

6. Shut-down

- 6.1 Close all valves.
- 6.2 Open the valve behind the CRT 60 and close again.
- 6.3 Depressure the adjusted regulator completely by exhausting all gas (outlet pressure gauges indicate 0 bar).
- 6.4 Unscrew the adjusting spindle of the regulator.

7. Repair

- 7.1 Repairs may only be carried out in authorised workshops by expert persons (Ask your local dealer for further information!).
- 7.2 Only original spare parts must be used. The materials have been adapted to the gas type in each instance. So always specify the gas type.
- 7.3 After repair, the pressure regulator must be completely checked against proper function, leak-tightness and cleanliness of the gas-wetted surfaces. When the system is used again, a sufficient purging operation must be carried out first.
- 7.4 In the event of unauthorised repairs or alterations by the user or by third or use of non-original spare parts, any form of liability for resulting damages as well as the manufacturer's warranty will expire.

Instruction for use CRT 60-I Tapping point system



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CRT 60-1V

1. Application

1.1 Designated use

Use the tapping point system CRT 60 for gases dissolved under pressure, compressed gases or liquefied gases. The tapping point system CRT 60 reduces an inlet pressure to an as constant as possible outlet pressure.

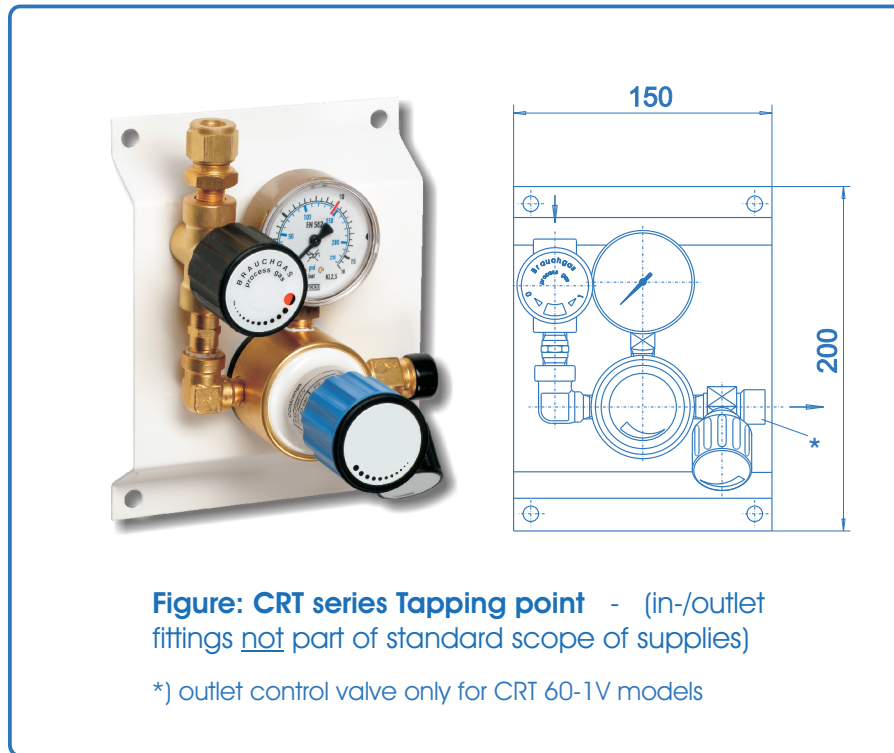
1.2 Non-designated use

- Do not use the CRT 60 for gases in the liquid phase.
- Do not use unsuitable gas types or corrosive gases.
- Do not use the CRT 60 at temperatures below -30°C or above +60°C.



The instruments has to be used according to these operating instructions and especially the safety instructions!

1.3 Dimensions



4. Start-Up

- ⚠ Before starting the first time, the complete pressure control panel must be purged through to the point of use. If corrosive gas is to be used as the process gas, dry inert gas must be used for purging.
- 4.1 Before starting read the specifications of this instructions for use and observe it while working.
- 4.2 Unscrew the adjusting knob of the regulators (to depressure the regulator) and close all valves.
- 4.3 Gradually open the cylinder valve.
- ⚠ 4.4 Set the regulator to the required outlet pressure by screwing in the adjusting knob, ensuring that any audible vibration of the regulator is avoided at all costs when filling the line connected downstream.
- 4.5 Check the complete control panel and all threaded connections for leaks.

5. Operation and maintenance

5.1 General information

In order to ensure safe, trouble free operation, it is essential to take into account to the configuration of the entire system, when selecting a pressure regulator. The function of the pressure regulator, compatibility of the materials, correlating temperature ranges, correct installation, operation and maintenance in accordance with the regulations are the responsibility of the system designer and the user.

5.2 Malfunctions

In case of malfunctions, e.g. an increase in the outlet pressure during the withdrawal, or in case of leakage versus atmosphere or a defective pressure gauge, shut down the laboratory tapping point system and close all shut-off valves immediately. Shut-off the upstream gas supply and replace the pressure regulator.

5.3 Materials

For applications involving purity gases, long-term resistance is only guaranteed when dry gas and dry-purged components are used. Incorrect handling or not completely dry gases can result in material attrition and limitation of service life.

We therefore recommend pressure regular inspection of the fittings at suitable intervals according to the conditions of use.

The pressure regulator must be stored in a dry place in order to prevent the penetration of air moisture.

3.5 Mount the connection to the gas supply/ discharge line in the clamping ring connection of the shut-off valve.

- Insert the burr-free pipe fully into the screwed connection.
- Tighten the union nut by hand.
- Tighten the union nut by 1/4-turns with a suitable spanner while providing a counter grip with a second spanner

3.6 Support sleeves must be used to ensure a proper connection of plastic hoses with clamp connections.

Hoses which are attached to hose coupling nipples must be ensured with hose clips.

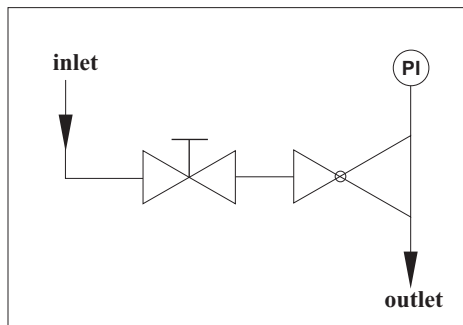


Check their suitability for the application (rated pressure).

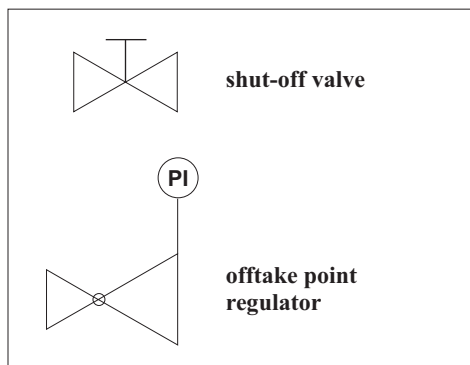


3.7 After connection to the supply system, check all connections for leaks, e.g. with a helium mass spectrometer. Before starting up, the tapping point must be purged with dry inert gas (pressure build-up purging 5-10 times)..

Flow diagram



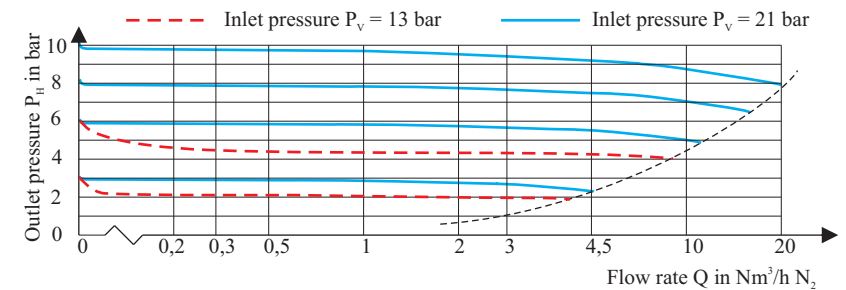
Legend



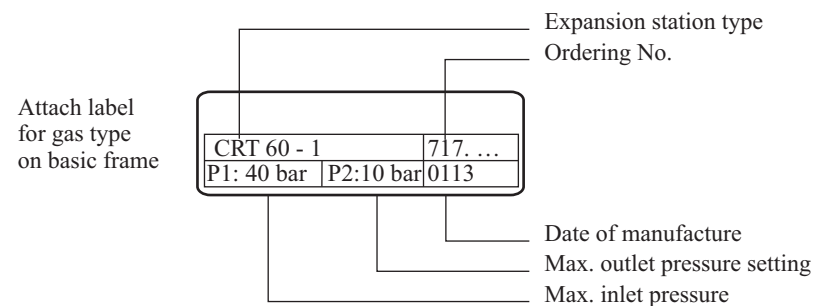
1.4 Technical data

Inlet pressure:	max. 40 bar (see nameplate)
Outlet pressure:	1.5/ 4/ 10/ 20 bar (see nameplate)
Flow rate:	see flow curves
Materials:	
Valve seat in regulator:	PA 11
Regulator body and valve body:	brass/ nickel plated
Valve seat:	PVDF
Regulator diaphragm	
(P _{in} =4/10/20 bar):	stainless steel 1.4310
Elastomers:	Viton (FKM)
Filter	sintered stainless steel 1.4404
Inlet connection:	1/4 - 18 NPT female
Outlet/ regulator:	1/4 - 18 MPT female
Operating temperature:	-30°C to +60°C
Helium leak rate:	
to atmosphere:	1 x 10 ⁻⁸ mbar l/s He
via seat:	1 x 10 ⁻⁶ mbar l/s He
Pressure gauge:	Safety pressure gauge EN 562/C1. 1.6/NG 50 mm

Flow curve



1.5 Labeling (Name plate)



2. Safety instructions

- 2.1 All items of information marked ▲ are valid as special safety instructions.
- 2.2 Changes or modifications are not allowed to be made to the laboratory tapping point system without the prior consent of the manufacturer.
- 2.3 The result of improper handling and improper use as intended can involve risks for the user and other persons as well as damage to the device.
- ▲ 2.4 This laboratory tapping point system is only allowed to be used for the gas type for which the device was put into service for the first time and for which the device has been labelled. Alternating use of the device for different gases is not permitted.
- ▲ 2.5 The laboratory tapping point system must not be exposed to ambient temperatures below -30°C and above +60°C as well as to an air humidity of more than 90% at 20°C. The same applies to ambient air pollution due to large quantities of dust, large salt or acid shares as well as other corrosive shares.
- ▲ 2.6 This laboratory tapping point system should also not be exposed to extraordinary operating conditions such as impacts, vibrations or oil vapour. In some cases, it may be necessary to contact the manufacturer for further information.
- ▲ 2.7 Don't use for gases in the liquid phase.
- 2.8 Accessories must be suitable for the gas type being used and for the pressure range (see Item 1.4). It is also important to provide a proper connection between the accessories and the laboratory tapping system.
- ▲ 2.9 All parts coming into contact with oxygen must be kept in oil-free and grease-free condition.
- ▲ **Fire or explosion hazard!**
- 2.10 Smoking or open fires in the vicinity of your oxygen supply system is strictly prohibited!
- ▲ **Fire or explosion hazard!**
- 2.11 Use a clean, dry cloth or a cloth moistened with clean water to clean the laboratory tapping point device always on the outside only and never on the inside!
- 2.12 The following directives, regulations and guidelines, among others, must be observed. In accordance with §27 of the Accident Prevention Regulation VGB 61 Gases, the owner-operator must set up and lay out operating instructions for gas systems so that these instructions are accessible to all employees. In accordance with §29 of VBG 61, gas systems are only allowed to be operated and serviced by persons who, before starting their job activity, have been properly instructed and informed about:
- the special risks that exist when working with gases,
 - the safety regulations,
 - the measures to be taken in case of accidents or malfunctions,
 - the operating instructions and the use of protective equipment.
- Accident Prevention Regulation BGV A1 "General Regulations"
- Accident Prevention Regulation BGV D2 "Working on Gas Lines"
- Accident Prevention Regulation BGV B6 "Gases"
- Accident Prevention Regulation BGV B7 "Oxygen" Guidelines, information sheets
- ZH 1/119 Guidelines for Laboratories
- Special attention has to be paid to the country specific laws, regulations and procedures concerning the use of this type of equipment.**

3. Installation

- 3.1 Screw regulator and shut-off valve on to the mounting plate with the M5 screws provided.
- 3.2 Connection of NPT fittings in the shut-off valve or regulator - wind Teflon tape (PTFE) clockwise around tapered ¼ - 18 NPT thread (wind around 5 to 10 times) leaving the first thread turn free. Screw the parts together, ensuring a gas-tight seal.
- 3.3 Secure the base section to the wall with the two 8x60 dia. wood screws provided. (Fig. 1)