

VINCKE

HYDRAULICS



VINCKE
INDUSTRIAL
HYDRAULIC
VALVES

index

link to your page / link a su página



4VNKSV Directional on/off control	4
▶ CETOP 3	7
▶ CETOP 5	10
<hr style="border-top: 1px dotted #000;"/>	
4VNKEH Electro-hydraulic directional control	13
▶ CETOP 7	17
▶ CETOP 8	18
▶ CETOP 10	19
<hr style="border-top: 1px dotted #000;"/>	
Modular valves series	
▶ KRV relief valves	20
▶ KRDV reducing valves	23
▶ KCV check valves	25
▶ KPCV pilot check valves	27
▶ KFR flow regulator valves	29
<hr style="border-top: 1px dotted #000;"/>	
CONVENTIONAL VALVES: PRESSURE CONTROLS	
▶ DAM	33
▶ DIU	35
<hr style="border-top: 1px dotted #000;"/>	
Modular valves series	
▶ VNKPV VNKPV-EI	37

Introduction

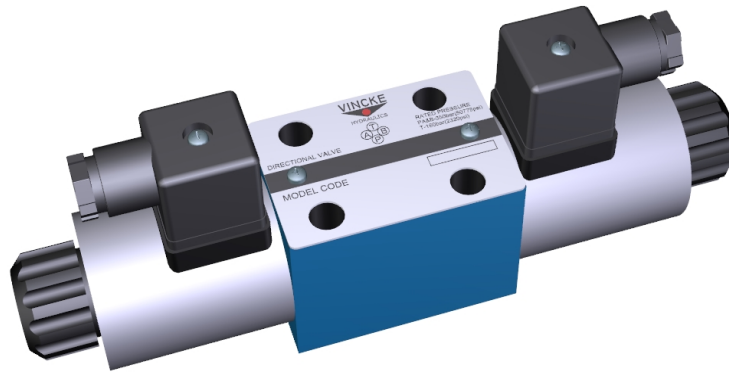
Hydraulic valves, in addition to the force density advantage of actuators, are what help make hydraulics unique in their control of force, torque and motion. Valves govern direction, pressure and flow of hydraulic fluid, enabling smooth, safe and controlled use of actuators.

Every machine both requires and uses valves, varying vastly in execution from a few valves to dozens on one machine. Their use can be as simple as a relief valve to protect your pump and actuator, such as the relief valve built into the kick-off valve on a log splitter. Conversely, the complexity of a hydraulic circuit can be extensive, using a dozen valves per function as can be seen in manifolds, such as a pilot operated valve with dual counterbalance valves, dual flow controls, dual post-compensation and load sensing checks.

Directional control valves are often described as the number of “ways” fluid can travel through itself, and also by the positions available to be shifted into. The ways are equal to the number of work ports, so a 4-way valve will have pressure, tank and A and B work ports. Positions are equal to the number of positional envelopes. For example, one would describe a double acting single-monoblock valve as “4-way, 3-position,” or simply a “4/3 valve.”

Directional valves are available in monoblock or sectional valves, common to the mobile-hydraulic industry, as well as subplate mounted industrial type valves such as ISO style D03’s, D05’s et al. Also common to both mobile and industrial markets are cartridge valves installed into manifold blocks. Cartridge valve manufacturers offer many unique products, and allow high levels of creativity with limitless available valve combinations.

Pressure valves are components designed to in some way limit pressure. Most pressure valves are based on a poppet being pushed against a seat with an adjustable spring. A relief valve controls maximum pressure for either the entire system or a sub-circuit of it, the lowest spring pressure being the one to open up first. Most other pressure valves are based on the relief valve’s simple spring-loaded ball or poppet.



Vincke solenoid valves is designed and tested under innovative concepts to satisfy the advanced needs of currents machines: versatility, reduced power absorbed and safety of use.

Solenoid directional valves are used for changing flow direction in hydraulic systems.

Technical characteristics

		Size/Type	
working pressure Mpa	Oil ports P,A,B	6	10
	Oil ports T	35	31.5
Max. Flow L/min		16	16
Working fluid		80	120
Fluid Temperature °C		Mineral oil; phospate-ester	
Viscosity mm ² /s		-20...70	
working voltage V	DC	2.8..100	
	AC	12	24
Max. Swich frequency T/h		110V/50Hz	220V/50Hz
insulation grade		15000 (DC)	7200 (AC)
Weight kg	Single solenoid	IP65	
	Double solenoid	1.45 DC 1.4 AC	5.1 DC 4.3 AC
		1.95 DC 1.9 AC	6.7 DC 5.1 AC

Cleanliness

The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638. It is suggested that the minimum filter rating should be $\beta_{10} \geq 75$.

Ordering code

4VNKSV - 6 - E - OF - DC24 - 4L

4 main ports
 Nominal size 6 Cetop 3 or 10 Cetop 5
 Type of spool E, J, D, C, HA, E etc.
 With spring return = no code
 Without spring return = O
 Without spring return with detent =OF

Electrical Connection:
 4L= DIN connector+led
 4X= DIN connector without led
 DC 24 or DC12
 AC220 AC110 AC24

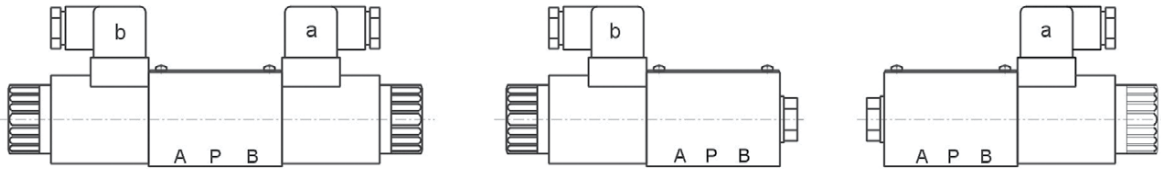
Code symbol



1) Example:

Spool symbol H with spool A, ordering code HA

Solenoid directional valves are used for changing flow direction in hydraulic systems.

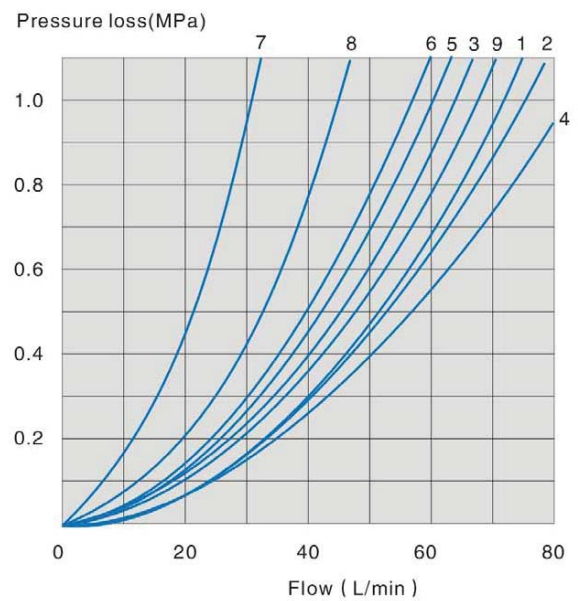


CETOP 3 SIZE 6

SPECIFICATION PERFORMANCE CURVE
Measured at $v=41\text{mm}^2/\text{s}$ and $t=50^\circ\text{C}$

Function Code	Direction			
	P→A	P→B	A→T	B→T
C	1	1	3	1
D	5	5	3	3
E	3	3	1	1
F	1	3	1	1
G	6	6	9	9
H	2	4	2	2
J	1	1	2	1
L	3	3	4	9
M	2	3	3	3
P	3	1	1	1

8. Spool symbol G in the neutral position P→T

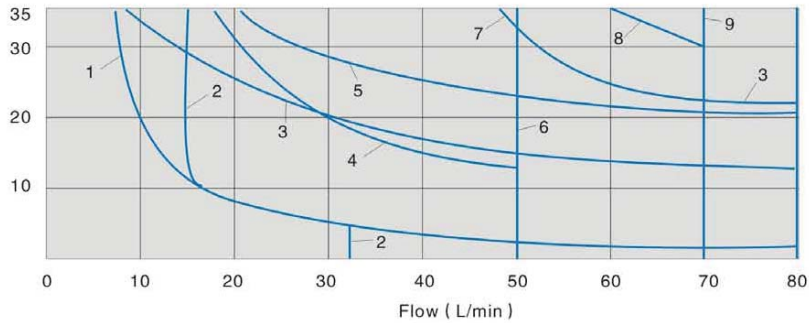


Specification working limits

With regard to the four-way valve, the normal flow data as show is get from the regular use of two directions of the flow. See tables. If only one flow direction is needed, the maximum flow may be very small in the serious condition.

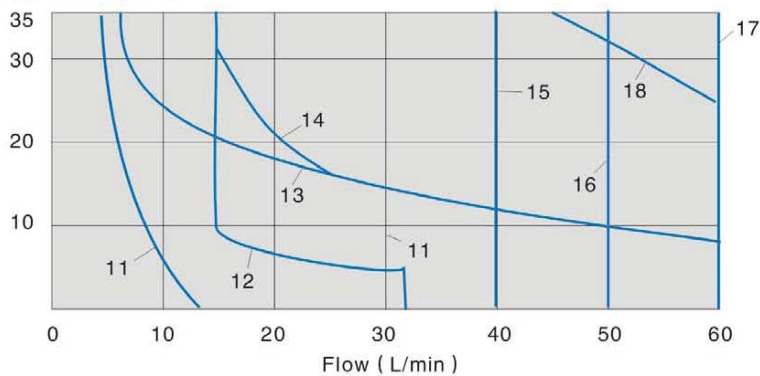
DC 24 12 110		AC 220 110 24, 50HZ	
Curve	Symbol	Curve	Symbol
4	F P	14	F M
5	J	15	G
6	G H	16	H
7	L	17	E H/OF E/OF J M L
8	C D	18	C D
9	M		
10	E H/OF E/OF		

Working pressure(MPa)

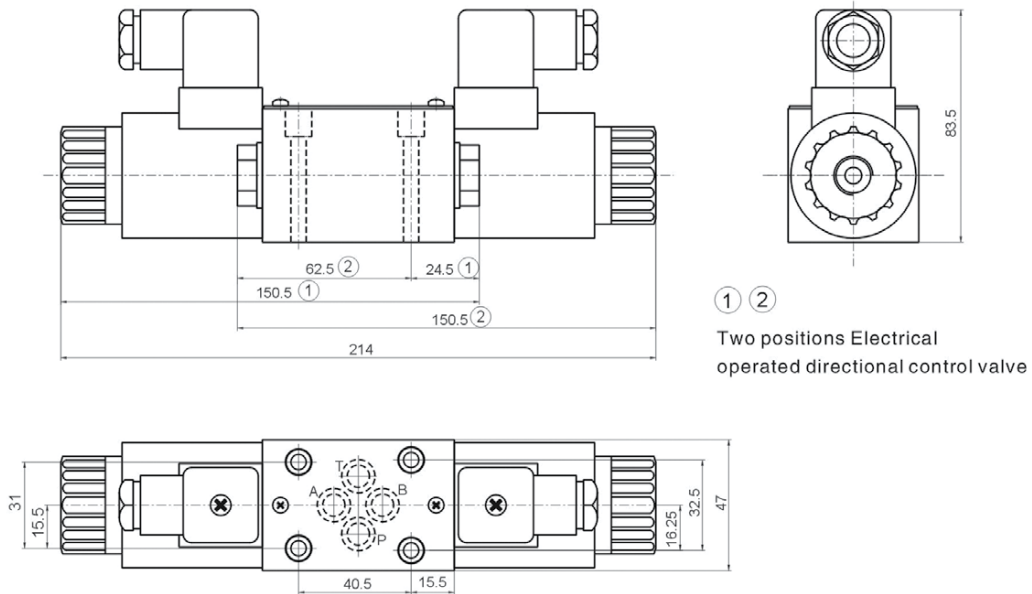


- 1) No manual emergency operation
- 2) Oil return from actuator to oil tank

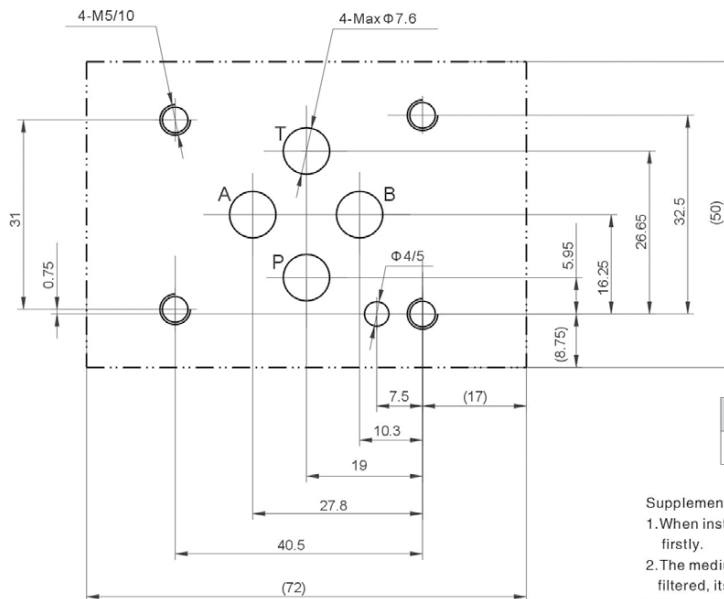
Working pressure(MPa)



External dimensions



Size of subplate oil port



Mounting screw	Amount	Tighten torque
M5X45-10.9	4	9Nm

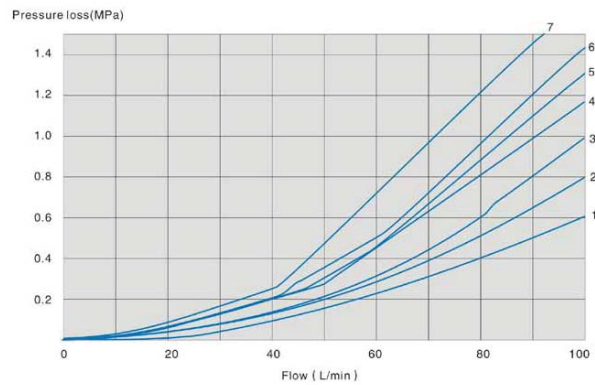
Supplementary explanation

1. When installing the product, considering horizontal position firstly.
2. The medium used in the hydraulic system must be filtered, its accuracy at least $20 \mu\text{m}$.
3. Screw should be according to the parameters in catalogue.
4. The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.

CETOP 5 SIZE 10

SPECIFICATION PERFORMANCE CURVE
Measured at $v=41\text{mm}^2/\text{s}$ and $t=50^\circ\text{C}$

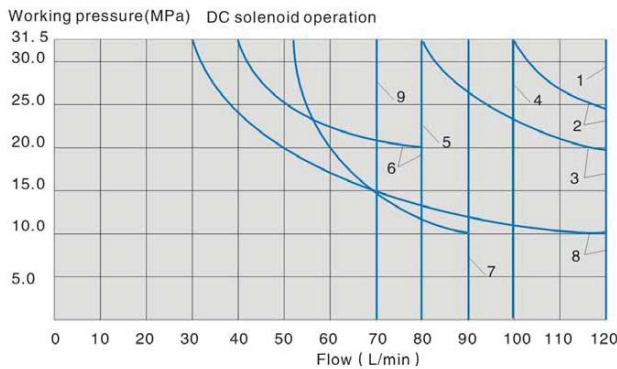
Function Code	Direction			
	P→A	P→B	A→T	B→T
C D	2	2	3	3
E	2	2	4	4
F	2	3	3	5
G	3	3	4	6
H	1	1	4	5
L	1	1	4	5
M	1	1	5	1
P	3	2	5	3



4. Spool symbol G in neutral position P→T

Specification working limits

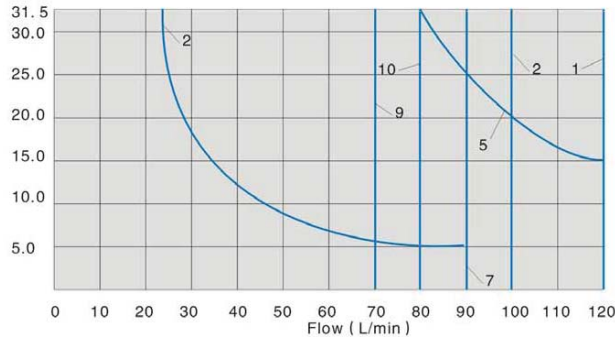
With regard to the four-way valve, the normal flow data as shown is get from the regular use of two directions of the flow (e.g. P to A, and simultaneous return flow from B to T). See tables, if only one flow direction is needed, for example: when a four port valve which is closed up port A or port B, used as a three-way valve, the maximum flow may be very small in the serious condition.



Curve	Symbol
1	C D H/OF E/OF M
2	E
4	L J H
6	G
7	F P

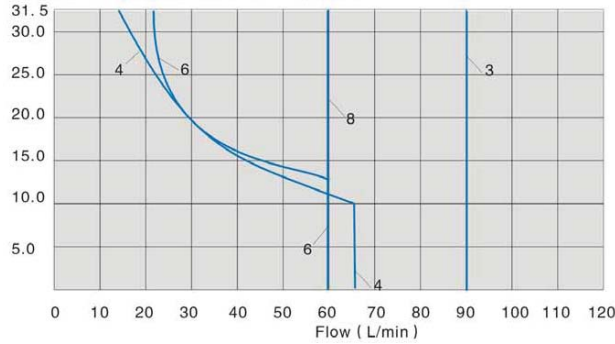
(1) Return circuit (independent of area ratio)

Working pressure(MPa) AC solenoid operation

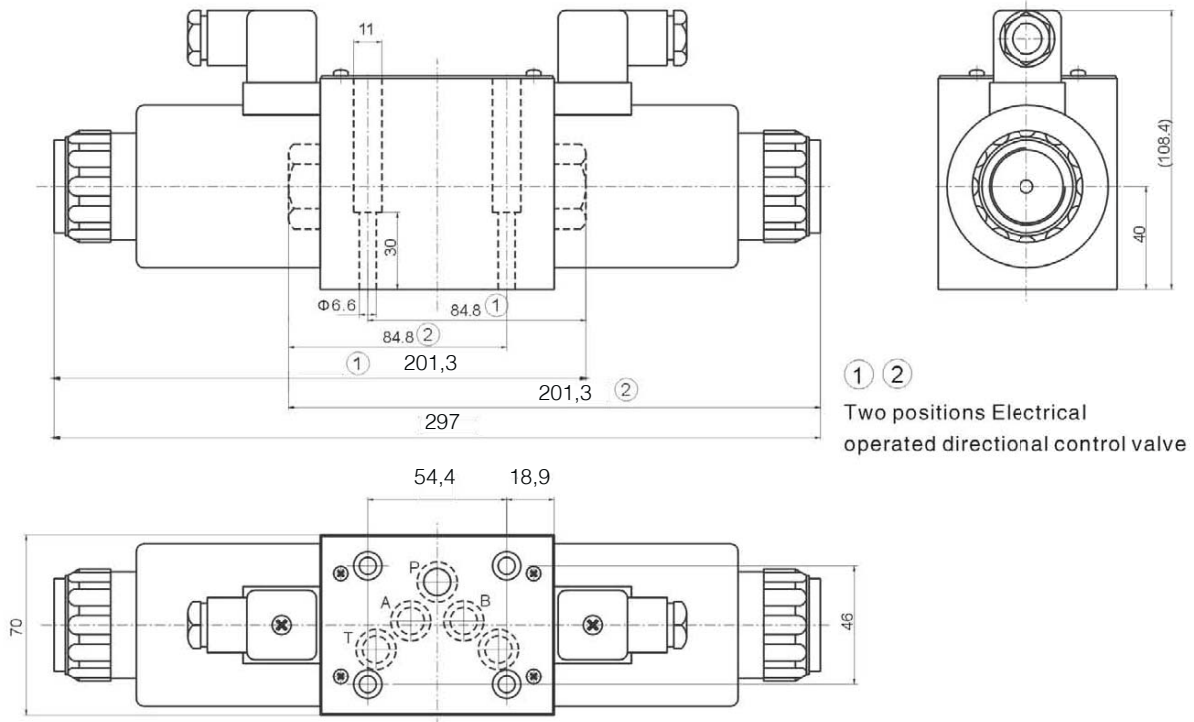


110V 220V	
Curve	Symbol
1	C D E/OF
2	E
3	L M
5	J
6	G
7	F P
8	H

Working pressure(MPa) AC solenoid operation

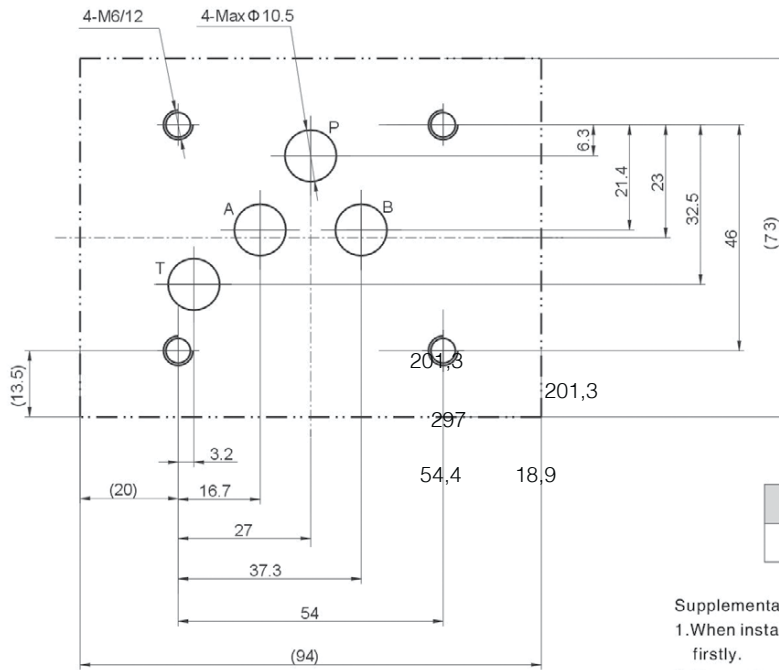


External dimensions



① ②
Two positions Electrical operated directional control valve

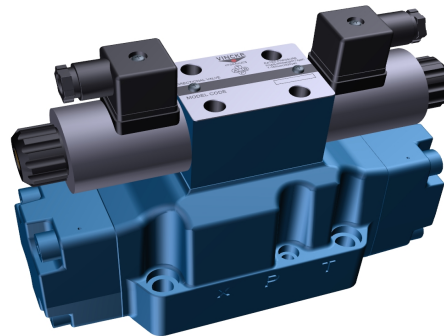
Size of subplate oil port



Mounting screw	Amount	Tighten torque
M6x40-10.9	4	15Nm

Supplementary explanation

1. When installing the product, considering horizontal position firstly.
2. The medium used in the hydraulic system must be filtered, its accuracy is at least $20 \mu\text{m}$.
3. Screw should be according to the parameters in catalogue.
4. The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.



Electro-hydraulic directional control valve is a control valve which can use the pressure of the hydraulic circuit to pull the spool and change the hydraulic oil direction.

Electro-hydraulic directional control valve is the combination of the electrical operated directional control valve and the hydraulic directional control valve. It uses the electrical operated directional control valve to control the hydraulic operated directional control valve, and change the hydraulic oil direction.

Electro-hydraulic directional control valve and hydraulic operated directional control valve are used mostly in hydraulic systems when electrical operated directional control valve can not afford the flow. It may control the movement of the power elements, or control the direction of the flowing oil.

Technical characteristics

Size		16	25	32
Allowed maximum pressure (Mpa)	Port A,B,P	31.5		
	Port T	Extl relief	16	
		Intl relief	16	
	Port Y Extl relief		16 for DC; 10 for AC	
Maximum control pressure (Mpa)		25		
Maximum Flow (L/min)		300	650	1100
Working fluid		Mineral oil		
Fluid temperature (°C)		-20~70		
Wheight (Kg.)	With pilot single solenoid valve	8.8	18	41
	With pilot doble solenoid valve	9.5	18.7	41.7

Cleanliness

The maximum allowable cleanliness of the oil should be according to 9th degree of Standard NAS1638. It is suggested that the minimum filter rating should be $\beta_{10} \geq 75$.

Ordering code

4VNKEH-S - 16 - E - OF - DC24 - N - XY - P4.5

Type: Hydraulic operated D.C.V

S= Solenoid pilot = without solenoid pilot

Nominal Size= 16 Cetop 7 - 25 Cetop 8 - 32 Cetop 10

Type of spool E,J,D,C,HA,E etc.

With spring return = no code

Without spring return = 0

Without spring return with detent =OF

P4.5=0.45MPa P4.5=0.45MPa

No code=Without pilot pressure

P0.45=With pilot pressure

cracking pressure is 0.45MPa

Omit= Intl control Intl drain

XY= Extl control Extl drain

X= Extl control Intl drain

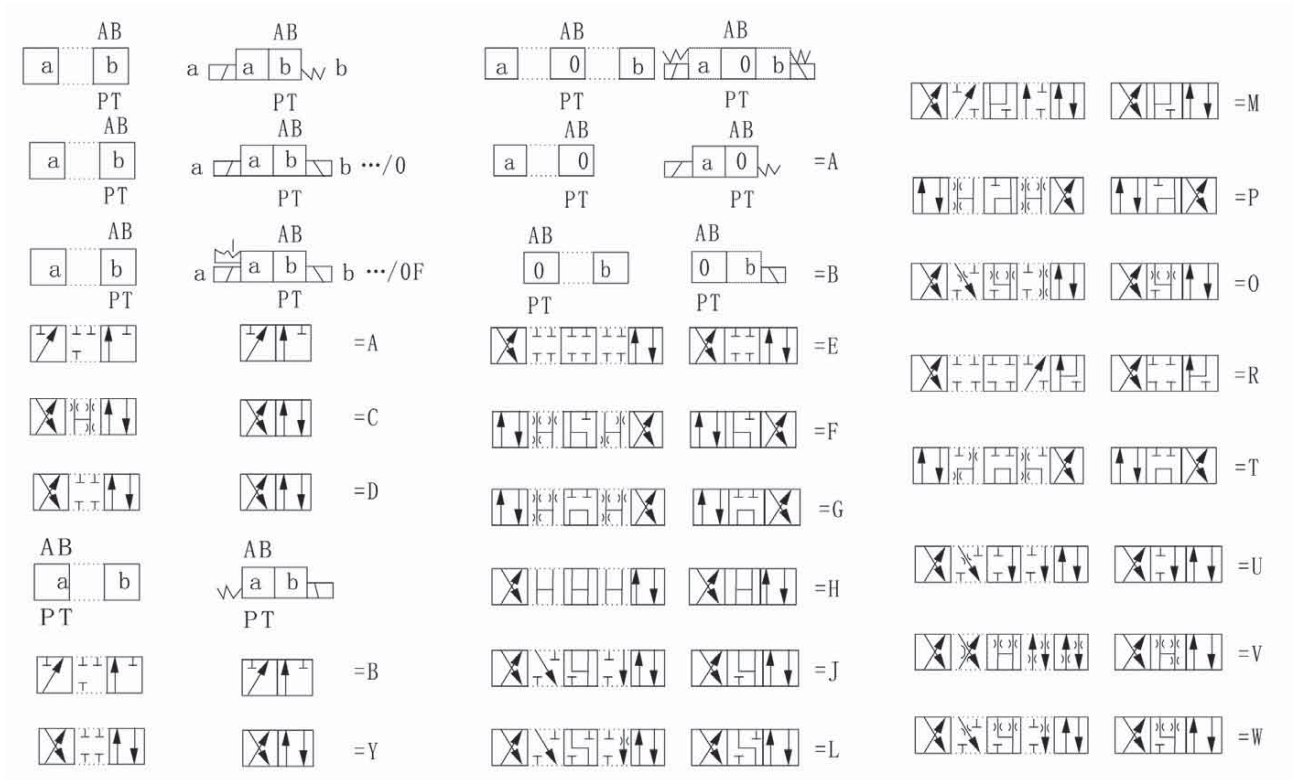
Y= Int control Extl drain

N = With hand emergency

Omit = without hand

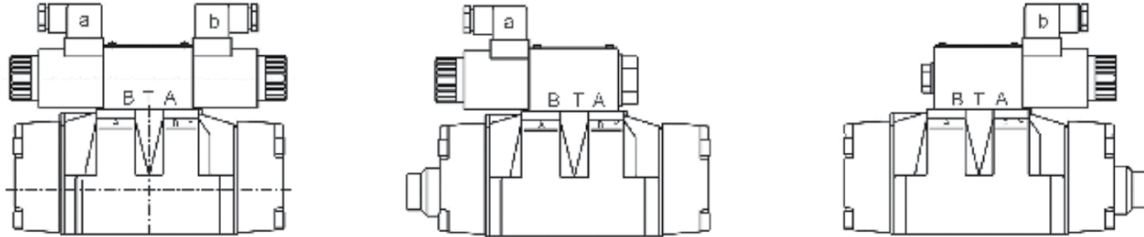
DC 24 or DC12

Code symbol



1) Example:

Spool symbol H with spool A, ordering code HA.

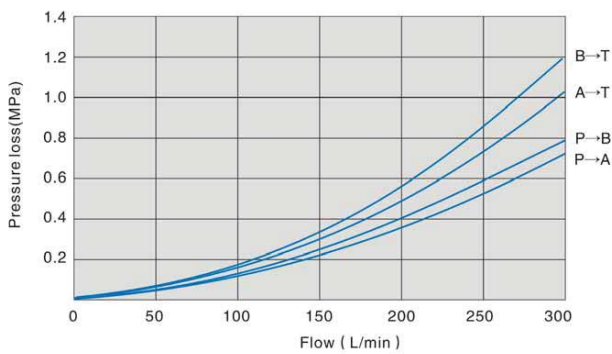


CETOP 7 NG16

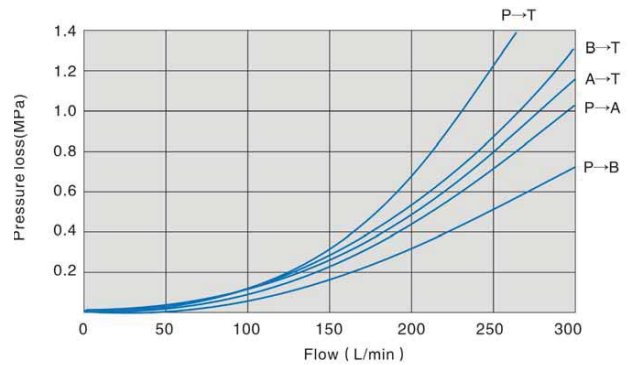
SPECIFICATION PERFORMANCE CURVE
Measured at $v=41\text{ mm}^2/\text{s}$ and $t=50^\circ\text{C}$

Pressure loss Mpa

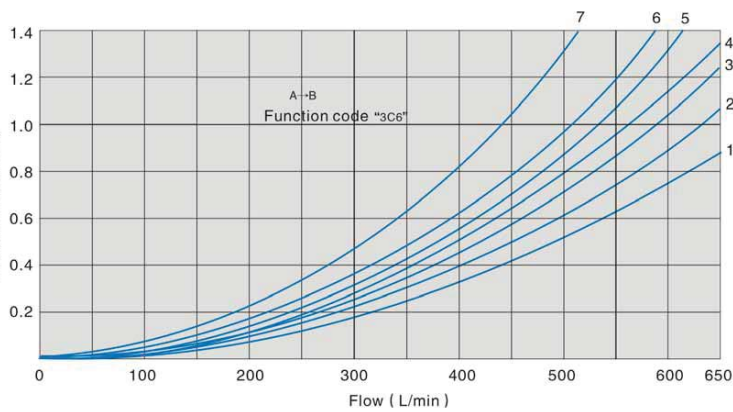
Spool E



Spool G



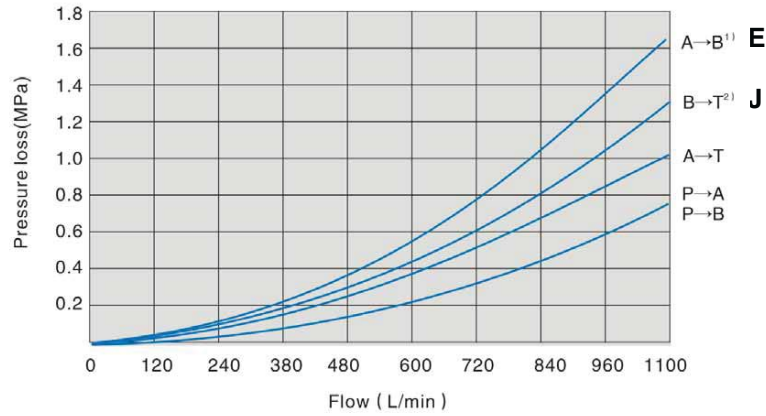
CETOP 8 NG25



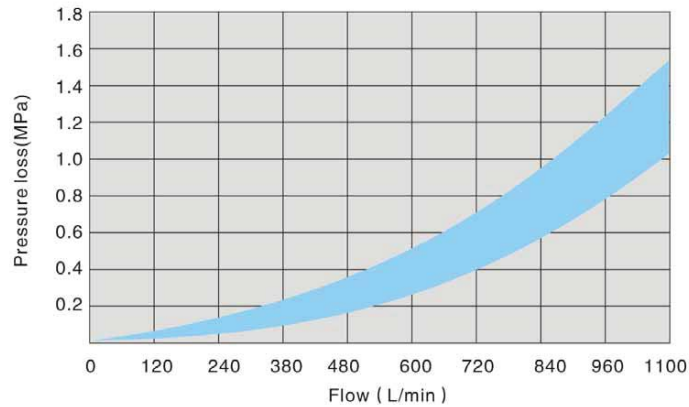
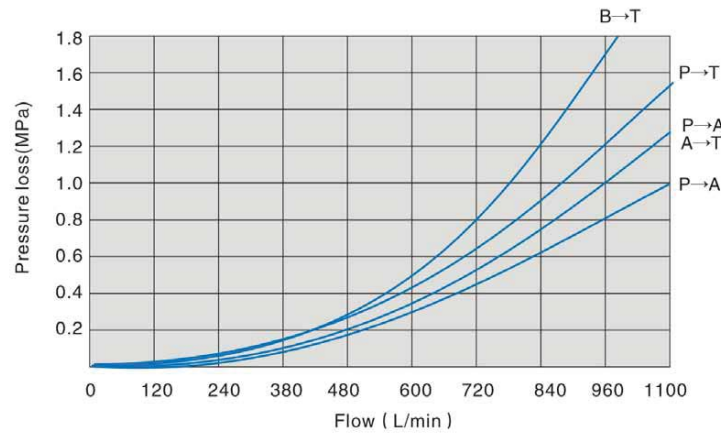
Function Code	Switching position				
	Symbol	P→A	P→B	A→T	B→T
E		1	2	4	5
F		1	4	1	1
G		4	2	2	6
H		4	4	1	4
J		1	2	1	3
L		2	3	1	4
M		4	4	3	4
P		4	1	3	4

CETOP 10 NG32

Spool E-J

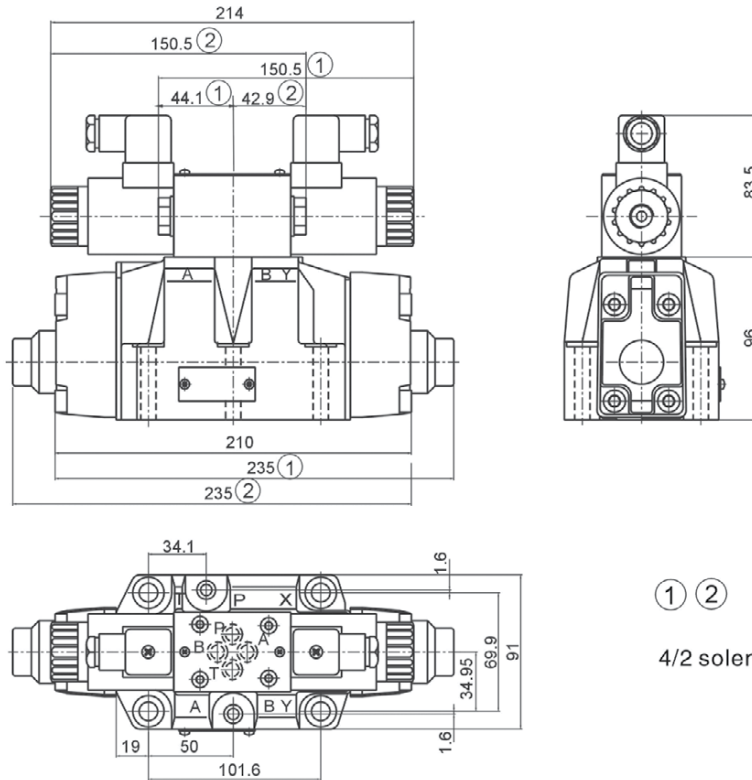


Spool G



CETOP 7 NG16

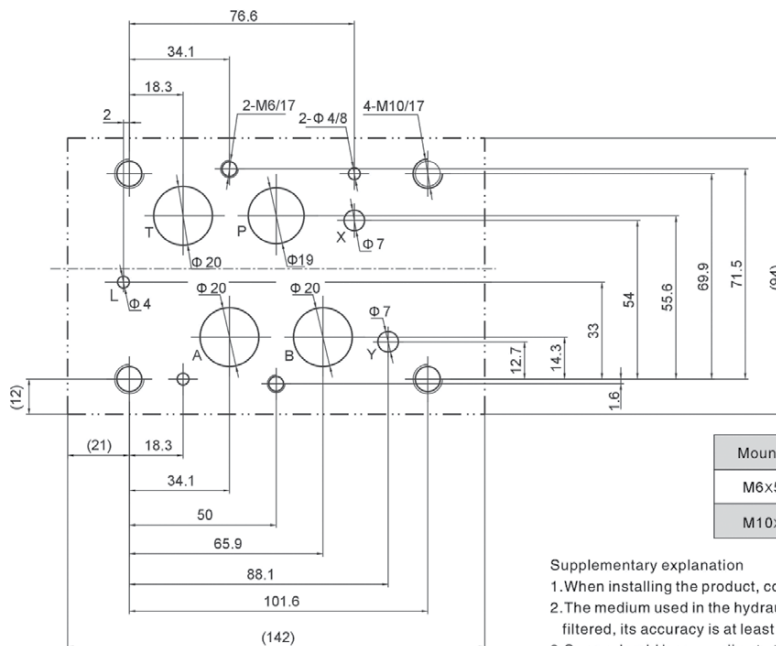
External dimensions



① ②

4/2 solenoid valve

Size of subplate oil port



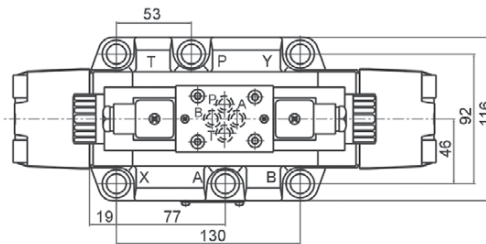
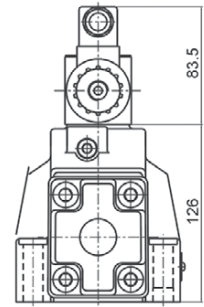
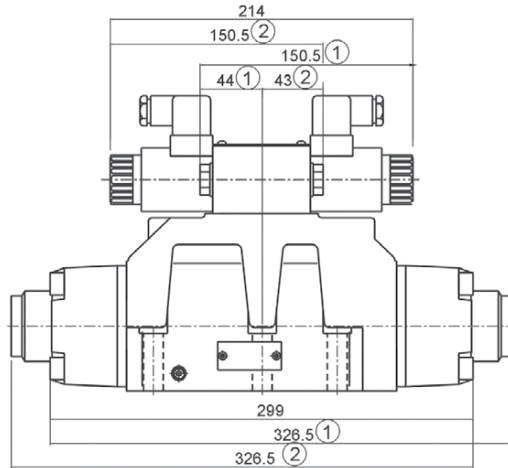
Mounting screw	Amount	Tighten torque
M6x55-10.9	2	15Nm
M10x60-10.9	4	75Nm

Supplementary explanation

1. When installing the product, considering horizontal position firstly.
2. The medium used in the hydraulic system must be filtered, its accuracy is at least 20 μm.
3. Screw should be according to the parameters in catalogue.
4. The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.

CETOP 8 NG25

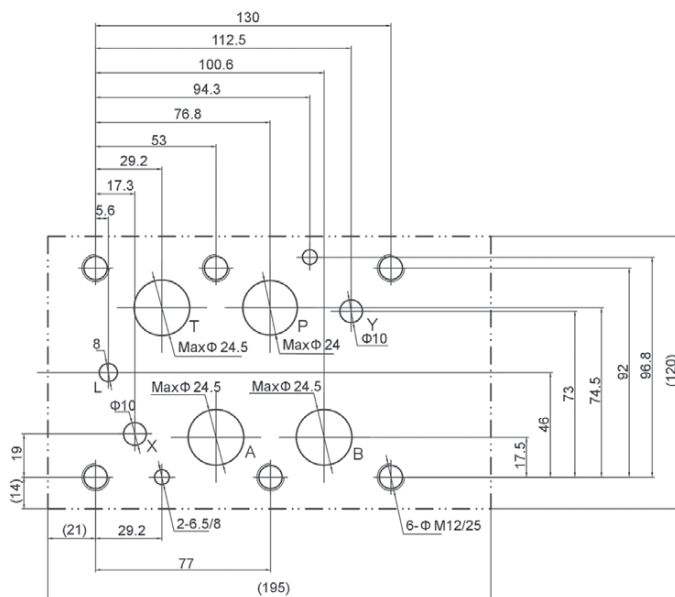
External dimensions



① ②

4/2 solenoid valve

Size of subplate oil port



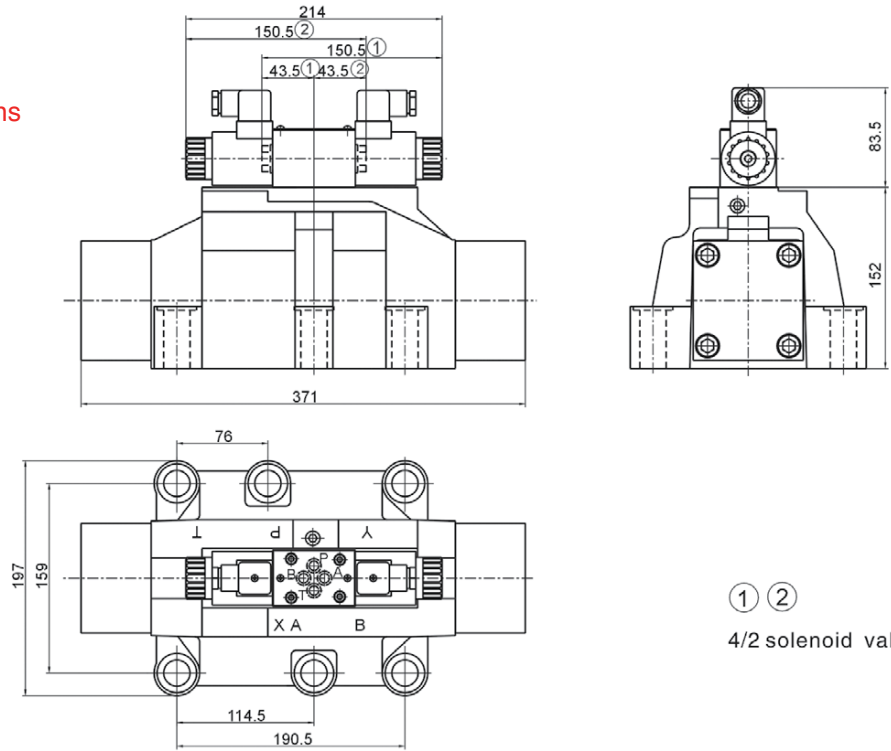
Mounting screw	Amount	Tighten torque
M12x60-10.9	6	130Nm

Supplementary explanation

1. When installing the product, considering horizontal position firstly.
2. The medium used in the hydraulic system must be filtered, its accuracy is at least 20 μm.
3. Screw should be according to the parameters in catalogue.
4. The surface, connecting with the valve, should be Ra0.8 roughness, and 0.01/100mm flatness.

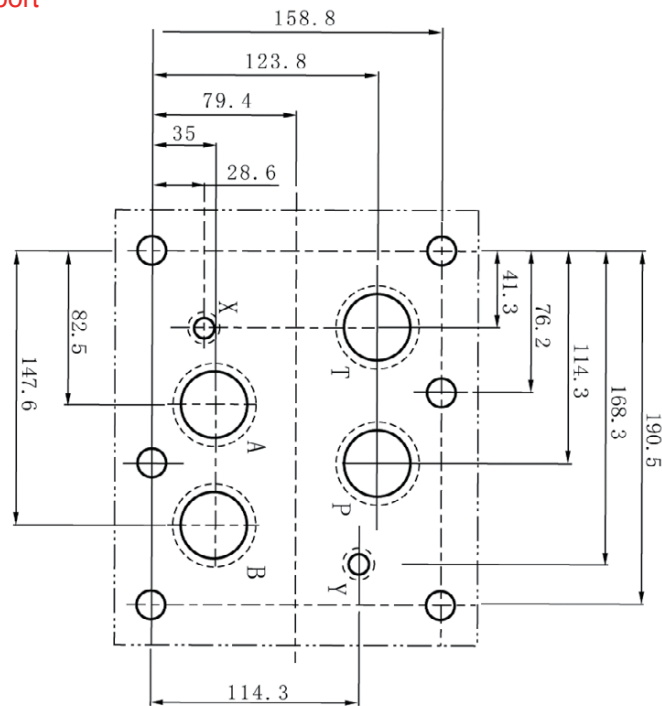
CETOP 10 NG32

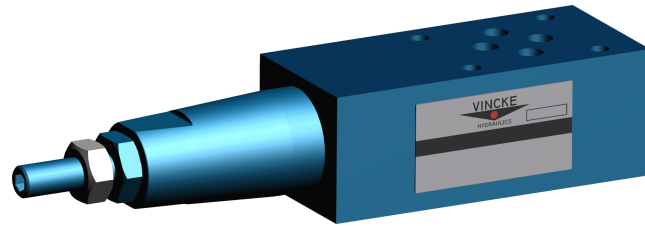
External dimensions



① ②
4/2 solenoid valve

Size of subplate oil port





KRV RELIEF VALVES

KRV series modular relief valves can control flow for positive direction pass oil port. Flow can be adjusted by handle. It passes to check valve for reverse flow.

Technical characteristics

Size	6	10	16
Max. Flow (L/min)	35	70	120
Max. W.P (Mpa)	31.5		
Working fluid	mineral oil ; phosphate-ester		
Fluid temperature (°C)	-20~70		
Viscosity (mm ² /s)	12~380		

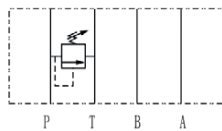
Ordering code

KRV-06-P-1-3

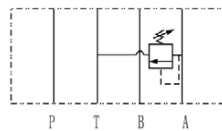
Modular relief Valve

NOMINAL SIZE: 06 Cetop 3 10 Cetop 5 16 cetop 7
P P Pipeline relief **A** Pipeline relief **AB** BA Pipeline relief
B B Pipeline relief **W** AB Pipeline relief
 Adjustment type: 1:rotatory knob 2: sleeve with exagon
 Setting pressure 5 to 50Mpa 1 to 10Mpa 2 to 20Mpa 3 to 31.5Mpa

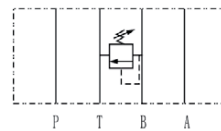
Code symbol



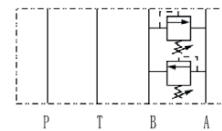
KRV-P



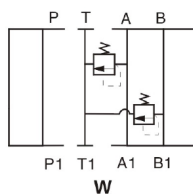
KRV-A



KRV-B



KRV-AB-BA

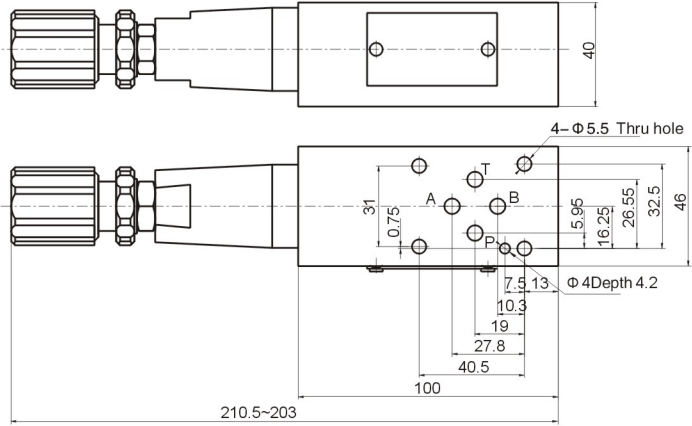


W

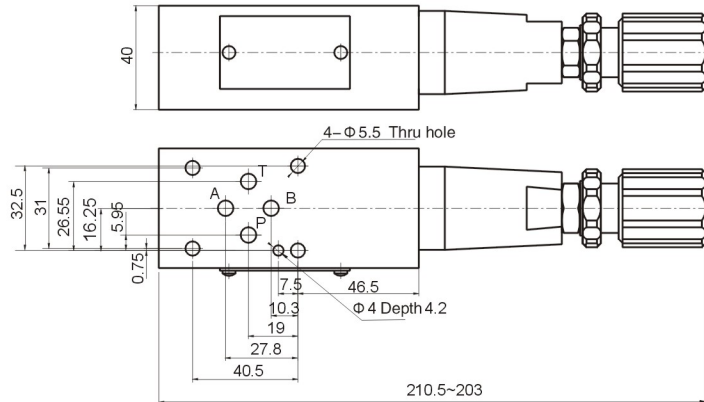
KRV RELIEF VALVES

Dimensions

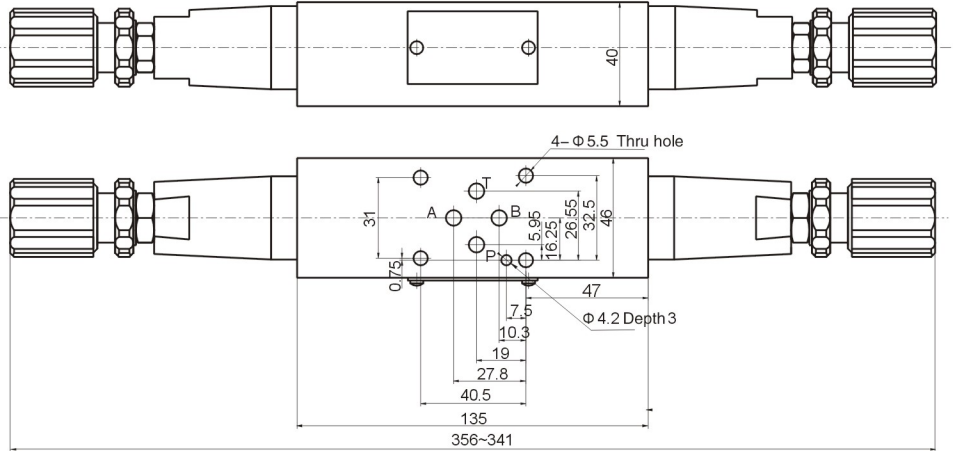
KRV-06-A



KRV-06-B/P



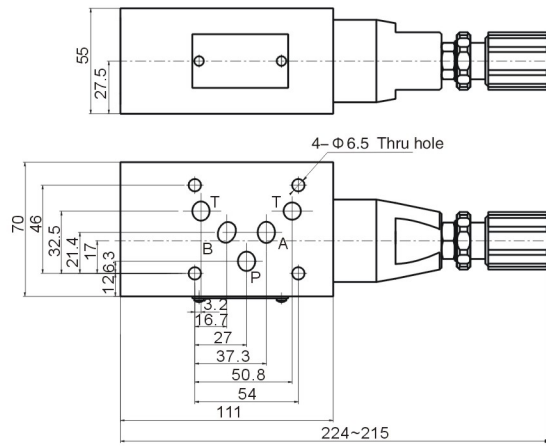
KRV-06-W



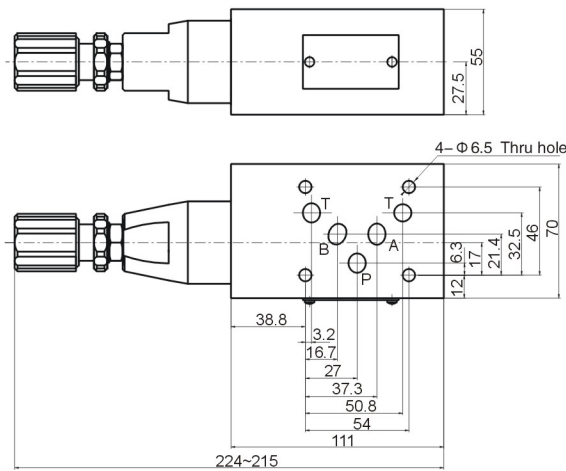
KRV RELIEF VALVES

Dimensions

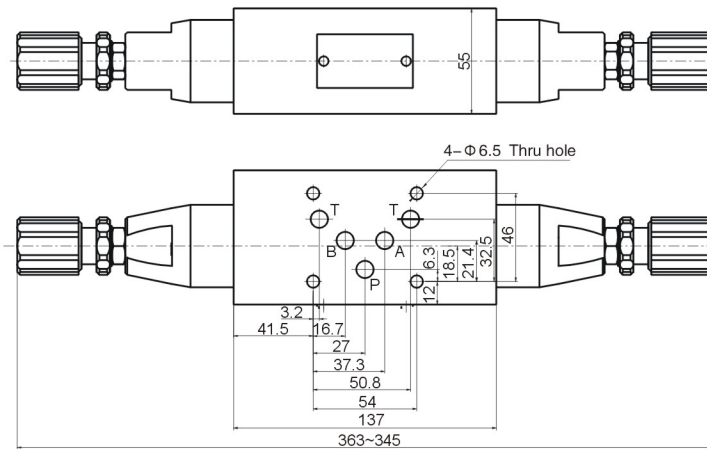
KRV-10-A



KRV-10-B/P

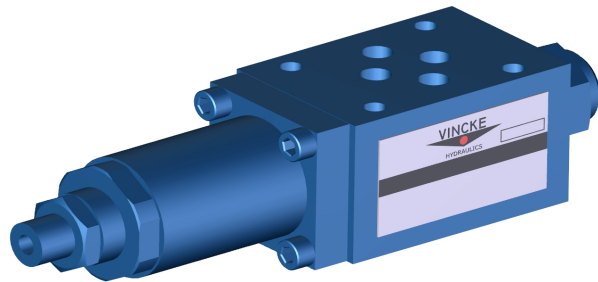


KRV-10-W



KRDV REDUCING VALVES

KRDV series modular reducing valves are used to reduce the pressure in a certain circuit lower than of the main circuit.



Technical characteristics

Size	6	10	16
Max. Flow (L/min)	35	70	120
Max. W.P (Mpa)	210		
Working fluid	mineral oil ; phosphate-ester		
Fluid temperature (°C)	-20~70		
Viscosity (mm ² /s)	12~380		

Ordering code

KRDV-06-A-1-2

Modular reducing Valve

NOMINAL SIZE: 06 Cetop 3 10 Cetop 5 16 cetop 7

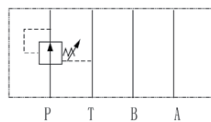
P P Pipeline relief **A** A Pipeline relief

B B Pipeline relief

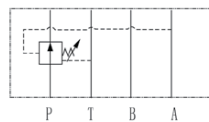
Adjustment type: 1:rotatory knob 2: sleeve with exagon.

Setting pressure 7 to 70Mpa 1 to 14Mpa 2 to 21Mpa

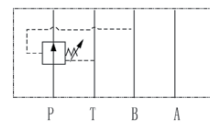
Code symbol



KRDV-P



KRDV-A

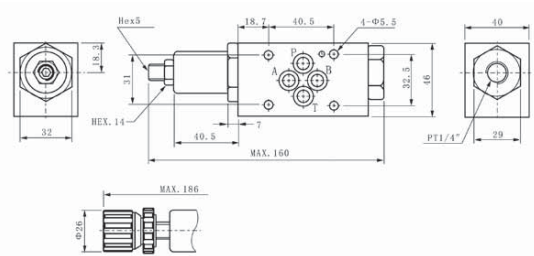


KRDV-B

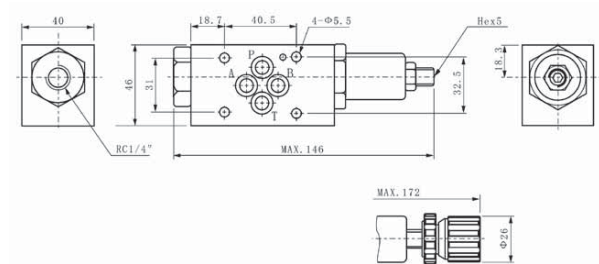
KRDV REDUCING VALVES

Dimensions

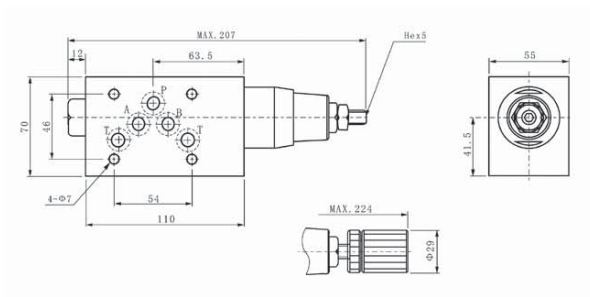
KRDV-06-B



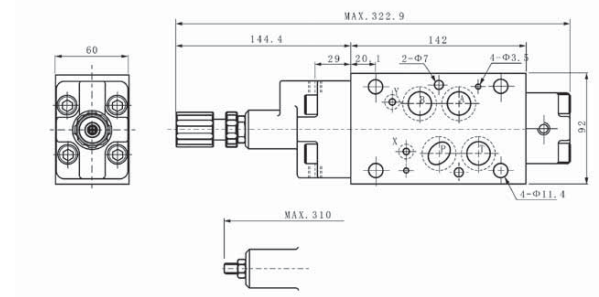
KRDV-06-A/P



KRDV-10-A/B/P

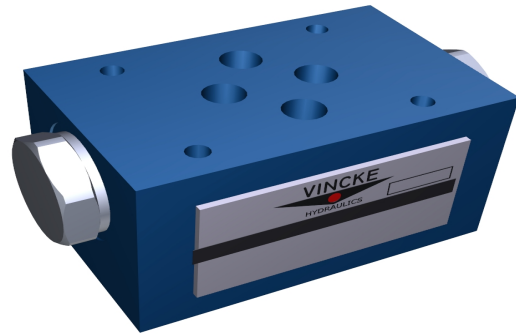


KRDV-16-A/B/P



KCV CHECK VALVES

KCV series modular check valves allow free flow in one direction and block flow in the counter direction.



Technical characteristics

Size	6	10	16
Max. Flow (L/min)	40	100	250
Max. W.P (Mpa)	31.5		
Working fluid	mineral oil ; phosphate-ester		
Fluid temperature (°C)	-20~70		
Viscosity (mm ² /s)	12~380		
Opening pressure	A 0.05 B 0.25 C 0.4		

Ordering code

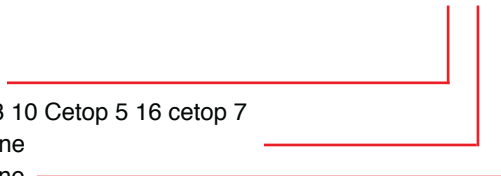
Modular check Valve

NOMINAL SIZE: 06 Cetop 3 10 Cetop 5 16 cetop 7

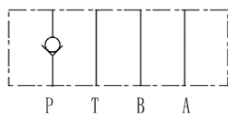
P P Pipeline A A Pipeline

B B Pipeline T T Pipeline

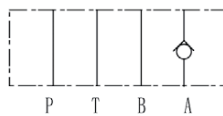
KCV-6-P



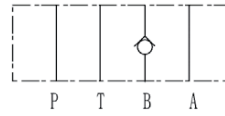
Code symbol



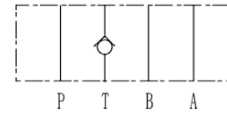
KCV-06-P



KCV-06-A



KCV-06-B

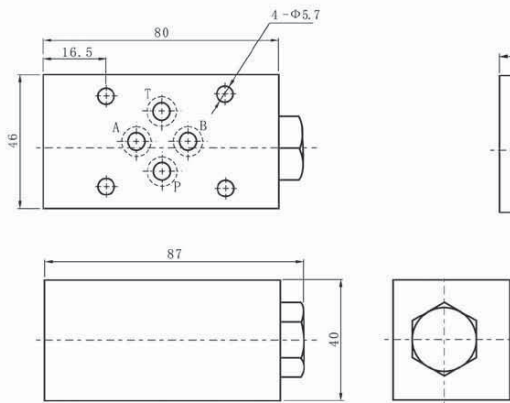


KCV-06-T

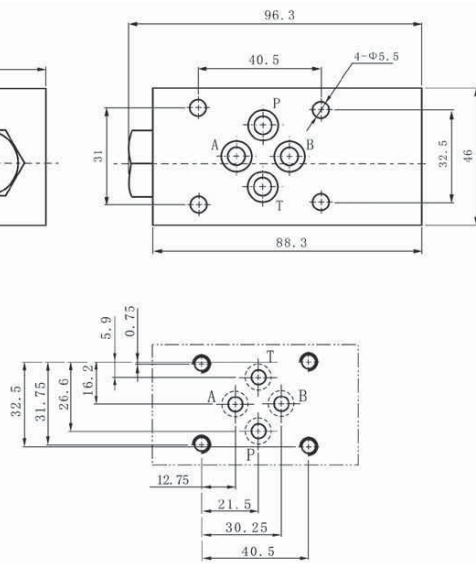
KCV CHECK VALVES

Dimensions

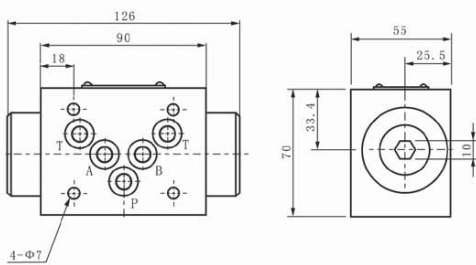
KCV-06-P/T/B



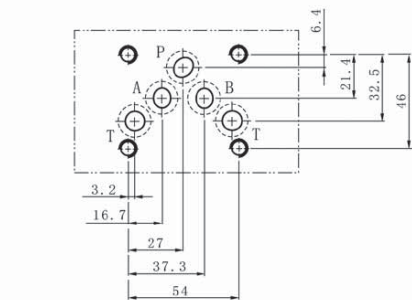
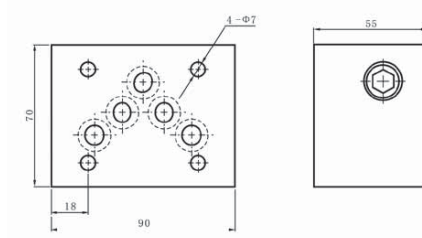
KCV-06-A



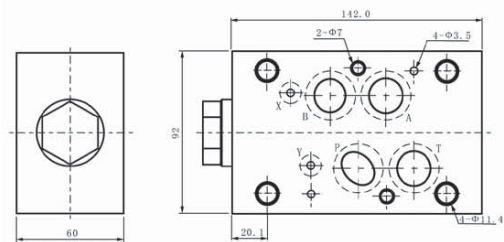
KCV-10-A/B



KCV-10-P/T

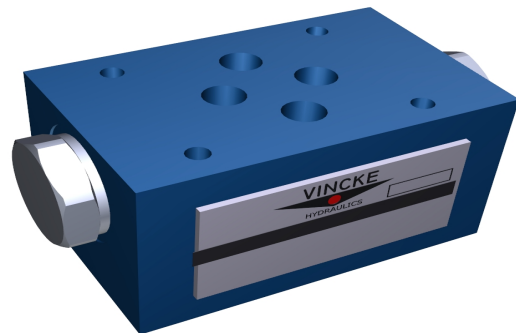


KCV-16-P



KPCV CHECK VALVES

KPCV series modular check valves allow free flow in one direction and block flow in the counter direction.



Technical characteristics

Size	6	10	16
Max. Flow (L/min)	60	100	200
Max. W.P (Mpa)	31.5		
Working fluid	mineral oil ; phosphate-ester		
Fluid temperature (°C)	-20~70		
Viscosity (mm ² /s)	2,8~380		
Opening pressure	A 0.05 B 0.25 C 0.4		

Ordering code

KPCV-06-..

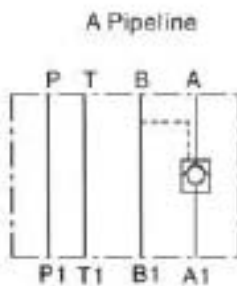
Modular check Valve

NOMINAL SIZE: 06 Cetop 3 10 Cetop 5 16 cetop 7

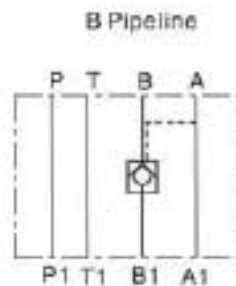
A A Pipeline

B B Pipeline W AB Pipeline

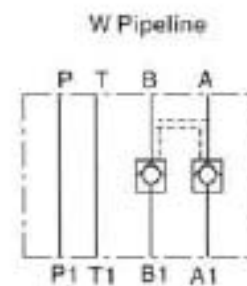
Code symbol



KPCV-06-A



KPCV-06-B

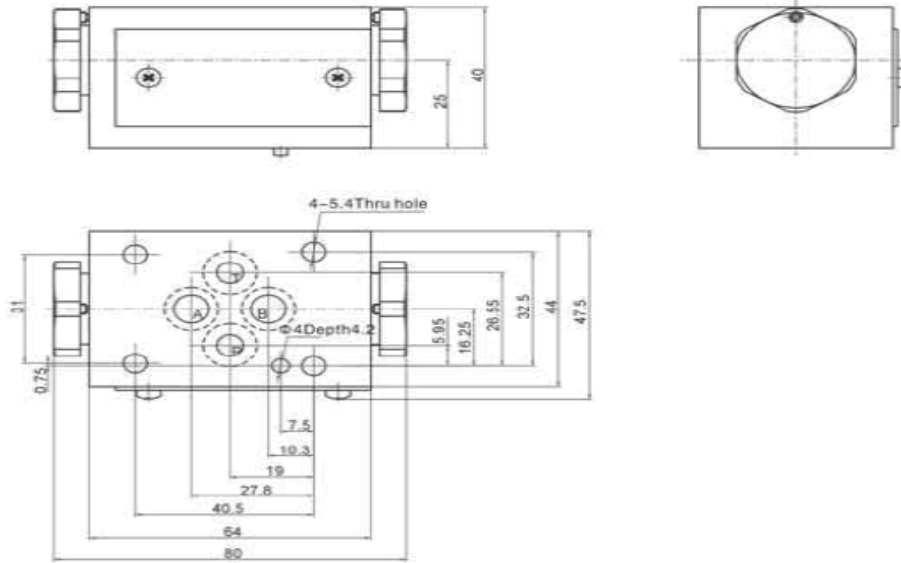


KPCV-06-W

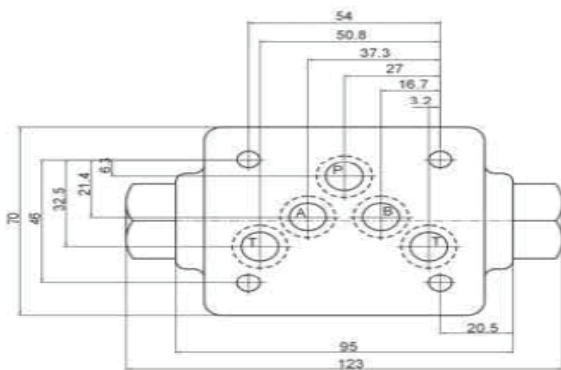
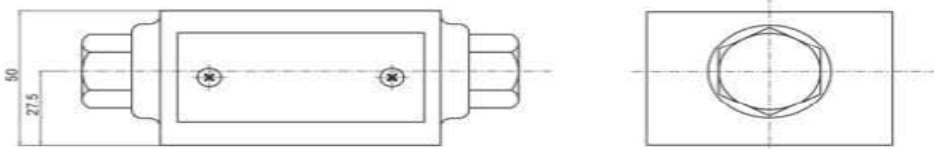
KPCV CHECK VALVES

Dimensions

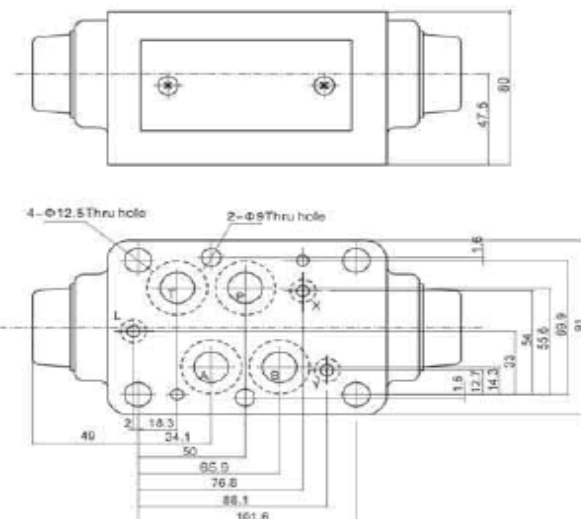
KPCV-06



KPCV-10-

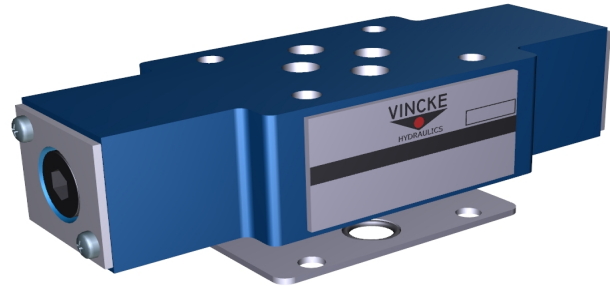


KPCV-16



KFR FLOW REGULATOR VALVES

KFR series modular flow regulator valves are used to restrict flow by handle.



Technical characteristics

Size	6	10	16
Max. Flow (L/min)	35	70	200
Max. W.P (Mpa)	31.5		
Working fluid	mineral oil ; phosphate-ester		
Fluid temperature (°C)	-20~70		
Viscosity (mm ² /s)	2.8~380		
Opening pressure	A 0.05		

Ordering code

KFR-06-A-1

Modular flow regulator

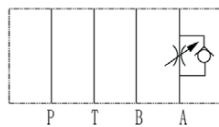
NOMINAL SIZE: 06 Cetop 3 10 Cetop 5 16 cetop 7

A A Pipeline **B** B Pipeline
P P Pipeline **T** T Pipeline **W** AB Pipeline

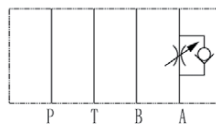
Adjustment type: 1:rotatory knob 2: sleeve with exagon

Throttle direction: Omit meter out 1 meter in

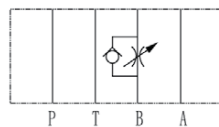
Code symbol



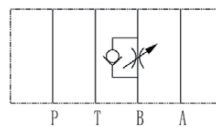
KFR-06-A-**-0



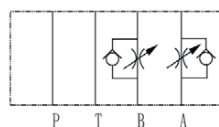
KFR-**-A-**-I



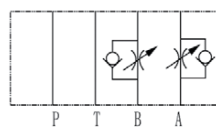
KFR-06-B-**-0



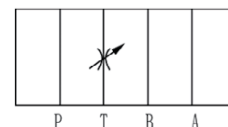
KFR-**-B-**-I



KFR-06-W-**-0



KFR-**-W-**-I

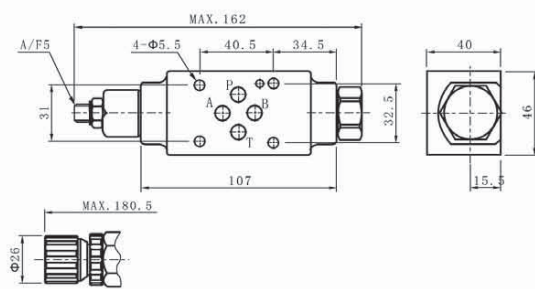


KFR-06/10T

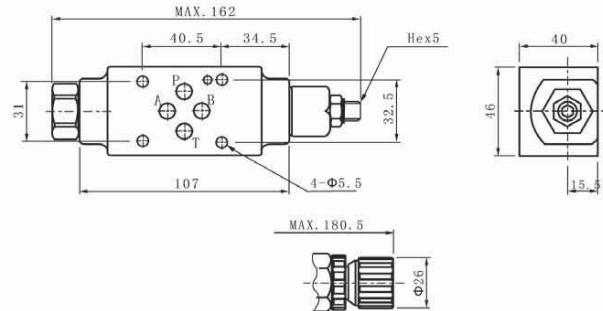
KFR FLOW REGULATOR VALVES

Dimensions

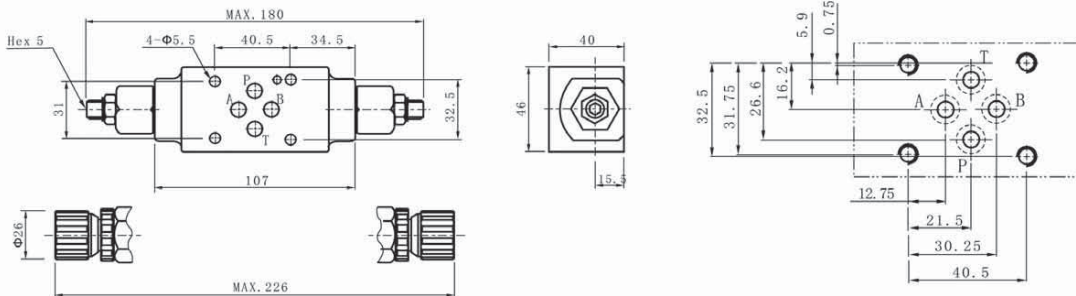
KFR-06-A



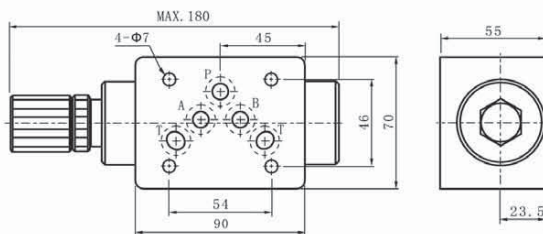
KFR-06-B



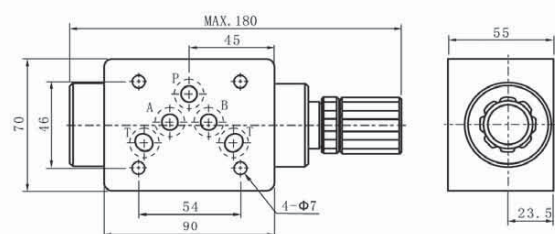
KFR-06-W



KFR-10-A

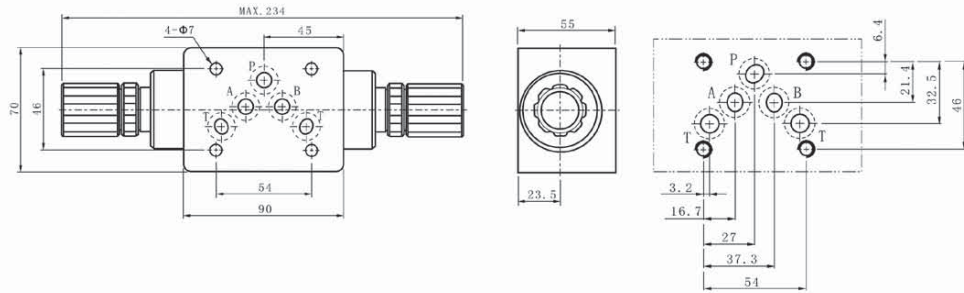


KFR-10-B

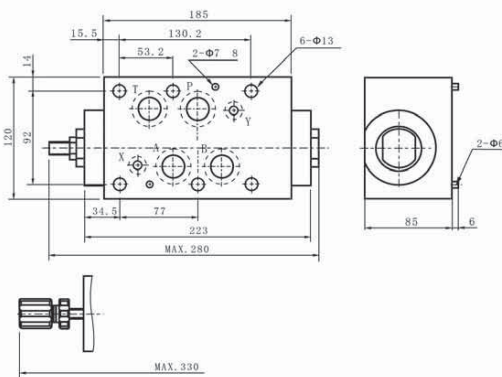


Dimensions

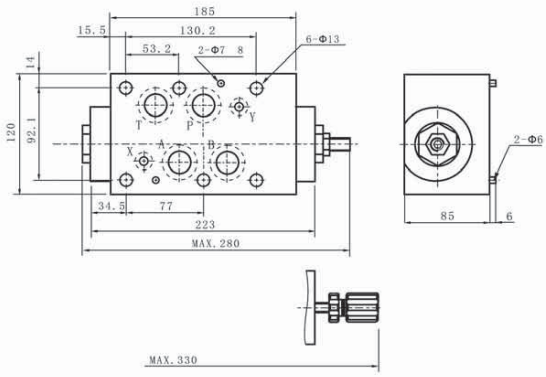
KFR-10-W



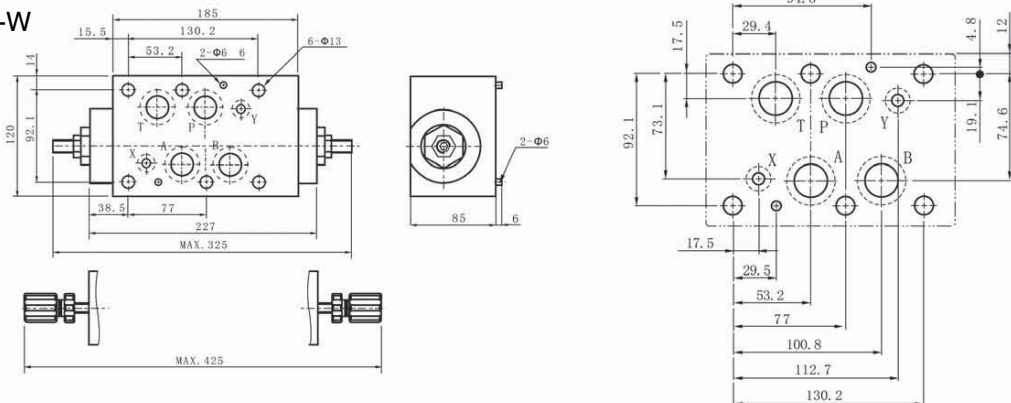
KFR-12-A



KFR-12-B

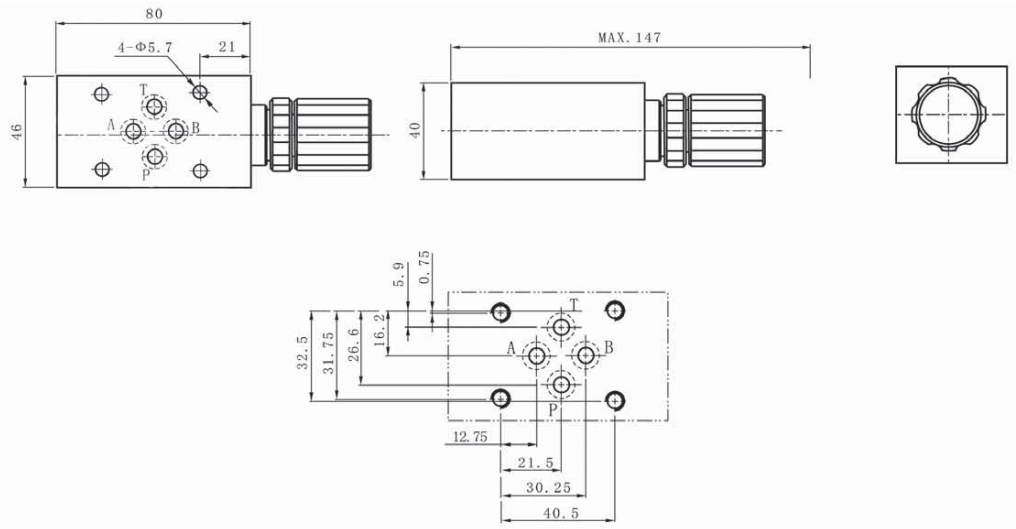


KFR-12-W

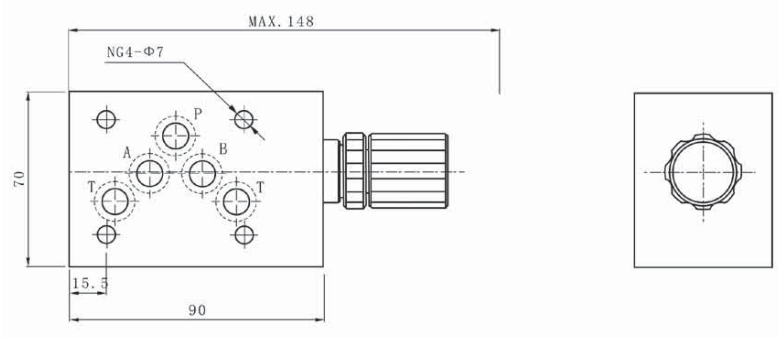


Dimensions

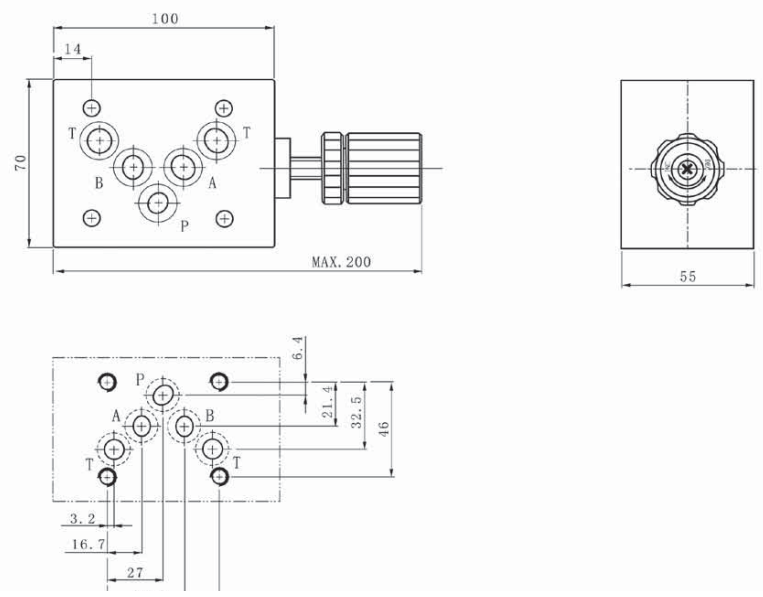
KFR-06-T



KFR-10-T



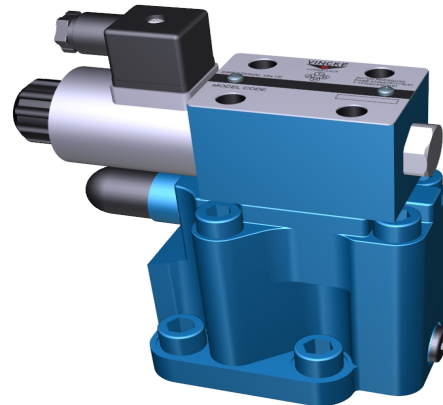
KFR-CV-10-T



PRESSURE CONTROL

DAM

DAM s series pilot operated relief valves and DBW series solenoid operated relief valves can be used to control and unload system pressure.



Technical characteristics

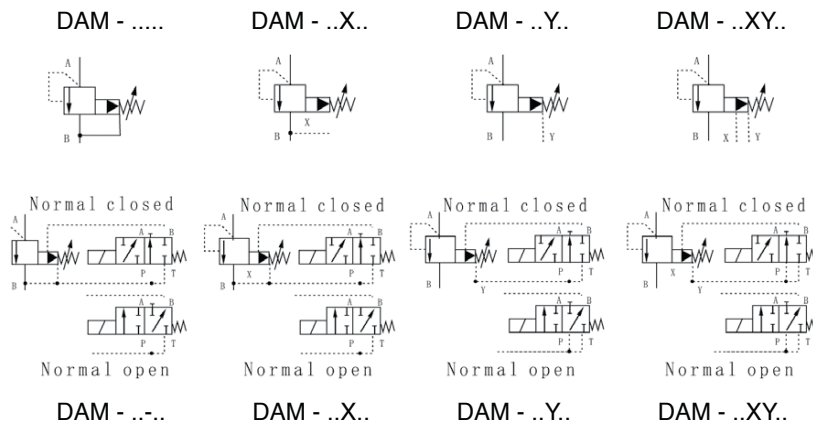
Size	10	20	30
Max. Flow (L/min)	250	500	650
Max. W.P (Mpa)	35		
Working fluid	mineral oil ; phosphate-ester		
Fluid temperature (°C)	-20~70		
Viscosity (mm ² /s)	12~380		

Ordering code

DAM-10-B-1-315-Y-DC24

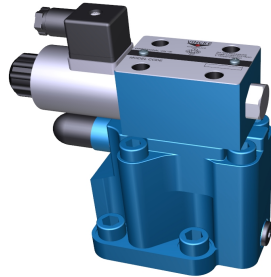
Pilot operated relief valve+solenoid valve. _____
 Nominal size 10-20-30 _____
 State: A normal closed B normal open. _____
 Adjustment type: 1:rotatory knob 2: sleeve with exagon. _____
 Setting pressure 50= 0,4~5 100 0,6~100 200 7~20 315 8~315 350
 10~35 Oil Control: Omit= Intl control Intl drain XY= Extl control Intl drain
 X= Extl control Intl drain Y= Intl control Extl drain _____
 Working voltage DC24 DC12 AC110 AC220. _____

Code symbol

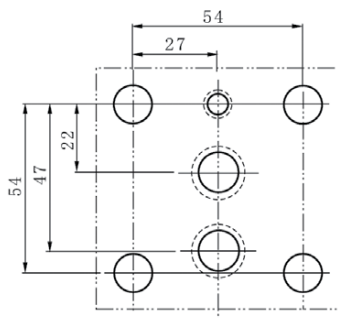


No code	Internal control internal drain
X	External control internal drain
Y	Internal control external drain
XY	External control external drain

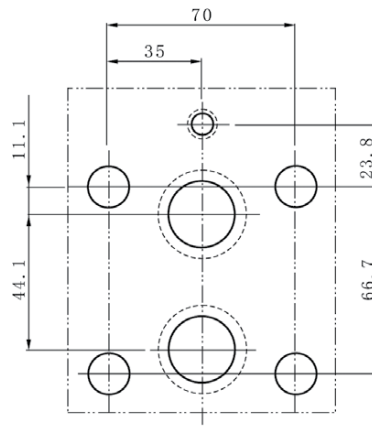
DAM



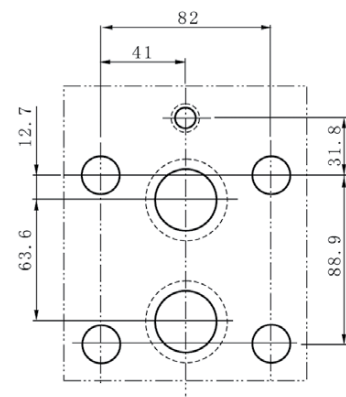
Subplate mounting size:



DAM-10



DAM-20

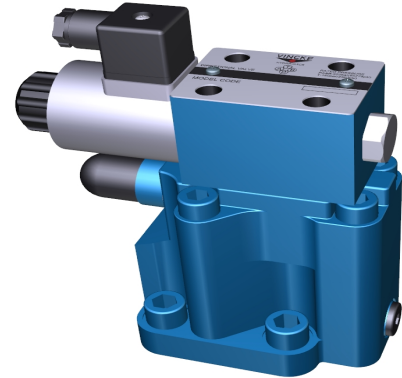


DAM-30

PRESSURE CONTROL

DIU

DIU series solenoid operated unloading valves are used to unload the oil pumps' pressure in a hydraulic system with accumulator. The valve allows high-pressure pump to operate and low-pressure pump to unload pressure.



Technical characteristics

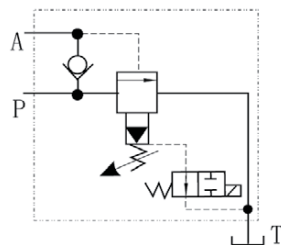
Size	10	20	30
Max. Flow (L/min)	60	120	240
Max. W.P (Mpa)	31.5		
Working fluid	mineral oil ; phosphate-ester		
Fluid temperature (°C)	-20~70		
Viscosity (mm ² /s)	12~380		

Ordering code

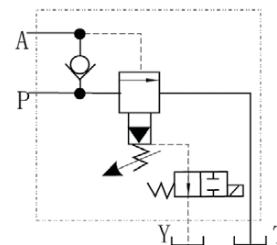
DIU-20-B-1-200-Y-17-DC24

Unloading relief valve+solenoid valve _____
 Nominal size: 10 20 30 _____
 State: A normal closed B normal open _____
 Adjustment type: 1:rotatory knob 2: sleeve with exagon _____
 Working pressure: 50 5~50Mpa 100 10~10Mpa 200 80~20Mpa 315 16~31.5Mpa _____
 Oil Control: Omit= Intl control Intl drain XY= Extl control Intl drain
 X= Extl control Intl drain Y= Int control Extl drain _____
 Switching differential pressure (PDA) 10 on average 17 on average _____
 Working voltage DC24 DC12 AC110 AC220 _____

Code symbol



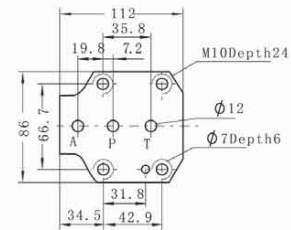
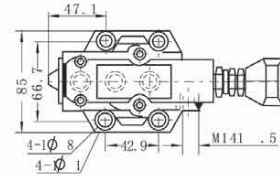
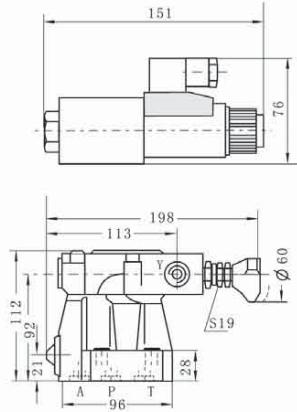
DIU 10/20/30



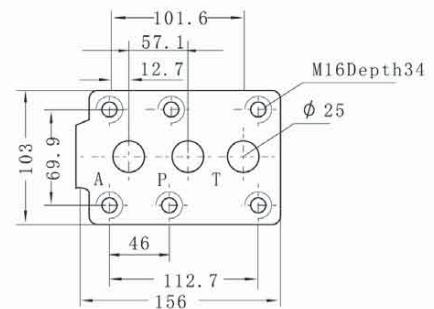
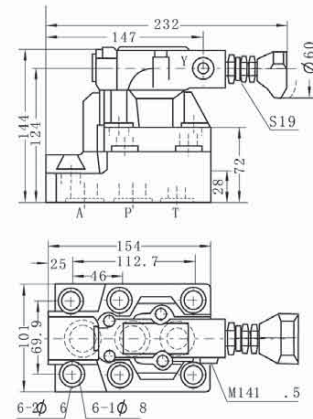
DIU 10/20/30 ...Y...

Subplate mounting size:

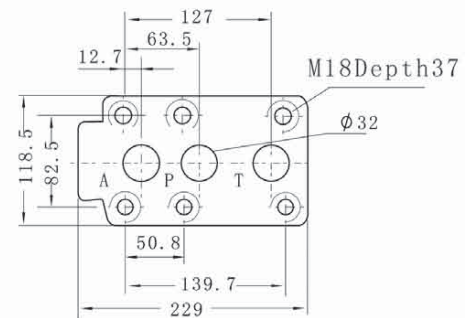
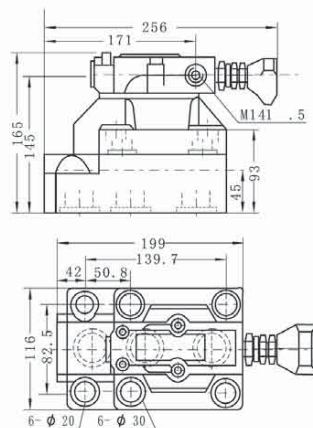
DIU 10

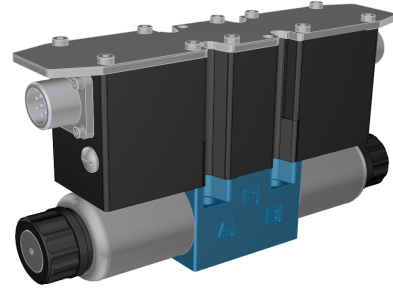
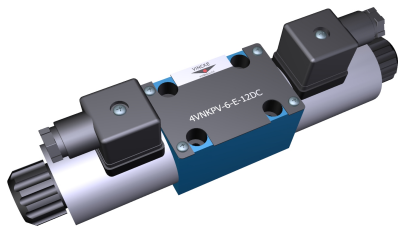


DIU 20



DIU 30





The built-in 4/2- and 4/3-way directly operated proportional solenoid valves, direct operated spool without electrical position feedback Type VNKPV and VNKPV-IE
 Nominal sizes 6 and 10
 Maximum operating pressure 315bar Maximum flow 42L/min (DN6)
 Maximum flow 75L/min (DN10)

Technical characteristics

Model	VNKPV	VNKPV-IE
Installation position	optional, preferably horizontal	
Storage temperature range °C	-20 -80	
Ambient temperature range °C	-20-70	-20-50
Weight (kg) DN06	2	2,2
DN10	6,6	7

Hydraulic

Operating pressure (bar)	Ports A, B, P	315
	Port T	210
Nominal flow (L/min)	DN06	7, 15 and 26
When q_{max} at $\Delta p=10$ bar	DN10	30 and 60
Flow (Max. Permissible) (L/min)	DN06	42 (with double flow 42) 80
	DN10	75 (with double flow 75) 140
Pressure fluid	Mineral oil (HL, HLP) to DIN 51 524; For other fluid please consult with us.	
Fluid temp. Range °C	-20-80(+40-+50 is preference)	
Viscosity range mm ² /s	20-380 (30-46 is preference)	
Hysteresis %	<5	
Reversal span %	<1	
Response sensitivity %	<0,5	
Cleanliness	Maximum permissible degree of fluid contamination to NAS 1638 to class 9	

Electrical

Model	VNKPV	VNKPV-IE
Voltage type	Direct voltage	
VNKPV-IE Voltage input "A1" (V)	± 10	± 10
Command signal Current input "F1" (mA)	4~20	4~20
Max. current per solenoid (A)	2,5	2,5
Solenoid coil Resistance (n)	Cold value at 20°C	10DN2
	Max. warm value	10DN3
Duty cycle (%)	100	
Max. Coil temperature	Up to 150	
Electrical connection	Plug-in connector to DIN EN 175301-803 and	Plug-in connector to DIN 43 563
Insulation of valve to DIN 40	IP65	

Control electronics

VNKPV	Analogue amplifier in Eurocard		Details refer to proportional amplifier	
	Digital amplifier in Eurocard former		Details refer to proportional amplifier	
VNKPV-IE (type)	Analogue command value module		Integrated into the valves	
Supply voltage	Nominal voltage	VDC	24	
	VNKPV-IE Lower limiting value	V	21/22	19
	VNKPV" Upper limiting value	V	35	
Amplifier current consumption	/ max	A	1,8	1,8
	Max. impulse current	A	3	3

Due to the occurring surface temperature of the solenoid coils, the European Standards DIN EN 563 a must be taken into account! With VINCKE control electronics

Ordering code

VNKPV - * - * - * - * - - G24 - *

Directional proportional valve

No code Without integrated electronics
IE With integrated electronics

02 DN 6
 03 DN 10

Spool symbols

With spool symbols: E and J
 P→A: qvmax B→T:qv/2
 P→B: qv/2 A→T:qvmax

Note:
 With spools J and JA, there is a flow from A to T and B to T with approx. 3 % of the corresponding nominal cross section in zero position.

1. Other types of electrical protection on request

²¹K4 Electrical connection For BFW (type) with plug component DIN EN 175301-803 See page A.3.3

²¹K31 with plug component DIN 43 650-AM2 See page A.3.4

24V 24 VDC

2X Component series 20 to 29 (20 to 29 unchanged installation and connection dimensions)

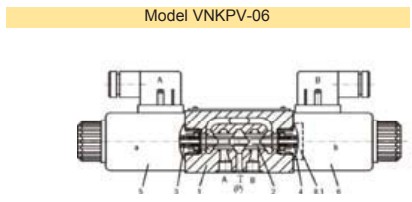
Nominal flow at valve pressure differential $\Delta p = 10$ bar

DN 6	07	7 L/min
	15	15 L/min
	30	26 L/min
DN 10	30	30 L/min
	60	60 L/min

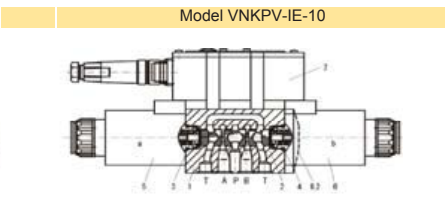
Structure and function description, section

The 4/2-way and 4/3-way proportional directional valves are designed as direct operated components for subplate mounting. They are actuated by means of proportional solenoid with central removable coil. The solenoid are controlled either by external control electronics (type VNKPV) or integrated control electronics (type VNKPV-IE).

Design:	Function:
<p>The valves basically consist of:</p> <ul style="list-style-type: none"> —Body (1) with mounting surface —Control spool (2) with compression springs (3 and 4) Solenoids (5 and 6) with central coil —Optional integrated electronics (7) 	<ul style="list-style-type: none"> —When solenoids (5 and 6) do not work, the control spool (2) is held in the central position by compression springs (3 and 4) —Direct actuation of the control spool (2) by energising a proportional solenoid E.g. When the solenoid "b" power is on (6) — The control spool (2) is moved to the left in proportion to the electrical input signal —connection from P to A and B to T via orifice-like crosssections with progressive flow characteristics <p>When the solenoid power is off (6)</p> <ul style="list-style-type: none"> — The control spool (2) is returned to the central position by compression spring (3)



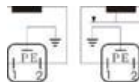
In theory, the function of this valve is the same to the valve with 3 positions. However, the valves with 2 positions are only fitted with solenoid "a".
 For DN6 valve, there is a plug (8.1) fixed in the second solenoid, but for DN10, it is a cover (8.2) instead



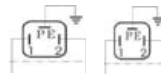
Note for type VNKPV-06
 Draining of tank line is to be avoided. With the appropriate installation conditions, a back pressure valve is to be installed (back pressure approx. 2 bar).

Electrical connection, plug—in connectors

Connection on component plug

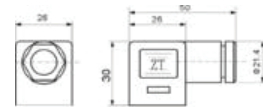


Connection on plug-in connector

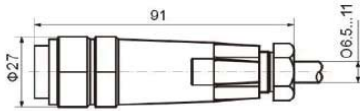


To amplifier To amplifier

Plug-in connector: CECC 75 301-803-A002FA-H3D08-G/DIN EN 175 301-803 and ISO 4400

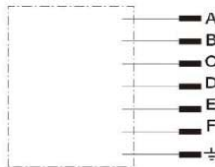


Electrical connection, plug-in connectors type VNKPV-IE



Plug-in connector:
 DIN 43 563-BF6-3/Pg11

Integrated electronics for type VNKPV-IE

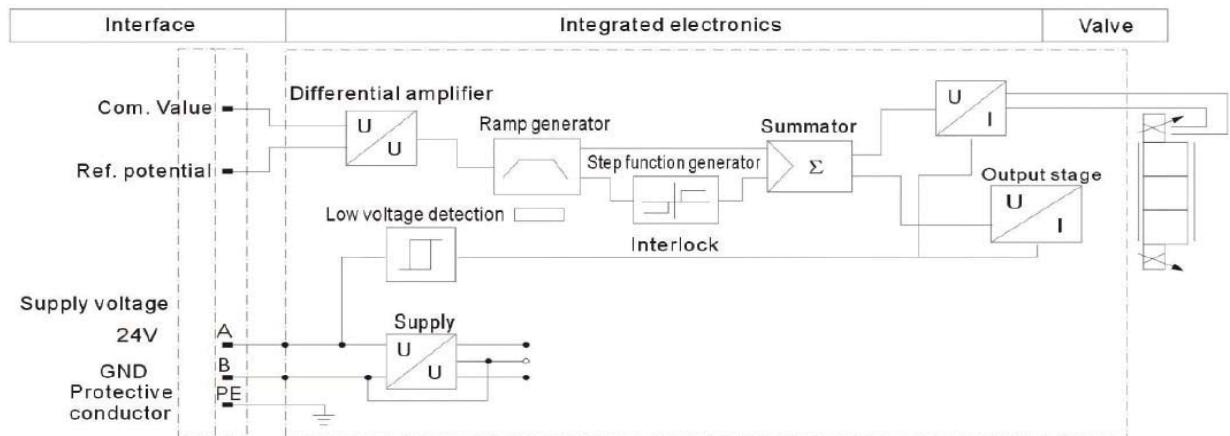


	Contact	Signal
Supply voltage	A	24VDC (19~35VDC)
	B	GND
	C	n.c. ⁽¹⁾
Differential amplifier input	D	Com. value ($\pm 10V/4-20mA$)
	E	reference potential
	F	n.c. ⁽¹⁾

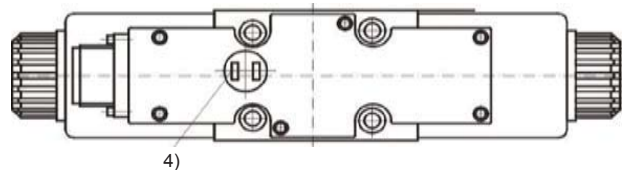
Positive command value (0 to 10 V or 12 to 20 mA) at D and reference potential to E causes flow from P to A and B to T. Negative command value (0 to 10 V or 12 to 4 mA) at D and reference potential to E causes flow from P to B and A to T. For valves with a solenoid on side "a" (spool variants EA and JA) a positive command value at D and reference potential to E (NS 6: 4 to 20 mA and NS 10: 12 to 20 mA) causes flow from P to B and A to T.

Recommendation:
 -up to 25 m cable length type LiYCY 5 x 0.75 mm'
 - up to 50 m cable length type LiYCY 5 x 1.0 mm2 External diameter 6.5 to 11 mm
 Connect screen to PE only on the supply side

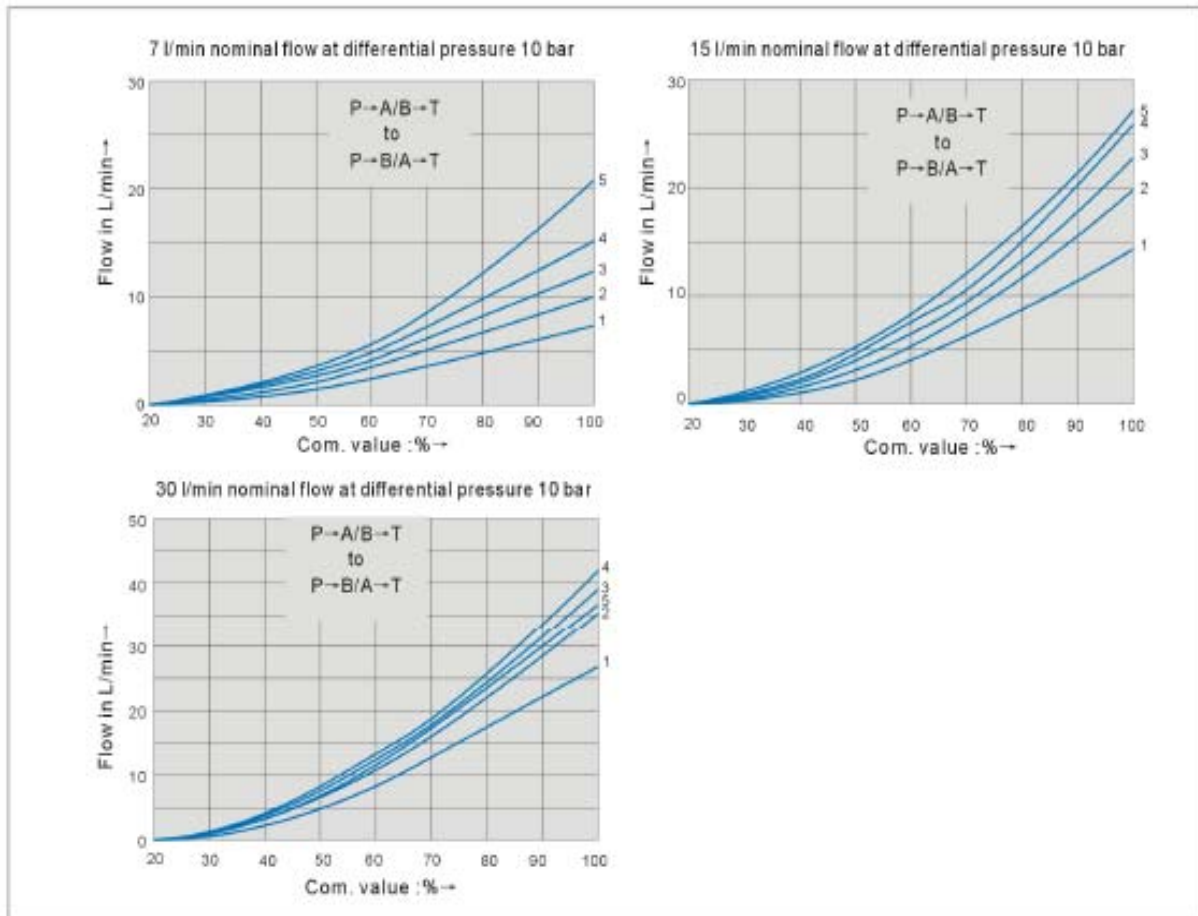
Block circuit diagram / connection allocation



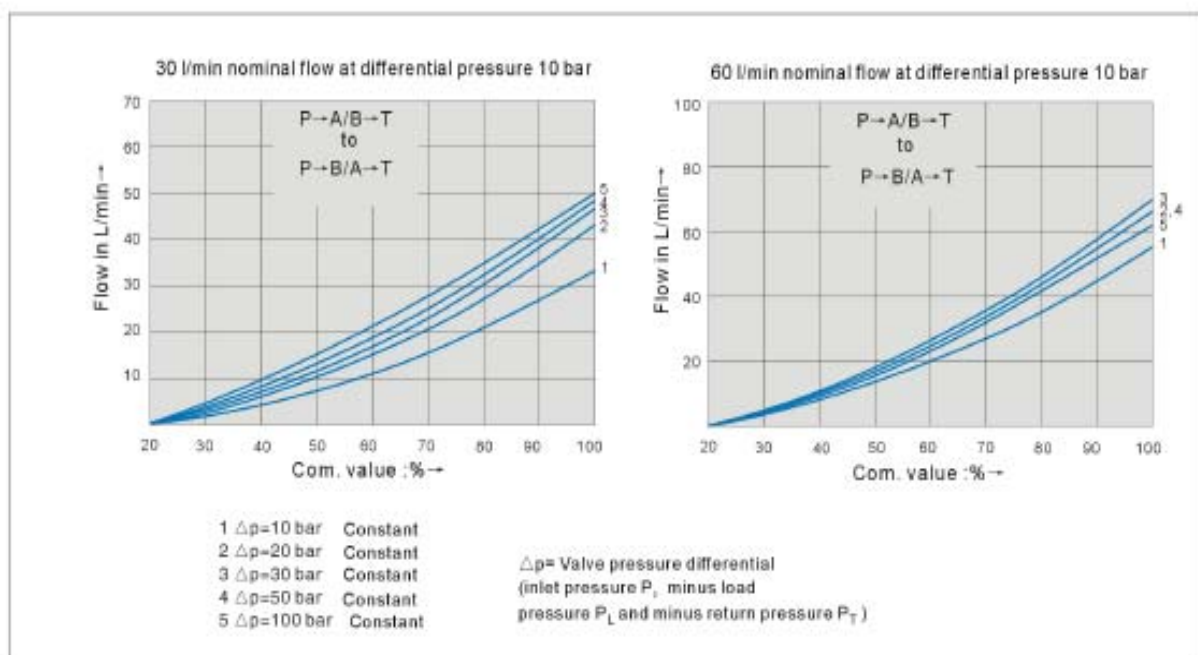
- 1) Contacts C and F must not be connected!
- 2) PE is connected to the cooling body and the valve housing
- 3) Protective conductor screwed to the valve housing and cover
- 4) Ramp can be externally adjusted from 0 to 2.5s; the same applies for T_{up} and T_{down}
- 5) Output stages current regulated
- 6) Low voltage detection is not carried out for component type VNKPV-IE-10



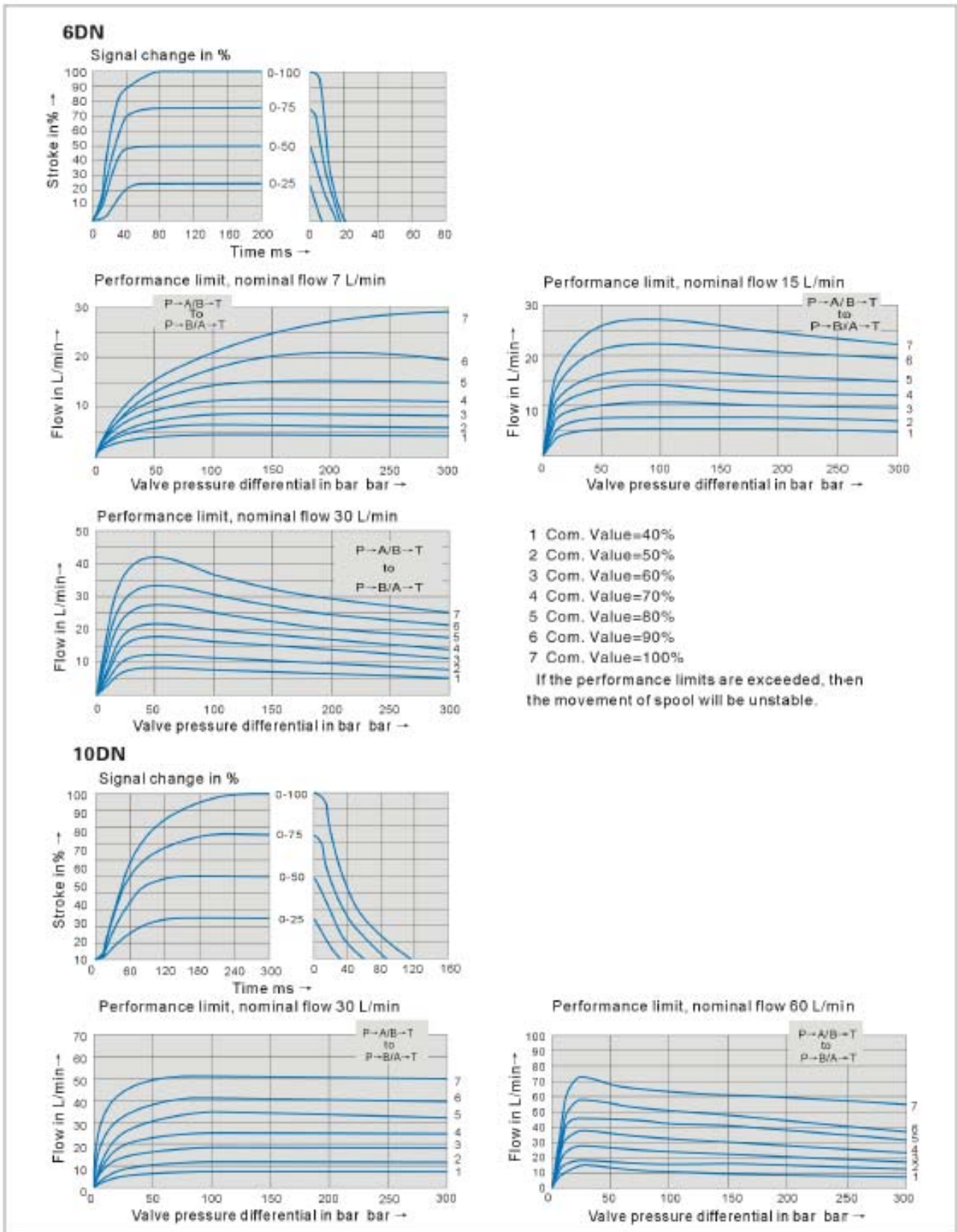
Characteristic curves (measured with HLP46) DN6



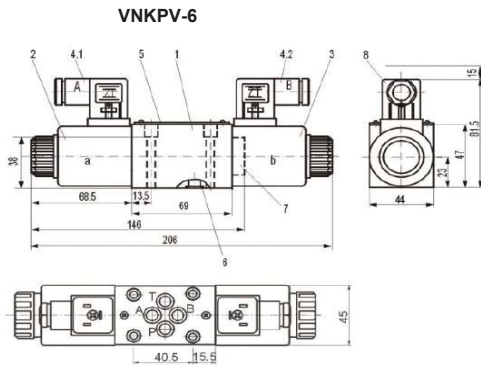
Characteristic curves (measured with HLP46) DN10



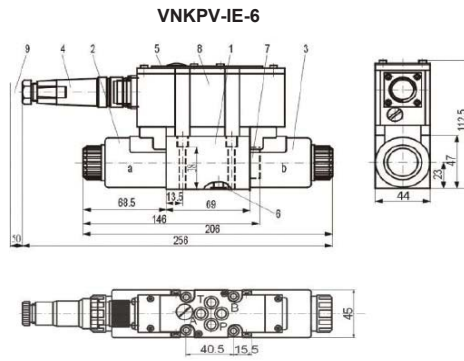
Transition functions with electrical step input signals VNKPV and VNKPV-EI



Unit dimensions size 06, Cetop 3

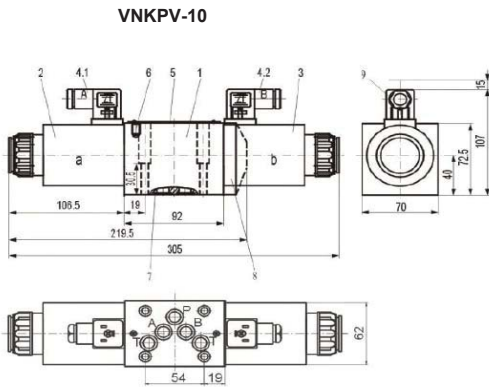


- 1 Valve body
- 2 Proportional solenoid "a"
- 3 Proportional solenoid "b"
- 4.1 4.2 Plug-in connector, colour black, separate order
- 5 Nameplate
- 6 8.73 x 1.78 I seal rings for ports A, B, P and T
- 7 Plug for valves with one solenoid (2 positions, spool type EA or JA)
- 8 Space required to remove the plug-in connector
- 9 Machined valve mounting surface, connection location to DIN 24340A, 1504401 (and) CETOP-RP 121 H
- Valve fixing screws: 4tM5x 45 DIN 912-12.9; M..=8.9 Nm

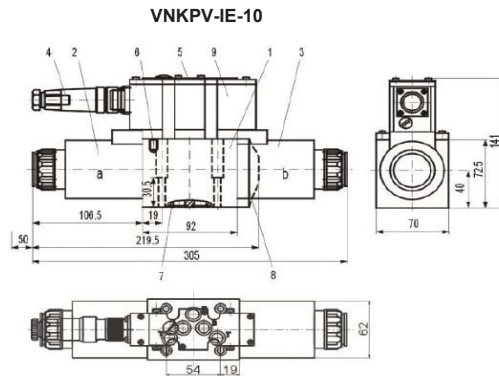


- 1 Valve body
- 2 Proportional solenoid
- 3 Proportional solenoid
- 4 Plug-in connector to E DIN 43 563-BF6-3/Pg11, 5 Nameplate
- 6 8.73 x 1.78 0 Identical seal rings for ports A, B, P and T
- 7 Plug for valves with one solenoid (2 switched positions, spool type EA or JA)
- 8 Integrated electronics
- 9 Space required for the connection cable and to remove the plug-in connector
- 10 Machined valve mounting surface, connection location

Unit dimensions size 10, Cetop 5



- 1 Valve body
- 2 Proportional solenoid "a"
- 3 Proportional solenoid "b"
- 4.1 4.2 Plug-in connector, colour black, separate order
- 5 Nameplate
- 6 Valve deflation screw
- 7 12 x 2 seal rings for ports A, B, P and T
- 8 Plug for valves with one solenoid (2 positions spool type EA or JA)
- 9 Space required to remove the plug-in connector
- 10 Machined valve mounting surface, connection location to DIN 24 340A, 1804401 (and) CETOP-RP 121 H
- Valve fixing screws: 4tM6x 40 DIN 912-12.9;



- 1 Valve body
- 2 Proportional solenoid "a"
- 3 Proportional solenoid "b"
- 4 Plug-in connector, to E DIN43563-BF6-31Pg11
- 5 Nameplate
- 6 Valve deflation screw
- 7 12 x 210 dential seal rings for ports A, B, P and T
- 8 Plug for valves with one solenoid (2 positions spool type EA or JA)
- 9 Integrated electronics
- 10 Space required for the connection cable and to remove the plug-in connector
- 11 Machined valve mounting surface, connection location to DIN 24 340A, ISO4401 (and) CETOP-RP 121 H

VINCO

