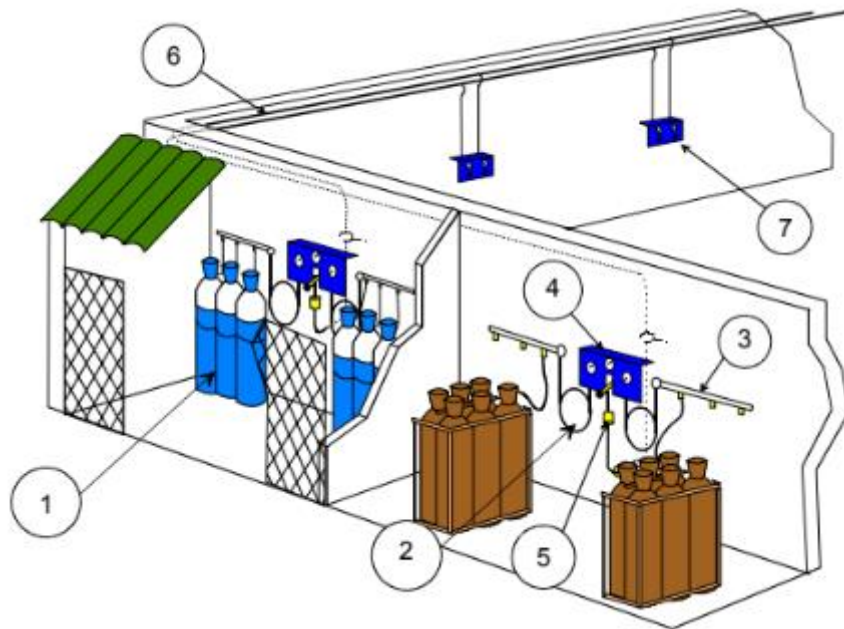


Scope:

The scope of these recommendations concerns the gas manifold systems to the distribution of gas for welding, cutting and allied processes on customer site. These gases are stored either in cylinders or in bundles (assemblies of cylinders joined together) in the form of:

- Compressed gases,
- Gases dissolved under pressure (only acetylene),
- Liquefied gases (except butane and propane which are the subject of specific provisions).

The gases stored in cryogenic vessels are not within the scope of this document.

Description of the installation:

1. Cylinders or bundles:

- Check the condition of fixing bottles, in order to avoid their falls,
- Check the tightness of the connection at each change of cylinders or bundles, with a product leak detector (specific foaming liquid, for example),
- The ground upon which the cylinders or bundles, must be flat and cleared in order to quickly access the valves in an emergency,
- The storage area should be kept clean and regularly cleaned to avoid the accumulation of combustible materials (paper, cardboard, tree leaves).
- If using combustible gas bundles, check the presence and condition of the bundle earth connection cables.

2. Flexible hoses, coiled metal pipes (pigtailed) and articulated tubing connections:

Applicable standard:

EN ISO 14113: Gas welding equipment -- Rubber and plastics hose and hose assemblies for use with industrial gases up to 450 bar (45 MPa)

ISO 16964_16964 Gas cylinders — Flexible hoses assemblies — Specification and testing

WARNING: Checks mentioned below must be carried out pressure:

- Check that the flexible safety cables are attached correctly to avoid them in case of break flapping,
- For flexible, to make each cylinder change a visual inspection of the state of the braid to ensure the absence of break, rupture braid son, corrosion points, and the condition of the seal,
- Even if visual inspection is satisfactory, we recommend changing the hose at least every five years, the reference date being affixed to flexible,
- Check the condition of coiled metal pipe (pigtail) and articulated tubing connection. When in doubt, it is recommended to replace them with flexible hoses.

3. Collecting Ramps:

Applicable standards:

EN ISO 14114: Gas welding equipment -- Acetylene manifold systems for welding, cutting and allied processes -- General requirements

EN ISO 15615: Gas welding equipment. Acetylene manifold systems for welding, cutting and allied processes. Safety requirements in high-pressure devices

- Check at least once a year the external sealing under gas at the operating pressure by a check using leak detector,
- Have it checked once a year, the proper functioning of equipment ramp according to the manufacturer's instructions, by trained and authorized personnel.

4. Manifold systems and change-over units:

Applicable standards:

EN ISO 14114: Gas welding equipment -- Acetylene manifold systems for welding, cutting and allied processes -- General requirements

EN ISO 15615: Gas welding equipment. Acetylene manifold systems for welding, cutting and allied processes. Safety requirements in high-pressure devices

4.1 Gauges:

Applicable standard: EN ISO 5171: Gas welding equipment - Pressure gauges used in welding, cutting and allied processes (Replace EN 562)

- Visually check that all pressure gauges are in good condition and provide correct information, for example the maximum pressure and zero.

4.2 Regulators:

Applicable standard: EN ISO 7291: Gas welding equipment - Pressure regulators for manifold systems used in welding, cutting and allied processes up to 30 MPa (300 bar)

- Check at least once a year the external sealing by using a leak detector. High pressure side of the manifold should be tested by cylinder filling pressure. Low pressure side should be tested by at least preset pressure of the regulator.

- Check at least once a year the external leak test with the gas at maximal operating pressure using a leak detector.

- Have it checked once a year the manifold system / change-over unit (filter, valve diaphragm, valve, check valves and purge) according to the manufacturer's instructions, by trained and authorized personnel.

4.3 Signaling system:

- Check once a year, the smooth operation of remote signaling system, if any.

5. Acetylene safety devices.

Applicable standard: EN ISO 5175-1 Gas welding equipment — Safety devices — Part 1: Devices incorporating a flame (flashback) arrestor

- Flashback arrestors and other safety devices installed within acetylene manifold unit, must be revised annually according to the manufacturer's instructions, by trained and authorized personnel.
- If present a bursting disc, it is necessary to make a visual inspection outside to ensure the absence of deterioration,
- A complete audit must also be carried out after each incident.

If necessary, equipment will be changed according to the manufacturer's instructions.

6. Pipeworks:

WARNING: The disassembly of equipment and purge plugs can cause a potential risk of explosion (case with fuel gases). This operation must be performed according to the manufacturer's instructions, by trained and authorized personnel.

Follow local rules and Instruction for Use. Provide following inspections at least once a year.

- Perform a visual inspection to ensure the absence of external corrosion and damage,
- Ensuring the presence and continuity of the effective electrical grounding of the pipeline,
- Perform tightness test under gas, connected components, using a leak detector,
- Check the correct identification of the pipeline relative to gas transported,
- For buried pipelines, ensure the absence of ground collapse.

7. Point of Use:

Applicable standard: EN ISO 5175-1 Gas welding equipment — Safety devices — Part 1: Devices incorporating a flame (flashback) arrestor

Perform once a year:

- An external leak test under gas, using a leak detector,
- A visual inspection to ensure good external condition of the pressure gauges, flow meters, valves and regulators.

Additional recommendations:

For other equipment necessary to refer to the EWA document:

TI-2018-04-Technical-information-on-maintenance-of-flame-equipment