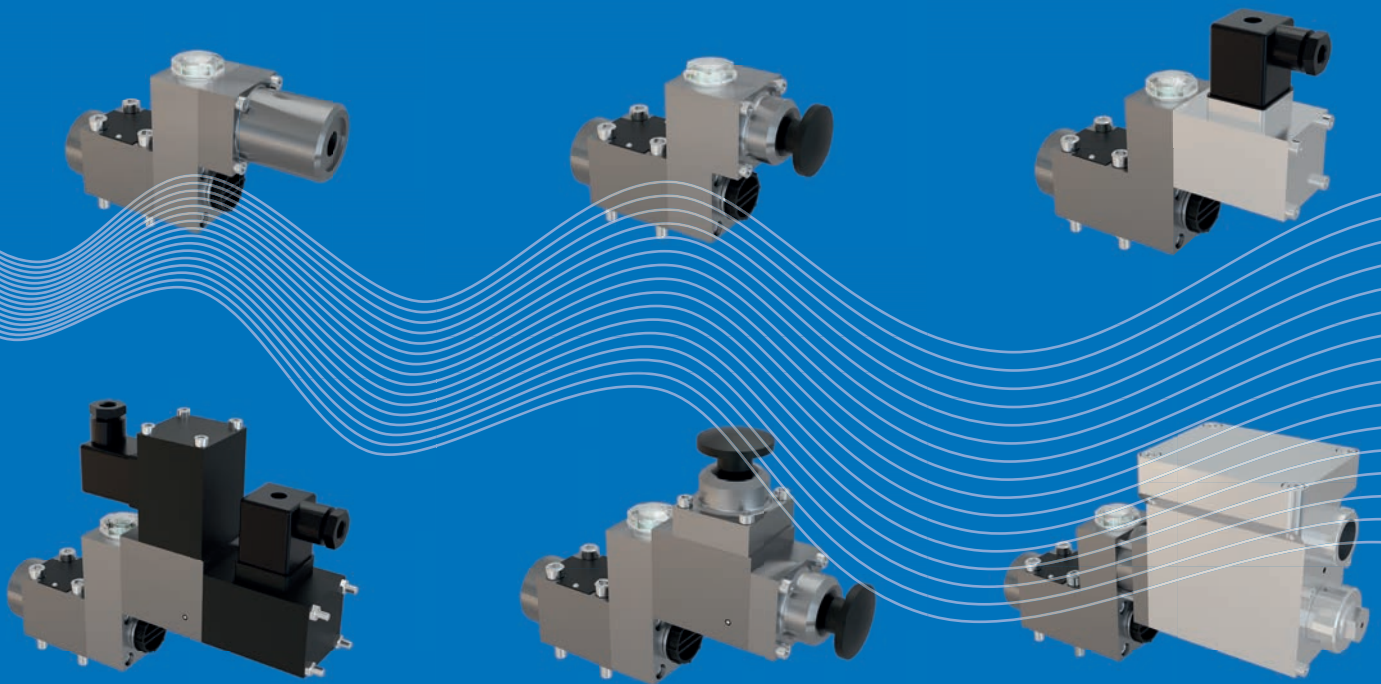




Water Hydraulic Valves and Control Systems



Hauhinco	4	H
Directly actuated seat valves	12	1
Proportional seat valves	70	2
2/2- and 3/2-way valves actuated	78	3
Control valves proportional actuated	136	4
Pressure relief valves	158	5
Safety valves	178	6
Pressure reducing valves	180	7
Non-return valves	188	8
Pilot operated non-return valves	202	9
Throttle-non-return valves	206	10
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High Pressure Hydraulic Accu- and Main Shut-off Control	236	15
Digital controller RE 4	238	16
Hauhinco - Our quality is your market advantage	242	17



From a mining supplier to an expert for water-hydraulic solutions

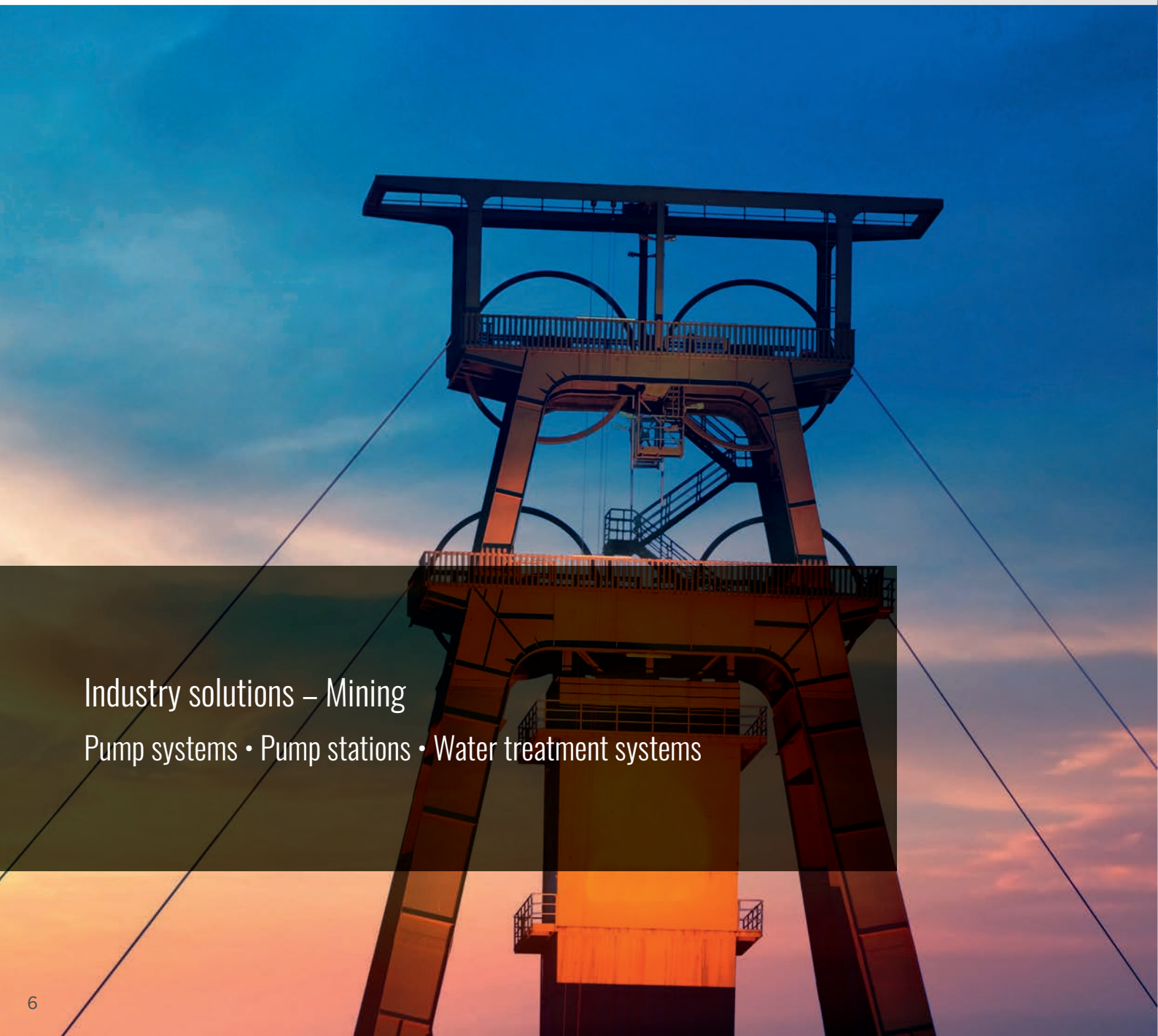
Tradition and innovation go hand in hand at Hauhinco. Founded in 1908 in Sprockhövel, Germany in the cradle of Ruhr mining, Hauhinco has remained true to its roots – up to the present time. For over 114 years, the company has adapted to many changes in structure and circumstances and continually brought new, innovative products onto the market.

This experience makes Hauhinco unique in the market place. We have been developing and producing high-pressure plunger pumps for over 50 years and water-hydraulic valves and controls for over 30 years. This know-how makes Hauhinco the partner for today's sustainable and intelligent water-hydraulic solutions.

Turnkey, all from a single source

Hauhinco is represented in a large number of industries with water hydraulic components and system solutions. In particular with comprehensive engineering solutions Hauhinco creates high quality systems that set standards.

Hauhinco offers complete engineering solutions in the area of modernization, expansion and also in the design of new control systems and drives for water-hydraulic presses.



Industry solutions – Mining
Pump systems • Pump stations • Water treatment systems



Industry solutions - Industrial
Control systems for drives and presses • Descaling systems

Industry solutions

Numerous amounts of large-scale projects realized with equipment manufacturers and global companies from the steel, non-ferrous metal, light metal and automotive industry reflect our competence and the confidence placed in our products and services. Our control systems and drives distinguish themselves through safety, precision, reliability, efficiency and repeat accuracy and are tailored to the customer-specific processes and needs.

Because of this, the product quality is sustainably improved and the process and work safety regulations are fulfilled to 100%.

Using the power of water

As one of the most powerful elements in the world, a variety of reasons ensure that even today water is an important and indispensable hydraulic medium. Water hydraulics have been in daily use for decades in underground longwall mining and in numerous industrial applications. Strict regulations and laws make environmentally friendly, safe, clean and hygienic hydraulic systems indispensable in many sensitive processes, production facilities and applications.

Continuous further development, the ready availability of the medium water and also the low life cycle costs (LCC) make water-hydraulics a commercially interesting alternative. Particularly storage, cleaning, disposal and insurance conditions are far more attractive.

Water-hydraulic engineering competence

Through a high degree of expertise in engineering science we are developing powerful, intelligent and environmentally friendly water-hydraulic systems for every requirement with the medium water. Thanks to our decades of expert knowledge and a well-founded process understanding of a diversity of markets, we know the high demands in mining and industry. This first-hand experience enables us to speak the language of our customers and to develop tailor-made systems.

Research & development

Research into new and existing areas, the development of new products as well as continuous further development of existing products, services and processes are of major significance at Hauhinco. For this purpose we regularly exchange information with our customers, other organisations, institutes and universities. New findings from a very wide range of areas often promote new ways of thinking and approaches and as a consequence flow into the development of our water-hydraulic products and systems.



Cross-sector process understanding
for customer-specific **engineering solutions**

Water Hydraulic Valves

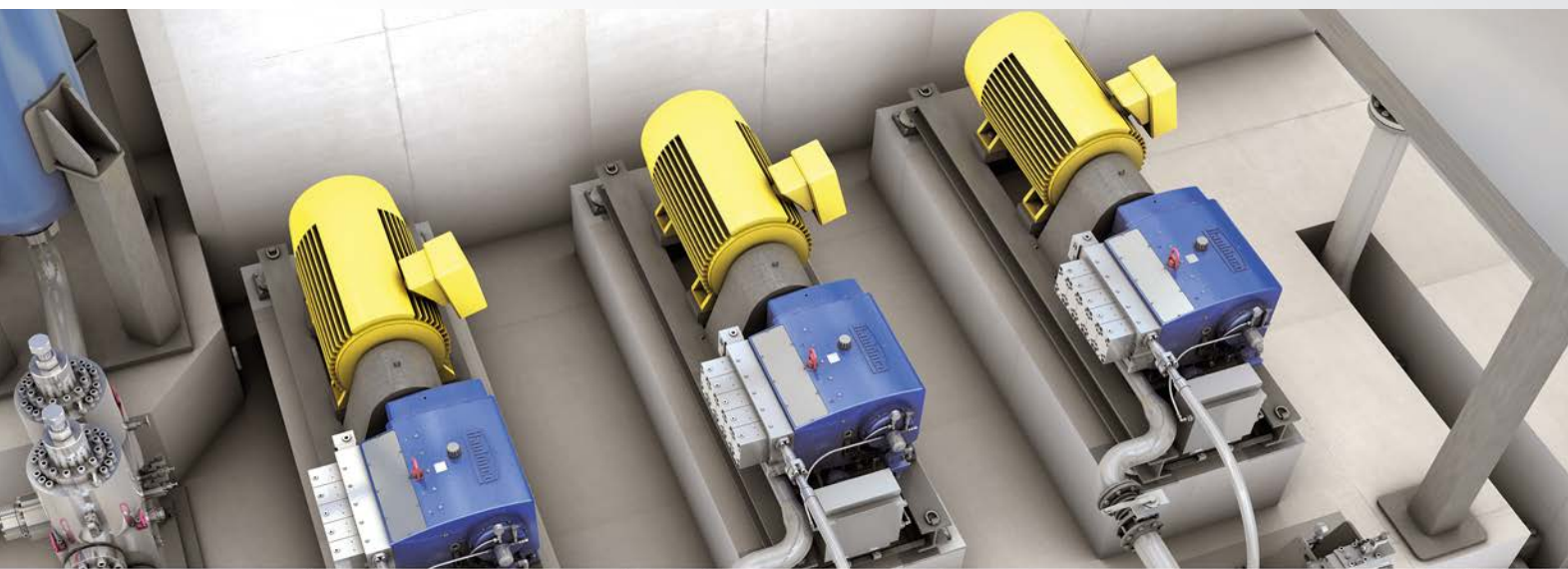
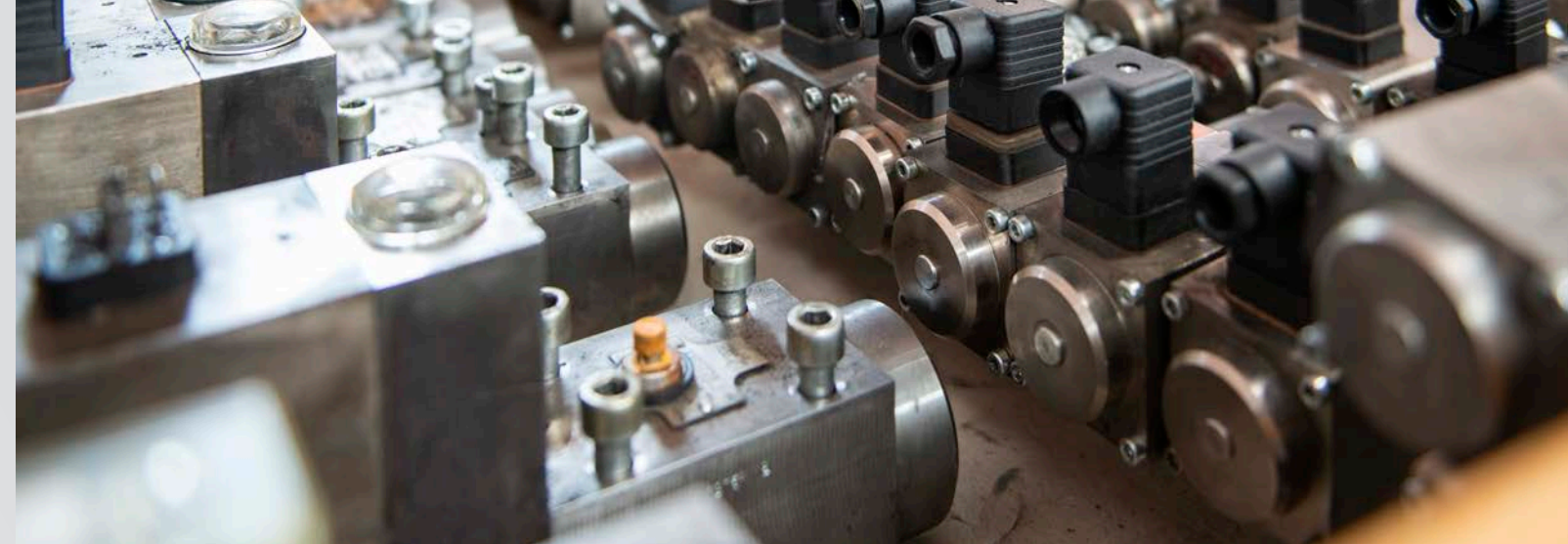
A complete valve product portfolio, as well as many years of experience in water hydraulics guarantee an optimal selection for numerous applications. The volumetric flow rate is up to 30 000 dm³/min at operating pressures of up to 800 bar.

For numerous applications

Along with control blocks (controls, manifolds), control technology and modular fluid systems, valves are among the most important components in water hydraulic installations.

They perform a wide variety of tasks: they reliably control, regulate and limit hydraulic flow rates – even in the toughest conditions under high pressure..

A complete valve product portfolio, as well as many years of experience in water hydraulic engineering guarantee an optimal selection for numerous applications, especially for press controls (manifolds, valve blocks) for water hydraulic presses off all kinds. Like all Hauhinco products, all valves are subjected to a complete function test prior to delivery.



Fluids

- HFA/HFC fluids
- Non-oily water/clear water
- Mine water
- Industrial water
- Descaling water
- Neutral fluids with a viscosity of 0.5 – 4.0 mm²/s

Range of Applications

- High Pressure Supply
- Water Spraying and Cooling
- Hydraulic Drives (Water hydraulics, Emulsion hydraulics)
- Press Drives
- Descaling
- Pressurized Water Systems
- Pump Stations
- Cleaning

Key data at a glance

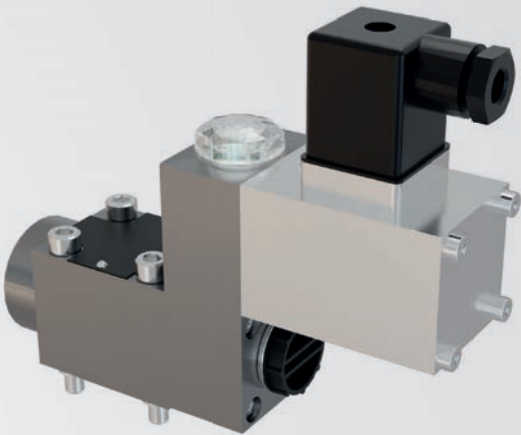
- Flow rate up to 30,000 dm³/min
- Drive powers up to 800 bar

Directly actuated seat valves

2/2- and 3/2-way

Features

- Directly actuated directional seat valve controlling pressurised media.
- The valve seat seals hermetically preventing internal leaks.
- All parts are made of corrosion-resistant materials, and they are easily replaceable.
- Valve design in a structural plate form
- On request, the valve can be equipped with other actuations than the electromagnet, e.g. hydraulic or pneumatic cylinder actuation, manual pushbutton operation
- In addition, the individual actuations can be supplemented with a maintained-contact function

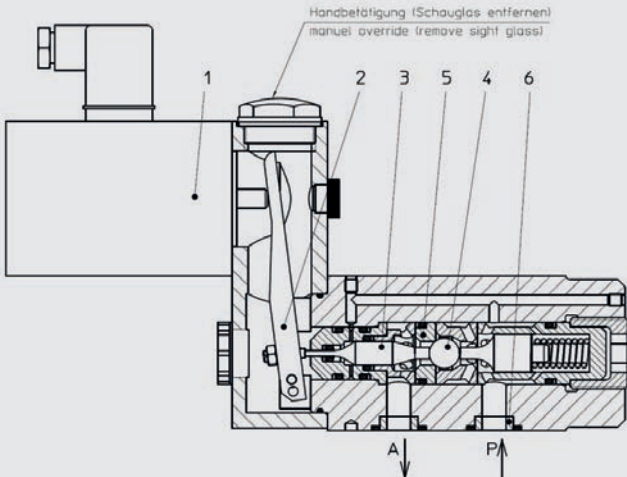


Function of 2/2-way valve

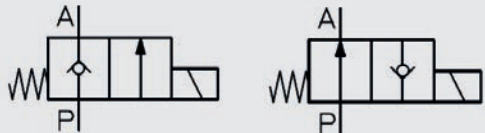
The force (1), generated by the actuation, acts through the lever (2), the tappet (3) on the ball (4) and presses it out of the valve seat (5). This is used to connect lines P and A, see Example. The ring (6) supports the flange seal from the inside. The volume flow is limited by the entire flow resistance.

Depending on the arrangement of the valve seat (5) and ball (4) the valve will have the basic position normally closed (NC) or normally open (NO).

Example 2/2-way valve



Symbol



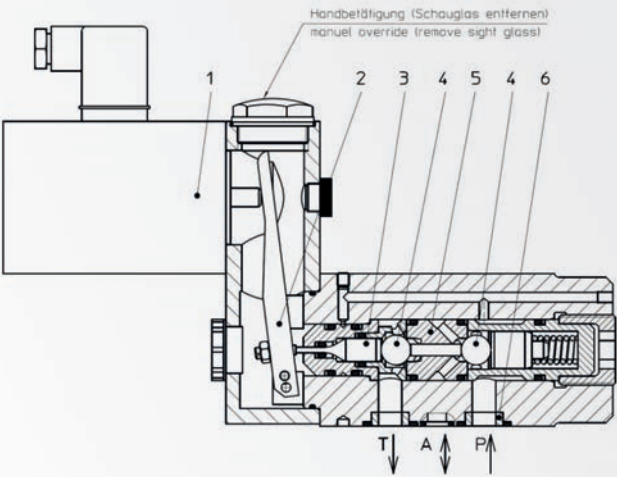
Function of 3/2-way valve

The force (1), generated by the actuation, acts through the lever (2), the tappet (3) on the ball(s) (4) and presses it out of the right valve seat (5) and into the left valve seat (5). This is used to connect lines P and A and shut off line T, see Example. The ring (6) supports the flange seal from the inside. The volume flow is limited by the entire flow resistance.

The 3/2-way valve is provided with a „negative overlap“. During the changeover process, connections P, A and T are briefly connected with each other. The changeover occurs so fast that the hydraulic effects are negligible. By design, a 3/2-way valve always requires the connection of a T-connector; only then a proper switching function can be ensured.

Depending on the design of the valve insert a valve with the basic position „A→T NO“ (lines A and T are connected) or „P→A NO“ (lines P and A are connected) is provided.

Example 3/2-way valve



Symbol



2/2-way seat valves

Image	Nominal size	max. Flow rate [l/min]	max. Operating pressure [bar]	Type	Actuation	Page
	DN3	15	100	Plate-type	solenoid actuation	16
	DN3	10	320	Plate-type	solenoid actuation	20
	DN3	10	320	Plate-type	solenoid actuation with a catch	20
	DN3	10	320	Plate-type	pushbutton control with a catch	20
	DN3	10	700	Plate-type	solenoid actuation	28
	DN3	10	1000	Plate-type	solenoid actuation	32
	DN3	10	320	Plate-type	solenoid actuation EX	34
	DN6	30	100	Plate-type	solenoid actuation	38
	DN6	15	320	Plate-type	solenoid actuation	42
	DN6	15	320	Plate-type	solenoid actuation with a catch	42
	DN6	15	320	Plate-type	pushbutton control with a catch	42
	DN6	15	320	Plate-type	pushbutton control	42
	DN6	15	320	Plate-type	cylinder actuation	42
	DN6	15	320	Plate-type	solenoid actuation with a catch	42
	DN6	15	700	Plate-type	solenoid actuation	50
	DN10	60	100	Plate-type	solenoid actuation	54

Technical changes reserved.
All data and figures are considered non-binding.

2/2-way seat valves

Image	Nominal size	max. Flow rate [l/min]	max. Operating pressure [bar]	Type	Actuation	Page
	DN10	40	320	Plate-type	solenoid actuation	58
	DN10	40	320	Plate-type	cylinder actuation	58
	DN10	40	320	Plate-type	pushbutton control with a catch	58
	DN10	40	700	Plate-type	solenoid actuation	66

3/2-way seat valves

Image	Nominal size	max. Flow rate [l/min]	max. Operating pressure [bar]	Type	Actuation	Page
	DN3	15	100	Plate-type	solenoid actuation	16
	DN3	10	320	Plate-type	solenoid actuation	20
	DN3	10	320	Plate-type	pushbutton control	20
	DN3	10	320	Plate-type	cylinder actuation	20
	DN3	10	320	Plate-type	solenoid actuation with a catch	20
	DN3	10	320	Plate-type	pushbutton control with a catch	20
	DN3	10	700	Plate-type	solenoid actuation	28
	DN3	10	480	Plate-type	solenoid actuation ATEX	36
	DN6	30	100	Plate-type	solenoid actuation	38
	DN6	15	320	Plate-type	solenoid actuation	42

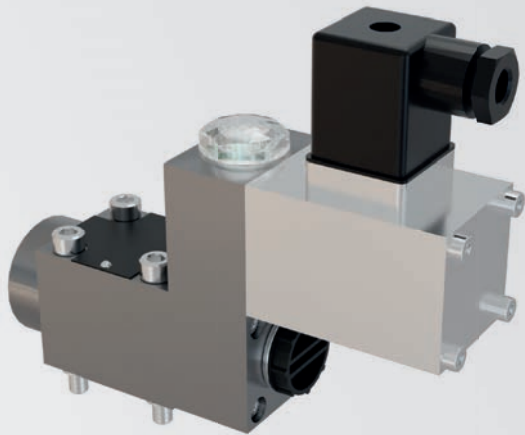
3/2-way seat valves

Image	Nominal size	max. Flow rate [l/min]	max. Operating pressure [bar]	Type	Actuation	Page
	DN6	15	320	Plate-type	pushbutton control	42
	DN6	15	320	Plate-type	Zylinderbetätigung	42
	DN6	15	320	Plate-type	roller actuation	42
	DN6	15	320	Plate-type	solenoid actuation with a catch	42
	DN6	15	320	Plate-type	pushbutton control with a catch	42
	DN6	15	700	Plate-type	solenoid actuation	50
	DN10	60	100	Plate-type	solenoid actuation	54
	DN10	40	320	Plate-type	solenoid actuation	58
	DN10	40	320	Plate-type	cylinder actuation	58
	DN10	40	320	Plate-type	roller actuation	58
	DN10	40	320	Plate-type	solenoid actuation with a catch	58
	DN10	40	320	Plate-type	pushbutton control with a catch	58
	DN10	40	700	Plate-type	solenoid actuation	66

Directly actuated seat valves

DN3 | PN100 | 15l/min

2/2- and 3/2-ways



Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	1,9 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	100bar
max. operating pressure of connector A	100bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see order information
max. volume flow P→A	15 l/min
max. volume flow A→T	15 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinc requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	21 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M6
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-Anzeige + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN3 | PN100 | 15 l/min, solenoid actuation

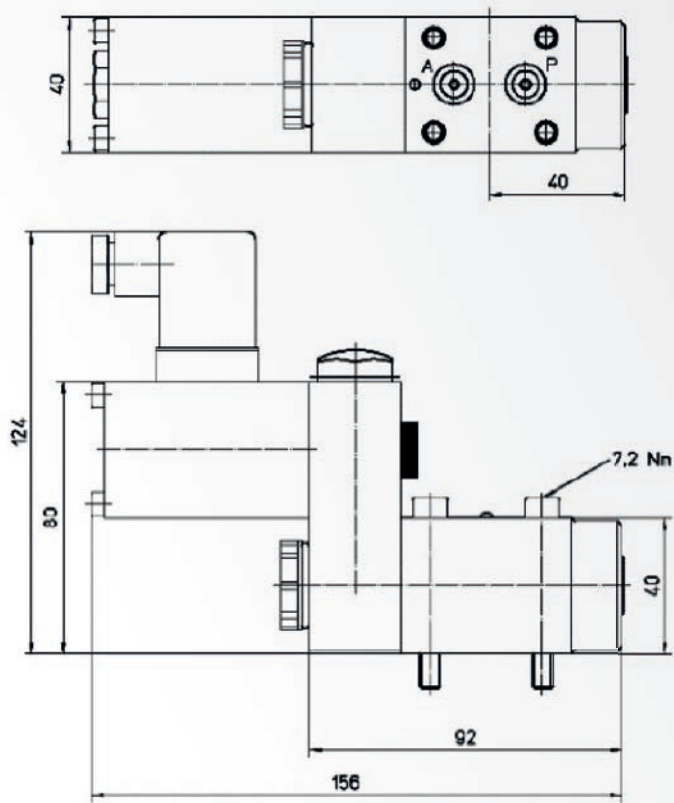
Designation	Basic position	Voltage	Article number
2/2-way valve DN3 PN100	NC	24 VDC	on request
	NC	110 VAC	on request
	NC	230 VAC	on request
2/2-way valve DN3 PN100	NO	24 VDC	on request
	NO	110 VAC	on request
	NO	230 VAC	on request

3/2-way valve DN3 | PN100 | 15 l/min, solenoid actuation

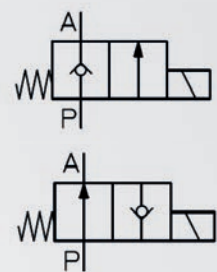
Designation	Basic position	Voltage	Article number
3/2-way valve DN3 PN100	A→T NO	24 VDC	6576257
	A→T NO	110 VAC	on request
	A→T NO	230 VAC	on request
3/2 -way valve DN3 PN100	P→A NO	24 VDC	6576265
	P→A NO	110 VAC	on request
	P→A NO	230 VAC	on request

2/2-way valve DN3 | PN100 | 15 l/min, solenoid actuation

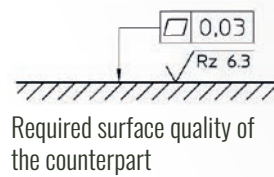
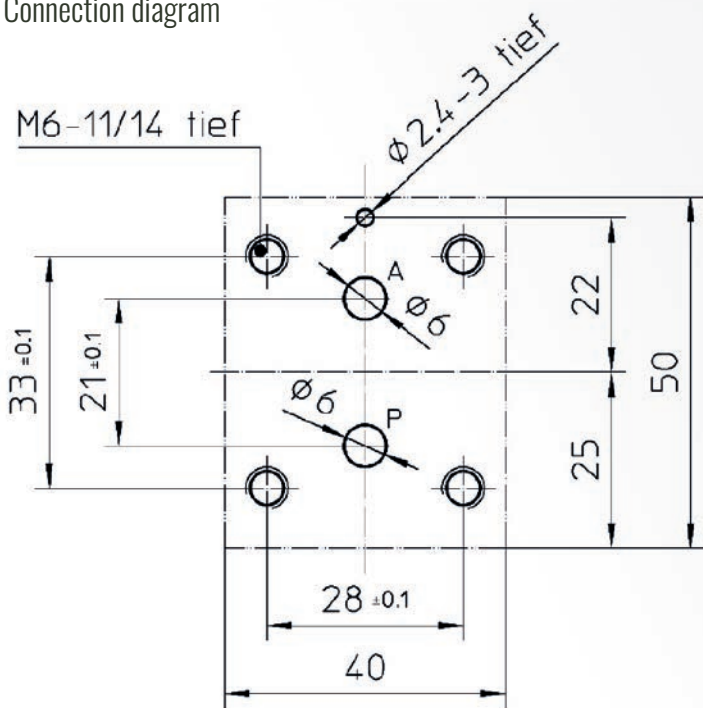
Dimensions



Symbol

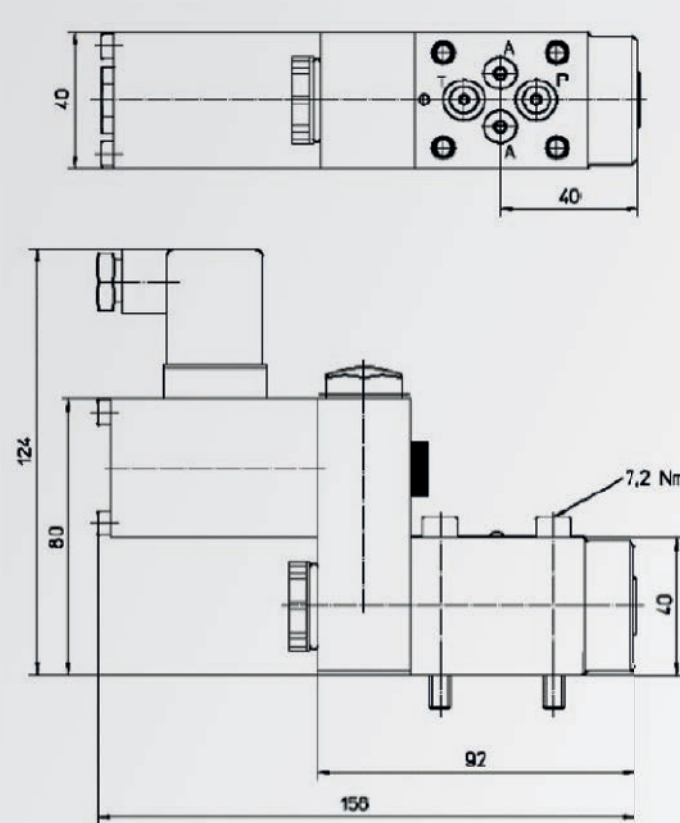


Connection diagram

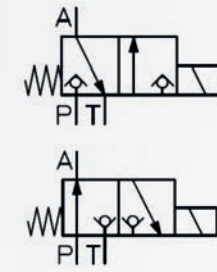


3/2-way valve DN3 | PN100 | 15 l/min, solenoid actuation

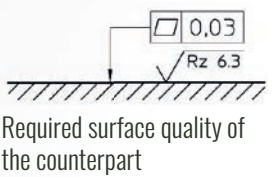
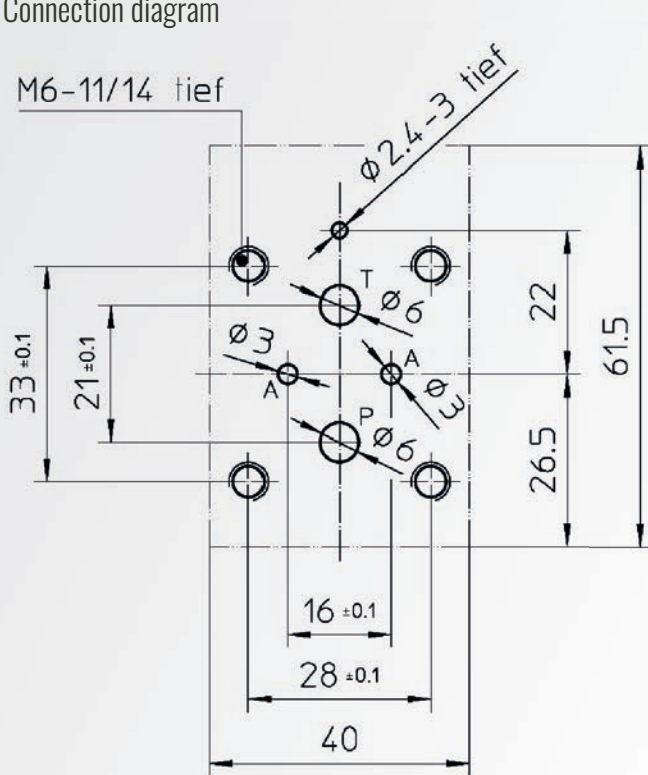
Dimensions



Symbol



Connection diagram



Technical changes reserved.
All data and figures are considered non-binding.

1

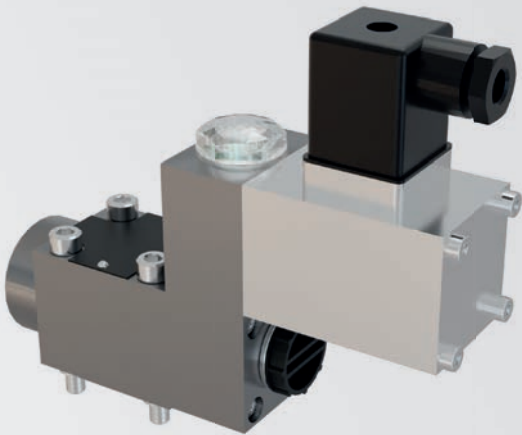
Directly actuated seat valves
DN3 | PN320 | 10l/min

2/2- and 3/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	320bar
max. operating pressure of connector A	320bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	10 l/min
max. volume flow A→T	10 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinco requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	21 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz



Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M6
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-Anzeige + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN3 | PN320 | 10l/min

Designation	Basic position	Voltage	Article number
2/2 -way valve DN3 PN320, solenoid actuation, weight: 1,9kg	NC	24 VDC	6545572
	NC	110 VAC	6545610
	NC	230 VAC	6545653
2/2 -way valve DN3 PN320, solenoid actuation, weight: 1,9kg	NO	24 VDC	6545580
	NO	110 VAC	6545629
	NO	230 VAC	6545661
2/2 Wegeventil DN3 PN320, solenoid actuation with a catch, weight: 3,5kg	NC	24VDC	6574831
	NO	24VDC	6574858

Designation	Basic position	approx. manual force	Article number
2/2 -way valve DN3 PN320, pushbutton control with a catch, weight: 2,8kg	NC	30N	6568343
	NO	30N	6568351

3/2 -way valve DN3 | PN320 | 10l/min

Designation	Basic position	Voltage	Article number
3/2-way valve DN3 PN320, solenoid actuation, weight: 1,9kg	A→T NO	24 VDC	6545599
	A→T NO	110 VAC	6545637
	A→T NO	230 VAC	6545688
3/2 -way valve DN3 PN320, solenoid actuation, weight: 1,9kg	P→A NO	24 VDC	6545602
	P→A NO	110 VAC	6545645
	P→A NO	230 VAC	6545696
3/2 -way valve DN3 PN320, solenoid actuation with a catch, weight: 3,5kg	A→T NO	24 VDC	6574866
	P→A NO	24 VDC	6574874
	P→A NO	230 VAC	6577938

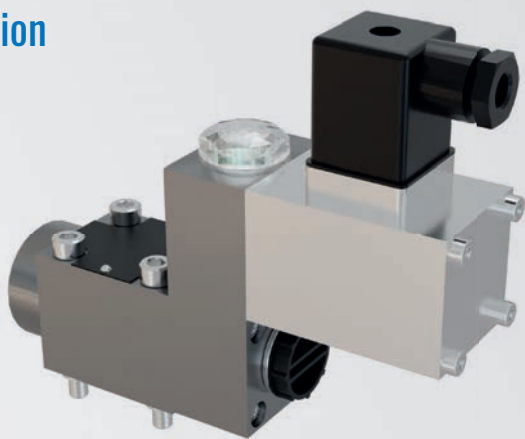
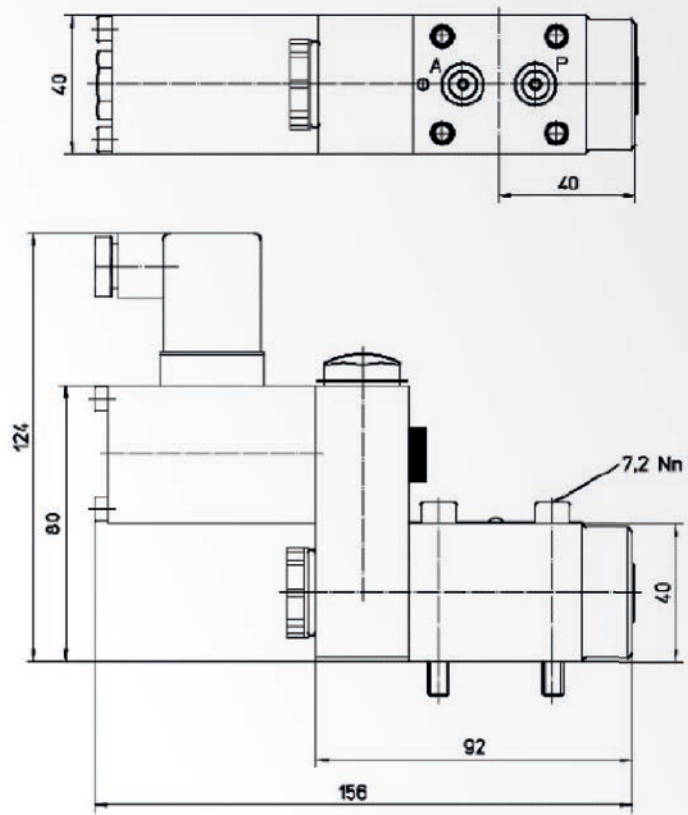
Designation	Basic position	adm. control pressure „Z“	Article number
3/2 -way valve DN3 PN320, cylinder actuation pneumatic, hydraulic, weight: 1,6kg	A→T NO	3-320bar	6547818
	P→A NO	3-320bar	6547834

approx. manual force	Basic position	approx. manual force	Article number
3/2 -way valve DN3 PN320, pushbutton control, weight: 1,6kg	A→T NO	30N	6570976
	P→A NO	30N	6570984
3/2 Wegeventil DN3 PN320, pushbutton control with a catch, weight: 2,8kg	A→T NO	30N	6568378
	P→A NO	30N	6568386

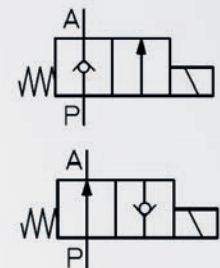
Technical changes reserved.
All data and figures are considered non-binding.

2/2-way valve DN3 | PN320 | 10l/min, solenoid actuation

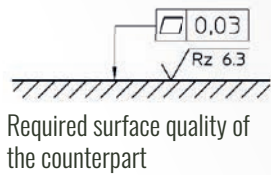
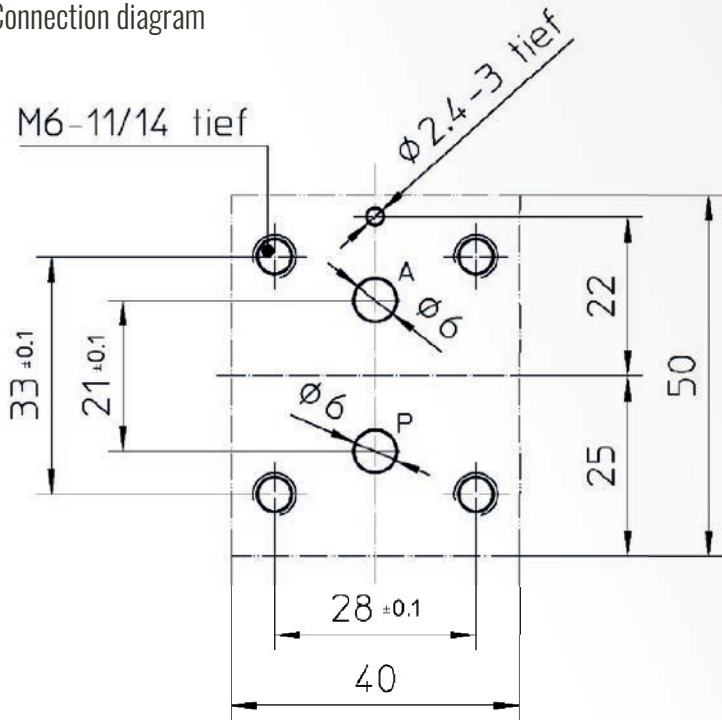
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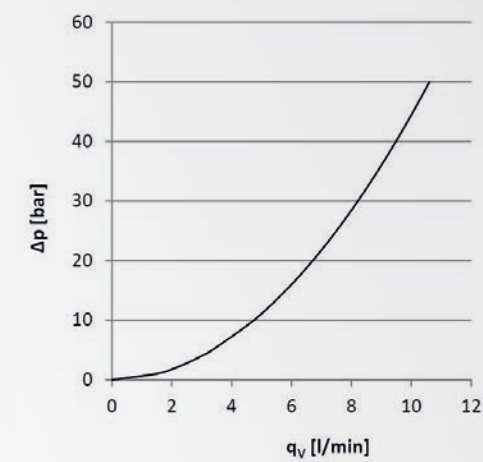
Symbol



Connection diagram

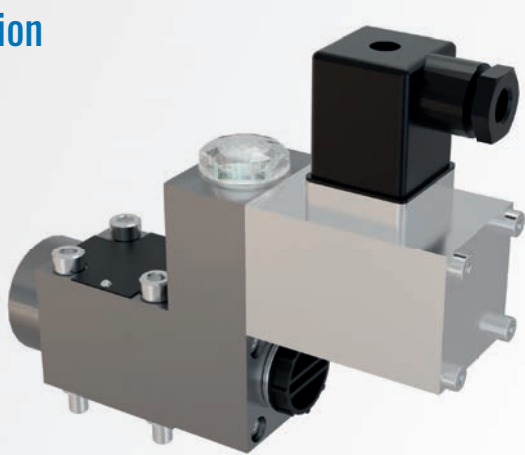
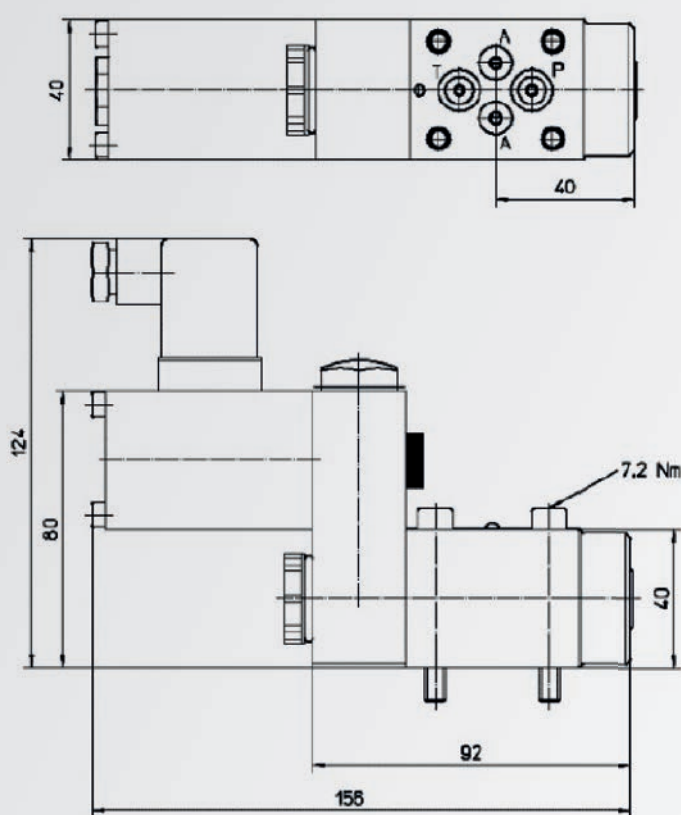


$\Delta p - q_v$ characteristic curve

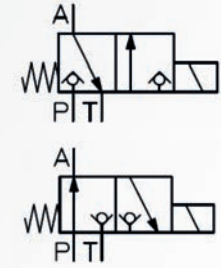


3/2-way valve DN3 | PN320 | 10l/min, solenoid actuation

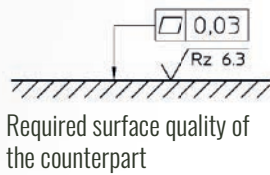
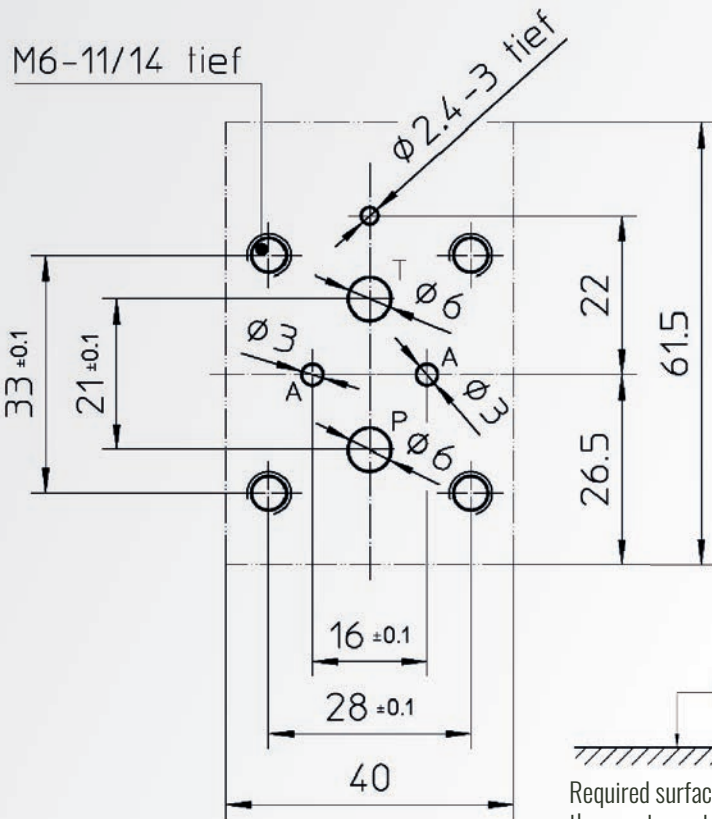
1 Dimensions



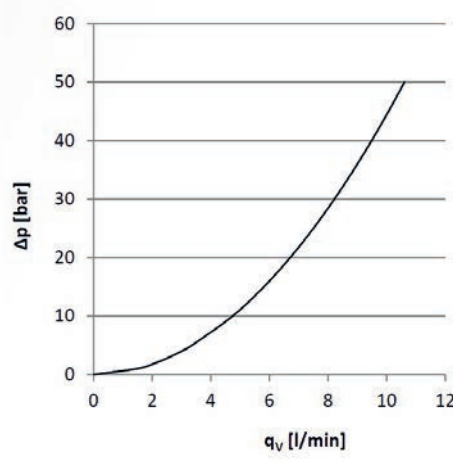
Symbol



Connection diagram

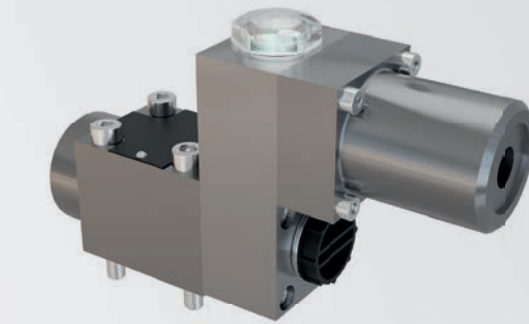
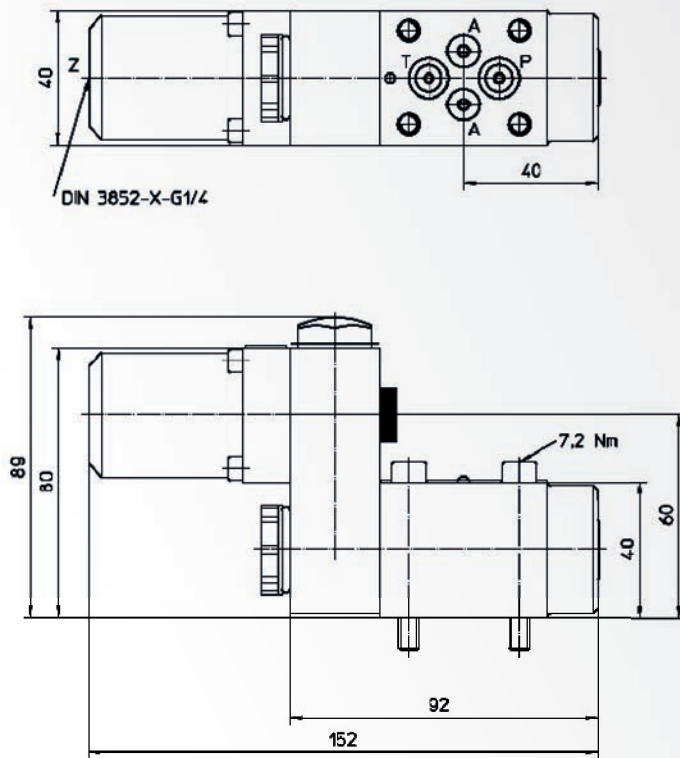


$\Delta p - q_v$ characteristic curve

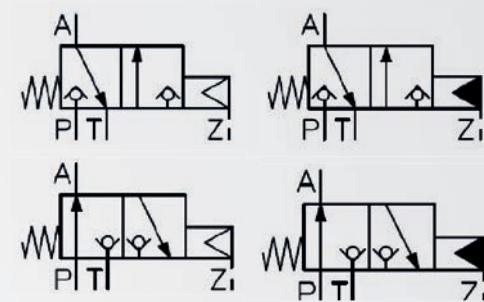


3/2-way valve DN3 | PN320 | 10l/min, cylinder actuation

Dimensions

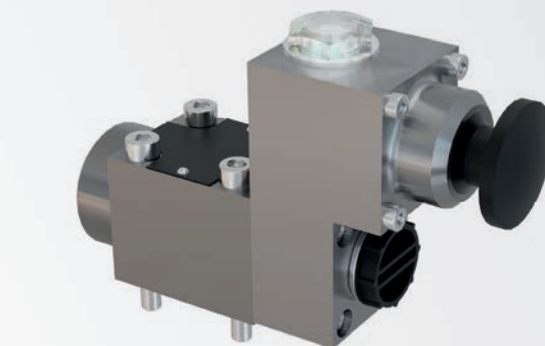
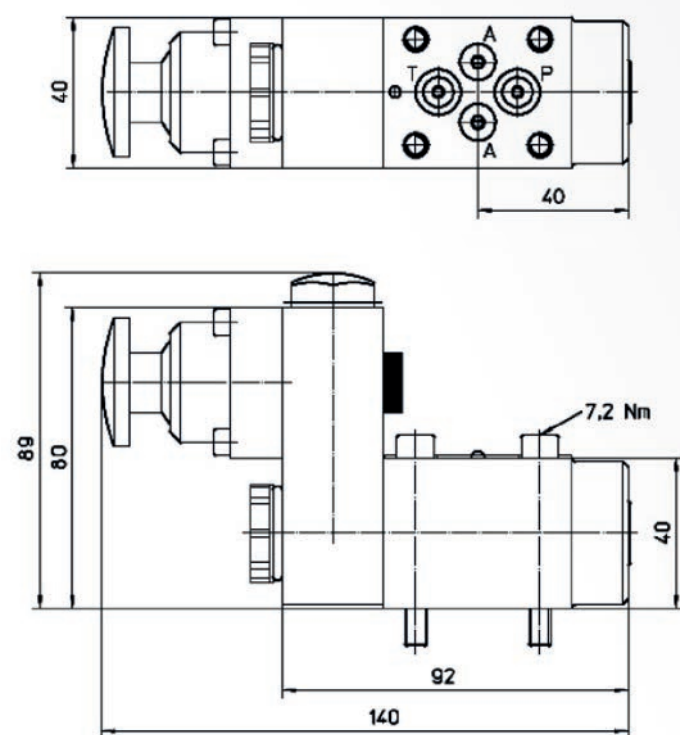


Symbol

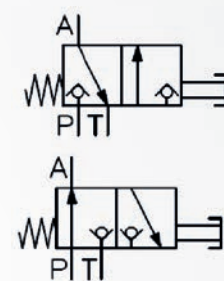


3/2-way valve DN3 | PN320 | 10l/min, pushbutton control

Dimensions

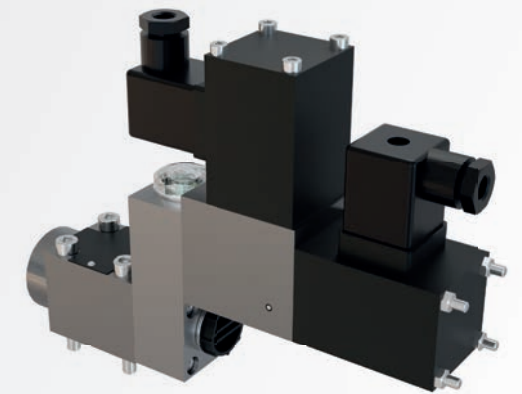
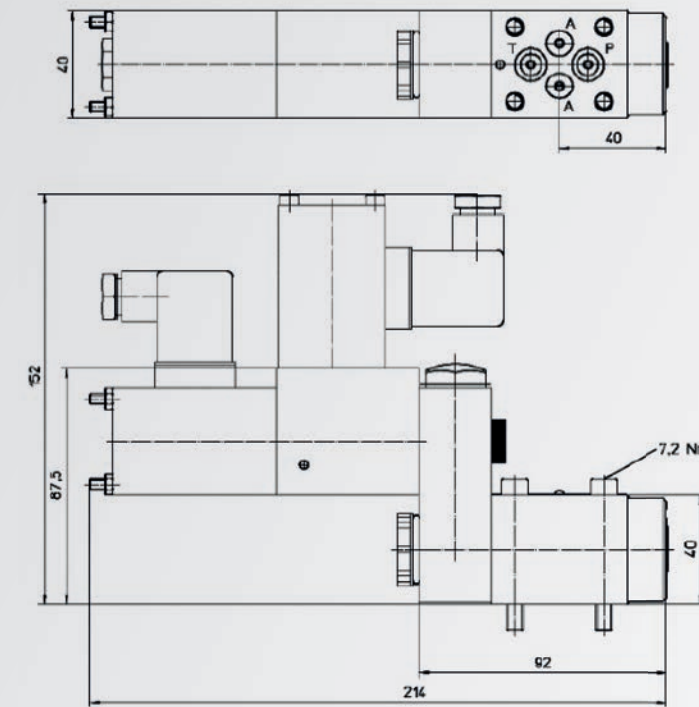


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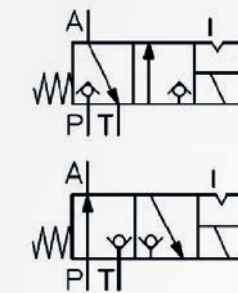


3/2-way valve DN3 | PN320 | 10l/min, solenoid actuation with a catch

Dimensions

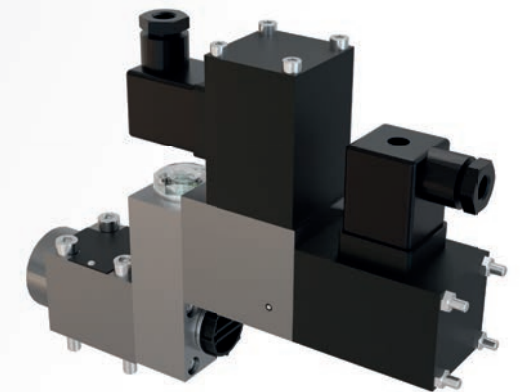
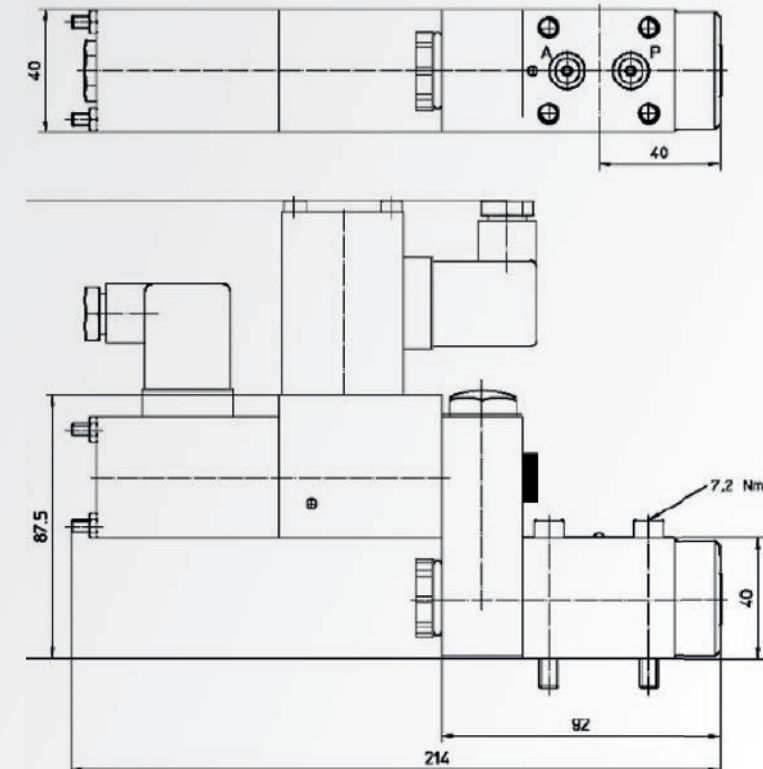


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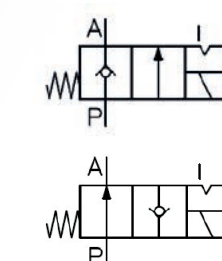


2/2-way valve DN3 | PN320 | 10l/min, solenoid actuation with a catch

Dimensions

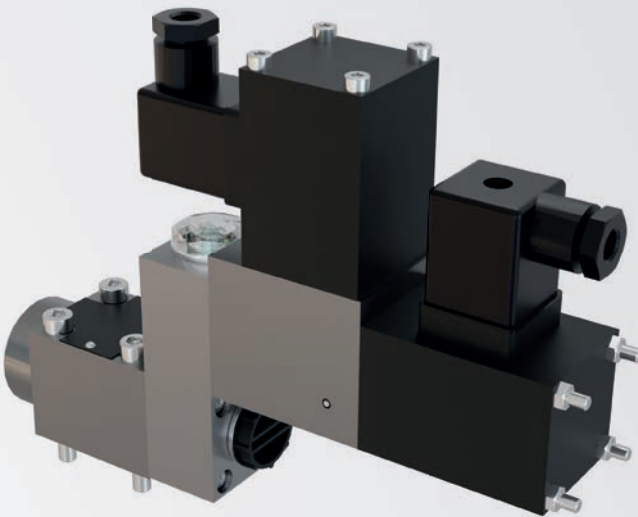


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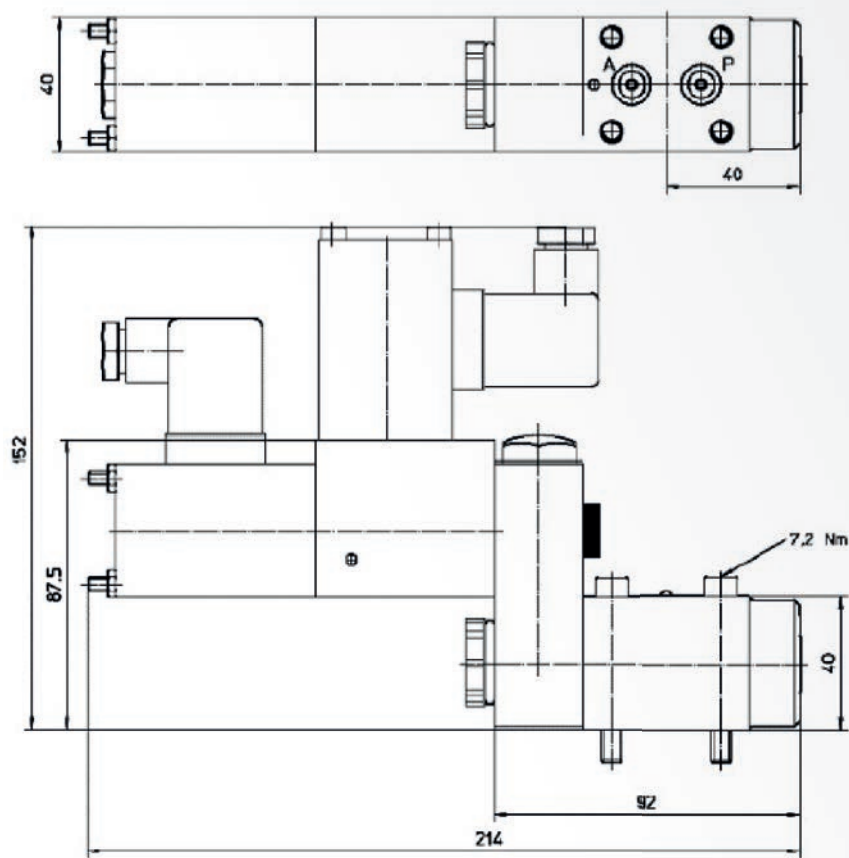


2/2-way valve DN3 | PN320 | 10l/min, solenoid actuation with a catch

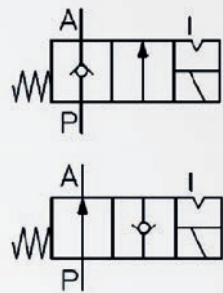
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Dimensions

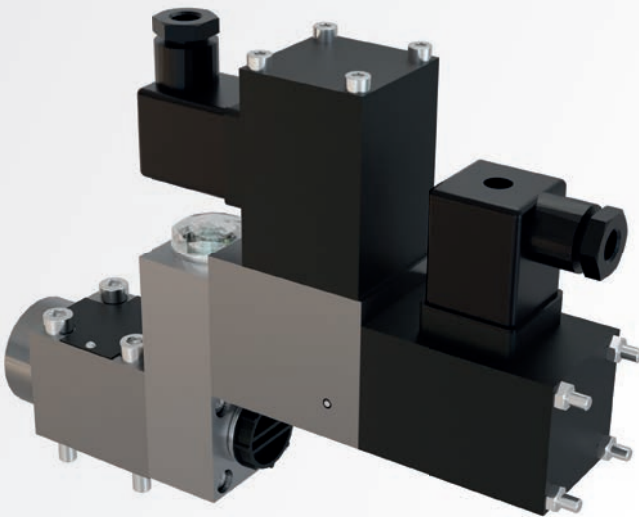


Symbol

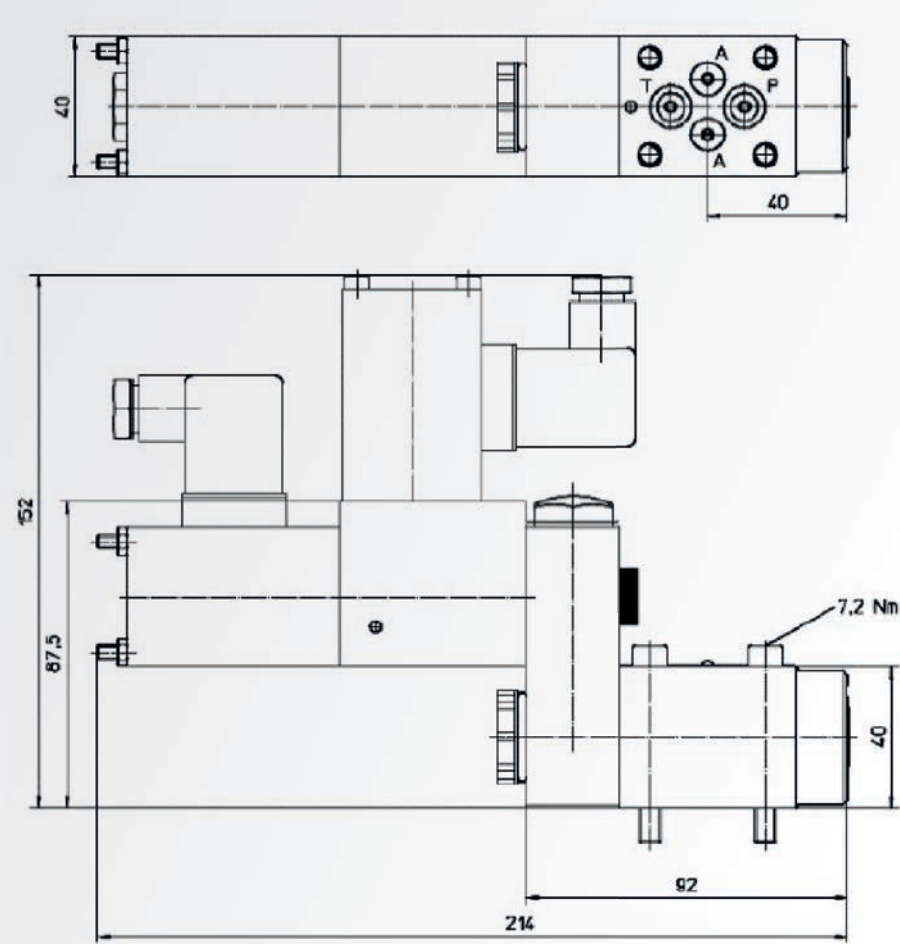


3/2-way valve DN3 | PN320 | 10l/min, solenoid actuation with a catch

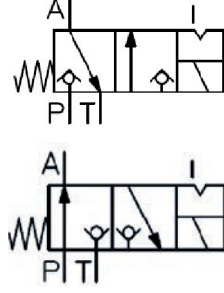
1



Dimensions



Symbol



1

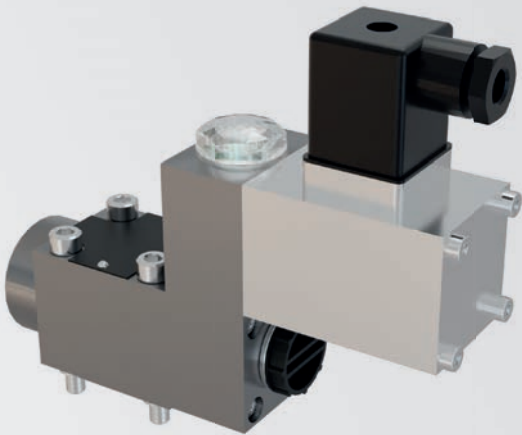
Directly actuated seat valves

DN3 | PN700 | 10l/min

2/2- and 3/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C



General	
Weight	1,9 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	FKM, PTFE
Hydraulic	
max. operating pressure of connector P	700bar
max. operating pressure of connector A	700bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	10 l/min
max. volume flow A→T	10 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhincó requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	21 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M6
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-Anzeige + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN3 | PN700 | 10l/min, solenoid actuation

Designation	Basic position	Voltage	Article number
2/2 -way valve DN3 PN700	NC	24 VDC	6545742
	NC	110 VAC	6545785
	NC	230 VAC	6545823
2/2 -way valve DN3 PN700	NO	24 VDC	6545750
	NO	110 VAC	6545793
	NO	230 VAC	6545831

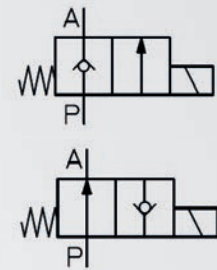
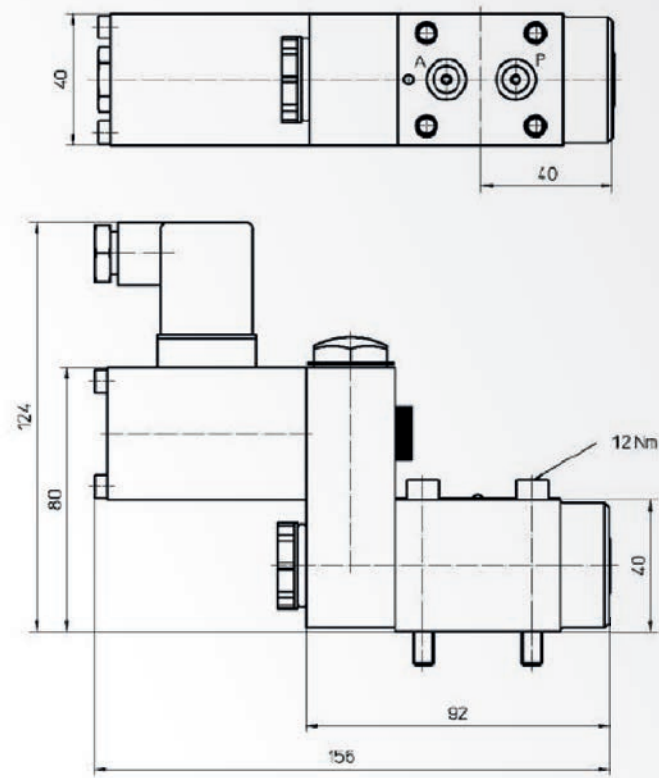
3/2-way valve DN3 | PN700 | 10l/min, solenoid actuation

Designation	Basic position	Voltage	Article number
3/2 Wegeventil DN3 PN700	A→T NO	24 VDC	6545769
	A→T NO	110 VAC	6545807
	A→T NO	230 VAC	6546129
3/2 Wegeventil DN3 PN700	P→A NO	24 VDC	6545777
	P→A NO	110 VAC	6545815
	P→A NO	230 VAC	6546137

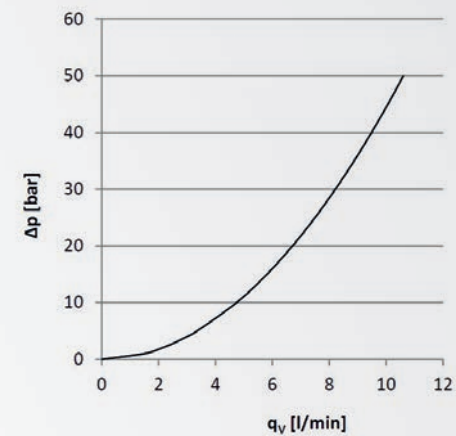
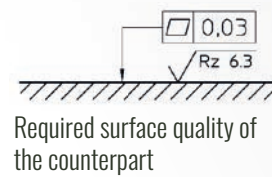
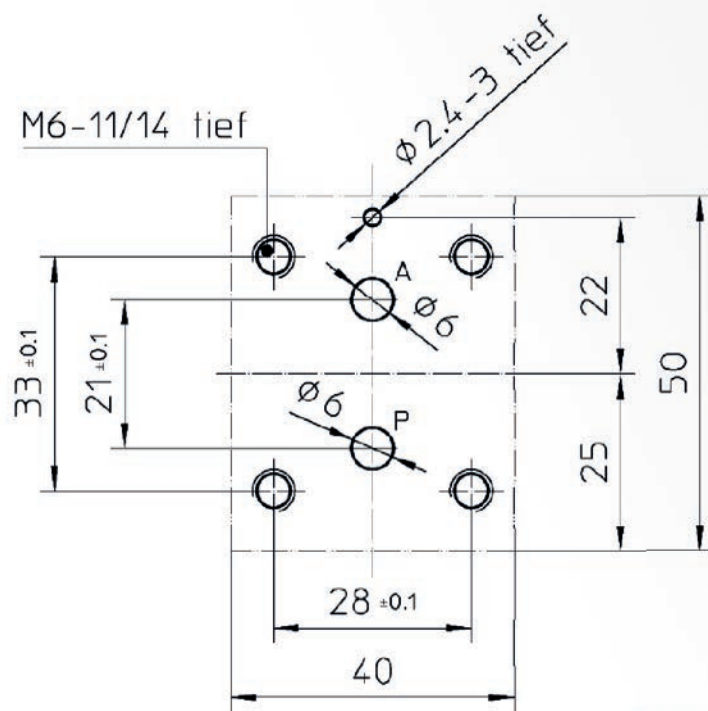
Technical changes reserved.
All data and figures are considered non-binding.

2/2 -way valve DN3 | PN700 | 10l/min, solenoid actuation

Dimensions

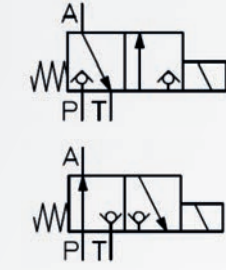
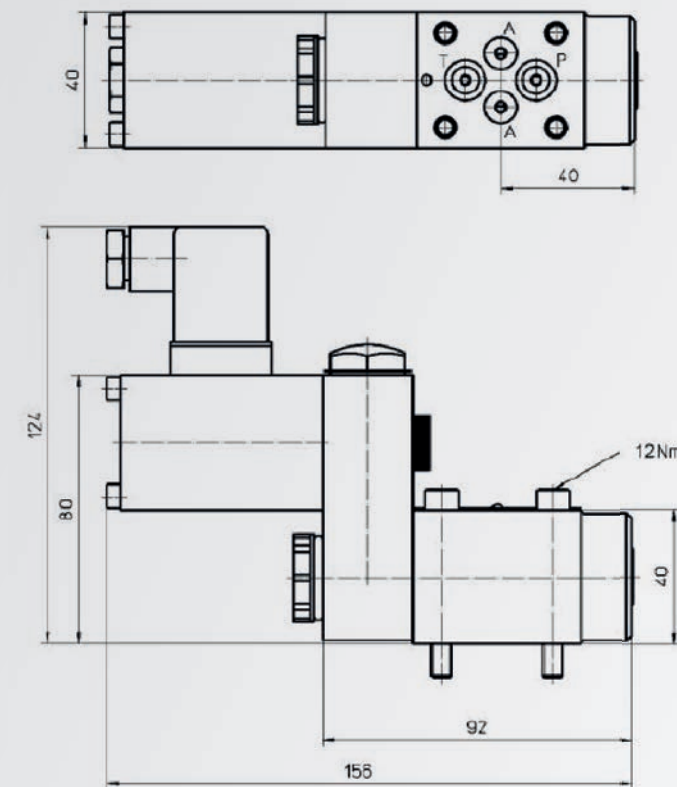


Connection diagram

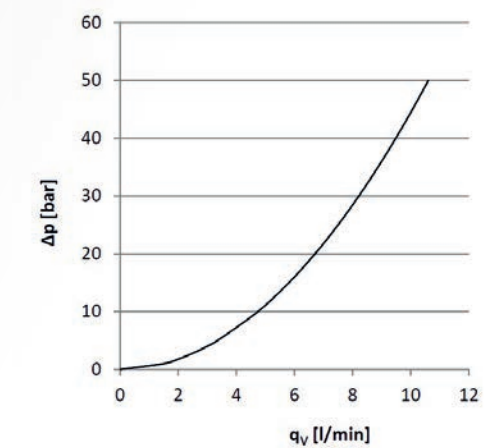
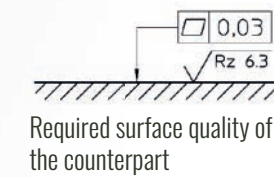
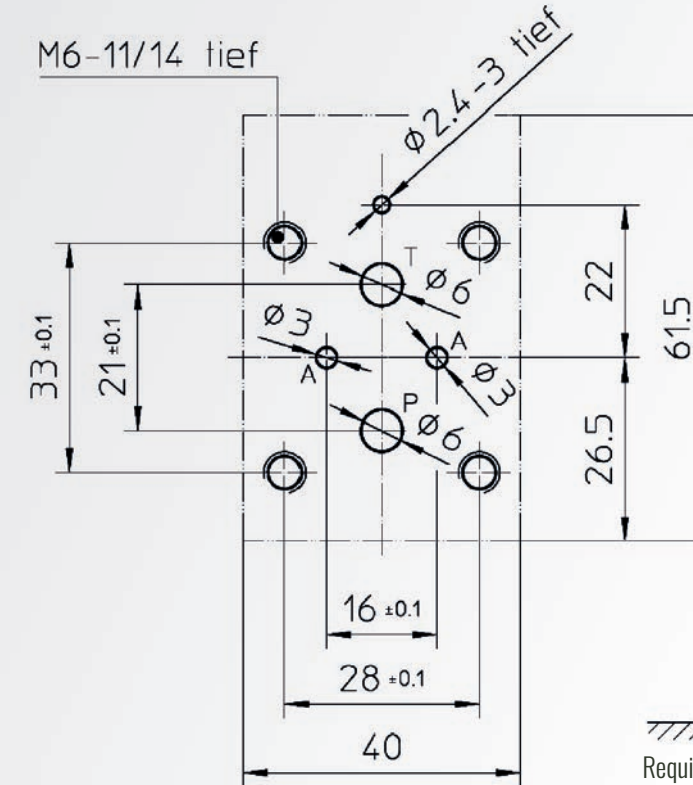


3/2 -way valve DN3 | PN700 | 10l/min, solenoid actuation

Dimensions



Connection diagram



Directly actuated seat valves

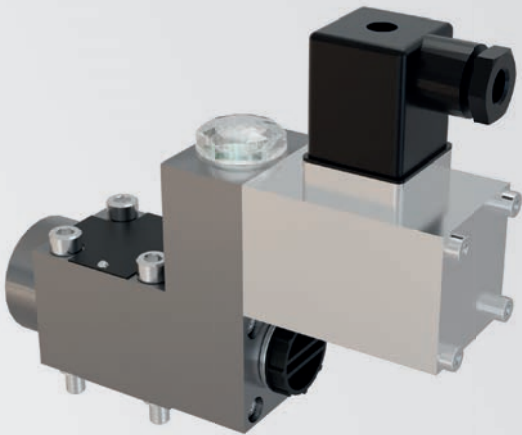
DN3 | PN1000 | 10l/min

2/2- and 3/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C

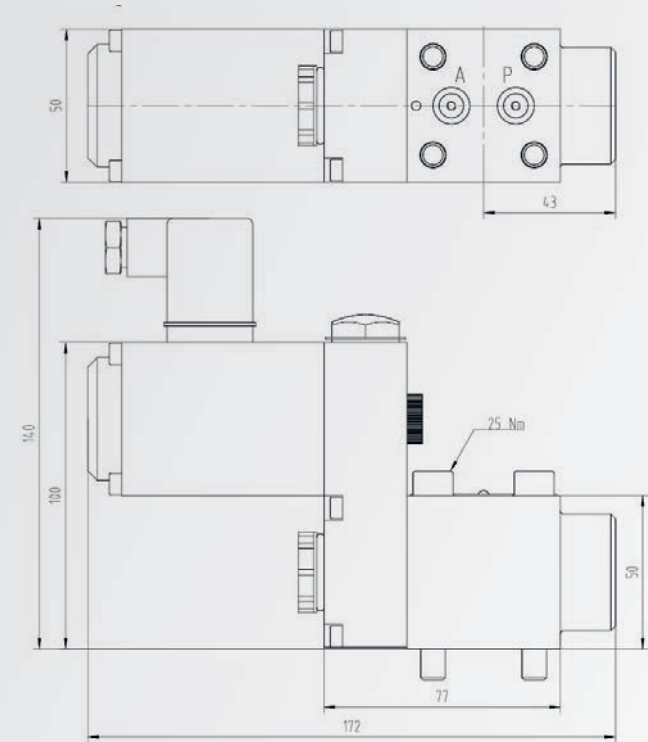
General	
Weight	3,2 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	1000bar
max. operating pressure of connector A	1000bar
max. volume flow P→A	15 l/min
max. volume flow A→T	15 l/min
specified direction of flow	P→A
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinc requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
The covers (6) are designed with a viscosity of approx. 1.0 mm²/s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.	
Electric	
Voltage	24 VDC
Current	1,5 A
Power consumption	36 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz



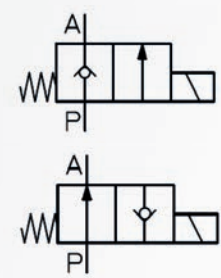
Order information

Included in the scope of supply			
Mounting screws of the valve		Cheese-head screw M8	
Cable socket of the valve solenoid - Supply voltage 24 VDC		according to DIN 43650 – type of design A max. 100 VA, LED-Anzeige + Z-diode, IP65	
Designation	Basic position	Voltage	Article number
2/2-way valve DN3 PN1000	NC	24 VDC	6572960
2/2-way valve DN3 PN1000	NO	24 VDC	6572979

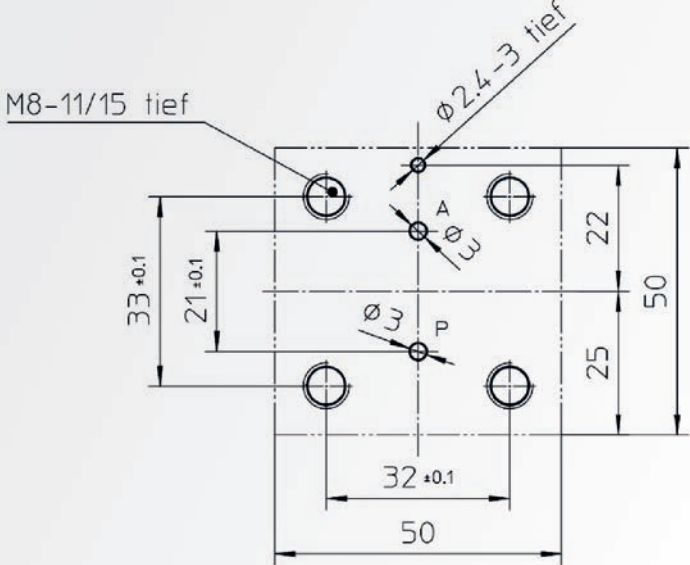
Dimensions



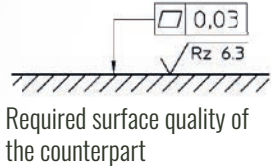
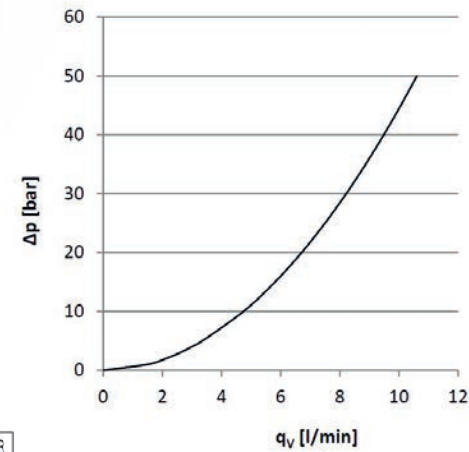
Symbol



Connection diagram



Δp – qV characteristic curve



Required surface quality of the counterpart

Directly actuated seat valves

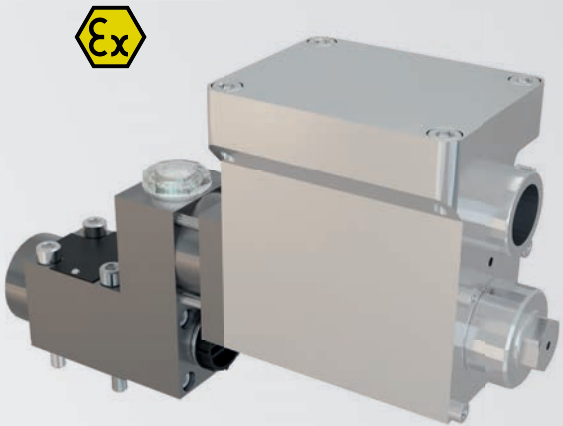
DN3 | PN320 | 10l/min

2/2-ways, Approval: IBExU09ATEX1046 X

Technical data

measured with HFA medium 97/3%, at 20°C

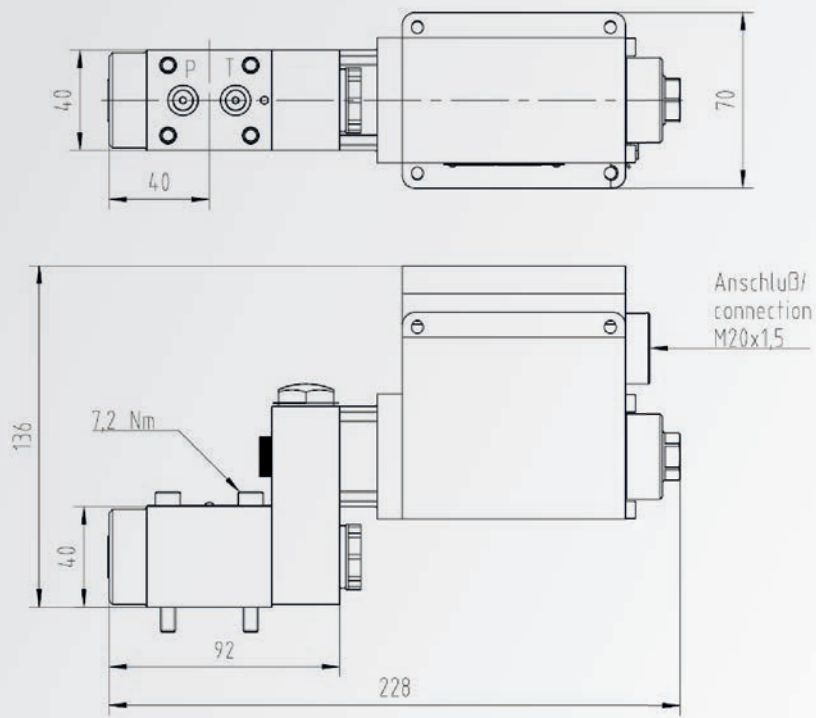
General	
Weight	4,5 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	320bar
max. operating pressure of connector A	320bar
max. volume flow P→A	10 l/min
specified direction of flow	P→A
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinco requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
The covers (6) are designed with a viscosity of approx. 1.0 mm²/s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.	
Electric	
Voltage	24 VDC
Current	0,37 A
Power consumption	8,8 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP68
Protection against ignition according to EN 50020	II 2G Ex d IIB T5
max. switching rate	1 Hz



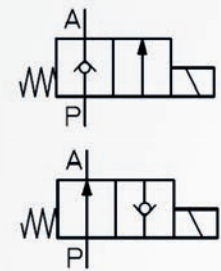
Order information

Included in the scope of supply			
Mounting screws of the valve	Cheese-head screw M6		
Connection thread of the valve solenoid	M20x1,5		
Designation	Basic position	Voltage	Article number
2/2-way valve DN3 PN320	NC	24 VDC	6548601
2/2-way valve DN3 PN320	NO	24 VDC	6548644

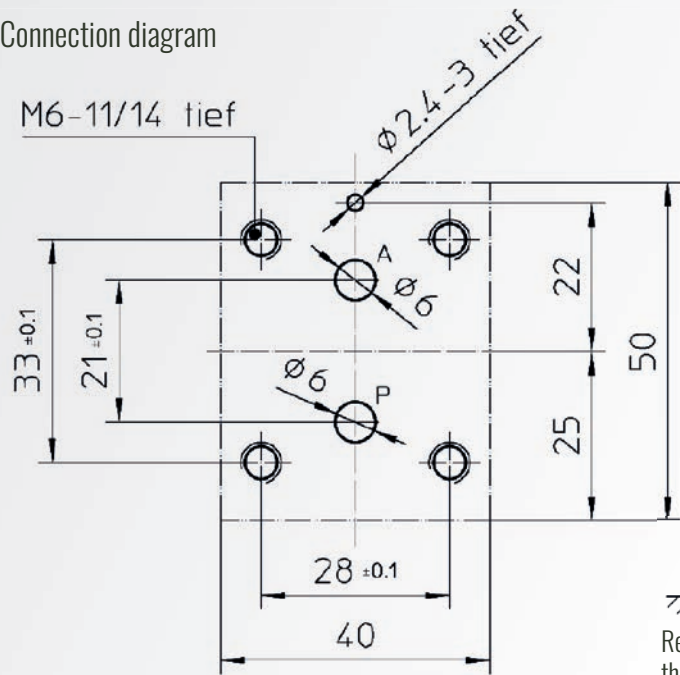
Dimensions



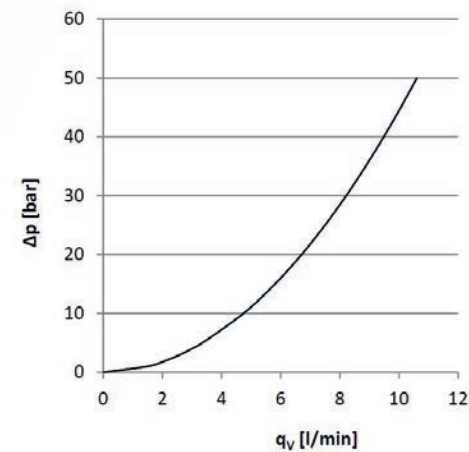
Symbol



Connection diagram



Δp – qV characteristic curve



Directly actuated seat valves

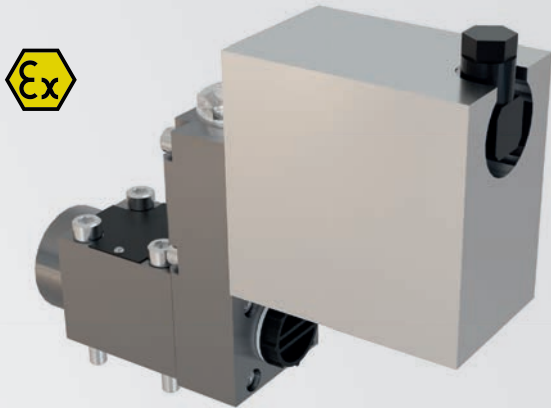
DN3 | PN480 | 10l/min

3/2-ways, Approval: BSV 04 ATEX E077

Technical data

measured with HFA medium 97/3%, at 20°C

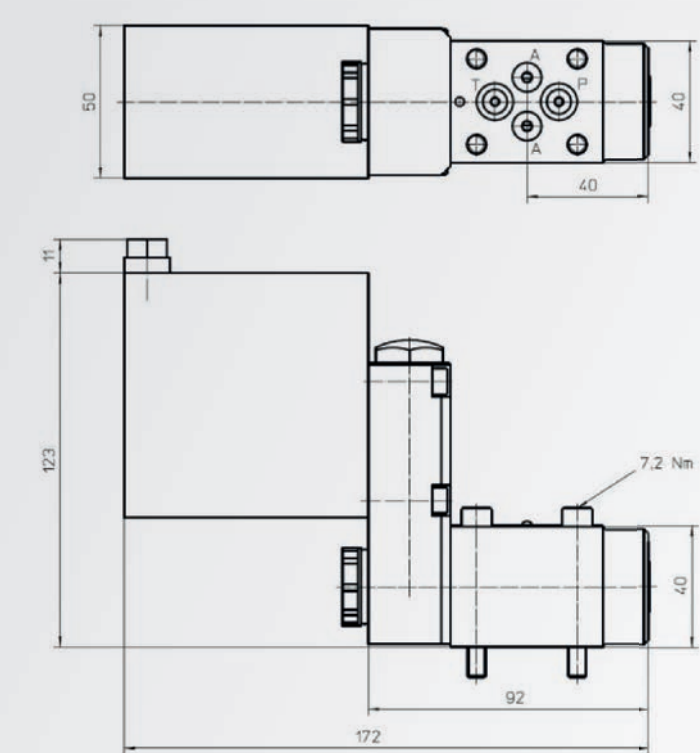
General	
Weight	3,9 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	480bar
max. operating pressure of connector A	480bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	10 l/min
max. volume flow A→T	10 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinco requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
The covers (6) are designed with a viscosity of approx. 1.0 mm²/s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.	
Electric	
Voltage	12 VDC, max. 15 VDC
Current	0,2 A
Power consumption	2,24 W
Operating time	100% ED
Degree of protection acc. to EN60529	Body IP54, electrical connection IP65
Protection against ignition according to EN 50020	I 2G EEx ia II T6; I M2 EEx ia
max. switching rate	1 Hz



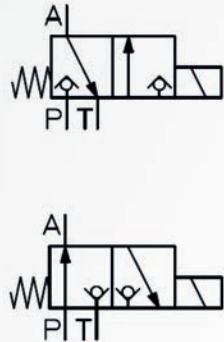
Order information

Included in the scope of supply			
Mounting screws of the valve	Cheese-head screw M6		
Cable socket of the valve solenoid	Hirschmann cable socket G - series		
Designation	Basic position	Voltage	Article number
3/2-way valve DN3 PN480	A→T NO	12 VDC	6269591
3/2-way valve DN3 PN480	P→A NO	12 VDC	6269605

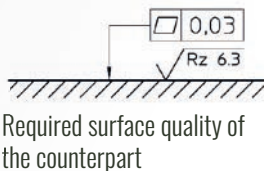
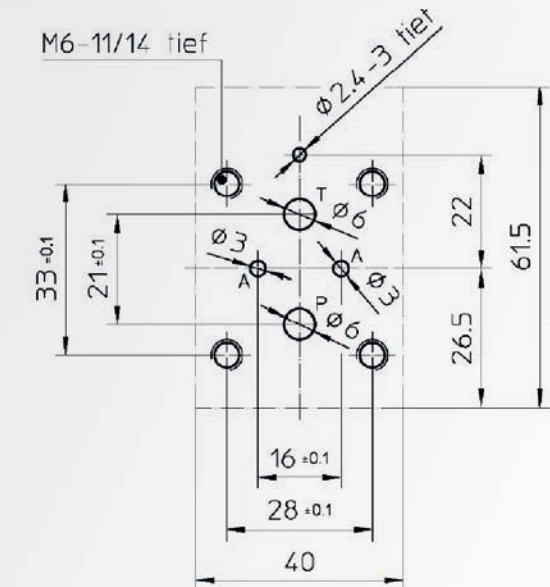
Dimensions



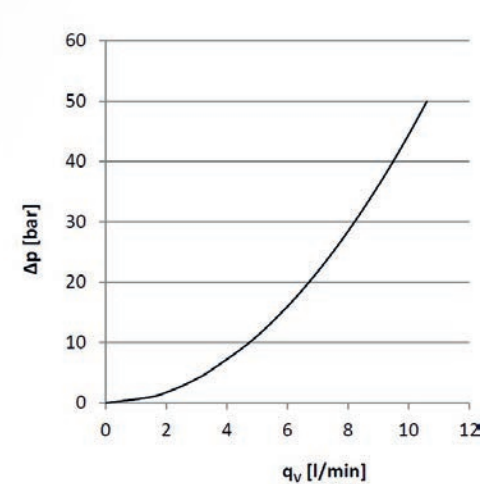
Symbol



Connection diagram



Δp – qV characteristic curve

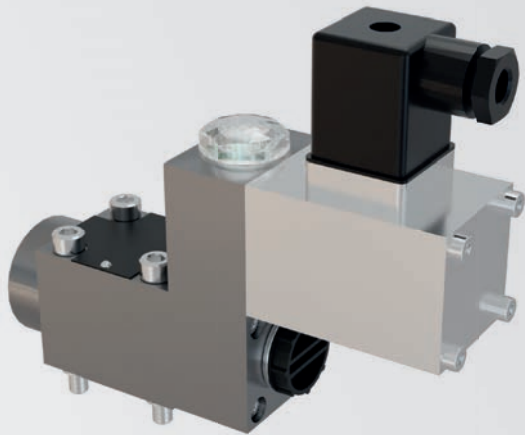


Technical changes reserved.
All data and figures are considered non-binding.

Directly actuated seat valves

DN6 | PN100 | 30l/min

2/2- and 3/2-ways



Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	3,5 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	100bar
max. operating pressure of connector A	100bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	30 l/min
max. volume flow A→T	30 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhincó requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	36 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M8
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-display + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN3 | PN100 | 30l/min, solenoid actuation

Designation	Basic position	Voltage	Article number
2/2-way valve DN6 PN100	NC	24 VDC	on request
	NC	110 VAC	on request
	NC	230 VAC	on request
2/2-way valve DN6 PN100	NO	24 VDC	on request
	NO	110 VAC	on request
	NO	230 VAC	on request

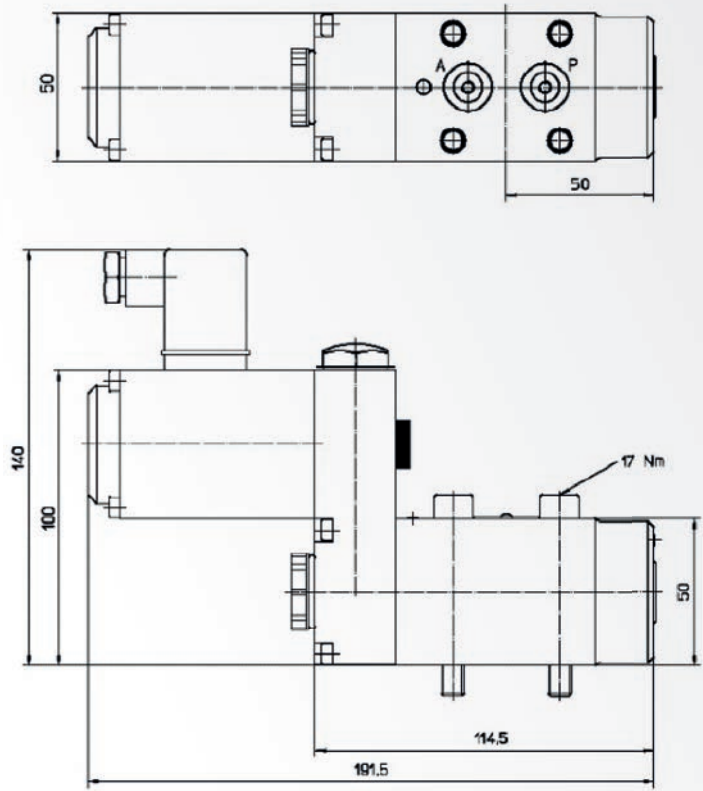
3/2-way valve DN3 | PN100 | 30l/min, solenoid actuation

Designation	Basic position	Voltage	Article number
3/2-way valve DN6 PN100	A→T NO	24 VDC	6576230
	A→T NO	110 VAC	on request
	A→T NO	230 VAC	on request
3/2 -way valve DN6 PN100	P→A NO	24 VDC	6576249
	P→A NO	110 VAC	on request
	P→A NO	230 VAC	on request

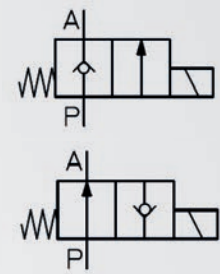
2/2-way valve DN6 | PN100 | 30l/min, solenoid actuation

1

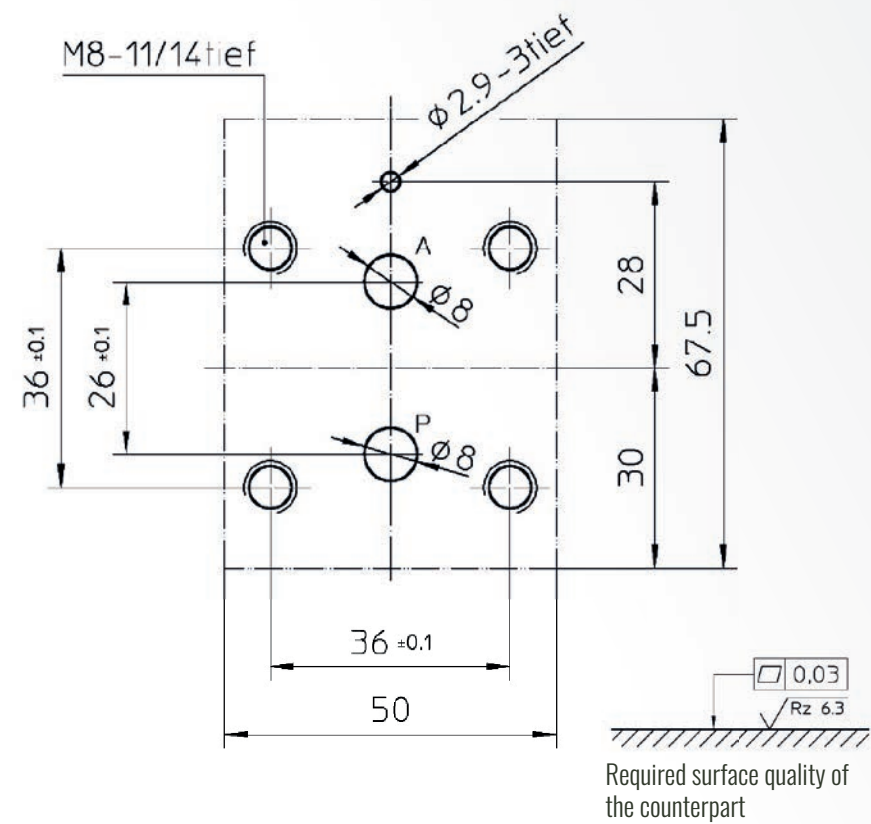
Dimensions



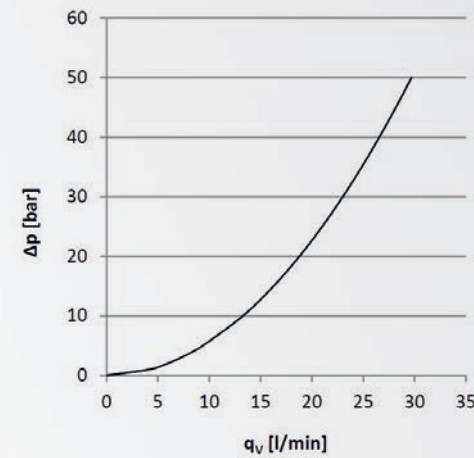
Symbol



Connection diagram



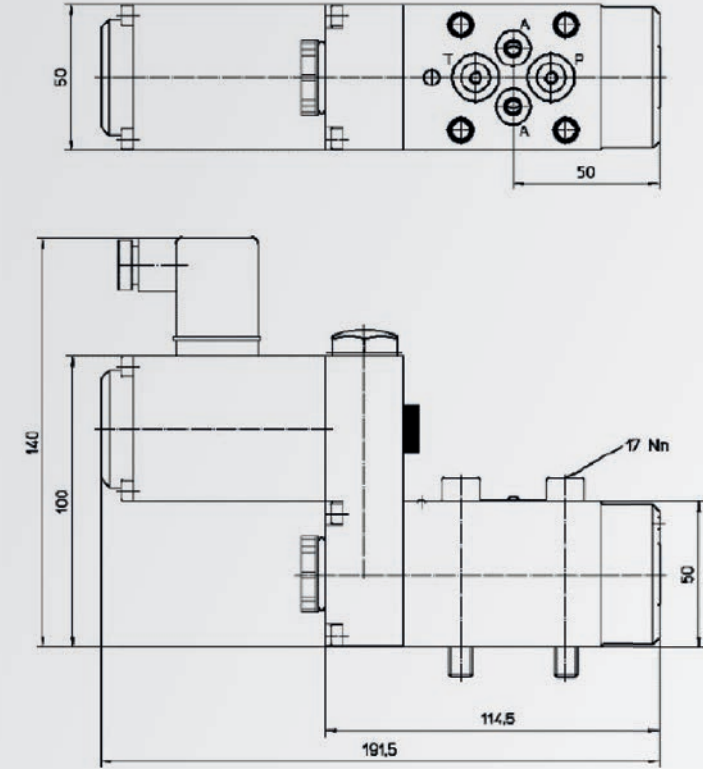
$\Delta p - q_v$ characteristic curve



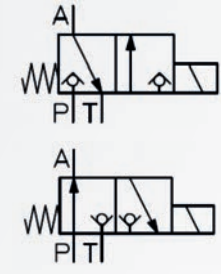
3/2-way valve DN6 | PN100 | 30l/min, solenoid actuation

1

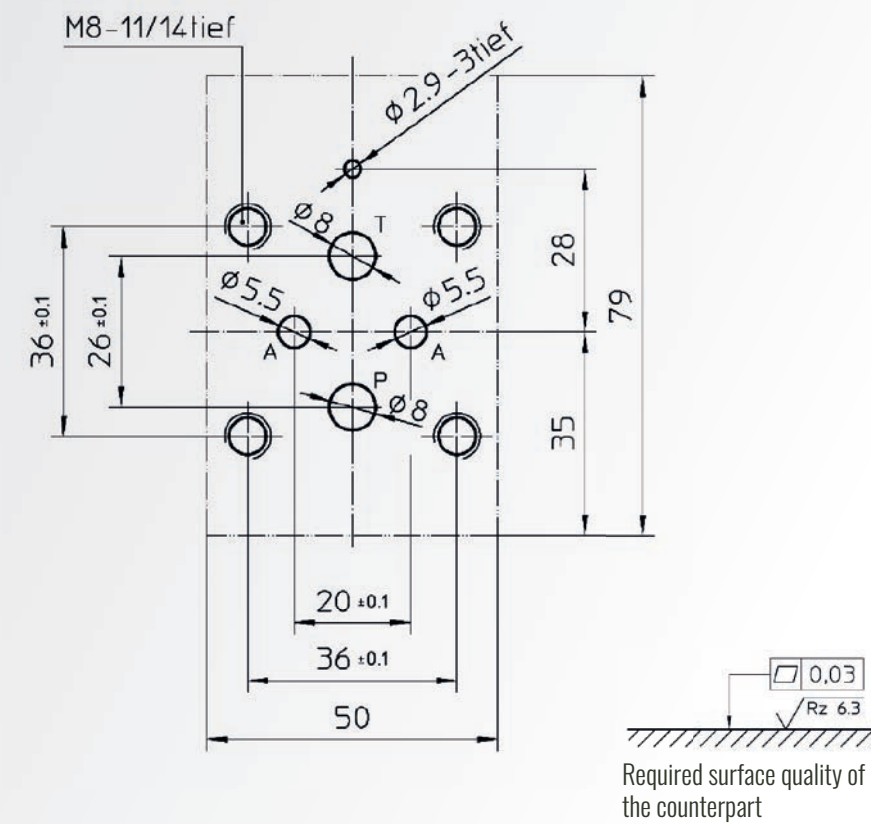
Dimensions



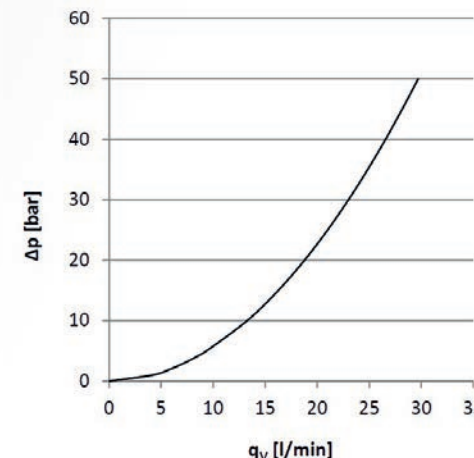
Symbol



Connection diagram



$\Delta p - q_v$ characteristic curve



1

Directly actuated seat valves

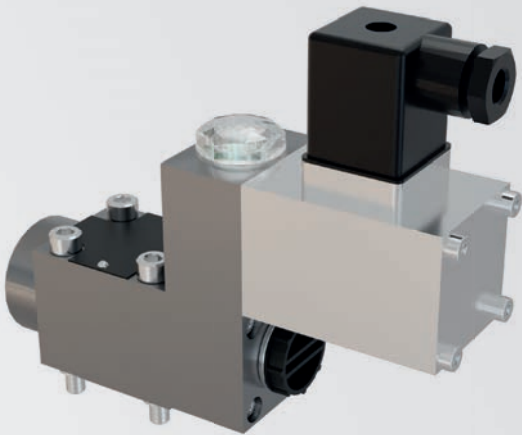
DN3 | PN320 | 15l/min

2/2- and 3/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	320bar
max. operating pressure of connector A	320bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	15 l/min
max. volume flow A→T	15 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinco requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	36 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

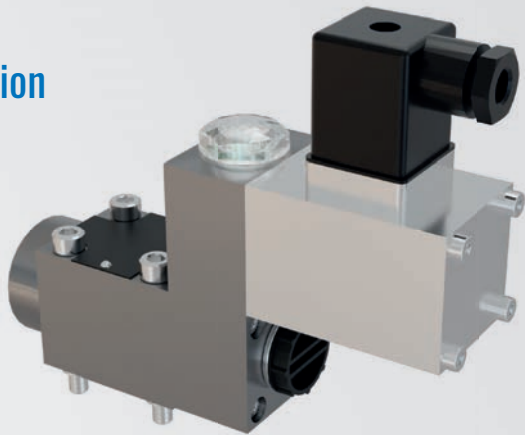
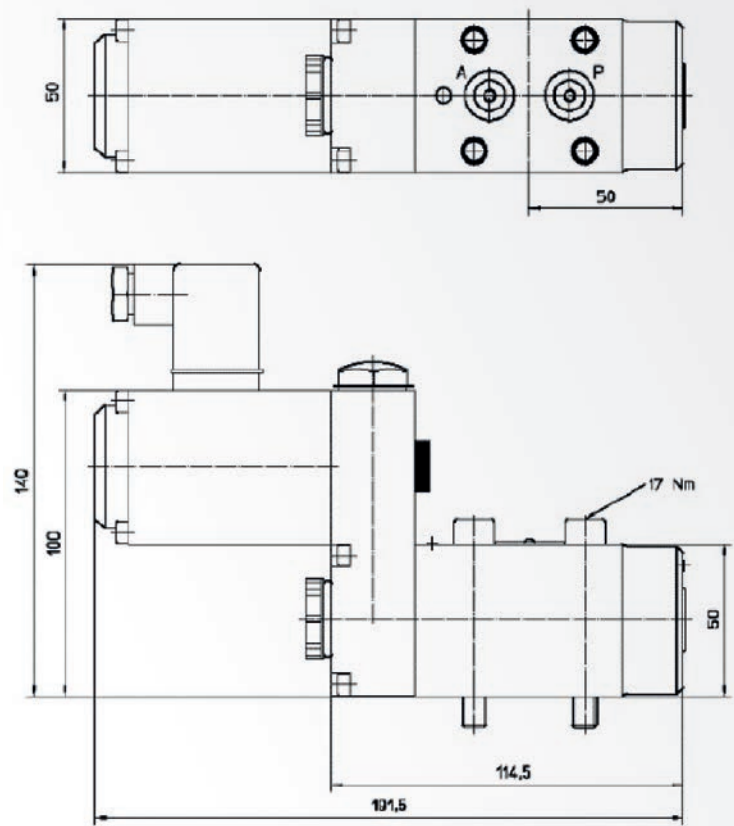


Order information

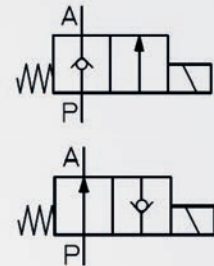
Included in the scope of supply			
Mounting screws of the valve	Cheese-head screw M8		
Cable socket of the valve solenoid	according to DIN 43650 – type of design A		
- Supply voltage 24 VDC	max. 100 VA, LED-display + Z-diode, IP65		
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65		
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65		
Designation	Basic position	Voltage	Article number
2/2-way valve DN6 PN320, solenoid actuation weight: 3,5kg	NC	24 VDC	6546684
	NC	110 VAC	6546692
	NC	230 VAC	6546706
2/2-way valve DN6 PN320, solenoid actuation weight: 3,5kg	NO	24 VDC	6546714
	NO	110 VAC	6546722
	NO	230 VAC	6546730
2/2-way valve DN6 PN320, solenoid actuation with a catch, weight: 5,0kg	NC	24VDC	6569986
	NO	24VDC	6569994
Designation	Basic position	approx. manual force	Article number
2/2-way valve DN6 PN320, pushbutton control with a catch, weight: 4,0kg	NO	70N	6568106
	NC	70N	6568114
Designation	Basic position	adm. control pressure „Z“	Article number
2/2-way valve DN6 PN320, cylinder actuation pneumatic, hydraulic, weight: 3,2kg	NC	3-320bar	6547923
	NO	3-320bar	6547958
Designation	Basic position	Voltage	Article number
3/2-way valve DN6 PN320, solenoid actuation weight: 3,5kg	A→T NO	24 VDC	6546749
	A→T NO	110 VAC	6546757
	A→T NO	230 VAC	6546765
3/2-way valve DN6 PN320, solenoid actuation weight: 3,5kg	P→A NO	24 VDC	6546773
	P→A NO	110 VAC	6546781
	P→A NO	230 VAC	6546803
3/2-way valve DN6 PN320, solenoid actuation with a catch, weight: 5,0kg	A→T NO	24 VDC	6570003
	P→A NO	24 VDC	6576990
	A→T NO	110 VAC	6570008
	P→A NO	110 VAC	6570016
Designation	Basic position	Article number	
3/2-way valve DN6 PN320, roller actuation weight: 3,3kg	A→T NO	6548032	
	P→A NO	6548040	
Designation	Basic position	adm. control pressure „Z“	Article number
3/2-way valve DN6 PN320, cylinder actuation pneumatic, hydraulic, weight: 3,2kg	A→T NO	3-320bar	6547974
	P→A NO	3-320bar	6547990
Designation	Basic position	approx. manual force	Article number
3/2-way valve DN6 PN320, pushbutton control weight: 2,9kg	A→T NO	70N	6570992
	P→A NO	70N	6571018
3/2-way valve DN6 PN320, pushbutton control with a catch, weight: 4,0kg	A→T NO	70N	6568122
	P→A NO	70N	6568130

2/2-way valve DN6 | PN320 | 15l/min, solenoid actuation

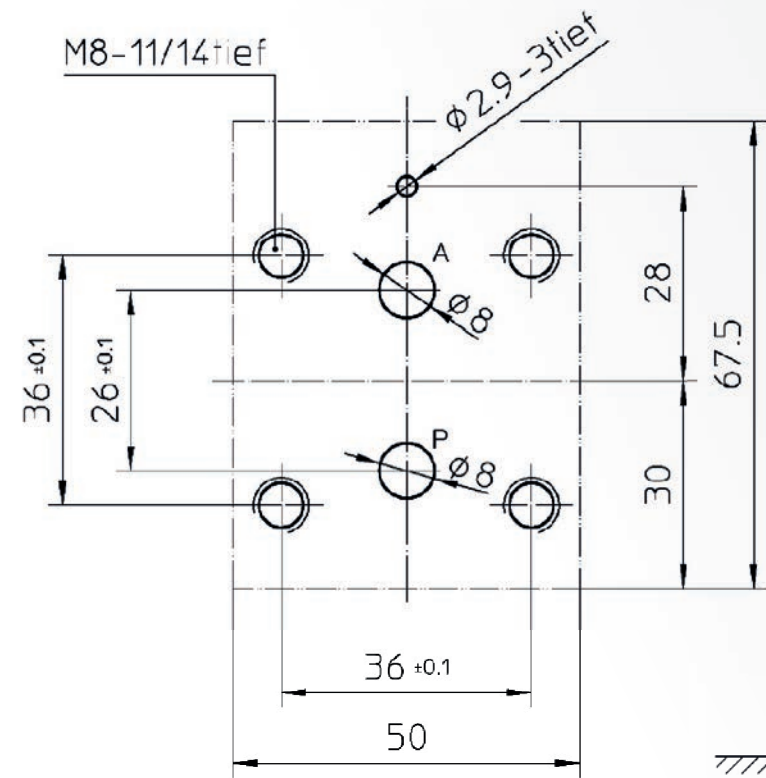
Dimensions



Symbol

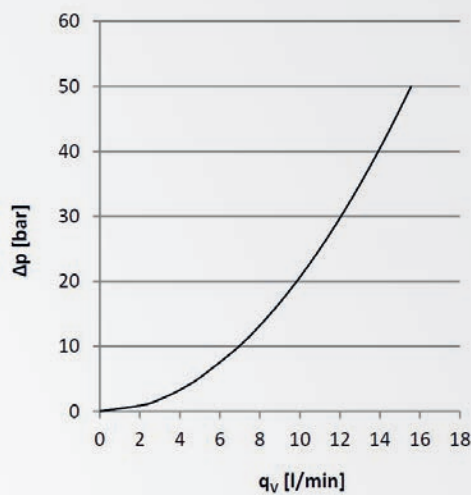


Connection diagram



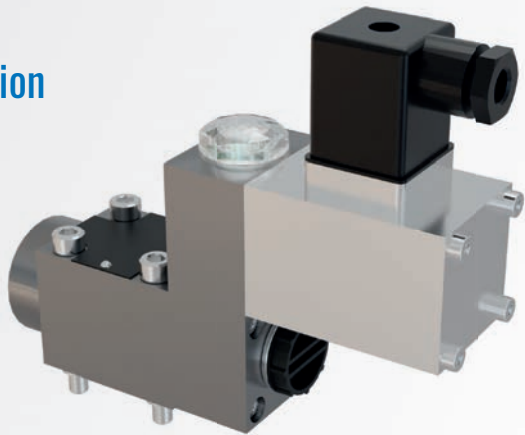
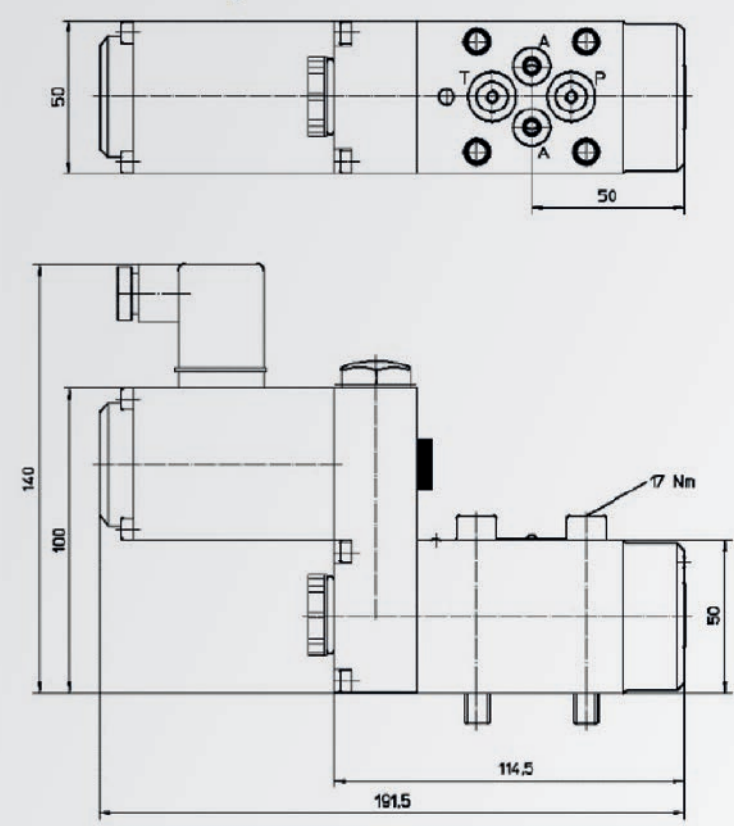
Required surface quality of the counterpart

$\Delta p - q_v$ characteristic curve

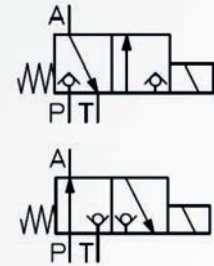


3/2-way valve DN6 | PN320 | 15l/min, solenoid actuation

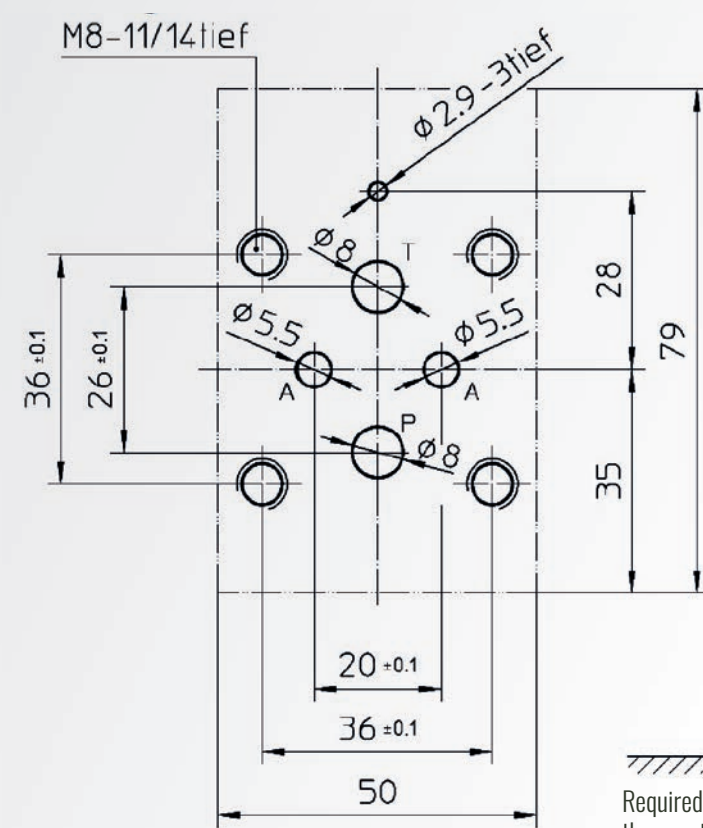
Dimensions



Symbol

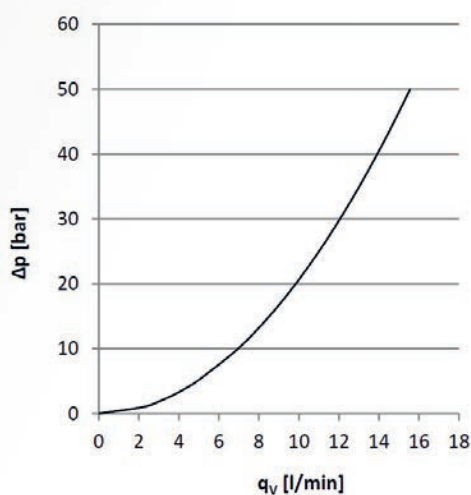


Connection diagram



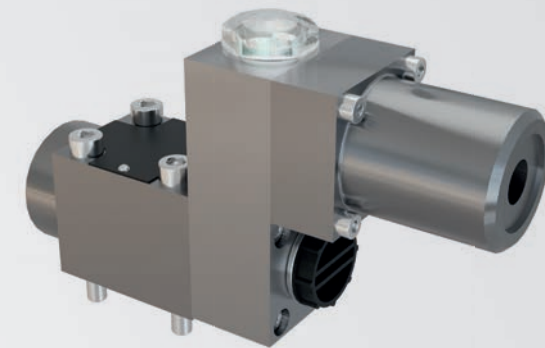
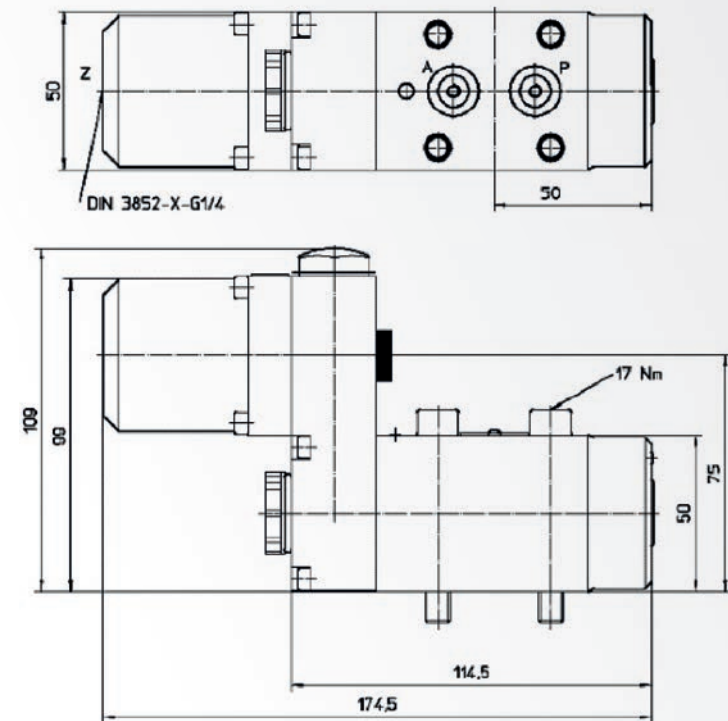
Required surface quality of the counterpart

$\Delta p - q_v$ characteristic curve

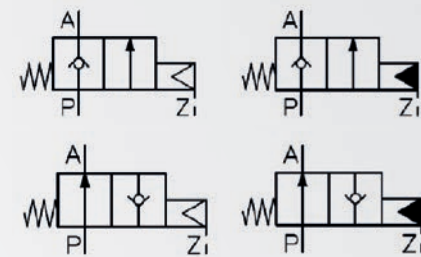


2/2-way valve DN6 | PN320 | 15l/min, cylinder actuation

Dimensions

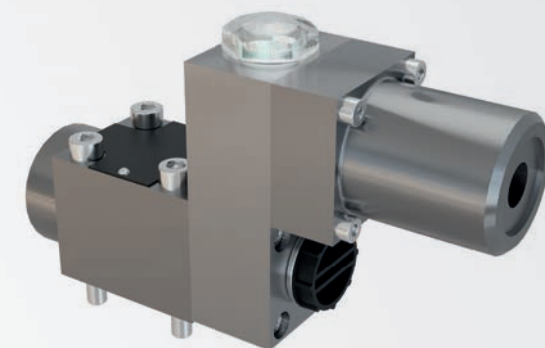
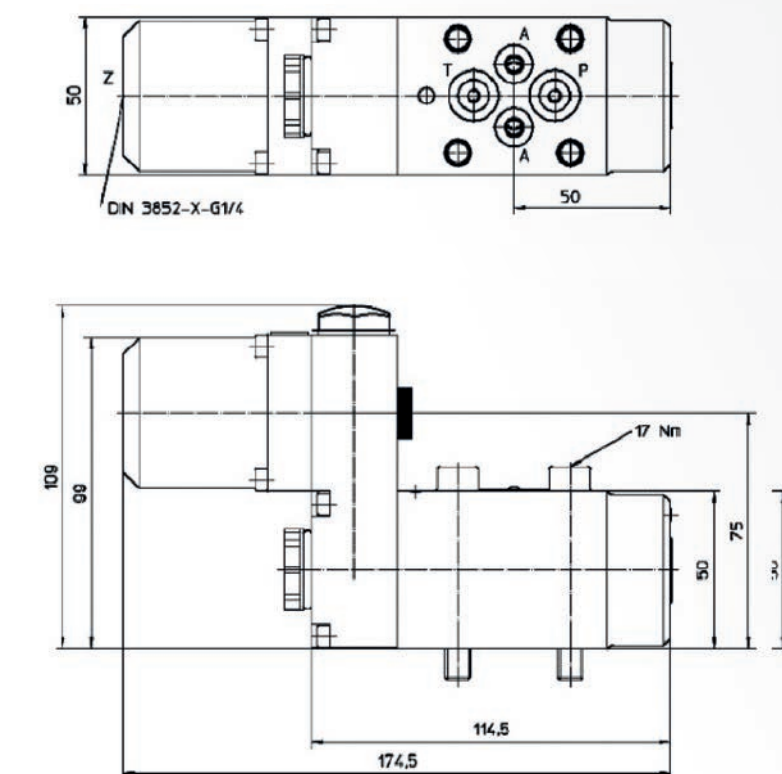


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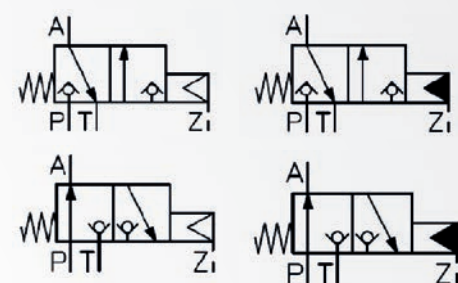


3/2-way valve DN6 | PN320 | 15l/min, cylinder actuation

Dimensions

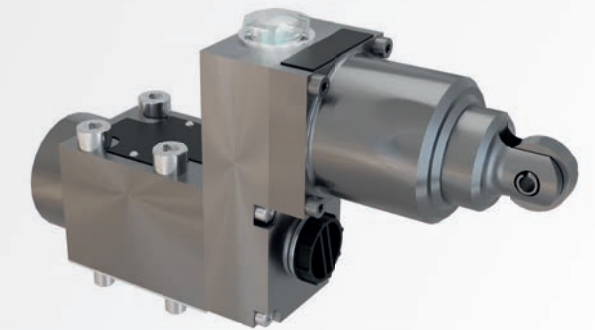
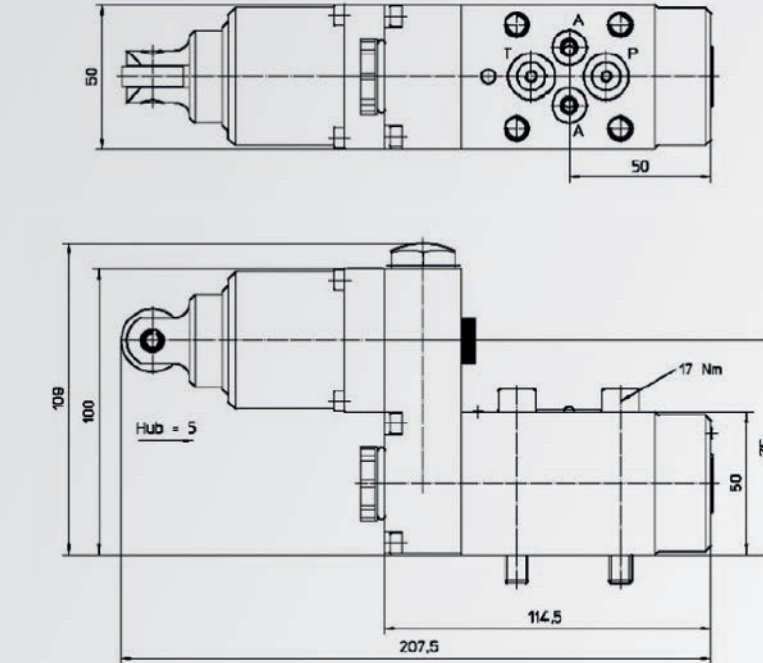


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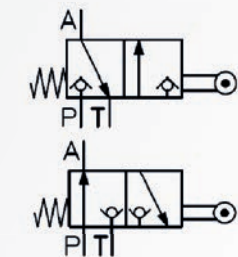


3/2-way valve DN6 | PN320 | 15l/min, roller actuation

Dimensions

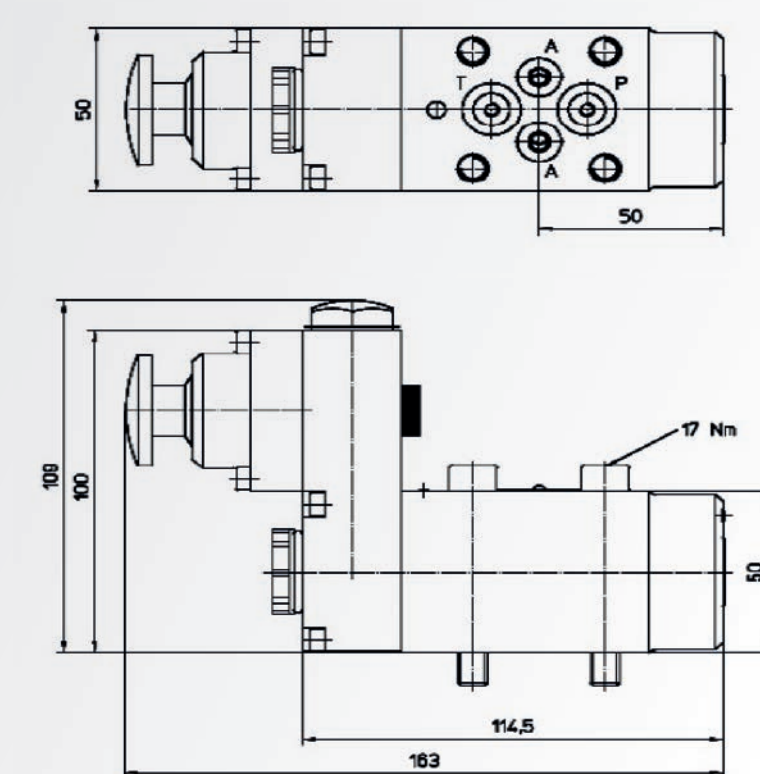


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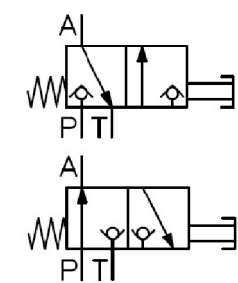


3/2-way valve DN6 | PN320 | 15l/min, pushbutton control

Dimensions



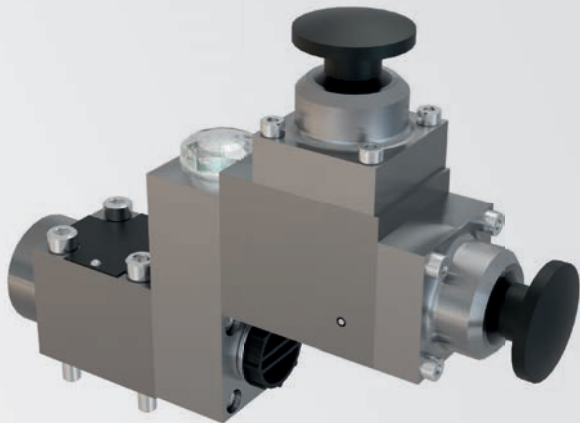
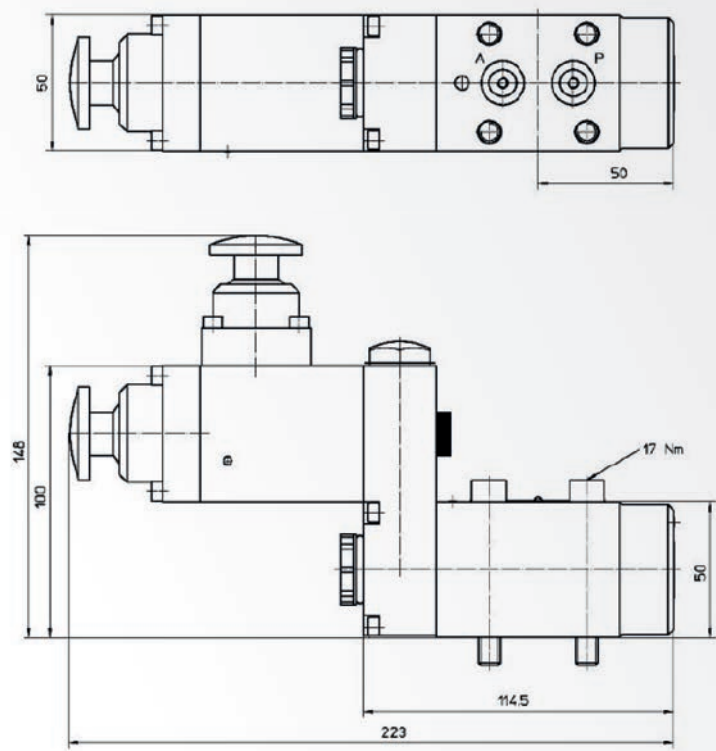
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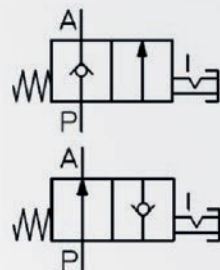
2/2-way valve DN6 | PN320 | 15l/min, pushbutton control with a catch

1

Dimensions

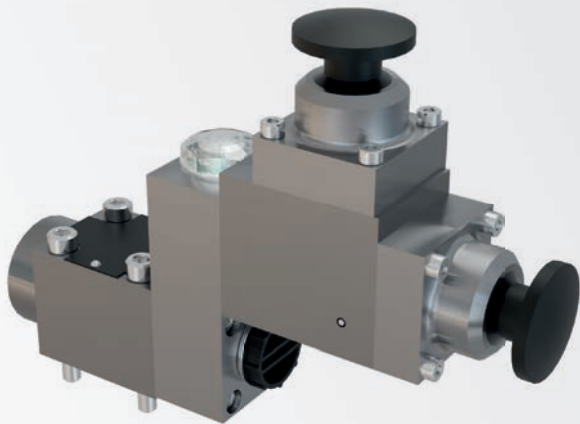
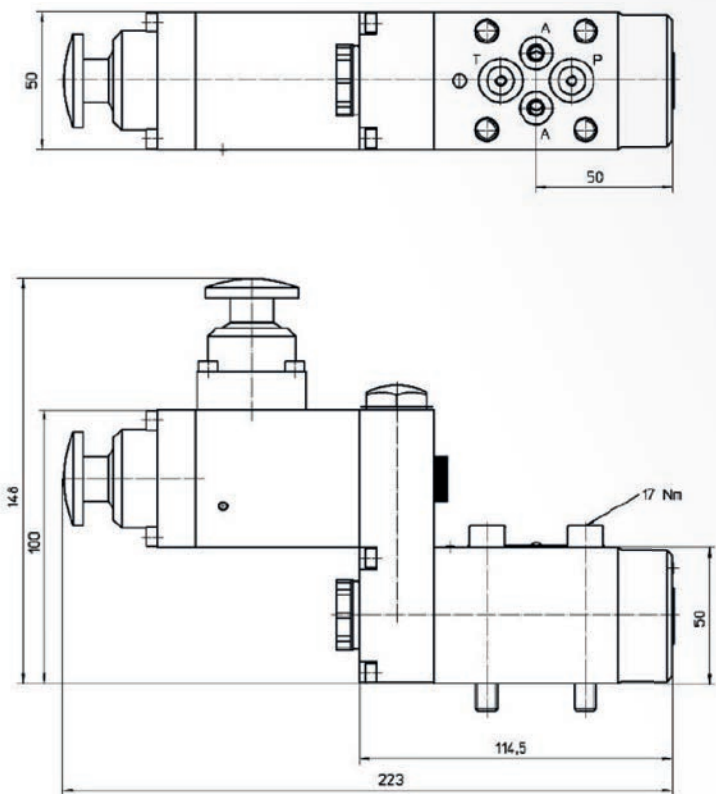


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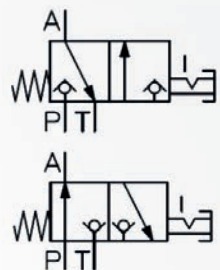


3/2-way valve DN6 | PN320 | 15l/min, pushbutton control with a catch

Dimensions



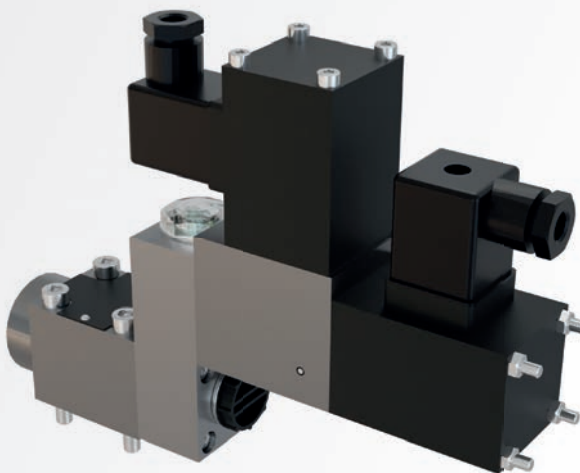
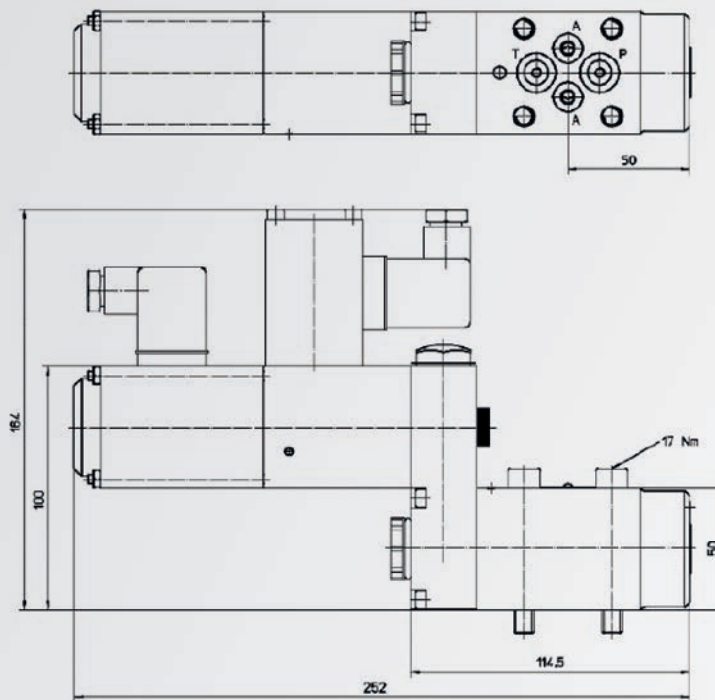
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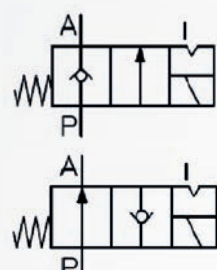
2/2-way valve DN3 | PN320 | 10l/min, solenoid actuation with a catch

1

Dimensions

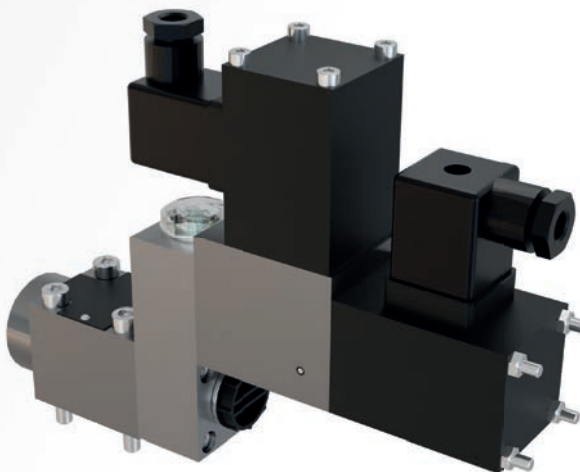
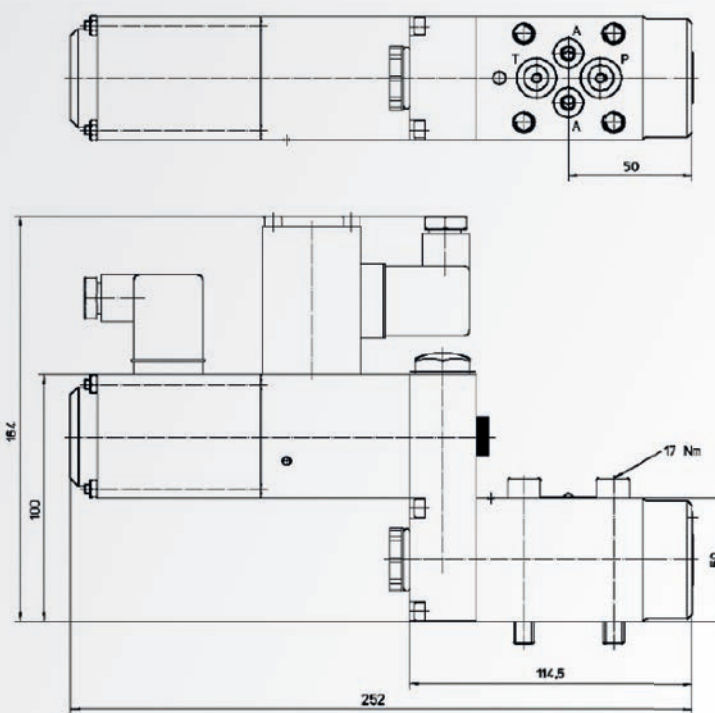


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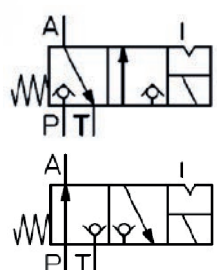


3/2-way valve DN3 | PN320 | 10l/min, solenoid actuation with a catch

Dimensions



Symbol

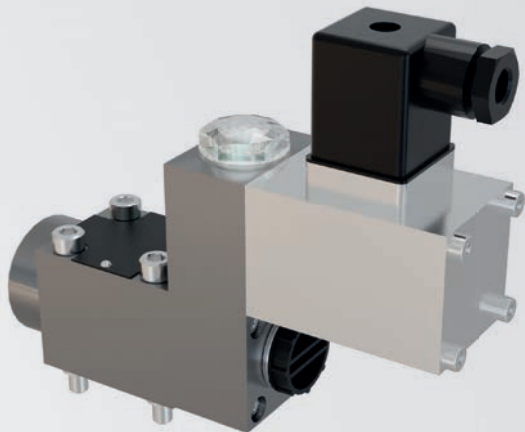


Directly actuated seat valves DN6 | PN700 | 15l/min

2/2- and 3/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C



General	
Weight	3,5 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	FKM, PTFE
Hydraulic	
max. operating pressure of connector P	700bar
max. operating pressure of connector A	700bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	15 l/min
max. volume flow A→T	15 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinco requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
The covers (6) are designed with a viscosity of approx. 1.0 mm²/s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	36 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M8
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-display + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN6 | PN700 | 15l/min, solenoid actuation

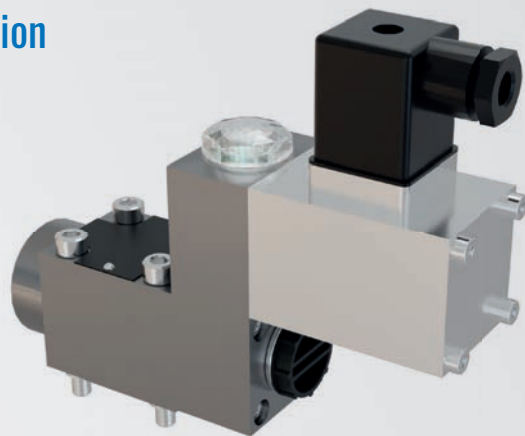
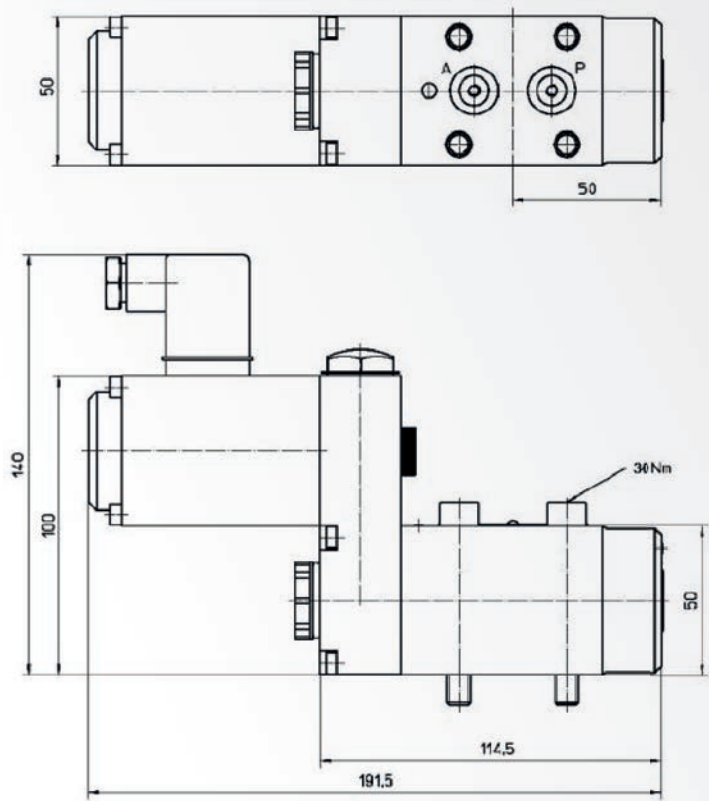
Designation	Basic position	Voltage	Article number
2/2-way valve DN6 PN700	NC	24 VDC	6546811
	NC	110 VAC	6546838
	NC	230 VAC	6546846
2/2-way valve DN6 PN700	NO	24 VDC	6546854
	NO	110 VAC	6546862
	NO	230 VAC	6546870

3/2-way valve DN6 | PN700 | 15l/min, solenoid actuation

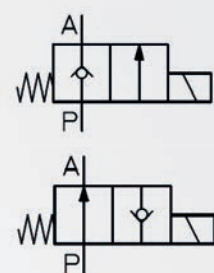
Designation	Basic position	Voltage	Article number
3/2-way valve DN6 PN700	A→T NO	24 VDC	6546889
	A→T NO	110 VAC	6546897
	A→T NO	230 VAC	6546900
3/2-way valve DN6 PN700	P→A NO	24 VDC	6546919
	P→A NO	110 VAC	6546927
	P→A NO	230 VAC	6546935

2/2-way valve DN6 | PN700 | 15l/min, solenoid actuation

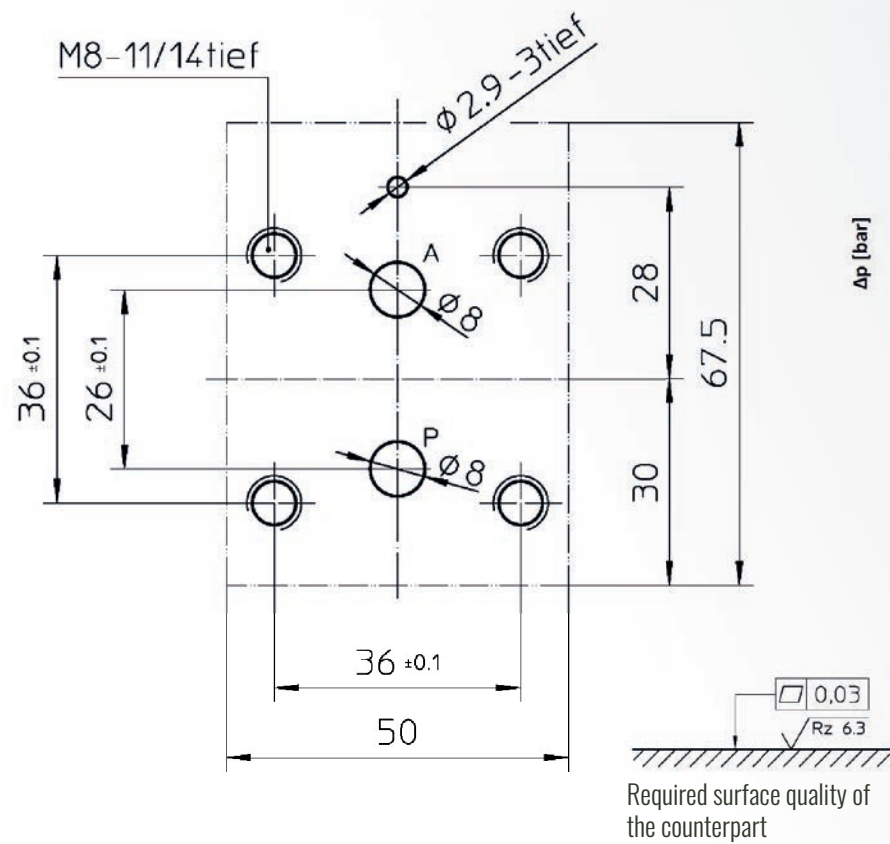
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Dimensions



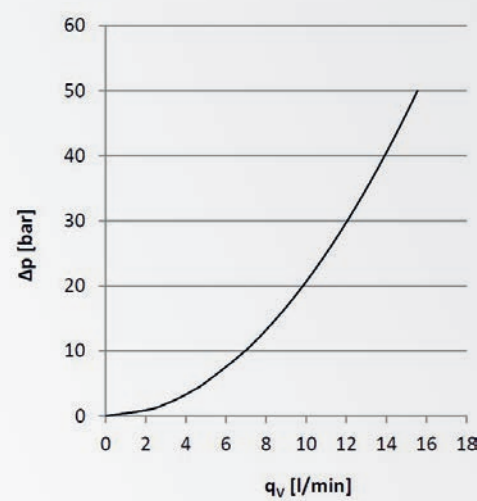
Symbol



Connection diagram

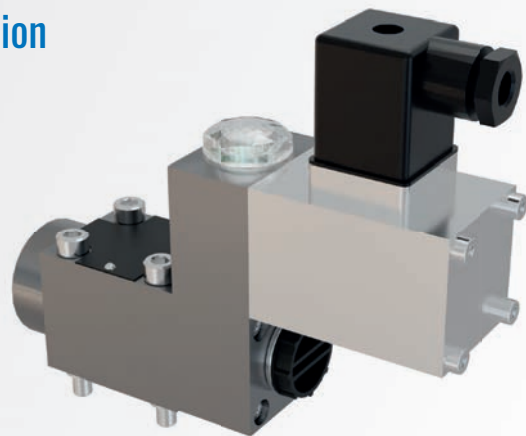
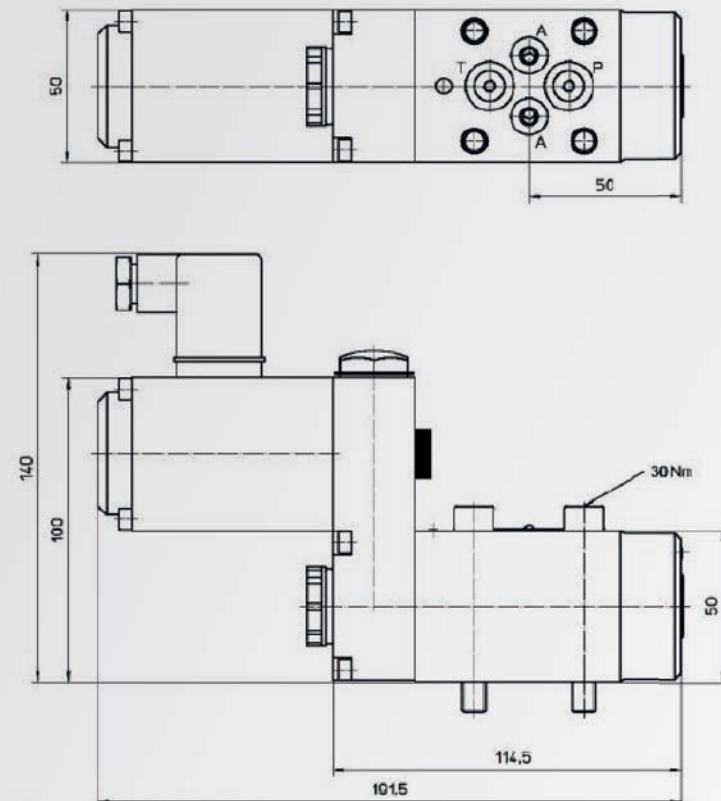


$\Delta p - q_v$ characteristic curve

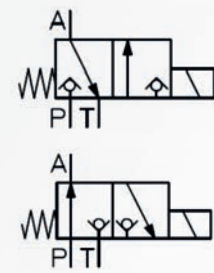


3/2-way valve DN6 | PN700 | 15l/min, solenoid actuation

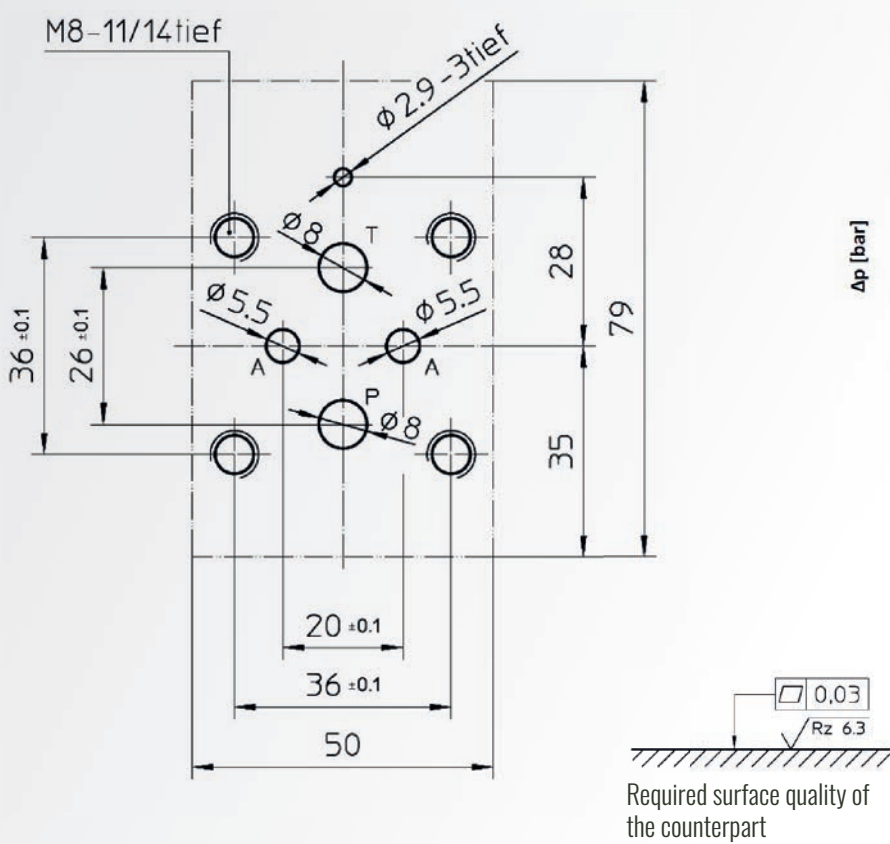
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Dimensions



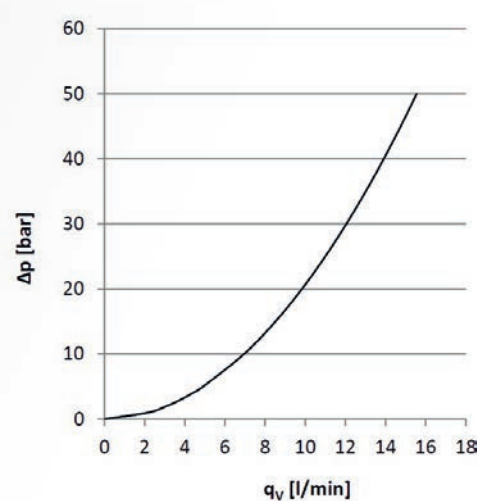
Symbol



Connection diagram



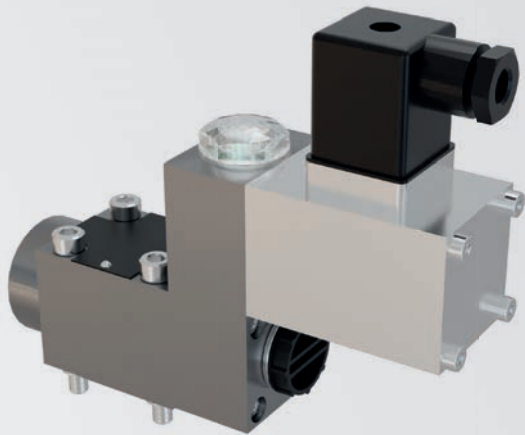
$\Delta p - q_v$ characteristic curve



Directly actuated seat valves

DN10 | PN100 | 60l/min

2/2- and 3/2-ways



Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	8,1 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	100bar
max. operating pressure of connector A	100bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	60 l/min
max. volume flow A→T	60 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhincó requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	55 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M10
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-display + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN10 | PN100 | 60l/min, solenoid actuation

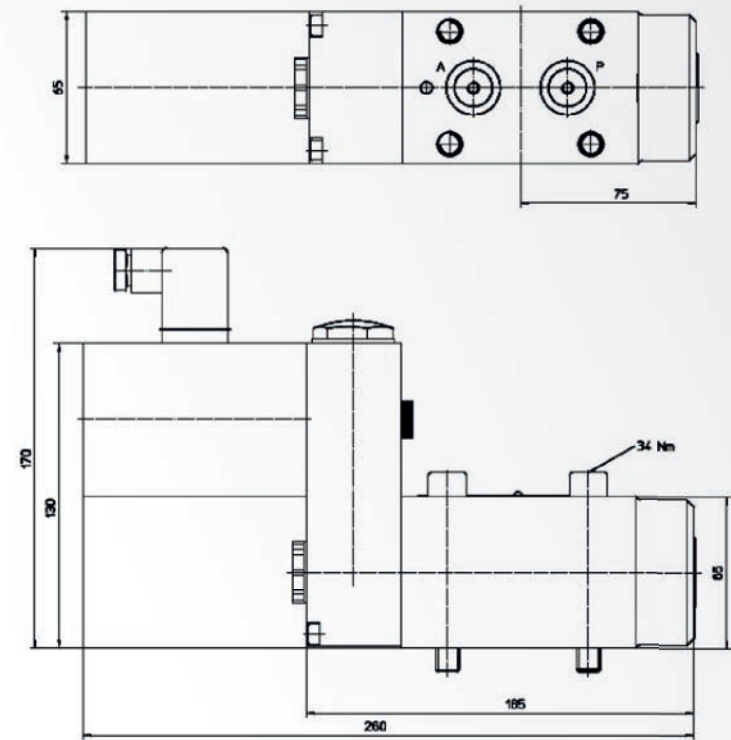
Designation	Basic position	Voltage	Article number
2/2-way valve DN10 PN100	NC	24 VDC	6572693
	NC	110 VAC	auf Anfrage
	NC	230 VAC	auf Anfrage
2/2-way valve DN10 PN100	NO	24 VDC	6576206
	NO	110 VAC	auf Anfrage
	NO	230 VAC	auf Anfrage

3/2-way valve DN10 | PN100 | 60l/min, solenoid actuation

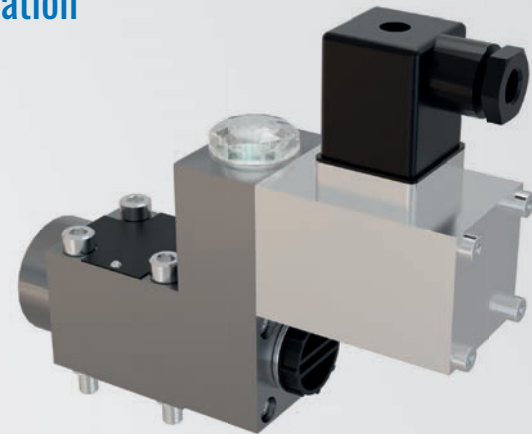
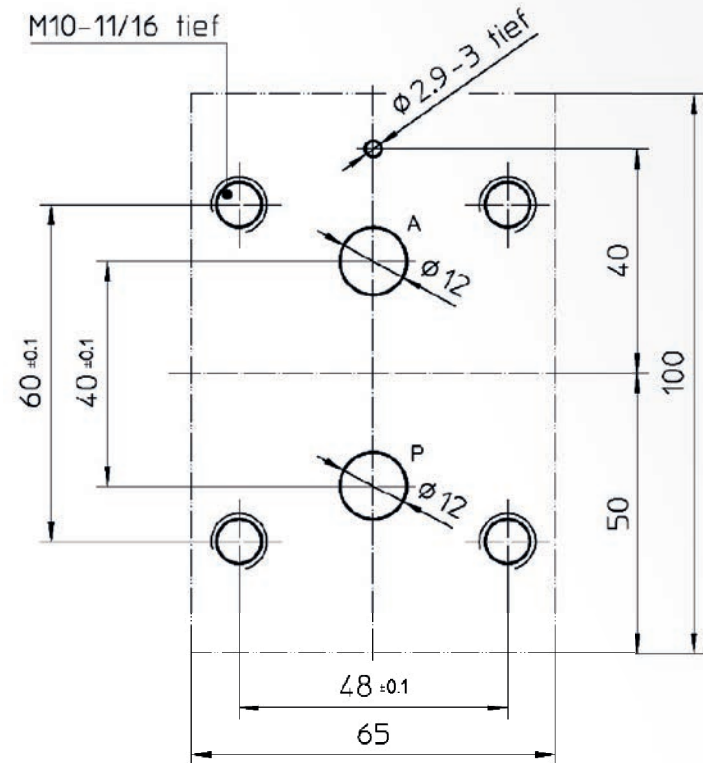
Designation	Basic position	Voltage	Article number
3/2-way valve DN10 PN100	A→T NO	24 VDC	6576214
	A→T NO	110 VAC	auf Anfrage
	A→T NO	230 VAC	auf Anfrage
3/2-way valve DN10 PN100	P→A NO	24 VDC	6576222
	P→A NO	110 VAC	auf Anfrage
	P→A NO	230 VAC	auf Anfrage

2/2-way valve DN10 | PN100 | 60l/min, solenoid actuation

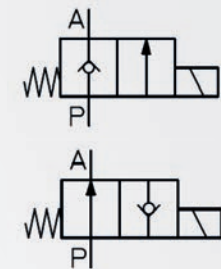
Dimensions



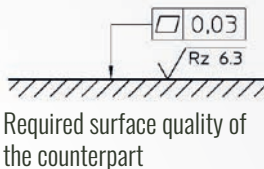
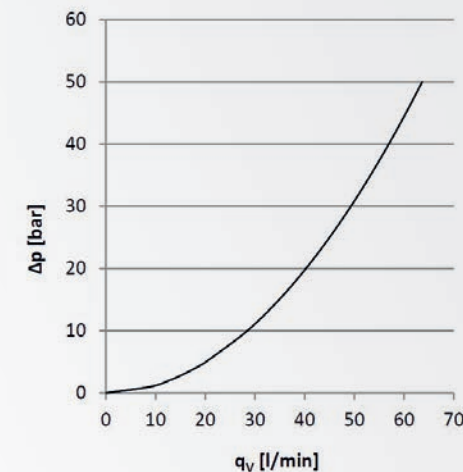
Connection diagram



Symbol

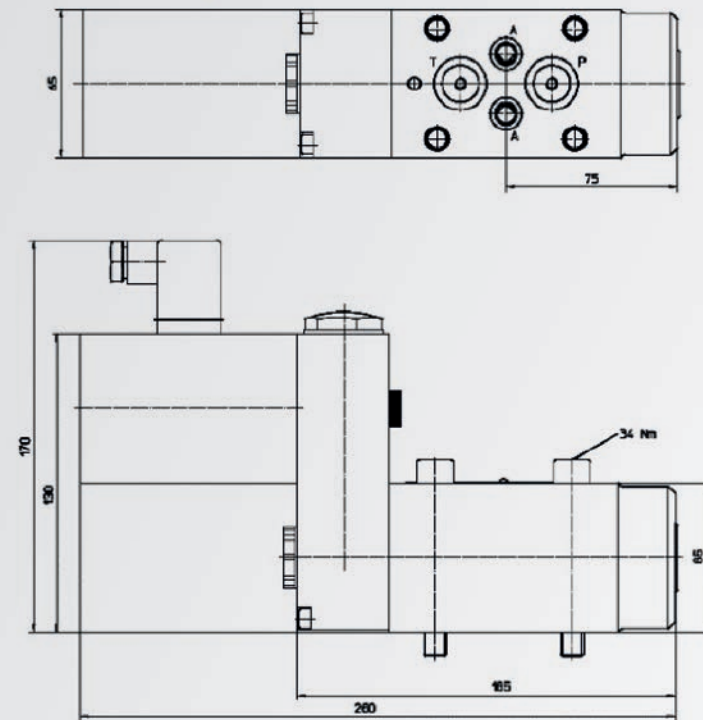


$\Delta p - q_v$ characteristic curve

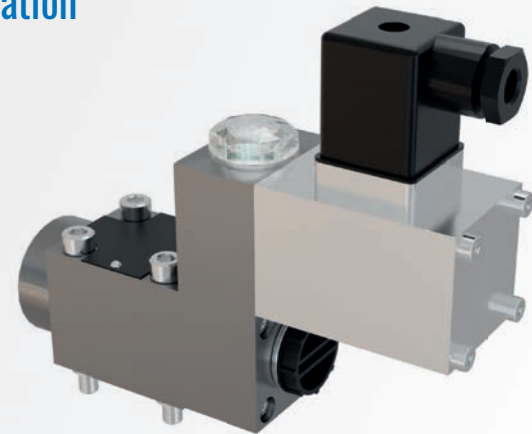
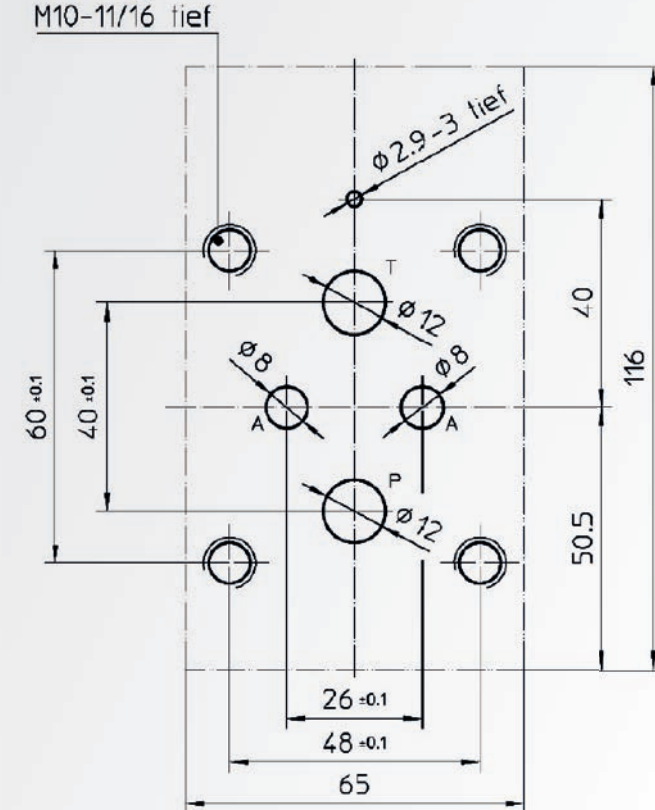


3/2-way valve DN10 | PN100 | 60l/min, solenoid actuation

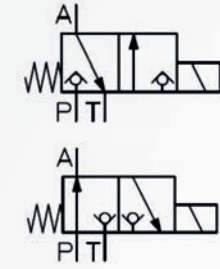
Dimensions



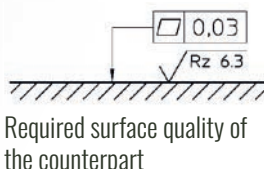
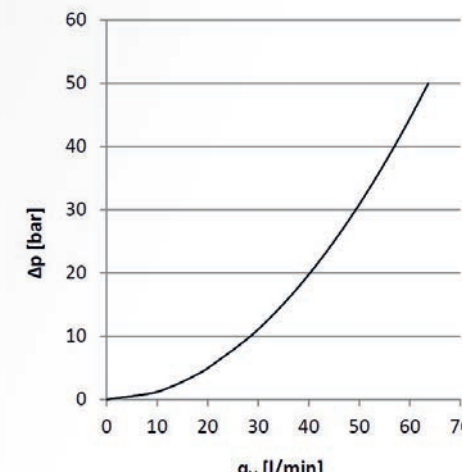
Connection diagram



Symbol



$\Delta p - q_v$ characteristic curve



Technical changes reserved.
All data and figures are considered non-binding.

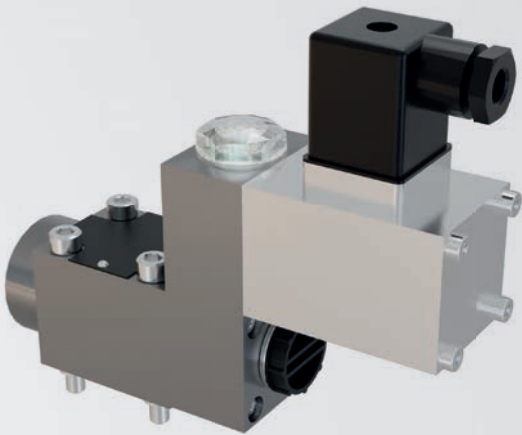
Directly actuated seat valves

DN10 | PN320 | 40l/min

2/2- and 3/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C



General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	NBR, PTFE
Hydraulic	
max. operating pressure of connector P	320bar
max. operating pressure of connector A	320bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	40 l/min
max. volume flow A→T	40 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinco requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
The covers (6) are designed with a viscosity of approx. 1.0 mm²/s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	36 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M10
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-display + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN10 | PN320 | 40l/min

Designation	Basic position	Voltage	Article number
2/2-way valve DN10 PN320, solenoid actuation weight: 8,1kg	NC	24 VDC	6235557
	NC	110 VAC	6241964
	NC	230 VAC	6243649
2/2-way valve DN10 PN320, solenoid actuation weight: 8,1kg	NO	24 VDC	6235565
	NO	110 VAC	6241956
	NO	230 VAC	6243657
Designation	Basic position	approx. manual force	Article number
2/2-way valve DN10 PN320, pushbutton control with a catch, weight: 4,0kg	NO	100N	6568475
	NC	100N	6568483
Designation	Basic position	Voltage	Article number
2/2-way valve DN10 PN320, cylinder actuation pneumatic, hydraulic, weight: 8,1kg	NC	3-320bar	6237088
	NO	3-320bar	6237061

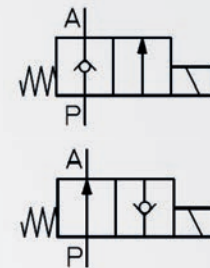
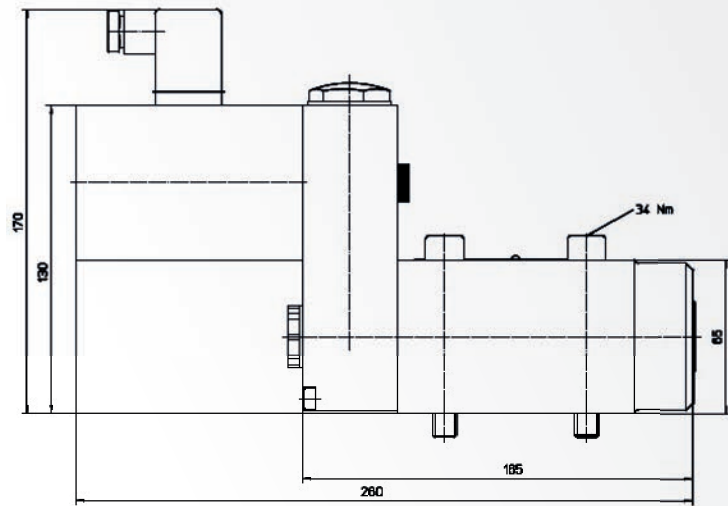
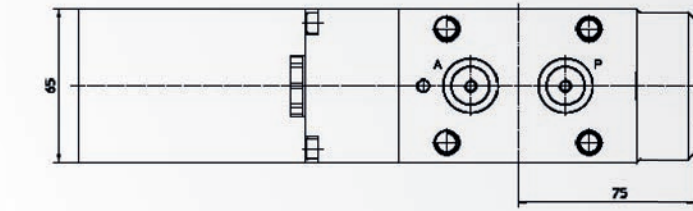
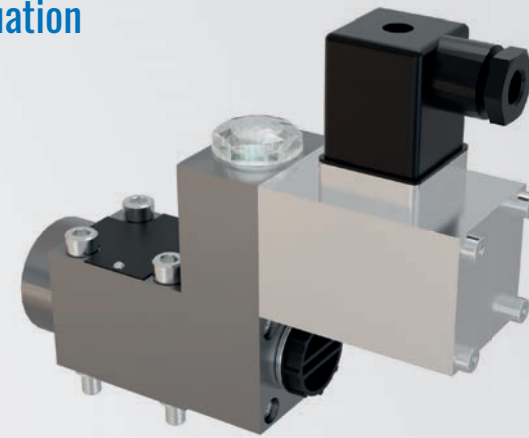
3/2-way valve DN10 | PN320 | 40l/min

Designation	Basic position	Voltage	Article number
3/2-way valve DN10 PN320, solenoid actuation weight: 8,1kg	A→T NO	24 VDC	6235530
	A→T NO	110 VAC	6241980
	A→T NO	230 VAC	6243622
3/2-way valve DN10 PN320, solenoid actuation weight: 8,1kg	P→A NO	24 VDC	6235549
	P→A NO	110 VAC	6241972
	P→A NO	230 VAC	6243630
3/2-way valve DN10 PN320, solenoid actuation with a catch, weight: 11,0kg	A→T NO	24 VDC	6576060
	P→A NO	24 VDC	6576079
Designation	Basic position	Article number	
3/2 -way valve DN10 PN320, roller actuation weight: 7,1kg	A→T NO	6237703	
	P→A NO	6237681	
Designation	Basic position	adm. control pressure „Z“	Article number
3/2-way valve DN10 PN320, cylinder actuation pneumatic, hydraulic, weight: 8,1kg	A→T NO	3-320bar	6237053
	P→A NO	3-320bar	6237045
Designation	Basic position	approx. manual force	Article number
3/2-way valve DN10 PN320, pushbutton control with a catch, weight: 4,0kg	A→T NO	100N	6568491
	P→A NO	100N	6568505

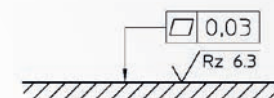
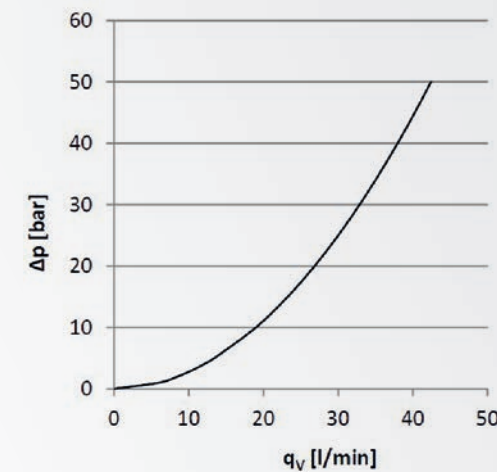
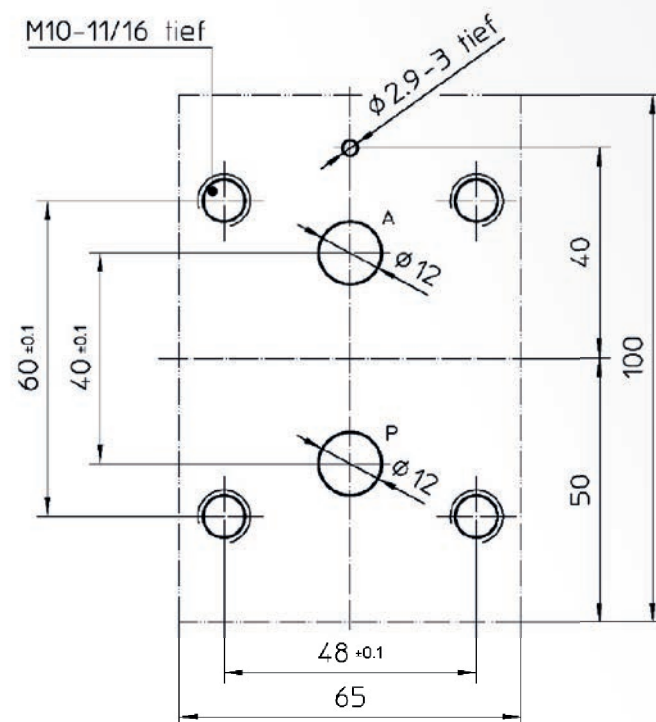
Technical changes reserved.
All data and figures are considered non-binding.

2/2-way valve DN10 | PN320 | 40l/min, solenoid actuation

Dimensions



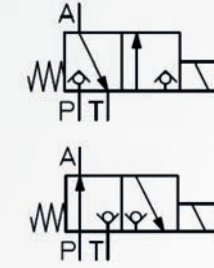
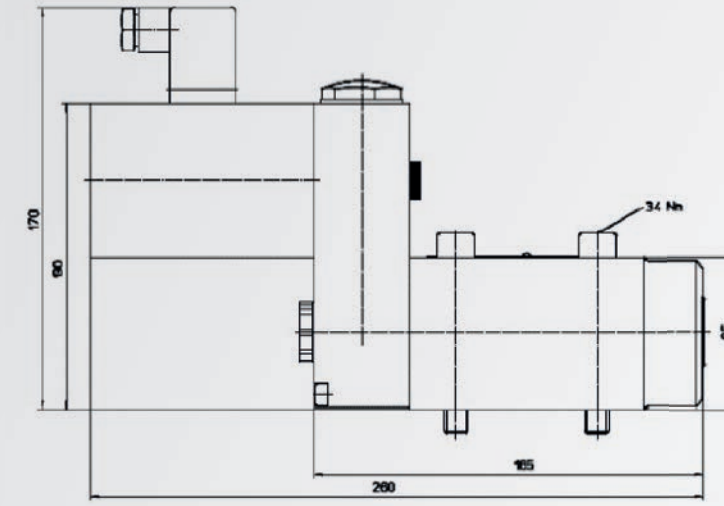
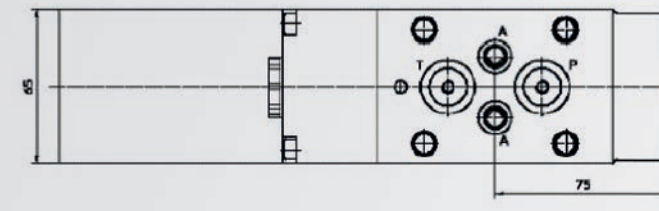
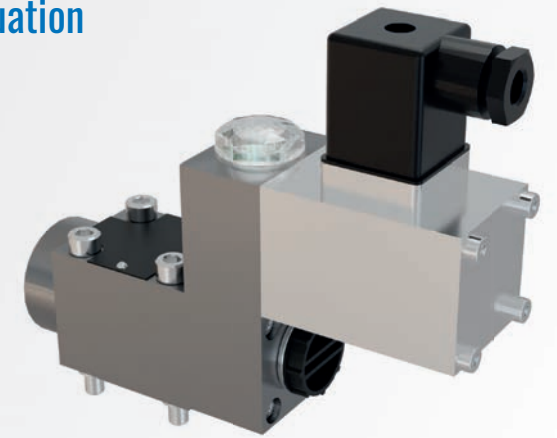
Connection diagram



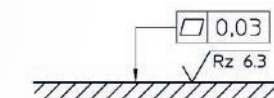
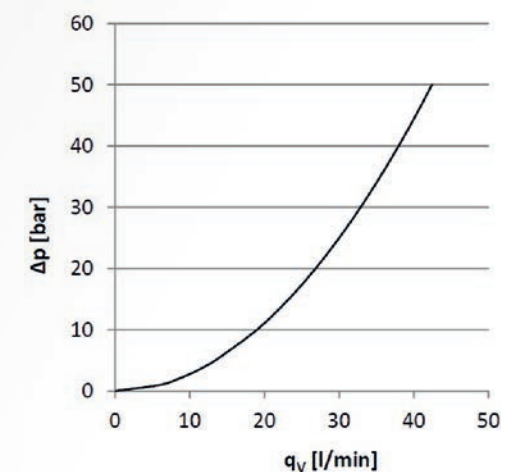
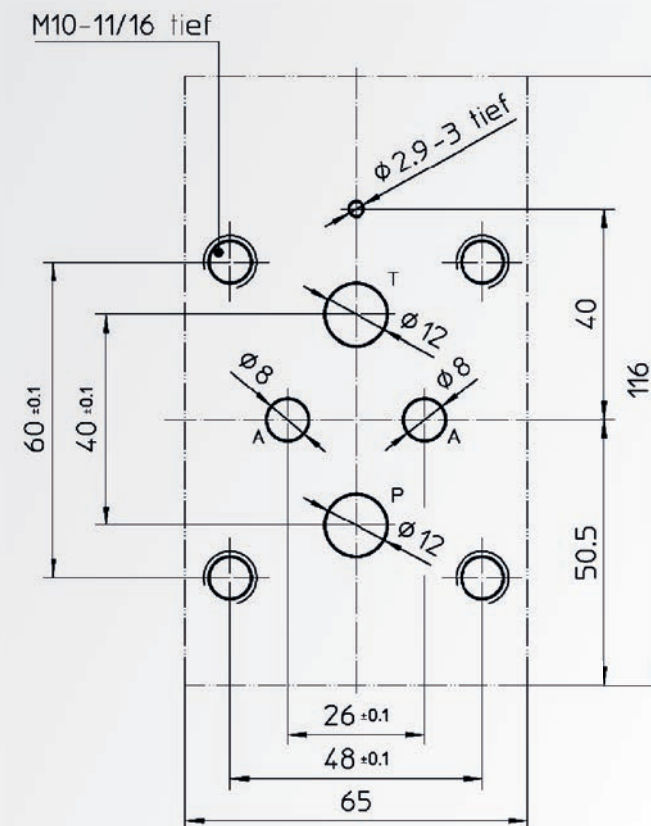
Required surface quality of the counterpart

3/2-way valve DN10 | PN320 | 40l/min, solenoid actuation

Dimensions



Connection diagram



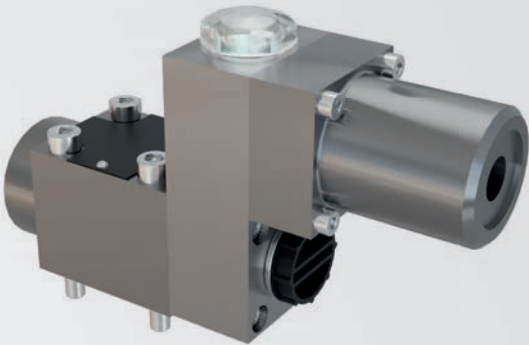
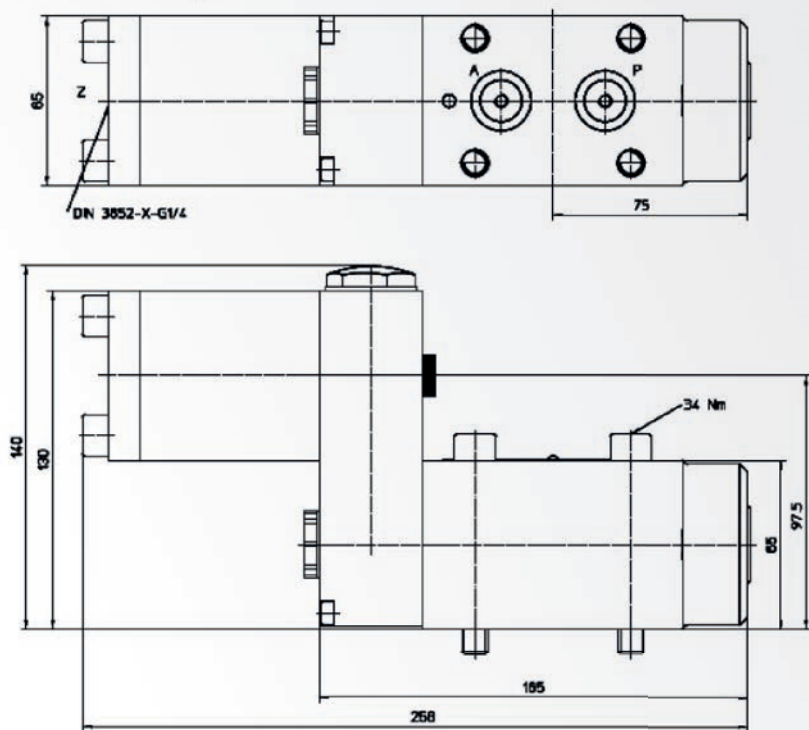
Required surface quality of the counterpart

Technical changes reserved.
All data and figures are considered non-binding.

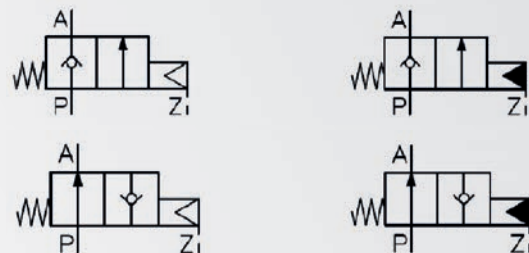
2/2-way valve DN10 | PN320 | 40l/min, cylinder actuation

1

Dimensions

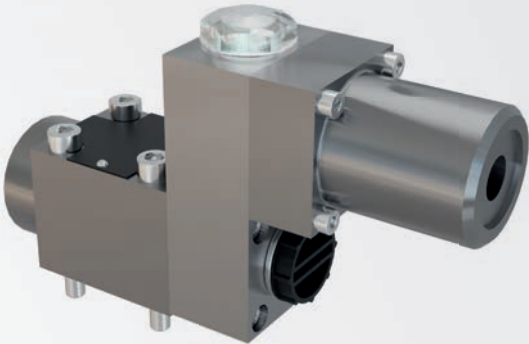
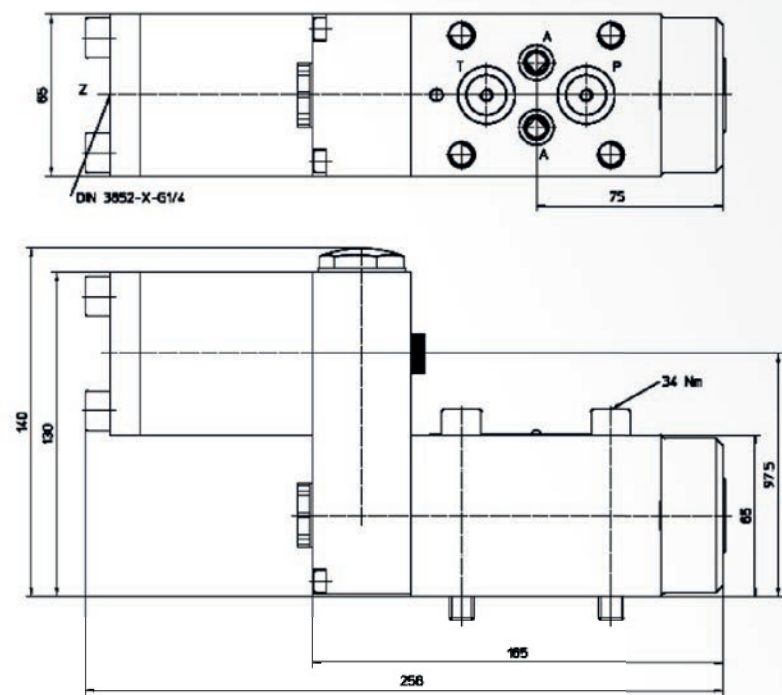


Symbol

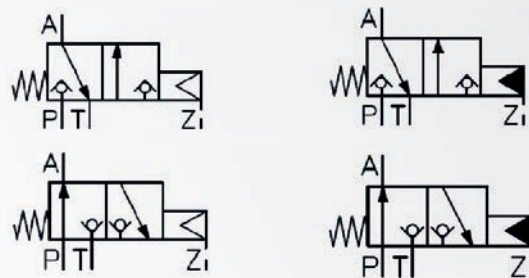


3/2-way valve DN10 | PN320 | 40l/min, cylinder actuation

Dimensions



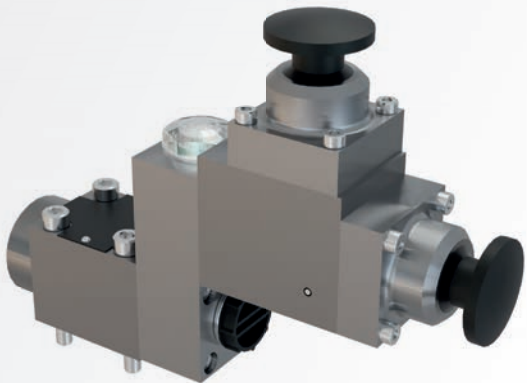
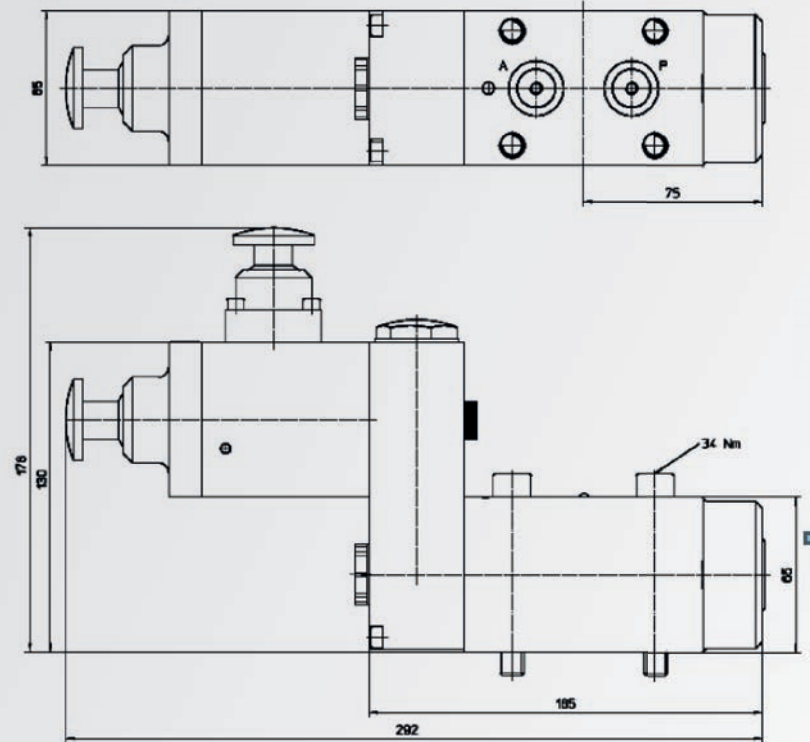
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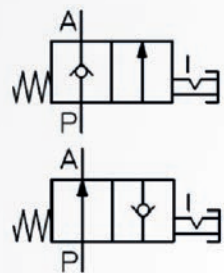
2/2-way valve DN10 | PN320 | 40l/min, pushbutton control with a catch

1

Dimensions

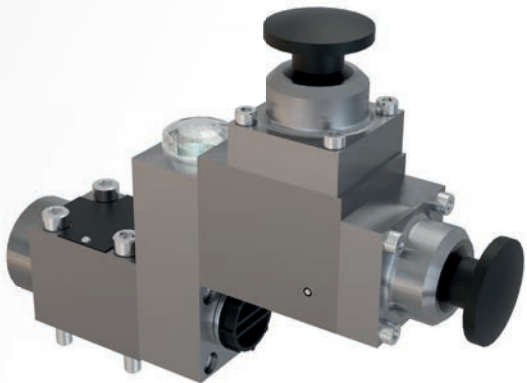
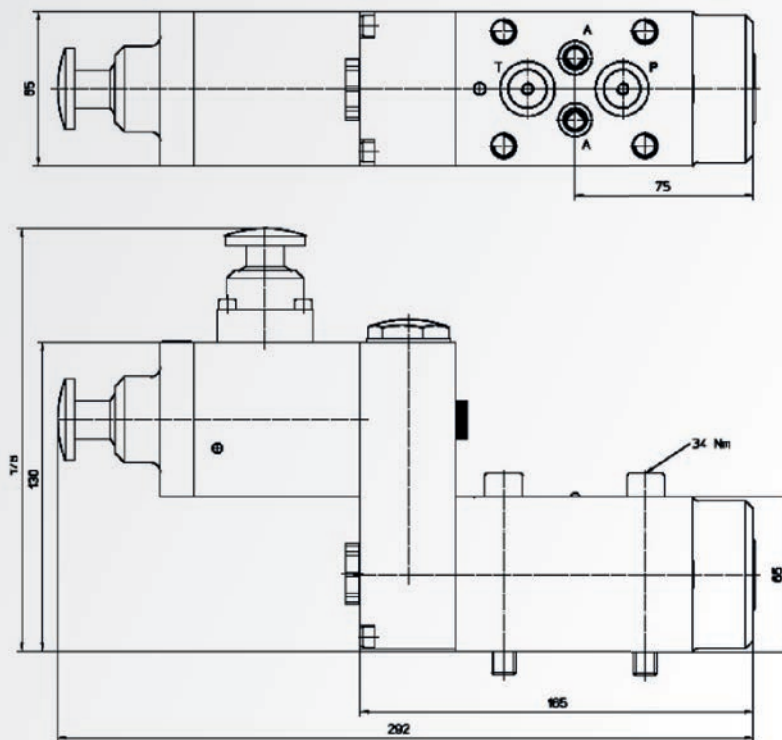


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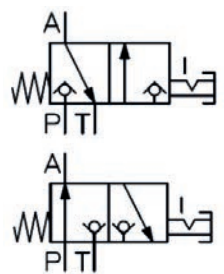


3/2-way valve DN10 | PN320 | 40l/min, pushbutton control with a catch

Dimensions

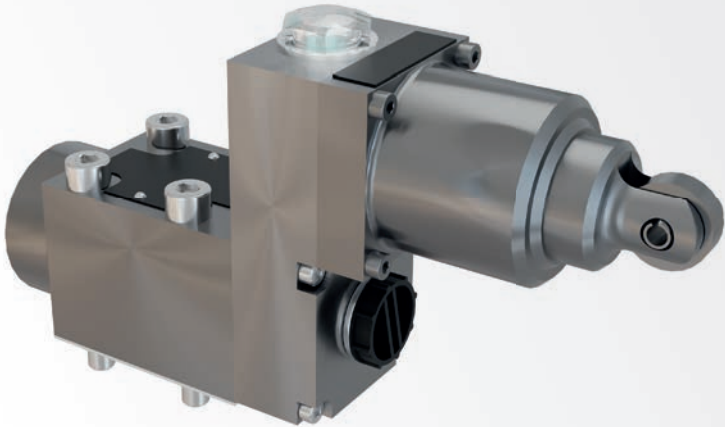


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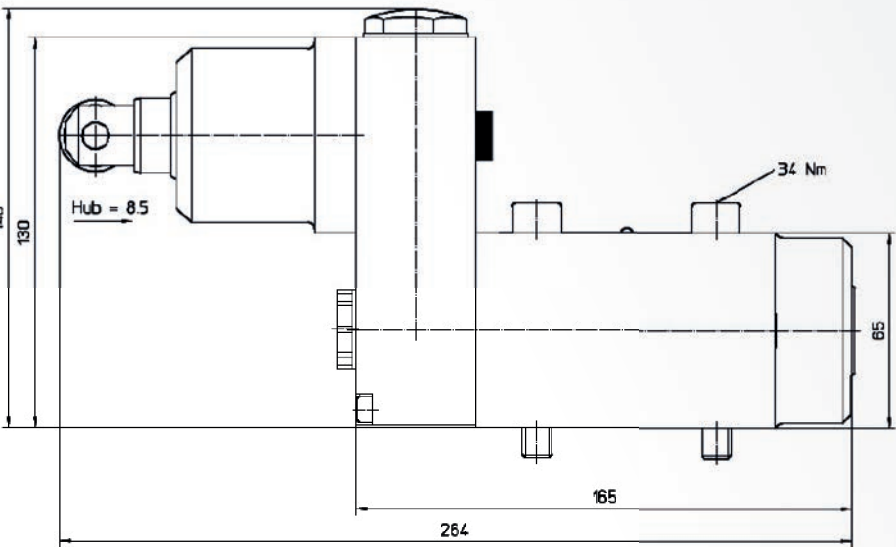
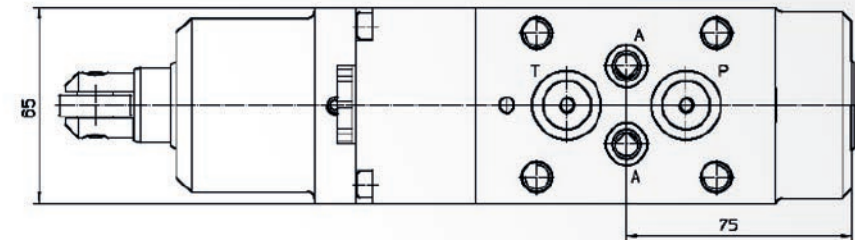


3/2-way valve DN6 | PN320 | 15l/min, roller actuation

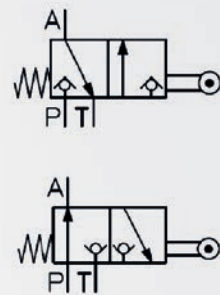
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Dimensions

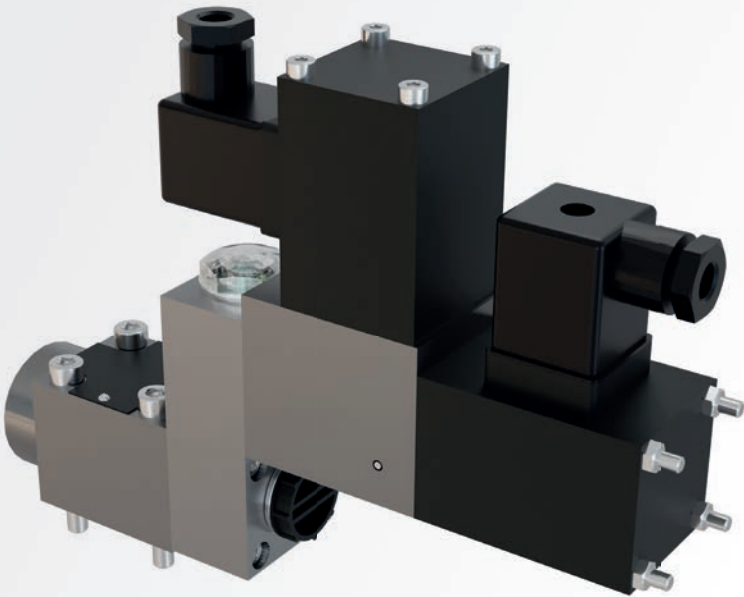


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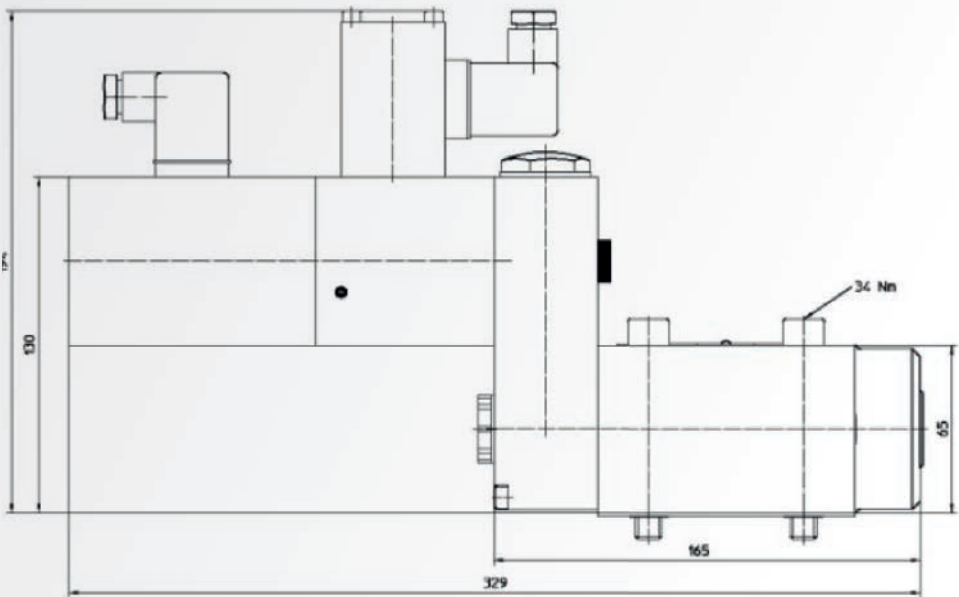
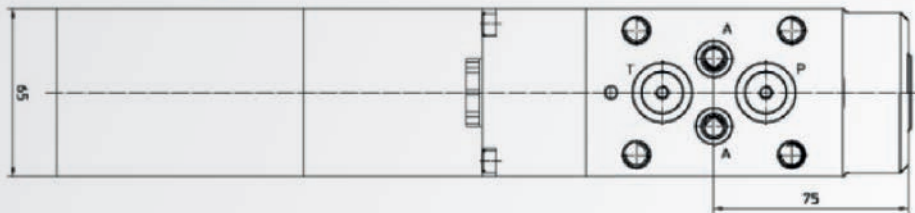


3/2-way valve DN10 | PN320 | 40l/min, solenoid actuation with a catch

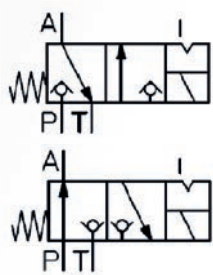
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Dimensions



Symbol



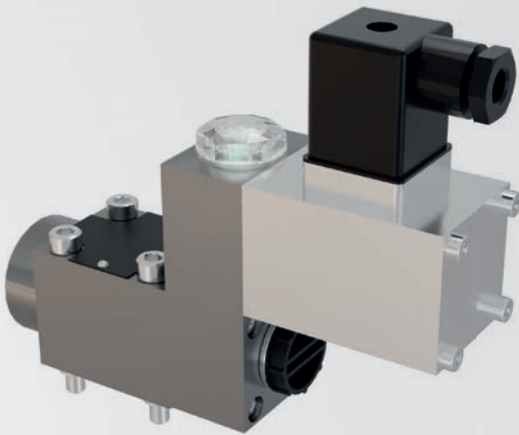
Technical changes reserved.
All data and figures are considered non-binding.

Directly actuated seat valves DN10 | PN700 | 40l/min

2/2- and 3/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C



General	
Weight	8,1 kg
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze except electromagnet
Material Seals	FKM, PTFE
Hydraulic	
max. operating pressure of connector P	700bar
max. operating pressure of connector A	700bar
max. operating pressure of connector T	50bar
max./min. control pressure of connector Z	see Order information
max. volume flow P→A	40 l/min
max. volume flow A→T	40 l/min
specified direction of flow	P→A, A→T
Pressure fluid	water, HFA
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	see Hauhinco requirements on water and HFA media
- Cleanliness class, filter fineness	class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Pressure fluid	mineral oil, HLP
- Medium - Temperature range	-10 bis 50°C
- Medium - Quality	acc. to DIN 51524
- Cleanliness class, filter fineness	Class 20/18/15, filter fineness 25µm
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
The covers (6) are designed with a viscosity of approx. 1.0 mm²/s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.	
Electric	
Voltage	24 VDC, 110 VAC (96 VDC), 230 VAC (205 VDC)
AC grid, admissible tolerance	± 10%
AC grid, admissible frequency	50 bis 60 Hz
Power consumption	55 W
Operating time	100% ED
Degree of protection acc. to EN60529	IP65
max. switching rate	1 Hz

Order information

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw M10
Cable socket of the valve solenoid	according to DIN 43650 – type of design A
- Supply voltage 24 VDC	max. 100 VA, LED-display + Z-diode, IP65
- Supply voltage 110 VAC	max. 1.5 A, bridge rectifier, LED display, IP65
- Supply voltage 230 VAC	max. 1.5 A, bridge rectifier, LED display, IP65

2/2-way valve DN10 | PN700 | 40l/min, solenoid actuation

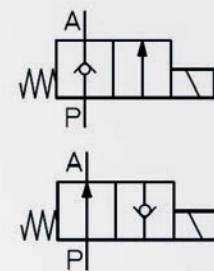
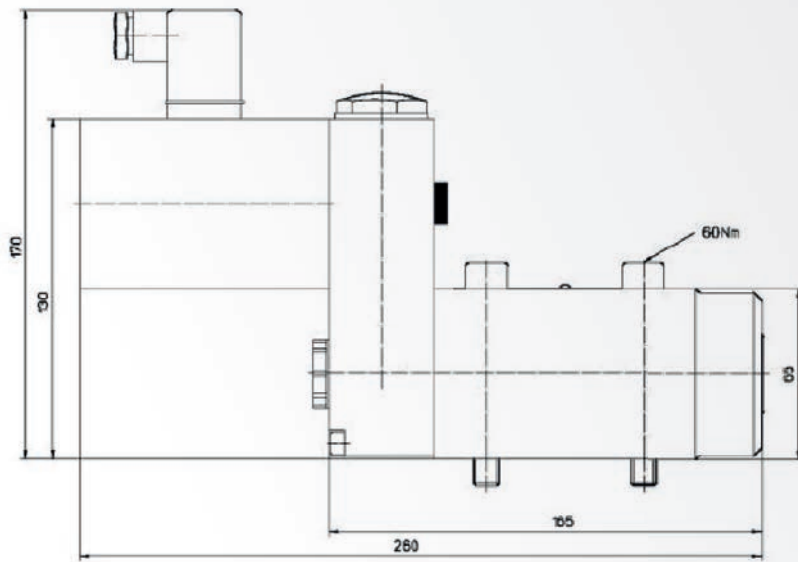
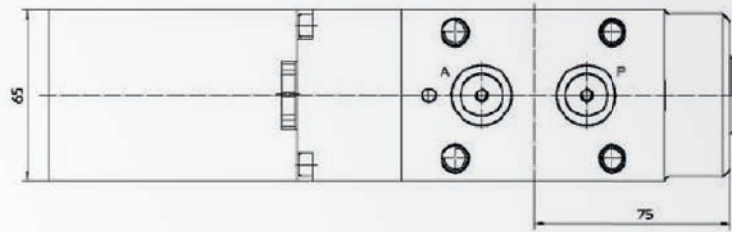
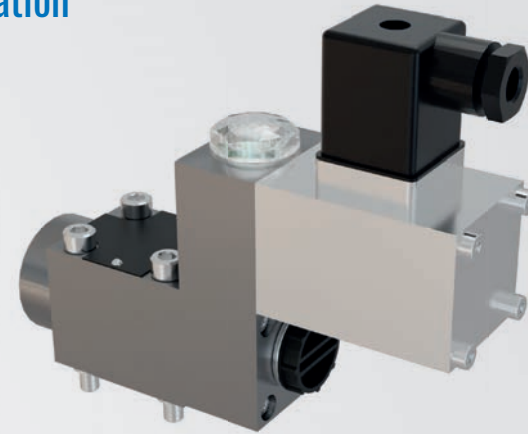
Designation	Basic position	Voltage	Article number
2/2-way valve DN10 PN700	NC	24 VDC	6553486
	NC	110 VAC	6547281
	NC	230 VAC	6547303
2/2-way valve DN10 PN700	NO	24 VDC	6553494
	NO	110 VAC	6547311
	NO	230 VAC	6547338

3/2-way valve DN10 | PN700 | 40l/min, solenoid actuation

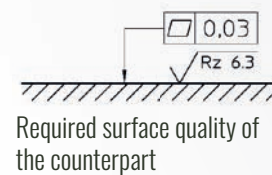
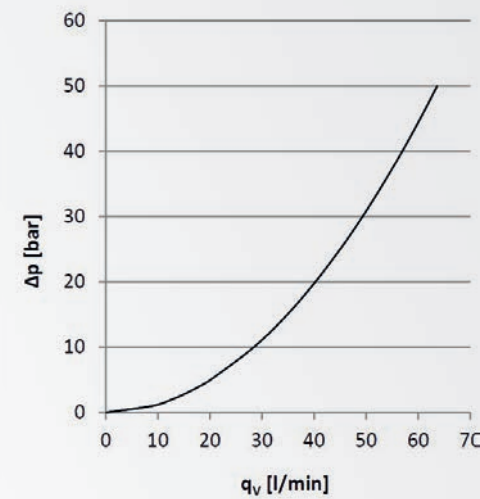
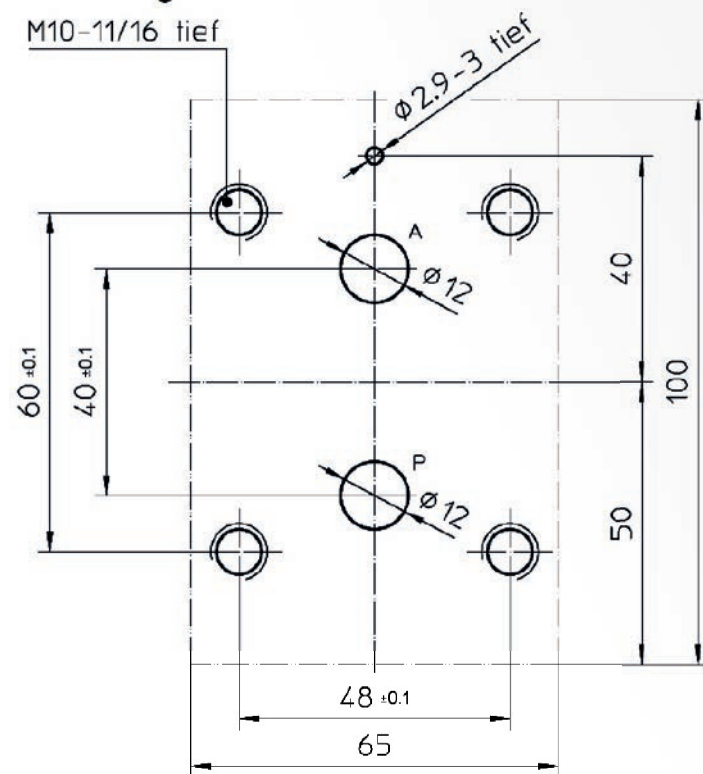
Designation	Basic position	Voltage	Article number
3/2-way valve DN10 PN700	A→T NO	24 VDC	6254543
	A→T NO	110 VAC	6547346
	A→T NO	230 VAC	6547354
3/2-way valve DN10 PN700	P→A NO	24 VDC	6254551
	P→A NO	110 VAC	6547362
	P→A NO	230 VAC	6547370

2/2-way valve DN10 | PN700 | 40l/min, solenoid actuation

Dimensions

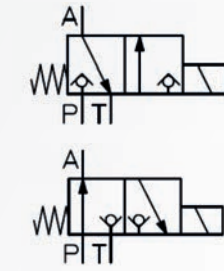
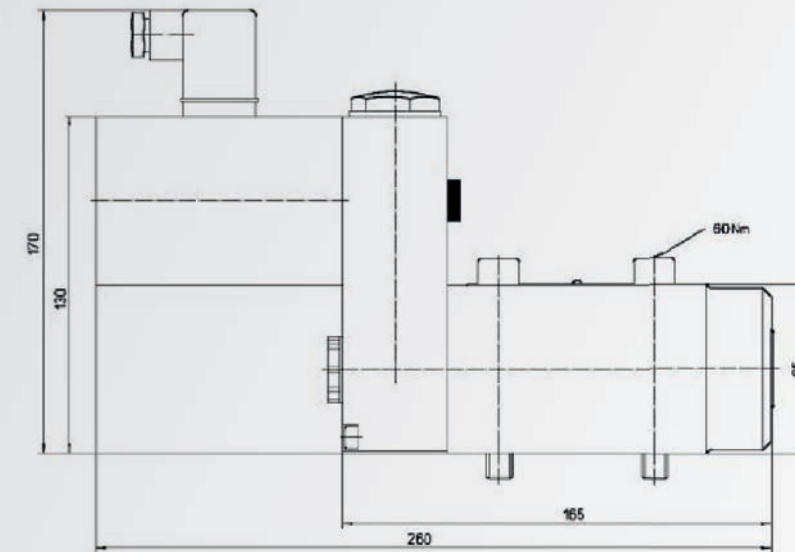
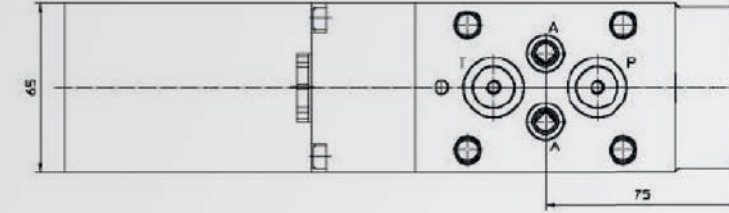
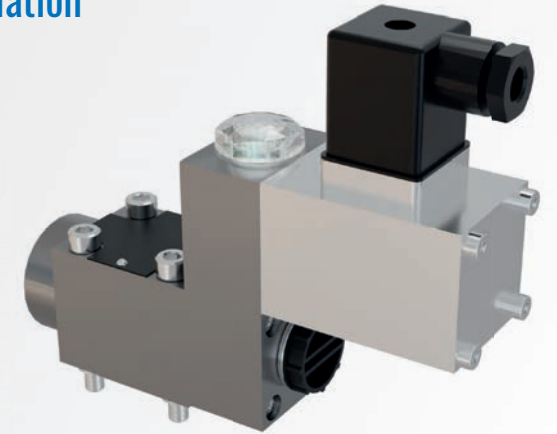


Connection diagram

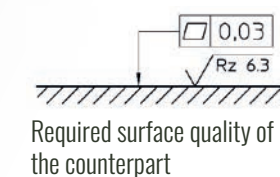
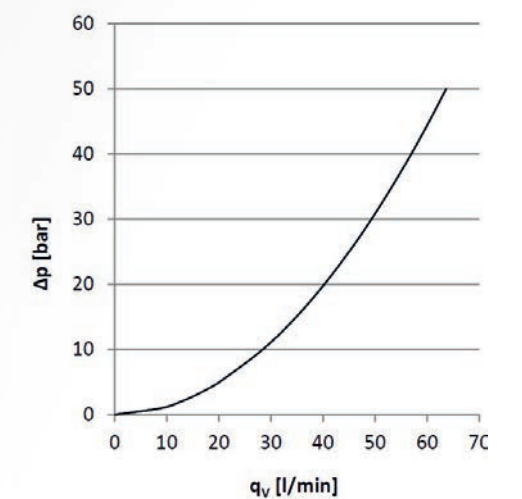
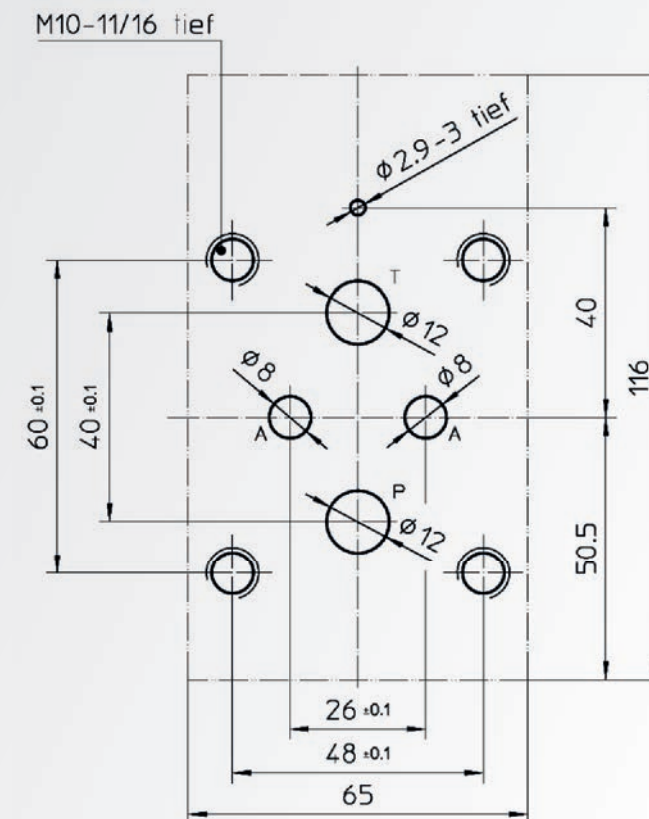


3/2-way valve DN10 | PN700 | 40l/min, solenoid actuation

Dimensions



Connection diagram



Technical changes reserved.
All data and figures are considered non-binding.

Proportional seat valve

2/2-ways

Features

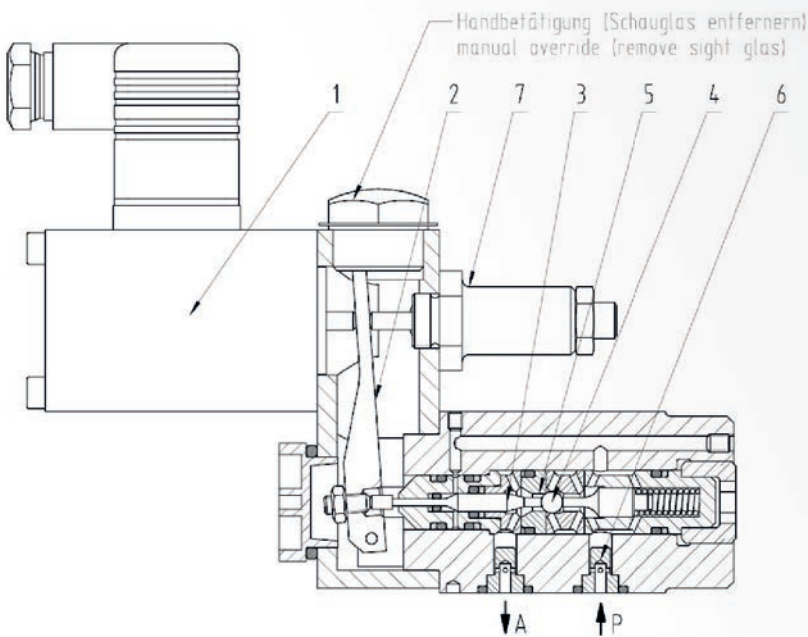
- Directly actuated directional seat valve for liquid media
- Valve actuation by means of proportional solenoid
- The proportional solenoid is activated via the Hauhinco automatic control unit „Controller RE4“
- The valve seat provides a leak-free seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable
- Valve fastening structural plate form with a Hauhinco Connection diagram

Function 2/2-way proportional seat valve

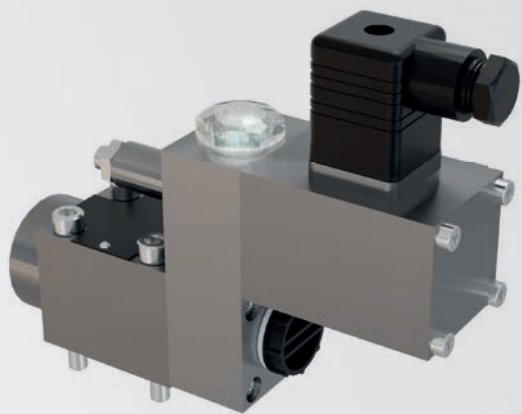
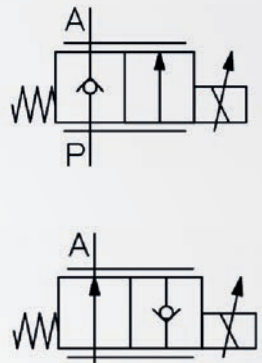
The generated magnetic force (1) acts via the lever (2), the tappet (3) onto the ball (4) and presses it out of the valve seat (5). This is used to connect lines P and A. The covers (6) support the flange seals from the inside and limits the maximum admissible volume flow. A defined actuating force can be preset (factory setting) by means of the counter-spring. The proportional solenoid is electrically activated by regulated current generated as the manipulated variable by the controlled electronic control unit, the Controller RE4. The controlled valve current specifies the degree of opening of the valve, thus, ahydraulic volume flow or pressure control can be performed.

Depending on the arrangement of the valve seat (5) and ball (4) the valve will have the basic position normally closed (NC) or normally open (NO).

Example 2-way proportional valve



Symbol



2/2-way Proportional seat valve

Image	Nominal size	max. Flow rate [l/min]	max. Operating pressure [bar]	Type	Actuation	Page
	DN3	10	320	Plate-type	Controller RE4	72
	DN3	10	500	Plate-type	Controller RE4	72
	DN6	15	320	Plate-type	Controller RE4	74
	DN6	15	500	Plate-type	Controller RE4	74
	DN10	40	320	Plate-type	Controller RE4	76
	DN10	40	500	Plate-type	Controller RE4	76

Control unit (not included in the scope of delivery of the valve)
Controller RE4, Article number 2336596
Control unit for Hauhinco Proportional seat valves

In this catalogue on page 238



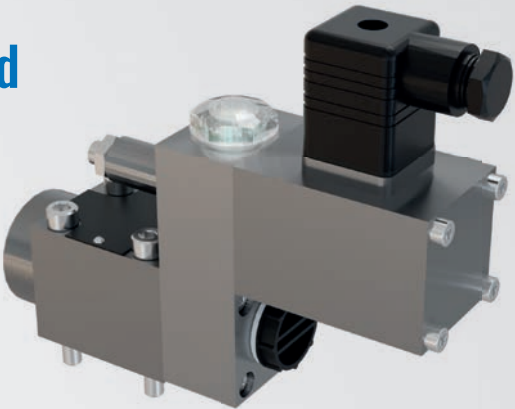
Proportional seat valve, directly actuated
DN3 | PN320, PN500 | 10l/min

2/2-ways

Technical data

measured with HFA medium 97/3%, at 20°C

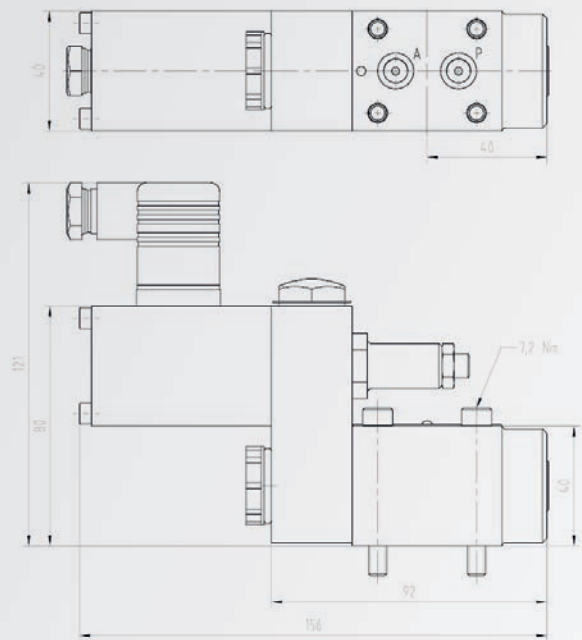
General		
Weight	1,9 kg	
Installation position	any	
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)	
Material Valve parts	Stainless steel, bronze except electromagnet	
Material Seals	NBR, PTFE	
Hydraulic		
max. operating pressure of connector P	320bar	500bar
max. operating pressure of connector A	320bar	500bar
max. operating pressure of connector T	50bar	
max./min. control pressure of connector Z	see Order information	
max. volume flow P→A	10 l/min	
specified direction of flow	P→A,	
Pressure fluid	water, HFA	
- Medium - Temperature range	5 bis 50°C	
- Medium - Quality	see Hauhinco requirements on water and HFA media	
- Cleanliness class, filter fineness	Calss -/18/15, filter fineness 25µm	
- Viscosity	0,6 bis 100 mm ² /s	
Pressure fluid	mineral oil, HLP	
- Medium - Temperature range	-10 bis 50°C	
- Medium - Quality	acc. to DIN 51524	
- Cleanliness class, filter fineness	Class -/18/15, filter fineness 25µm	
- Viscosity	0,6 bis 100 mm ² /s	
Use of other pressure fluids on request.		
The covers (6) are designed with a viscosity of approx. 1.0 mm ² /s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.		
Electric		
Voltage	24 VDC	
Power consumption	21 W	
Operating time	100% ED	
Degree of protection acc. to EN60529	IP65	



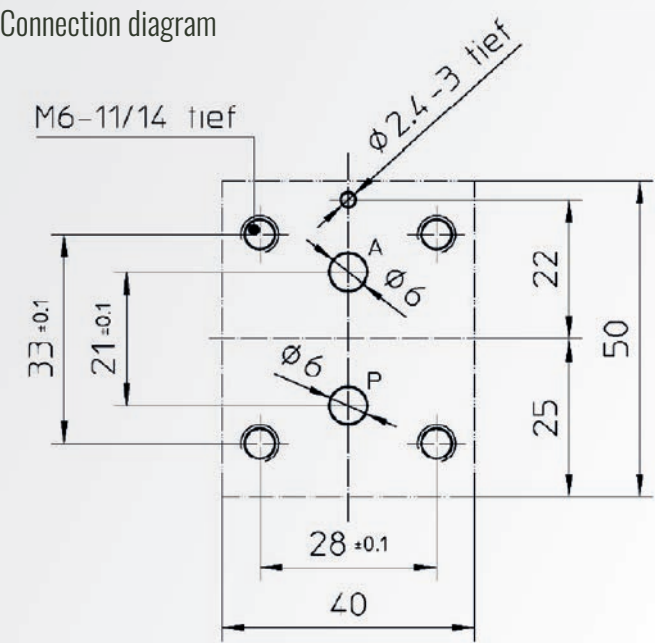
Order information

Included in the scope of supply			
Mounting screws of the valve	Cheese-head screw		
Cable socket of the valve solenoid - Supply voltage 24 VDC	according to DIN 43650 – type of design A max. 100 VA		
Designation	Basic position	Voltage	Article number
2/2-way proportional valve DN3 PN320	NC	24 VDC	6545718
	NO	24 VDC	6545726
2/2-way proportional valve DN3 PN500	NC	24 VDC	6547273
	NO	24 VDC	6547265

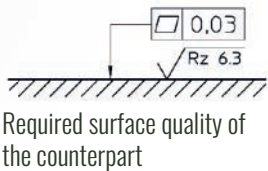
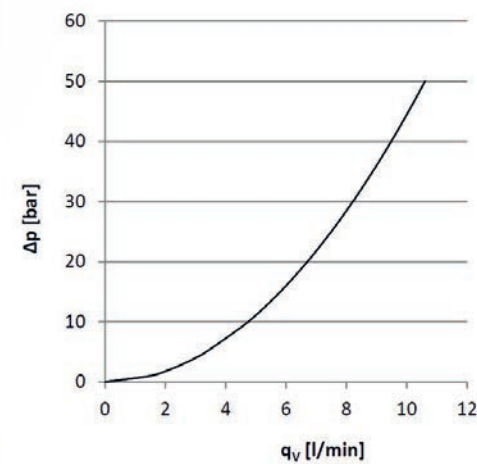
Dimensions



Connection diagram



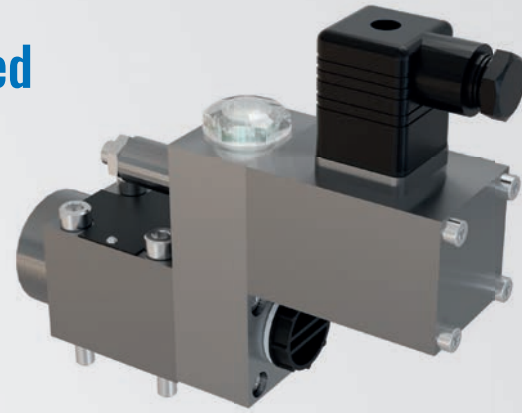
Δp – qV characteristic curve



Technical changes reserved.
All data and figures are considered non-binding.

Proportional seat valve, directly actuated DN6 | PN320, PN500 | 15l/min

2/2-ways



Technical data

measured with HFA medium 97/3%, at 20°C

General		
Weight	3,8 kg	
Installation position	any	
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)	
Material Valve parts	Stainless steel, bronze except electromagnet	
Material Seals	NBR, PTFE	
Hydraulic		
max. operating pressure of connector P	320bar	500bar
max. operating pressure of connector A	320bar	500bar
max. operating pressure of connector T	50bar	
max./min. control pressure of connector Z	see Order information	
max. volume flow P→A	15 l/min	
specified direction of flow	P→A,	
Pressure fluid	Wasser, HFA	
- Medium - Temperature range	5 bis 50°C	
- Medium - Quality	siehe Hauhinco Anforderungen an Wasser- und HFAMedien	
- Cleanliness class, filter fineness	Klasse -/18/15, Filterfeinheit 25µm	
- Viscosity	0,6 bis 100 mm²/s	
Pressure fluid	Mineralöl, HLP	
- Medium - Temperature range	-10 bis 50°C	
- Medium - Quality	nach DIN 51524	
- Cleanliness class, filter fineness	Klasse -/18/15, Filterfeinheit 25µm	
- Viscosity	0,6 bis 100 mm²/s	
Use of other pressure fluids on request.		
The covers (6) are designed with a viscosity of approx. 1.0 mm²/s; if a medium with a substantially different viscosity is used, the covers must be selected such that the maximum admissible volume flow is not exceeded.		
Electric		
Voltage	24 VDC	
Power consumption	21 W	
Operating time	100% ED	
Degree of protection acc. to EN60529	IP65	

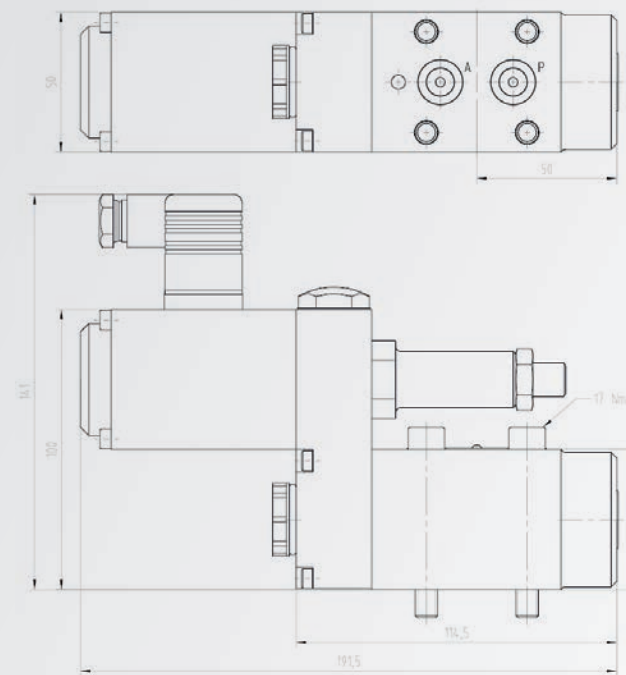
Order information

Included in the scope of supply

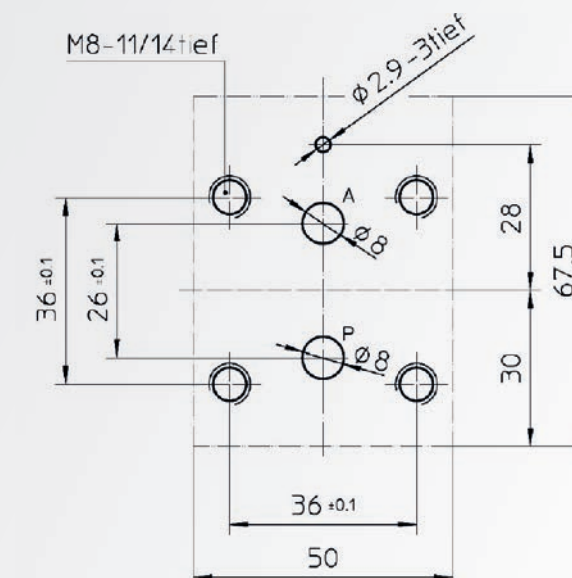
Mounting screws of the valve	Cheese-head screw
Cable socket of the valve solenoid - Supply voltage 24 VDC	according to DIN 43650 – type of design A max. 100 VA

Designation	Basic position	Voltage	Article number
2/2-way proportional valve DN6 PN320	NC	24 VDC	6546382
	NO	24 VDC	6546390
2/2-way proportional valve DN6 PN500	NC	24 VDC	6546943
	NO	24 VDC	6547230

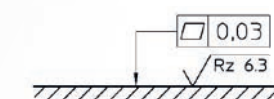
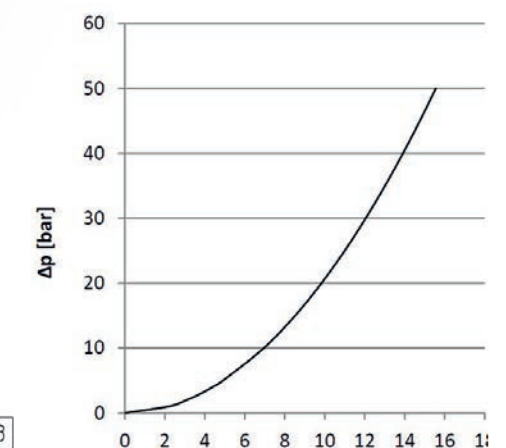
Dimensions



Connection diagram



$\Delta p - qV$ characteristic curve

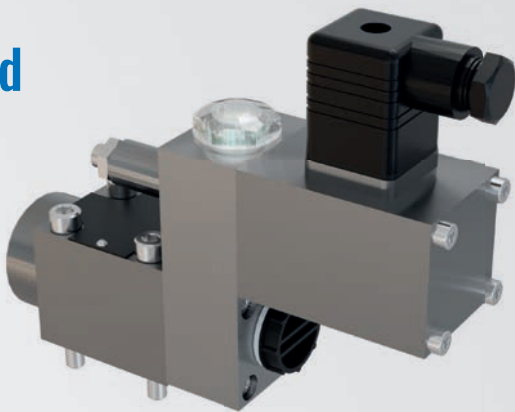


Required surface quality of the counterpart

Technical changes reserved.
All data and figures are considered non-binding.

Proportional seat valve, directly actuated
DN10 | PN320, PN500 | 40l/min

2/2-ways



Technical data

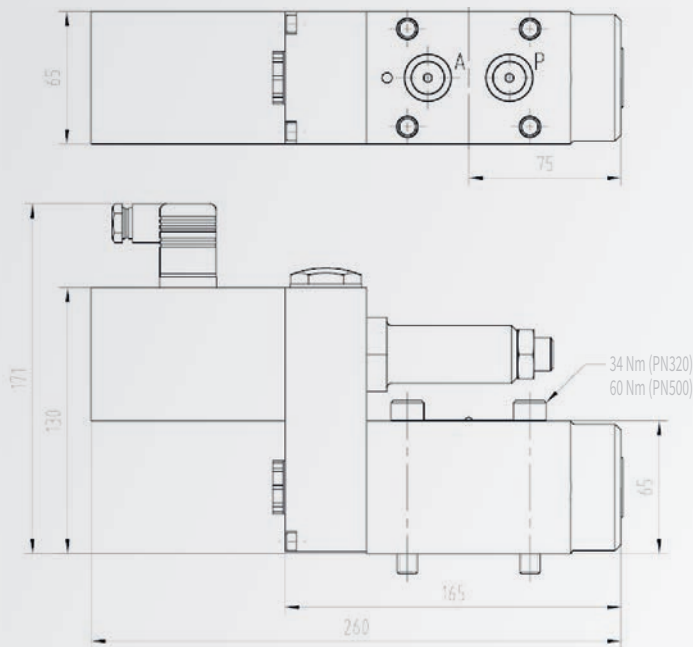
measured with HFA medium 97/3%, at 20°C

General		
Weight	8,5 kg	
Installation position	any	
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)	
Material Valve parts	Stainless steel, bronze except electromagnet	
Material Seals	NBR, PTFE	
Hydraulic		
max. operating pressure of connector P	320bar	500bar
max. operating pressure of connector A	320bar	500bar
max. operating pressure of connector T	50bar	
max./min. control pressure of connector Z	see Order information	
max. volume flow P→A	40 l/min	
specified direction of flow	P→A,	
Pressure fluid	Wasser, HFA	
- Medium - Temperature range	5 bis 50°C	
- Medium - Quality	siehe Hauhinco Anforderungen an Wasser- und HFAMedien	
- Cleanliness class, filter fineness	Klasse -/18/15, Filterfeinheit 25µm	
- Viscosity	0,6 bis 100 mm²/s	
Pressure fluid	Mineralöl, HLP	
- Medium - Temperature range	-10 bis 50°C	
- Medium - Quality	nach DIN 51524	
- Cleanliness class, filter fineness	Klasse -/18/15, Filterfeinheit 25µm	
- Viscosity	0,6 bis 100 mm²/s	
Use of other pressure fluids on request.		
Die Blenden (6) sind ausgelegt auf eine Viskosität von ca. 1,0 mm²/s, bei dem Einsatz eines Medium mit stark abweichender Viskosität sind die Blenden so zu wählen, dass der maximal zulässige Volumenstrom nicht überschritten wird.		
Electric		
Voltage	24 VDC	
Power consumption	21 W	
Operating time	100% ED	
Degree of protection acc. to EN60529	IP65	

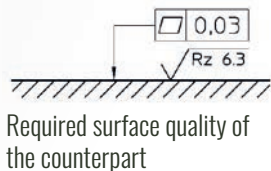
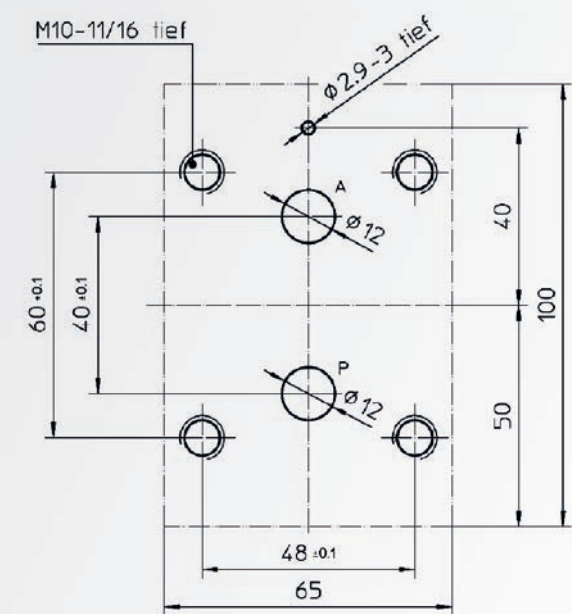
Order information

Included in the scope of supply			
Mounting screws of the valve	Cheese-head screw		
Cable socket of the valve solenoid - Supply voltage 24 VDC	according to DIN 43650 – type of design A max. 100 VA		
Designation	Basic position	Voltage	Article number
2/2-way proportional valve DN10 PN320	NC	24 VDC	6244270
	NO	24 VDC	6244289
2/2-way proportional valve DN10 PN500	NC	24 VDC	6553508
	NO	24 VDC	6547397

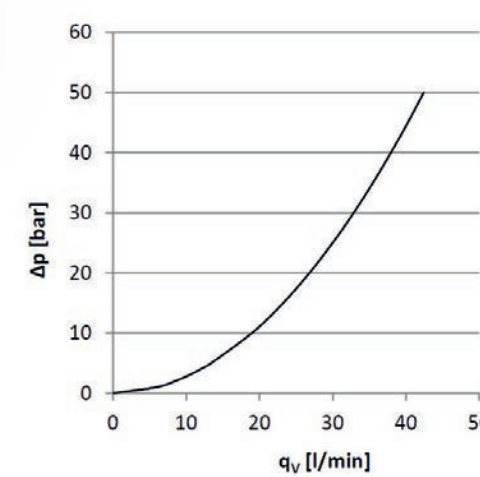
Dimensions



Connection diagram



Δp – qV characteristic curve



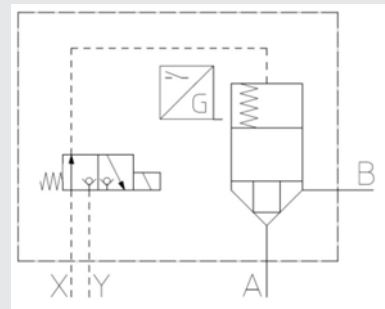
Technical changes reserved.
All data and figures are considered non-binding.

Contents Way Valves actuated

2/2-way valve C1 X, Y actuated

DN16 - DN125 PN 320

- Passively controllable 2/2-way valve with 1-stage control logic
- Function variants possible via the interconnection of the X- and Y-line
- Valve seat sleeve equipped with a low-friction seal, thus, the valve pistons move easily and without inner leakages
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- The valve is actuated via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram
- In closed position, the switching position is monitored by a proximity switch



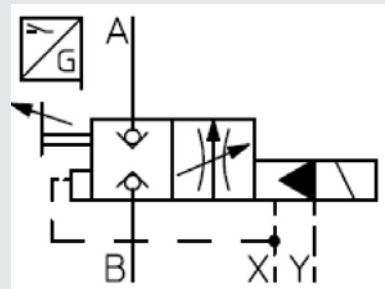
Page 80

2/2-way valve C3 X, Y actuated

DN12 - DN125 PN 320

DN16 - DN100 PN 500

- Actively controllable 2/2-way valve with a 3-stage control logic provides safe opening and closing
- The valve is actuated via a 3/2-way pilot valve
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- Valve fastening structural plate form with a Hauhinco connection diagram
- The valve cross-section can be set via the stroke limitation and be locked mechanically
- Optically and with an optional proximity switch, the valve position can be monitored
- Optionally, a locking device can be selected for the stroke limitation

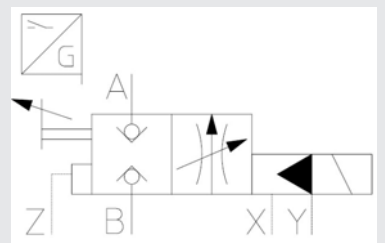


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2/2-way valve C3 X, Y, Z actuated

DN25 - DN100 PN 320

- Actively controllable 2/2-way valve with a 3-stage control logic provides safe opening and closing
- The valve is actuated via a 3/2-way pilot valve
- Function variants possible via the interconnection of the Z-line
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- The valve cross-section can be set via the stroke limitation and be locked mechanically
- Valve fastening structural plate form with a Hauhinco connection diagram
- Optically and with an optional proximity switch, the valve position can

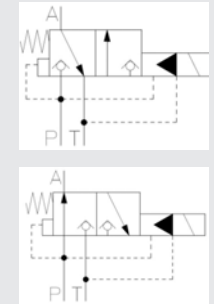


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3/2-way valve B1 X, Y internally actuated

DN3 - DN25, PN320, PN500

- Passively controllable 3/2-way valve with 1-stage control logic
- The basic valve position is maintained by the hydraulic pressure (P)
- The valve is designed in two function variants , A-T NO and P-T NO
- The nominal value DN16 provides the switching function starting with a hydraulic pressure of 3bar
- The hydraulic control pressure (X, Y) is picked off internally along the lines (P, T)
- Valve piston and valve seat are coupled and close hydraulically „leak-free“
- The valve is actuated hydraulically via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram



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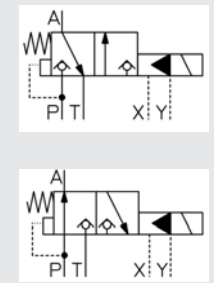
A→T NO

P→A NO

3/2-way valve B2 X, Y externally actuated

DN10 - DN16, PN320

- Passively controllable 3/2-way valve with 2-stage control logic
- The basic valve position is maintained by the hydraulic pressure (P)
- The valve is designed in two function variants , A-T NO and P-T NO
- The hydraulic control pressure (X, Y) is applied externally via the connection diagram
- Valve piston and valve seat are coupled and close hydraulically „leak-free“
- The valve is actuated hydraulically via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram



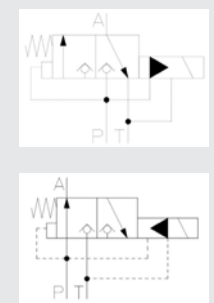
A→T NO

P→A NO

3/2-way valve B2 X, Y internally actuated

DN10 - DN16, PN320

- Hydraulically actuated directional seat valve controlling liquid media.
- Passively controllable 3/2-way valve with 2-stage control logic
- The basic valve position is maintained by the hydraulic pressure (P)
- The valve is designed in the function variant P→T NO, the function variant A→T NO can be generated by a pilot valve with the hydraulic function P→A NO
- The hydraulic control pressure (X, Y) is picked off internally along the lines (P, T)
- Valve piston and valve seat are coupled and close hydraulically „leak-free“
- The valve is actuated hydraulically via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram



A→T NO

P→A NO

2/2-way valve C1 X, Y actuated

DN16 - DN125 PN 320

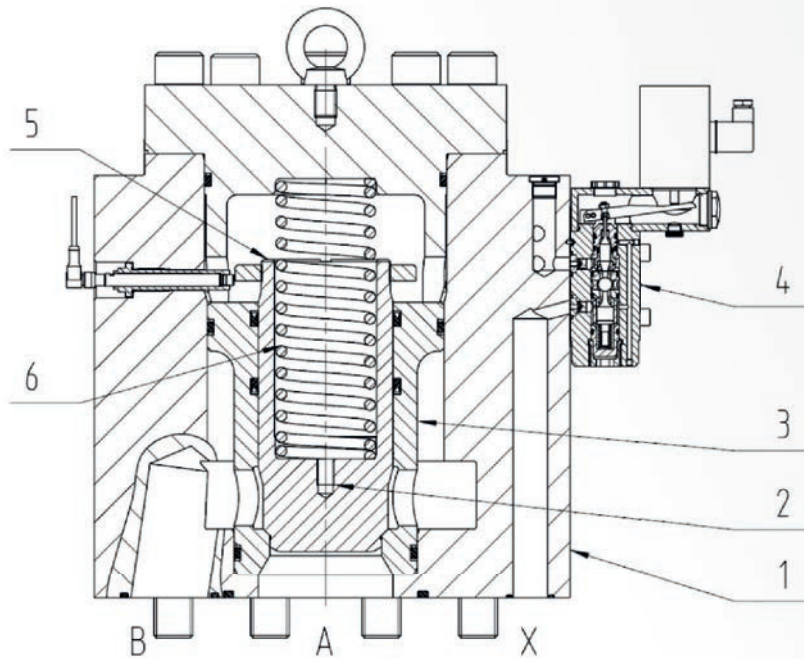
Features

- Hydraulically actuated directional seat valve controlling liquid media
- Passively controllable 2/2-way valve with 1-stage control logic
- Function variants possible via the interconnection of the X- and Y-line
- Valve seat sleeve equipped with a low-friction seal, thus, the valve pistons move easily and without inner leakages
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- The valve is actuated via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram
- In closed position, the switching position is monitored by a proximity switch

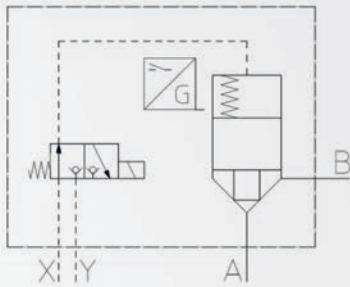
Function

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power and the spring force (6) generated by the control pressure (X) on the control surface (5). Thus, the lines (A, B) are separated. By switching the pilot valve (4), the control surface (5) is depressurised and the hydraulic power along the lines (A, B) can be used to lift the valve piston (2) off the valve seat (3), i.e. as soon as the hydraulic pressure is applied to the lines (A, B), the valve piston (2) moves into the opened position up to the mechanical end position. Thus, the lines (A, B) are connected. Depending on the design of the pilot valve (4), the basic valve position normally closed (NC) or normally open (NO) is provided. The valve functions depend on the interconnection of the X- and Y-lines, e.g. the closing of the valve

Function of 2/2-way valve



Symbol



Control surfaces, hydraulic forces
A channel: Area A1, open valve passively
B channel: Area A2, open valve passively
Control surface (5): A3, close valve actively

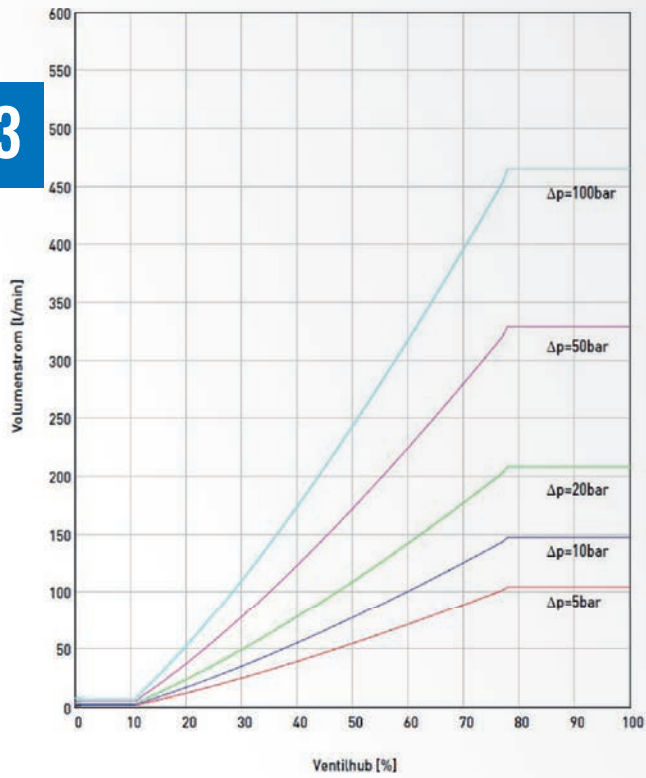
Technical data

measured with HFA medium 97/3%, at 20°C

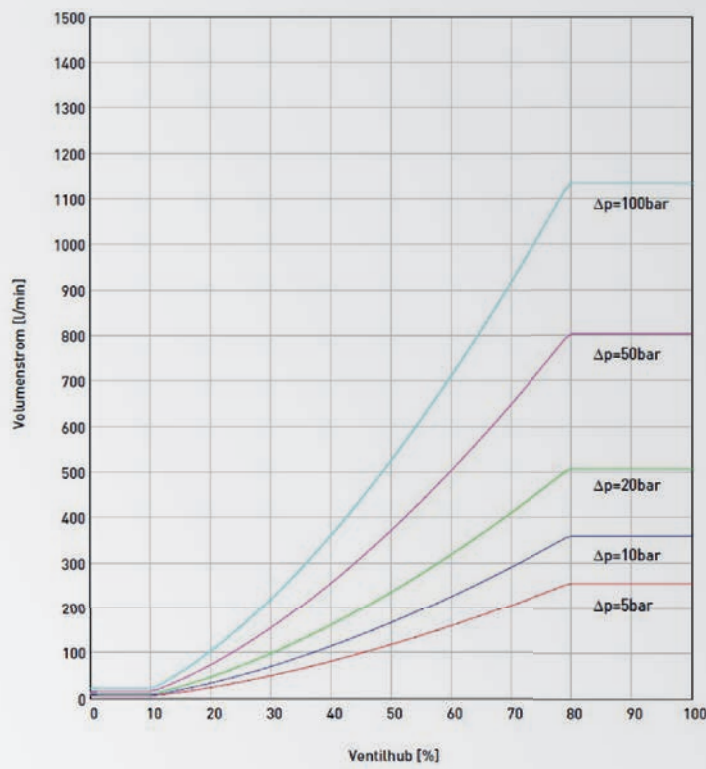
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, bronze NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	$\geq 20 \text{ bar} \leq 320 \text{ bar}$
Hydraulic pressure connector X	$\geq 20 \text{ bar} \geq \text{hydraulic pressure at the connector A, B} \leq 320 \text{ bar}$
Hydraulic pressure connector Y	$\leq 10 \text{ bar}$
Direction of flow	any
Area sum	$A1 + A2 = A3$
Pressure fluid - Medium - Quality - Medium - Temperature range - min filter fineness connector A, B - min filter fineness connector X	Water, HFA see Hauhinco media requirement, water, HFA 5 - 40°C Filter fineness 100µm Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 nach ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Magnet - Voltage - Power consumption - Operating time - Degree of protection acc. to EN60529 - max. switching rate	24 VDC, other voltages on request see Order information 100% ED IP65 1Hz
Inductive proximity switch - Output - Voltage - Current - Switching distance - Electrical connection	NO contact, PNP 10 – 30 VDC 0,150 A 2,0 mm Three wire, plug connection M12x1

2/2-way valve C1 X, Y actuated, PN 320

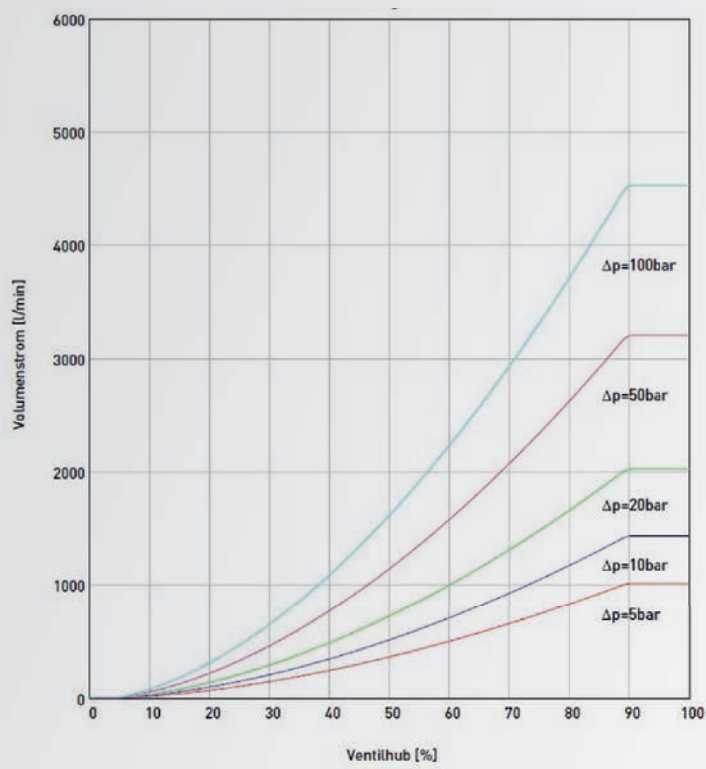
Δp – q_v characteristic curves DN16



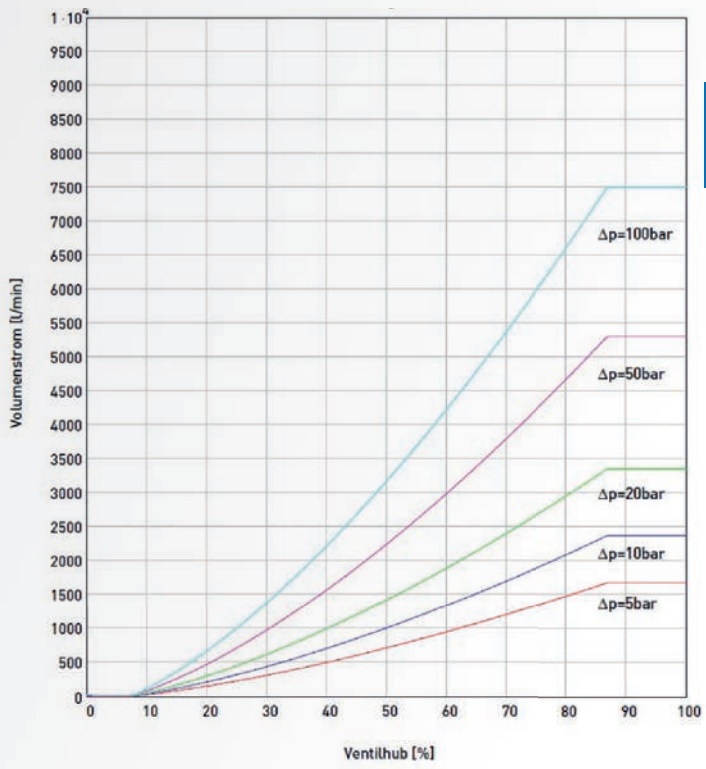
Δp – q_v characteristic curves DN25



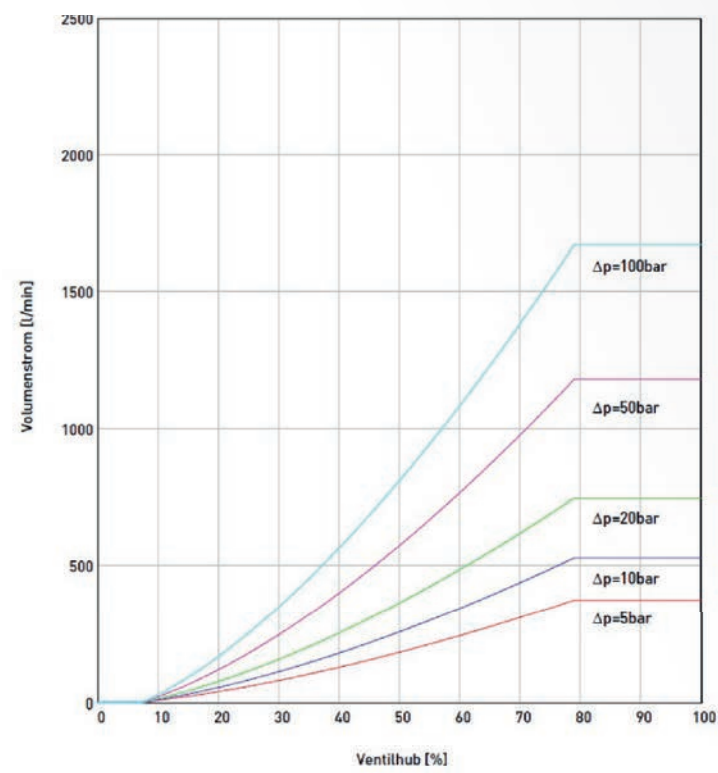
Δp – q_v characteristic curves DN60



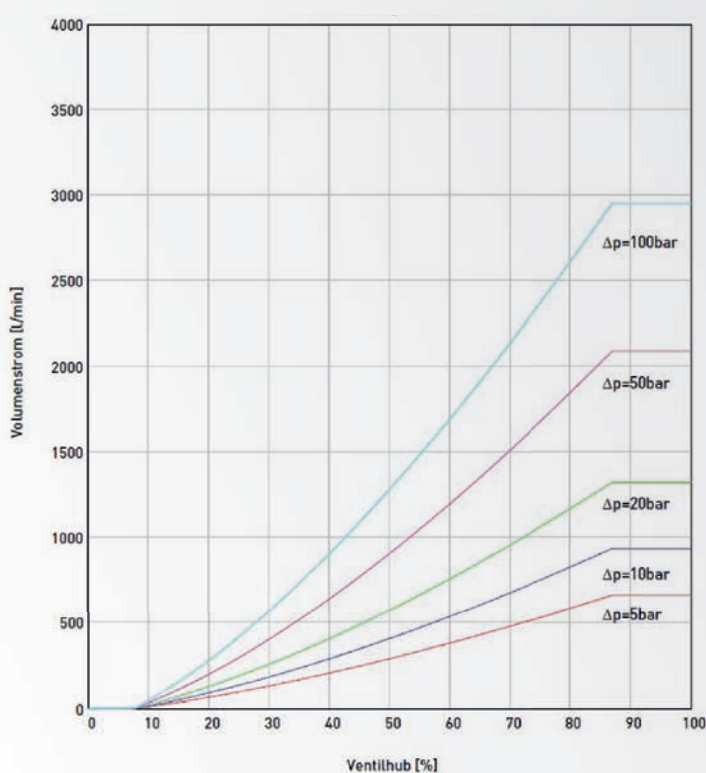
Δp – q_v characteristic curves DN65



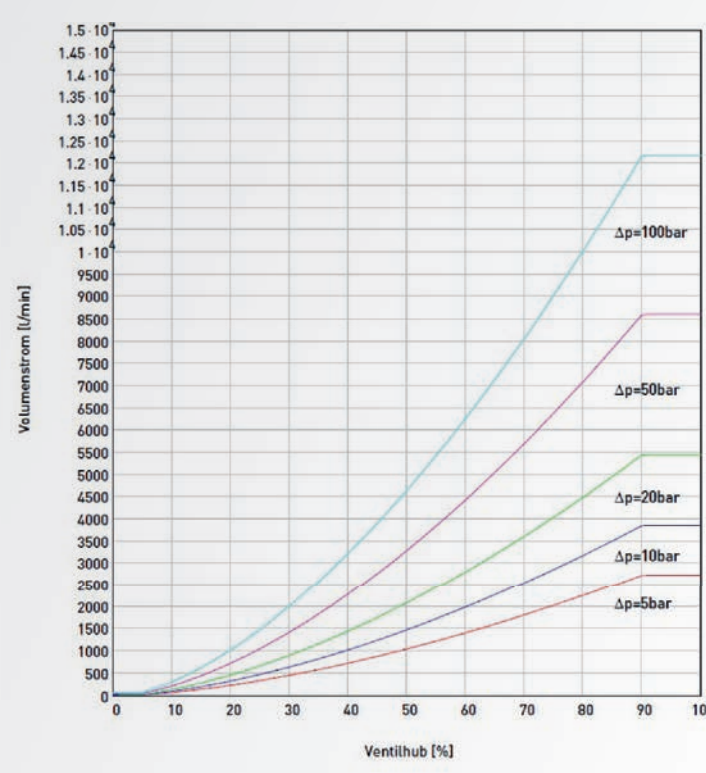
Δp – q_v characteristic curves DN32



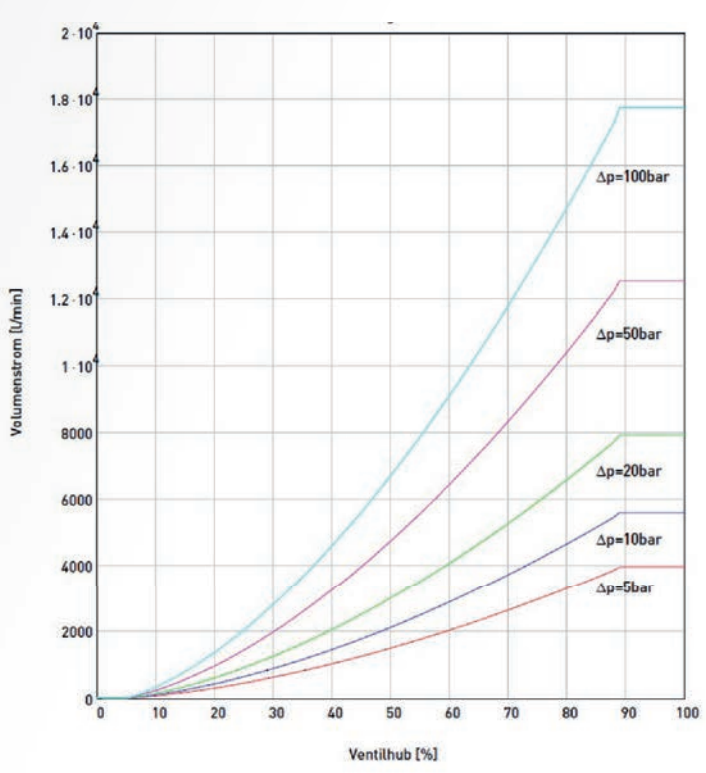
Δp – q_v characteristic curves DN40



Δp – q_v characteristic curves DN80

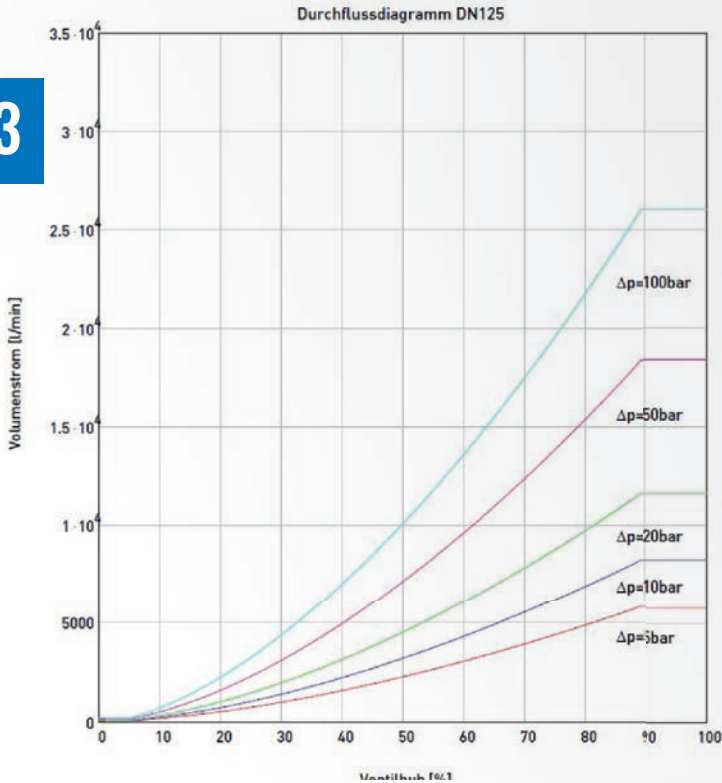


Δp – q_v characteristic curves DN100

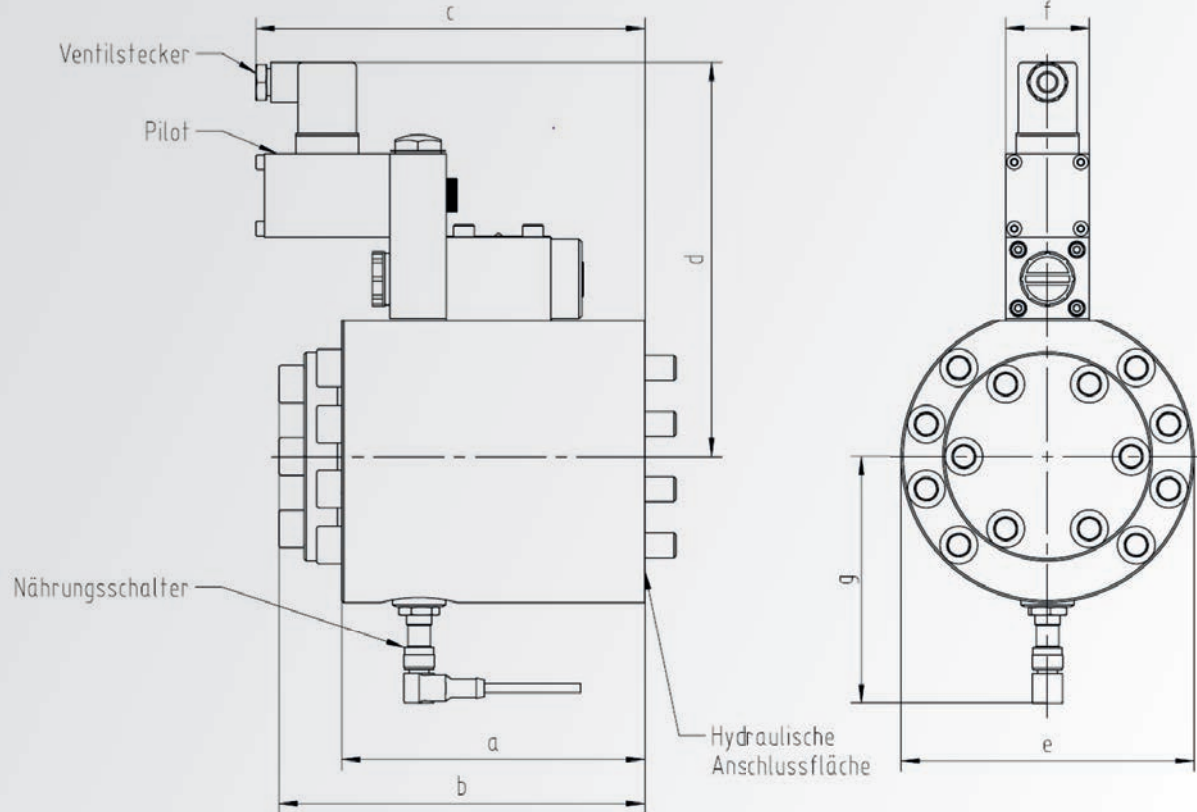


2/2-way valve C1 X, Y actuated, PN 320

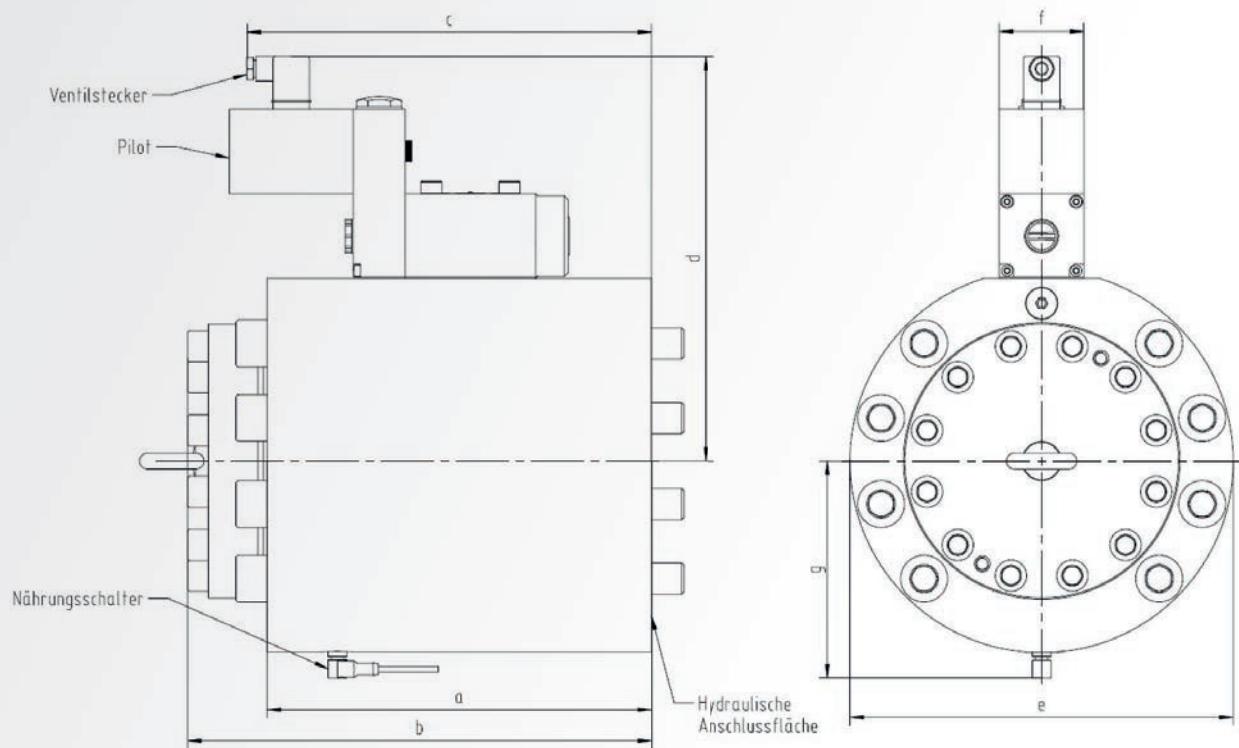
$\Delta p - q_v$ characteristic curves DN125



Single-stage pilot control, 2/2-way valve C1, PN 320, DN16 - DN32



Single-stage pilot control, 2/2-way valve C1, PN 320, DN40 - DN125



Order information 2/2-way valve C1 X, Y actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valve
Cable socket for the magnet

Single-stage pilot control

Pilot valve

Position monitoring

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]							Article number valve C3	Nominal size	Basic position	Designation	Current	Article number Pilot valve	Designation	Article number monitoring
				a	b	c	d	e	f	g								
DN16	8,0	320	NC	90	112	161	167	100	40	109	6269133	DN3	P→A NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545602	Inductive proximity switch, NO contact, Output – PNP, Voltage 10 – 30 VDC	5127726
DN16	8,0	320	NO	90	112	161	167	100	40	109	6269133	DN3	A→T NO		1,0 A	6545599		
DN25	17,0	320	NC	114	143	171	184	130	40	115	6266746	DN3	P→A NO		1,0 A	6545602		
DN25	17,0	320	NO	114	143	171	184	130	40	115	6266746	DN3	A→T NO		1,0 A	6545599		
DN32	19,0	320	NC	145	175	186	189	140	40	118	6263291	DN3	P→A NO		1,0 A	6545602		
DN32	19,0	320	NO	145	175	186	189	140	40	118	6263291	DN3	A→T NO		1,0 A	6545599		
DN40	35,0	320	NC	173	207	232	222	176	50	123	6263356	DN6	P→A NO		1,5 A	6546773		
DN40	35,0	320	NO	173	207	232	222	176	50	123	6263356	DN6	A→T NO		1,5 A	6546749		
DN50	43,0	320	NC	180	222	242	232	196	50	131	6154867	DN6	P→A NO		1,5 A	6546773		
DN50	43,0	320	NO	180	222	242	232	196	50	131	6154867	DN6	A→T NO		1,5 A	6546749		
DN65	82,0	320	NC	244	289	238	258	240	50	156	6269168	DN6	P→A NO		1,5 A	6546773		
DN65	82,0	320	NO	244	289	238	258	240	50	156	6269168	DN6	A→T NO		1,5 A	6546749		
DN80	146,0	320	NC	295	256	311	311	294	65	167	6158501	DN10	P→A NO		2,3 A	6235549		
DN80	146,0	320	NO	295	256	311	311	294	65	167	6158501	DN10	A→T NO		2,3 A	6235530		
DN100	275,0	320	NC	342	433	307	352	370	65	223	6163742	DN10	P→A NO		2,3 A	6235549		
DN100	275,0	320	NO	342	433	307	352	370	65	223	6163742	DN10	A→T NO		2,3 A	6235530		
DN125	504,0	320	NC	393	507	463	389	466	65	241	6169112	DN10	P→A NO		2,3 A	6235549		
DN125	504,0	320	NO	393	507	463	389	466	65	241	6169112	DN10	A→T NO		2,3 A	6235530		

Order example

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way valve DN80-PN320-X,Y actuated-24VDC-NC single stage pilot control	6158501	1	Inductive proximity switch, NO contact, Output – PNP, Voltage 10 – 30 VDC	5127726
1	Pilot valve DN10	6235549			

2/2-way valve C3 X, Y actuated

DN12 - DN125 PN 320

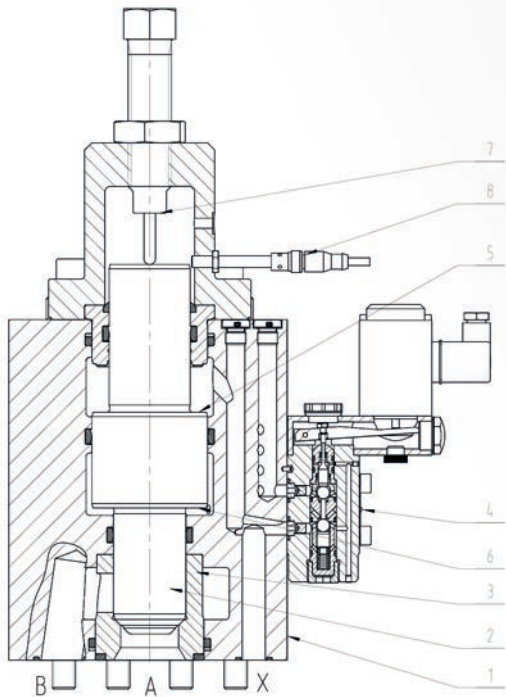
Features

- Hydraulically actuated directional seat valve controlling liquid media.
- Actively controllable 2/2-way valve with a 3-stage control logic provides safe opening and closing
- The valve is actuated via a 3/2-way pilot valve
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- Valve fastening structural plate form with a Hauhinco connection diagram
- The valve cross-section can be set via the stroke limitation and be locked mechanically
- Optically and with an optional proximity switch, the valve position can be monitored
- Optionally, a locking device can be selected for the stroke limitation

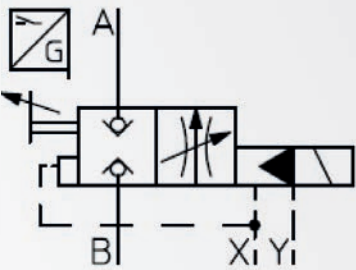
Function

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power generated by the control pressure (X) on the closing area (5), provided the opening area (6) is depressurised by the pilot valve (4). Thus, the lines (A, B) are separated. By switching the pilot valve (4), also the opening area (6) of the valve piston (2) is pressurised and lifts off the valve seat (3), the valve piston (2) moves into the opened position up to the mechanical end position and to the stroke limitation (7). Thus, the lines (A, B) are connected. The valve can be opened and closed actively by means of control pressure (X, Y), independent of the pressure along the work lines (A, B). The area ratios „opening area/closing area“ and „closing area/cable area (A, B)“, ensure a safe opening and closing of the valve. Depending on the design of the pilot valve (4), the basic valve position normally closed (NC) or normally open (NO) is provided. The position of the valve piston (2) can be monitored by the proximity switch (8).

Example 2/2-way valve C3 - X,Y - actuated



Symbol



Control surfaces, hydraulic forces
A channel: Area A1, open valve passively
B channel: Area A2, open valve passively
Control surface (6): A3, open valve actively
Control surface (5): A4, close valve actively

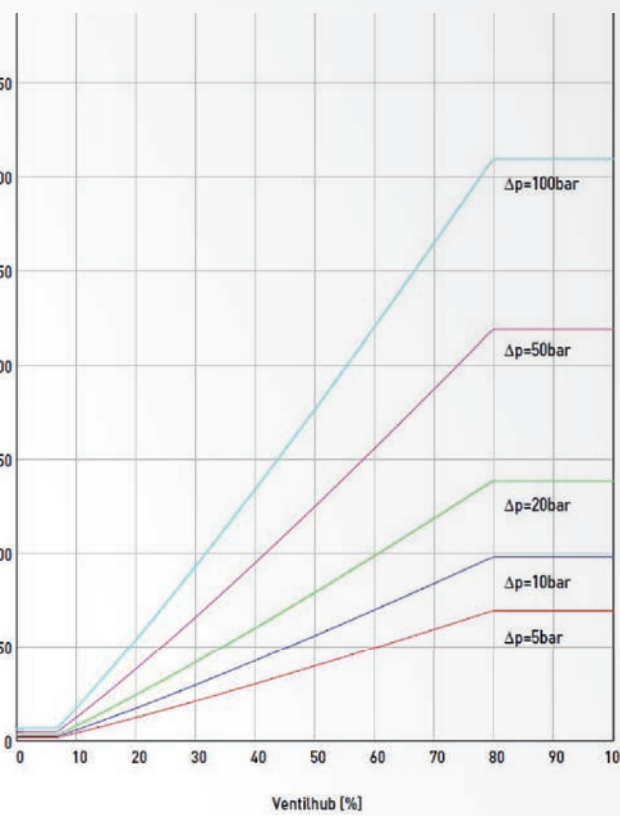
Technical data

measured with HFA medium 97/3%, at 20°C

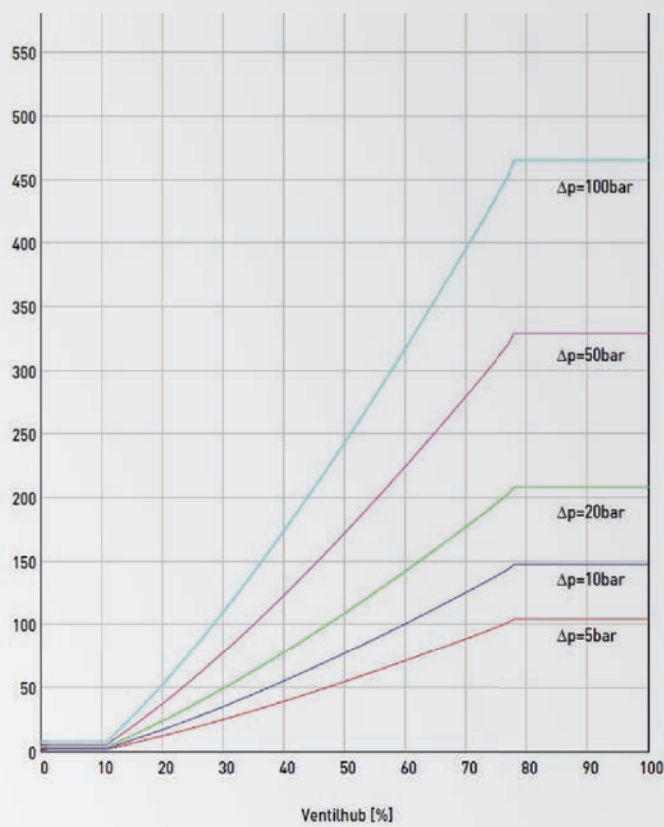
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, bronze NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	$\geq 20 \text{ bar} \leq 320 \text{ bar}$
Hydraulic pressure connector X	$\geq 50 \text{ bar} \geq \text{hydraulic pressure at the connector A, B} \leq 320 \text{ bar}$
Hydraulic pressure connector Y	$\leq 10 \text{ bar}$
Direction of flow	any, preferred direction of flow B→A
Area sum	$A3 > A4, A4 > A1 + A2$
Pressure fluid - Medium - Quality - Medium - Temperature range - min filter fineness connector A, B - min filter fineness connector X	Water, HFA see Hauhinco media requirement, water, HFA 5 - 40°C Filter fineness 100µm Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 nach ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Magnet - Voltage - Power consumption - Operating time - Degree of protection acc. to EN60529 - max. switching rate	24 VDC, other voltages on request see Order information 100% ED IP65 1Hz
Inductive proximity switch - Output - Voltage - Current - Switching distance - Electrical connection	NO contact, PNP 10 – 30 VDC 0,150 A 2,0 mm Three wire, plug connection M12x1

2/2-way valve C3 X, Y actuated, PN 320

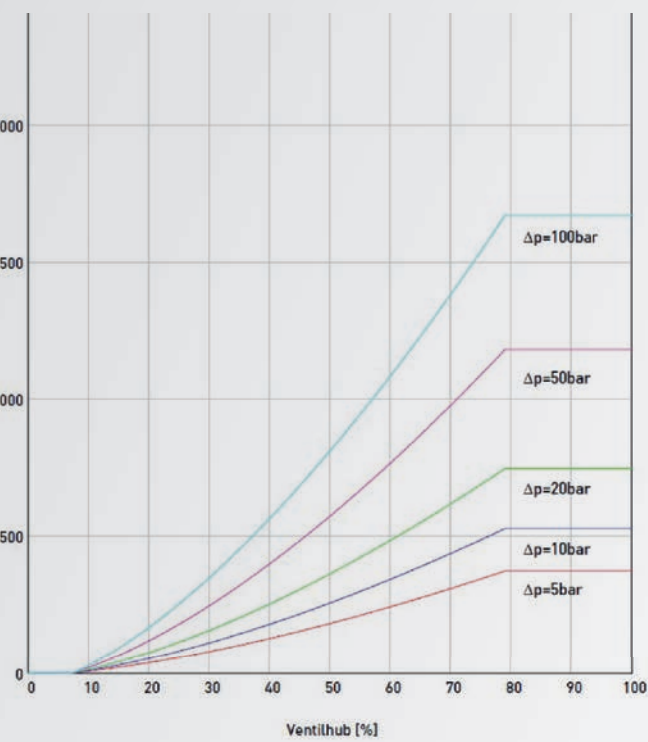
$\Delta p - q_v$ characteristic curves DN12



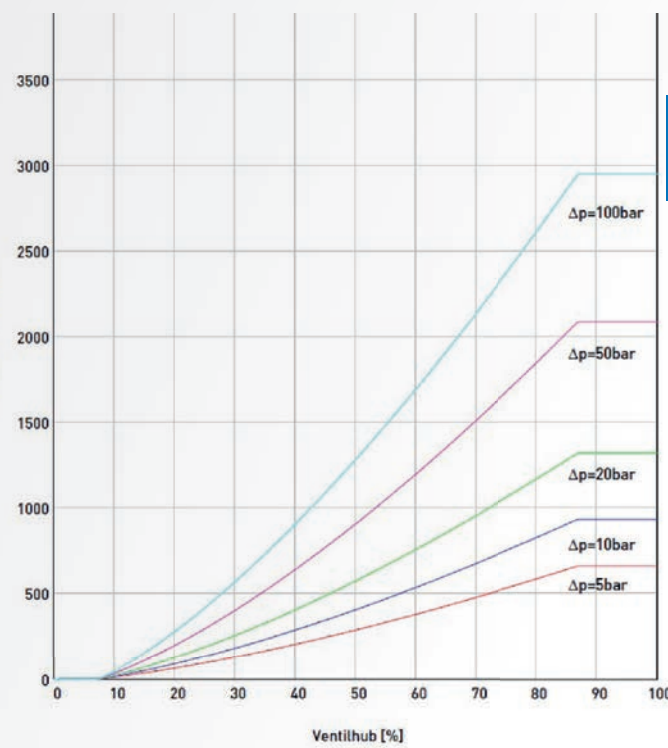
$\Delta p - q_v$ characteristic curves DN16



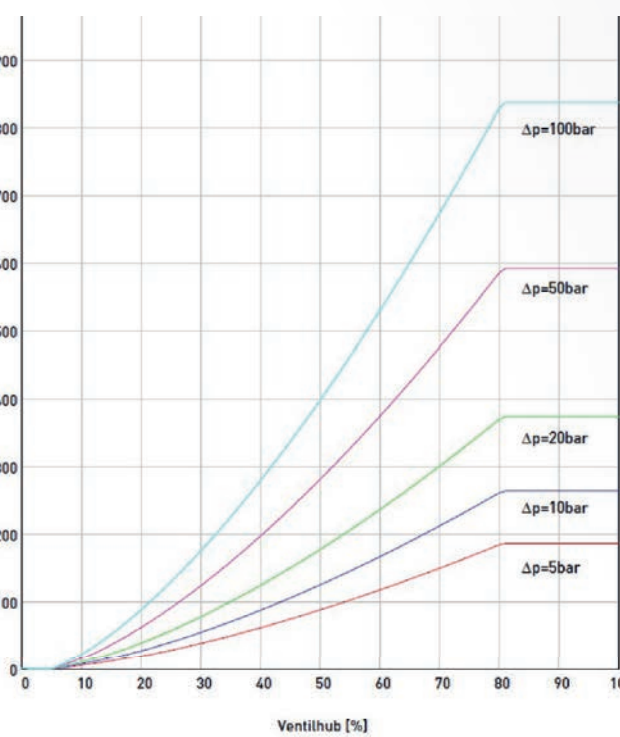
$\Delta p - q_v$ characteristic curves DN32



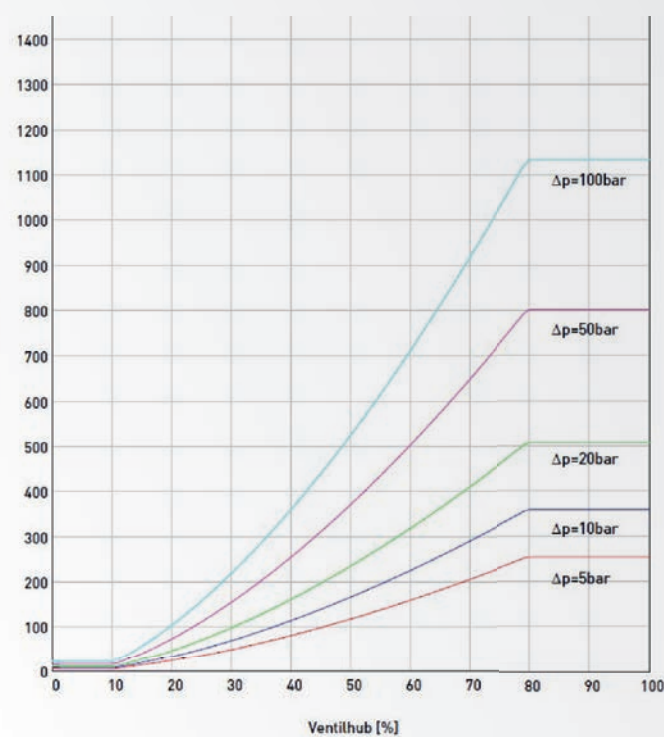
$\Delta p - q_v$ characteristic curves DN40



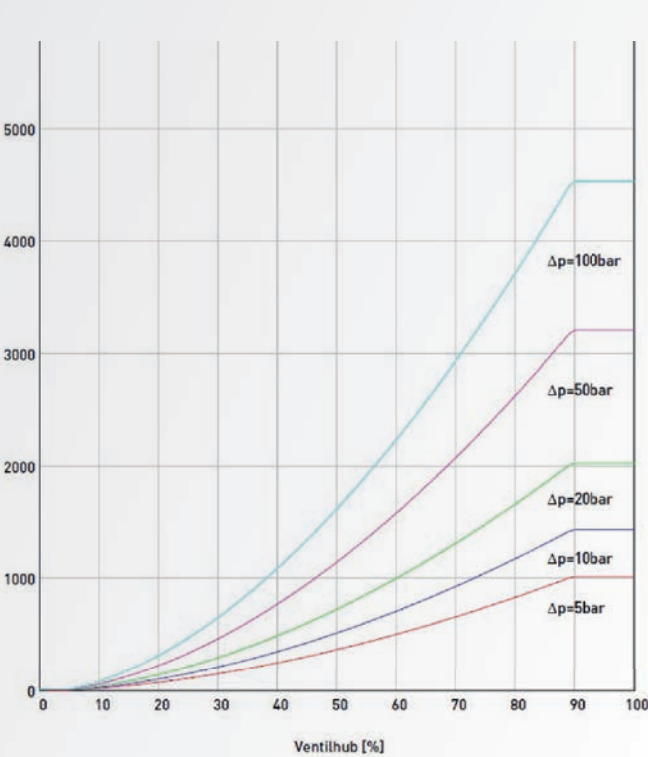
$\Delta p - q_v$ characteristic curves DN20



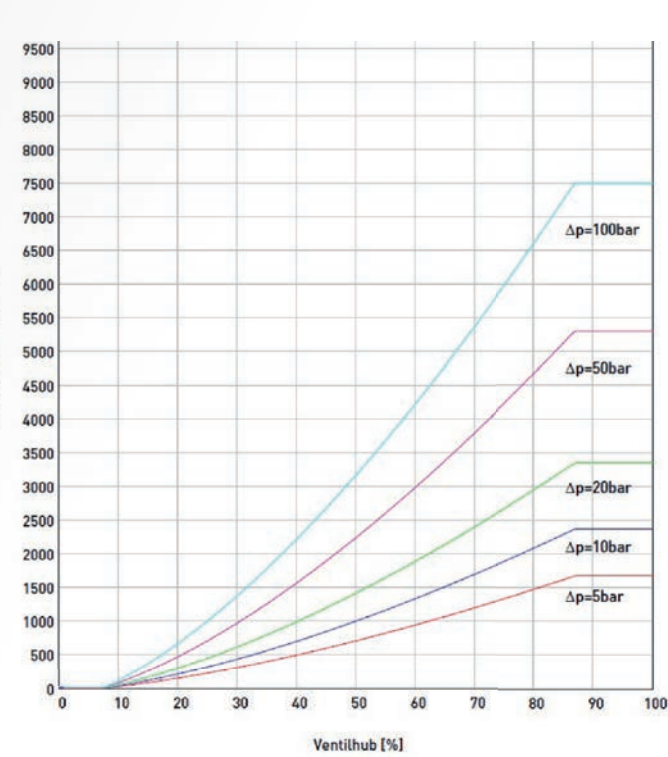
$\Delta p - q_v$ characteristic curves DN25



$\Delta p - q_v$ characteristic curves DN50



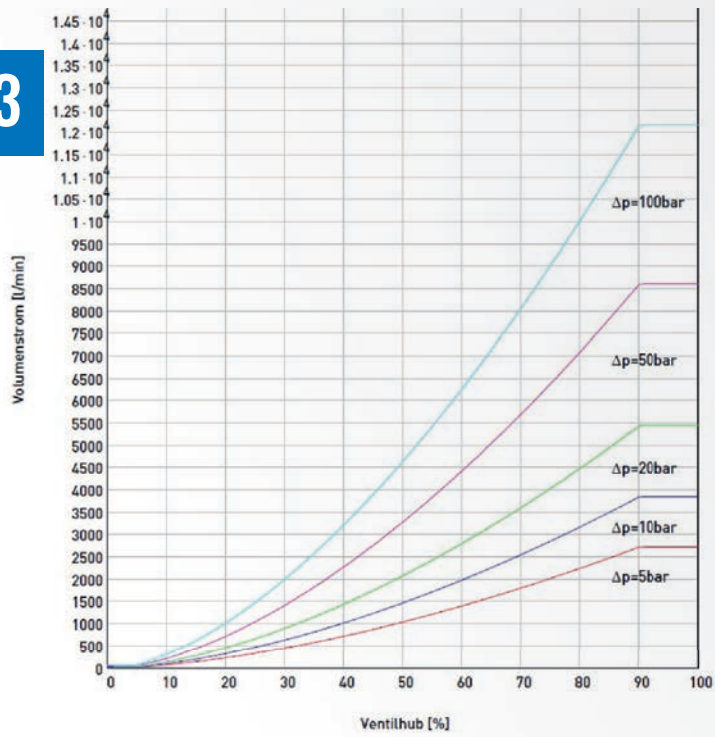
$\Delta p - q_v$ characteristic curves DN65



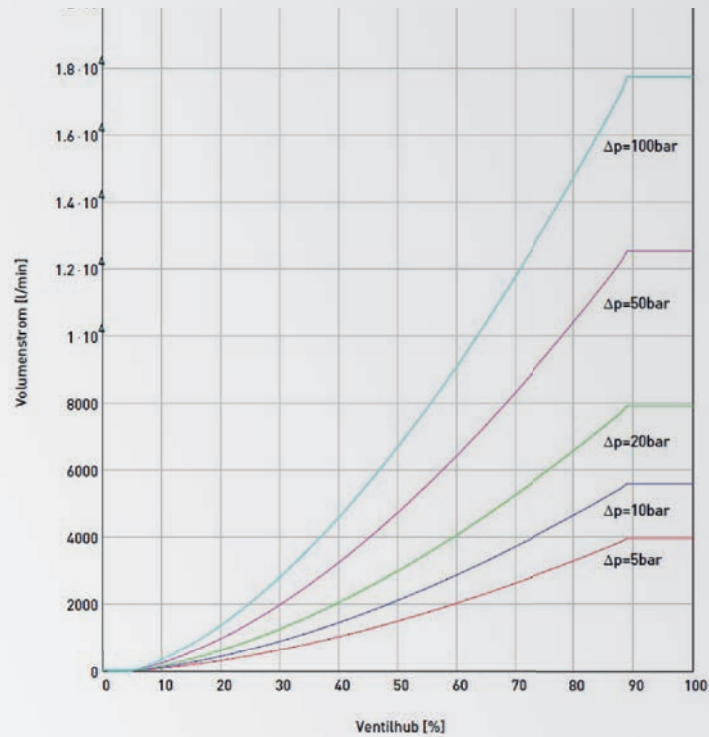
Technical changes reserved.
All data and figures are considered non-binding.

2/2-way valve C3 X, Y actuated, PN 320

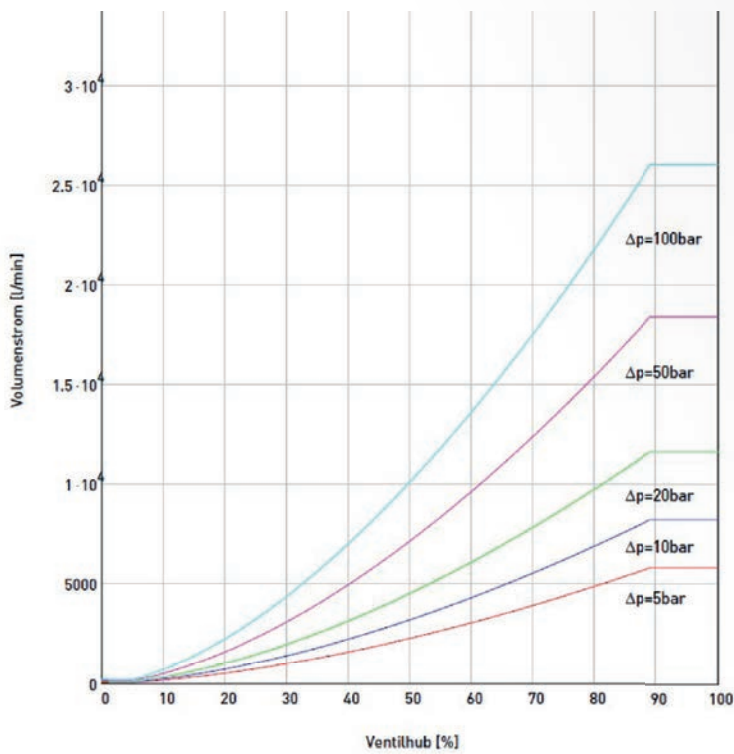
$\Delta p - q_v$ characteristic curves DN80



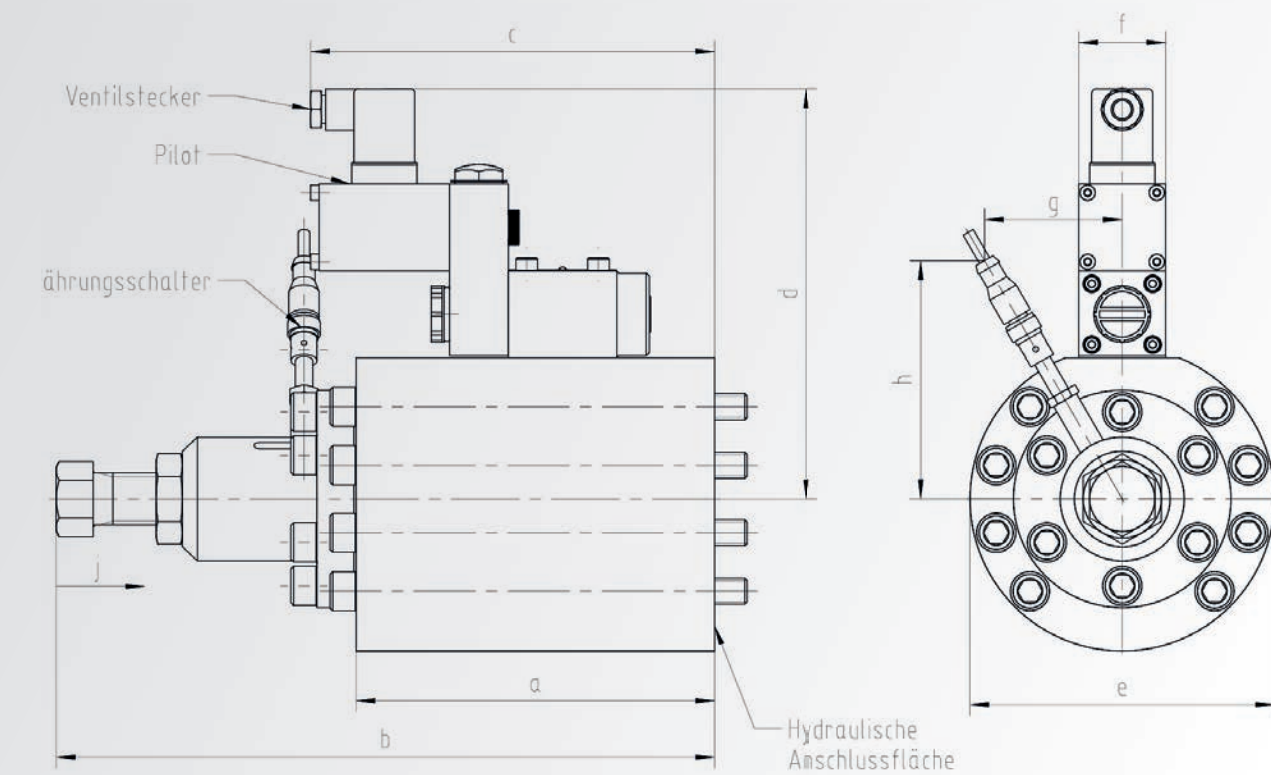
$\Delta p - q_v$ characteristic curves DN100



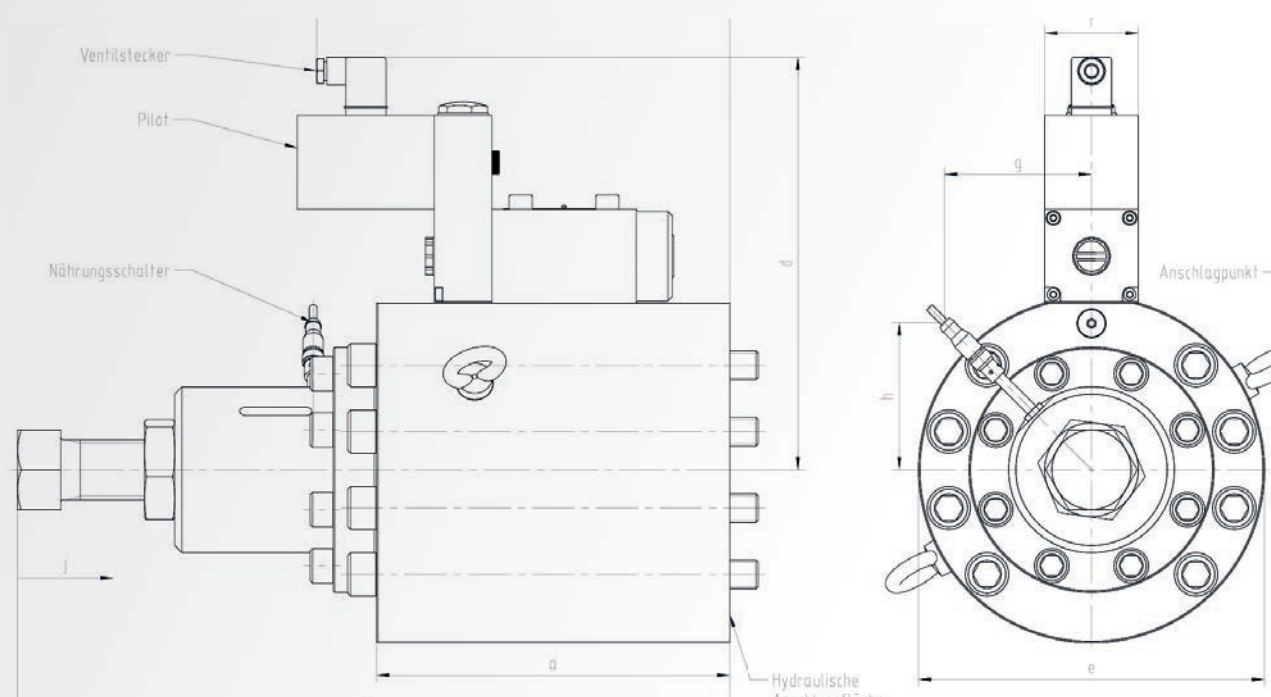
$\Delta p - q_v$ characteristic curves DN125



Single-stage pilot control, 2/2-way valve C3, X, Y actuated, PN 320, DN12 - DN32

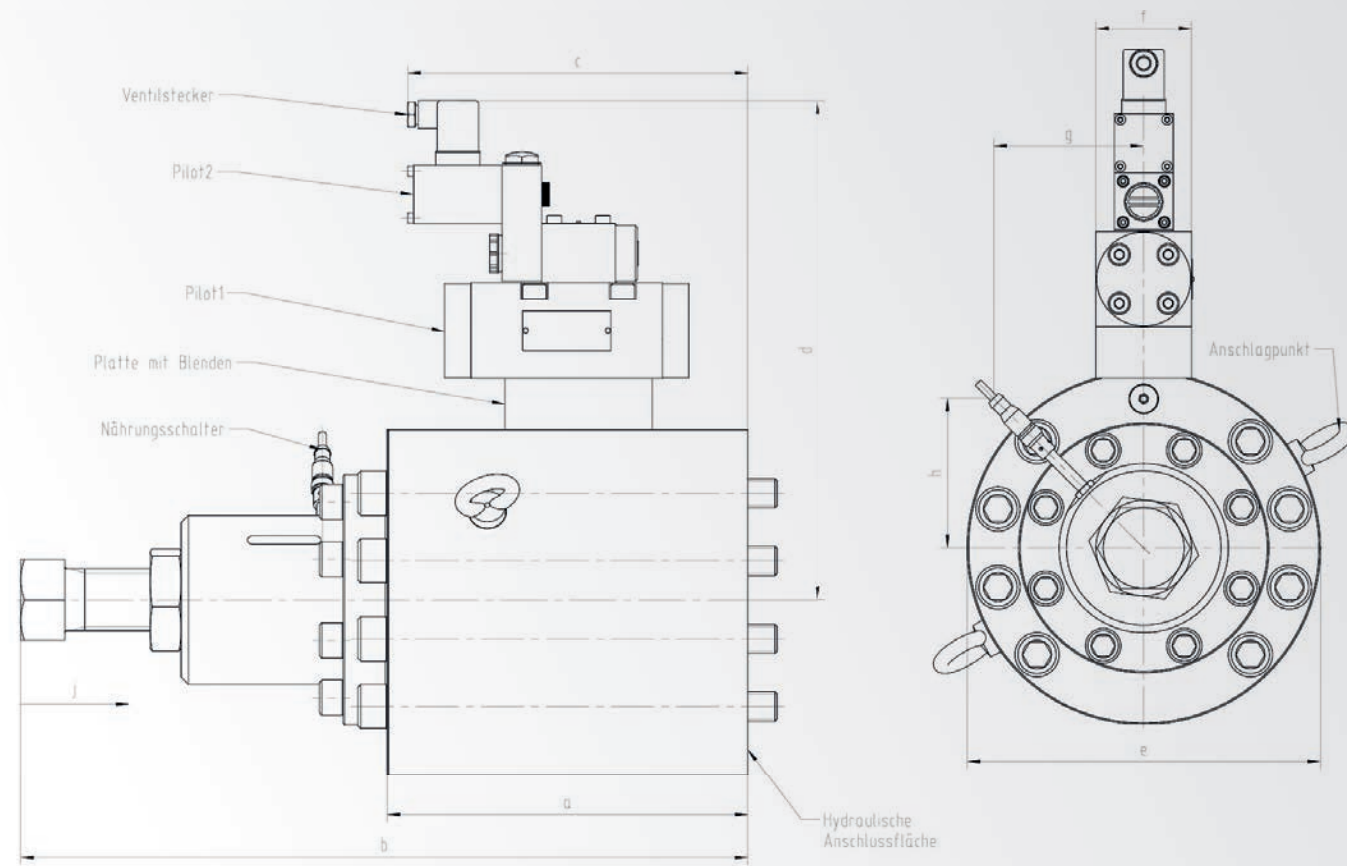


Single-stage pilot control, 2/2-way valve C3, X, Y actuated, PN 320, DN40 - DN80

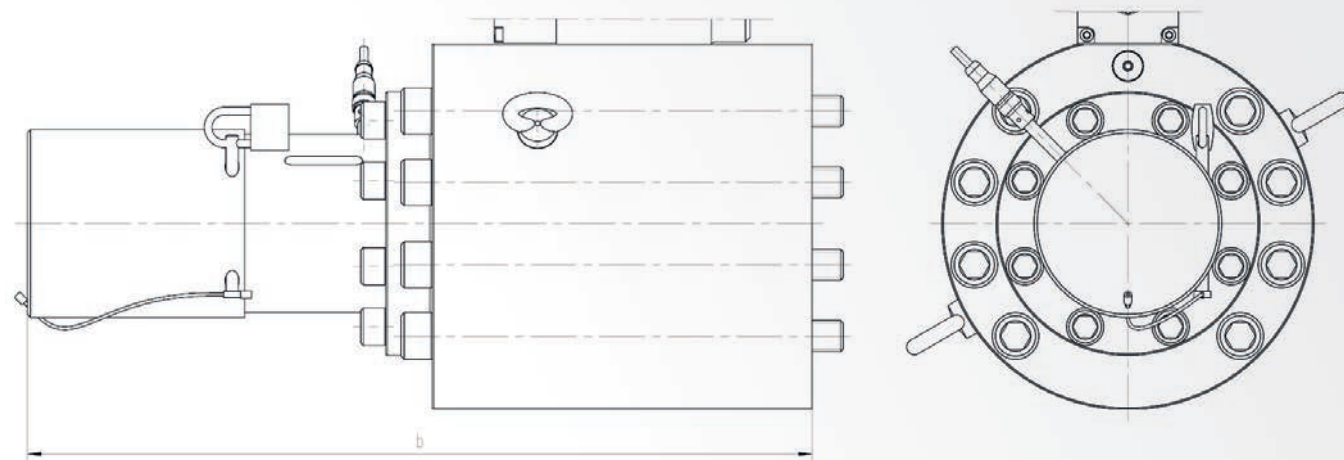


Technical changes reserved.
All data and figures are considered non-binding.

Two-stage pilot control, 2/2-way valve C3, X, Y actuated, PN 320, PN 320, DN65 - DN125



Valve DN16 – DN125 with a locking device



Notes

This image shows a full page of graph paper. The background is white, and it is covered by a uniform grid of thin, light gray lines. The grid consists of small squares that extend across the entire area of the page, leaving a small margin at the top and bottom. There are no markings, text, or other features on the page.

Order information 2/2-way valve C3, X, Y actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valve
Cable socket for the magnet

Single-stage pilot control

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Pilot valve					Position monitoring	
				a	b	c	d	e	f	g	h	j		Nominal size	Basic position	Actuation	Current	Article number Pilot valve	Designation	Article number monitoring
DN12	7,0	320	NC	110	196	186	158	85	40	59	102	9,5	6251773	DN3	A→T NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545599	Inductive proximity switch, NO contact, Output – PNP, Voltage 10 – 30 VDC	5127726
DN12	7,0	320	NO	110	196	186	158	85	40	59	102	9,5	6251773	DN3	P→A NO		1,0 A	6545602		
DN16	9,5	320	NC	120	212	176	167	100	40	60	103	15	6251781	DN3	A→T NO		1,0 A	6545602		
DN16	9,5	320	NO	120	212	176	167	100	40	60	103	15	6251781	DN3	P→A NO		1,0 A	6545599		
DN20	14,5	320	NC	140	247	185	179	120	40	61	106	17	6251935	DN3	A→T NO		1,0 A	6545599		
DN20	14,5	320	NO	140	247	185	179	120	40	61	106	17	6251935	DN3	P→A NO		1,0 A	6545602		
DN25	17,5	320	NC	147	270	186	184	130	40	63	108	19	6251838	DN3	A→T NO		1,0 A	6545599		
DN25	17,5	320	NO	147	270	186	184	130	40	63	108	19	6251838	DN3	P→A NO		1,0 A	6545602		
DN32	22,0	320	NC	165	303	186	189	140	40	64	110	22	6251943	DN3	A→T NO		1,0 A	6545599		
DN32	22,0	320	NO	165	303	186	189	140	40	64	110	22	6251943	DN3	P→A NO		1,0 A	6545602		
DN40	39,0	320	NC	182	344	214	222	176	50	93	93	24	6145159	DN6	A→T NO		1,5 A	6546773		
DN40	39,0	320	NO	182	344	214	222	176	50	93	93	24	6145159	DN6	P→A NO		1,5 A	6546773		
DN50	60,0	320	NC	235	446	240	235	196	50	97	97	31,5	6042341	DN6	A→T NO		1,5 A	6235549		
DN50	60,0	320	NO	235	446	240	235	196	50	97	97	31,5	6042341	DN6	P→A NO		1,5 A	6546773		
DN65	98,0	320	NC	245	494	287	286	240	65	102	102	37	6145019	DN10	A→T NO		2,5 A	6235530		
DN65	98,0	320	NO	245	494	287	286	240	65	102	102	37	6145019	DN10	P→A NO		2,5 A	6235549		
DN80	168,0	320	NC	295	585	308	310	294	65	109	109	40	6042260	DN10	A→T NO		2,5 A	6235530		
DN80	168,0	320	NO	295	585	308	310	294	65	109	109	40	6042260	DN10	P→A NO		2,5 A	6235549		

Order example

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way valve DN50-PN320-X,Y actuated-24VDC-NC single stage pilot control	6042341	1	Inductive proximity switch, NO contact, Output – PNP, Voltage 10 – 30 VDC	5127726
1	Pilot valve DN6	6235549			

Order information 2/2-way valve C3, X, Y actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valve
Cable socket for the magnet

Two-stage pilot control

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Pilot valve 1 Hydraulically actuated, X, Y internally					Pilot valve 2			
				a	b	c	d	e	f	g	h	j		Nominal size	Basic position	Article number Pilot valve	Article number plate	Article number cover	Nominal size	Basic position	Actuation	Article number valve
DN65	99,0	320	NC	245	494	231	321	240	65	102	102	37	6145019	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO	Electromagnet, voltage 24V DC, current 1.0A, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	6545599
DN65	99,0	320	NO	245	494	231	321	240	65	102	102	37	6145019	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599
DN80	170,0	320	NC	295	585	252	364	297	65	109	109	40	6042260	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO		6545599
DN80	170,0	320	NO	295	585	252	364	297	65	109	109	40	6042260	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599
DN100	300,0	320	NC	342	705	277	408	370	90	82	142	55	6042430	DN16	A→T NO	6161448	6569714	6532292	DN3	A→T NO		6545599
DN100	300,0	320	NO	342	705	277	408	370	90	82	142	55	6042430	DN16	P→A NO	6161405	6569714	6532292	DN3	A→T NO		6545599
DN125	575,0	320	NC	393	793	312	478	466	90	90	155	60	6600013	DN16	A→T NO	6161448	6569714	6532292	DN3	A→T NO		6545599
DN125	575,0	320	NC	393	793	312	478	466	90	90	155	60	6600013	DN16	P→A NO	6161405	6569714	6532292	DN3	A→T NO		6545599

Position monitoring

Designation	Article number monitoring
Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way valve DN50-PN320-X,Y actuated-24VDC-NC	6600013	2	Cover	6532292
1	Pilot valve 1, DN16	6161405	1	Pilot valve 2, DN3	6545599
1	Plate	6569714	1	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Order example

Order information 2/2-way valve C3, X, Y actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valves 1 and 2
Cable socket for the magnet

Single-stage pilot control, valve with a locking device

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3
				a	b	c	d	e	f	g	h	j	
DN16	10,0	320	NC	120	221	176	167	100	40	60	103	15	6269699
DN16	10,0	320	NO	120	221	176	167	100	40	60	103	15	6269699
DN25	18,0	320	NC	147	278	186	184	130	40	63	108	19	6600221
DN25	18,0	320	NO	147	278	186	184	130	40	63	108	19	6600221
DN32	23,0	320	NC	165	354	186	189	140	40	64	110	22	6269745
DN32	23,0	320	NO	165	354	186	189	140	40	64	110	22	6269745
DN40	40,0	320	NC	182	456	214	222	176	50	93	93	24	6274048
DN40	40,0	320	NO	182	456	214	222	176	50	93	93	24	6274048
DN50	58,0	320	NC	235	456	240	235	196	50	97	97	31,5	6078028
DN50	58,0	320	NO	235	456	240	235	196	50	97	97	31,5	6078028
DN65	103,0	320	NC	245	506	287	286	240	65	102	102	37	6165907
DN65	103,0	320	NO	245	506	287	286	240	65	102	102	37	6165907
DN80	171,0	320	NC	295	598	308	310	294	65	109	109	40	6164145
DN80	171,0	320	NO	295	598	308	310	294	65	109	109	40	6164145

Two-stage pilot control, valve with a locking device

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3
				a	b	c	d	e	f	g	h	j	
DN65	99,0	320	NC	245	506	231	321	240	65	102	102	37	6165907
DN65	99,0	320	NO	245	506	231	321	240	65	102	102	37	6165907
DN80	170,0	320	NC	295	598	252	364	297	65	109	109	40	6164145
DN80	170,0	320	NO	295	598	252	364	297	65	109	109	40	6164145
DN100	300,0	320	NC	342	725	277	408	370	90	82	142	55	6164153
DN100	300,0	320	NO	342	725	277	408	370	90	82	142	55	6164153
DN125	575,0	320	NC	393	804	312	478	466	90	90	155	60	6600220
DN125	575,0	320	NC	393	804	312	478	466	90	90	155	60	6600220

Position monitoring

Designation	Article number monitoring
Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Pilot valve

Nominal size	Basic position	Actuation	Current	Article number Pilotventil
DN3	A→T NO	Electromagnet, voltage 24V DC, current 1.0A, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545599
DN3	A→T NO		1,0 A	6545602
DN3	P→A NO		1,0 A	6545599
DN3	A→T NO		1,0 A	6545602
DN3	A→T NO		1,0 A	6545599
DN3	P→A NO		1,0 A	6545602
DN6	A→T NO		1,5 A	6546749
DN6	P→A NO		1,5 A	6546773
DN6	A→T NO		1,5 A	6235549
DN6	A→T NO		1,5 A	6546773
DN10	P→A NO		2,5 A	6235530
DN10	P→A NO		2,5 A	6235549
DN10	A→T NO		2,5 A	6235530
DN10	P→A NO		2,5 A	6235549

Pilot valve 1 Hydraulically actuated, X, Y internally

Nominal size	Basic position	Article number valve	Article number plate	Article number cover
DN12	A→T NO	6266975	6569641	6569927
DN12	P→A NC	6266983	6569641	6569927
DN12	A→T NO	6266975	6569641	6569927
DN12	P→A NC	6266983	6569641	6569927
DN16	A→T NO	6161448	6569714	6532292
DN16	P→A NC	6161405	6569714	6532292
DN16	A→T NO	6161448	6569714	6532292
DN16	P→A NC	6161405	6569714	6532292

Pilot valve 2

Nominal size	Basic position	Actuation	Article number valve
DN3	A→T NO	Electromagnet, voltage 24V DC, current 1.0A, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	6545599
DN3	A→T NO		6545599
DN3	A→T NO		6545599
DN3	A→T NO		6545599
DN3	A→T NO		6545599
DN3	A→T NO		6545599
DN3	A→T NO		6545599

2/2-way valve C3 X, Y actuated

DN16 - DN100 PN 500

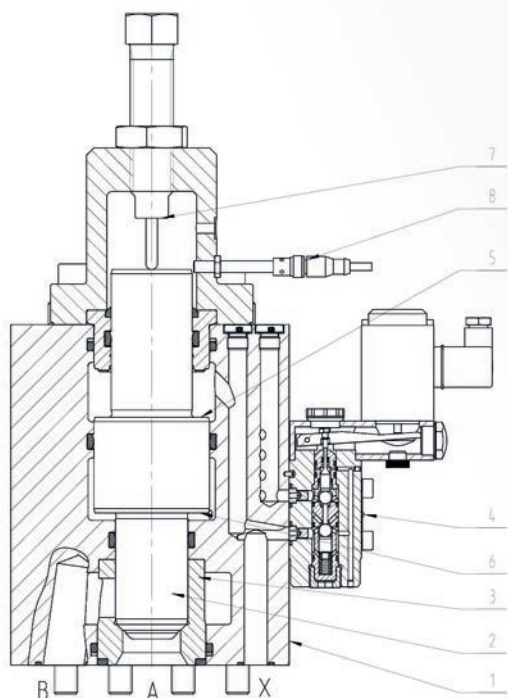
Features

- Hydraulically actuated directional seat valve controlling liquid media.
- Actively controllable 2/2-way valve with a 3-stage control logic provides safe opening and closing
- The valve is actuated via a 3/2-way pilot valve
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- Valve fastening structural plate form with a Hauhinco connection diagram
- The valve cross-section can be set via the stroke limitation and be locked mechanically
- Optically and with an optional proximity switch, the valve position can be monitored
- Optionally, a locking device can be selected for the stroke limitation

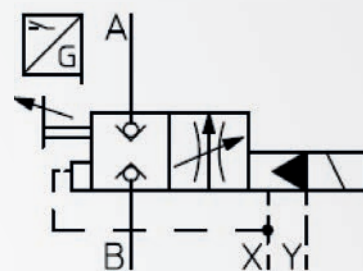
Function

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power generated by the control pressure (X) on the closing area (5), provided the opening area (6) is depressurised by the pilot valve (4). Thus, the lines (A, B) are separated. By switching the pilot valve (4), also the opening area (6) of the valve piston (2) is pressurised and lifts off the valve seat (3), the valve piston (2) moves into the opened position up to the mechanical end position and to the stroke limitation (7). Thus, the lines (A, B) are connected. The valve can be opened and closed actively by means of control pressure (X, Y), independent of the pressure along the work lines (A, B). The area ratios „opening area/closing area“ and „closing area/cable area (A, B)“, ensure a safe opening and closing of the valve. Depending on the design of the pilot valve (4), the basic valve position normally closed (NC) or normally open.

Example 2/2-way valve C3 - X,Y - actuated



Symbol



Control surfaces, hydraulic forces
A channel: Area A1, open valve passively
B channel: Area A2, open valve passively
Control surface (6): A3, open valve actively
Control surface (5): A4, close valve actively

Technical data

measured with HFA medium 97/3%, at 20°C

General

Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze
Material Seals	NBR, PTFE, PUR

Hydraulic

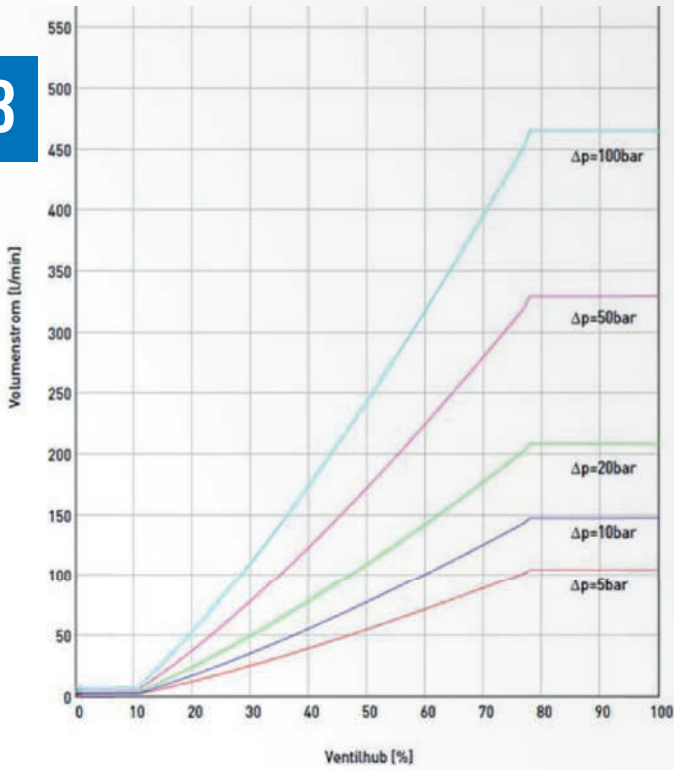
Hydraulic pressure connector A, B	≤ 500 bar
Hydraulic pressure connector X	≥ 50 bar ≥ hydr. Druck am Anschluss A, B ≤ 500 bar
Hydraulic pressure connector Y	≤ 10 bar
Direction of flow	any, preferred direction of flow B→A
Area sum	A3 > A4, A4 > A1 + A2
Pressure fluid	Water, HFA
- Medium - Quality	see Hauhinco media requirement, water, HFA
- Medium - Temperature range	5 - 40°C
- min filter fineness connector A, B	Filter fineness 100µm
- min filter fineness connector X	Filter fineness 25µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 nach ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

Electric

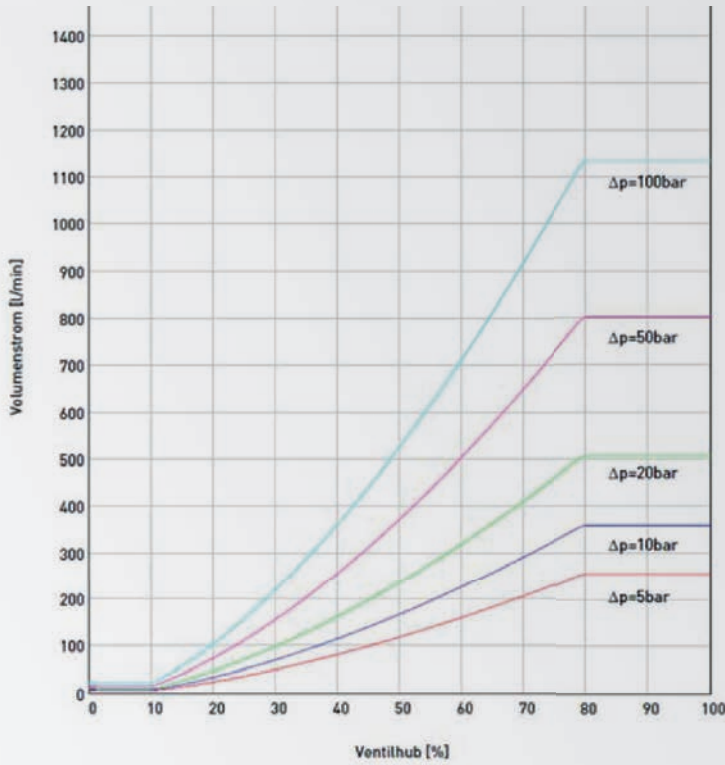
Magnet	
- Voltage	24 VDC, other voltages on request
- Power consumption	see Order information
- Operating time	100% ED
- Degree of protection acc. to EN60529	IP65
Inductive proximity switch	
- Output	NO contact, PNP
- Voltage	10 – 30 VDC
- Current	0,150 A
- Switching distance	2,0 mm
- Electrical connection	Three wire, plug connection M12x1

2/2-way valve C3, X, Y actuated, PN 500

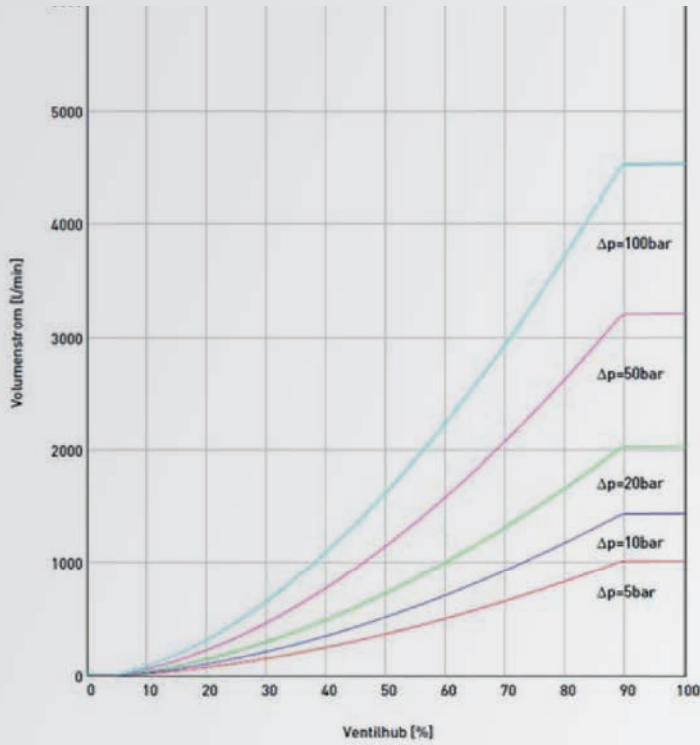
Δp – q_v characteristic curves DN16



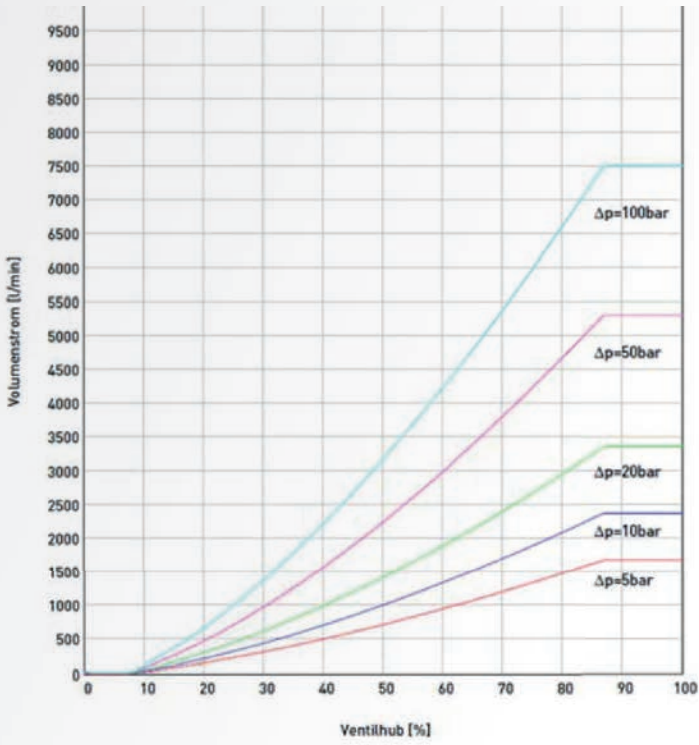
Δp – q_v characteristic curves DN25



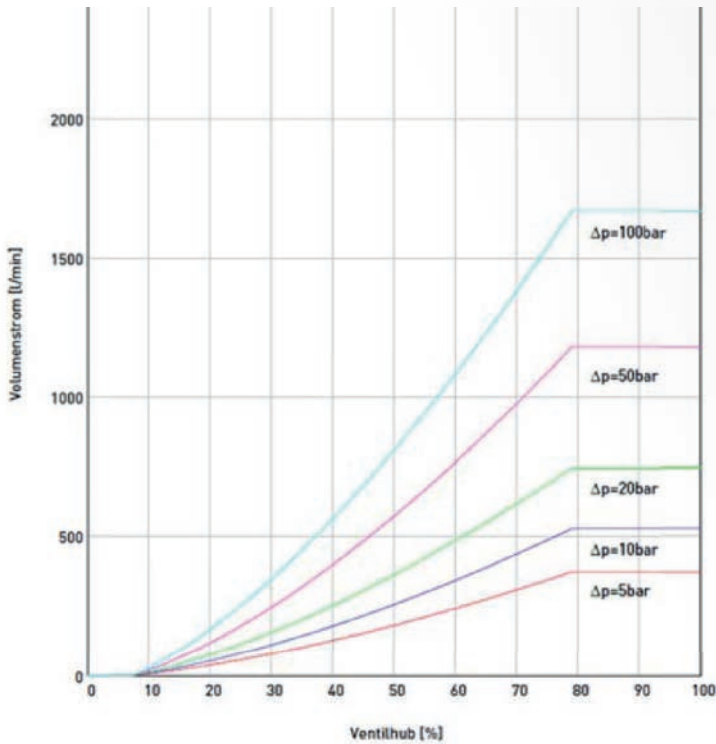
Δp – q_v characteristic curves DN50



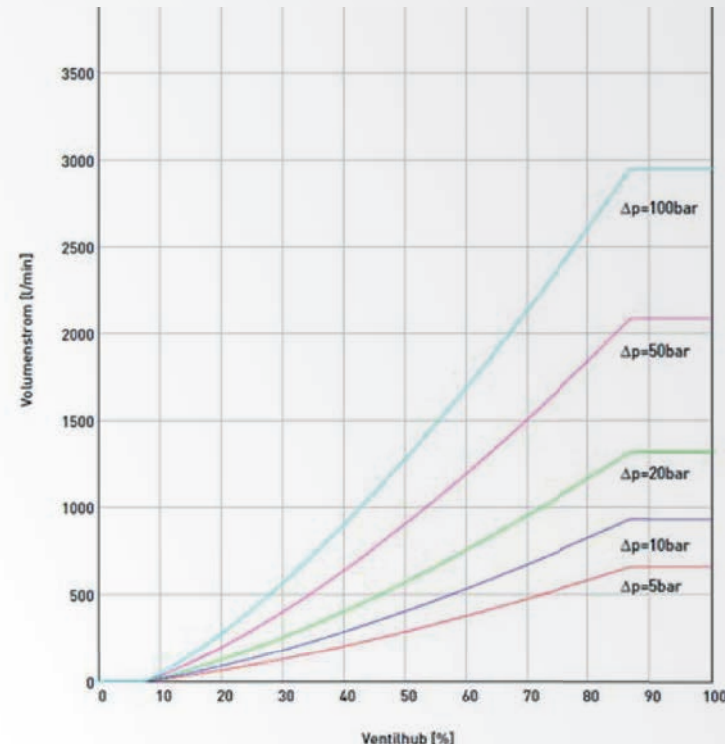
Δp – q_v characteristic curves DN65



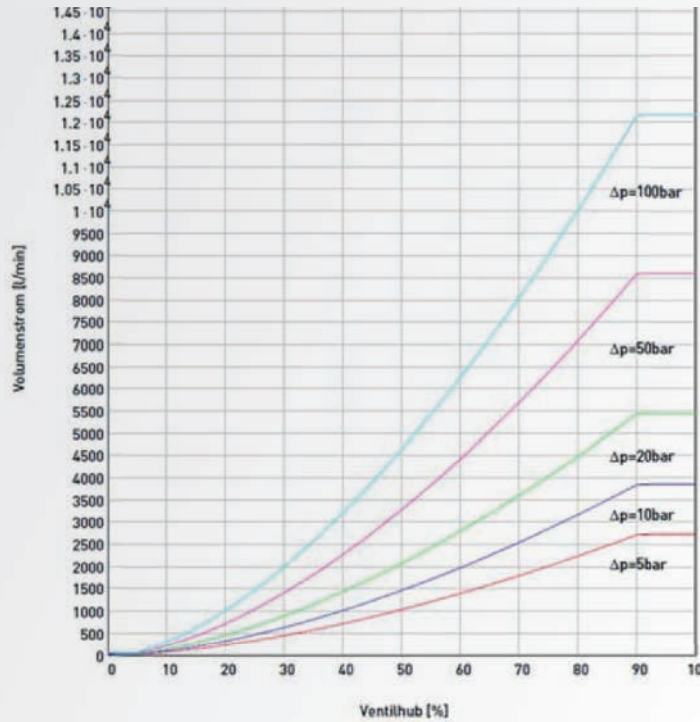
Δp – q_v characteristic curves DN32



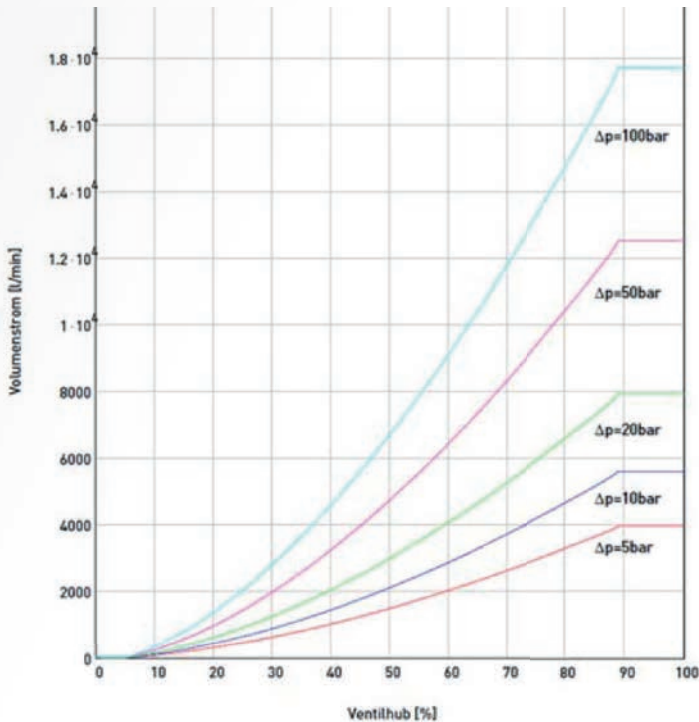
Δp – q_v characteristic curves DN40



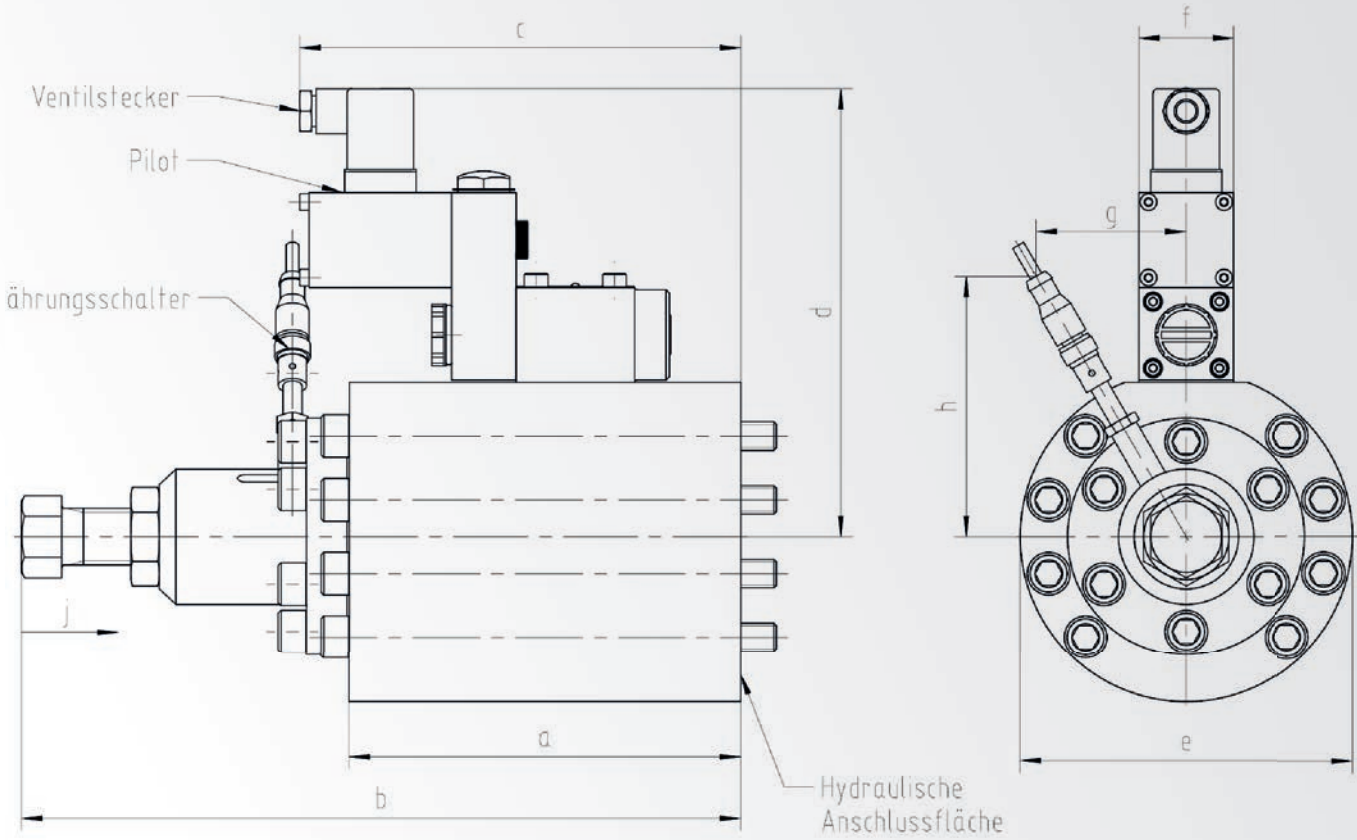
Δp – q_v characteristic curves DN80



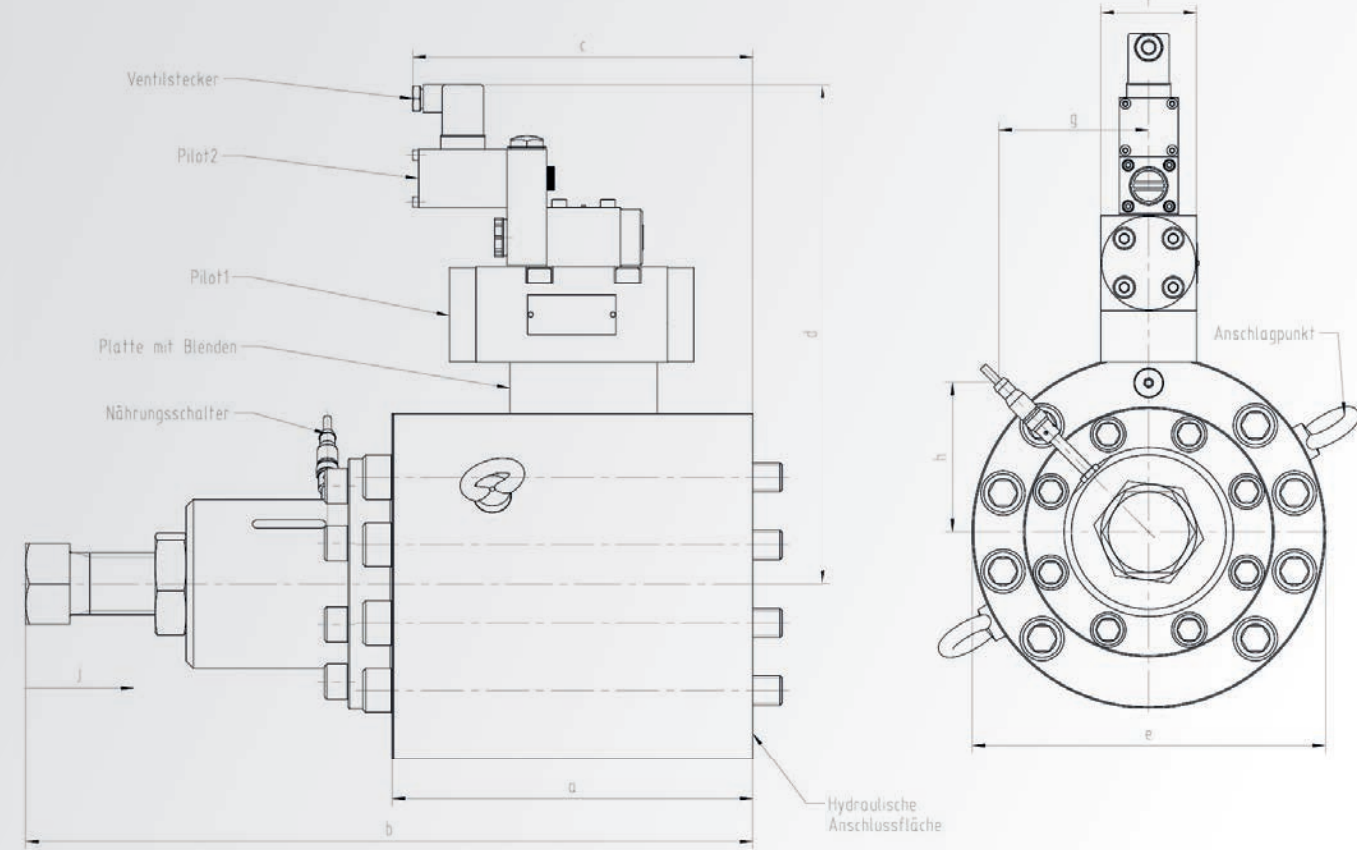
Δp – q_v characteristic curves DN100



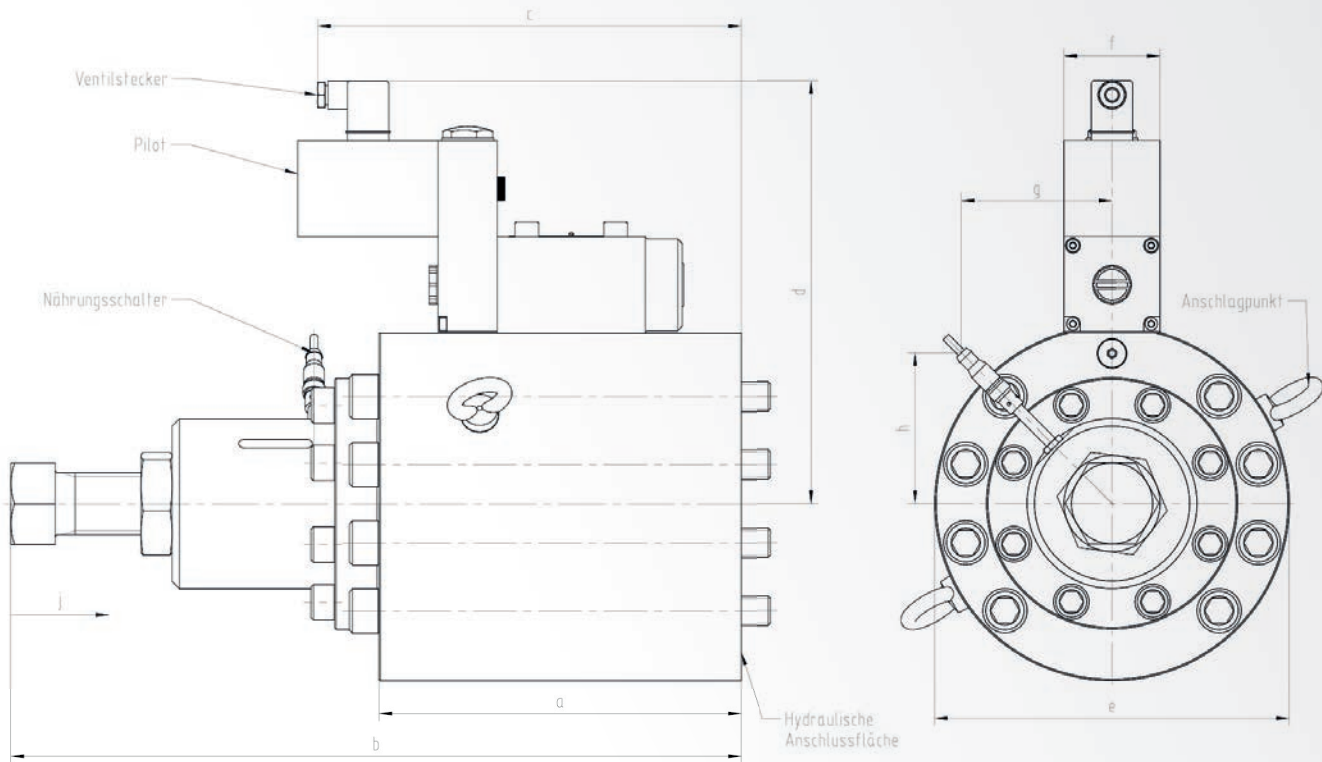
Single-stage pilot control, 2/2-way valve C3, X, Y actuated, PN 500, DN16 - DN32



Two-stage pilot control, 2/2-way valve C3, X, Y actuated, PN 500, DN16 - DN32



Single-stage pilot control, 2/2-way valve C3, X, Y actuated, PN 500, DN40 - DN80



Order information 2/2-way valves C3 X, Y actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valve
Cable socket for the magnet

Single-stage pilot control

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Pilot valve					Position monitoring	
				a	b	c	d	e	f	g	h	j		Nominal size	Basic position	Actuation	Current	Article number Pilot valve	Designation	Article number monitoring
DN16	13,0	500	NC	120	210	176	179	120	40	59	102	14,5	6600205	DN3	A→T NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545769	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726
DN16	13,0	500	NO	120	210	176	179	120	40	59	102	14,5	6600205	DN3	P→A NO		1,0 A	6545777		
DN25	20,0	500	NC	147	270	186	189	130	40	63	108	19	6165176	DN3	A→T NO		1,0 A	6545769		
DN25	20,0	500	NO	147	270	186	189	130	40	63	108	19	6165176	DN3	P→A NO		1,0 A	6545777		
DN32	35,0	500	NC	163	320	186	208	176	40	64	110	22	6148565	DN3	A→T NO		1,0 A	6545769		
DN32	35,0	500	NO	163	320	186	208	176	40	64	110	22	6148565	DN3	P→A NO		1,0 A	6545777		
DN40	52,0	500	NC	182	378	214	232	196	50	93	93	24	6057772	DN6	A→T NO		1,5 A	6546889		
DN40	52,0	500	NO	182	378	214	232	196	50	93	93	24	6057772	DN6	P→A NO		1,5 A	6546919		
DN50	95,0	500	NC	235	475	240	255	240	50	97	97	31,5	6057780	DN6	A→T NO		1,5 A	6546889		
DN50	95,0	500	NO	235	475	240	255	240	50	97	97	31,5	6057780	DN6	P→A NO		1,5 A	6546919		
DN65	141,0	500	NC	245	528	287	310	294	65	102	102	37	6154751	DN10	A→T NO		2,5 A	6254543		
DN65	141,0	500	NC	245	528	287	310	294	65	102	102	37	6154751	DN10	P→A NO		2,5 A	6254551		
DN80	253,0	500	NC	295	585	308	345	370	65	109	109	40	6153917	DN10	A→T NO		2,5 A	6254543		
DN80	253,0	500	NC	295	585	308	345	370	65	109	109	40	6153917	DN10	P→A NO		2,5 A	6254551		

Order example

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way valve DN65-PN500-X,Y actuated-24VDC-NC single-stage pilot control	6154751	1	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726
1	Pilot valve DN10	6254543			

Order information 2/2-way valve C3 X, Y actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valves 1 and 2
Cable socket for the magnet

Position monitoring

Designation	Article number monitoring
Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Two-stage pilot control

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Nominal size	Basic position	Article number valve	Article number plate	Article number cover	Nominal size	Basic position	Actuation	Article number valve
				a	b	c	d	e	f	g	h	j										
DN65	142,0	500	NC	245	528	231	364	294	65	102	102	37	6154751	DN10	A→T NO	6271820	6569641	6569927	DN3	A→T NO	Electromagnet, voltage 24V DC, current 1.0A, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	6545769
DN65	142,0	500	NO	245	528	231	364	294	65	102	102	37	6154751	DN10	P→A NO	6600028	6569641	6569927	DN3	A→T NO		6545769
DN80	254,0	500	NC	295	585	252	400	370	65	109	109	40	6153917	DN10	A→T NO	6271820	6569641	6569927	DN3	A→T NO		6545769
DN80	254,0	500	NO	295	585	252	400	370	65	109	109	40	6153917	DN10	P→A NO	6600028	6569641	6569927	DN3	A→T NO		6545769
DN100	469,0	500	NC	340	705	277	451	466	65	82	142	55	6077250	DN10	A→T NO	6271820	6569714	6532292	DN3	A→T NO		6545769
DN100	469,0	500	NO	340	705	277	451	466	65	82	142	55	6077250	DN10	P→A NO	6600028	6569714	6532292	DN3	A→T NO		6545769

Order example

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way valve DN100-PN500-X,Y actuated-24VDC-NC	6077250	2	Cover	6532292
1	Pilot valve 1, DN10	6600028	1	Pilot valve 2, DN3	6545769
1	Plate	6569714	1	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Pilot valve 1 Hydraulically actuated, X, Y internally

Pilot valve 2

2/2-way valve C3

X, Y, Z actuated

DN25 - DN150 PN 320

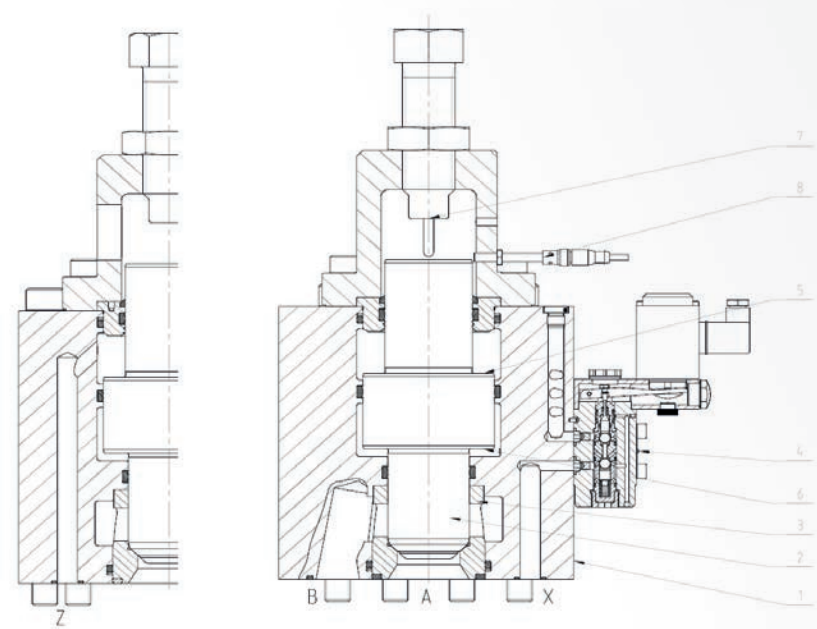
Features

- Hydraulically actuated directional seat valve controlling liquid media.
- Actively controllable 2/2-way valve with a 3-stage control logic provides safe opening and closing
- The valve is actuated via a 3/2-way pilot valve
- Function variants possible via the interconnection of the Z-line
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- The valve cross-section can be set via the stroke limitation and be locked mechanically
- Valve fastening structural plate form with a Hauhinco connection diagram
- Optically and with an optional proximity switch, the valve position can

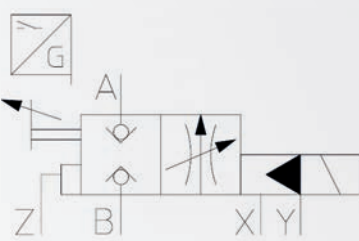
Function

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power generated by the control pressure (X) on the closing area (5), provided the opening area (6) is depressurised by the pilot valve (4). Thus, the lines (A, B) are separated. By switching the pilot valve (4), also the opening area (6) of the valve piston (2) is pressurised and lifts off the valve seat (3), the valve piston (2) moves into the opened position up to the mechanical end position and to the stroke limitation (7). Thus, the lines (A, B) are connected. Control channel (Z) is assigned to the closing area and control channel (X) to the opening area. The valve can be opened and closed actively by means of control pressure (X, Y), independent of the pressure along the work lines (A, B). The area ratios „opening area/closing area“ and „closing area/cable area (A, B)“, ensure a safe opening and closing of the valve. Depending on the design of the pilot valve (4), the basic valve position normally closed (NC) or normally open (NO) is provided. The position of the valve piston (2) can be monitored by the proximity switch (8).

Example 2/2-way valve C3 - X,Y, Z - actuated



Symbol



Control surfaces, hydraulic forces
A channel: Area A1, open valve passively
B channel: Area A2, open valve passively
Control surface (6): A3, open valve actively
Control surface (5): A4, close valve actively

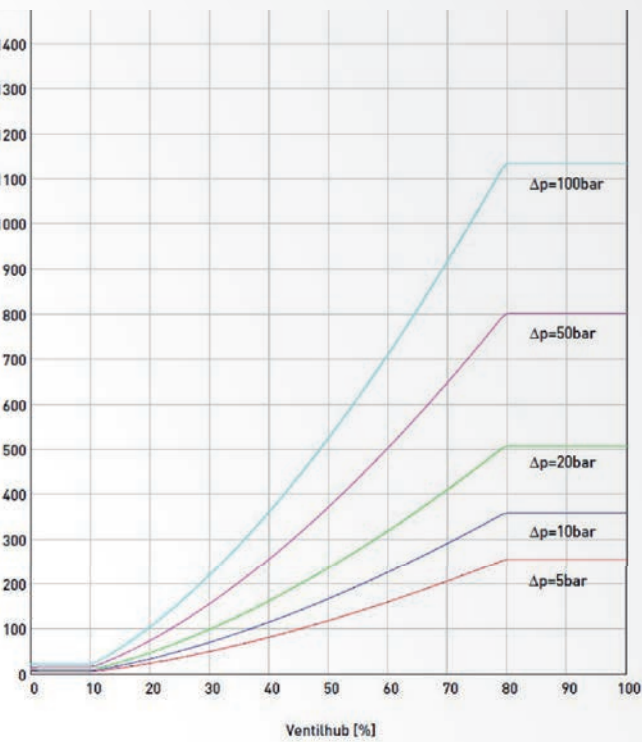
Technical data

measured with HFA medium 97/3%, at 20°C

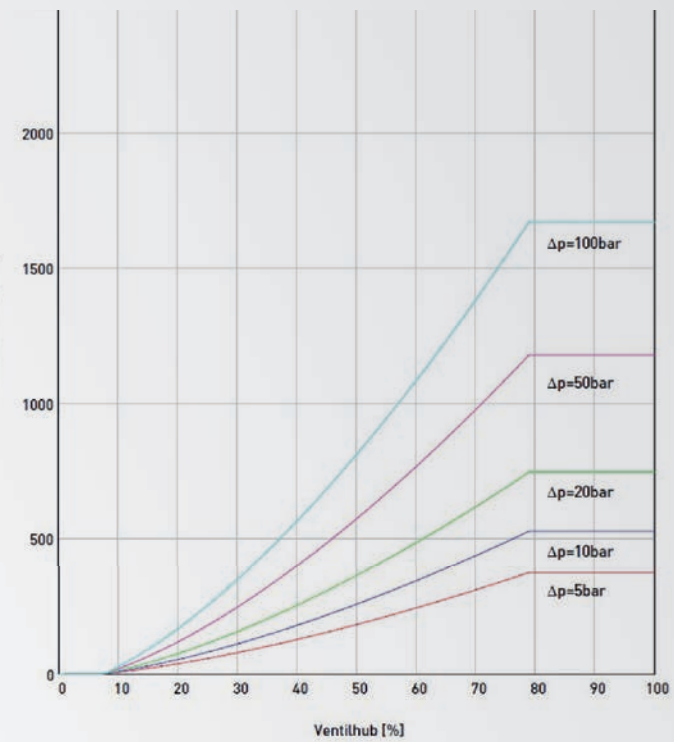
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≤ 320 bar, higher pressure stages on request
Hydraulic pressure connector X	≥ 50 bar ≥ hydraulic pressure at the connector A, B ≤ 320 bar
Hydraulic pressure connector Y	≤ 10 bar
Direction of flow	any, preferred direction of flow B→A
Druckflüssigkeit	Water, HFA
- Medium - Quality	see Hauhinco media requirement, water, HFA
- Medium - Temperature range	5 - 40°C
- filter fineness connector A, B	Filter fineness 100µm
- filter fineness connector X	Filter fineness 25µm
Druckflüssigkeit	Mineralöl, HLP nach DIN 51624-2
- Medium - Temperaturbereich	5 bis 50°C
- Medium - Qualität	Reinheitsklasse -/19/16 nach ISO 4406
- Viskosität	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Magnet	
- Voltage	24 VDC
- Power consumption	see Order information
- Operating time	100% OT
- Degree of protection acc. to EN60529	IP65
Inductive proximity switch	
- Output	NO contact, PNP
- Voltage	10 – 30 VDC
- Current	0,150 A
- Switching distance	2,0 mm
- Electrical connection	Three wire, plug connection M12x1

2/2-way valve C3, X, Y, Z actuated, PN 320, DN25 - DN32

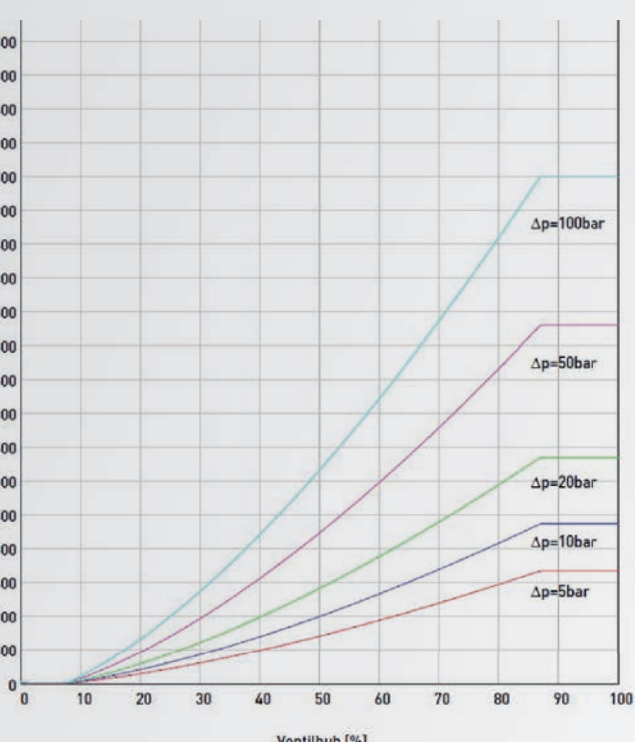
Δp - q_v characteristic curves DN25



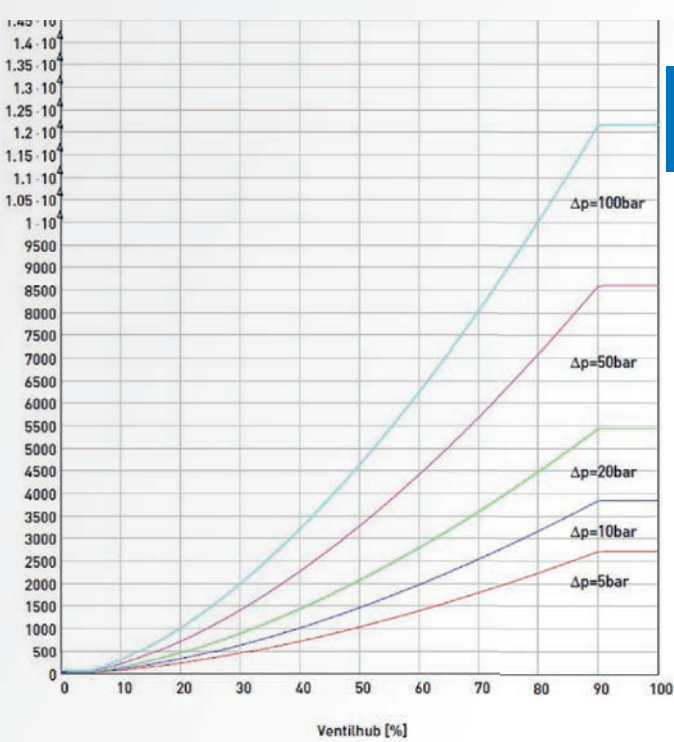
Δp - q_v characteristic curves DN32



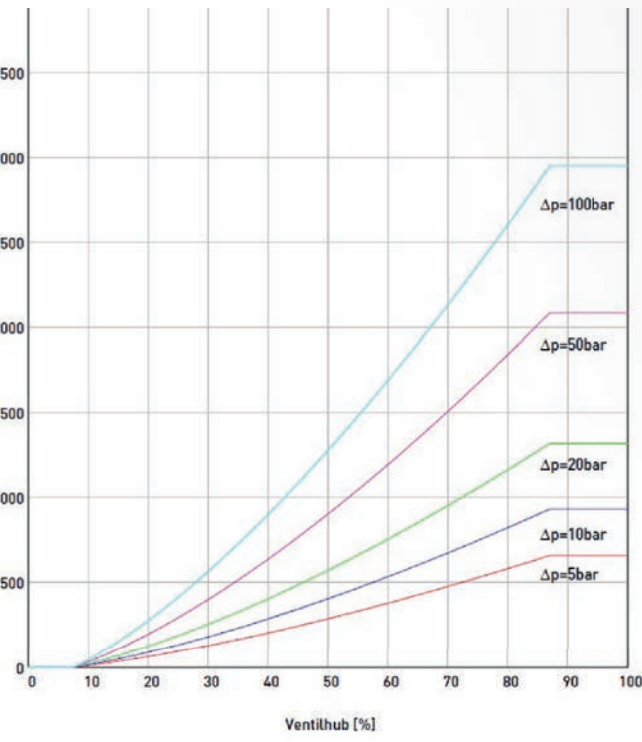
Δp - q_v characteristic curves DN65



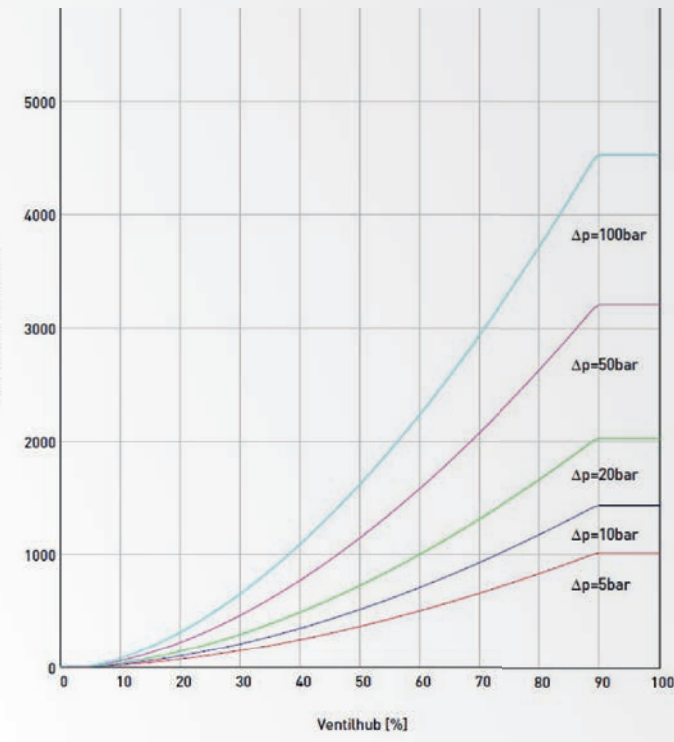
Δp - q_v characteristic curves DN80



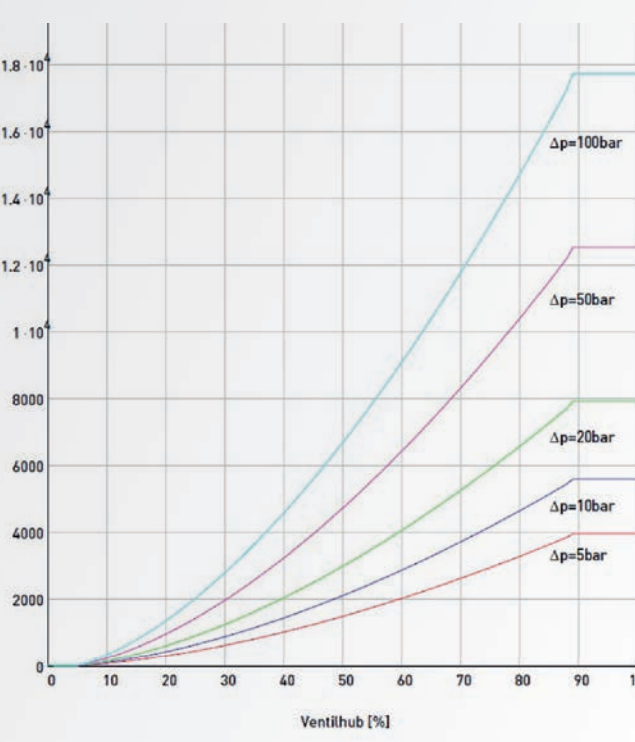
Δp - q_v characteristic curves DN40



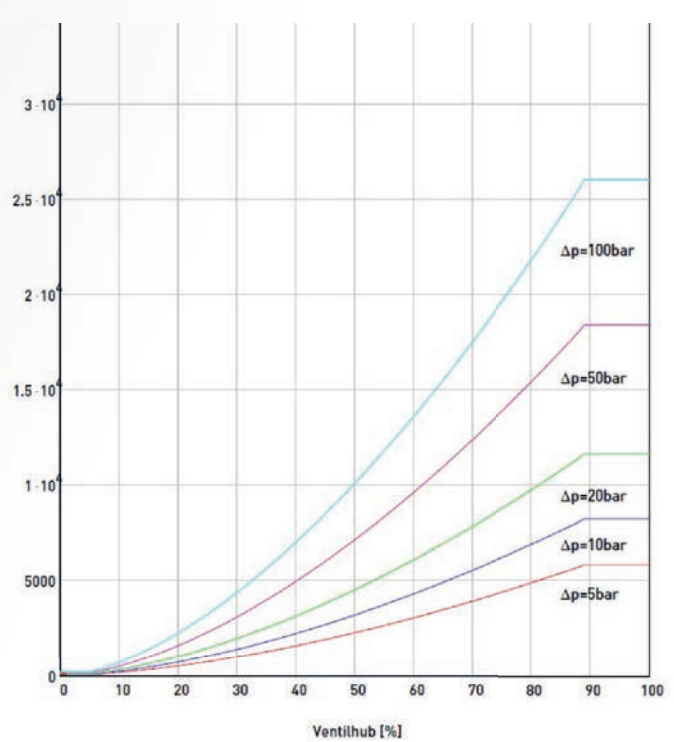
Δp - q_v characteristic curves DN50



Δp - q_v characteristic curves DN100

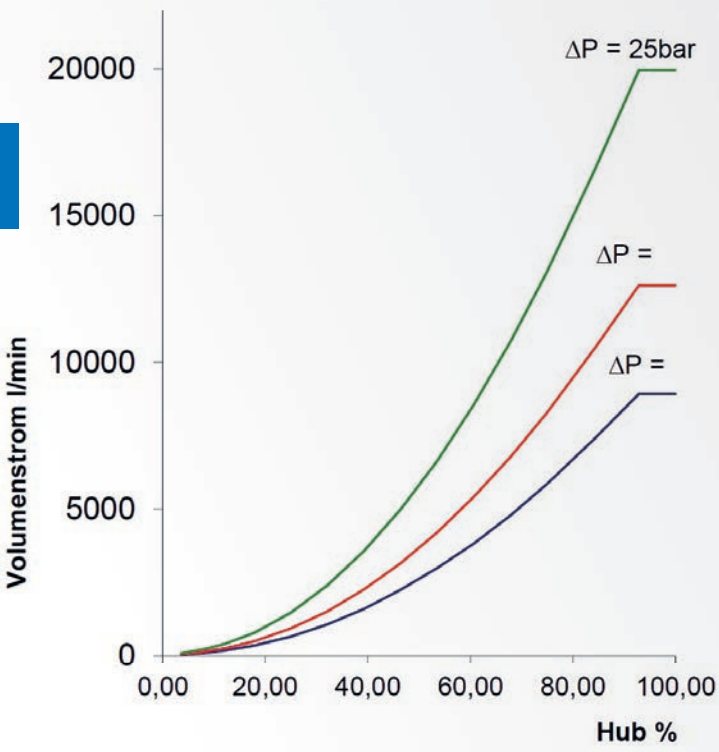


Δp - q_v characteristic curves DN125

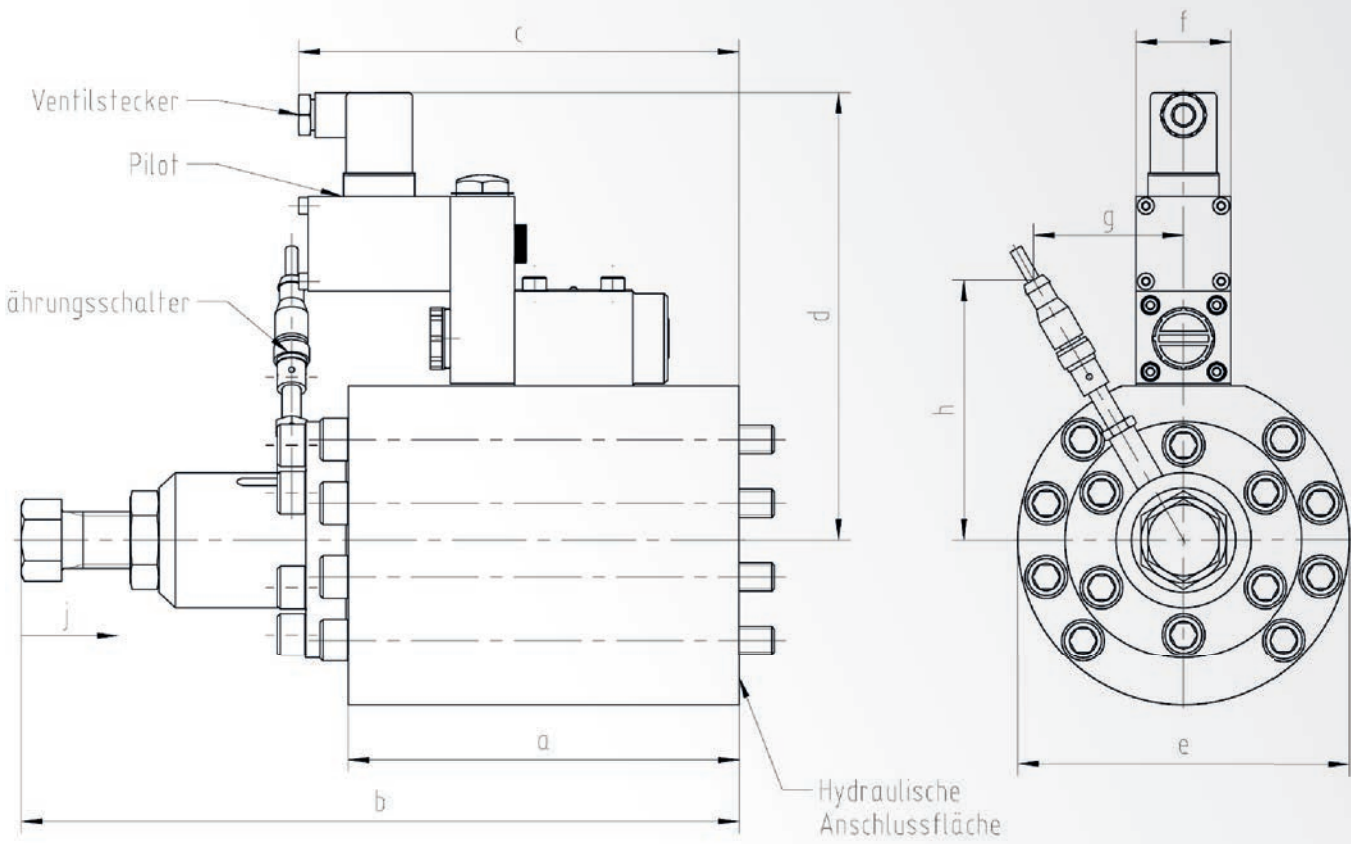


2/2-way valve C3, X, Y, Z actuated, PN 320, DN25 - DN32

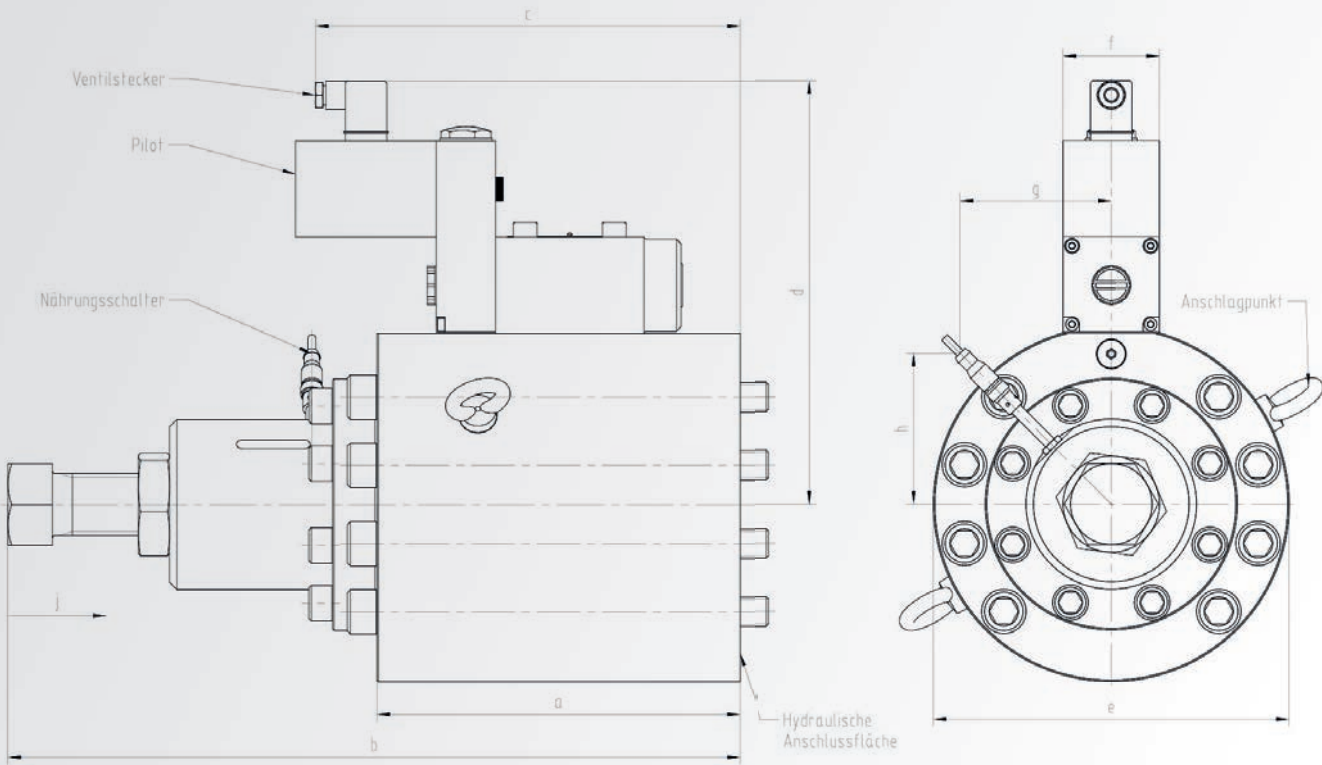
Δp - q_v characteristic curves DN150



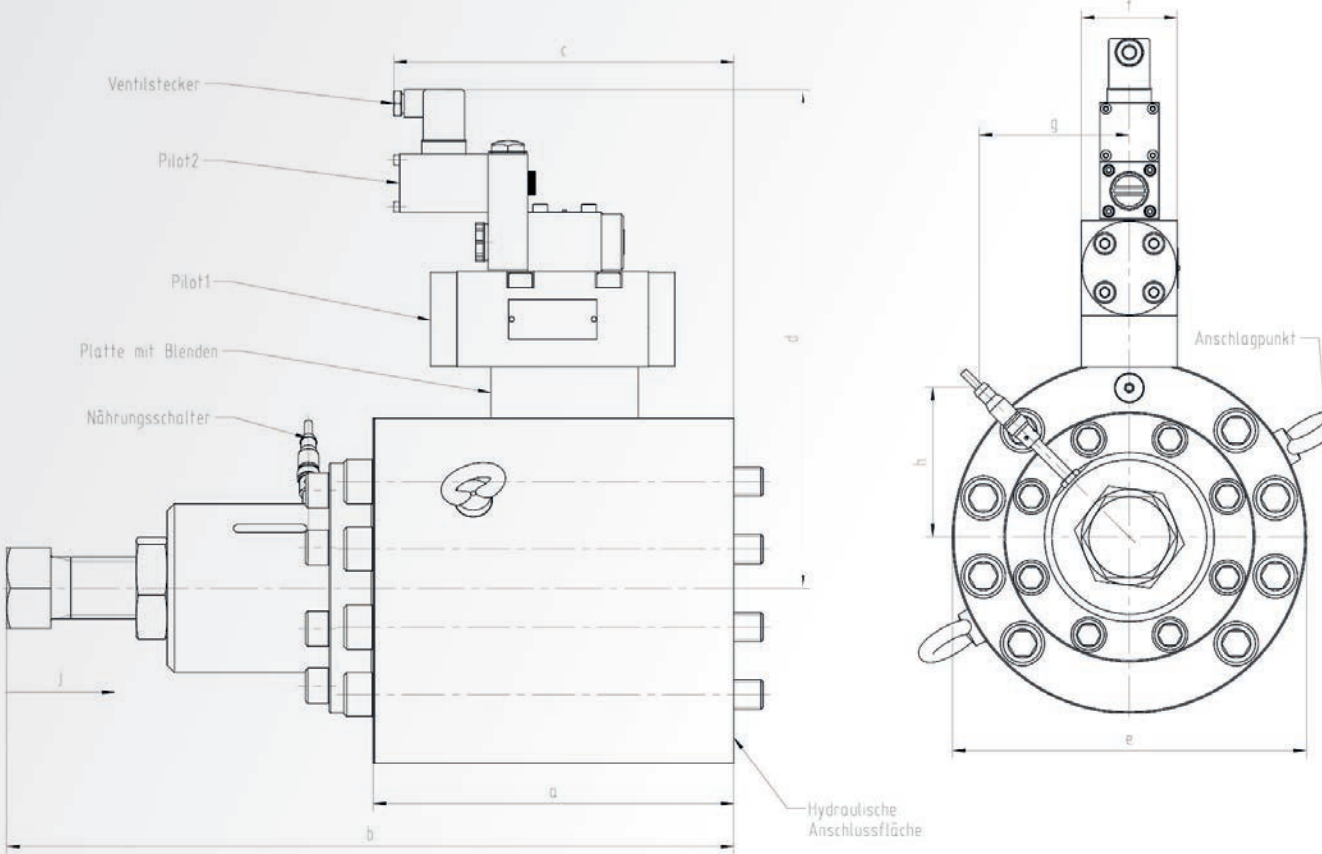
Single-stage pilot control, 2/2-way valve C3, X, Y, Z actuated, PN 320, DN25 - DN32



Single-stage pilot control, 2/2-way valve C3, X, Y, Z actuated, PN 320, DN40 - DN80



Two-stage pilot control, 2/2-way valve C3, X, Y, Z actuated, PN 320, DN65 - DN150



Order information 2/2-way valve C3, X, Y, Z actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valves 1 and 2
Cable socket for the magnet

Single-stage pilot control

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Pilot valve					Position monitoring	
				a	b	c	d	e	f	g	h	j		Nominal size	Basic position	Actuation	Current	Article number valve	Designation	Article number monitoring
DN25		320	NC	147	270	186	184	130	40	63	108	19	6600270	DN3	A→T NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545599	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726
DN25		320	NO	147	270	186	184	130	40	63	108	19	6600270	DN3	P→A NO		1,0 A	6545602		
DN32	22,0	320	NC	165	303	186	189	140	40	64	110	22	6266967	DN3	A→T NO		1,0 A	6545602		
DN32	22,0	320	NO	165	303	186	189	140	40	64	110	22	6266967	DN3	P→A NO		1,0 A	6545599		
DN40	39,0	320	NC	182	344	214	222	176	50	93	93	24	6160956	DN6	A→T NO		1,5 A	6546749		
DN40	39,0	320	NO	182	344	214	222	176	50	93	93	24	6160956	DN6	P→A NO		1,5 A	6546773		
DN50	60,0	320	NC	235	446	240	235	196	50	97	97	31,5	6066844	DN6	A→T NO		1,5 A	6546749		
DN50	60,0	320	NO	235	446	240	235	196	50	97	97	31,5	6066844	DN6	P→A NO		1,5 A	6546773		
DN65	89,0	320	NC	245	494	251	256	240	50	102	102	37	6161006	DN6	A→T NO		1,5 A	6546749		
DN65	89,0	320	NO	245	494	251	256	240	50	102	102	37	6161006	DN6	P→A NO		1,5 A	6546773		
DN80	165,0	320	NC	295	585	272	280	294	50	109	109	40	6160999	DN6	A→T NO		1,5 A	6235530		
DN80	165,0	320	NO	295	585	272	280	294	50	109	109	40	6160999	DN6	P→A NO		1,5 A	6235549		
DN100	291,0	320	NC	342	705	330	345	370	65	82	142	55	6066666	DN10	A→T NO		2,5 A	6235530		
DN100	291,0	320	NO	342	705	330	345	370	65	82	142	55	6066666	DN10	P→A NO		2,5 A	6235549		
DN125	568,0	320	NC	393	793	363	398	466	65	90	155	60	6063772	DN10	A→T NO		2,5 A	6235530		
DN125	568,0	320	NO	393	793	363	398	466	65	90	155	60	6063772	DN10	P→A NO		2,5 A	6235549		

Order example

Item	Designation	Article number	Item	Designation	Article number
1	2/2 Wegeventil DN50-PN320-X,Y, Z actuated-24VDC-NC single-stage pilot control	6066666	1	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726
1	Pilot valve DN10	6235530			

Order information 2/2-way valve C3, X, Y, Z actuated

Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valves 1 and 2
Cable socket for the magnet

Position monitoring

Designation	Article number monitoring
Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Two-stage pilot control

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Nominal size	Basic position	Article number valve	Article number plate	Article number cover	Nominal size	Basic position	Actuation	Article number valve
				a	b	c	d	e	f	g	h	j										
DN80	170,0	320	NC	295	585	252	364	294	65	109	109	40	6160999	DN6	A→T NO	6264808	6569668	6561136	DN6	A→T NO		6546749
DN80	170,0	320	NO	295	585	252	364	294	65	109	109	40	6160999	DN6	P→A NO	6264816	6569668	6561136	DN6	A→T NO	Electromagnet, voltage 24 VDC, current 1,0 A (DN6 1,5A), Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	6546749
DN100	292,0	320	NC	342	705	274	398	370	65	82	142	55	6066666	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO		6545599
DN100	292,0	320	NO	342	705	274	398	370	65	82	142	55	6066666	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599
DN125	570,0	320	NC	393	793	307	450	466	65	90	155	60	6063772	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO		6545599
DN125	570,0	320	NO	393	793	307	450	466	65	90	155	60	6063772	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599
DN150	905,0	320	NC	480	925	326	489	550	65	97	167	70	6163637	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO		6545599
DN150	905,0	320	NO	480	925	326	489	550	65	97	167	70	6163637	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way valve DN150-PN320-X,Y,Z actuated-24VDC-NC two-stage pilot control	6163637	2	Cover	6569927
1	Pilot valve 1, DN12	6266983	1	Pilot valve 2, DN3	6545599
1	Plate	6569641	1	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Order example

Order information 2/2-way valve C3, X, Y, Z actuated

Single-stage pilot control, valve with a locking device

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Pilot valve					Position monitoring	
				a	b	c	d	e	f	g	h	j		Nominal size	Basic position	Actuation	Current	Article number valve	Designation	Article number monitoring
DN65	99,0	320	NC	245	506	251	256	240	50	102	102	37	6600175	DN6	A→T NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,5 A	6546749	Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726
DN65	99,0	320	NO	245	506	251	256	240	50	102	102	37	6600175	DN6	P→A NO		1,5 A	6546773		
DN80	167,0	320	NC	295	598	272	281	294	50	109	109	40	6600184	DN6	A→T NO		1,5 A	6546749		
DN80	167,0	320	NO	295	598	272	281	294	50	109	109	40	6600184	DN6	P→A NO		1,5 A	6546773		
DN100	308,0	320	NC	342	725	330	345	370	65	82	142	55	6167748	DN10	A→T NO		2,5 A	6235530		
DN100	308,0	320	NC	342	725	330	345	370	65	82	142	55	6167748	DN10	P→A NO		2,5 A	6235549		
DN125	567,0	320	NC	393	804	363	398	466	65	90	155	60	6166393	DN10	A→T NO		2,5 A	6235530		
DN125	567,0	320	NO	393	804	363	398	466	65	90	155	60	6166393	DN10	P→A NO		2,5 A	6235549		

Two-stage pilot control, valve with a locking device

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]									Article number valve C3	Pilot valve 1 Hydraulically actuated, X, Y internally					Pilot valve 2			
				a	b	c	d	e	f	g	h	j		Nominal size	Basic position	Article number valve	Article number plate	Article number cover	Nominal size	Basic position	Actuation	Article number valve
DN80	171,0	320	NC	295	598	272	340	294	50	109	109	40	6600184	DN6	A→T NO	6264808	6569668	6561136	DN6	A→T NO	Electromagnet, voltage 24 VDC, current 1,0 A (DN6 1,5A), Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	6546749
DN80	171,0	320	NO	295	598	272	340	294	50	109	109	40	6600184	DN6	P→A NO	6264816	6569668	6561136	DN6	A→T NO		6546749
DN100	300,0	320	NC	342	725	274	398	370	65	82	142	55	6167748	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO		6545599
DN100	300,0	320	NO	342	725	274	398	370	65	82	142	55	6167748	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599
DN125	568,0	320	NC	393	804	307	451	466	65	90	155	60	6166393	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO		6545599
DN125	568,0	320	NO	393	804	307	451	466	65	90	155	60	6166393	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599
DN150	915,0	320	NC	480	950	326	489	550	65	168	97	70	6600186	DN12	A→T NO	6266975	6569641	6569927	DN3	A→T NO		6545599
DN150	915,0	320	NO	480	950	326	489	550	65	168	97	70	6600186	DN12	P→A NO	6266983	6569641	6569927	DN3	A→T NO		6545599

Valve DN16 – DN150 with a locking device



Included in the scope of supply
Mounting screws for the 2/2-way valve assembly
Mounting screws for the pilot valves 1 and 2
Cable socket for the magnet

Technical changes reserved.
All data and figures are considered non-binding.

3/2-way valve B1

X, Y internally actuated

DN3 - DN25, PN320, PN500

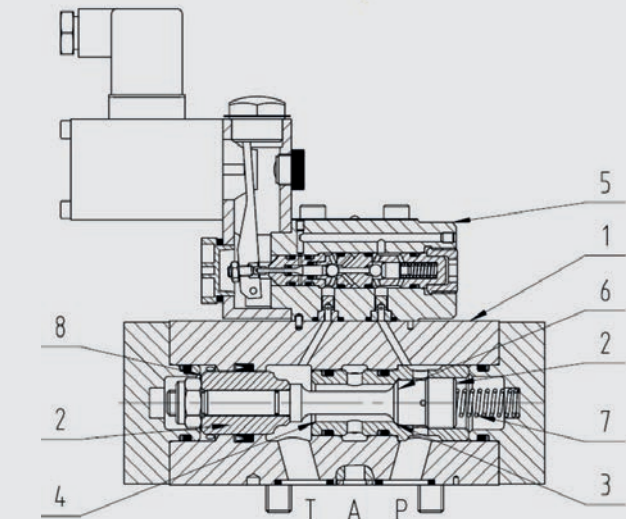
Features:

- Hydraulically actuated directional seat valve controlling liquid media.
- Passively controllable 3/2-way valve with 1-stage control logic
- The basic valve position is maintained by the hydraulic pressure (P)
- The valve is designed in two function variants , A-T NO and P-T NO
- The nominal value DN16 provides the switching function starting with a hydraulic pressure of 3bar
- The hydraulic control pressure (X, Y) is picked off internally along the lines (P, T)
- Valve piston and valve seat are coupled and close hydraulically „leak-free“
- The valve is actuated hydraulically via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram

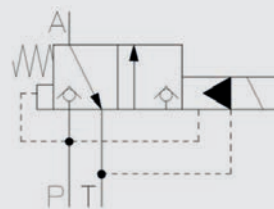
Function of 3/2-way valve A→T NO

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power and the spring force (7) generated by the operating pressure (P) on the control surface (6). Thus, the line (P) is shut off and the lines (A, T) are connected. By switching the pilot valve (5), the control surface (8) is pressurised and the valve piston (2) is moved into the actuated position. Thus, the valve piston (2) is pressed into the valve seat (4), the lines (P, A) are connected and the line (T) shut off. Within the switching phase, the valve is provided with a positive overlap.

Examples 3/2-way valvel A→T NO



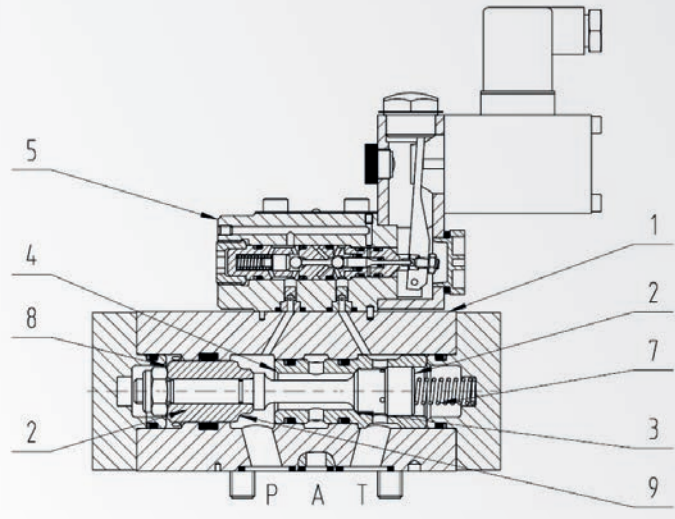
Symbol



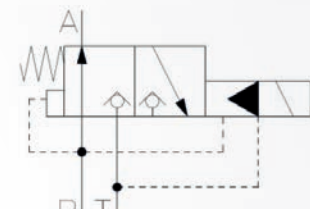
Function of 3/2-way valve P→A NO

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power and the spring force (7) generated by the operating pressure (P) on the control surface (9). Thus, the line (T) is shut off and the lines (P, A) are connected. By switching the pilot valve (5), the piston valve area (8) is pressurised and the valve piston (2) is moved into the actuated position. Thus, the valve piston (2) is pressed into the valve seat (4), the lines (A, T) are connected and the line (P) is shut off. Within the switching phase, the valve is provided with a positive overlap.

Examples 3/2-way valve P→A NO



Symbol

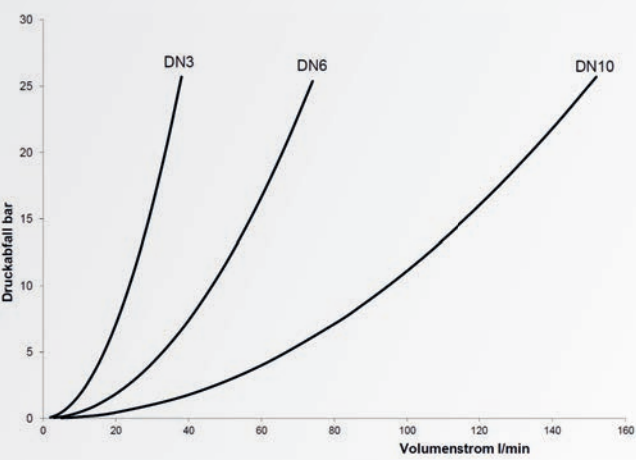


Technical data

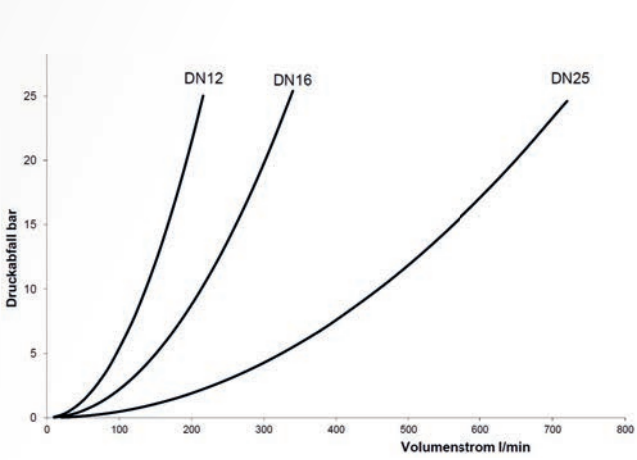
measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, except for the electromagnet NBR, PTFE
Hydraulic	
Hydraulic pressure connector P, X	≤ 320 bar, bzw. ≤ 500bar, see Order information
Hydraulic pressure connector A	≤ P ≤ 320bar bzw. ≤ 500bar, see Order information
Hydraulic pressure connector T, Y	≤ 10 bar
Direction of flow	P→A, A→T
Pressure fluid - Medium - Quality - Medium - Temperature range - min filter fineness connector P, A, T	Water, HFA see Hauhinco media requirement, water, HFA 5 - 40°C Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Magnet - Voltage - Operating time - Degree of protection acc. to EN60529 - max. switching rate	24 VDC see Order information 100% OT IP65 0,5 Hz

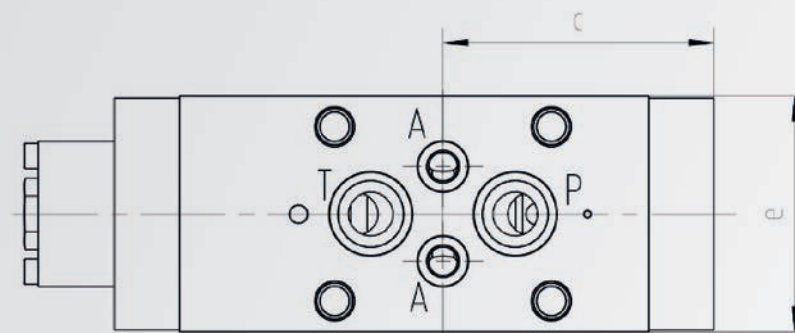
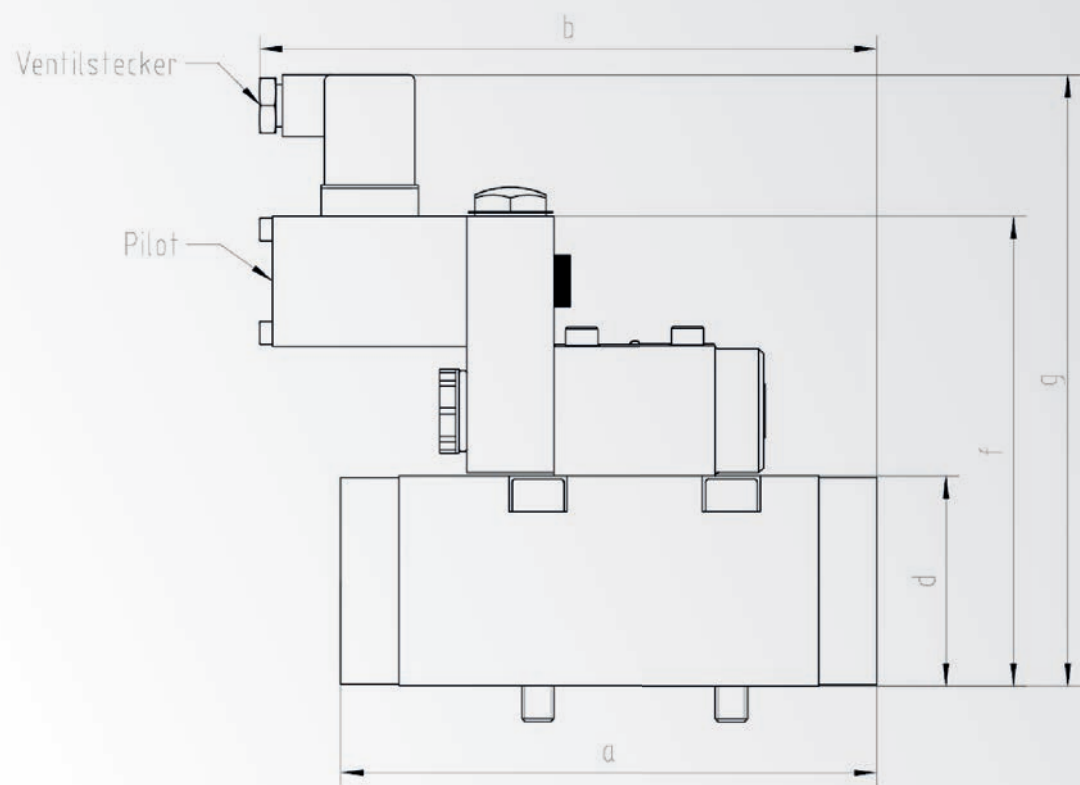
Δp –qv characteristic curves DN3 - DN10



Δp –qv characteristic curves DN12 - DN25



3/2-way valve B1, X, Y, internally, PN 320 PN500, DN3 - DN25



Order information 3/2-way valve B1, X, Y internally

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw
Cable socket of the valve solenoid - Supply voltage 24 VDC	according to DIN 43650 – type of design A max. 100 VA

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	min. pressure difference [bar]	Dimensions [mm]							Article number valve B1
					a	b	c	d	e	f	g	
DN3	3,0	320	A→T NO	30	114	169	53	40	40	120	164	6264832
DN3	30	320	P→A NO	30	114	177	61	40	40	120	164	6264824
DN6	5,0	320	A→T NO	30	118	189	53	40	50	140	181	6264808
DN6	5,0	320	P→A NO	30	118	201	65	40	50	140	181	6264816
DN10	7,0	500	A→T NO	30	166	191	75	65	65	154	189	6271820
DN10	7,0	500	P→A NO	30	166	207	91	65	65	145	189	6600028
DN12	7,0	320	A→T NO	10	166	191	75	65	65	145	189	6266975
DN12	7,0	320	P→A NO	30	166	207	91	65	65	145	189	6266983
DN16	13,0	320	A→T NO	10	205	206	90	90	90	170	214	6161448
DN16	14,0	320	P→A NO	30	205	231	115	90	90	170	214	6161405
DN25	33,0	320	A→T NO	30	294	266	132	125	125	205	249	6153208

Item	Designation	Article number
1	3/2-way valve DN10-PN500 B1, X, Y, internally- 24VDC-P-A NO	6600028
1	Pilot valve DN3	6545769

Pilot valve

Nominal size	Basic position	Actuation	Current	Article number valve
DN3	A→T NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545599
DN3	A→T NO		1,0 A	6545599
DN6	A→T NO		1,5 A	6546749
DN6	A→T NO		1,5 A	6546749
DN3	A→T NO	LED display + Z-diode, IP65	1,0 A	6545769
DN3	A→T NO		1,0 A	6545599
DN3	A→T NO		1,0 A	6545599
DN3	A→T NO		1,0 A	6556515
DN3	A→T NO		1,0 A	6556515
DN3	A→T NO		1,0 A	6557910

Order example

3/2-way valve B2 X, Y externally

DN10 - DN16, PN320

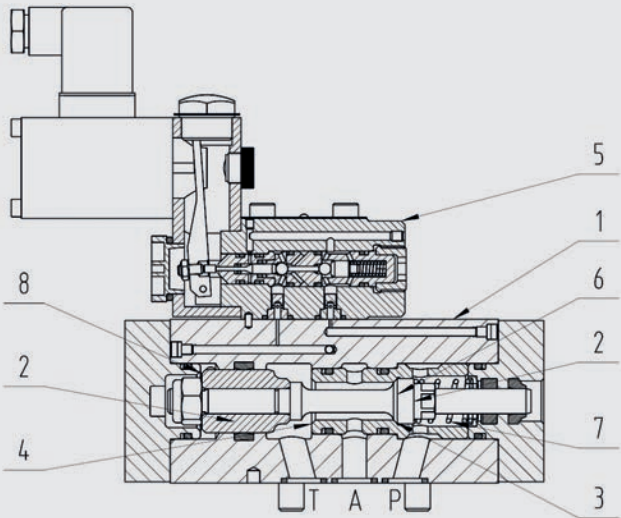
Features

- Hydraulically actuated directional seat valve controlling liquid media.
- Passively controllable 3/2-way valve with 2-stage control logic
- The basic valve position is maintained by the hydraulic pressure (P)
- The valve is designed in two function variants , A-T NO and P-T NO
- The hydraulic control pressure (X, Y) is applied externally via the connection diagram
- Valve piston and valve seat are coupled and close hydraulically „leak-free“
- The valve is actuated hydraulically via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram

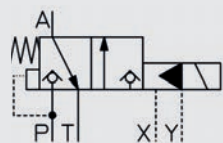
Function of 3/2-way valve A→T NO

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power and the spring force (7) generated by the operating pressure (P) on the control surface (6). Thus, the line (P) is shut off and the lines (A, T) are connected. By switching the pilot valve (5), the control surface (8) is pressurised and the valve piston (2) is moved into the actuated position. Thus, the valve piston (2) is pressed into the valve seat (4), the lines (P, A) are connected and the line (T) shut off. Within the switching phase, the valve is provided with a positive overlap.

Examples 3/2-way valve A→T NO



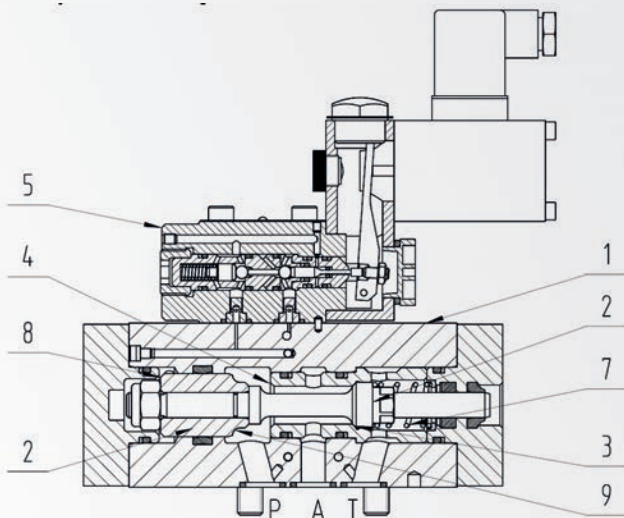
Symbol



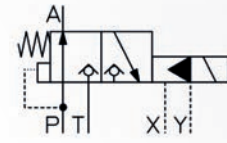
Function of 3/2-way valve P→A NO

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power and the spring force (7) generated by the operating pressure (P) on the control surface (9). Thus, the line (T) is shut off and the lines (P, A) are connected. By switching the pilot valve (5), the piston valve area (8) is pressurised and the valve piston (2) is moved into the actuated position. Thus, the valve piston (2) is pressed into the valve seat (4), the lines (A, T) are connected and the line (P) is shut off. Within the switching phase, the valve is provided with a positive overlap.

Examples 3/2-way valve P→A NO



Symbol



Technical data

measured with HFA medium 97/3%, at 20°C

General

Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, except for the electromagnet NBR, PTFE

Hydraulic

Hydraulic pressure connector P	≤ 320 bar
Hydraulic pressure connector A	≤ P ≤ 320bar
Hydraulic pressure connector T, Y	≤ 10 bar
Hydraulic pressure connector X	≥ 30bar ≥ P ≤ 320bar
Direction of flow	P→A, A→T
Pressure fluid - Medium - Quality - Medium - Temperature range - min filter fineness connector P, A - min filter fineness connector X	Water, HFA see Hauhinco media requirement, water, HFA 5 - 40°C Filter fineness 100µm Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

Electric

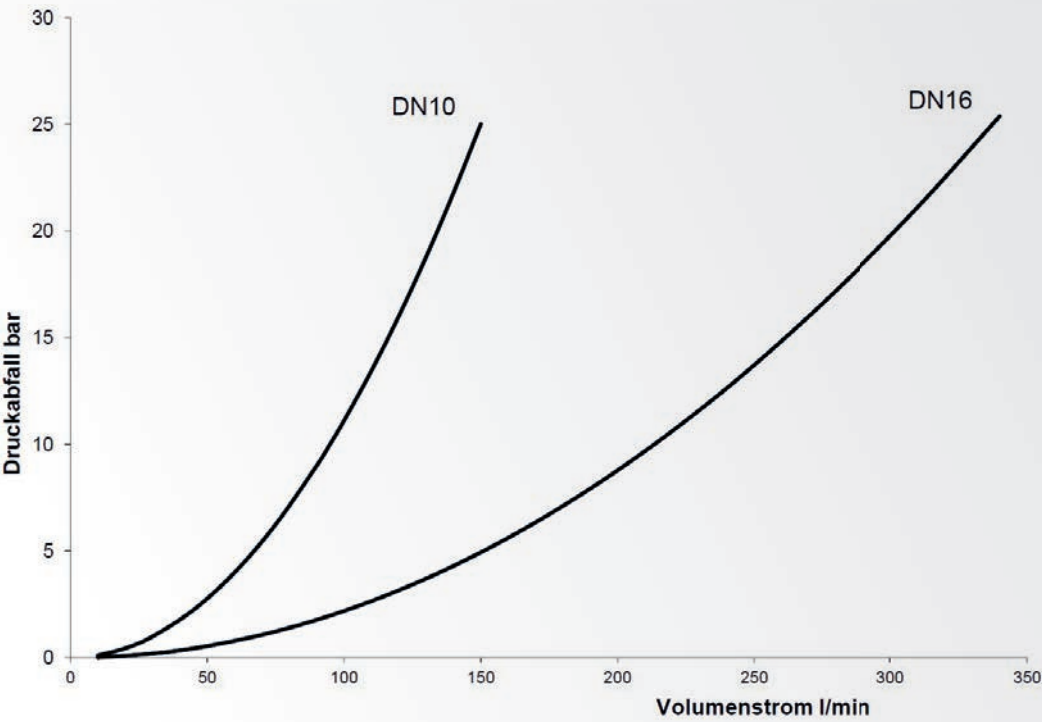
Magnet - Voltage - Power consumption - Operating time - Degree of protection acc. to EN60529 - max. switching rate	24 VDC 21 W 100% OT IP65 0,5 Hz
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Einsatzbereiche

3/2-way valve A→T NO, -P→A NO	Actuation of hydraulic drives (hydraulic cylinder). These valves will particularly be used if due to the medium a separation between the operating and the control circuit is required.
3/2-way valve P→B NO	The valve works like a hydraulic separator; optionally, it may pass on the supplied pressure and the volume flow from line P to line A or B. Thus, optionally pressure can be applied to two different pressure circuits.

3/2-way valve B2, X, Y externally, PN 320, DN10 - DN16

Δp –qv characteristic curves DN3 - DN10

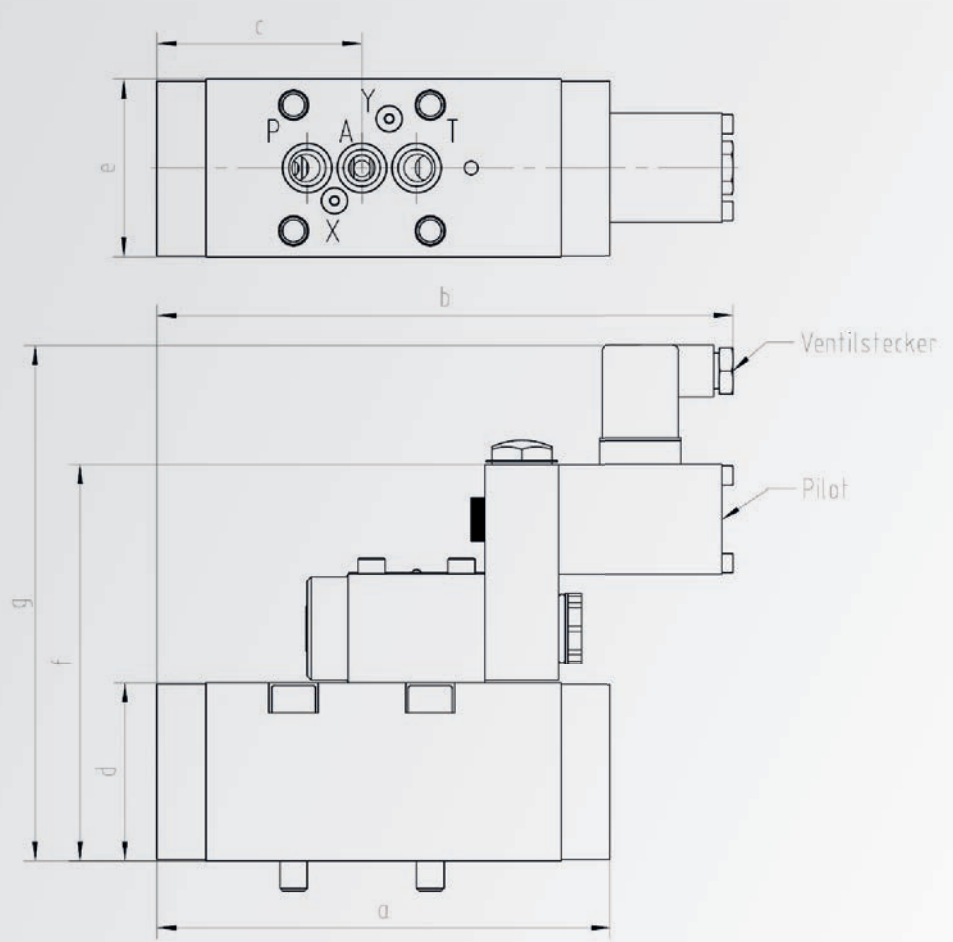


Order information 3/2-way valve B2, X, Y externally

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw
Cable socket of the valve solenoid - Supply voltage 24 VDC	according to DIN 43650 – type of design A max. 100 VA

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	min. pressure difference [bar]	Dimensions [mm]							Article number valve B1
					a	b	c	d	e	f	g	
DN10	7,0	320	A→T NO	30	166	211	75	65	65	145	189	6270646
DN10	7,0	320	P→A NO	30	166	187	91	65	65	145	189	6270662
DN16	13,5	320	A→T NO	30	217	218	102	90	90	170	214	6270425
DN16	13,5	320	P→A NO	30	217	231	115	90	90	170	214	6270441
DN16	13,5	320	P→A NO	30	205	206	90	90	90	170	214	6259596
DN16	13,5	320	P→B NO	30	205	206	90	90	90	170	214	6259596

3/2-way valveB2, X, Y externally, PN 320, DN10 - DN16



Item	Designation	Article number
1	3/2-way valve DN10- PN500 B1, XY internally, 24VDC-P-A NO	6600028
1	Pilot valve DN10	6254543

Pilot valve

Nominal size	Basic position	Actuation	Current	Article number valve
DN3	A→T NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545599
DN3	A→T NO		1,0 A	6545599
DN3	A→T NO		1,0 A	6545599
DN3	A→T NO		1,0 A	6545599
DN3	P→A NO		1,0 A	6545602
DN3	A→T NO		1,0 A	6545599

Order example

Technical changes reserved.
All data and figures are considered non-binding.

3/2-way valve B2 X, Y internally

DN10 - DN16, PN320

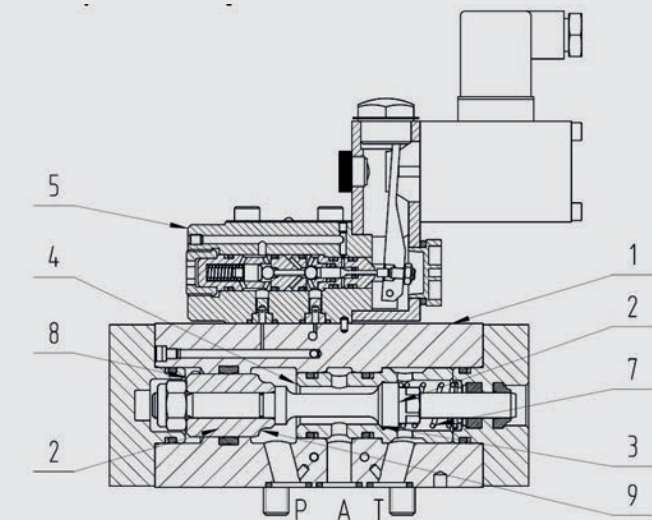
Features

- Hydraulically actuated directional seat valve controlling liquid media.
- Passively controllable 3/2-way valve with 2-stage control logic
- The basic valve position is maintained by the hydraulic pressure (P)
- The valve is designed in the function variant P→T NO, the function variant A→T NO can be generated by a pilot valve with the hydraulic function P→A NO
- The hydraulic control pressure (X, Y) is picked off internally along the lines (P, T)
- Valve piston and valve seat are coupled and close hydraulically „leak-free“
- The valve is actuated hydraulically via a 3/2-way pilot valve
- Valve fastening structural plate form with a Hauhinco connection diagram

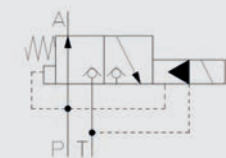
Function of 3/2-way valve P→A NO

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power and the spring force (7) generated by the operating pressure (P) on the control surface (6). Thus, the line (P) is shut off and the lines (A, T) are connected. By switching the pilot valve (5), the control surface (8) is pressurised and the valve piston (2) is moved into the actuated position. Thus, the valve piston (2) is pressed into the valve seat (4), the lines (P, A) are connected and the line (T) shut off.

Function of 3/2-way valve P→A NO



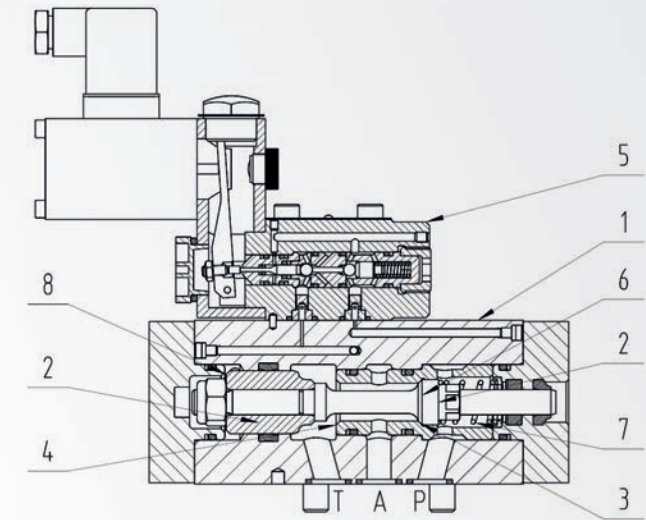
Symbol



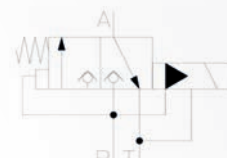
Function of 3/2-way valve A→T NO

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (4) by the hydraulic power generated by the control pressure (X) on the control surface (8), against the operating pressure (P) on the control surface (9) and the spring force (7). Thus, the line (P) is shut off and the lines (A, T) are connected. By switching the pilot valve (5), the piston valve area (8) is depressurised and the valve piston (2) is moved by the operating pressure (P) into the non-actuated position. Thus, the valve piston (2) is pressed into the valve seat (3), the lines (P, A) are connected and the line (T) is shut off.

Function of 3/2-way valve A→T NO



Symbol



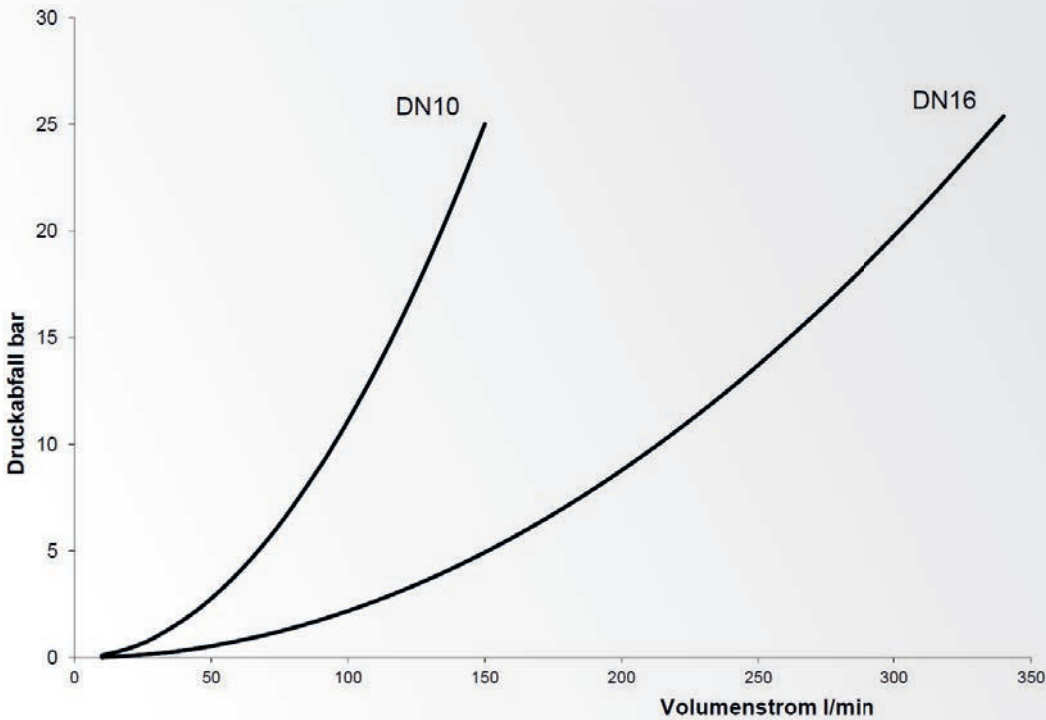
Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, except for the electromagnet NBR, PTFE
Hydraulic	
Hydraulic pressure connector P	≤ 320 bar
Hydraulic pressure connector A	≤ P ≤ 320bar
Hydraulic pressure connector T, Y	≤ 10 bar
Hydraulic pressure connector X	≥ 30bar ≥ P ≤ 320bar
Direction of flow	P→A, A→T
Pressure fluid - Medium - Quality - Medium - Temperature range - min filter fineness connector P, A - min filter fineness connector X	Water, HFA see Hauhinco media requirement, water, HFA 5 - 40°C Filter fineness 100µm Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Magnet - Voltage - Power consumption - Operating time - Degree of protection acc. to EN60529 - max. switching rate	24 VDC 21 W 100% OT IP65 0,5 Hz

3/2-way valve B2, X, Y internally, PN 320, DN10 - DN16

Δp –qv characteristic curves DN3 - DN10

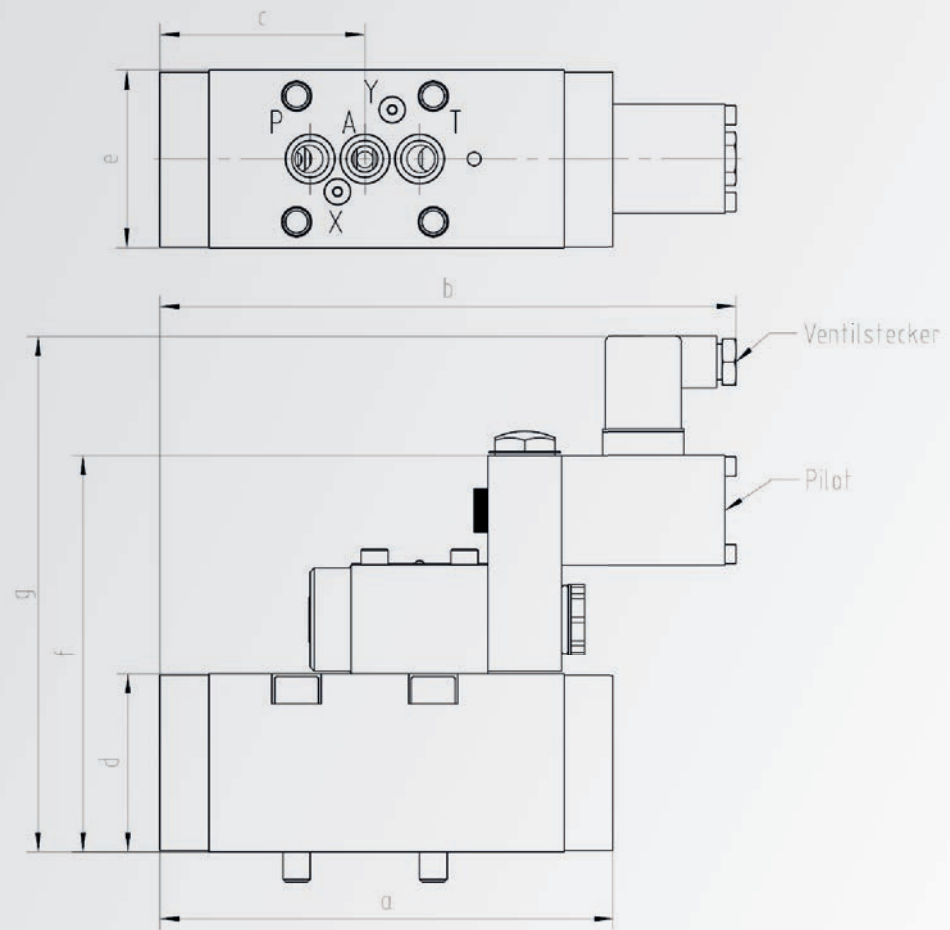


Order information 3/2-way valve B2, X, Y internally

Included in the scope of supply	
Mounting screws of the valve	Cheese-head screw
Cable socket of the valve solenoid - Supply voltage 24 VDC	according to DIN 43650 – type of design A max. 100 VA

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	min. pressure difference [bar]	Dimensions [mm]							Article number valve B1
					a	b	c	d	e	f	g	
DN10		320	A→T NO	30	166	187	91	65	65	145	189	6270999
DN10		320	P→A NO	30	166	187	91	65	65	145	189	6270999
DN16		320	A→T NO	30	217	231	115	90	90	170	214	6270735
DN16		320	P→A NO	30	217	231	115	90	90	170	214	6270735

3/2-way valve B2, X, Y internally, PN 320, DN10 - DN16



Item	Designation	Article number
1	3/2-way valveDN16- PN320 B2, XY internally 24VDC-P-A NO	6270735
1	Pilot valve DN3	6545599

Pilot valve

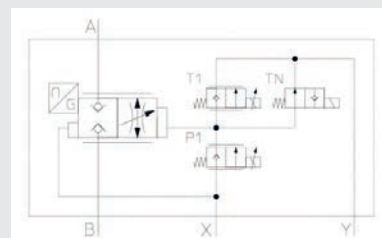
Nominal size	Basic position	Actuation	Current	Article number valve
DN3	P→A NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	1,0 A	6545602
DN3	A→T NO		1,0 A	6545599
DN3	P→A NO		1,0 A	6545602
DN3	A→T NO		1,0 A	6545599

Order example

Contents control valve proportional actuated

2/2-way control valve C3 proportional actuated

- Hydraulically actuated directional seat valve for liquid media
- Actively controllable 2-way control valve with a position controlled piston position
- The controlled piston position specifies the variably adjustable flow cross-section
- The valve is actuated via proportional 2-way pilot valves
- The pilot valves are activated via the digital Controller RE4
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- Valve fastening structural plate form with a Hauhinco Connection diagram
- Optionally, the valve position can be monitored by a proximity switch



2/2-ways, DN12 - DN125 PN 320

Page 138

2/2-ways, DN25 - DN100 PN 500

Page 150

Required digital controller RE4

- Electronic amplifier with integrated PID-Controller for solenoid-operated hydraulic valves
- Operating mode Pressure and Position control
- Suitable for all Hauhinco Valves
- Exchangeability of RE1, RE2 and RE3 is given
- Control and Diagnosis over software
- Automatic calibration between controller and hydraulic valve
- Communication between PC/Laptop and Controller by USB-port



Notes

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.

2/2-way control valve C3 proportional actuated

2/2-ways, DN12 - DN125 PN 320

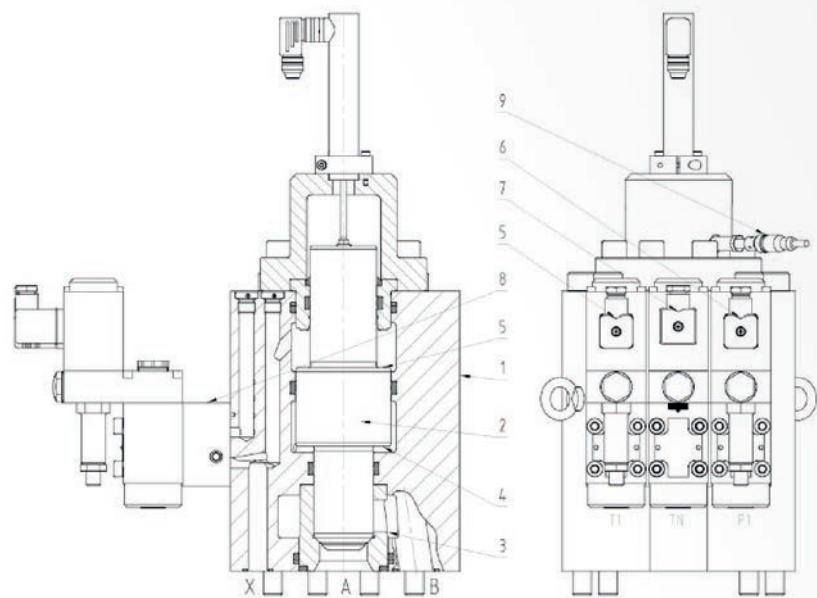
Features

- Hydraulically actuated directional seat valve for liquid media
- Actively controllable 2-way control valve with a position controlled piston position
- The controlled piston position specifies the variably adjustable flow cross-section
- The valve is actuated via proportional 2-way pilot valves
- The pilot valves are activated via the digital Controller RE4
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- Valve fastening structural plate form with a Hauhinco Connection diagram
- Optionally, the valve position can be monitored by a proximity switch

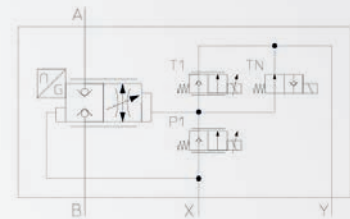
Function

The pilot valves (5, 6) and the control pcb (8) form the pilot control group of the 2-way control valve. The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power generated by the control pressure (X) on the closing area (5), provided the opening area (4) is depressurised by the activated pilot valve (5). Thus, the lines (A, B) are separated. Activated by the pilot valve (6), the opening area (4) is pressurised and the valve piston (2) lifts off the valve seat (3). The pilot valves (5, 6) are activated according to the controller specification, thus, the valve piston (2) moves into the requested position. The flow cross-section is set analogue to the valve's piston position. Both proportional pilot valves are 2-way seat valves NC. As soon as the control is switched off, the 2-way control valve remains in the position reached last. If an S/W pilot valve NO (7) is added to the proportional pilot control group, the 2-way control valve is moved into the safe basic position with the control switched off. Pilot valves (5, 6, 7) are fastened to the valve.

Example: 2-way control valve C3



Symbol



Control surfaces, hydraulic forces
A channel: Area A1, open valve passively
B channel: Area A2, open valve passively
Control surface (6): A3, open valve actively
Control surface (5): A4, close valve actively

Technical data

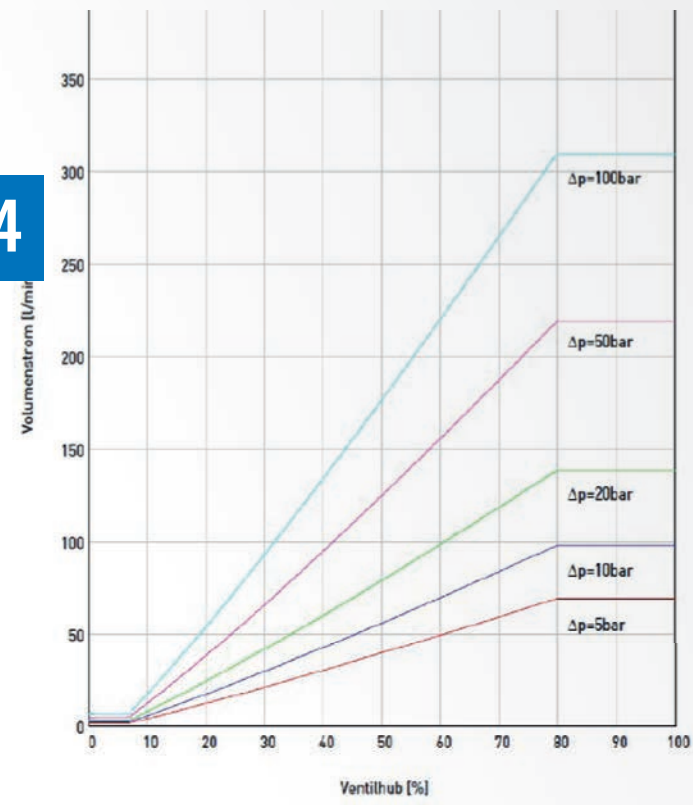
measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, bronze NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≤ 320 bar
Hydraulic pressure connector X	≤ 320 bar
Hydraulic pressure connector Y	≤ 10 bar
Hydraulic pressure connector X	≥ 50bar; ≥ Operating pressure at connector A, B
Direction of flow	any, preferred direction of flow B→A
Area ratios	A3 > A4, A4 > A1 + A2
Pressure fluid - Medium - Quality - min filter fineness connector A, B - min filter fineness connector X	Water, HFA see Hauhinco media requirement, water, HFA Filter fineness 100µm Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Magnet - Voltage - Power consumption - Operating time - Degree of protection acc. to EN60529	24 VDC see Order information 100% OT IP65
Position feedback encoder (displacement transducer) - Output - Voltage - Current - Electrical connection	4 - 20 mA 21,5 – 30 VDC max. 0,060 A Three wire, plug connection
Inductive proximity switch - Output - Voltage - Current - Switching distance - Electrical connection	NO contact, PNP 10 – 30 VDC 0,150 A 2 mm Three wire, plug connection M12x1

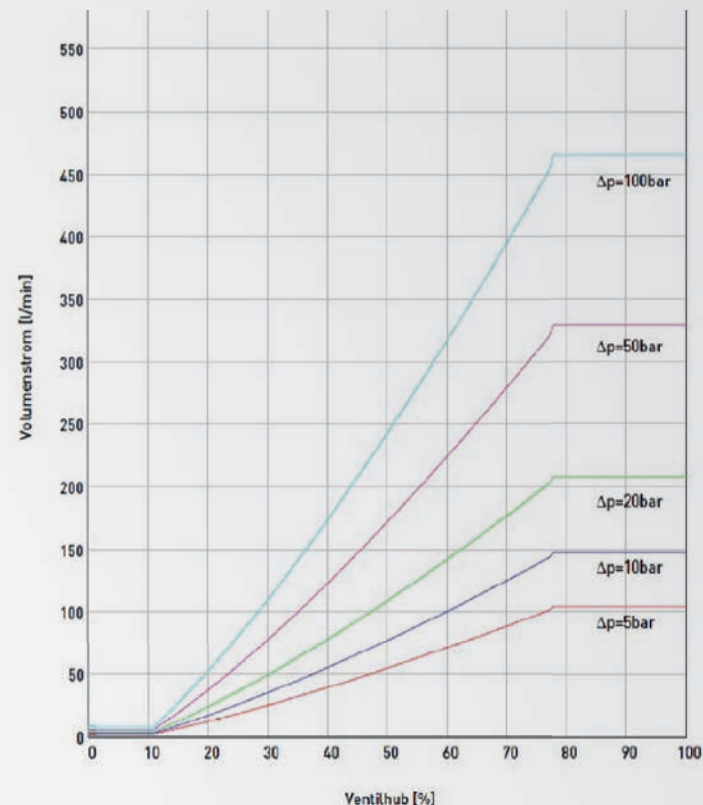
Characteristic curves control valve C3, PN320 proportionally actuated

$\Delta p - q_v$ characteristic curves DN12

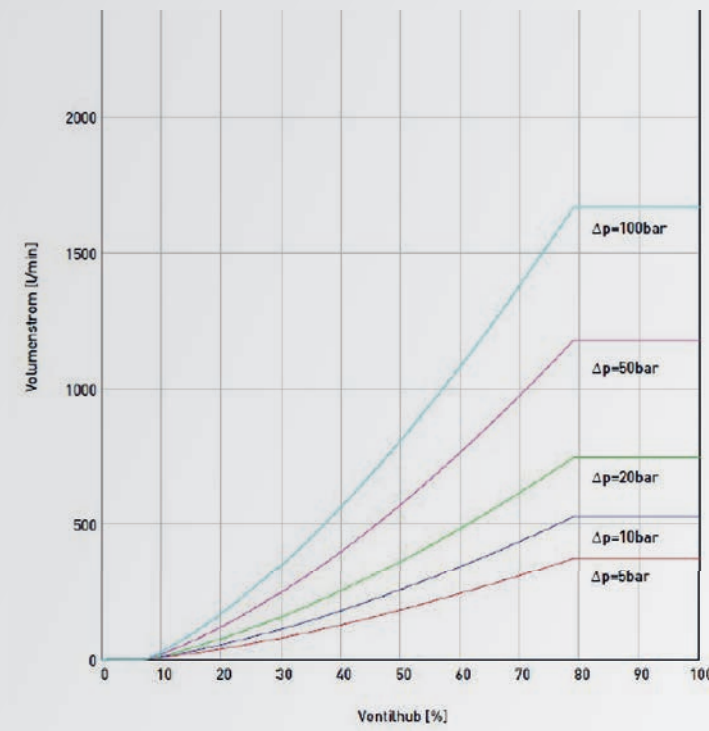
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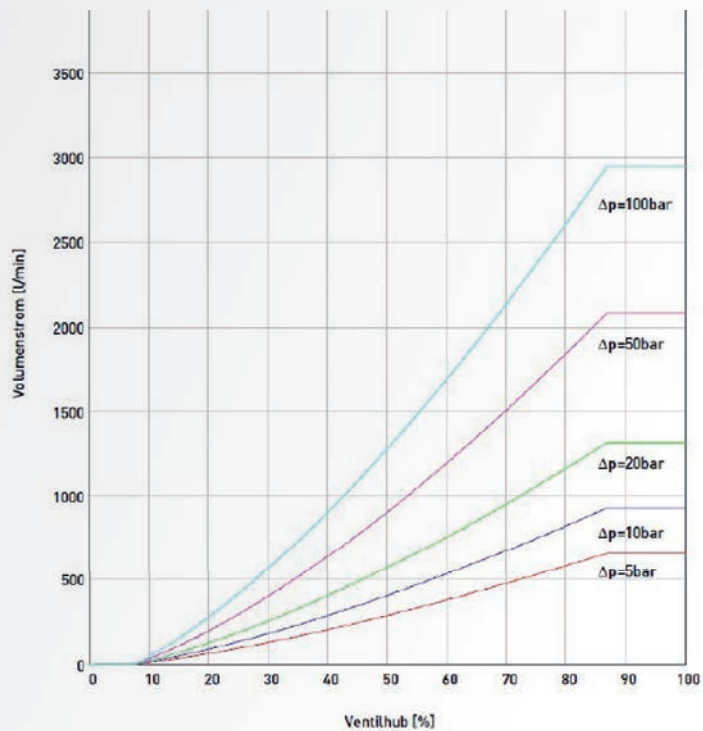
$\Delta p - q_v$ characteristic curves DN16



$\Delta p - q_v$ characteristic curves DN32

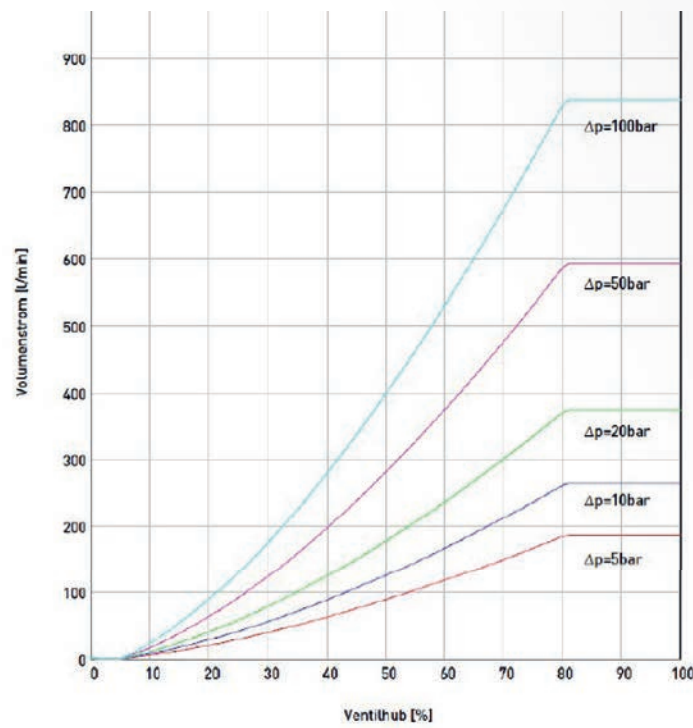


$\Delta p - q_v$ characteristic curves DN40

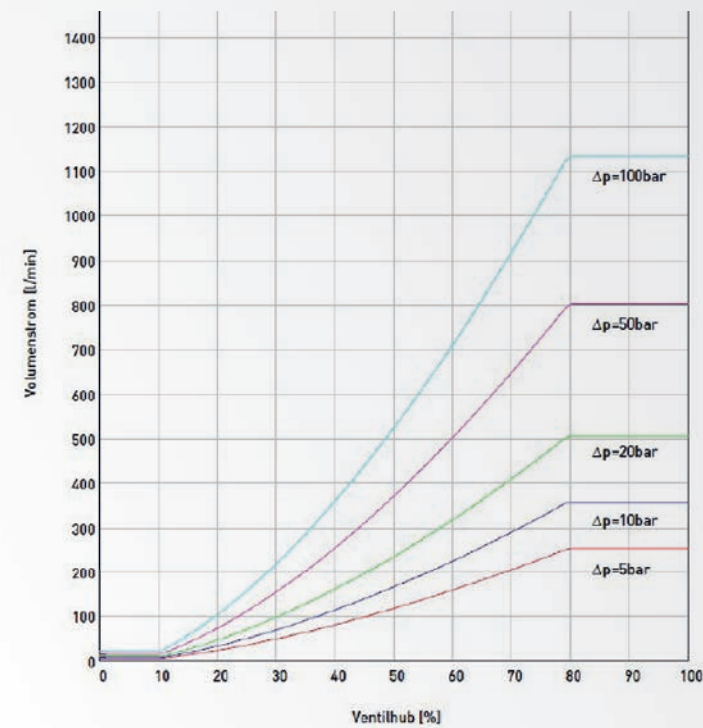


4

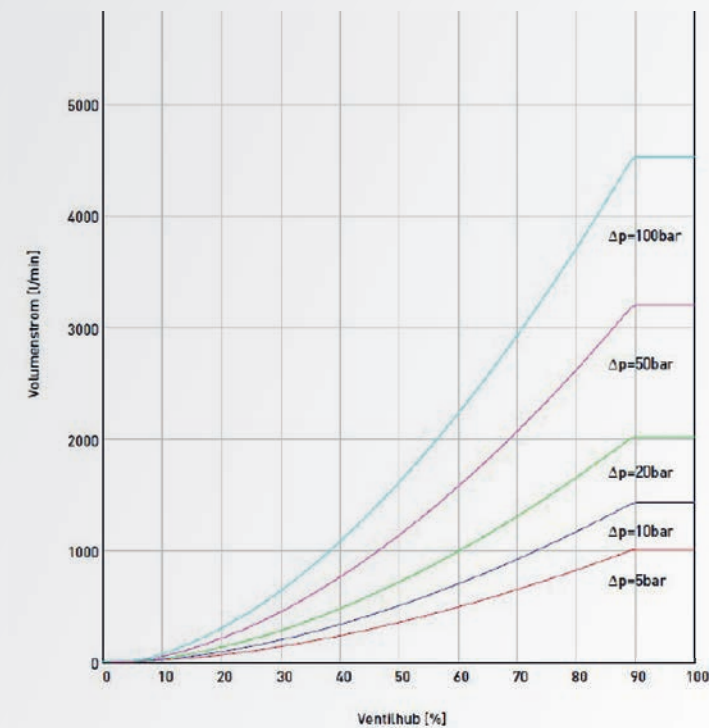
$\Delta p - q_v$ characteristic curves DN20



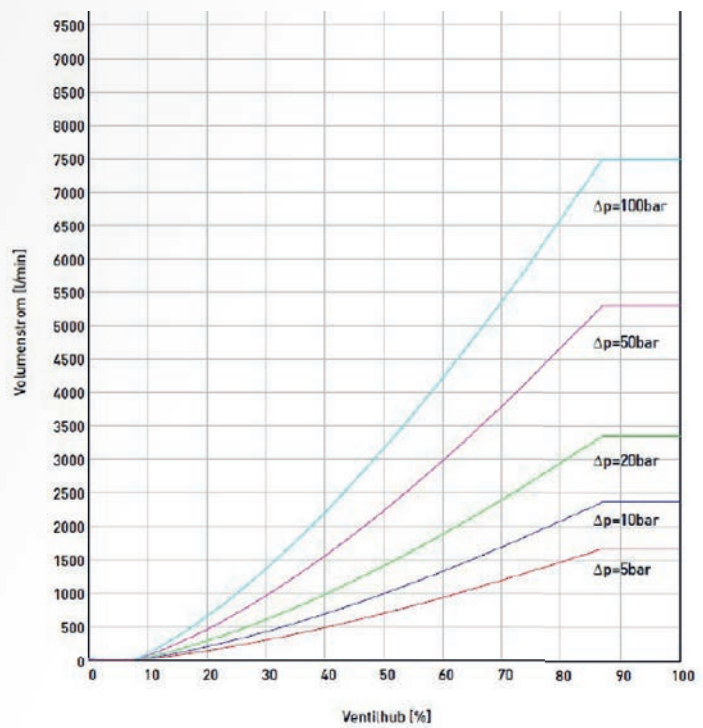
$\Delta p - q_v$ characteristic curves DN25



$\Delta p - q_v$ characteristic curves DN50

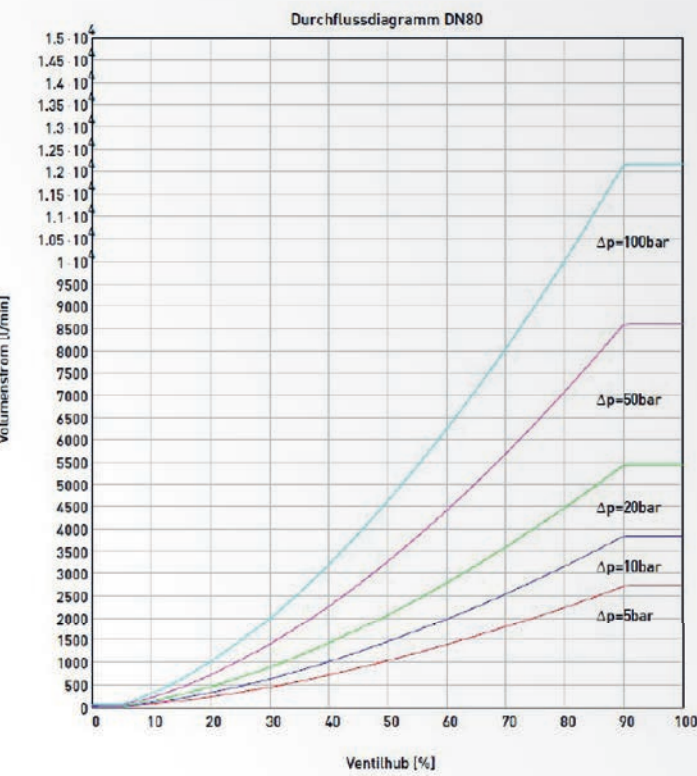


$\Delta p - q_v$ characteristic curves DN65

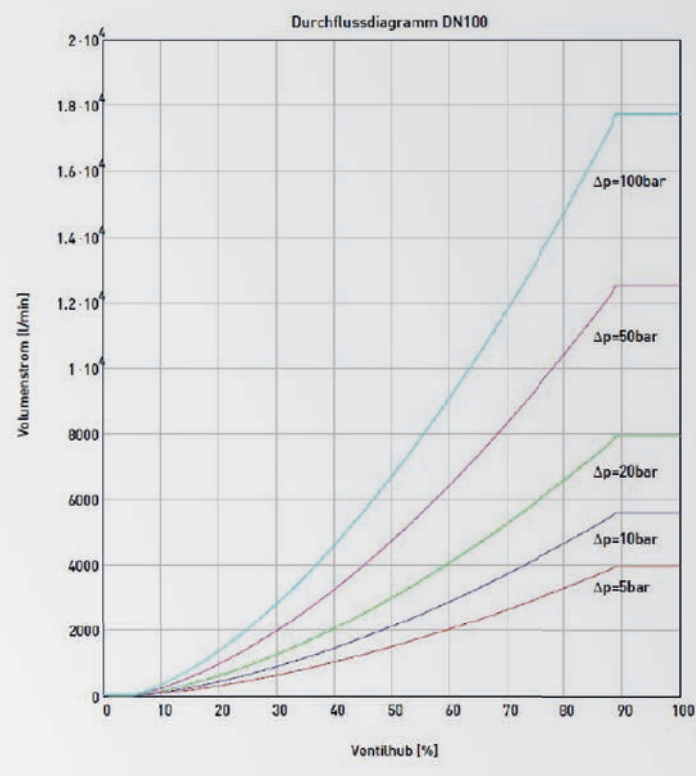


Characteristic curves control valve C3, PN320 proportionally actuated

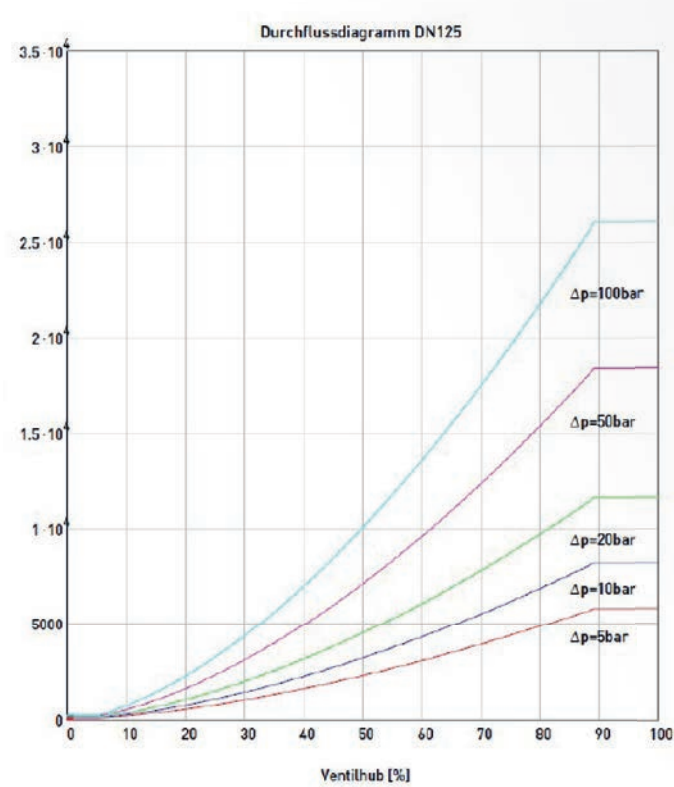
$\Delta p - q_v$ characteristic curves DN80



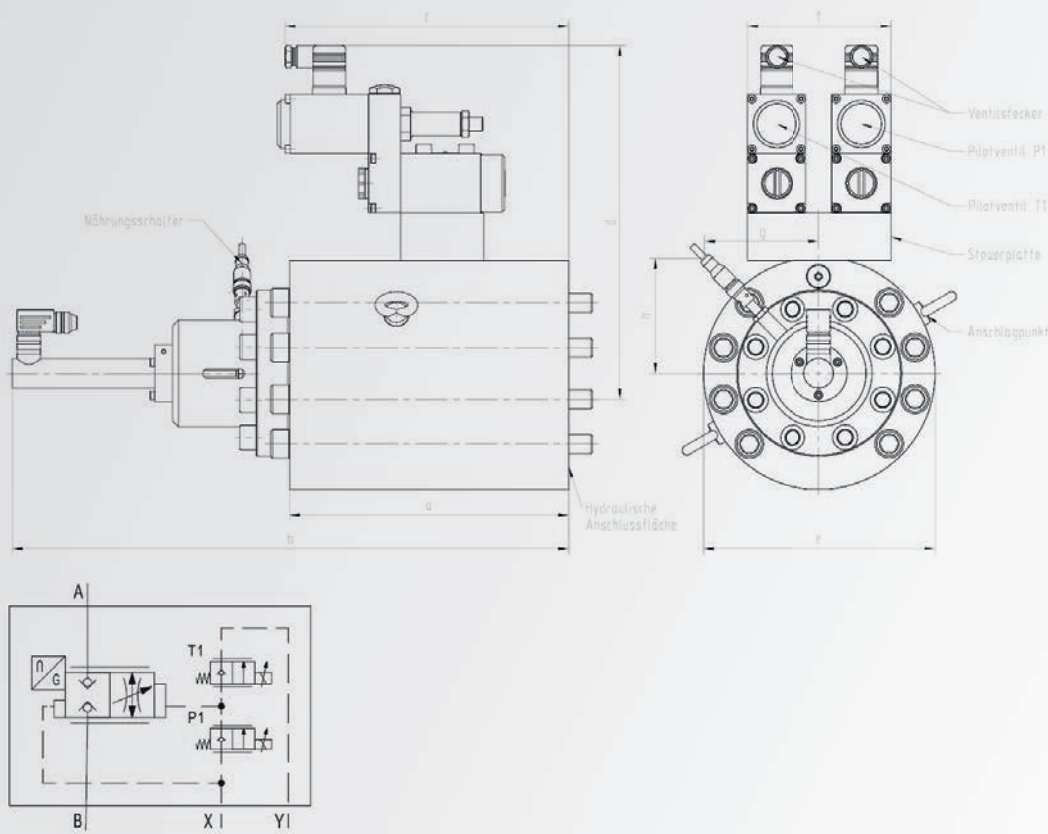
$\Delta p - q_v$ characteristic curves DN100



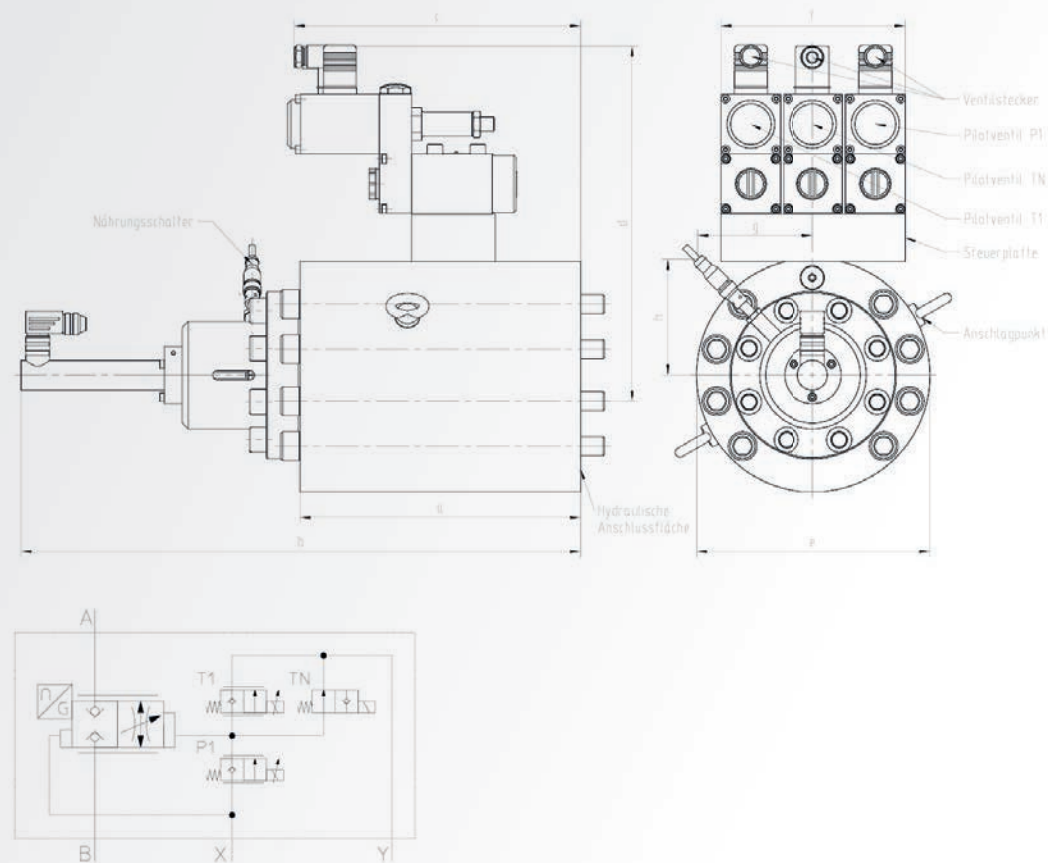
$\Delta p - q_v$ characteristic curves DN125



Pilot control with a pair of valves DN12 - DN65, PN320

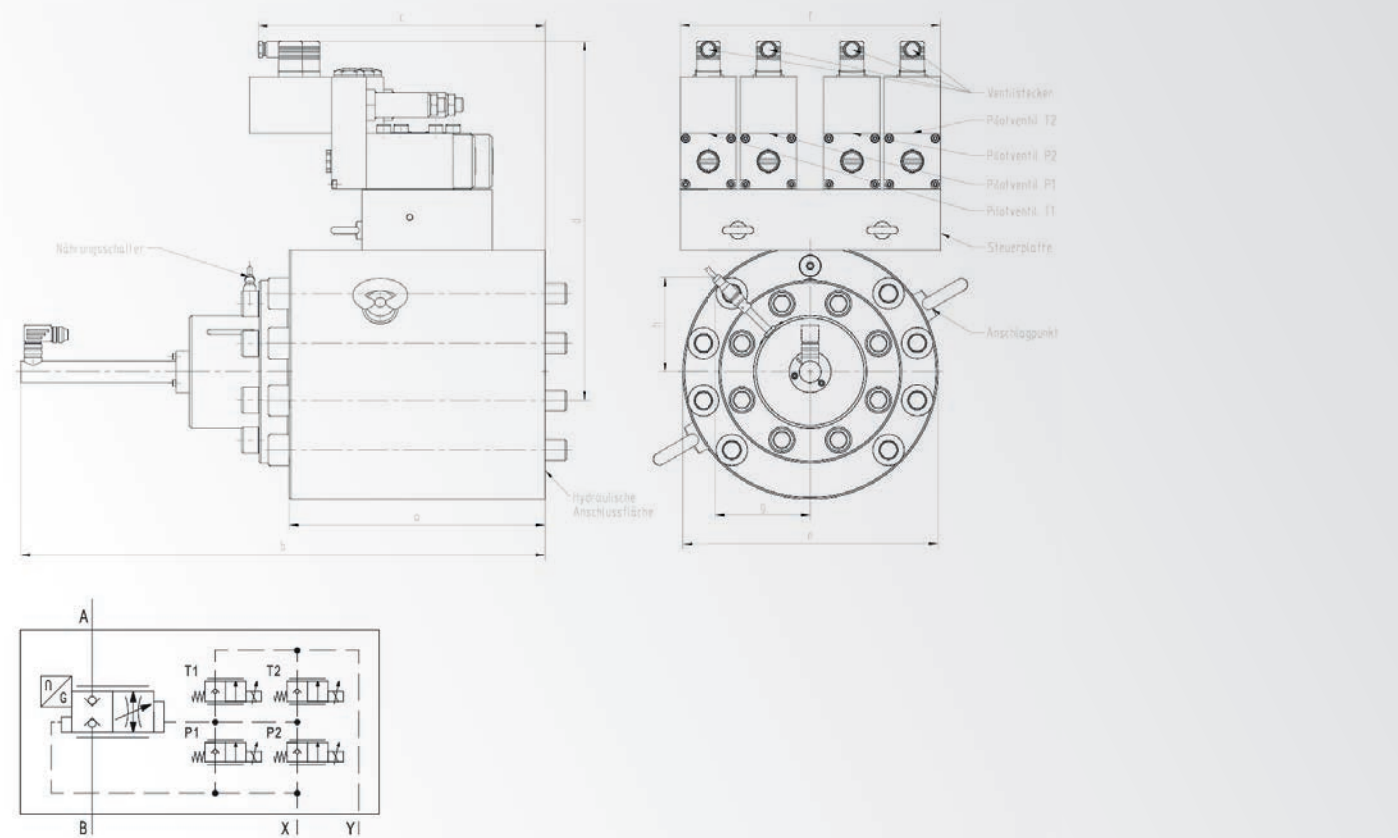


Pilot control with a pair of valves and basic position valve DN12 - DN65, PN320

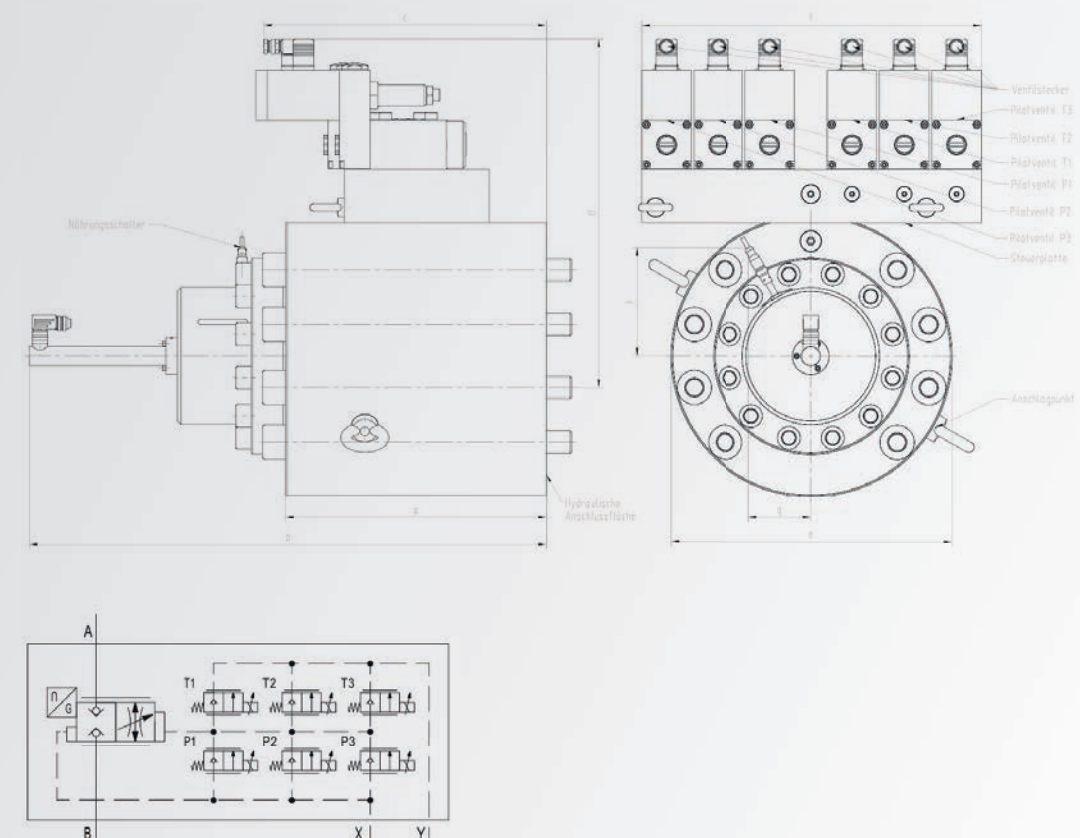


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All data and figures are considered non-binding.

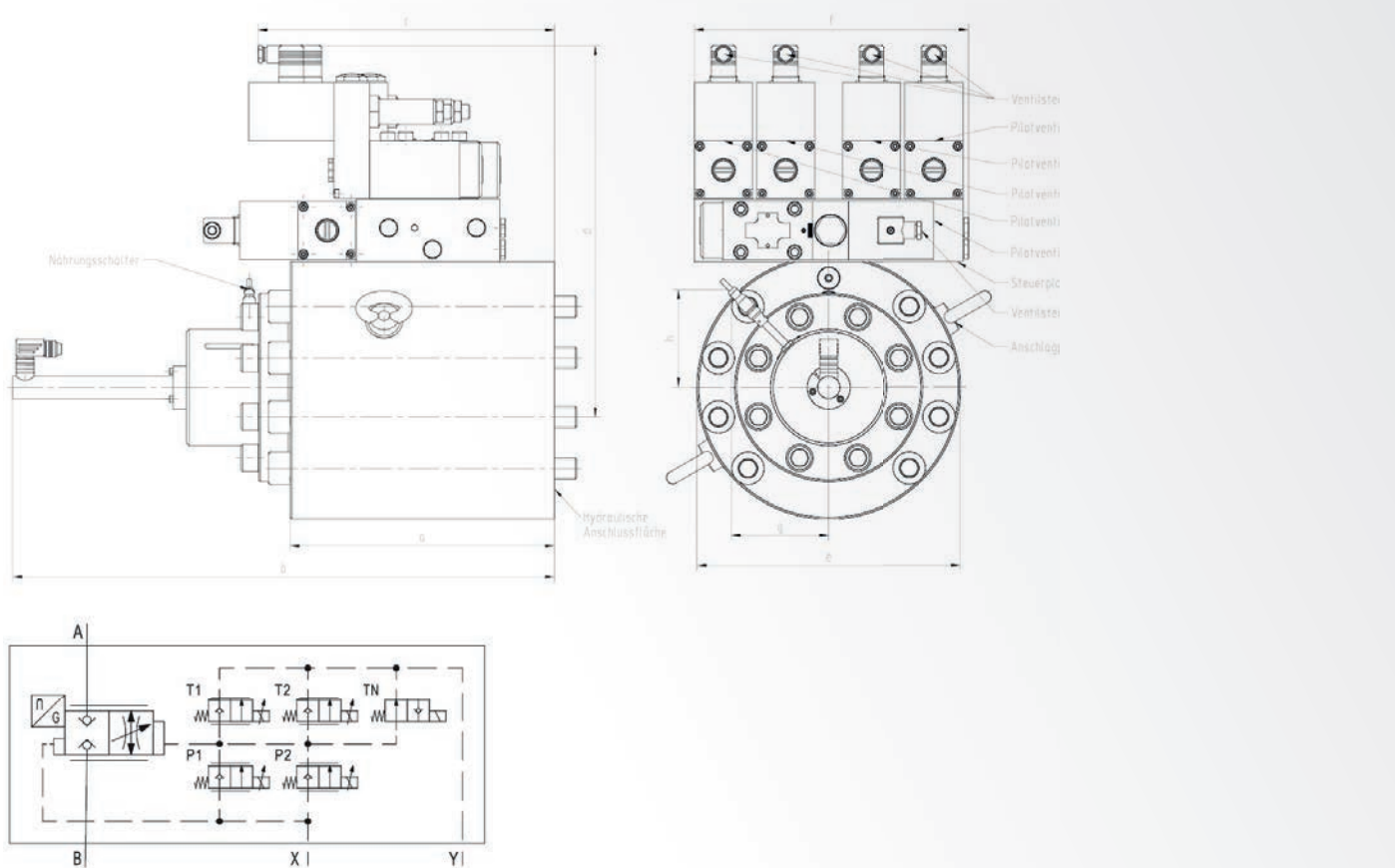
Pilot control with two pairs of valves DN80 - DN125, PN320



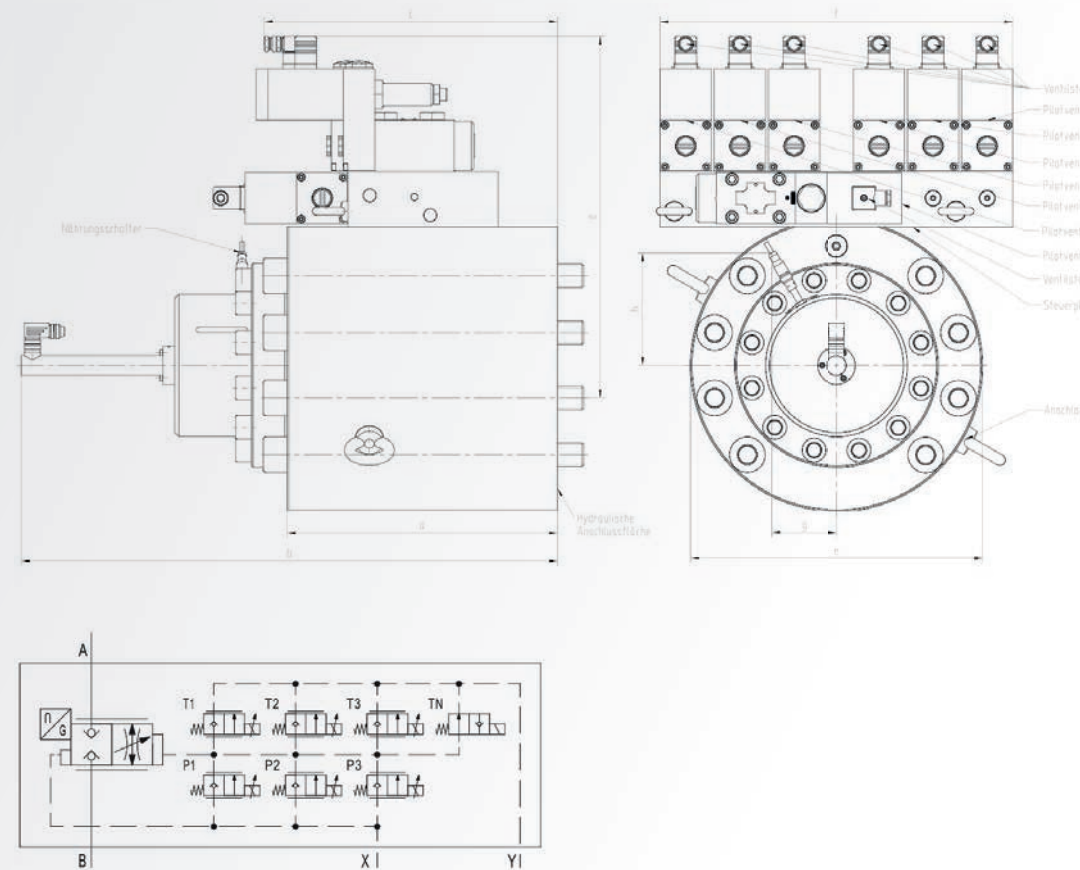
Pilot control with three pairs of valves DN100 - DN125, PN320



Pilot control with two pairs of valves and basic position valve DN80 - DN125, PN320



Pilot control with three pairs of valves and basic position valve DN100 - DN125, PN320



Order information control valve C3, proportionally actuated, PN 320

Included in the scope of supply
Mounting screws for the 2-way control valve
Mounting screws for the pilot valves and the control pcb
Cable sockets for the magnets

Pilot control with a pair of valves

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN12	11,0	320	110	271	191	185	85	96	114	66	6259294	6383394
DN16	14,0	320	120	286	181	194	100	96	115	66	6259308	6383394
DN20	18,0	320	140	309	189	206	120	96	40	61	6257682	6383394
DN25	21,0	320	147	349	191	151	130	96	63	108	6257674	6383394
DN32	25,5	320	165	382	191	216	140	96	64	110	6257631	6383394
DN40	46,0	320	182	401	213	263	176	122	93	93	6052061	6384277
DN50	67,0	320	235	469	239	276	196	122	97	97	6052088	6384277
DN65	114,0	320	245	487	290	342	240	172	102	102	6151396	6380409

Pilot control with a pair of valves and basic position valve

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN12	14,0	320	110	271	191	185	85	130	114	66	6259294	6382959
DN16	16,5	320	120	286	181	194	100	130	115	66	6259308	6382959
DN20	21,0	320	140	309	189	206	120	130	40	61	6257682	6382959
DN25	23,5	320	147	349	191	151	130	130	63	108	6257674	6382959
DN32	28,0	320	165	382	191	216	140	130	64	110	6257631	6382959
DN40	50,0	320	182	401	213	263	176	155	93	93	6052061	6383173
DN50	71,0	320	235	469	239	276	196	155	97	97	6052088	6383173
DN65	124,0	320	245	487	290	342	240	217	102	102	6151396	6384285

Order example

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way control valve DN16 PN320	6259308	1	2/2-way seat valve DN3 PN320	6545580
1	Plate	6382959	1	Controller RE4	2336596
2	2-way proportional valve DN3 PN320	6545718			

Position monitoring

Designation	Article number monitoring
Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Pilot valve

Nominal size	Item	Actuation	Current	Article number pilot valve
DN3	2	Electromagnet, voltage 24V DC	1,0 A	6545718
DN3	2		1,0 A	6545718
DN3	2		1,0 A	6545718
DN3	2		1,0 A	6545718
DN6	2		1,5 A	6546382
DN6	2		1,5 A	6546382
DN10	2		2,3 A	6244270

Pilot valve

Basic position valve

Nominal size	Item	Actuation	Current	Article number pilot valve	Nominal size	Actuation	Current	Article number pilot valve
DN3	2	Electromagnet, voltage 24V DC	1,0 A	6545718	DN3		1,0 A	6545580
DN3	2		1,0 A	6545718	DN3		1,0 A	6545580
DN3	2		1,0 A	6545718	DN3	Electromagnet, voltage 24V DC	1,0 A	6545580
DN3	2		1,0 A	6545718	DN3		1,0 A	6545580
DN6	2		1,5 A	6546382	DN6		1,5 A	6546714
DN6	2		1,5 A	6546382	DN6		1,5 A	6546714
DN10	2		2,3 A	6244270	DN10		2,3 A	6235565

Order information control valve C3, proportionally actuated, PN 320

Included in the scope of supply
Mounting screws for the 2-way control valve
Mounting screws for the pilot valves and the control pcb
Cable sockets for the magnets

Pilot control with two pairs of valves

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN80	213,0	320	295	605	331	381	294	300	109	109	6152236	6378498
DN16	14,0	320	120	286	181	194	100	96	115	66	6152295	6378501
DN20	18,0	320	140	309	189	206	120	96	40	61	6152376	6378501

Pilot control with two pairs of valves and basic position valve

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN80	223,0	320	295	605	331	381	294	306	109	109	6152236	6380395
DN100	353,0	320	342	678	356	416	370	310	82	142	6152295	6392652
DN125	603,0	320	393	753	391	468	466	310	90	155	6152376	6392652

Pilot control with three pairs of valves

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN100	378,0	320	342	678	371	416	370	447	82	142	6152295	6383319
DN125	628,0	320	393	753	406	468	466	447	90	155	6152376	6570690

Pilot control with three pairs of valves and basic position valve

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN100	378,0	320	342	678	371	416	370	447	82	142	6152295	6383319
DN125	628,0	320	393	753	406	468	466	447	90	155	6152376	6570690

Position monitoring

Designation	Article number monitoring
Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Pilot valve

Nominal size	Item	Actuation	Current	Article number pilot valve
DN10	4	Electromagnet, voltage 24V DC	2,3 A	6244270
DN10	4		2,3 A	6244270
DN10	4		2,3 A	6244270

Pilot valve

Nominal size	Item	Actuation	Current	Article number pilot valve
DN10	4	Electromagnet, voltage 24V DC	2,3 A	6244270
DN10	4		2,3 A	6244270
DN10	4		2,3 A	6244270

Basic position valve

Nominal size	Actuation	Current	Article number pilot valve
DN10	Electromagnet, voltage 24V DC	2,3 A	6235565
DN10		2,3 A	6235565
DN10		2,3 A	6235565

Pilot valve

Nominal size	Item	Actuation	Current	Article number pilot valve
DN10	6	Electromagnet, voltage 24V DC	2,3 A	6244270
DN10	6		2,3 A	6244270

Pilot valve

Nominal size	Item	Actuation	Current	Article number pilot valve
DN10	6	Electromagnet, voltage 24V DC	2,3 A	6244270
DN10	6		2,3 A	6244270

Basic position valve

Nominal size	Actuation	Current	Article number pilot valve
DN10	Electromagnet, voltage 24V DC	1,0 A	
DN10		1,0 A	

Regelventil C3

proportional actuated

2/2-Wege, DN25 - DN100 PN 500

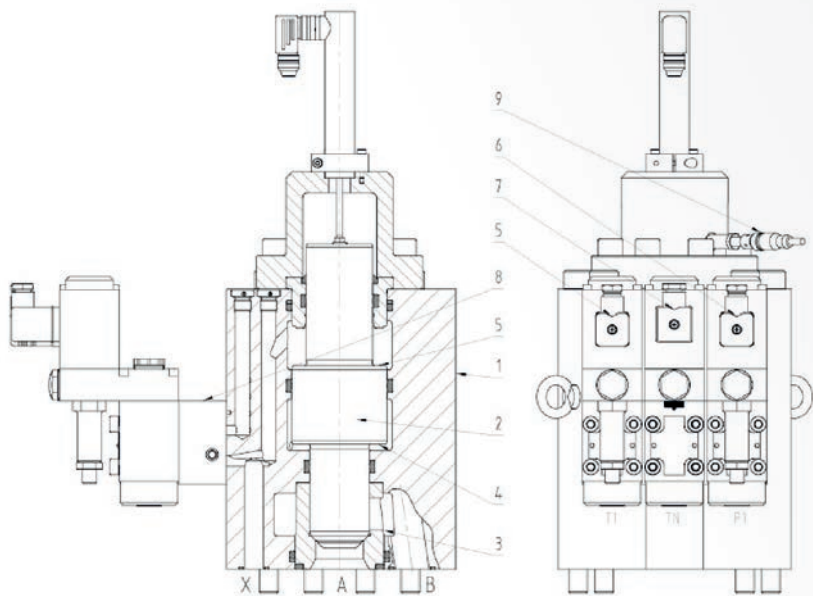
Features

- Hydraulically actuated directional seat valve for liquid media
- Actively controllable 2-way control valve with a position controlled piston position
- The controlled piston position specifies the variably adjustable flow cross-section
- The valve is actuated via proportional 2-way pilot valves
- The pilot valves are activated via the digital Controller RE4
- Valve pistons are sealed via seals within the body, thus no inner leakages develop
- Valve fastening structural plate form with a Hauhinco connection diagram
- Optionally, the valve position can be monitored by a proximity switch

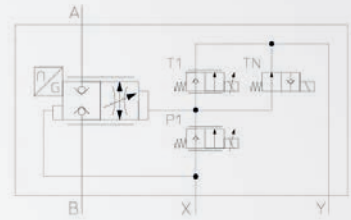
Function

The pilot valves (5, 6) and the control pcb (8) form the pilot control group of the 2-way control valve. The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the hydraulic power generated by the control pressure (X) on the closing area (5), provided the opening area (4) is depressurised by the activated pilot valve (5). Thus, the lines (A, B) are separated. Activated by the pilot valve (6), the opening area (4) is pressurised and the valve piston (2) lifts off the valve seat (3). The pilot valves (5, 6) are activated according to the controller specification, thus, the valve piston (2) moves into the requested position. The flow cross-section is set analogue to the valve's piston position. Both proportional pilot valves are 2-way seat valves NC. As soon as the control is switched off, the 2-way control valve remains in the position reached last. If an S/W pilot valve NO (7) is added to the proportional pilot control group, the 2-way control valve is moved into the safe basic position with the control switched off. Pilot valves (5, 6, 7) are fastened to the valve body (1) via the control pcb (8). The basic valve position can also be monitored by a limit switch (9).

Example: 2-way control valve C3



Symbol



Control surfaces, hydraulic forces
A channel: Area A1, open valve passively
B channel: Area A2, open valve passively
Control surface (6): A3, open valve actively
Control surface (5): A4, close valve actively

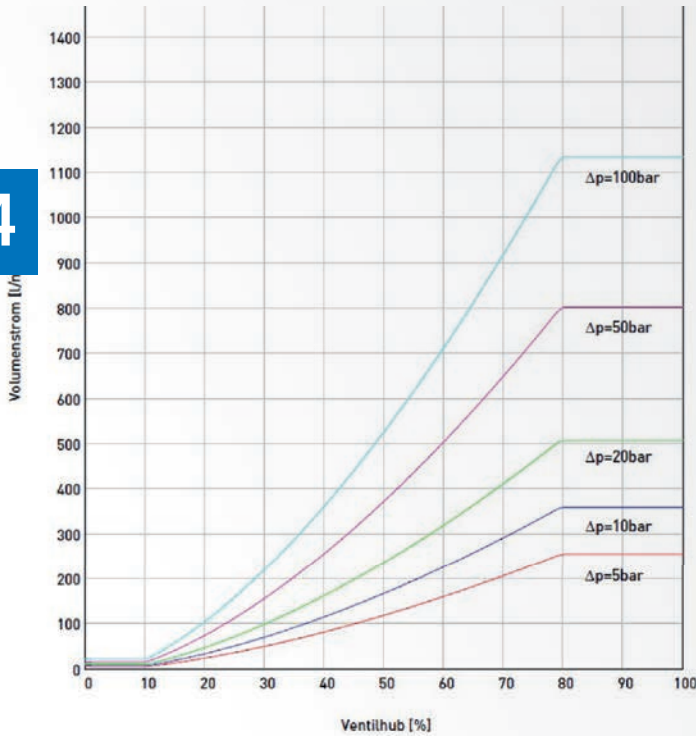
Technical data

measured with HFA medium 97/3%, at 20°C

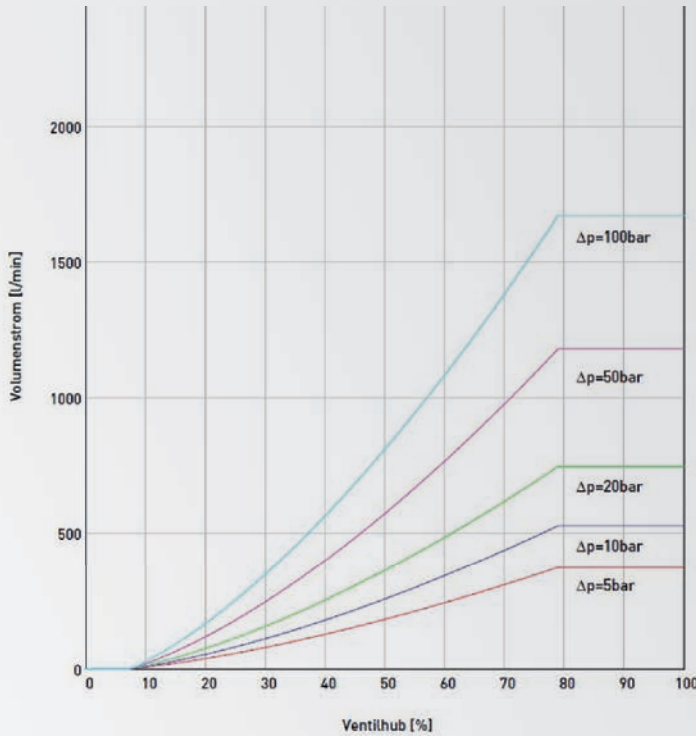
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, bronze NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≤ 500 bar
Hydraulic pressure connector X	≤ 500 bar
Hydraulic pressure connector Y	≤ 10 bar
Hydraulic pressure connector X	≥ 50bar; ≥ Operating pressure at connector A, B
Direction of flow	any, preferred direction of flow B→A
Area ratios	A3 > A4, A4 > A1 + A2
Pressure fluid - Medium - Quality - min filter fineness connector A, B - min filter fineness connector X	Wasser, HFA see Hauhinco media requirement, water, HFA Filter fineness 100µm Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Electric	
Magnet - Voltage - Power consumption - Operating time - Degree of protection acc. to EN60529	24 VDC see Order information 100% OT IP65
Position feedback encoder (displacement transducer) - Output - Voltage - Current - Electrical connection	4 - 20 mA 21,5 – 30 VDC max. 0,060 A Three wire, plug connection
Inductive proximity switch - Output - Voltage - Current - Switching distance - Electrical connection	NO contact, PNP 10 – 30 VDC 0,150 A 2 mm Three wire, plug connection M12x1

Characteristic curves control valve C3, PN 500 proportionally actuated

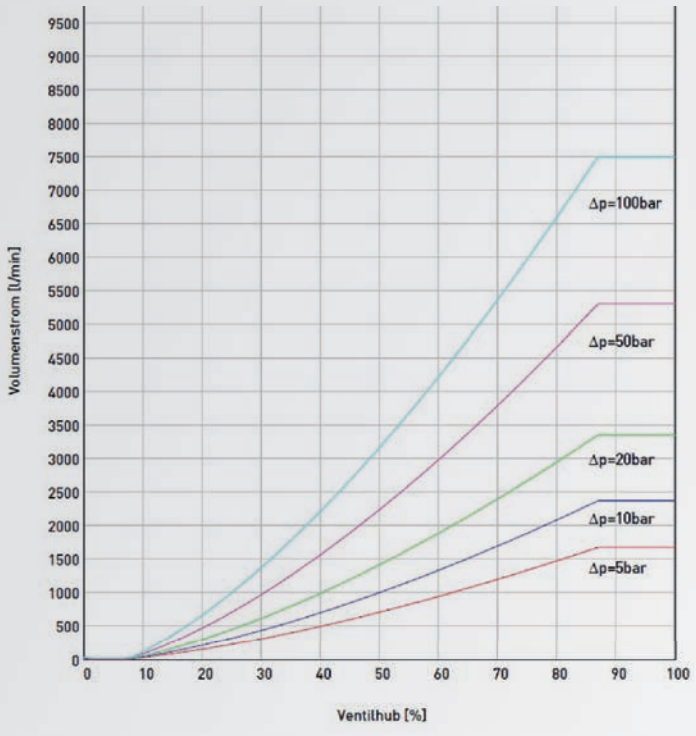
$\Delta p - q_v$ characteristic curves DN25



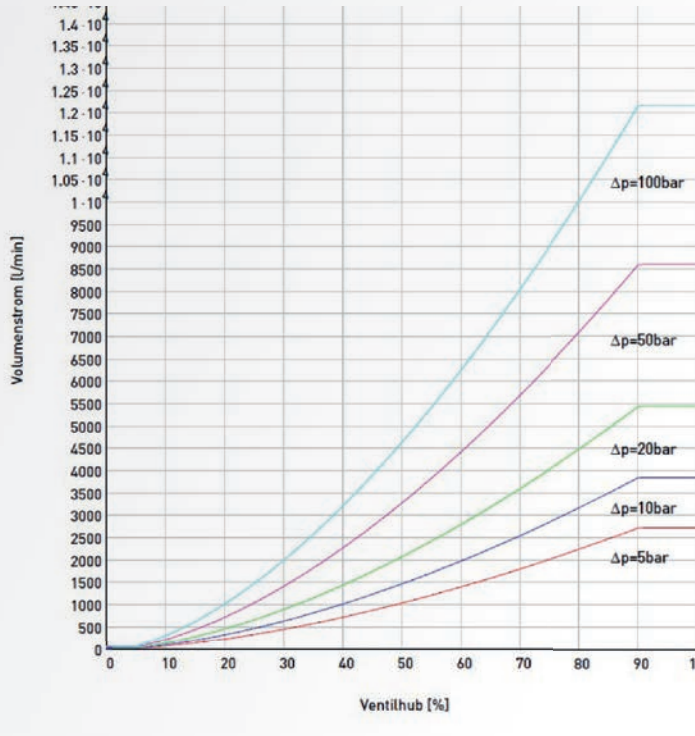
$\Delta p - q_v$ characteristic curves DN32



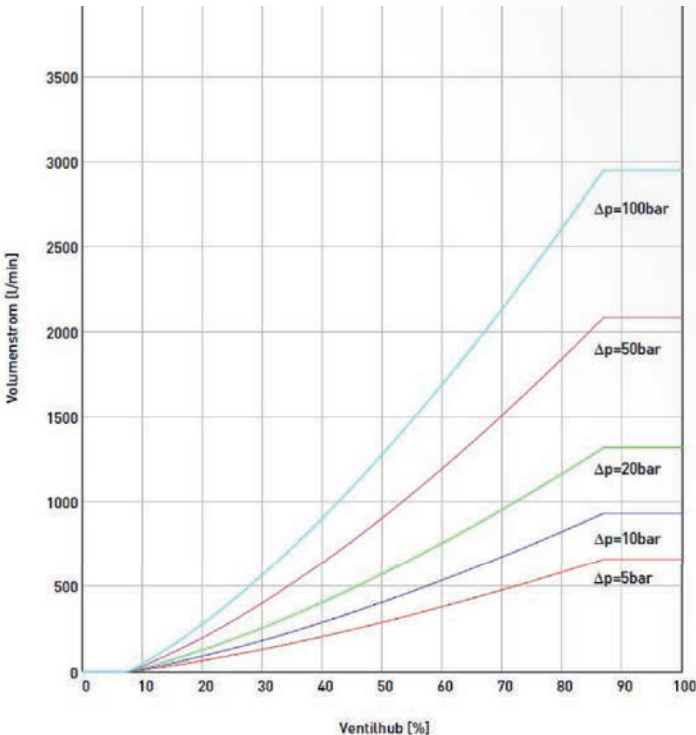
$\Delta p - q_v$ characteristic curves DN65



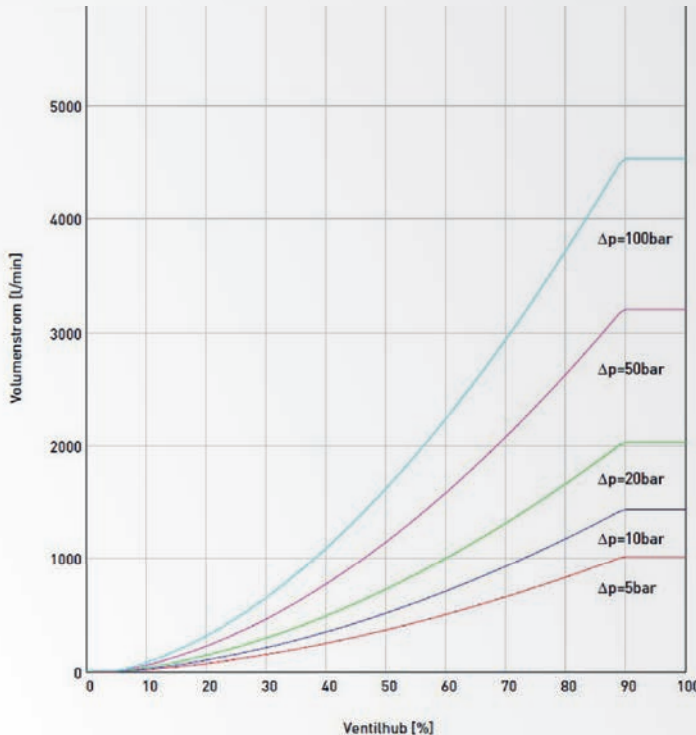
$\Delta p - q_v$ characteristic curves DN80



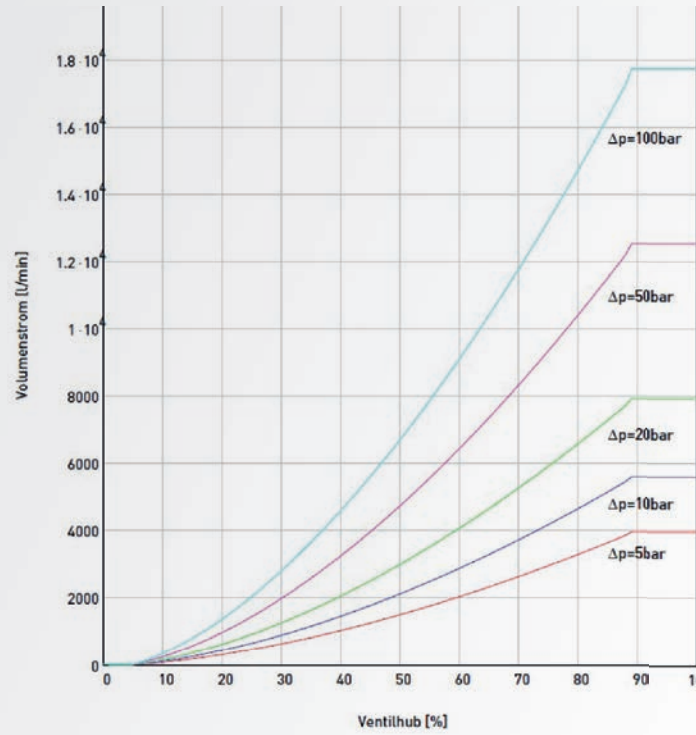
$\Delta p - q_v$ characteristic curves DN40



$\Delta p - q_v$ characteristic curves DN50

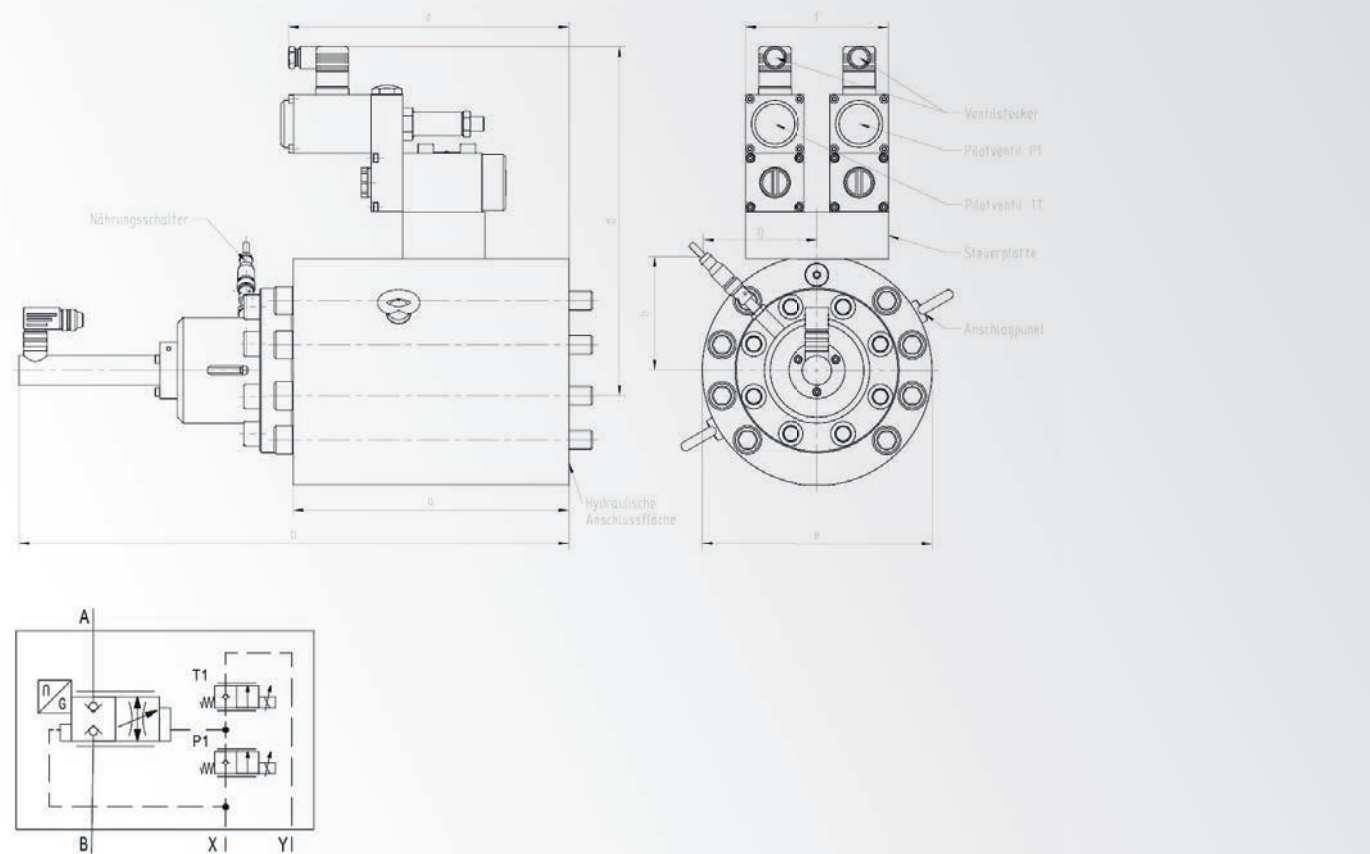


$\Delta p - q_v$ characteristic curves DN100

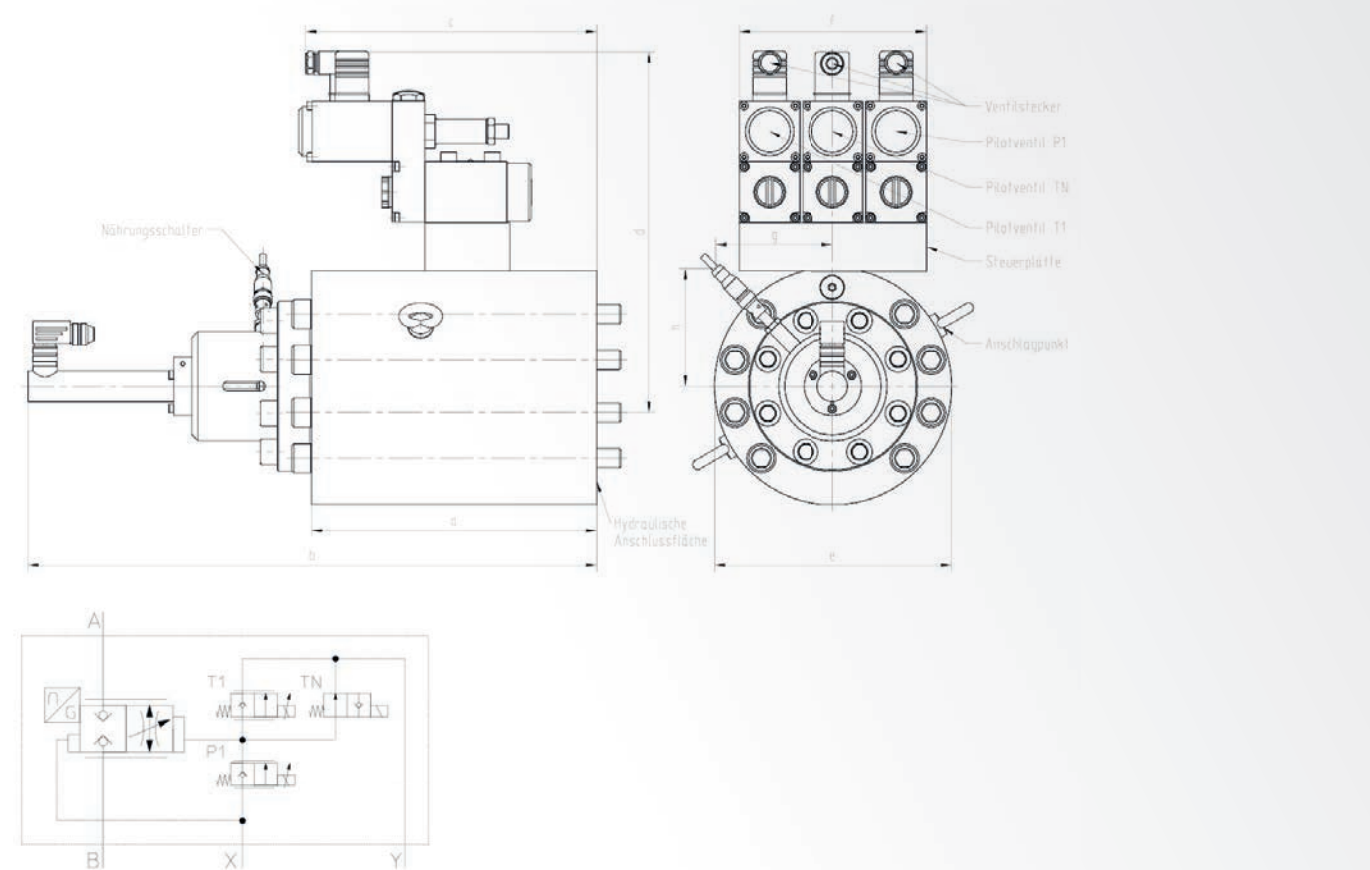


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All data and figures are considered non-binding.

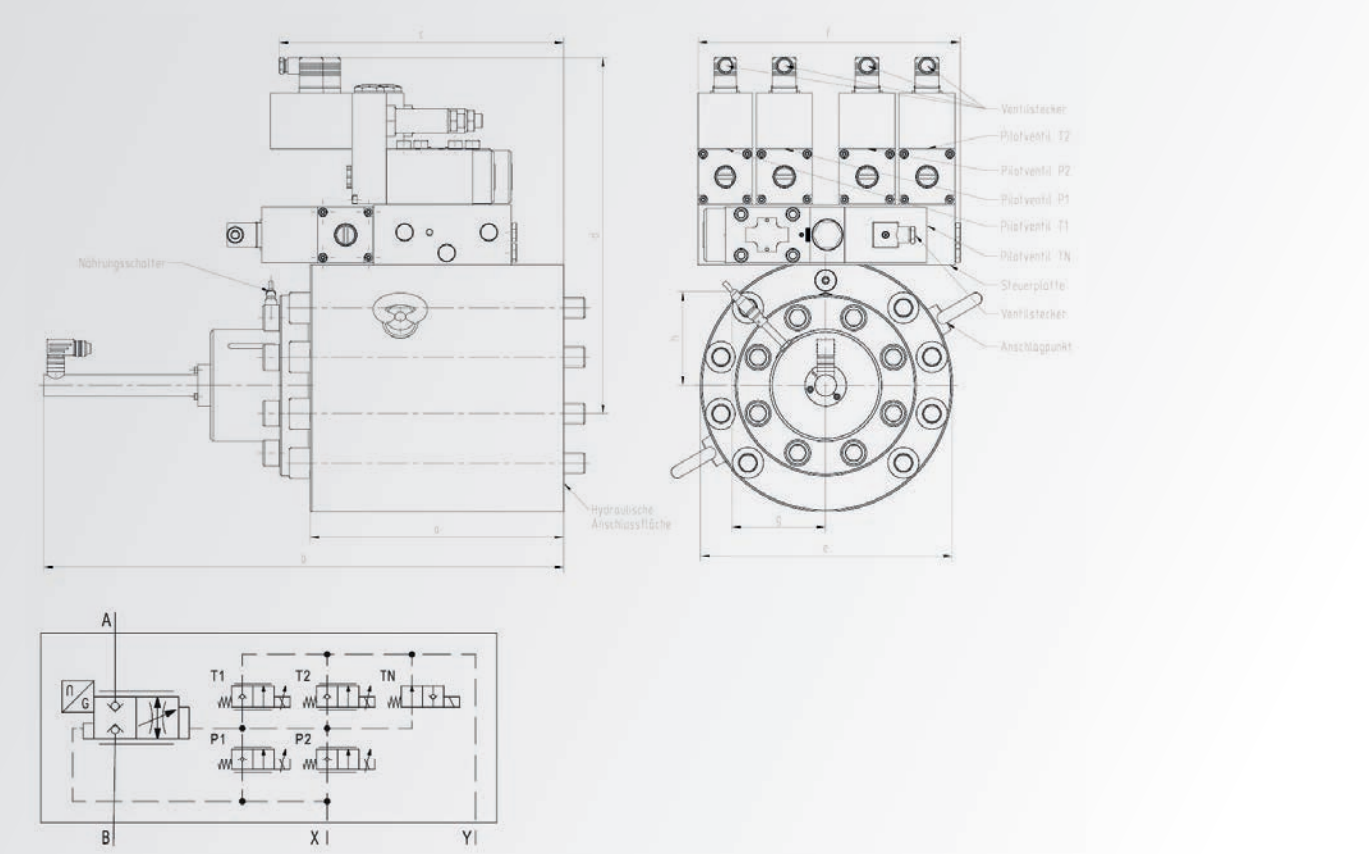
Pilot control with a pair of valves DN12 - DN65, PN 500



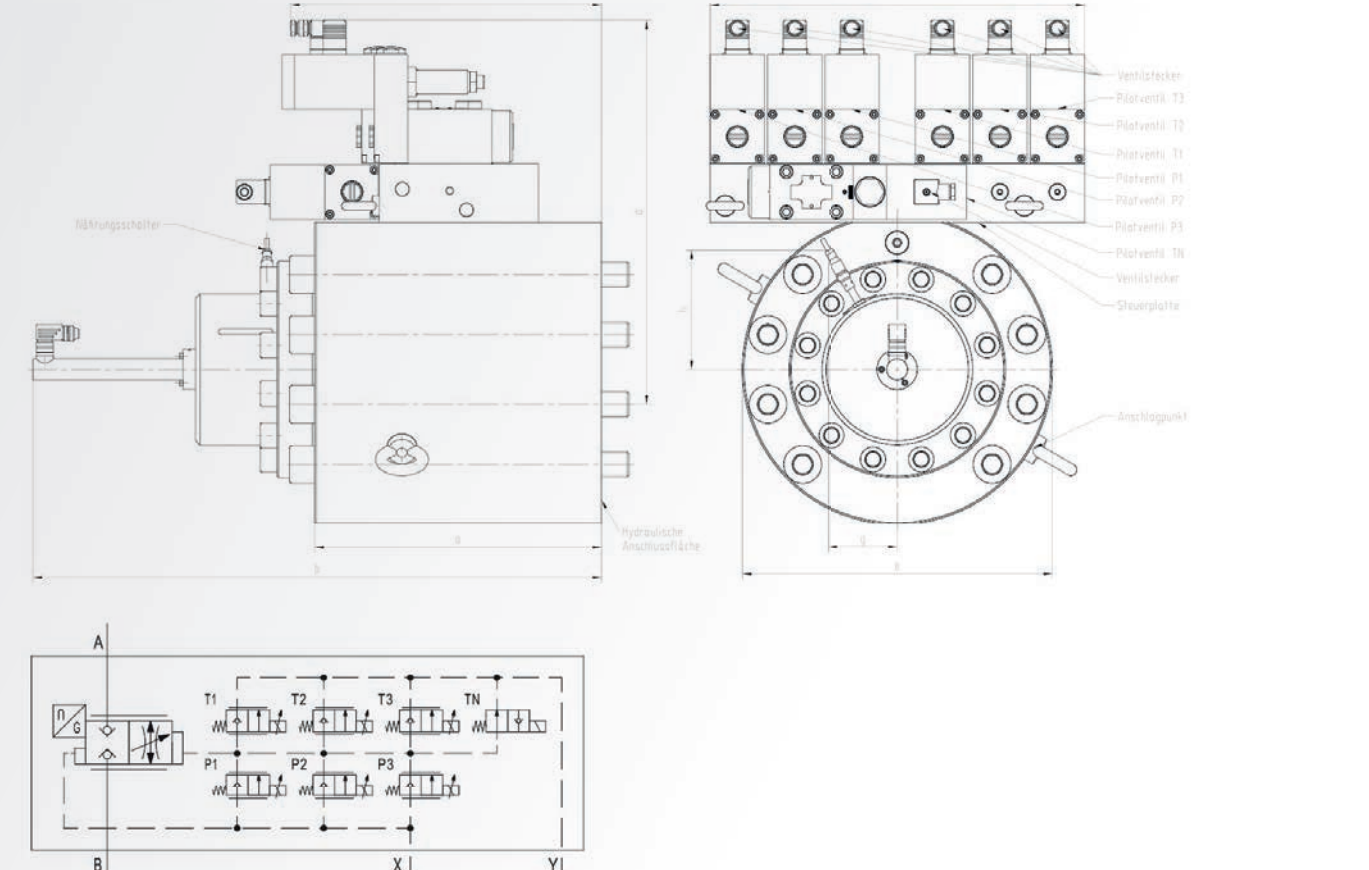
Pilot control with a pair of valves and basic position valve DN12 - DN65, PN 500



Pilot control with two pairs of valves and basic position valve DN80 - DN100, PN 500



Pilot control with three pairs of valves and basic position valve DN80 - DN100, PN 500



Order information control valve C3, proportionally actuated, PN500

Included in the scope of supply
Mounting screws for the 2-way control valve
Mounting screws for the pilot valves and the control pcb
Cable sockets for the magnets

Pilot control with a pair of valves

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN25	24,0	500	147	349	191	216	140	96	108	62	6600303	6383394
DN32	38,0	500	163	372	191	235	176	96	90	90	6166784	6383394
DN40	54,0	500	182	401	213	273	196	122	93	93	6068359	6384277
DN50	98,0	500	235	467	239	296	240	122	97	97	6600299	6384277
DN65	157,0	500	245	487	290	366	294	172	102	102	6153909	6380409

Pilot control with a pair of valves and basic position valve

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN25	26,5	500	147	349	191	216	140	130	108	62	6600303	6382959
DN32	40,0	500	163	372	191	235	176	130	90	90	6166784	6382959
DN40	58,0	500	182	401	213	273	196	155	93	93	6068359	6383173
DN50	102,0	500	235	467	239	296	240	155	97	97	6600299	6383173
DN65	167,0	500	245	487	290	366	294	217	102	102	6153909	6384285

Pilot control with two pairs of valves and basic position valve

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN80	315,0	500	295	605	331	416	370	306	109	109	6153895	6380395
DN100	523,0	500	342	678	356	468	466	306	82	142	6077277	6380395

Pilot control with three pairs of valves and basic position valve

Nominal size	Weight [kg]	max. Pressure [bar]	Dimensions [mm]								Article number valve C3	Article number plate
			a	b	c	d	e	f	g	h		
DN25	341,0	500	295	605	331	416	370	452	109	109	6153895	6600165
DN100	550,0	500	342	678	356	468	466	452	82	142	6077277	6600165

Position monitoring

Designation	Article number monitoring
Inductive proximity switch, Output – PNP, NO contact, Voltage 10 – 30 VDC	5127726

Pilot valve

Nominal size	Item	Actuation	Current	Article number valve
DN3	2	Electromagnet, voltage 24V DC	1,0 A	6547273
DN3	2		1,0 A	6547273
DN6	2		1,5 A	6546943
DN6	2		1,5 A	6546943
DN10	2		2,3 A	6553508

Pilot valve

Nominal size	Item	Actuation	Current	Article number valve
DN3	2	Electromagnet, voltage 24V DC	1,0 A	6547273
DN3	2		1,0 A	6547273
DN6	2		1,5 A	6546943
DN6	2		1,5 A	6546943
DN10	2		2,3 A	6553508

Pilot valve

Nominal size	Item	Actuation	Current	Article number valve
DN10	4	Electromagnet, voltage 24V DC	2,3 A	6553508
DN10	4		2,3 A	6553508

Pilot valve

Nominal size	Item	Actuation	Current	Article number valve
DN10	6	Electromagnet, voltage 24V DC	2,3 A	6553508
DN10	6		2,3 A	6553508

Order example

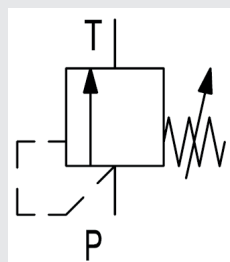
Item	Designation	Article number
1	2-way control valve DN65 PN500	6153909
1	Plate	6384285
2	2-way proportional valve DN10 PN500	6553508
1	2/2-way seat valve DN10 PN500	6553494
1	Controller RE4	2336596

Contents Pressure relief valve

DN3 - DN10, PN320 - PN350

- Directly actuated pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable
- Compression spring as a preload element
- Attachment, structural plate form with a Hauhinco connection diagram

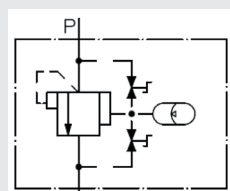
Page 160



DN20 - DN25, PN450 - PN500

- Directly actuated pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable.
- Hydraulic accumulator as a preload element, adjustable spring (force)
- Attachment, structural plate form or flange design

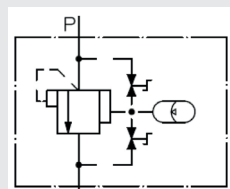
Page 164



DN40 - PN350

- Directly actuated pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable.
- Attachment, structural plate form or flange design

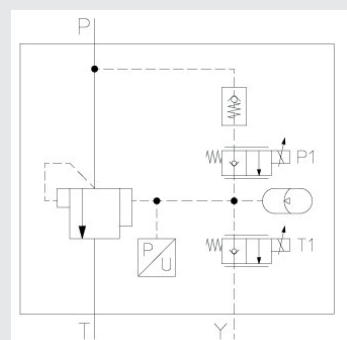
Page 170



Proportional controlled, DN20 - DN25, PN400

- Proportional controlled pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable
- Hydraulic accumulator as a preload element, adjustable accumulator pressure by proportional pilot valves
- Attachment, structural plate form with Hauhinco connection diagram

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Notes

This image shows a full page of blank graph paper. The background is a very light gray, and it is covered by a precise grid of thin, darker gray lines. The grid consists of small, equal-sized squares that extend across the entire area of the page, providing a template for technical drawing or mathematics. There are no margins, text, or other markings present.

Pressure relief valve

DN3 - DN10, PN320 - PN350

Features

- Directly actuated pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable
- Compression spring as a preload element
- Attachment, structural plate form with a Hauhinco connection diagram

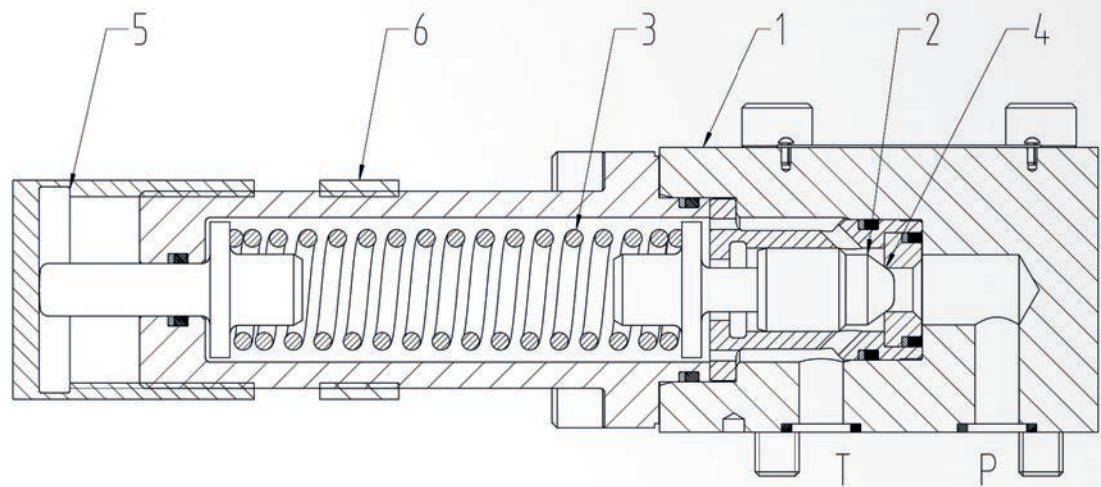
Function

Pressure relief valve for the primary pressure setting at the hydraulic pumps and the pressure protection of the hydraulic drives and hydraulic components.

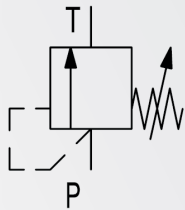
In the basic valve position, the power of the compression spring (3) acts on the valve piston (2) and transfers it to the valve seat (4). The valve seat (4) and the valve piston (2) form the valve seal at the conical surface. By turning the adjusting nut (5) the compression spring (3) is preloaded and the desired set pressure “Pe” set. The adjusting nut (5) can be fixed using the lock nut (6).

Within the operation of the valve, the system pressure „Ps“ enters the valve body (1) at the P-connector and generating a hydraulic (opening) force at the valve seat area of the valve piston (2). The force of the compression spring (3) maintains the valve piston (2) in the shut off basic position as long as the hydraulic opening force is < than the set closing force of the spring. If the system pressure „Ps“ increases to the extent that the force ratio reverses to be opening force > closing force, then the valve piston (2) is pressed out of the basic position, lines P and T are connected thus opening the valve. The valve opening increases proportionally with increasing system pressure until the maximum admissible volume flow for the valve has been reached, see valve characteristic.

Example: Pressure relief valve DN10 - structural plate form



Symbol



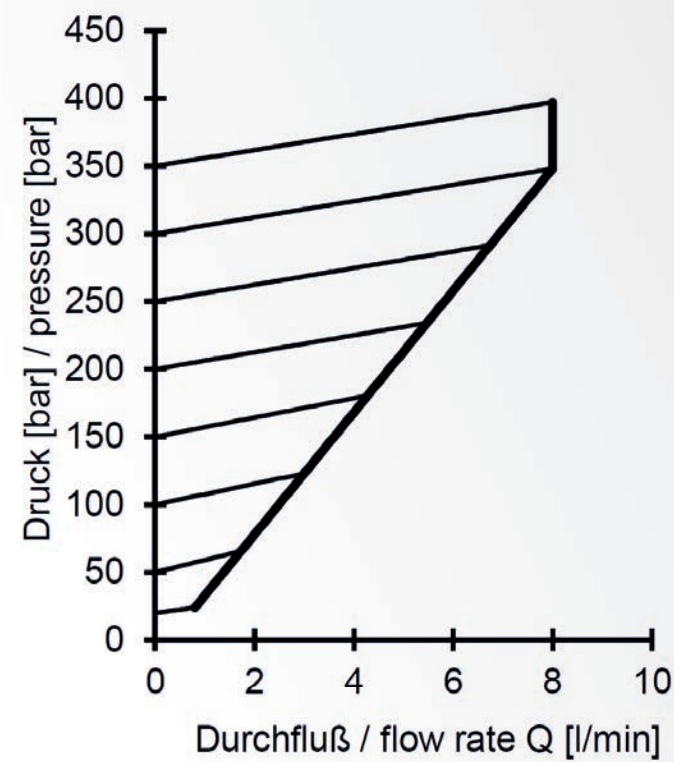
Technical data

measured with HFA medium 97/3%, at 20°C

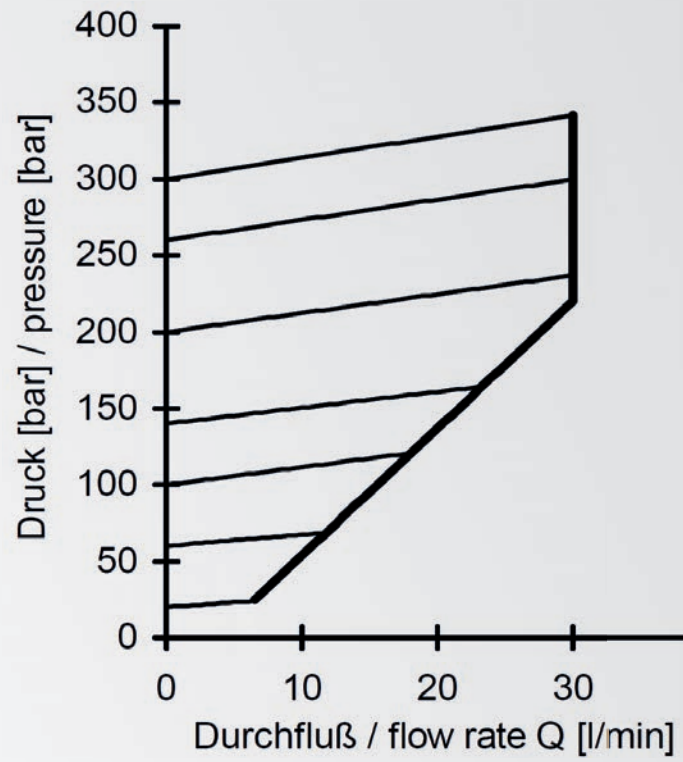
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, bronze NBR, PTFE, PUR
Hydraulic	
hydraulic pressure connector P	DN3: ≤ 350 bar DN6: ≤ 350 bar DN10: ≤ 320bar
hydraulic pressure connector T	≤ 50bar (observe counterpressure within the pressure setting)
Setting range of hydraulic response pressure P _e	see Order information
max. volume flow	DN3: 8 l/min DN6: 30 l/min DN10: 60 l/min
specified direction of flow	P→T
Pressure fluid - Medium - Temperature range - Medium - Quality - min filter fineness	Water, HFA 5 bis 40°C see Hauhinco media requirement, water, HFA Filter fineness 100µm
Pressure fluid - Medium - Temperature range - Medium - Quality	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406
Use of other pressure fluids on request.	

Characteristic curves Pressure relief valve DN3 - DN10

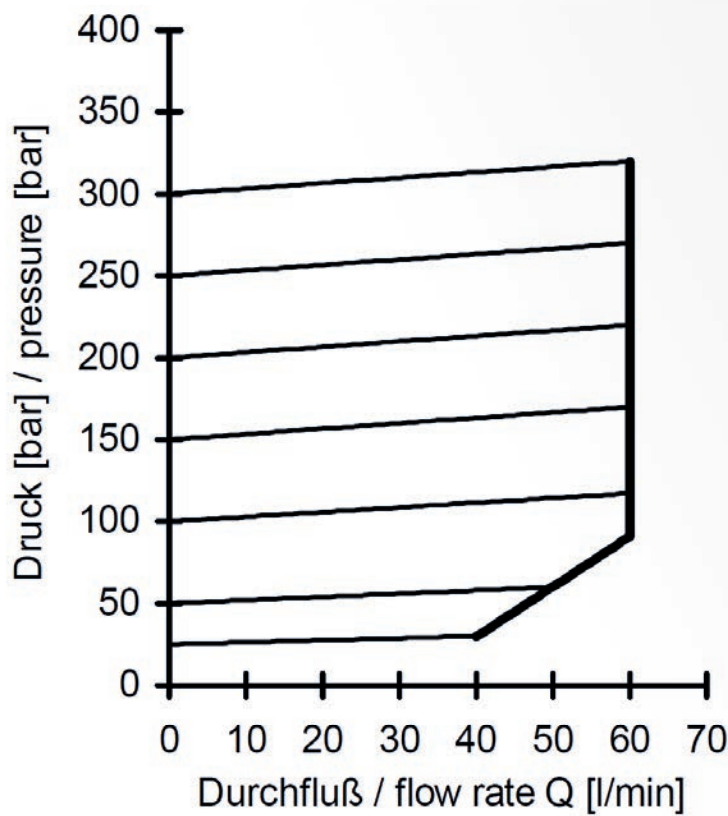
Δp – qV characteristic curves DN3



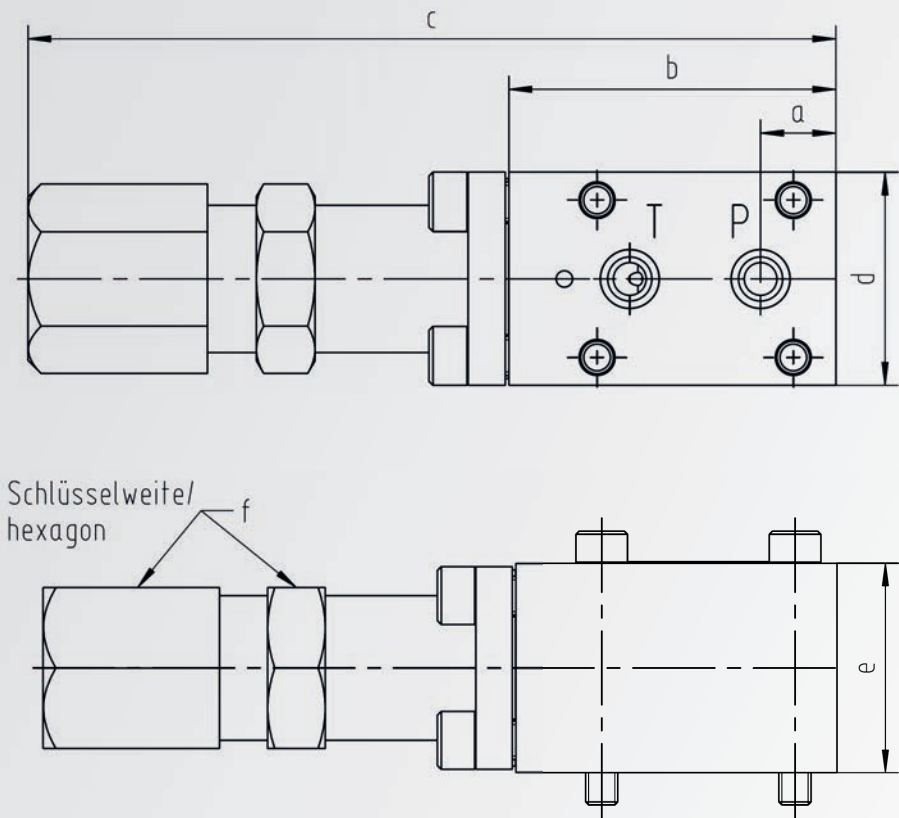
Δp – qV characteristic curves DN6



Δp – qV characteristic curves DN10



Pressure relief valve, plate-type DN3 - DN10



Order information

Included in the scope of supply											
Mounting screws for the valves											
Pressure setting according to customer specification											
Factory test certificate on request											
Nominal size	Weight [kg]	max. Pressure [bar]	Setting range [bar]	Type	Dimensions [mm]						Article number
					a	b	c	d	e	f	
DN3	1,3	350	20-160	Plate-type	22,5	66	158	40	40	34	6246354
DN3	1,3	350	150-340	Plate-type	22,5	66	158	40	40	34	6246362
DN6	2,4	350	20-155	Plate-type	24,5	75	210	50	50	41	6247679
DN6	2,4	350	145-275	Plate-type	24,5	75	210	50	50	41	6248714
DN6	2,4	350	270-340	Plate-type	24,5	75	210	50	50	41	6248722
DN10	5,3	320	20-130	Plate-type	23	100	298	65	65	50	6271642
DN10	5,3	320	30-210	Plate-type	23	100	298	65	65	50	6271634
DN10	5,3	320	190-320	Plate-type	23	100	298	65	65	50	6267491

Technical changes reserved.
All data and figures are considered non-binding.

Pressure relief valve

DN20 - DN25, PN450 - PN500

Features

- Directly actuated pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable.
- Hydraulic accumulator as a preload element, adjustable spring (force)
- Attachment, structural plate form or flange design

Function

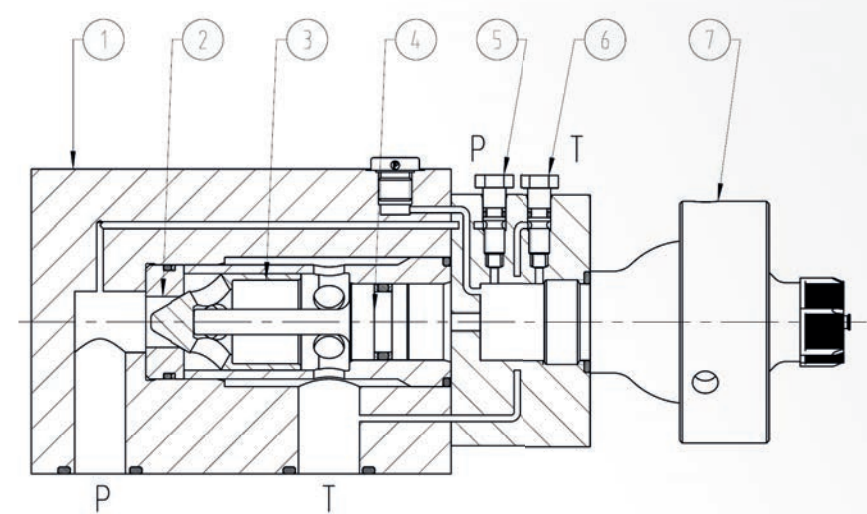
Pressure relief valve for the primary pressure setting at the hydraulic pumps and the pressure protection of the hydraulic drives and hydraulic components.

In the basic valve position, the hydraulic power of the hydraulic accumulator (7) acts on the piston valve (4) and transfers it to the valve piston (3). The valve seat (2) and the valve piston (3) form the valve seal at the conical surface. On the gas side, the hydraulic accumulator (7) has been prefilled with nitrogen and is preloaded hydraulically with the pressure setting on the liquid-side until the requested pre-set pressure „Pe“ is reached. The gas within the accumulator is compressible and acts as a flexible spring.

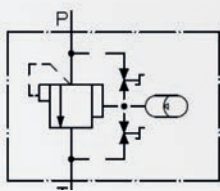
Within the operation of the valve, the system pressure „Ps“ enters the valve body (1) at the P-connector generating a hydraulic (opening) force at the valve seat area of the valve piston (3). The piston valve (4) maintains the valve piston (3) in the shut off basic position as long as the hydraulic opening force is < than the closing force at the piston valve (4). If the system pressure „Ps“ increases to the extent that the force ratio reverses to be opening force > closing force, then the valve piston (3) is pressed out of the basic position, lines P and T are connected thus opening the valve. The valve opening increases proportionally with increasing system pressure until the maximum admissible volume flow for the valve has been reached, see valve characteristic.

The pressure of the valve is set via the adjustment valves (5, 6). Thus, the pressure of the accumulator (7) is set. Depending on the pressure setting of the accumulator a hydraulic power is generated, which is transferred to the valve piston (3). From the control ratio „SK“ (see Technical data) and the pre-set pressure „Pe“ follows the required accumulator pressure „Pap“.

Example: Pressure relief valve DN20 - structural plate form



Symbol



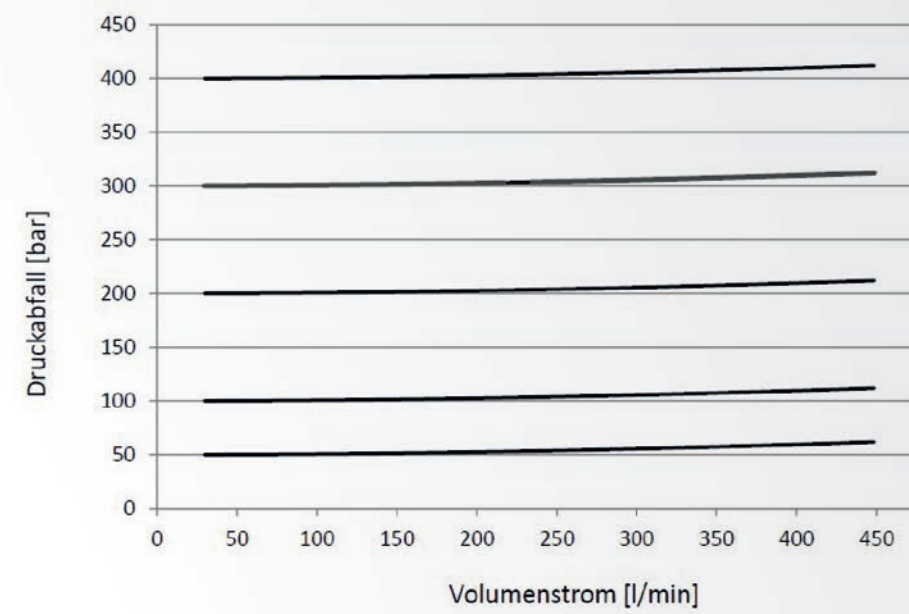
Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze
Material Seals	NBR, PTFE, PUR
Hydraulic	
hydraulic pressure connector P, M	≤ 400 bar bzw. ≤ 500bar, see Order information
hydraulic pressure connector T	≤ 50bar (observe counterpressure within the pressure setting)
Setting range of hydraulic response pressure P_e	DN20: 30 – 450 bar DN25: 30 – 500 bar
Control ratio S_k	DN20: 1:1,9 – 2,20 (area piston valve/valve piston) DN25: 1:2,0 – 2,22 (area piston valve/valve piston)
Pressure range accumulator P_{Sp}	14 – 260 bar
max. volume flow	DN20: 500 l/min DN25: 700 l/min
direction of flow	P→T
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min filter fineness	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
Optional features	Pressure display „ P_{Sp} “, see order data
Use of other pressure fluids on request.	

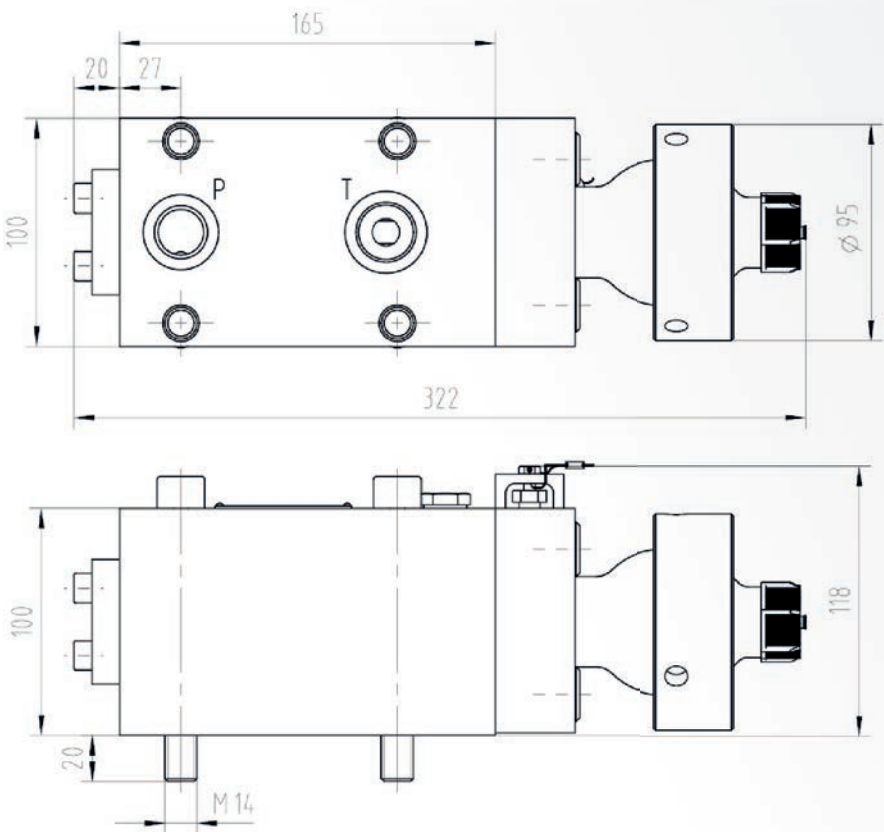
Characteristic curves Pressure relief valve DN20

$\Delta p - q_V$ characteristic curves DN 20



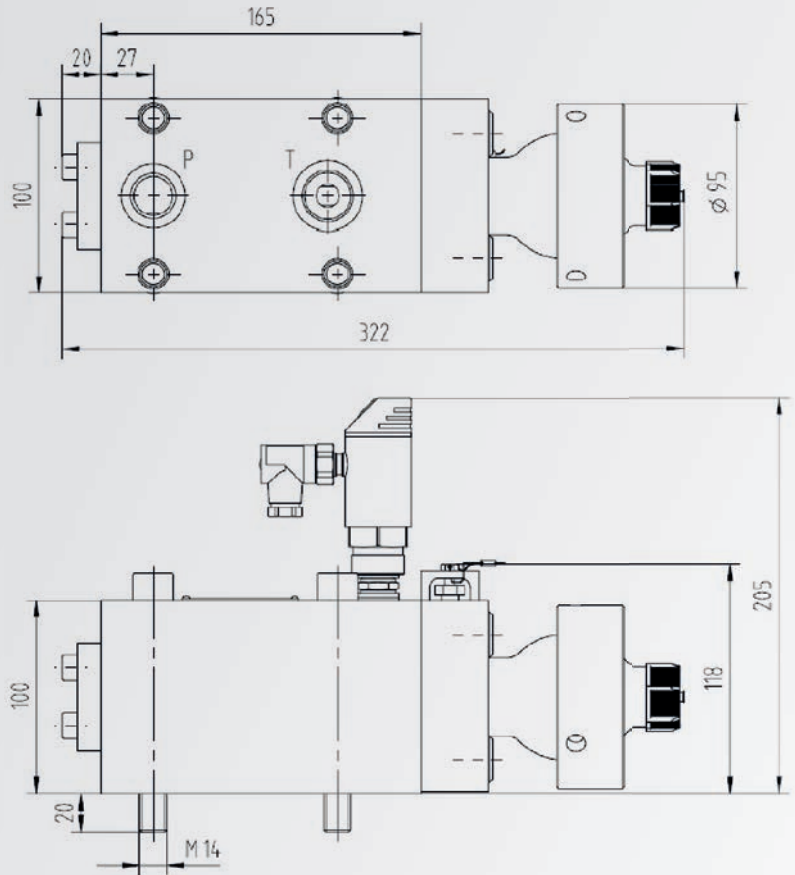
Pressure relief valve, plate-type DN20

Art. Nr. 6261981



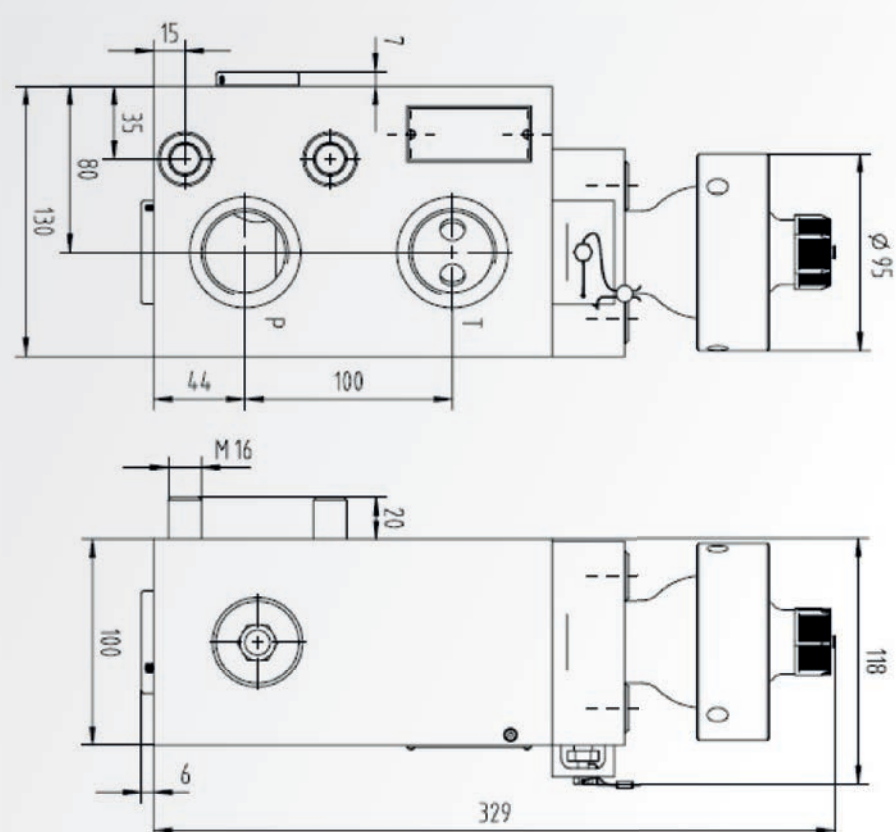
Pressure relief valve, plate-type DN20

Art. Nr. 6392660, 6267092



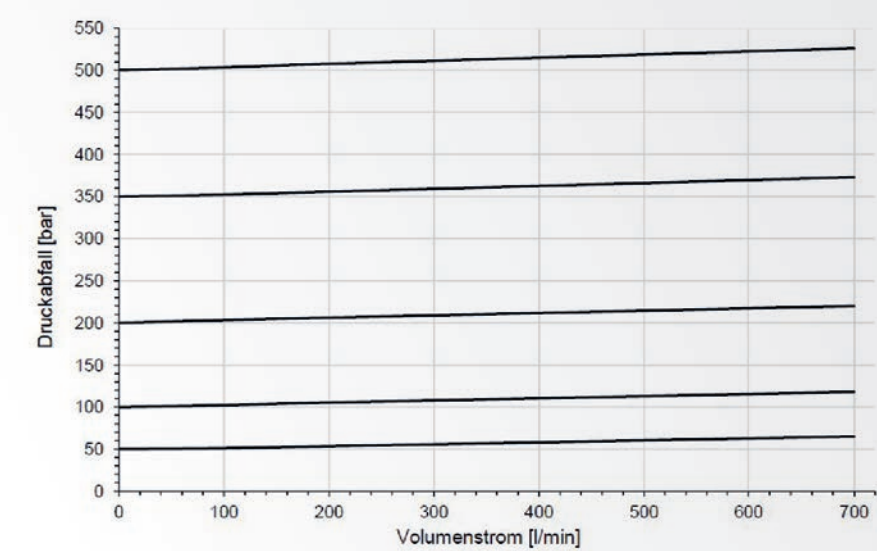
Pressure relief valve, flange-type DN20

Art. Nr. 6159362



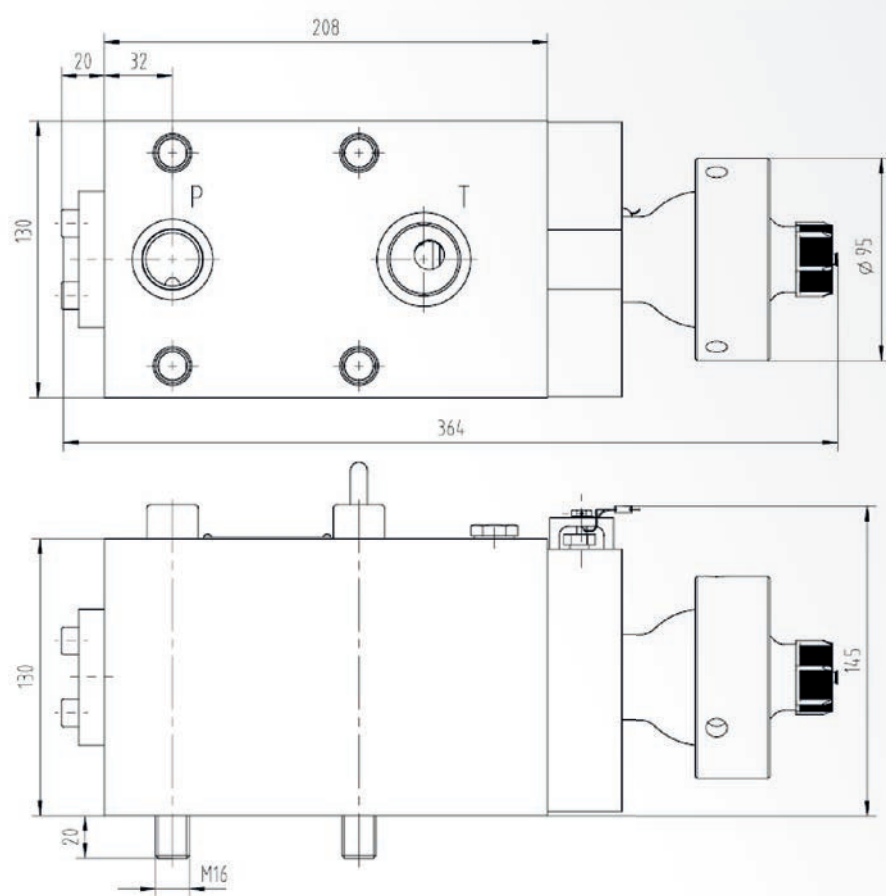
Characteristic curves Pressure relief valve DN25

Δp – qV characteristic curves DN 25



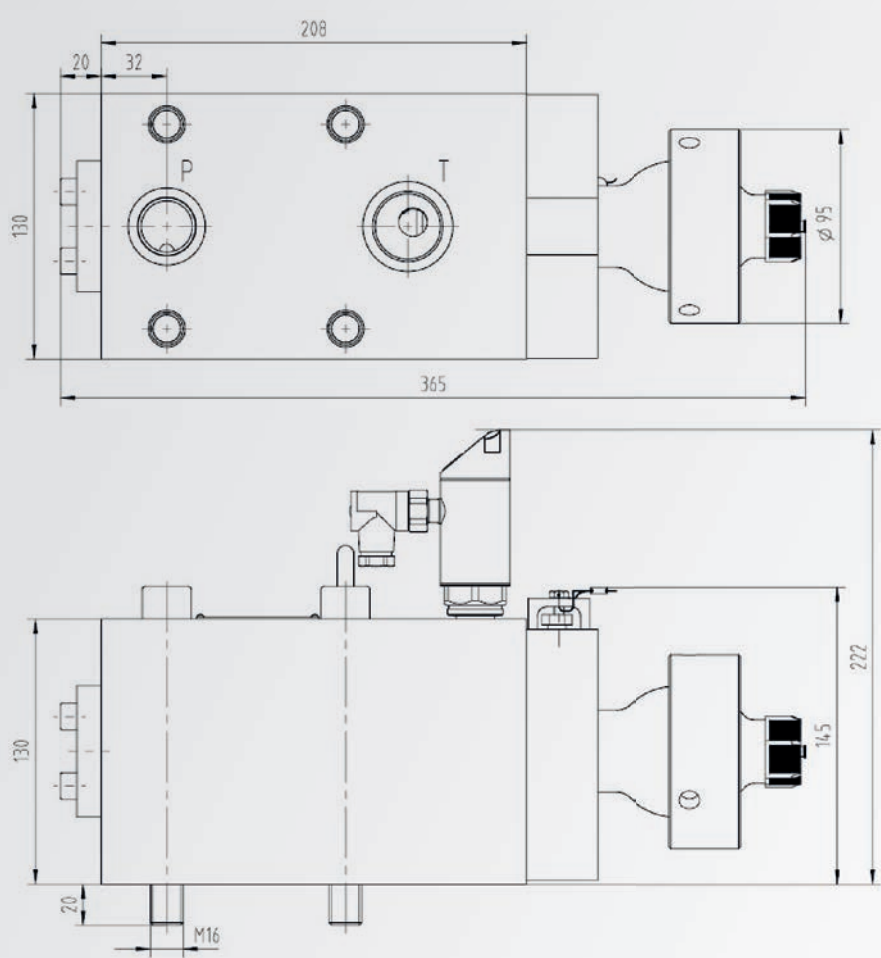
Pressure relief valve, plate-type DN25

Art. Nr. 6167861



Pressure relief valve, plate-type DN25

Art. Nr. 6272673



Order information

Included in the scope of supply						
Mounting screws for the valves						
Pressure setting according to customer specification						
Factory test certificate on request						
Designation	Nominal size	Weight [kg]	Type	max. Pressure [bar]	Setting range [bar]	Article number
Pressure relief valve U504	DN20	22	Flange-type	400	30-400	6159362
Pressure relief valve	DN20	16	Plate-type	500	30-450	6261981
Pressure relief valve, with pressure display	DN20	16	Plate-type	500	30-400	6392660
Pressure relief valve, with pressure display	DN20	16	Plate-type	500	30-250	6267092
Pressure relief valve	DN20	30	Plate-type	500	30-500	6167861
Pressure relief valve, with pressure display	DN25	30,5	Plate-type	500	30-400	6272673

Technical changes reserved.
All data and figures are considered non-binding.

Pressure relief valve

DN40, PN350

Features

- Directly actuated pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable.
- Attachment, structural plate form or flange design

Function

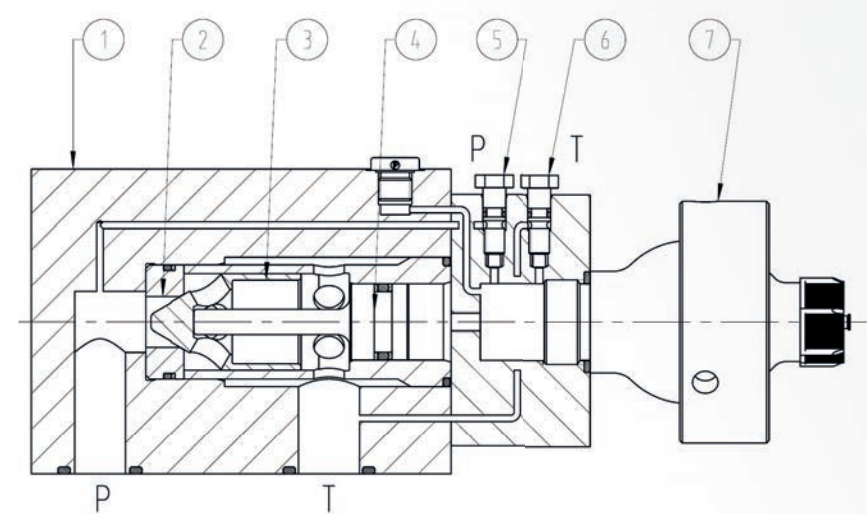
Druckbegrenzungsventil zur Primärdruckeinstellung an Hydraulikpumpen und zur Druckabsicherung von Hydraulik-antrieben, Hydraulikkomponenten.

In der Ventilgrundstellung wirkt die hydraulische Kraft des Hydrospeichers (7) auf den Steuerkolben (4) und über-trägt diese auf den Ventilkolben (3). Der Ventilsitz (2) und der Ventilkolben (3) bilden an den Kegelflächen die Ventil-abdichtung. Der Hydrospeicher (7) ist gaseitig mit Stickstoff vorgefüllt und wird bei der Druckeinstellung auf der Flüssigkeitsseite hydraulisch vorgespannt, bis der gewünschte Einstelldruck „Pe“ erreicht ist. Das Gas im Speicher ist kompressibel und wirkt wie eine elastische Feder.

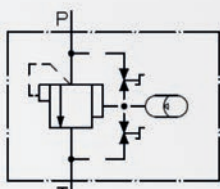
Im Betrieb des Ventils tritt am P - Anschluss der Anlagendruck „Ps“ in das Ventilgehäuse (1) ein und erzeugt eine hydraulische (Öffnungs)-Kraft an der Ventilsitzfläche des Ventilkolbens (3). Der Ventilkolben (3) wird von dem Steuer-kolben (4) solange in der gesperrten Grundstellung gehalten, wie die hydraulische Öffnungskraft < als die Schließ-kraft am Steuerkolben (4) ist. Steigt der Anlagendruck „Ps“ soweit an, dass das Kraftverhältnis sich umkehrt in Öffnungskraft > Schließkraft, dann wird der Ventilkolben (3) aus der Grundstellung gedrückt, die Leitungen P und T werden verbunden und damit das Ventil geöffnet. Die Ventilöffnung nimmt proportional mit steigendem Anlagen-druck zu, bis der maximal zulässige Volumenstrom für das Ventil erreicht ist, siehe Ventilkennlinie.

Die Druckeinstellung des Ventils erfolgt mit den Einstellventilen (5, 6). Damit wird der Druck des Speichers (7) ein-gestellt. Je nach Druckeinstellung des Speichers ergibt sich eine hydraulische Kraft, die auf den Ventilkolben (3) übertragen wird. Aus dem Steuerverhältnis „SK“.

Example: Pressure relief valve DN40 - structural plate form



Symbol



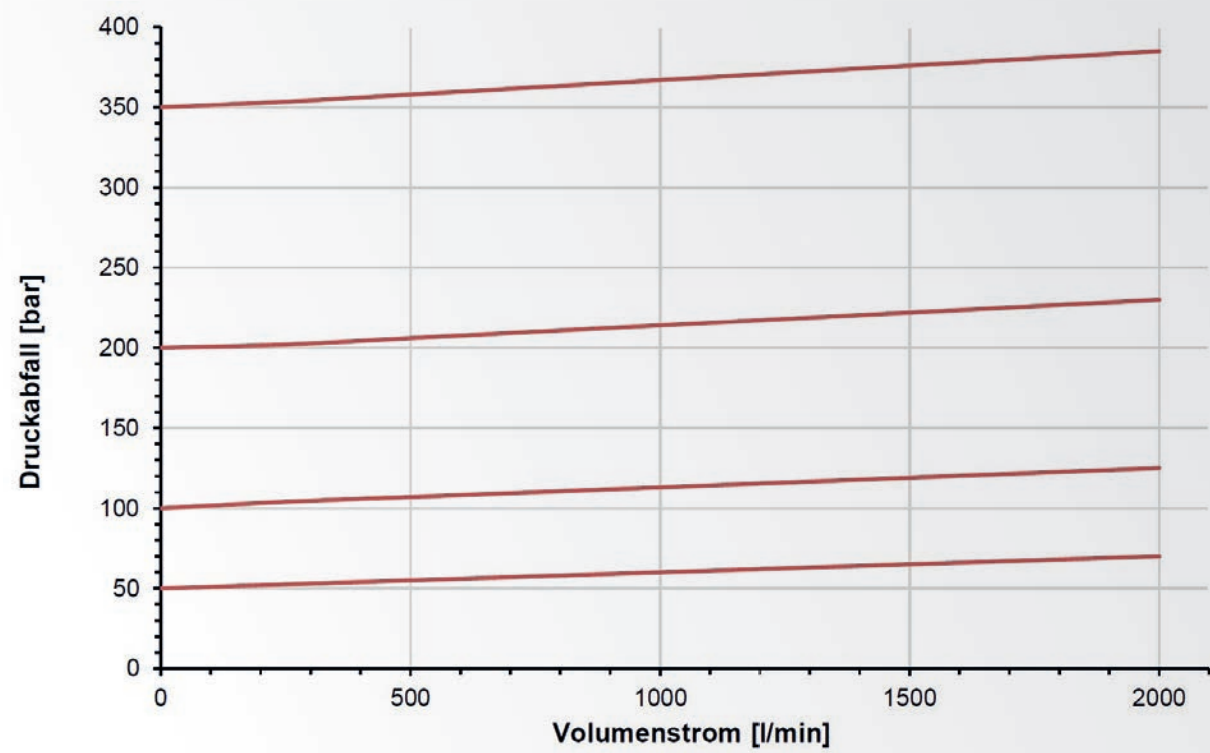
Technical data

measured with HFA medium 97/3%, at 20°C

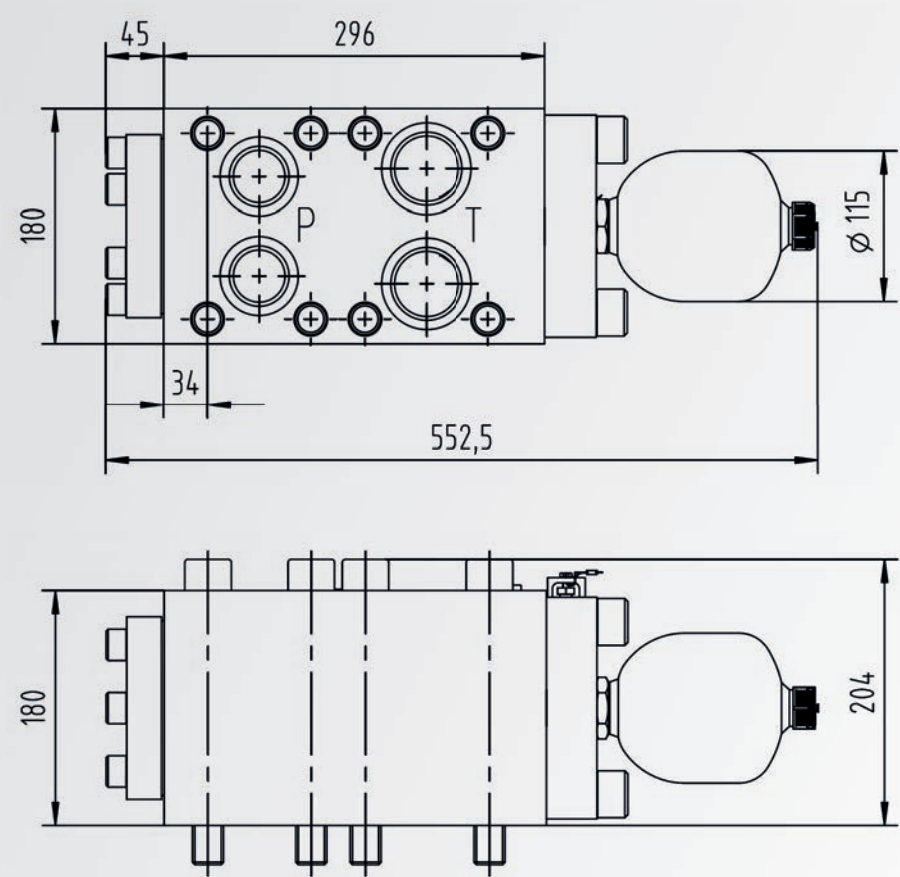
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze
Material Seals	NBR, PTFE, PUR
Hydraulic	
hydraulic pressure connector P	≤ 350 bar
hydraulic pressure connector T	≤ 50bar (Gegendruck bei der Druckeinstellung beachten)
Setting range of hydraulic response pressure P_e	30 – 350 bar
Control ratio S_k	1:1,58 – 1,78 (area piston valve/valve piston)
Pressure range accumulator P_{sp}	10 – 60 bar
max. volume flow	1800 l/min
specified direction of flow	P→T
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min filter fineness	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
Optional features	Pressure display „Pap“, see Order information
Use of other pressure fluids on request.	

Characteristic curves Pressure relief valve DN40

Δp – qV characteristic curves DN40



Pressure relief valve DN40, plate-type



Order information

Included in the scope of supply						
Mounting screws for the valves						
Pressure setting according to customer specification						
Factory test certificate on request						
Designation	Nominal size	Weight [kg]	Type	max. Pressure [bar]	Setting range [bar]	Article number
Pressure relief valve	DN40	84,0	Plate-type	350	30-350	6156177
Pressure relief valve, with pressure display	DN40	84,0	Plate-type	350	30-350	6392687

Pressure relief valve

proportional

Features

- Proportional controlled pressure relief valve
- Seat valve with a leak-free, metallic conical seat seal
- All parts are made of corrosion-resistant materials, and they are easily replaceable
- Hydraulic accumulator as a preload element, adjustable accumulator pressure by proportional pilot valves
- Attachment, structural plate form with Hauhinco connection diagram

Function

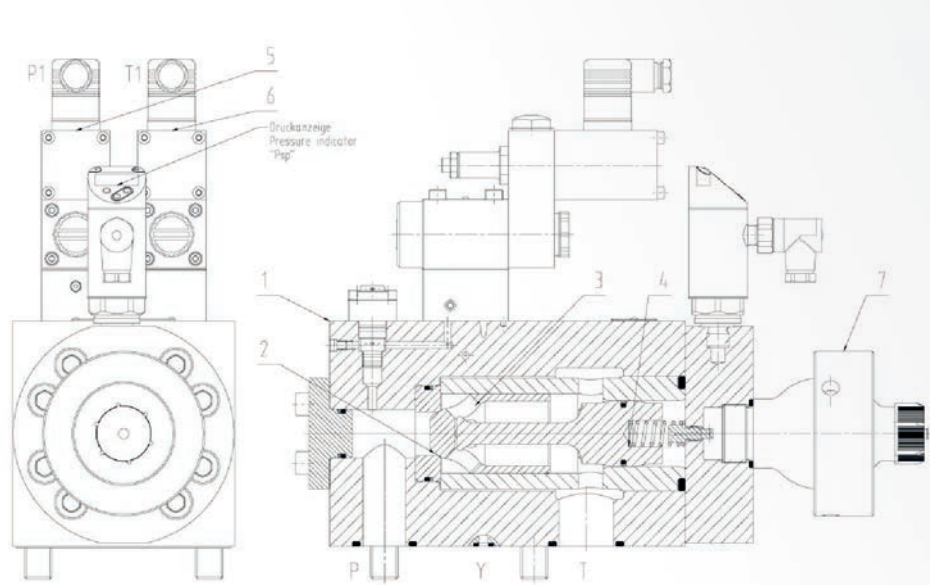
Pressure relief valve for the primary pressure setting at the hydraulic pumps and the pressure protection of the hydraulic drives, hydraulic components.

In the basic valve position, the hydraulic power of the hydraulic accumulator (7) acts on the piston valve (4) and transfers it to the valve piston (3). The valve seat (2) and the valve piston (3) form the valve seal at the conical surface. On the gas side, the hydraulic accumulator (7) has been prefilled with nitrogen and is preloaded hydraulically with the pressure setting on the liquid-side until the requested preset pressure „Pe“ is reached. The gas within the accumulator is compressible and acts as a flexible spring.

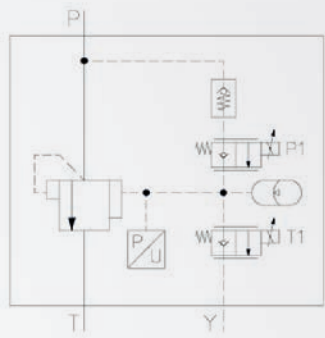
Within the operation of the valve, the system pressure „Ps“ enters the valve body (1) at the P-connector generating a hydraulic (opening) force at the valve seat area of the valve piston (3). The piston valve (4) maintains the valve piston (3) in the shut off basic position as long as the hydraulic opening force is < than the closing force at the piston valve (4). If the system pressure „Ps“ increases to the extent that the force ratio reverses to be opening force > closing force, then the valve piston (3) is pressed out of the basic position, lines P and T are connected thus opening the valve. The valve opening increases proportionally with increasing system pressure until the maximum admissible volume flow for the valve has been reached, see valve characteristic.

The pressure of the valve is set via the proportional pilot valves (5, 6). Thus, the pressure of the accumulator (7) is set. Depending on the pressure setting of the accumulator a hydraulic power is generated, which is transferred to the valve piston (3). From the control ratio „SK“ (see technical data) and the preset pressure „Pe“ follows the required accumulator pressure „Pap“.

Pressure relief valve proportional



Symbol



Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, bronze NBR, PTFE, PUR
Hydraulic	
hydraulic pressure connector P	≤ 400 bar
hydraulic pressure connector T	≤ 50bar (Gegendruck bei der Druckeinstellung beachten)
Setting range of hydraulic response pressure Pe	30 – 400 bar
Control ratio Sk	DN20: 1:1,9 – 2,25 (Fläche Steuerkolben/Ventilkolben) DN25: 1:2,0 – 2,20 (Fläche Steuerkolben/Ventilkolben)
Pressure range accumulator PSp	14 – 200 bar
max. volume flow	DN20: 450 l/min DN25: 700 l/min
specified direction of flow	P→T,
Pressure fluid - Medium - Temperature range - Medium - Quality - min filter fineness	Water, HFA 5 bis 40°C see Hauhinco media requirement, water, HFA Filter fineness 100µm
Pressure fluid - Medium - Temperature range - Medium - Quality	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406
Optional features	Pressure display „Pap“, see Order information
Use of other pressure fluids on request.	

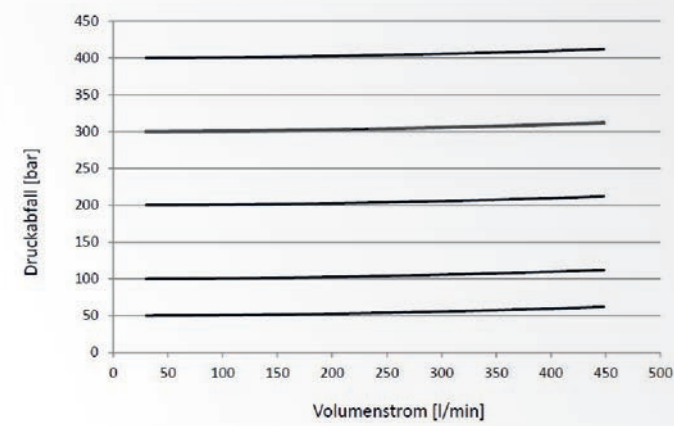
Order information

Included in the scope of supply						
Mounting screws for the valves						
Pressure setting according to customer specification						
Factory test certificate on request						
Designation	Nominal size	Weight [kg]	Type	max. Pres-sure [bar]	Setting range [bar]	Article number
Pressure relief valve	DN20	22,8	Plate-type	400	30-400	6602555
Pressure relief valve	DN25	35,8	Plate-type	400	30-400	6601235

Characteristic curves pressure relief valve DN20

proportional

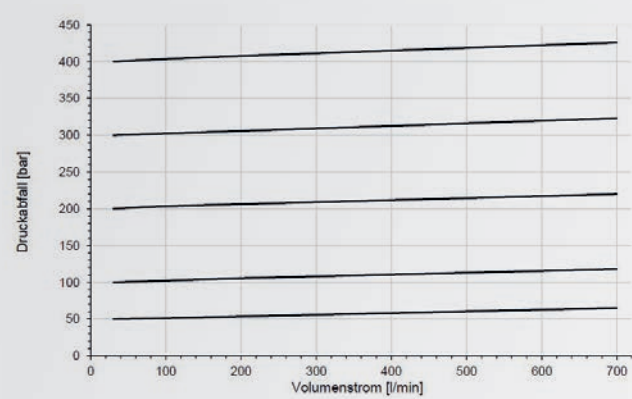
$\Delta p - qV$ characteristic curves DN 20, max. open valve, dyn. viscosity 1mm2/s



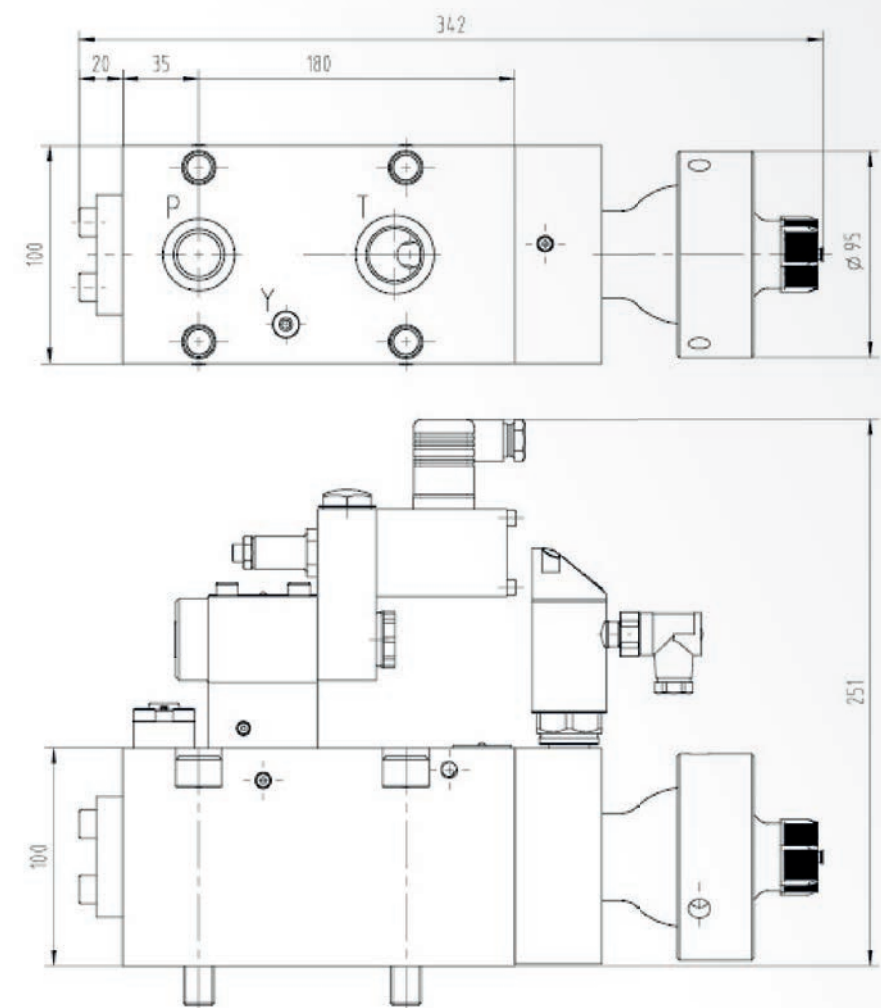
Characteristic curves pressure relief valve DN25

proportional

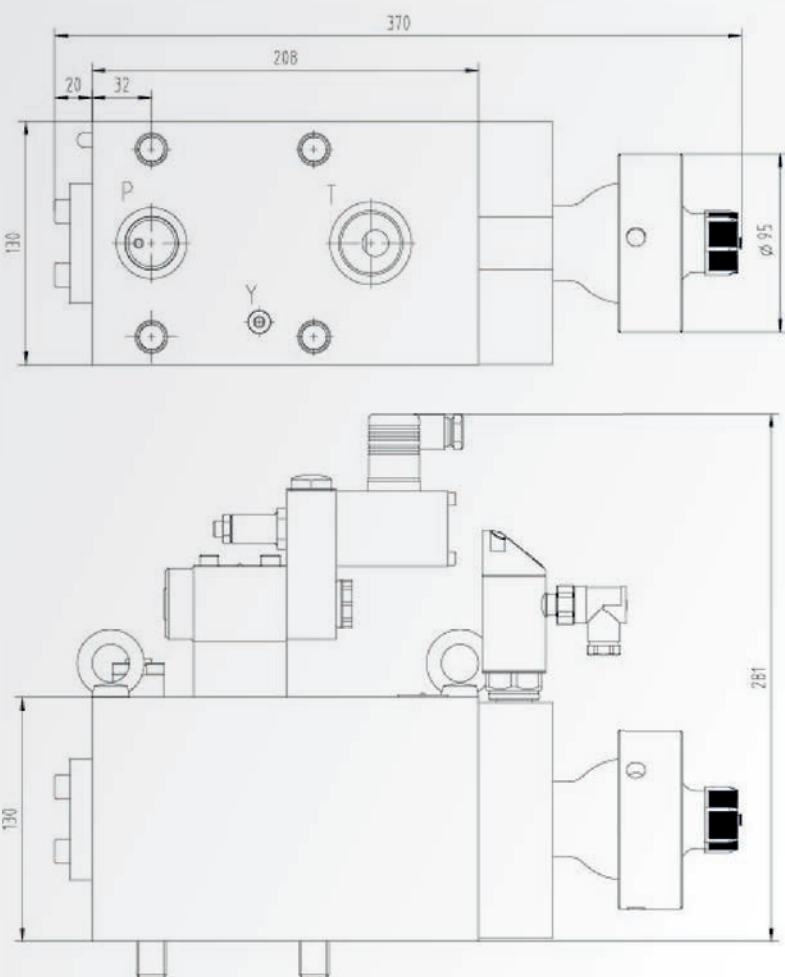
$\Delta p - qV$ characteristic curves DN 25, max. open valve, dyn. viscosity 1mm2/s



Proportional pressure relief valve DN20 Art. Nr. 6602555



Proportional pressure relief valve DN20 Art. Nr. 6601235



Technical changes reserved.
All data and figures are considered non-binding.

Safety valve S301

Description of operation

The S301 safety valve is designed as a direct-action normal safety valve which is loaded by a spring assembly (disc springs).

The safety valve meets the requirements of European Parliament Directive 2014/68/EC (pressure vessels). The safety valve is used for pressure safeguarding hydraulic systems (e.g. pressure vessels). The valve is made of stainless steel and thus resistant to corrosion and suitable for use with the specified media. The valve data is included in the chapter „Range of application“.

The required valve function „to trigger reliably and within the set tolerances in case of overpressure“ requires a precise and linear valve seat surface. I.e. as soon as the valve has responded due to over-pressure, the valve seat may be damaged and can thus a leak-free seal can no longer be guaranteed.



Leaking or damaged safety valves must be replaced as a complete unit.
Repairs must only be made by the manufacturer or by the manufacturer's certified subsidiaries

Range of application

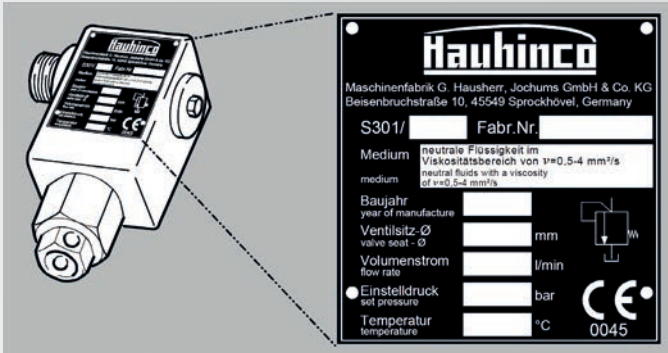
The specified range of application can be found on the valve label and in the table 1 below.

Typ = valve model
Ser.-Nr. = serial number / year of manufacture
d0 = diameter of valve seat [mm]
Medium = pressure medium
G = flow rate [l/min]
p = set pressure [Bar]
T = fluid temperature 0 – 50 °C

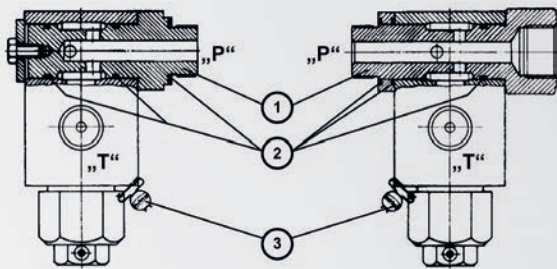
A safety valve must be engineered and installed in line with the existing directives and the manufacturer's specifications.

To prevent unintentional opening of the safety valve, allow for system pressure peaks (pulsation) when selecting the set pressure.

The safety valve S301 reacts to intermittent pressure peaks that are too short in duration to even register on a pressure gauge.



Installation / Mounting



The safety valve must only be installed by authorised and qualified specialist staff.

The S301 safety valve must only be installed on the P-port with the corresponding hollow bolt (1).

Connecting thread: G 1" – DIN2999-1
Tightening torque: 300 Nm

No other fastening facility is provided for the safety valve. The supply line (P-port) must have a minimum inner diameter of $D_i \geq 13$ mm. Expelled medium must be able to flow freely into the open air at connection „T“.

If a return line is installed at the outlet (T) of the safety valve for system reasons, the following rules must be observed.

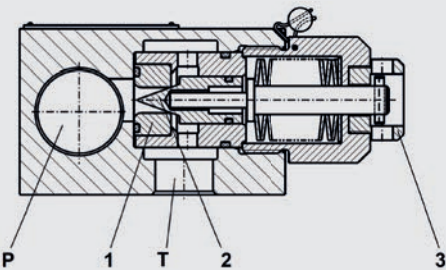
- A safety valve with a threaded connection must be used (see table 1).
- The return line must have a minimum inner diameter of $D_i \geq 17$ mm.
- The return line must be no longer than a maximum of 1.5 m and have a bend of $\leq 90^\circ$.
- The return line must be installed with an inclination so that it runs to empty automatically.
- The return line must be fastened properly so that the reaction forces do not cause a hazard when the safety valve discharges.

Before installation the sealing plug has to be removed from port „T“ and the valve has to be checked for damage.

The valve has to be installed so that personnel are not put at risk from discharging pressure medium. The discharged pressure medium must not be directed at sensitive, unprotected plant parts.

Put up a clearly visible information sign: „Caution: Safety valve – Beware of pressure medium discharged suddenly into the open air!“

Function testing



The functional checks to be performed on the valve are set out by the user or in accordance with the regulations for plant inspection. To perform a functional check on the S301 safety valve, the venting nut (3) is unfastened and turned anti-clockwise by hand until there is a noticeable resistance. Then turn the venting nut (3) half a turn further. The valve cone (2) is raised from the valve seat (1) and the pressure medium is expelled from the outlet (T).



After the functional check the venting nut has to be re-fastened properly.

Designation	d ₀ [mm]	Q* [l/min]	P [bar]	Article number
S301/108	10,8	192	310	1720007 (5127939)**
		195	320	
		198	330	
		201	340	
		204	350	
		206	360	
S301/162	16,2	209	370	6414893 (5123240)**
		212	380	
		175	400	
		178	410	
		180	420	
		182	430	
S301/152	15,2	184	440	1720031 (5133432)**
		186	450	
		178	450	
		180	460	
		182	470	
		184	480	
S301/128	12,8	186	480	1720023 (6541631)**
		188	500	
		208	200	
		200	200	
		205	210	
		210	220	
S301/120	12,0	215	230	6414885 (5124638)**
		220	240	
		224	250	
		212	250	
		216	260	
		220	270	
S301/95	9,5	225	280	6402194 (6353495)**
		229	290	
		233	300	
		233	300	

Storage

The safety valve can be stored up to five years. After this time the valve must be checked by the manufacturer. Before the safety valve is taken into operation for the first time, its correct function must be tested.

During storage all ports (P and T) must be sealed and the safety valve must be protected against dirt, moisture, frost and corrosion.

Designation	d ₀ [mm]	Q* [l/min]	P [bar]	Article number
S301/108	10,8	192	310	1720007 (5127939)**
		195	320	
		198	330	
		201	340	
		204	350	
		206	360	
S301/162	16,2	209	370	6414893 (5123240)**
		212	380	
		175	400	
		178	410	
		180	420	
		182	430	
S301/152	15,2	184	440	1720031 (5133432)**
		186	450	
		178	450	
		180	460	
		182	470	
		184	480	
S301/128	12,8	186	480	1720023 (6541631)**
		188	500	
		208	200	
		200	200	
		205	210	
		210	220	
S301/120	12,0	215	230	6414885 (5124638)**
		220	240	
		224	250	
		212	250	
		216	260	
		220	270	
S301/95	9,5	225	280	6402178 (5128005)**
		229	290	
		233	300	
		233	300	
		233	300	
		233	300	

* The flow rates Q were measured with HFA-medium ($v \approx 1 \text{ mm}^2/\text{s}$).
** (Part no.) These part numbers are for safety valves with G ¾" – DIN2999-1 threaded connection in the port „T“.

Pressure reducing valve

DN10 - DN16 PN400, PN500

Features

- Direct controlled pressure reducing valve.
- All parts are made of corrosion-resistant materials, and they are easily replaceable.
- Hydraulic accumulator as a preload element
- Attachment, structural plate form or pipe connection

Control function

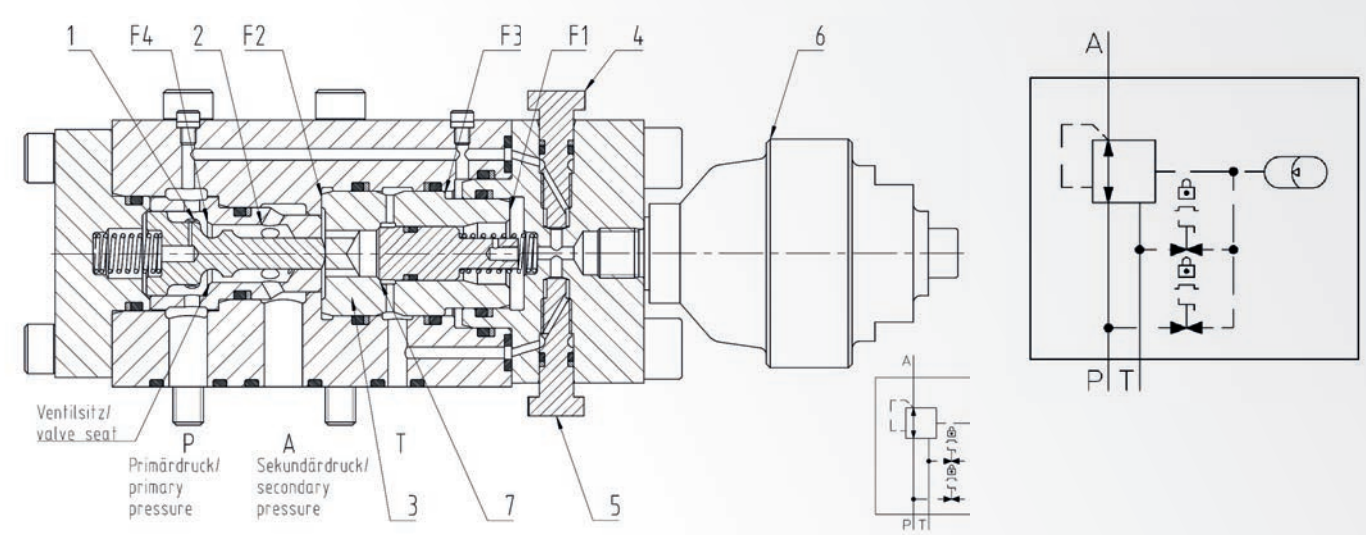
The Pressure reducing valve reduces the primary pressure on port P to a previously set secondary pressure in port A. For primary pressures up to 400 (500) bar, reduced pressures can be set between 20 and 350 (480) bar. A hydraulic accumulator (6), which is prefilled with nitrogen on the gas side, serves as a preload element. The pressure in the hydraulic accumulator (6) is set by opening the adjusting screw (4). Readjustment of the set pressure is possible by releasing the pressure via the adjusting screw (5) into the tank connection (T).

In the basic valve position, pressure medium flows through the valve seat (2) from primary side (P) to secondary side (A). The pressure in the hydraulic accumulator (6) acts to surface (F1) of piston (3). The primary pressure acts to surface F2 and F3. As long as the primary pressure is lower than the set pressure, the valve bolt (1) remains open since the surface F1 to F2-F3 are balanced. When the set pressure in the hydraulic accumulator is reached or exceeded, the piston (3) and thus the valve bolt (1) moves and closes the open valve seat. In closed position, the primary pressure acts to surface (4). The surface F3 is just as large as the surface F4 so that the secondary pressure is kept constant by permanently opening and closing the valve bolt (1).

The pressure relief valve (7) prevents an unwanted pressure increase in the event of leaks at the valve seat. The excess pressure is discharged via the tank connection (T).

Example: Pressure reducing valve DN10 structural plate form

Symbol



Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector P	DN10: ≤ 400 bar, DN16: ≤ 500 bar
Hydraulic pressure connector A	DN10: ≤ 350 bar, DN16: ≤ 480 bar
Hydraulic pressure connector T	≤ 10 bar
setting range of hydraulic response pressure Pa	DN10: 20-350 bar, DN16: 20-480 bar
control ratio:	
- pressure reducing function (P-A)	1:1
- pressure relief function (A-T)	1:0,95
direction of flow	P→A
max. volume flow	DN10: 60 l/min, DN16: 200 l/min
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min filter fineness	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

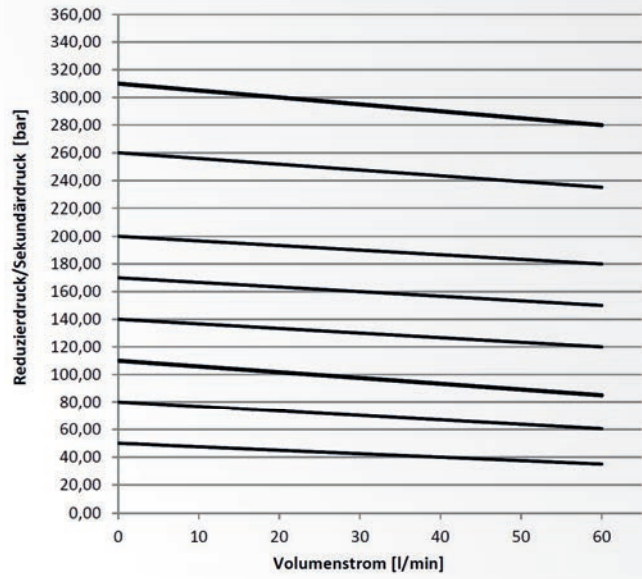
Order information

Included in the scope of supply					
Mounting screws for the valves					
Pressure setting according to customer specification					
Factory test certificate on request					
Designation	Weight [kg]	max. Pres-sure [bar]	Setting range [bar]	Type	Article number
Pressure relief valve DN10	6,0	400	30-350	Plate-type	6260896
Pressure relief valve D500/30	15,6	500	20-480	Plate-type	6262090
Druckminderventil D500/30	15,6	500	20-480	Pipe connection	6206530

Characteristic curves pressure reducing valve

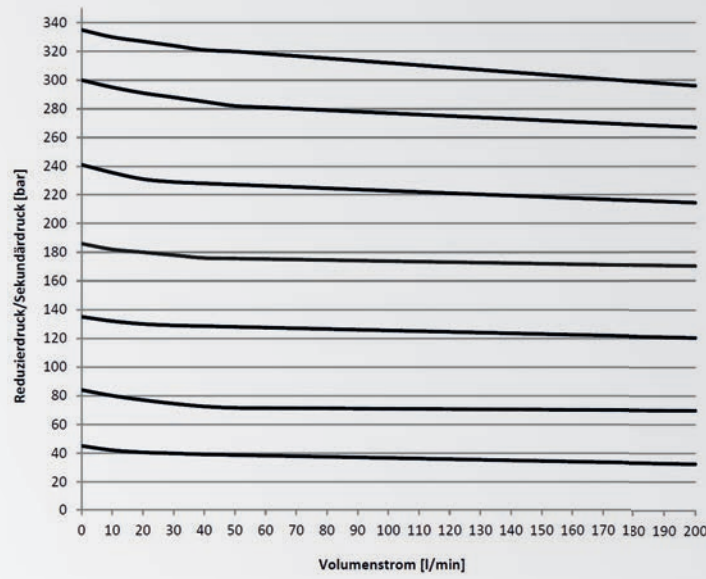
$\Delta p - qV$ characteristic curves DN10

max. open valve, dyn. viscosity 1mm²/s

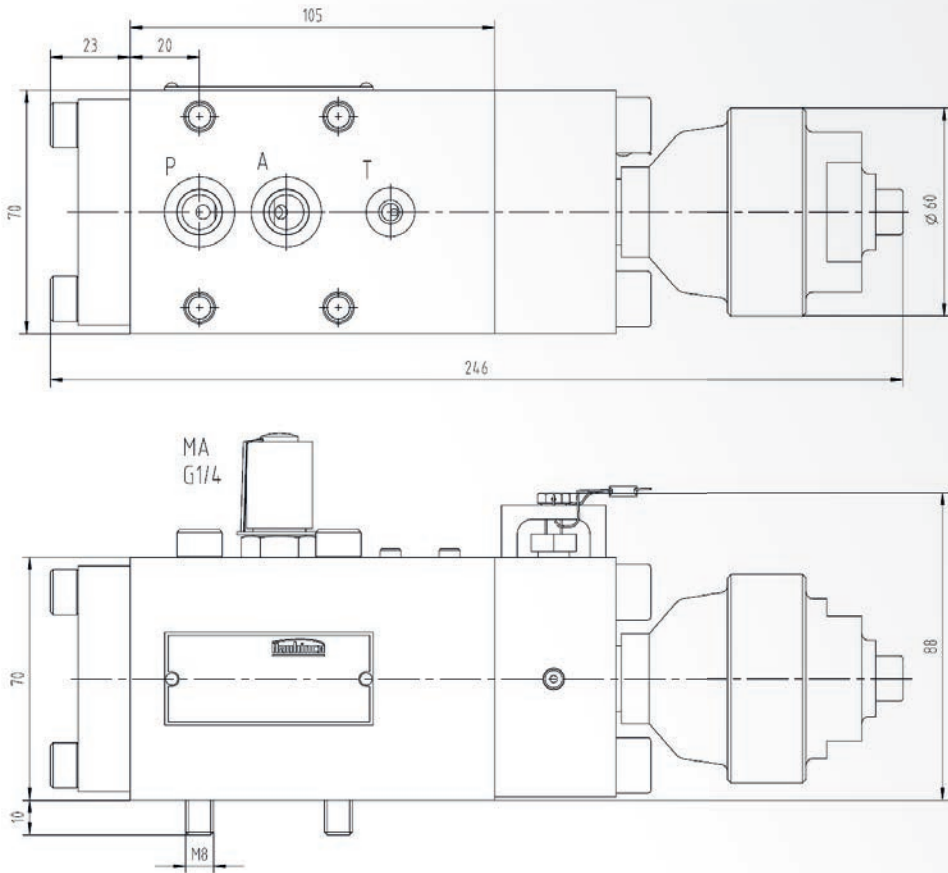


$\Delta p - qV$ characteristic curves DN16

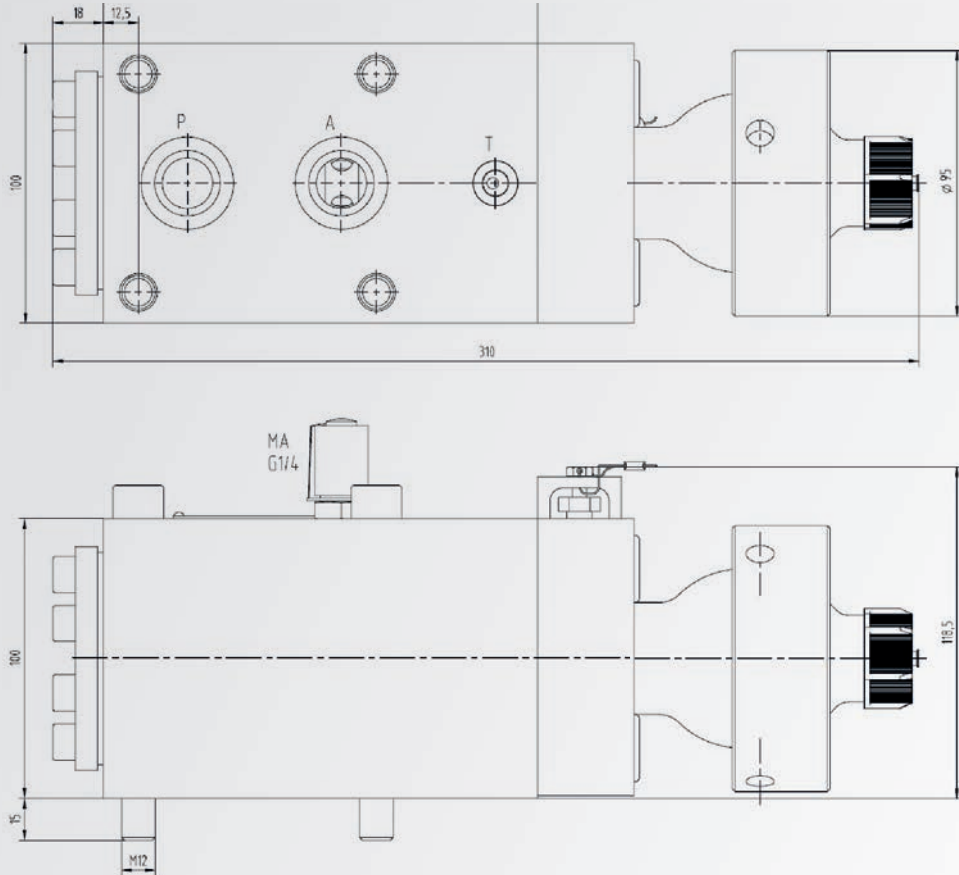
max. open valve, dyn. viscosity 1mm²/s



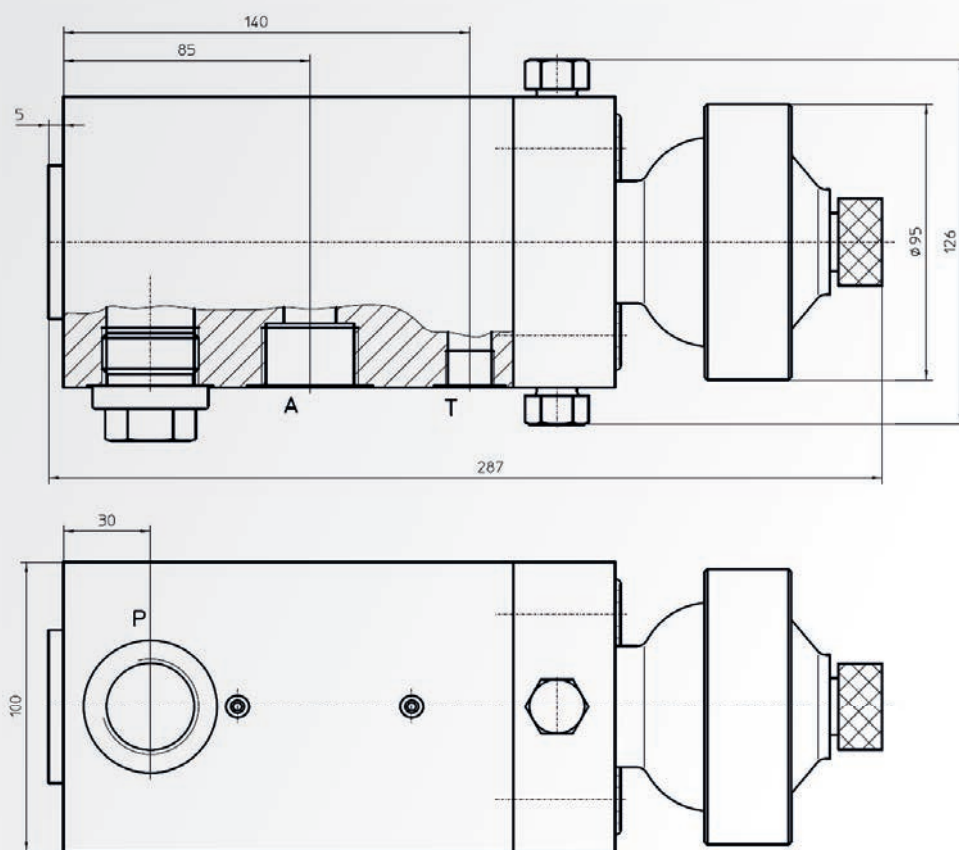
Pressure reducing valve DN10, plate-type



Pressure reducing valve DN16, plate-type



Pressure reducing valve DN16, pipe connection



Proportional pressure reducing valve

DN16, PN400, 20-380bar

Features

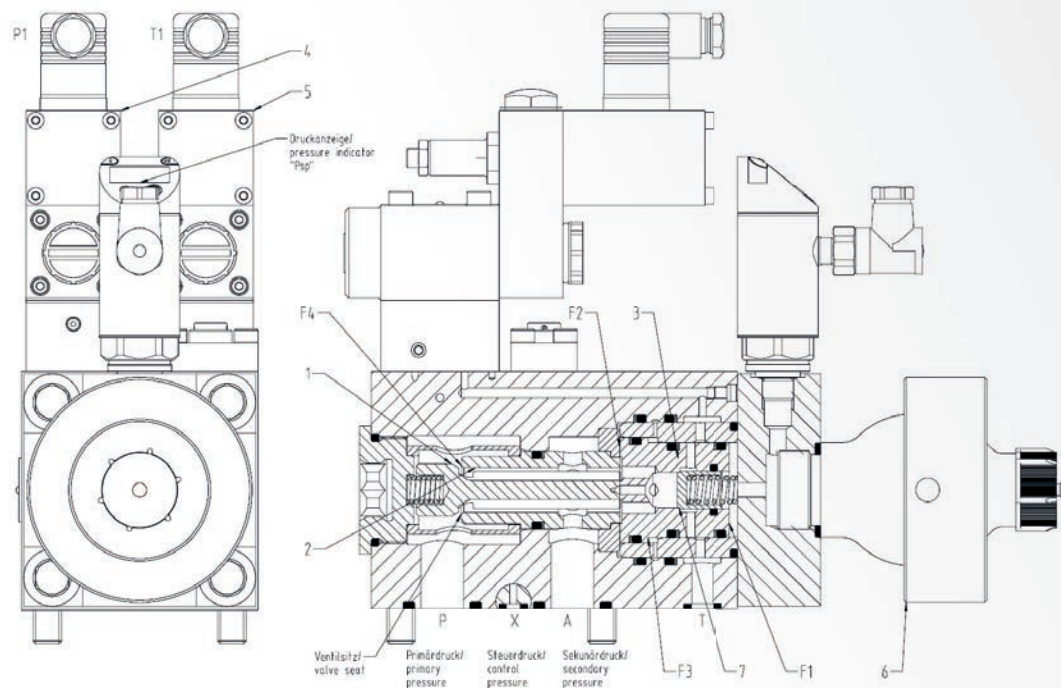
- Proportional controlled pressure reducing valve
- All parts are made of corrosion-resistant materials, and they are easily replaceable.
- Hydraulic accumulator as a preload element, adjustable accumulator pressure by proportional pilot valves
- Attachment, structural plate form

Control function

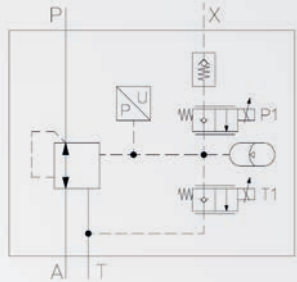
The Pressure reducing valve reduces the primary pressure on port P to a previously set secondary pressure in port A. For primary pressures up to 400 bar, reduced pressures can be set between 20 and 380 bar. A hydraulic accumulator (6), which is prefilled with nitrogen on the gas side, serves as a preload element. The pressure in the hydraulic accumulator (6) is set by the control pressure (X) by opening the pilot valve (4). Readjustment of the set pressure is possible by releasing the pressure via the pilot valve (5) into the tank connection (T). In the basic valve position, pressure medium flows through the valve seat (2) from primary side (P) to secondary side (A). The pressure in the hydraulic accumulator (6) acts to surface (F1) of piston (3). The primary pressure acts to surface F2 and F3. As long as the primary pressure is lower than the set pressure, the valve bolt (1) remains open since the surface F1 to F2-F3 are balanced.

When the set pressure in the hydraulic accumulator is reached or exceeded, the piston (3) and thus the valve bolt (1) moves and closes the open valve seat. In closed position, the primary pressure acts to surface (4). The surface F3 is just as large as the surface F4 so that the secondary pressure is kept constant by permanently opening and closing the valve bolt (1). The pressure relief valve (7) prevents an unwanted pressure increase in the event of leaks at the valve seat. The excess pressure is discharged via the tank connection (T).

Example: Proportional pressure reducing valve DN16 structural plate form



Symbol



Technical data

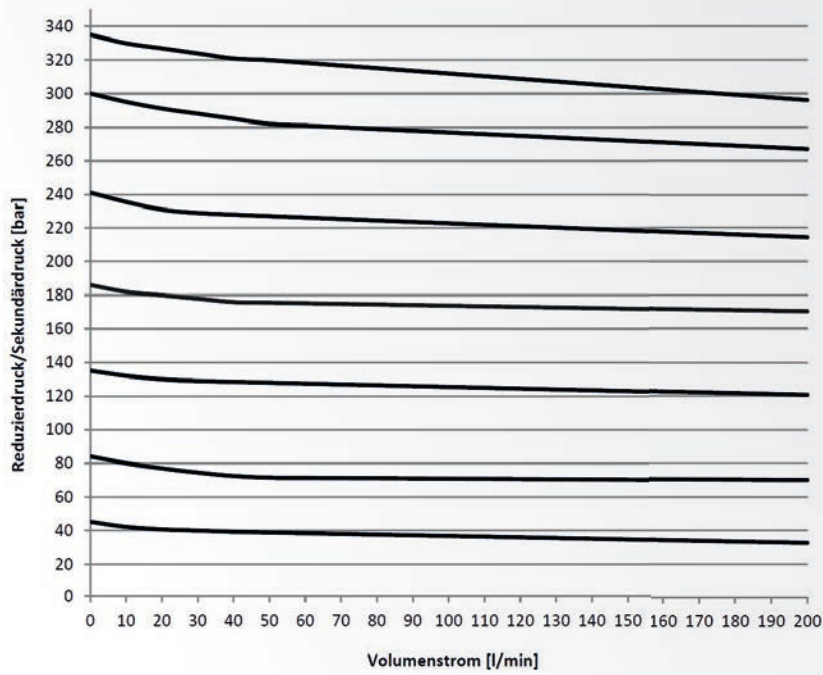
measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel, bronze NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector P	≤ 400 bar
Hydraulic pressure connector A	≤ 380 bar
Hydraulic pressure connector T	≤ 10 bar
setting range of hydraulic response pressure Pa	20-380 bar
control ratio: - pressure reducing function (P-A) - pressure relief function (A-T)	1:1 1:0,95
direction of flow	P→A
max. volume flow	200 l/min
Pressure fluid - Medium - Temperature range - Medium - Quality - min. filter fineness connection P, T - min. filter fineness connection X	Water, HFA 5 bis 40°C see Hauhinco media requirement, water, HFA Filter fineness 100µm Filter fineness 25µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

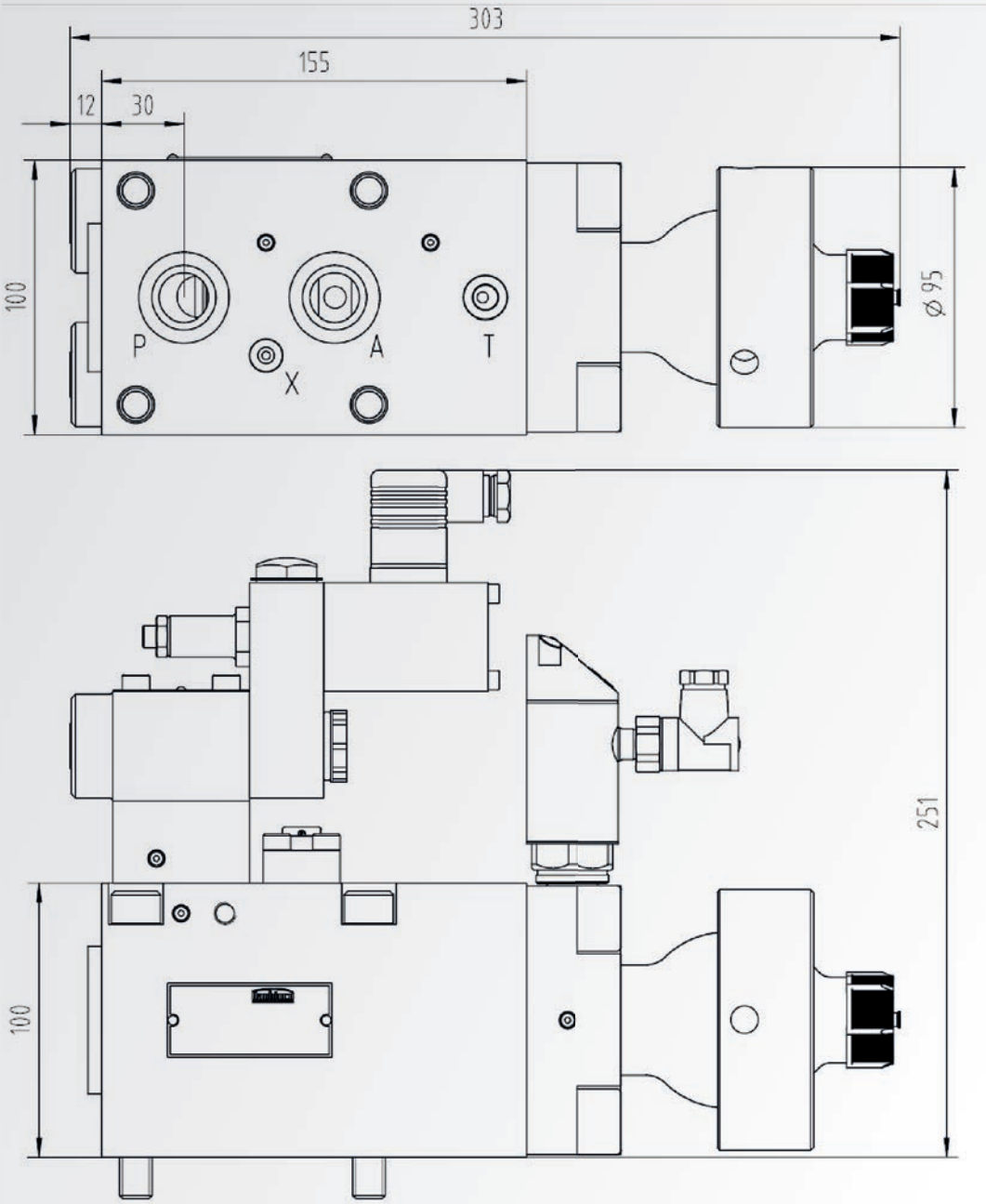
Characteristic curves pressure reducing valve, proportional actuated

$\Delta p - q_V$ characteristic curves DN16

max. open valve, dyn. viscosity 1mm²/s



Pressure reducing valve DN16, proportional actuated



Order information

Included in the scope of supply					
Mounting screws for the valves					
Pressure setting according to customer specification					
Factory test certificate on request					
Designation	Weight [kg]	max. Pres- sure [bar]	Einstellbereich [bar]	Type	Article number
Druckminderventil DN16	20,3	400	20-380	Plate-type	6603293

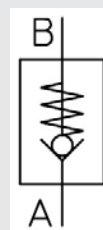
Technical changes reserved.
All data and figures are considered non-binding.

Non-return valve B-RV

DN3 - DN10 PN 320, PN500

- Non-return valve controlling liquid media
- Opening pressure of the preload spring is „1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve fastening structural plate form with a Hauhinco connection diagram
- Valve parts made of corrosion-resistant stainless steel

Seite 190

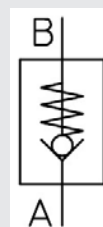


Non-return valve C-RV

DN16 - DN100 PN 320, PN500

- Non-return valve controlling liquid media
- The valve is designed in two different control ratios, see Valve data
- Opening pressure of the preload spring is „1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve fastening structural plate form with a Hauhinco connection diagram
- Valve parts made of corrosion-resistant stainless steel

Seite 192

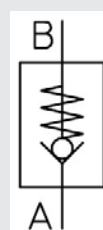


Non-return valve R-RV

DN25 - DN50 PN 420, PN500

- Non-return valve controlling liquid media
- Opening pressure of the preload spring is „0,2-1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve parts made of corrosion-resistant stainless steel

Seite 196

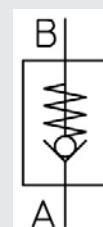


Non-return valve insert E-RV

DN32 - DN50, PN 420

- Non-return valve controlling liquid media
- Opening pressure of the preload spring is „1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve parts made of corrosion-resistant stainless steel

Seite 200

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.

Non-return valve B-RV

DN3 - DN10 PN 320, PN500

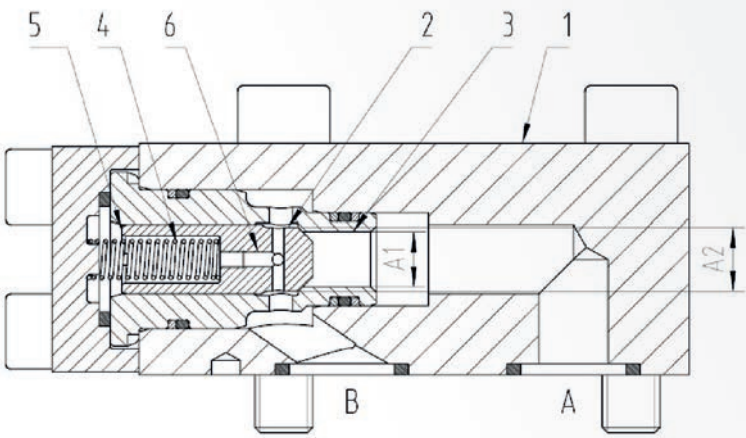
Features

- Non-return valve controlling liquid media
- Opening pressure of the preload spring is „1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve fastening structural plate form with a Hauhinco connection diagram
- Valve parts made of corrosion-resistant stainless steel

Function of Non-return valve

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the force of the spring (4). The control chamber (5) is connected to the B-channel via the control channels (6) within the valve piston (2). The hydraulic pressure supplied at the B-channel with the valve closed is thus also acting on the control surface (A2). This pressure keeps the valve closed and shuts off the direction of flow from the B- to the A-channel. Conversely, the non-return valve opens when the hydraulic pressure at the A-channel exceeds the hydraulic pressure at the B-channel and the spring force (4). In order to reach the initial opening of the closed valve, the hydraulic pressure within the A-channel must be greater by the factor of the control ratio $A2/A1$. The response behaviour of the valve is dampened by the throttling pin.

Example non-return valve B-RV:

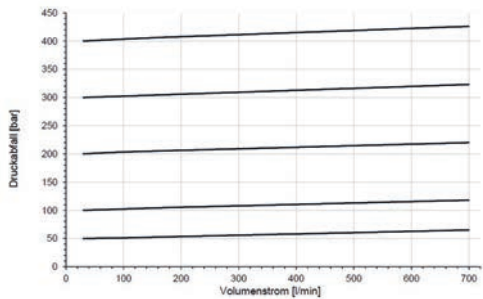


Symbol

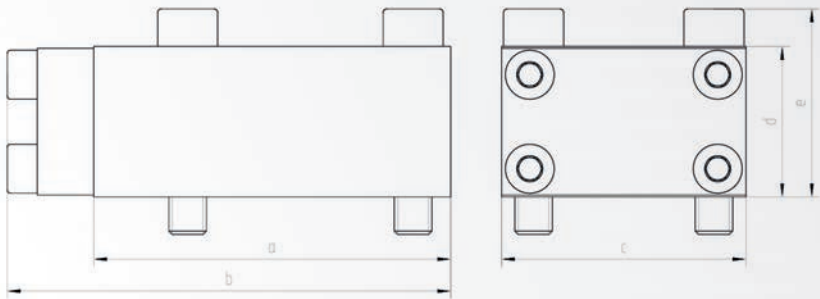


Control surfaces, hydraulic forces
A channel: Area A1, open valve
B channel: Area A2, close valve
Control surface (5) = $A2 > A1$

$\Delta P - Q$ characteristic curves



Dimension sheet



Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≤ 320 bar bzw. ≤ 500bar, see Order information
Direction of flow	A→B
Control ratio	$A1 \leq A2$, A1, A2 – Steuerflächen
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

Order information

Included in the scope of supply										
Mounting screws for the valves										
Designation	Nominal size	Weight [kg]	max. Pres- sure [bar]	Control ratio [A2/A1]	Dimensions [mm]					Article number
					a	b	c	d	e	
Non-return valve B-RV	DN3	0,7	320	1,35	58	76	40	30	36	6356435
Non-return valve B-RV	DN6	0,9	320	1,35	62	80	50	30	38	6355846
Non-return valve B-RV	DN6	0,9	500	1,35	62	80	50	30	38	6392636
Non-return valve B-RV	DN10	2,2	320	1,20	95	118	65	40	50	6356419
Non-return valve B-RV	DN10	2,2	500	1,35	95	118	65	40	50	6396291

Non-return valve C-RV

DN16 - DN100 PN 320, PN500

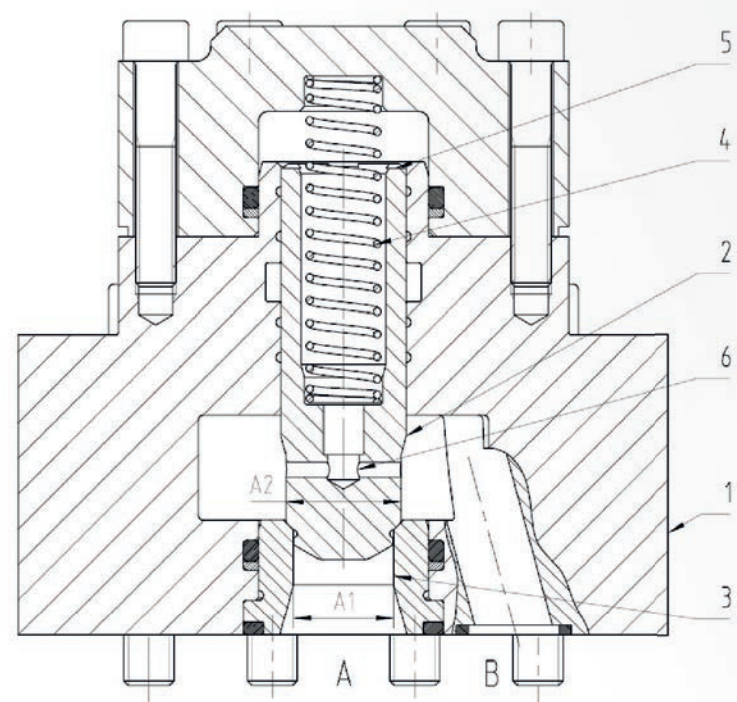
Features

- Non-return valve controlling liquid media
- The valve is designed in two different control ratios, see Valve data
- Opening pressure of the preload spring is „1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve fastening structural plate form with a Hauhinco connection diagram
- Valve parts made of corrosion-resistant stainless steel

Function of Non-return valve

The valve piston (2) guided within the valve body (1) is pressed into the valve seat (3) by the force of the spring (4). The control chamber (5) is connected to the B-channel via the control channels (6) within the valve piston (2). The hydraulic pressure supplied at the B-channel with the valve closed is thus also acting on the control surface (A2). This pressure keeps the valve closed and shuts off the direction of flow from the B- to the A-channel. Conversely, the non-return valve opens when the hydraulic pressure at the A-channel exceeds the hydraulic pressure at the B-channel and the spring force (4). In order to reach the initial opening of the closed valve, the hydraulic pressure within the A-channel must be greater by the factor of the control ratio A2/A1. The response behaviour of the valve is dampened by the throttling pin.

Example non-return valve C-RV:



Symbol



Control surfaces, hydraulic forces
A channel: Area A1, open valve
B channel: Area A2, close valve
Control surface (5) = A2 > A1

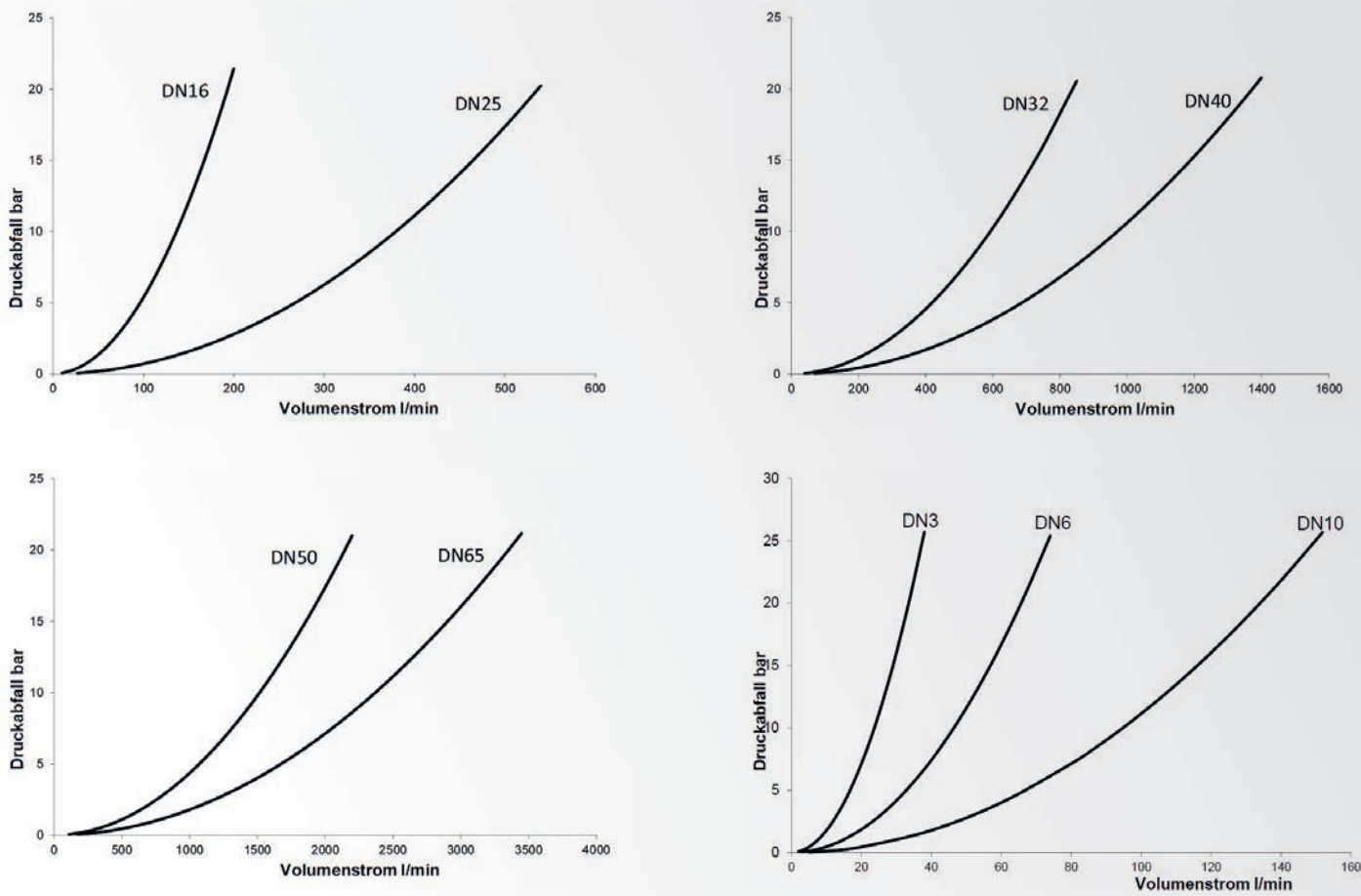
Technical data

measured with HFA medium 97/3%, at 20°C

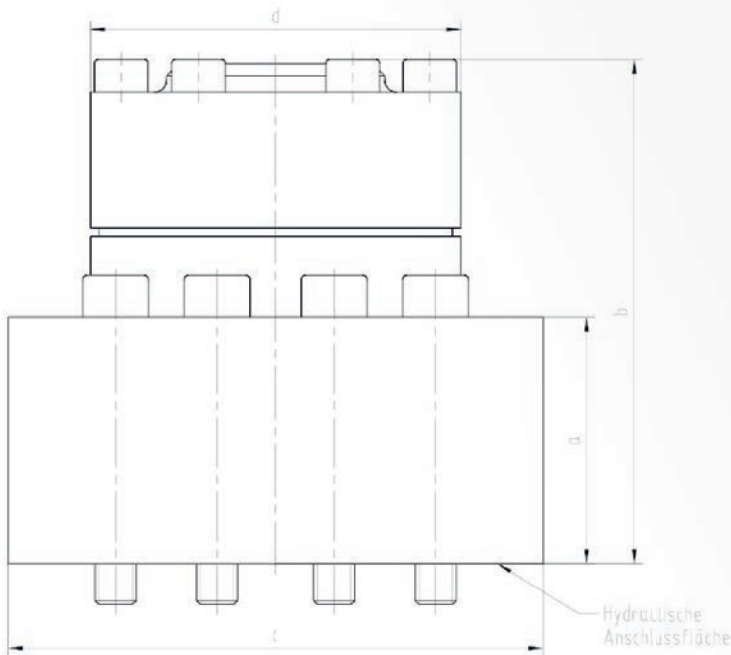
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≤ 320 bar, higher pressure stages on request ≤ 500bar, see Order information
Direction of flow	A→B
Control ratio	A1≤A2, A1, A2 – Steuerflächen
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Ranges of application	
Control ratio A2/A1 ≥ 1,2	Standard applications, e.g. backstop. Special valve features are a delayed response due to the area ratio, an increased resistance to wear due to the large sealing surface.
Control ratio A2/A1 ≥ 1,2	Special applications, e.g. for a quick response with a low pressure difference between A- and B-channel, such as a pressure relief function, pre-loading valve

Characteristic curves non-return valves C-RV DN16 - DN 100

ΔP – Q characteristic curves



Dimension sheet



Order information

Included in the scope of supply
Mounting screws for the valves

Area ratio $A2/A1 \geq 1,2$

Designation	Nominal size	Weight [kg]	max. Pres- sure [bar]	Control ratio [A2/A1]	Dimensions [mm]				Article number
					a	b	c	d	
Non-return valve C-RV	DN16	3,8	320	1,20	45	93	100	70	6244343
Non-return valve C-RV	DN16	5,0	500	1,20	45	93	120	70	6260144
Non-return valve C-RV	DN25	8,5	320	1,25	60	123	130	90	6243460
Non-return valve C-RV	DN25	10,5	500	1,25	76	123	140	90	6271847
Non-return valve C-RV	DN32	12,0	320	1,30	76	150	140	100	6396291
Non-return valve C-RV	DN40	21	320	1,30	83	175	176	119	6145124
Non-return valve C-RV	DN50	31	320	1,35	92	209	196	142	6145191
Non-return valve C-RV	DN65	60	320	1,20	120	273	240	170	6145779
Non-return valve C-RV	DN65	112	500	1,20	205	270	294	210	6600030
Non-return valve C-RV	DN80	122	320	1,35	180	336	294	214	6251994
Non-return valve C-RV	DN80	179	500	1,35	180	336	370	214	6260152
Non-return valve C-RV	DN100	233	320	1,30	235	398	370	265	6145795
Non-return valve C-RV	DN100	448	500	1,30	340	434	466	300	6169171

Area ratio $A2/A1 \leq 1,1$

Designation	Nominal size	Weight [kg]	max. Pres- sure [bar]	Control ratio [A2/A1]	Dimensions [mm]				Article number
					a	b	c	d	
Non-return valve C-RV	DN16	3,8	320	1,10	45	93	100	70	6259405
Non-return valve C-RV	DN25	8,5	500	1,10	60	123	130	90	6259421
Non-return valve C-RV	DN32	12,0	320	1,15	76	150	140	100	6259448
Non-return valve C-RV	DN40	21,0	500	1,10	83	175	176	119	6154182
Non-return valve C-RV	DN65	60,0	320	1,10	120	273	240	170	6153097

Non return valve R-RV

DN25 - DN50, PN 420 - PN500

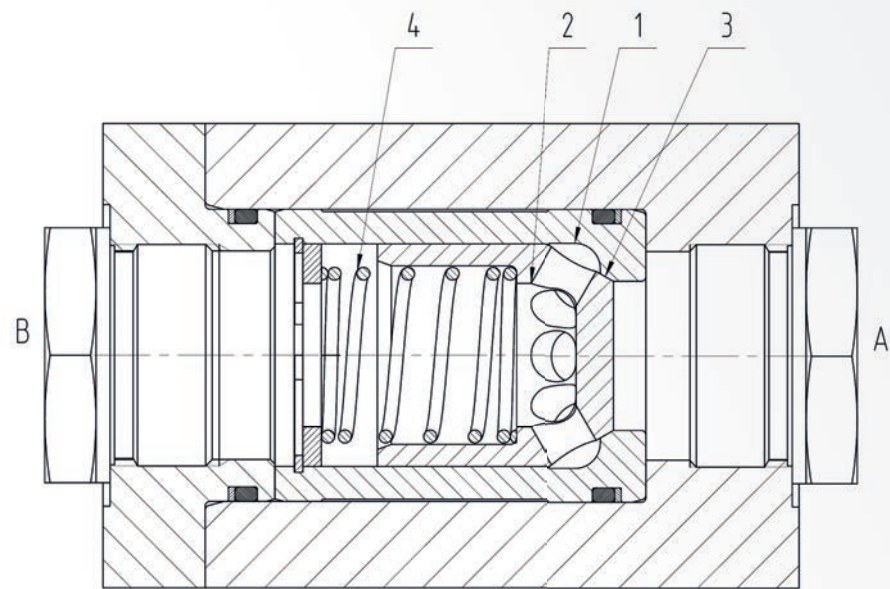
Features

- Non-return valve controlling liquid media
- Opening pressure of the preload spring is „0,2-1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve parts made of corrosion-resistant stainless steel

Function of non return valve

The valve piston (2) guided within the valve seat bush (1) is pressed into the valve seat (3) by the force of the spring (4) and blocks the flow direction from the B to the A channel. Conversely, the non-return valve opens when the hydraulic pressure at the A-channel exceeds the spring force (4).

Example non-return valve R-RV:



Symbol



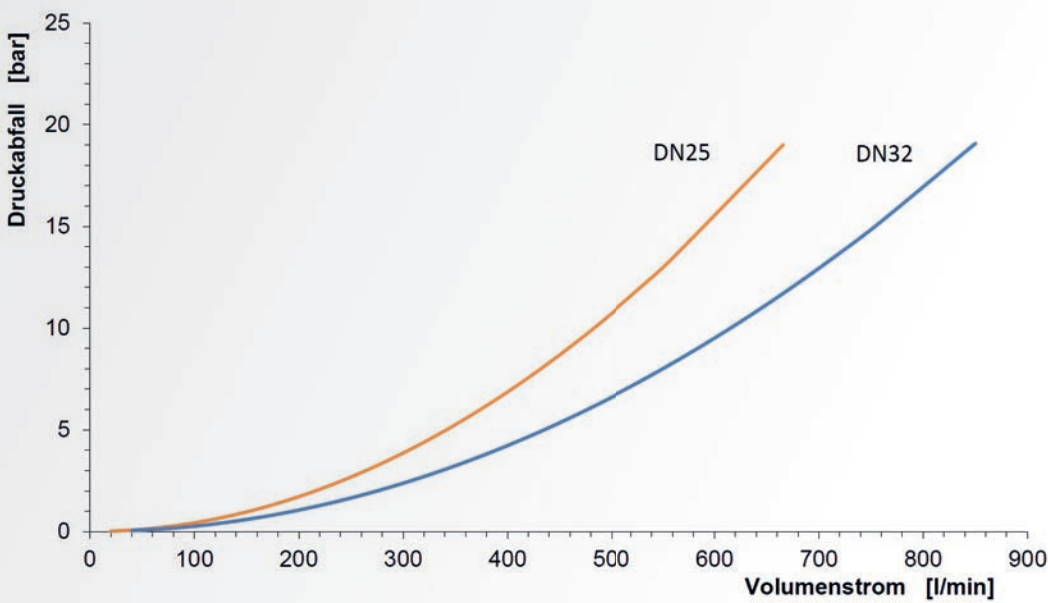
Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE
Hydraulic	
Hydraulic pressure connector A, B	≤ 320 bar, ≤ 320 bar, see Order information
Direction of flow	A→B
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

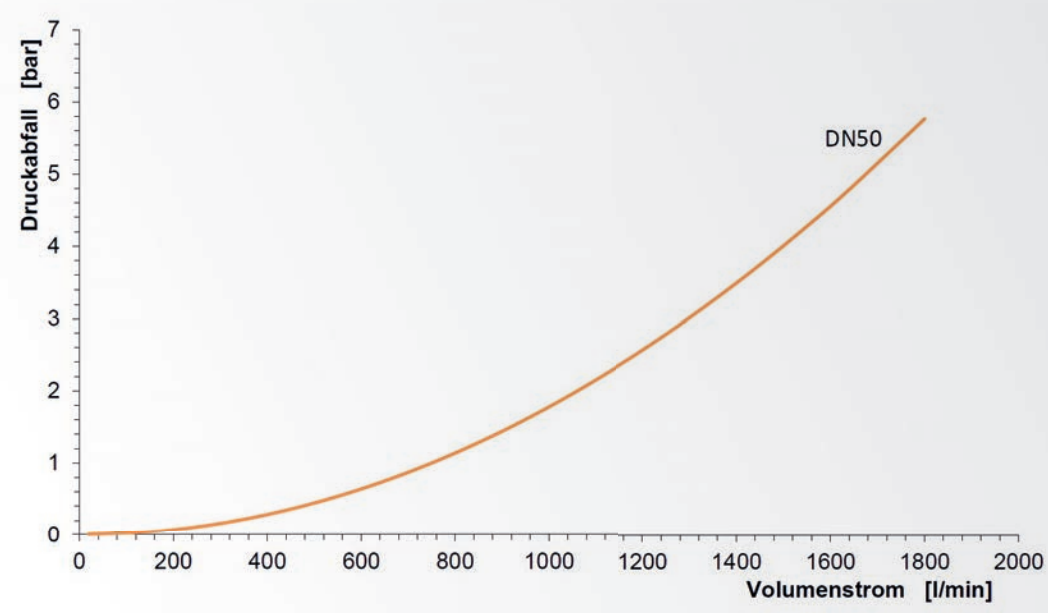
Characteristic curves DN25 - DN32

$\Delta p - q_v$ characteristic curves max. open valve, dyn. viscosity 1mm2/s



Characteristic curve DN50

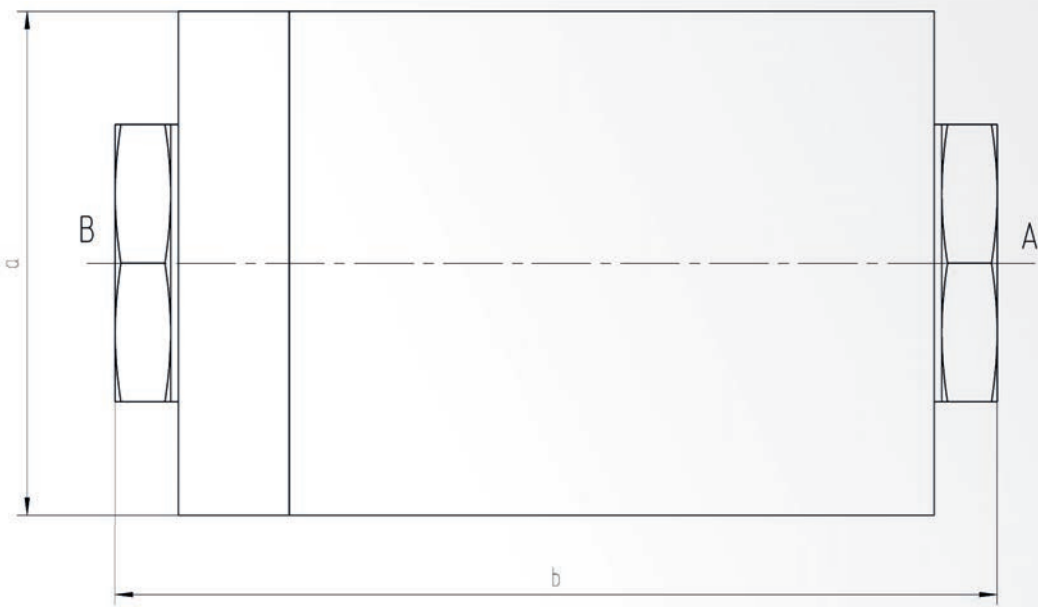
$\Delta p - q_v$ characteristic curves max. open valve, dyn. viscosity 1mm²/s



Order information Non return valve R-RV

Nominal size	Weight [kg]	max. Pres- sure [bar]	Opening pressure [bar]	Dimensions [mm]				Article number
				a	b	A	B	
DN25	2,8	500	~0,5	Ø73	139	G1 DIN 3852	G1 DIN 3852	6463509
DN25	2,8	500	~0,2	Ø73	139	G1 DIN 3852	G1 DIN 3852	6601371
DN32	9,7	420	~1,0	4kt 100	150	G1-1/2 DIN 3852	G1-1/2 DIN 3852	6393233
DN32	10,5	420	~1,0	4kt 100	175	G1 DIN 3852	G1 DIN 3852	6394558
DN50	45,5	420	~1,0	4kt 165	270	SAE 2“-6000 PSI	SAE 2“-6000 PSI	6602008

Dimension sheet



Non-return valve insert E-RV

DN32 - DN50, PN 420

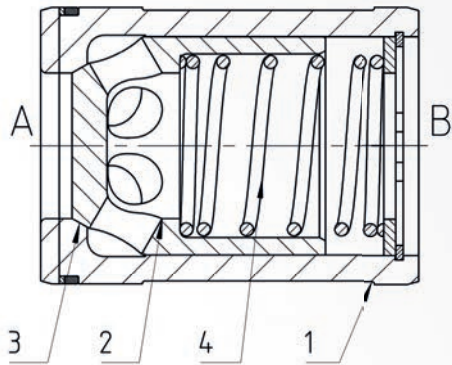
Features

- Non-return valve controlling liquid media
- Opening pressure of the preload spring is „1bar“, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically „leak-free“.
- Valve parts made of corrosion-resistant stainless steel

Function of non return valve

The valve piston (2) guided within the valve seat bush (1) is pressed into the valve seat (3) by the force of the spring (4) and blocks the flow direction from the B to the A channel. Conversely, the non-return valve opens when the hydraulic pressure at the A-channel exceeds the spring force (4).

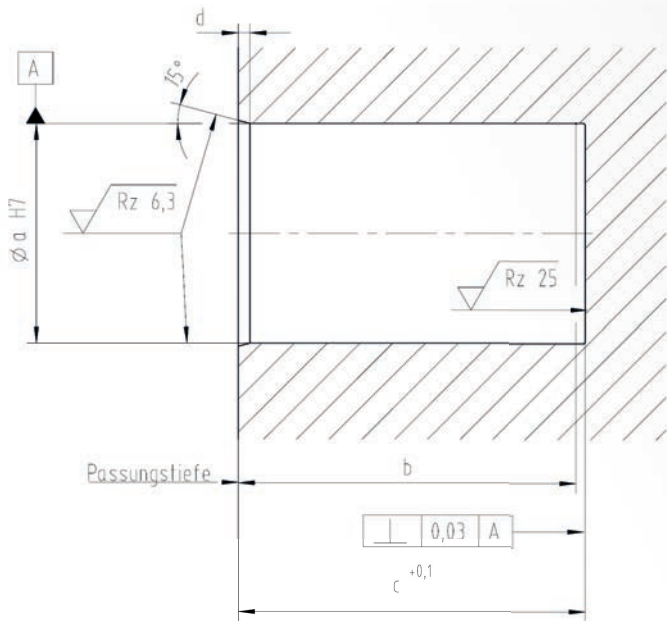
Example non-return valve E-RV



Symbol



Dimension sheet



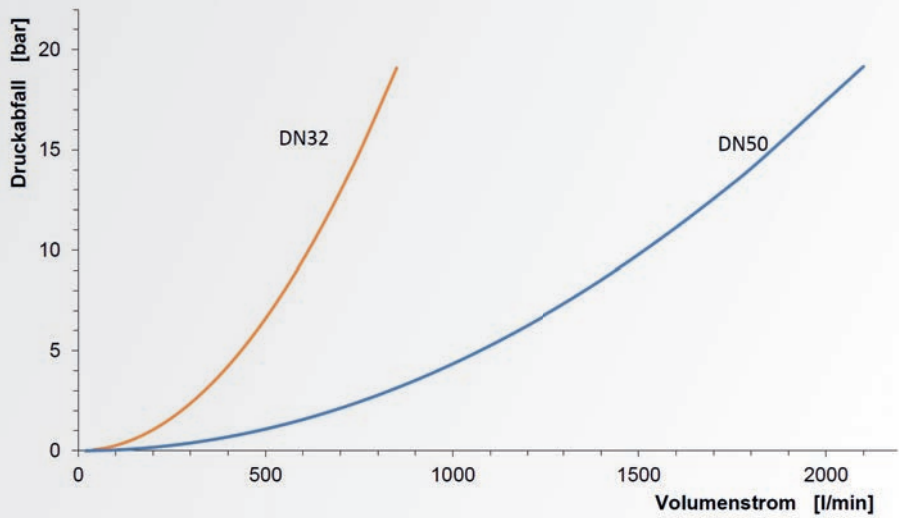
Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE
Hydraulic	
Hydraulic pressure connector A, B	≤ 420 bar
Direction of flow	A→B
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

Characteristic curves DN32 - DN50

$\Delta p - q_v$ characteristic curves max. open valve, dyn. viscosity 1mm2/s



Order information Non return valve insert E-RV

Nominal size	Weight [kg]	max. Pressure [bar]	Opening pressure [bar]	Dimensions [mm]				Article number
				a	b	c	d	
DN32	2,8	420	~1,0	Ø63	77	80	4	6572871
DN50	4,0	420	~1,0	Ø95	126	130	4	6601246

Pilot operated non-return valve

DN10, PN320

Features

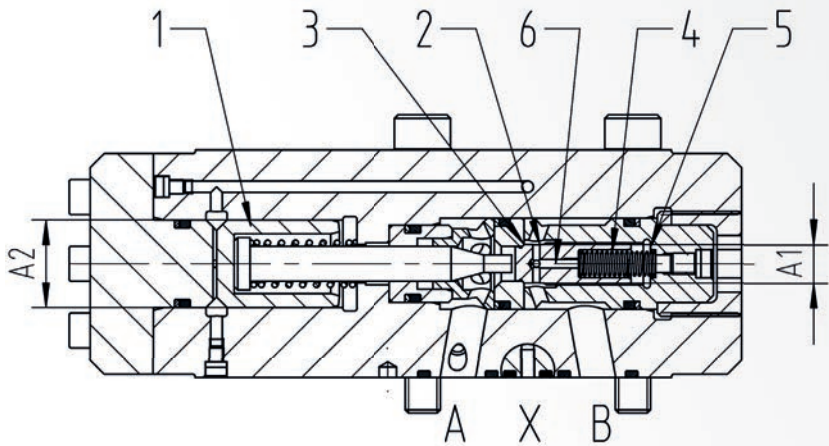
- Pilot operated non-return valve controlling liquid media
- Opening pressure of the preload spring approx. 1bar, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically leak-free
- Valve fastening structural plate form with a Hauhinco connection diagram
- Valve parts made of corrosion-resistant stainless steel

Function of pilot operated non-return valve

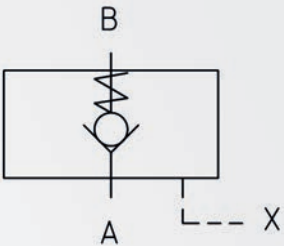
The valve piston (2) is pressed into the valve seat (3) by the force of the spring (4). The control chamber (5) is connected to the B-channel via the control channels (6) within the valve piston (2). The hydraulic pressure supplied at the B-channel with the valve closed is thus acting on the control surface A1, keeps the valve closed and shuts off the direction of flow from the B- to the A-channel. Conversely, the nonreturn valve opens when the hydraulic pressure at the A-channel exceeds the hydraulic pressure at the B-channel and the spring force (4).

The valve blocked via the B port can be opened against the blocking direction. This is done via the control piston (1) which is pressurized via the control port (X). The control pressure (X) acts to surface A2, surface A2 is > as surface A1 and open the non-return valve.

Example: Pilot operated non-return valve DN10



Symbol



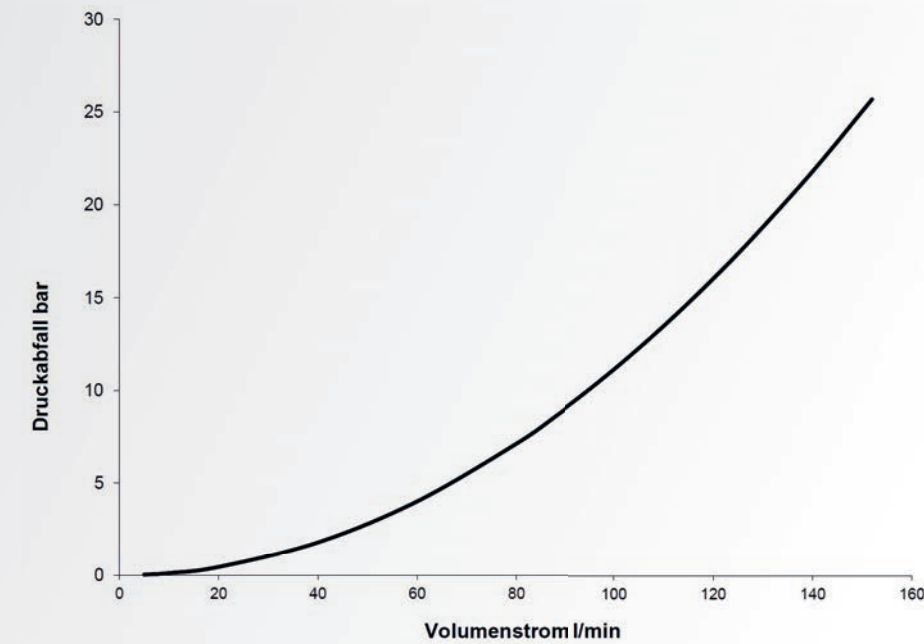
Technical data

measured with HFA medium 97/3%, at 20°C

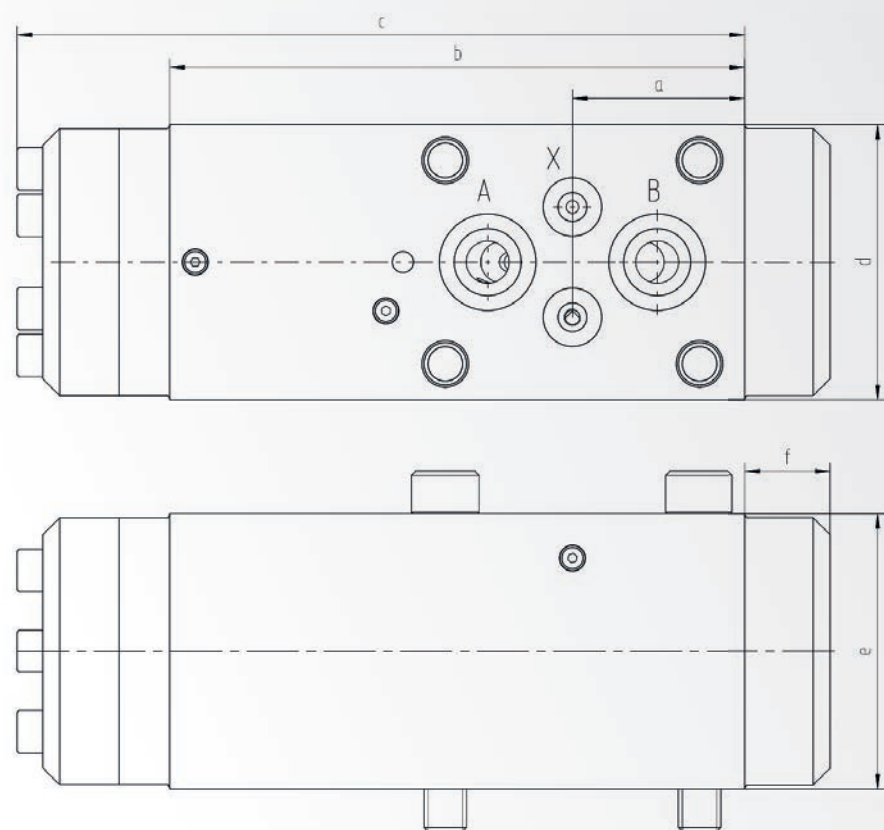
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B, X	≤ 320 bar
Direction of flow	A→B
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection A, B	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

Characteristic curves DN10

$\Delta p - q_v$ characteristic curves



Dimension sheet



Order information pilot operated non-return valve

Included in the scope of supply										
Mounting screws for the non-return valve										
Nominal size	Weight [kg]	max. Pres- sure [bar]	Control ratio [A1/A2]	Dimensions [mm]						Article number
				a	b	c	d	e	f	
DN10	5,4	320	1:5	41	136	172	65	65	20	6377971

Notices



Technical changes reserved.
All data and figures are considered non-binding.

Throttle-non-return valve

DN3 - DN10 PN 320

Features

- Throttle- Non-return valve controlling liquid media
- Opening pressure of the preload spring is approx. 1bar, other opening pressures on request
- Valve piston and valve seat are coupled and close hydraulically leak-free
- Valve fastening structural plate form with a Hauhinco connection diagram
- Valve parts made of corrosion-resistant stainless steel

Function of non-return valve

The valve piston (1) is pressed into the valve seat (2) by the force of the spring (3). The control chamber (4) is connected to the A-channel via the control channels (5) within the valve piston (1). The hydraulic pressure supplied at the A-channel with the valve closed is thus also acting on the control surface (A2). This pressure keeps the valve closed and shuts off the direction of flow from the A- to the B-channel. Conversely, the non-return valve opens when the hydraulic pressure at the B-channel exceeds the hydraulic pressure at the A-channel and the spring force (3). In order to reach the initial opening of the closed valve, the hydraulic pressure within the B-channel must be greater by the factor of the control ratio $A2/A1$.

Function of throttle valve

The valve piston (7) is adjusted by turning the hexagon (8) axially via the thread. By turning it clockwise, the valve is closed pressing the valve piston (7) into the valve seat (9). The valve piston can be fixed via the locking nut (10).

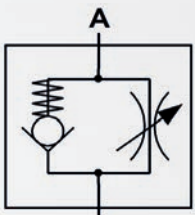
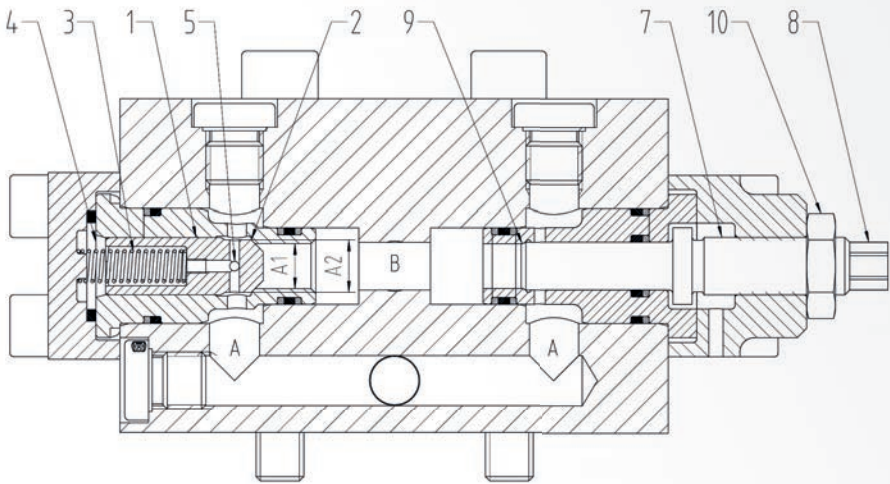
Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≤ 320
Direction of flow	B→A
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection	Filter fineness 100µm
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
- Viscosity	0,6 bis 100 mm²/s
Use of other pressure fluids on request.	

Example Throttle- Non-return valve DN10:

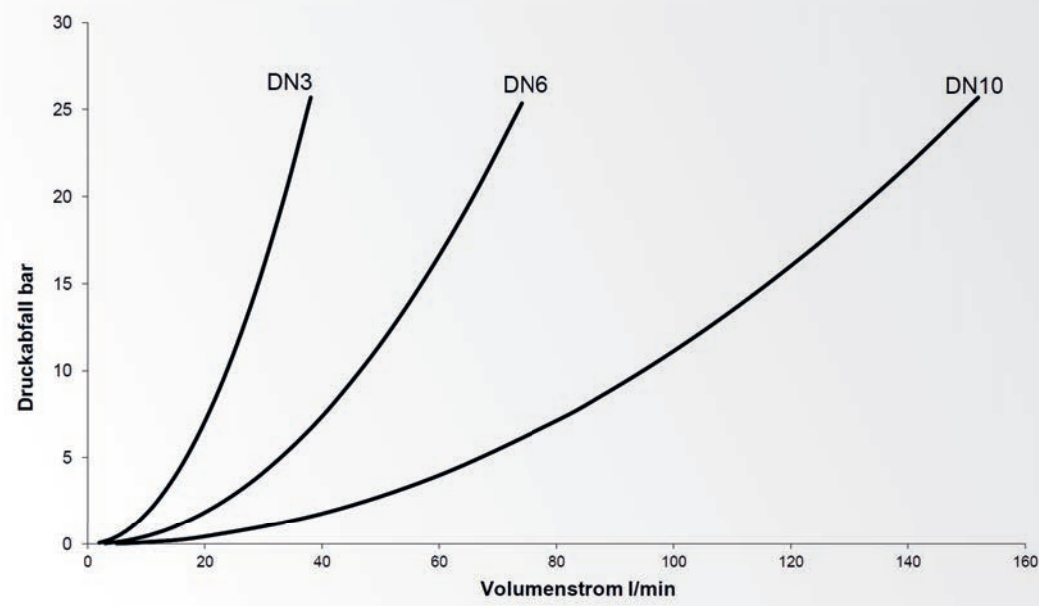
Symbol



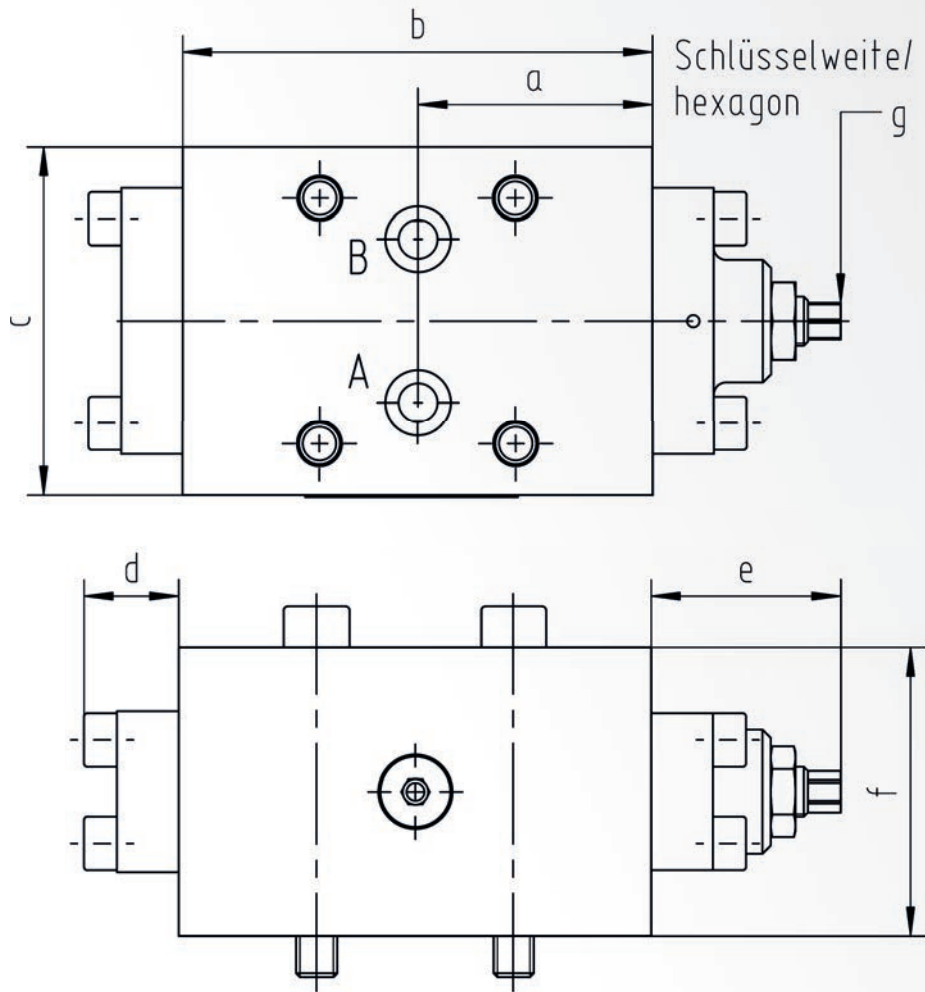
Control surface, hydr. forces
B-channel: Area-A1, open valve
A-Channel: Area-A2, close valve
Control surface (4) = $A2 > A1$

Characteristic curves throttle-non-return valves DN3 - DN 10

$\Delta P - Q$ characteristic curves



Dimension sheet throttle-non-return valve



Order information throttle-non-return valve

Included in the scope of supply											
Mounting screws for the non-return valve											
Nominal size	Weight [kg]	max. Pres- sure [bar]	Control ratio [A2/A1]	Dimensions [mm]						Article number	
				a	b	c	d	e	f		
DN3	1,3	320	1,5	35	70	50	21	40	40	4	6356656
DN6	1,6	320	1,5	37,5	75	50	21	40	50	5	6356451
DN10	5,6	320	1,35	57,5	115	85	23	46	70	9	6356907

Throttle shut-off valve C-DR

DN10 - DN32 PN 320, PN500

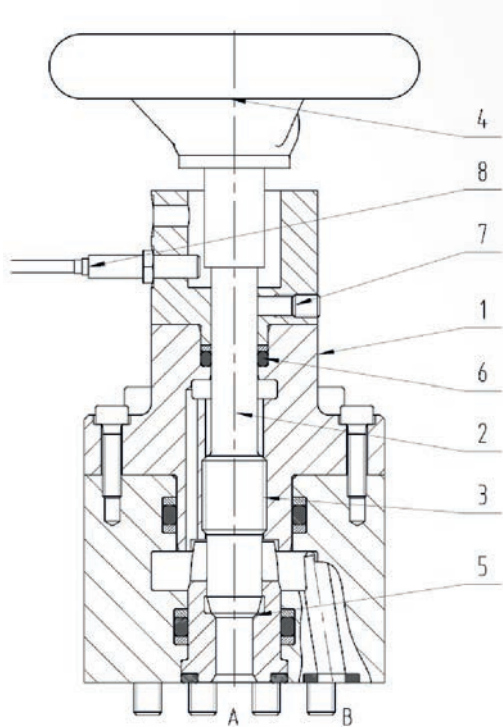
Features

- Throttle shut-off valve controlling liquid media
- The valve is used to connect and shut off hydraulic lines, shut-off function
- A volume flow can be set via the selected valve piston position, throttle function
- Depending on the arrangement of the proximity switches, the opened or closed position is monitored
- Valve piston and seat are coupled and close hydraulically „leak-free“.
- Valve fastening structural plate form with a Hauhinco connection diagram
- Valve parts made of corrosion-resistant stainless steel

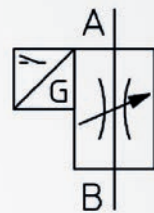
Function of throttle shut-off valve

The valve piston (2) guided within the valve body and cover (1) is adjusted by turning the handwheel (4) axially via the thread (3). By turning it clockwise, the valve is closed pressing the valve piston (2) into the valve seat (5). The thread (3) of the valve piston has a self-locking action; the hydraulic axial forces at the valve piston result in frictional forces within the thread (3) and on the piston seal (6) fixing the valve piston within the position. In addition, the valve piston can be fixed via the locking screw (7). The proximity switch (8) is arranged in the bottom position and monitors the closed valve position. In order to keep the actuation forces at the valve to a minimum, for this valve the preferred direction of flow is to be selected from the B-channel to the A-channel; depending on the valve size this specification may vary, see Valve data. To enable adjustment under pressure for larger nominal value and thus larger hydraulic surfaces, these valves are additionally equipped with a bearing.

Example non-return valve C-DR:



Symbol



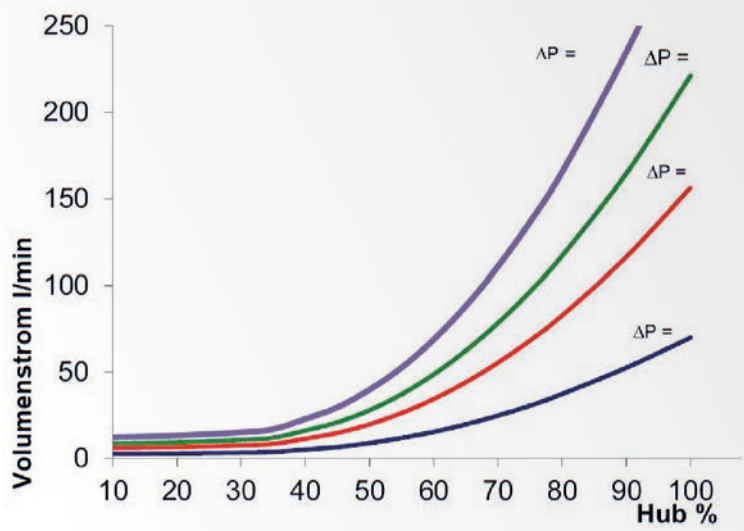
Technical data

measured with HFA medium 97/3%, at 20°C

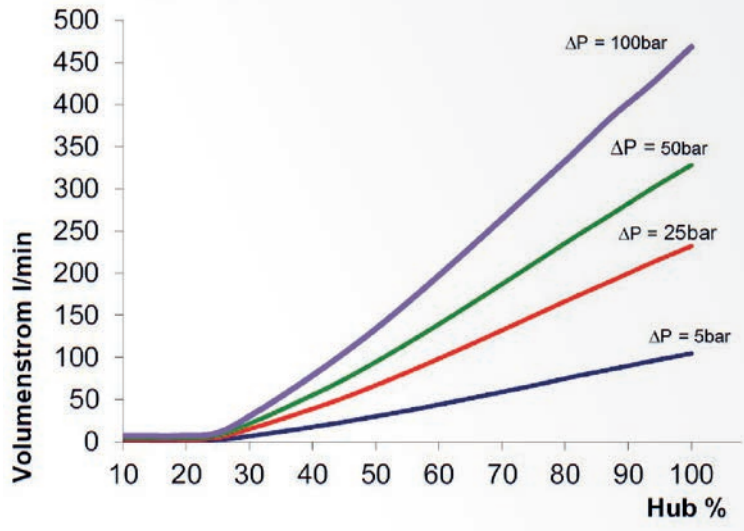
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts Material Seals	Stainless steel NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≤ 320bar, ≤500bar, see Order information
Direction of flow	A→B, , see Order information
Pressure fluid - Medium - Temperature range - Medium - Quality - min. filter fineness connection	Water, HFA 5 bis 40°C see Hauhinco media requirement, water, HFA Filter fineness 100µm
Pressure fluid - Medium - Temperature range - Medium - Quality - Viscosity	Mineral oil HLP according to DIN51624-2 5 bis 50°C Cleanliness class -/19/16 according to ISO 4406 0,6 bis 100 mm²/s
Use of other pressure fluids on request.	
Ranges of application	
Shut-off function	Monitoring of the closed valve position for a normal operation, e.g. pressure relief, ventilation, drain valve, pressure shut-off for safely shutting off a hydraulic system.
	Monitoring of the open valve position for the normal operation, e.g. safe pressure application, shut-off only during maintenance work
Throttle function	Setting of the volume flow as required, e.g. setting the speed of motion at the consumer.

Characteristic curves throttle shut-off valve C-DR DN10 - DN 32

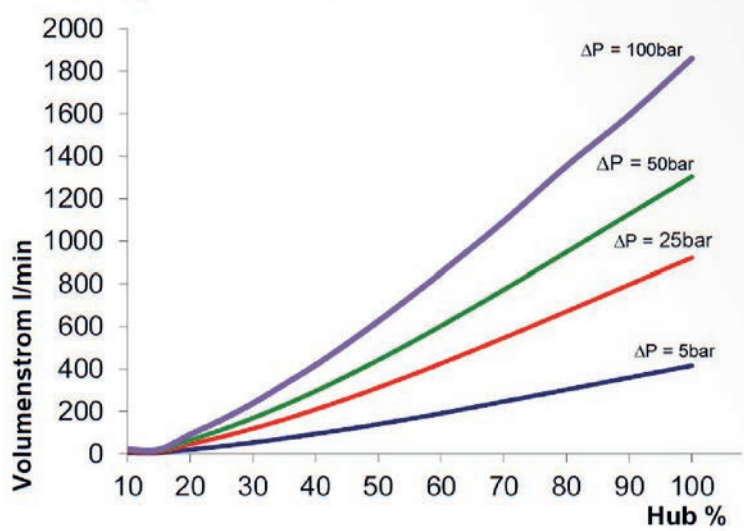
ΔP – Q characteristic curves DN10



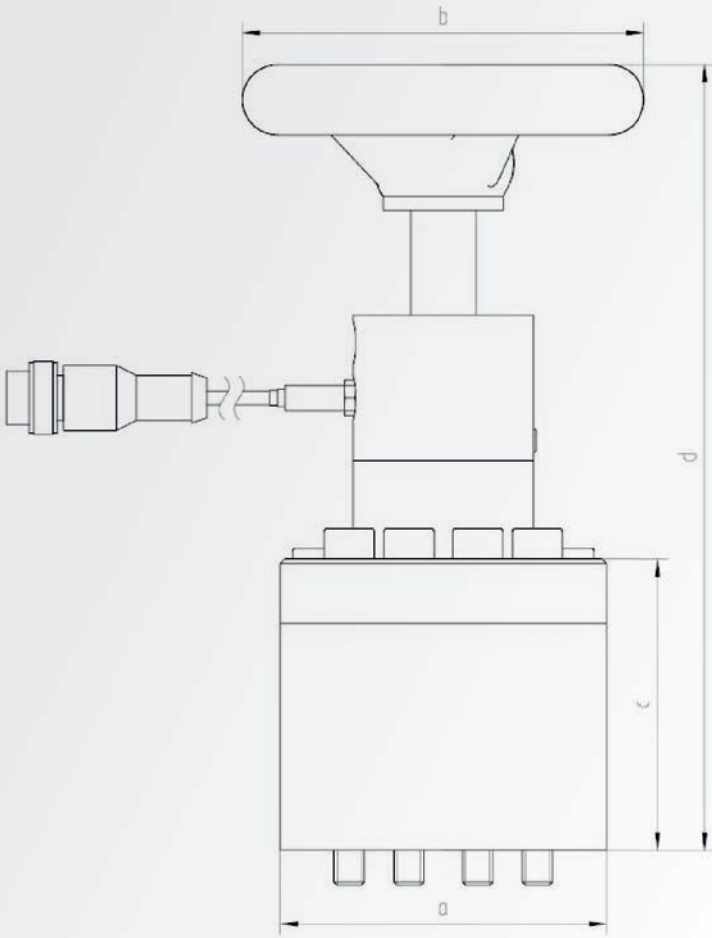
ΔP – Q characteristic curves DN16



ΔP – Q characteristic curves DN32



Dimension sheet throttle shut-off valve C-DR



Order information

Included in the scope of supply									
Mounting screws for the non-return valve									
Designation	Nominal size	Weight [kg]	max. Pres- sure [bar]	with bearing	Dimensions [mm]				Article number
					a	b	c	d	
Throttle shut-off valve C-DR	DN10	2,0	320	no	65	80	58	157	6274269
Throttle shut-off valve C-DR	DN10	1,8	500	no	65	-	68	97	6398480
Throttle shut-off valve C-DR	DN16	5,7	320	yes	100	125	60	203	6606267
Throttle shut-off valve C-DR	DN16	7,3	500	yes	120	125	60	203	6603266
Throttle shut-off valve C-DR	DN25		320	no					
Throttle shut-off valve C-DR	DN32	14,5	320	yes	140	125	96	256	6603268

Technical changes reserved.
All data and figures are considered non-binding.

Descaling valves

2/2 Way valve, X, Y controlled, DN16, DN32, PN420

Features

- Hydraulically actuated directional seat valve controlling liquid media
- Passively controllable 2/2-way valve with 1-stage control logic
- Valve seat sleeve equipped with a low-friction seal thus, the valve piston moves easily and without inner leakages
- Valve piston and seat are coupled and close hydraulically „leak-free“
- The valve is actuated via a 3/2-way pilot valve

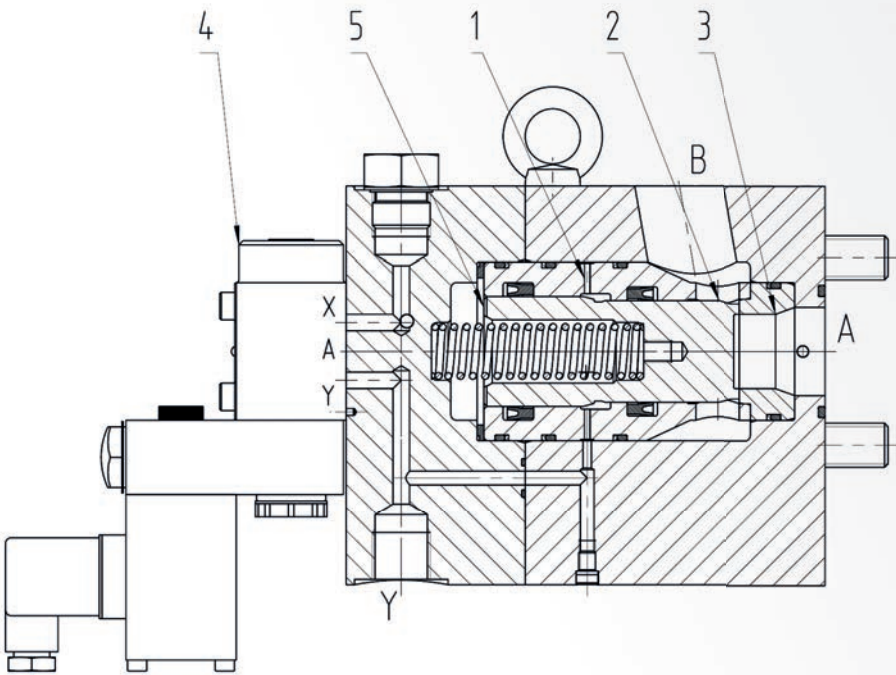
Function 2/2-way valve

The control pressure (X) for switching the valve is tapped internally from the system pressure in port A. The valve piston (2) guided within the Valve seat sleeve (1) is pressed into the valve seat (3) by the hydraulic power and the spring force generated by the control pressure (X) via the pilot valve (4) on the control surface (5). Thus, the lines (A, B) are separated.

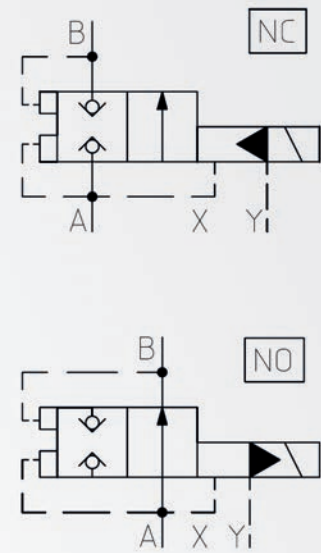
By switching the pilot valve (4), the control surface (5) is depressurized and the hydraulic power along the lines A can be used to lift the valve piston (2) off the valve seat (3), i.e. as soon as the hydraulic pressure is applied to the lines A, the valve piston (2) moves into the opened position up to the mechanical end position. Thus, the lines (A, B) are connected.

The pilot volume in the control room is discharged to the Y line via the Y connection of the pilot valve (4). Depending on the function of the pilot valve (4), the basic valve position can be specified normally closed (NC) or normally open (NO).

Example 2/2-way valve X, Y– controlled (NC):



Symbol



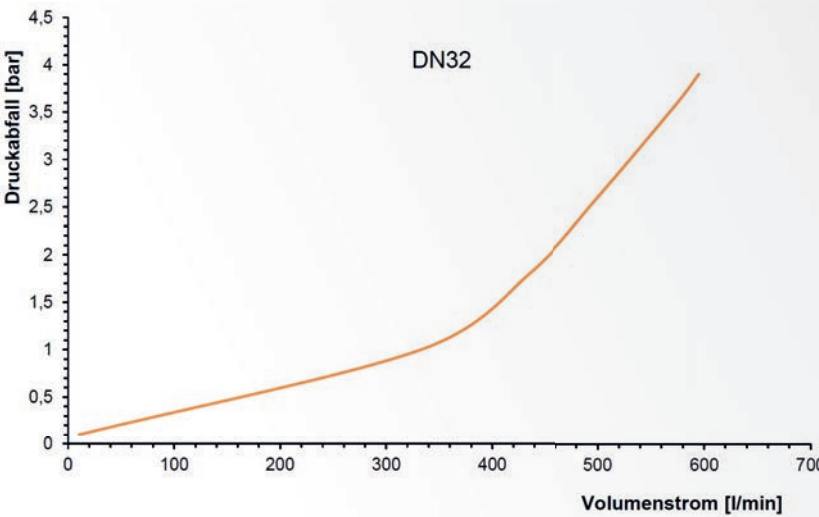
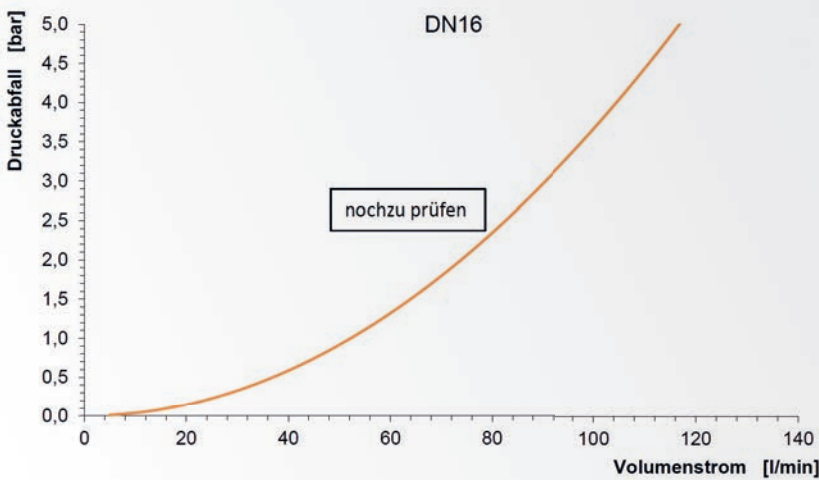
Technical data

measured with HFA medium 97/3%, at 20°C

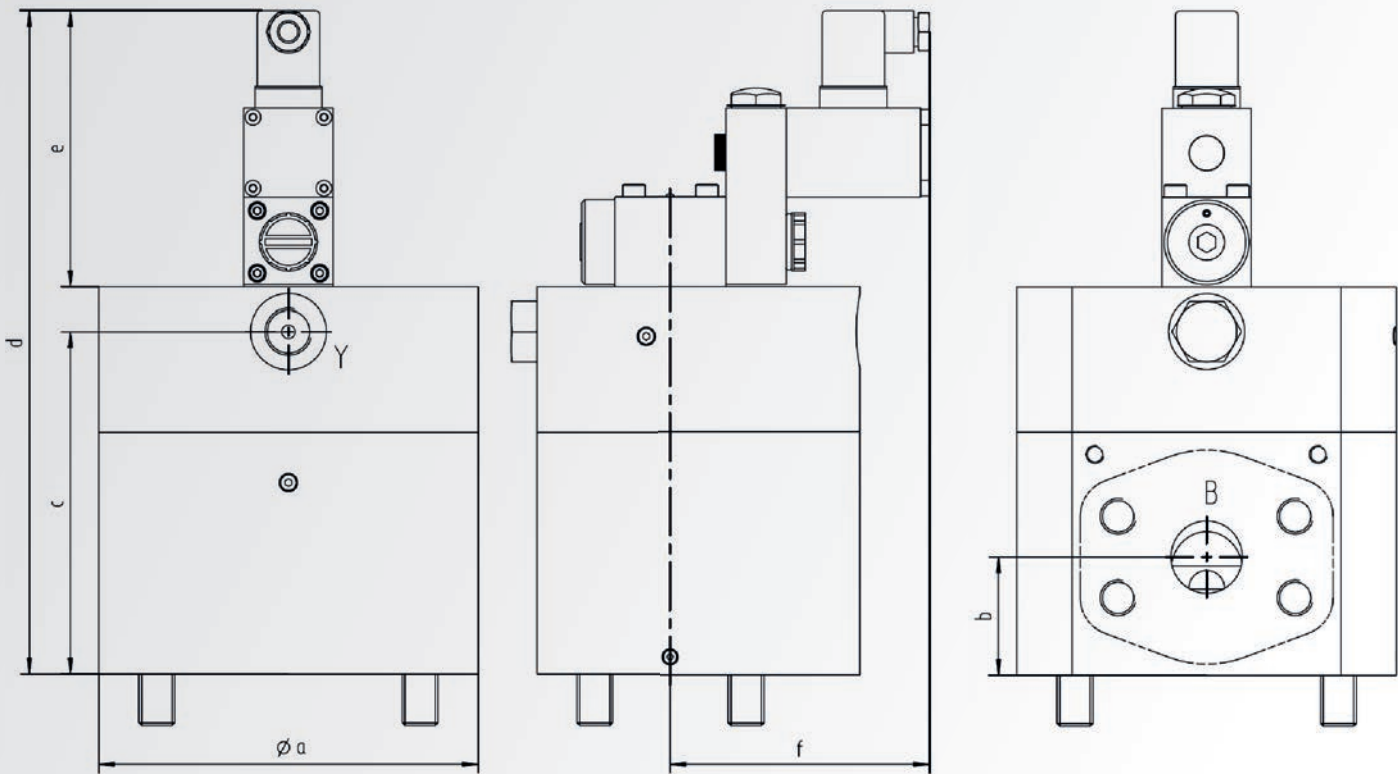
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≥ 20 bar ≤ 420 bar
Hydraulic pressure connector Y	≤ 5 bar
Direction of flow	A→B
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection A, B	Filter fineness 25µm
Use of other pressure fluids on request.	
Electric	
Magnet	
- Voltage	24 VDC, other voltages on request
- Power consumption	see Order information
- Operating time	100% OT
- Degree of protection acc. to EN60529	IP65
- max. switching rate	1Hz

Descaling valves

Δp –qv characteristic curves DN16 max. open valve, dyn. viscosity 1mm2/s



Dimension sheet descaling valve



Item	Designation	Article number
1	2/2-way valve DN32- PN420, X,Y controlled, NO	6600965
1	Pilot valve DN3	6545777

12 Order information 2/2 Way valve, X, Y controlled

Included in the scope of supply

Mounting screws for the 2/2-way valve assembly and the pilot valve

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]							B	Y	Article number valve
				a	b	c	d	e	f				
DN16	10,0	420	NC	105	33	111	252	124	116	DIN 3852-X-G3/4 A	DIN 3852-X-G1/4 A	-	
DN16	10,0	420	NO	105	33	111	252	124	116	DIN 3852-X-G3/4 A	DIN 3852-X-G1/4 A	-	
DN32	28,0	420	NC	170	53	154	298	124	116	SAE 1-1/2 Serie 6000 ISO 6162-2	DIN 3852-X-G1/2 A	6600965	
DN32	28,0	420	NO	170	53	154	298	124	116	SAE 1-1/2 Serie 6000 ISO 6162-2	DIN 3852-X-G1/2 A	6600965	

Erforderliches Pilotventil

Nominal size	Basic position	Actuation	Current	Article number pilot valve
DN3	A→T NO	Electromagnet, voltage 24V DC, Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Zdiode, IP65	1,0 A	6545769
DN3	P→A NO		1,0 A	6545777
DN3	A→T NO		1,0 A	6545769
DN3	P→A NO		1,0 A	6545777

Order example

Technical changes reserved.
All data and figures are considered non-binding.

Descaling valves insert

2/2-way valve insert X, Y controlled, DN50 - DN125, PN420

Features

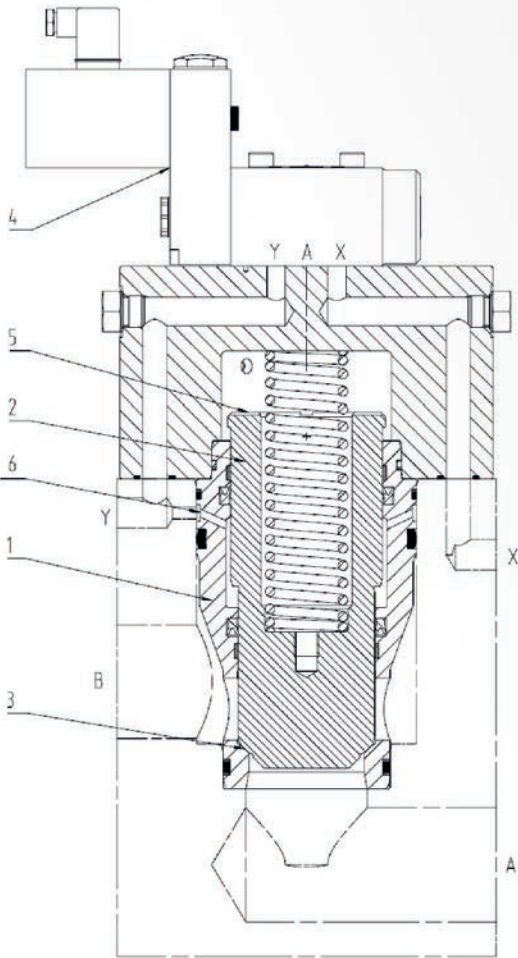
- Hydraulically actuated directional seat valve controlling liquid media
- Passively controllable 2/2-way valve with 1-stage control logic
- Valve seat sleeve equipped with a low-friction seal
- Valve piston and seat are coupled and close hydraulically „leak-free“
- The valve is actuated via a 3/2-way pilot valve
- The switching position can optionally monitored by a proximity switch for open and close position
- Installation space according Hauhinco standard

Function 2/2-way valve insert

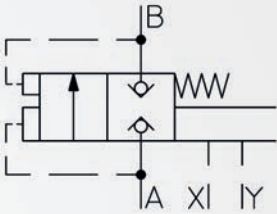
The valve piston (2) guided within the Valve seat sleeve (1) is pressed into the valve seat (3) by the hydraulic power and the spring force generated by the control pressure (X) on the control surface (5). Thus, the lines (A, B) are separated.

By switching the pilot valve (4), the control surface (5) is depressurised and the hydraulic power along the lines (A, B) can be used to lift the valve piston (2) off the valve seat (3), i.e. as soon as the hydraulic pressure is applied to the lines (A, B), the valve piston (2) moves into the opened position up to the mechanical end position. Thus, the lines (A, B) are connected. The ring-surface (6) of the valve piston (2) must be connected to the leakage line (Y) of the manifold.

Beispiel 2/2-Wege Einbauventil X, Y gesteuert



Symbol



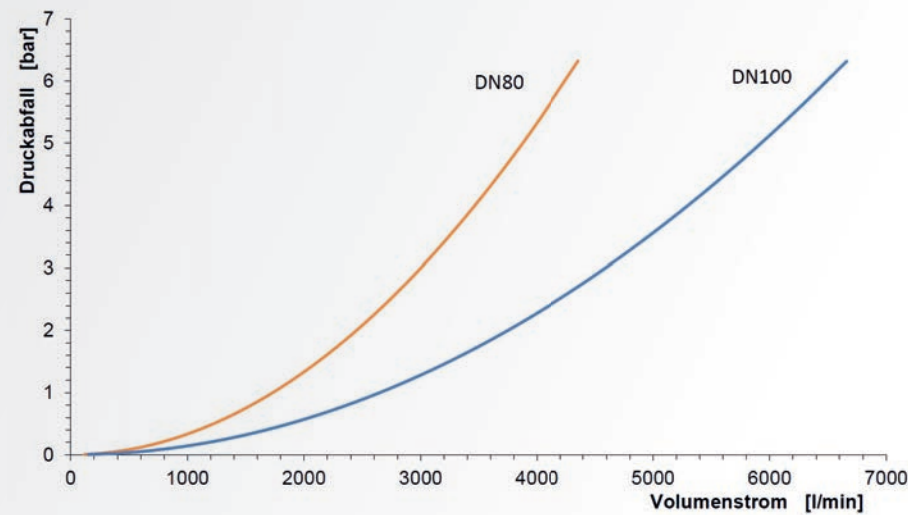
Control surfaces, hydraulic forces
A- channel: Area -A1, valve passively open
B- channel: Area -A2, valve passively open
Control surface (5): A3, close valve actively

Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze
Material Seals	NBR, PTFE, PUR
Hydraulic	
Hydraulic pressure connector A, B	≥ 20 bar ≤ 420 bar
Hydraulic pressure connector X	≥ 20bar ≥ hydr. Druck am Anschluss A, B ≤ 420bar
Hydraulic pressure connector Y	≤ 10 bar
Direction of flow	any
Area sum	A1+A2 = A3
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection A, B	Filter fineness 100µm
- min. filter fineness connection X	Filter fineness 25µm
Use of other pressure fluids on request.	
Electric	
Magnet	
- Voltage	24 VDC, andere Voltageen auf Anfrage
- Power consumption	see Order information
- Operating time	100% OT
- Degree of protection acc. to EN60529	IP65
- max. switching rate	1Hz
Induktiver Näherungsschalter	
- Ausgang	NO contact, PNP
- Voltage	10 - 30 VDC
- Current	0,200 A
- Switching distance	1,5 mm
- Electrical connection	Three wire, plug connection M12x1

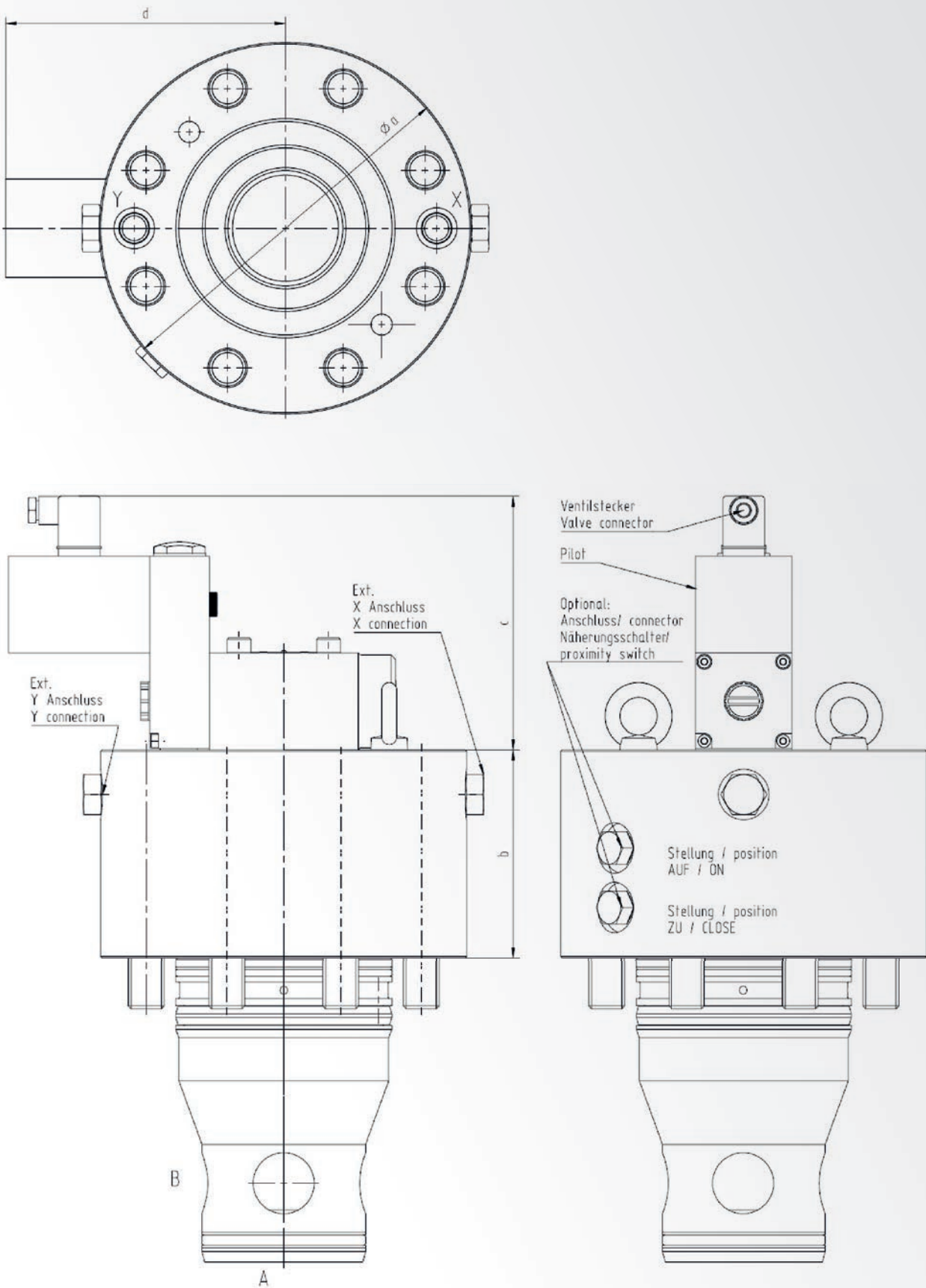
Δp –qv characteristic curves DN80 - DN100 max. open valve, dyn. viscosity 1mm2/s



Technical changes reserved.
All data and figures are considered non-binding.

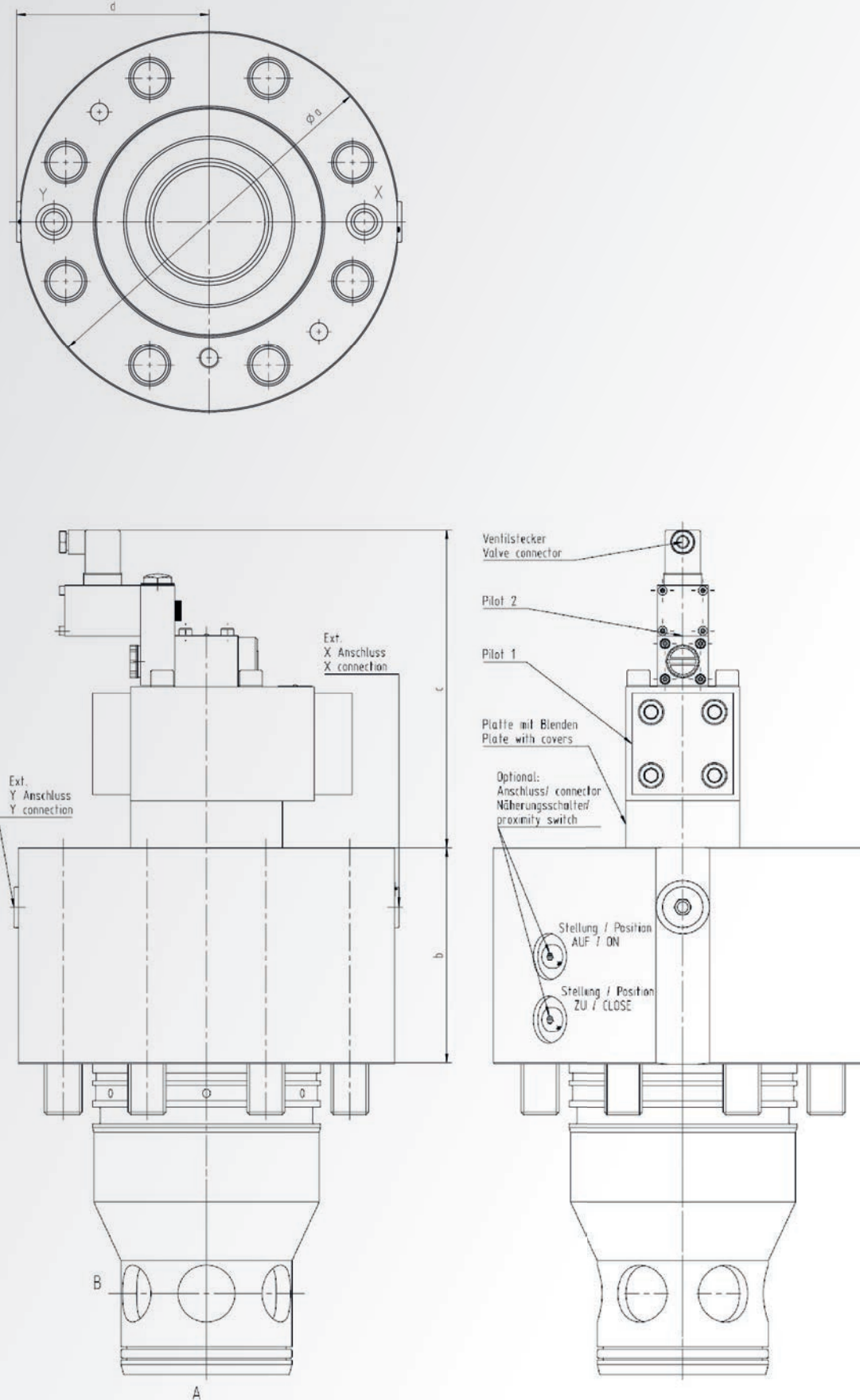
Dimension sheet 2/2-way valve insert, single-stage pilot control

2/2-way valve insert, X, Y controlled, DN50 - DN80, PN420



Dimension sheet 2/2-way valve insert, two-stage pilot control

2/2-way valve insert, X, Y controlled, DN100 - DN125, PN420



Technical changes reserved.
All data and figures are considered non-binding.

Order information

Included in the scope of supply
Mounting screws for the 2/2-way valve insert assembly
Mounting screws for the pilot valves 1 and -2
Cable socket for the magnet

2/2-way valve insert, single-stage pilot control DN50 – 80, PN420, X, Y

Pilot valve

Position monitoring

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]				Article number valve	Installation space	Nominal size	Basic position	Actuation	Current	Article number valve	Designation	Article number monitoring
				a	b	c	d									
DN50																
DN65												Electromagnet, voltage 24V DC Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65			Inductive proximity switch Output – PNP, NO contact Voltage 10 – 30 VDC	2325349
DN80	70,0	420	NC	246	140	170	185	6602296	6600369	DN10	P→A NO		2,3 A	6235549		

2/2-way valve insert, two-stage pilot control DN50 – 80, PN420, X, Y

Pilot valve 1, hydraulically actuated, X, Y internally

Pilot valve 2

Nominal size	Weight [kg]	max. Pressure [bar]	Basic position	Dimensions [mm]				Article number Einbauventil	Installation space	Nominal size	Basic position	Article number plate	Article number cover	Article number valve	Nominal size	Basic position	Actuation	Article number valve
				a	b	c	d											
DN100	128,0	420	NC	300	171	251	150	66...	66...	DN16	P→A NO	6569714	6532292	6235549	DN3	P→A NO	Electromagnet, voltage 24V DC Cable socket magnet DIN43650 – form A: max. 100VA, LED display + Z-diode, IP65	6545599
DN125																		

Order example

Item	Designation	Article number	Item	Designation	Article number
1	2/2-way valve insert, DN80-PN420-X,Y controlled, single-stage pilot control	6602296	1	Installation space	6600369
1	Pilot valve DN10	6235549	1	Inductive proximity switch Output – PNP, NO contact Voltage 10 – 30 VDC	2325349

Position monitoring

Designation	Article number monitoring
Inductive proximity switch Output – PNP, NO contact Voltage 10 – 30 VDC	2329573

Pump bypass valve H30, H300

Pilot valve V300 and control pcb with filter

Features

- Mechanically - hydraulically actuated valve
- Pump bypass valve consisting of the 2/2-way valve and the non-return valve
- Pilot valve as a separate unit to be attached to the pump bypass valve
- Control pcb with filter inserts in an intermediate plate design
- The valve seats seal hermetically preventing internal leaks
- All parts are made of corrosion-resistant materials, and they are easily replaceable
- Attachment, flange design to be mounted directly to pumps

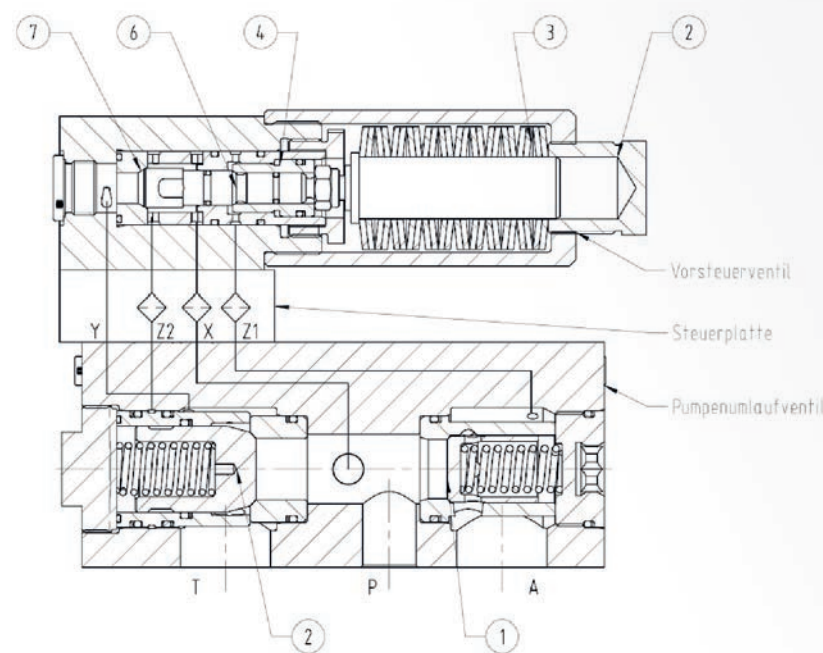
Control function

The pump bypass valve, the control pcb and the pilot valve form a valve unit controlling a pump in a pressure supply system with a pressure accumulator. Depending on the system pressure, the valve controls the working cycle of the pump, „load accumulator“ or „depressurised bypass“. The P-connector is connected to the pressure port of the pump, the A-connector to the pressure line of the system and the T-connector to the pressure-free tank.

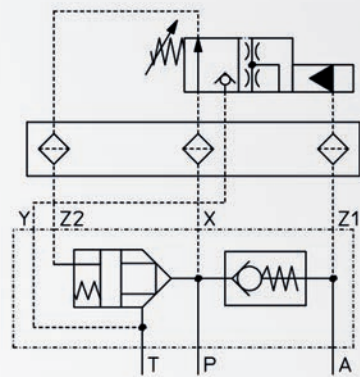
The flow of the pump enters the pump bypass valve at the P-connector. In the basic position, the pressure generated by the pump is used to close the 2/2-way valve (2) via the X- and the Z2-line. This has the effect that the non-return valve (1) opens, and the pump flow is supplied to the system via the A – connector.

At the pilot valve, the required pressure value „PE“ is set by means of the adjusting screw (3). Depending on the setting value, the springs (4) generate a force pressing the valve piston (6) into the valve seat (7). Thus, the Y-line is shut-off from the X- and Z2-line, and the generated pump pressure closes the 2/2-way valve. The pilot valve changes over, when the hydraulic power resulting from the pressure exceeds the power set at the springs (4) at the A- and thus at the Z1-connector. Then, the piston valve (5) lifts the valve piston (6) off the valve seat (7). Thus, the control surface of the 2/2-way valves (2) is depressurised, it opens and connects the lines „P, T“ with each other. Thus, the pump flow is carried pressureless to the tank. Simultaneously, the non-return valve (1) closes and shuts off the backflow from the system. The valve piston (6) remains in the open position until the system pressure at the A-connector falls short of the set pressure value „PE“ minus the value of the switching hysteresis; the 2/2-way valve (2) also remains open for this period.

Valve group for the pump control



Symbol



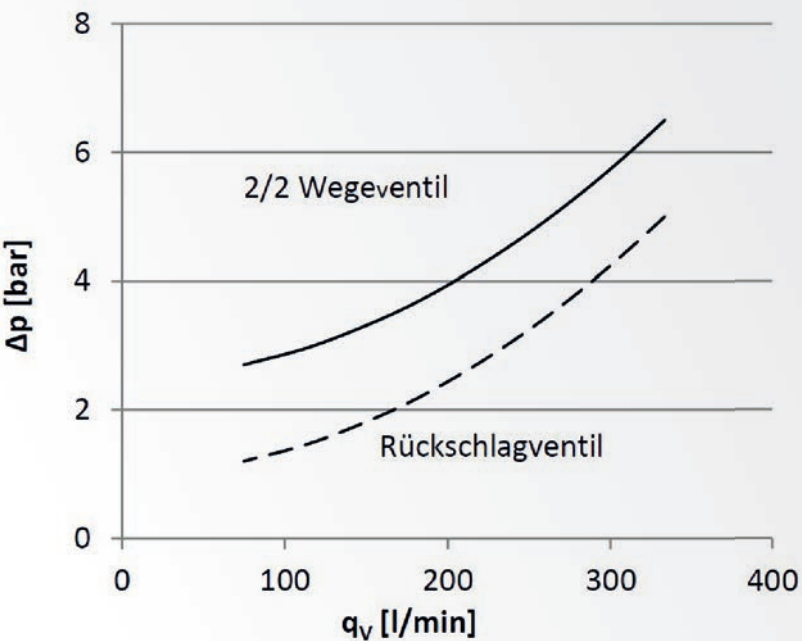
Technical data

measured with HFA medium 97/3%, at 20°C

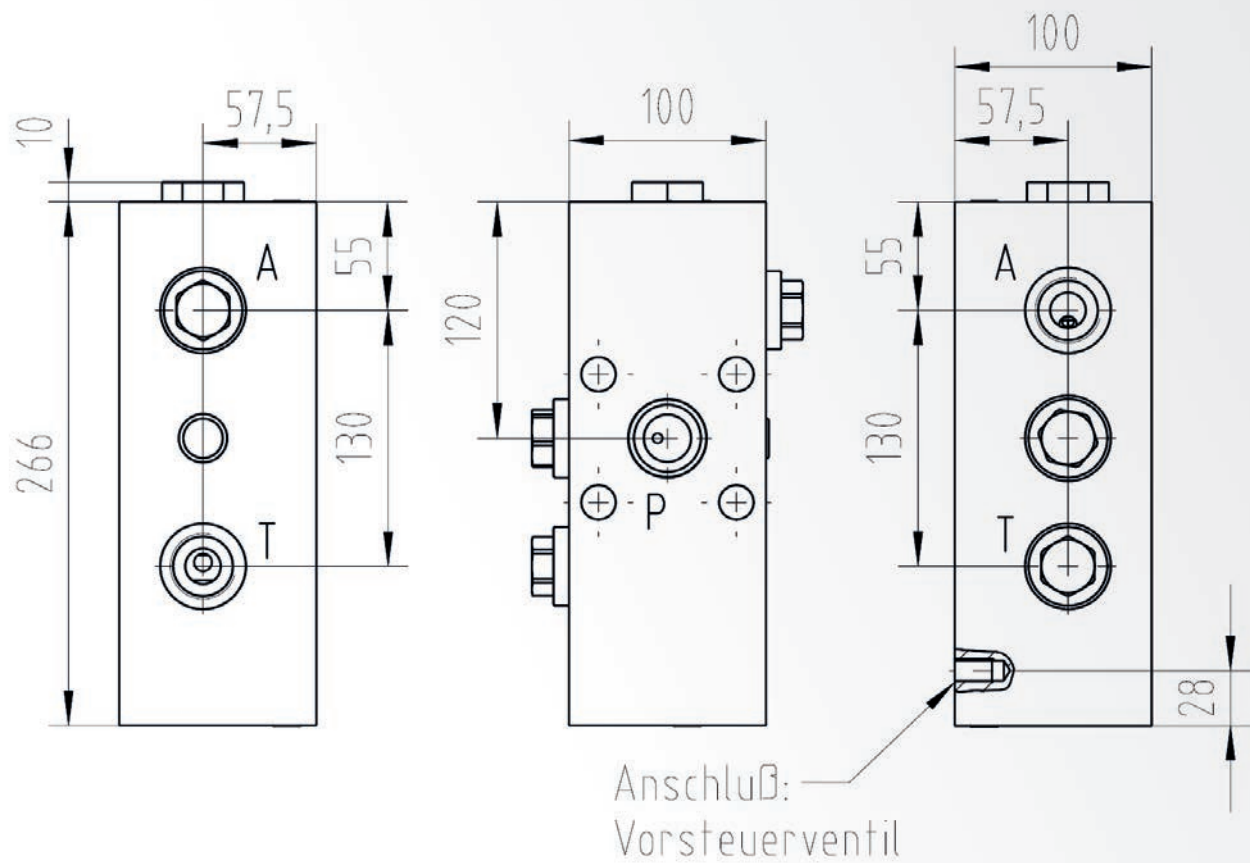
General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel, bronze
Material Seals	NBR, PTFE, PUR
Hydraulic	
Pump bypass valve H30, H300	
Hydraulic pressure connector P, A, M	≤ 400 bar
Hydraulic pressure connector X, Z1, Z2	≤ 400 bar
Hydraulic pressure connector Y	≤ 10 bar
Direction of flow	P→T, P→A
Pilot valve V300	
Hydraulic pressure connector X, Z1, Z2	≤ 400 bar
Hydraulic pressure connector Y	≤ 10 bar
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection P, A, T	Filter fineness 100µm
- min. filter fineness connection X, Z1, Z2	Filter fineness 25µm (control pcb with filter inserts)
Pressure fluid	Mineral oil HLP according to DIN51624-2
- Medium - Temperature range	5 bis 50°C
- Medium - Quality	Cleanliness class -/19/16 according to ISO 4406
max. switching rate of the valve unit	0,2 Hz
Note: The maximum decrease volume flow of the consumer and the size of the pressure accumulator control the switching rate of the pump circulation control system.	
Use of other pressure fluids on request.	

Pump bypass valve H300

Δp - q_v characteristic curves

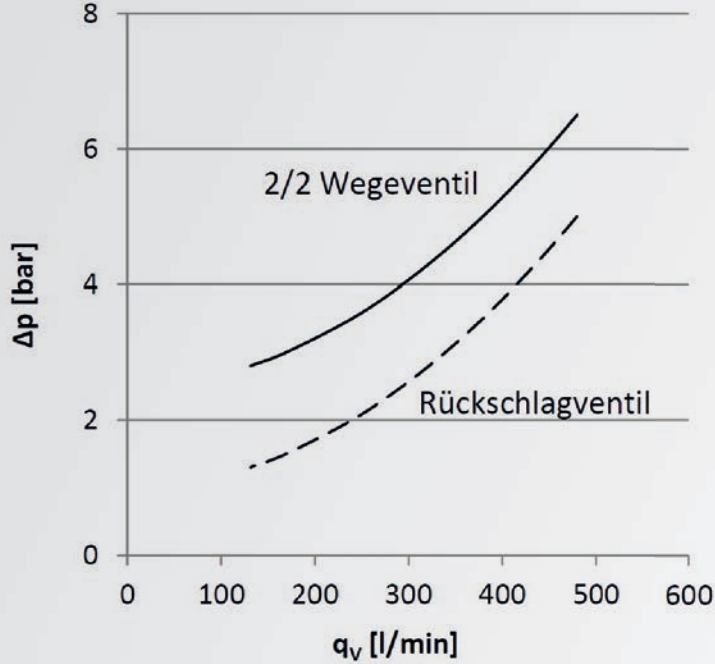


Dimension sheet pump bypass valve H300

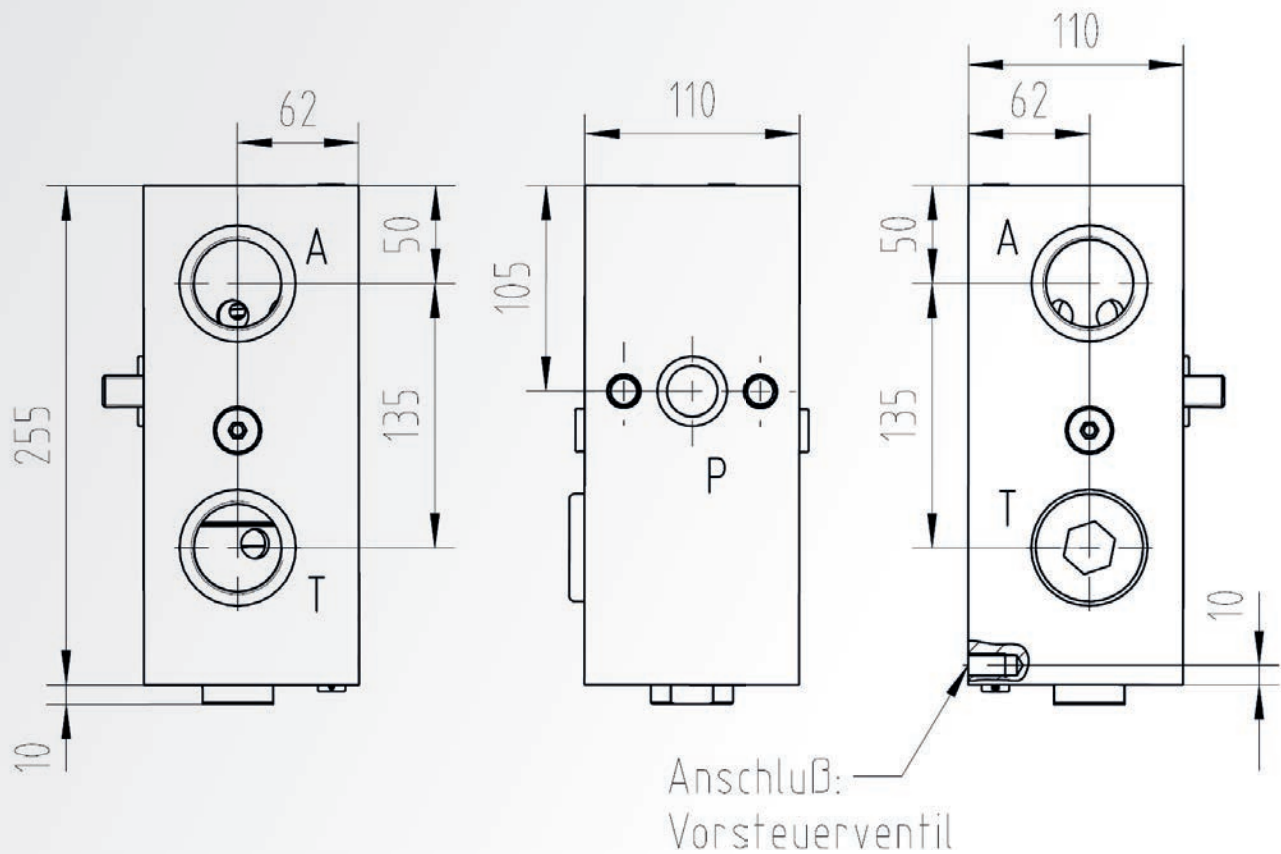


Pump bypass valve H30

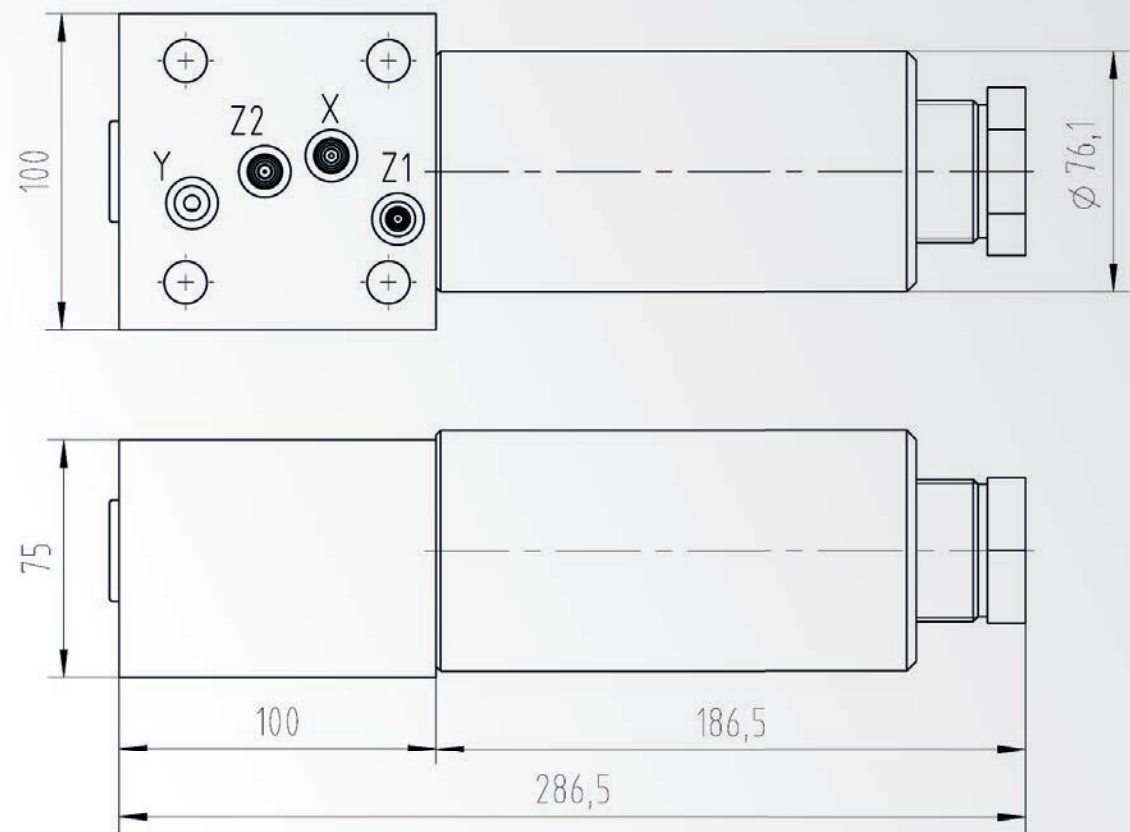
Δp - q_v characteristic curves



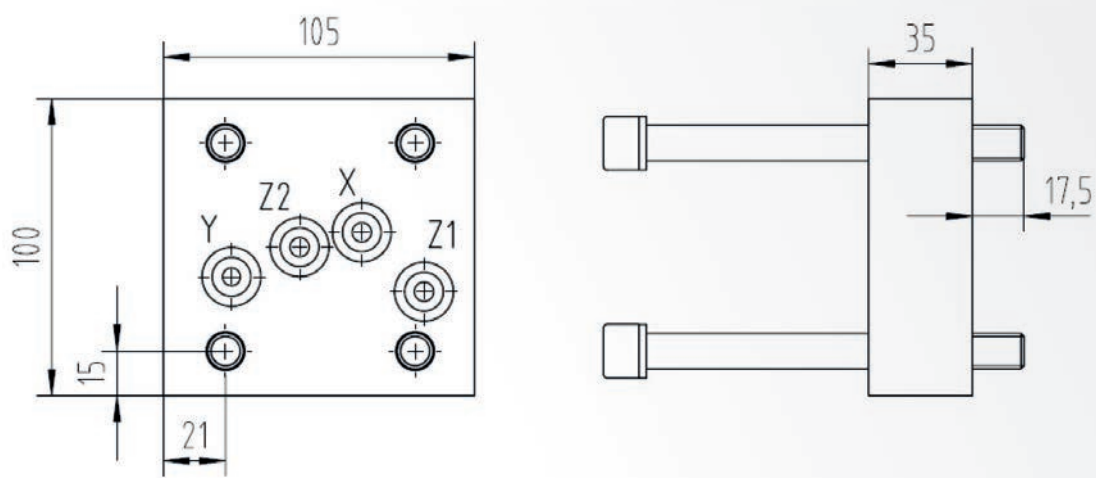
Dimension sheet pump bypass valve H30



Pilot valve V300



Control pcb with filter



Order information

Included in the scope of supply					
Mounting screws of the valves					
Designation	Nominal size	Weight [kg]	Setting range [bar]	Switching hysteresis	Article number
Pump bypass valve H300	DN25	20,0			6264956
Pump bypass valve H30	DN30	20,0			6264948
Pilot valve V300/10		10,0	230-400	10%	5100682
Pilot valve V300/20		10,0	230-400	20%	5100658
Control pcb with filter		3,0			6328423

Pump Unloader Control

DN16 - DN65, PN420

Features

- Electro- hydraulically actuated valve
- Pump unloader control consisting of 2/2-way valve, non-return valve and pre-control valve with connection plate and filter
- The valve seats seal ae hermetically sealed and prevent internal leaks
- Internal pilot pressure (no external pressure source required)
- All parts are made of corrosion-resistant materials and are easily replaceable
- flange design for direct mounting to pumps or separate blocks

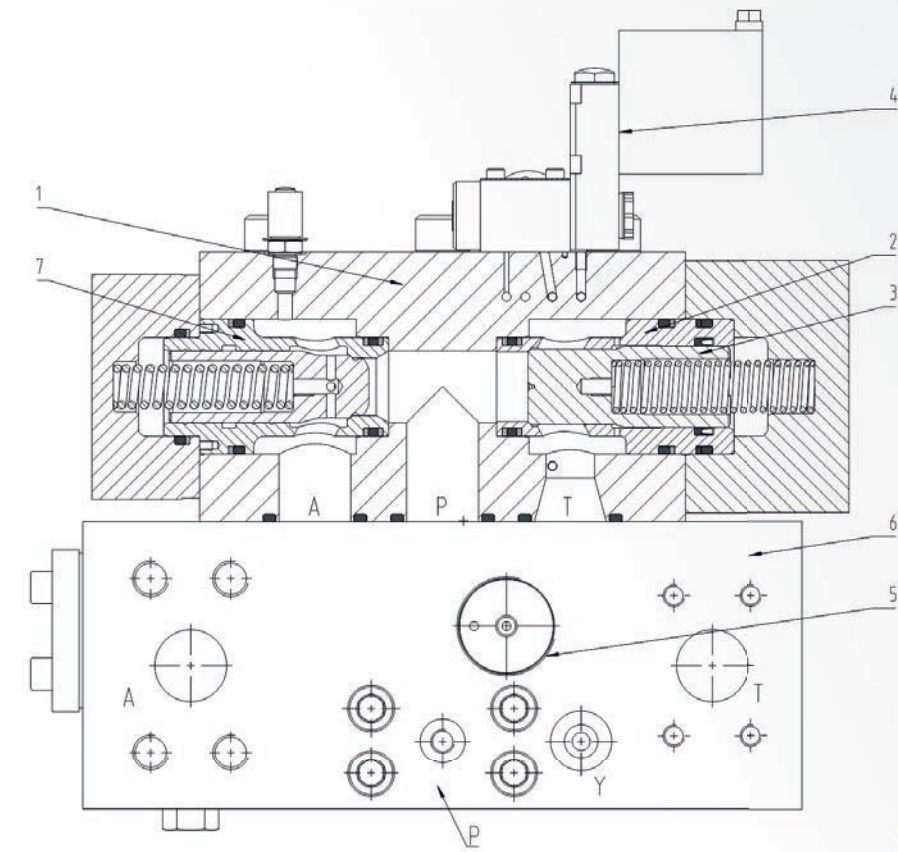
Control function

The pump bypass valve (1), the pilot valve (4) and the connection plate (6) form a valve unit for controlling a pump in a pressure supply system. Depending on the system pressure, the valve controls the work cycle of the pump, „pressure build-up“, „load accumulator“ or „pressure less circulation“. The P port is connected to the pressure port of the pump, the A port to the pressure line of the system and the T port to the pressure less tank.

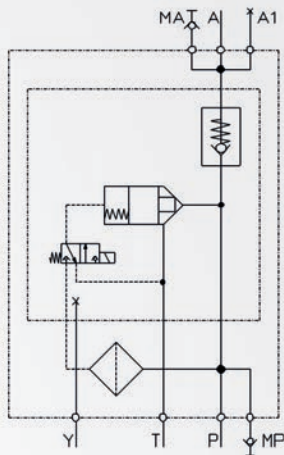
The flow of the pump enters the pump bypass valve at the P connection. The pump flow is connected to the pressure port of the pilot valve (4) via the filter (5). In the unload position, the pressure on the control piston (3) of the 2/2-way valve (2) on the control side is discharged, the 2/2-way valve is open, and the pump flow is discharged from P to T without pressure.

By switching over the pilot valve (4), the piston (3) is pressurized on the control side and the 2/2-way valve (2) closes and blocks the connection P to T. At the same time, the check valve (7) opens and connects the lines P to A. The pump flow is supplied via the A port, to the system.

Valve group for the pump control



Symbol



Technical data

measured with HFA medium 97/3%, at 20°C

General	
Weight	see Order information
Installation position	any
Ambient temperature	-10 bis 50°C (hydraulic fluids, heed standard requirements)
Material Valve parts	Stainless steel
Material Seals	NBR, PTFE, POM
Hydraulic	
Pumpenumlaufventil H30, H300	
Hydraulic pressure connector P, A, A1	≤ 420 bar
Hydraulic pressure connector MP, MA	≤ 420 bar
Hydraulic pressure connector Y	≤ 2 bar
Hydraulic pressure connector	≤ 2 bar
Direction of flow	P→T, P→A
Pressure fluid	Water, HFA
- Medium - Temperature range	5 bis 40°C
- Medium - Quality	see Hauhinco media requirement, water, HFA
- min. filter fineness connection A, B	Filter fineness 100µm
- min. filter fineness connection X	Filter fineness 25µm (control pcb with filter inserts)
Druckflüssigkeit	Mineral oil HLP according to DIN51624-2
- Medium - Temperaturbereich	5 bis 50°C
- Medium - Qualität	Cleanliness class -/19/16 according to ISO 4406
max. switching rate of the valve unit	0,2 Hz
Note: The maximum decrease volume flow of the consumer and the size of the pressure accumulator control the switching rate of the pump circulation control system.	
Use of other pressure fluids on request.	

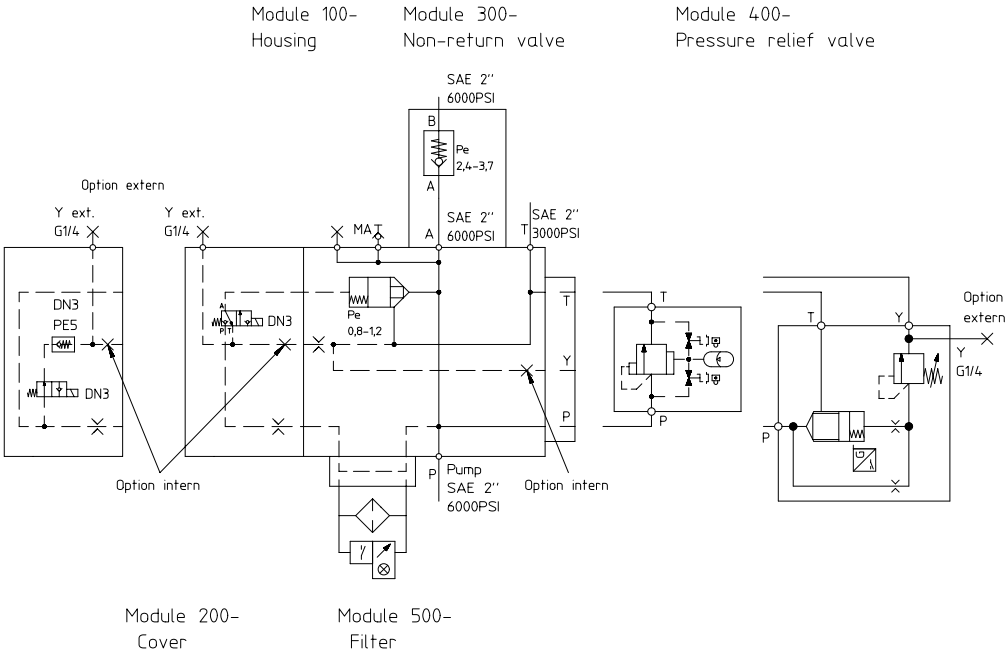
The latest generation of Hauhinco pump circulation controls has a modular design and can be individually assembled as a construction kit.

See example drawing number 6602632, on the following page.

All other pump controls are available on request.

Ausgabe issue	Anzahl quantity	Änderung/revision	Datum date	Name
0				

Pump unloader control		
Type code	Item no.	Weight [kg]
PU40-E-3I-R-S-F-V0-33	6602810	113
PU40-E-3I-R-S-F-V0-32	6603243	113
PU40-E-3I-R-S-F-V0-31	6603328	115
PU40-E-3I-O-S-F-V0-32	6603389	96



Example:

PU40	I	3I	R	S	F	O	32
------	---	----	---	---	---	---	----

Position	item No.	Quantity	Module	Variant	Explanation	Type code
100	6602332	1	Housing	Y intern	Leakage pressure relief valve, Y internal	I
101	6603188	1	Housing	Y extern	Leakage pressure relief valve, Y extern	E
200	6602337	1	Cover	2/2 way	with Non-return valve, Y intern	2RI
201	6603190	1	Cover	2/2 way	with Non-return valve, Y extern	2RE
202	6603191	1	Cover	2/2 way	without Non-return valve, Y intern	2I
203	6603192	1	Cover	2/2 way	without Non-return valve, Y extern	2E
204	6602349	1	Cover	3/2 way	Y intern	3I
205	6603189	1	Cover	3/2 way	Y extern	3E
300	6602436	1	Non-return valve		with Non-return valve	R
					without Non-return valve	O
400	6167861	1	Pressure relief valve		Pressure relief valve with hydr. accumulator	S
401	6601272	1	Pressure relief valve		without Pressure relief valve	O
402		1	Pressure relief valve		manuel pressure relief valve, Y intern	MI
403		1	Pressure relief valve		manuel pressure relief valve, Y extern	ME
500	6531547	1	Filter		Threaded filter	F
501	6602597	1	Filter		without Threaded filter	O
600	2356060	1	Display	optical	optische Verschmutzungsanzeige	VO
601	2179547	1	Display		without contamination indicator	O
700	6269591	1	Pilot valve	3/2 Wege DN3	A-T NO, 12 VDC, ATEX	31
701	6545769	1	Pilot valve	3/2 Wege DN3	A-T NO, 24 VDC	32
702	6545807	1	Pilot valve	3/2 Wege DN3	A-T NO, 110 VDC	33
703	6545750	1	Pilot valve	2/2 Wege DN3	NO, 24 VDC	34
800	6602583	1	Typenschild			
801	2061813	2	Grooved pin			

* at Pos 400 pressure relief valve with accumulator
Item 101 housing assy. Y externally

Projektionsmethode 1 first angle projection method	Fertigungsvorschriften/manufacturing instructions Oberflächen/ Surfaces: DN ISO 1502 Allgemeintoleranzen/general tolerances: DN ISO 2768-mK	Technische Referenz/technical reference	Werkstoff/material	Gewicht/weight	Bemerkung/note	Matchcode
		Kollmann	1,4310	Kg		30
Weitergabe sowie Vervielfältigung dieser Zeichnung, Verwertung und Mitteilung seines Inhaltes sind verboten, soweit nicht ausdrücklich gestattet. Zuwiderhandlungen verpflichten zu Schadenersatz. Alle Rechte für den Fall der Patent-, Gebrauchsmuster- oder Geschmacksmusterreingtragung vorbehalten.		Erstellt/created 10.10.22 Gepf./checked 10.10.22 Freigegeben/released 10.10.22	Datum/date 10.10.22 Name seboldt seboldt kollmann	Benennung/title MODULBAUKASTEN PUST DN40 PUMPENUMLAUFSTEUERUNG DN40 PN420 MODUL KIT PUST DN40		
The reproduction, distribution and utilization of this drawing as well as the communication of its contents to others without express authorization is prohibited. Offenders will be held liable for the payment of damages. All rights reserved in the event of the grant of a patent, utility model or design.				Maßstab/scale 1:2	Zeichnungsnummer/drawing number 6602632	Version 0 Blattsheet 1/2 Format A1
		Ersatz für/supersedes:		Grundlage/origin		

Assembly instruction:

Pos.	tightening torque MA
100-101	290 Nm
200-205	420 Nm
300	420 Nm
400, 402, 403	210 Nm
401	145 Nm
500-501	200 Nm
600-602	90 Nm
700-703	see Pilot valve

screw thread and head rest
oiled or greased.

Prefill Valves

Features

- available in DN125 up to DN260 other sizes on request
- simple and safe valve function
- standardized Hauhinco valve insert
- customized valve body and adapter
- reliable valve
- successfully used in various applications
- easy to maintain
- changeable wear parts

Simple and safe valve function

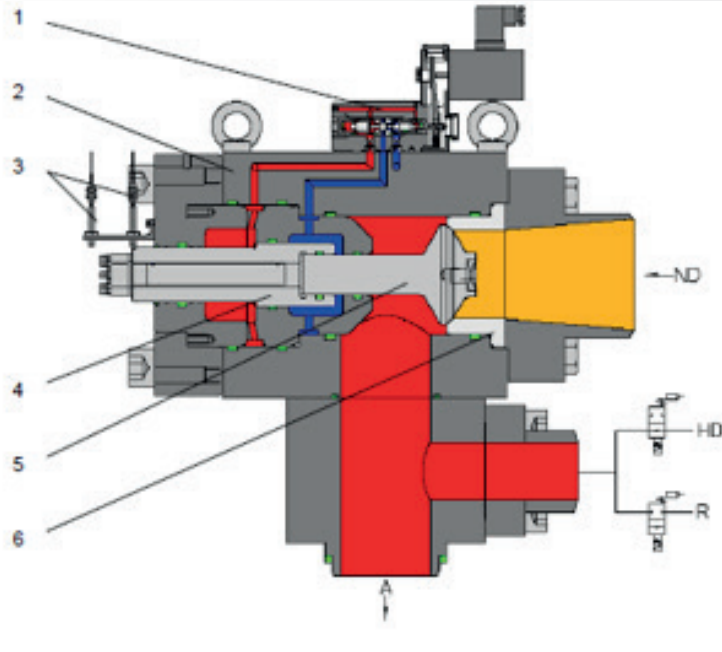
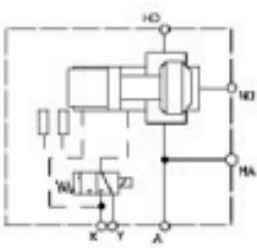
The filling valve is used for the leak-tight blocking of low-pressure systems. Due to the large flow cross-sections it is particularly suitable for fast positioning movements with low pressure, primarily on press cylinders.

During the high pressure stroke the valve remains closed.

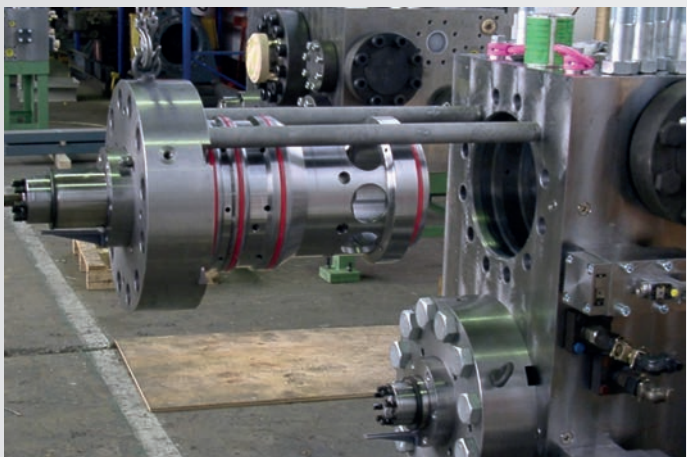
The valve consists essentially of the housing (2), valve piston (5), valve seat (6), control piston (4) and a single-stage or multi-stage electrohydraulic pilot control system (1). All components are made of stainless steel or bronze and are easy to replace. The use of proximity switches (3) allows a monitoring of the switching points of the valve piston (5).

The home position of the valve (normally open or normally closed) is determined by the variation of the magnet-operated pilot valve.

In the basic position shown here, the continuously applied control pressure - via the closing surface of the control piston (4) - presses the valve piston (4) into the seat (6). If the actuation of the pilot valve applies additional control pressure to the opening surface of the control piston, the valve piston will open due to the existing surface ratios.



Hauhinco Prefill Valves

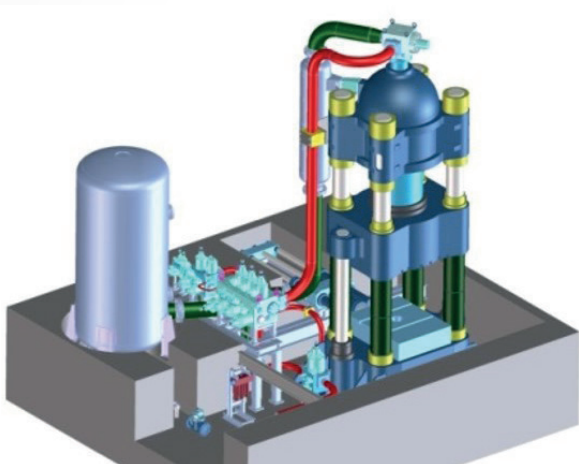
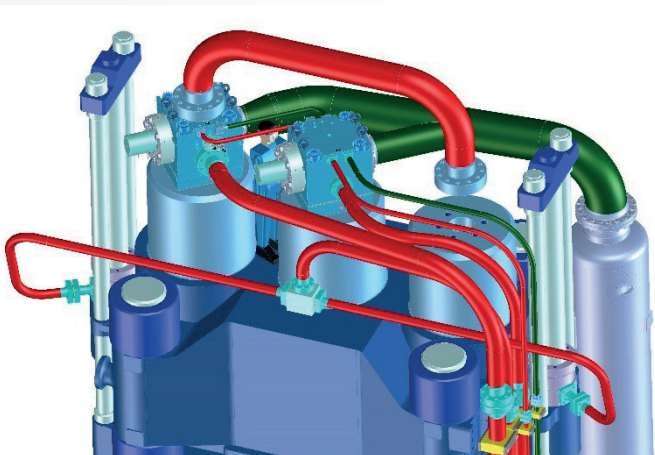


Standardized valve insert

- Easy assembly and maintenance
- No disassembling of tubes necessary
- Valve insert assembled in one piece
- Sliding pins for easy assembling
- Super bolts for easy handling
- Installation without pipe changes
- Short downtime
- Proven and reliable state-of-the-art technology
- less spare parts cost
- Easily and inexpensively replaceable wearing parts
- Optimum support from Hauhinco Service in your area

Successfully used in various applications

- Extrusion presses
- Open and close die forging presses
- Piecer presses
- Drawing press



High Pressure Hydraulic Accu- and Main Shut-off Control

Currently available in nominal sizes DN16 to DN200 PN420
other nominal sizes on request

Features

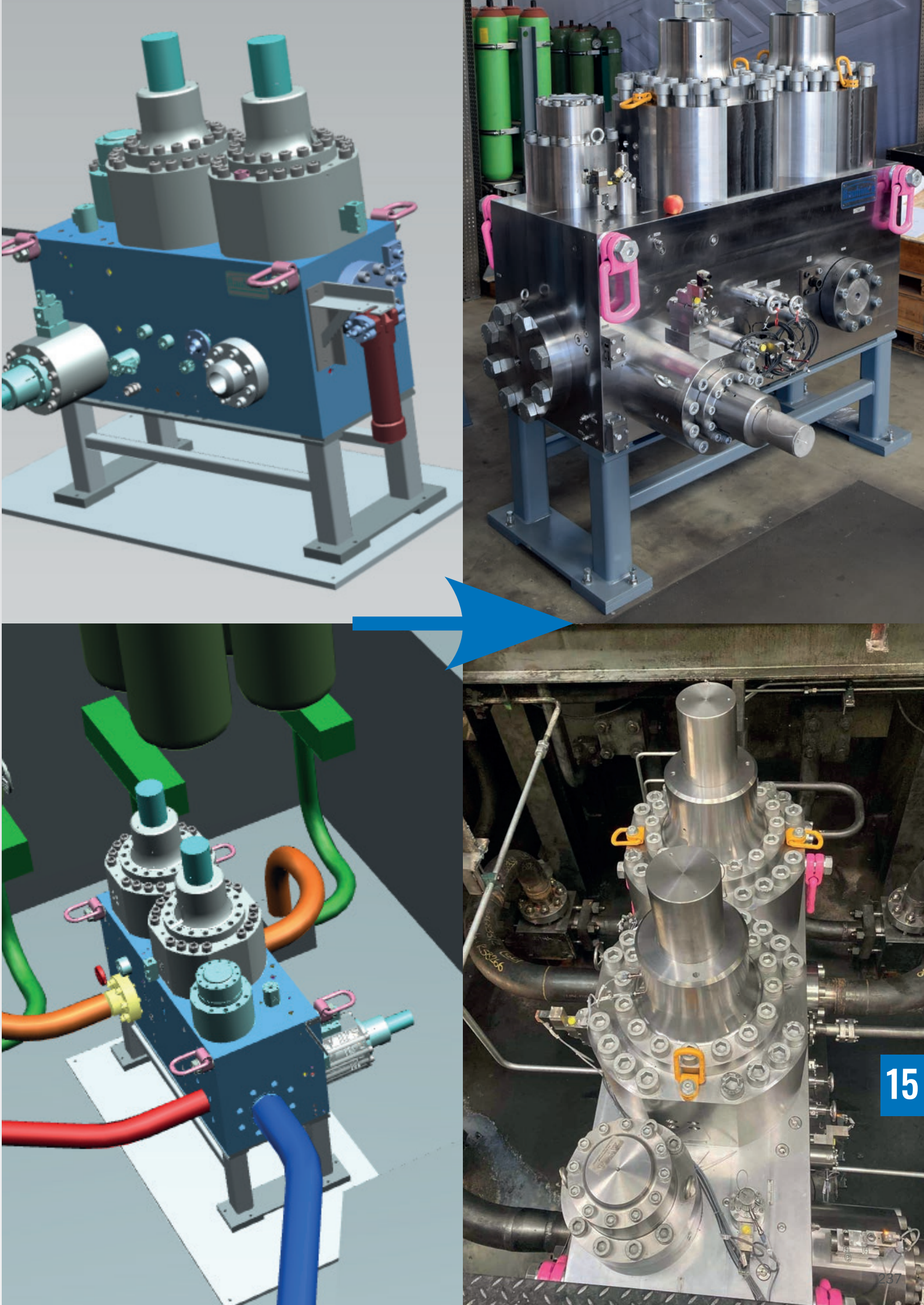
- Hauhinco water hydraulic valves
- Proven reliable Hauhinco technology
- Safe control of the main valves by own medium
- Controls according to the necessary country-specific regulations
- Optimal block design to minimize piping work

Hydraulik Function Accu Control

- Shut-off of the high-pressure accumulator with hydraulically pilot-operated 2/2-way valve (Manually and electromagnetically actuated pilot control for double security against unintentional switching on)
- Shut-off of the high-pressure accumulator when the low water level is reached by means of a hydraulically pilot-operated 2/2-way valve, electromagnetically actuated.
- Filling of the high-pressure-accumulator even when the low level valve is closed via the non-return valve
- External control pressure supply for the downstream hydr. Control using a 2/2-way valve and an additional monitored throttle shut-off valve
- Slow build-up of the working pressure by means of a pilot-operated 2/2-way valve
- Automatic decompression of the working pressure using a 2/2-way valve
- Drain valve for internal control pressure X and return line Y
- Possibility of shutting off the internal control pressure circuit with filter, using a manually operated throttle shut-off valve with position monitoring

Hydraulic Components

- Manifold
Constructive integration into the existing environment to minimize the piping work
- Shut-Off Valve
Pilot-operated 2/2-way valve with proximity switches for switching position monitoring, with stroke limiter to reduce the valve cross-section and lockable hood to be able to secure the valve against unintentional switching on again, complete with manually operated and electromagnetically operated pilot valve (each with 1x push button actuation and 1x solenoid actuation).
- Low-Level Valve
Pilot-controlled 2/2-way valve with proximity switches for switching position monitoring, with stroke limiter to reduce the valve cross-section and lockable hood to be able to secure the valve against unintentional switching on again, complete with solenoid-controlled pilot valve.
- Pressure built up valvel
Pilot-operated 2/2-way valve DN16 PN320 with proximity switch for switching monitoring, with stroke limiter to reduce the valve cross-section and lockable hood to be able to secure the valve against unintentional switching on again, complete with solenoid-controlled pilot valve.
- Various service valves
- Lockable pilot filter with monitoring
- Pressure sensors on all HP ports
- Stand
Steel construction frame adapted to the existing installation situation



Digital Controller RE 4 for Hauhinco Proportional Valves

Features

- Electronic amplifier with integrated PID-Controller for solenoid-operated hydraulic valves
- Operating mode Pressure and Position control
- Suitable for all Hauhinco Valves
- Exchangeability of RE1, RE2 and RE3 is given
- Control and Diagnosis over software
- Automatic calibration between controller and hydraulic valve
- Communication between PC/Laptop and Controller by USB-port

Functional description

The Controller has been specifically designed for Hauhinco Control Valves and forms a closed loop circuit with hydraulic valve.

The demand values for the pressure at the working connection or the position of the setting piston are transmitted by the user by scaled voltage (0-10V) and electricity (4-20 mA) to the controller. Through the controller the demand value and the current value are compared and the valve is being calibrated until the offset is minimized. The control parameters can be altered in many areas within the control software. Further functions as for example a ramp function are also implemented.

Depending on the used valve type (3/2 or 2/2 way valve) one or two valves can be controlled per one controller. The master/slave configuration of the controller allows an expansion to up to four 3/2 way valves or eight 2/2 way valves that are controlled by the master controller. The previous control cards RE1, RE2 und RE3 can be replaced with the RE4.

Technical information

- Mechanical mounting on a standardized top hat rail according to DIN 50 022
- Digital PID-Controller
- Controller sampling rate 1 ms
- Control deviation monitoring
- Up to 8 demand values can be stored on the Controller and selected digitally
- Demand value correction for the analog signal
- Automatic actual value correction for the analog signal
- Broken wire detection for analog power inputs
- Broken wire detection for power outputs
- Short circuit detection for power outputs
- Adaption to Hauhinco valve construction sizes
- Visualization of the control variables in test mode
- Automatic adaption of the overlap compensation for all Hauhinco Valve construction sizes
- Analog output of internal control parameters
- To optimize the control procedures, manual correction of single parameters are possible
- Controller is configurable as Master/Slave, parallel valve groups can controlled
- The initial valve position can be defined, for example „NC“ or „NO“
- The operating and diagnostic software is designed for WIN32 compatible operating systems (e.g. Windows® Vista, Windows® 7, 8, 10 etc.)



Technical data

Digital Controller RE 4	
Supply voltage (Ub)	12... 30 VDC (incl. ripple))
Power requirement max.	60W (depending on solenoid)
External protection	3A medium time lag
Digital inputs	4
Low level	OFF : < 2 V
High level	ON : > 10 V
Input resistance	25 kOhm
Digital outputs	2
Low level	OFF : < 2 V
High level	ON : > max. Ub
Maximum output current	50 mA
Analogue inputs	3
Signal	0... 10 V; min. 25 kOhm 4... 20 mA; 240 Ohm
Signal resolution	0,003 % incl. Oversampling
Analogue outputs	2
Signal	0... 10 V 10 mA (max. load)
Signal resolution	0,006 %
PWM outputs	2
Nominal current	500... 2600 mA, broken wire monitored and short circuit proof
Frequency	61... 2604 Hz, adjustable in steps
Dither frequency	60...400 Hz
Dither amplitude	0...30 %
Sample time	1 ms
PID controller	0,125 ms
Current controller	
Ramp function	
Up	0...60000 ms
Down	0...60000 ms
Standby current for pre-magnetisation	0...60 (max. current)%
Serial interface	USB in RS 232C Emulation (9600... 57600 Baud, 1 Stop bit, no parity, Echo Mode)
Housing	Snap-on module to EN 50022 PA 6.6 polyamide Flammability class V0 (UL94)
Protection class	IP20
Temperature range	-20... 60°C
Storage temperature	-20... 70°C
Humidity	< 95% (non-condensing)
Weight	0,250 kg
Connections	USB Type B 8 x 4 pole terminal blocks PE: via the DIN mounting rail
EMC	EN 61000-6-2: 8/2005 EN 61000-6-4: 6/2007 + A1:2011

Technical changes reserved.
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Modification measures

An adaption is necessary when older Controllers are being replaced.
Please see the following overview for the necessary adaptations:

MR1 / Controller RE 4.01		
Version RE 1.19 RE 2.01	Connections at the controller	RE 4.01
2	z 24 V + Supply Voltage Controller	3
	b 24 V + Supply Voltage Controller	3
	d 24 V + Supply Voltage Controller	3
4	z GND Demand Value	1
	b Demand value 0-10 V	13
	d Demand Value 4-20 mA	13
6	z GND Actual Value 1	11
	b Actual Value 1, 0-10 V	14
	d Actual Value 1, 4-20 mA	14
8	z	
	b	
	d	
10	z	
	b	
	d Digital Input No. 9 / constant demand value 2	6
12	z Digital Input No. 8 / valve lock	8
	b Digital Input No. 7 / constant demand value 1	5
	d Digital Input No. 6 / constant demand value 0 (RE2.01 analog/digital demand value)	-
14	z Digital Input No. 5 / constant demand value 3	7
	b Digital Output No. 4 / I-Amount Reset	-
	d Digital Output No. 3 / 2 ramp pairs	-
16	z Digital Input No. 2 / Delete ramp	-
	b Digital Output No. 1 / Actual Value Comparator	-
	d Digital Output No. 2 / Failure	1
18	z Proportional solenoid Y1 GND	19
	b Analog 0 Output	16
	d Analog 1 Output	-
20	z + 12 Volt	-
	b + 12 Volt	-
	d + 12 Volt	-
22	z GND Analog Output	12
	b GND	-
	d GND	-
24	z -12 Volt	-
	b -12 Volt	-
	d -12 Volt	-
26	z + 10 Volt Reference	-
	b S/W Solenoid Y3 GND	-
	d S/W Solenoid Y3 +	-
28	z + 24 Volt Supply Solenoid Valves	22
	b S/W Solenoid Y4 GND (not applicable by RE2.01)	-
	d Proportional Solenoid Y2 GND	20
30	z Proportional Solenoid Y2 +	18
	b Proportional Solenoid Y1 +	17
	d S/W Solenoid Y4 + (not applicable by RE2.01)	-
30	z GND	4/24
	b GND	4/24
	d GND	4/24
	- Output deviation	2
	- Input from Slave-Signal to Master 0-10 Volt	10
	- Input from Slave-Signal to Master 0 Volt	9
	- Master Output Slave-Signal for Slave 0-10 Volt	15
	- Master Output Slave-Signal for Slave 0 Volt	11

Notes

This image shows a full page of blank graph paper. The grid consists of thin, light gray horizontal and vertical lines that intersect to form small squares across the entire surface. There are no margins, text, or other markings on the paper.

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Our quality is your market advantage



We are your partner for intelligent, sustainable and economical water-hydraulic solutions

Hauhinco, as the world's leading manufacturer of water hydraulics solutions and systems, provides customers exclusively with high-quality, intelligent and high-performance high-pressure technologies and services.

With our water hydraulics expertise, we design tailor-made solutions for underground mining as well as innovative descaling systems for hot rolled products. Whether high-pressure pump station, spray pump stations or press water stations, with or without water treatment, we manufacture certified pump systems with all necessary approvals for the international market.

Hauhinco stands for high quality plunger pumps and systems that guarantee the necessary safety and reliability during operation.

The satisfaction of the customer is the highest priority at all times during the business relationship. We do not merely develop solutions, but we also want to supply our customers with our products and systems to provide long-term support so that they can achieve their own business targets.

One of the keys to the achievement of our targets is our highly qualified and motivated workforce, another is the well thought out structure which we live and breathe, which facilitates and promotes our flexible and innovative way of working. Our medium-sized business, short decision-making routes and quick communication with one another are the basis for the development of optimum, customised solutions.

The modern production process, in which specialists from all technical disciplines work together to achieve great things, ensures our customers the highest quality and efficiency. Environmental protection is not just an important aspect of water hydraulics but also of great significance in our daily work.

Quality management systems and certifications are the basis of sustainable business success. The entire value-added chain is therefore characterised by a high demand for quality.

A constant exchange with our customers, research in new and existing areas and close cooperation with institutions of higher education are of immense importance at Hauhinco.

Our employees benefit from constant training and further education courses to learn the newest methods and findings. Because we have one aim:

To consolidate and build on our position as the leading water hydraulics competence centre.



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