

# Safety valve with component approval type MVEX, SVX

## Product documentation



Directly controlled

Operating pressure  $p_{\max}$ :

450 bar

Flow rate  $Q_{\max}$ :

100 l/min



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# 1 Overview of component approved safety valve type MVEX., SVX..

The component approved safety valve type MVEX., SVX.. protect pressurised hydraulic systems against overloading in accordance with the Pressure Equipment Directive.

The valve must not be used as an operating pressure-limiting valve. It is not designed for frequent response.

The valve is designed as a direct-acting spring-loaded cone-seated valve.

## Features and advantages

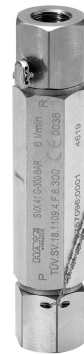
- Operating pressures up to 450 bar
- Easily produced mounting hole

## Intended applications

- Safety valve for accumulators in oil-hydraulic systems, taking account of the following regulations:
  - Pressure Equipment Directive 2014/68/EU
  - Industrial Safety Regulation dated 1.6.2015 / Use of Work Equipment Directive 2009/104/EC
  - AD 2000 Code, data sheets A2 and S5, latest release



*Component approved safety valve type MVEX..*



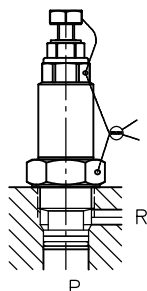
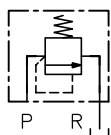
*Component approved safety valve type SVX..*



## 2 Available versions

### 2.1 Screw-in valve

#### Circuit symbol



#### Ordering example

MVEX 6	E	-120	-3/4 A	-AT
2.1.1 "Basic type and size"				
Pressure setting		2.1.2 "Pressure range"		
2.1.3 "Version with single connection block"			2.1.4 "Seal material"	

#### 2.1.1 Basic type and size

Type	Size	Description	Pressure setting $p_{max}$ (bar)	Flow rate $Q_{max}$ (l/min)
MVEX	4	Screw-in valve	450	24
	6			100



#### NOTICE

The max. flow rate and the permissible pressure setting depend on the selected pressure range see Chapter 2.1.2, "Pressure range".

## 2.1.2 Pressure range

Type	Pressure range	Pressure setting range $p_{min} - p_{max}$ (bar)	Flow rate $Q_{max}$ (l/min)	Component coding	Cone, seat and nominal $\varnothing$ (mm)
MVEX 4	H	80 ... 90	22	TÜV.SV.23 - 1149.4.F.22.p	4
	F	91 ... 110	22		
	E	111 ... 180	24	TÜV.SV.23 - 1149.4.F.24.p	
	C	181 ... 290	24	TÜV.SV.23 - 1149.4.F.20.p	
	G	291 ... 320	20		
	G	321 ... 350	22		
	B	351 ... 450	22	TÜV.SV.23 - 1149.4.F.22.p	
MVEX 6	E	100 ... 140	90	TÜV.SV.23 - 709.do.F.G.p	6
	E	141 ... 160	100	TÜV.SV.23 - 709.do.F.G.p	
	D	161 ... 210			
	C	211 ... 315			
	B	316 ... 450	80	TÜV.SV.23 - 709.do.F.G.p	5

### ! NOTICE

The maximum operating pressure of the system should be at least 25% lower than the pressure setting on the safety valve.

## 2.1.3 Version with single connection block

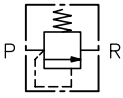
Type	Coding	Description	Circuit symbol
MVEX 4	-1/4	P and R = G 1/4, pipe connection	
	-3/8	P and R = G 3/8, pipe connection	
	-P4	Manifold mounting, flange pattern like MVPX 4	
MVEX 6	-1/2	P and R = G 1/2, pipe connection	
	-3/4	P and R = G 3/8, pipe connection	
	-1/2 A	P and R = G 1/2, with drain valve	
	-3/4 A	P and R = G 3/4, with drain valve	
	-P5	Manifold mounting, flange pattern like MVPX 5	
	-P6	Manifold mounting, flange pattern like MVPX 6	

## 2.1.4 Seal material

Coding	Description	Pressure $p_{max}$ (bar)
<b>without coding</b>	Standard, NBR	see Chapter 2.1.2, "Pressure range"
<b>-AT</b>	EPDM	On request
<b>-PYD</b>	FKM	On request

## 2.2 Straight-way valve for pipe connection

### Circuit symbol



### Ordering example

SVX 41	C	-200
	Pressure setting	2.2.2 "Pressure range"
	2.2.2 "Pressure range"	
2.2.1 "Basic type and size"		

### 2.2.1 Basic type and size

Type	Size	Description	Connection	Pressure setting $p_{max}$ (bar)	Flow rate $Q_{max}$ (l/min)
SVX	41	Straight-way valve for pipe connection	G 1/4	430	6



#### NOTICE

The max. flow rate and the permissible pressure setting depend on the selected pressure range see Chapter 2.2.2, "Pressure range".

### 2.2.2 Pressure range

Type	Pressure range	Pressure setting range $p_{min} - p_{max}$ (bar)	Flow rate $Q_{max}$ (l/min)	Component coding	Cone, seat and nominal $\varnothing$ (mm)
SVX 41	E	80 ... 120	3	TÜV.SV.23 - 1109.4.F.3.p	4
	E	121 ... 160	4	TÜV.SV.23 - 1109.4.F.4.p	
	C	161 ... 250	3,5	TÜV.SV.23 - 1109.4.F.3.5.p	
	C	251 ... 300	6	TÜV.SV.23 - 1109.4.F.6.p	
	B	301 ... 430	6	TÜV.SV.23 - 1109.4.F.6.p	



#### NOTICE

The maximum operating pressure of the system should be at least 25% lower than the pressure setting on the safety valve.

## 3 Parameters

### 3.1 General data

<b>Designation</b>	Direct-acting safety valve
<b>Design</b>	Cone-seated design
<b>Model</b>	Valve for pipe installation, manifold mounting valve, screw-in valve
<b>Material</b>	Steel; electro-galvanised sealing nut and connection block, Hardened and ground functional inner parts; Balls made of rolling bearing steel
<b>Basis block requirements</b>	<ul style="list-style-type: none"> <li>▪ Yield strength: <math>R_{p0} \geq 245</math> MPa</li> <li>▪ Minimum wall thickness: 5 mm</li> </ul>
<b>Installation position</b>	Any
<b>Ports/connections</b>	<ul style="list-style-type: none"> <li>▪ P = pressure-side connection</li> <li>▪ R = reflux (depressurised)</li> </ul>
<b>Flow direction</b>	P → R
<b>Hydraulic fluid</b>	Hydraulic fluid, according to DIN 51 524 Parts 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448 Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.
<b>Operating viscosity</b>	12 ... 230 mm <sup>2</sup> /s (required)
<b>Cleanliness level</b>	<b>ISO 4406</b> <u>21/18/15...19/17/13</u> (required)
<b>Temperatures</b>	Environment: approx. -40 ... +80 °C, hydraulic fluid: -20 ... +80 °C, ensure the correct viscosity range. Biologically degradable hydraulic fluids: note manufacturer specifications. With consideration for the seal compatibility, not above +70°C.
<b>Static overload capacity</b>	2 x p <sub>max</sub>

## 3.2 Weight

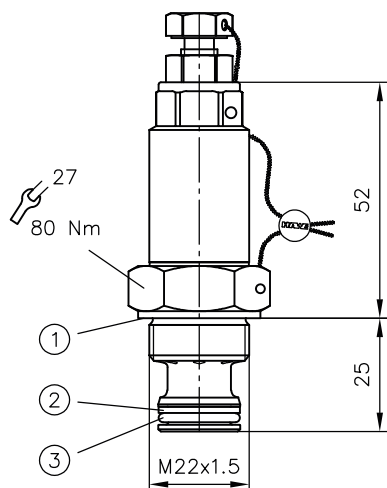
Single valves	Type			
	MVEX 4	= 0.2 kg		
	MVEX 6	= 0.4 kg		
	SVX 42	= 0.2 kg		
Valves with a single connection block	Type		Type	
	MVEX 4 -..-1/4	= 0.7 kg	MVEX 4 -..-P4	= 0.6 kg
	MVEX 4 -..-3/8	= 0.7 kg	MVEX 6 -..-P5	= 1.25 kg
	MVEX 6 -..-1/2	= 1.85 kg	MVEX 6 -..-P6	= 1.6 kg
	MVEX 6 -..-3/4	= 2.15 kg		

## 4 Dimensions

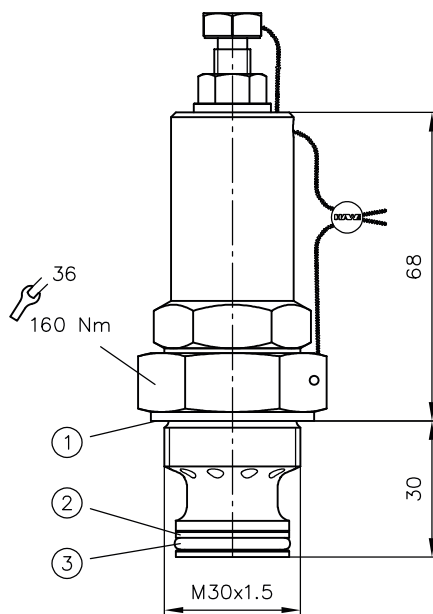
All dimensions in mm, subject to change.

### 4.1 Screw-in valve

MVEX 4

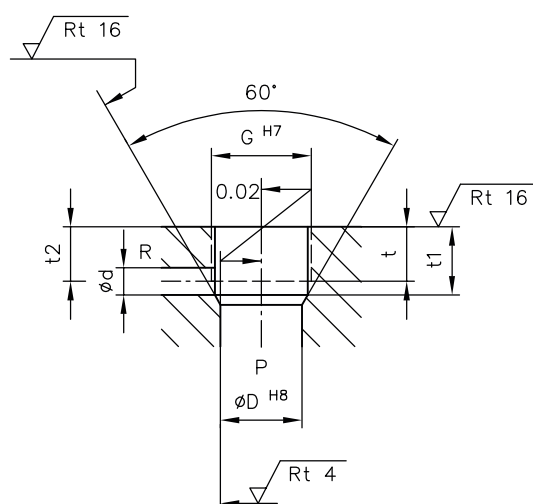


MVEX 6



- 1 Sealing ring
- 2 Supporting ring
- 3 O-ring

### Mounting hole

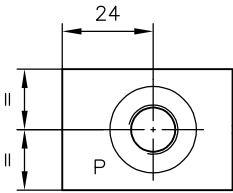


Type	$\varnothing D$	$\varnothing d$	t	t1	t2	G
MVEX 4	18	6	12	15	12	M22x1.5
MVEX 6	25	12	12	19	14	M30x1.5

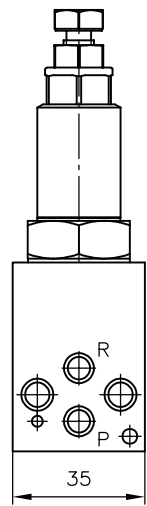
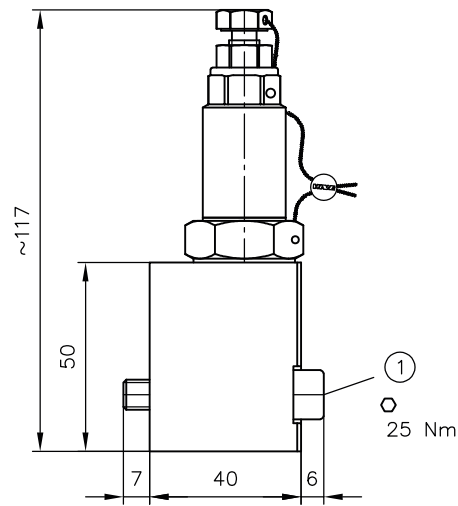
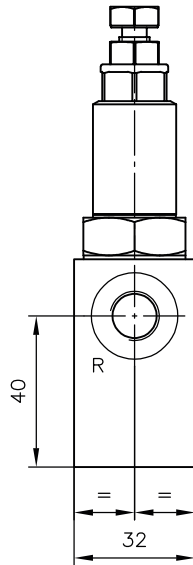
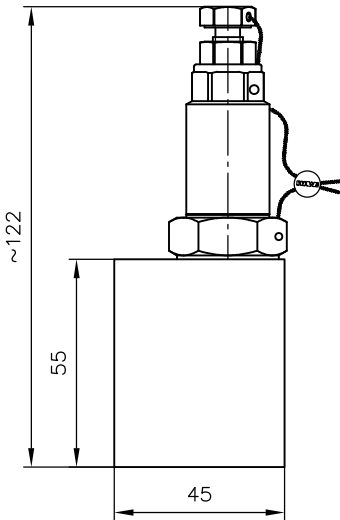
**NOTICE**  
Basis block requirements see Chapter 3, "Parameters"

### 4.1.1 Version with single connection block

MVEX 4 -..-1/4  
MVEX 4 -..-3/8



MVEX 4 -..-P4

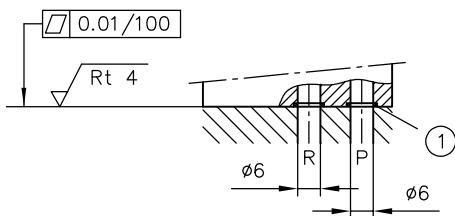


1 Cylinder screw ISO 4762-M8x45-8.8-A2K

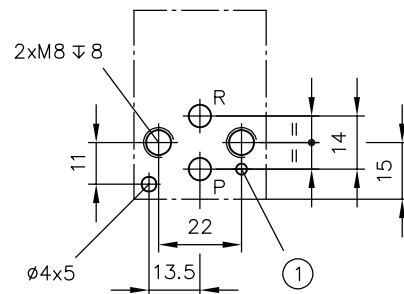
Coding	Ports (ISO 228-1) P, R
-1/4	G 1/4
-3/8	G 3/8

### Hole pattern of the base plate

MVEX 4 -..-P4



1 O-ring 8.00x2.00 NBR 90 Sh

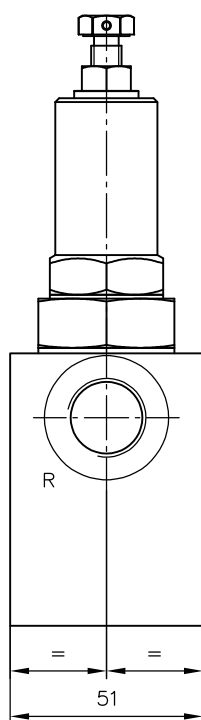
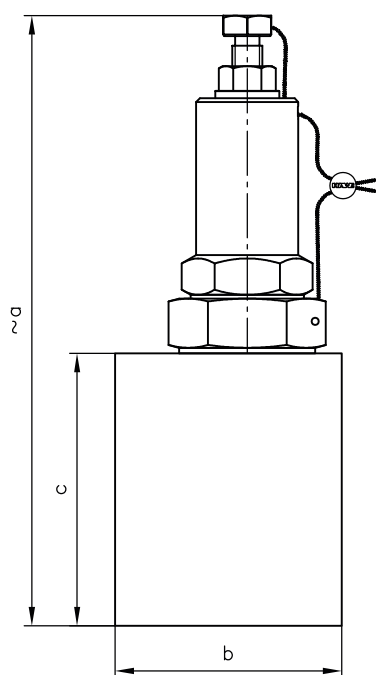
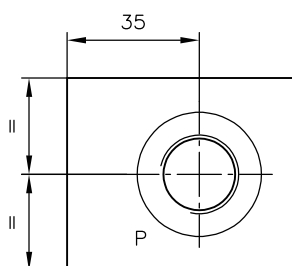


1 Index hole for roll pin Ø3 mm



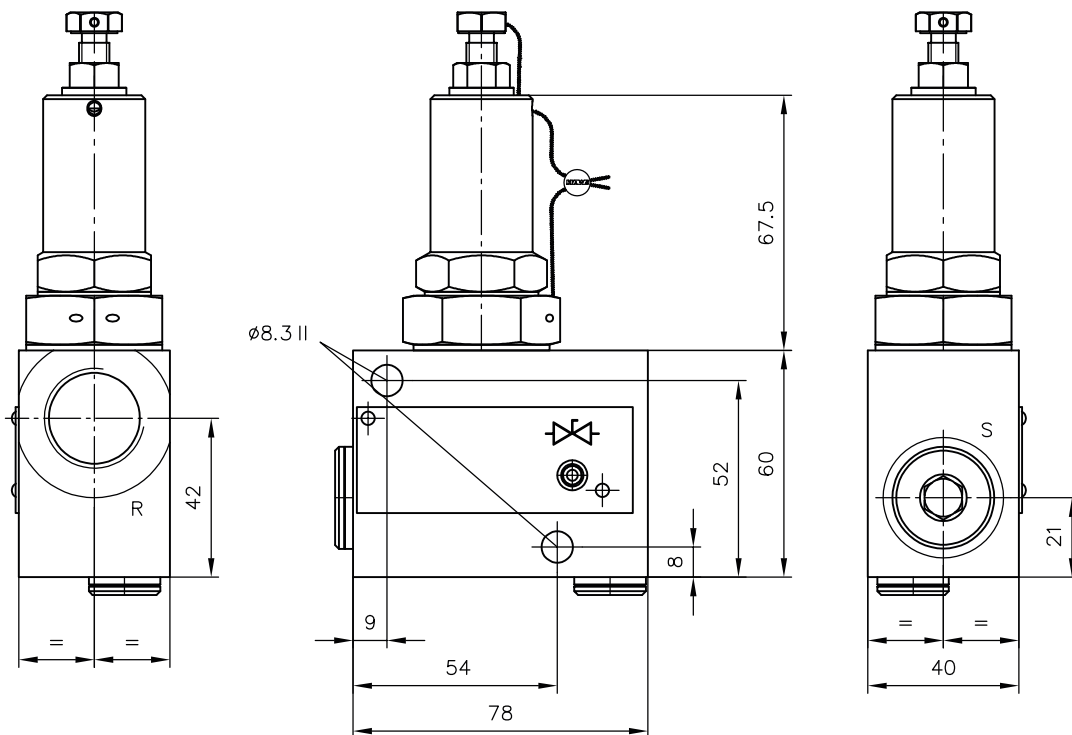
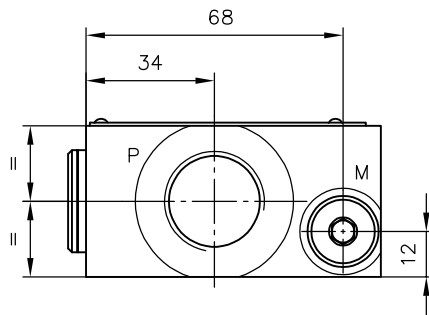
MVEX 6 --1/2

MVEX 6 --3/4



Coding	a	b	c	Ports (ISO 228-1) P, R
-1/2	161,5	60	72	G 1/2
-3/4	170,5	65	81	G 3/4

MVEX 6 -..-1/2 A  
MVEX 6 -..-3/4 A

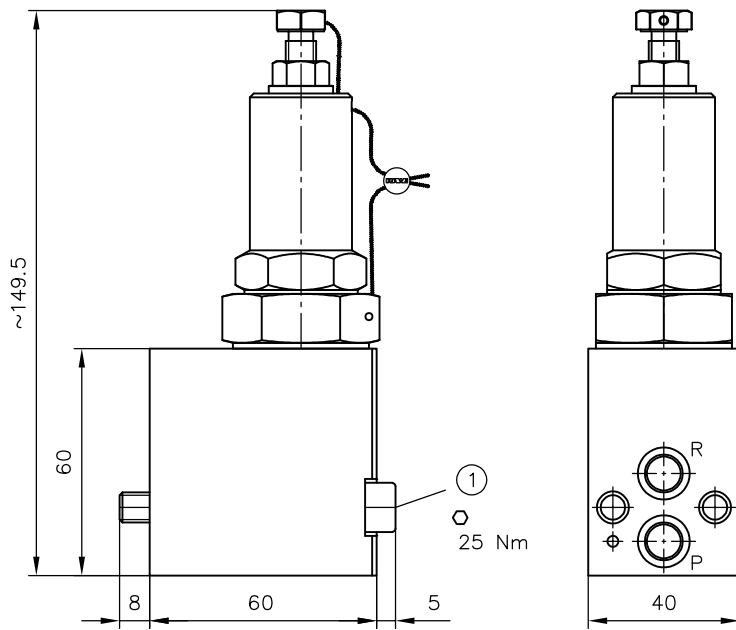


**Coding**

**Ports (ISO 228-1)**

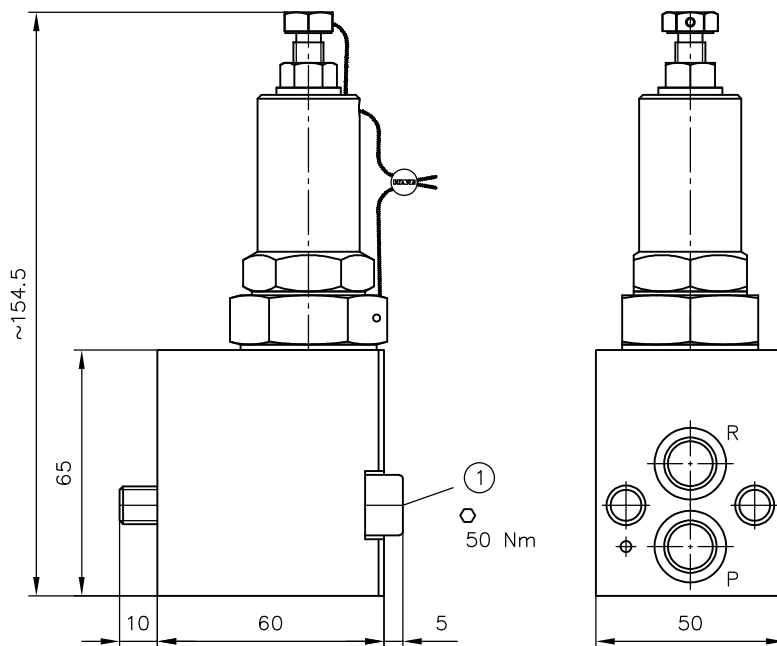
	P, R	S	M
-1/2 A	G 1/2	G 1/2	G 1/4
-3/4 A	G 3/4		

MVEX 6 -.-P5



1 Cylinder screw ISO 4762-M8x65-8.8-A2K

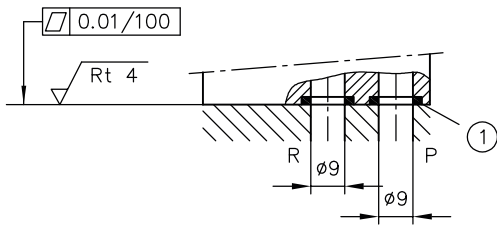
MVEX 6 -.-P6



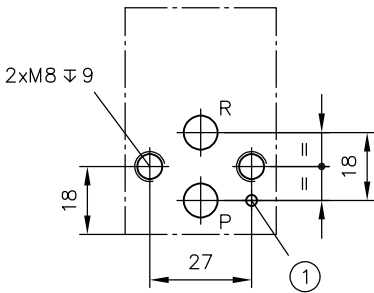
1 Cylinder screw ISO 4762-M10x65-8.8-A2K

**Hole pattern of the base plate**

**MVEX 6 --P5**

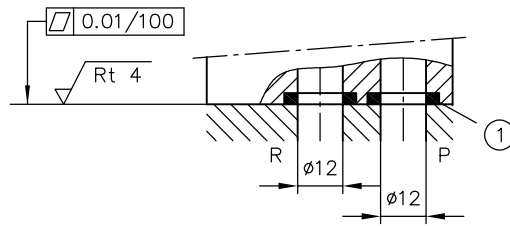


1 O-ring 10.00x2.00 NBR 90 Sh

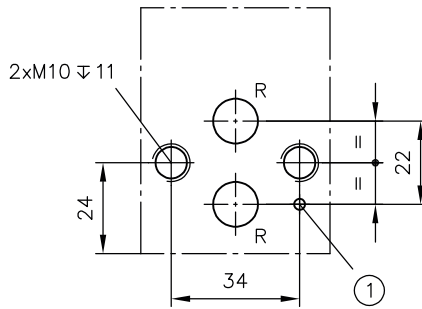


1 Index hole for roll pin  $\varnothing 3$  mm

**MVEX 6 --P6**



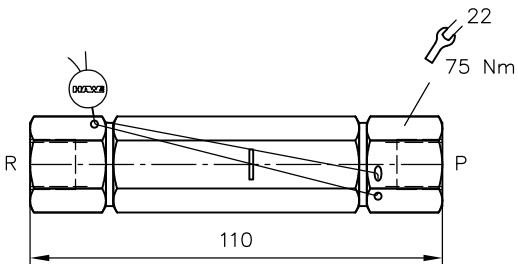
1 O-ring 13.95x2.62 NBR 90 Sh



1 Index hole for roll pin  $\varnothing 3$  mm

**4.2 Straight-way valve for pipe connection**

**SVX**



**Ports (ISO 228-1)**

P, R | G 1/4

## 5 Installation, operation and maintenance information

Observe the document B 5488 "General operating instructions for assembly, commissioning, and maintenance."

### 5.1 Intended use

This product is intended exclusively for hydraulic applications (fluid technology).

The user must observe the safety measures and warnings in this document.

#### **Essential requirements for the product to function correctly and safely:**

- ▶ All information in this documentation must be observed. This applies in particular to all safety measures and warnings.
- ▶ The product must only be assembled and put into operation by specialist personnel.
- ▶ The product must only be operated within the specified technical parameters described in detail in this document.
- ▶ All components must be suitable for the operating conditions when using an assembly.
- ▶ The operating instructions for the components, assemblies and the specific complete system must also always be observed.

#### **If the product can no longer be operated safely:**

1. Remove the product from operation and mark it accordingly.
  - ✓ It is then not permitted to continue using or operating the product.

### 5.2 Assembly information

The product must only be installed in the complete system with standard and compliant connection components (screw fittings, hoses, pipes, fixtures etc.).

The product must be shut down correctly prior to disassembly (in particular in combination with hydraulic accumulators).



#### **DANGER**

#### **Sudden movement of the hydraulic drives when disassembled incorrectly**

Risk of serious injury or death

- ▶ Depressurise the hydraulic system.
- ▶ Perform safety measures in preparation for maintenance.

### 5.2.1 Installing the valve

Safety valves must be installed with particular care. The provisions of the Pressure Equipment Directive must be observed. Regular inspections are governed by the national regulations on safety valves and systems.

**The flow direction must always be adhered to.**

In order to protect against external damage, the valve must be installed in a safe mounting position, or a suitable protective device must be fitted.

Connect the return line (R) to the tank. The necessary lines must be sufficiently dimensioned. For the housing screw connections of type MVEX -1/4, MVEX -3/8, MVEX -1/2, MVEX -3/4 and SVX, the specified torques must never be exceeded.

**!** NOTICE

When tightening the screws, restrain the piping.

Tighten the fastening screws of manifold mounting valve type MVEX .. - P. and the screw-in valves type MVEX only to the required torques.

Use only wrench size AF to tighten type MVEX in the mounting hole of the connecting element.

**!** NOTICE

Do not damage the sealing wire!

### 5.2.2 Drilling the mounting hole (type MVEX)

see Chapter 4, "Dimensions"

## 5.3 Operating instructions

Observe product configuration and pressure/flow rate.

The statements and technical parameters in this document must be strictly observed.

The instructions for the complete technical system must also always be followed.

### ! NOTICE

- ▶ Read the documentation carefully before usage.
- ▶ The documentation must be accessible to the operating and maintenance staff at all times.
- ▶ Keep documentation up to date after every addition or update.

### ⚠ CAUTION

#### **Overloading components due to incorrect pressure settings.**

Risk of minor injury. Parts may burst or fly off, and uncontrolled leakage of hydraulic fluid.

- Pay attention to the maximum operating pressure of the pump, valves and fittings.
- Always monitor the pressure gauge when setting and changing the pressure.

## Purity and filtering of the hydraulic fluid

Fine contamination can significantly impair the function of the product. Contamination can cause irreparable damage.

### Examples of fine contamination include:

- Swarf
- Rubber particles from hoses and seals
- Dirt due to assembly and maintenance
- Mechanical debris
- Chemical ageing of the hydraulic fluid

### ! NOTICE

#### **New hydraulic fluid from the manufacturer may not have the required purity.**

Damage to the product is possible.

- ▶ Filter new hydraulic fluid to a high quality when filling.
- ▶ Do not mix hydraulic fluids. Always use hydraulic fluid that is from the same manufacturer, of the same type, and with the same viscosity properties.

For smooth operation, pay attention to the cleanliness level of the hydraulic fluid (cleanliness level see Chapter 3, "Parameters").

Additionally applicable document: [D 5488/1](#) oil recommendations

## 5.4 Maintenance information

Check regularly (at least once a year) by visual inspection whether the hydraulic connections are damaged. If external leakages are found, shut down and repair the system.

Clean the surface of the device regularly (at least once a year) (dust deposits and dirt).

## 6 Other information

### 6.1 Accessories, spare parts and individual parts

For sourcing spare parts see [HAWE Hydraulik interactive contact map](#).

Type	Sealing of ports P and R with O-ring NBR 90 Sh		
MVEX 4 -P4	8x2		
MVEX 6 -P5	10x2		
MVEX 6 -P6	13.95x2.62		

Type	Sealing ring	O-ring	Supporting ring item number
MVEX 4	A 22x27x1.5 DIN 7603-St	12.37x2.62	5660 002
MVEX 6	A 30x36x2 DIN 7603-Cu	20.29x2.62	3771 003

**i** **INFORMATION**

Additional sealing materials available on request.





# CERTIFICATE

The Certification Body of  
TÜV SÜD Industrie Service GmbH,  
a Notified Body of the Pressure Equipment Directive (PED),

certifies that

**HAWE Hydraulik SE**  
Einsteinring 17  
85609 Aschheim / München, Germany

with the production plant  
83679 Sachsenkam, Tegernseer Weg 5

implemented, operates and maintains a quality assurance system as described in the Pressure Equipment 2014/68/EU Annex III, Module D

for the scope of

Production of directly acting spring loaded safety valves for hydraulic fluids

acc. to EU-Type examinations – production type (specified in attachment)

The audit with the report number Q-IS-ESA12-MUC-PED-149835-001-22 proves that the quality assurance system fulfils the PED requirements.

The manufacturer is authorized to provide the pressure equipment produced within the scope of the assessed quality assurance system with the following Notified Body number:

## CE 0036

Certificate No.: DGR-0036-QS-843-22

valid until August 11<sup>th</sup>, 2025  
provided that annual surveillance audits have been performed successfully

Filderstadt, July 27<sup>th</sup>, 2022

TÜV SÜD Industrie Service GmbH  
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*M. John*  
Martina John  
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e-mail: martina.john@tuvsud.com



TÜV SÜD Industrie Service - PED-QA-Certification Body - Germany

# ZERTIFIKAT CERTIFICATE

gültig bis: 14.01.2030

valid until: 14.01.2030

EU-Baumusterprüfung (Modul B) - Baumuster - nach Richtlinie 2014/68/EU

EU Type examination (module B) - production type - according to Directive 2014/68/EU

Zertifikat-Nr.: Z-IS-AN1-MAN-20-01-2804846-15165224

Certificate No.:

Name und Anschrift des Herstellers: HAWE Hydraulik SE

Name and address of manufacturer:

Einsteinring 17  
DE-85609 Aschheim

Hiermit wird bescheinigt, dass das unten genannte Baumuster die Anforderungen der Richtlinie 2014/68/EU erfüllt.

We herewith certify that the type mentioned below meets the requirements of the Directive 2014/68/EU.

## CE 0036

Prüfbericht Nr.:

Evaluation report No.:

P-IS-MAN-20-01-2804846-15165224

Geltungsbereich:

Scope of examination:

Hydraulik-Sicherheitsventile des Typs MVEX 6  
Druckbereiche E - B  
Einstelldrücke 100 bis 450 bar

Fertigungsstätte:

Manufacturing plant:

HAWE Hydraulik SE  
Tegernseer Weg 5  
DE-83679 Sachsenkam

Mannheim, 15.01.2020

(Ort, Datum)

(Place, date)

Echtheitsprüfung durch App TÜV SÜD Verify  
Verification of Certificate by TÜV SÜD App Verify

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GERMANY

Dokument ID: 2804846Y06ca5



Seite 1 zum Zertifikat Nr. / Page 1 of the certificate No. Z-IS-AN1-MAN-20-01-2804846-15165224

# ZERTIFIKAT CERTIFICATE

gültig bis: 23.07.2028

valid until: 23.07.2028

EU-Baumusterprüfung (Modul B) - Baumuster - nach Richtlinie 2014/68/EU

EU Type examination (module B) - production type - according to Directive 2014/68/EU

Zertifikat-Nr.: Z-IS-AN1-MAN-18-07-2831115-24154816

Certificate No.:

Name und Anschrift des Herstellers: HAWE Hydraulik SE

Name and address of manufacturer:

Einsteinring 17  
85609 Aschheim

Hiermit wird bescheinigt, dass das unten genannte Baumuster die Anforderungen der Richtlinie 2014/68/EU erfüllt.

We herewith certify that the type mentioned below meets the requirements of the Directive 2014/68/EU.

## CE 0036

Prüfbericht Nr.:

Evaluation report No.:

P-IS-AN1-MAN-18-06-2831115-27094427

Geltungsbereich:

Scope of examination:

Sicherheitsventile für Hydraulikanlagen,  
Typ SVX 41, Ansprechdrücke 80 - 430 bar

Fertigungsstätte:

Manufacturing plant:

HAWE Hydraulik SE  
Tegernseer Weg 5  
83679 Sachsenkam

Mannheim, 24.07.2018

(Ort, Datum)

(Place, date)

Echtheitsprüfung durch App TÜV SÜD Verify  
Verification of Certificate by TÜV SÜD App Verify

TÜV SÜD Industrie Service GmbH  
Zertifizierungsstelle für Druckgeräte  
*R. Brinkmann*  
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+49 621 395-367

Notifizierte Stelle, Kennnummer 0036  
Notified Body, No. 0036  
TÜV SÜD Industrie Service GmbH  
Westendstr. 199  
80686 München  
GERMANY



Seite 1 zum Zertifikat Nr. / Page 1 of the certificate No. Z-IS-AN1-MAN-18-07-2831115-24154816

# ZERTIFIKAT CERTIFICATE

gültig bis: 13.03.2028

valid until: 13.03.2028

EU-Baumusterprüfung (Modul B) - Baumuster - nach Richtlinie 2014/68/EU

EU Type examination (module B) - production type - according to Directive 2014/68/EU

Zertifikat-Nr.: Z-IS-AN1-MAN-18-03-2831115-14172942

Certificate No.:

Name und Anschrift des Herstellers: HAWE Hydraulik SE

Name and address of manufacturer:

Einsteinring 17  
85609 Aschheim

Hiermit wird bescheinigt, dass das unten genannte Baumuster die Anforderungen der Richtlinie 2014/68/EU erfüllt.

We herewith certify that the type mentioned below meets the requirements of the Directive 2014/68/EU.

## CE 0036

Prüfbericht Nr.:

Evaluation report No.:

P-IS-AN1-MAN-18-03-2831115-14172942

Geltungsbereich:

Scope of examination:

Sicherheitsventile des Typs MVEX4  
Druckbereich H - B,  
Einstelldruck 80 - 450 bar

Fertigungsstätte:

Manufacturing plant:

HAWE Hydraulik SE  
Tegernseer Weg 5  
83679 Sachsenkam

Mannheim, 16.03.2018

(Ort, Datum)

(Place, date)

Echtheitsprüfung durch App TÜV SÜD Verify  
Verification of Certificate by TÜV SÜD App Verify

TÜV SÜD Industrie Service GmbH  
Zertifizierungsstelle für Druckgeräte  
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## References

### Additional versions

- Connection blocks for single-circuit pump types AB, AL: D 6905 AB
- Pressure-limiting valve, with unit approval type CMVX: D 7710 TUV
- Pressure limiting valve type MV, SV and DMV: D 7000/1
- Pressure-limiting valve (installation kit) type MV: D 7000 E/1
- Pressure valve type CMV, CMVZ, CSV and CSVZ: D 7710 MV
- Pressure-limiting valve, pilot-controlled type DV, DVE and DF: D 4350

