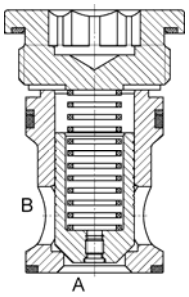
Table of Contens

we engineer your progress

1 Product Description

Cartridge valves of type CVE are a combination of CEE 2/2 way valves (size NG10-30) and a plug. For this valve kit no additional cover is needed. Due to the plug a recessed mounting position is possible.
This design is only available for valves with Hydroment standard design.



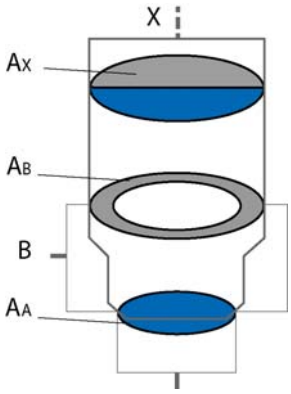
Hydroment Standard

1.1 Intended purpose

2/2 way cartridge valves could be used in multiple application. They can be used as directional valves, check valves or pressure relief valves up to complex control functionalities.

2 Function

2/2 way cartridge valves consists of a sleeve, a poppet and a spring which results in a normally closed position when the valve is unloaded. The cartridge is closed by a cover on the top. The cover connects the pilot port X with the control port of the valve. When used with a cartridge cover and corresponding pilot valve, the sum of the pressures applied to each of these control surfaces either opens or closes the cartridge valve. The surfaces A_A and A_B work to open the valve, while surface A_X together with the spring force work to close the valve. B, C and R poppets with a stepped shape have these three different surfaces while poppet A and D have only two control surfaces (A_B =0). An overview of the surfaces can be seen on the graph on the right. When in the open position, the poppet enables fluid flow in both directions, from A to B or B to A depending on the needs of the application. When the poppet is in the closed position, the valve seat design ensures a leak free separation of ports A and B:



Schnittdarstellung CEE
mit Flächenprojektion

2.1 Properties

Very high power density
compact design
High flexibility in the control block design
high reliability
Increased pollution tolerance
Short response times
Leak-free check valve function
Easy replacement of elements for Maintenance

3 Technical Data

Criteria	Unit	Value	
Design		piloted throttle-seat valve	
Direction of flow		A ↔ B (A → B)	
Installation position		any	
Porting pattern		DIN ISO 7368	
Maximum inlet pressure port A, B, X	bar	420	
Hydraulic fluid		Mineral oil (HL, HLP) conforming with DIN 51524, other fluids upon request	
NBR		hydraulic fluids based on mineral oils HFD- hydraulic fluids	
FKM		hydraulic fluids based on mineral oils HFB-, HFC- hydraulic fluids	
Hydraulic fluid temperature range			
NBR	°C	temperature range -25 bis +80	
FKM	°C	temperature range -20 bis +120	
Ambient temperature:			
NBR	°C	temperature range -25 bis +80	
FKM	°C	temperature range -20 bis +120	
Viscosity range	mm^2/s	2,8 – 500	
Contamination grade		Filtering conforming with NAS 1638, class 9, with minimum retention rate $\beta_{10} \geq 75$	
torque:	Nm	CVE 10	80
	Nm	CVE 15	200
	Nm	CVE 30	200+20

we engineer your progress

4 Order Informationen

CVE		C1				
00	01	02	03	04	05	06

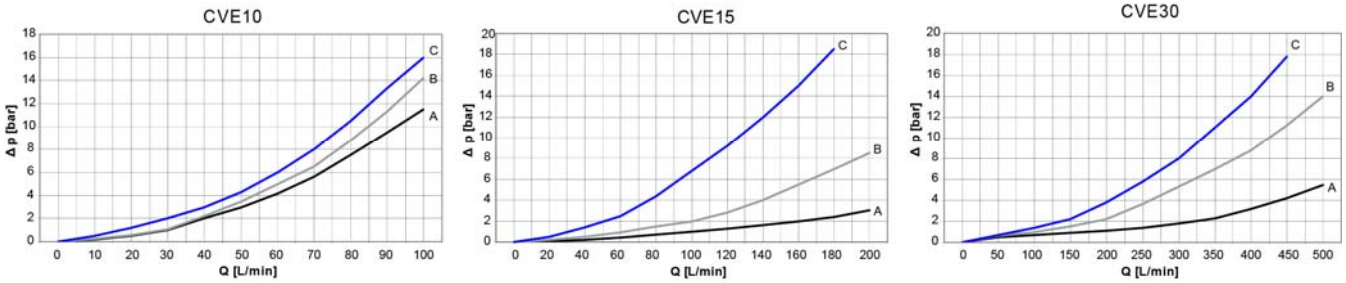
00	Product group	2/2 way cartridge valve		**CVE**
01	Design	Hydroment-Standard	10, 15, 30	
02	Hydroment-standard	Hydroment standard allows a more compact design with the same performance.		**C1**
03	Cone design	A-cone (always with sleeve A)	1:1	**A**
		D- cone (always with sleeve A)	1:1, same as A but with damping nose	**D**
		B- cone (always with sleeve B)	1:1,6 a reduced seat	**B**
		C- cone (always with sleeve B)	1:1,6 a reduced seat and with damping nose	**C**
		R- cone (always with sleeve B)	1:1,6 a reduced seat	**R**
04	Spring	**Cone A, D**	**Cone B, C, R**	
		0,6 bar	1,0 bar	**S**
		1,2 bar	2,0 bar	**T**
		2,4 bar	4,0 bar	**U**
		3,7 bar	6,0 bar	**V**
05	Seal	NBR	temperature range -25°C bis +80°C	**N**
		FKM / Viton	temperature range -20°C bis +120°C	**V**
06	nozzle in cone	Cone without diaphragm Cone with nozzle	Cone with plug	**K00**
			Cone with thread, without nozzle	**K99**
			Cone without hole	**KOB**
			Nozzle size 0.6	**K06**
			Nozzle size 0.8	**K08**
			Nozzle size 1.0	**K10**
			Nozzle size 1.2	**K12**
			Nozzle size 1.5	**K15**
			Nozzle size 2.0	**K20**
			Nozzle size 2.2	**K22**
			Nozzle size 2.5	**K25**

XXX – permanently predetermined characteristics **XXX** – characteristics selectable by customer ■ available ○ not available
Different configurations are unfortunately not implementable for technical reasons. Please let us know if you have questions

we engineer your progress

5 Description of Characteristics in Accordance with Type Code

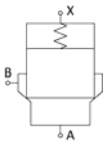
5.1 Characteristics 1: Design

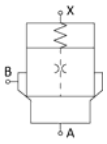


(A) cone A, (B) cone B, (C) cone C

5.2 Characteristics 2: Cone design

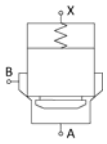
Druckventilfunktion
cone A: control area ratio 1:1

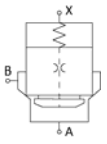




Nozzle for internal control oil supply between A and X

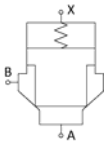
cone D with additional damping nose:
control area ratio 1:1

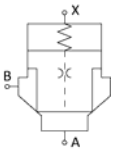




Nozzle for internal control oil supply between A and X

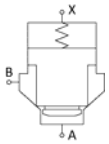
Directional valve function
conel B: control area ratio 1:1,6

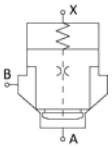




Nozzle for internal control oil supply between A and X

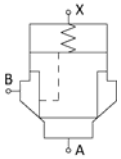
cone C with additional damping nose:
control area ratio 1:1,6





Nozzle for internal control oil supply between A and X

Check valve function
cone R: control area ratio 1:1,6



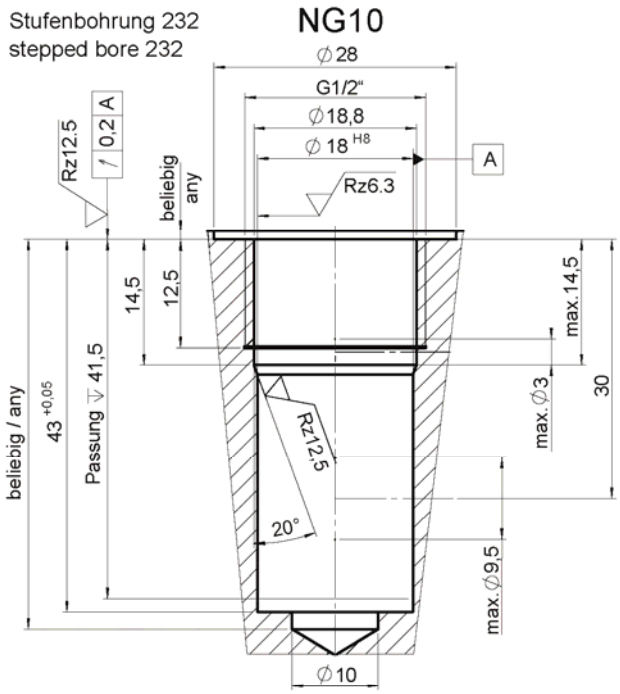
Nozzle for internal control oil supply between B and X

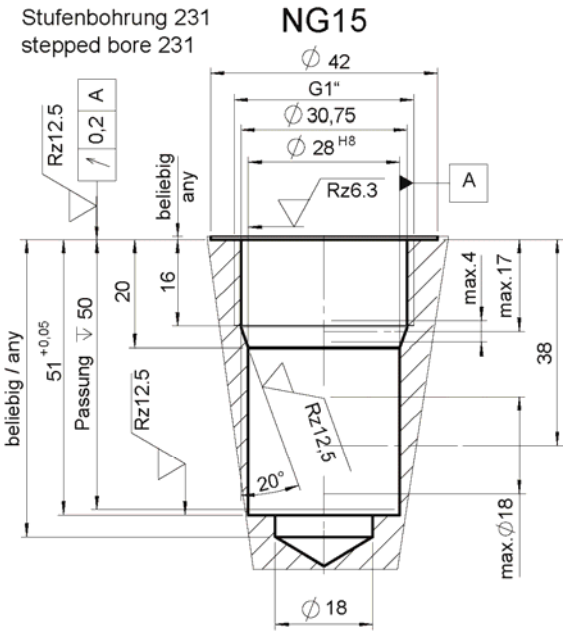
6 Installation

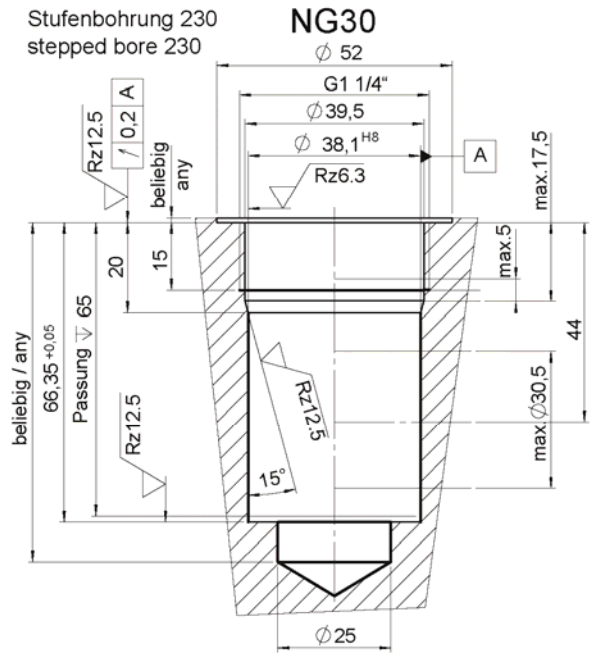
6.1 General remarks

Observe all installation and safety information of the machine manufacturer.
Only technically permitted changes may be made on the machine.
The user has to ensure that the device is suitable for the respective application.
Use exclusively for the range of application specified by the manufacturer.
Depressurize the hydraulic system prior to installation or dismantling.
May only be adjusted by technical staff.
May only be opened with the approval of the manufacturer, otherwise the warranty is invalidated.
The enclosed connection recommendation is without guarantee. The functionality and the technical specifications of the machine require checking.

6.2 Stepped bore Hydroment-standard



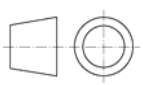




7 Notes, Standards and Safety Requirements

7.1 General remarks

The views in drawings are shown in accordance with the European normal projection variant
A comma (,) is used as a decimal point in drawings
All dimensions are given in mm



7.2 Standards

The following standards must be observed when installing and operating the valve:

DIN EN ISO 13732-1:2008-12, Temperatures on accessible surfaces