



# Installation and operating instructions

*gas flow control valve SVL*



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## **Antriebs- & Regeltechnik**

### **Schimpf GmbH**

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This documentation includes specifications for the relevant products but does not guarantee that they have any particular properties. We reserve the right to make changes to reflect technological advances.

Edition: 07/2023

### **Liability and guarantee**

Schimpf Ex & Gas GmbH accepts no liability or guarantee whatsoever in the event of the improper installation or use of the flow control valve. The technical specifications and safety instructions provided by us must be observed.

## Safety instructions for maintenance and installation



- **The control valve may only be installed, maintained and commissioned by qualified specialists!**



- **Before installing or maintaining the control valve, all affected devices/machines/systems must be switched off! The gas supply must be disconnected!**



- **Before switching off devices/machines/systems, it is important to check that it is safe to do so.**



- **Make sure that no danger to people, the environment and devices/machines/systems can result from installation or maintenance work!**



- **The control valve may only be repaired by the manufacturer.**
- Shutdowns may only be carried out after prior consultation with the plant manager, shift supervisor or safety engineer!
- Malfunctions must be reported immediately to the plant manager, shift supervisor or safety engineer in order to avoid danger!
- When installing or maintaining the control valve, the applicable safety and accident prevention regulations of the employers' liability insurance association must be observed!
- Before installing an actuating drive, check that the control valve is moving freely!
- Before installing/maintaining the control valve, make sure that the safety devices are functioning correctly!
- After completing the installation, check whether the settings on the drive correspond to the mechanical position of the control valve! This applies in particular to the end positions!
- Permissible settings for the control valve must be implemented in accordance with the operating instructions of the gas consumption device.



- **Do not open the screws securing the console to the housing. Make sure that the sealant on the screw plugs is intact. If there is visible damage to the sealant, the control valve may no longer be used and must be serviced by the manufacturer.**



- **A leak test and function check must be carried out after any work on the control valve.**

## Device safety



- **In order to keep the control valve in a safe condition, it is imperative that installers/users strictly adhere to the manufacturer's instructions in this documentation and have the appropriate professional qualifications.**

- The control valves may only be used for their intended purpose!
- The control valve may only be operated with an actuating mechanism intended for this purpose (actuator, hand lever, etc.).
- The control valve may only be operated in accordance with the values specified in the technical specifications!
- The control valve must not be installed, commissioned or adjusted on damaged supply lines or flanged system parts! The same requirements apply to damaged actuating drives!



- **Take care when touching the surfaces of the control valve. Danger of burns or frostbite.** Depending on the permissible media temperature, the surfaces of the control valves can become hot or very cold. **The operator must ensure that the necessary protection against contact is provided.**

## ***Function and intended use***

The gas flow control valves SVL are used to adjust the volume of gas and cold air in gas and air consumption units. They can be used with attached actuator or hand lever for volume flow control in modulating or stage-controlled combustion processes.

The gas flow control valves operate with a rotatable cylinder for volume control. The control cylinder is provided with an opening. Depending on the opening angle between 0° and 90°, a cross-section of different size is released for the medium. Depending on the model, the control cylinder is provided with an opening of different size in order to obtain correspondingly graduated volume flows. The control cylinder is designed for an approximately linear relationship between volume flow and opening angle. The currently set opening angle can be read off via an integrated position indicator. A stop is provided at approx. -5° and approx. 95°. The stops can be removed individually if necessary.

The gas flow control valves are designed for installation in the pipeline via female threaded connections. The flange plates required for this must be purchased separately. The flange plates are available in several gradations with Rp or NPT threaded connections from ½" to 2".

**Important:** **The control valves are not designed to securely stop the gas supply.**



gas flow control valve SVL with flange Rp 1 ¼ "

## ***Approval***

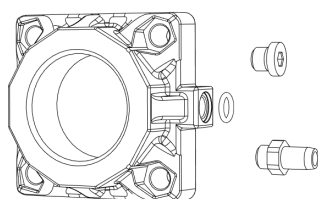
EU type examination certificate no. **C5A 116408 0005** in accordance with EU Regulation 2016/426 (Regulation on appliances burning gaseous fuels)

UK type examination certificate no. **C5AUK 116408 0006** in accordance with „Gas Appliances (Enforcement) and Miscellaneous Amendment Regulations, UKSI 2018:389 (as amended by UKSI 2019:696)“

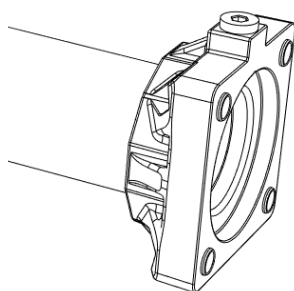
# Installation

## Steps

**Important:** The “Safety instructions for maintenance and installation” and the “Installation instructions” listed in this document must be observed when installing the control valve. Before installing the control valve, all affected devices/machines/systems must be switched off and, if necessary, disconnected from mains power! The gas supply must be disconnected!

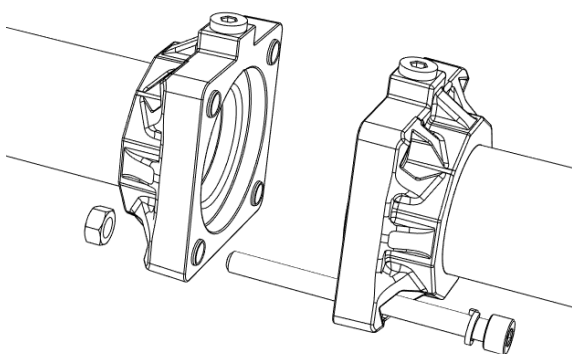


- Either a pressure measuring socket or a screw plug including the matching O-ring (8 x 2) must be screwed into the flange plates as far as it will go. The plug embedded in the pressure measuring connection must be tightened with a suitable slotted screwdriver. See chapter **Measuring connector**.

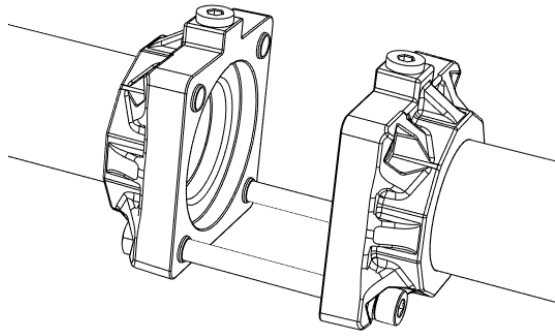


- Screw the flange plates onto the pipelines, sealing the pipe threads properly.
- The flange plates can be inserted in 90° steps in relation to the housing.

**Important:** Pipes must have a male thread matching the flange plate size according to EN 10226-1 / ISO 7/1 (BSPT) or ANSI B 1.20.1 (NPT).

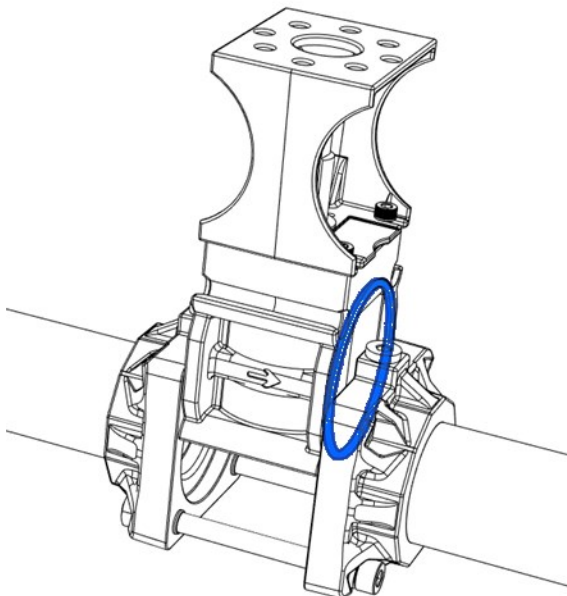


- Insert the two cylinder-head-screws (M8 x 100) opposite the drive side (for upright assembly these are the two lower cylinder-head-screws). Insert the spring rings on the bolt head side. Position the nuts (M8) in the hexagon socket of the flange plates.

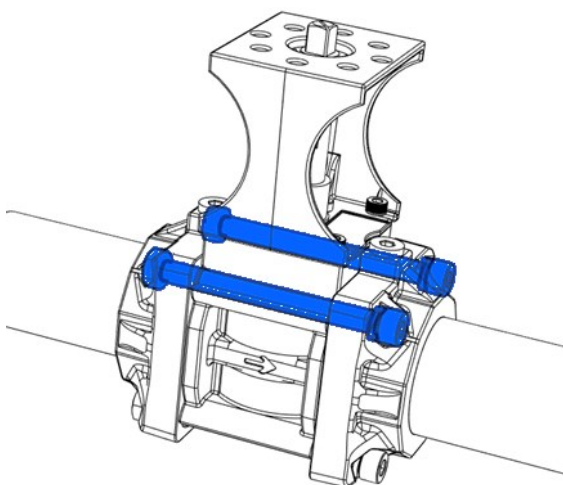


- Tighten the cylinder-head-screws only slightly.

**Important:** ***Before inserting the valve housing, check the inside of the flange plates and pipelines as well as the sealing surfaces of the flange plates for contamination (e.g. remains of sealing material) and clean if necessary.***



- Remove both protective foils from the housing.
- Insert both flange gaskets (66 x 2.5) into the respective groove of the housing.
- Place the housing on the cylinder-head-screws. Observe the permissible installation positions and the specified flow direction (marking on the housing). Also ensure that the two sealing rings are seated correctly.



- Insert the two remaining cylinder-head-screws and tighten them slightly.
- Properly tighten all four cylinder-head-screws crosswise (20 Nm) and make sure that the installation is mechanically stress-free.

**Important:** ***A leak test and function check must be carried out after the installation of the control valve.***

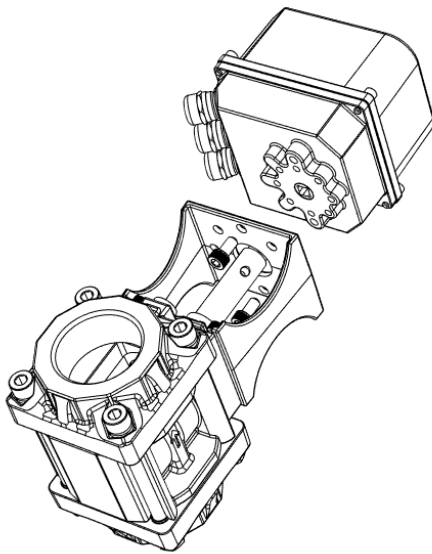


For the connection and installation of the actuator, **the instructions of the respective manufacturer** must be observed. The cylinder position must be checked.

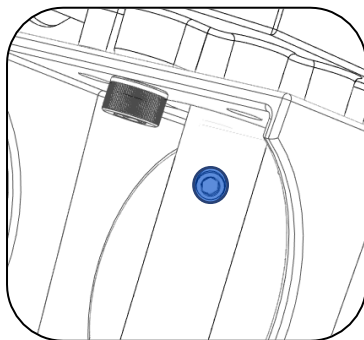
The SVL flow control valve is optionally available in clockwise (when looking at the shaft end, the control valve closes clockwise) or counterclockwise (when looking at the shaft end, the control valve opens clockwise) direction of rotation.

The actuator can be mounted before or after the installation of the control valve in the pipeline, as required.

### Installation of a Schimpf actuating drive:



To mount a Schimpf actuator on the control valve, the external square drive at the shaft end of the control valve is inserted into the internal square drive of the actuator (if necessary, loosen the socket set screw on the control valve shaft slightly). Make sure that the inner square of the actuator and the outer square of the control valve have the same size. The control valve is fastened with the two hexagon socket head screws supplied with the control valve. When mounting, make sure that the actuator is in the correct position relative to the control valve (open or closed). The integrated position indicator must be observed.



For a backlash-free connection, tighten the optional upper socket set screw on the actuator shaft (if available). If the actuator is to be dismantled, this must also be loosened before.



## Installation instructions

**Important:** Avoid direct contact between the control valve and masonry, concrete walls or floors.



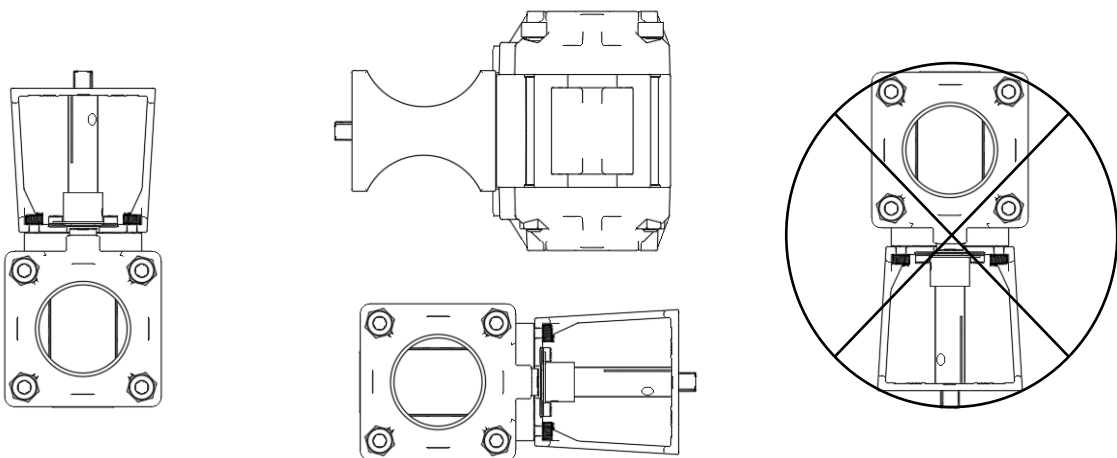
**Important:** Make sure that the control valve is installed in a position which is not ex-posed to vibrations.



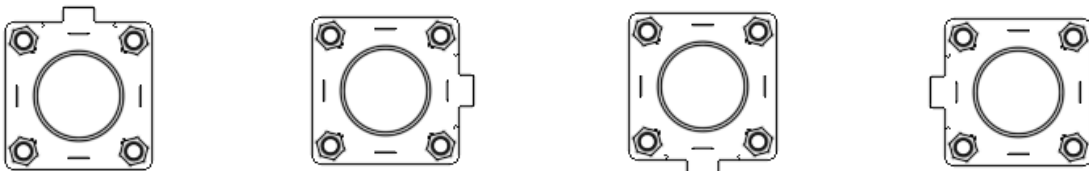
**Important:** No contaminants must be allowed to enter the control valve. A strainer can be fitted on the inlet side as an accessory. To ensure the cylinder's ability to rotate in the long term, the installation of an additional external filter with a finer filter mat is strongly recommended.



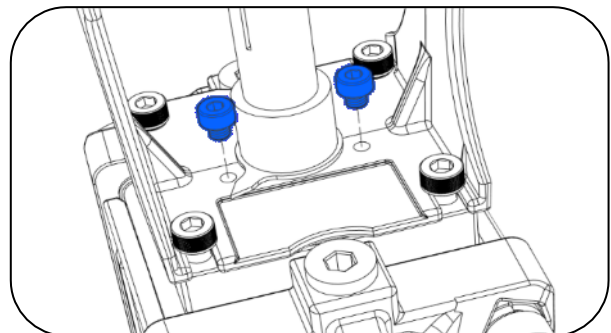
- Permissible installation positions (the requirements for the actuating drive must also be observed):



- The orientation of the flange plates to the housing is arbitrary.



- If necessary, the two stops at approx.  $-5^\circ$  and approx.  $+95^\circ$  can be removed individually by loosening the screws.



# Selection

## Direction of rotation

The SVL flow control valve is either available for right-hand rotation (when looking at the shaft end, the control valve closes clockwise) or left-hand rotation (when looking at the shaft end, the control valve opens clockwise).

## Model size

The gas flow control valves are available in seven model sizes. These differ only in the different shaping of the control cylinder in order to obtain correspondingly graduated volume flows.

To select the appropriate model size, refer to the data in the chapter **Flow rate**.

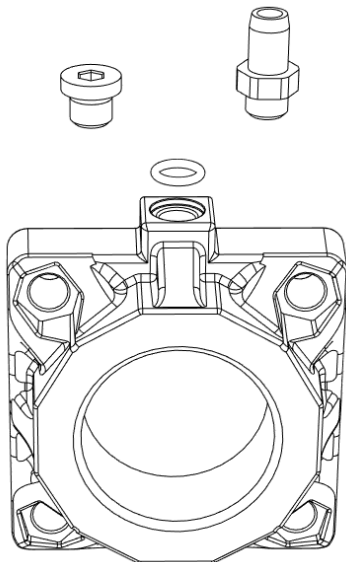
Model size	SVL 08	SVL 15	SVL 20	SVL 25	SVL 32	SVL 40	SVL 50
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## Flange plates

The gas flow control valves are designed for mounting in the pipeline via female threaded connections. Two separately available flange plates are used for this purpose. Flange plates are available with the following threaded connections:

Thread Standard	Size Chart					
EN 10226-1 / ISO 7/1 (BSPT)	Rp 1/2"	Rp 3/4"	Rp 1"	Rp 1 1/4"	Rp 1 1/2"	Rp 2"
ANSI B 1.20.1 (NPT)	NPT 1/2"	NPT 3/4"	NPT 1"	NPT 1 1/4"	NPT 1 1/2"	NPT 2"

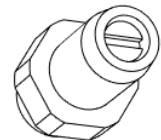
## Measuring connector



Each flange plate has a threaded connection for the connection of a pressure sensor (G 1/8"). A lockable pressure measuring connector or a screw plug can be screwed in here as desired. The seal is made by a suitable O-ring (NBR 8 x 2 mm).

When changing the pressure measuring socket / the screw plug, it must be tightened to the stop. It is recommended to replace the seal. Only use original spare parts.

The lock embedded in the pressure measuring socket is adjusted with a suitable slotted screwdriver (e.g. 0.8 x 4.5).



**Important:** If the pressure measuring socket is used without a pressure sensor connected, the lock must be tightened firmly. It is not tightened ex works.

**Important:** After any change to the measuring connection, it must be re-checked for external tightness.

## Options / Accessories

### Actuation

All control valves are equipped with an external square for easy mounting of a Schimpf actuator or a hand lever.

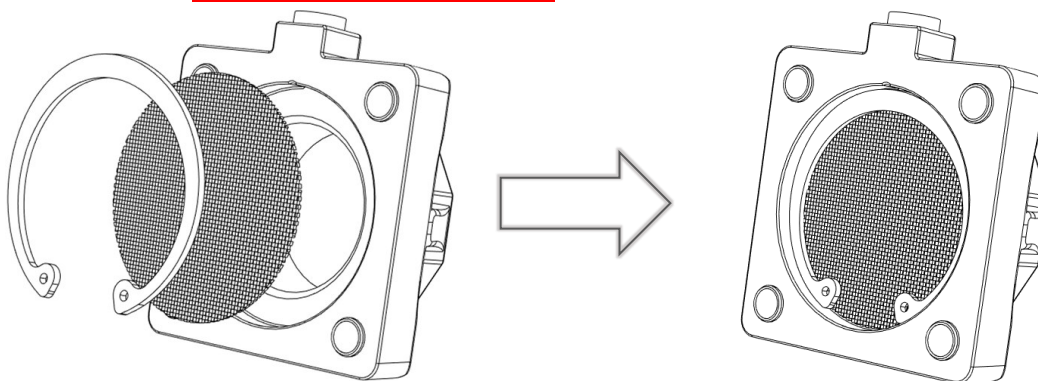
By means of an optional **hand lever**, volumetric flows of 0°-90° can be continuously adjusted and fixed. The setting angle can be read off a scale.

Customised shaft end forms and adapter sets for other actuators are also available.

### Filter

As an accessory, a strainer (stainless steel, mesh size 0,77 mm) can be fitted on the inlet side to prevent the ingress of foreign bodies. The strainer is inserted into the flange plate on the input side and fixed with the enclosed retaining ring (60x2mm). A suitable retaining ring pliers is required for assembly.

**Important:** To ensure the cylinder's ability to rotate in the long term, the installation of an additional external filter with a finer filter mat is strongly recommended.



### seal kit

Seal kit consisting of 2 x O-ring flange (NBR 66x2.5mm) and 2 x O-ring pressure measuring connection (NBR 8x2mm). Use according to the information in the chapter **Maintenance and service life**.

## Type code

### Gas flow control valve SVL

Code*	Description
SVL	Gas flow control valve SVL
08-50	Volume flow rate indicator
R / L	Direction of rotation: right / left

\*Other supplementary code numbers are possible depending on optional customer-specific variations

### Flange plate

Code	Description
FL-SVL	flange plate for Gas flow control valve SVL
N / R	NPT or Rp thread
1/2 - 2	Thread size

# Flow rate

## Selection of the nominal size

The appropriate nominal size can be determined either by calculation using the  $k_v$  values from the following table or with the aid of the following diagrams.

The following formula should be used for the calculation (subcritical flow):

$$Q_N = 514 \cdot k_V \cdot \sqrt{\frac{\Delta p \cdot p_2}{\rho_N \cdot T}}$$

$Q_N$  = flow rate in  $\text{m}^3/\text{h}$

$k_V$  = flow coefficient in  $\text{m}^3/\text{h}$

$\Delta p$  = differential pressure across valve in bar

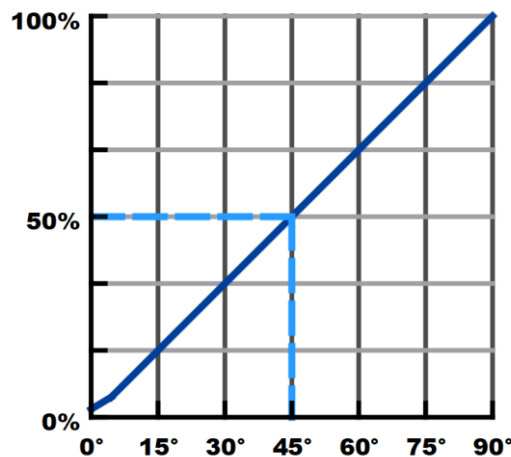
$p_2$  = pressure after valve in bar, absolute

$\rho_N$  = standard density of the gas in  $\text{kg}/\text{m}^3$

$T$  = gas temperature in kelvin

When selecting a valve, the leakage rate with the valve closed ( $0^\circ$ ) must also be taken into account. The maximum permissible parameters for operating pressure and differential pressure must also be observed. For optimum control, a differential pressure greater than 10 mbar should be maintained.

Approximately there is a **linear relationship** between the volume flow and the opening angle. For example, a valve position of  $45^\circ$  results in a volume flow of approx. 50% in relation to the maximum volume flow.



Volume flow as a percentage in relation to the opening angle (idealised)

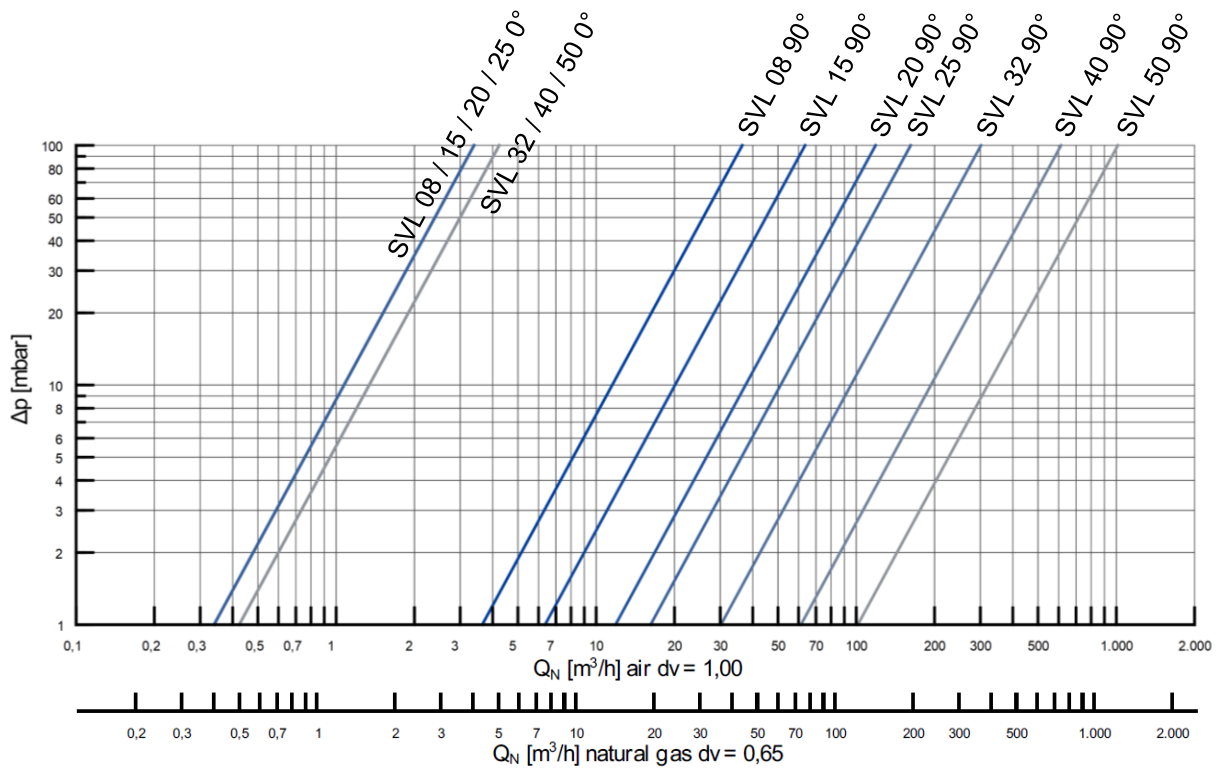
The data provided here were obtained based on laboratory measurements (medium: air,  $15^\circ$ , 1013 mbar). Actual values may differ, depending on the on-site conditions.

# k<sub>v</sub> values

Data in m<sup>3</sup>/h

Type	Control valve position		Mounted flanges under test
	0°	90°	
SVL 08	0,4	4,3	FL-SVL R 1/2"
SVL 15	0,4	7,5	FL-SVL R 3/4"
SVL 20	0,4	14,0	FL-SVL R 1"
SVL 25	0,4	19,1	FL-SVL R 1 1/4"
SVL 32	0,5	35,6	FL-SVL R 1 1/2"
SVL 40	0,5	72,3	FL-SVL R 2"
SVL 50	0,5	119,6	FL-SVL R 2"

# Flow curves



## Maintenance and service life

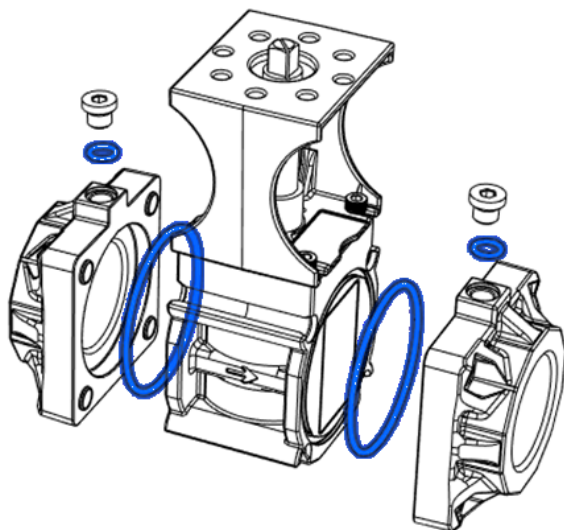
**Important:** **The “Safety instructions for maintenance and installation” must be observed during all maintenance work.**



**Important:** **Do not open the screws securing the console to the housing. Make sure that the sealant on the screw plugs is intact. If there is visible damage to the sealant, the control valve may no longer be used and must be serviced by the manufacturer.**



The SVL gas flow control valve requires little maintenance but must be checked regularly by qualified personnel to ensure it is working properly. We recommend inspecting the control valve once a year to check the tightness of the seal and determine whether the valve is functioning as intended. All user-side screw connections must be checked for proper seating. The intervals for regular inspections must be set by the operator depending on the operating conditions.



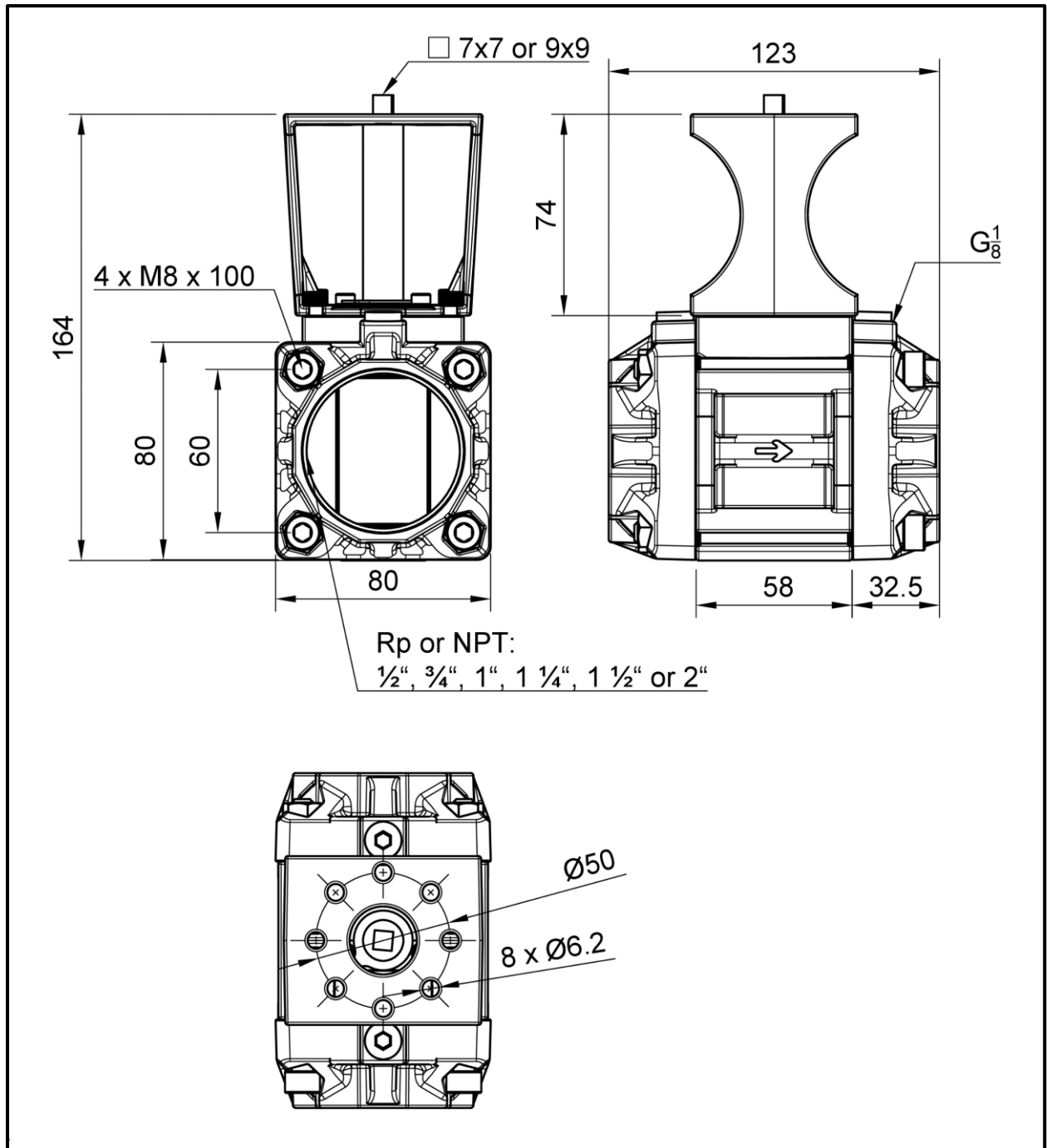
It is recommended to replace the seals at every maintenance and after every change to the user made connections: 2 x O-ring flange (NBR 66x2.5 mm) and 2 x O-ring pressure measuring connection (NBR 8x2 mm). Only use original spare parts. A gasket set is available as an accessory. The installation of the seals is carried out according to the information in the chapters **Installation** or **Measuring connector**.

It is recommended to check the optional strainer for contaminants and to clean or replace it if necessary.

If contaminants are found in the area of the control cylinder, it is recommended to have the control valve serviced by the manufacturer.

The SVL gas flow control valve is designed to have a service life of 10 years. When this period is over, the control valve must be inspected in detail by qualified specialists, serviced by the manufacturer or replaced.

## SVL dimensions



## ***Technical specifications***

Gas type:	For gases of gas families 1, 2, 3 and other neutral gaseous media. Suitable for gases up to max. 0.1% H <sub>2</sub> S by volume. The gas must be dry under all conditions and must not condense.
Housing:	Aluminium
Shaft:	Aluminium
Control cylinder:	Aluminium
Flange plate:	Aluminium
Seals:	NBR
Weight:	approx. 1,6 kg including 2 x flange plate 1"
Connection:	Rp or NPT thread
Operating pressure:	max. 50 kPa (500 mbar)
Drive adaptation:	square spindle 7x7mm or 9x9mm others available on request
Ambient temperature:	-20 bis +60 °C
Medium temperature:	-20 bis +60 °C
Maximum permissible positioning speed:	1,5s/90°
Direction of rotation:	Either right (the control valve closes clockwise when looking at the shaft end) or left (the control valve opens clockwise when looking at the shaft end).



# EU Declaration of Conformity



## EU-Konformitätserklärung

EU Declaration of Conformity  
Déclaration de Conformité UE

Wir **Schimpf Ex & Gas GmbH, Bonholzstrasse 17, D-71111 Waldenbuch**

We / Nous

erklären, dass das Produkt **alle Regelklappen der Serie SVL**

declare that product / déclarons que produit

auf welche sich diese Erklärung bezieht, mit den für dieses Produkt relevanten Teilen der folgenden Norm(en) übereinstimmt

to which this declaration relates is in conformity with the relevant parts of the following standard(s) for this product  
à laquelle se rapporte cette déclaration, est conforme aux éléments pertinents pour ce produit de la/des norme(s) suivante(s)

DIN EN 13611:2022  
DIN EN 161:2013

gemäß den Bestimmungen der folgenden Richtlinie(n).

according to the provisions of the following directive(s) / conformément aux dispositions de la directive(s)

Nummer (Number / Numéro)	Text (Text / Texte)
<b>2016/426/EU</b>	<b>Verordnung über Geräte zur Verbrennung gasförmiger Brennstoffe</b>
2016/426/EU	Regulation on appliances burning gaseous fuels
2016/426/UE	Règlement concernant les appareils brûlant des combustibles gazeux

Die Montage- und Betriebsanleitung ist zu beachten.

The Installation and operating instructions have to be considered.

Les guides d'installation et d'utilisation doivent être respectés.

### EU-Baumusterprüfung

EU-Type Examination  
examen UE de type

Zertifikatsnummer C5A 116408 0005

Certificate number

Numéro de certificat

Gültigkeitsdauer 2033-07-11

Validity period

Durée de validité

Notifizierte Stelle

TÜV SÜD Product Service GmbH

Notified Body

Ridlerstraße 65

Organisme notifié

D-80339 München

(2016/426/EU)

Notified Body number: 0123

Überwachungsverfahren

TÜV SÜD Product Service GmbH

Surveillance procedure

Ridlerstraße 65

Procédure de surveillance

D-80339 München

(2016/426/EU)

Notified Body number: 0123

Anbringung der CE-Kennzeichnung:

ja

Placing of the CE marking / L'apposition du marquage CE

Rechtsverbindliche Unterschrift

Authorized signature / Signature autorisée

Waldenbuch, 17.07.2023

N. Geiger, Geschäftsführung

Schimpf Ex & Gas GmbH

Bonholzstr. 17

71111 Waldenbuch

Telefon 07157/52756-0

# UK Declaration of Conformity



## UK-Konformitätserklärung

UK Declaration of Conformity  
Déclaration de Conformité UK

Wir **Schimpf Ex & Gas GmbH, Bonholzstrasse 17, D-71111 Waldenbuch**

We / Nous  
erklären,

dass das Produkt  
declare that product / déclarons que produit  
**alle Regelklappen der Serie SVL**  
all control valves of the SVL series / tous les volets de régulation de la série SVL

auf welche sich diese Erklärung bezieht, mit den für dieses Produkt relevanten Teilen der folgenden  
Norm(en) übereinstimmt

to which this declaration relates is in conformity with the relevant parts of the following standard(s) for this product  
à laquelle se rapporte cette déclaration, est conforme aux éléments pertinents pour ce produit de la/des norme(s) suivante(s)

DIN EN 13611:2022  
DIN EN 161:2013

gemäß den Bestimmungen der folgenden Richtlinie(n).  
according to the provisions of the following directive(s) / conformément aux dispositions de la directive(s)

Gas Appliances (Enforcement) and Miscellaneous Amendment Regulations, UKSI 2018:389  
(as amended by UKSI 2019:696)

Die Montage- und Betriebsanleitung ist zu beachten.  
The installation and operating instructions have to be considered.  
Les guides d'installation et d'utilisation doivent être respectés.

<b>UK-Baumusterprüfung</b> UK-Type Examination examen UK de type	
Zertifikatsnummer Certificate number Numéro de certificat	C5AUK 116408 0006
Gültigkeitsdauer Validity period Durée de validité	2033-07-18
Notifizierte Stelle Notified Body Organisme notifié	TUV SUD BABT Unlimited Octagon House, Concorde Way, Segensworth North, Fareham, Hampshire, PO15 SRL Notified Body number: 0168
Überwachungsverfahren Surveillance procedure Procédure de surveillance	TUV SUD BABT Unlimited Octagon House, Concorde Way, Segensworth North, Fareham, Hampshire, PO15 SRL Notified Body number: 0168

Anbringung der UKCA-Kennzeichnung: **ja, yes, oui**  
Placing of the UKCA marking / L'apposition du marquage UKCA

Waldenbuch, 24.07.2023  
N. Geiger, Geschäftsführer, Managing Director, Directeur général

Rechtsverbindliche Unterschrift  
Authorized signature / Signature autorisée

Schimpf Ex & Gas GmbH  
Bonholzstr. 17  
71111 Waldenbuch  
Telefon 07157/52756-0

# EU-Type examination certificate



Product Service

## EU-Type Examination Certificate

No. C5A 116408 0005 Rev. 00

**Holder of Certificate:** Schimpf Ex & Gas GmbH  
Bonholzstraße 17  
71111 Waldenbuch  
GERMANY

**Product:** Fittings (Gas)  
Throttle valve

SVL

PIN CE-0123DN1056

The Certification Body of TÜV SÜD Product Service GmbH confirms according to Annex III (Module B) that the listed product complies with the relevant provisions according to Annex I of Regulation (EU) 2016/426 on appliances burning gaseous fuels. It refers only to the sample submitted for testing and certification and on its technical documentation. For details see: [www.tuvsud.com/ps-cert](http://www.tuvsud.com/ps-cert)

**Test report no.:** V 1743-00/23

**Valid until:** 2033-07-11

**Date,** 2023-07-14

( Johannes Steiglechner )

Page 1 of 2

TÜV SÜD Product Service GmbH is Notified Body according to Regulation (EU) 2016/426 on appliances burning gaseous fuels with identification No. 0123.

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TUV®

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證書 ◆ CERTIFICADO ◆ CERTIFICAT

# UK-Type examination certificate



## Type Examination Certificate

No. C5AUK 116408 0006 Rev. 00

**Holder of Certificate:** Schimpf Ex & Gas GmbH  
Bonholzstraße 17  
71111 Waldenbuch  
GERMANY

**Product:** Fittings (Gas)  
Throttle valve

SVL

The Approved Body of TUV SUD B A B T Unlimited confirms according to the Gas Appliances (Enforcement) and Miscellaneous Amendment Regulations, UKSI 2018:389 (as amended by UKSI 2019:696), that in the conformity assessment procedure in accordance with Article 14 the listed product has been assessed in a type examination (module B - production type) and complies with the relevant provisions according to Annex I on appliances burning gaseous fuels. It refers only to the sample submitted for testing and certification and on its technical documentation. See also notes overleaf.

**Test report no.:** V 1752-00/23

**Valid until:** 2033-07-18

**Date,** 2023-07-20

( Klaus Joachim Kurth )

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Approved Body according to Regulation (EU) 2016/426 and the Gas Appliances (Enforcement) and Miscellaneous Amendments Regulations 2018 with identification No. 0168.

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