

BLUE RECOVERY

Gas recovery from pipelines



ITALMETANO-HELLAS S.A.

ISO-9001, ISO-14001, ISO-45001 & ISO 39001

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Premise...

- ▶ The European Regulation 30 May 2018, n. 2018/842 / EU introduces obligations to reduce greenhouse gas emissions, borne by the member states of the Union, in the period 2021-2030.
- ▶ The aim is to reach 2030 with a reduction in emissions, by 30% compared to 2005 levels and by 43% compared to those of 1990, for those sectors not covered by the "ETS rules" (Directive 2003 (87 / EC), such as: construction, agriculture, waste management, transport (excluding air and maritime transport) and industry (industrial processes, energy supply and use of products).
- ▶ Greenhouse gas emissions under the regulation are emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), nitrogen trifluoride (NF₃), and sulphur hexafluoride (SF₆), expressed in tonnes of carbon dioxide equivalent.



METHANE: Distribution networks

The supply of natural gas takes place through pipelines arranged throughout the territory, in a widespread and widespread manner, creating a real distribution network.

The distribution network can be divided into three pressure bands:

- High pressure (AP): Main transport with pressure up to 60 barg
- Medium pressure(MP): with pressures between (19 barg)
- Low pressure (BP): supply users with 4 barg



Interventions to the network

Interventions to the distribution network, for ordinary or extraordinary maintenance, or due to possible failures, are made possible thanks to interception equipment that allows the pipeline to be sectioned, in sections of various lengths, depending on the size of the pipeline and the type of valve.

The cutting distances can be of the order of 100 m up to more than 10 km.

In each section, obtained as a result of cutting, there are suitable drainage devices, which allow the pipeline section to be emptied quickly if necessary.



Emissions into the atmosphere

Currently, the discharge operations of the pipelines subject to maintenance take place through the controlled release into the atmosphere of a large amount of natural gas present in the section considered.

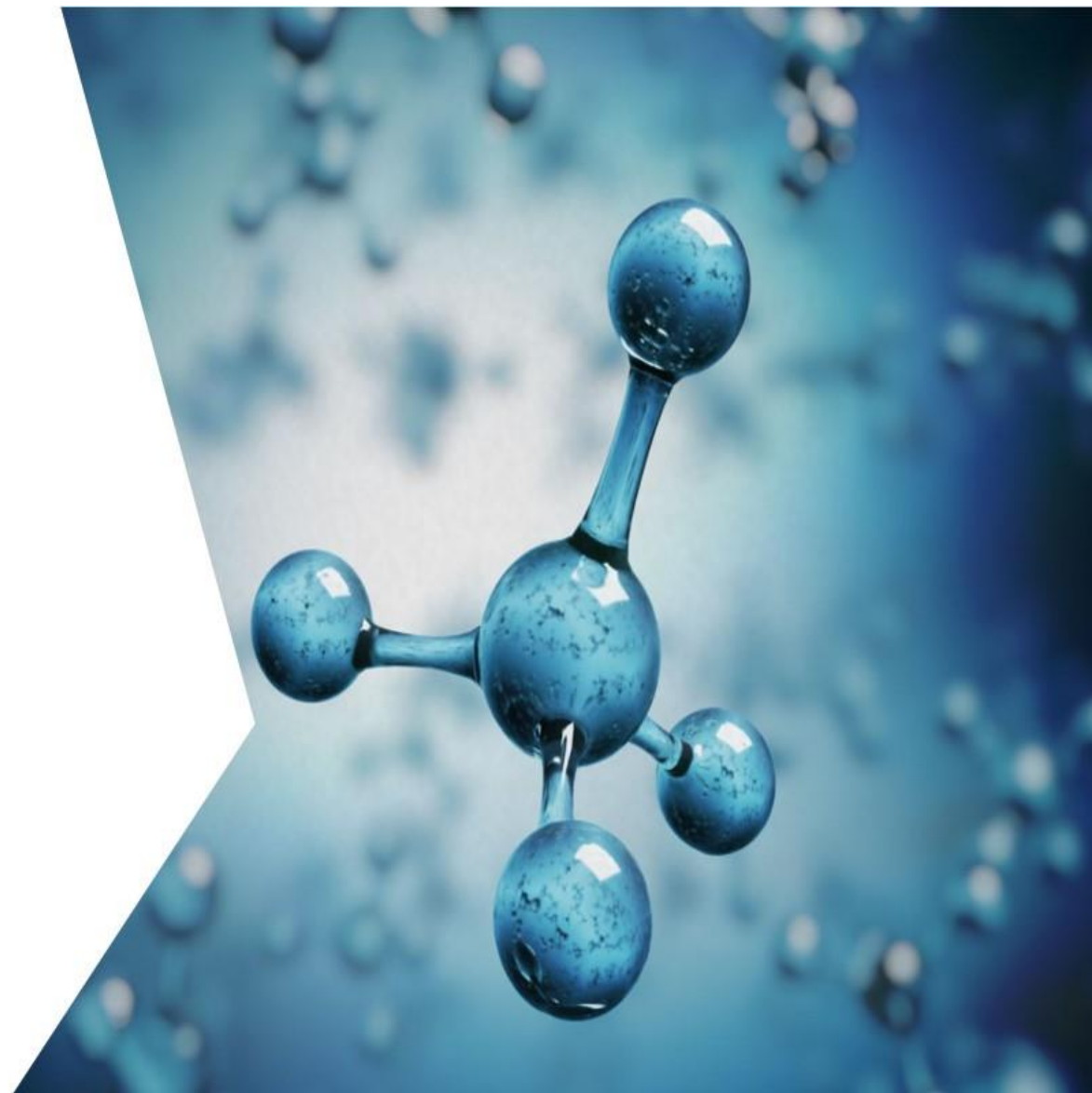
These quantities may vary, depending on the type of pipe, length and working pressure, between 5,000 Smc and 300,000 Smc!

Blue Recovery

TRANSPORTABLE EQUIPMENT, FOR GAS RECOVERY, FROM DISSECTED PIPELINE..

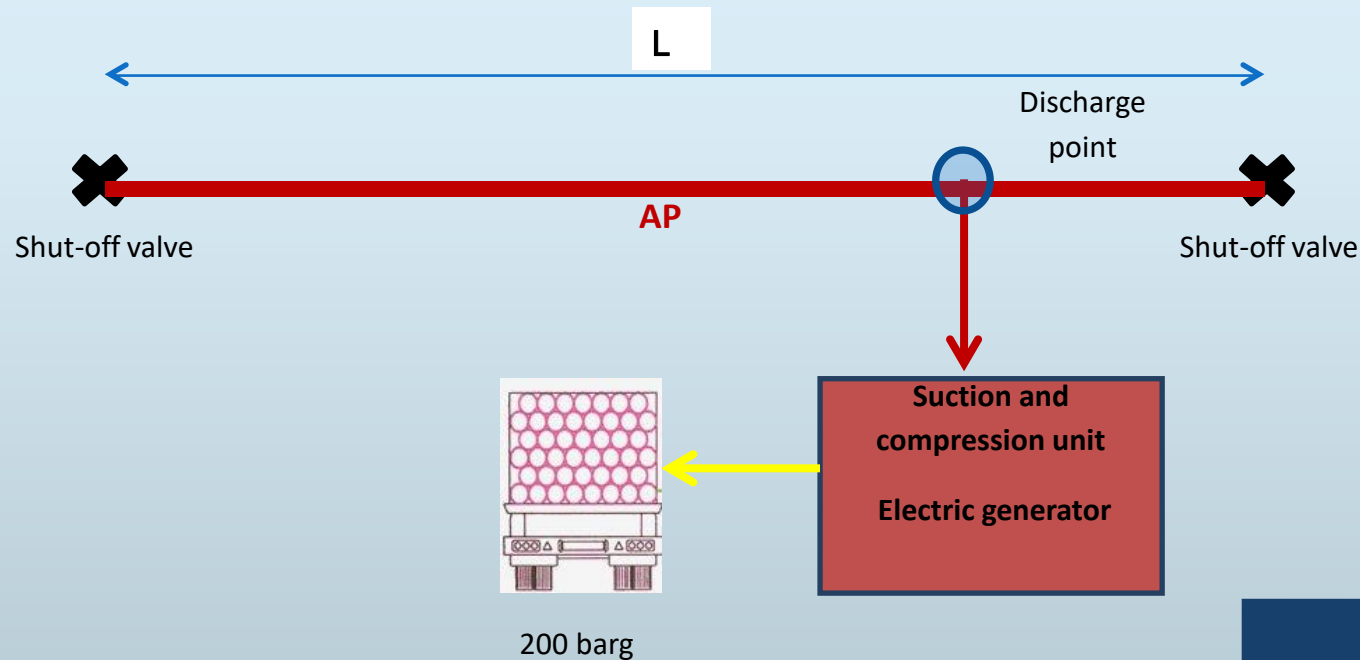
In the current context of climate change, considering the value of sensitivity to the environment, the proposed system allows the recovery of gas, present in the pipeline sections, subject to scheduled routine maintenance.

Not to lose or disperse, both economically and environmentally.



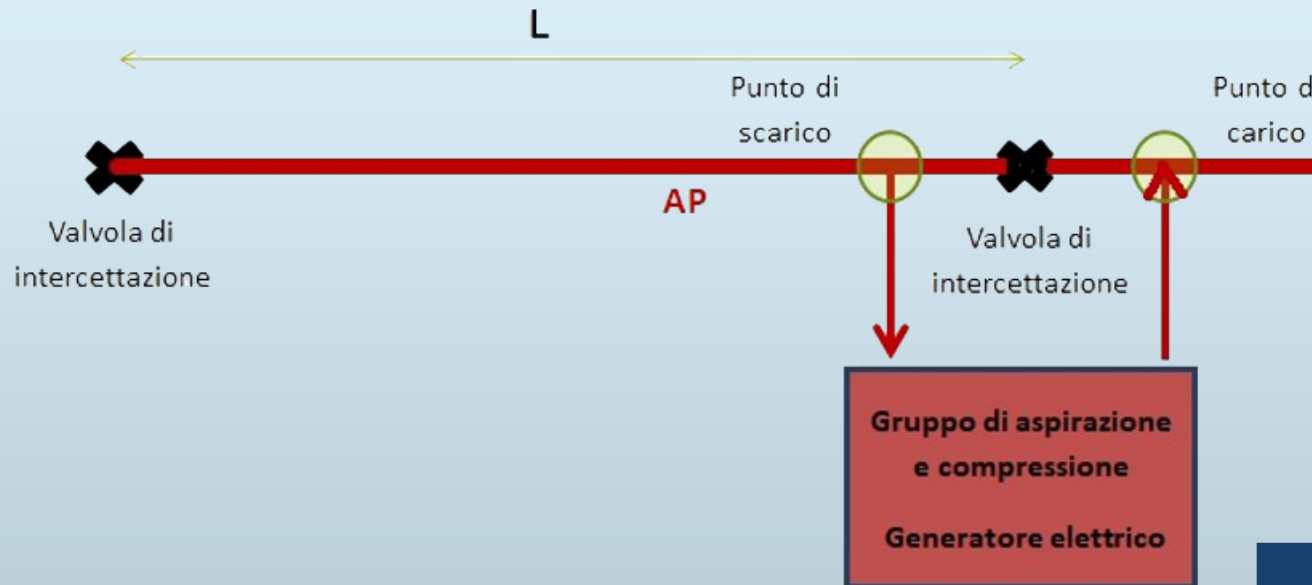
How does that work...

The system provides for the suction of the gas at a pressure $p > 1.5$ barg, from the discharge points present in the trunks of the sectioned pipeline, by means of a reciprocating mechanical compressor, with the consequent sending for storage, at a pressure of 200 barg, in special cylinder wagons, safely and effectively.



DIRECT ENTRY...

The presence of nearby unloading/loading points, between the two sectioned pipeline sections, can allow the direct re-introduction of the gas, avoiding storage and transport by cylinder wagon.

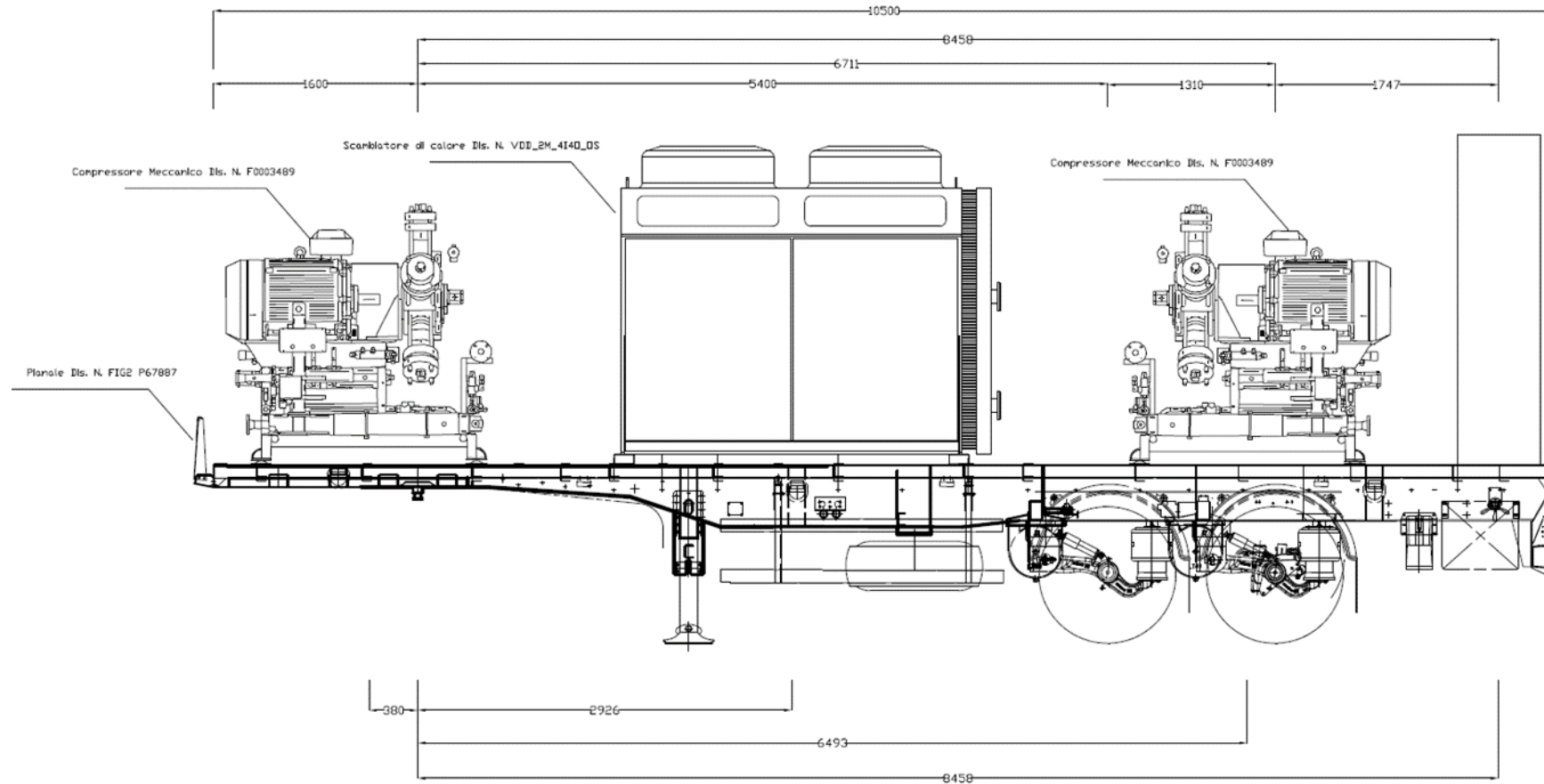


SYSTEM COMPONENTS

The system is therefore composed of:

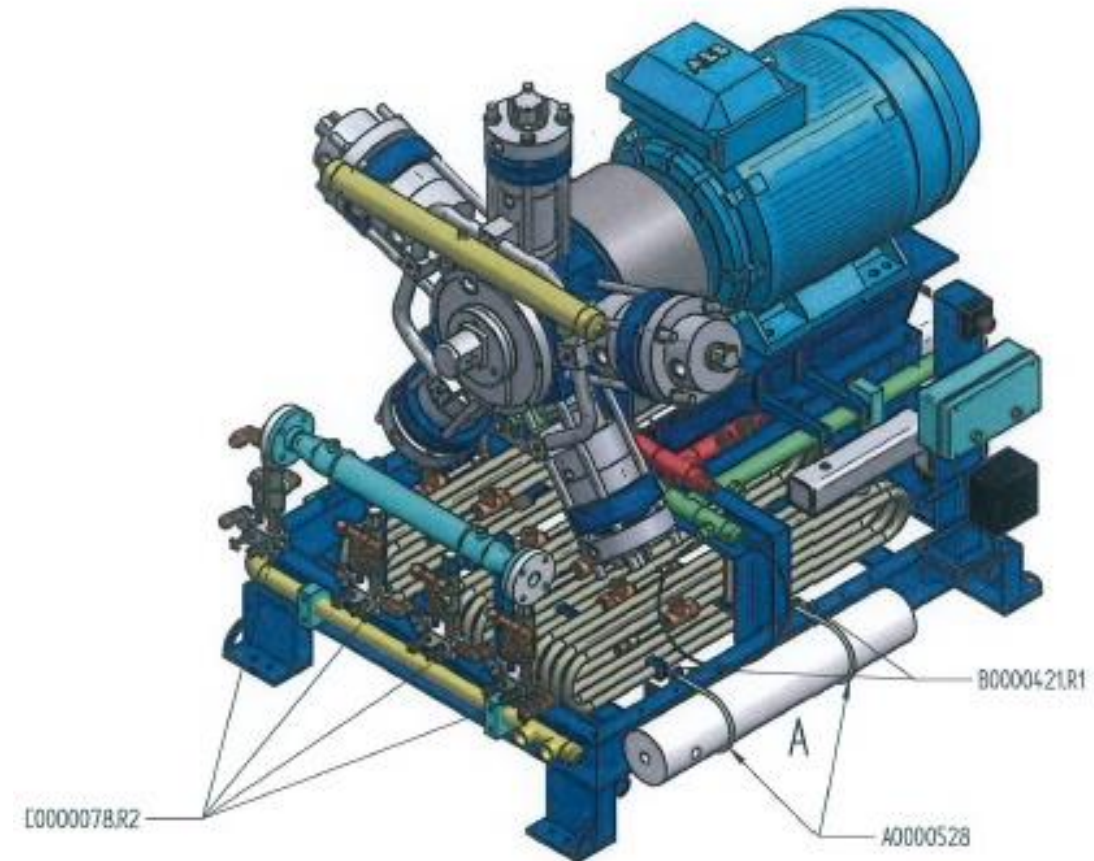
1. Semi-trailer with gas intake and compression unit
2. Cylinder wagon for gas storage and transport
3. Generator set of at least 400 kW for the required power

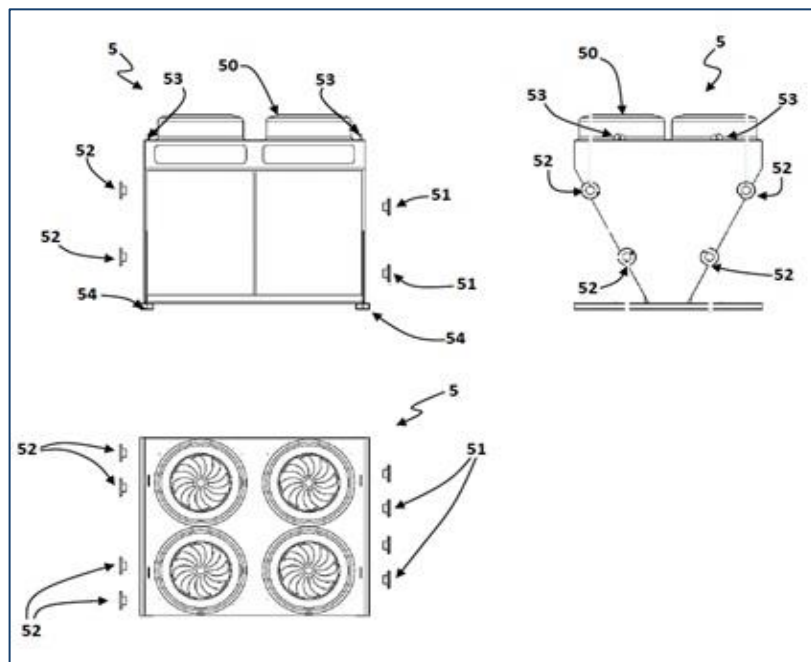
Semi-trailer with intake/compression unit



Suction and compression unit

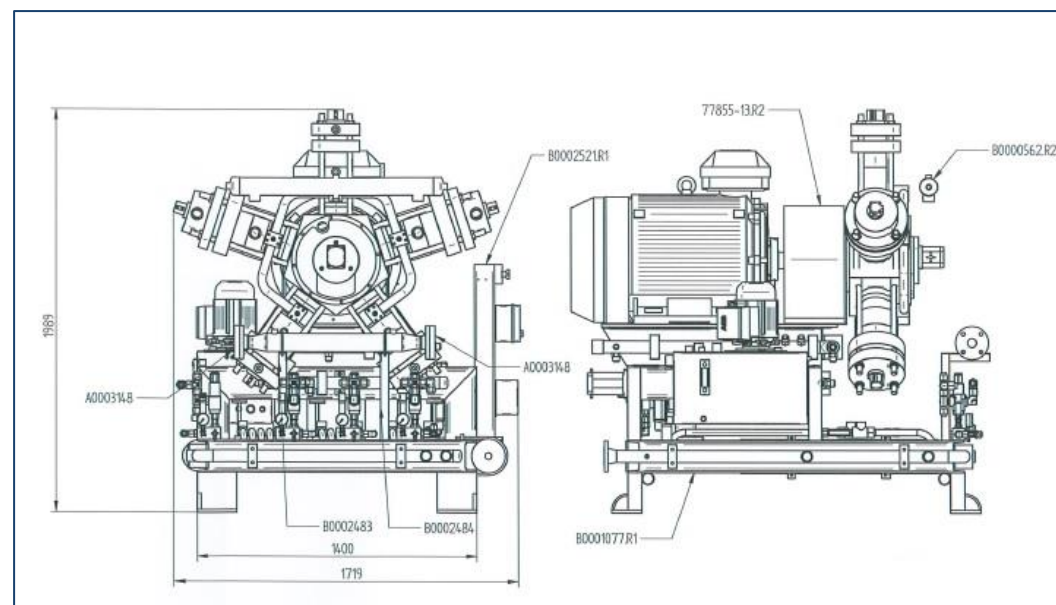
- N° 2 mechanical compressors ST110 with:
 - ❑ Minimum suction pressure 1.5 barg
 - ❑ Discharge pressure 200 barg
 - ❑ maximum flow 1200 Smc/h (600 x 2)
 - ❑ power 110 kW (each)
 - ❑ N° 2 electrical panels (1 x compressor)
- N° 2 air cooler heat exchangers (1 x compressor)





► Compressor ST110

► Cooler heat exchanger



System components



ALL strictly certified:

PED - pressure equipment

ATEX - Explosive atmospheres

EMC - electromagnetic compatibility





Thank you.

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