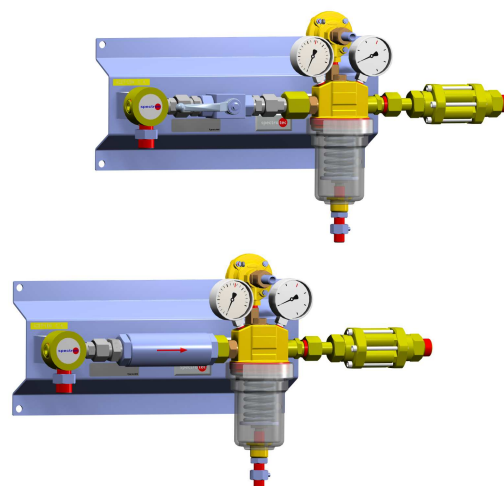


Contents

	Page
1 Use	1
1.1 Preliminary notes	2
1.2 Technical data	3
1.3 Labelling	3
2 Safety information	4
3 Installation	5
4 Commissioning	7
5 Cylinder change	7
6 Taking out of operation	7
7 Information on operation maintenance and storage	8
8 Repairs	8



1 Use

Pressure control panels are central supply devices supplying acetylene to one or several points of use. Pressure control panels are available in various models.

- ☒ Panel for connection of one cylinder
- ☒ Panel for connection of 2 to 6 cylinders, cylinders can be shut off individually.

The manifold pressure regulator reduces of up to approximately 18 bar at 20 °C to an outlet pressure value of max. 1.5 bar and maintains it constant at that level as far as possible.

A manual quick-acting shut-off valve (ball valve) is mounted in the pressure control panel upstream of the manifold pressure regulator. A decompression arrestor is mounted downstream of the manifold pressure regulator.

The pressure regulator is equipped with an over-pressure valve. This limits the operating pressure in the downstream pipeline to a maximum of 1.5 bar.

The over-pressure valve (SV 73) is not a safety valve as defined by ISO 4126-1.

A line shut-off valve must be installed in the pipeline behind the pressure control panel. This is not necessary if there are tapping points located directly behind the pressure control panel. The content of the gas cylinders can be monitored by installing contact pressure gauges in combination with a gas shortage signalling device.

To ensure correct handling of the pressure control panel, these instructions, in particular the safety instructions, must be complied with.

Note

The materials and production processes used are designed for the intended use.

The pressure control panels design uses state-of-the-art technology and sound engineering practice and meets the requirements of the pertinent standards and directives, as well as those of DIN-EN-ISO 14114 and DIN-EN-ISO 15615; in particular the regulations for the use of acetylene.

The components are manufactured with the utmost care and under clean conditions in special workshops, where they are subject to continuous quality controls throughout the production process.

Each complete system and its individual components are tested for correct function and leak-tightness, thus ensuring compliance with the exacting Spectron quality standards.

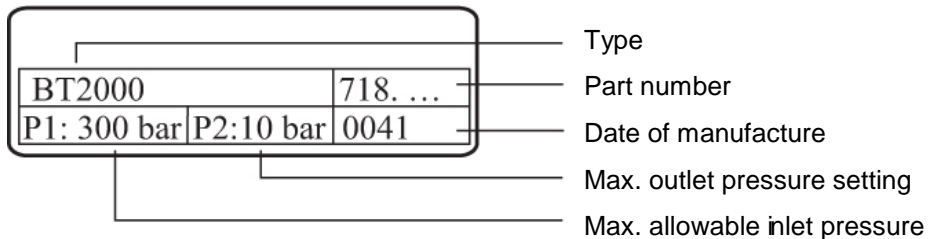
In many countries acetylene systems are subject to specific laws that require a full system check within regular time periods. It is imperative for the operator of such systems to verify the legal situation.

1.1 Technical data

SPECTROTEC	BU13 AC
Inlet pressure P_1 :	max.25 bar
Outlet pressure P_2 :	max.1.5 bar
Flow rate Q (per cylinder):	approx. 0.5 m ³ /h in continuous operation, for brief periods 1 m ³ /h per cylinder
Connection:	G 3/4 "-LH (male thread in acc. with DIN-EN 560)*
Outlet decomposition arrestor:	G 3/4 " (male thread in acc. with DIN-EN 560)*
Materials:	
Regulator body:	brass
Diaphragms:	EPDM
Valve cone:	PA 12
Mounting plate:	stainless steel
Pipes and screw fittings:	steel, galvanized
Weight:	
BU 13 AC (man. quick-acting shut-off)	9.6 kg
BU 13 AC (autom. quick-acting shut-off)	12.9 kg
Shut-off unit:	5.9 kg
Extension:	1.9 kg
* Other connections conforming to relevant national standards possible	

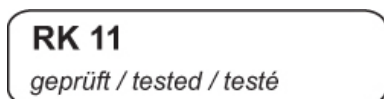
1.2 Labelling

On the baseplate of the pressure control panel, there is a type plate with information on:



Inspection sticker

Prior to delivery, all BU13 AC pressure control panels undergo a 100% leak and function test. To document this, an inspection sticker is attached on the mounting plate on the back of each panel.



2 Safety information

2.1 Handling combustible gases

Specialist knowledge is required when handling acetylene. The instructions in this manual and the pertinent local regulations must be complied with.

Training and regular safety training for operating personnel on the correct procedures for handling this system, combustible gases and pressurized gas vessels is mandatory and must be repeated annually. Incorrect handling and/or use of the system can endanger operating personnel and other persons, and can lead to damage to the system and the surrounding area. This instruction manual must be available to operating personnel at all times.

2.2 Manifold size and output

The withdrawal rate per acetylene cylinder should not exceed 500 l/h in continuous operation. This prevents solvent being withdrawn from the cylinders. For brief periods, the withdrawal quantity can be increased to 1000 l/h per cylinder.

2.3 Gas-specific design

The pressure control panel may only be used for acetylene. Alternating use for other gases is not permitted. It is also prohibited to attach adapters to the cylinder connection. The materials and seals have been selected for gas type "acetylene."

2.4 Resistance of the materials

The resistance of the materials can only be guaranteed with the use of dry gas and if lines and fittings are dry-purged. Incorrect installation and leaking screw fittings can reduce the service life of the equipment.

2.5 Regulations, directives, technical specifications

A series of regulations must be observed when installing and operating acetylene cylinder manifolds. For example, the systems created must comply with the following regulations and rules.

2.5.1 Accident prevention regulations

- BGR 500 (Chap. 2.26, 2.31, 2.33)
-

2.5.2 Laws, ordinances, technical regulations

- ☞ EU Pressure Equipment Directive 97/23/EC
- ☞ Industrial health and safety ordinance
- ☞ Explosion Protection Directives Atex 95 and Atex 137
- ☞ Guidelines for the prevention of ignition hazards as a result of electrostatic charging.
- ☞ The installation of electrical equipment in potentially explosive atmospheres. VDE 0170/DIN 57 165
- ☞ Employers' liability insurance association leaflet on preventing the explosion of acetylene cylinders.
- ☞ Code of practice Acetylene (EIGA IGC-Doc 123/04/E)

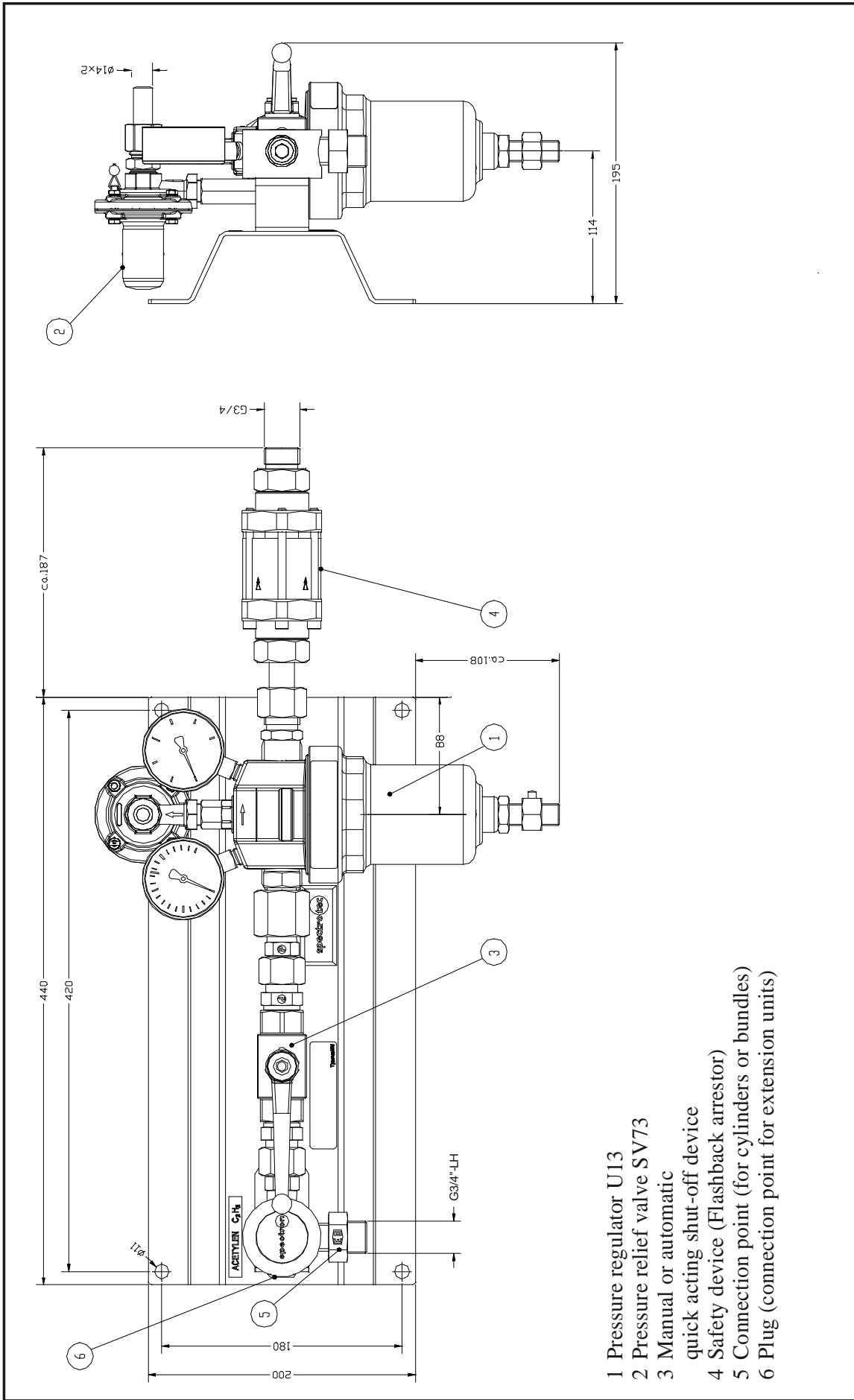
3 Installation

- 3.1 Installation must be performed by personnel with the requisite expertise and who have received the appropriate training and instruction on safety engineering. These courses of instruction must be repeated at specified intervals.
- 3.2 All parts of the pressure control panel are leak and function tested prior to delivery. All apertures are closed off. The necessary seals and labeling form part of the scope of delivery. As far as possible, the equipment is delivered pre-assembled.
- 3.3 Attach the baseplate, any extensions and the cylinder brackets to the wall with the screws provided.
- 3.4 The waste gas line on over-pressure valve SV73 (Pos. 2) is connected by welding it to the 14x2 port.

Important note:

Pipelines for acetylene must not be made of copper or alloys with more than 70% Cu. This applies to the piping system to the tapping points and to the waste gas lines under Point 3.4. Steel pipes in accordance with TRAC 204 Point 4 are permissible.

- 3.5 Place the cylinders in front of the brackets and secure with safety chain or strap.
- 3.6 Check that the gas cylinder valve connections and threads, hose line connection and seal are undamaged (if necessary, briefly blow out with compressed air). The high-pressure hose line must not be connected if there is any damage.
- 3.7 Connect the pressure control panel and the gas cylinder with the high-pressure hose.
- 3.8 Leak test
After installation and prior to commissioning, the entire system must be tested for leakage.
- 3.9 Test before putting into operation for the first time
 - ☒ Equipment
 - ☒ Installation location (protection zone, ex-zone, floor)
 - ☒ Mechanical strength
 - ☒ Documents on tests performed and material certification



- 1 Pressure regulator U13
- 2 Pressure relief valve SV73
- 3 Manual or automatic quick acting shut-off device
- 4 Safety device (Flashback arrestor)
- 5 Connection point (for cylinders or bundles)
- 6 Plug (connection point for extension units)

4 Commissioning

- 4.1 The instructions in this manual must be read prior to commencing work and complied with.
- 4.2 Check that the pressure control panel is labelled as approved for use with the specific gas type.
- 4.3 Unscrew the handle of the pressure regulator by turning it anti-clockwise (1). (Regulator spring is relieved).
- 4.4 Close ball valve (3).
- 4.5 Secure full cylinder with the chain of the cylinder bracket. Remove protective cap. Check connecting surfaces and connection gaskets. Replace damaged or worn gaskets in the side port of the gas cylinder valve.
- 4.6 Slowly open the gas cylinder valve.
- 4.7 Slowly open ball valve (3).
- 4.8 Set the pressure regulator (1) to the desired outlet pressure by screwing in the handle. The setting is limited to 1.5 bar in all operation situations. The limiting device must not be removed or modified!
- 4.9 Slowly open the main shut-off valve downstream of the pressure regulator so that the pressure in the downstream line builds up slowly, then fully open the main shut-off valve. The connected equipment can now be put into operation. Check the pressure at the manifold pressure regulator (1) and adjust if necessary.

5 Cylinder change

- 5.1 Close the gas cylinder valve.
- 5.2 Close ball valve (3).
- 5.3 Unscrew the yoke-connector on the gas cylinder valve. Screw the protective cap onto the gas cylinder. Release the chain of the cylinder bracket. Remove the cylinder.
- 5.4 Proceed as described in Point 4.

6 Taking out of operation

- 6.1 Close all cylinder valves.
- 6.2 Close ball valve (3).
- 6.3 Relieve the pressure regulator (1) by unscrewing the handle (inlet and outlet pressure gauges read 0 bar).
- 6.4 Close main shut-off valve.
To put the equipment into operation again, proceed as described in Section 4.

7 Information on operation, maintenance and storage

7.1 Pressure control panels must be protected against damage at all times.

7.2 Protection zones
Welding, naked flames, incandescent objects, naked lights and smoking are prohibited within this area. Highly flammable and explosive substances or materials are prohibited within this area.

7.3 The set limits of the pressure regulator (1) and the pressure relief valve (2) must not be changed.

7.4 Ensure that connection gaskets (in the gas cylinder valve), sealing surfaces and pressure gauges are in perfect condition.
Use a foaming agent to check all sealing points at regular intervals for leak-tightness.

7.5 In the event of malfunctions, the equipment must be taken out of operation as described in Section 6.

7.6 General conditions for transport and storage.

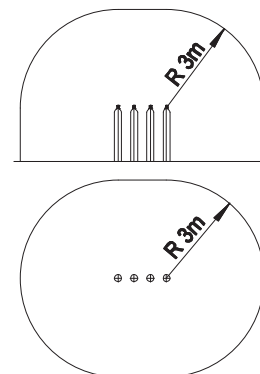
Transport and storage:	-30 °C to +60 °C
Atmospheric conditions:	50% rel. humidity at 40 °C
	90% rel. humidity at 20 °C

Environment: Ambient air must be free from unusually high quantities of dust, acids, corrosive gases or substances such as smoke, steam, oil vapour etc.

Note: The operation of the pressure control panels under extreme weather conditions, in particular on the coast or on board ships, vibrations and shocks all impairing function and safety must be avoided.

Operation in conditions deviating from those stipulated above can be agreed upon in consultation between the manufacturer and the user.

Protection areas for acetylene cylinder manifolds of up to 6 cylinders



8 Repairs

8.1 For safety reasons, repairs must be carried out in authorised workshops, by the manufacturer or suitably qualified personnel.

8.2 Only original spare parts must be used.

8.3 After every repair, the panel must be checked for correct functioning and leak-tightness.

8.4 The manufacturer accepts no liability for repairs not effected in authorised workshops, if the panels are modified or if non-original spare parts are used. In such cases, the warranty is rendered null and void with immediate effect.

8.5 The system should be tested for correct functioning and operational safety once per year by the manufacturer.

8.6 Annual inspection of the flashback arrestors and other safety devices attached to the tapping points downstream of the pressure control panel is prescribed by law. The operator must provide verification of this.