

METALIKA

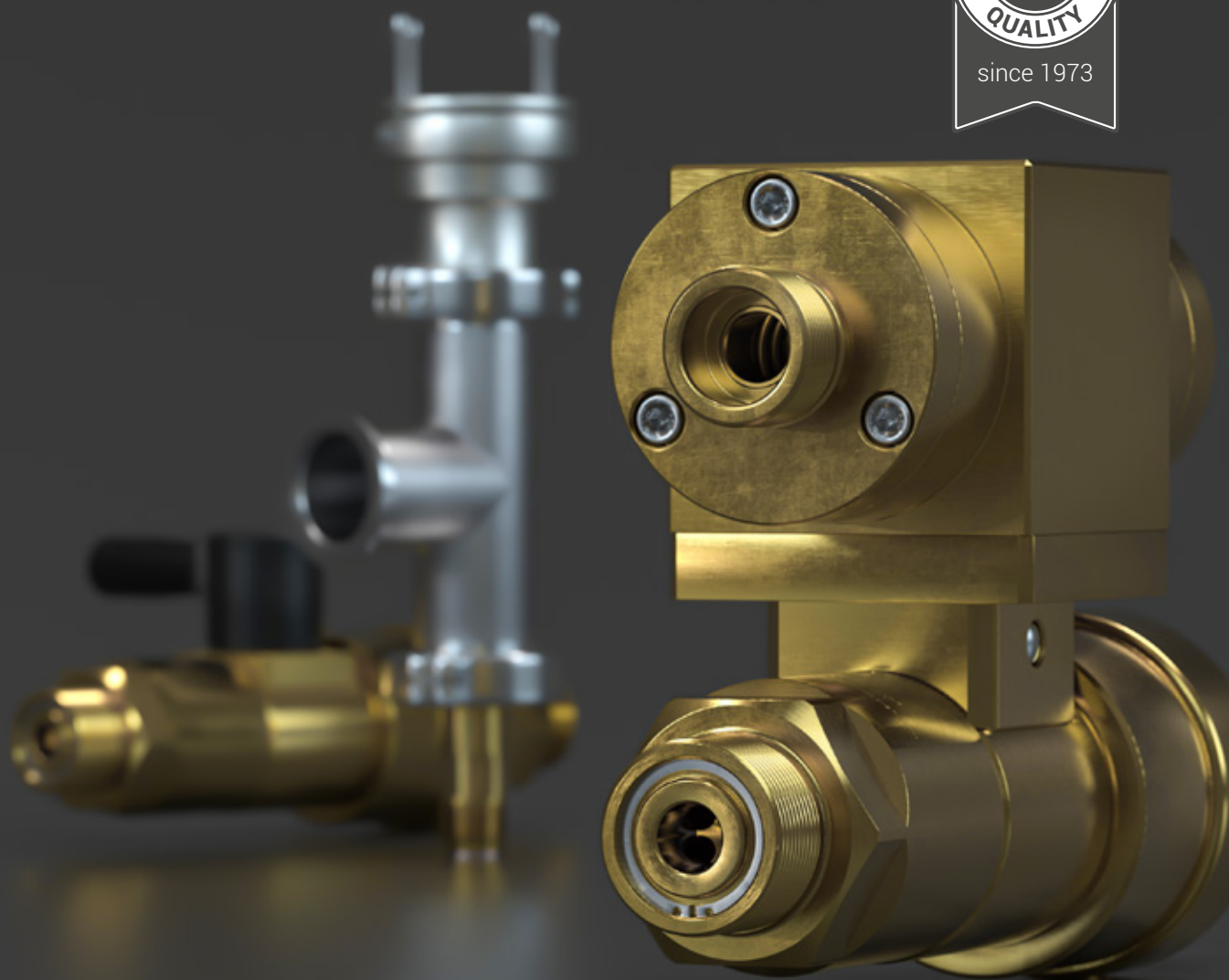
COMPONENTS FOR INDUSTRY **KACIN**



2023 | Catalog | Gas technology

WEH[®] Components

for the assembly of safe technical gas systems and plants



WEH[®] - We Engineer Hightech

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WEH[®] Components

Reliable & safe since 1983

As a specialist in the gas sector, we have been developing safe and reliable components for well-known manufacturers worldwide for more than 30 years.

Technical gases are used in practically every industry and in many industrial processes. In addition to the generation of other mixed gases, they are also used in medical technology, pharmaceuticals, chemistry, food technology and many other sectors.












In order to produce or use gases of high quality in a process-safe manner, reliable and high-performance process plant technology is required that also meets the highest economic demands.

Over the years, the product range has been continuously expanded, so that today a large number of components, which are required for plants for filling, mixing, evacuating and discharging gases, are available.

Our product portfolio includes:

- ▶ **Shut-off valves** for use in gas mixing and filling plants (among others)
- ▶ **Vacuum pressure relief modules** for protection of vacuum pumps (among others)
- ▶ **Check valves** as return flow protection in gas mixing plants
- ▶ **Gas filters** for the filtration of inert gases and oxygen
- ▶ **Quick connectors** for filling, testing and evacuating gas cylinders (see catalog no. 20)

Our core competencies

-  **Global sales network**
In 60 countries
-  **Passion for High-Pressure**
High-pressure components for a large number of industries
-  **Professional engineering**
Product designs according to customer requirements
-  **In-house test center**
Extensive testing during development
-  **Pioneer – we set standards**
Future oriented product solutions
-  **100 % outgoing goods inspection**
Each product is tested
-  **Over 45 years of experience**
Therefrom 30 years in the gas sector
-  **Quality – made in Germany**
ISO 9001:2015 /
Pressure Equipment Directive
2014/68/EU Annex III, Module H
-  **Environmental management**
Sustainable actions and products
-  **Service and maintenance**
Directly from the manufacturer
-  **Maximum safety**
with well-engineered products and
high-quality materials





Quality at WEH

WEH has always stood for the best quality. By processing only high-quality materials and the label 'Made in Germany', our products meet the highest quality requirements.

Sustainable satisfaction and, above all, the safety of our customers is our top priority. The demand for excellent quality is firmly embedded in our corporate processes - from the product idea to the service. For us, it is a matter of course to subject every product to the highest quality and safety tests.

Certified quality management

Our high quality standards are achieved by a practiced quality management and confirmed by certification according to international quality standards.

- ▶ ISO 9001:2015
- ▶ Pressure Equipment Directive 2014/68/EU Annex III, Module H

The result of this philosophy?

Product solutions that stand out for high quality and optimum safety and offer many advantages to our customers:

- ▶ Low downtime
- ▶ Cost reduction and increased productivity
- ▶ Reliability
- ▶ Unique ease of operation

Environmental management at WEH

Environmentally responsible behaviour plays a significant part in our corporate philosophy. This applies to all departments of our company, whether for product development, manufacturing processes, logistics, administration or finances. We are always striving for optimum use of resources in the manufacture of our products.

For more than 45 years, it has been both a high demand and an obligation for us to develop and manufacture innovative products that actively contribute to environmental protection.



Product overview

Everything for your gas plant - the WEH product range includes a wide variety of components. Starting with shut-off valves for filling, mixing, evacuating and discharging of gases including suitable accessories up to filters and check valve.

The portfolio is rounded off with quick connectors for filling, testing and evacuating gas cylinders - please see our catalog no. 20. With WEH you have the right partner for safe and reliable components for the gas technology.

Shut-off valves



TV17G0



TV17G0S

Vacuum pressure relief modules



TVS20



TVS21

Check valve



TVR2

Filter



TSF4

Swivel joint



TD1

Quick release system



TK350 - TN350

Ordering

In order to be able to process your inquiry / order successfully, we usually need the following information:

- | | |
|--|---------------------------------------|
| 1. Part no. | 5. Medium |
| 2. Connection type / connection size | 6. Description of application |
| 3. Max. allowable operating pressure / cracking pressure | 7. CAD drawing of customer test piece |
| 4. Temperature range | 8. Test piece |

For reasons of precaution, we'd like to point out that

- a) regarding the delivery of each article acc. to the respective order confirmation - in particular concerning ECE / EC79 articles - WEH does not confirm the fulfilment of additional requirements of the concerned end customer,
 - b) WEH is not subject to any external reporting obligation with regard to external change management (see page 48) and
 - c) WEH does not confirm the replacement of the product in the form of a regular series delivery.
- Exclusions acc. to a) - c) can be agreed with the conclusion of a customer-specific project with corresponding special conditions.



» Shut-off valve TV17GO

DESCRIPTION



Features

- Compact design
- High flow rate
- Light weight, approx. 4.2 kg resp. approx. 8.3 kg incl. pneumatic actuator
- Bidirectional sealing possible
- Easy installation
- Low investment costs
- Low flow noise
- Reduction of the number of valves needed in plant construction
- High-quality materials

The WEH® TV17GO Shut-off valve for inert gases is used to shut off gases under high pressure. Due to its compact design, it is ideal for installation in technical gas plants. It can also be installed in existing systems without any problems. Thanks to its streamlined design, the shut-off valve impresses with high flow values and its extremely low-noise operation. The WEH® TV17GO is available with manual or pneumatic actuation (initial position NC or NO).

Application

Shut-off valve for filling, mixing, evacuating and discharging pipe systems or vessels of all types filled with inert gases at a pressure of up to 420 bar.

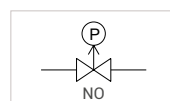
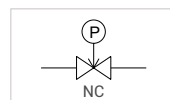
The shut-off valve is not designed for media of fluid group 1 as defined in the Pressure Equipment Directive 2014/64/EU or use in ATEX-relevant zones. Corresponding requirements can be evaluated by us on request.

TECHNICAL DATA

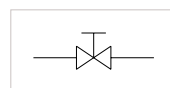
Characteristics	Basic version
Generation	2
Functions	
Automatic venting	No
Check valve	No
Vacuum operation	Yes
Flow direction	B1 → B2
Actuation	Pneumatic (NC resp. NO) for automatic control (e.g. via SPS) or manual with actuation lever
Specifications of valve	
Nominal bore (DN)	12 mm
Max. allowable operating pressure PS	420 bar
Temperature range	0 °C up to +60 °C
Leak rate	≤ 5 x 10 ⁻³ mbar x l/s
Specifications of pneumatic actuator	
Pilot pressure port P1	G1/4" female thread
Pilot pressure	6 - 8 bar
Measuring port MA2	M28x1.5 male thread
Number of cycles	Maximum 1 cycle per minute
Materials	
Materials (in flow channel)	Brass and Monel® 400
Spring material	Steel 1.4310
Inlet valve seal	Modified polyimide
Sealing material	EPDM

Symbols

pneumatic:



manual:

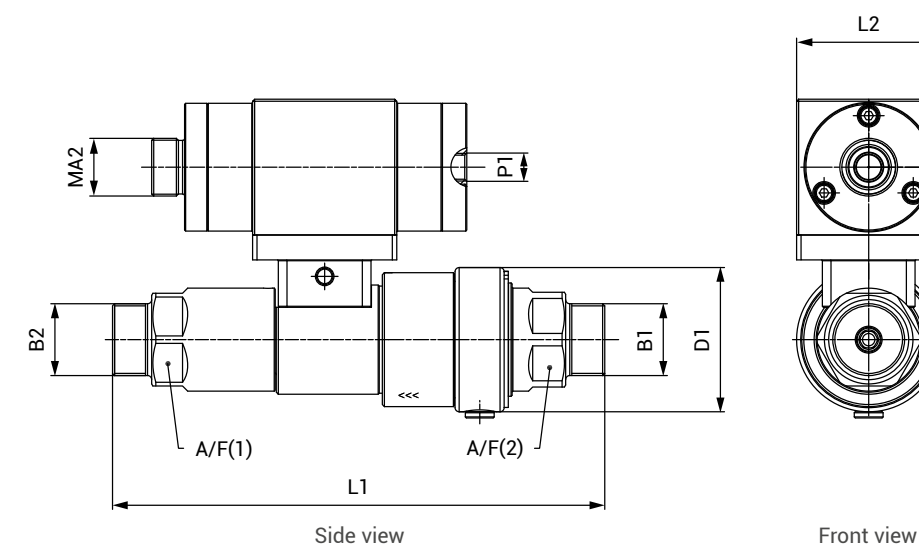


» Shut-off valve TV17GO

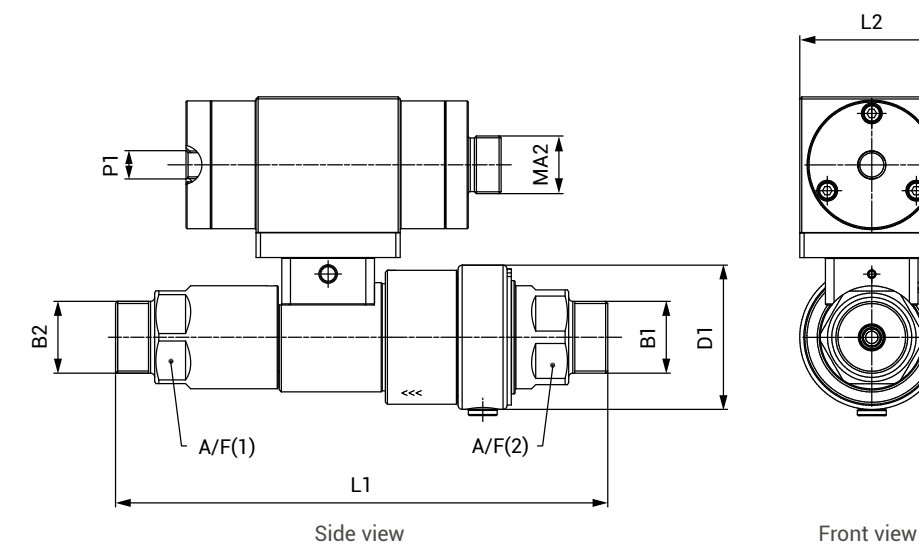
ORDERING | WEH® TV17GO Shut-off valve with pneumatic actuation

approx. dimensions (mm)

TV17GO NC



TV17GO NO

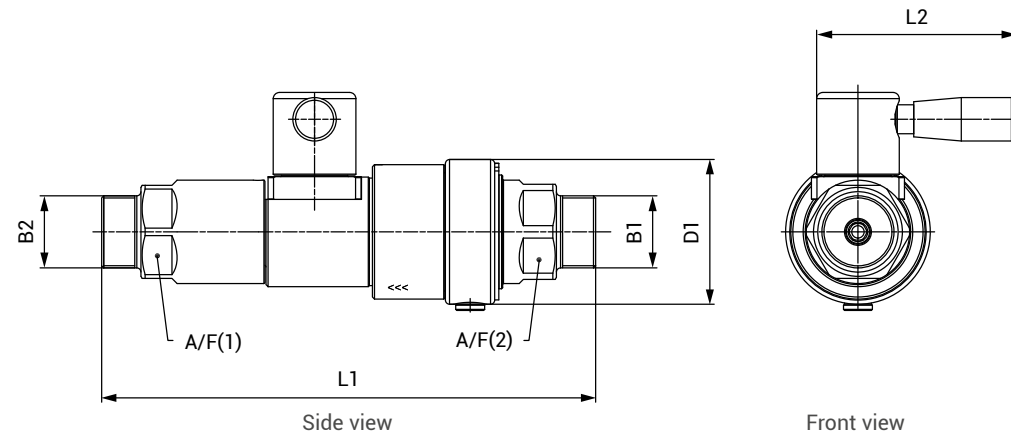


Part no.	Description	DN	B1 / B2 (male thread)	P1 (female thread)	MA2 (male thread)	L1	L2	D1	A/F(1)	A/F(2)
C1-162130	TV17GO NC	12	UNF 1 3/8"-12	G1/4"	M28x1.5	239	70	70	45	46
C1-175840	TV17GO NO	12	UNF 1 3/8"-12	G1/4"	M28x1.5	239	70	70	45	46

» Shut-off valve TV17GO

ORDERING | WEH® TV17GO Shut-off valve with manual actuation

approx. dimensions (mm)



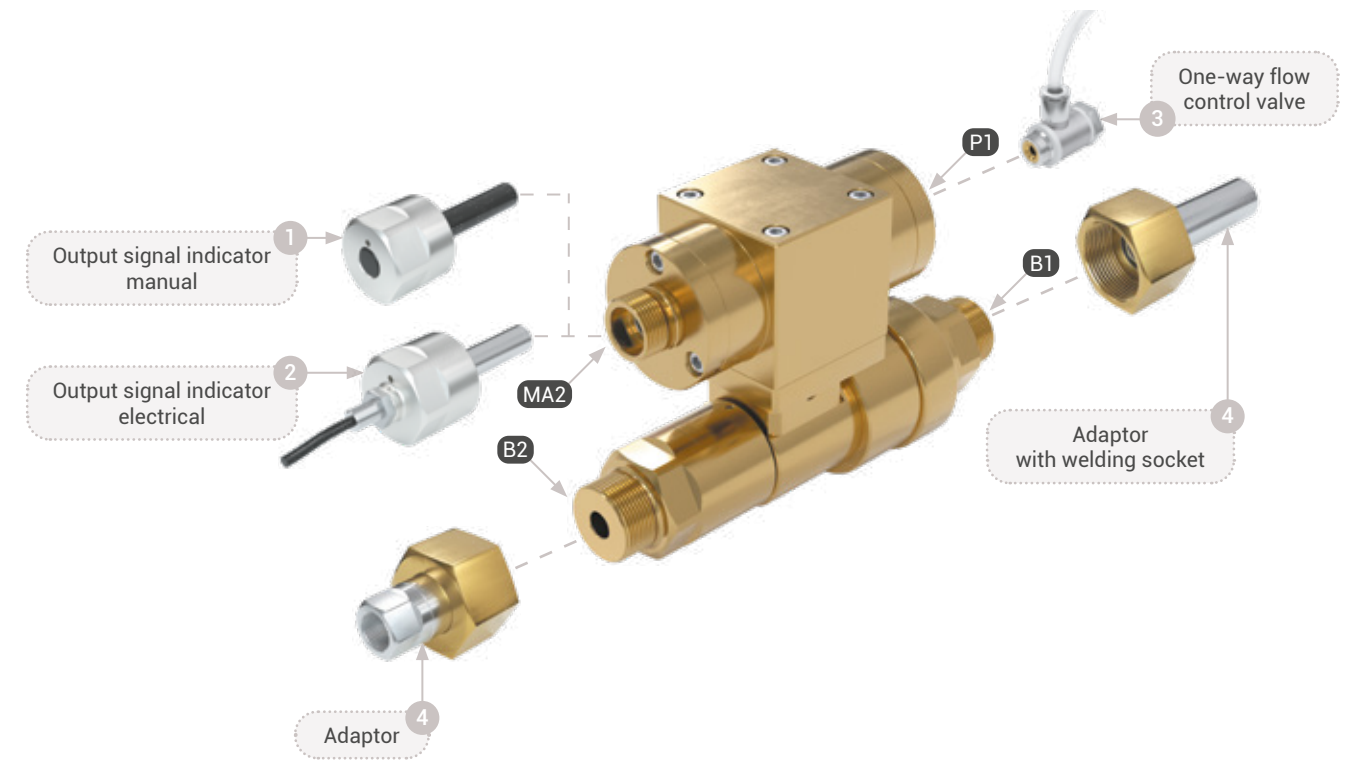
Part no.	Description	DN	B1 / B2 (male thread)	L1	L2	D1	A/F(1)	A/F(2)
C1-163171	TV17GO	12	UNF 1 3/8"-12	239	97	70	45	46

Required information for ordering see page 7.

» Shut-off valve TV17GO

SYSTEM OVERVIEW

The following schematic diagram gives you an overview of the various accessories available for the WEH® TV17GO Shut-off valve.



Definition of ports

- B1** Media inlet
- B2** Media outlet
- P1** Pilot pressure port, compressed air 6 - 8 bar
- MA2** Measuring port for output signal indicators

» Shut-off valve TV17GO

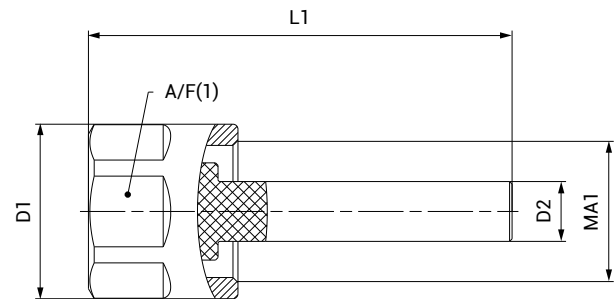
ACCESSORIES

The following accessories are available for the WEH® TV17GO Shut-off valve:

1 Manual output signal indicator for pneumatic actuator

Application: Manual indication of valve position for the pneumatic actuator (port MA2)
Function: A pin (visible/non-visible) indicates whether the valve is closed or open
Materials: Aluminum and POM

approx. dimensions (mm)

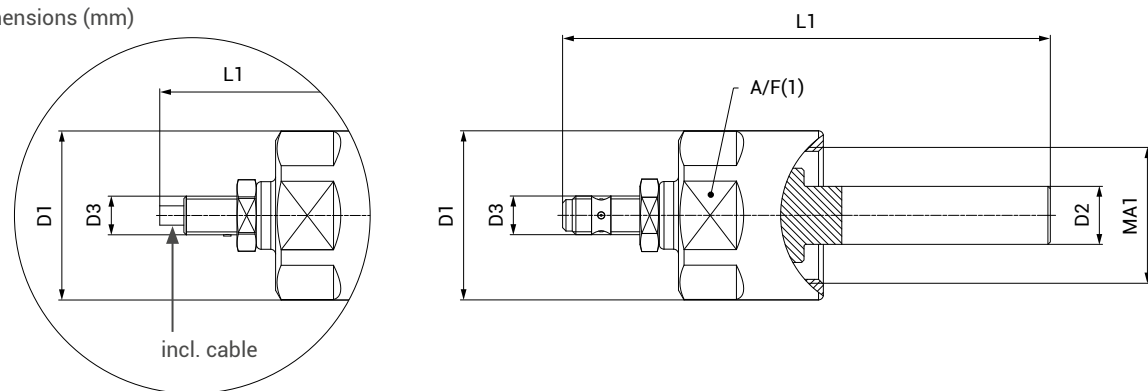


Part no.	Description	MA1 (female thread)	L1	D1	D2	A/F(1)
C1-76590	Manual output signal indicator	M28x1.5	85	35	12	32

2 Electrical output signal indicator for pneumatic actuator

Application: Electrically transmittable indication of valve position for the pneumatic actuator (port MA2)
Function: The valve position can be transmitted electrically to a control system via the 'Namur' proximity switch. This is useful if feedback of the valve position is required for automatic switching operations.
Materials: Stainless steel 1.4305 and aluminum (C1-76878) resp. stainless steel 1.4435 and brass (C1-101585)

approx. dimensions (mm)



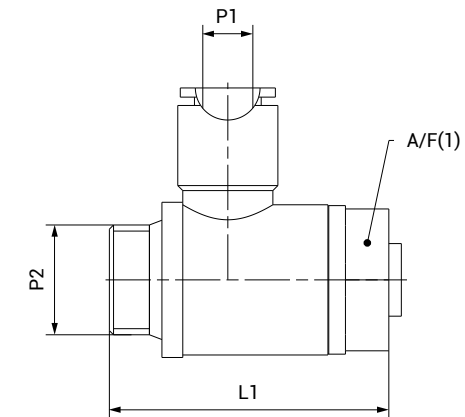
Part no.	Description	MA1 (female thread)	L1	D1	D2	D3	A/F(1)
C1-76878	Electrical output signal indicator (EX) incl. cable	M28x1.5	85	35	12	M8x1	32
C1-101585	Electrical output signal indicator	M28x1.5	85	35	12	M8x1	32

» Shut-off valve TV17GO

3 One-way flow control valve for pneumatic actuator

Application: For regulation of the switching parameters of the valve (port P1)
Function: Soft opening of the valve
Materials: Nickel-plated brass

approx. dimensions (mm)



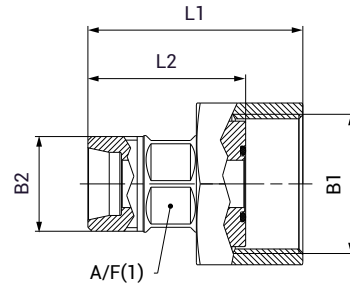
Part no.	Description	P1	P2 (male thread)	L1	A/F(1)
C1-78813	One-way flow control valve	6	G1/4"	33.5	17

» Shut-off valve TV17GO

4 Adaptors incl. sleeve nut

Application: For easy installation of valves (ports B1/B2) in pipelines or complete plants
Materials: Adaptor of stainless steel 1.4305, sleeve nut of brass (plane sealing)

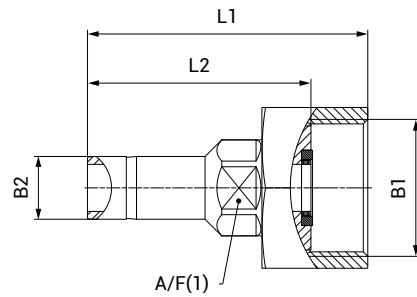
approx. dimensions (mm)



Adaptor with 24° cone connection acc. to ISO 8434-1 (S16xM24)

Part no.	DN	B1 (female thread)	B2 (male thread)	L1	L2	A/F(1)
C1-164158	12	UNF 1 3/8"-12	M24x1.5	55	40	22

approx. dimensions (mm)

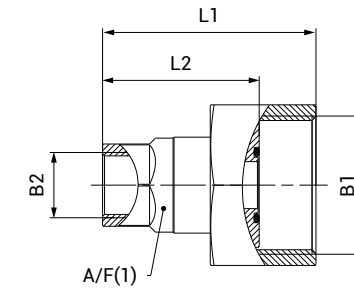


Adaptor for tube connection via pipe socket (for ferrule fitting)

Part no.	DN	B1 (female thread)	B2	L1	L2	A/F(1)
C1-166893	12	UNF 1 3/8"-12	Tube Ø 16	71.5	57	22

» Shut-off valve TV17GO

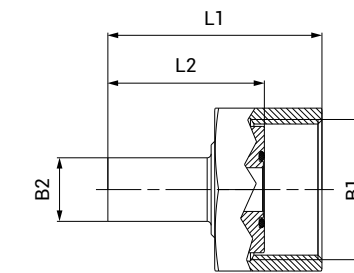
approx. dimensions (mm)



Adaptor for connection to G-thread

Part no.	DN	B1 (female thread)	B2 (female thread)	L1	L2	A/F(1)
C1-164157	12	UNF 1 3/8"-12	G3/8"	55	40	21

approx. dimensions (mm)



Adaptor with welding socket

Part no.	DN	B1 (female thread)	B2	L1	L2
C1-100953	12	UNF 1 3/8"-12	Tube Ø 16x2	54	39
C1-164156	12	UNF 1 3/8"-12	Tube Ø 20x3	84	69

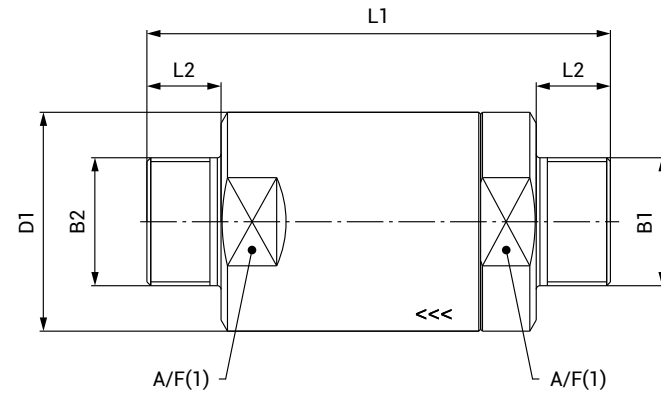
Other adaptors on request.

» Shut-off valve TV17GO

WEH® TSF4 Filter

Application: For installation in gas mixing plants
Function: Filtering of contaminants in the gas flow
Materials: brass, seals EPDM

approx. dimensions (mm)



Part no.	Filter (µm)	B1 (male thread)	B2 (male thread)	L1	L2	D1	A/F(1)
C1-82292-X01	40	UNF 1 3/8"-12	UNF 1 3/8"-12	125	20	59	54

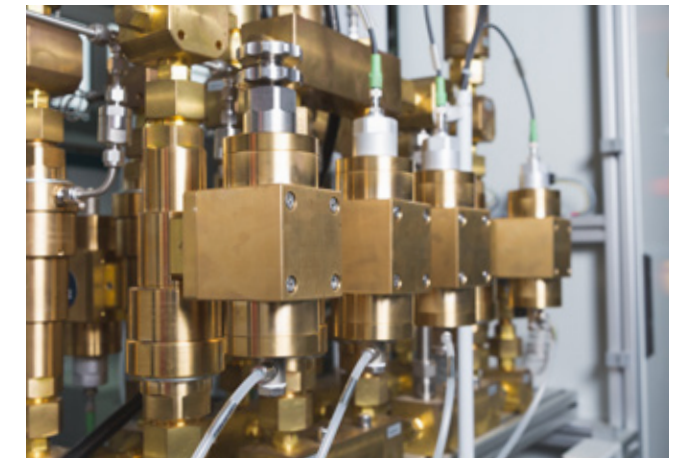
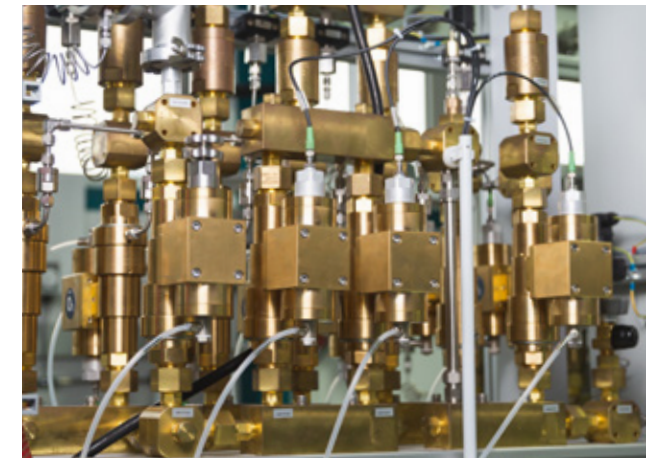
» Shut-off valve TV17GO

ACCESSORIES FOR VALVE ASSEMBLIES

The following accessories enable the construction of complex valve systems by valve assemblies (see following sample images of technical gas plants). In this way, technical gas plants for filling, mixing, evacuating and discharging can be realized particularly economically. Monitoring and maintenance of these plants are thus considerably facilitated and investment costs are reduced.

Part no.	Description	Connection
C1-101070	Adaptor incl. sleeve nut	M24x2 male thread - UNF 1 3/8"-12 female thread
C1-100942	Screw adaptor	M24x2 male thread - UNF 1 3/8"-12 male thread
C1-100958	Plug	M24x2 male thread
C1-167238	Screw adaptor	M24x2 male thread - pipe socket Ø 6 mm
C1-110327	Connection bar for up to 4 components	M24x2 female thread
C1-100360	Connection bar for up to 6 components	M24x2 female thread
C1-75787	Connection tee with 3 connections	M24x2 female thread

Example of a technical gas plant with TV17 valve assemblies:



» Shut-off valve TV17GOS

DESCRIPTION



Features

- Compact design
- High flow rate
- Light weight, approx. 4.2 kg resp. approx. 8.3 kg incl. pneumatic actuator
- Bidirectional sealing possible
- Easy installation
- Low investment costs
- Low flow noise
- Reduction of the number of valves needed in plant construction
- High-quality materials

The WEH® TV17GOS Shut-off valve for oxygen is used to shut off the flow in oxygen systems. Due to its compact design, it is ideal for installation in technical gas plants. It can also be installed in existing systems without any problems. Thanks to its streamlined design, the shut-off valve impresses with high flow values and its extremely low-noise operation. The WEH® TV17GOS is available with manual or pneumatic actuation (initial position NC or NO).

Application

Shut-off valve for filling, mixing, evacuating and discharging pipe systems or vessels of all types filled with oxygen at a pressure of up to 420 bar.

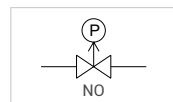
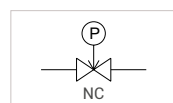
The shut-off valve is not designed for media of fluid group 1 as defined in the Pressure Equipment Directive 2014/64/EU or use in ATEX-relevant zones. Corresponding requirements can be evaluated by us on request.

TECHNICAL DATA

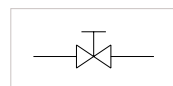
Characteristics	Basic version
Generation	2
Functions	
Automatic venting	No
Check valve	No
Vacuum operation	Yes
Flow direction	B1 → B2
Actuation	Pneumatic (NC resp. NO) for automatic control (e.g. via SPS) or manual with actuation lever
Specifications of valve	
Nominal bore (DN)	12 mm
Max. allowable operating pressure PS	420 bar
Temperature range	0 °C up to +60 °C
Leak rate	≤ 5 x 10 ⁻³ mbar x l/s
Specifications of pneumatic actuator	
Pilot pressure port P1	G1/4" female thread
Pilot pressure	6 - 8 bar
Measuring port MA2	M28x1.5 male thread
Number of cycles	Maximum 1 cycle per minute
Materials	
Materials (in flow channel)	Brass and Monel® 400
Spring material	Steel 1.4310
Inlet valve seal	Modified polyimide
Sealing material	EPDM
Conformity / Tests / Approvals	Type approval for suitability against adiabatic compression available

Symbols

pneumatic:



manual:

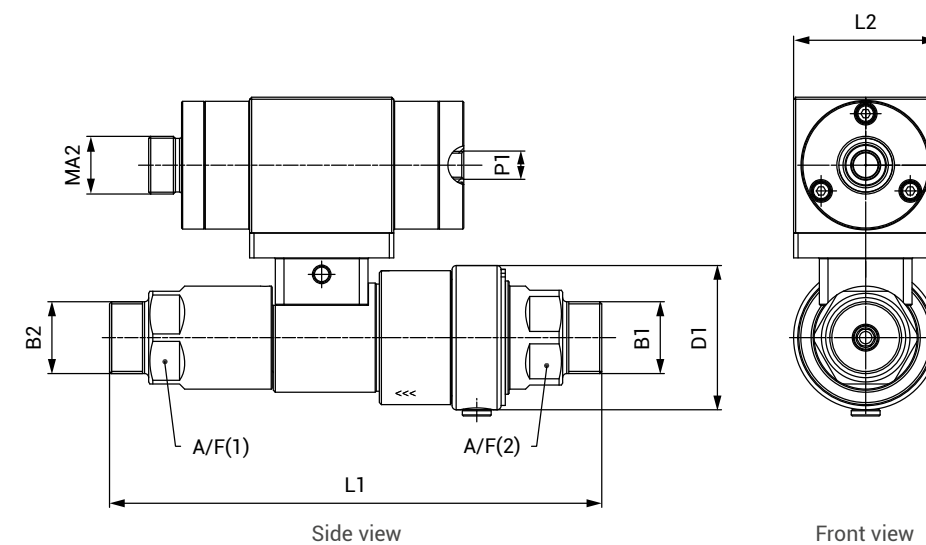


» Shut-off valve TV17GOS

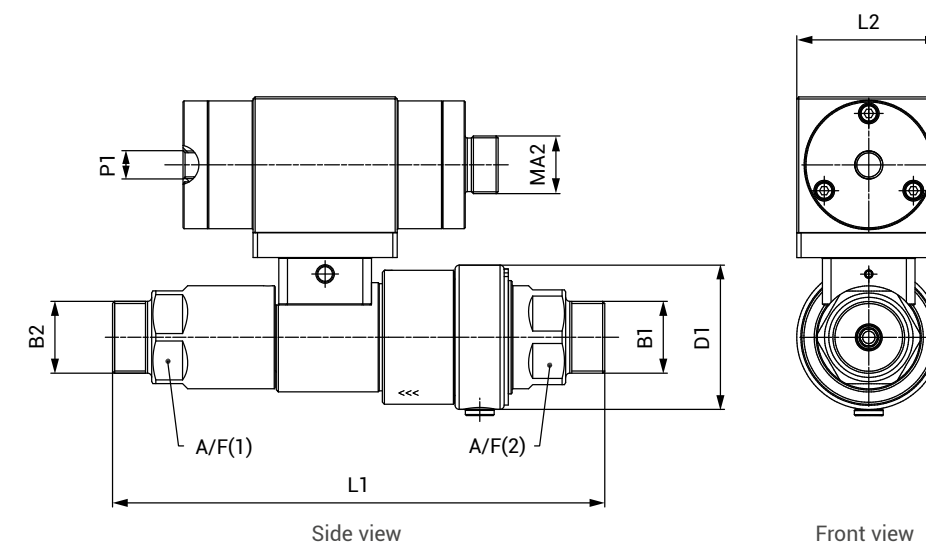
ORDERING | WEH® TV17GOS Shut-off valve with pneumatic actuation

approx. dimensions (mm)

TV17GOS NC



TV17GOS NO

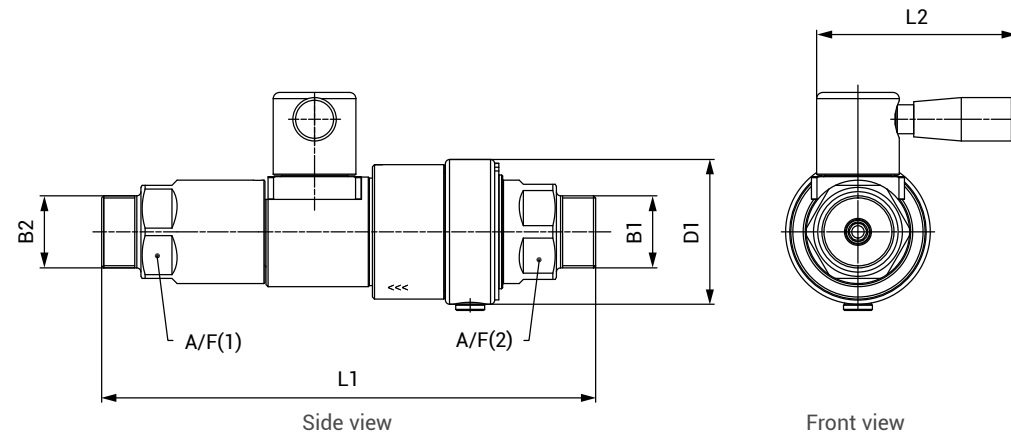


Part no.	Description	DN	B1 / B2 (male thread)	P1 (female thread)	MA2 (male thread)	L1	L2	D1	A/F(1)	A/F(2)
C1-159223	TV17GOS NC	12	UNF 1 3/8"-12	G1/4"	M28x1.5	239	70	70	45	46
C1-171636	TV17GOS NO	12	UNF 1 3/8"-12	G1/4"	M28x1.5	239	70	70	45	46

» Shut-off valve TV17GOS

ORDERING | WEH® TV17GOS Shut-off valve with manual actuation

approx. dimensions (mm)



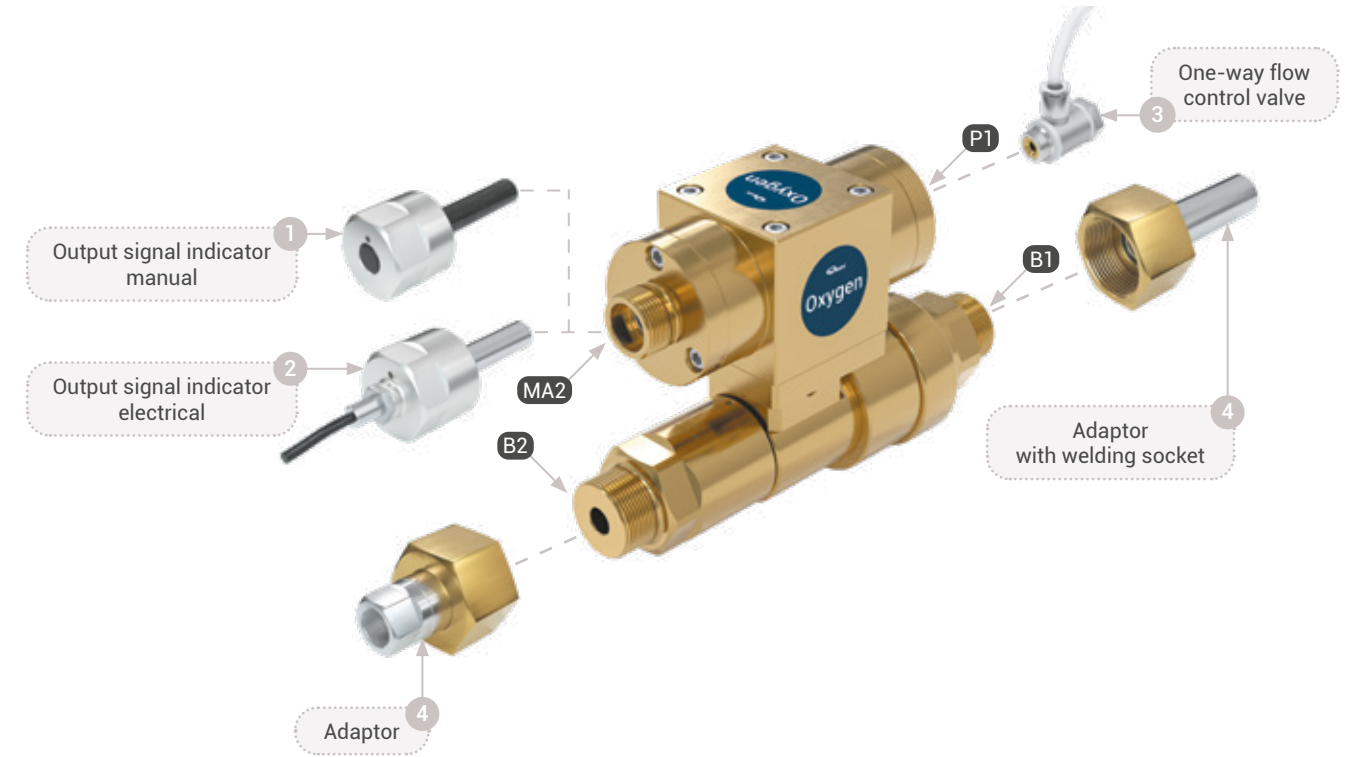
Part no.	Description	DN	B1 / B2 (male thread)	L1	L2	D1	A/F(1)	A/F(2)
C1-163167	TV17GOS	12	UNF 1 3/8"-12	239	97	70	45	46

Required information for ordering see page 7.

» Shut-off valve TV17GOS

SYSTEM OVERVIEW

The following schematic diagram gives you an overview of the various accessories available for the WEH® TV17GOS Shut-off valve.



Definition of ports

- B1** Media inlet
- B2** Media outlet
- P1** Pilot pressure port, compressed air 6 - 8 bar
- MA2** Measuring port for output signal indicators

» Shut-off valve TV17GOS

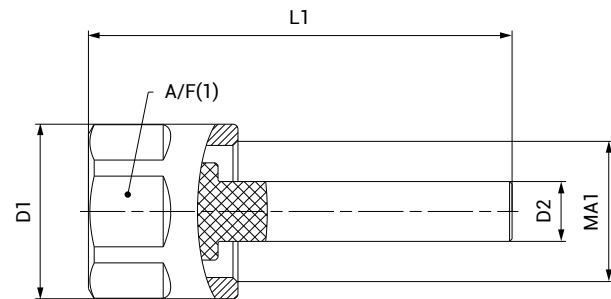
ACCESSORIES

The following accessories are available for the WEH® TV17GOS Shut-off valve:

1 Manual output signal indicator for pneumatic actuator

Application: Manual indication of valve position for the pneumatic actuator (port MA2)
Function: A pin (visible/non-visible) indicates whether the valve is closed or open
Materials: Aluminum and POM

approx. dimensions (mm)

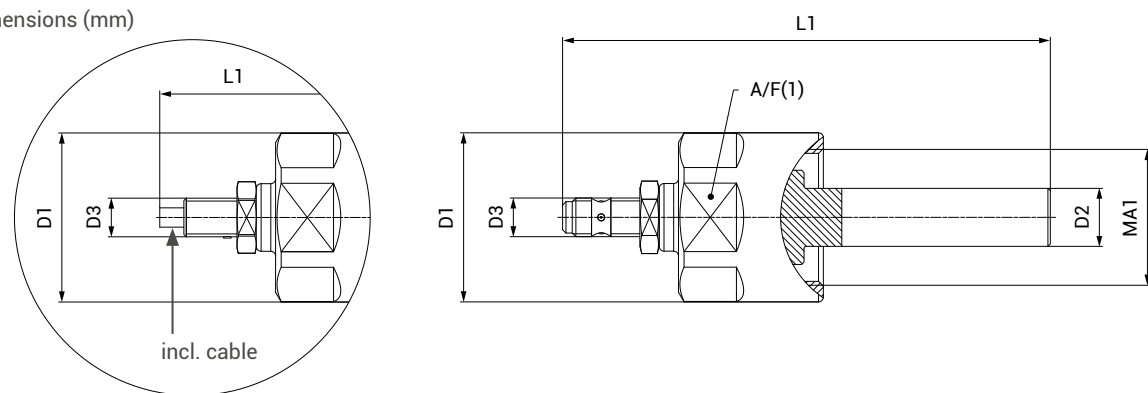


Part no.	Description	MA1 (female thread)	L1	D1	D2	A/F(1)
C1-76590	Manual output signal indicator	M28x1.5	85	35	12	32

2 Electrical output signal indicator for pneumatic actuator

Application: Electrically transmittable indication of valve position for the pneumatic actuator (port MA2)
Function: The valve position can be transmitted electrically to a control system via the 'Namur' proximity switch. This is useful if feedback of the valve position is required for automatic switching operations.
Materials: Stainless steel 1.4305 and aluminum (C1-76878) resp. stainless steel 1.4435 and brass (C1-101585)

approx. dimensions (mm)



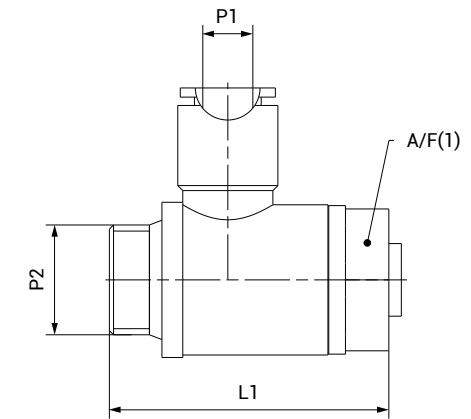
Part no.	Description	MA1 (female thread)	L1	D1	D2	D3	A/F(1)
C1-76878	Electrical output signal indicator (EX) incl. cable	M28x1.5	85	35	12	M8x1	32
C1-101585	Electrical output signal indicator	M28x1.5	85	35	12	M8x1	32

» Shut-off valve TV17GOS

3 One-way flow control valve for pneumatic actuator

Application: For regulation of the switching parameters of the valve (port P1)
Function: Soft opening of the valve
Materials: Nickel-plated brass

approx. dimensions (mm)



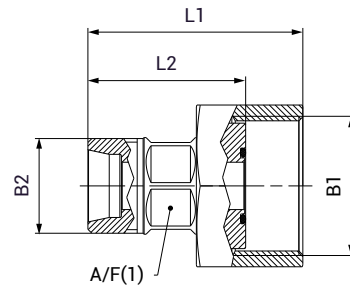
Part no.	Description	P1	P2 (male thread)	L1	A/F(1)
C1-78813	One-way flow control valve	6	G1/4"	33.5	17

» Shut-off valve TV17GOS

4 Adaptors incl. sleeve nut

Application: For easy installation of valves (ports B1/B2) in pipelines or complete plants
Materials: Adaptor of stainless steel 1.4305, sleeve nut of brass (plane sealing)

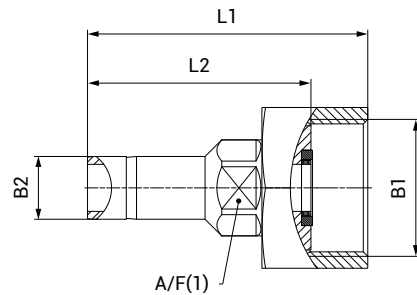
approx. dimensions (mm)



Adaptor with 24° cone connection acc. to ISO 8434-1 (S16xM24)

Part no.	DN	B1 (female thread)	B2 (male thread)	L1	L2	A/F(1)
C1-164158	12	UNF 1 3/8"-12	M24x1.5	55	40	22

approx. dimensions (mm)

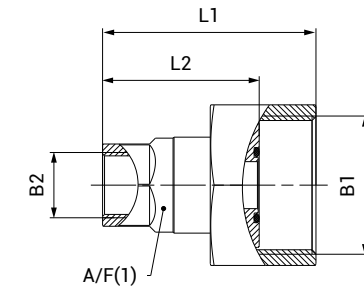


Adaptor for tube connection via pipe socket (for ferrule fitting)

Part no.	DN	B1 (female thread)	B2	L1	L2	A/F(1)
C1-166893	12	UNF 1 3/8"-12	Tube Ø 16	71.5	57	22

» Shut-off valve TV17GOS

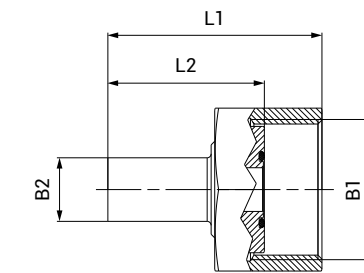
approx. dimensions (mm)



Adaptor for connection to G-thread

Part no.	DN	B1 (female thread)	B2 (female thread)	L1	L2	A/F(1)
C1-164157	12	UNF 1 3/8"-12	G3/8"	55	40	21

approx. dimensions (mm)



Adaptor with welding socket

Part no.	DN	B1 (female thread)	B2	L1	L2
C1-100953	12	UNF 1 3/8"-12	Tube Ø 16x2	54	39
C1-164156	12	UNF 1 3/8"-12	Tube Ø 20x3	84	69

Other adaptors on request.

» Shut-off valve TV17GOS

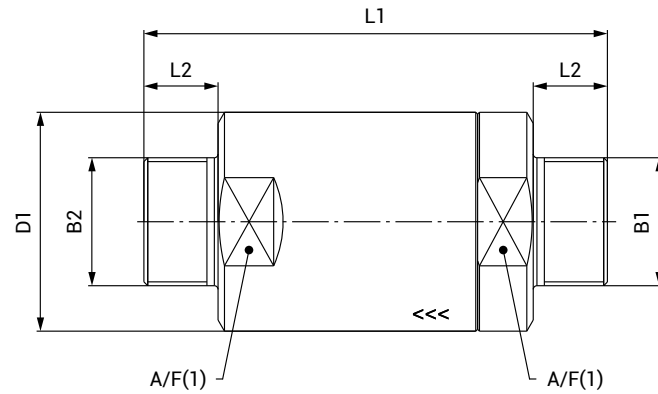
WEH® TSF4 Filter

Application: For installation in gas mixing plants

Function: Filtering of contaminants in the gas flow

Materials: brass, EPDM seals, Monel® wire filter insert

approx. dimensions (mm)



Part no.	Filter (µm)	B1 (male thread)	B2 (male thread)	L1	L2	D1	A/F(1)
C1-92654-X01	40	UNF 1 3/8"-12	UNF 1 3/8"-12	125	20	59	54

» Shut-off valve TV17GOS

ACCESSORIES FOR VALVE ASSEMBLIES

The following accessories enable the construction of complex valve systems by valve assemblies (see following sample images of technical gas plants). In this way, technical gas plants for filling, mixing, evacuating and discharging can be realized particularly economically. Monitoring and maintenance of these plants are thus considerably facilitated and investment costs are reduced.

Part no.	Description	Connection
C1-101070	Adaptor incl. sleeve nut	M24x2 male thread - UNF 1 3/8"-12 female thread
C1-100942	Screw adaptor	M24x2 male thread - UNF 1 3/8"-12 male thread
C1-100958	Plug	M24x2 male thread
C1-167238	Screw adaptor	M24x2 male thread - pipe socket Ø 6 mm
C1-110327	Connection bar for up to 4 components	M24x2 female thread
C1-100360	Connection bar for up to 6 components	M24x2 female thread
C1-75787	Connection tee with 3 connections	M24x2 female thread

Example of a technical gas plant with TV17 valve assemblies:



» Vacuum pressure relief module TVS20

DESCRIPTION



Features

- Effective protection of/under vacuum operated components such as vacuum pumps, sensors, etc.
- Venting into space
- Version for inert gases
- Simple design
- Easy to integrate into plants
- Retrofittable due to simple construction
- Easy to dismantle, easy to clean
- High-quality materials

The WEH® TVS20 Vacuum pressure relief module is designed to protect of and under vacuum operated components such as vacuum pumps, sensors etc. from overpressure. If, for example, a vacuum pump is installed in a pressure system which has a significantly higher pressure than the allowable operating pressure of the vacuum pump, the WEH® TVS20 protects the pump from damage by safely venting the overpressure into the space. Even short-term inlet pressures up to 420 bar are safely relieved in the TVS20 pressure relief module up to an overpressure of 0.2 bar in the outlet to the vacuum pump.

Suitable for pressure systems with a maximum inlet pressure of 420 bar and a nominal bore of up to 12 mm.

Various adaptors for inlet 'B1' are available for connecting the vacuum pressure relief module to the system (see accessories).

Application

Vacuum pressure relief module with venting into space, for installation in pressure systems to protect the vacuum pump, such as in gas mixing and control plants with vacuum function, which among other things require protection in front of the vacuum pump.

TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN) at inlet B1	12 mm
Max. inlet pressure at inlet B1	420 bar
Max. outlet pressure at outlet B1	0.2 bar
Temperature range	+5 °C up to +60 °C
Medium	Inert gases
Material	Stainless steel, brass
Sealing material	Copper, EPDM

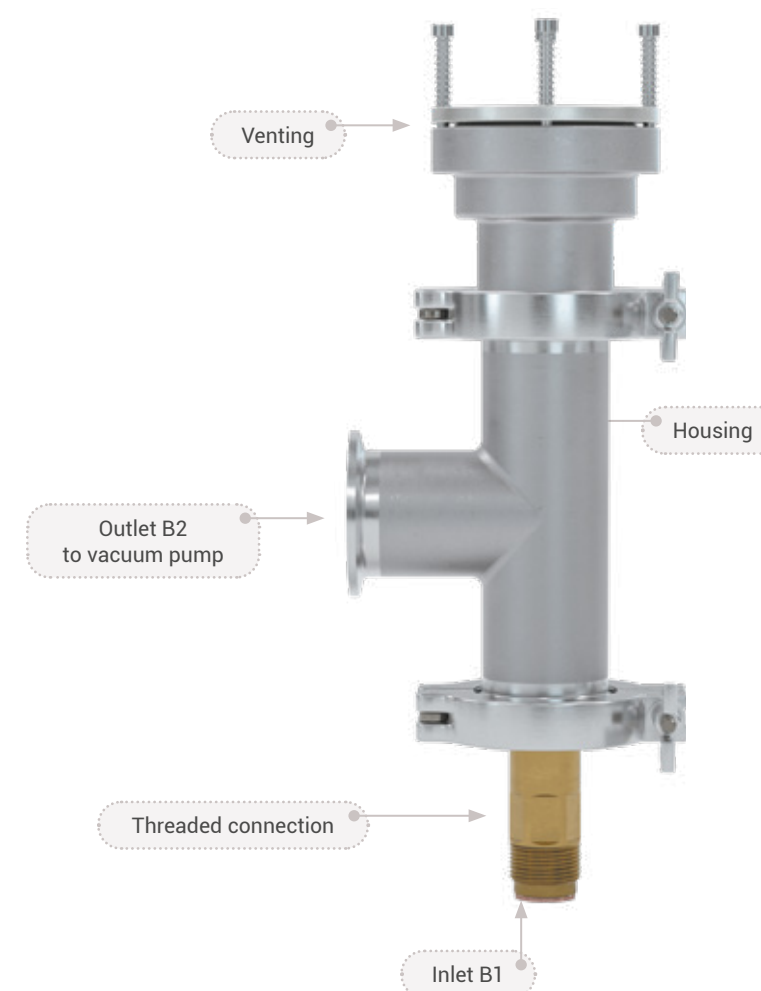
Other designs on request

Example of use:



» Vacuum pressure relief module TVS20

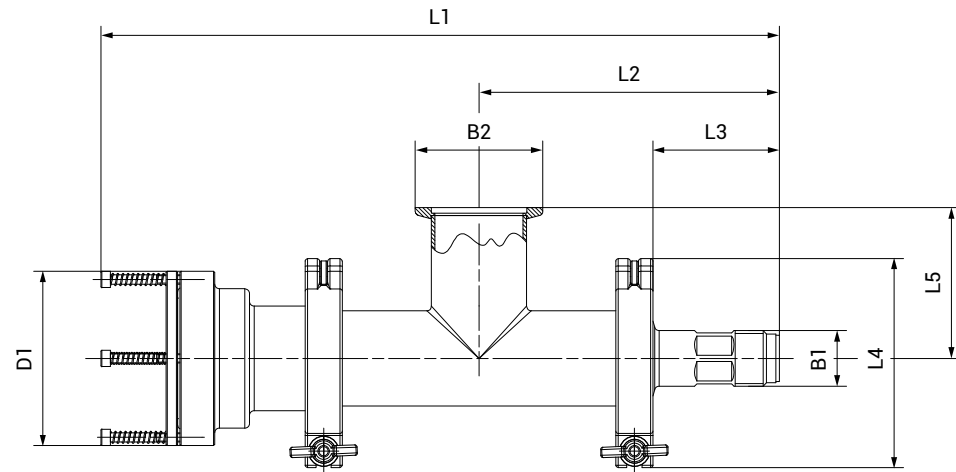
SYSTEM OVERVIEW



» Vacuum pressure relief module TVS20

ORDERING | WEH® TVS20 Vacuum pressure relief module

approx. dimensions (mm)



Part no.	Description	B1 (male thread)	B2*	L1	L2	L3	L4	L5	D1
C1-169470	TVS20	M24x2	ISO KF flange DN 40	292	129	54	90	65	75

* acc. to ISO 2861

Required information for ordering see page 7.

» Vacuum pressure relief module TVS20

ACCESSORIES

The following accessories are available for the WEH® TVS20 Vacuum pressure relief module:

Adaptors

Stainless steel adaptors for connecting the TVS20 vacuum pressure relief module (port B1) to the system.



Part no.	Description	DN	B1	B2 (female thread)
C1-99861**	Adaptor	12	Tube Ø 20x4.0	M24x2
W99863**	Adaptor	12	Tube Ø 16x2.5	M24x2
E29-162220	Adaptor	12	G3/4"* male thread	M24x2
E29-160839	Adaptor	12	NPT 3/4" male thread	M24x2

* acc. to DIN 3852-2
** with welding socket

» Vacuum pressure relief module TVS21

DESCRIPTION



Features

- Effective protection of/under vacuum operated components such as vacuum pumps, sensors, etc.
- Venting to the atmosphere
- Version for inert gases
- Simple design
- Easy to integrate into plants
- Retrofittable due to simple construction
- Easy to dismantle, easy to clean
- High-quality materials

The WEH® TVS21 Vacuum pressure relief module is designed to protect of and under vacuum operated components such as vacuum pumps, sensors etc. from overpressure. If, for example, a vacuum pump is installed in a pressure system which has a significantly higher pressure than the allowable operating pressure of the vacuum pump, the WEH® TVS21 protects the pump from damage by safely venting the overpressure via hose to the atmosphere. Even short-term inlet pressures up to 420 bar are safely relieved in the TVS21 pressure relief module up to an overpressure of 0.2 bar in the outlet to the vacuum pump.

Suitable for pressure systems with a maximum inlet pressure of 420 bar and a nominal bore of up to 12 mm.

Various adaptors for inlet 'B1' are available for connecting the vacuum pressure relief module to the system (see accessories).

Application

Vacuum pressure relief module with venting to the atmosphere, for installation in pressure systems to protect the vacuum pump, such as in gas mixing and control plants with vacuum function, which among other things require protection in front of the vacuum pump.

TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN) at inlet B1	12 mm
Max. inlet pressure at inlet B1	420 bar
Max. outlet pressure at outlet B1	0.2 bar
Temperature range	+5 °C up to +60 °C
Medium	Inert gases
Material	Stainless steel, brass
Sealing material	Copper, EPDM

Other designs on request

» Vacuum pressure relief module TVS21

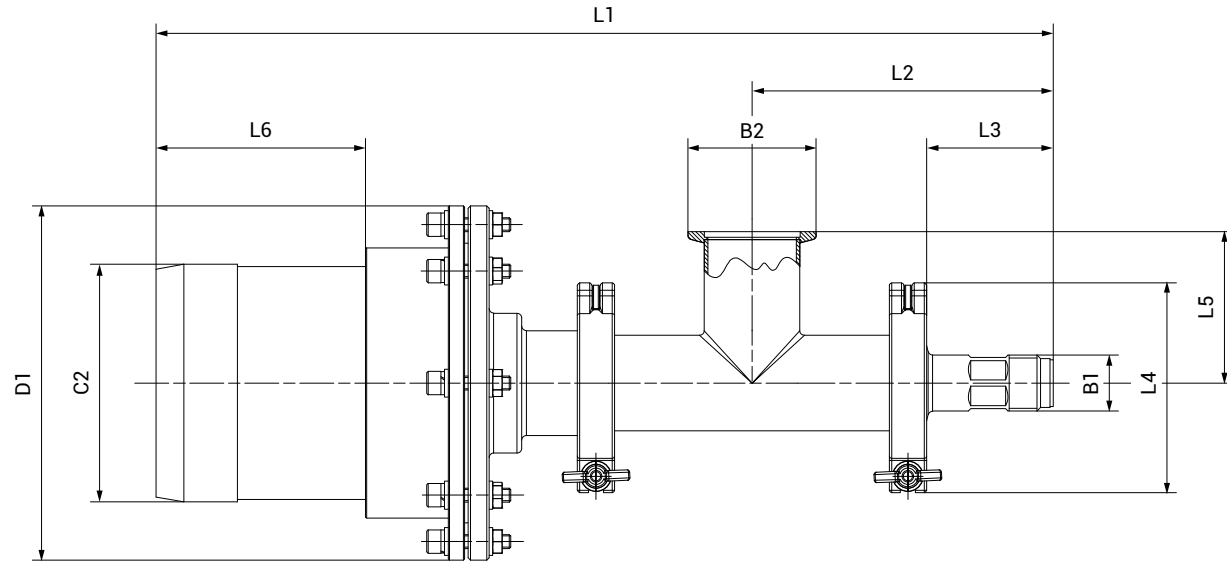
SYSTEM OVERVIEW



» Vacuum pressure relief module TVS21

ORDERING | WEH® TVS21 Vacuum pressure relief module

approx. dimensions (mm)



Part no.	Description	B1 (male thread)	B2*	C2	L1	L2	L3	L4	L5	L6	D1
C1-169471	TVS21	M24x2	ISO KF flange DN 40	∅ 100	385	129	54	90	65	90	152

* acc. to ISO 2861

Required information for ordering see page 7.

» Vacuum pressure relief module TVS21

ACCESSORIES

The following accessories are available for the WEH® TVS21 Vacuum pressure relief module:

Adaptors

Stainless steel adaptors for connecting the TVS21 vacuum pressure relief module (port B1) to the system.



Part no.	Description	DN	B1	B2 (female thread)
C1-99861**	Adaptor	12	Tube ∅ 20x4.0	M24x2
W99863**	Adaptor	12	Tube ∅ 16x2.5	M24x2
E29-162220	Adaptor	12	G3/4"* male thread	M24x2
E29-160839	Adaptor	12	NPT 3/4" male thread	M24x2

* acc. to DIN 3852-2
** with welding socket

» Check valve TVR2

DESCRIPTION



Features

- High leak tightness
- Very low noise due to optimized internal gas flow
- Wear and corrosion resistant
- Robust construction
- Simple installation
- High-quality materials

The WEH® TVR2 Check valve was specially developed for installation in gas mixing plants.

The internal seals are arranged so that they are protected from the media flow. This prevents damage to the seals from any dirt particles on the sealing components within the unit.

The check valves, which are very silent in use even under high flow rates, are characterized in particular by their very low cracking pressure and their optimum tightness, which makes them ideal for use with gaseous media.

The WEH® TVR2 is equipped with a EPDM housing seal. Other sealing materials are available on request. It is the customer's responsibility to clarify the media compatibility.

Application

Check valve for reliable return flow prevention in a gaseous media flow and for installation in gas mixing plants.

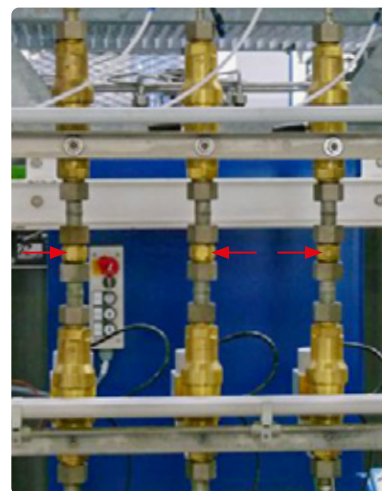
Attention: The TVR2 is not designed to be used as a filling or safety valve!

TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	12 mm
Max. allowable operating pressure PS	420 bar
Temperature range	+5 °C up to +95 °C
Medium	Inert gases
Material	Housing of brass, inner parts of stainless steel
Spring material	Stainless spring steel
Sealing material	Housing seal of EPDM
Sealing concept	Cone sealing with PEEK
Flow direction	B1 → B2

Other designs on request

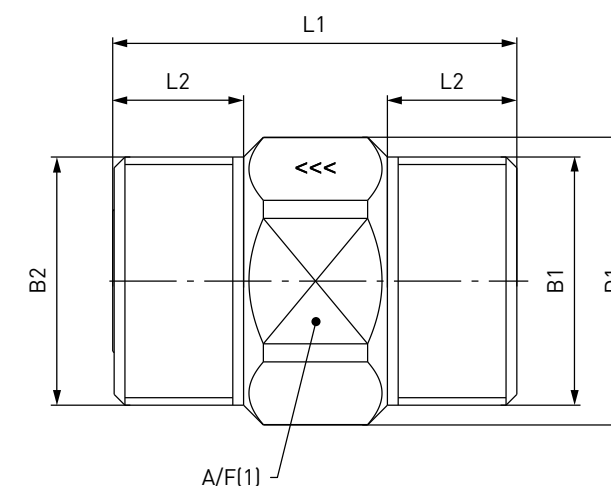
Example of use:



» Check valve TVR2

ORDERING | WEH® TVR2 Check valve

approx. dimensions (mm)



Part no.	Description	B1 (male thread)	B2 (male thread)	L1	L2	D1	A/F(1)
C1-77200-X01	TVR2	UNF 1 3/8"-12	UNF 1 3/8"-12	56	18	40	36

Other connection sizes and types on request.

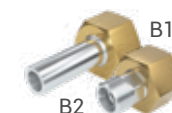
Required information for ordering see page 7.

ACCESSORIES

The following accessories are available for the WEH® TVR2 Check valve:

Adaptors incl. sleeve nut

Adaptors with threaded or welded connection for installation of the TVR2 check valve (ports B1/B2) in pipelines or plants.



Part no.	Description	B1 (female thread)	B2
C1-164158	Adaptor	UNF 1 3/8"-12	M24x1.5* male thread for tube Ø 16
C1-166893	Adaptor	UNF 1 3/8"-12	Tube Ø 16**
C1-164157	Adaptor	UNF 1 3/8"-12	G3/8"
C1-100953***	Adaptor	UNF 1 3/8"-12	Tube Ø 16x2
C1-164156***	Adaptor	UNF 1 3/8"-12	Tube Ø 20x3

* 24° cone connection acc. to ISO 8434-1 (S16xM24)

** double ferrule fitting

*** with welding socket

» Filter TSF4

DESCRIPTION



Features

- Suitable for installation in gas mixing plants for the air and gas filtration
- Version for inert gases or oxygen
- Wear and corrosion resistant
- Easy replacement of filter element
- Simple installation
- High-quality materials

Clean, filtered gases are a basic requirement for the proper functioning of individual components when filling gases and using them in gas mixing plants. Seals in particular can be damaged by contaminants in the media flow, such as dirt particles. A special gas filter has been developed to clean the media flow from these components.

The WEH® TSF4 Filter is especially used in filling plants for oxygen and inert gases, such as argon and nitrogen. The filter removes the contaminants from the gas. The gas flows through the filter and the filter retains the dirt particles contained in the gas and in the piping system.

The TSF4 is suitable for high pressures and is particularly easy to maintain. The wire filter insert can be easily removed and cleaned without time-consuming unscrewing of pipes.

The WEH® TSF4 is equipped with a EPDM housing seal. Other sealing materials are available on request. It is the customer's responsibility to clarify the media compatibility.

Application

Filter for use with gaseous media and for installation in gas mixing plants.

TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	12 mm
Max. allowable operating pressure PS	420 bar
Temperature range	-20 °C up to +85 °C -10 °C up to +60 °C (O ₂)
Medium	Inert gases or oxygen
Material	Brass and stainless steel resp. Monel® (O ₂)
Sealing material	Housing seal of EPDM
Design	Incl. unscrewable filter element (40 µm)
Conformity / Tests / Approvals	Type approval for suitability against adiabatic compression available

Other designs on request

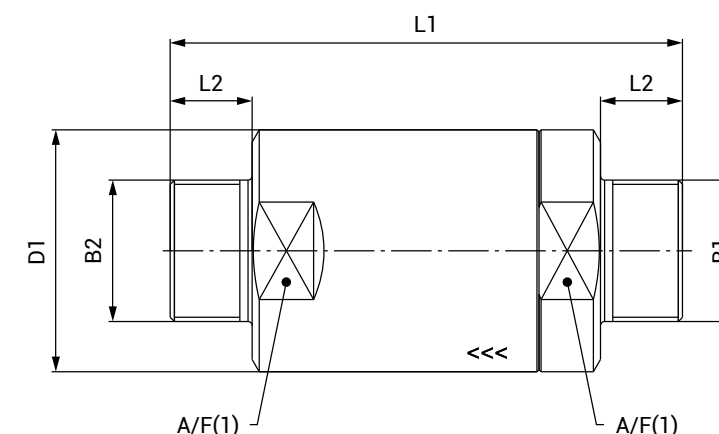
Example of use:



» Filter TSF4

ORDERING | WEH® TSF4 Filter

approx. dimensions (mm)



Part no.	Description	B1 (male thread)	B2 (male thread)	L1	L2	D1	A/F(1)
C1-82292-X01	TSF4	UNF 1 3/8"-12	UNF 1 3/8"-12	125	20	59	54
C1-92654-X01*	TSF4	UNF 1 3/8"-12	UNF 1 3/8"-12	125	20	59	54

* for oxygen

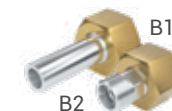
Other connection sizes and types on request. Required information for ordering see page 7.

ACCESSORIES

The following accessories are available for the WEH® TSF4 Filter:

Adaptors incl. sleeve nut

Adaptors with threaded or welded connection for installation of the TSF4 filter (ports B1/B2) in pipelines or plants.



Part no.	Description	B1 (female thread)	B2
C1-164158	Adaptor	UNF 1 3/8"-12	M24x1.5* male thread for tube Ø 16
C1-166893	Adaptor	UNF 1 3/8"-12	Tube Ø 16**
C1-164157	Adaptor	UNF 1 3/8"-12	G3/8"
C1-100953***	Adaptor	UNF 1 3/8"-12	Tube Ø 16x2
C1-164156***	Adaptor	UNF 1 3/8"-12	Tube Ø 20x3

* 24° cone connection acc. to ISO 8434-1 (S16xM24)

** double ferrule fitting

*** with welding socket

SPARE PARTS

Various parts are available as spares for the WEH® TSF4 Filter.

Part no.	Description
W9062	Wire filter insert 40 µm
E69-91040*	Wire filter insert 40 µm

* Monel® construction for oxygen

» Swivel joint TD1

DESCRIPTION



Features

- For free rotation of the WEH® Connector / filling hose in each position
- No twisting of the filling hose
- Version for inert gases and oxygen
- High-quality materials

The WEH® TD1 Swivel joint is the ideal addition for any application where a WEH® Connector can be placed in the optimum connection position without pressure. This prevents the filling hose from twisting.

The swivel joint is simply screwed onto the corresponding WEH® Connector.

The WEH® TD1 is equipped with a seal adapted to the medium. Other sealing materials are available on request. It is the customer's responsibility to clarify the media compatibility.

Application

Swivel joint for axial alignment of the WEH® Connector.

TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	5 mm
Max. allowable operating pressure PS	420 bar
Temperature range	+5 °C up to +80 °C +5 °C up to +60 °C (O ₂)
Medium	Inert gases and oxygen
Material	Brass
Sealing material	Depending on medium
Conformity / Tests / Approvals	Type approval for suitability against adiabatic compression available

Other designs on request

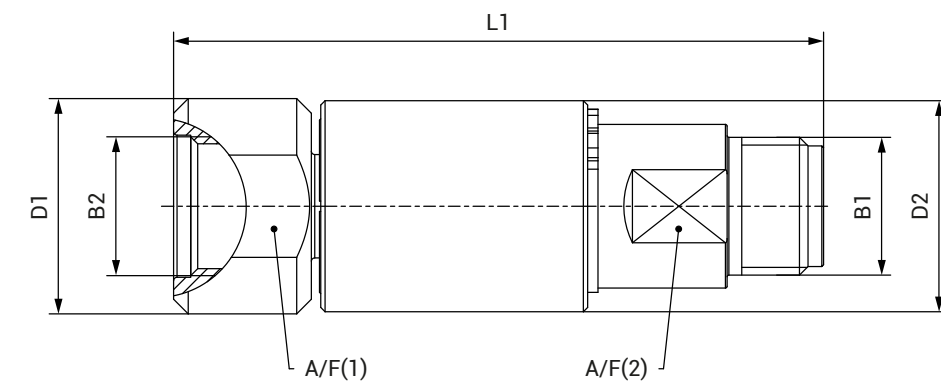
Example of use:



» Swivel joint TD1

ORDERING | WEH® TD1 Swivel joint

approx. dimensions (mm)



Part no.	Description	B1 (male thread)	B2 (female thread)	L1	D1	D2	A/F(1)	A/F(2)
W6996-X01	TD1	M16x1.5	M16x1.5	75.5	25	24.5	22	17

Other connection sizes and types on request.

Required information for ordering see page 7.

ACCESSORIES

The following accessories are available for the WEH® TD1 Swivel joint:

Adaptors

Adaptors for connecting the TD1 swivel joint (port B1) to the filling hose are available on request.

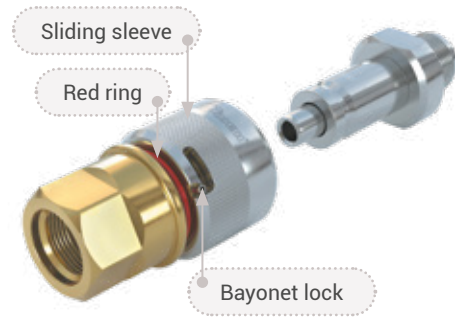
SPARE PARTS

Various parts are available as spares for the WEH® TD1 Swivel joint.

Part no.	Description
E50-139S614	Seal

» Quick release system TK350-TN350

DESCRIPTION



Features

- Quick connector change
- Bayonet lock
- Suitable for inert gases and oxygen
- Can be used as swivel joint
- High-quality materials

Previously, when gas cylinders were filled with different cylinder valves, the filling hose had to be unscrewed each time from the quick connector and screwed onto a different connector. The quick release system has solved this problem. The WEH® TK350-TN350 Quick release system allows a quick change of a WEH® Connector for repairs or when changing to other cylinder valve standards. Changing from residual pressure to non-residual pressure connectors is also made much easier. An additional swivel joint is not required, as the quick release system can also be used for this purpose.

The quick release system consists of a WEH® TK350 Quick release coupling (without shut-off valve) for direct connection to the WEH® Connectors TW54, TW57 and TW67 and a WEH® TN350 Quick release nipple (without shut-off valve) for connection to the filling hose.

The TK350 quick release coupling is screwed directly onto the WEH® Connector and the corresponding TN350 quick release nipple is screwed to the filling hose. When changing to a different cylinder valve configuration, disconnect the TK350 and TN350 by unlocking the bayonet lock and pulling back the sliding sleeve of the TK350. The TN350 quick release nipple remains on the filling hose and is simply connected to another WEH® Connector, which is also equipped with a TK350 quick release coupling. This allows quick change from one system to another. The WEH® TK350 Quick release coupling has a red ring as a visual check, which indicates whether the quick release coupling is connected correctly and a bayonet lock which prevents the coupling from disconnecting by itself.

The WEH® TK350-TN350 is equipped with a seal adapted to the medium. Other sealing materials are available on request. It is the customer's responsibility to clarify the media compatibility.

Application

Quick release system for fast and easy changing of WEH® Connectors for repairs, for changing to other standards and for changing from residual pressure to non-residual pressure connectors.

TECHNICAL DATA

Characteristics	Basic version
Nominal bore (DN)	5 mm
Max. allowable operating pressure PS	375 bar
Temperature range	+5 °C up to +80 °C +5 °C up to +60 °C (O ₂)
Leak rate	1 x 10 ⁻³ mbar x l/s
Medium	Inert gases and oxygen
Material	Corrosion resistant TK350: brass and stainless steel TN350: stainless steel
Sealing material	Depending on medium
Actuation	Manual actuation via sliding sleeve
Conformity / Tests / Approvals	Type approval for suitability against adiabatic compression available

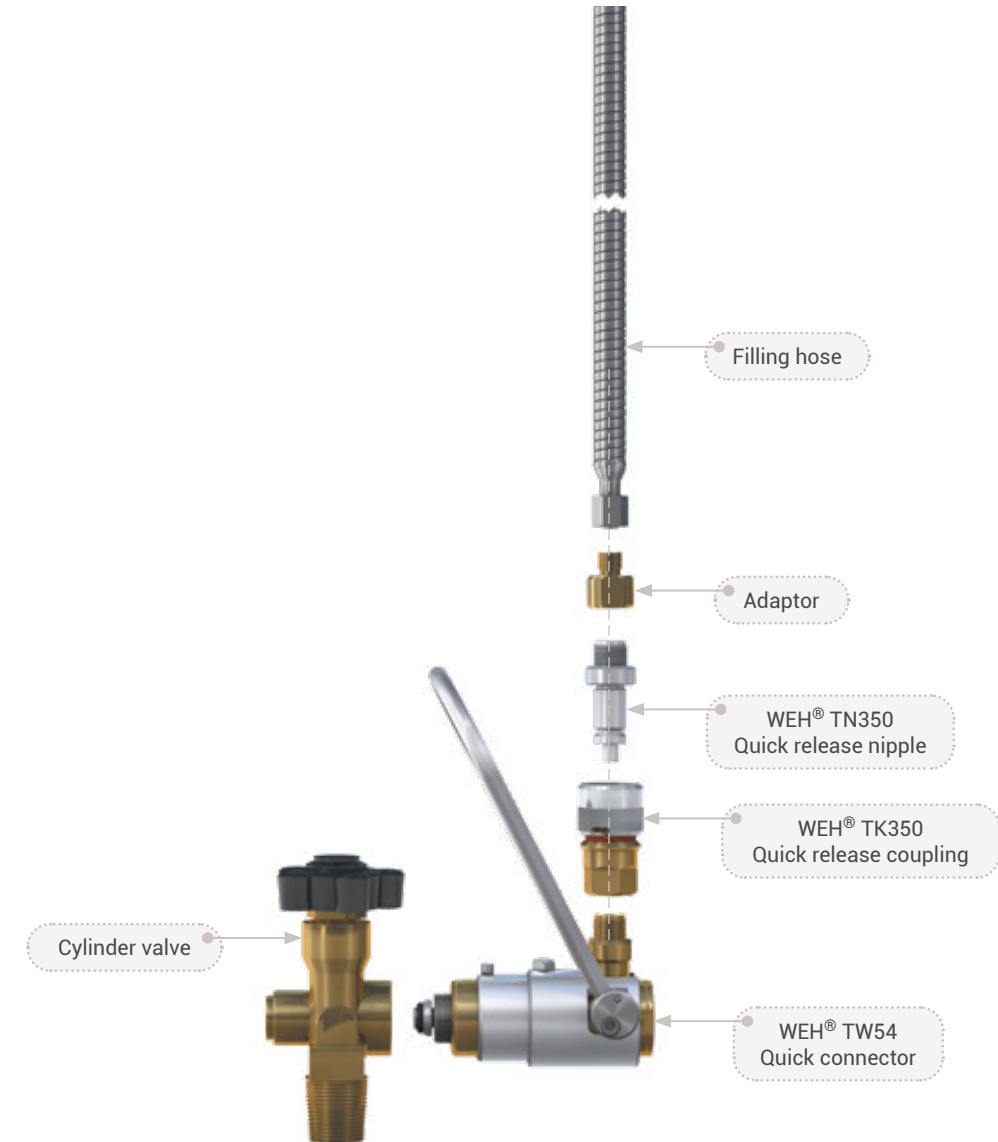
Other designs on request

Example of use:



» Quick release system TK350-TN350

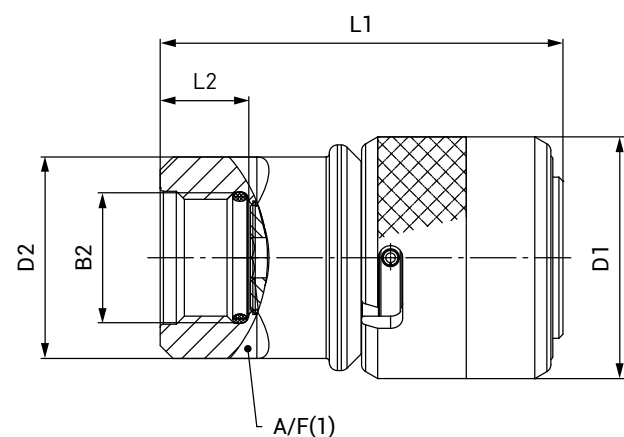
SYSTEM OVERVIEW



» Quick release system TK350-TN350

ORDERING | WEH® TK350 Quick release coupling

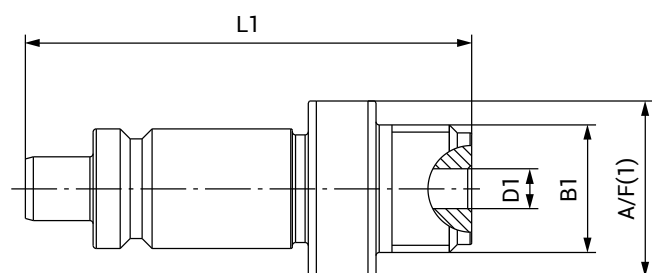
approx. dimensions (mm)



Part no.	Description	B2 (female thread)	L1	L2	D1	D2	A/F(1)
C1-91239-X01	TK350	M16x1.5	50	11	30	25	22

ORDERING | WEH® TN350 Quick release nipple

approx. dimensions (mm)



Part no.	Description	B1 (male thread)	L1	D1	A/F(1)
C1-91241-X01	TN350	M16x1.5	56	5	22

Other connection sizes and types on request.

Required information for ordering see page 7.

» Quick release system TK350-TN350

ACCESSORIES

The following accessories are available for the WEH® TK350-TN350 Quick release system:

Adaptors

Adaptors for connecting the TN350 quick release nipple to the filling hose are available on request.

Monel® construction

All pressurized parts are also available in Monel®. Please contact us!

» Technical appendix

Definitions

Abbreviation	Definition	
Pressure specifications		
PN	Nominal pressure	Nominal pressure after temperature compensation at 15 °C (59 °F)
PS	Max. allowable operating pressure	Maximum allowable operating pressure acc. to Pressure Equipment Directive 2014/68/EU, Article 2 paragraph 8
PT	Hydrostatic test pressure	Hydrostatic test pressure acc. to Pressure Equipment Directive 2014/68/EU, Annex I no. 7.4
PP	Pilot pressure	Actuation pressure for hydraulic and pneumatic components
PC	Cracking pressure	Pressure at which the check valve opens and the first indication of flow occurs
WP	Working pressure	'Working pressure' means the maximum pressure to which a component is designed to be subjected to and which is the basis for determining the strength of the component under consideration
MAWP	Max. allowable working pressure	Max. allowable operating pressure at which the weakest point of the system or the vessel (e.g. cylinder valve) can operate at a certain temperature during normal operation
Dimensions		
L1, L2, L3 ...	Length specification	
D1, D2, D3 ...	Diameter specification	
A/F(1), A/F(2) ...	Wrench size specification	
Ports		
A / X	Customer-specific port (test piece, sample, cylinder valve, handwheel respiratory protective equipment)	
B1, B2, B3 ...	Media ports	
C1, C2, C3 ...	Gas recirculation ports	
P1, P2, P3 ...	Pilot pressure ports	
MA1, MA2 ...	Measuring ports	
Q	Drain port filter	
G	Mounting bores	
Others		
DN	Nominal size (DN) acc. to Pressure Equipment Directive 2014/68/EU, whereby the largest, pressurized diameter of the media or pilot pressure connections of the WEH® Device (A, B1, B2, B3 or C1, C2, C3 and P1, P2, P3) which faces the customer's pipe system, is relevant.	
µm	Max. diameter of the filtered particle	
Kv	Is the discharge of water in m ³ /h at a pressure drop of 1 bar (14.5 psi), acc. to DIN/EN 60534-2	
Cv	Is the discharge of water in gallons per minute at a pressure drop of 1 psi, acc. to DIN/EN 60534-2	
IR	Infrared data interface	
ENR	Exchangeable data interface (exchangeable nozzle receiver)	
TS	Maximum allowable temperature acc. to Pressure Equipment Directive 2014/68/EU, Article 2 paragraph 9	

» Technical appendix

Definitions

Abbreviation	Definition
Breakaway force	Is the force range, in which the breakaway releases
NC	Normally closed (initial position of shut-off valve)
NO	Normally open (initial position of shut-off valve)

Technical explanations

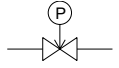
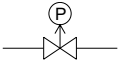
Term	Definition
Temperature range	Is the temperature range in which the WEH® Product can be used.
Media temperature range	Is the temperature range of the medium used, which can flow through the WEH® Product (may change depending on the time of measurement).
Ambient temperature range	Is the temperature range of the environment in which the WEH® Product can be used.
Leak rate	Is the maximum external leak rate, which the WEH® Product exhibits in delivery condition.
Internal leak rate	The internal leak rate depends, among other things, on type of application, medium and pressure difference on the WEH® Product. On request it can be specified more precisely.
Max. side load	Is the max. allowable sum of all external forces that may act on the device under intended use. Note: External forces can affect the life time of WEH® Products and can cause damage. Tensile and transverse loads as well as vibrations and pressure impacts need to be considered, e.g. by user side measures such as on site mountings and similar. Therefore, lateral forces such as whipping hoses or other equipment must be avoided. WEH® Products should be installed in such a way, that lateral forces which could lead to leakage or damage can not occur. Special applications require a special consultation before selecting the product.
Products with pneumatic actuation	The customer has to ensure there is adequate axial movement when pneumatically actuated WEH® Products are used in automated systems, see maximum side load. Ideally the products should be mounted with a floating joint or introduced individually to prevent the possibly existing clamping jaws getting blocked or jammed in the thread of the test piece.
Sealing material	On request the WEH® Product can be adapted to customer specific applications regarding to the sealing materials used. The clarification of the media compatibility and suitability of the adapted WEH® Product for the final application is always the responsibility of the end user.
Corrosion resistant	WEH® Products are designed for use in temperate climate zones - with low levels of humidity and salinity in the air. An accelerated formation of rust or corrosion may occur at or near the sea. Therefore, reduce the inspection interval recommended for normal use and send in the WEH® Product for maintenance immediately if you notice increased soot, rust or corrosion.
Storage / life time of components	There are certain requirements for every WEH® Product. WEH® Products are generally products which may be subject to wear and fatigue during operation and depending on your individual application/use. For details - in particular regarding the corresponding minimum inspection and maintenance intervals - please refer to the respective operating instructions for the WEH® Product.

» Technical appendix

Further explanations

Subject	Definition
Technical data	Unless otherwise stated, the technical data in catalogs, data sheets and operating instructions are based on tests with nitrogen that are in the development phase or at the end of development. Leakage data are based on measurements with helium.
Intended use	For the intended use of WEH® Products, please refer to the respective operating instructions. The following applications are generally excluded for WEH® H ₂ and CNG products, unless these are expressly permitted in the operating instructions: <ul style="list-style-type: none"> • aerospace applications, e.g. in aircrafts • shipping applications • applications offshore and in littoral areas • applications within defense and weapons technology
Safe product selection	Our WEH® Products are designed to be operated by qualified professional users (insofar as WEH® Products are also designed to be operated by other users in individual cases, this is explicitly stated in the corresponding operating instructions). Please note that WEH does not know your system and therefore - also due to the large number of different potential applications of WEH® Products - cannot perform tests on all potential types of application. You alone are responsible for the selection, configuration and suitability of WEH® Products, especially according to the requirements of your system. Before purchasing WEH® Products, please particularly ensure that our products are compatible with your intended use, your performance data, your material and fluids, your system concept and your system limits according to our product specifications. Please also consider your technical and legal requirements for operation, handling and maintenance. The quality and safety of WEH® Products is our highest priority. For this reason, WEH® Products may not be used outside the specifications in the relevant data sheets and product descriptions. If you are not sure whether the WEH® Product is suitable for your system and intended use, please contact us in advance. We also strongly recommend that you refrain from using third-party spare parts or a combination of WEH® Products with unsuitable third-party products. You alone are responsible for reviewing the suitability of third-party products. WEH® Products and WEH® Spare parts comply with our quality and safety standards.
Explanation on the Pressure Equipment Directive	In general, WEH® Products with a maximum allowable operating pressure of more than 0.5 bar (PS) fall within the scope of application of the Pressure Equipment Directive 2014/68/EU, are generally classified as pressure accessories in accordance with Article 2 (5) of the same and are considered to be similar to piping. These WEH® Products may not be used as safety accessories. Furthermore, it is pointed out, that these WEH® Products are designed and placed on the market in accordance with the requirements of Article 4 (3) of the Pressure Equipment Directive 2014/68/EU. For some products a different classification and/or categorisation is required or can be conducted on request. In these cases, if legally required, a conformity assessment procedure in accordance with Annex III of the Pressure Equipment Directive 2014/68/EU can and will also be conducted and the conformity can be declared by means of an EU Declaration of Conformity in accordance with Annex IV of the Pressure Equipment Directive 2014/68/EU. In these cases, the EU Declaration of Conformity is enclosed with the product.
External change management	WEH reserves the right to update, optimise and adjust its products continuously. This may result in corresponding changes of the product. Customers will be informed proactively or unsolicited by WEH only in individual cases about product updates, product optimisations and/or product adaptations that have been carried out. You are free to contact WEH at any time to request information about any product updates, product optimisations and/or product adjustments.

Symbols

Type	Pneumatic - NC	Pneumatic - NO	Manual
Shut-off valve TV17G0 & TV17G0S			

» Brochure data

This catalog was created diligently and on the basis of decades of experience.

All information/recommendations in this catalog are non-binding and are particularly subject to possible deviations or changes. For any binding information/recommendations, please refer to the verified information/recommendations in our individual orders. Particularly, due to the wide range of possible applications of WEH® Products and the unknown parameters and operating conditions linked to them, the accuracy and/or completeness of the information/recommendations in this catalog cannot be guaranteed with respect to certain individual cases. In doing so, we would like to refer once again to the information/recommendations provided in individual orders.

The application limits indicated in this catalog (e.g. for pressure, temperature, etc.) are generally theoretical values determined in a test environment. As the concrete operating conditions could differ, we cannot ensure that these values apply to a specific customer application. During the practical use, you should particularly consider that the mutual influence of operational parameters could result in changes of the maximum values. Especially, in case of any unusual operating conditions, please contact WEH before using any WEH® Products. We therefore strongly recommend that you also require any necessary binding information/recommendations to be included by us in the individual orders.

Furthermore, we point out that we cannot assume any warranty or accept any responsibility for printing errors, incomplete information or misinterpretations. Illustrations and/or images are particularly provided for illustrative purposes only and may differ in some details from the actual product. Moreover, dimensions and other technical details in this catalog are non-binding information and are provided for illustrative purposes only. The product's exact form and design result exclusively from the specific individual order. In particular, certain information/recommendations in the catalog only become integral part of the contract if they have been expressly contractually agreed.

Only the latest version of our catalog and other product related documents is valid and applicable. Please ensure that you always use the latest catalog's and documents' versions. Please feel free to contact WEH at any time and request the latest versions.

Our General Terms and Conditions and the Agreement on Protection of Know-How and Quality Assurance shall apply to deliveries and other services, unless expressly agreed otherwise.

In principle, we do not accept the General Terms and Conditions of our customers or third parties. Thank you for your understanding.

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More questions? – Great! Don't hesitate to contact our experts.