeps pressure on the turbine constant. The pipework in insulated copper keeps the air clean and prevents the formation of condensation along the entire distribution system. As regards sound vibration, the compressor can be supplied with plastic protective cover or cabinet. In the first version, noise is reduced by about 10 dB (A), in the second by 20 dB (A). Use only enclosures and covers supplied by the manufacturer. Machines sound proofed with other equipment will not be covered by warranty.

The cabinets and covers supplied by the manufacturer are designed not only to make the unit more attractive and reduce sound vibrations, but also to serve as a means of protection from and prevention of explosion and fire; these are rare events but the possibility cannot be excluded. The two and three-cylinder compressors and the Blok-Jet are set at 6 to 8 bar. Setting operating pressure to different values will affect the life of the compressor: the higher the maximum pressure, the greater the strain and the wear of the machine.



\* only for compressors with silica gel air dryer.



# BLOK-JET AND LARGE SYSTEMS

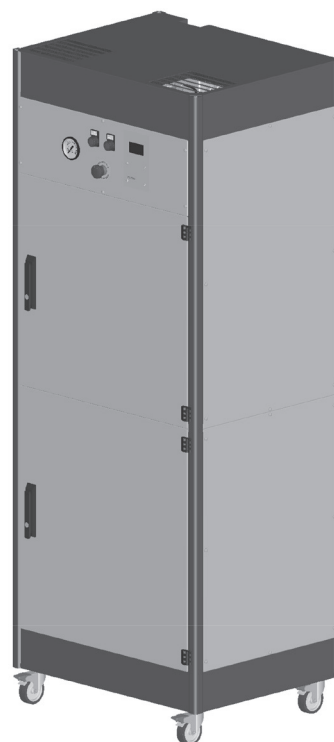
## NOISE REDUCING SOLUTION FOR BLOK-JET

### BLOK-JET AND LARGE SYSTEMS

Blok-Jet is basically a frame that houses suction and compression, or simply a number of compressor heads (page 23).

The frame makes it possible to stack items (the compressor is normally placed above the suction unit) reducing space requirements by 50%.

Sound deadening reduces sound vibrations but it does not eliminate them. For large systems, a group of heads, regulated by an electronic control system, automatically switches on the heads in a sequence; this makes the system flexible and more cost-effective than a machine with a single motor. Starting the heads in a sequence prevents power consumption peaks. In our website, you can find a catalogue dedicated to large systems, with a number of solutions for centralized systems of various sizes.



### NOISE REDUCING SOLUTION FOR BLOK-JET

We have found a way to significantly reduce sound vibrations in single, twin and triple cylinder compressors: with our cover (item code 010800) we have reduced sound vibration by approximately 20 dB (A). Our acoustic covers lower the sound vibration of twin and triple cylinder tandem units by almost 10 dB(A).

This means we can provide compressed air to up to six dental units in simultaneous suction with a sound vibration of 70.4 dB(A). With larger sized Blok-Jet units, we advise against the construction

of noise reducing enclosures. In our experience, it is more cost-effective to soundproof the plant room. The function of the Blok-Jet panelling shown in this manual is not so much noise reducing but rather personal safety, i.e. preventing accidental contact.

# RECOMMENDATIONS FOR PLANT ROOM

## RECOMMENDATIONS FOR PLANT ROOM

The following suggestions are not based on current regulations but on our experience, so their application is optional.

- Compressor and suction unit should be installed in a room that cannot be accessed by patients, unauthorized persons and also surgery personnel who have not been specifically trained.
- If there is no plant room, the machines should be protected with a special enclosure that is not easy to remove. This will prevent accidental contact, which can be dangerous due to possible shock hazard, high operating temperature of the units, the possibility of fire and explosions (a remote but possible event), leakage of contaminating air or liquids. Install a steel mesh protection to stop incautious people from getting close to the machines.
- **Install a remote switch, so that the operator can keep at a safe distance when switching on the machine.**



### For the plant room, we recommend:

a smoke or temperature detector, for fire prevention, connected to a continuous monitoring service, e.g. administration office; provide an extinguisher outside the plant room and check its efficiency regularly; ensure that technicians in charge of routine and special maintenance operations are adequately protected against contaminated material and accidental contact; ensure that the machines and their safety systems are not altered and that no work is carried out on the machines when they are operating or connected to the power mains.

- The minimum temperature in this room must be +5 °C and the maximum + 35 °C.
- Power supply must be sufficient for the loads shown on machine plates, and it must feature three phases + neutral + earth; earth is also necessary for the single phase.
- Power lines, electrical control panels and machines must be protected against direct and indirect electrical contacts, power surge and short circuit, in accordance with EC 64-8 regulations for first class equipment (corresponding I. E. C. available on request).
- We strongly recommend that you protect power mains from extra currents.
- Protect electrical switchboards and machines from accidental splashing.
- Arrange for liquid collection on the floor with drain connected to the sewage system.
- Keep the plant room clear of all material not related to the machines, in particular flammable material; ensure that there is no possibility of formation of corrosive, flammable or explosive mixes.
- Machine installation must be performed by skilled and specifically trained persons using suitable tools. The installation technician must refer to the machine manual, test the machine and provide users with instructions regarding operation and routine maintenance. When instructing personnel you should preferably use a new, non-contaminated machine.
- Before starting the machines make sure that the suction pipes and compressed air mains are clean; heavy debris could damage your equipment.
- Hazard warnings such as machine shutdown or excessive temperature, must be sent from the plant room to an area where staff are normally present (i.e. administration office) with visual and acoustic warnings.

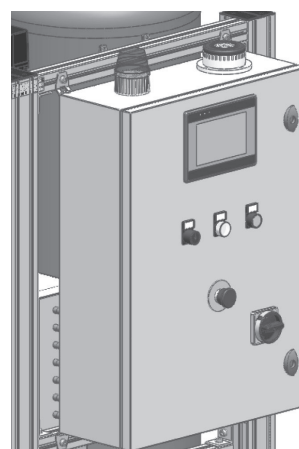
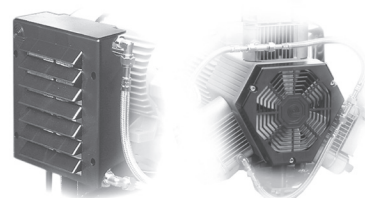
# ASSEMBLY AND PUTTING INTO SERVICE

- After the installation, perform the regulatory and functional tests, check direction of motor rotation, mains voltage, electrical absorption and dispersion to the ground.
- Arrange for periodic inspection of the equipment. This control is not only a means for avoiding shutdowns in the surgery or clinic, but also a means of preventing injury and accidents.
- **Updated** manuals are available from our website: **www.cattani.it**. We recommend you refer to

these especially for the latest **safety** updates.

## ASSEMBLY AND PUTTING INTO SERVICE

- **Do not connect damaged equipment to power mains.**
- Do not use extension cords, multiple sockets or plugs.
- Make sure that the power line is sufficient to power the compressor.
- **Ensure that the compressor (or the Blok-Jet) is installed in a clean place, away from heat sources or deposits of contaminated material**, that it is sucking up clean air, free from dust, gas and humidity. An accessory kit is available on request to connect the compressor head with the outside. Carefully read the data plate on the compressor, check power voltage and frequency; incorrect power supply can damage the equipment, compromise its operation and cause fire. As this is a three-phase machine, it is necessary to check the direction of rotation indicated on the motor and on the grille (10). Check that the exchanger fan (4) is running.



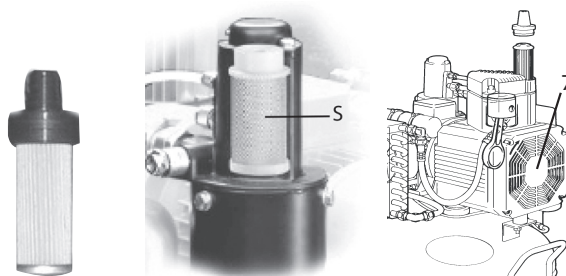
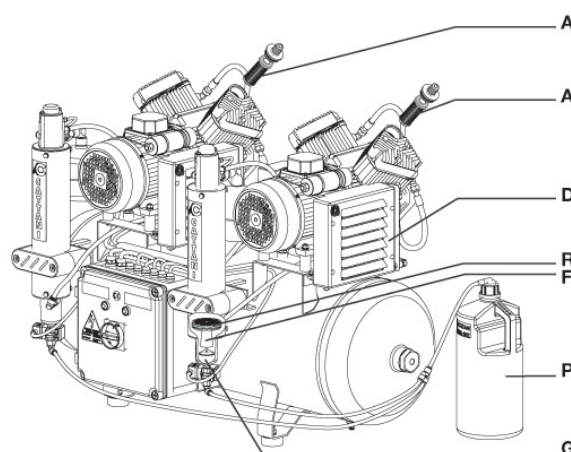
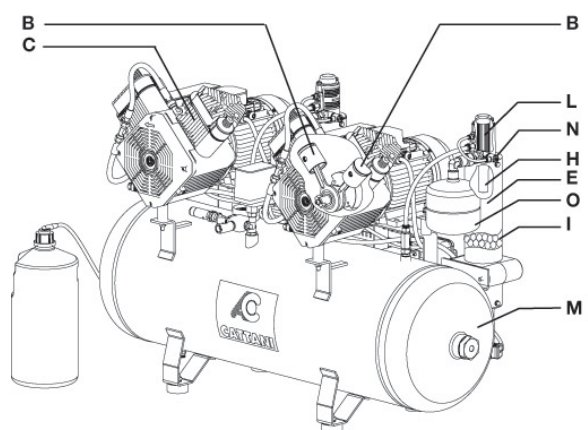
# ROUTINE MAINTENANCE

## ROUTINE MAINTENANCE TO BE CARRIED OUT BY TRAINED MEMBERS OF THE SURGERY STAFF

Only competent, authorized personnel should carry out technical work on the compressor. Working on a charged compressor can result in serious injury. Before getting close to the compressor remove power and make sure that nobody can restore power without informing the person in charge of maintenance. If the compressor is installed in a dusty place where it can suck up solid particles such as dust, sand, dry leaves or other, you should frequently clean the fans of the head and replace the filters on the cylinder head often. In an environment with clean air it is sufficient to clean the filters (A) every 12 months. The (S) filter can go in a 135 °C ∩ autoclave (20 cycles maximum). We recommend replacing it every 12 months\*\*. Spare cartridges are available; follow the instructions (included in the filter) and record changes in the special log. Check the efficiency of fans; the compressor cannot operate for long times without adequate ventilation. Keep in mind that the silica gel air drying system cannot work well with a temperature above 35 °C. The compressor must not start running if air is not used; if that happens, call a technician. Careful monitoring prolongs the life of the machine: when a machine becomes noisy or creates vibrations, it means that something is loose or worn out, in this case call a technician.

Based on their experience and on the load of work at the surgery, operators may decide to reduce or increase the frequency of maintenance operations that we have suggested.

\*\*We recommend you call a technician when filter (S) needs to be replaced.



# SPECIAL MAINTENANCE

## SPECIAL MAINTENANCE

TO BE CARRIED OUT BY A TRAINED AUTHORIZED TECHNICIAN, USING ORIGINAL SPARE PARTS

Before doing technical work on the compressor, let all the air in the tank out.

Checks must be carried out regularly; the frequency of these checks will depend on the amount of work at the surgery. For surgeries working eight hours a day, five days a week, a visit every six or twelve months will suffice, provided the machines are also monitored by staff trained for routine maintenance. Technicians in charge of special maintenance operations must use only original spare parts, they must not alter the machines or their operation and must not modify the safety devices. Most importantly, they must not perform welds on the compressor tank. Before intervening, refer to the instruction manual, exploded drawings and wiring diagrams.

**Before you get close to the compressor remove power, if the main disconnection switch is far from the compressor and cannot be visually monitored, place a padlock on the switch.** For compressors with silica gel dryer, make sure that with each charge the compressor reaches the maximum pressure value, the charging time is approximately 45/55 seconds while regeneration and cooling time is a third of the charging time. If the compressor has difficulty reaching maximum pressure, check mains voltage. Check electrical absorption. **Every time the compressor stops, a small amount of dry air is counter flowed to dry the silica gel, if this is not the case check or replace the solenoid valve. Every six months check the absorptions with clamp-on ammeter.** Check for leaks in the machine, in the pipework and in the chairs. Check suction of each cylinder (6 or 8 bar); the air drawn must not be less than 6000 N l/h. Replace any burned out bulbs in the switchboard, replace any relays and contactors that form sparks or that have worn out contacts. Do not alter operation and electrical and mechanical protections.

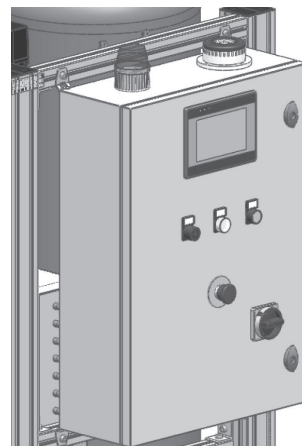
- Replace the filter in the heads or clean them with compressed air (item A). Every 6 months replace

the filters of the refrigerated dryer.

- Loosen the screw under the tank and ensure there is no water inside.
- Make sure there is no dust or foreign objects obstructing the ventilation of motors and heads.
- Check the condition of bearings (possibly with a vibrometer) and replace them if necessary. The life of bearings under normal operating conditions is 10,000 hours.

Changes in operating noise may be a sign of malfunction and danger of breaking; it is therefore a good idea to replace noisy heads.

Check the temperature in the plant room, with a temperature above 35 °C the air drying system will not operate correctly.



# IMPORTANT WARNINGS

## TRANSPORT AND STORAGE

### IMPORTANT WARNINGS

The manufacturer is available to provide spare parts, documentation, instructions and anything else that may be useful.

- Your local authorized dealers, agents and technicians can provide exploded views, wiring diagrams, instructions and updates on care and maintenance.

The device is under warranty for 3 years from the date of sale, provided that it is returned to the manufacturer with the warranty card showing date of sale, seller and name of user/customer.

The warranty and manufacturer's liability shall lapse if the devices and/or systems are tampered with and work of any kind is carried out by unqualified persons who have not been authorized by the manufacturer.

- For any use other than the one explained in this manual please consult the manufacturer.
- Compressors can be disposed of as waste metal.
- **Updated** manuals are available from our website:

**[www.cattani.it](http://www.cattani.it)** . We recommend you refer to these especially for the latest **safety** updates.



### TRANSPORT AND STORAGE

- During transport and storage, the packed equipment can withstand temperatures in the - 10 and + 60 °C range.

- The packages cannot be exposed to water and splashing and cannot withstand humidity values greater than 70 %.

- All Blok-Jet units are packaged on a pallet to enable transport with forklifts or pallet trucks.

For safe transport, check the dimensions and weight of the machine on the drawing glued to the wood frame.

# WASTE DISPOSAL

## INFORMATION FOR PROFESSIONAL USERS

- Pursuant to Item 13 Legislative Decree no.151 25 July, "Implementation of directive 2011/65 EU ROHS and 2003/108/CE, concerning reduction of the use of dangerous substances in electrical and electronic appliances, and waste disposal".

The crossed out bin symbol on the appliance indicates that at the end of its useful life, the appliance must be disposed of separately from other waste. Separate disposal of this appliance at the end of its life is organized and managed by the manufacturer. Users wanting to dispose of this appliance must therefore contact the manufacturers and follow the system adopted by them to enable separate disposal of the appliance at the end of its life.

Adequate separate disposal for subsequent recycling of the appliance, processing and environmentally compatible disposal contributes to the prevention

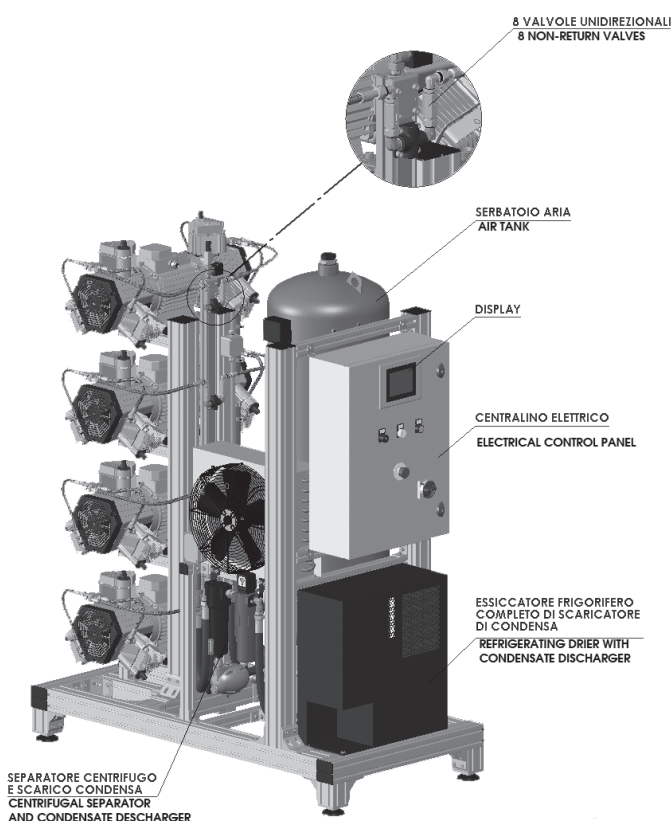
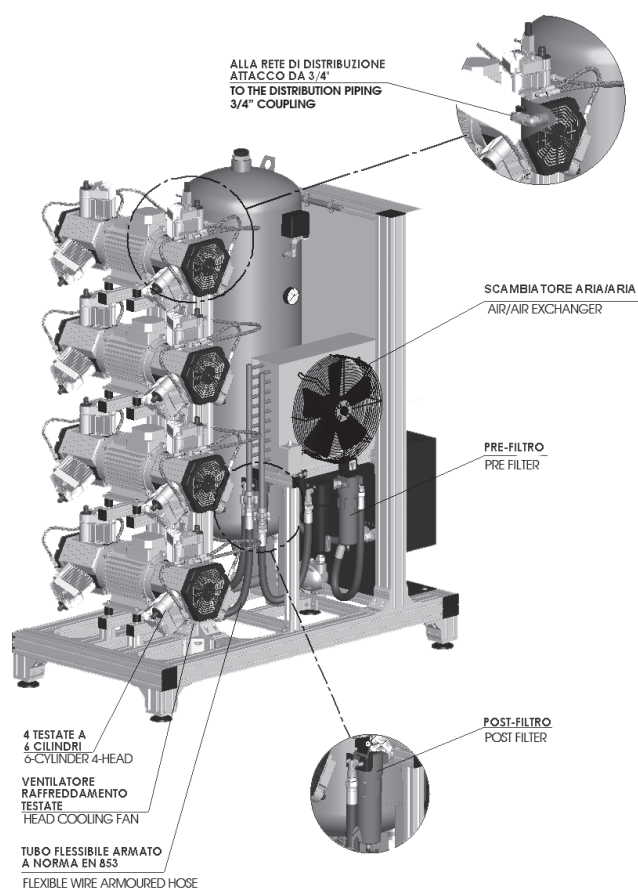
of negative effects on the environment and on human health and promotes reuse and/or recycling of the materials with which the appliance is made. Improper disposal of the product by the user shall result in the administrative sanctions set forth by current regulations.





# BLOK-JET - COMPRESSED AIR DISTRIBUTION UNITS WITH REFRIGERATED DRYING

## BLOK-JET - COMPRESSED AIR DISTRIBUTION UNITS WITH REFRIGERATED DRYING



# COMPRESSED AIR PRODUCTION PLANT

## COMPRESSED AIR PRODUCTION PLANT

The design of suction piping and compressed air distribution is a service that Cattani S.p.A. offers to its customers.

To produce a layout we need to have a DWG file or, alternatively DXF, of the areas involved, showing:  
position of the plant room,  
position of the dental units and equipment that will need to be connected to suction or compressed air.

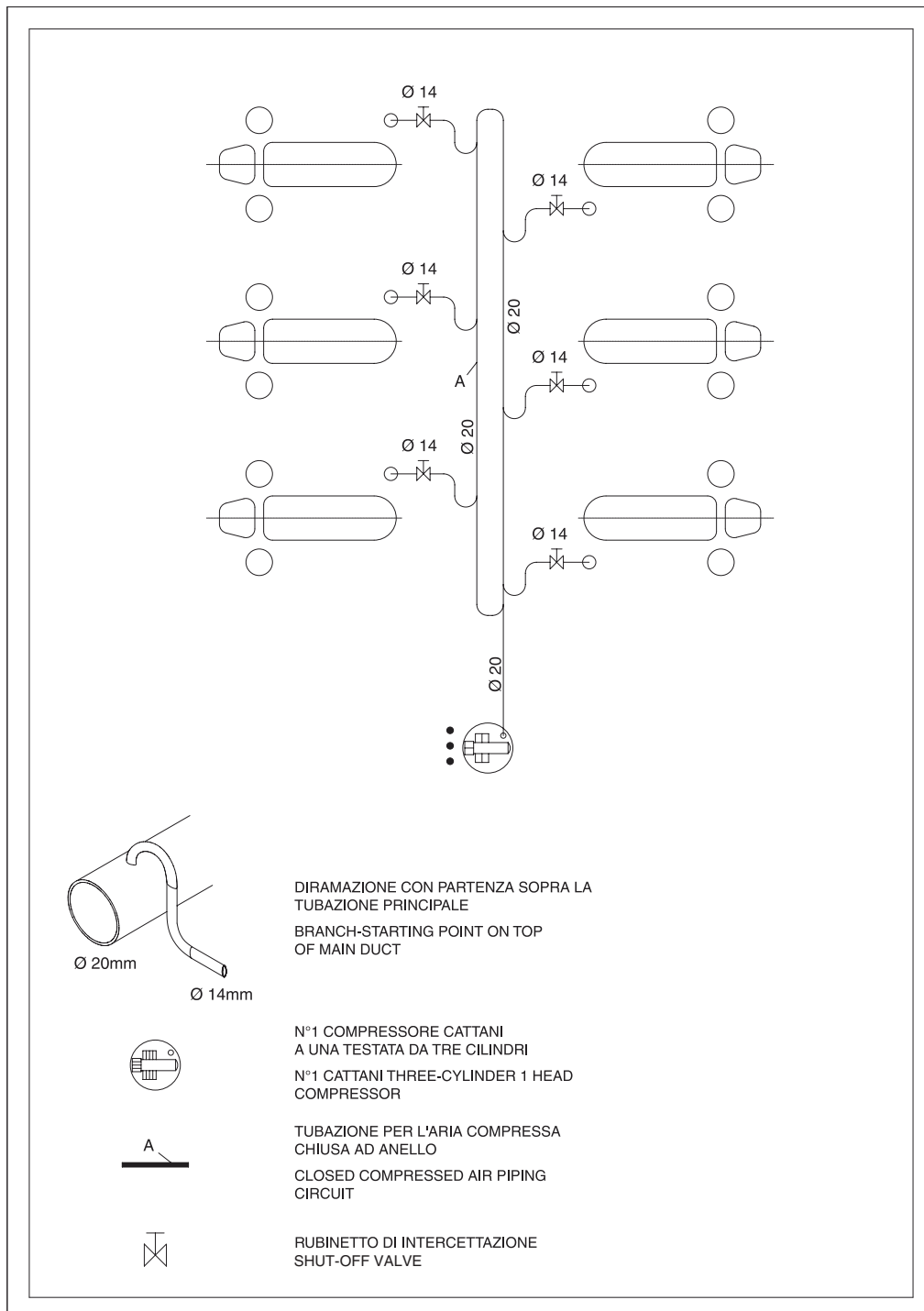
Suggested piping for both suction and compressed air does not come with the machines: we believe

it is more cost effective to purchase these locally and have them installed by a local technician in full compliance with the indications of the drawing.

For compressed air distribution we recommend a ring installation, the only one that ensures constant pressure on the individual machines.

# CLOSED CIRCUIT LAYOUT

## CLOSED CIRCUIT LAYOUT







**WE HAVE BEEN SPECIALISING WITH AIR TECHNOLOGY  
FOR 50 YEARS:  
SPECIALIZATION HAS GIVEN EXCELLENT RESULTS.**

Company with Quality System certified = **ISO 9001** = and = **ISO 13485** =

cod: ed. 04-2018

**HOW IS IT WE LEAD IN OUR FIELD, WHEN WE COST LESS THAN THE ALTERNATIVES? THIS IS HOW:**

**Constant research:** this enables us to apply the latest technology to all of our products and solutions.

**We enhance performance:** electronic and information technology enable us to enhance the performance and reliability of our products.

**We reduce costs:** less maintenance and lower energy costs mean that we are always the most economical on a cost-benefit analysis.

**We reduce environmental impact:** we save 50% on raw materials, so that you can save between 30% and 50% on electrical consumption.