



OPERATION MANUAL

PNEUMATIC CYLINDERS

DIRECTIVE 2014/34/EU

ATEX

ENGLISH

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1 Product identification

This manual describes function and maintenance of the cylinder and gives important information for a safe usage of it.

Product identification:

- **Cylinders ISO 15552 (ex ISO 6431 VDMA)**
- **Compact cylinders**
- **Compact cylinders ISO 21287**
- **Short stroke cylinders**

All the persons in charge for the setting up of the cylinder commit themselves to observe the fundamental instructions about safety against explosions, work safety, accident prevention and to read all considerations indicated in this manual especially in chapter "Security".


AZ Pneumatica s.r.l. prohibits to reproduce, to distribute, re-use or give this manual to others, both partially and completely.

Label with mark ATEX:

CE  II2G Ex h IIC T6 Gb X

II2D Ex h IIIC T85° Db X

Ambient temperature: -25°C ÷ 60°C

CE	European directive
	approved for potentially explosive atmospheres
II2G / II2D	group II, G gas, D dust
Ex h	Protection mode not electric
IIC IIIC	Group gas IIC (it covers IIB, IIA) Conductive combustible dust group
c	Protection class
T6 T85°C	Temperature class Temperature class for dust
Gb / Gd	EPL
X	Special conditions for use
-25°C ÷ 60°C	Ambient temperature range

2 Security

All the persons in charge for the setting up of the cylinder commit themselves to use the cylinder in a **proper way**, that is to observe the technical information indicated on the label with mark ATEX and on the Conformity Declaration.

Proper use

The cylinder has been produced to transform the energy of the compressed air into mechanic energy, on the basis of the technical information indicated in this document.

The proper use also includes the duty to let exclusively the producer's special trained workers, intended for the assistance, to carry out any intervention on the cylinder.

It is forbidden for all persons in charge for the setting up of the cylinder to:

- do any kind of alteration on the cylinder;
- do anything that compromises the safety of the cylinder;
- disassemble and/or put out of order any safety and protection device;
- use fittings and accessories not authorized by the producer.

It is compulsory for all the staff in charge for the setting up of the cylinder to:

- observe all the safety information indicated on the cylinder and tags for compressed air connections;
- maintain these tags readable;
- use tools in a correct way without getting collisions;
- observe the producer's information regarding lubrication, solvent and cleaning substances;
- observe the information regarding safety instructions and security procedures recognized by the EU and the specific ones in the own nation.

There could be damages and danger for things and persons if the cylinder is used in an improper way.

The producer declines all responsibility for damages due to an improper use.

3 Guarantee

AZ Pneumatica s.r.l. guarantees the conformity of the supplied products, it means that they correspond in quality, quantity and performance to what has been established in the sales contract.

The guarantee is valid for 12 (twelve) months and it starts from the delivery of the products and, for the substituted products or parts, from the day of their substitution.

Within that date AZ Pneumatica s.r.l., to which the customer, not later than eight days from the delivery for obvious defects and eight days from the date of discovery for the hidden ones, has to send a written report about the defect, commits itself, at its choice, to repair or replace free of charge the parts or products that are defective. The return of defected goods has to be authorized by AZ Pneumatica s.r.l. and must respect the original packing.

The guarantee expires if the product has been stored, assembled or used in an incorrect way or if it has received an insufficient maintenance or if it has been modified or repaired without AZ Pneumatica s.r.l. written authorization. AZ Pneumatica s.r.l. is not responsible for defects due to normal wear and tear of these parts that, due to their nature, are subject to quick and continuous wear and tear.

4 Transportation

Improper transportation can cause damages and danger to persons and things.

The transportation of the cylinder can be done only by instructed and trained staff.

We recommend to store the cylinder in flat and dry rooms, not subject to dust and vibrations.

The damages due to transportation and/or missing parts must be communicated as soon as possible to the forwarder and to AZ Pneumatica s.r.l. or to the re-seller with a written report.

5 Assemblage

Wrong assemblage can cause damages and danger to persons and things.

We recommend to **assemble the cylinder connecting all the air ports, and putting plugs into the not used air ports**; no air port should be left without connection or plug.

This is to avoid that inflammable dust can enter the internal space of the cylinder.

Moreover, all the staff entrusted to the assemblage has to be sure that:

- The package is removed in all its parts and correctly disposed;
- Pipes and surfaces are cleaned;
- All the sealing gaskets have been inserted in the cylinder or correctly put on the connection plate;
- The cylinder has to be assembled without efforts and distortions;
- All the elements of control and connection have to be reachable;
- Electric grounding through the machine or system has to be done;
- A technician trained to do the setting up of electrical systems in spaces in which there is the risk of explosions has to connect the electrical supply;
- The ATEX label has to be readable.
- Protect the cylinder profile (tube) of the cylinder with a structure which avoids that falling objects hurt the cylinder surface;
- In case of mounting elements which allow the rotation or the oscillation of the cylinder, verify that the speed of these movements does not create a high temperature on the surface;
- Convoy the compressed air avoiding any exhaust in the explosive atmosphere.

To avoid the risk of **overheat due to external sources** make sure that fresh air always circulate in the cylinder and that, in proximity of external heat sources, screens against overheating have been assembled.

After the assemblage of the cylinder **do not carry out operations of welding** on the machine or on the system as the system could leak.

6 Setting up

Before setting up verify that all connections has been carried out correctly and that the cylinder has been assembled and fixed in a correct way. Convoy all exhaust air out from the explosive zone. Connect the cylinder to the valve avoiding any leakage.

7 Adjustments

If the cylinder has a pneumatic or mechanic cushioning that regulates the cylinder speed at stroke end, the user must regulate it to avoid any violent impact of the piston at stroke end. Regulate the air supply in the system in a slow and progressive way, to avoid uncontrolled movement of the cylinder because of the absence of resistance and pressure in the system.

8 Technical information

For the cylinder ISO 6431 VDMA, the compact cylinder, the compact cylinder ISO 21287 and the short stroke cylinder:

	Pneumatic cylinders
Fluid	Filtered air 5 µm without lubrication
Working pressure	0 ÷ 1 MPa
Temperature [°C]	-25 ÷ +60
Cylinder speed during the normal work	0.6 m/s
Maximum allowed cylinder speed	1 m/s

9 Use

There is danger for explosions if the cylinder is overheated.
In case of problems on the cylinder, stop the machine/system immediately; inform the producer's staff intended for assistance.
Do not carry out any intervention on the cylinder but apply only to the producer's staff.

10 Maintenance

The only interventions of maintenance that the customer can carry out are the following:

- Check the general condition / integrity of the valve.
- Check the connections.

11 Special conditions for use

- Cleaning of the external surface exclusively with an antistatic damp; **no flammable material should settle on the surface** of the valve, and the cleaning interval has to be adequate to the ambient condition in which the valve is assembled.

N.B. In case that oxidation appears on the surface or on other parts of the cylinder, the oxidation must be immediately cleaned, without any waiting. If cleaning is not possible, the system must be stopped and the cylinder removed and changed.

N.B. In case of use of electrical valves connected to the cylinder, only the use of ATEX certificated magnetic coils with the correct electrical characteristics is allowed.
The magnetic coils has to be tightened with the nut and the round piece that are given as accessories; verify that the magnetic coil after the assemblage is safely fixed.

12 Disassembling / disposal

Carry out the disassembling exclusively with:

- The machine turned off,
- The compressed air blocked,
- Unload the compressed air circuit around the cylinder to reach atmospheric pressure.
- The cylinder piston rod must be blocked to avoid any unexpected movement.

During the disassembling wear protective glasses and gloves to avoid possible injuries and proceed with particular caution.
Observe chapter "Security" and the local security arrangements.
For the disposal of the material strictly follow the local laws and instructions.

AZ Pneumatica s.r.l. has the right to modify these instructions and the technical information indicated in this manual.

More information:
<http://www.azpneumatica.srl/azweb/ita/atex.htm>