KIESELMANN
FLUID PROCESS GROUP

Translation of the original

Operating Instructions

Bunging valve

Type: 6254 - 6255

spring loaded
for steam and gas



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1 General informations

1.1 Informations for your safety

We are pleased that you have decided for a high-class KIESELMANN product. With correct application and adequate maintenance, our products provide long time and reliable operation.

Before installation and initiation, please carefully read this instruction manual and the security advices contained in it. This guarantees reliable and safe operation of this product and your plant respectively. Please note that an incorrect application of the process components may lead to great material damages and personal injury.

In case of damages caused by non observance of this instruction manual, incorrect initiation, handling or external interference, guarantee and warranty will lapse!

Our products are produced, mounted and tested with high diligence. However, if there is still a reason for complaint, we will naturally try to give you entire satisfaction within the scope of our warranty. We will be at your disposal also after expiration of the warranty. In addition, you will also find all necessary instructions and spare part data for maintenance in this instruction manual. If you don't want to carry out the maintenance by yourself, our KIESELMANN - service team will naturally be at your disposal.

1.2 Marking of security instructions

Hints are available in the chapter "safety instructions" or directly before the respective operation instruction. The hints are highlighted with a danger symbol and a signal word. Texts beside these symbols have to be read and adhered to by all means. Please continue with the text and with the handling at the valve only afterwards.

Symbol	Signal word	Meaning
	DANGER	Imminent danger which will result severe personal injury or death.
	WARNING	Imminent danger which may result severe personal injury or death.
	CAUTION	Dangerous situation which may cause slight personal injury or material damages.
	NOTICE	An harmful situation which may result in damages of the product itself or of adjacent vicinity.
	INFORMATION	Marks application hints and other information which is particularly useful.

1.3 General designated use

The fitting is designed exclusively for the purposes described below. Using the fitting for purposes other than those mentioned is considered contrary to its designated use. KIESELMANN cannot be held liable for any damage resulting from such use. The risk of such misuse lies entirely with the user. The prerequisite for the reliable and safe operation of the fitting is proper transportation and storage as well as competent installation and assembly. Operating the fitting within the limits of its designated use also involves observing the operating, inspection and maintenance instructions.

1.4 Personnel

Personnel entrusted with the operation and maintenance of the tank safety system must have the suitable qualification to carry out their tasks. They must be informed about possible dangers and must understand and observe the safety instructions given in the relevant manual. Only allow qualified personnel to make electrical connections.

1.5 Modifications, spare parts, accessories

Unauthorized modifications, additions or conversions which affect the safety of the fitting are not permitted. Safety devices must not be bypassed, removed or made inactive. Only use original spare parts and accessories recommended by the manufacturer.

1.6 General instructions

The user is obliged to operate the fitting only when it is in good working order. In addition to the instructions given in the operating manual, please observe the relevant accident prevention regulations, generally accepted safety regulations, regulations effective in the country of installation, working and safety instructions effective in the user's plant.

2 Safety instructions

2.1 Intended use

The bunging valve is primarily intended to be used to hold the pressure of gaseous media in tanks and containers consistently and to prevent overpressure's if the safety function is set.

2.2 General notes



NOTICE - observe the operating instructions

To avoid danger and damage, the fitting must be used in accordance with the safety instructions and technical data contained in the operating instructions.



NOTICE

All data are in line with the current state of development. Subject to change as a result of technical progress.

2.3 General safety instructions



⚠ WARNING

Risk of injury by outflowing medium

Dismantling the valve or valve assemblies from the plant can cause injuries.

- Medias flowing through the leakage drain outlet are to be drained off without splashing into a discharge arrangement.
- Carry the disassembling only if when the plant has been rendered pressure-less and free of liquid and gas.



⚠ WARNING

Use in EX areas

If the valve or the plant is operated in a potentially explosive atmosphere, the valid directive and the installation instructions in this operating manual must be observed.



⚠ WARNING

Risk of injury by outflowing medium

With pressure greater than the set pressure the gaseous or liquid media will radial escape into the atmosphere via outlet drillings.

- It is necessary to install protection and drainage devices.



⚠ CAUTION

Before starting the system, the entire pipeline system must be thoroughly cleaned.



⚠ CAUTION

Steps should be taken to ensure that no external forces are exerted on the fitting.

3 Delivery, transport and storage

3.1 Delivery

- Immediately after receipt check the delivery for completeness and transport damages.
- Remove the packaging from the product.
- Retain packaging material, or expose of according to local regulations.

3.2 Transport



⚠ CAUTION

Risk of injury and damage to the product

During the transport the generally acknowledged rules of technology, the national accident prevention regulations and company internal work and safety regulations must be observed.

3.3 Storage



NOTICE

Damage to the product due to improper storage!

Observe storage instructions

avoid a prolonged storage



INFORMATION

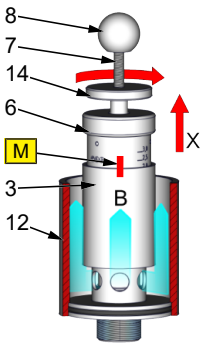
Recommendation for longer storage

We recommend regularly checking the product and the prevailing storage conditions during long storage times.

- To avoid damage to seals and bearings,
  - products up to DN 125 / OD 5 inch should be stored horizontally for maximum 6 months.
  - products larger than DN 125 / 5 inch, should be stored in the upright position with the actuator on top.
- Don't store any objects on the products.
- Protect the products for wetness, dust and dirt.
- The product should be stored in a dry and well ventilated room at a constant temperature (optimal indoor temperature: 25 C ±5 ; indoor humidity data 60% ±5%).
- Protect seals, bearings and plastic parts for UV light and ozone.

4 Function and operation

4.1 Description of function



The bunging valve is used to prevent inadmissible overpressure of gaseous media in tanks, containers and plant sections. Generally, the set pressure is greater than the operating pressure. The valve opens against a spring force if the operating pressure increases to the set pressure. With pressure increase analogous to the opening characteristic, the flow volume is constantly conveyed depending on the max. permissible operating pressure.

To the visual control the glass cylinder (12) is filled with a liquid. Pressure excesses of gaseous condition media in the outlet opening "B" thereby get visible.

4.2 Manual operation

Manual operation

The manual lifting device serves to manually actuate the valve.

- Short term lifting of the valve takes place by pulling on the spindle (7) via the spherical button (8) and/or the lifting nut (14) in the direction X. This will raise the valve and the medium disperses via outlet B.
- For a longer lifting of the valve (e.g. when cleaning), the lifting nut (14) is turned in a clockwise direction to the adjusting nut (6). Now mark (M) the position with a pen/pencil. nscrew the adjusting nut (6) anticlockwise using 2 complete turns. The valve will be raised and the medium disperses via outlet B.

In order to close the valve, the adjusting nut (6) is turned in an anticlockwise direction using 2 complete turns as far as the mark. Screw the lifting nut (14) anticlockwise as far as the spherical button (8) and tighten.

4.3 Pressure setting

The set pressure can be adjusted by turning the adjustment nut (6) and can be read off about a scale on the adjustment nut (6).

INFORMATION

The positioning of the lifting nut (14) is tightened in the operating mode using the spherical button (8).

Were the lifting to come and rest upon the adjusting nut (6) the valve would not close tight enough to ensure a seal against the leakage.

5 Commissioning, service and maintenance

5.1 Commissioning

5.1.1 Installation instructions



Fitting position

The bunging valve must be installed vertically at connection "A" (see illustration).

Functional check

You should check for proper closing after installation by manually aerating the valve disk (2). Additionally, you should test for proper performance in the operating state according to the specified performance data.

5.1.2 General welding guidelines

Sealing elements integrated in weld components must generally be removed prior to welding. To prevent damage, welding should be undertaken by certified personnel (EN ISO 9606-1). Use the TIG (Tungsten Inert Gas) welding process.

⚠ CAUTION

Damage and injuries due to high temperature supply

To avoid a distortion of the components, all welding parts must be welded to stress-relieved.

Allow all components to cool before assembling.

NOTICE

Damage due to impurities

Impurities can cause damage to the seals and seals area.

Clean inside areas prior to assembly.

5.1.3 Use in EX area

For valves or plants/installations that are operated in the ATEX area, sufficient bonding (grounding) must be ensured. (see e.g. ATEX Directives EC; UKSI 696:2019-Schedule 25)

5.2 Maintenance

RECOMMENDATION

Replacement of seals

To achieve optimal maintenance cycles, the following points must be observed!

- When replacement of seals, all product-contacting seals should be replaced.
- Only original spare parts may be installed.

Maintenance interval

The maintenance intervals depend on the operating conditions "temperature, temperature-intervals, medium, cleaning medium, pressure and opening frequency". We recommend replacing the seals 1-year cycle. The user, however should establish appropriate maintenance intervals according to the condition of the seals.

Lubricant recommendation

	EPDM; HNBR; NBR; PTFE; FKM; k-flex	-	Klüber Paraliq GTE703*
	Silicone	-	Klüber Sintheso pro AA2*
	Thread	-	Interflon Food*

*) It is only permitted to use approved lubricants, if the respective fitting is used for the production of food or drink. Please observe the relevant safety data sheets of the manufacturers of lubricants.

5.3 Cleaning

Cleaning

The optimal cleaning is performed when the valve is opened. For this, open the valve with the manual lifting lever. (seeManual operation [▶ 8]).

6 Technical data

Valve size	DN 20	
Connection	• Thread RA 1 Inch DIN 11851 • Liner/nut DIN 11851	
Temperature range	Ambient temperature: Operating temperature: Sterilization temperature:	+4 to +45°C (air) +0 to +95°C (medium dependent) EPDM +140°C (SIP 30 min)
Pressure range	0,2 - 2,2 bar 0,3 - 3,0 bar 1,1 - 3,2 bar	
Material: (in product contact)	Stainless steel:	1.4301 / AISI 304 1.4404 / AISI 316L
	Surfaces:	Ra ≤ 0,8µm e-polished
	Sealing material:	EPDM

Setting range		
Item number	**Working area**	**Opening-/ Permissible closing differential**
6254 020 110 - xxx 6255 025 110 - xxx	0,2 - 2,2 bar	± 0,1 bar
6254 020 240 - xxx 6255 025 240 - xxx	0,3 - 3,0 bar	± 0,1 bar (>2 bar ± 0,2 bar)
6254 020 200 - xxx 6255 025 200 - xxx	1,1 - 3,2 bar	± 0,1 bar (>2 bar ± 0,2 bar)

7 Disassembly and assembly

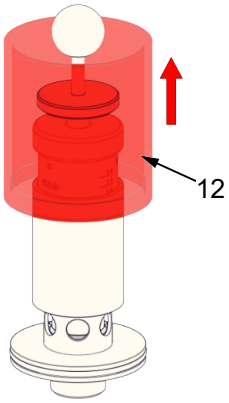
7.1 Disassembly

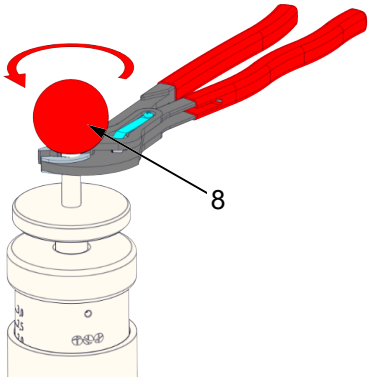
NOTICE

All screw connections have right-handed threads.

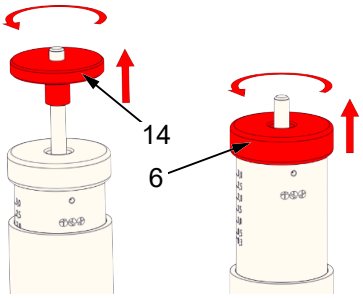
Bunging valve with manual operation

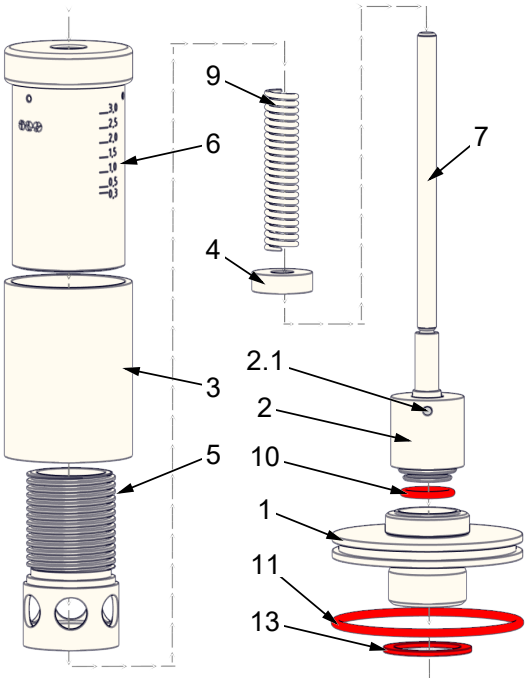
- Evacuate the liquid from the glass cylinder.
- Slide glass cylinder (12) upwards from the tightly seat (1).





- Unscrew the spherical button (8).
- Unsrew spherical button (14).
- Unscrew adjustment nut (6). The tension from the pressure spring (9) is completely released.





- Remove distance (3).
- Remove the pressure spring (9) and the spring disc (4).
- Unscrew the housing (5) from tightly seat (1).
- Remove the spindle (7) with valve disc (2).
- Remove O-ring (10), (11) and seal (13).

NOTICE! For bunging valves without manual operating, the dowel pin (2.1) and the lifting nut (14) are be dispensed with.

7.2 Assembly

Assembly

- Thoroughly clean and slightly lubricate mounting areas and running surfaces.
- Assemble in reverse order.



NOTICE

Alternately press and roll the O-ring (10) into the groove with round body.

Functional check

Check the function according to the specified performance data in the operating state.

8 Drawings and dimensions

8.1 Drawings

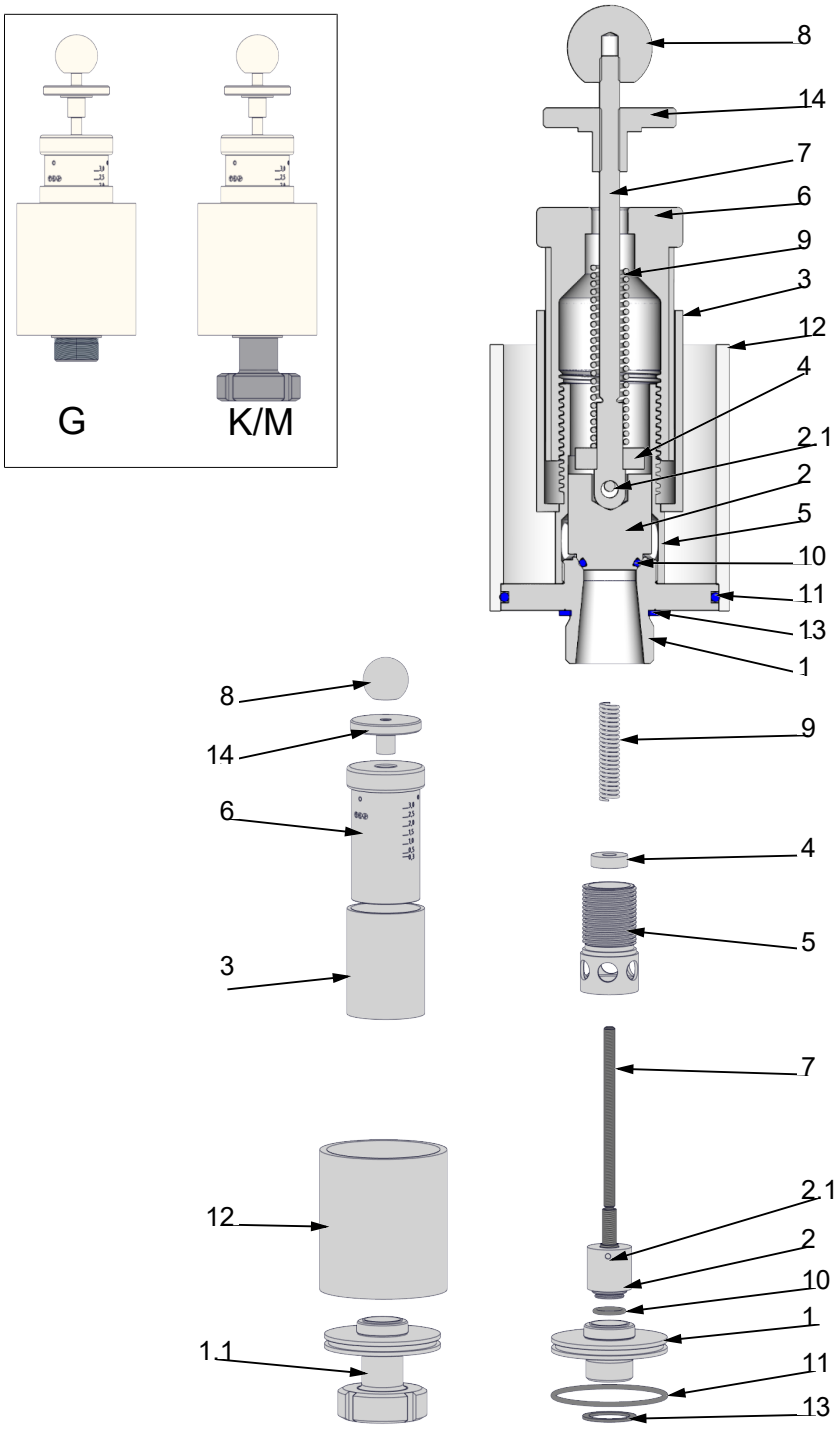


Fig. 1

1	Tightly seat -Thread	5	Housing	11	O-ring
1.1	Tightly seat -Liner/nut	6	adjusting nut	12	glass cylinder
2	Piston	7	Spindle	13	Seal
2.1	Dowel pin optional	8	spherical button	14	Lifting nut optional
3	Distance	9	Compression spring		
4	Spring disc	10	O-ring		

8.2 Dimensions

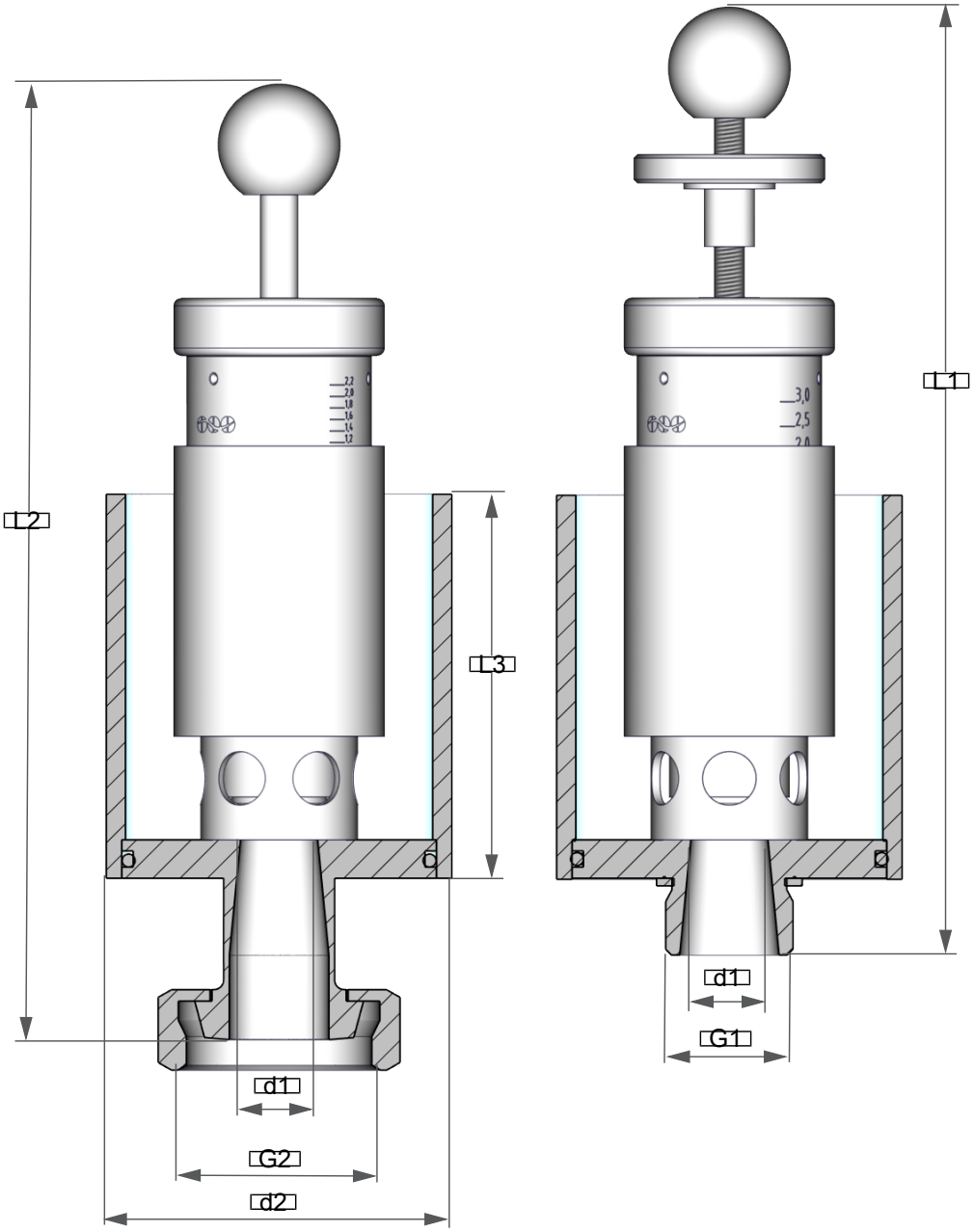


Fig. 2

Type	d1	d2	G1	G2	L1	L2	L3
6254, 6255	20	90	1	Rd 52x1/6	207 - 227	229 - 275	100

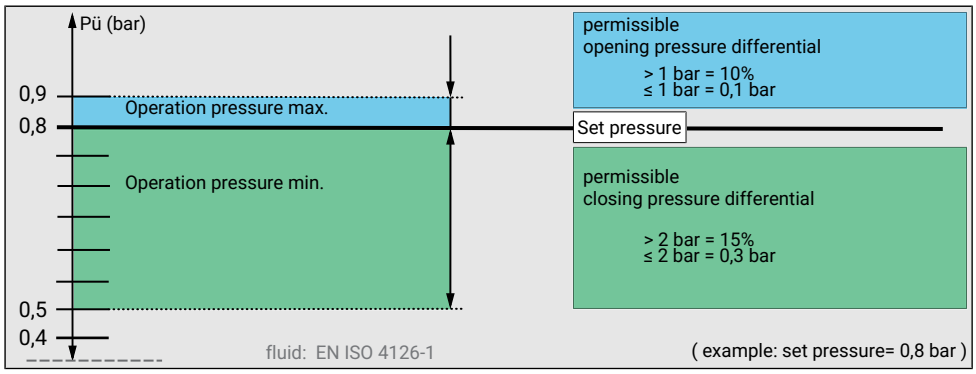
9 Wearing parts

Pos.	Designation	Material:	Item number
10	O-ring	EPDM	2304 015 030-086
11	O-ring	NBR	2304 069 035-055
12	glass cylinder	PMMA	6254 020 001-077
13	Seal	NBR	2353 038 029-077

10 Characteristic curves

10.1 Opening & closing characteristics

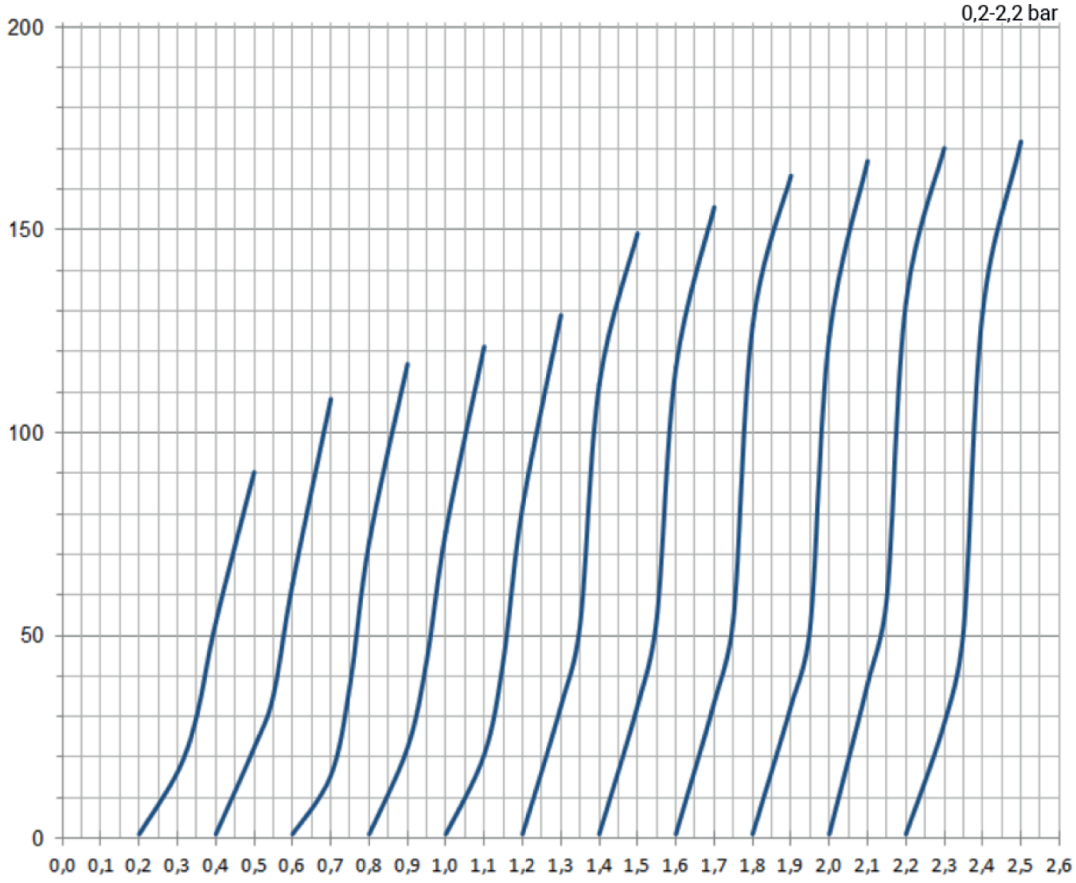
- Opening and closing characteristics for gas (air) 20°C



10.2 Performance chart

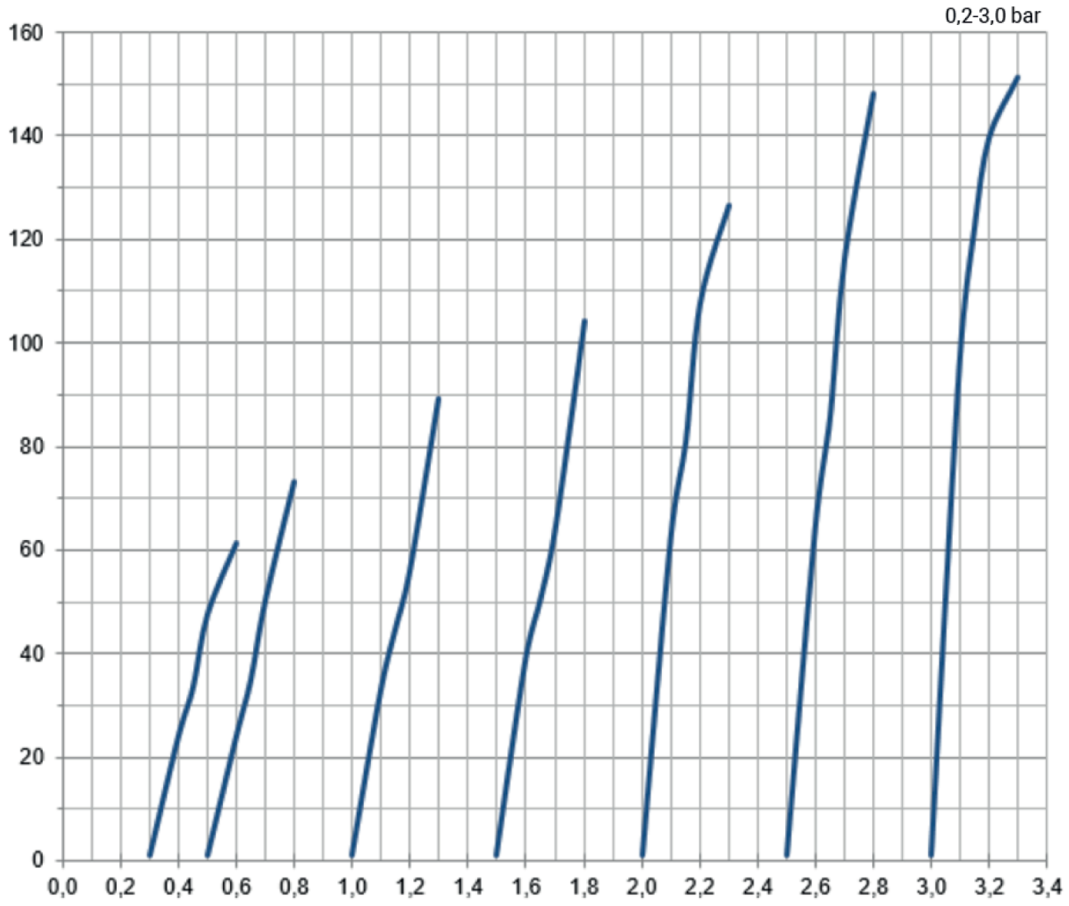
Working area 0,2 - 2,2 bar

Set pressure	Closing pressure	Flow rate [m³/h] at set pressure			
bar	bar	+0.1 bar	+0.15 bar	+0.2 bar	+0.3 bar
0.2	0.2	16.3	30.1	53.3	90.3
0.4	0.4	22.4	35.2	62.8	108.3
0.6	0.5	15.5	37.8	73.1	116.9
0.8	0.7	22.4	43.8	75.7	121.2
1.0	0.9	20.6	43.8	81.7	129.0
1.2	1.1	32.6	52.6	111.9	149.2
1.4	1.3	32.7	54.2	116.1	155.6
1.6	1.5	33.5	54.2	126.4	163.4
1.8	1.7	32.6	51.8	123.6	167.0
2.0	1.9	38.1	59.2	132.1	170.2
2.2	2.1	28.4	51.1	129.7	171.8



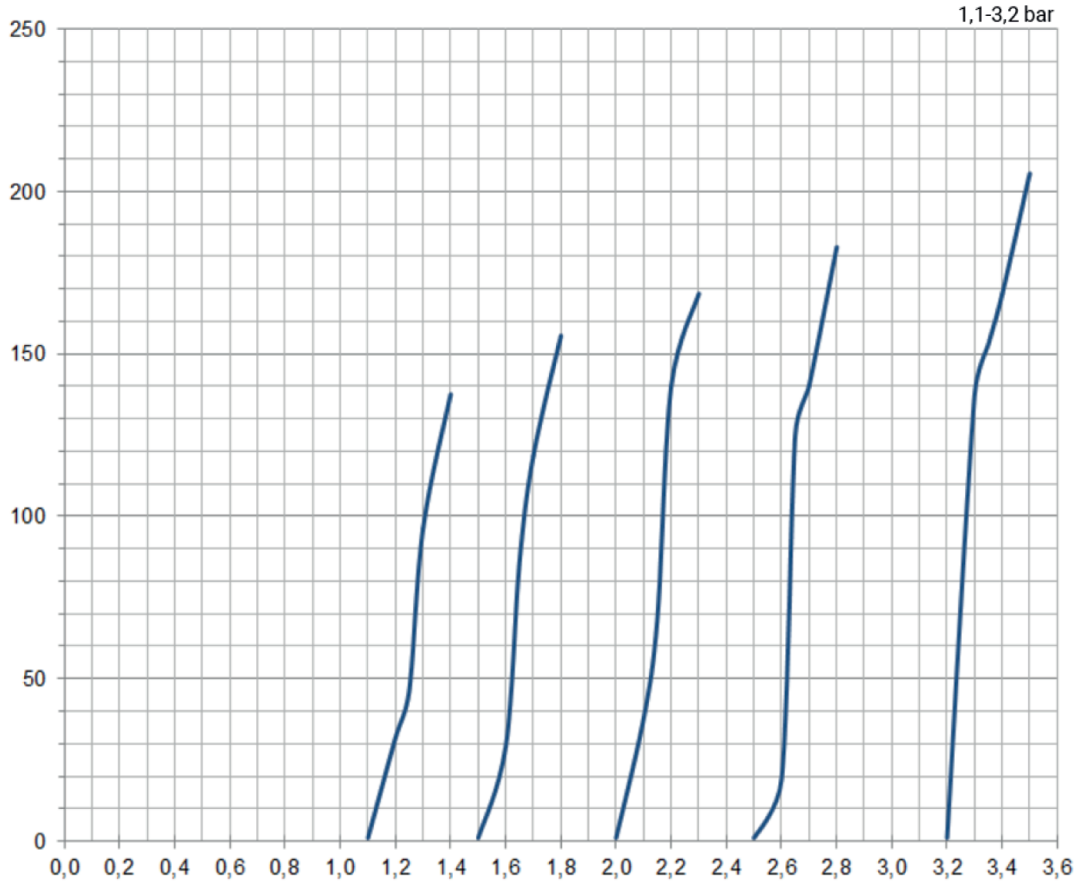
Working area 0,3 – 3,0 bar

Set pressure	Closing pressure	Flow rate [m³/h] at set pressure			
bar	bar	+0.1 bar	+0.15 bar	+0.2 bar	+0.3 bar
0.3	0.25	22.8	33.4	47.5	61.3
0.5	0.4	24.1	35.0	50.3	73.4
1.0	0.9	32.9	44.6	55.8	89.3
1.5	1.4	39.0	50.5	63.9	104.2
2.0	1.9	63.4	80.8	107.7	126.7
2.5	2.3	64.9	85.5	116.0	148.0
3.0	2.8	97.4	122.2	139.6	151.4



Working area 1,1 – 3,2 bar

Set pressure	Closing pressure	Flow rate [m³/h] at set pressure			
bar	bar	+0.1 bar	+0,1,5 bar	+0.2 bar	+0.3 bar
1.1	1.0	31.8	46.4	96.3	137.6
1.5	1.4	29.2	86	118.6	155.6
2.0	1.9	37.8	68.8	140.1	168.5
2.5	2.4	19.2	125.3	140.3	182.9
3.2	3.1	137.6	153.0	168.4	205.5



11 Appendix

11.1 Declaration of incorporation

Declaration of Incorporation

according to Directive 2006/42/EC of the European Parliament and the Council of 17 May 2006

Manufacturer:
KIESELMANN GmbH
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D-75438 Knittlingen

We declare that the following pressure equipment

Designation	Function
Pneumatic Linear actuator	pneumatically operation of valves
Pneumatic Quarter-turn actuator	pneumatically operation of valves
Butterfly Valve (pneumatically operated)	Separation of medium flow
Ball Valve (pneumatically operated)	Separation of medium flow
Single seat Valve (pneumatically operated)	Separation of medium flow
Changeover Valve (pneumatically operated)	Separation of medium flow
Double-Seat mixproof Valve (pneumatically operated)	Separation of medium flow
Control Valve (pneumatically operated)	Regulation of medium flow
Throttling Valve (pneumatically operated)	Regulation of medium flow
Tank Outlet Valve (pneumatically operated)	Separation of medium flow
Sampling Valve (pneumatically operated)	Separation of medium flow

complies with the definition of an „incomplete machine“ according to Article 2 of the European Machinery Directive 2006/42/EG, when fitted in or merged with other machines or incomplete machines which also comply with the provision of the Directive.

Applied harmonized standards:

Directive 2014/68/EU
EN ISO 12100

Person responsible for documentation:

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Documentation / Development
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Knittlingen, 10.10.2020

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