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Instruction and Maintenance Manual

MODEL: 0301-018/C

**AFTER COOLER 2 OUTLET,
AIR-COOLED MODEL: PAC-550
(550 CFM)**

PAC 550

(Tropical Version) Rev.04.2022

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1.0 GENERAL INFORMATION

1.1 Remarks

This manual is to be considered a part of the final air-cooled aftercooler alike and should always accompany it for quick reference, to any person like the end-user, the mechanic or any other qualified workman who installs the unit.

We wish to emphasize the importance of reading and understanding its contents before starting the machine. It will allow you to make a better use of it and, to avoid possible mistakes when operating.

We also remind you that all instructions contained in the manual should be carefully noted since they will put you in the position of performing some operation which could be source of damages to the aftercooler and harm to persons, if not carried out properly.

Furthermore, by strictly following the instructions a rational use of the unit will be achieved and thus economic result as well. For any problem which may arise in the use of the aftercooler or in case of breakdown, please contact your reseller or any other authorized service center.

Finally, we recommend that, in case of need, only original spare parts are used. It will guarantee both the performance and long a life to your aftercooler.



This manual contains all the features of the aftercoolers and all the information about safety, installation, operation regulation and maintenance of the unit.

By reading the following chapters, with the help of the drawings and of the data sheets, it will be possible to understand different procedures to be adopted.

No claim will be accepted for damages due to the improper installation of the equipment. In case of enquires the end-user is requested to contact our offices or the nearest agent for advice.

All details concerning the equipment are valid only for the models manufactured when this manual was printed.

The manufacturer reserves the right to make any change without notice.

1.2 Warranty

All products supplied by us have been tested at the factory and are guaranteed for 12 months from date of delivery.

The guarantee is only valid provided the customer has complied with the contract and administrative rules and its installation and use has been followed accordingly to the instructions contained in this manual.

The said guarantee provides for the substitution or repair at no charge of all the components which may be supplied defective by the factory.

Our technical department will make the final decision in this regard.

1.2.1 Warranty Exclusions

The warranty excludes any liability for direct or indirect damages to persons or things arising from wrong installation and / or incorrect operation of the unit. The liability is limited to defective manufacture or assembly.

The manufacturer declines any liability for damage due to alterations and / or changes of the packing. Furthermore, the warranty does not cover all those parts subject to wear and tear, or does it cover shipping, handling, installation or other expenses, including the provision of technicians to rectify faults arising, that were not of our direct responsibility.

Tampering and replacement of any parts by unauthorized personnel and / or improper machine use exonerate the manufacturer from all responsibility and invalidate the warranty.

The manufacture declines and present or future liability for damage to person, things and the machine, due to negligibility of the operators, non-compliance with all the instruction given in this manual, and non-application of current regulation regarding safety of the system.

1.3 Safety Information

Installation and maintenance operations must be done in conformity to the instruction contained in this manual.

The manual is intended for the end-user, only for operations performable with closed panels: operations requiring opening with tools (as cleaning or maintenance) must be carried out by skilled and qualified personnel with knowledge of the necessary precautions.

Only use the unit for professional work and for its intended purpose.



- Do not locate any flammable substances near the aftercooler.
- Do not allow anybody to use the aftercooler without prior instruction.
- Before any maintenance operations, be sure that power and air supply are disconnected and make sure that the circuit are not under pressure.
- Do not exceed the design limits given on the data plate.
- It is the user's responsibility to avoid loads different from the internal static pressure. The unit must be appropriately protected whenever risk of earthquake exists.
- The safety devices on the compressed air circuit must be provided by the user.
- Under normal working condition, fan protection must be properly installed.
- Right after any maintenance work on the aftercooler, all the protection must be properly reinstalled with the safety devices sealed.
- Under normal working condition, there is the risk of injury if the fan protection is removed.
- Before removing the fan protection of the condenser, make sure that the power supply is switched off and the circuit are not under pressure.
- In case soldering work has to be done, the power supply and air pressure must be disconnected.
- It is dangerous to hit the inner pipes and components with any object.
- Always wear eyes protection during any operations.

The user is responsible for analyzing the application aspects for product installation and following all the applicable industrial and safety standards and regulations contained in the product instruction manual or other documentation supplied with the unit.

This unit has been developed and manufactured according the European CEE safety norms as indicated on the declaration of conformity.

1.4 Purpose and General Description

The aftercooler is becoming increasingly popular in particular for the following reasons:

- Good refrigeration power;
- Practical;
- Economical.

The right collocation of the aftercooler unit is at the air outlet point of the compressors, it is basically made up of:

- A COOLING GROUP with a radiant heat exchanger in copper tubes with aluminum finning, especially studied for applications with compressed air. It is supplied with a ventilation group formed by an electro-ventilator necessary to dissipate the heat of the finned pack.
- A CONDENSATE SEPARATOR for the discharge of as much as possible of the condensation formed in the system as a result of cooling.

Any overloading of the equipment, within the maximum limits, will cause a lower performance of the unit (higher humidity) but it will not affect the safety.

1.5 Safety Symbols



Electrical shock hazard



General Danger



Rotating Parts



Do not remove Protection



Wear Eye Protection

2.0 RECEIPT AND STORAGE

2.1 Receipt

Upon receipt the client must carefully examine the aftercooler thoroughly in order to verify the integrity and the availability of all items listed on the shipping documents.

As soon as you receive the unit, if you notice any damage inform the carrier immediately.

All claims for missing goods and/or damages have to be notified to us or to the nearest retailer within 8 (eight) days from date of receipt.

It is necessary that the aftercooler is kept in vertical position as shown on the packaging.

2.2 Unpackaging

Unpackaging operation have to be done according to the instruction listed under chap. 3 (Installation).

After the removal of the packaging material, check whether the aftercooler is damage free, and before any action is taken read carefully this manual.

Keep the packaging in case of need and/or the aftercooler has to be returned to the supplier.

3.0 INSTALLATION

3.1 Transport / Handling

Use lifting equipment of suitable capacity to lift and move the unit (fork lift etc.).

Protect the unit from impact to prevent damage to internal components, the manufacturer assumes no liability for damages which may be caused by decayed or modified packaging.

3.2 Indoor Positioning

The unit can either be wall mounting (using brackets) or floor mounted using the legs, either supplied as standard or available as an optional depending upon the model.

Where the floor mounting installation of the aftercooler is concerned, no special foundation is needed. A solid and flat horizontal surface will do for this purpose.

Always guarantee a sufficient air flow and appropriate ambient air inlet and outlet. If possible place the aftercooler's air intake up against the ambient air inlet for maximum cooling and it is important that enough free space is left around the unit (minimum 1 meter free space from nearest wall) in order to allow enough air circulation and thus the proper cooling.

Never place the aftercooler's air inlet near the (hot) air compressor.

Furthermore, the ambient air should be free from pollution or flammable gases and vapors, this being a serious fire hazard with fire and explosion risks.

The ambient temperatures should not be lower than + 5 °C or higher than + 40 °C.

More over the unit should be placed in a room away from direct sunlight, rain and with proper ventilation.

3.3 Outdoor Positioning

When positioning the aftercooler outdoors it is highly recommended to position the unit under an overhead protection and avoid positions where leaves and other impurities can be sucked into the air intake.

In order to guarantee the stability of the equipment even in case of wind or adverse atmospheric conditions, it must be anchored to the ground using suitable fixing devices, to be applied to the holes provided for this purpose at the base of the legs.

Install the unit only in environments which ensure an ambient temperature within the range specified on the data plate. These limits must be observed in all cases.

3.4 Installation

With reference to the technical data, before proceeding with any operation, make sure that the air system pipes are clean and free from any contaminating particle.

- a. After unpackaging, arrange the air fittings as follow:
 - Mount the air fittings where indicated by the "air inlet" and "air outlet" stickers;
 - Close the other air points with hermetic screw plugs.
 - RESPECT THE DIRECTION OF THE AIR INLET AND OUTLET LABELS.
- b. Fix the "legs" of the heat exchanger using the supplied material.
- c. Mount the condensate separator at the air outlet point.
- d. Connect the aftercooler to the air system according to one of the examples shown on chap. 7.0, installed immediately downstream of the compressor and with the separator downstream of the aftercooler.

- e. Connect the condensate discharge pipe to the drainage system according to local regulation. It is forbidden to discharge the condensate directly into the water system therefore it is recommended to install a water-oil separator for the treatment of the condensate.
- h. Install one or more safety valves as necessary on the compressed air side to ensure that maximum design pressure is never exceeded. These valves must be fitted in such a way that there is no risk of any expelled fluid coming into contact with operators.
- i. If the pressurized air circuit is subject to vibration, use suitable flexible hoses and vibration dampers to connect up the unit, or secure the circuit more firmly to eliminate the vibrations. If the circuit is subject to pressure pulses of more than 10% rated pressure, install a pulse damper to reduce them to below this level.
- j. Support the air / gas inlet and outlet pipes if they strain the connection ports and / or flanges. No loads are admitted on aftercooler's connections.
- k. If the unit is installed in a seismic zone, install suitable devices to protect against seismic activity.
- l. Install fire-prevention and fire-fighting equipment suitable for the area in which the unit is installed in order to protect it against fire.
- m. If operating temperature exceeds 60°C, fit any protective guards necessary to prevent accidental contact and burns.

3.5 Operation

The temperature of incoming fluids must never exceed the maximum value specified in the data plate. If temperature exceed the specified values, contact the manufacturer for further information.

Avoid subjecting the unit to thermal stress caused by repeated fluctuations in incoming fluid temperature.

To guarantee optimum operation, ensure that the maintenance program below is performed regularly, and the following rules are respected:

- Ensure a constant air flow through the aftercooler coil.
- Drain all water out of the aftercooler when it is not in operation (to prevent ice formation)

For separator see respective manual.

3.6 Pneumatic Motor Version

Aftercooler air-cooled pneumatic version is provided of filter / regulator and pneumatic air motor.

These components must only be used with compressed air. Use with any another fluid (liquid or gas) is not permitted.

For safety reason the filter should be installed before the regulator. Install after the condenser the fitting tee 2" (if not already connected).



4.0 MAINTENANCE

4.1 Routine Maintenance

Maintenance must only be performed by specialist personnel.

Always use original spares supplied by the manufacturer, failure to do so renders the manufacturer not liable for incorrect unit operation.

For best performances of the aftercooler the following maintenance program is recommended:

- **Weekly**, check the Water Separator condensate discharge.
- **Monthly**, depending on the quality of the ambient air and however at the beginning of the hot season, the radiant heat exchanger should be cleaned with compressed air and, if necessary, wash the finned block to eliminate dirt deposits (this must be done after the ventilator motor is disconnected from the power supply).
- **Every 4/6 months**, check that the power consumption of the ventilator matches the standard values on sheet 1.

4.2 Components

Before performing any maintenance operation, isolate the FR+L group and then slowly drain it.

The aftercooler is supplied with a Water Separator which should be periodically checked on the condensate discharge as mentioned in the above.

Pressure calibration is carried out using the regulation lever, checking, firstly, that the level is lifted out of its safety-lock position; turning it clockwise to increase the pressure and anti-clockwise to decrease the pressure.

An increase in pressure increases the velocity of the fan motor and, hence, the cooling capacity. Periodically remove the plug (this can be done without removing the regulator from the line) and clean the valve and seat.

When installing the valve after cleaning we recommend that a sealant be applied to the screw thread.

Regarding the lubricator, periodically check the oil level, filling when necessary to about half of the body capacity. Use only clean oil suitable for this application. **Please see the manual of pressure reducer.**

4.2.1 FRL – Filter, Regulator + Lubricator



Feature	Value
Filtration Grade	40 micron
Operating pressure	Max. 10 bar
Pressure regulation range	1.5 to 9 bar
Medium / Ambient Temperature	-5...70°C
Pneumatic connection	G 1/2
Lubricant type	Hydraulic 32

4.2.2 WATER SEPARATOR

Model	SGO 934
Flowrate	550 cfm
Connection	2"
Working Pressure	7 bar (Max. 15 bar)
Inlet Air Temperature	Max. 100°C
Auto Drain (p/n #)	AM10

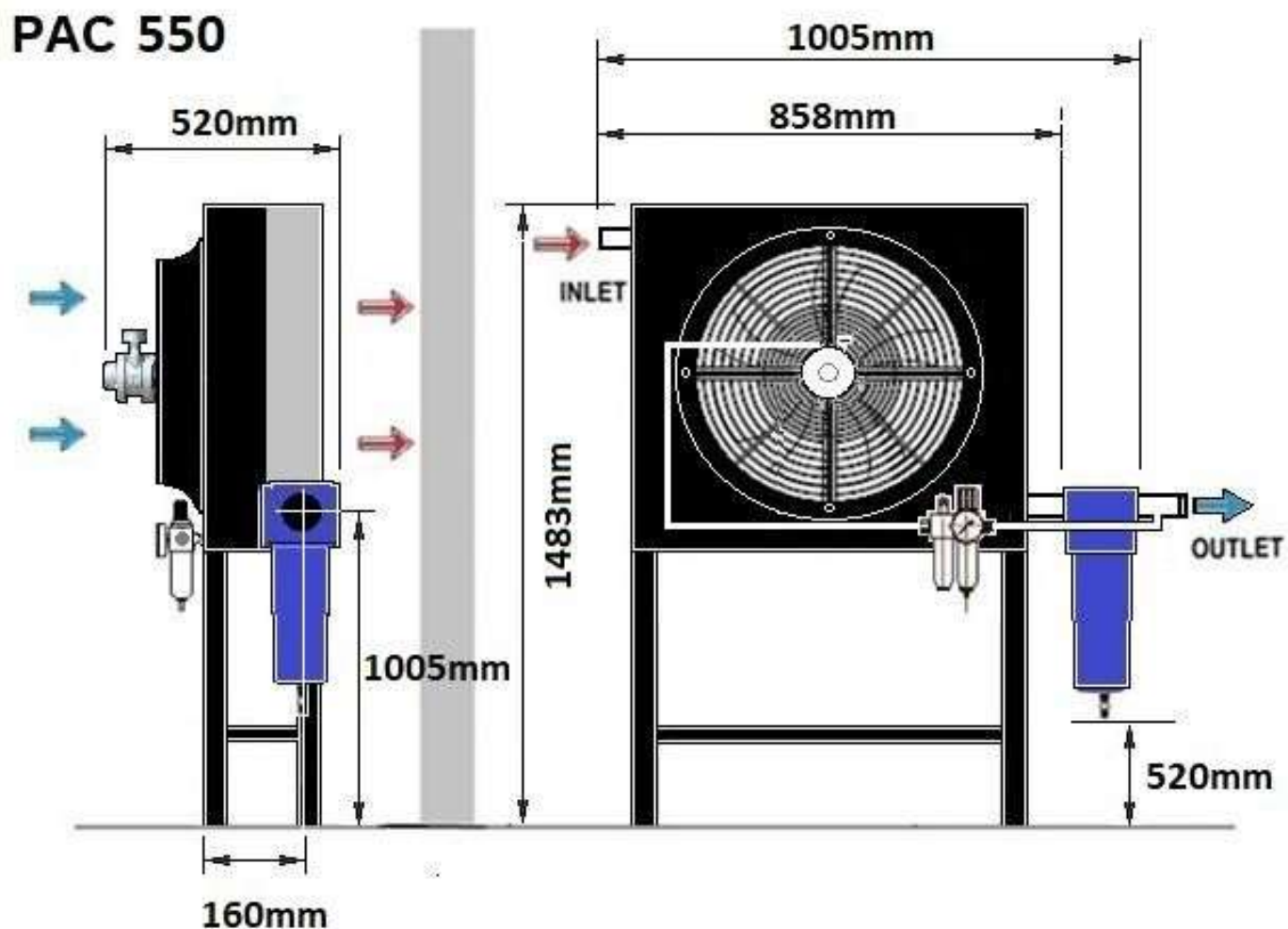


WARNING: do not attempt to remove the body while the unit is pressurized. Relieve the pressure by unscrewing the on-off valve provided

The amount of oil delivery can be controlled by turning the regulation screw. Periodically remove the regulation screw and clean the seat and pin using a compressed air gun. Eliminate any impurities which may have been deposited in the bottom of cup.

The motor does not require any maintenance as long as it is supplied with clean and lubricated air. Periodically check the motor lubricating oil to ensure that is not contaminated or oxidized.

5.0 TECHNICAL DATA SHEET

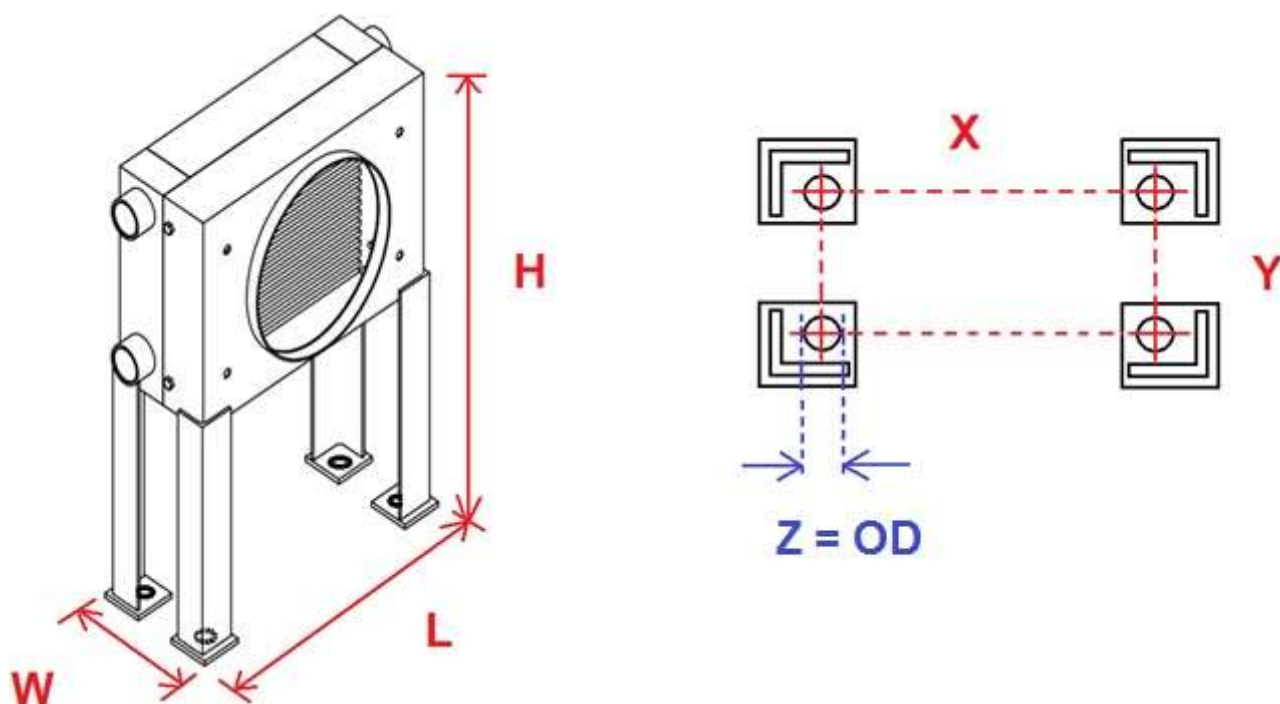


Performances & specifications: +/- 5%

Outlet air temperature : 9°C higher than ambient temperature

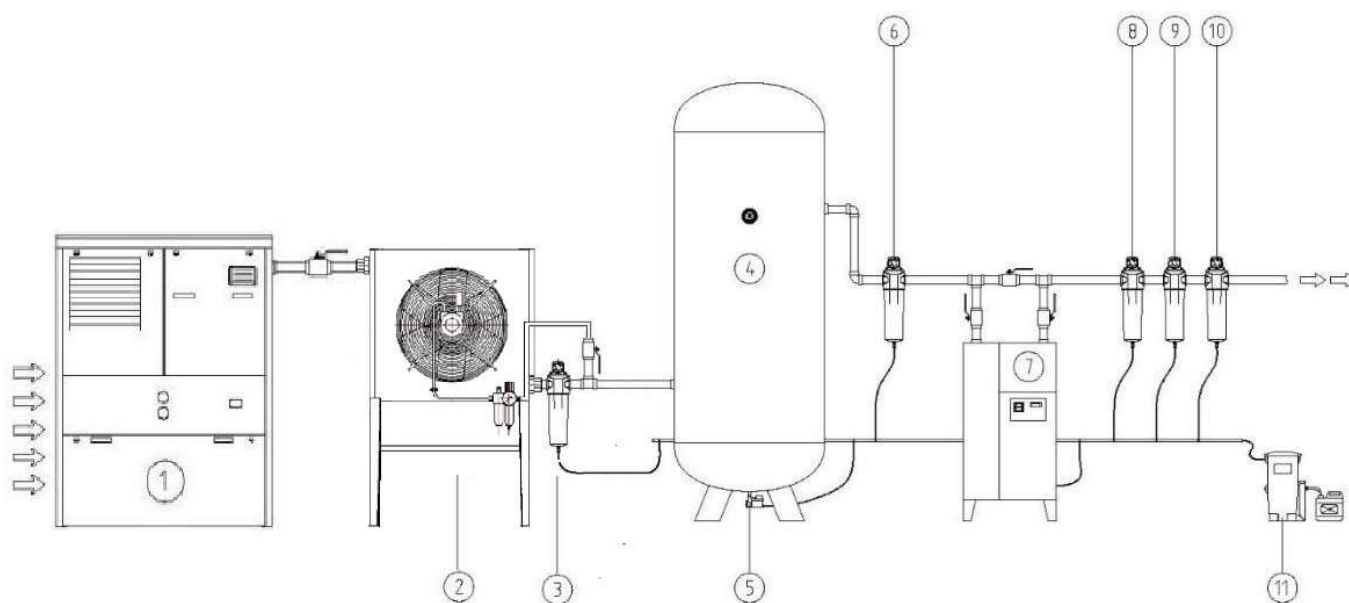
MODEL	FLOW RATE			MAX. PRESSURE	COMPRESSED AIR TEMP.	AMBIENT TEMP.	AIR MOTOR CAPACITY	DIMENSIONS					COOLER WEIGHT
	cfm	m3/h	l/min					L	W	H	IN/OUT (BSP)	C	
PAC-550	550	935	15575	16	120	35	5.25	1005	520	1480	2"	886	90

6.0 SKID INSTALLATION



Description	Value (mm)
L	920
W	240
H	1480
X	730
Y	158
Z (OD)	12

7.0 INSTALLATION LAYOUT



1	Compressor
2	<i>Pneumatic Aftercooler</i>
3	Condensate cyclone separator
4	Buffer tank
5	Automatic Drain
6	Pre-filter 3 - P
7	Dryer
8	Filter 1 - M
9	Filter 0,01 - H
10	Carbon Filter - C
11	Oil water separator

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