



General principles

- Our units must be used under the limits specified in the catalogue.
- In MICRO we design, manufacture and control the units, with knowledge and technical experience, so that they become safe during the appropriate use.
- Whenever a component performs a critical function in a system, it should be used in a way so that, in case of failure, the circuit turns back to its safe condition. To get specific advice about security circuits, please contact our agents.
- Human body must not be exposed to compressed air. Therefore, we suggest not to block exhaust holes with the hands and not to guide jet air towards people.
- Eliminate humidity presented as water vapour from the compressed air line using suitable elements like: aftercoolers, refrigeration dryers, filters, etc. The excessive use of them will deteriorate the performance of the installation causing corrosion and "washing" the lubricants. Before any utilization port, install suitable filters to separate impurities and condensates.
- Despite the fact that units have a range of working temperature, the optimal life can be reached at about +20°C.
- If units are going to be used below +2°C, it is recommended to use 100% dried air in order to prevent the formation of ice that can interfere in the normal operation.
- Our valves and cylinders reach their best performance and life time, using 50 µ filtered and lubricated compressed air. However, some products are pre-greased during its assembly so they can be used with oil free air; in these cases it is recommended to increase the maintenance frequency and internal greasing.
- The security and integrity of a system are guaranteed supposing no air leakage. The pneumatic components have no warranty for total watertightness; all of them have an acceptable level of leakage previously verified during its production. Moreover, leakages might appear in joints and connections, when units are connected to make a pneumatic control system.
- The adaptation of the products for any purpose or application is out of our responsibility or warranty.
- The security and performance of our products, altered by personal outside our technical service is out of our responsibility or warranty.

Cautions before and during use

- Before pressure is connected, remove the plastic protections from threads and any other cover that can be used to preserve the unit during its storage and carriage.
- Make a double check of the connections and verify that the ports are correctly connected between them.
- As far as possible, we recommend to pressurize the system progressively, not only in the setup, but also during normal operation. For this reason, use a manual pressure regulator or a progressive pressurization valve (start up valve).
- Verify that connections are both mechanically and pneumatically tightened, in order to avoid lashes to people from off-line hosepipes.
- When switching on units like solenoid valves and pressure switches, make sure protection devices are installed and check isolation and protective earth connection.
- When operating flow adjust or cushioning screws, etc., take care not to unscrew excessively in order to prevent screws being thrown towards people.
- Do not remove silencers, exhaust collectors or connections when the system is pressurized.
- Before doing the maintenance service, either preventive or corrective, switch off the air and electricity supply and ensure previously the circuit exhaust.

Lubrication

Every mechanism with moving parts requires some kind of lubrication for a correct operation. Its absence is shown by slow or jump movements, vibrations, increase of temperature, decrease of life time, etc.

Our products does not escape this rule, in consequence, the optimal durability can be reached using lubricated compressed air during its use. However, for applications on food industries, automotive or others, oil free air can be required.

Our standard products are able to work on those conditions, taking advantage of the prelubrication done during the assembly of the internal parts, and because of the use of selected materials and designs between the most new specific and reliable technologies.

Non-lubricated compressed air utilization has some limitations:

- Uses air properly filtered (50 µ).
- Air humidity with dew point between -20°C and 10°C.
- Cylinders velocity under 1 m/s.
- If a component worked with lubricated air, it won't be able to do it with oil free air, as the additional lubrication produces a "wash" and eliminates the grease incorporated in the assembly of the unit.

- Intervals between maintenances should be reduced. Furthermore, there are special greases with approvals from FDA, USDA or other certification institutions that can be used to assemble the units. Consult for specific applications.

Connection ports

Our products have connection threads according to ISO 7-1 and 228-1.

They can be provided as an optional and by request the same products with NPT ports. Consult for each particular case.

Warning

- Compressed air, in its basic state or in any industrial application, can cause accidents if it is not used properly and by qualified personal.
- Take into account the existence of laws and regulations to comply with, referred to a particular kind of unit (pressurized reservoir, presses or impact presses, elevation devices, etc.). Under any doubt, consult either a security and health specialist or our agents.
- Our products are intended for general industrial purposes with compressed air, with the pressures and temperature ranges specified for each one.
- Please consult before using our products with any other fluid different from the specified, in human life support systems (medicine), no industrial applications, or others different from the suggested in the Master catalogue.
- Units can fail for different reasons as wrong use, aging or malfunctioning. Systems should be designed taking into account the different possible failures of units so that the system becomes safe for the staff and the installations.
- Always consult our agents for the safety devices more suitable for each application.

Dangerous substances for health

Most of our products have been manufactured since many years, and no problems related to dangerous substances have been registered.

Our products are mainly composed of chemically inert solids.

Most of them are lubricated from the inside. Although the lubricant is used in small quantities and the risk is minimum, lubricant manipulation cautions must be taken.

In most of the components, synthetic rubber and thermoplastics in their stable state present no risk of manipulation.

In case of combustion, avoid inhalation of fumes, because of the probable formation of toxics or corrosive gases.

All the components are asbestos free.

Environment care

MICRO has a program of environment management with the conviction that industry is committed to solve in an ecological and economical way, the problems that derive from its operation.

In addition, the environmental laws of each country give a legal framework for this performance.

With this aim in mind, below there are some actions taken by Micro referred to environmental aspects of its products.

- **Packaging:** the elements used to wrap our products, are mainly recycled, including PE bags, cardboard boxes and wood.

- **Noise:** Our products do not produce noise, except for the exhaust of the compressed air, which varies with the flow and working pressure.

Each user must ensure, using suitable measurement systems, that levels will not be higher than the stipulated by the law and regulations.

In order to reduce this effect, we recommend using silencers.

- **Exhaust and purges:** If lubricated compressed air is used, exhaust collectors can be installed in order to separate the oil and avoid its propagation.

Then, the emulsions and lubricant waste products collected from the pipe line must be treated under the respective laws.

- **Final disposition:** The alternatives are: incineration under controlled conditions by reliable companies, recycling or derivation through a differentiated recollection system. Do not throw to rivers, watercourses or storm sewers.

Our products are made of chemically stable materials that do not endanger people. Therefore, when their lifetime finishes, they can be disassembled or taken to a recollection centre to transform them into scrap and recuperate some of the materials.

In case more information is needed, please contact our agents.

Warranty

In Automación Micromecánica S.A.I.C. we guarantee our products against manufacturing hidden vices, within a period of 12 months after the purchase date, been an invoice demanded for its validity.

Our obligation is limited to the reparation or replacement of the defective material for free, or to a refund according to our viewpoint.

No direct, indirect or consequent damage or risk that could be produced by the use or application of our products is assumed as our responsibility.

The current warranty will not have validity if it is verified that the products had been exposed to misuse, modifications, negligent actions, unauthorized reparations or accidents that can affect its normal performance.

The non-fulfilment of the "Recommendations for the proper use of equipments" can invalidate the present warranty. Ask for a copy of it if necessary.

Our policy is of continuous research and development. With the aim of improving our products, we reserve the right to change the technical specifications of the Master catalogue without notice.