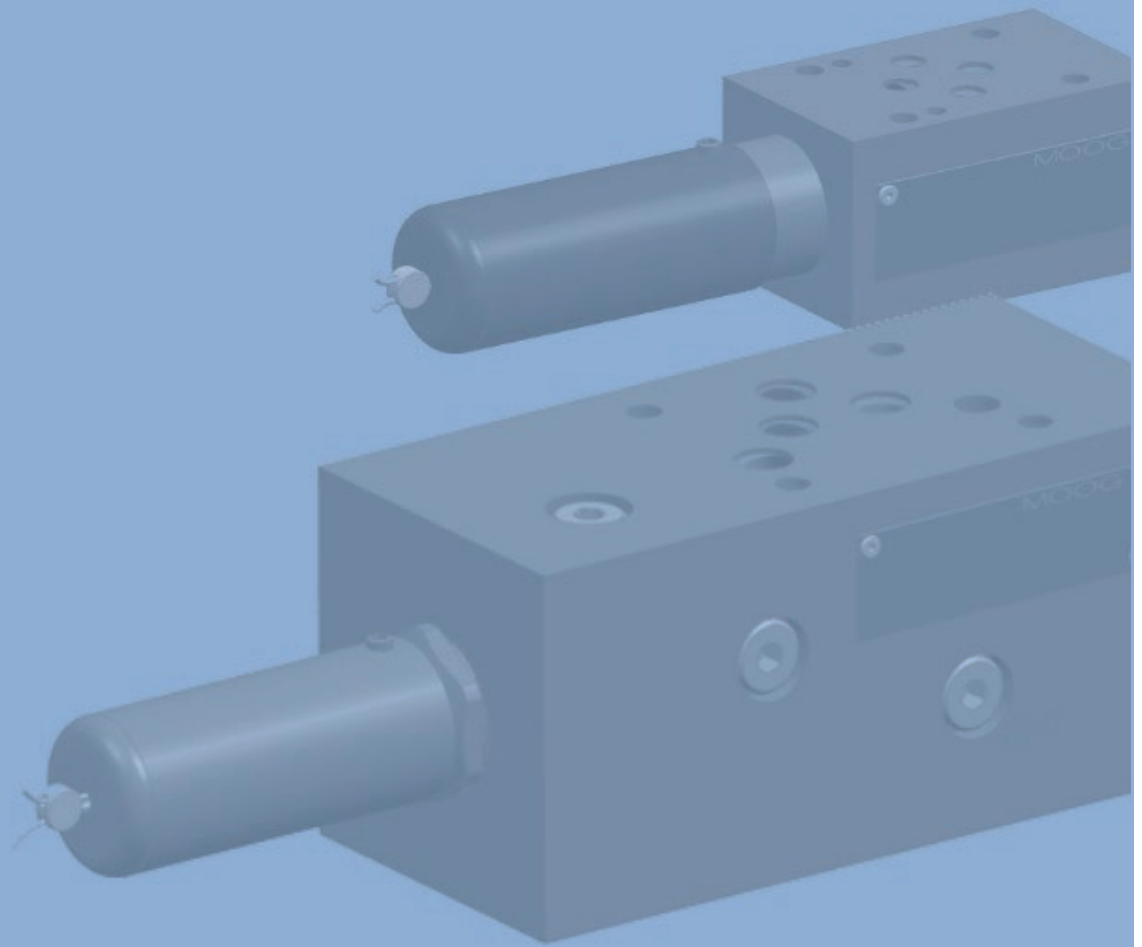


MODULAR VALVES

ISO 4401 SIZES 03 AND 05



Rev. C, Jan. 2019

CONTENTS

SIZE 06

Description	SeriesPage
Modular valves – Throttle check valves	N-ZFDRP064
Modular valves – Check valves	N-ZREP068
Modular valves – Pilot operated check valves	N-ZRDP0612
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Modular valves – Pressure relief valves pilot operated	ZDBVP0620
Modular valves – Pressure reducing valves pilot operated	ZDMVP0624

SIZE 10

Description	SeriesPage
Modular valves – Throttle check valves	N-ZFDRP1028
Modular valves – Check valves	N-ZREP1032
Modular valves – Pilot operated check valves	N-ZRDP1036
Modular valves – Pressure relief valves direct operated	ZDBDP1040
Modular valves – Pressure relief valves pilot operated	ZDBVP1044
Modular valves – Pressure reducing valves pilot operated	ZDMVP1048

This catalogue is for users with technical knowledge. To ensure that all necessary characteristics for function and safety of the system are given, the user has to check the suitability of the products described herein. In case of doubt please contact AXXERON Hydrolux.

MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRP06

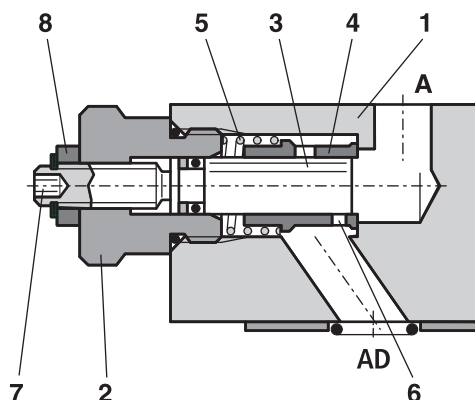
DESCRIPTION OF FUNCTION, SECTION

Valves type N-ZFDRP06 are double throttle/check valves in sandwich plate design. They serve to limit a main or pilot flow of one or two user ports.



They comprise a

- housing (1)
- guide nut (2)
- throttling screw (3)
- metering bush (4) and a
- spring (5).



Two symmetrically arranged throttle/check valves limit flow by means of adjustable throttling spools in one direction and give free return flow in the other. At metering-out the fluid in line A2 reaches the line A1 via the throttle position (6), a combination from the metering bush (4) and the throttling screw (3). To set the throttle orifice, use a 4 A/F hexagon key in the end (7) of the self-locking throttling screw (3).

The 13 A/F locknut (8) provides additional security. Oil flowing from the line A1 pushes the metering bush (4) against the spring (5) and allows oil to flow freely from line A1 to A2, operating as a check valve. By rotating the valve about its long axis it can be mounted with either of this two interface surfaces uppermost – one position gives a METER-IN function, the other METER-OUT.

MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRP06

ORDERING INFORMATION

N

-

Z

F

DR

P

06

A

4

A

2

C

Seals

N

NBR (Standard)

w/o ind.

FPM/FKM

M

FPM/FKM + PUR

H

HNBR (on request)

Valve

Z

Modular valve

Valve type

F

Flow control valve

Valve function

DR

Throttle / check valve

Mounting

P

Subplate

Nominal bore

06

NG06

A

Serial

Flow (AD = seal side; A = valve side)

V

free flow from

AD → A

;

BD → B

S

free flow from

A → AD

;

B → BD

Throttling

C

Throttling in A + B

Adjustment

2

Int. hex socket screw with locknut

Flow range

A

Standard flow range

Series

4

Connection recommended by DIN 24340

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	6	80	N-ZFDRP06A4A2CV	XEB17296-000N01
	6	80	N-ZFDRP06A4A2CS	XEB17297-000N01

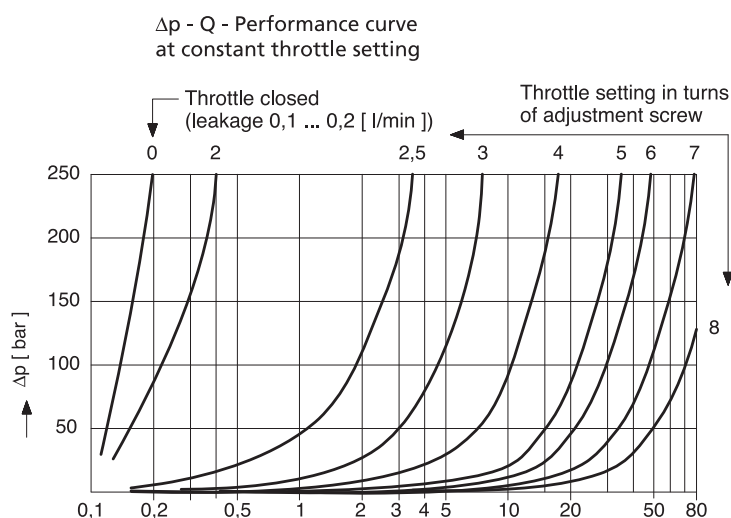
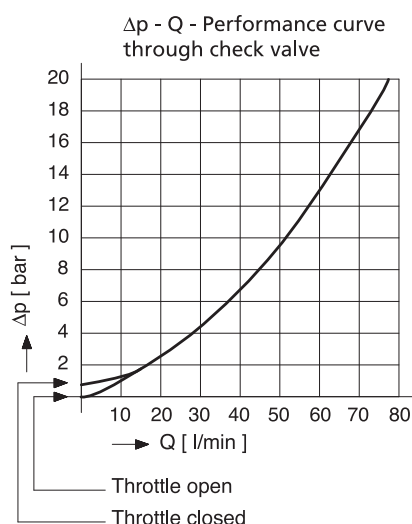
MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRPO6

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Throttle check valve
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 03 (NG06) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{\max.}$	l/min	80 (see performance curves)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	315
Outlet	min.	bar	0
	max.	bar	315
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	2,8
	max.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	380
Operational viscosity	ν	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	35
Weight	m	kg	1,3
Cracking pressure	p_0	bar	ca. 0,7 (in free flow direction)

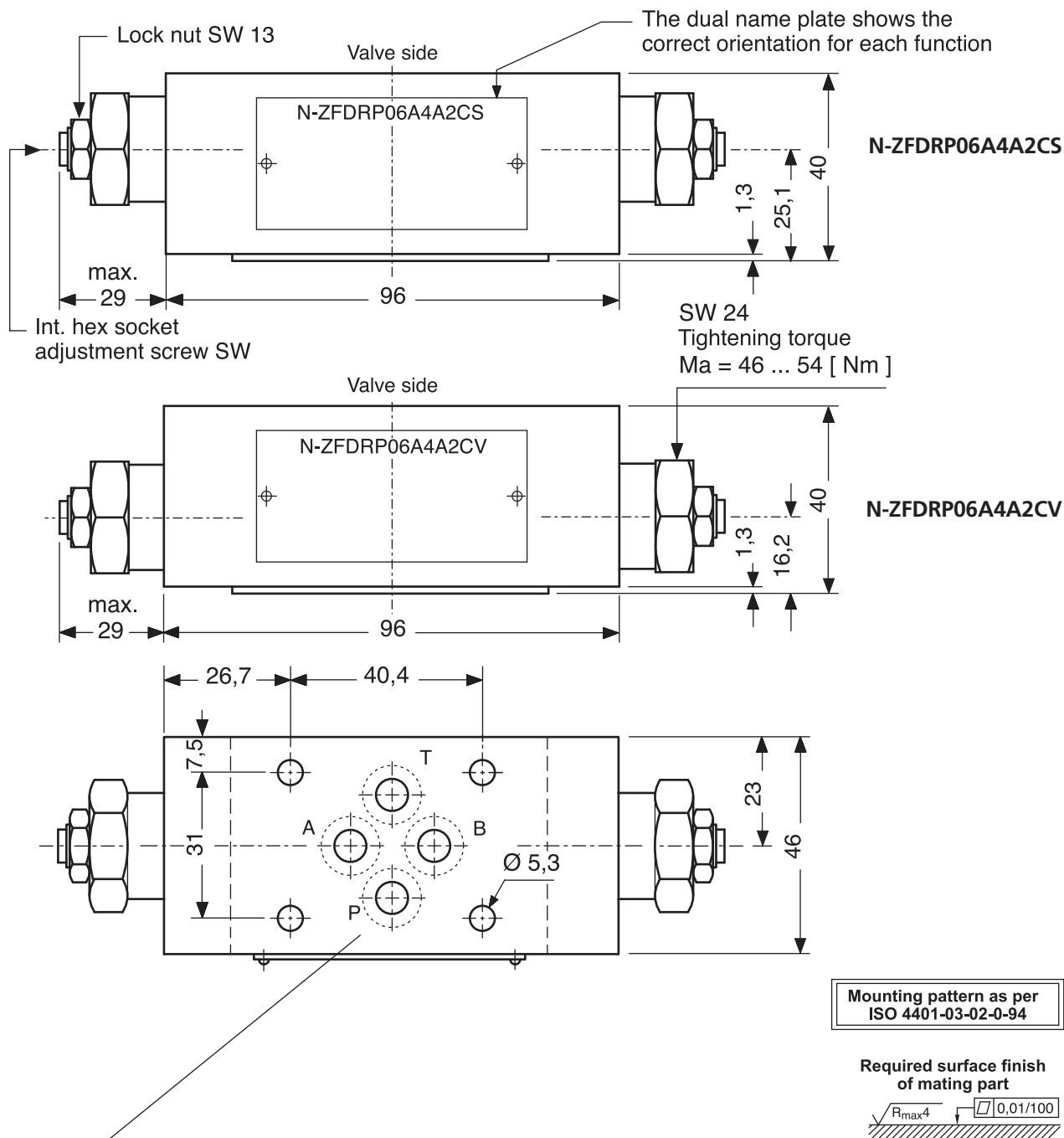
PERFORMANCE CURVES



MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRP06

INSTALLATION DRAWING N-ZFDRP06A4A2CV/S



4 x O-Ring NBR 9,25x1,78 (Part number: X783-00288); Seal kit, complete: XEB17583-000N00

MODULAR VALVES CHECK VALVES

N-ZREP06

DESCRIPTION OF FUNCTION, SECTION

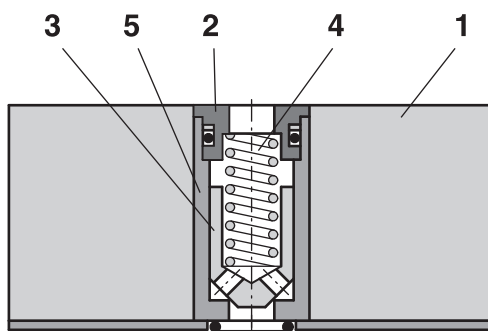
Check valves type N-ZREP06 are direct operated valves in sandwich plate design. They give leakfree closure in one direction and allow free flow in the other.



They comprise a

- housing (1)
- spring retainer (2)
- poppet (3) and a
- spring (4).

These 3 last parts belong to the slip-in poppet cartridge (5).



The stroke of the poppet (3) at the internal diameter is limited by the spring retainer (2). The built-in spring (4) supports the closing movement and also serves to hold the valve poppet (3) in the closed position.

The slip-in cartridge (5) can be inverted in its bore, enabling simple field changes from free flow IN to free flow OUT, and vice versa. The flow direction is marked on the cartridge with a check valve symbol.

MODULAR VALVES CHECK VALVES

N-ZREPO6

ORDERING INFORMATION

N	-	Z	R	E	P	06	A	4		1	R
----------	---	----------	----------	----------	----------	-----------	----------	----------	--	----------	----------

Seals	
N	NBR (Standard)
w/o ind.	FPM/FKM
M	FPM/FKM + PUR
H	HNBR (on request)

Valve	
Z	Modular valve

Valve type	
R	Check valve

Valve function	
E	simple

Mounting	
P	Subplate

Nominal bore	
06	NG06

A Serial	
-----------------	--

Spring	
R	0,5 bar

Area ratio	
-------------------	--

Flow (AD = seal side; A = valve side)			
PV	free flow:	PD	→ P
AS	free flow:	A	→ AD
BS	free flow:	B	→ BD
TS	free flow:	T	→ TD
CS	free flow:	A	→ AD and B → BD
PT	free flow:	PD	→ P and T → TD

Series	
4	Connection recommended by DIN 24340

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	6	60	N-ZREP06A4PV1R	XEB17139-000N01
	6	60	N-ZREP06A4AS1R	XEB17302-000N01
	6	60	N-ZREP06A4BS1R	XEB17303-000N01
	6	60	N-ZREP06A4TS1R	XEB17304-000N01
	6	60	N-ZREP06A4CS1R	XEB17305-000N01
	6	60	N-ZREP06A4PT1R	XEB17457-000N01

MODULAR VALVES CHECK VALVES

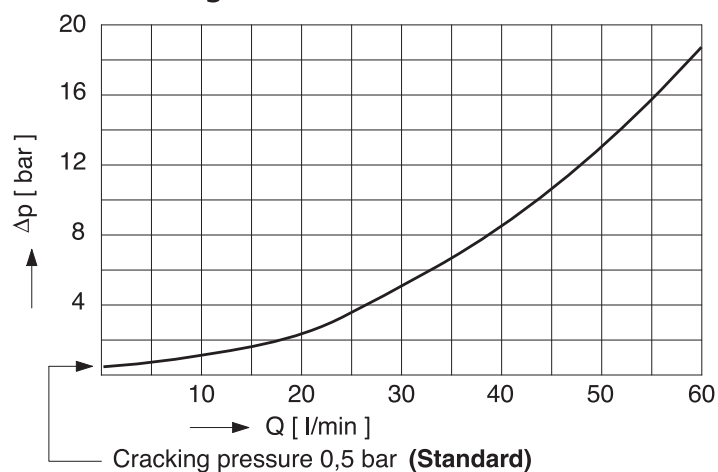
N-ZREPO6

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Check valve
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 03 (NG06) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	Q_{max}	l/min	60 (see performance curves)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	315
Outlet	min.	bar	0
	max.	bar	315
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$mm^2 \cdot s^{-1}$ [cSt]	2,8
	max.	$mm^2 \cdot s^{-1}$ [cSt]	380
Operational viscosity	ν	$mm^2 \cdot s^{-1}$ [cSt]	35
Weight	m	kg	0,7
Cracking pressure	p_0	bar	0,5

PERFORMANCE CURVE

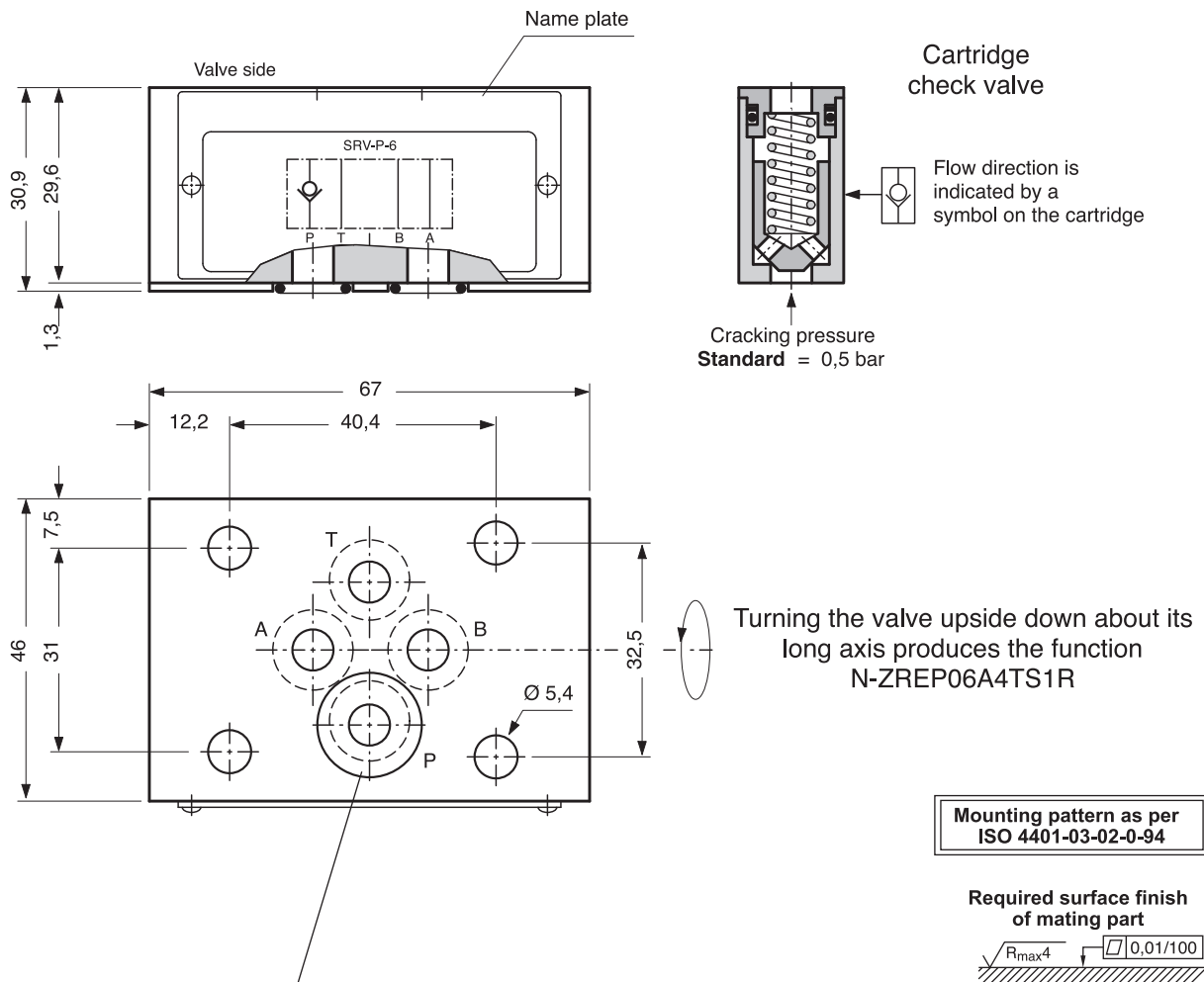
Δp - Q Performance curve
through check valve



MODULAR VALVES CHECK VALVES

N-ZREPO6

INSTALLATION DRAWING N-ZREP06A4_1R



4 x O-Ring NBR 9,25x1,78 (Part number: X783-00288);
 Seal kit, complete: XEB17593-000N00 (all except CS + PT-Versions)
 XEB17601-000N00 (CS + PT-Version)

MODULAR VALVES PILOT OPERATED CHECK VALVES

N-ZRDP06

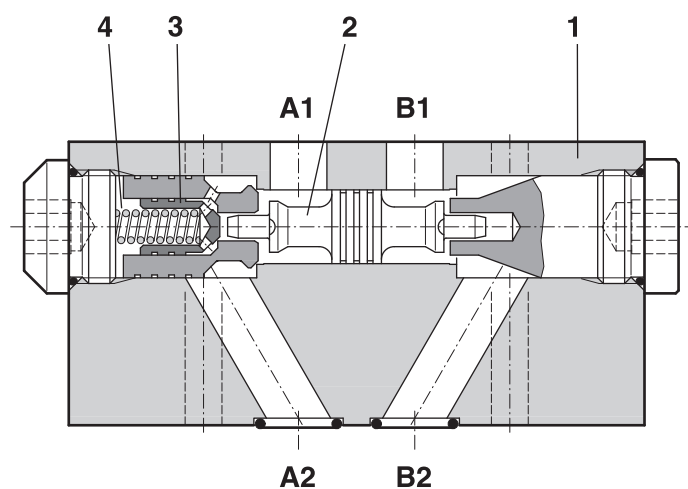
DESCRIPTION OF FUNCTION, SECTION

Check valves type N-ZRDP06 are self-piloting check valves in sandwich plate design. They ensure closure of the service line with near-zero leakage, and therefore block the effects of external forces on the actuator and various leakages across the directional valve.



They comprise a

- housing (1)
- dual piston (2)
- pilot poppet (3) and a
- spring (4).



There is free flow from A1 to A2, while flow is blocked in the other direction. When oil flows from B1 to B2, build-up of pressure causes dual piston (2) to move. As piston (2) is moved to left, pilot poppet (3) is pushed from its seat. Oil can now flow from A2 to A1. In order

to ensure that the poppet valve seats properly, the service ports of the directional valve should be connected to the return line in the neutral position.

MODULAR VALVES

PILOT OPERATED

CHECK VALVES

N-ZRDP06

ORDERING INFORMATION

N

-

Z

R

D

P

06

A

4

5

S

Seals

N	NBR (Standard)
w/o ind.	FPM/FKM
M	FPM/FKM + PUR
H	HNBR (on request)

Valve

Z	Modular valve
---	---------------

Valve type

R	Check valve
---	-------------

Valve function

D	Pilot operated
---	----------------

Mounting

P	Subplate
---	----------

Nominal bore

06	NG06
----	------

A

Serial

Spring

S	1,0 bar
---	---------

Area ratio

5	1 : 6
---	-------

Flow

CC	Pilot operated check valve in A + B
AB	Pilot operated check valve in A (pilot from B)
BA	Pilot operated check valve in B (pilot from A)

Series

4	Connection recommended by DIN 24340
---	-------------------------------------

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	6	60	N-ZRDP06A4CC5S	XEB16883-000N01
	6	60	N-ZRDP06A4AB5S	XEB17299-000N01
	6	60	N-ZRDP06A4BA5S	XEB17300-000N01

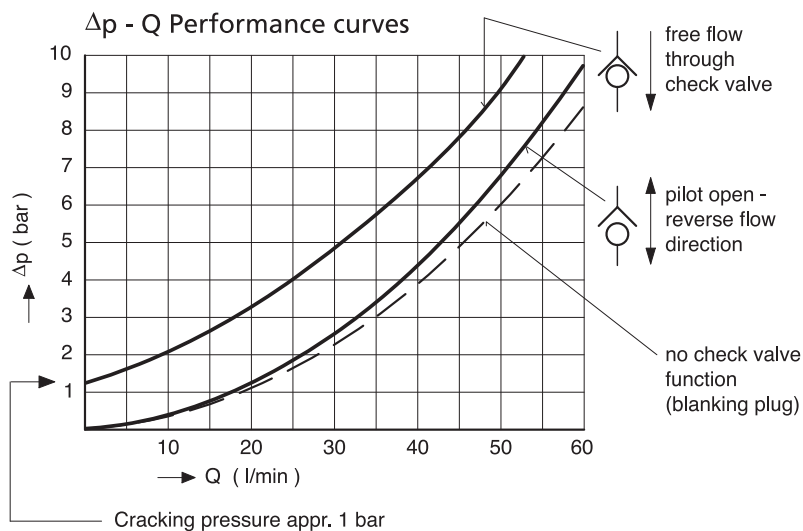
MODULAR VALVES PILOT OPERATED CHECK VALVES

N-ZRDPO6

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Pilot operated check valve
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 03 (NG06) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{max.}$	l/min	60 (see performance curves)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	315
Outlet	min.	bar	0
	max.	bar	315
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$mm^2 \cdot s^{-1}$ [cSt]	2,8
	max.	$mm^2 \cdot s^{-1}$ [cSt]	380
Operational viscosity	ν	$mm^2 \cdot s^{-1}$ [cSt]	35
Weight	m	kg	1,2
Area ratio	-	-	1 : 6

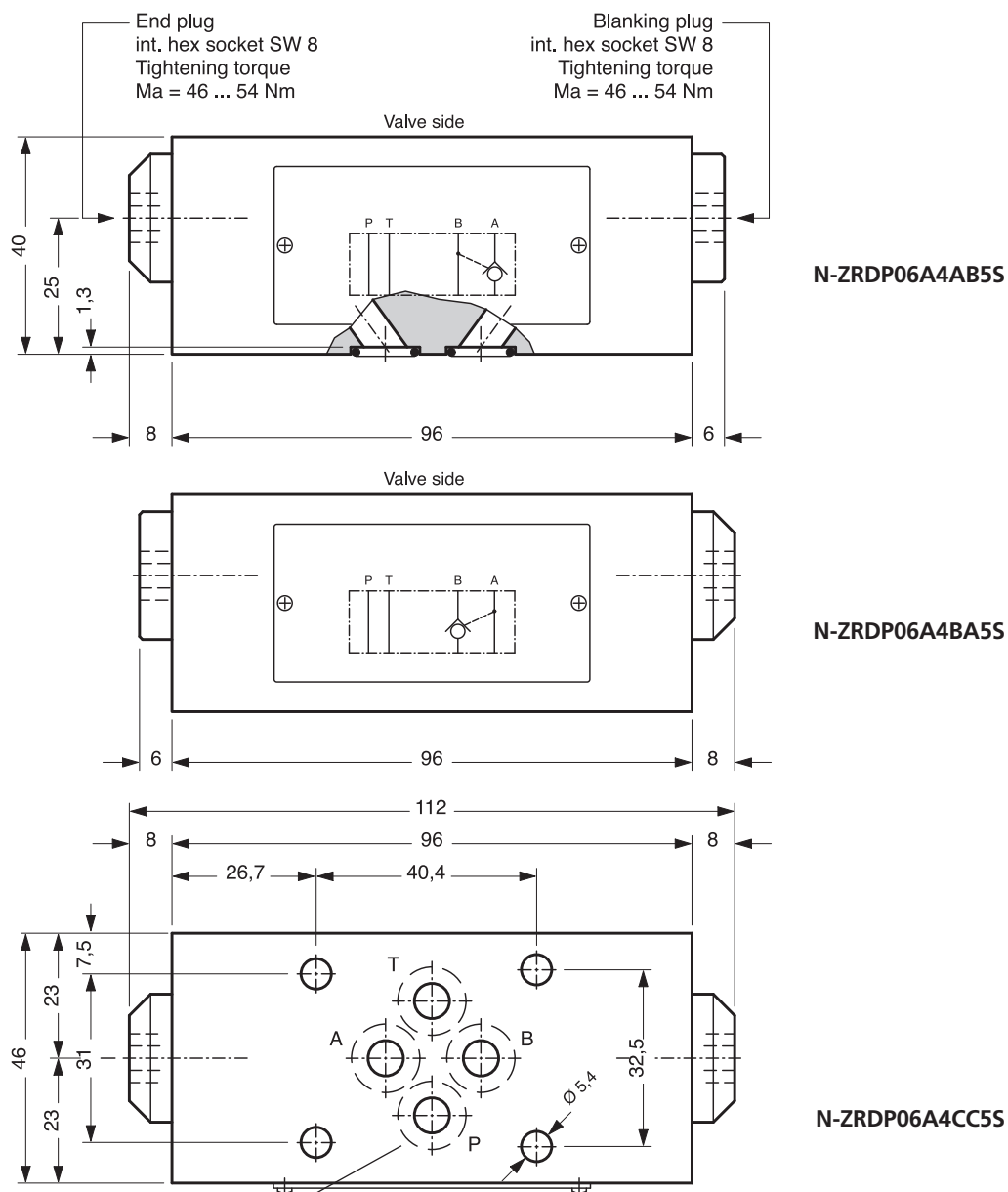
PERFORMANCE CURVES



MODULAR VALVES PILOT OPERATED CHECK VALVES

N-ZRDP06

INSTALLATION DRAWING N-ZRDP06A4__5S



4 x O-Ring NBR 9,25x1,78 (Part number: X783-00288);
Seal kit, complete: XEB17587-000N00 (CC-Version)
XEB17589-000N00 (AB + BA-Version)

Mounting pattern as per
ISO 4401-03-02-0-94

Required surface finish
of mating part

$\sqrt{R_{max}} 4$ $\boxed{0,01/100}$

MODULAR VALVES

PRESSURE RELIEF VALVES

DIRECT OPERATED

ZDBDP06

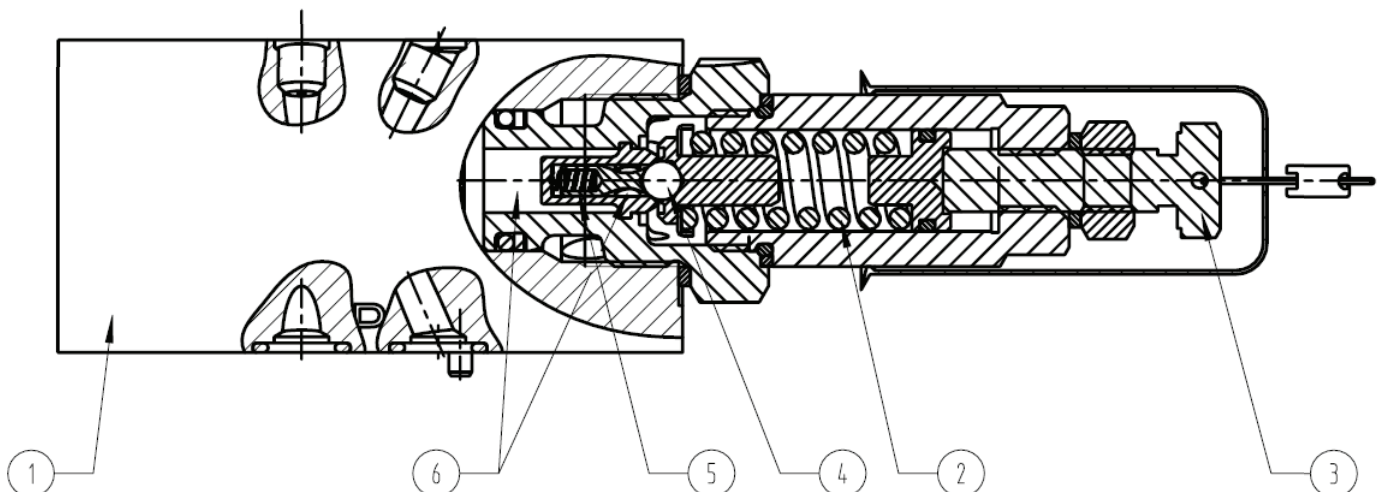
DESCRIPTION OF FUNCTION

Pressure relief valves type ZDBDP06 are direct operated pressure relief valves in sandwich plate design. They are used to limit the maximum pressure in a hydraulic system.



They consist of

- Housing (1)
- Adjustment spring (2)
- Adjustment mechanism (3)
- Ball (4)
- Dampening sleeve (5)



Pressure relief valves are normally closed. Pressure at the port (6) acts upon the exposed surface area of the ball (4). If the pressure at the port (6) exceeds the value set on adjustment spring (2), then the ball (4) opens. Fluid flows from the spring-loaded side of the ball (4) into tank. These valves should be used only as pilot valves !

MODULAR VALVES PRESSURE RELIEF VALVES DIRECT OPERATED

ZDBDP06

ORDERING INFORMATION

Seals		Valve		Valve type		Valve function		Mounting		Nominal bore		Series		Series Letter	
N	NBR (Standard)	Z	Modular valve	D	Pressure Valve	BD	Pressure relief valve, direct operated Use as pilot valve only!	P	Subplate	06	NG06	K	420 bar series	4	Connection regarding ISO 4401
V	FPM/FKM														

Modification		Pressure range	
MA	Adjustment A side	B	70 bar
MB	Adjustment B side	E	175 bar
.....	Orifice size indication, e.g. P20 (= orifice 2,0 mm in P)	G	245 bar
	or: DP20 (= orifice 2,0 mm in P on the seal ring size)	K	350 bar
		L	420 bar

Adjustment	
2	HEX Screw
8	Adjust. 2, with Cap (factory set and sealed)
9	Adjust. 2, with Cap (Seal and Wire loose)

Function	
PT	P => T
AT	A => T
BT	B => T

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	6	12	N-ZDBDP06K4PT2B/MA N-ZDBDP06K4PT2E/MA N-ZDBDP06K4PT2G/MA N-ZDBDP06K4PT2K/MA N-ZDBDP06K4PT2L/MA	XZB10337-202N01 XZB10337-203N01 XZB10337-204N01 XZB10337-205N01 XZB10337-206N01
			N-ZDBDP06K4PT2B/MB N-ZDBDP06K4PT2E/MB N-ZDBDP06K4PT2G/MB N-ZDBDP06K4PT2K/MB N-ZDBDP06K4PT2L/MB	XZB10340-202N01 XZB10340-203N01 XZB10340-204N01 XZB10340-205N01 XZB10340-206N01
	6	12	N-ZDBDP06K4AT2B/MA N-ZDBDP06K4AT2E/MA N-ZDBDP06K4AT2G/MA N-ZDBDP06K4AT2K/MA N-ZDBDP06K4AT2L/MA	XZB10338-202N01 XZB10338-203N01 XZB10338-204N01 XZB10338-205N01 XZB10338-206N01
			N-ZDBDP06K4AT2B/MB N-ZDBDP06K4AT2E/MB N-ZDBDP06K4AT2G/MB N-ZDBDP06K4AT2K/MB N-ZDBDP06K4AT2L/MB	XZB10341-202N01 XZB10341-203N01 XZB10341-204N01 XZB10341-205N01 XZB10341-206N01
	6	12	N-ZDBDP06K4BT2B/MA N-ZDBDP06K4BT2E/MA N-ZDBDP06K4BT2G/MA N-ZDBDP06K4BT2K/MA N-ZDBDP06K4BT2L/MA	XZB10339-202N01 XZB10339-203N01 XZB10339-204N01 XZB10339-205N01 XZB10339-206N01
			N-ZDBDP06K4BT2B/MB N-ZDBDP06K4BT2E/MB N-ZDBDP06K4BT2G/MB N-ZDBDP06K4BT2K/MB N-ZDBDP06K4BT2L/MB	XZB10342-202N01 XZB10342-203N01 XZB10342-204N01 XZB10342-205N01 XZB10342-206N01

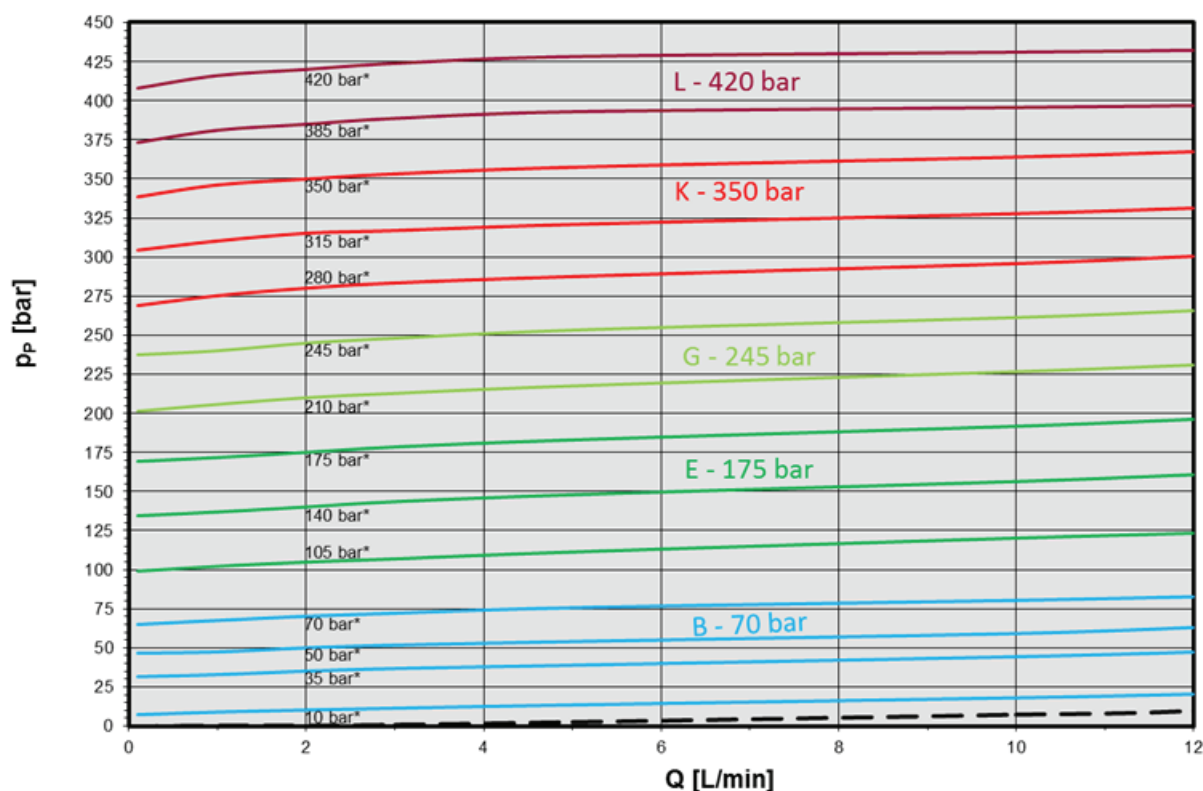
MODULAR VALVES PRESSURE RELIEF VALVES DIRECT OPERATED

ZDBDP06

TECHNICAL DATA

General Data	Specification
Valve Type	Pressure Relief Valve, direct operated
Type Code	ZDBDP06
Valve Design	Sandwichplate Valve
Mounting Pattern	ISO 4401-03-02-0-05
Mounting Position	any
Nominal Flow	12 l/min
Inlet Pressure (P, A, B)	420 bar
Outlet Pressure (T)	350 bar Note: Back pressure to be added to the pre-set pressure. As low as possible pressure on the Y-port is recommended, e.g. direct connection to leak oil (≈ 0 bar). <i>Pre-set pressure+tank pressure = opening pressure</i>
Ambient temperature range	NBR-seals: -30 to +80 °C FKM-seals: -20 to +80 °C
Hydraulic Data	
FKM	- Mineral oil based hydraulic fluids - HFD hydraulic fluids
NBR	- Mineral oil based hydraulic fluids - HFB, HFC hydraulic fluids
Hydraulic fluid temperature range	NBR-seals: -30 to +80 °C FKM-seals: -20 to +80 °C
Viscosity range, maximum	2,8 to 380 mm ² /s
Viscosity range, recommended	15 to 46 mm ² /s
Recommended cleanliness class as per ISO 4406	
For functional safety	20/18/15
For longer service life	17/14/11

PERFORMANCE CURVES



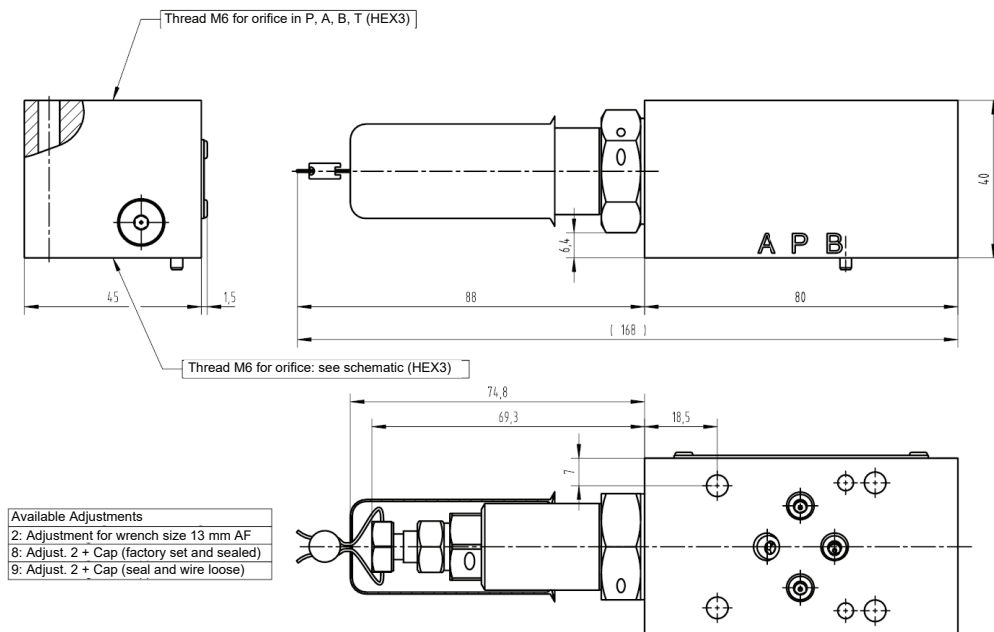
MODULAR VALVES

PRESSURE RELIEF VALVES

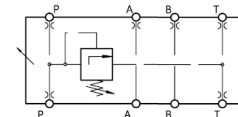
DIRECT OPERATED

ZDBDP06

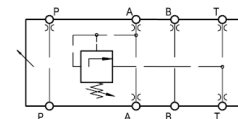
INSTALLATION DRAWING ZDBDP06 4_/MA



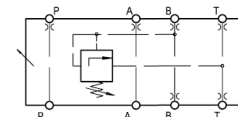
ZDBDP06K4PT_/MA



ZDBDP06K4AT_/MA

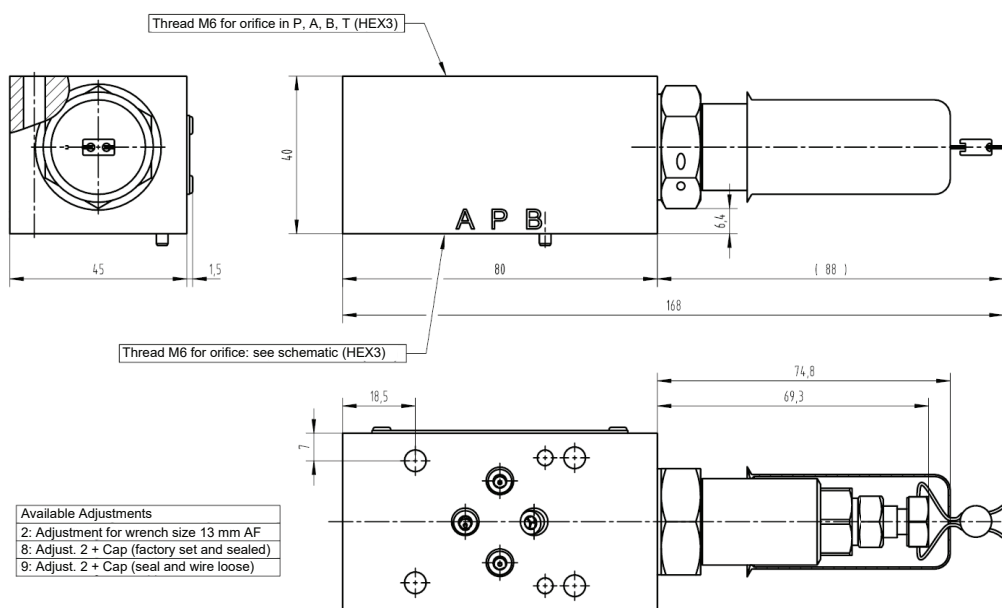


ZDBDP06K4BT_/MA

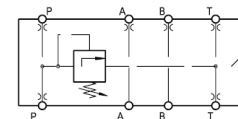


Anschlussbild/Pattern
ISO 4401-03-02-0-05

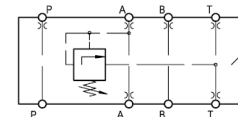
INSTALLATION DRAWING ZDBDP06 4_/MB



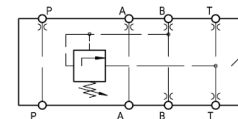
ZDBDP06K4PT_/MB



ZDBDP06K4AT_/MB



ZDBDP06K4BT_/MB



Anschlussbild/Pattern
ISO 4401-03-02-0-05

MODULAR VALVES

PRESSURE RELIEF VALVES

PILOT OPERATED

ZDBVP06

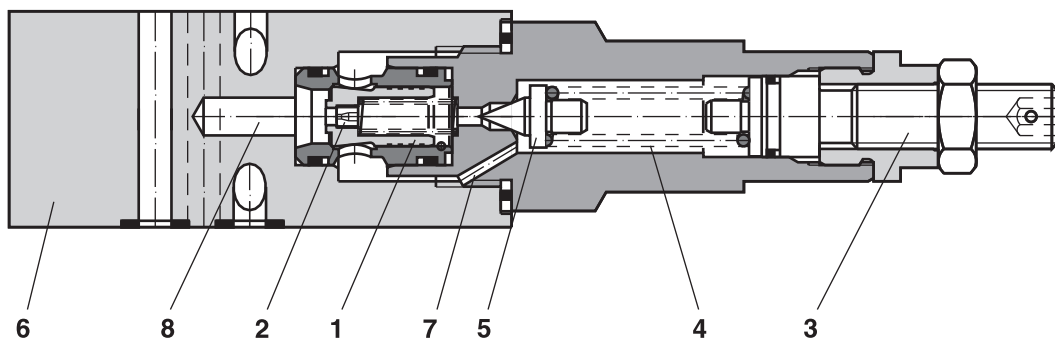
DESCRIPTION OF FUNCTION, SECTION

Pressure relief valves type ZDBVP06 are pilot operated poppet type valves in sandwich plate design. They limit maximum pressure in a hydraulic system.



They comprise a

- housing (6)
- adjustment spring (4)
- adjustment mechanism (3)
- main poppet (1) and a
- pilot poppet (5).



Pressure relief valves are normally closed. Pressure (shown in cross-section on port 8) acts upon both sides of main poppet (1), via orifice (2), and also upon pilot poppet (5).

As the pressure on the exposed surface area of pilot poppet (5) exceeds spring force (4), it opens allowing pilot flow via orifice (2) and drain (7). This pressure drop across main poppet (1), allows the main flow into tank.

MODULAR VALVES PRESSURE RELIEF VALVES PILOT OPERATED

ZDBVP06

ORDERING INFORMATION

Seals		Modification	
w/o ind.	FPM/FKM (Standard)	MA	Adjustment A side (BT version only)
M	FPM/FKM + PUR	MB	Adjustment B side (PT and AT version)
N	NBR		Orifice size indication, e.g. P20 (= orifice 2,0 mm in P) or: DP20 (= orifice 2,0 mm in P on the seal ring size)
H	HNBR (on request)		
Valve		Pilot connection x/y	
Z	Modular valve	S	without x / without y pilot connection
Valve type		Pressure range	
D	Pressure control valve	B	70 bar
Valve function		G	245 bar
BV	Pressure relief valve, pilot operated Use as main valve!	K	350 bar
Mounting		Adjustment	
P	Subplate	2	Int. hex socket screw with locknut
Nominal bore		8	Int. hex socket screw with locknut and seal
06	NG06	Function	
A	Serial	PT	P => T
Series		AT	A => T
4	Connection recommended by DIN 24340	BT	B => T
		CT	C => T
		AB	A => T, B => A

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	6	60	ZDBVP06A4PT2BS ZDBVP06A4PT2GS ZDBVP06A4PT2KS	XZB10048-000-01 XZB10050-000-01 XZB10051-000-01
	6	60	ZDBVP06A4AT2BS ZDBVP06A4AT2GS ZDBVP06A4AT2KS	XZB10088-000-01 XZB10090-000-01 XZB10091-000-01
	6	60	ZDBVP06A4BT2BS ZDBVP06A4BT2GS ZDBVP06A4BT2KS	XZB10052-000-01 XZB10054-000-01 XZB10055-000-01
	6	60	ZDBVP06A4CT2BS ZDBVP06A4CT2GS ZDBVP06A4CT2KS	XZB10096-000-01 XZB10098-000-01 XZB10099-000-01
	6	60	ZDBVP06A4AB2BS ZDBVP06A4AB2GS ZDBVP06A4AB2KS	XZB10092-000-01 XZB10094-000-01 XZB10095-000-01

MODULAR VALVES PRESSURE RELIEF VALVES PILOT OPERATED

ZDBVP06

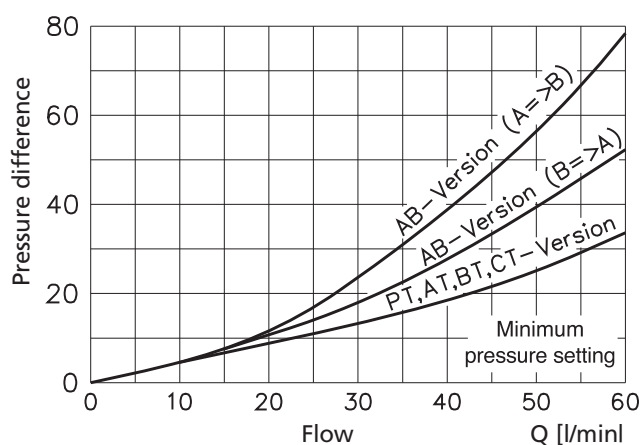
TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Pressure relief valve pilot operated
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 03 (NG06) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{\max}$	l/min	60 (see performance limits)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	350
Outlet	min.	bar	0
	max.	bar	350
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	2,8
	max.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	380
Operational viscosity	ν	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	35
Weight	m	kg	1,5 => Version PT, AT, BT / 2,5 => Version CT, AB

PERFORMANCE CURVES

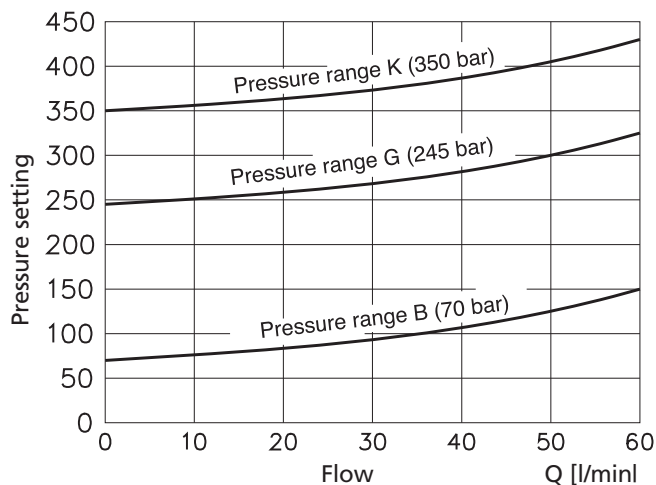
Δp -Q-Diagram

Δp [bar]



p_E -Q-Diagram

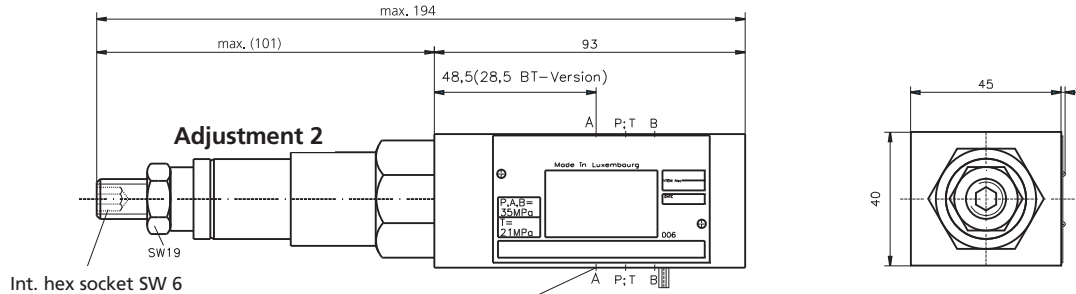
p_E [bar]



MODULAR VALVES PRESSURE RELIEF VALVES PILOT OPERATED

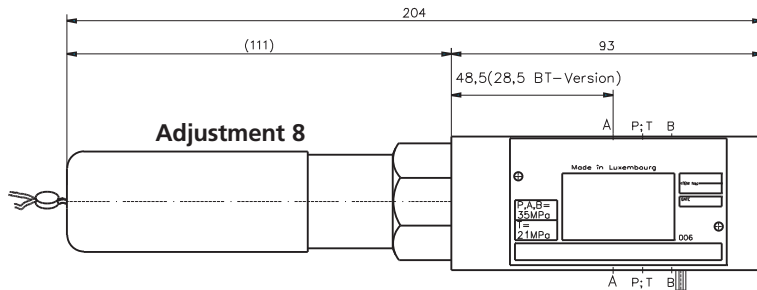
ZDBVP06

INSTALLATION DRAWING ZDBVP06A4PT(AT,BT)_S/MA(MB)



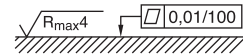
4 x O-Ring Viton 9,25x1,78 (Part number: X980-02012)
M-Version: 4 x Axial seal ring 8,5x12,5x1,5 (Part number: XE15498)

Seal kit, complete: XEB17626-000-00
Seal kit, complete: XEB17626-000M00

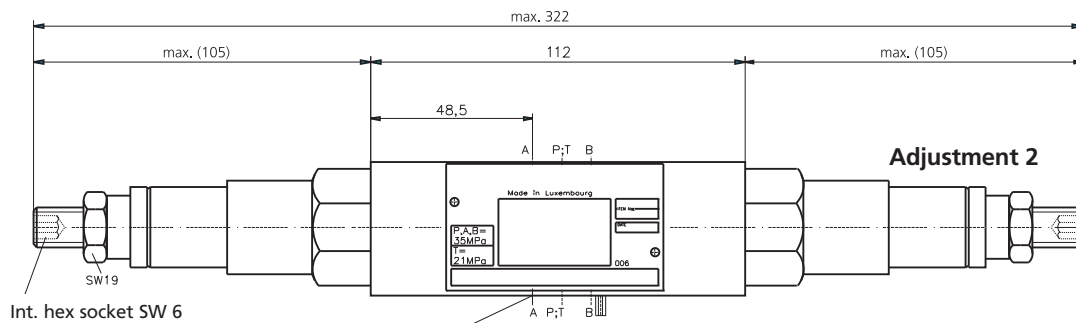


Mounting pattern as per
ISO 4401-03-02-0-94

Required surface finish
of mating part



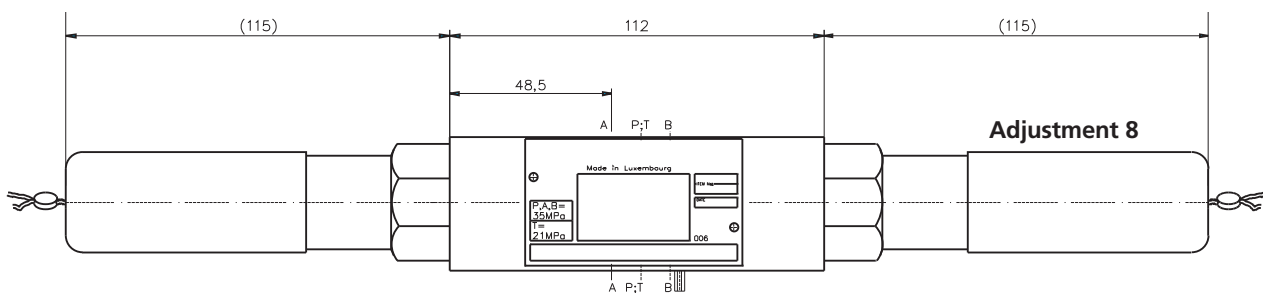
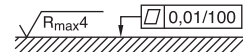
INSTALLATION DRAWING ZDBVP06A4CT(AB)_S



4 x O-Ring Viton 9,25x1,78 (Part number: X980-02012)
Seal kit, complete: XEB17628-000-00 (CT), XEB17630-000-00 (AB)
M-Version: 4 x Axial seal ring 8,5x12,5x1,5 (Part number: XE15498)
Seal kit, complete: XEB17628-000M00 (CT), XEB17630-000M00 (AB)

Mounting pattern as per
ISO 4401-03-02-0-94

Required surface finish
of mating part



MODULAR VALVES

PRESSURE REDUCING

VALVES, PILOT OPERATED

ZDMVP06

DESCRIPTION OF FUNCTION, SECTION

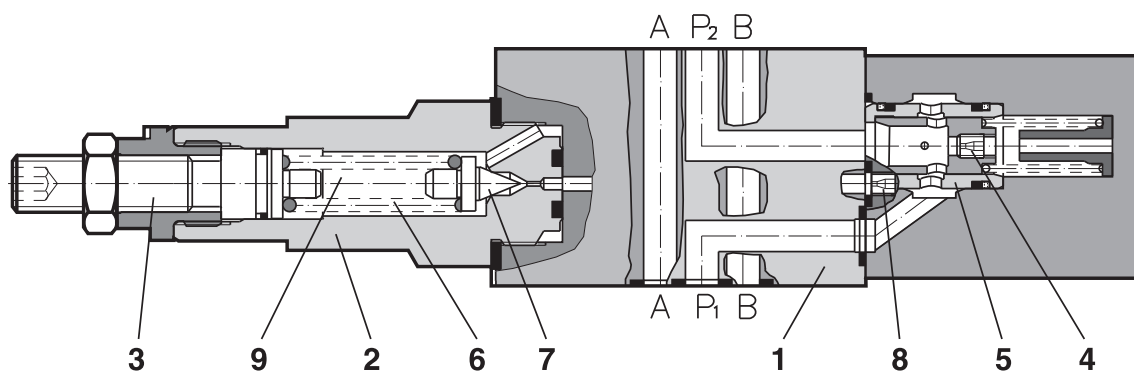
Pressure reducing valves type ZDMVP06 are pilot operated pressure reducing valves in sandwich plate design. They reduce pressure in a branch circuit lower than that of the main circuit.



They comprise a

- housing (1) and a
- cartridge (2).

Pressure in the branch circuit is manually set by adjustment mechanism (3).



Pressure reducing valves are normally open, permitting fluid to flow from port P₁ to P₂. Pressure at port P₂ is applied on main spool (5), and via orifice (4), on the spring-loaded side of main spool (5). If pressure at port P₂ exceeds the value set at spring (6), pilot poppet (7) opens.

Fluid flows from the spring-loaded side of main spool (5) through orifice (8) and pilot poppet (7) to spring chamber (9) into tank. Main spool (5) modulates to maintain pressure at port P₂ constant.

MODULAR VALVES

PRESSURE REDUCING

VALVES, PILOT OPERATED

ZDMVP06

ORDERING INFORMATION

	-	Z	D	MV	P	06	A	4	PP			S
--	---	---	---	----	---	----	---	---	----	--	--	---

Seals

w/o ind.	FPM/FKM (Standard)
M	FPM/FKM + PUR
N	NBR
H	HNBR (on request)

Valve

Z	Modular valve
---	---------------

Valve type

D	Pressure control valve
---	------------------------

Valve function

MV	Pressure reducing valve, pilot operated Use as main valve!
----	---

Mounting

P	Subplate
---	----------

Nominal bore

06	NG06
----	------

A Serial

Pilot connection x/y

S	without x / without y pilot connection
---	--

Pressure range

B	70 bar
E	175 bar
G	245 bar

Adjustment

2	Int. hex socket screw with locknut
8	Int. hex socket screw with locknut and seal

Function

PP	P1 => P2
----	----------

Series

4	Connection recommended by DIN 24340
---	-------------------------------------

Subject to technical changes

SYMBOL AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	6	60	ZDMVP06A4PP2BS	XZB10076-000-01
			ZDMVP06A4PP2ES	XZB10077-000-01
			ZDMVP06A4PP2GS	XZB10079-000-01

MODULAR VALVES PRESSURE REDUCING VALVES, PILOT OPERATED

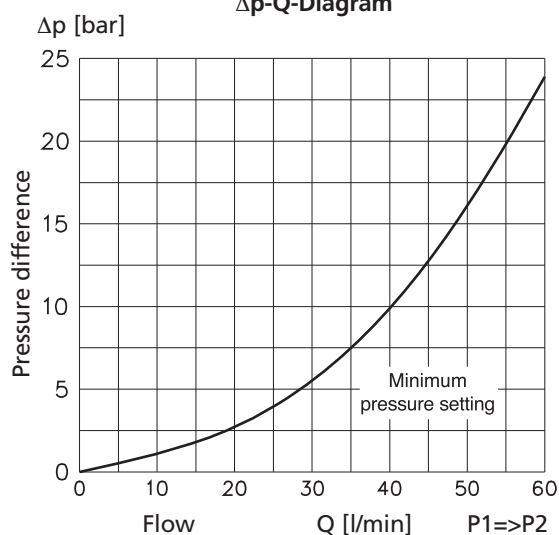
ZDMVPO6

TECHNICAL DATA

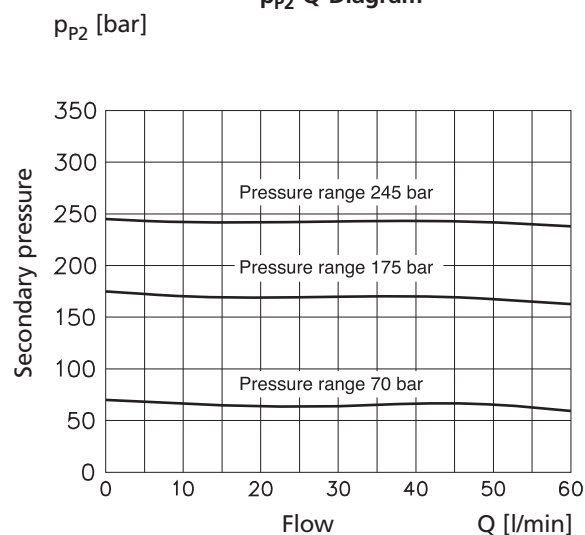
General Data	Value	Unit	Specifications
Designation	-	-	Pressure reducing valve pilot operated
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 03 (NG06) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{\max.}$	l/min	up to 60 (see performance limits)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	350
Outlet (secondary pressure)	min.	bar	0
	max.	bar	up to 70, up to 175, up to 245
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	2,8
	max.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	380
Operational viscosity	ν	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	35
Weight	m	kg	1,5

PERFORMANCE CURVES

Δp -Q-Diagram



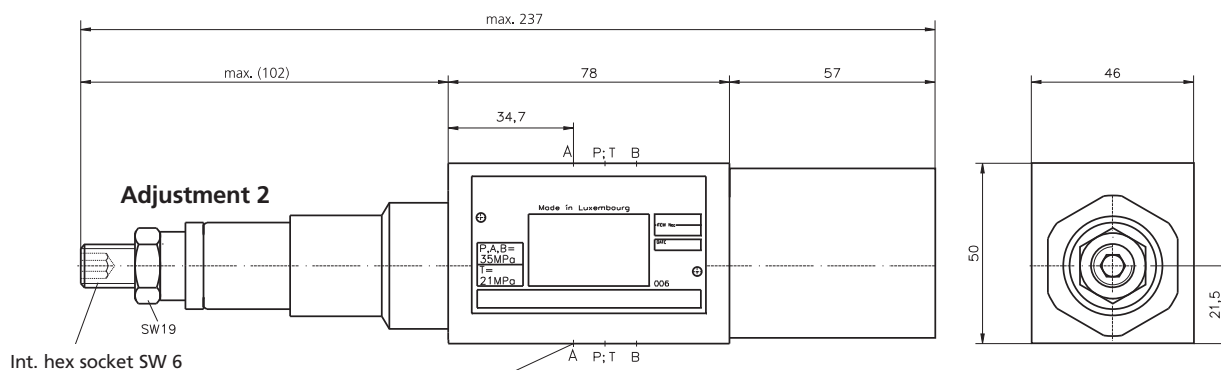
p_{P2} -Q-Diagram



MODULAR VALVES PRESSURE REDUCING VALVES, PILOT OPERATED

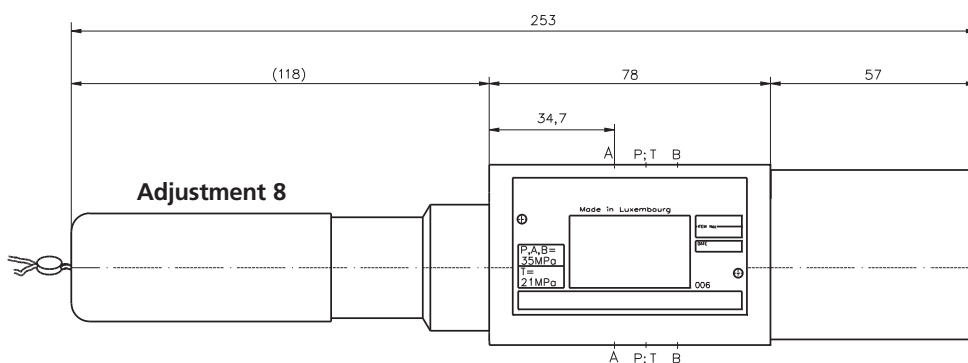
ZDMVPO6

INSTALLATION DRAWING ZDMVP06A4PP__S



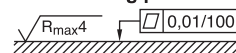
4 x O-Ring Viton 9,25x1,78 (Part number: X980-02012)
M-Version: 4 x Axial seal ring 8,5x12,5x1,5 (Part number: XE15498)

Seal kit, complete: XEB17634-000-00
Seal kit, complete: XEB17634-000M00



Mounting pattern as per
ISO 4401-03-02-0-94

Required surface finish
of mating part



MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRP10

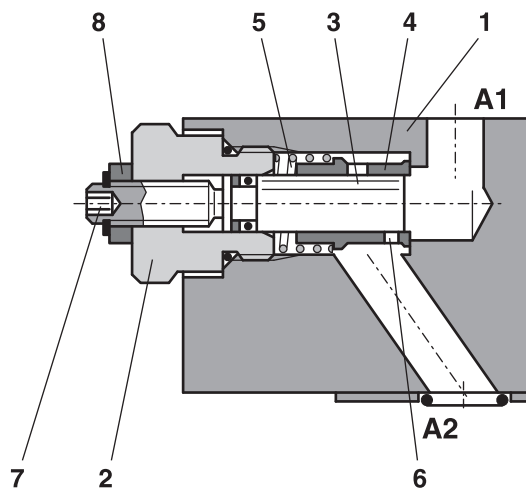
DESCRIPTION OF FUNCTION, SECTION

Valves type N-ZFDRP10 are double throttle/check valves in sandwich plate design. They serve to limit a main or pilot flow of one or two user ports.



They comprise a

- housing (1)
- guide nut (2)
- throttling screw (3)
- metering bush (4) and a
- spring (5).



Two symmetrically arranged throttle/check valves limit flow by means of adjustable throttling spools in one direction and give free return flow in the other. At metering-out the fluid in line A2 reaches the line A1 via the throttle position (6), a combination from the metering bush (4) and the throttling screw (3). To set the throttle orifice, use a 4 A/F hexagon key in the end (7) of the self-locking throttling screw (3).

The 13 A/F locknut (8) provides additional security. Oil flowing from the line A1 pushes the metering bush (4) against the spring (5) and allows oil to flow freely from line A1 to A2, operating as a check valve. By rotating the valve about its long axis it can be mounted with either of this two interface surfaces uppermost – one position gives a METER-IN function, the other METER-OUT.

MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRP10

ORDERING INFORMATION

N

-

Z

F

DR

P

10

A

4

A

2

C

Seals

N	NBR (Standard)
w/o ind.	FPM/FKM
M	FPM/FKM + PUR
H	HNBR (on request)

Valve

Z	Modular valve
---	---------------

Valve type

F	Flow control valve
---	--------------------

Valve function

DR	Throttle / check valve
----	------------------------

Mounting

P	Subplate
---	----------

Nominal bore

10	NG10
----	------

A

Serial

Flow (AD = seal side; A = valve side)

V	free flow from	AD → A	; BD → B
S	free flow from	A → AD	; B → BD

Throttling

C	Throttling in A + B
---	---------------------

Adjustment

2	Int. hex socket screw with locknut
---	------------------------------------

Flow range

A	Standard flow range
---	---------------------

Series

4	Connection recommended by DIN 24340
---	-------------------------------------

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	10	160	N-ZFDRP10A4A2CV	XEB17470-000N01
	10	160	N-ZFDRP10A4A2CS	XEB17471-000N01

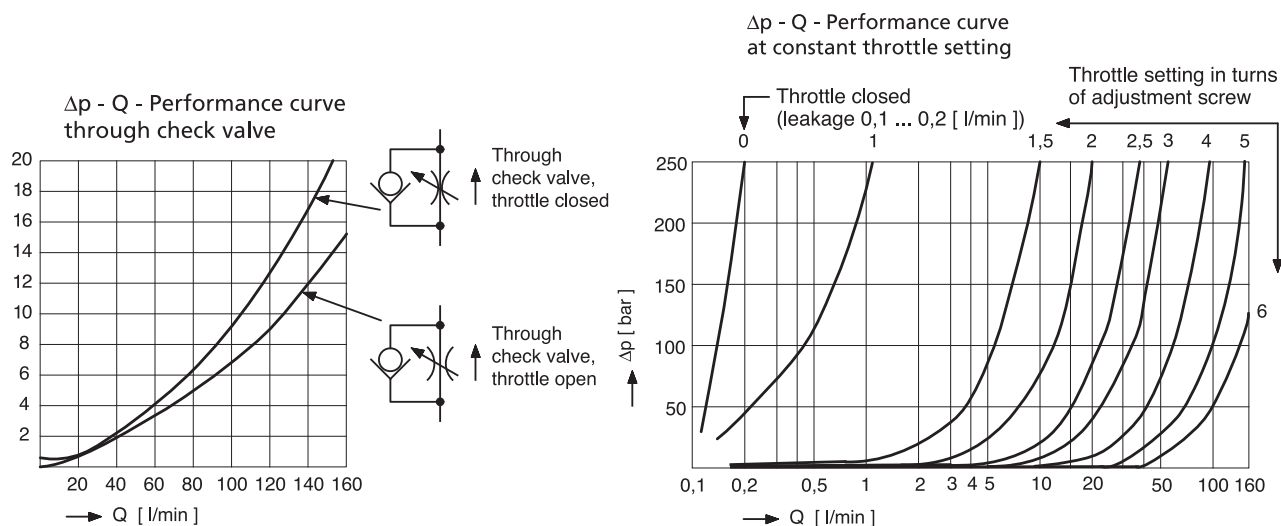
MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRP10

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Throttle check valve
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 05 (NG10) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{max.}$	l/min	160 (see performance curves)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	315
Outlet	min.	bar	0
	max.	bar	315
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$mm^2 \cdot s^{-1}$ [cSt]	2,8
	max.	$mm^2 \cdot s^{-1}$ [cSt]	380
Operational viscosity	ν	$mm^2 \cdot s^{-1}$ [cSt]	35
Weight	m	kg	2,9
Cracking pressure	P_0	bar	ca. 0,7 (in free flow direction)

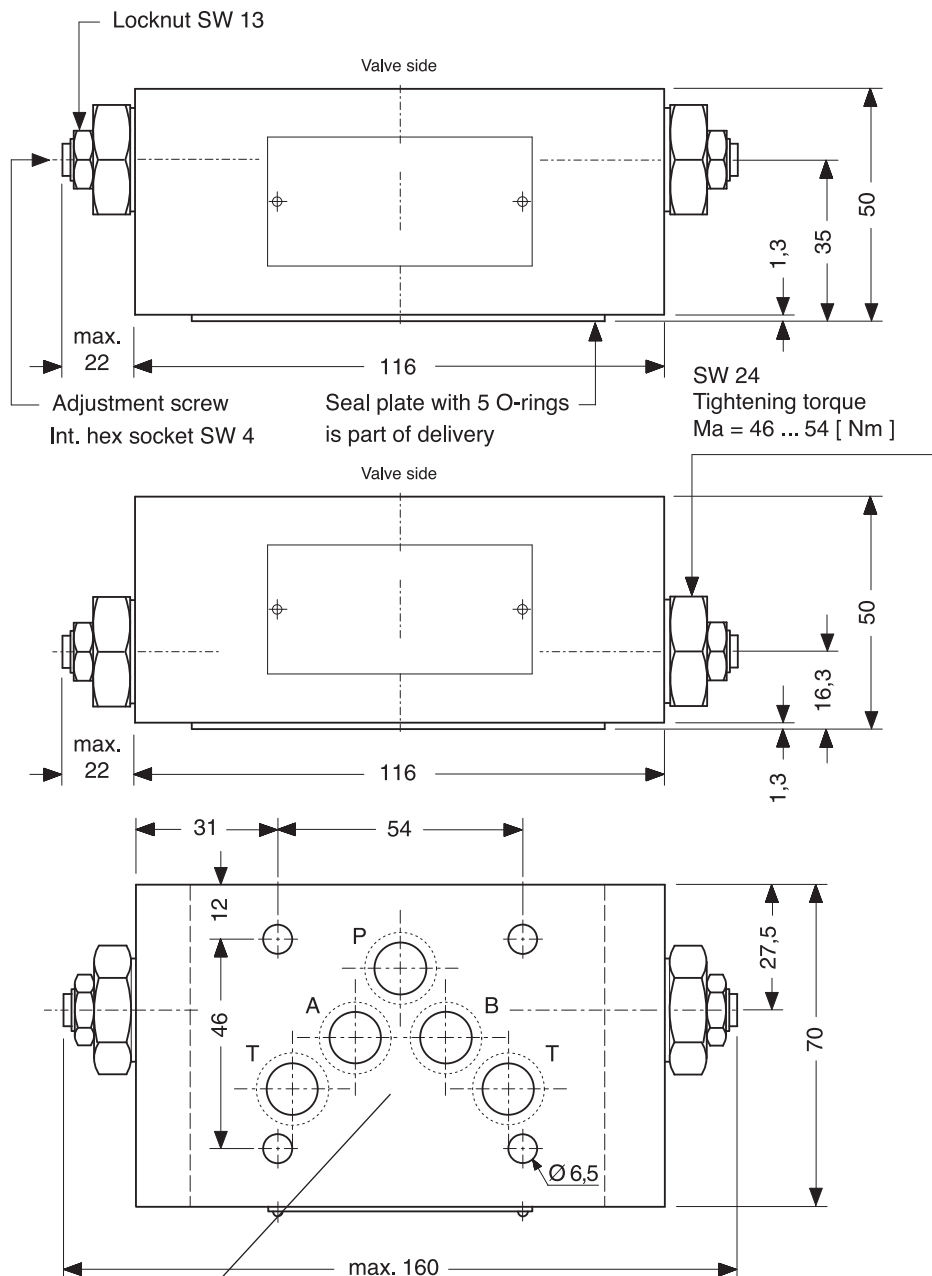
PERFORMANCE CURVES



MODULAR VALVES THROTTLE CHECK VALVES

N-ZFDRP10

INSTALLATION DRAWING N-ZFDRP10A4A2CV/S



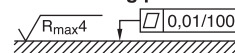
N-ZFDRP10A4A2CS

N-ZFDRP10A4A2CV

5 x O-Ring NBR 12,42x1,78 (Part number: X783-00288); Seal kit, complete: XEB17583-000N00

Mounting pattern as per
ISO 4401-05-04-0-94

Required surface finish
of mating part



MODULAR VALVES CHECK VALVES

N-ZREP10

DESCRIPTION OF FUNCTION, SECTION

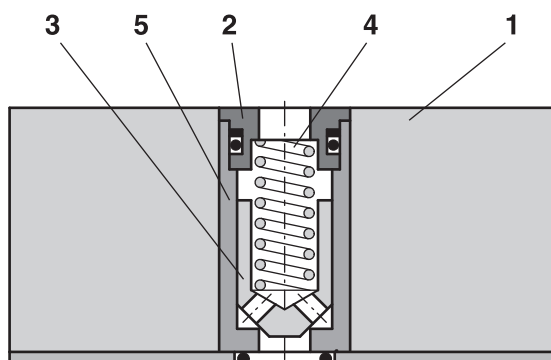
Check valves type N-ZREP10 are direct operated valves in sandwich plate design. They give leakfree closure in one direction and allow free flow in the other.



They comprise a

- housing (1)
- spring retainer (2)
- poppet (3) and a
- spring (4).

These 3 last parts belong to the slip-in poppet cartridge (5).



The stroke of the poppet (3) at the internal diameter is limited by the spring retainer (2). The built-in spring (4) supports the closing movement and also serves to hold the valve poppet (3) in the closed position.

The slip-in cartridge (5) can be inverted in its bore, enabling simple field changes from free flow IN to free flow OUT, and vice versa. The flow direction is marked on the cartridge with a check valve symbol.

MODULAR VALVES CHECK VALVES

N-ZREP10

ORDERING INFORMATION

N	-	Z	R	E	P	10	A	4		1	R
----------	---	----------	----------	----------	----------	-----------	----------	----------	--	----------	----------

Seals	
N	NBR (Standard)
w/o ind.	FPM/FKM
M	FPM/FKM + PUR
H	HNBR (on request)

Valve	
Z	Modular valve

Valve type	
R	Check valve

Valve function	
E	simple

Mounting	
P	Subplate

Nominal bore	
10	NG10

Series	
4	Connection recommended by DIN 24340

Spring	
R	0,5 bar

Area ratio	

Flow (AD = seal side; A = valve side)			
PV	free flow:	PD	→ P
AS	free flow:	A	→ AD
BS	free flow:	B	→ BD
TS	free flow:	T	→ TD
CS	free flow:	A	→ AD and B → BD
PT	free flow:	PD	→ P and T → TD

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	10	120	N-ZREP10A4PV1R	XEB16912-000N01
	10	120	N-ZREP10A4AS1R	XEB17472-000N01
	10	120	N-ZREP10A4BS1R	XEB17473-000N01
	10	120	N-ZREP10A4TS1R	XEB17474-000N01
	10	120	N-ZREP10A4CS1R	XEB17475-000N01
	10	120	N-ZREP10A4PT1R	XEB17476-000N01

MODULAR VALVES CHECK VALVES

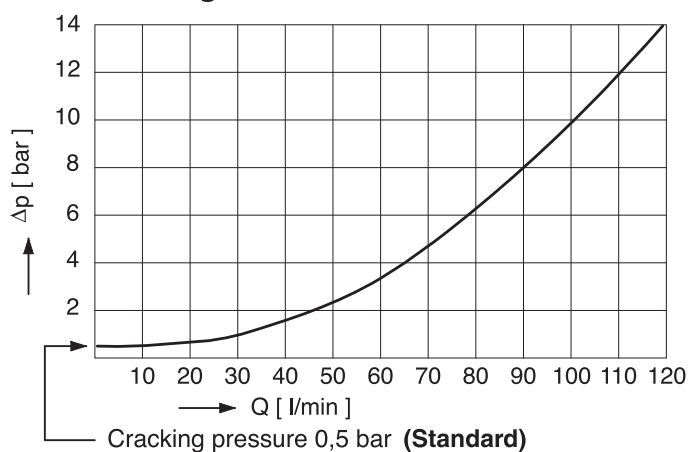
N-ZREP10

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Check valve
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 05 (NG10) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{max.}$	l/min	120 (see performance curves)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	315
Outlet	min.	bar	0
	max.	bar	315
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	2,8
	max.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	380
Operational viscosity	ν	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	35
Weight	m	kg	2
Cracking pressure	p_0	bar	0,5

PERFORMANCE CURVE

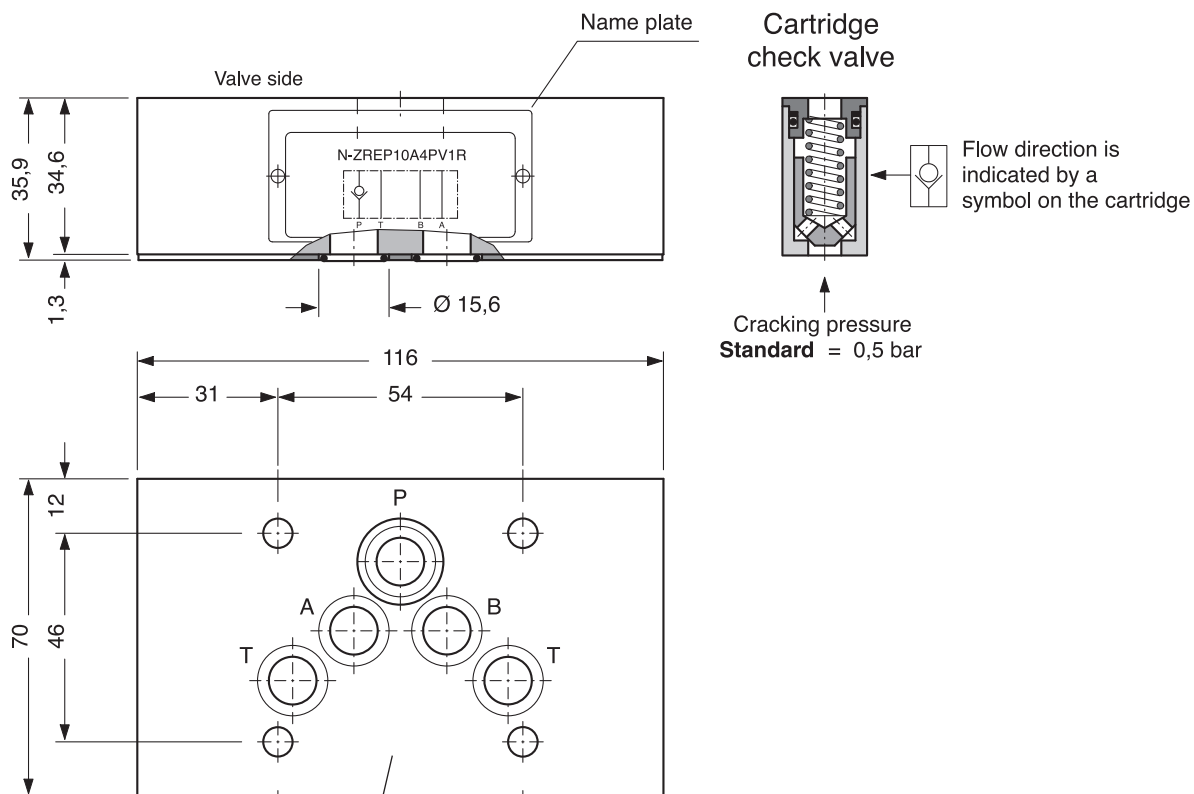
Δp - Q Performance curve
through check valve



MODULAR VALVES CHECK VALVES

N-ZREP10

INSTALLATION DRAWING N-ZREP10A4_1R



Mounting pattern as per
ISO 4401-05-04-0-94

Required surface finish
of mating part

$\sqrt{R_{max}4}$ $\square 0,01/100$

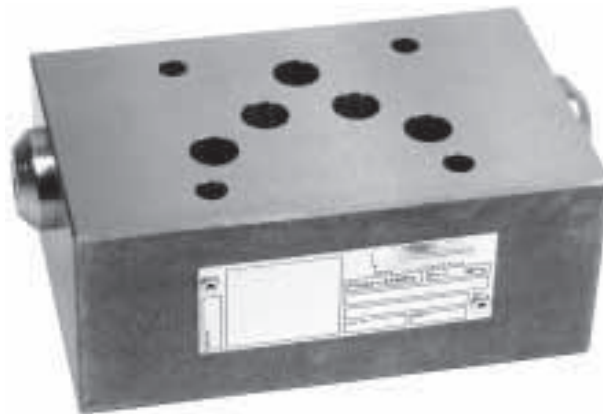
5 x O-Ring NBR 12,42x1,78 (Part number: X783-00288);
Seal kit, complete: XEB17593-000N00 (all except CS + PT versions)
XEB17601-000N00 (CS + PT version)

MODULAR VALVES PILOT OPERATED CHECK VALVES

N-ZRDP10

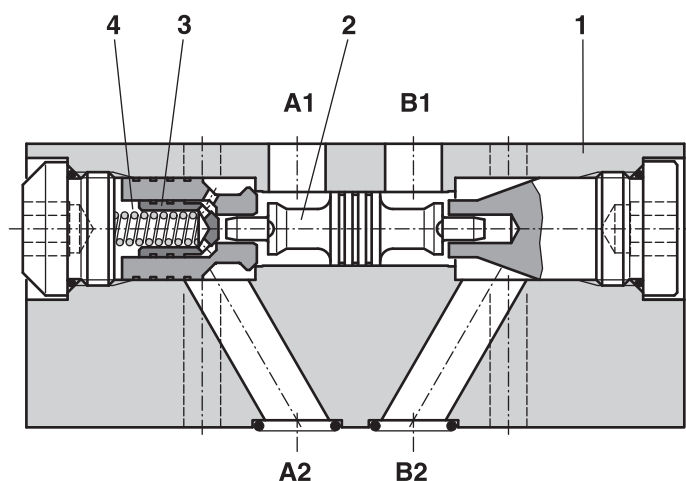
DESCRIPTION OF FUNCTION, SECTION

Check valves type N-ZRDP10 are self-piloting check valves in sandwich plate design. They ensure closure of the service line with near-zero leakage, and therefore block the effects of external forces on the actuator and various leakages across the directional valve.



They comprise a

- housing (1)
- dual piston (2)
- pilot poppet (3) and a
- spring (4).



There is free flow from A1 to A2, while flow is blocked in the other direction. When oil flows from B1 to B2, build-up of pressure causes dual piston (2) to move. As piston (2) is moved to left, pilot poppet (3) is pushed from its seat. Oil can now flow from A2 to A1. In order

to ensure that the poppet valve seats properly, the service ports of the directional valve should be connected to the return line in the neutral position.

MODULAR VALVES
PILOT OPERATED
CHECK VALVES

N-ZRDP10

ORDERING INFORMATION

N

-

Z

R

D

P

10

A

4

5

T

Seals

N	NBR (Standard)
w/o ind.	FPM/FKM
M	FPM/FKM + PUR
H	HNBR (on request)

Valve

Z	Modular valve
---	---------------

Valve type

R	Check valve
---	-------------

Valve function

D	Pilot operated
---	----------------

Mounting

P	Subplate
---	----------

Nominal bore

10	NG10
----	------

A

Serial

Spring

T	2,0 bar
---	---------

Area ratio

5	1 : 6
---	-------

Flow

CC	Pilot operated check valve in A + B
AB	Pilot operated check valve in A (pilot from B)
BA	Pilot operated check valve in B (pilot from A)

Series

4	Connection recommended by DIN 24340
---	-------------------------------------

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	10	120	N-ZRDP10A4CC5T	XEB16888-000N01
	10	120	N-ZRDP10A4AB5T	XEB16887-000N01
	10	120	N-ZRDP10A4BA5T	XEB16886-000N01

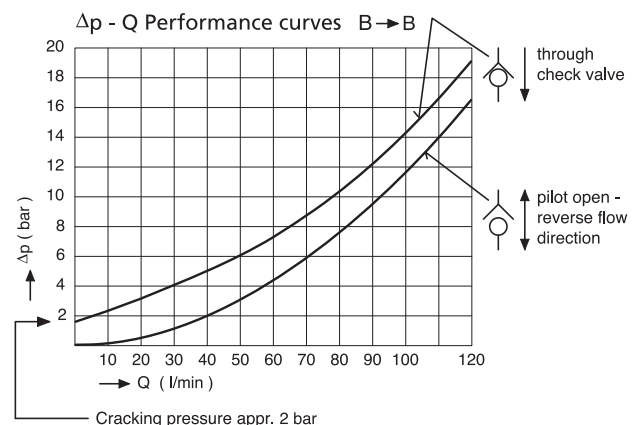
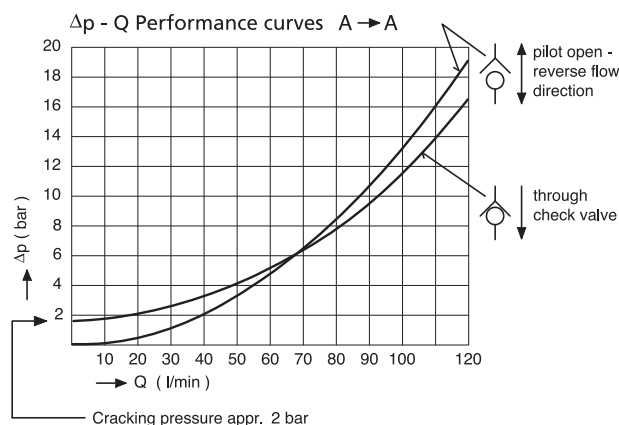
MODULAR VALVES PILOT OPERATED CHECK VALVES

N-ZRDP10

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Pilot operated check valve
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 05 (NG10) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{max.}$	l/min	120 (siehe Performance curves)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	315
Outlet	min.	bar	0
	max.	bar	315
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	2,8
	max.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	380
Operational viscosity	ν	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	35
Weight	m	kg	3,1
Area ratio	-	-	1 : 6

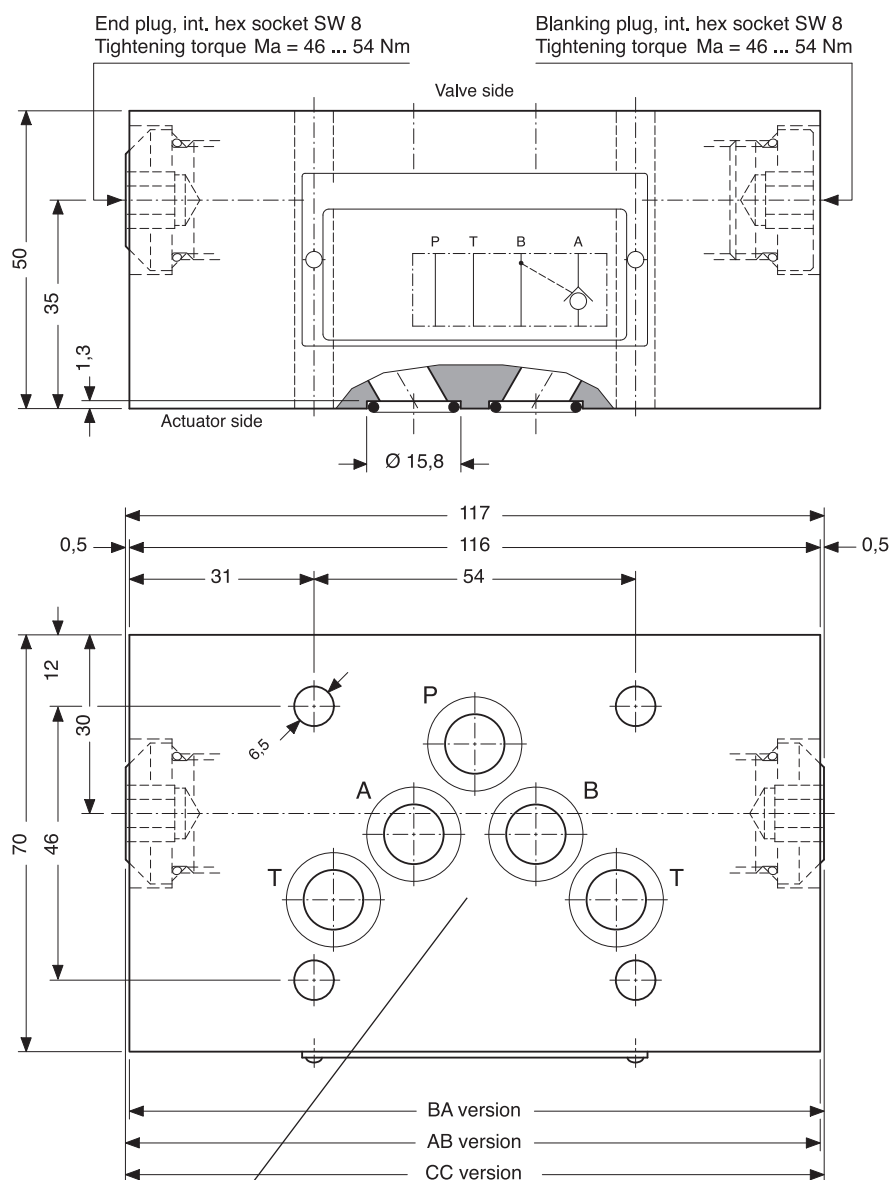
PERFORMANCE CURVES



MODULAR VALVES PILOT OPERATED CHECK VALVES

N-ZRDP10

INSTALLATION DRAWING N-ZRDP10A4__5T



5 x O-Ring NBR 12,42x1,78 (Part number: X783-00288);
Seal kit, complete: XEB17587-000N00 (CC version)
XEB17589-000N00 (AB + BA version)

Mounting pattern as per
ISO 4401-05-04-0-94

Required surface finish
of mating part

$\sqrt{R_{\max}^4}$ $\square 0,01/100$

MODULAR VALVES

PRESSURE RELIEF VALVES

DIRECT OPERATED

ZDBDP10

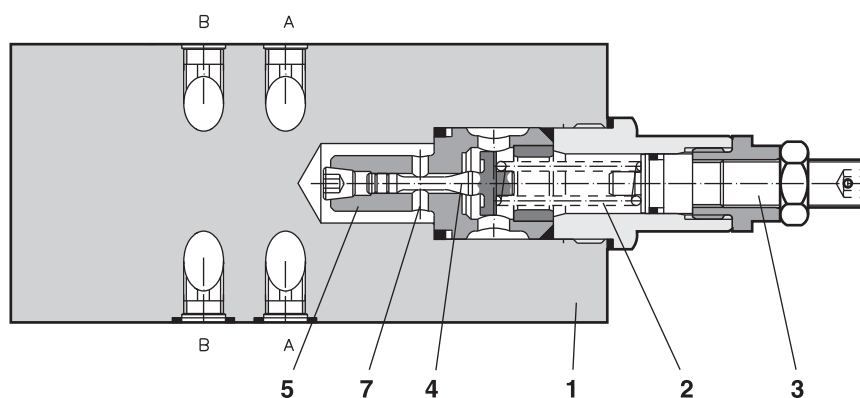
DESCRIPTION OF FUNCTION, SECTION

Pressure relief valves type ZDBDP10 are direct operated poppet type valves in sandwich plate design. They limit maximum pressure in a hydraulic system.



They comprise a

- housing (1)
- adjustment spring (2)
- adjustment mechanism (3)
- poppet (4) and a
- poppet sleeve (5).



Pressure relief valves are normally closed. Pressure at port (7) acts upon the exposed surface area of poppet (4). If the pressure at port (7) exceeds the value set on adjustment spring (2), poppet (4) opens. Fluid flows from the spring-loaded side of poppet (4) into tank. **These valves should be used only as pilot valves !**

MODULAR VALVES PRESSURE RELIEF VALVES DIRECT OPERATED

ZDBDP10

ORDERING INFORMATION

Seals		Modification	
w/o ind.	FPM/FKM (Standard)	MA	Adjustment A side (BT version only)
M	FPM/FKM + PUR	MB	Adjustment B side (PT and AT version)
N	NBR		Orifice size indication, e.g. P20 (= orifice 2,0 mm in P) or: DP20 (= orifice 2,0 mm in P on the seal ring size)
Valve		Pilot connection x/y	
Z	Modular valve	S	without x / without y pilot connection
Valve type		Pressure range	
D	Pressure control valve	B	70 bar
Valve function		G	245 bar
BD	Pressure relief valve, direct operated Use as pilot valve only!	K	350 bar
Mounting		L	420 bar
P	Subplate	Adjustment	
Nominal bore		2	Int. hex socket screw with locknut
10	NG10	8	Int. hex socket screw with locknut and seal
A 350 bar series		Function	
K 420 bar series		AT	A => T
Series			
4	Connection recommended by DIN 24340		

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	10	40	ZDBDP10A4AT2BS/MA	XZB10133-000-01
	10	40	ZDBDP10A4AT2GS/MA	XZB10135-000-01
	10	40	ZDBDP10A4AT2KS/MA	XZB10136-000-01
	10	40	N-ZDBDP10K4AT2LS/MA	XZB10320-000N01

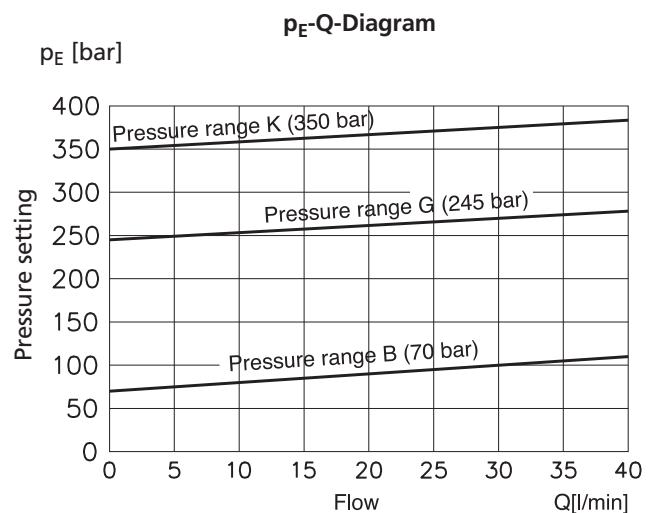
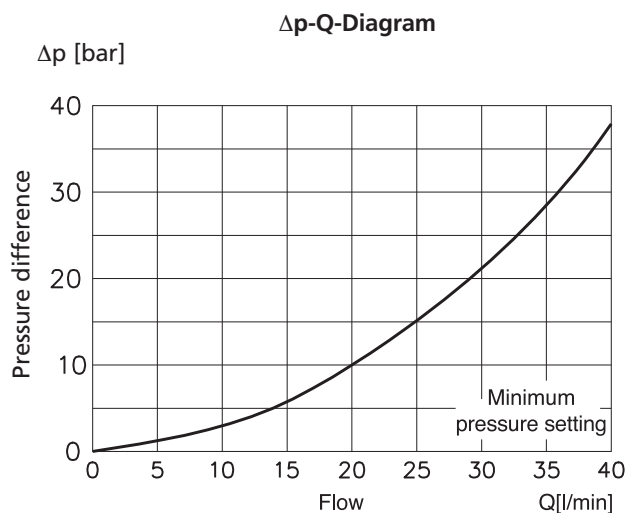
MODULAR VALVES PRESSURE RELIEF VALVES DIRECT OPERATED

ZDBDP10

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Pressure relief valve direct operated
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 05 (NG10) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Nominal flow	Q_N	l/min	30
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	420
Outlet	min.	bar	0
	max.	bar	350
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	2,8
	max.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	380
Operational viscosity	ν	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	35
Weight	m	kg	3

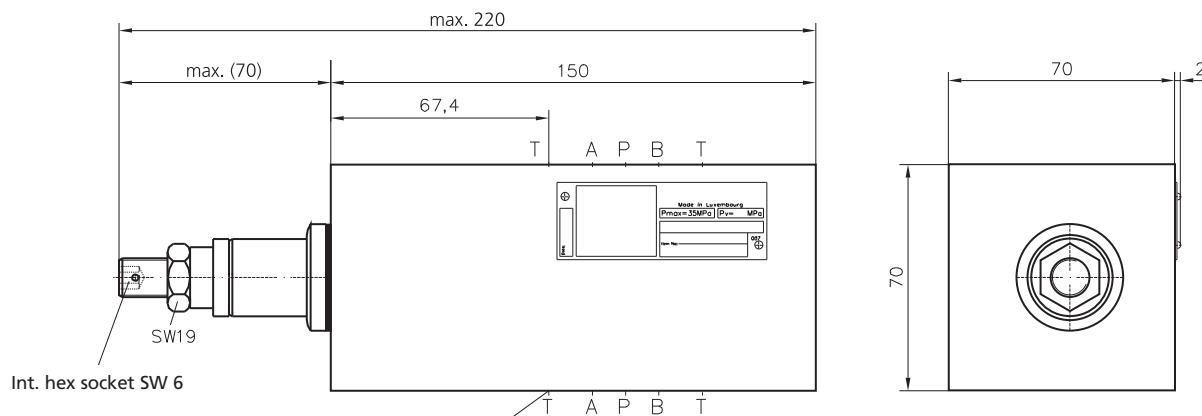
PERFORMANCE CURVES



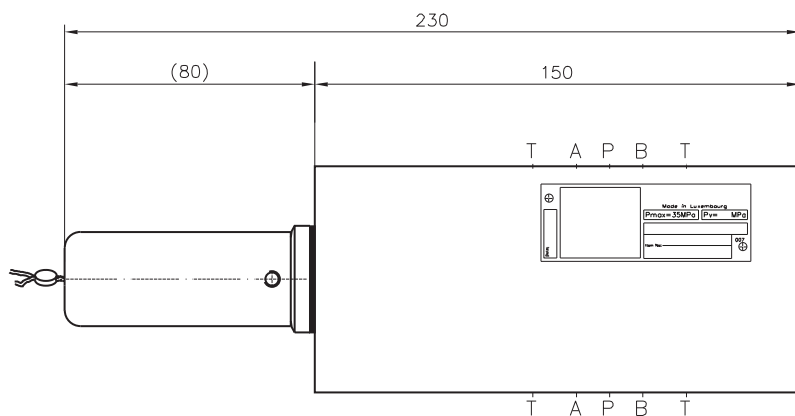
MODULAR VALVES PRESSURE RELIEF VALVES DIRECT OPERATED

ZDBDP10

INSTALLATION DRAWING ZDBDP10A4AT_S/MA

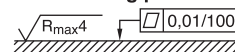


for M version: 5 x O-Ring Viton 12,42x1,78 (Part number: X980-02014); Seal kit, complete: XEB14764-000-00
5 x Axial seal ring 15,7x11,7x1,5 (Part number: XE15214); Seal kit, complete: XEB14680-000-00



Mounting pattern as per
ISO 4401-05-04-0-94

Required surface finish
of mating part



MODULAR VALVES

PRESSURE RELIEF VALVES

PILOT OPERATED

ZDBVP10

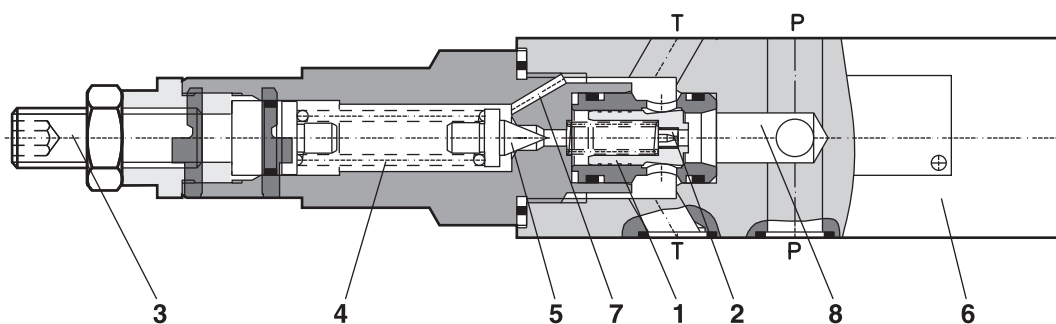
DESCRIPTION OF FUNCTION, SECTION

Pressure relief valves type ZDBVP10 are pilot operated poppet type valves in sandwich plate design. They limit maximum pressure in a hydraulic system.



They comprise a

- housing (6)
- adjustment spring (4)
- adjustment mechanism (3)
- main poppet (1) and a
- pilot poppet (5).



Pressure relief valves are normally closed. Pressure (shown in cross-section on port 8) acts upon both sides of main poppet (1), via orifice (2), and also upon pilot poppet (5). As the pressure on the exposed surface area of pilot poppet (5) exceeds spring force (4), it opens allowing pilot flow via orifice (2) and drain (7).

This pressure drop across main poppet (1), allows the main flow into tank.

MODULAR VALVES PRESSURE RELIEF VALVES PILOT OPERATED

ZDBVP10

ORDERING INFORMATION

Seals		Modification	
w/o ind.	FPM/FKM (Standard)	MA	Adjustment A side (BT version only)
M	FPM/FKM + PUR	MB	Adjustment B side (PT and AT version)
N	NBR		Orifice size indication, e.g. P20 (= orifice 2,0 mm in P) or: DP20 (= orifice 2,0 mm in P on the seal ring size)
H	HNBR (on request)		
Valve		Pilot connection x/y	
Z	Modular valve	S	without x / without y pilot connection
Valve type		Pressure range	
D	Pressure control valve	B	70 bar
Valve function		G	245 bar
BV	Pressure relief valve, pilot operated Use as main valve!	K	350 bar
Mounting		Adjustment	
P	Subplate	2	Int. hex socket screw with locknut
Nominal bore		8	Int. hex socket screw with locknut and seal
10	NG10	Function	
A	Serial number	PT	P => T
Series		AT	A => T
4	Connection recommended by DIN 24340	BT	B => T
		CT	C => T
		AB	A => T, B => A

Subject to technical changes

SYMBOLS AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	10	120	ZDBVP10A4PT2BS ZDBVP10A4PT2GS ZDBVP10A4PT2KS	XZB10072-000-01 XZB10074-000-01 XZB10075-000-01
	10	120	ZDBVP10A4AT2BS ZDBVP10A4AT2GS ZDBVP10A4AT2KS	XZB10060-000-01 XZB10062-000-01 XZB10063-000-01
	10	120	ZDBVP10A4BT2BS ZDBVP10A4BT2GS ZDBVP10A4BT2KS	XZB10064-000-01 XZB10066-000-01 XZB10067-000-01
	10	120	ZDBVP10A4CT2BS ZDBVP10A4CT2GS ZDBVP10A4CT2KS	XZB10068-000-01 XZB10070-000-01 XZB10071-000-01
	10	120	ZDBVP10A4AB2BS ZDBVP10A4AB2GS ZDBVP10A4AB2KS	XZB10056-000-01 XZB10058-000-01 XZB10059-000-01

MODULAR VALVES PRESSURE RELIEF VALVES PILOT OPERATED

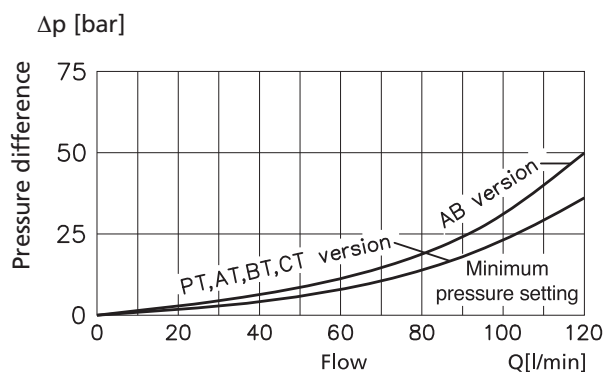
ZDBVP10

TECHNICAL DATA

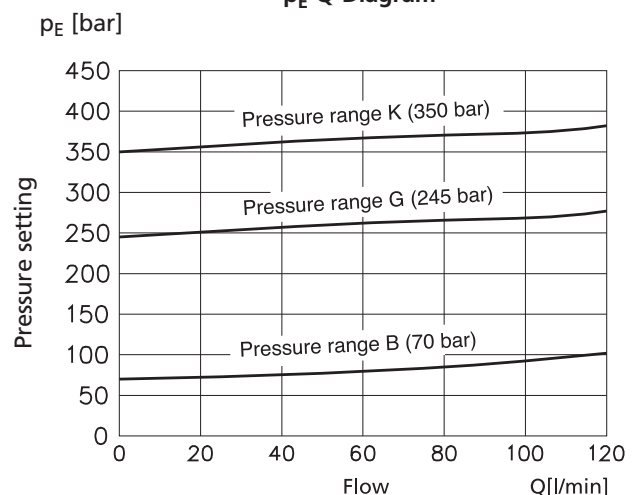
General Data	Value	Unit	Specifications
Designation	-	-	Pressure relief valve pilot operated
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 05 (NG10) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	Q_{max}	l/min	120 (see performance limits)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	350
Outlet	min.	bar	0
	max.	bar	350
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	2,8
	max.	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	380
Operational viscosity	ν	$\text{mm}^2 \cdot \text{s}^{-1}$ [cSt]	35
Weight	m	kg	2,5 => Version PT, AT, BT / 3,5 => Version CT, AB

PERFORMANCE CURVES

Δp -Q-Diagram



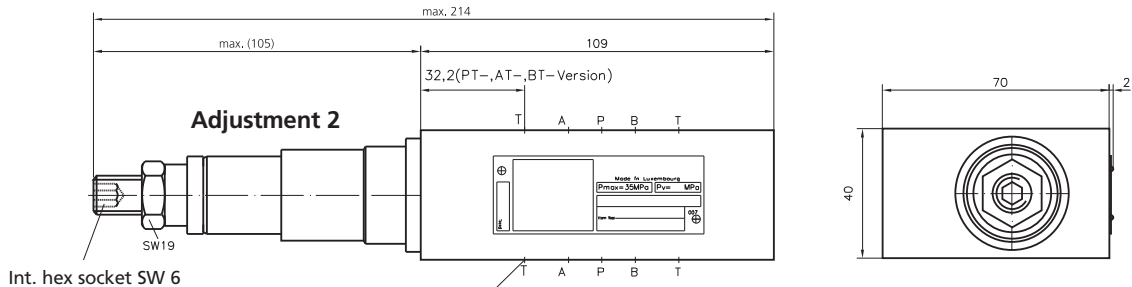
p_E -Q-Diagram



MODULAR VALVES PRESSURE RELIEF VALVES PILOT OPERATED

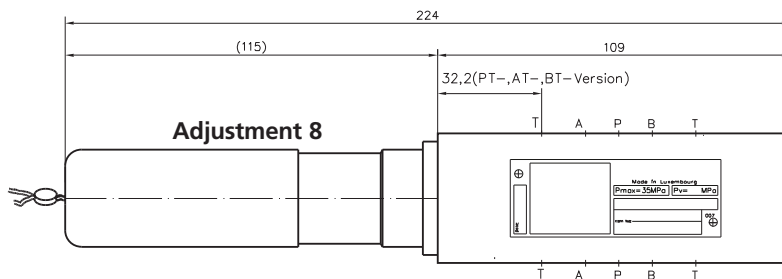
ZDBVP10

INSTALLATION DRAWING ZDBVP10A4PT(AT,BT)_S/MA(MB)



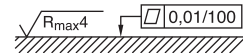
5 x O-Ring Viton 12,42x1,78 (Part number: X980-02014)
M version: 5 x Axial seal ring 15,7x11,7x1,5 (Part number: XE151214)

Seal kit, complete: XEB17627-000-00
Seal kit, complete: XEB17627-000M00

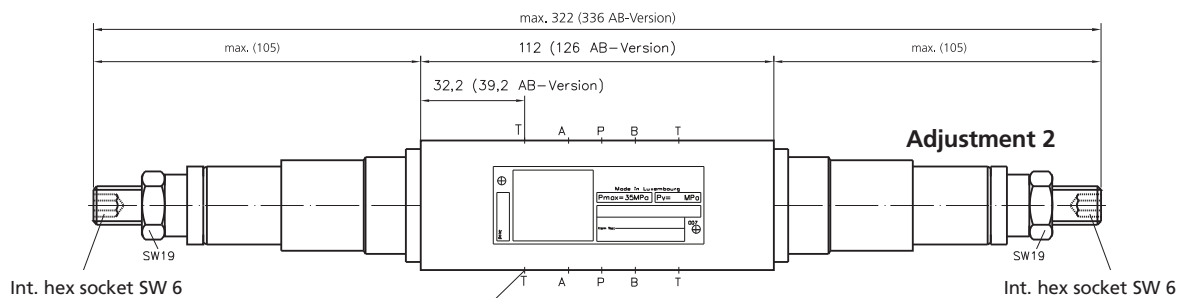


Mounting pattern as per
ISO 4401-05-04-0-94

Required surface finish
of mating part



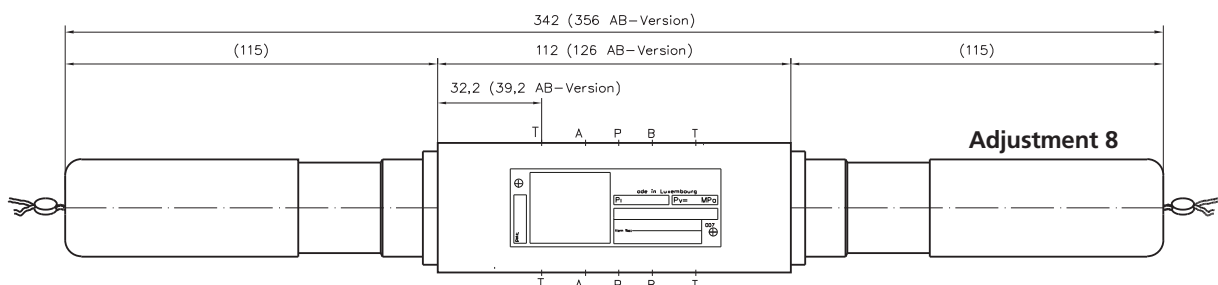
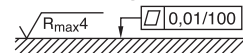
INSTALLATION DRAWING ZDBVP10A4CT(AB)_S



5 x O-Ring Viton 12,42x1,78 (Part number: X980-02014)
Seal kit, complete: XEB17629-000-00 (CT), XEB17631-000-00 (AB)
M version: 5 x Axial seal ring 15,7x11,7x1,5 (Part number: XE151214)
Seal kit, complete: XEB17629-000M00 (CT), XEB17631-000M00 (AB)

Mounting pattern as per
ISO 4401-05-04-0-94

Required surface finish
of mating part



MODULAR VALVES PRESSURE REDUCING VALVES, PILOT OPERATED

ZDMVP10

DESCRIPTION OF FUNCTION, SECTION

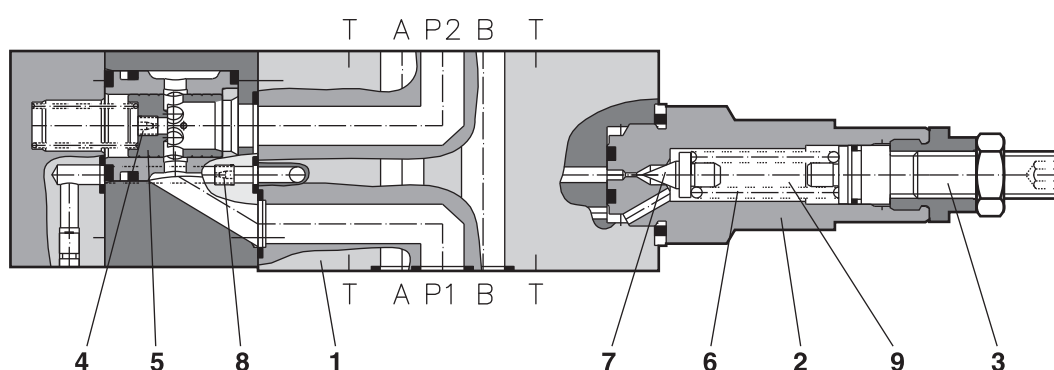
Pressure reducing valves type ZDMVP10 are pilot operated pressure reducing valves in sandwich plate design. They reduce pressure in a branch circuit lower than that of the main circuit.



They comprise a

- housing (1) and a
- cartridge (2).

Pressure in the branch circuit is manually set by adjustment mechanism (3).



Pressure reducing valves are normally open, permitting fluid to flow from port P1 to P2. Pressure at port P2 is applied on main spool (5), and via orifice (4), on the spring-loaded side of main spool (5). If pressure at port P2 exceeds the value set at spring (6), pilot poppet (7) opens.

Fluid flows from the spring-loaded side of main spool (5) through orifice (8) and pilot poppet (7) to spring chamber (9) into tank. Main spool (5) modulates to maintain pressure at port P2 constant.

MODULAR VALVES

PRESSURE REDUCING

VALVES, PILOT OPERATED

ZDMVP10

ORDERING INFORMATION

	-	Z	D	MV	P	10	A	4	PP			S
--	---	---	---	----	---	----	---	---	----	--	--	---

Seals

w/o ind.	FPM/FKM (Standard)
M	FPM/FKM + PUR
N	NBR
H	HNBR (on request)

Valve

Z	Modular valve
---	---------------

Valve type

D	Pressure control valve
---	------------------------

Valve function

MV	Pressure reducing valve, pilot operated Use as main valve!
----	---

Mounting

P	Subplate
---	----------

Nominal bore

10	NG10
----	------

A Serial number

Pilot connection x/y

S	without x / without y pilot connection
---	--

Pressure range

B	70 bar
E	175 bar
G	245 bar

Adjustment

2	Int. hex socket screw with locknut
8	Int. hex socket screw with locknut and seal

Function

PP	P => P
----	--------

Series

4	Connection recommended by DIN 24340
---	-------------------------------------

Subject to technical changes

SYMBOL AND PART NUMBERS

	NG	Q _{max.} [l/min]	DESIGNATION	PART NUMBER
	10	120	ZDMVP10A4PP2BS	XZB10030-000-01
			ZDMVP10A4PP2ES	XZB10031-000-01
			ZDMVP10A4PP2GS	XZB10032-000-01

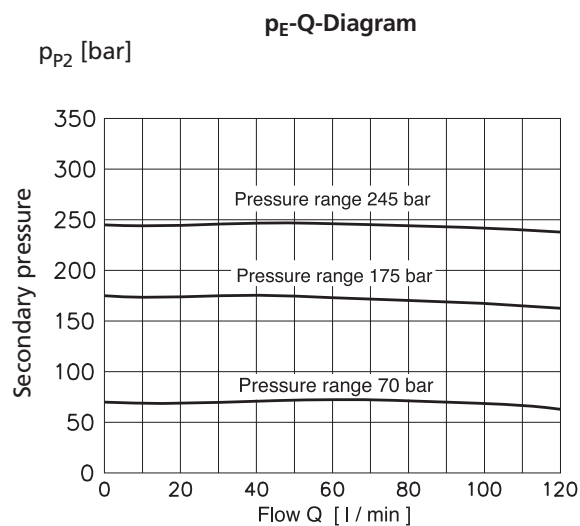
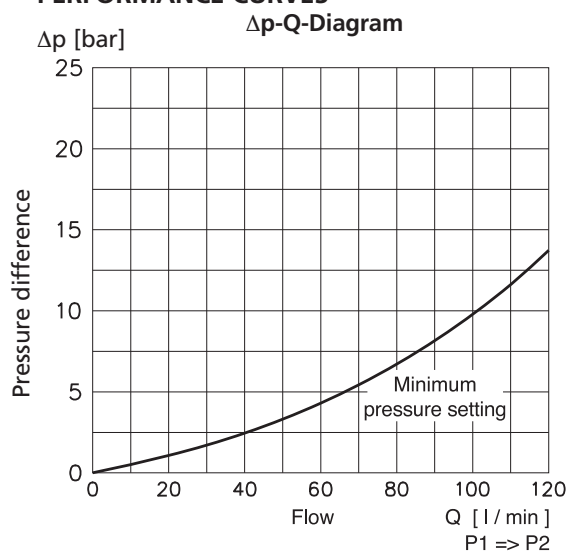
MODULAR VALVES PRESSURE REDUCING VALVES, PILOT OPERATED

ZDMVP10

TECHNICAL DATA

General Data	Value	Unit	Specifications
Designation	-	-	Pressure reducing valve pilot operated
Type designation	-	-	see Ordering Information
Mode of construction	-	-	Modular valve
Mounting pattern	-	-	Size 05 (NG10) as per ISO 4401
Mounting dimensions	-	mm	see Unit dimensions
Mounting position	-	-	any
Flow max.	$Q_{max.}$	l/min	120 (see performance limits)
Ambient temperature range	min.	°C	-25
	max.	°C	+60
Working pressure			
Inlet	min.	bar	0
	max.	bar	350
Outlet (secondary pressure)	min.	bar	0
	max.	bar	up to 70, up to 175, up to 245
Fluid temperature range	min.	°C	-25
	max.	°C	+80
Viscosity range	min.	$mm^2 \cdot s^{-1}$ [cSt]	2,8
	max.	$mm^2 \cdot s^{-1}$ [cSt]	380
Operational viscosity	ν	$mm^2 \cdot s^{-1}$ [cSt]	35
Weight	m	kg	2,5

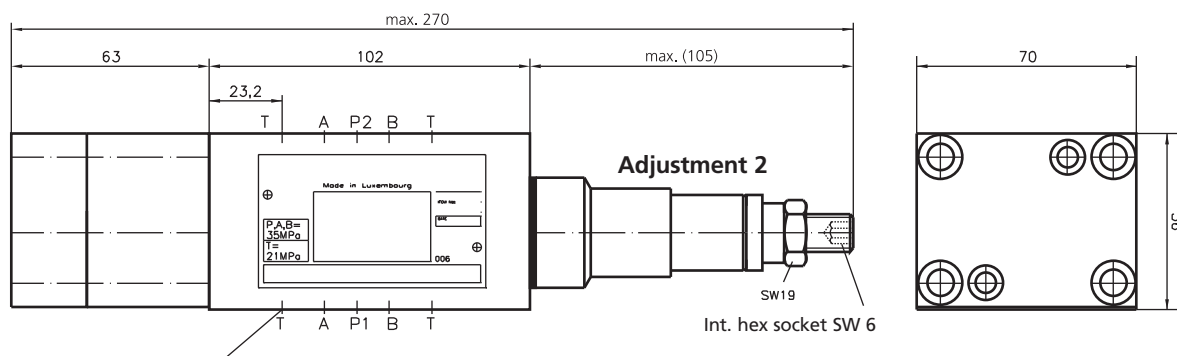
PERFORMANCE CURVES



MODULAR VALVES PRESSURE REDUCING VALVES, PILOT OPERATED

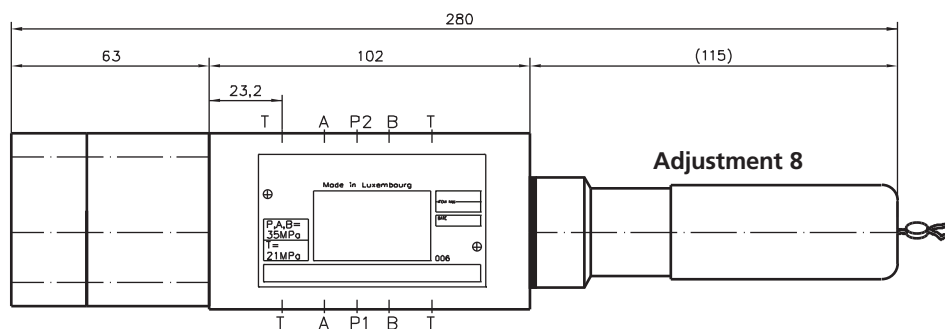
ZDMVP10

INSTALLATION DRAWING ZDMVP10A4PP__S



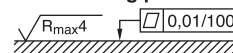
5 x O-Ring Viton 12,42x1,78 (Part number: X980-02014)
M version: 5 x Axial seal ring 15,7x11,7x1,5 (Part number: XE151214)

Seal kit, complete: XEB17635-000-00
Seal kit, complete: XEB17635-000M00



Mounting pattern as per
ISO 4401-05-04-0-94

Required surface finish
of mating part



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Z P-Sandwich Plate Valves-EN - Z_P-
CDL66651-001-01_2019-EN

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