

Pressure valves

2.3 Pressure-reducing valve type ADC, ADM, ADME and AM

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

The pressure reducing valve type ADC and AM is 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. There is a design-related leakage flow.

Features and benefits:

- Compact design
- Numerous configurations

Intended applications:

- For control oil supply in pilot circuits



Nomenclature:	Pressure reducing valve
Design:	Screw-in valve Valve for pipe connection
Adjustment:	Fixed (non-adjustable)
$p_{\max P}$:	400 bar
$p_{\max A}$:	100 bar
Q_{\max}:	10 lpm

Design and order coding example

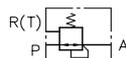
ADC 1	- 25	- 1/4	
			Design
			<ul style="list-style-type: none"> ▪ Cartridge valve ▪ Design with housing for direct pipe connection ▪ Version with housing for manifold mounting (type AM 11)
			Pressure downstream Pressure at port A [bar]
Basic type	Type ADC, AM		
	Type ADM, ADME		
			<ul style="list-style-type: none"> ▪ Type ADM 1 adjustable version available

Function

ADC, AM, ADM, ADME



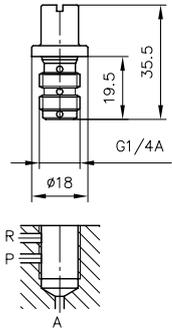
Screw-in valve



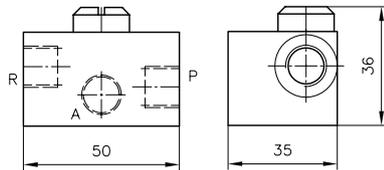
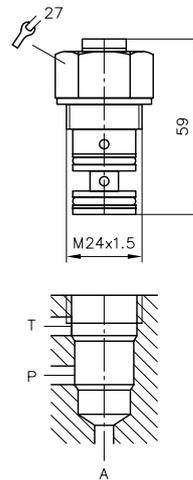
Pipe installation

General parameters and dimensions
ADC 1 - 25

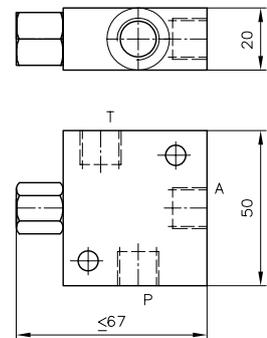
Pressure reducing valve type ADC 1 as screw-in valve, pressure at A (on the consumer side) approx. 25 bar


AM 1 - 20 - 1/4

Pressure reducing valve type AM 1, version for pipe connection (threaded connections G 1/4), pressure at A (on the consumer side) approx. 20 bar


ADME 1 - ...

ADM 1 - 70

Pressure reducing valve type ADM 1, version for pipe connection, pressure at A (on the consumer side) approx. 70 bar



	Q_{max} [lpm]	p_{max} [bar]	Outlet pressure [bar] at A	Ports ¹⁾	m_{max} [kg]	
					Screw-in valve	Pipe installation
ADC 1	2	300	15, 25	G 1/4	0.03	0.32
AM 1	2	400	20, 30, 40, 100	G 1/4	0.03	0.3
ADM 1	8 ... 10	300	15, 20, 30, 70	G 1/4	-	0.34
ADME	8	300	15, 20, 30	-	0.05	-

1) In version for pipe connection only

Associated technical data sheets:

▪ [Pressure-reducing valve type ADC, ADM, ADME and AM: D 7458](#)

- Prop. pressure reducing valves type PDM: [Page 186](#)
- Miniature prop. pressure reducing valves type PM, PMZ: [Page 184](#)

Similar products:

- Pressure reducing valves type ADM, VDM: [Page 176](#)
- Pressure reducing valves type CDK: [Page 180](#)

Pressure valves

2.3 Pressure-reducing valve type ADM and VDM

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

The pressure reducing valve type ADM is directly controlled, the type VDM is hydraulically pilot-controlled. 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. There is a design-related leakage flow.

Features and benefits:

- With safety valve function
- Various adjustment options
- Various additional functions

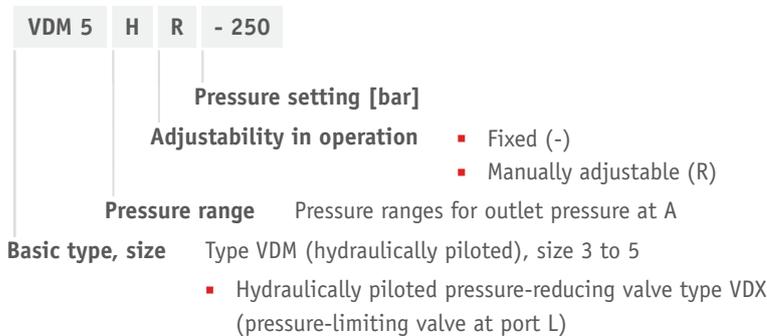
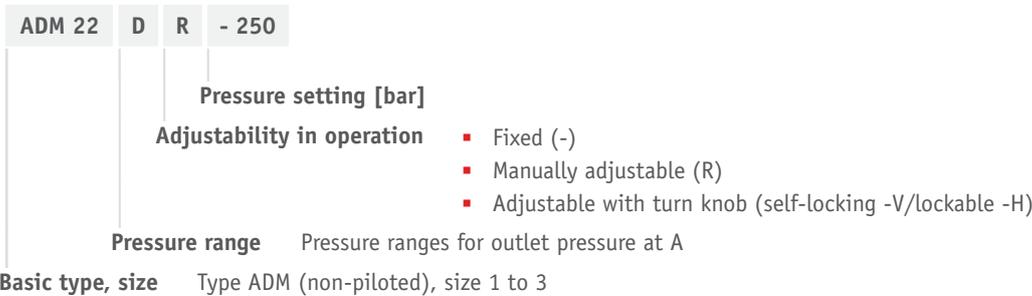
Intended applications:

- General hydraulics
- Jigs
- Test benches

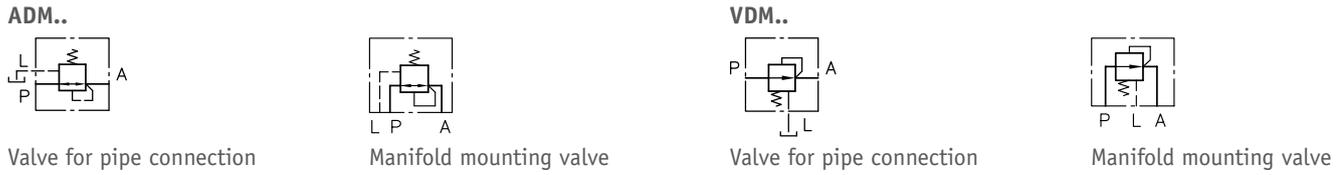


Nomenclature:	Pressure reducing valve (directly-controlled or pilot-controlled)
Design:	Single valve for pipe connection Individual valve for manifold mounting
Adjustment:	Tool adjustable (fixed) Manually (adjustable)
$p_{max P}$:	400 bar
$p_{max A}$:	300 bar
Q_{max}:	120 l/min

Design and order coding example



Function



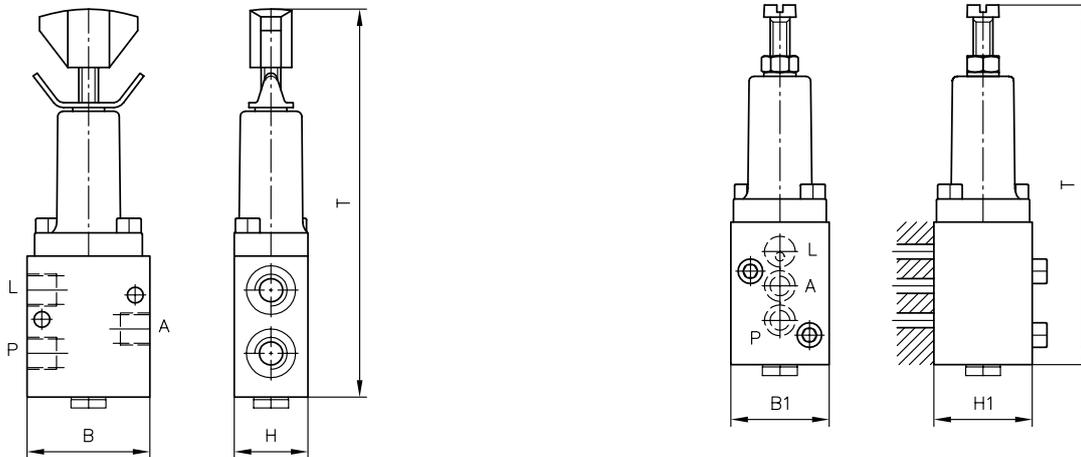
General parameters and dimensions

ADM 22 DR

Version for pipe connection
 Directly controlled pressure reducing valve type ADM, size 2
 for pipe connection
 (threaded connections G 3/8, coding 2),
 pressure range 30 to 120 bar (coding D),
 manually adjustable pressure (coding R)

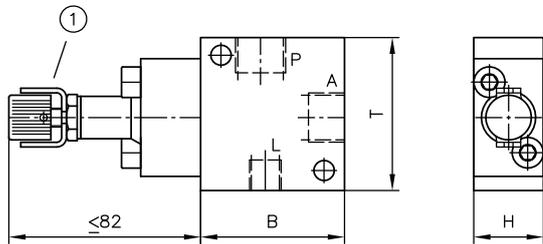
ADM...P

Version as manifold mounting valve



VDM...G

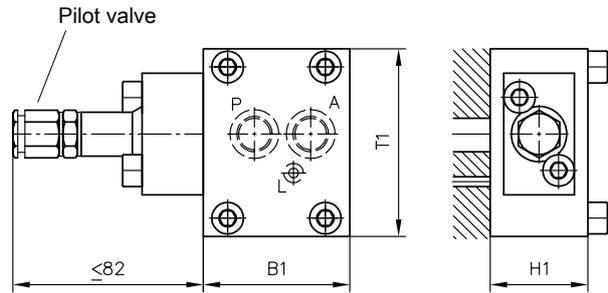
Version for pipe connection



1 Pilot valve

VDM 5 PH - 250

Version as manifold mounting valve
Pilot-controlled pressure reducing valve type VDM, size 5
for manifold mounting (coding P),
pressure range 10 to 400 bar (coding H),
pressure fixed at 250 bar



1 Pilot valve

	Q_{\max} [lpm]	p_{\max} [bar]	$p_{\max A}$ [bar]	Ports ²⁾	Leakage flow Q_{leak} [lpm]	Dimensions [mm]						m_{\max} [kg] ³⁾
						H	H1	B	B1	T	T1	
ADM 1...	12	300	F: 30	G 1/4	<0.05	30	35	45	35	141	-	0.6/0.6
ADM 2..	25		D: 120	G 1/4, G 3/8	<0.05	30	40	50	40	162	-	0.7/0.85
ADM 3..	60		C: 160	G 3/8, G 1/2	<0.07	30	40	50	40	174	-	1.0/1.1
		A: 250										
VDM 3..	40	400	N: 100	G 1/2	<0.4	30	-	60	-	66	-	1.1/--
VDM 4..	70		H: 400 ¹⁾	G 3/4		40	40	65	60	71	78	1.5/2.0
VDM 5..	120			G 1		50	50	80	88	73	81	2.0/2.5

1) Max. pressure difference between inlet and outlet pressure is 300 bar

2) For pipe connection versions only

3) Versions for pipe connection / manifold mounting

Pressure valves

2.3 Pressure-reducing valve type CDK, CLK, DK, DLZ and DZ

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

The pressure reducing valve type CLK features 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. The pressure reducing valve type DK features a tracked pressure switch, e.g. pressure and switch are set simultaneously with an adjustment device.

All versions have zero leakage when in the closed state. The valve type CDK and CLK can be screwed-in and can be integrated into control blocks. The necessary mounting holes are straightforward to make.

Features and benefits:

- Zero leakage in closed state

Intended applications:

- General hydraulic systems
- Jigs
- Test benches



Nomenclature:	Pressure reducing valve (2-way valve)
Design:	Screw-in valve combination with a connection block for <ul style="list-style-type: none">▪ Pipe connection▪ Manifold mounting
Adjustment:	Fixed Manually (adjustable)
P_{max}:	500 bar
Q_{max}:	22 l/min

Design and order coding example

CDK 3 -2 R - 250

Pressure setting [bar]

- Adjustment
- Fixed (-)
 - Manually adjustable (R)
 - Adjustable with turn knob (self-locking -V/lockable -H)

Basic type and pressure range Type CDK, type CLK (with additional override compensation)

- Screw-in valve
- Version with connection block for pipe connection with/without pressure-limiting valve
- Version with connection block for manifold mounting with/without pressure-limiting valve
- In intermediate plate design NG6 (type NZP)

DK 2 R /160 /4R

Additional elements Orifice/throttle

Pressure setting [bar]

- Adjustment
- Fixed (-)
 - Manually adjustable (R)
 - Adjustable with turn knob (self-locking -V/lockable -H)

- Basic type and pressure range
- Type DK (with tracked pressure switch)
 - Type DZ with type CDK
 - Type DLZ with type CLK
 - With bypass check valve
 - Manifold mounting
 - Version with connection block for pipe connection

Function

CDK

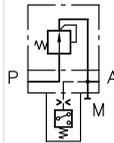


Screw-in valve

CLK

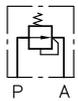


CDK 3. ...-1/4-DG3.



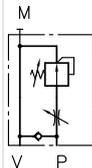
Version for pipe connection, a pressure switch type DG 3. May be installed as option, additional port for pressure gauge

CDK 3. ...-P



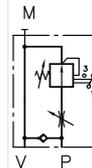
Manifold mounting valve

DZ, DLZ



Manifold mounting valve, optional with orifice/throttle and bypass check valve

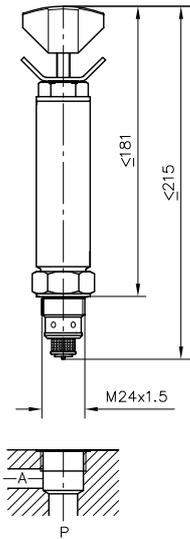
DK



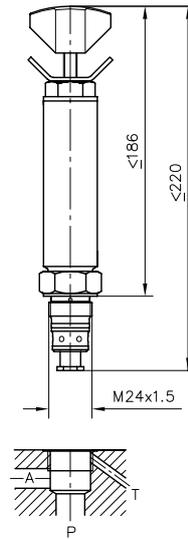
Manifold mounting valve with tracked pressure switch

General parameters and dimensions

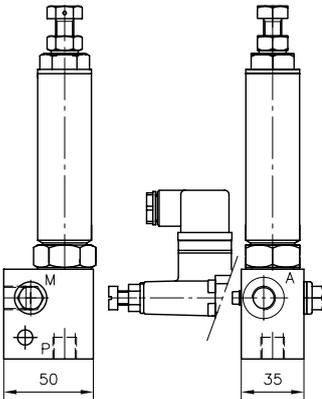
CDK 3..



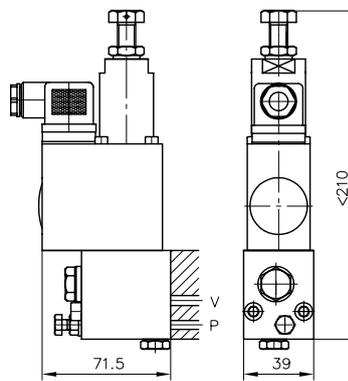
CLK 3..



CDK 3. ...-1/4-DG3.



DK 2.

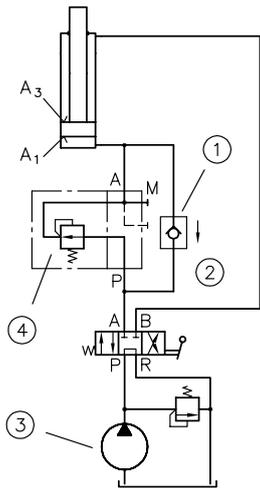


	Q _{max} [lpm]	Pressure range p _{max} [bar]		Ports (BSPP)	m [kg]
CDK 3.-..., CLK 3.-...	6... 22	..-08:450 ¹⁾	..-2:200 ..	-	0.7
CDK 3. ...-1/4-DG3.		..-081:500 ¹⁾	..-21:250 ..	G1/4	1.25
CDK 3. ...-P		..-1:300-5:130 ..	-	1.4
DZ..., DLZ..., DK...		..-11:380-51:165	-	

1) Only available as type CDK and DK

Circuit examples

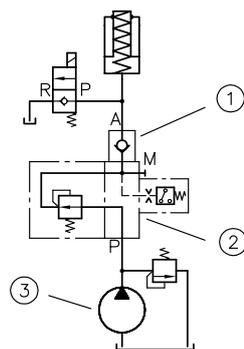
Example of a version with large flow rate $Q_{A \rightarrow P}$
Example: $Q_P = 15 \text{ lpm}$ [formula]



Application example for large flow rate

- 1 E.g. type RK 2G in accordance with [D 7445](#)
- 2 $Q_{\text{return}} = 45 \text{ lpm}$
- 3 $Q_P = 15 \text{ lpm}$
- 4 Type CDK 3-2-1/4

Example of a version with undesired return flow

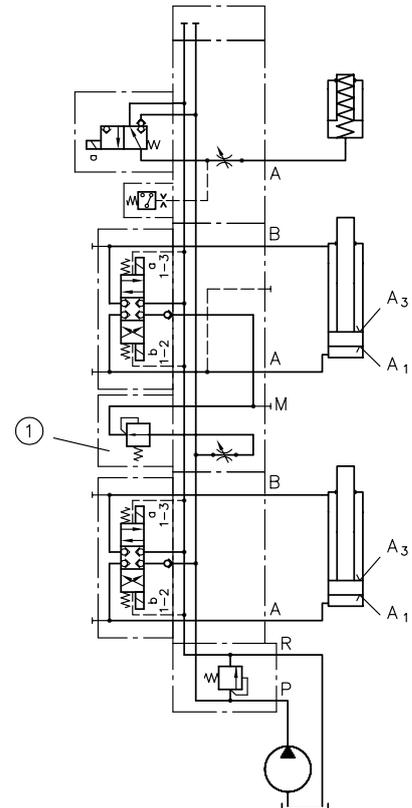


Application example for undesired return flow

- 1 E.g. type RK 1E in accordance with [D 7445](#) (shown here screwed into connection A of the CDK 3 valve)
- 2 Type CDK 3- 2-1/4-DG 34

Use in the valve bank, shown here with seated valves type BVZP 1

- BVZP 1 A - 1/300 - G22/0
- G22/CZ2/100/4/2
- WN1H/10/4
- 1 - 1 - G 24



Application example in the valve bank

- 1 Type CDK 3-2-100 shown here incorporated as -/CZ 2/100...

Associated technical data sheets:

- 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](#)

Similar products:

- Pressure reducing valves type ADM, VDM, VDX: [Page 176](#)
- Miniature pressure reducing valves type ADC etc.: [Page 174](#)
- Prop. pressure reducing valves type PDM: [Page 186](#)

Intermediate plates:

- Intermediate plate type NZP: [D 7788 Z](#)

Accessories:

- Pressure switches type DG 3., DG 5 E: [Page 262](#)