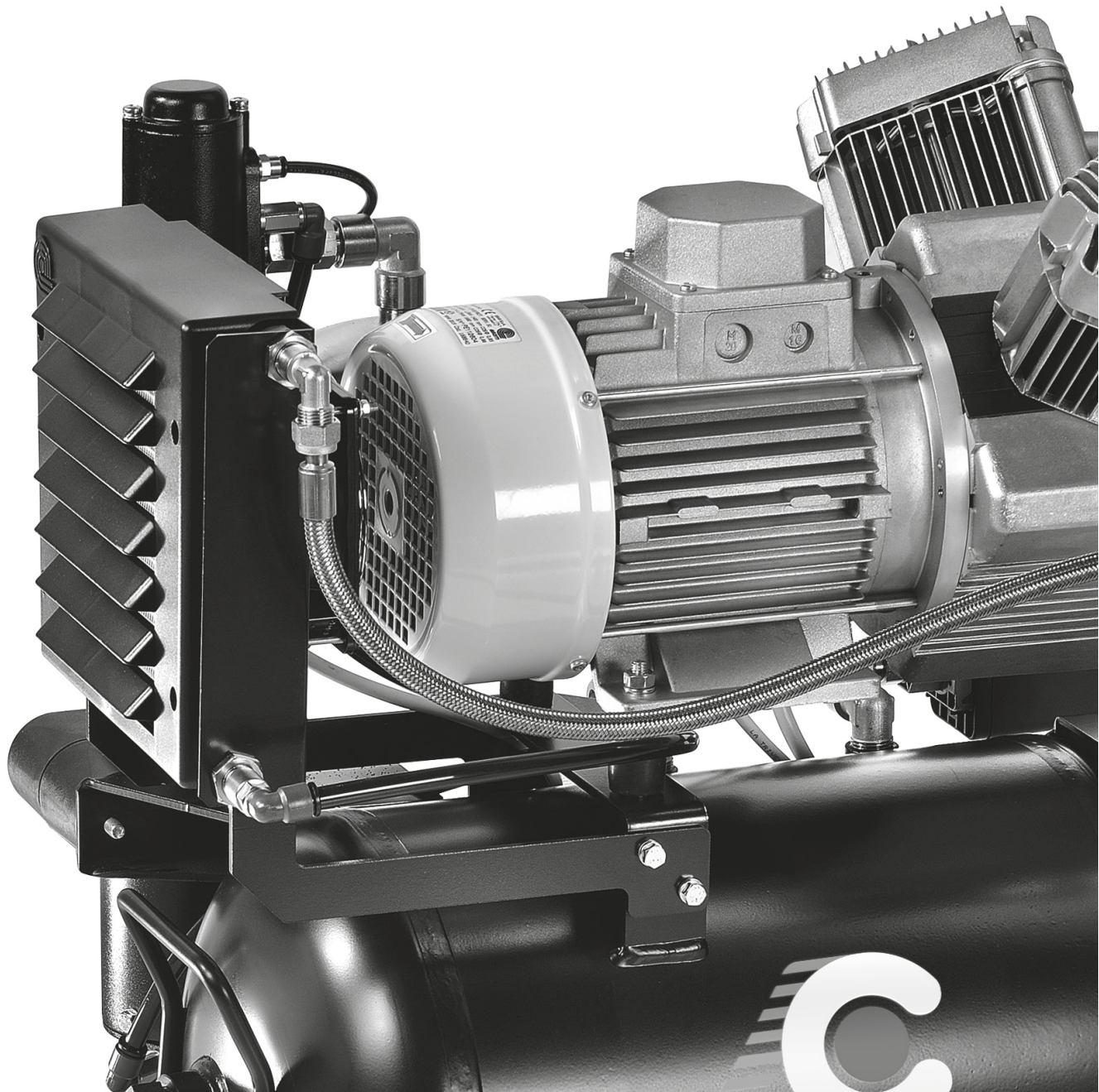


WE LOVE WHAT WE DO.



OIL-LESS COMPRESSOR 1-2-3 CYLINDERS








Instruction Manual

English

INDEX

General operation data	4
Rated electrical features of compressor motors	5
Introduction	8
Signs and warnings	8
Oil-free compressor and compressed air drying systems	8
Unpacking	9
Compressor operation	9
Model selection and distribution system	11
Recommendations for plant room	12
Routine Maintenance	13
Special maintenance	14
Important warnings	15
Transport and storage	15
Waste disposal	16
Pictures	17

GENERAL OPERATION DATA

		Common Characteristics
Insulation Class		Class I
Use instructions		Alternating operation with physical adsorption dryer
Operation temperature		+ 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

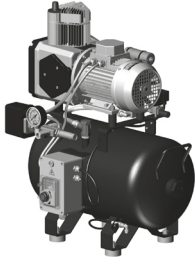
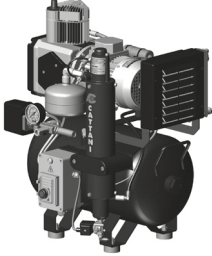


lapse if the devices and/or systems are tampered and work of any kind is carried out by unqualified persons who have not been authorized by the manufacturer.

Made by CATTANI S.p.A. - PARMA - ITALY

RATED ELECTRICAL FEATURES OF COMPRESSOR MOTORS

COMPRESSORS WITH 1-2-3 CYLINDERS ON HORIZONTAL TANKS
have replaced the same compressors previously on vertical tanks.

Sound pressure level detected according to ISO 3746-1979 (E).
Parameters: d = 1.5 - background noise <38 dB(A) - instrument Bruel & Kjaer type 2232.

Compressor with single cylinder	AC 100 ND - single cylinder compressor without air dryer	
(230V / 50Hz 1~)	230 V - 0,55 kW - 3,8 A 240 V - 0,55 kW - 3,8 A	
(400V / 50Hz 3~)	400 V - 0,7 kW - 2,3 A	
(220V / 60Hz 1~)	220 V - 0,7 kW - 4,9 A 110 V - 0,7 kW - 9,3 A	
	30 litre tank. Air output with supply at 5 bar 67.5 N l/min. Sound pressure level: 70 dB (A). Dimensions: L= 600 mm P= 470 mm H= 720 mm. Net Weight= 40 kg Gross weight= 54 kg	
	AC 100 - single cylinder compressor with air dryer	
(230V / 50Hz 1~) (220V / 60Hz 1~)	Dimensions: L= 620 mm P= 460 mm H= 720 mm. Net Weight= 47 kg Gross weight= 61 kg	
	AC 100 QND - single cylinder compressor without air dryer complete with plastic sound proof cover	
(230V / 50Hz 1~) (220V / 60Hz 1~)	Sound pressure level: 63 dB (A). Dimensions: L= 600 mm P= 510 mm H= 860 mm. Net Weight= 50 kg Gross weight= 64 kg	
	AC 100Q - single cylinder compressor with air dryer complete with plastic sound proof cover and air dryer	
(230V / 50Hz 1~) (220V / 60Hz 1~)	Dimensions: L= 660 mm P= 600 mm H= 860 mm. Net Weight= 57 kg Gross weight= 72 kg	

2 cylinder compressor	AC 200 ND - 2 cylinder compressor without air dryer	
(230V / 50Hz 1~) (400V / 50Hz 3~)	230 V - 1,2 kW - 7,7 A 240 V - 1,25 kW - 7,1 A	
(400V / 50Hz 3~)	400 V - 1,5 kW - 3,7 A	
(220V / 60Hz 1~)	220 V - 1,5 kW - 9,2 A 110 V - 1,3 kW - 18,5 A	
	30 litre tank. Air output with supply at 5 bar 160 N l/min. Sound pressure level: 71 dB (A). Dimensions: L= 600 mm P= 470 mm H= 720 mm. Net weight = 48 kg Gross weight = 62 kg	
	AC 200 - 2 cylinder compressor with air dryer	
(230V / 50Hz 1~) (400V / 50Hz 3~) (220V / 60Hz 1~)	Dimensions: L= 620 mm P= 460 mm H= 720 mm. Net Weight= 54 kg Gross weight= 68 kg	
	AC 200 QND - 2 cylinder compressor without air dryer complete with plastic sound proof cover	
(230V / 50Hz 1~) (400V / 50Hz 3~) (220V / 60Hz 1~)	Sound pressure level: 63 dB (A). Dimensions: L= 660 mm P= 510 mm H= 860 mm. Net Weight= 56 kg Gross weight= 71 kg	
	AC 200 Q - 2 cylinder compressor with air dryer complete with plastic sound proof cover and air dryer	
(230V / 50Hz 1~) (400V / 50Hz 3~) (220V / 60Hz 1~)	Dimensions: L= 660 mm P= 600 mm H= 860 mm. Net Weight= 64 kg Gross weight= 79 kg	

3 cylinder compressor	AC 300 ND - 3 cylinder compressor without air dryer	
(230V / 50Hz 1~)	230 V - 1,5 kW - 10,2 A 240 V - 1,5 kW - 9,2 A	
(400V / 50Hz 3~)	400 V - 1,5 kW - 3,7 A	
(220V / 60Hz 1~)	220 V - 1,75 kW - 12,2 A	
	45 litre tank. Air output with supply at 5 bar 238 N l/min. Sound pressure level: 73.6 dB (A). Dimensions: L= 620 mm P= 520 mm H= 750 mm. Net weight = 56 kg Gross weight = 70 kg	
	AC 300 - 3 cylinder compressor with air dryer	
(230V / 50Hz 1~) (400V / 50Hz 3~) (220V / 60Hz 1~)	Dimensions: L= 620 mm P= 520 mm H= 750 mm. Net Weight= 65 kg Gross weight= 79 kg	
	AC 300 QND - 3 cylinder compressor without air dryer complete with plastic sound proof cover	
(230V / 50Hz 1~) (400V / 50Hz 3~) (220V / 60Hz 1~)	Sound pressure level: 68 dB (A). Dimensions: L= 720 mm P= 580 mm H= 970 mm. Net weight = 72 kg Gross weight = 92 kg	
	AC 300 Q - 3 cylinder compressor with air dryer complete with plastic sound proof cover and air dryer	
(230V / 50Hz 1~) (400V / 50Hz 3~) (220V / 60Hz 1~)	Dimensions: L= 720 mm P= 600 mm H= 970 mm. Net Weight= 80 kg Gross weight= 100 kg	

INTRODUCTION

SIGNS AND WARNINGS

OIL-FREE COMPRESSOR AND AIR DRYING SYSTEMS

INTRODUCTION

The following information describes the equipment and systems for end users and service technicians. It covers operation, routine maintenance and hazards. It also describes precautions and

preventative maintenance **that must be considered** to ensure reliable operation.

SIGNS AND WARNINGS



Please read through the manual before installation



Electrical shock hazard: even 230 V \sim 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 as required.

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.

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-FREE COMPRESSOR AND AIR DRYING SYSTEMS

When high quality air is required, it is certainly advantageous to use a dry air and oil-less compressor, i.e. a compressor that does not use oil for its operation and that is equipped with an air-drying system.

In fact, it is well-known that the emulsion of water and oil produced by a normal oil-lubricated compressor is detrimental to the proper functioning of pneumatic tools in general and rotating tools in particular.

Furthermore, if air is also used to dry surfaces

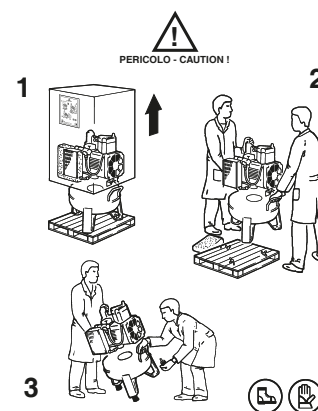
before painting or gluing them, it is evident how even a few traces of such emulsion can compromise the quality of work.

The use of oil-lubricated compressors combined with filter systems to stop condensate and emulsified oil is less safe and, in the end, it will probably be more expensive than an oil-less compressor.

UNPACKING COMPRESSOR OPERATION

UNPACKING

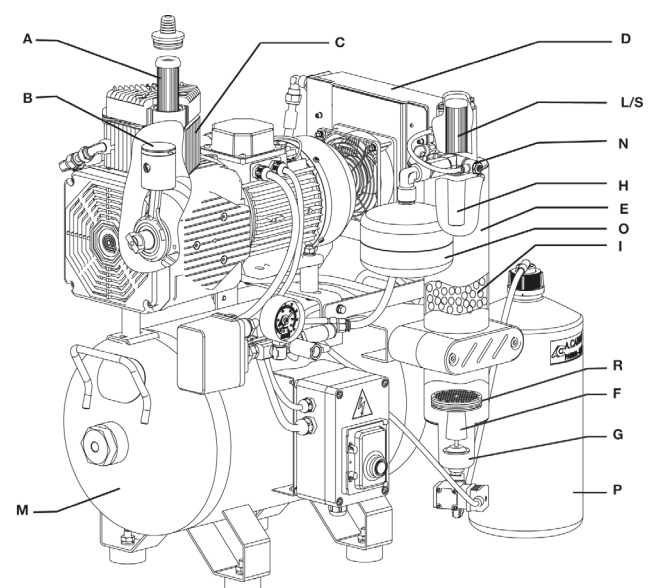
- To unpack the appliance, follow the instructions shown the outside of the packaging
- Dispose of the packaging in compliance with current, local regulations
- Inspect the appliance and ensure it has not been damaged during transportation
- Do not connect damaged equipment to mains power
- Do not use extension cords or multiple sockets to connect power to the appliance. Plug the appliance power cord directly into the power outlet socket.
- Ensure that the power supply is sufficient to power the appliance.



COMPRESSOR OPERATION

Air enters the cylinder through a filter (A), which improves its quality by removing airborne dust, as well as protecting the piston and cylinder. The filter (A) can be replaced by an antibacterial filter Hepa H14. The piston (B) travels inside the cylinder (C) without oil lubrication. The piston ring material (which is the same material used to coat the piston) is compatible with the material used in the cylinder liner to ensure low friction, therefore, will not be subject to appreciable wear. Air temperature increases as it is compressed in the cylinder. The compressed air must be cooled to reach dew point in order to condense the water vapour present in the air. This is achieved by routing the air through an air-to-air heat exchanger (D) where at an ambient temperature of approximately 20 °C, the T will remain at approximately 5 °C. The cooled air then enters the drying column (E) where it firstly passes through the cyclone (F) to remove the initial droplets of condensation which are collected in the base housing of the column (G). The air then rises through the filter disc (R) before passing through the silica gel (I) mixed with a highly absorbent powder to complete the drying process. Before exiting the drying column, the air passes through two filters.

The first filter is sintered bronze (H), whilst the second one (L/S) is an antibacterial Hepa H14 filter.



As the dried and hygienically filtered air finally exits the drying column, it fills the small tank (O) through valve (N) before passing into the compressor tank (M) where it is ready to be used. The inside of the tank is painted with a resin approved for food contact and having antibacterial properties, to ensure good preservation of the air. At the end of each charge cycle, the dry air stored in the small tank flows in the opposite direction down through the drying column to regenerate the silica gel. The release of this stored volume of air pushes the accumulated condensation through the base of the drying column and into the collection bottle (P). This entire process occurs automatically.

MODEL SELECTION AND DISTRIBUTION PIPE WORK SYSTEM

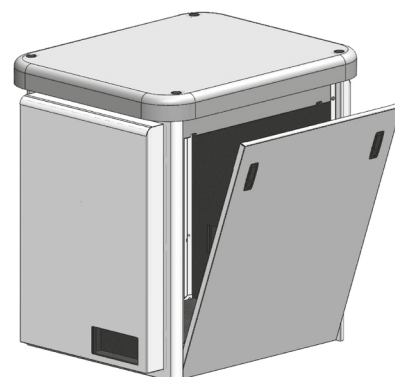
MODEL SELECTION AND DISTRIBUTION PIPE WORK SYSTEM

The selection of the oil free compressor model is made in reference to the compressed air requirements. Each cylinder of the compressor produces approximately 60 l/min air at about 5 bar pressure. It is capable of supplying an instrument with about 50/60 l/min* consumption at 2/3 bar pressure. However, the capacity of the compressor should exceed the overall consumption to allow the compressor to cycle for sufficient time to allow the regeneration of the drying column as well as allowing the compressor to cool. Pressure losses along the distribution pipe work are generally due to the lack of a closed loop (ring main) layout, or excessively small sections of pipe. It is important not to overlook these characteristics. A closed loop system keeps the pressure constant as configured for use. This same result can be obtained by using other systems, yet the closed loop method is the most commonly used and possibly the most suitable and safe. Using insulated copper pipe ensure the air remains clean and prevents the formation of condensation along the distribution pipe work system. With regard to noise emissions, compressors are available with optional noise reduction hoods or cabinets. Hoods reduce noise by approximately 10 dB(A), whilst the cabinet reduces noise by approximately 20 dB(A). **Only noise reduction hoods and cabinets supplied by the manufacturer should be used as they are designed not only to reduce noise, but to also offer protection from unlikely events such as explosion and/or fire, whilst also considering proper ventilation.** Tank pressure for the single cylinder compressor is factory set at: Min. 5.5 Bar and Max. 7.5 Bar. The two and three cylinder compressors are set at: Min. 6.0 Bar and Max. 8.0 Bar. Altering the operating pressure of the compressor can affect the life of the compressor. The higher the maximum pressure, the greater the load and wear on the compressor.

Sound pressure level detected according to ISO 3746-1979 (E).

Parameters: d = 1.5 - background noise <38 dB(A) - instrument

Bruel & Kjaer type 2232.



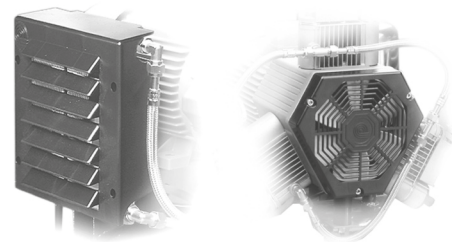
RECOMMENDATIONS FOR THE PLANT ROOM AND INSTALLATION

RECOMMENDATIONS FOR THE PLANT ROOM AND INSTALLATION

- Compressor and suction unit shall be installed in a room that cannot be accessed by customers, unauthorized persons and also staff who have not been specifically trained.
- The plant room should be temperature controlled to maintain temperatures between a minimum of +5 °C and a maximum T +35 °C.
- Power supply must be in accordance with local regulations and sufficient for the loads as stated on machine nameplates. Three phase machines require a neutral connection. Earth connections are mandatory for both single and three phase machines.
- 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).
- Power mains should be protected against excessive current absorption.
- Electrical switchboards and machines shall be protected from accidental splashing.
- Installation of a floor waste connected to the sewer for any possible liquid spillage is recommended.
- Keep the plant room free 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.
- Before starting the machines make sure that the distribution pipe work is clean internally as heavy debris can damage the equipment.
- Installation of a visual and/or acoustic alarm remotely where it can be monitored by clinic staff

is recommended.

- After the installation, the technician shall perform the regulatory and functional tests and check direction of motor rotation. Mains voltage and electrical absorption shall also be tested.
- Arrange for periodic inspection of the equipment, not only as a means for avoiding equipment downtime, but also as 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**.



ROUTINE MAINTENANCE

ROUTINE MAINTENANCE TO BE CARRIED OUT BY TRAINED TECHNICIAN

Electrical shock hazard: even 230 V \sim can cause death.

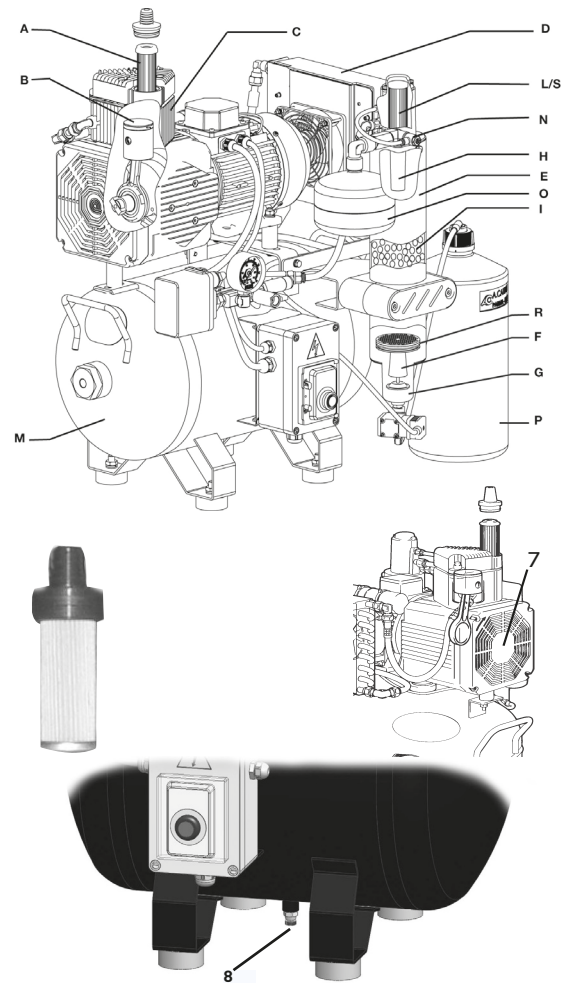
- High temperature.
- Generic danger sign.
- Obligatory direction of flow or rotation.



Technical work on the compressor must be carried out by skilled and authorised personnel. Work carried out on a loaded compressor may cause serious accidents. Before attempting any maintenance on the compressor, isolate the power to the machine by unplugging it from the electrical supply socket and ensure nobody and restore the power without informing the person in charge of the maintenance. If the compressor is installed in an environment whereby it is subject to large amounts of dust and other debris, the cooling fans of the compressor pump (7), the electric motor (6) and the air-to-air heat exchanger (4) should be replaced frequently. The compressor air intake filters will also need to be replaced more frequently in such an environment. Every 12 months, the efficiency and effectiveness of the cooling fans should be checked as the compressor cannot withstand extended periods of time with inadequate ventilation. Periodically open the tap (8) located under the compressor tank and check if any moisture is present. If so, contact a service technician for further advice. Keep in mind that the effectiveness of the air drying system is reduced with temperatures in excess of 35 °C. If no air is being consumed, the compressor should not activate. If this happens, check the system and any instruments connected to the system for air leaks. The charging time is approximately 45 – 55 seconds, whilst the down time (to regenerate the drying column and allow for cooling) should be approximately 1/3 of the charging time. Careful monitoring of the system prolongs the life of the machine as small problems can be realised and rectified before they become large or catastrophic problems. If the machine starts to make abnormal sounds or vibrations, it can mean something is loose or worn. In this case, contact a service technician. Experience and work load of the machine shall inform the operator regarding

increased or reduced frequency of maintenance operations compared to the manufacturer's guidelines.

* Except for the single-cylinder compressor which operates between 5.5 to 7.5 bar.



SPECIAL MAINTENANCE

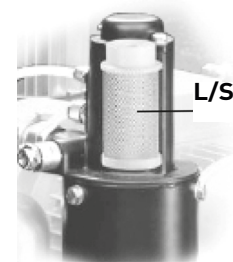
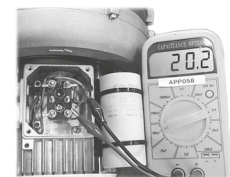
SPECIAL MAINTENANCE

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

The periodic check is related to the work load. Standard inspections every six or twelve months shall be sufficient. The service technician must only use genuine Cattani spare parts, must not alter the operation nor modify the machine or in particular, the safety devices. Most importantly, any weld or alteration to the compressor tank is strictly forbidden. **Before attempting any maintenance on the compressor, isolate the power to the machine by unplugging it from the electrical supply socket and ensure nobody and restore the power without informing the person in charge of the maintenance. If the isolation point is not able to be monitored visually, then an appropriate lockout device shall be installed. Release enough pressure to start a cycle.** Ensure that with each charge the compressor reaches the maximum pressure value, that the charge time is within the range of 45 – 55 seconds and the down time (to regenerate the drying column and allow for cooling) is approximately 1/3 of the charging time. Check the current absorption throughout the charge cycle and ensure it does not exceed the full load current value stated on the nameplate. **At the end of each charge cycle, the volume of air held in the small tank on the drying column escapes through the solenoid (13) at the base of the drying column (to regenerate the silica gel) and carries absorbed fluid into the collection bottle. This process also unloads the pressure in the cylinders. If this does not occur, check the solenoid and clean or replace as necessary.** Check for any air leaks on the compressor, the pipe work and in the user connections. Check the air flow of each cylinder inlet throughout the charge cycle. The air drawn into the cylinder should be greater than 6,000 N l/h. Replace any burnt out lamps within the control panel and replace any relay or contactors that arc excessively or have badly worn contacts. Do not modify any of the electrical or mechanical safety protection. Changes in operating sound may be a sign or excessive wear. To avoid possible malfunction or component breakages, investigate the origin of any abnormal sounds. Check the temperature of the plant room. Temperatures in excess of +35 °C will reduce the effectiveness of the drying column and

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will shorten the life of the compressor. Open the tap (8) located under the compressor tank and check if any moisture is present. If so, possible causes are related to aforementioned checks: effectiveness of the air-to-air heat exchanger cooling fan, plant room temperature, cycle charge time and down time and drying column drain solenoid operation. Replacement of HEPA H14 filters: HEPA H14 replacement filter cartridges are provided with fitting and maintenance instructions. In an environment with relatively clean air, it is sufficient to replace filters every 12 months. To service this filter, firstly electrically isolate the compressor, close the compressed air outlet tap and drain the tank by opening the drain valve (8) located under the tank. Replacement cartridges are available (for replacement follow the instructions enclosed to the filter).



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 are EEE appliances and as such

subject to WEEE (Waste Electrical and Electronic Equipment) regulations.

- Updated manuals are available from our website: **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 %.
- The packages may be stacked only up to three rows having the same weight.
- The compressor is equipped with handles for safe handling.
- All the compressors are packaged on a pallet to enable transport with forklifts or pallet trucks. Except for the smaller models, all the other compressors should be moved using suitable equipment. In any case, for safe transport (manual or with forklift) use only of the handles. The tandem models with horizontal 300 litre tank can be transported with a pallet truck or fork lift truck,

using the guides welded under the tanks. The other tandem models, which do not have guides under the tanks, can be transported using suitable forklifts or hoisting equipment and lifting straps secured to the handles.

WASTE DISPOSAL

INFORMATION FOR PROFESSIONAL USERS

- Pursuant to art. 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.

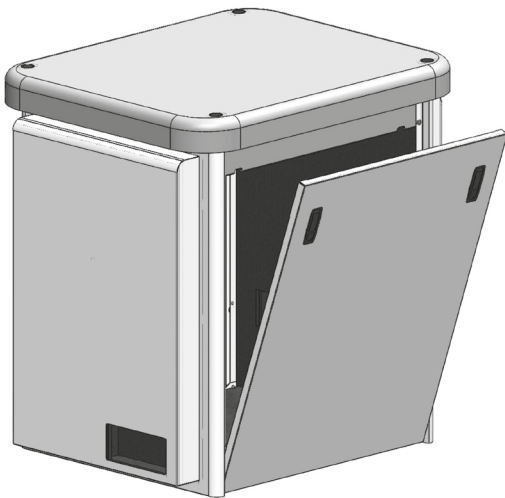
Adequate separate disposal for subsequent recycling of the appliance, processing and environmentally compatible disposal contributes to the prevention

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.

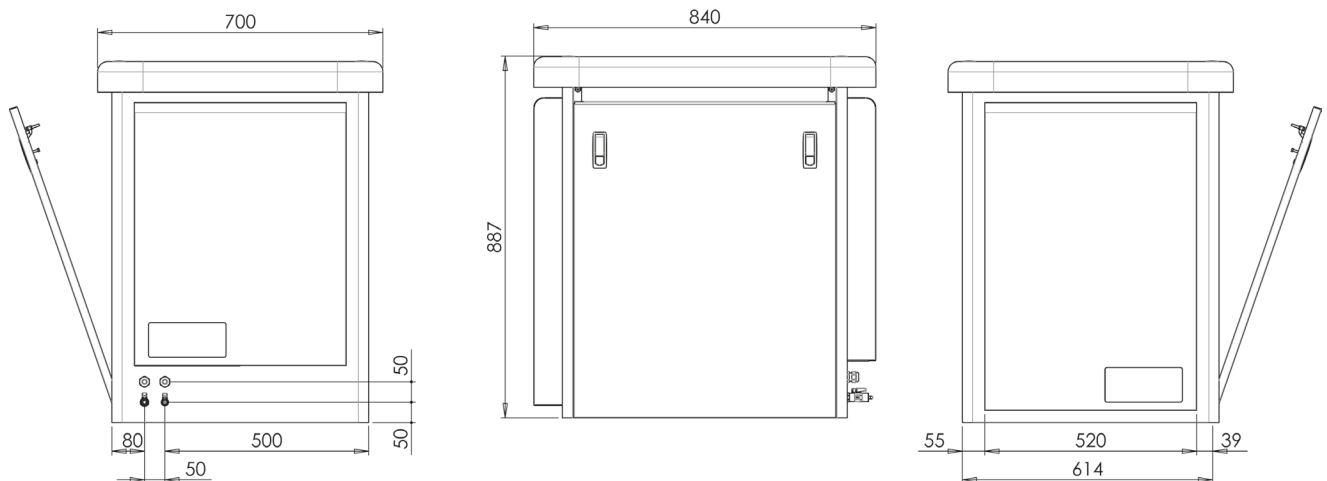


COMPRESSOR CABINETS 1-2-3 CYLINDERS

ITEM 010800 NEW CABINET FOR 1-2-3 CYLINDER COMPRESSORS



Same for all three models, suitable for both outdoor and indoor installations, made of galvanized steel, painted with polyester powder; antifreeze feature on request. It can be exposed to direct sun heat, rain and frost.



BLOK-JET SILENT 2

ITEM 073520 BLOK-JET SILENT 2



Composed of 1 Turbo-Smart "B" and Idrociclone ISO 18 and 1 Three-cylinder compressor complete with air dryer.

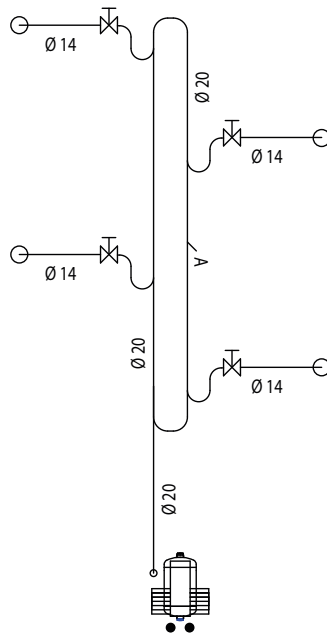
Voltage: 230V 50Hz





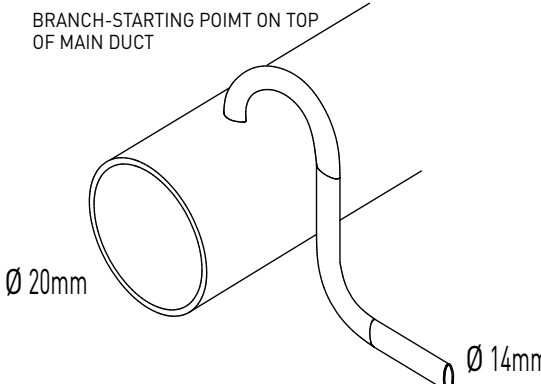
Dimensions: 757x607x1936 mm

For larger installations, Cattani s.p.a. supplies compressed air production systems that meet any demand. Our "Large systems catalogue" features a series of ten completed projects.

CLOSED CIRCUIT LAYOUT

CLOSED CIRCUIT LAYOUT



	<p>TUBAZIONE PER L'ARIA COMPRESSA CHIUSA AD ANELLO</p> <p>CLOSED COMPRESSED AIR PIPING CIRCUIT</p>
	<p>RUBINETTO DI INTERCETTAZIONE</p> <p>SHUT-OFF VALVE</p>
	<p>N. 1 COMPRESSORE CATTANI A UNA TESTATA DA TRE CILINDRI</p> <p>N. 1 CATTANI THREE-CYLINDER 1 HEAD COMPRESSOR</p>
	<p>DIRAMAZIONE CON PARTENZA SOPRA LA TUBAZIONE PRINCIPALE</p> <p>BRANCH-STARTING POINT ON TOP OF MAIN DUCT</p> 

**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. 02-2023

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, and allow you to save between 30% and 50% on electrical consumption.