

Operating manual.

BASELINE™ gas supply panels, line regulators, valves and points of use.

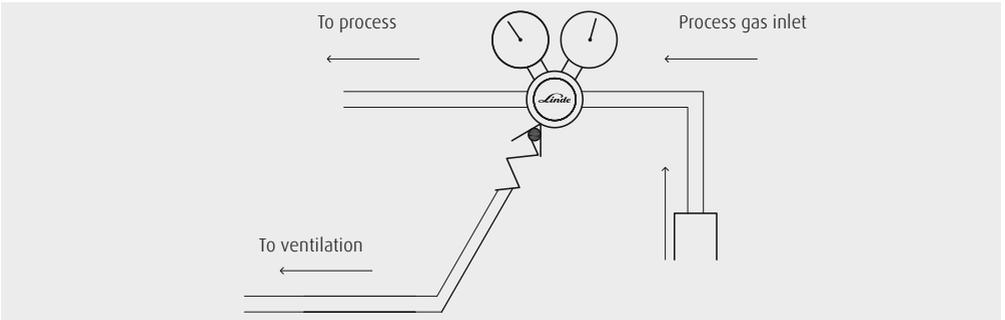
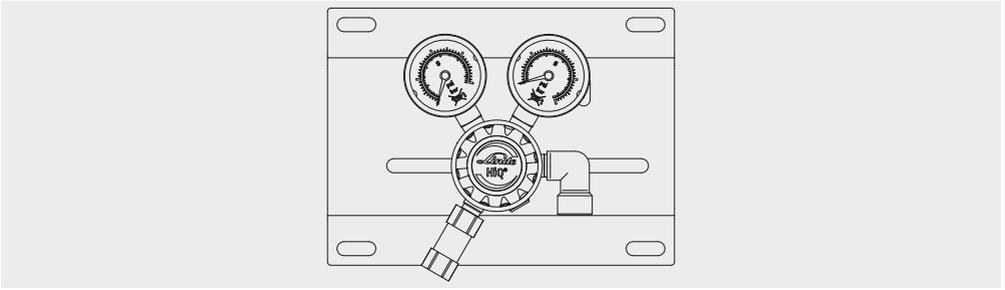
Models: S100, S101, A107, A108, R30, V100, W30 A, W30 B

Date: 01/07/2014

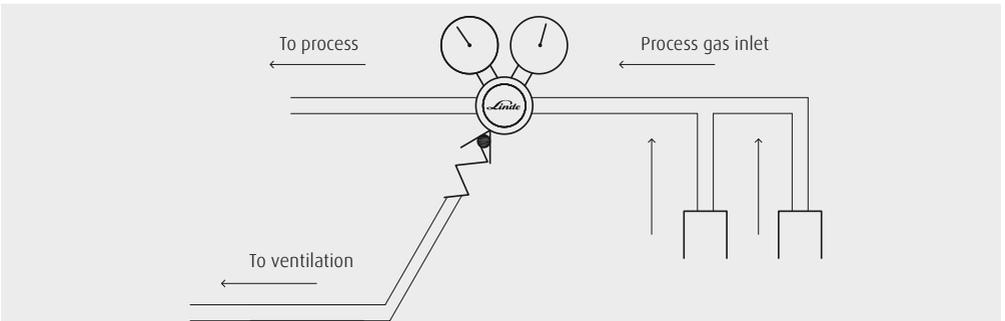
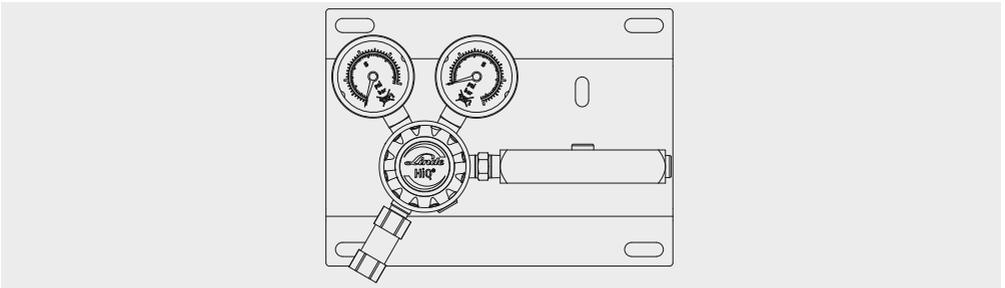
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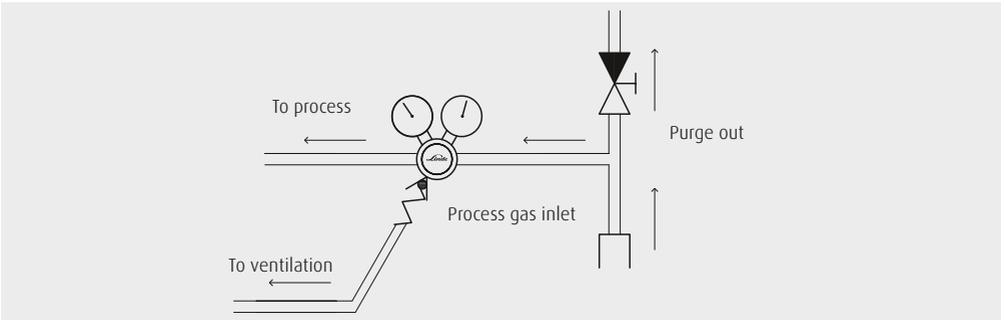
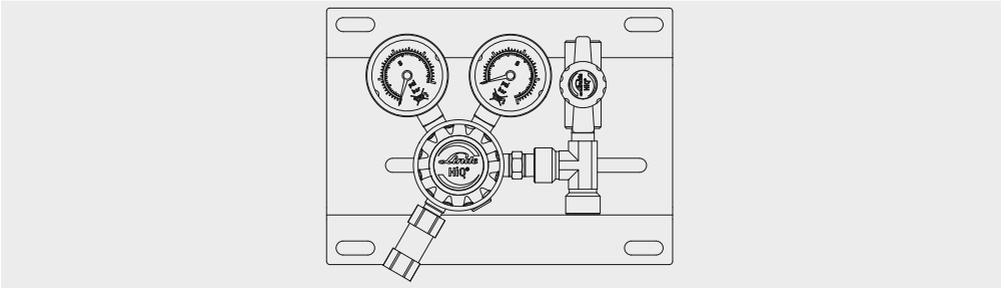
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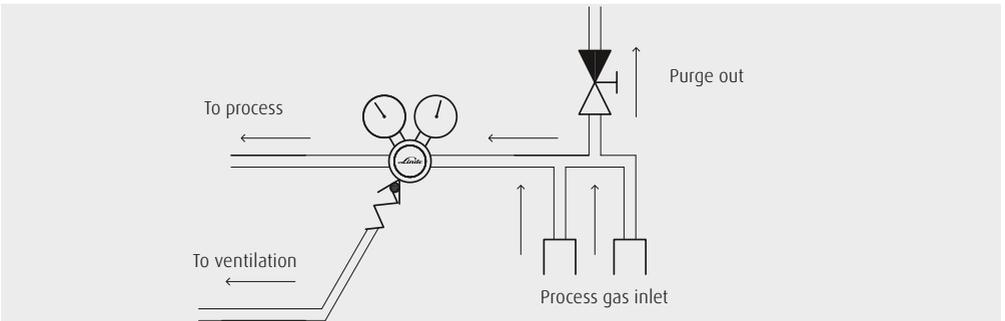
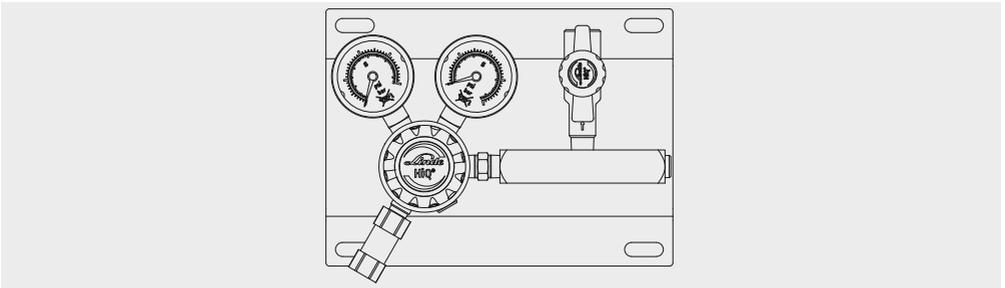
S100 C1



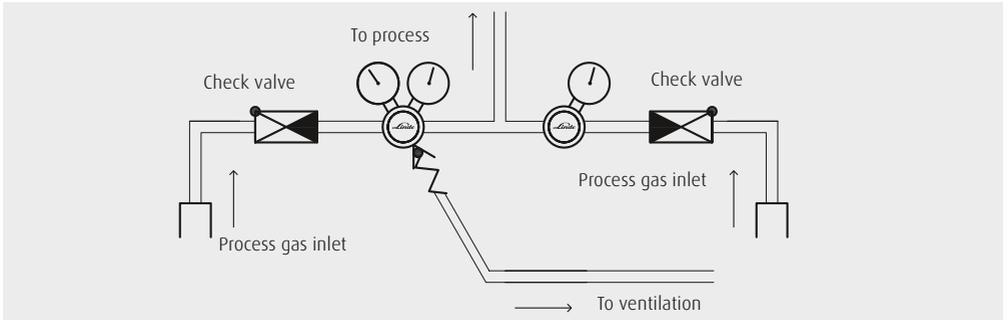
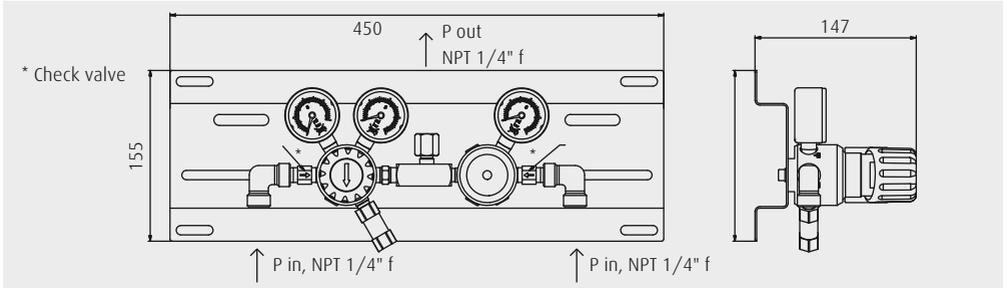
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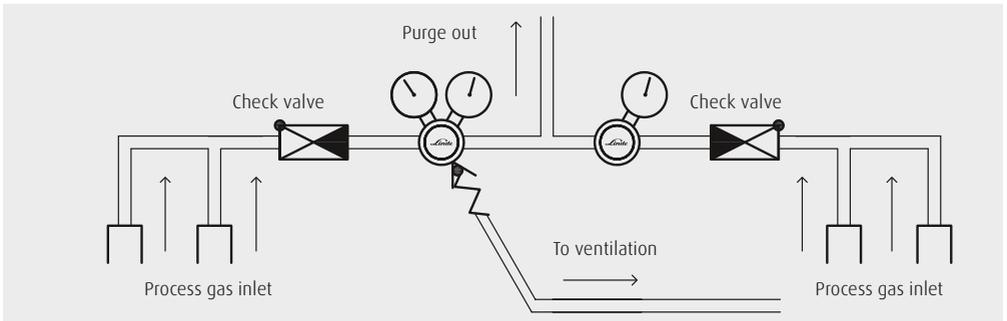
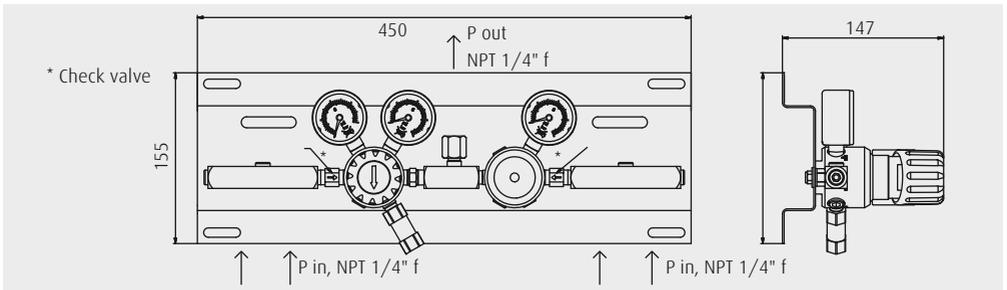
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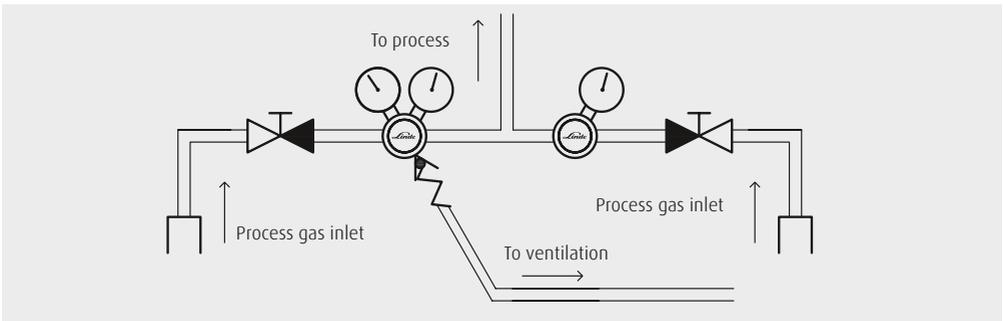
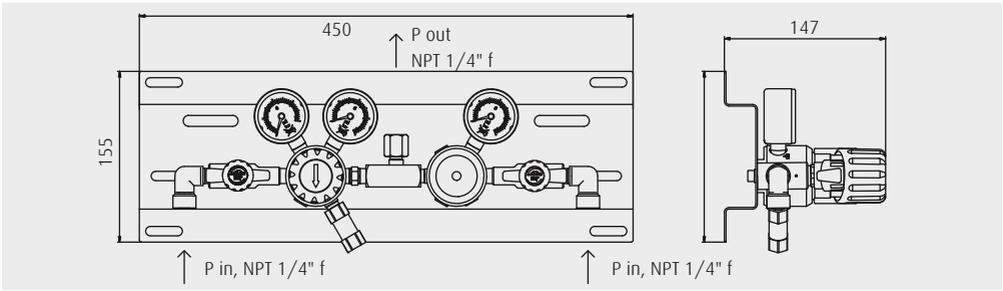
S101 C2



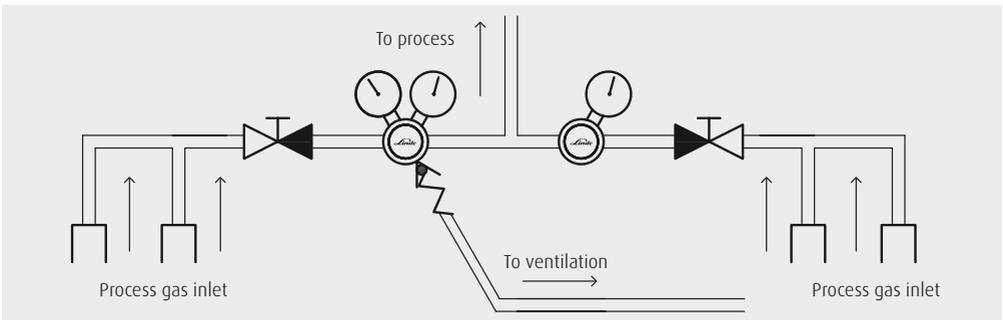
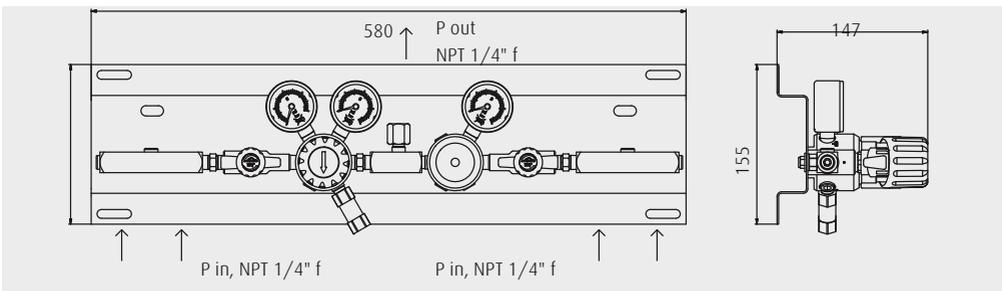
A 107 C2 with inlet check valves (not for oxygen)



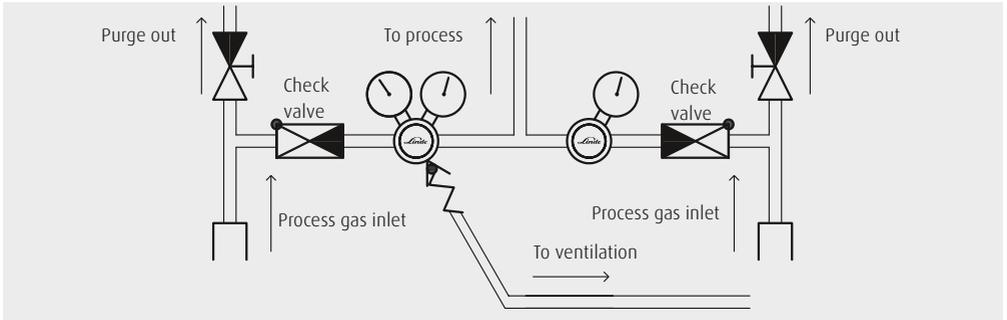
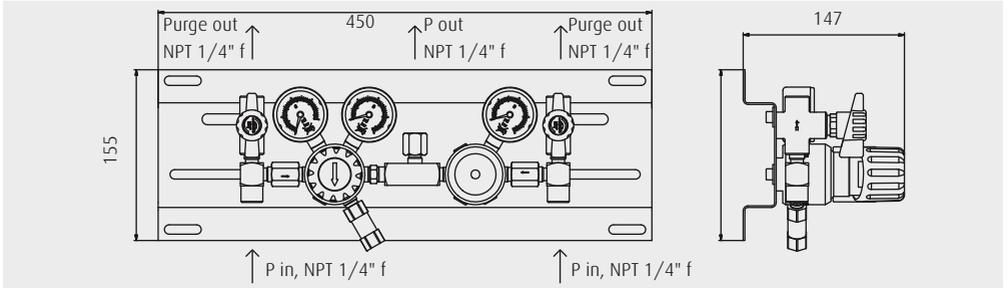
A 107 C4 with inlet check valves (not for oxygen)



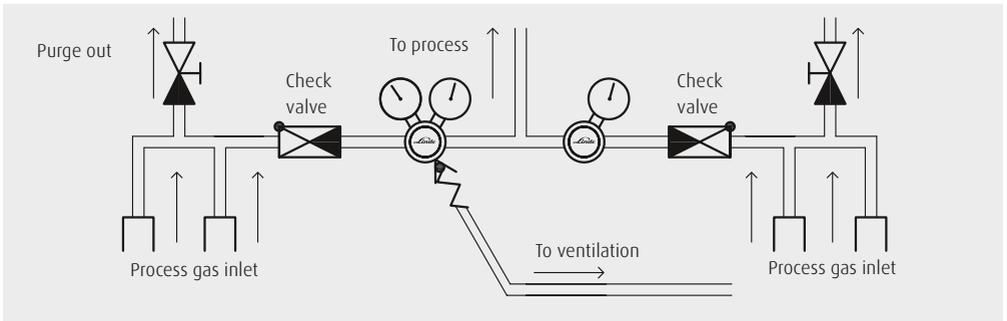
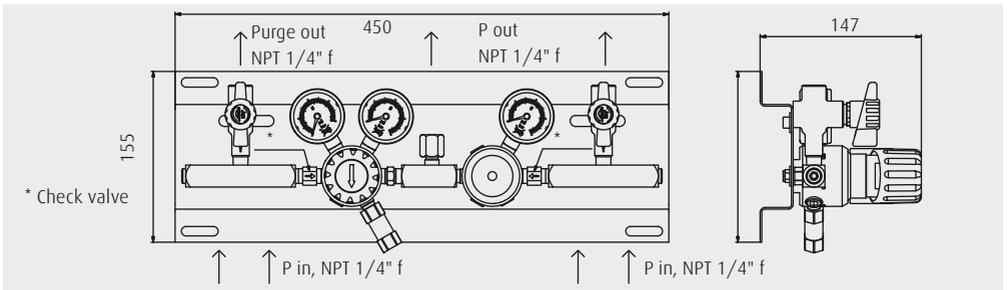
A 107 C2 with inlet shut-off valves



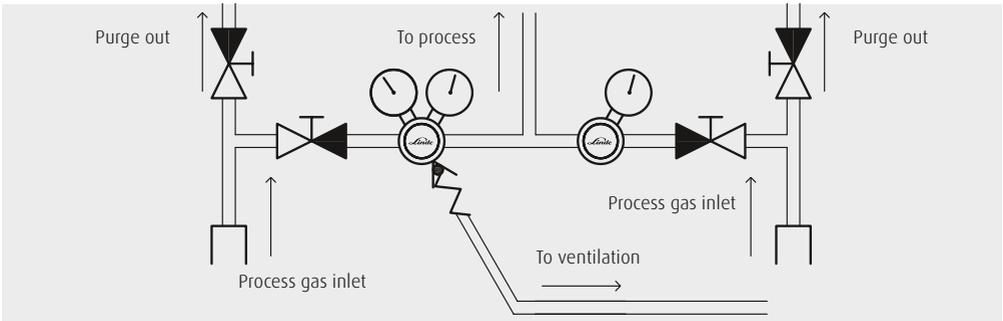
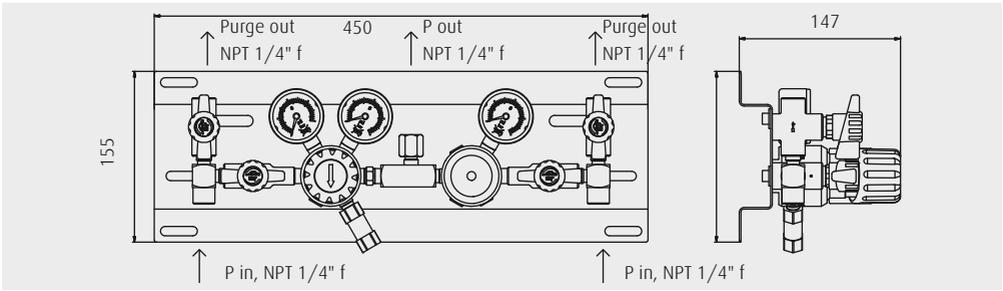
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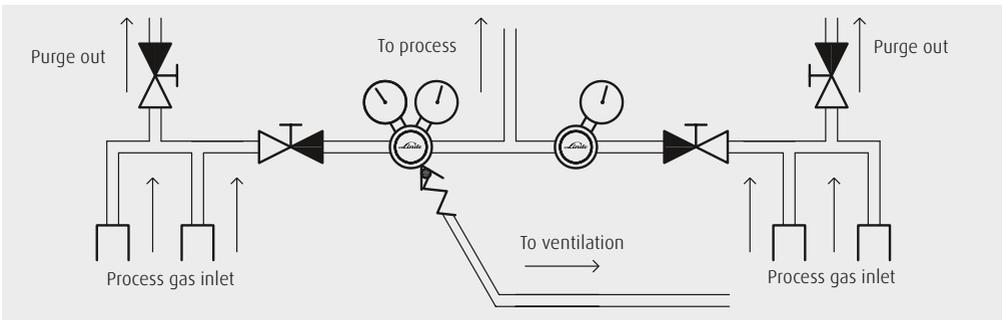
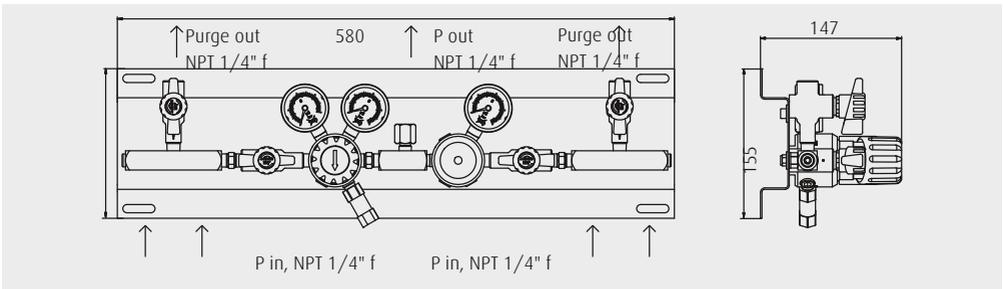
A 108 C2 with inlet check valves (not for oxygen)



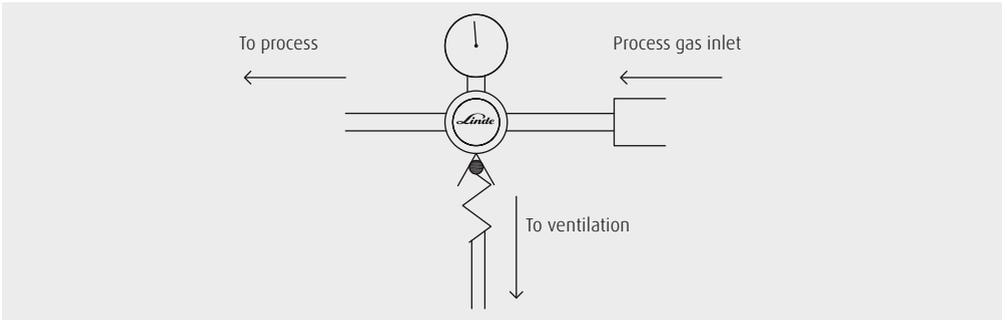
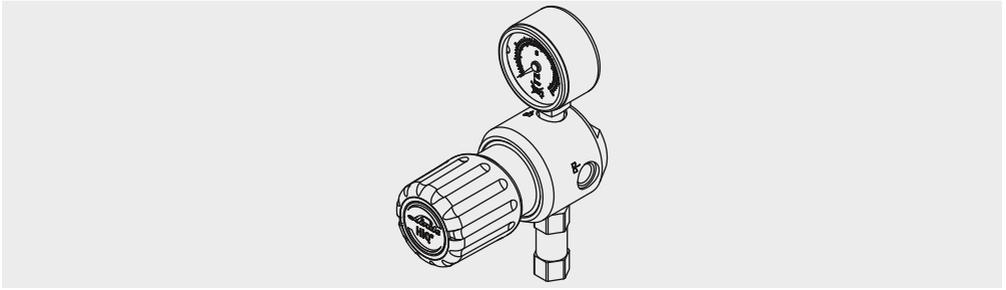
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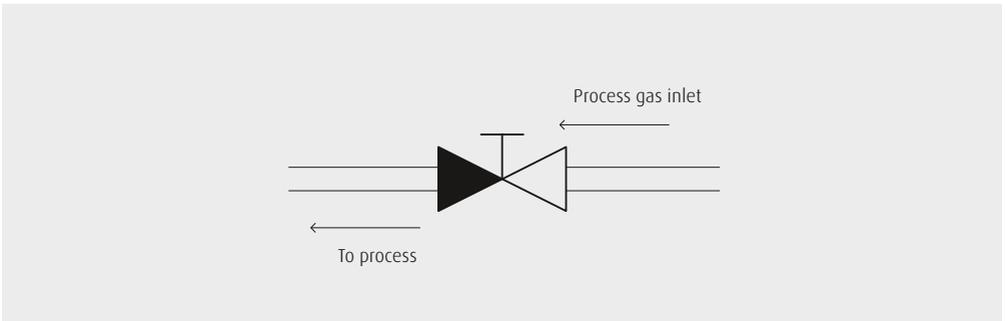
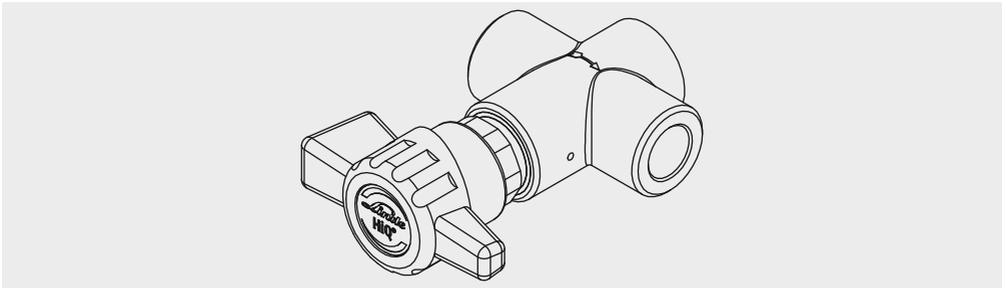
A 108 C2 with inlet shut-off valves



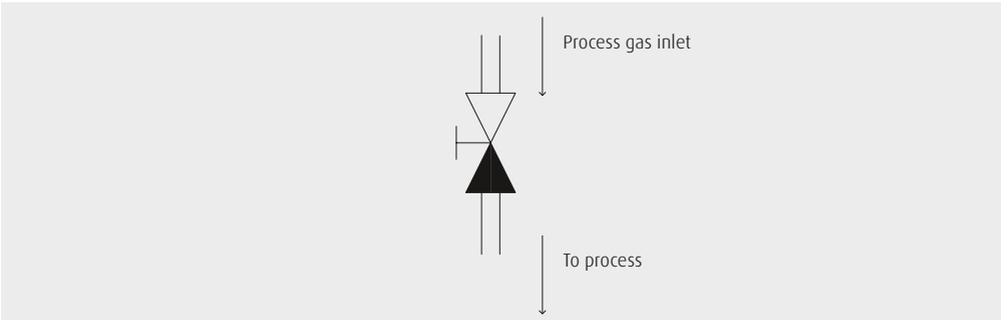
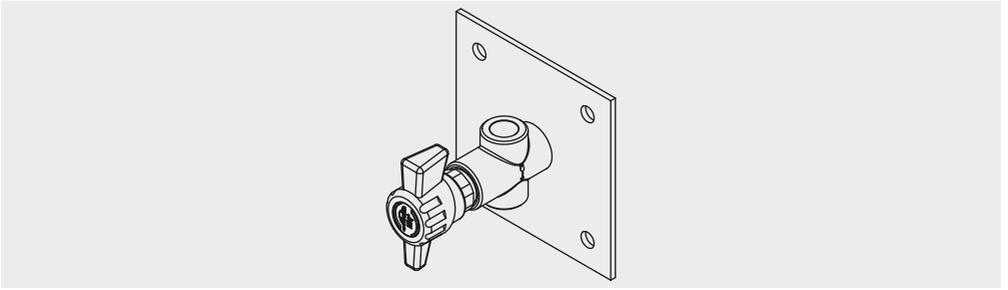
A 108 C4 with inlet shut-off valves



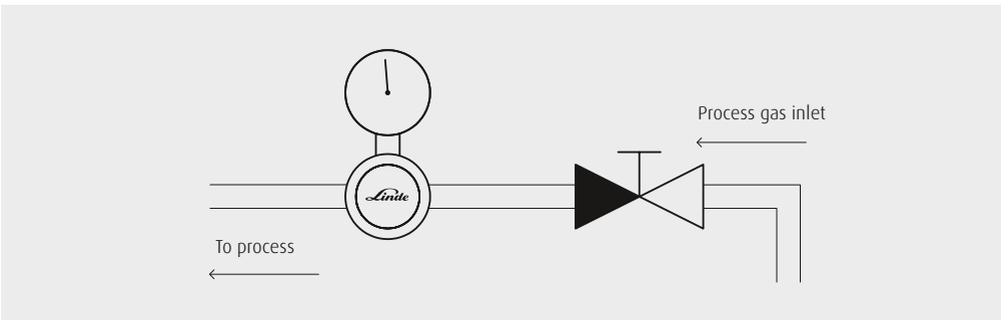
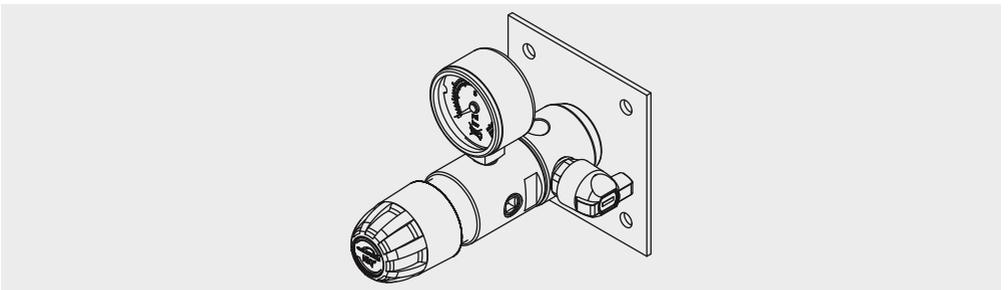
R 30



V 100



W 30 A



W 30 B

1. Scope.

These operating instructions only apply to the BASELINE™ gas supply panels, line regulators, valves and points of use supplied with this instruction by Linde Gas. These products are clearly identified with the name Linde on the operating or

pressure-regulating parts. If these BASELINE™ equipment have been integrated into gas supply systems, the operating instructions that apply to the gas supply system components must also be observed.

2. Basic safety advice.

2.1 Duty of care as a buyer

The buyer must take appropriate measures to ensure that the regulator is only operated by staff members who are familiar with the basic regulations on safety at work and accident prevention, have permanent access to these regulations, have read and understood the chapter on safety and the warning notices in these operating instructions and have been professionally trained to use BASELINE™ equipment. The buyer must verify at regular intervals that users demonstrate an appropriate level of safety awareness. In addition, the buyer must ensure that responsibilities for assembly, start-up and operation are clearly defined.

Personnel in training may only operate pressure regulators under the supervision of an experienced operator. The buyer must further ensure that all safety and warning notices are clearly legible in a readily accessible place.

2.2 Duty of care as a user

All operators of pressure regulators must observe the basic rules and regulations on safety at work and accident prevention. They must also familiarise themselves with the safety regulations that apply to the gas or gas mixtures being used and with these instructions.

2.3 Intended use

The pressure regulator is to be used exclusively to withdraw gas from pressurised cylinders or as a secondary control device for gas pipeline systems. Any other or wider use renders the pressure regulator unfit for purpose. The operator's duty to use as intended encompasses the duty to observe all notices in the operating instructions, comply with the service and maintenance work required and pay close attention to the nameplates and the data sheets.

2.4 Explanation of warning notices

The following warning notices are used in these operating instructions:

Danger



This notice means an immediate threat to life and the health of people. Failure to observe this notice can result in serious health-damaging effects, including life-threatening injuries.

Warning



This notice means a possible threat to life and the health of people. Failure to observe this notice can result in serious health-damaging effects, including life-threatening injuries.

Caution



This notice warns of a possibly dangerous situation. Failure to observe can lead to minor injuries or damage to property.

2.5 Warranty and liability

This equipment is sold by Linde Gas under the guarantee set forth in the following paragraphs. This guarantee only applies to equipment purchased directly from Linde or its authorised agents as new merchandise, and only applies to the first buyer thereof and not to devices that have been resold.

For a period of one (1) year from the date of original delivery (90 days if used in corrosive service) to the buyer, this equipment is guaranteed to be free of functional defects in material and workmanship and to conform to the description contained in this manual and any accompanying labels and/or inserts, provided that the same is properly operated under conditions of normal use and further that regular periodic maintenance and service are performed or replacements made in accordance with the instructions provided. The foregoing guarantee shall not apply if the equipment has not been repaired by Linde Gas or a designated service facility or in accordance with written instructions provided by Linde Gas, or if it has been altered by anyone other than Linde Gas, or if the equipment has been subject to abuse, misuse, negligence or accident. Linde Gas' sole and exclusive obligations and the buyer's sole and exclusive remedies under the above guarantee are limited to the free-of-charge repair or replacement, at Linde's discretion, of the equipment or part which is reported to the Linde Gas authorised agent from whom it was purchased and which, if so advised, is returned with a statement of the observed deficiency and proof of purchase no later than seven (7) days after the expiration date of the applicable guarantee to the nearest designated service facility during normal business hours, transportation charges prepaid, and which, upon examination, is found not to comply with the above guarantee. Return trip transportation charges for the equipment or part shall be paid by the buyer.

Linde Gas shall not be otherwise liable for any damages including but not limited to incidental damages, consequential damages or special damages, whether such damages result from negligence, breach of guarantee or otherwise.

There is no express or implied guarantee which extends beyond the guarantee outlined here. Linde makes no guarantee of merchantability or fitness for a particular purpose with respect to the equipment or parts covered under this warranty.

Furthermore, the provisions under the paragraph "Guarantee" in the general conditions for the supply of plant and machinery for export, ECE188, shall also apply.

2.6 Leakage of harmful gases and vapours

Very hazardous, hazardous or slightly hazardous gases can pose a danger to the operator and co-workers if a malfunction in the equipment or a leak in the gas supply occur. Malfunctions in the pressure equipment or operation of pressure relief valves, additional safety relief valves or purge valves can result in the release of hazardous gases to the work environment. When using hazardous gases, operators must therefore pay particular attention to ventilation and evacuation safety guidelines. Pressure relief valves, additional safety valves and purge valves should always be safely vented through secure piping. Any leakages must be disposed of safely and in an environmentally friendly manner in accordance with local regulations.

Operators must be familiar with the particular dangers of the gas or mixtures they are using. They must be kitted out with the appropriate

personal protective equipment and observe all measures necessary for safe operation of pressure equipment.

2.7 Information on special types of gas

All parts that come into contact with oxygen must be completely free of oil, grease and particulate matter to avoid danger of ignition and/or explosion. If a lubricant is required, only lubricants that are approved for oxygen service can be used. Tubing or other parts made of copper must not be used with acetylene. It is important that operators are aware of the hazards of these two and other reactive gases and take appropriate precautions.

Please note, that not all BASELINE equipment has suitable oxygen service solutions. Please refer to datasheets for further information.

2.8 Design changes to the equipment

Without written permission from Linde, no changes, extensions or redesigns are to be carried out on any of the BASELINE equipment.

2.9 Cleaning the regulator

Oily rags and grease are not suitable for cleaning the equipment due to the risk of contamination. Similarly, solvents must not be used for cleaning.

3. Storage and transport.

All pressure equipment must be cleaned and stored in a dust-free, dry and well-sealed environment. Do not use cleaning agents containing solvents! Before returning pressure equipment to Linde, all

components that have been in contact with corrosive or toxic gases must first be purged with an inert gas.

4. Technical data.

4.1 Data sheets

All technical data is contained in the BASELINE data sheets issued by Linde. These are valid along with the general operating instructions. Specifically, the data sheets outline the maximum permissible inlet pressure, the operating range of the regulator, the external dimensions, leak-tightness and the permissible operating temperature range.



Please pay close attention to the information contained in the "Connections" and "Start-up" sections below.

4.2 Gas supply panel (S100, S101, A107, A108), line regulators (R30)

All inlet and outlet ports on the gas supply panel feature NPT ¼" internal threads. Gas supply panels can be connected to gas cylinders, cylinder bundles or other gas containers via stainless steel coils or high-pressure hose assemblies. Coils or hoses may contain NPT ¼" adaptors. If not, these may need to be ordered separately to connect to the panel.

Linde regulators R30 act as the in-line second pressure stage of a central gas supply system. They are usually connected via compression fittings to the gas supply piping.

Cylinder connections have different threads and sizes depending on the type of gas used. Do not use adaptors or change cylinder connections at the high pressure hose assembly or coil.

4.3 Point-of-Use (PoU) outlet (W30A, W30B)

All ports feature G¼" internal threads. PoU outlet are placed at the end of a gas supply system. They are usually connected via compression fittings to the gas supply piping.

4.4 Shut-off valves (S/O), check valves (CV)

The standard semi-automatic switch-over gas supply panels contains a shut-off valve or check valve on each inlet side. The version with check valves are not suitable for oxygen service.

Danger



Do not use the check valve version with oxygen. In rare cases this can result in oxygen ignition. Always use shut-off valves for oxygen.

PoU regulator W30A is a low-pressure S/O valve mounted on a plate. PoU regulator W30B contains a low-pressure S/O valve in the outlet.

If a gas supply panel or PoU regulator including an S/O valve is installed, the S/O valve is closed by turning the knob in clockwise direction and opened by turning it anti-clockwise.

5. Marking.

The nameplate lists the model number and serial number of the pressure equipment as well as the manufacturer's name. It also includes basic information about the material, manufacturing date, inlet pressure (P_{IN}) and outlet pressure (P_{OUT}).

Caution



Only use equipment approved for the gas type and operating pressures required. The maximum intended inlet pressure is listed on the pressure equipment. Failure to observe the intended use can pose a danger to the life and health of people and a risk of damage to equipment or fittings.

6. Connection.

Panels and coils or hoses

Danger



The thread on the cylinder valve and swivel nut must show no signs of damage, dirt, grease, oil, foreign matter or metal shavings. The same applies to all threads on the high-pressure side.

Warning



Only use new gaskets. Gaskets must not be deformed or show traces of dirt or metal shavings.

Warning



Do not overly tighten the mounting fitting as this could damage the thread and the gasket. This can result in leakage, uncontrolled release of gas or loss of the entire cylinder or gas supply contents.

Caution



Before connecting the equipment, check that it is suitable for the planned application (type of gas, pressure, etc.)

Preparation

Only use panels, coils or hoses with cylinder connections which correspond to the type of gas being used and the valid national standards for cylinder connections.

Connecting to gas cylinder

1. Screw the swivel nut of the coil or hose onto the valve connection on the cylinder by hand. Pay attention to right-handed and left-handed threads! Align coil or hose. When mounting make sure the hose or coil is not turned.
2. Tighten the swivel nut with a suitable fork spanner.

Caution



Do not use a spanner extension as this could result in damage to the gasket and the thread.

This can lead to leakage and uncontrolled release of the gas (possibly also complete loss of gas!).

Connecting the outlet tubes to the panel

Tubes are usually connected with compression fittings. Insert the tube fully into the compression fitting. Then screw on the swivel nut by hand and tighten with a fork spanner (1 ¼ turn). Please pay attention to information provided by the manufacturer and verify the suitability of the materials for required gases and pressure ranges.

7. Start-up.

Danger



Before starting operation, check whether the pressure regulator to be used is suitable for the intended application (type of gas, pressure, material, etc.)

Warning



Before switching on the BASELINE equipment, ensure that no one can be endangered by the start-up procedure.

Preparation

Ensure that all fittings and connections are secure. Turn the handwheel of the regulator as far as it goes in an anti-clockwise direction to stop the gas flow. Close all valves.

Process gas withdrawal

S100, S102, A107, A108

Slowly open the valve on the pressurised cylinder. Watch the inlet pressure gauge.

A107, A108

The outlet pressure is preset at 14 bar. The gas supply panel is ready for use. Turn the handwheel of the left panel regulator anti-clockwise till the arrow on the label points to the right side.

A107 and A108 with inlet shut-off valves

Slowly open the inlet S/O valves by turning the knob anti-clockwise. When the right-hand cylinder is empty, the pressure regulator switches automatically to the left-hand cylinder.

W30A

Slowly open the shut-off valve, turning the knob anti-clockwise by 90°.

W30B, R30

Adjust the outlet pressure by turning the regulator handwheel clockwise.

8. Cylinder change.

Danger



When changing cylinders containing toxic, corrosive or hazardous gases, appropriate personal protective equipment must be worn (breathing apparatus, eye protection and protective clothing). Care must also be taken to ensure that maximum concentration thresholds at the workplace must not be exceeded! Purge, vent and/or dispose of the residual contents of all toxic, corrosive and hazardous cylinders in a safe and environmentally appropriate manner in accordance with local regulations.

To ensure a continuous supply of gas, the right-hand cylinder should be replaced promptly.

Preparation

Turn the handwheel on the left-hand pressure regulator clockwise to the right. The arrow on the label must point to the left side.

Tightly close the cylinder valve on the right-hand side (on the pressurised cylinder). Close the inlet S/O valve if there is one.

A108 only

Completely empty the inlet side by opening and closing the purge gas valve (outlet S/O valve).

Removing the empty cylinder and connecting the new cylinder

Disconnect the empty cylinder by using a suitable fork spanner to loosen the swivel nut from the cylinder valve connection of the coil or high pressure hose. Be aware that some connections have right-hand threads and some have left-hand threads.

Connect the new cylinder and open the cylinder valve (A107, A108).

A108 only

Purge the right-hand side with the process gas by briefly opening and closing the purge valve (outlet S/O valve) three times.

The left-hand cylinder ensures continuity of supply.

Once the cylinder is empty, the panel automatically changes over to the right-hand cylinder.

The entire procedure can be repeated once the change-over handwheel has been switched back to the right-hand side and the left-hand cylinder has been replaced.

9. Shutting down operations.

Caution



When shutting down the gas supply, the pressure in the equipment must be released by venting the gas in a safe manner. The pointers of the inlet and outlet pressure gauges must indicate no internal pressure.

9.1 W30 A

Close the valve by turning the knob clockwise.

9.2 W30 B

For short interruptions to work, it is sufficient to close the upstream shut-off valve clockwise. In

the case of longer stops, also turn the regulator handwheel in anti-clockwise direction to close the regulator.

9.3 R30

Release the pressure by turning the handwheel clockwise.

9.4 S100/S101/A107/A108 Gas supply panels

For safety reasons always close the cylinder valve.

Oxygen versions only

For short interruptions to work, it is sufficient to close the shut-off valves at each inlet side. For longer stops, always close the cylinder valves.

10. Maintenance and malfunctions.

10.1 Maintenance

The BASELINE equipment should be examined regularly and at least once a year to make sure it is working correctly and is not leaking. Maintenance and service staff must inform the operating personnel and users before commencing work. The power supply to all operating equipment must be shut off before service and maintenance work can commence, and the main switch must be secured to prevent it from being turned back on accidentally. Fittings which have come undone must be checked for correct positioning.

Once maintenance work has been completed, maintenance staff must ensure that all safety devices and installations are functional.

Danger



For safety reasons, repairs and/or maintenance work to BASELINE™ equipment should only be carried out by Linde Gas service agents or Linde-authorized service personnel.

10.2 Malfunctions

Experience has shown that BASELINE™ equipment is highly reliable.

Should any of the following malfunctions nevertheless occur, you should exchange the regulator or valve or gas supply panel and have the defective equipment repaired:

- Gas release at the outlet of the regulator or valve or gas supply panel when the handwheel is completely closed.
- Display of increasing pressure on the outlet pressure gauge when the valve is closed or no gas is flowing.
- Gas release at the regulator cover.
- Gas release at a gasket.
- Too high pressure drop with normal flow.
- Gas release at the pressure relief valve.
- Gas release at the pressure gauge.
- Pointer of a pressure gauge does not return to "0".
- Faulty pressure display.

11. Return of pressure equipment.

Danger



Pressure equipment can only be returned to Linde with prior authorisation. It must be completely depressurised, drained and purged with an inert gas. The packaging must be sealed (gas-tight) to prevent contamination or exposure during transport.

Danger



Observe local rules and legislation governing the transport and storage of hazardous goods and materials.

12. Manufacture.

Linde Gas reserves the right to make technical enhancements/changes to its products at any time without notice. All rights reserved.

Linde AG

Linde Gases Division, Seitherstrasse 70, 82049 Pullach, Germany
Phone +49.89.7446-0, Fax +49.89.7446-1230, www.linde-gas.com