Pressure reducing valve type ADC, ADM, ADME, AM

Product documentation

Operating pressure p_{max}:	300 bar
Flow rate Q_{max}:	10 l/min

D 7458
07-2026 -1.2 en

HAWE HYDRAULIK

Printing date / document generated on: 2026-07-16

Table of Contents

1 Overview of pressure reducing valves type ADC, ADM, ADME, AM

Pressure reducing valves are a type of pressure valve. They maintain a largely constant outlet pressure even at a variable (higher) inlet pressure.

Pressure reducing valves type ADC and AM are suitable for the supply of control circuits with low oil consumption. These valves feature an override compensation, i.e. acting like a pressure-limiting valve if the secondary pressure exceeds the set pressure e.g. due to external forces. Leakage flow is present due to design-based reasons.

Pressure reducing valves type ADM and ADME are suitable for larger flow rates to supply systems with up to 10 l/min.

Pressure reducing valve type AM

Features and advantages

- Compact design
- Numerous configurations

Intended applications

- For control oil supply in pilot circuits

2 Available versions

Ordering examples

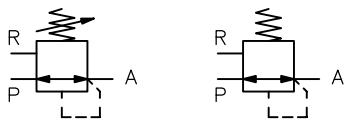
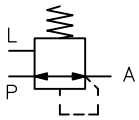
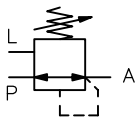
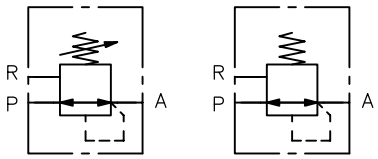
AM 1	-E	-30	
AM 1	-D	-55	-1/4
ADC 1	-15		-1/4

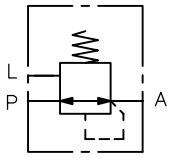
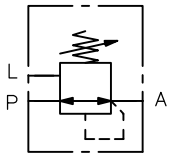
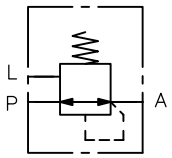
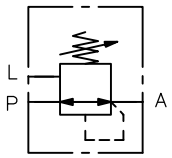
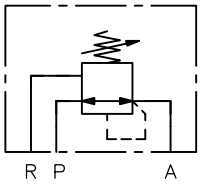
Pressure setting (bar)

2.2 "Pressure range"

2.1 "Basic type and size"

2.1 Basic type and size

Type	Connections (ISO 228-1)		Flow rate Q_{max} (l/min)	Pressure at port p_{max} (bar)		Circuit symbol
	P, A	R		P	A	
Screw-in valve						
AM 1	*	*	2	300	100	Adjustable / fixed 
ADC 1	*	*	2	315	25	fixed 
ADC 1 K	*	*	2	300	25	Adjustable 
ADME 1	*	*	8	300	70	Adjustable / fixed 
Housing version with pipe connections						
AM 1-...1/4	G 1/4	G 1/4	2	300	100	Adjustable / fixed 

Type	Connections (ISO 228-1)		Flow rate Q_{max} (l/min)	Pressure at port p_{max} (bar)		Circuit symbol
	P, A	R		P	A	
ADC 1-...1/4	G 1/4	G 1/4	2	300	25	fixed 
ADC 1 K-...1/4	G 1/4	G 1/4	2	300	25	Adjustable 
ADM 1	G 1/4	G 1/4	8	300	70	fixed 
ADM 1 K	G 1/4	G 1/4	8	300	15	Adjustable 
Housing version for manifold mounting						
AM 11	**	**	2	300	100	Adjustable 

NOTICE

Free return flow A → P

A free return flow A → P is only possible if the valve was previously without load, i.e. was in open initial position P → A, and around 1/3 of $Q_{A\ max}$ is not exceeded. If return flow A → P is to be possible without restrictions, a bypass check valve is required.

* Screw-in hole G 1/4 (A); connections P, A, R see Chapter 4.1, "Screw-in valve"

** Connections P, A, R see Chapter 4.2, "Housing versions"

2.2 Pressure range

Type	Coding Pressure range	Pressure p_A (bar)	Adjustment
AM 1 **AM 1-...1/4**	**without coding**	20 25	fixed
	C	60 to 100	Adjustable
	D	40 to 60	
	E	15 ... 40	
ADC 1 **ADC 1-...1/4**	**15**	15	fixed
	25	25	
ADC 1 K	**without coding**	5 to 25	Adjustable
ADME 1	**15**	15	fixed
	20	20	
	30	30	
	50	50	
	70	70	
ADM 1	**02**	2	fixed
	15	15	
	20	20	
	30	30	
	40	40	
	50	50	
	70	70	
ADM 1 K	**without coding**	5 to 15	Adjustable
AM 11	**C**	60 to 100	
	E	25 to 40	
	F	5 to 20	

3 Parameters

3.1 General data

Designation	Pressure reducing valve
Design	Spool valve
Model	Screw-in valve or housing version for pipe connection or manifold mounting
Material	**Screw-in valve** ▪ Nitrided screw ▪ Diamond honed hole ▪ Stainless steel control piston (ADC 1.., AM 1 (11)..) or rolling bearing steel (ADM ..), hardened or ground ▪ Bore and piston deburred by polishing ▪ Optimal wear resistance of the control edges against erosion and cavitation effect of the flowing medium
Tightening torque	see Chapter 4, "Dimensions"
Installation position	As desired
Line connection	**Screw-in valve** ▪ Mounting hole see Chapter 4.1, "Screw-in valve" **Housing version** ▪ For direct pipe connection (G 1/4 ISO 228-1 and DIN 3852-1)
Ports/connections	▪ Ports P and A: see Chapter 2.1, "Basic type and size" ▪ Connection R: max. 20 bar
Leakage oil	ADC 1(K)-.. = approx. 0.5 l/min for p_E, 300 bar AM 1(E, D, C)-.. ADM(E) -.. AM 11.. = approx. 0.1 l/min for p_E, 300 bar Depends largely on the thread tolerance
Flow direction	▪ Working direction P → A ▪ Free return flow A → P only possible to a limited extent, see Chapter 3.3, "Characteristic lines" ▪ Overdrive A → T(R) see following p_A-Q_A characteristic line
Hydraulic fluid	Hydraulic fluid, according to DIN 51524 Parts 1 to 3; ISO VG 10 to 68 according to DIN ISO 3448 Viscosity range: 4 - 800 mm²/s Optimal operating range: approx. 10 - 200 mm²/s Also suitable for biologically degradable hydraulic fluids type HEPG (polyalkylene glycol) and HEES (synthetic ester) at operating temperatures up to approx. +70°C.
Cleanliness level	**ISO 4406** 21/18/15
Temperatures	Environment: approx. -40 to +80 °C, hydraulic fluid: -25 to +80 °C, pay attention to the viscosity range. 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. Biologically degradable hydraulic fluids: note manufacturer specifications. With consideration for the seal compatibility, not above +70°C.

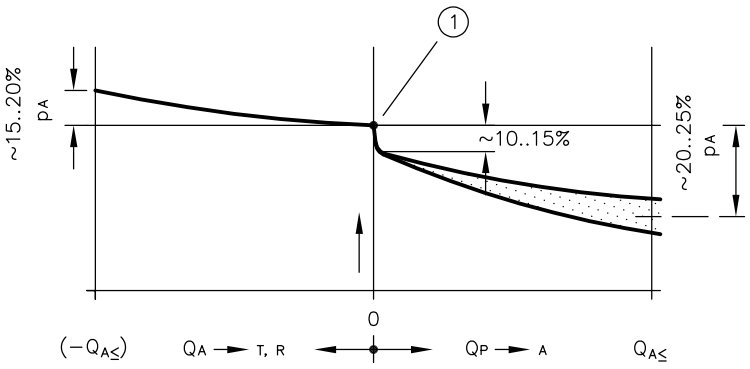
3.2 Weight

Screw-in valve	**Type**	
	ADC 1-..	= 30 g
	ADC 1 K-25	= 45 g
	AM 1 -..	= 30 g
	AM 1 E-.., AM 1 D-.., AM 1 C-..	= 70 g
	ADME 1-..	= 50 g
Housing version	**Type**	
	ADC 1-..	= 320 g
	ADC 1-25	= 340 g
	AM 1-..	= 340 g
	AM 1 E-.., AM 1 -.., AM 1 C-..	= 380 g
	AM 11 ..	= 200 g
	ADM 1-..	= 350 g

3.3 Characteristic lines

Viscosity of the hydraulic fluid approx. 60 mm²/s

p_A-Q_A-Characteristic lines (Tendency)



1 pA as per see "Basic type and size"

Overdrive

Overdrive compensation occurs when the consumer is forced back against p_A due to an external force. The valve then acts as a pressure-limiting valve from A → T(R).

Free return flow A → P

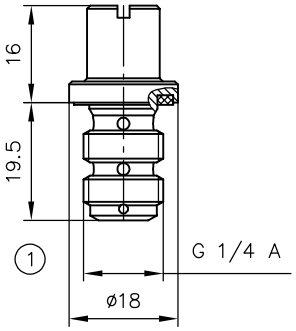
A free return flow A → P is only possible if the valve was previously without load, i.e. was in open initial position P → A, and around 1/3 of $Q_{A\ max}$ is not exceeded. If return flow A → P is to be possible without restrictions, a bypass check valve is required.

4 Dimensions

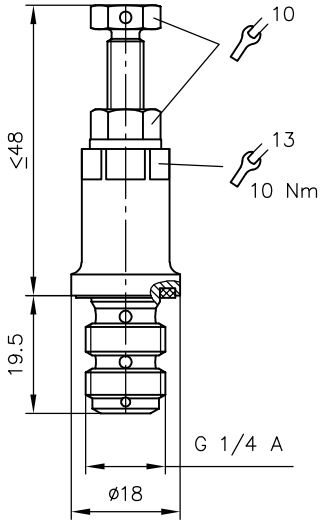
All dimensions in mm, subject to change.

4.1 Screw-in valve

ADC 1-..

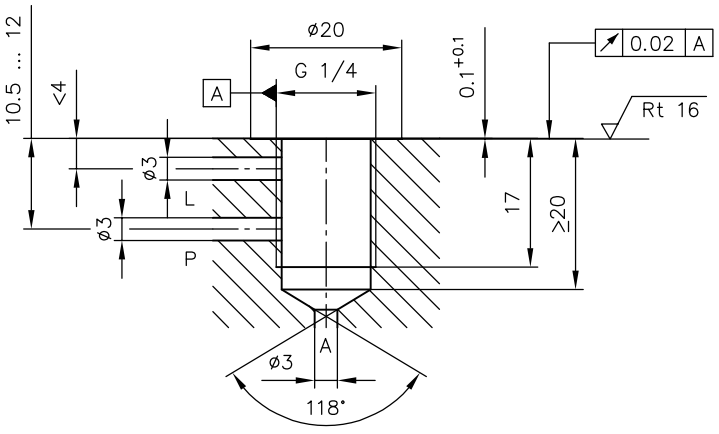


ADC 1 K-25

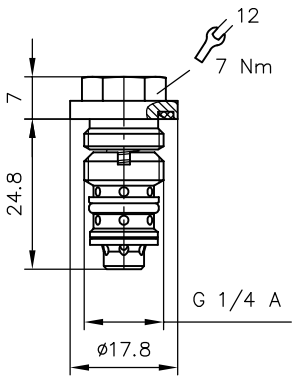


1 Tightening torque 10 Nm

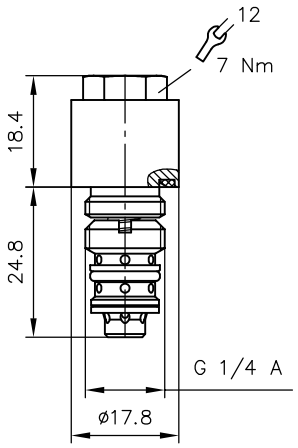
Mounting hole



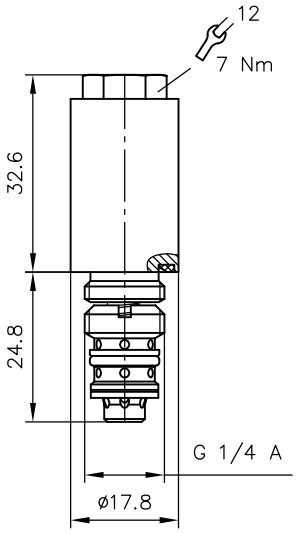
AM 1 20(25) - ..



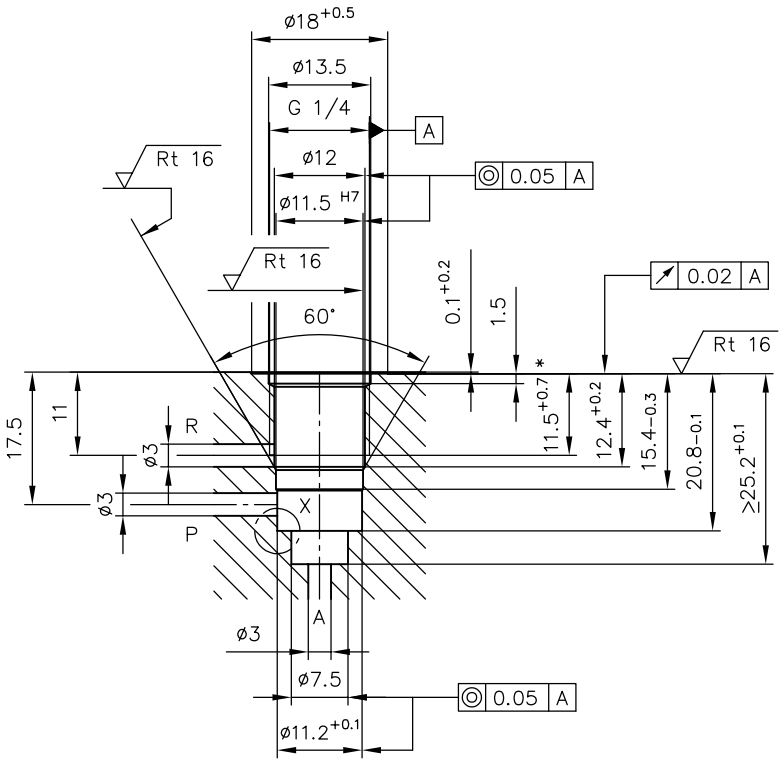
AM 1 E(D) - ..



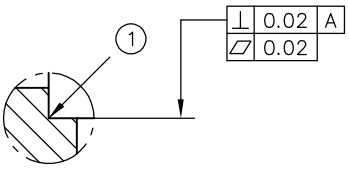
AM 1 C - ..



Mounting hole

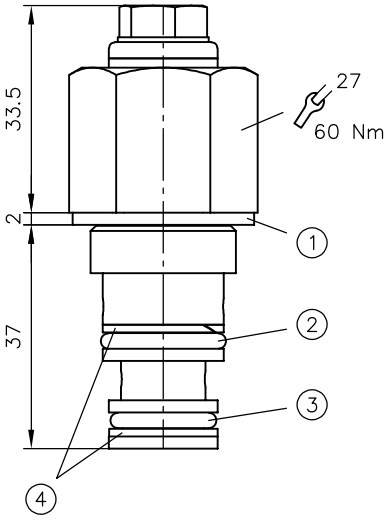


Detail X



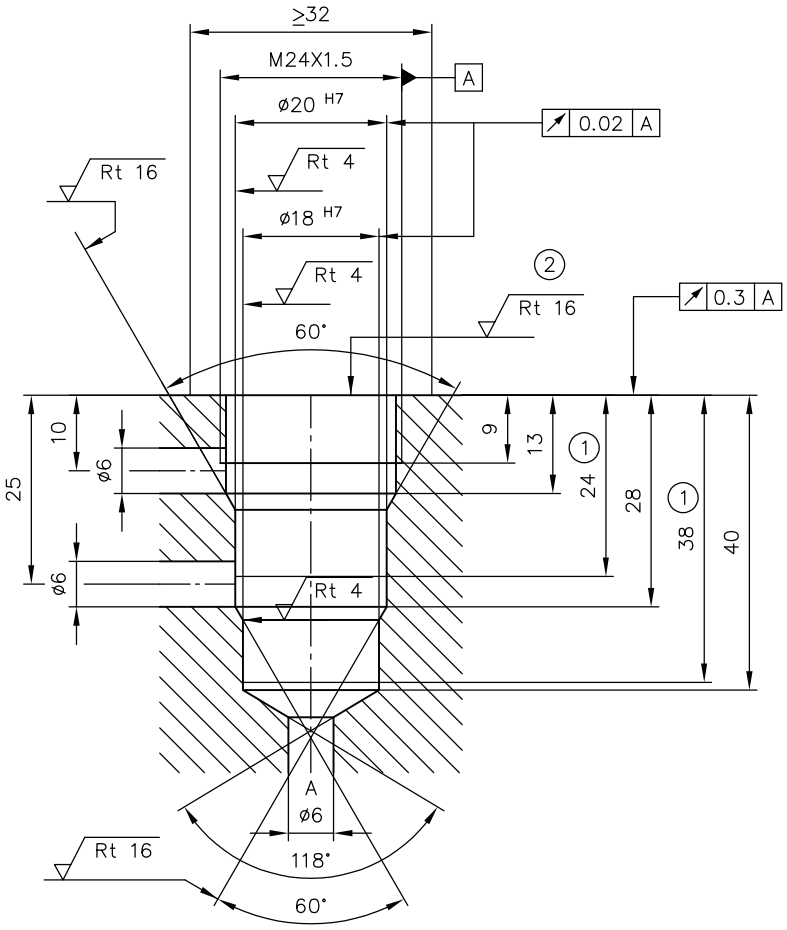
1 Round off edge max. R0.4

ADME 1-..



1 Sealing ring Cu A24x30x2
2 O-ring 15.55x2.62 NBR 90 Sh
3 O-ring 12.37x2.62 NBR 90 Sh
4 Teflon supporting rings

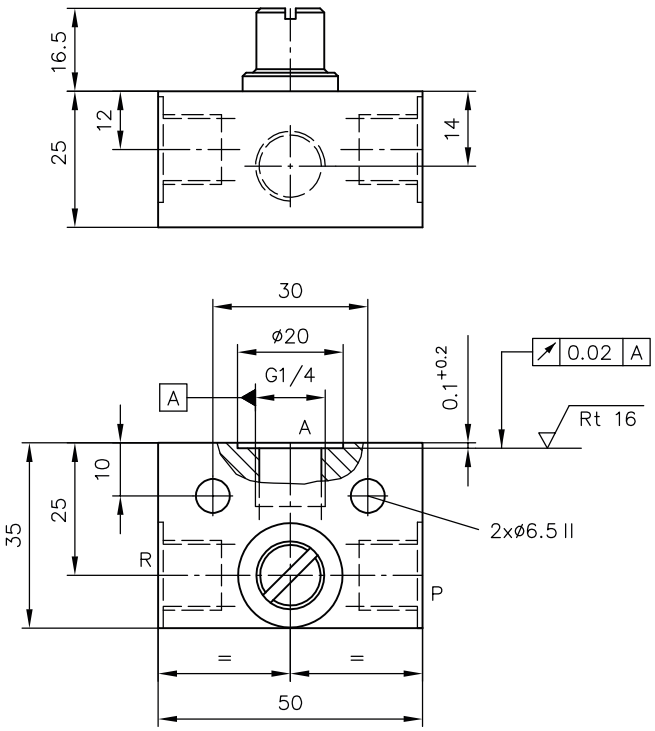
Mounting hole



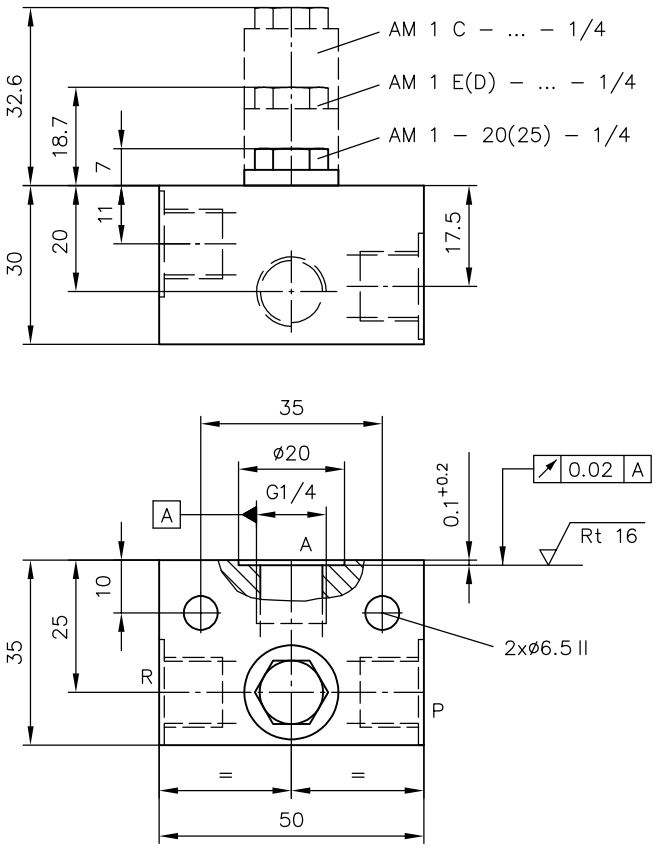
1 Reaming depth
2 Sealing surfaces

4.2 Housing versions

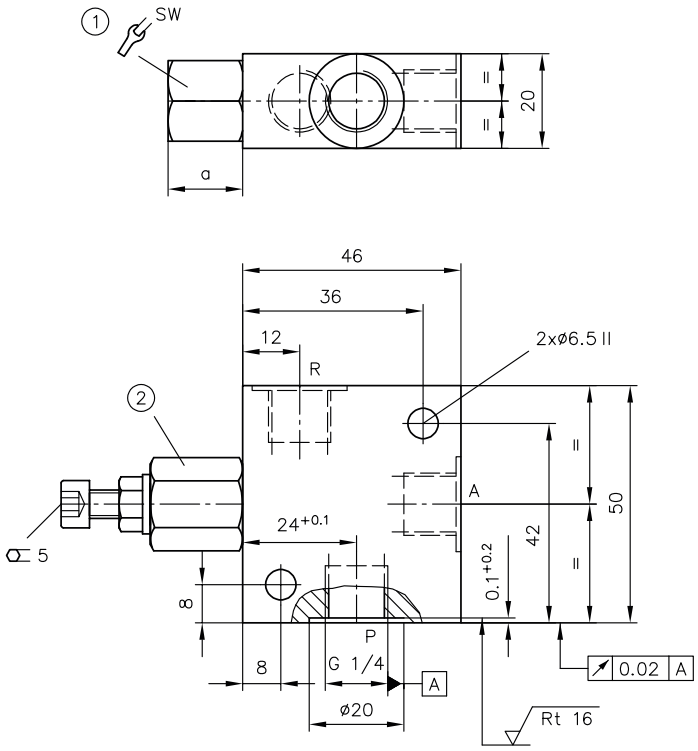
ADC 1-..-1/4



AM 1-20(25)-1/4
AM 1 E(D, C)-..-1/4



ADM 1-..
ADM 1 K-15

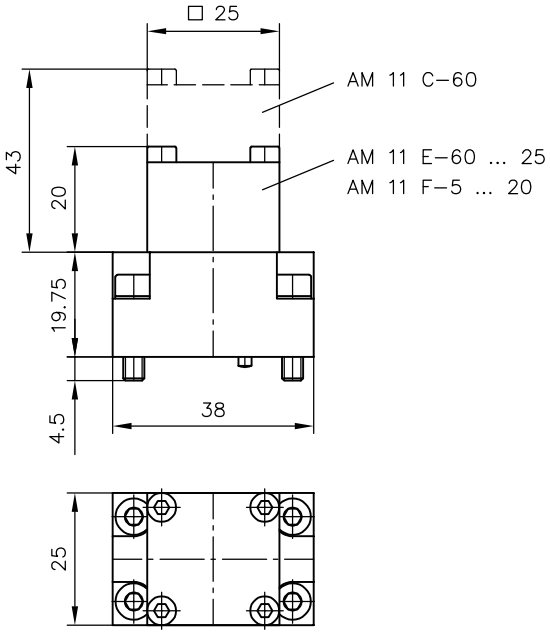


SW = Width across flats

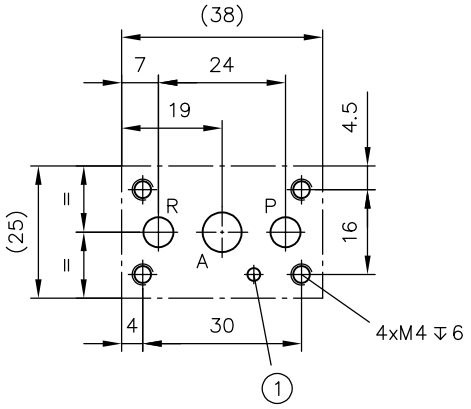
1 ADM 1-..
2 ADM 1 K-15

Type	a	SW	Connections (ISO 228-1)	Tightening torque (Nm)
			A, R, P	
ADM 1 - 15 ADM 1 - 20 ADM 1 - 30	15	17	G 1/4	20
ADM 1 - 40 ADM 1 - 50 ADM 1 - 70	21	19	G 1/4	20

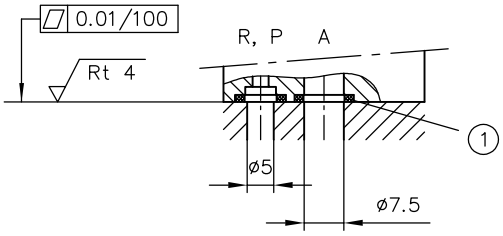
AM 11 ..



Hole pattern of the base plate



1 Connecting hole ∅2.5 deep for mounting centring pin



1 O-ring

Sealing of the ports

	O-ring NBR 90 Sh
A	7.65x1.78
P, R	6.07x1.78

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 Creating the mounting hole

See description in 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.
Minor injuries. Flyaway or bursting parts 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 and individual parts

To purchase spare parts, please see HAWE Hydraulik interactive contact map.

Pressure adjustment using washers

Type	Washer (HAWE no.)
AM 1 E-20..40 AM 1 D-40..60 AM 11 E-.. AM 11 F-..	7625 525 (for each washer 0.75 mm approx. Δp = 5 bar)
AM 1 C-.. AM 11-..	7625 549 (for each washer 0.4 mm approx. Δp = 5 bar)
ADM 1-20..30 ADME 1-20..30 ADME 1-50..70	7434 006 a - 0.5 mm 7434 006 b - 1.0 mm 7434 006 c - 2.0 mm (depending on requirements)

References

Additional versions

- Pressure-reducing valve type ADM: D 7120
- Pressure-reducing valve, pilot-controlled type VDM: D 5579
- Pressure-reducing valve type CDK: D 7745
- Pressure-reducing valve type CLK: D 7745 L
- Pressure-reducing valve type DK, DZ and DLZ: D 7941
- Proportional pressure-reducing valve type PDM and PDMP: D 7584/1
- Proportional pressure-limiting valve type PDV and PDM: D 7486
- Proportional pressure-reducing valve type PM and PMZ: D 7625
- Proportional pressure-reducing valve type KFB 01: D 6600-01

D 7458 07-2026-1.2

HAWE Hydraulik SE
Einsteinring 17 | 85609 Aschheim/Munich | P.O. Box 11 55 | 85605 Aschheim | Germany
Phone +49 89 379100-1000 | info@hawe.de | www.hawe.com

hawe.com/contact