

SMART DUST CLEANING SYSTEM

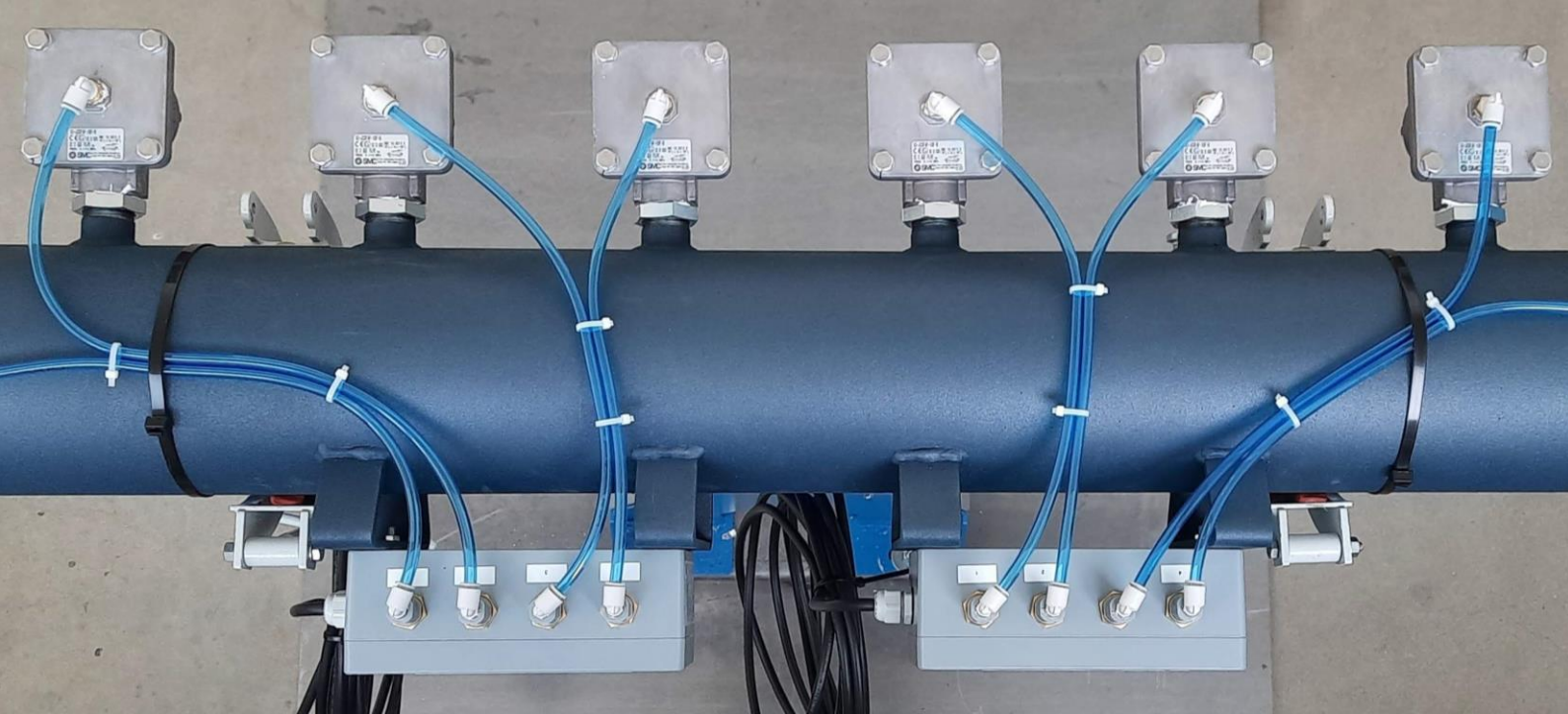
High efficiency Pulse Jet dedusting system



INSTALLATION, USE AND MAINTENANCE MANUAL OF TANKS AND VALVES FOR DEDUSTING EQUIPMENT IN POTENTIALLY EXPLOSIVE ATMOSPHERES AND NOT EXPLOSIVE



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INDEX

1. INTRODUCTION.....	4
2. STORAGE AND CONSERVATION	4
3. QUALITY OF THE COMPRESSED AIR SUPPLY TO THE DCS TANK	4
4. SAFETY VALVES	4
5. IDENTIFICATION PLATE	5
6. CONNECTION TO EARTH TERMINALS FOR THE ATEX VERSION	6
7. PRECAUTIONS FOR THE USE	6
7.1 Health & Safety	6
7.2 Installation and handling.....	7
7.3 Maintenance	8
8. MINISTERIAL DECREE no. 329 of 01/12/2004	9

The translation of the text into a foreign language must be understood for the unique purpose of explanation for the user; however, we point out that for any disputes, the Italian text is valid. It is suggested to keep correctly this manual and make it available for consultation. To obtain copies conforming to the original, contact ECOTECH GTS SRL. The manufacturer reserves the right to make changes to this manual without obligation to update the manuals previously provided.

1. INTRODUCTION

These safety instructions refer to the installation, use and maintenance of "Tanks and valves for dedusting equipment", designed, manufactured and tested for operation with "Fluid Group 2" Air according to the requirements of the Pressure Equipment Directive 2014/68 / EU (PED), Electromagnetic Compatibility Directive 2014/30 / EU (EMC), Low Voltage Directive 2014/35 / EU (LV), Directive 2014/34 / EU (ATEX), intended for use in areas with potentially explosive atmospheres.

2. STORAGE AND CONSERVATION

At delivery time, all equipment is ready for transport and storage. Especially, each component is normally equipped with special protections, covers, shockproof plastic films, which must be kept intact until the installation time.

More over, the device must also be preserved / stored in a clean and dry environment until installation.

3. QUALITY OF THE COMPRESSED AIR SUPPLY TO THE DCS TANK

Generally speaking, for correct operation and protection of the DCS "valves and tanks" systems, the ISO 8573-1 standard is the reference which dictates the purity parameters of the compressed air used for the purpose and which must therefore be suitably treated with systems filtration\drying.

As a general indication, we recommend compliance with class 3 for solid particles (5micron filtration) and class 3 for water content (drying at +3° dewpoint) while for oil content reference class 3

In the presence of plants for process use, for example, in the food or medical sector, the quality of the air is also fundamental for the final product and therefore subject to more restrictive rules, scrupulously comply with the field of application of the process regulations, requirements and prescriptions in the case of areas with the presence of potentially dangerous atmospheres.

4. SAFETY VALVES

The safety valve is an accessory designed to protect the system on which it is installed from overpressure caused by the malfunction of one or more components of the system itself.

Designed and built in compliance with the 2014/68/EU Directive and with the ISO4126-1, AD2000-MERKBLATT standard of the TUV body, it can be used for: air, refrigerant fluids, saturated steam and group 2 inert gases and installed on a wide range of systems falling within the IVth category.

Its function is to open when the pressure accumulated inside the container exceeds the calibration value of the valve itself and then close again. For safe operation of the cleaning system, its use is recommended.

5. IDENTIFICATION PLATE

The identification plate shows the following safety data:

- name and address of the manufacturer
- product serial number
- date of production
- volume
- working pressure PS = 8 bar
- test pressure PT
- working temperature TS: carbon steel TS = - 20 / + 80 ° C
- low temperature carbon steel TS = - 40 / + 80 ° C
- stainless steel TS = -50 / + 200 ° C
- Air Fluid Gr 2

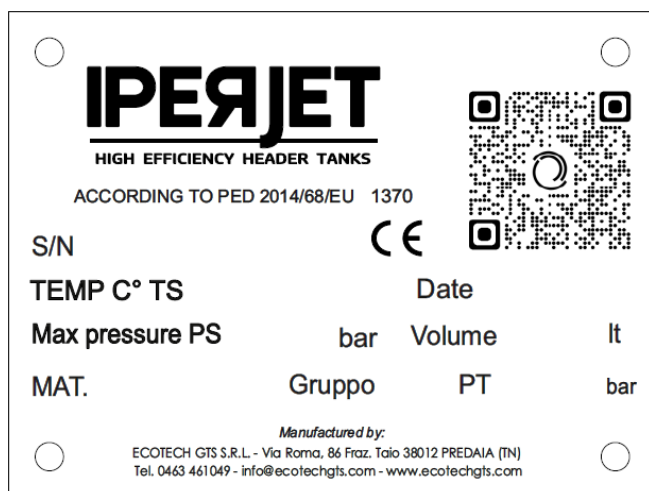
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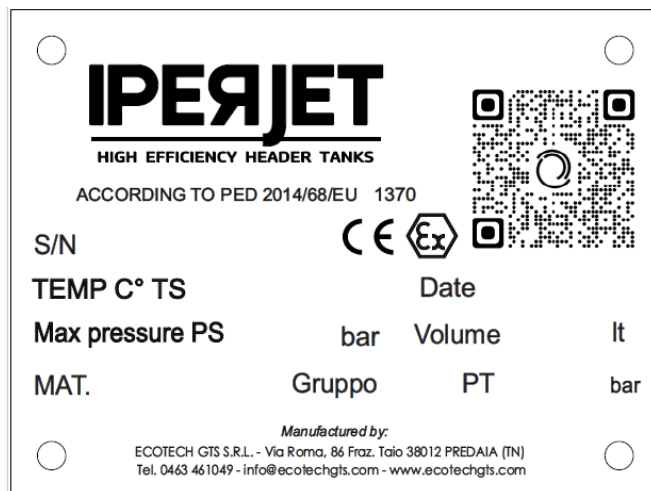
EUROPEAN COMMUNITY TRADEMARK



MARK OF CONFORMITY WITH DIRECTIVE 2014/34 / EU AND RELATED TECHNICAL STANDARDS



Example NON ATEX identification plate



Example ATEX identification plate

6. CONNECTION TO EARTH TERMINALS FOR THE ATEX VERSION

For all equipment bearing the MARK OF CONFORMITY TO DIRECTIVE 2014/34 / EU AND THE RELEVANT TECHNICAL STANDARDS, the grounding terminal normally highlighted by the symbol on the side must be used:



This terminal, equipped with an anti-rotation and anti-alignment system, must be connected to the general grounding line of the system by means of a conductor with a section $\geq 4 \text{ mm}^2$.

7. PRECAUTIONS FOR THE USE

Once the device has been installed or maintenance is executed, it is recommended to observe the following indications.

7.1 Health & Safety

- Use the tank correctly within the pressure and temperature limits written on the manufacturer's identification plate.
- It is forbidden to weld on the cylindrical shell and on the bottom.
- The tank must always be equipped with efficient and sufficient safety and control accessories. If necessary, replace them with others having equivalent characteristics, after having consulted the Manufacturer. In particular, the safety valve must be applied directly on the container without interception. It must have a discharge capacity greater than the quantity of air that can be input into the container. It should be calibrated and sealed at a lower pressure than the designed one. For safe use, all drains must be equipped with special conveyors / manifolds.
- Avoid placing the tank in areas insufficiently ventilated, exposed to heat sources or in the near of flammable substances.
- The tank must not be subject to vibrations that can generate breakages, during operation.
- The tank can only contain air.
- Tampering with the tank and any improper use is strictly prohibited.
- Adequate safety and control accessories must be installed to protect the collector.
- The plant must be built with appropriate safety margins.
- Do not burden the system with external loads.
- Prohibition of use of incompatible fluids.
- Check the suitability of the base on which the system is installed.
- Take all necessary measures to avoid external fire.
- Evaluate the fire risk according to the place of installation and the fluids used.
- Carry out a risk assessment and eliminate, or reduce, potential ignition sources in accordance with the requirements of the classified area of installation.

- Observe all the health and safety regulations envisaged for the site (classified area) where the equipment is installed, in full compliance with the Employer's risk analysis (Legislative Decree 81/2008 title XI) in implementation of Directive 1999 / 92 / EC.
- Wear the required personal protective equipment.
- Any applications of electrical and / or electronic components must comply with the prescribed protection requirements.
- End users are responsible for ensuring product compatibility with the specific application (i.e. pressure and nature of the process fluid, corrosion status, which may affect suitability and reliability).
- If the devices are to be used in the presence of unstable gases, make sure that the indicated operating parameters are not exceeded.
- These devices are not safety devices and must be controlled / protected by other devices in order to prevent excess pressure and temperature.
- It is absolutely forbidden to use a flame near the appliances both during operation and maintenance.
- Do not burden the portions of the system and the equipment making up the system itself with external loads unrelated to the operation of the system and / or in any case not indicated by the manufacturer of the pressure equipment.

7.2 Installation and handling

- Work must be carried on by expert Employees and adequately informed personnel.
- Keep the protection, control and safety devices efficient.
- Use always suitable lifting methods and means for the installation, removal and maintenance of the equipment and ensure that they are always properly supported in their final place of operation.
- Before installing the appliances in areas potentially subject to seismic activity or extreme climatic conditions, consult the Ecotech GTS S.r.l. Technical Office
- Do not use the devices for tasks that exceed the operating parameters prescribed for them. Contact the Ecotech GTS S.r.l. Technical Office for more information.
- Do not modify or alter the appliances without consulting the manufacturer.
- Use only original spare parts suggested by the manufacturer.
- Keep the protection, control and safety devices efficient.
- The devices must be installed as far as possible from:
 - any source of impact or friction (vehicles during maneuvers, unstable structures, etc.)
 - sources of leakage currents (electrical, faulty, grounded devices)
 - equipment for receiving / emitting radio frequency electromagnetic waves (see EN1127-1 Sect. 5.8 and 5.9)
 - vibration sources (ultrasonic devices, vibrating machines)
- The user must carry out, with the equipment installed, the electrical continuity and equipotentiality check required by the EN 60204-1 standard or equivalent.

7.3 Maintenance

- Do not remove or carry out maintenance on the devices without having previously completely depressurized them and, where necessary, cleaned them from residues of any toxic or flammable substances.
- Make sure that the accumulation of potential flammable dust is minimized through frequent thorough cleaning and / or suitable repairs.
- In order to avoid the occurrence of sparks of mechanical origin between tools used for maintenance and equipment components, the maintenance personnel must be adequately trained to prevent this phenomenon.

For preventive purposes, it is absolutely forbidden to use pneumatic or hydraulic equipment that can generate vibrations, compressions, during the assembly or disassembly phases of the parts during installation or maintenance. Only non-sparking hand tools are allowed as prescribed by the UNI EN 1127-1: 2011 standard (Appendix A).

- In order to avoid the rise of sparks of mechanical origin, due to vibrations and rubbing between flanged and / or threaded connections, it is recommended to check periodically the correct tightening of the connection components and the linkage.
- Prescription on the compensation of the outlet pressures - adiabatic compression. In order to avoid the rise of shock wave refraction on fittings or narrowings with the development of localized high temperature, it is recommended that the user make a correct preparation of the system, avoiding, for example, elbow connections.
- The appliances, where applicable, are treated with protective paint. Additional painting layers or any restorations carried out by the user, must not exceed a total thickness of 0.2 mm as required by the EN 13463-1 PAR. 6.7.5 (d).
- The user is reminded that he is still required to comply with the laws on the operation of pressure equipment, intended for use in areas with potentially explosive atmospheres, in force in the country of use.

8. MINISTERIAL DECREE no. 329 of 01/12/2004

Regulation containing rules for the commissioning and use of pressure equipment and assemblies referred to in article 19 of legislative decree 25 February 2000, n. 9.

ANNEX A

TABLE - Frequencies of periodic requalification of pressure equipment (article 10, paragraphs 3 and 5)

PRESSURE EQUIPMENT	LIMITS AND FREQUENCY OF INSPECTIONS
EQUIPMENT/ASSEMBLY CONTAINING GROUP 1 FLUIDS (Legislative Decree 93/2000 art. 3)	
Containers/assemblies classified in category III and IV, containers containing unstable gases belonging to category I to IV, ovens for chemical and similar industries, generators and containers for superheated liquids other than water.	Inspection frequency: - every 2 years: operation check - every 10 years: integrity check
Containers/assemblies classified in category I and II	Inspection frequency: - every 4 years: functioning check - every 10 years: integrity check
Pipes for gases, vapors and superheated liquids classified in category I, II and III	Inspection frequency: - every 5 years: operation check - every 10 years: integrity check
Pipes for liquids classified in category I, II and III	Inspection frequency: - every 5 years: operation check - every 10 years: integrity check
Containers for liquids belonging to category I, II and III	Inspection frequency: - every 5 years: operation check - every 10 years: integrity check



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