

Directional seated valve type BVE 1F

Product documentation



Operating pressure p_{\max} :

400 bar

Flow rate Q_{\max} :

20 l/min



© by HAWE Hydraulik SE.

The reproduction and distribution of this document, as well as the use and communication of its contents to others without explicit authorization, is prohibited.

Offenders will be held liable for the payment of damages.

All rights reserved in the event of patent or utility model applications.

Brand names, product names and trademarks are not specifically indicated. In particular with regard to registered and protected names and trademarks, usage is subject to legal provisions.

HAWE Hydraulik respects these legal provisions in all cases.

HAWE Hydraulik cannot provide individual guarantees that the stated circuits or procedures (including in part) are not subject to the intellectual property rights of third parties.

Printing date / document generated on: 2023-09-11

Table of Contents

1	Overview of directional seated valve type BVE 1F.....	4
2	Available versions.....	5
2.1	Basic type and size.....	5
2.2	Circuit symbol.....	5
2.3	Actuating solenoid.....	6
2.4	Actuating solenoid addition.....	7
2.5	Single connection block.....	8
3	Parameters.....	9
3.1	General data.....	9
3.2	Pressure and volumetric flow.....	10
3.3	Weight.....	11
3.4	Characteristic lines.....	12
3.5	Electrical data.....	13
3.5.1	Electrical data for explosion-proof solenoids.....	14
4	Dimensions.....	16
4.1	Screw-in valve type BVE 1F.....	16
4.1.1	Solenoid versions.....	18
4.2	Versions with single connection block.....	20
5	Installation, operation and maintenance information.....	24
5.1	Intended use.....	24
5.2	Assembly information.....	24
5.2.1	Replacing the solenoid.....	25
5.2.2	Adjusting the plug position.....	25
5.3	Operating instructions.....	26
5.4	Maintenance information.....	26
6	Other information.....	27
6.1	Creating the mounting hole.....	27
6.2	Manual override.....	27
6.3	Accessories, spare and individual parts.....	28
6.3.1	Blocking (coding B).....	28
6.4	Additional elements.....	29
6.5	Order coding for individual parts.....	30

1**Overview of directional seated valve type BVE 1F**

Directional seated valves are a type of directional valve. Their function is to direct the flow of hydraulic medium in certain directions, therefore connecting the relevant connections, or shutting off the flow with zero leakage. By this means they control the movement of the actuators in a hydraulic system.

The directional seated valve type BVE is a screw-in valve. 2/2 and 3/2 directional seated valves are available. All connections can be subjected to the same pressures.

Type BVE 1F can be used for highly viscous media (e.g. lubricating grease).

Appropriate connection blocks enable direct pipe connection or manifold mounting.

Features and advantages

- Any flow direction
- No interaction between actuating elements and media
- Increased temperatures do not cause the actuating elements to resinify or stick

Intended applications

- Lubrication systems



Directional seated valve type BVE 1F

2 Available versions

Ordering example

BVE 1F	-Z	-G 24	T1	-1/2
				2.5 "Single connection block"
				2.4 "Actuating solenoid addition "
				2.3 "Actuating solenoid"
				2.2 "Circuit symbol"
				2.1 "Basic type and size"

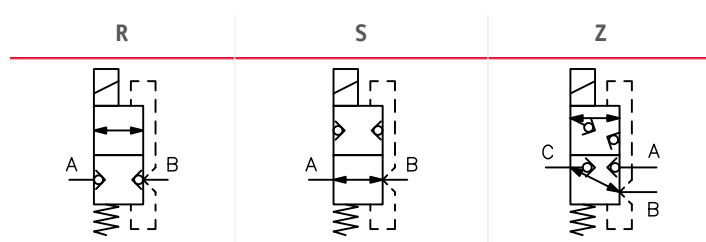
2.1 Basic type and size

Type	Flow rate Q_{\max} (l/min)	Pressure p_{\max} (bar)
BVE 1F	20	400

NOTICE

Flow rates and operating pressures depend on the solenoid version. Specifications apply for hydraulic fluids, see Chapter 3.2, "Pressure and volumetric flow"

2.2 Circuit symbol



2.3 Actuating solenoid

! NOTICE

The specifications regarding the IP protection class apply for versions featuring a properly assembled male connector.

Coding	Electrical connection	Nominal voltage		Protection class (IEC 60529)	
		V AC	V DC		
X(M) 12, G(M) 12	EN 175 301-803 A		12 V DC	IP 65	
X(M) 24, G(M) 24	<ul style="list-style-type: none"> ▪ X: without connector ▪ G: with line connector MSD3-309 ▪ L: with LED connector ▪ WG: with alternating rectifier in line connector ▪ 5k: with cast-on cable 5 m long ▪ .24/18W: if lower output required 		24 V DC		
X 24/18W G 24/18W			24 V DC		
X(M) 48, G(M) 48			48 V DC		
X(M) 98, G(M) 98			98 V DC		
X(M) 205, G(M) 205			205 V DC		
L(M) 12			12 V DC		
L(M) 24			24 V DC		
L 24/18W			24 V DC		
L5K(M) 24			24 V DC		
L5K 24/18W			24 V DC		
WG(M) 110			110 V AC 50/60 Hz		98 V DC
WG(M) 230			230 V AC 50/60 Hz		205 V DC
AMP(M) 12		AMP Junior Timer 2-pole			12 V DC
AMP(M) 24				24 V DC	
DT(M) 24	DEUTSCH plug (DT 04-2P)		24 V DC	IP 67	
M 24	M12x1			IP 65	
X 24 EX 55 FM	ATEX		24 V DC	IP 66/67	
X 24 EX M 55 FM	ATEX, metric connection				

! NOTICE

For electrical connection according to ATEX:

Observe electrical data for explosion-proof solenoids, see Chapter 3.5.1, "Electrical data for explosion-proof solenoids".

! NOTICE

Solenoid for electrical connection according to ATEX in combination with connection blocks/sub-plates:

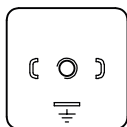
When using a connection block that you have prepared yourself: The minimum volume of the connection block must not be undershot, see Chapter 3.5.1, "Electrical data for explosion-proof solenoids".

When using a single connection block with coding **-P**: Observe the minimum volume of the additional sub-plate to be used, see Chapter 3.5.1, "Electrical data for explosion-proof solenoids".

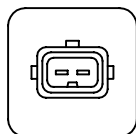
Only for use with anti-twist protection, see Chapter 4, "Dimensions".

Connection pattern

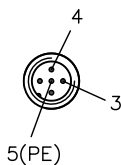
G .., X .., L .., WG ..



AMP ..



M ..



DT ..



2.4 Actuating solenoid addition

Coding	Description
Without coding	Series
B	Blocking (circuit symbol R only)
T	Manual operation, engaging
T1	Manual operation, not engaging (spring return mechanism)

! NOTICE

For use of blocking see Chapter 6.3.1, "Blocking (coding B)"

2.5 Single connection block

Coding	Description	Circuit symbols	Connections A, B, C ISO 228-1, ANSI B1.20.3
-1/4	Pipe connection	R, S, Z	G 1/4
-3/8			G 3/8
-1/4-VP	Pipe connection with thread position type VP 1 R, S, Z according to D 7915 , $p_{max} = 400$ bar	R, S, Z	G 1/4
-3/8-VP			G 3/8
-1/2-VP			G 1/2
-P	Manifold mounting	R, S, Z	--
-P-VP	Manifold mounting, flange pattern type VP 1 R, S, Z according to D 7915 , $p_{max} = 400$ bar, type GR(S)2-12 according to D 7300-12 , $p_{max} = 500$ bar	R, S, Z	--
-1/4 NPTF	Pipe connection	R, S	1/4-18 NPTF
-3/8 NPTF			3/8-18 NPTF
-1/4 NPTF-VP	Pipe connection with thread position type VP 1 R, S according to D 7915 , $p_{max} = 400$ bar	R, S	1/4-18 NPTF
-3/8 NPTF-VP			3/8-18 NPTF
-1/2 NPTF-VP			1/2-18 NPTF



NOTICE

Note the max. operating pressures and flow rates of the valves and connection blocks, see corresponding publications.

3 Parameters

3.1 General data

Designation	2/2, 3/2-way directional seated valves
Design	Cone-seated valve
Model	Screw-in valve
Material	<p>steel</p> <ul style="list-style-type: none"> ▪ Coil housing zinc-nickel coated ▪ Valve housing/solenoid pipe zinc-nickel coated ▪ Connection blocks zinc-nickel coated
Attachment	Screw-in valve, on connection block for manifold mounting, pipe connection
Overlap for 3/2-way directional valves	Negative, transition from one flow direction to the other is completed only in the stroke end position. During switching, all ports are open to each other.
Tightening torque	see Chapter 4, "Dimensions"
Installation position	Any
Flow direction A, B, C	Any, according to circuit symbol Chapter 2.2, "Circuit symbol"
Hydraulic fluid	<p>Lubricating greases from NLGI grades 000 ... 2 to DIN 51818 based on mineral oil and synthetic oil at operating temperatures up to approx. +70°C.</p> <p>Hydraulic fluid, according to DIN 51 524 Parts 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448</p> <p>Viscosity range: 4 - 800 mm²/s</p> <p>Optimal operating range: approx. 10 - 200 mm²/s</p> <p>Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.</p>
Cleanliness level	<p>ISO 4406</p> <hr style="width: 20%; margin-left: 0;"/> <p>21/18/15...19/17/13</p>
Temperatures	<p>Environment: approx. -40 to +80 °C, hydraulic fluid: -25 to +80 °C, pay attention to the viscosity range.</p> <p>Start temperature: down to -40 °C is permissible (take account of the start viscosities!), as long as the steady-state temperature is at least 20 K higher during subsequent operation.</p> <p>Biologically degradable hydraulic fluids: note manufacturer specifications. With consideration for the seal compatibility, not above +70°C.</p> <div style="border: 1px solid gray; padding: 10px; margin-top: 10px;"> <p>! NOTICE</p> <p>Observe the correct duty cycle, see Chapter 3.5, "Electrical data"</p> <p>Observe the restrictions for explosion-proof solenoids.</p> </div>

! NOTICE

Standard seals NBR/TPU, versions with special seals (PYD operating pressure $p_{max} = 250$ bar) available on request.

3.2 Pressure and volumetric flow

Operating pressure p_{max}	X, G, L, WG, AMP, DT, M	X 24/18W, G 24/18W, L 24/18W
	Connection A, B, C	Connection A, B, C
	400 bar	250 bar
	XM, GM, LM, WGM, AMPM, DTM	
	Connection A, C	Port B
	400 bar	50 bar
	X 24 EX 55 FM, X 24 EX M 55 FM	
	Connection A, C	Port B
	250 bar	50 bar
Flow rate Q_{max}	X, G, L, WG, AMP, DT, M	X 24/18W, G 24/18W, L 24/18W
	20 l/min	5 l/min
	XM, GM, LM, WGM, AMPM, DTM	
	20 l/min	
	X 24 EX 55 FM, X 24 EX M 55 FM	
	15 l/min	
	see Chapter 2.1, "Basic type and size"	

! NOTICE

Values are for hydraulic fluid.

3.3 Weight

Screw-in valve	Type	
	BVE 1F	= 0.5 kg
Single connection block	Type BVE 1F R(S)	
	- 1/4	= 0.6 kg
	- 3/8	= 0.6 kg
	- 1/4 - VP	= 0.85 kg
	- 3/8 - VP	= 0.85 kg
	- 1/2 - VP	= 1.1 kg
	- P	= 0.6 kg
	- P - VP	= 0.45 kg
	- 1/4 - NPTF	= 0.65 kg
	- 3/8 - NPTF	= 0.6 kg
	- 1/4 - NPTF - VP	= 0.85 kg
	- 3/8 - NPTF - VP	= 0.85 kg
	- 1/2 - NPTF - VP	= 1.1 kg
	Type BVE 1F Z	
	- 1/4	= 0.9 kg
	- 3/8	= 0.85 kg
	- 1/4 - VP	= 1.1 kg
	- 3/8 - VP	= 1.0 kg
	- 1/2 - VP	= 1.3 kg
	- P	= 0.75 kg
	- P - VP	= 0.65 kg

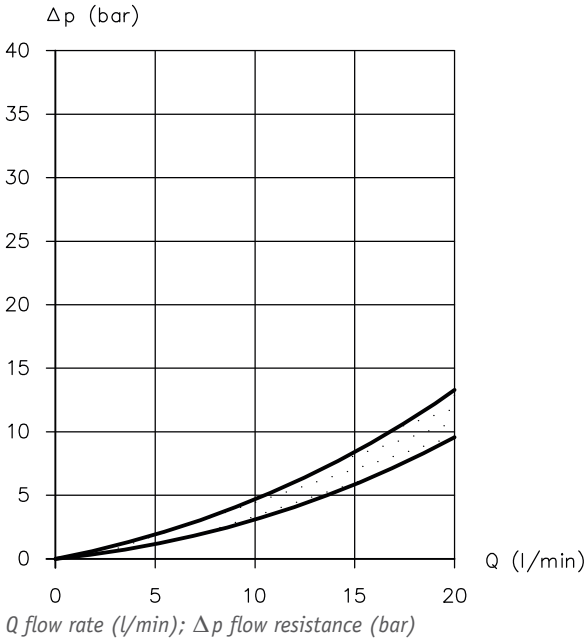
3.4 Characteristic lines

Viscosity of the hydraulic fluid approx. 60 mm²/s

Basic valve

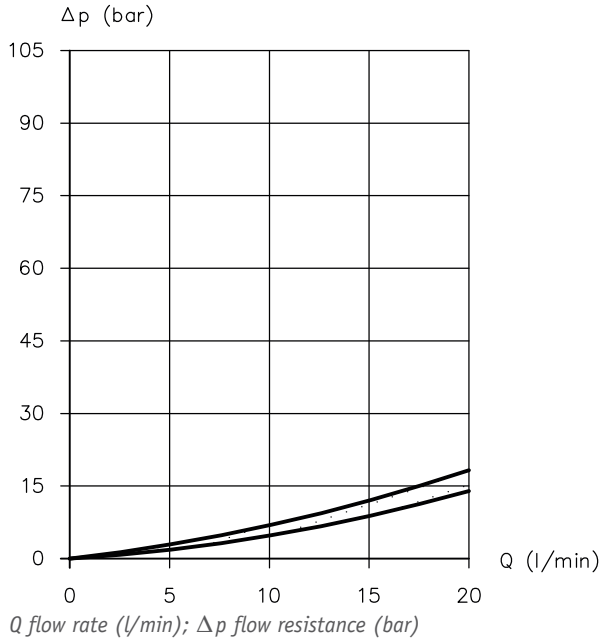
BVE 1F - Z

C → A, C → B, A → C



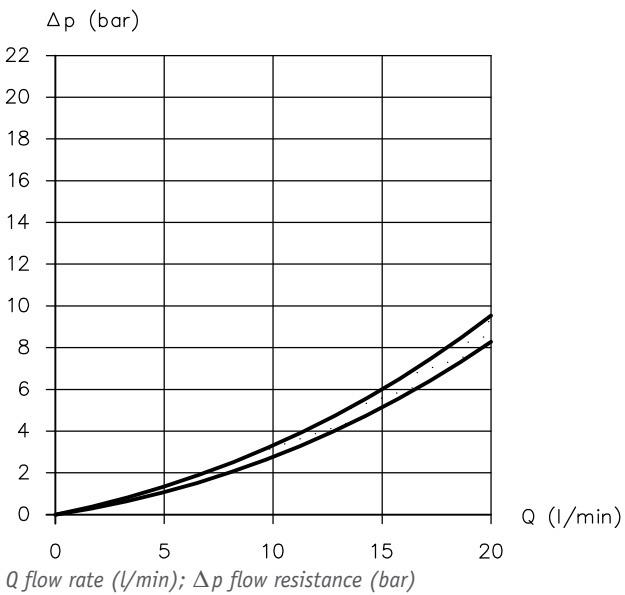
BVE 1F - Z

B → C



BVE 1F - R, BVE 1F - S

A → B, B → A



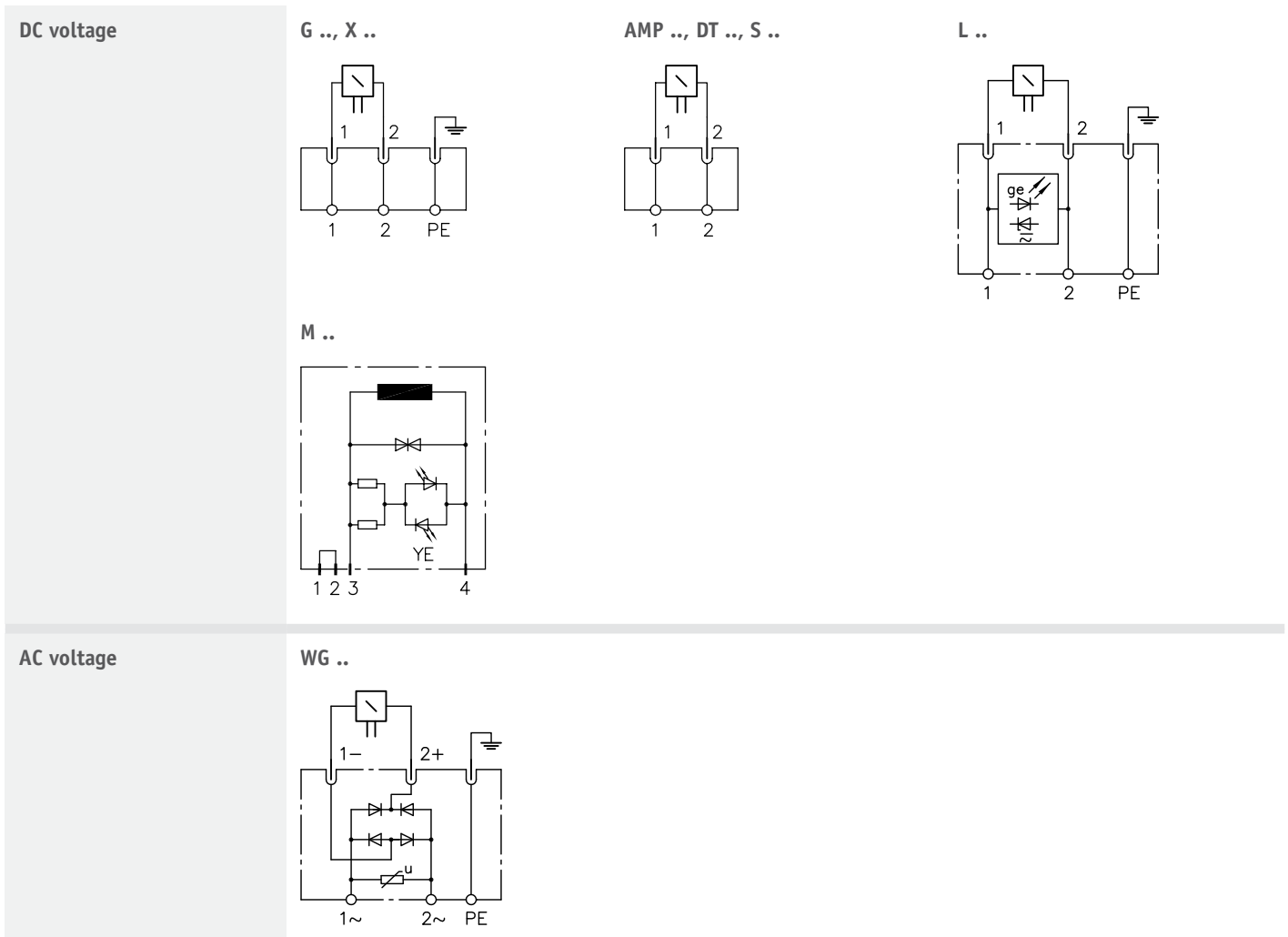
NOTICE

Characteristic lines indicate reference values and apply for hydraulic fluid.

3.5 Electrical data

Nominal power P_N	12 V DC	24 V DC	48 V DC	98 V DC	205 V DC
	X, G, L, WG, AMP, DT, M				
BVE 1F	30 W	30 W	30 W	30 W	30 W
X 24/18W, G 24/18W, L 24/18W					
BVE 1F	--	19 W	--	--	--
XM, GM, LM, WGM, AMPM, DTM					
BVE 1F	26.2 W	26.5 W	26.1 W	24.8 W	28 W
Nominal current I_N	12 V DC	24 V DC	48 V DC	98 V DC	205 V DC
	X, G, L, WG, AMP, DT, M				
BVE 1F	2.5 A	1.25 A	0.625 A	0.297 A	0.146 A
X 24/18W, G 24/18W, L 24/18W					
BVE 1F	--	0.8 A	--	--	--
XM, GM, LM, WGM, AMPM, DTM					
BVE 1F	2.34 A	1.17 A	0.54 A	0.28 A	0.14 A
Switching times	on 50 to 60 ms off 50 to 60 ms for WG.. 2 - 3 times longer Values are reference values and apply for hydraulic fluid!				
Switching operations	approx. 2000/h, to be seen as approximately evenly distributed				
Contact temperature	120°C at 20°C ambient temperature				
Insulation material class	F, H for plug option DT				
Relative duty cycle 100% duty cycle (specified on solenoid)	Duty cycle as a function of temperature <p>ϑ Ambient temperature (°C); % duty cycle, T = 5 min</p>				
<div style="border: 1px solid black; padding: 5px;"> <p>! NOTICE The thermal load of the coil can be reduced by means of an economy circuit, for example.</p> </div>					
Protection class	Depending on the actuating solenoid see Chapter 2.3, "Actuating solenoid"				
Electrical connection	Depending on the actuating solenoid see Chapter 2.3, "Actuating solenoid"				
Cut-off energy	approx. < 0.5 Ws of reference value from measurements at nominal voltage U_N				
other solenoid voltages	Special voltages and plug options upon request				

Circuit diagrams



3.5.1 Electrical data for explosion-proof solenoids

NOTICE

When using solenoids for potentially explosive atmospheres, it is essential to observe the operating instructions **B ATEX** and the separate operating instructions for the respective solenoid.

Refer to the applicable operating instructions B 22 (EX22) for operating thresholds, classifications, electrical parameters and electrical connections.

Coding

X 24 EX 55 FM
X 24 EX M 55 FM

Operating instructions with declaration of conformity

- B ATEX
- B 22 (EX22)

**Dimensioning
Sub-plates**

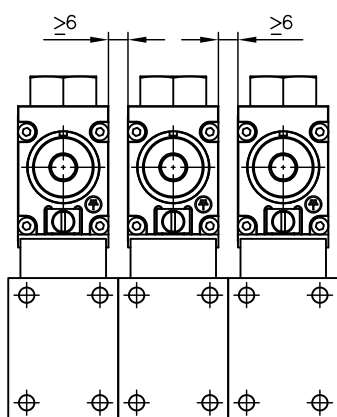
**Minimum volume for heat
dissipation**

Valves arranged individually or next to one another, mounted in a block

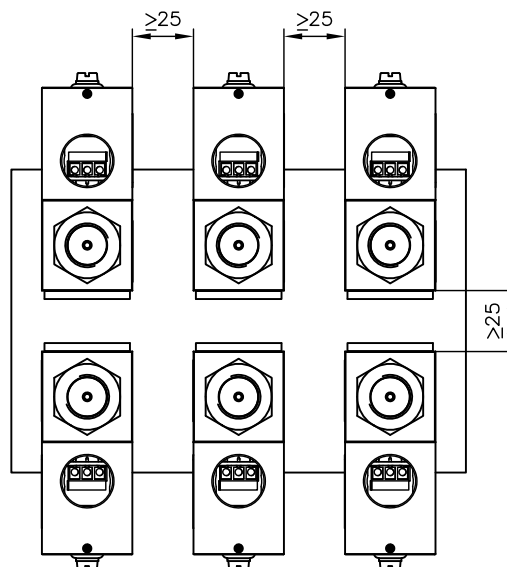
Arrangement for individual connection blocks

	Arranged in single row	Arranged in multiple rows	Single connection block
min. distance between magnet surfaces	6 mm	25 mm	--
min. volume per solenoid	152 200 mm ³	192 300 mm ³	61 250 mm ³

Arranged in single row



Arranged in multiple rows



Valves arranged individually or next to one another with HAWE connection block for manifold mounting, mounted on a sub-plate

Connection blocks in row per solenoid

Coding	Circuit symbol	Min. volume of HAWE connection block (mm ³)	Min. volume of customer-specific sub-plate (mm ³)
- P	R, S	58 050	94 170
	Z	112 230	39 990
- P-VP	R, S	72 000	80 220
	Z	108 000	44 220

NOTICE

Solenoid for electrical connection according to ATEX in combination with connection blocks/sub-plates:

When using a single connection block with coding P, P-VP: Observe the minimum volume of the additional sub-plate to be used, only for use with anti-twist protection, see Chapter 4.1, "Screw-in valve type BVE 1F".

CAUTION

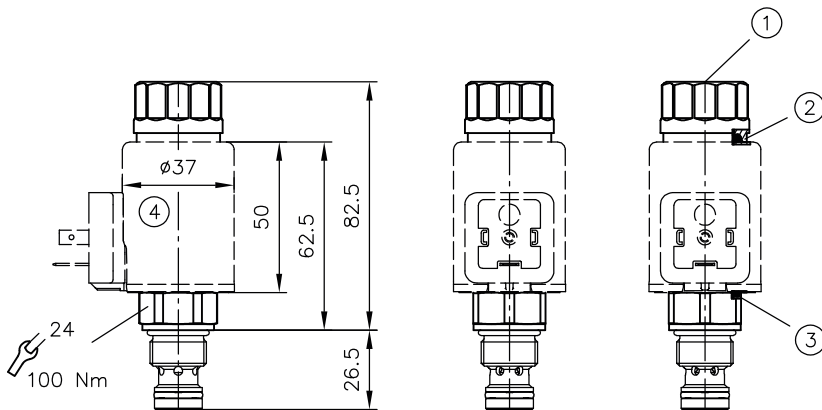
- Take particular care during assembly and dismantling work!
- The surfaces must not be damaged under any circumstances!

4 Dimensions

All dimensions in mm, subject to change.

4.1 Screw-in valve type BVE 1F

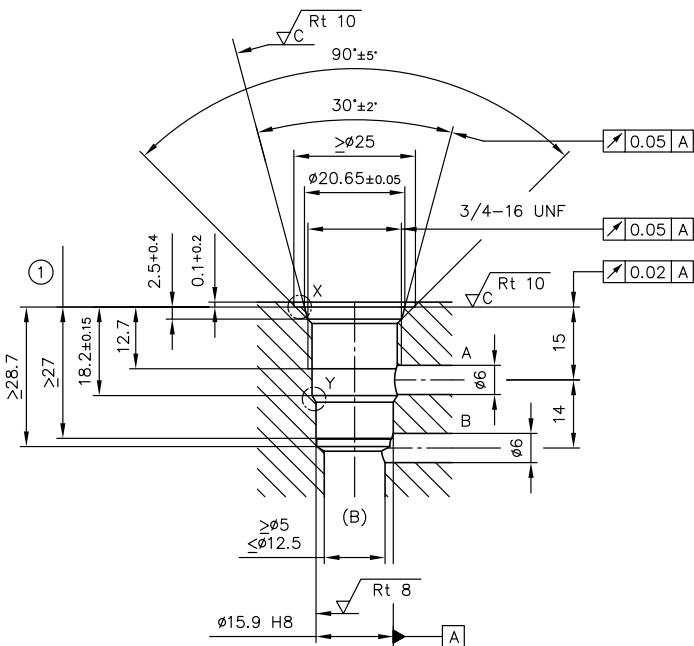
BVE 1F R(S)



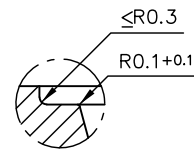
Solenoid versions and solenoid addition see Chapter 4.1.1, "Solenoid versions"

- 1 Manual override
- 2 Sealing between coil and nut
- 3 Sealing between coil and valve cartridge
- 4 Excitation system can be pivoted through 360°

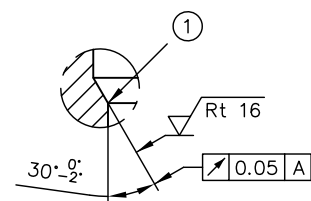
Mounting hole



Detail X



Detail Y



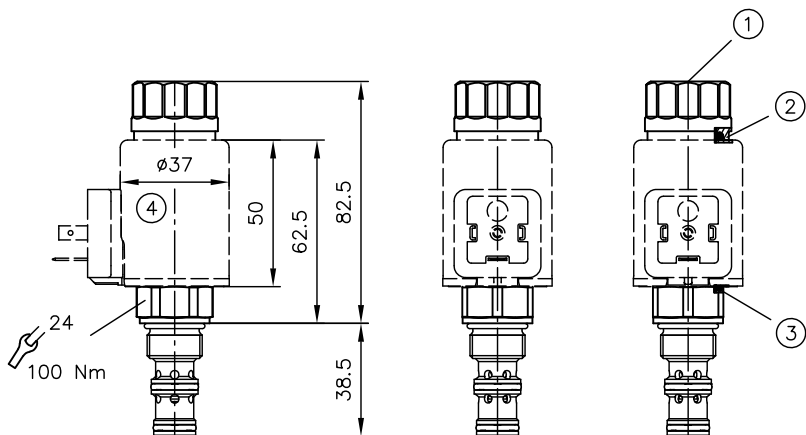
- 1 Round off edge max. R0.2

- 1 Reaming depth

NOTICE

For tools for creating the mounting hole see Chapter 6.4, "Additional elements".

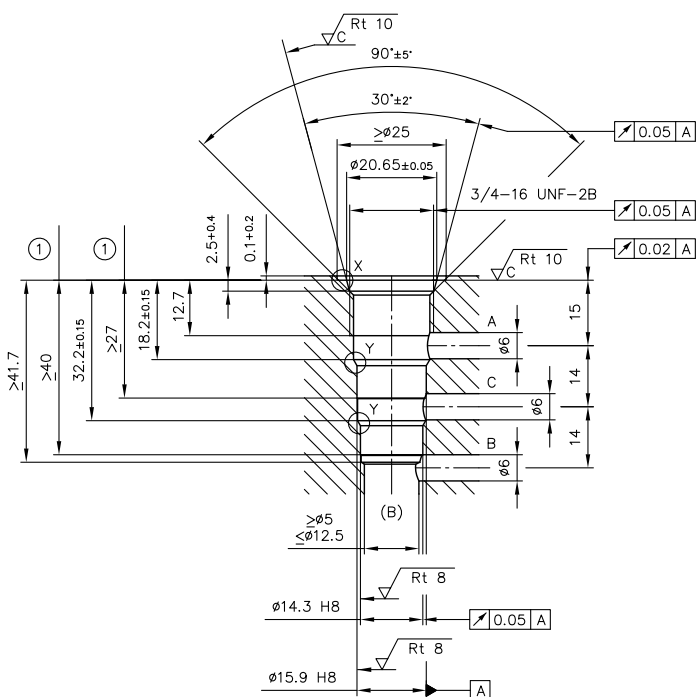
BVE 1F Z



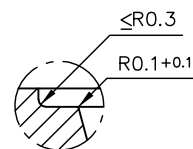
Solenoid versions and solenoid addition see Chapter 4.1.1, "Solenoid versions"

- 1 Manual override
- 2 Sealing between coil and nut
- 3 Sealing between coil and valve cartridge
- 4 Excitation system can be pivoted through 360°

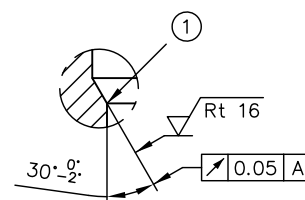
Mounting hole



Detail X



Detail Y



- 1 Round off edge max. R0.2

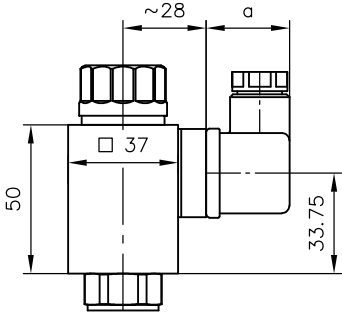
- 1 Reaming depth

NOTICE

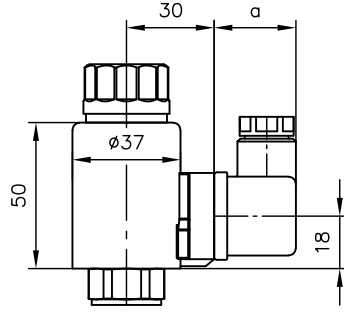
For tools for creating the mounting hole see Chapter 6.4, "Additional elements".

4.1.1 Solenoid versions

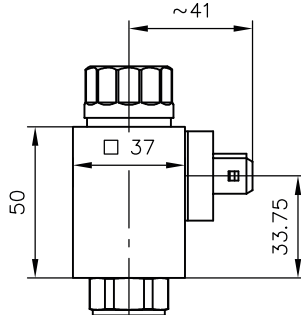
WG .., G .., L .., X ..



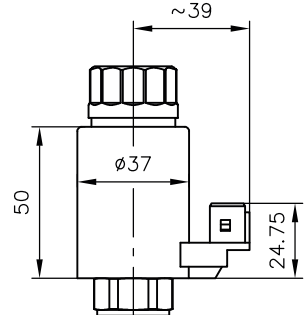
WGM .., GM .., LM .., XM ..



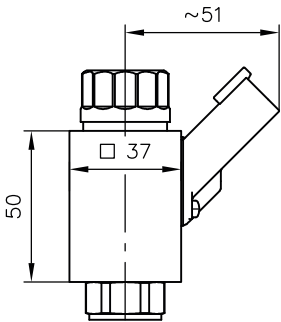
AMP ..



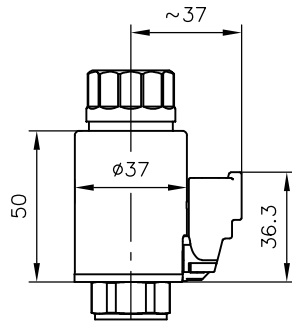
AMPM ..



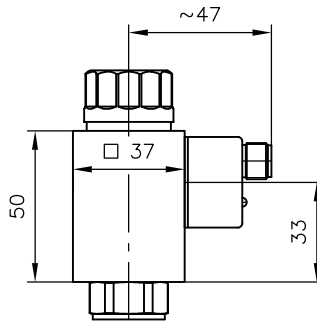
DT ..



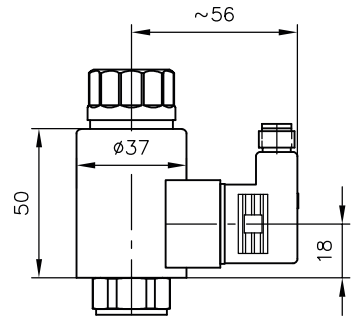
DTM ..



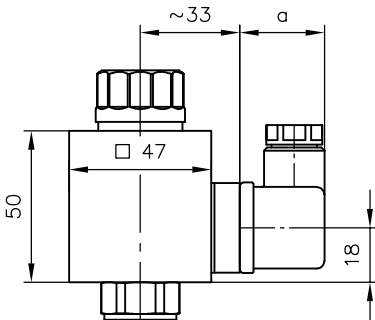
M ..



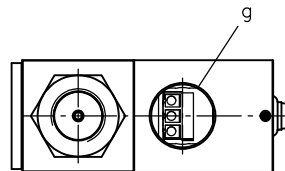
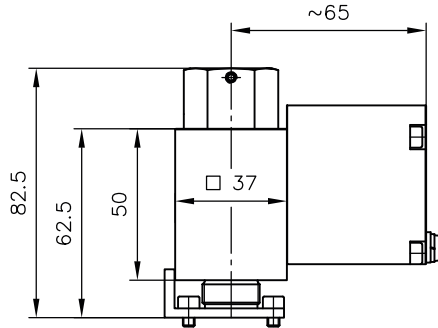
MM ..



.24/18W



X 24 EX 55 FM
X 24 EX M 55 FM

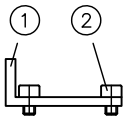


Version	a
G, GM	28 *
WG, WGM	34.5 *


Coding	g
X 24 EX 55 FM	1/2-14 NPT
X 24 EX M 55 FM	M20x1.5-6H

* Up to 40 mm depending on the manufacturer

Anti-twist protection

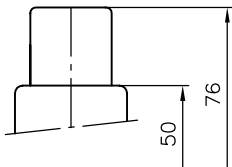


- 1 Anti-twist protection 7750 412
- 2 2x cylinder screw ISO 4762 M4x50-12.9 screwed in diagonally

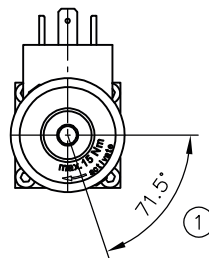
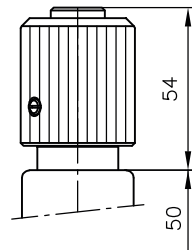
NOTICE
 For solenoids for electrical connection according to ATEX: use anti-twist protection!

Solenoid additions

- .. B



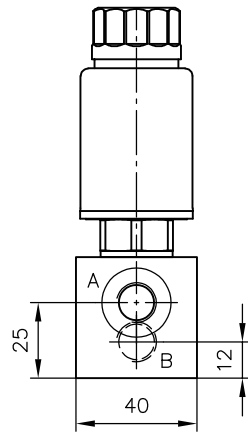
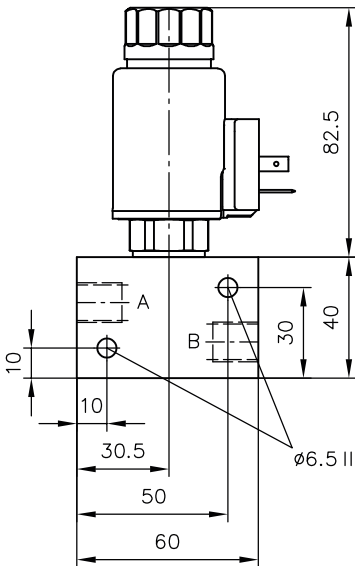
- .. T, - .. T1



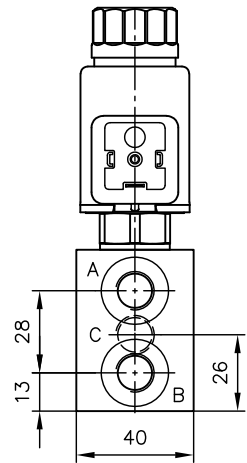
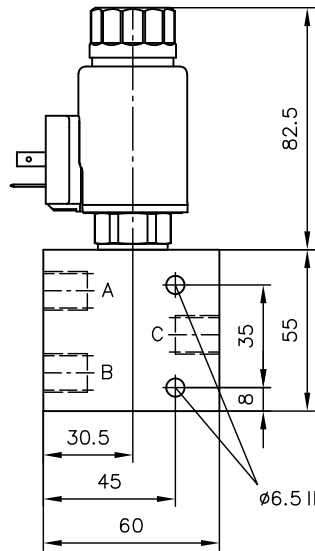
- 1 Maximum adjustment torque 15 Nm

4.2 Versions with single connection block

BVE 1F R(S) - ... - 1/4 (NPTF)
BVE 1F R(S) - ... - 3/8 (NPTF)



BVE 1F Z - ... - 1/4
BVE 1F Z - ... - 3/8



Coding

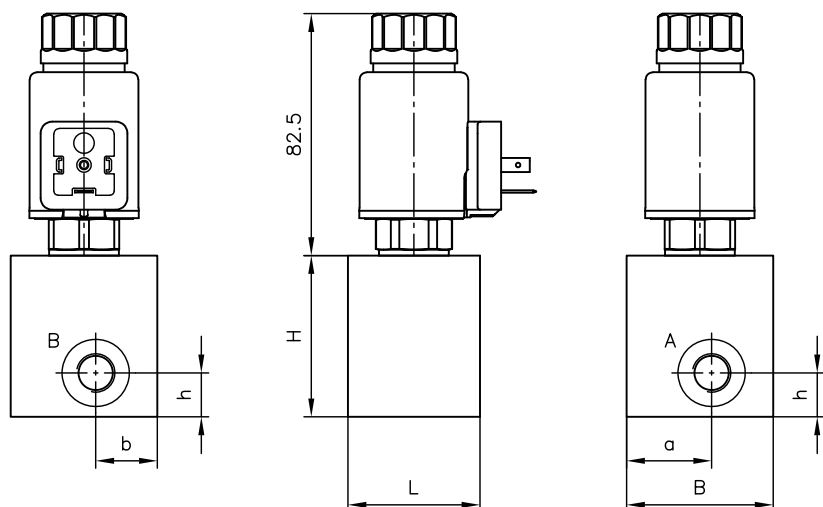
Connections

	Connections	
	ISO 228-1	ANSI B1.20.3
	A, B, C	A, B
- 1/4	G 1/4	--
- 3/8	G 3/8	--
- 1/4 NPTF	--	1/4-18 NPTF
- 3/8 NPTF	--	3/8-18 NPTF

BVE 1F R(S) - ... - 1/4 (NPTF) - VP

BVE 1F R(S) - ... - 3/8 (NPTF) - VP

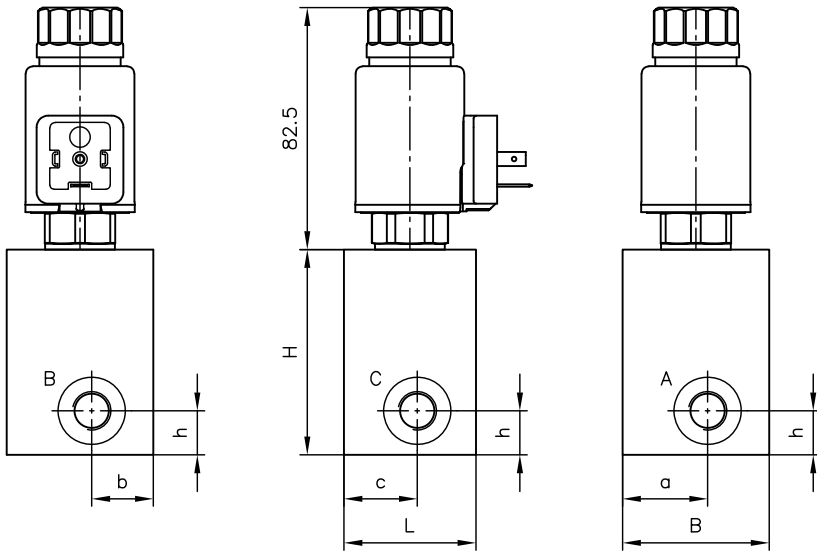
BVE 1F R(S) - ... - 1/2 (NPTF) - VP



Coding

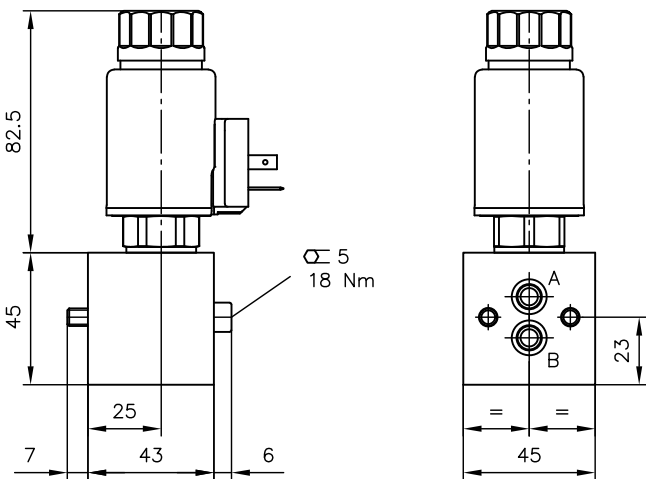
	L	B	H	a	b	c	h	Connections	
								ISO 228-1	ANSI B1.20.3
								A, B	A, B
- 1/4 - VP	45	50	55	29	21	25	15	G 1/4	--
- 1/4 NPTF - VP								--	1/4-18 NPTF
- 3/8 - VP	45	50	55	27	23	27	15	G 3/8	--
- 3/8 NPTF - VP								--	3/8-18 NPTF
- 1/2 - VP	50	50	65	25	25	25	22,5	G 1/2	--
- 1/2 NPTF - VP								--	1/2-14 NPTF

BVE 1F Z - ... - 1/4 - VP
 BVE 1F Z - ... - 3/8 - VP
 BVE 1F Z - ... - 1/2 - VP

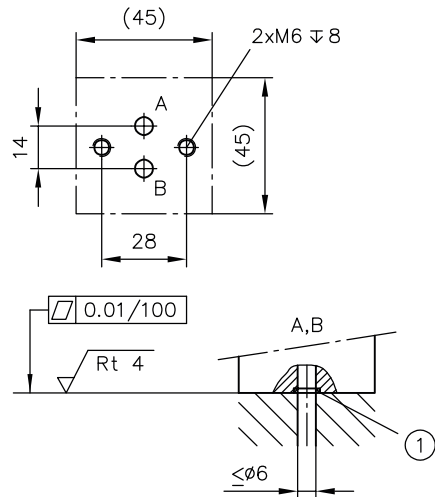


Coding	L	B	H	a	b	c	h	Ports according to ISO 228-1 A, B, C
- 1/4 - VP	45	50	70	29	21	25	15	G 1/4
- 3/8 - VP	45	50	70	27	23	27	15	G 3/8
- 1/2 - VP	50	50	80	20	20	25	22,5	G 1/2

BVE 1F R(S) - ... - P

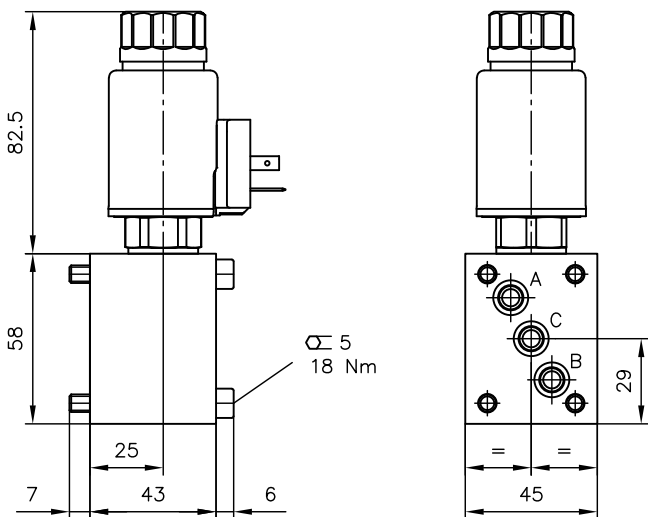


Hole pattern of the base plate

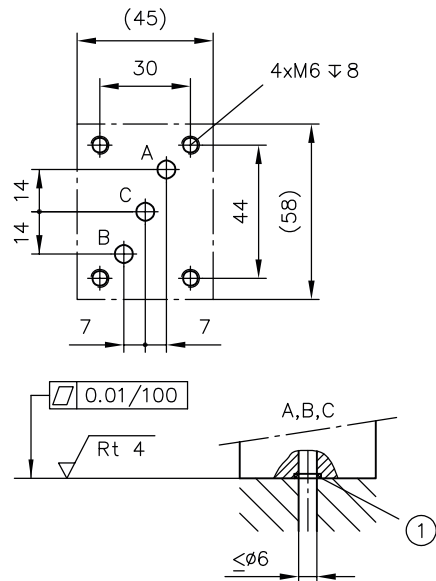


1 O-ring 8.73x1.78 TPU 94 Sh / P 5001

BVE 1F Z - ... - P

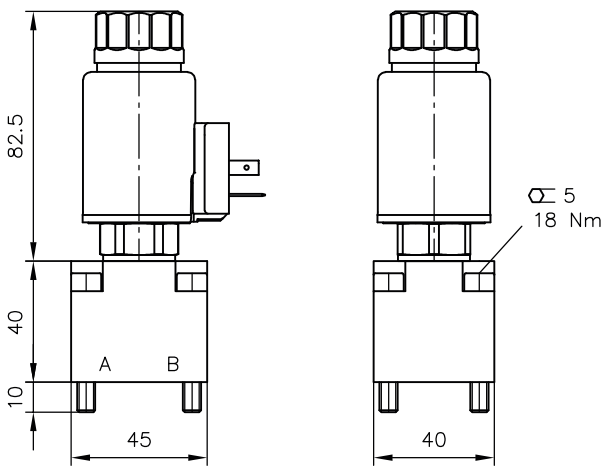


Hole pattern of the base plate

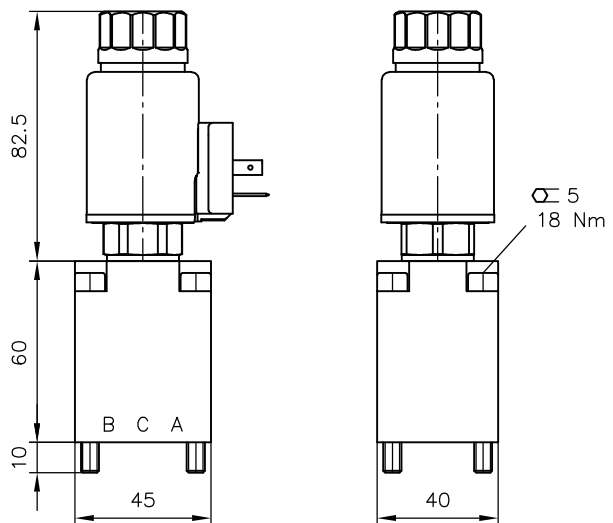


1 O-ring 8.73x1.78 TPU 94 Sh / P 5001

BVE 1F R(S) - P - VP



BVE 1F Z - P - VP



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).



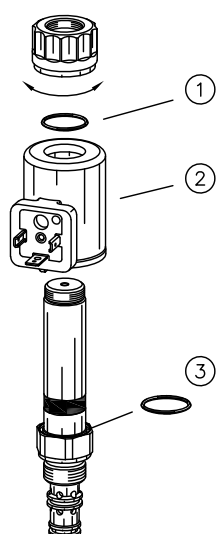
DANGER

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.

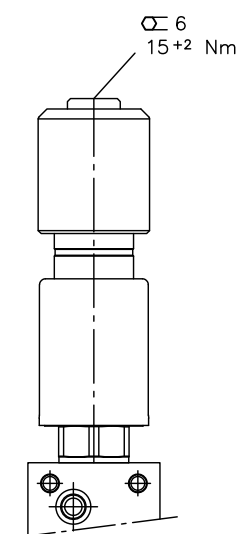
5.2.1 Replacing the solenoid



- 1 O-ring 18.75x2.62 NBR 90 Sh
- 2 Solenoid
- 3 O-ring 20.00x1.50 NBR 90 Sh

Solenoid: see Chapter 6.5, "Order coding for individual parts"

5.2.2 Adjusting the plug position



Plug position can be adjusted individually:

- ▶ Undo the manual override at the size 6 hex socket.
- ▶ Position the coil.
- ▶ Re-tighten the manual override at the size 6 hex socket.

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).

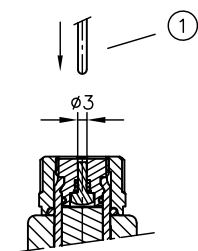
Check that the product is securely fastened in the mounting hole at regular intervals, but at least once per year.

6 Other information

6.1 Creating the mounting hole

see Chapter 4, "Dimensions"

6.2 Manual override



To actuate the valve:

- Use a steel pin or screwdriver etc. to depress the brass bolt (visible on the upper face).

Actuation forces	BVE 1F
100 bar	160 N
200 bar	260 N
300 bar	340 N
400 bar	420 N
500 bar	520 N

1 Auxiliary tool for actuation (do not use parts with sharp edges)

! NOTICE

Manual override with coding T or T1 is recommended for higher system pressures.

6.3 Accessories, spare and individual parts

To purchase spare parts, please see [HAWE Hydraulik interactive contact map](#).

6.3.1 Blocking (coding B)

In the case of circuit symbol R, blocking can be used for maintenance/set-up operation.

- Operating mode: normal operation
 - Solenoid (replaceable solenoid!) mounted
 - Blocking nut acts as a fixing element for the solenoid
 - Blocking is ineffective
 - Valve is actuated via the solenoid
- Maintenance/set-up operation mode
 - Solenoid (replaceable solenoid!) not mounted
 - Blocking nut screwed on hand-tight
 - Valve is in the actuated state

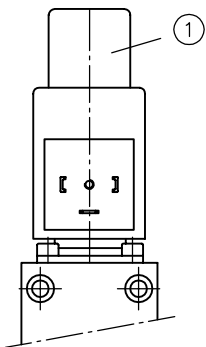
⚠ DANGER

Sudden movement of the hydraulic drives

Risk of serious injury or death.

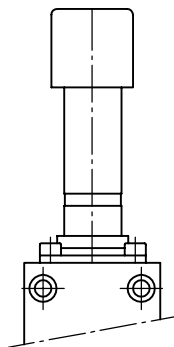
Prevent unintended movements by the consumers!

Normal operation



1 Blocking nut

Maintenance/set-up operation

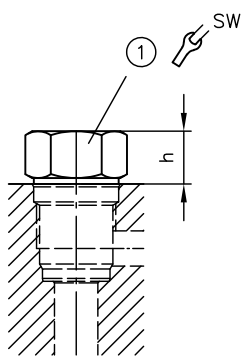


6.4 Additional elements

Tapped plugs

The mounting holes can be sealed with tapped plugs if necessary; for example, if the assembly of standardised basic bodies is to be carried out with or without screw-in valves as required.

For type	Order coding	Circuit symbol
BVE 1F	7750 181	
BVE 1F	7750 191	
BVE 1F	7750 181	
BVE 1F	7750 171	



1 Tapped plug

Type	h	SW	Tightening torque (Nm)
BVE 1F	12.5	24	100

Step tools for creating the mounting hole

Tool	Order coding
Step drill BVE 1 R/S	2800 0001-00
Step drill BVE 1 Z	2800 0002-00
Reamer BVE 1 R/S	2800 0003-00
Step reamer BVE 1 Z	2800 0004-00

6.5 Order coding for individual parts

Screw-in valve type BVE 1F

Excitation system:			Male connector:	
	Coding	Order no.	Coding	Order no.
Solenoid 26 W	GM 12, LM 12, XM 12	4704 8692-00	G ..	6217 0002-00
	WGM 24, GM 24, LM 24, XM 24, L5KM 24	4704 8685-00	L ..	6217 8024-00
	GM 48, XM 48	4704 8695-00	WG ..	6217 6002-00
	WGM 110, XM 98	4704 8698-00	L 5 K ..	6217 8088-00
	GM 110, XM 110	4704 8699-00	L 10 K ..	6217 8090-00
	WGM 230, GM 205, XM 205	4704 8700-00	Seal kit:	
	AMPM 12	4704 8753-00	DS 7921-1 for BVE 1 Z	6800 8454-02
	AMPM 24	4704 8754-00	DS 7921-2 for BVE 1 R/S	6964 0047-32
	MM 24	4704 4042-00		
	DTM 24	4704 5330-00		
Solenoid 30 W	G 12, L 12, X 12	4704 8756-00		
	G 24, L 24, X 24	4704 8757-00		
	G 48, X 48	4704 8762-00		
	WG 110, X 98	4704 8763-00		
	WG 230, X 205	4704 8764-00		
	AMP 12	4704 8761-00		
	AMP 24	4704 8759-00		
	M 24	4704 4084-00		
	DT 24	4704 8824-00		
Solenoid 18 W	X 24/18W, G 24/18W L 24/18W, L 5 K 24/18W	4704 9031-00		

Anti-twist protection size 1

	Order no.
Anti-twist protection BVE 1- .. EX..	3407 4848-00
Cylinder screw	ISO 4762 M4x50-12.9-GEOMET500

Reactive plates

	Order no.
Reactive plate BVE 1 R(S) - P	3407 1228-00

References

Additional versions

- Directional seated valve type BVE: D 7921
- Directional seated valve type EM and EMP: D 7490/1
- Directional seated valve type BVG 1 and BVP 1: D 7765
- Directional seated valve type NBVP 16: D 7765 N
- Directional seated valve type VP: D 7915
- Directional seated valve type ROLV: D 8144

