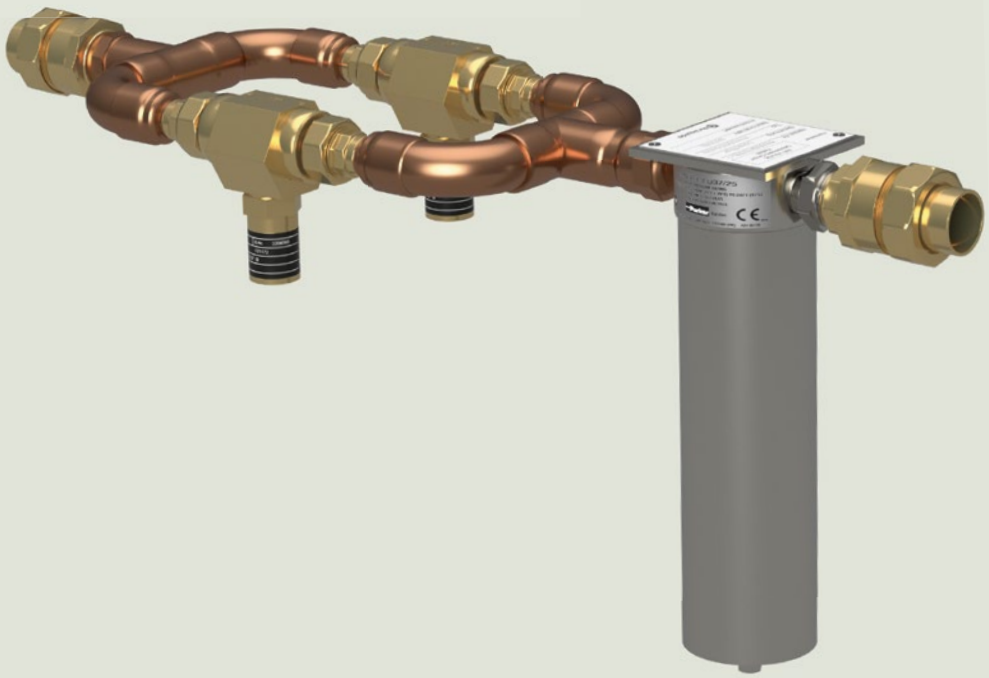
Air Liquide

Filter units

Operating manual

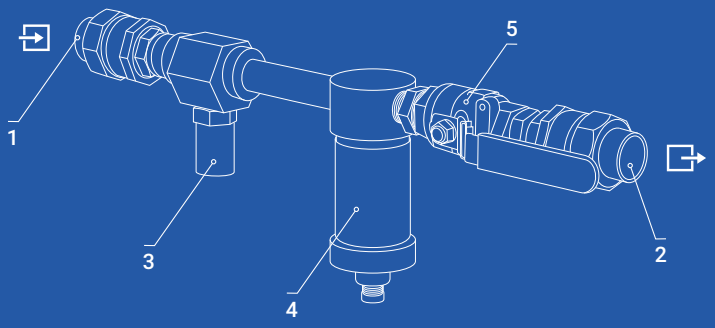


OP 920

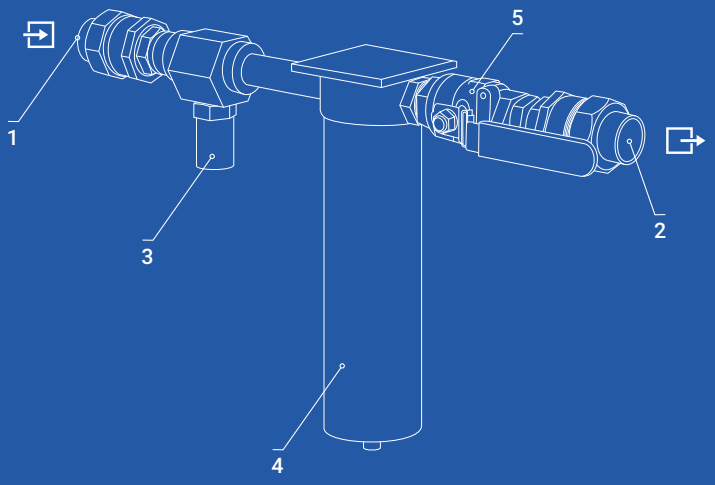
Filter units

Content

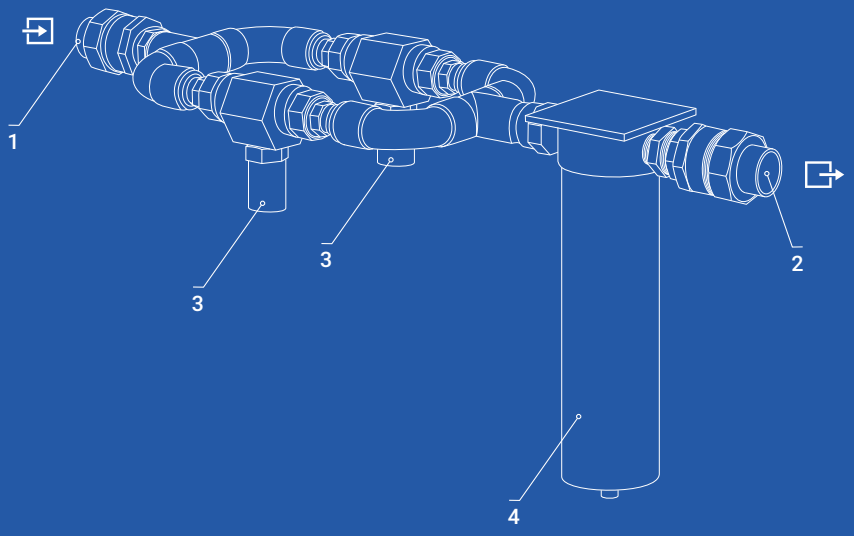
80 PN 29



80 PN 40



80 PN 40
with Bypass



1. Inlet
2. Outlet
3. Filter F310
4. Filter EU37/25
5. Shut-off valve

1 Preliminary notes

According to the legislator, the operator is responsible for the safety and health of his employees.

He must also provide employees with the necessary work equipment to prevent hazards from arising. In addition, must regularly monitor and document the safety-related systems document this.

This operating manual is intended to help that a small part of these requirements can be met.

Our pressure control panels comply with the actual rules of regulation and are design according to the state of the art.

1.2 AIR LIQUIDE Commitments

1.2.1 Conformity

AIR LIQUIDE certifies that the equipment is manufactured, tested and controlled, in accordance with state of the art and AIR LIQUIDE rules.
It is the responsibility of the end user to ensure that such equipment is installed and used in accordance with the current regulations.

1.2.2 PED Directive 2014/68/EC: Pressurized equipment

Technical requirements of Article 4 § 3 indicates that Pressure equipment and assemblies below or equal to the limits set out in points (a), (b) and (c) of paragraph 1 and in paragraph 2 respectively shall be designed and manufactured in accordance with the sound engineering practice of a Member State in order to ensure safe use. Without prejudice to other applicable Union harmonisation legislation providing for its affixing, such equipment or assemblies shall not bear the CE marking referred to in Article 18. By design, these equipment may integrate pressure relief valves or burst disks.
In this case, those ones shall neither be CE marked according to paragraph 2 of annex II. In all other cases, pressure relief valves and burst disks shall be CE marked.

1.2.3 ATEX Directive 2014/34/EC

The equipment is not in the scope defined in points a), b) and c) of the article of the ATEX Directive: consequently, they shall not wear the CE marking. The equipment is not capable of causing an explosion through their own potential sources of ignition: then, they can be installed in ATEX zone 1 or 2, as far as respecting up to date regulations, rules, operating instructions, in accordance with the sound engineering practice are followed during installation and use.
Reminder: it belongs to the end user to define the ATEX zone.

1.2.4 REACH regulation (EC) n°1907/2006

The pressure reducers are made of brass parts, essentially the body, which is a copper alloy with a lead content between 1 % and 4 % w/w. As requested by art. 33 of REACH Regulation (Registration, Evaluation and Authorisation of Chemicals) and with reference to current list of SVHC (substances of very high concern) available on ECHA website, we inform that lead may be present in a concentration above 0,1 % w/w in our products made of brass. Lead inclusion in the SVHC list in June 2018 does not modify the use conditions described in operating instructions. Lead will not be released to the surrounding environment or the gas used during normal use. After product end of life, the pressure reducers must be scrapped by an authorized metal recycler.

1.2.5 FOOD regulation (EC) n°1935/2004

The AL equipment enhancing the term “FOOD” in their designation are specifically designed for use with food gases used for food and beverage applications. They are compliant with Regulation EC 1935/2004 which requires that packaging and articles intended to be in contact with foodstuffs are tobe manufactured in compliance with good manufacturing practices and standard operating procedures. Thus, under normal or foreseeable conditions of use, no transfer of contaminants, eg, metal elements, to food in quantities that could endanger human health, modify food composition or deteriorate organoleptic characteristics is expected.
Nevertheless, the end-user must check the compliance with an eventual national regulation. Articles for food usage has a Food logo marking. For traceability purposes, the batch number is written on each article and AL can perform a batch recall, as requested by its Quality management system.

1.3 Cleaning

Each equipment is subject to a grease removal and a high quality cleaning to preserve the purity of gas in the equipment as well as for use with oxygen for compatible equipment. A suitable packaging protects the equipment against exterior pollutants during storage and transport.
Take care to avoid polluting the equipment during installation.

1.4 Warranty

Our “General Terms and Conditions of Sale and Terms of Delivery” apply. These are available to the operator at the latest upon conclusion of the contract. Warranty and liability claims for personal injury and property damage are excluded if they are attributable to one or more of the following causes:

- Improper use of the equipment.
- Improper installation, commissioning, operation and maintenance of the pressure and maintenance of the equipment.
- Operation of the pressure equipment with defective safety,devices or improperly installed or or non-functioning safety and protective devices.
- Failure to observe the instructions in the operating manual regarding transport, storage, assembly, commissioning, operation, maintenance and set-up of the pressure equipment.
- Unauthorized structural modifications to the pressurem equipment.
- Unauthorized alteration of the cylinder connections for the use of other types of gas, exceeding the permissible inlet pressure permissible inlet pressures, the use of foreign or non-original seals.
- Inadequate monitoring of equipment, screwed connections

and sealing parts that are subject to wear.

- Improperly performed repairs.
- Exceeding or falling below the temperature range specified in the data sheet during operation or during storage.
- Catastrophic events due to the effects of foreign bodies and higher force majeure.

The warranty period of this equipment supplied by AIR LIQUIDE is one year, including spare parts and repair, excluding postage and packing costs. Excluded from the warranty are gaskets, these parts are subject to natural wear.

For further information please refer to the General Terms and Conditions of AIR LIQUIDE.

2 Field of usage

2.1 Functions

Air Liquide filters and filter units are designed for use in pipework.

When correctly installed in a gas pipe, the filters effectively separate solid particles from the gas supply. The amount of media that is separated and the size of the solid particles filtered out of the gas depends on the type of filter cartridge installed in the filter housing.

The microfibre filter cartridges seal against a flat surface by compression. No seals are required between the filter cartridge and the filter housing.

The efficiency of the microfibre cartridge is not impaired by the liquid contained in the gas flow. The service life of a filter cartridge depends on the increase in flow resistance caused by the solid particles trapped inside the filter cartridge. The filter cartridge should be replaced when the flow rate falls below an acceptable level or when the pressure drop becomes too high. However, the filter cartridge should always be replaced when the pressure drop reaches 0.3-0.7 bar, as it then only has a short service life.

2.2 Intended Use

Intended use for compressed and pressurised gases, for filtering out foreign bodies from pipelines and system components. The fittings downstream of the filter are protected against possible wear, their proper functioning is guaranteed and operational faults are avoided.

Do not use the filter for gases in the liquid phase. Do not use for unsuitable gas types or aggressive gases. Use for different gases is not permitted. Please refer to the gas compatibility table in the appendix.

3 Assembly – Activation

3.1 Safety

Please first read and observe the "General safety instructions" document enclosed with the product.

NEVER dismantle the filter unit while the pipework is pressurised.

Filter units with plastic or nylon components must not be exposed to solvents, alcohols or glycols, as this may impair the function of the filter housing. For housings containing polycarbonate, only non-detergent mineral oils may be used. If other types of oil are used, this can lead to a dangerous malfunction of the product.

3.2 Precautions before assembly

After opening the packaging, make sure that the equipment is not damaged. damaged.

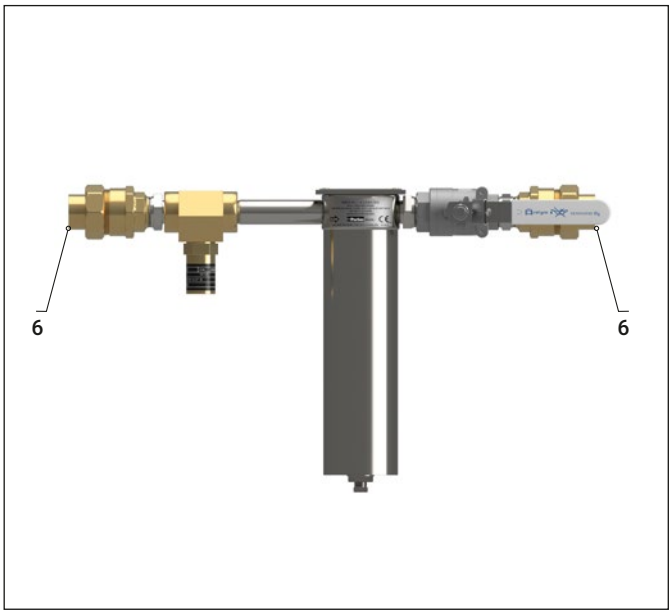
- Extreme care must be taken during installation to ensure cleanliness and avoid contamination.
- Select a ventilated location for the installation of the filter unit, protected from the weather if possible.
- Avoid direct heat influence on the filters or filter units.

3.3 Mounting the filters or filter units

The filter units can be installed directly in a pipe. Please note that:

- in the case of soldered/welded connections (6), the filter units are not installed, but are connected with the corresponding screw connection after the heat-introducing work.

The relevant safety regulations for pressurised pipelines must be observed during installation..



3.4 Commissioning

A leak test must be carried out after installation in the pipework. A pressure test must then be carried out using a suitable leak detection agent and the corresponding pressure. The maximum permissible operating pressures of the pipework and the components installed in the pipework must be observed.

After a successful pressure test, the filter unit can be operated.

4 Marking

4.1 Type plate

On the body of the line pressure regulator there is a type plate with information about:
Type designation, date of manufacture, approved upstream pressure (P1), device-specific downstream pressure (P2) and flow rate (Q1). Furthermore, the permissible temperature range and the symbol of freedom from oil and grease (for the use of oxygen) listed.The manufacturer's name and a QR code for scanning the operating instructions in the desired language are printed on the body of the regulator.

4.2 CE marking

The regulator has been designed and manufactured in accordance with the Pressure Equipment Directive (PED), Article 4, Paragraph 3, in accordance with „good engineering practice", a CE marking may not be applied.

5 Instructions for operation and maintenance

5.1 Maintenance

During operation, the filter elements in the filter unit may no longer fulfill the required throughput capacity due to particles. They must then be replaced.

Detailed information on the filter elements is available from the relevant manufacturers and must be observed. The following are the most important points to be observed when handling or replacing the filter elements:

- Filters must always be protected against damage (regular visual inspection)
- Ensure that seals and sealing surfaces are in perfect condition.
- Leaking filters must be taken out of service immediately.
- If the pressure loss increases and the flow rate decreases, but at least once a year, the filter insert must be removed and cleaned/replaced. If the filter insert is damaged, it must be replaced.
- When used with oxygen, the particles filtered out by the gas flow will clog the filter cartridge after prolonged use. This reduces the free filter surface and the differential pressure between the inlet and outlet pressure increases, which in turn increases the flow rate of the oxygen in the filter. To prevent this, the filter cartridge must be cleaned/replaced regularly.
- Before dismantling or removing the filter insert, the filter must be depressurised.
- After loosening the screw plug on the hexagon provided for this purpose by turning it anti-clockwise, the filter insert can also be removed for cleaning/replacement by turning it anti-clockwise. Insertion is carried out in reverse order.

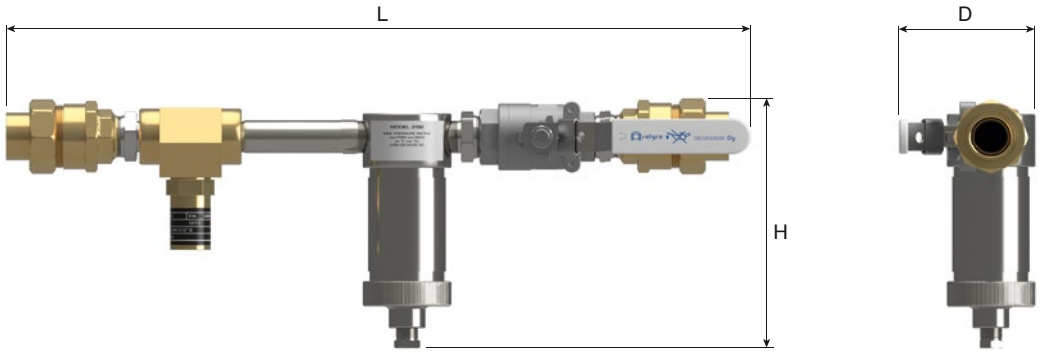
5.2 Disposal and recycling

At the end of the equipment's useful life or when it is impossible to repair it, it is essential to respect the local regulations for recycling/disposal of our equipment. To prevent reuse, these products must be unsuitable for use. In accordance with EU Directive 2018/851 on waste, the owner of the equipment ensures that when recovery is not carried out in accordance with article 10, the waste will be subjected to safe disposal operations that comply with the provisions of article 13 on the protection of human health and the environment.
The licensee must take steps to promote high quality recycling and, to this end, must establish separate waste collections when technically, environmentally and economically feasible and adequate to meet the quality standards required by the relevant recycling sectors.

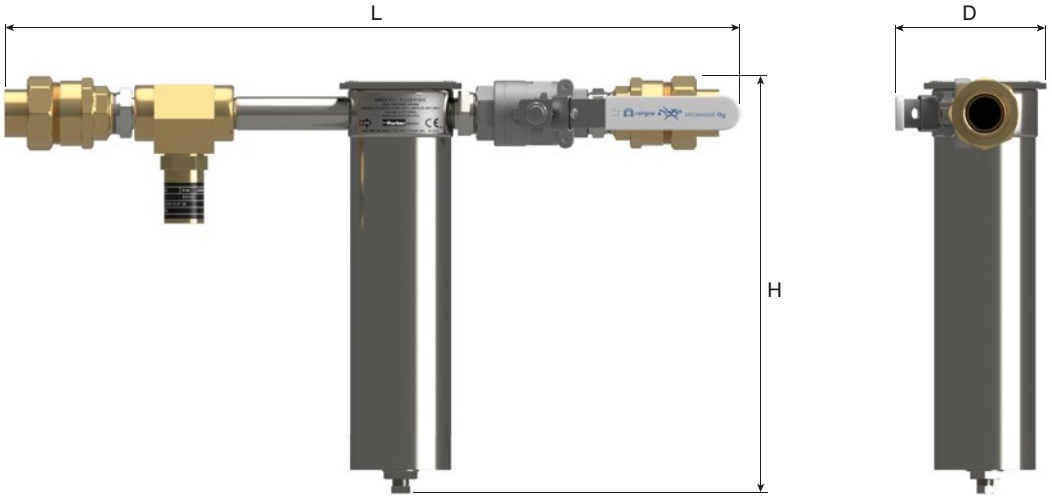
6 Appendix

6.1 Dimensions

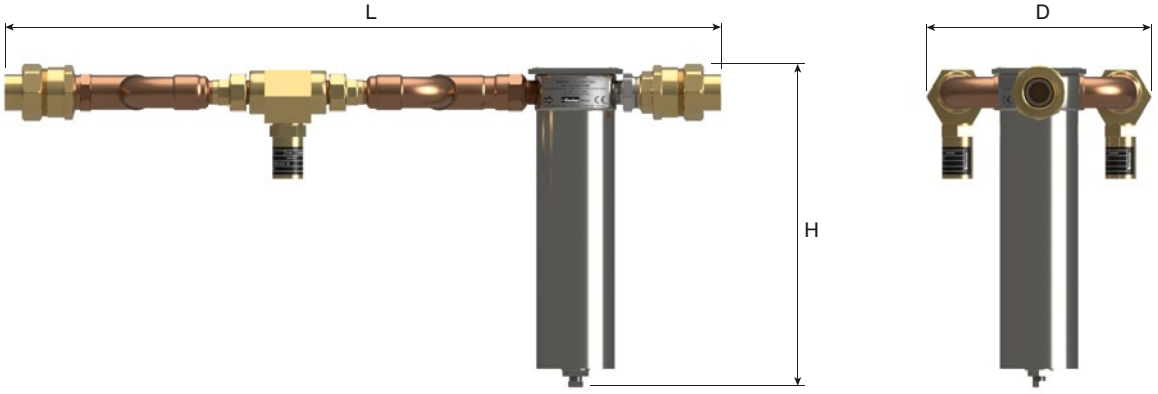
L = 477 mm
H = 163 mm
D = 92 mm



L = 489 mm
H = 277 mm
D = 100 mm



L = 601 mm
H = 279 mm
D = 192 mm



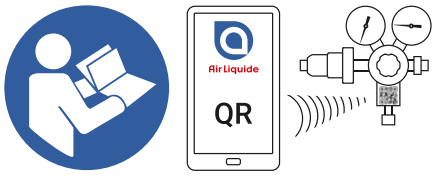
6.2 Gas compatibility

Designation		Filter combination 80 PN 29	Filter combination 80 PN 40	Filter combination 80 PN 40
Main gases – Gas purity < or = 4.8	Ammonia	◀	◀	◀
	Methane	◀	◀	◀
	Ethylene	◀	◀	◀
	Propylene	◀	◀	◀
	Propane	◀	◀	◀
	Acetylen	◀	◀	◀
	Hydrogen	◀	◀	◀
	Nitrogen monoxide	25	25	25
	Oxygen	25	25	25
	Compressed air (non breathable)	◀	◀	◀
	Compressed air (breathable)	◀	◀	◀
	Carbon monoxide	◀	◀	◀
	Carbon dioxide	29	40	40
	Argon/CO_2	29	40	40
	Inerte Gases*	29	40	40

25 Suitable up to an operating pressure of ...

◀ Not suitable

* Inert gases = nitrogen, argon, helium and other compressed noble gases



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Gebrauchsanleitung / Operating Instructions / Manuel d'utilisation / Istruzioni per l'uso

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Air Liquide

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