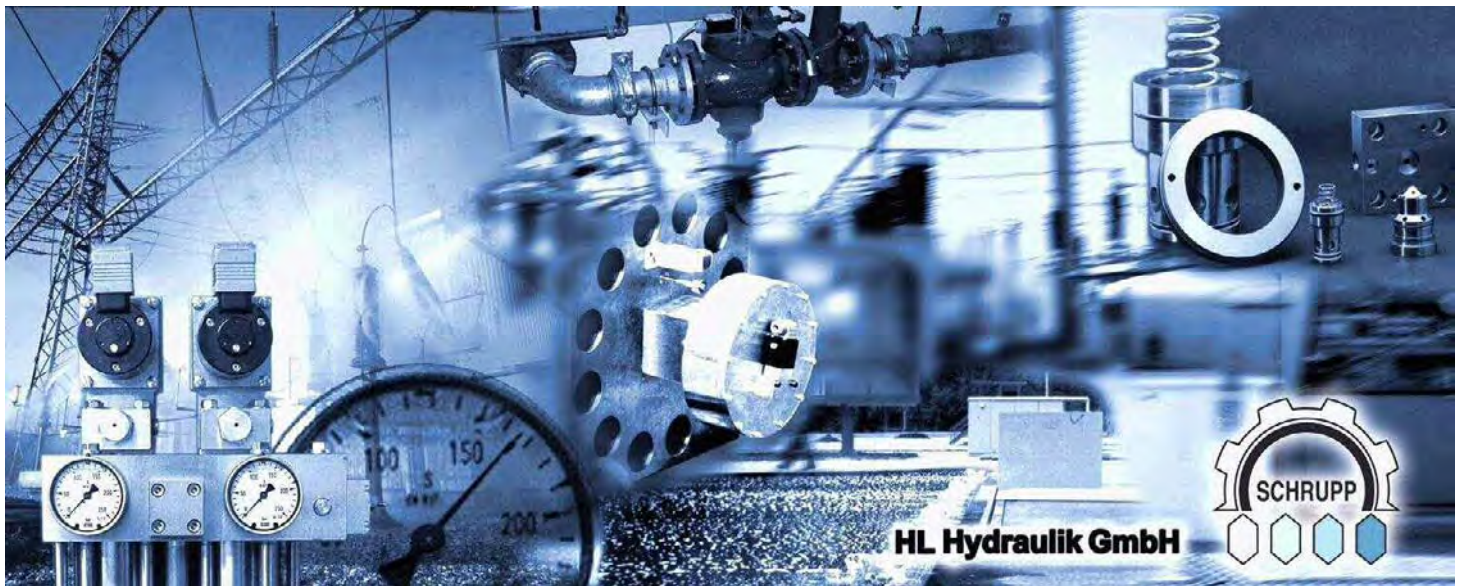




System Solution for Industry

HP Pneumatics

Water- and Special- Fluid Hydraulics

Equipment for Road Safety Training Centres

Fire Fighting Systems for Transformers

Live Line Washing Systems for Insulators

HL-Hydraulik GmbH

Kupferhütte 5C

D-57562 Herdorf

Tel: **+49 (0)2744-9324-0**

web: **www.hl-hydraulik.de**

e-mail: **info@hl-hydraulik.de**

E FEB22



HL Hydraulik GmbH

Kupferhütte 5c
57562 Herdorf

Telefon: +49 (0) 27 44 - 93 24 - 0

E-Mail: info@hl-hydraulik.de

www.hl-hydraulik.de

HP Pneumatic (Drucklufttechnik)

VDEW empfohlene Druckluftsysteme und Komponenten bis 350 bar

HP Pneumatic

Electrical Industry (VDEW) recommended systems and components up to 350 bar



Wasser- und Sonderhydraulik

Edelstahl-Cartridgeventile und Vorsteuerungen bis 350 bar (800 bar), Nennweiten 2 bis 250 mm Entzunderungsventile, Druck- und Wegeventile, Sprühventile zur partiellen Walzenkühlung.



Water- and Special-Fluid Hydraulics

Stainless steel cartridges and pilot valves up to 350 bar (optional 800 bar), size 2 to 250 mm (08-10 inch).

Descaling valves, directional, check, flow and pressure control functions, spray valves for roll coolant systems.



Technik für Fahrsicherheitszentren

Innovative Technik zur Simulation kritischer Situationen im Straßenverkehr: Schleuderplatten, Fahrbahnbewässerungen, Wasserhindernissysteme

Equipment for Road Safety Training Centers

To simulate critical traffic situations.
Vehicle skidding devices, water film systems, water obstacles

Feuerlöschsysteme für Transformatoren

Fremdenergie-unabhängige Wassersprühsysteme

Fire Fighting Systems for Transformers

Water spraying systems for operation independent from an external power supply



Isolatorenreinigungssysteme

Stationäre Wassersprühsysteme zur Reinigung unter Spannung

Insulator Cleaning Systems

Water spraying systems for stationary live electrical line cleaning



HP – PNEUMATICS

System Solutions for Industry

HP Pneumatics

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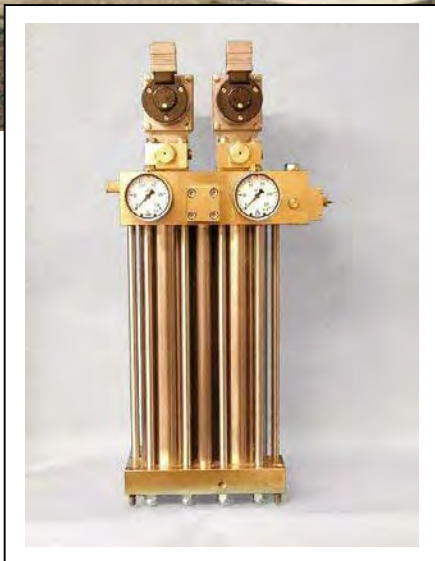
web: **www.hl-hydraulik.de**

e-mail: **info@hl-hydraulik.de**

E1 FEB22

HP – PNEUMATICS

System Solutions for Industry



HP Pneumatics

Water- and Special- Fluid Hydraulics

Equipment for Road Safety Training Centres

Fire Fighting Systems for Transformers

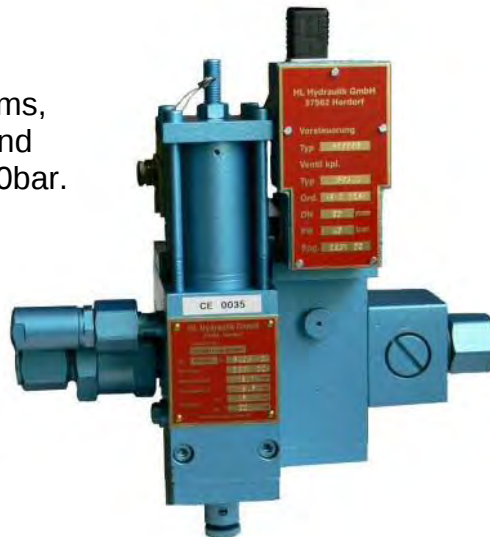
Live Line Washing Systems for Insulators

HP – PNEUMATICS

System Solutions for Industry

Traditional Valves

For high voltage breaker systems, accumulator safety functions and industrial applications up to 350bar.



Valves and Systems

Modular designed components and manifolds in cartridge-technology for industrial applications. Pressures up to 500bar, sizes from 4 to 100mm.

High flexibility, compact design

Reduction of maintenance and interruption time



HP – PNEUMATICS

System Solutions for Industry

Gas Dryer Stations

For laboratories and industrial productions with a need for continuous high quality in the compressed air supply.

For high pressure breathing air in diving and rescue systems.

For high voltage breaker systems to prevent corrosion and icing.

Pressures up to 350bar and dew points below -50°C can be realized.



Compressor Stations

Individual compressor units for in- or outdoor use, complete assembled including necessary valves and electrically control systems.





HP-PNEUMATICS

Traditional Valves



Manual Shut-Off and Check Valves

PN 64 - DN 15, 25

PN 350 - DN 8

Type

HAV 15, HAV 25

HAV 08



Pressure Maintaining and Pressure Maintaining Check Valves

PN 60/350 - DN 16

PN 400 - DN 5

Type

DHV 16/12

DHV 05, DRV 05



Safety Valves

PN 350 - DN 6

PN 40 - DN 30/15

Type

SVE 06

SVE 30/15



Safety Devices

PN 64 – DN 20

PN 200 – DN 10

Type

SHE 06

SHE 20

Pressure Reducing Valves

PN 200 – DN 8

PN 40 – DN20

Type

DMV 08

DMV 20

Systems and Cartridge Technology



Cartridge Program Directional, Sluice Valves

PN 400 – DN 6

PN 250 – DN16

Type

WEV 06

WEV 16



Gas Dryer

PN 350bar

Q 1000L/min /1400L/min

Q 1100-3300L/min

Type

GTR 10, GTR 14

GTF



HAND OPERATED VALVES TYPE HAV

Hand operated valves of the Series HAV provide leakfree operation for high pressure pneumatic or water service. Their robust construction and special adjustable spindle-sealing allow operation under extreme conditions with a very long lifespan. The valves can accept flow in both directions.

Product Range:

NG 8mm PN 350bar

NG 15mm PN 64bar

NG 25mm PN 64bar

Accessories:

Reduction from NG 15 to NG 10 with outside-screw thread M18 x 1.5

Tube fitting connection to Gal. ZN 1201 DIN 50961

Options please find at datasheet DE11.3

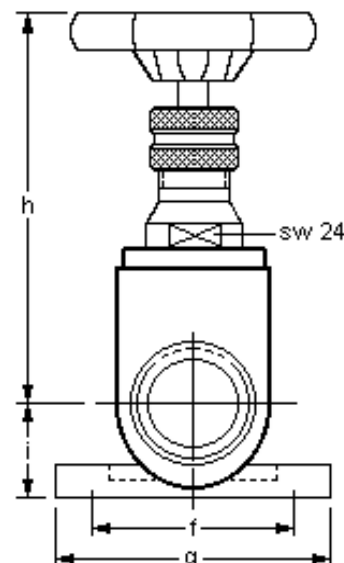
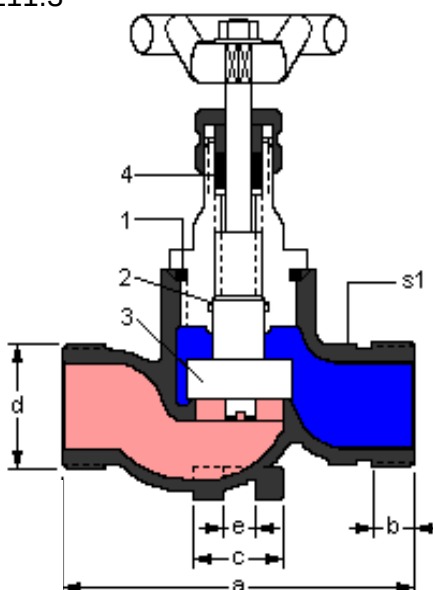


Ordering Information:

HAV15-Productno.

HAV25-Produktno.

■ = low pressure
■ = high pressure



Type	DN	Productno.	Socket *	Vent	a	b	c	d	e	l	g	h	i	S1	D Pipe	Mass Kg
HAV	15	160523			80	9	-	M26x1,5	-	-	-	112	19	24	15/18	0,55
HAV	15	160525*	X		80	9	17	M26x1,5	8	44	60	112	19	24	15/18	0,59
HAV	15	160524		X	80	9	-	M26x1,5	-	-	-	112	19	24	15/18	0,55
HAV	15	160526*	X	X	80	9	17	M26x1,5	8	44	60	112	19	24	15/18	0,59
HAV	25	160527			105	12	-	M36x2	-	-	-	113	25	36	25/28	0,89
HAV	25	160528		X	105	12	-	M36x2	-	-	-	113	25	36	25/28	0,89

* on request

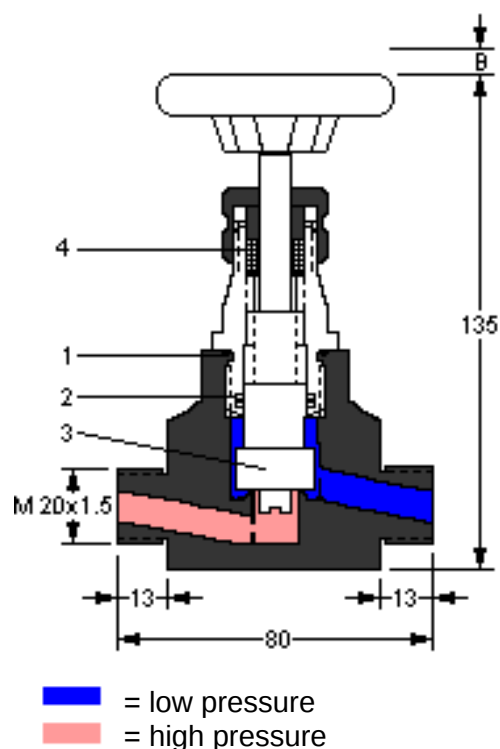


HAND OPERATED VALVES TYPE HAV

Ordering Information HAV08-504242

ND 8mm PN 350bar

Productno.: 504242



Spare Parts Kit

Consisting of:

Pos	name
1	O-ring
2	U-ring
3	disk
4	Seal kit

Ordering Information

HAV15VTS-Productno.-92

HAV25VTS-Productno.-92

HAV08VTS-504242-92

Accessories

HAV 08

Tube fitting connection per
Gal. ZN 1201 DIN 50961 for tube D = 8/10mm
Order no.: **HAV 08 EO**

HAV 15

Tube fitting connection per
Gal. ZN 1201 DIN 50961 for tube D = 15/18mm
Order no.: **HAV 15 EO**

Reduction M26x1,5 to M18x1,5 male thread
Orderno.: **HAV 15 RED10**

HAV 25

Tube fitting connection per
Gal. ZN 1201 DIN 50961 for tube D = 25/28mm
Order no.: **HAV 25 EO**

Options please find at datasheet DE1.1.3



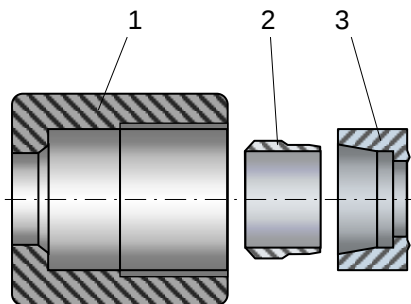
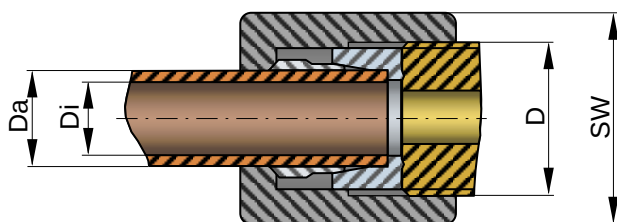
VERSCHRAUBUNGEN FITTINGS

Stossverschraubungen erleichtern den Aus- und Einbau von Ventilen in Rohrleitungen. Nach dem Lösen der Überwurfmutter können die Ventile aus dem Rohrleitungssystem herausgenommen werden ohne die vorhandenen Leitungen zu demontieren. Die Verschraubungen werden aus St A3C gefertigt und können für Ventile des Typs HAV, RSV, DHV, DHR und DRV verwendet werden.

Serienmäßig werden unsere Ventile mit den jeweiligen Standard Stossverschraubungen gemäß Datenblatt ausgeliefert. Darüber hinaus können aber auch Sonderverschraubungen für andere Rohrdurchmesser geliefert werden.

The use of breakaway fittings allows an easy assembling and de assembling of valves in an piping system. After unscrewing the Nuts it is possible to move the valve out of the piping system without deinstalation of any pipes. All parts are produced from galvanized steel St A3C and will be used at valves type HAV, RSV, DHV, DHR and DRV.

Our valves include standard breakaway fittings according to the individual datasheets. Optional it is possible to order fittings for other pipe diameters.



Stoßverschraubungen /Breakaway Fittings								
Type	12	10	12	15	18	22	25	28
Teilenr. / Partsno.	852525	852508	852505	852502	852526	852511	852513	852527
Druck / Pressure	400bar	400bar	400bar	100bar	100bar	100bar	250bar	100bar
Da	12mm	10mm	12mm	15mm	18mm	22mm	25mm	28mm
Di	8mm	7,5mm	9,5mm	12,5mm	15mm	19,5mm	21,5mm	25mm
D	M20 x 1,5	M26 x 1,5	M26 x 1,5	M26 x 1,5	M26 x 1,5	M36 x 2	M36 x 2	M36 x 2
SW	24mm	32mm	32mm	32mm	32mm	41mm	46mm	41mm
1. Mutter / Nut	080786	852510	852507	852504	080788	852512	505896	080790
2. Schneidring / Cut Ring	080794	080793	080794	163574	080795	080797	505897	080798
3. Druckring / Pressure Ring	080801	852509	852506	852503	080802	850267	851500	080805
Einsetzbar für Teilenummer (Datenblatt)	504242 (D/E1.1.2)	160523 (D/E1.1.1) 160524 (D/E1.1.1) 60535 (D/E1.2) 160540 (D/E1.3.5)				160527 (D/E1.1.1) 160528 (D/E1.1.1) 160537 (D/E1.2) 159784 (D/E1.2) 451263 (D/E1.3.1)		
Usable for Partno. (Datasheet)	159423 (D/E1.2) 504270 450050 (D/E1.3.1) 851714 851716 (D/E1.3.6)							



NON RETURN VALVES TYPE RSV

PN 64

DN 15 und DN 25

Includes EO tube fittings

Gal. ZN 1201 DIN 50961

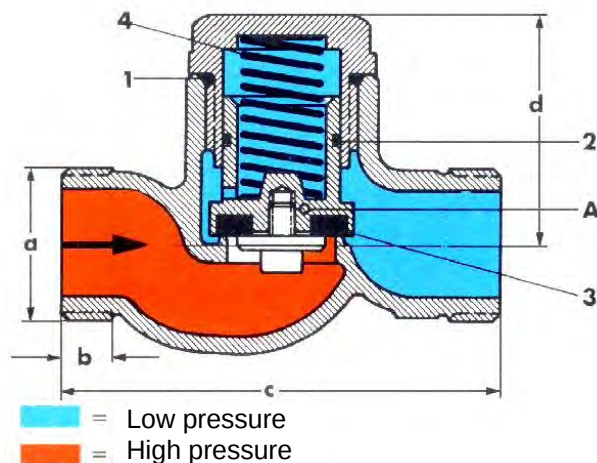
Options please find at datasheet DE1.1.3

DN	Seat	a	b	c	d	Mass Kg	Partno.
15	soft	M26 x 1,5	9	80	60	0,4	160535
25	soft	M36 x 2	12	105	58	0,5	160537

Ordering Information

RSV-Productno.

Opening pressure 2bar



PN 100

DN 16 und DN 25

Includes EO tube fittings

Gal. ZN 1201 DIN 50961

Options please find at datasheet DE1.1.3

DN	Thread connection	length	Partno.
10	M 20 x 1,5/PN200	80	195423
25	M 36 x 2/PN100	85	159784

Ordering Information

RSV-Productno.





PRESSURE MAINTAINING VALVES TYPE DHV, DRV

Pressure Maintaining and Pressure Maintaining Check Valves series DHV and DRV are mounted between the condenser and the compressed air vessel. These valves maintain a constant pressure at the condenser and help to facilitate water separation from the air.

The higher the pressure at the valve, the better the water-separation.

Their robust construction allows their use under extreme conditions with a very long lifespan.



Ordering Information Pressure Maintaining Valves

- DHV16-35-451263** ND16mm PN 15-60bar
- DHV12-330-451262** ND12mm PN 30-350bar
- DHV05-350-504270** ND 5mm PN 60-350bar
- DHV05-66-504270-02** ND 5mm PN 15-70bar
- DHV05-395-504270-04** ND 5mm PN 300-400bar

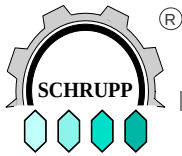
Ordering Information Pressure Maintaining Check Valves

- DRV05-345-450050** ND 5mm PN 60-350bar
- DRV05-69-450050-02** ND 5mm PN 15-70bar

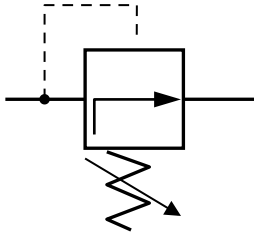
└ Adjusted set pressure with delivery [bar]



Technical Data	DHV 05	DRV 05	DHV 12	DHV 16	
Flow rate with 5bar dp	-	-	750	1500	l/min
with 10bar dp	160	160	2500	5000	l/min
with 15bar dp	-	-	4600	9200	l/min
with 220bar dp	3500	3500	-	-	l/min
Minimum pressure difference	10	10	5	5	bar
Max. operating pressure	350	350	350	60	bar
Pressure range	15-350	15-350	30-350	15-60	bar
Mass	1	1,8	12	12	Kg
Housing material	MS	MS	MS	MS	
Seals	Buna-N	Buna-N	Buna-N	Buna-N	
Tube-connection size	12	12	20	28	mm
Options please find at datasheet DE1.1.3					

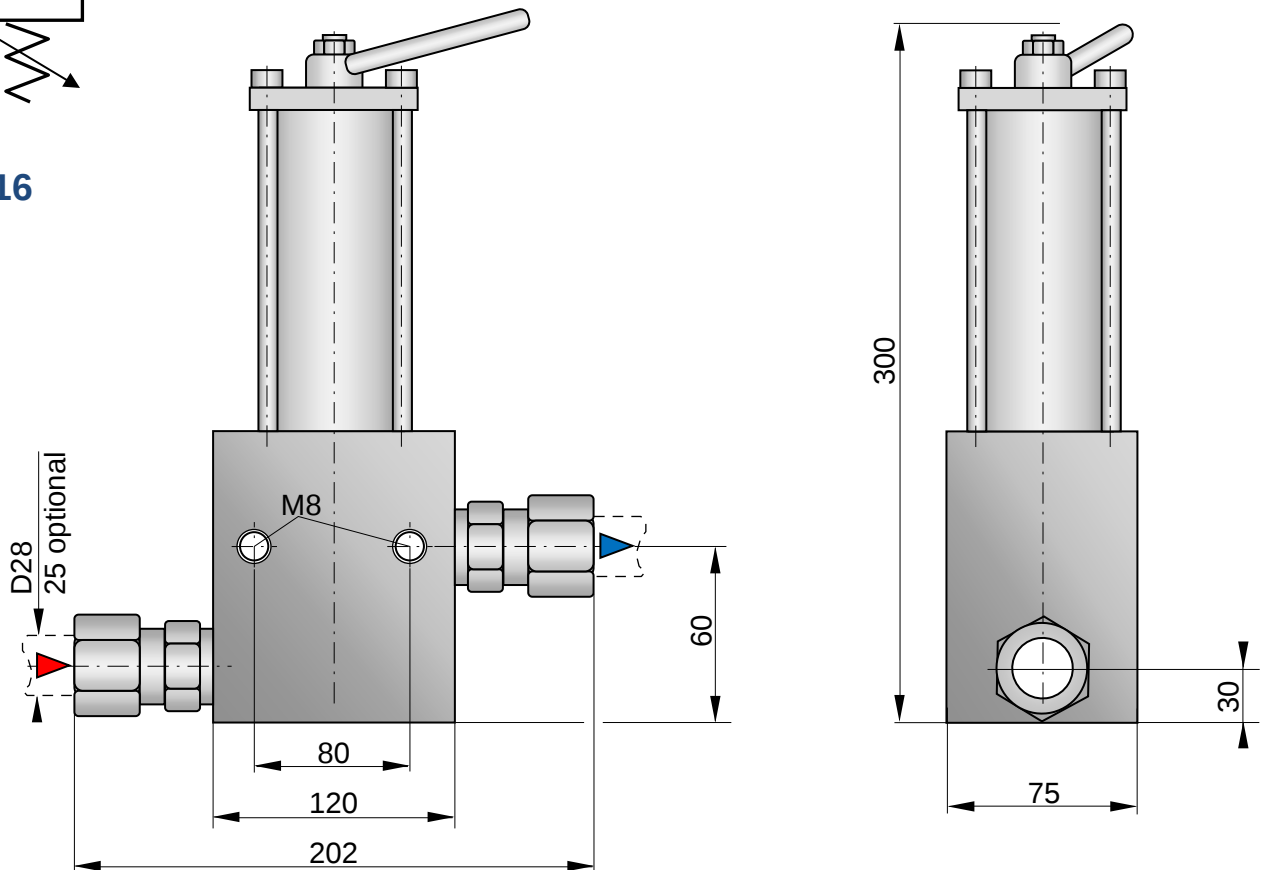


PRESSURE MAINTAINING VALVES TYPE DHV, DRV

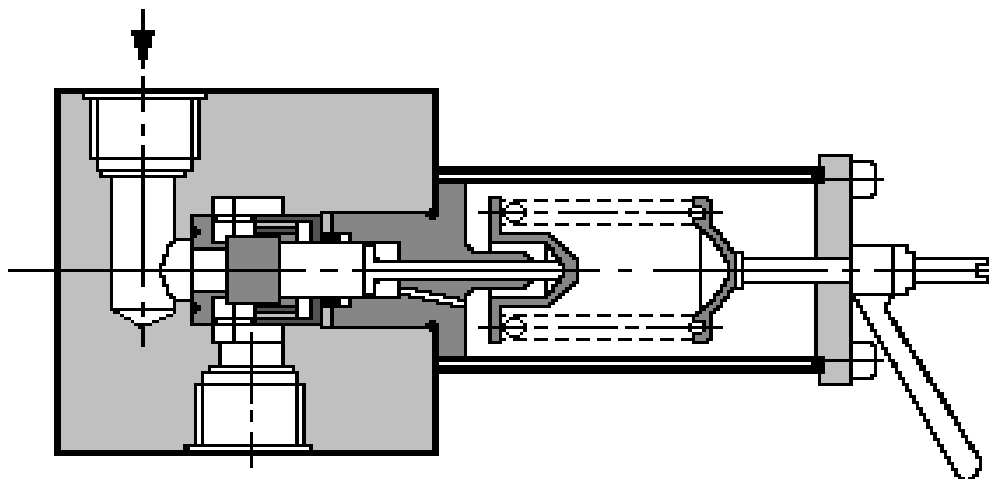


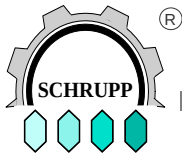
Opening Pressure Adjustment

DHV16

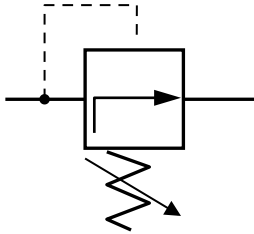


Order no. Seal Kit: DHV16VTS-451263-92



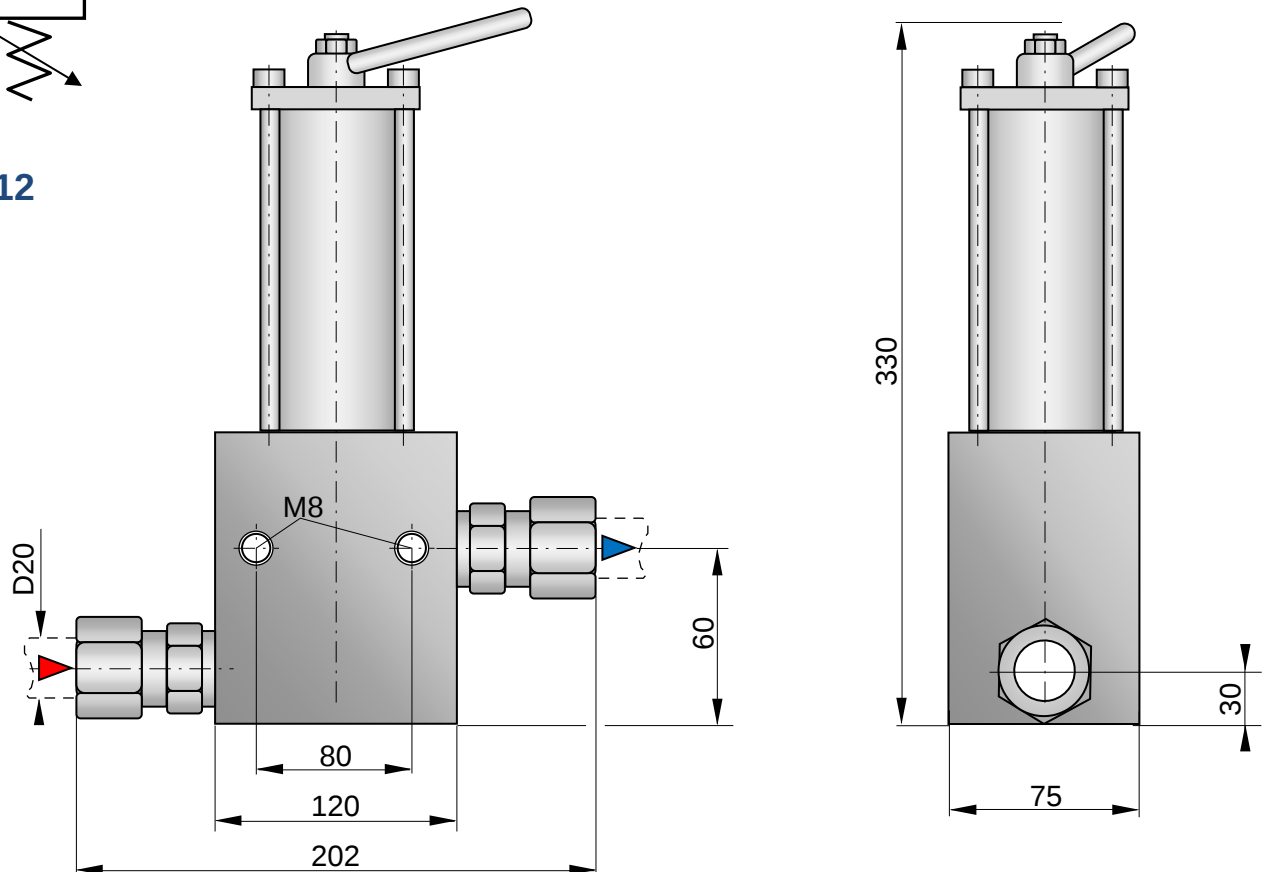


PRESSURE MAINTAINING VALVES TYPE DHV, DRV

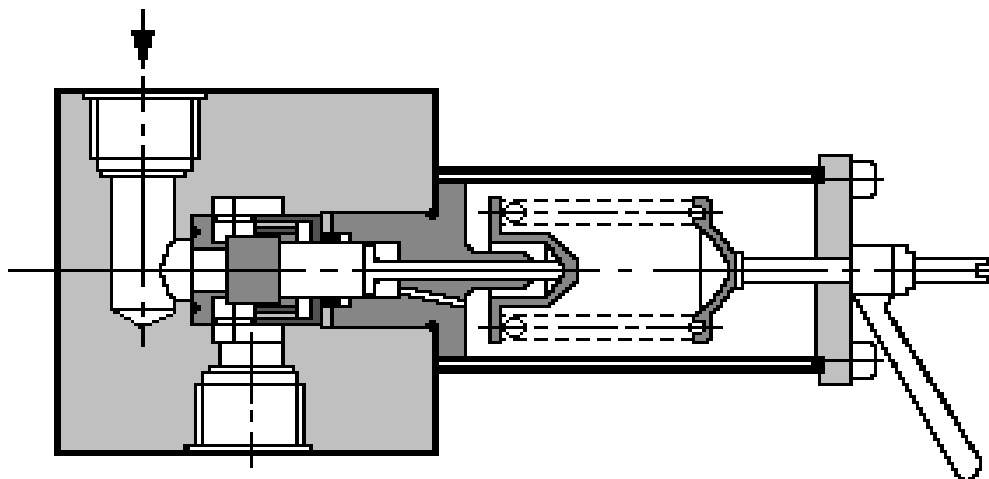


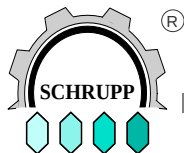
Opening Pressure Adjustment

DHV12



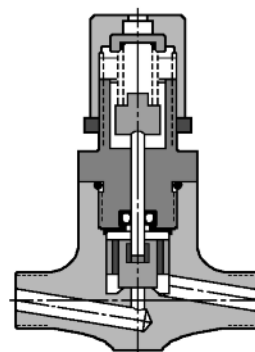
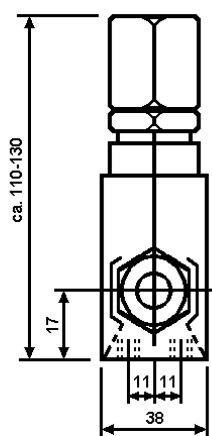
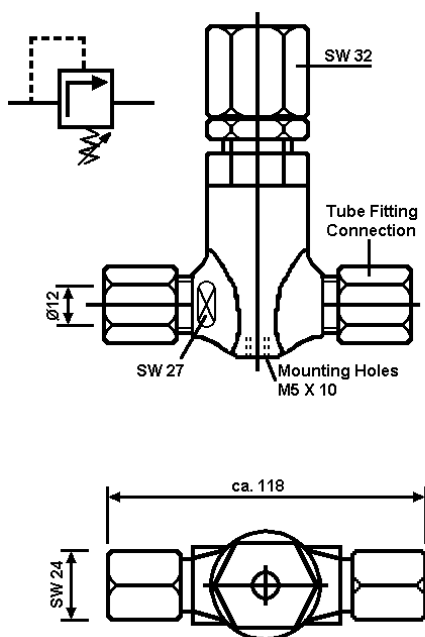
Order no. Seal Kit: DHV12VTS-451262-92





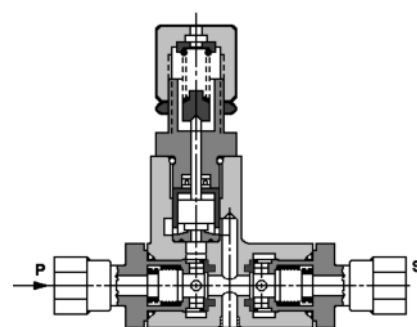
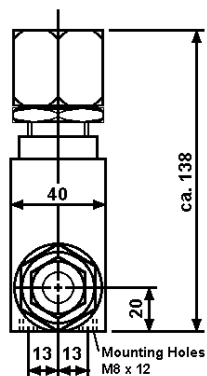
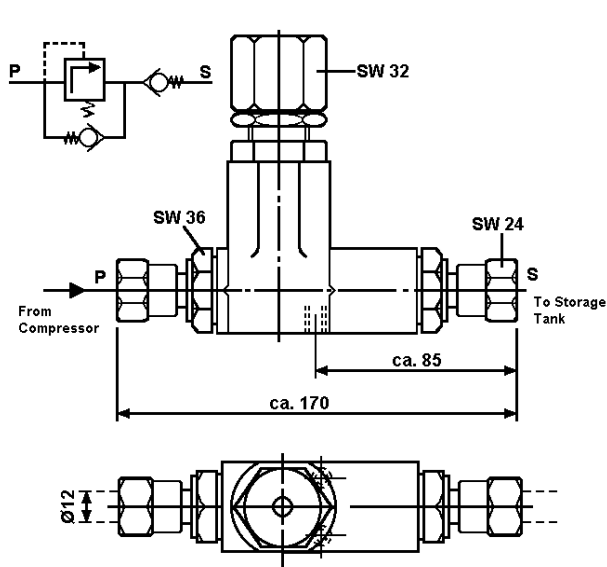
PRESSURE MAINTAINING VALVES TYPE DHV, DRV

DHV 05



Ordering Information
Spare Parts Kit:
DHV05VTS-504270-92

DRV 05



Ordering Information
Spare Parts Kit:
DRV05VTS-450050-92

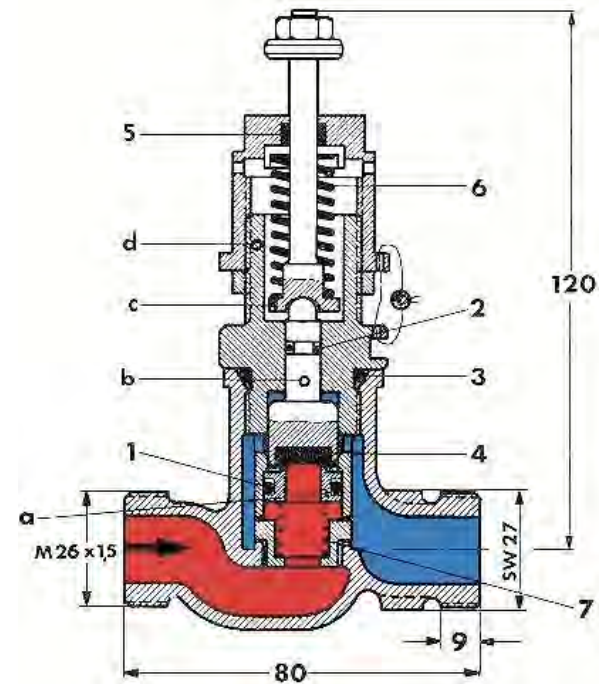
PRESSURE MAINTAINING VALVES TYPE DHV, DRV

Pressure Maintaining Valves are mounted between the condenser and the compressed air vessel. These valves maintain a constant pressure at the condenser and help to facilitate water separation from the air.

The higher the pressure at the valve, the better the water-separation.

Pressure Maintaining Valve includes EO fittings Gal. Zn 1201 DIN 50961

Options please find at datasheet DE1.1.3



Mass 5kg

Max operating pressure 45 bar

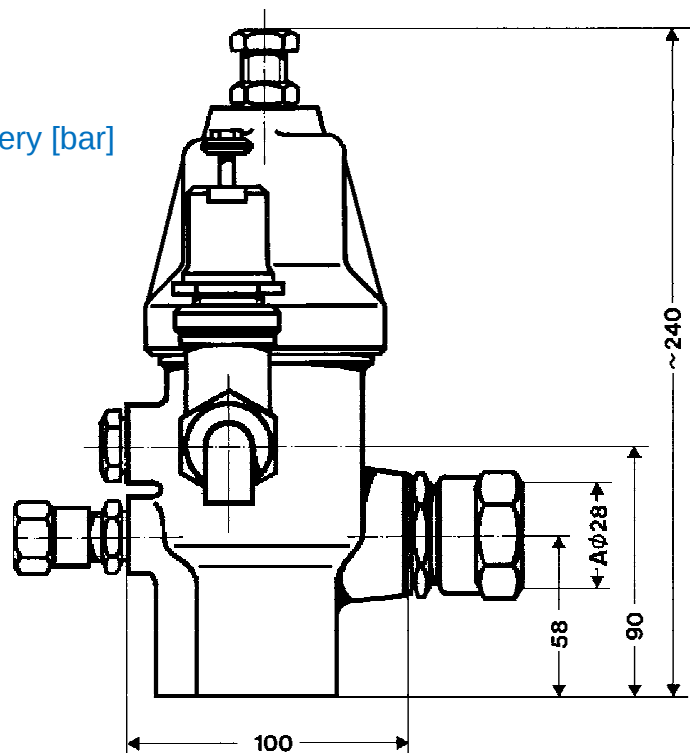
Soft seat

Ordering code: DHV08-12-160540

Adjusted set pressure with delivery [bar]

Example:

Valve combination DMV 08 and DHV 06. This combination can be used to reduce a pressure in a system and to protect the secondary circuit against overpressure.





PRESSURE MAINTAINING VALVES TYPE DHV, DRV

Pressure Maintaining Check Valves Type DHR05 include an Pressure Maintaining Valve Type DHV05 and an check valve. This combination is an economical option to individual piped valves. DHR valves are available with different ports so that they can be easily adapted to existing systems.

Pressure Maintaining Check Valves series DHR are mounted between the condenser and the compressed air vessel. These valves maintain a constant pressure at the condenser and help to facilitate water separation from the air.

As higher the pressure at the valve is, as better the water-separation.

Their robust construction allows their use under extreme conditions with a very long lifespan.



Ordering Information

DHR05-280-851714 Pressure Maintaining Check Valve with connections for pipes outside dia 12mm (Options please find at datasheet DE1.1.3)

DHR05-320-851741-01 DHR, Inlet: for pipe outside dia 12mm, Outlet: G 3/8" female port

RSV05-350-851716 Check Valve inlet: DHV connection port, outlet: for pipe outside dia 12mm (Options please find at datasheet DE1.1.3)

RSV05-185-851716-01 Check Valve inlet: DHV connection port, outlet: G 3/8" female port

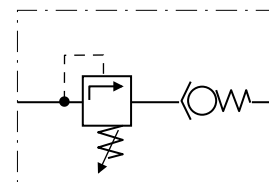
└ Adjusted set pressure with delivery [bar]

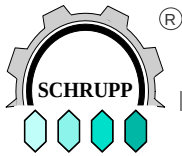
Technical Data

DHR 05

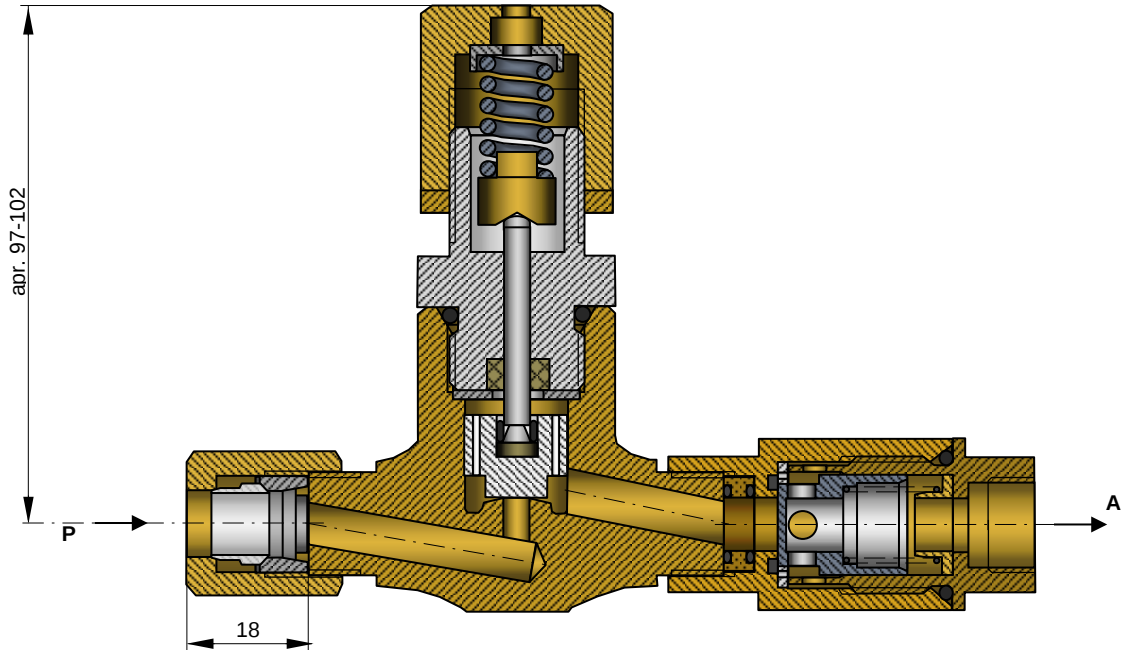
Flow rate at 10 bar dp	160	l/min
at 220bar dp	3500	l/min
Medium	compr.air	others on request
Min pressure drop	10	bar
Max. operating pressure	350	bar
Adjustment	15-350	bar
Mass	15	N
Housing material	MS	
Seals	Buna-N	

Functional Diagram

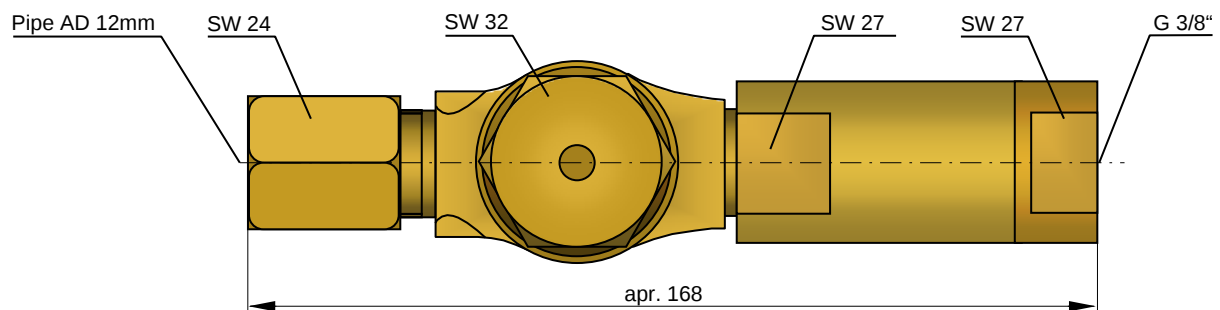




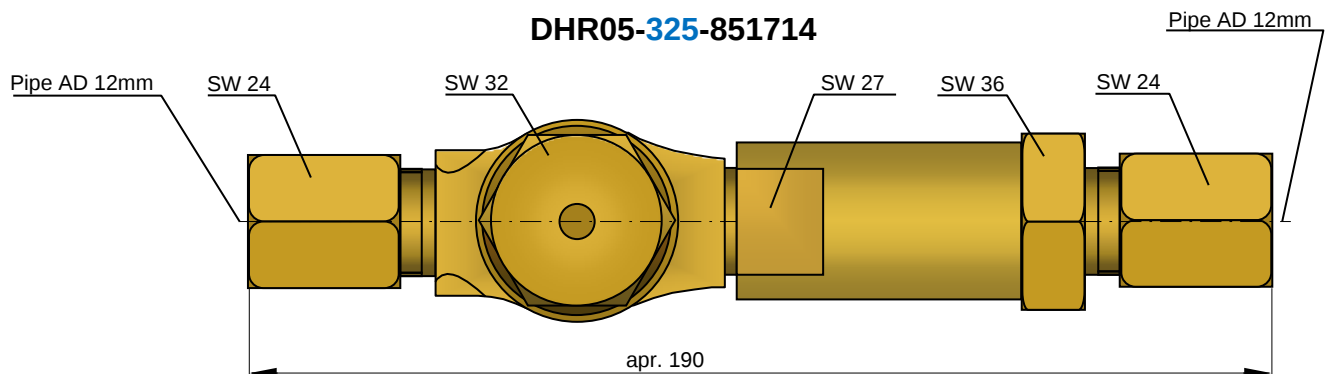
PRESSURE MAINTAINING VALVES TYPE DHV, DRV



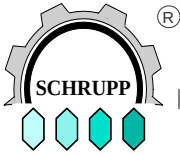
DHR05-340-851714-01



DHR05-325-851714



Adjusted set pressure with delivery [bar]



SAFETY VALVES TYPE SVE 06



SAFETY VALVE TYPE V600 ORDERING NO SVE 06 - 087202

Application: Schrupp safety valves type SV06-1 and SV06-2 are spring loaded valves designed to protect compressors from over-pressurization.

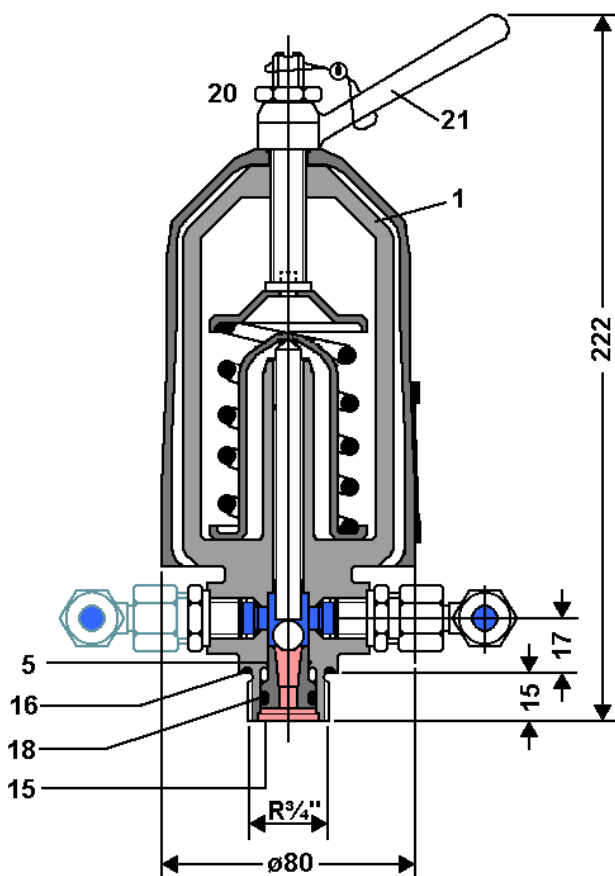
Schrupp proportional safety valves can also be used to protect pressure vessels containing non-poisonous gases.

- Special characteristics:** TUV approval up to 350 bar
Acc. to 214/68/EC gases Group 2, Category IV, Certificate according to Modul B (TÜV)
Low hysteresis and good operational control even under adverse conditions.
Compact dimensions
Robust design
Easy to maintain
- Technical Data:** Size: DN6
Operating Pressure: 55 -350bar
Flow rate in L/min: $32.2 \times p(\text{bar})$
Ambient Temperature: 0-70 degrees C.
Manufactured according to AD specification no. A2 for proportional safety valves.
- Notice:** Valves are shipped with plugged ports. Please remove before installation



SAFETY VALVES TYPE SVE 06

■ = Primärdruck
■ = Sekundärdruck



Functional Description:

Port R is connected to the compressor or high pressure vessel. In the event of over-pressure, the ball lifts from the seat and bleeds pressure through the side outlet port. The elbow fittings can be arranged to send the air in any direction. To check valve function, turn lever #21 counter-clockwise to valve housing, #1. This test will not affect the pressure set point.

The set pressure can be adjusted by turning lever #21 after loosening locking nut #20. (Turn clockwise to increase pressure set point.) After adjustment, re-tighten locking nut #20. The valves do not require regular servicing. Periodically, tests are required. according to 2014/68/EC.

The valve can be ordered for different pressure adjustment ranges

SVE06 - 087201	adjust. pressure	55 - 66bar
SVE06 - 087199	adjust. pressure	66,1- 85bar
SVE06 - 087202	adjust. pressure	85,1-110bar
SVE06 - 087200	adjust. pressure	110,1-135bar
SVE06 - 087400	adjust. pressure	135,1-150bar
SVE06 - 087204	adjust. pressure	150,1-175bar
SVE06 - 087203	adjust. pressure	175,1-220bar
SVE06 - 160253	adjust. pressure	220,1-250bar
SVE06 - 087975	adjust. pressure	250,1-350bar

Ordering Information

SVE 06 - **345** - **087957**

Type

Set Pressure [bar]

Productno.

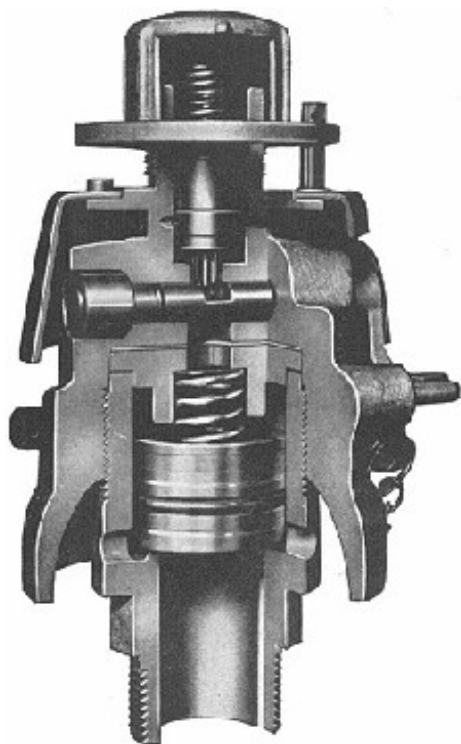
Ordering Information seal kit:

Part no.: SVE 06 VTS - 087400

- Item 5 Seat
- Item 15 O-Ring
- Item 16 O-Ring
- Item 18 Back Ring



SAFETY VALVES TYPE SVE 30 (POP OFF)



Safety Valves Type S650:

Ordering no. SVE 30

Application: The Schrupp SV30 safety valve is a spring loaded valve used to protect vessels containing non-toxic gases from over-pressurization. Upon reaching the set pressure, the valve opens fully and immediately.

Special Features:

TUV approval up to 44 bar acc. to 2014/68/EU gases Group 2, Category IV, Certificate according to Modul B (TÜV),

Low hysteresis and good operational control even under adverse conditions.

Compact dimensions

Robust design

Easy to maintain

Technical Data:

Nominal Size: DN 30 mm

Set pressure from 4.5 to 44 bar

Flow rate: 4750 x p in liter/min

Mass: approximately 3.2 kg

Ordering Information

SVE30 - **36** - **156148**

Adjusted Set
Pressure
[bar]

Ordering Information Seal Kit:

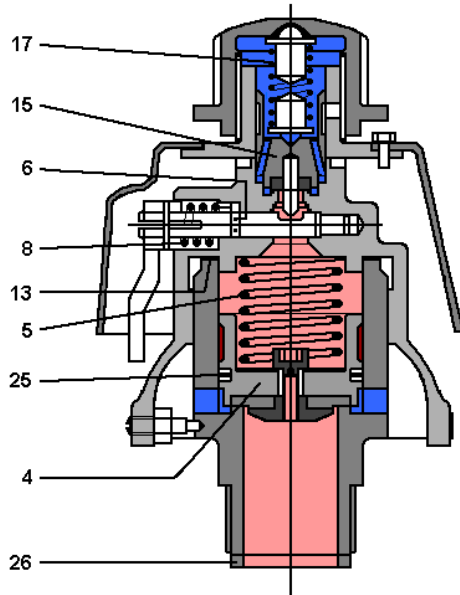
SVE30 VTS - **156148** - 92

Pressure Range[bar] / Productno.

4,5 - 6	089049
6,1 - 8	089060
8,1 - 13	089061
13,1 - 16	089062
16,1 - 21	089063
21,1 - 25	089064
25,1 - 35	089065
35,1 - 44	156148

SAFETY VALVES TYPE SVE 30 (POP OFF)

Maintenance and Operation:



■ = Primary Pressure
■ = Relieved Pressure

1. Shipping and Storage

During transportation or storage, the valve should be locked in the open position by use of the manual handle. All ports must be plugged. To open the valve, the lever should be moved against the spring force to the end position and fixed by the holding clamp.

2. Installation

On pressure vessels or pipes with minimum inside diameter of 1 inch. For installation, use only original seals; never use glue or other additional seal materials.

3. Adjustment of Set Pressure

After removing the pin the set pressure can be changed, by turning the thread cap clockwise (increases set pressure) or counter-clockwise (reduces set pressure).

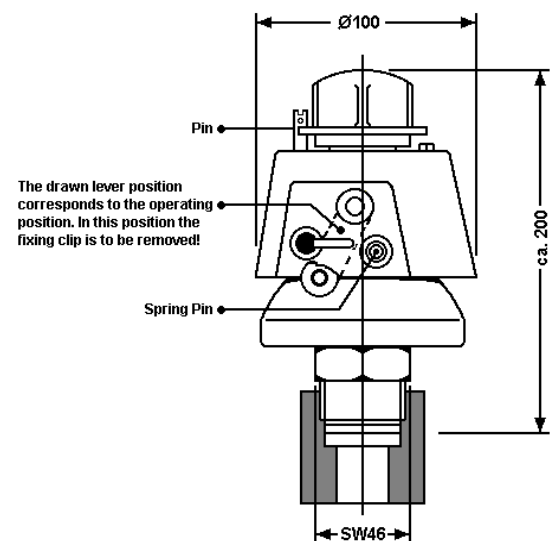
4. Noise protection

Because of the possible production of high noise levels, we recommend the use of an ear protection.

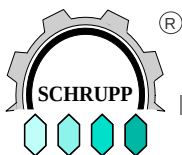
Mode of operation:

Closing: With increasing pressure the valve insert (15) rises out of its seat and vents air to atmosphere. Then the piston (4) rises out of its seat and the valve opens.

Open: After blowing the pressure off over the piston (4) the valve insert (15) closes fast; the closing process of the piston (4) is delayed until the pressure build-up over the piston (4) escapes through the drilling in the piston. Thus, closing of the piston (4) takes place not via the strength of the spring (5), but with the pressure on the differential area of the piston (4) opposite the valve seat.



Technical data subject to change



SAFETY VALVES TYPE SVE 10



TÜV approved Safety Valve for compressed air.

2014/68/EU, Group2, Category IV

Set Pressure: 0,3 – 50 bar

Operating Temperature: max 180°C

DN 10mm

Ordering Information

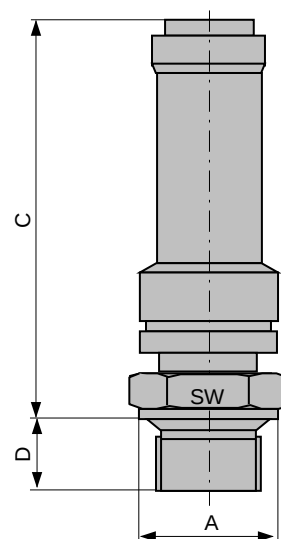
SVE10 - 45 – Part no.

Set Pressure [bar]

Type

Part no.	Connection	Pressure	SW	A	C	D
850803	G3/8"	0,3 – 8,5 bar	27	22	75	12
850803		8,6 – 40 bar	27	22	95	12
850803		40,1– 50 bar	27	22	120	12
850804	G1/2"	0,3 – 8,5 bar	27	26	75	14
850804		8,6 – 40 bar	27	26	95	14
850804		40,1– 50 bar	27	26	120	14
850805	G3/4"	0,3 – 8,5 bar	32	32	75	16
850805		8,6 – 40 bar	32	32	95	16
850805		40,1– 50 bar	32	32	120	16

Dimensions in mm

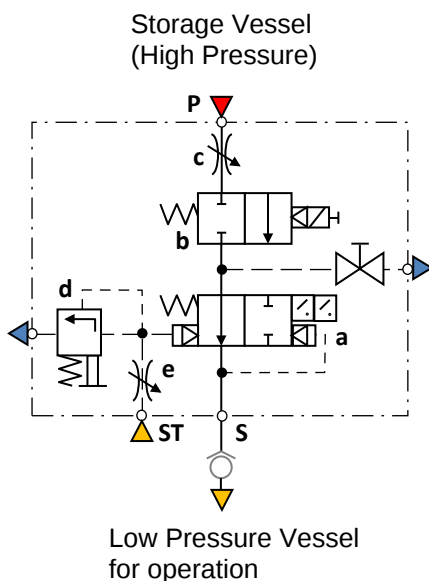


SAFETY DEVICES TYPE SHE

Safety devices of the type SHE are used to protect downstream storage vessels which are being fed by a higher operating pressure, against over pressurization. As opposed to the function of a typical safety valve, the Schrupp SHE valve protects the lower rated pressure vessel by closing the interconnection between the two vessels once the set pressure has been reached. In this way, the operational (low pressure) vessel is protected, while at the same time, maintaining the stored pressurized air necessary to ensure operation of the selected component, such as electrical switch gear.

The Schrupp SHE safety device includes the following elements:

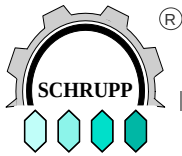
- Locking valve with electrical position indication switch.
- Solenoid actuated, pilot operated, 2/2 way sluice valve.
- Throttling Device.
- Pressure Relief Valve
- Pilot Throttle.
- Bleed Valve.



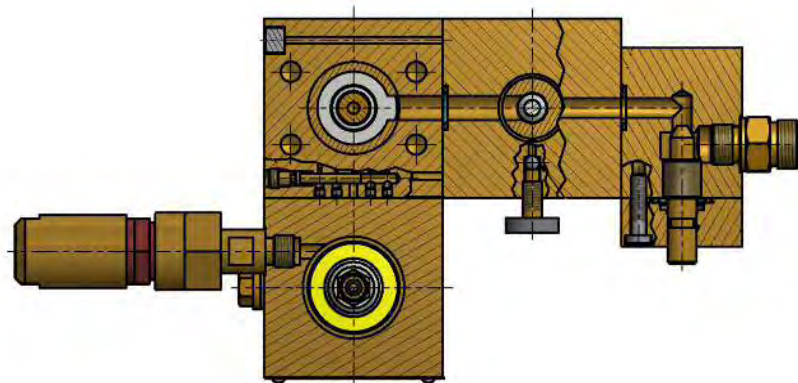
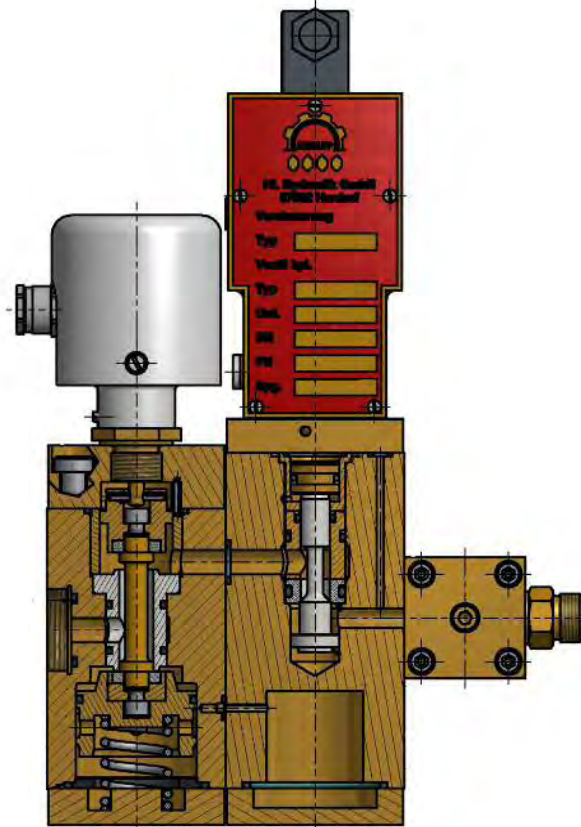
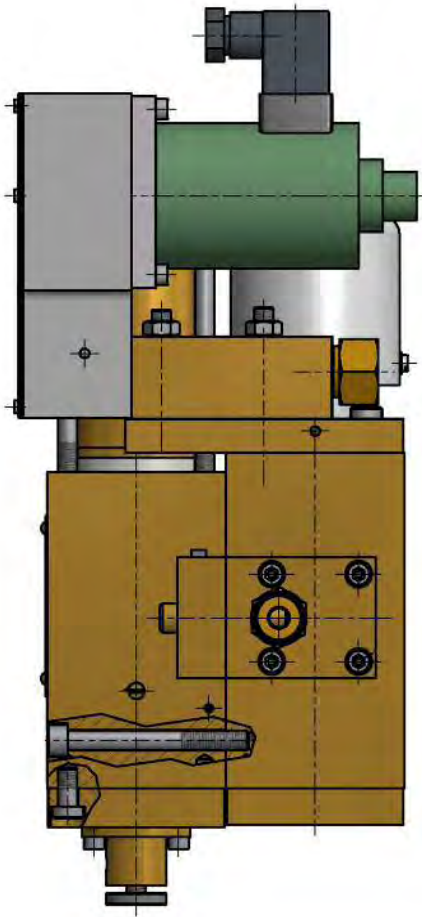
For safety reasons a check valve has to be installed at the S line.
Optional the safety device can be ordered with an integrated non return valve also.

Technical Data

TYPE	SHE MP	SHE HP	
Nominal size	20	10	mm
Primary pressure	64	64 - 200	bar
Secondary pressure	5 – 40	15 – 40	bar
Max flow rate	56,000	56,000	l/min
Mass	ca. 320	ca. 320	N
Nominal size of pressure relief valve	6	6	mm
Port P	M36 x 2	G 3/8"	
Port T	M36 x 2	M36 x 2	
Port ST connection for pipes with outside dimension:	10	10	mm
According to 2014/68/EU, Group 2, Category IV			

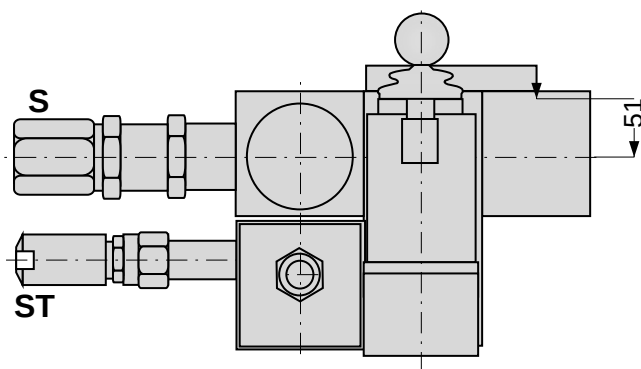
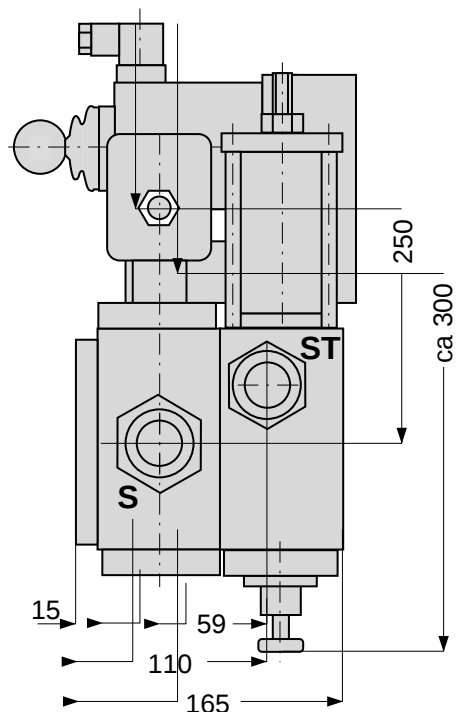
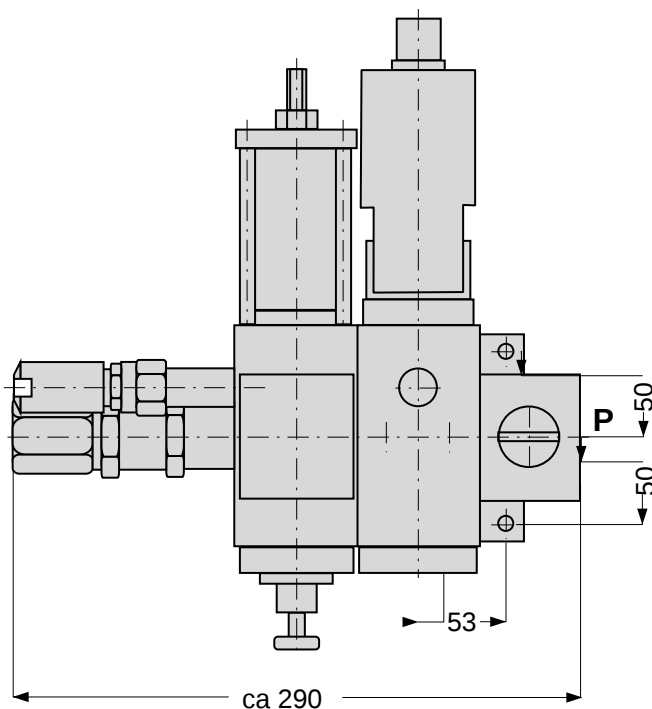


SAFETY DEVICES TYPE SHE





SAFETY DEVICES TYPE SHE

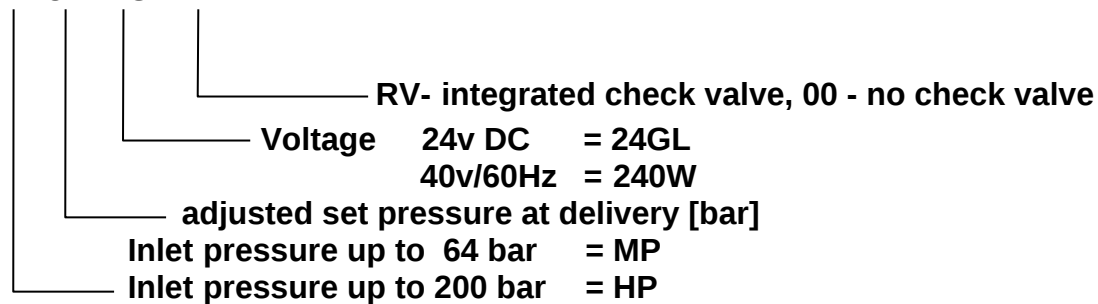


Port Connections

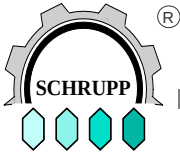
SHE MP	P,T	-	M36 x 2
	St	-	10 mm
SHE HP	P	-	G 3/8"
	T	-	M36 x 2
	St	-	10 mm

Ordering Information

SHE MP 34 24GL RV



Spare parts kit: SHE MP 24GL RV VTS



PRESSURE REDUCING VALVES TYPE DMV 08

Schrupp pressure reducing valves, type DMV08 (AP20380) are used to reduce pneumatic system pressure from a maximum primary pressure of 200 bar to a maximum secondary pressure of 60 bar. Upon reaching the adjusted outlet pressure, the leakfree Schrupp DMV08 closes. The robust design of the Schrupp pressure reducing valve is very compact and provides exact pressure control.



Technical Data

Nominal Size: 8mm
Inlet port: G 3/8"
Outlet port: G 1"
Max Primary pressure: 200bar
Max Secondary pressure: 60bar
Min Secondary pressure: 5bar
Flow rate 33,000L/min at 180bar dp
Mass: ca. 45N
Ambient Temperature 0-70°C

Ordering Code

DMV08-42-155308

(5-45bar Secondary press.)

DMV08-55-155324

(45-60bar Secondary press.)

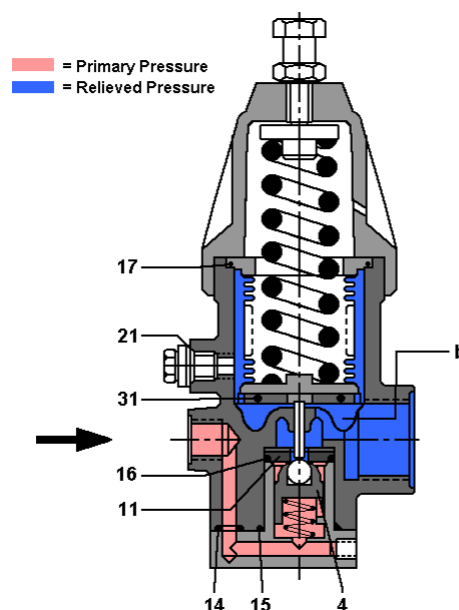
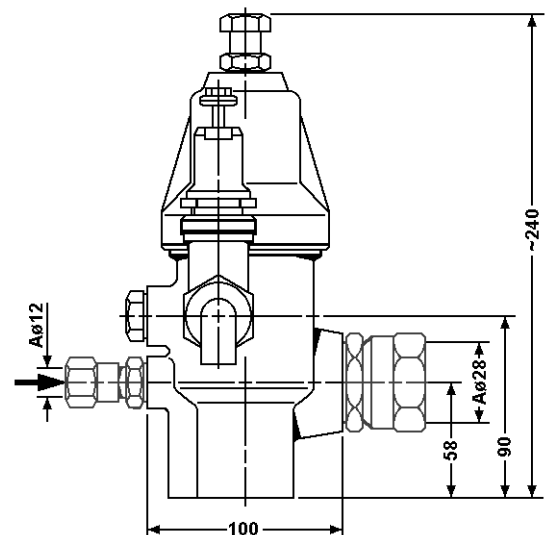
Adjusted set pressure w. delivery [bar]

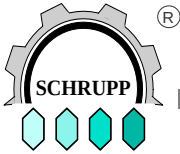
Spare Kit:

DMV08VTS-(Partnumber)

includes:

Pos	Stk	Description
4	1	Piston
11	1	Seat Ring
14	1	O-Ring
15	1	O-Ring
16	1	O-Ring
17	1	O-Ring
21	1	Seal
31	1	O-Ring





PRESSURE REDUCING VALVES TYPE DMV 20

Schrupp pressure reducing valves, type DMV20 are used to reduce pneumatic system pressure from a maximum primary pressure of 40 bar to a maximum secondary pressure of 25 bar. Upon reaching the adjusted outlet pressure, the leakfree Schrupp DMV20 closes. The robust design of the Schrupp pressure reducing valve is very compact and provides exact pressure control.



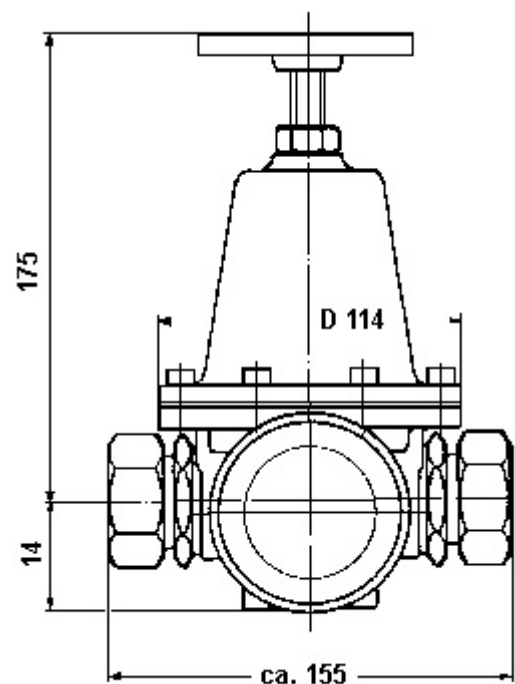
Technical Data

Size:	20mm
Inlet port:	G 1"
Outlet port:	G 1"
Max inlet-pressure:	40bar
Max outlet-pressure:	25bar
Min outlet pressure:	0,5bar
Flowrate	7.800L/min max
Mass:	apr. 4Kg
Temperature	0-60°C

Ordering code

DMV20-40-453419

Adjusted set pressure with delivery [bar]



CARTRIDGE PROGRAM



Stainless Steel Cartridge valves according to DIN24342

The valves are designed for use with water, water and oil emulsions, oil and gases. Their robust construction and compact design provide long life, ease of maintenance, and high performance.

These slip in cartridge type valves can be combined in many different ways to satisfy the requirements of a wide variety of applications. The sealed poppet design provides drop tight, leak free shut off.

Product range:

Cartridges for directional functions

Soft seated ND10 to 100 for compressed air and gases according to Group 2, 27/93/EG up to 350bar

Functional description

These valves are designed for use with special fluids:

No metal to metal contact at the sliding surfaces.

- the use of non-lubricating mediums is possible.

All pressurized areas are separated by soft seals

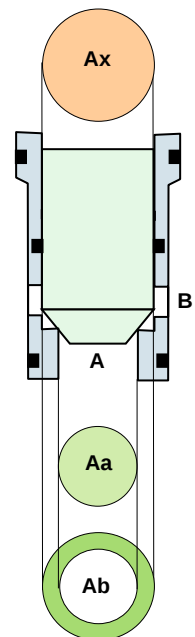
- for thin fluids and gases under high pressure.

Special geometry and non-corroding material

- for gases with an high humidity.

An important dimension for the function of cartridge valves is the surface ratio of the seat area A_a and the annulus area A_b to the pilot area P_x . Schrupp soft seated cartridge valves with metal support do have an ratio of 1:2 and can be used for flow in either direction.

Soft-seated valves are suitable for use in shut-off and directional functions. These valves are absolutely leak-free even for long-term operation in gas or high-pressure circuits.





CARTRIDGE PROGRAM

Cartridge valves Type 6

For directional and shut off applications

Dimensions according to DIN 24342

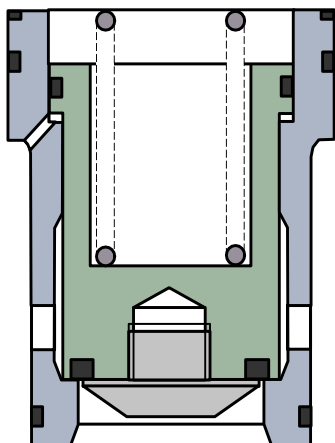
Material: stainless steel, soft seated, metal support
area ratio 1:2

Example / Order code

EO - 025 - 00 - 0.0 - 6D / S

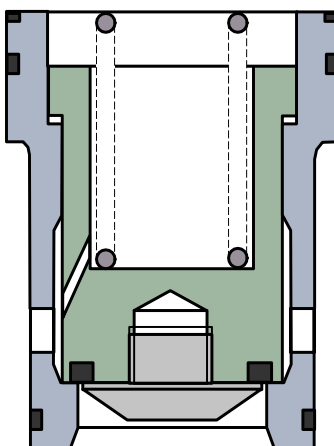
/ S = Standard design
/ R = Non return valve
/ A = Active valve

Size 010, 016, 025, 032, 040, 050, 063,
080, 100mm



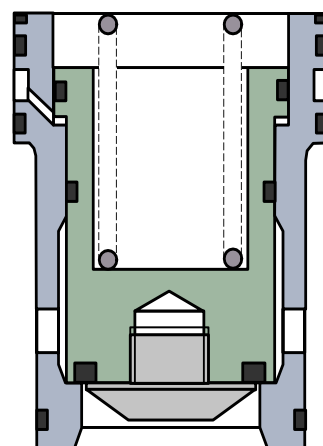
**Standard design
Type 6D / S**

350bar - ND 010 to 100
for water, oil and gas.



**Non return valve
Type 6D / R**

Up to 350bar - ND 010, 016,
025 for water, descaling water,
oil and gas.



**Active valve
Type 6D / A**

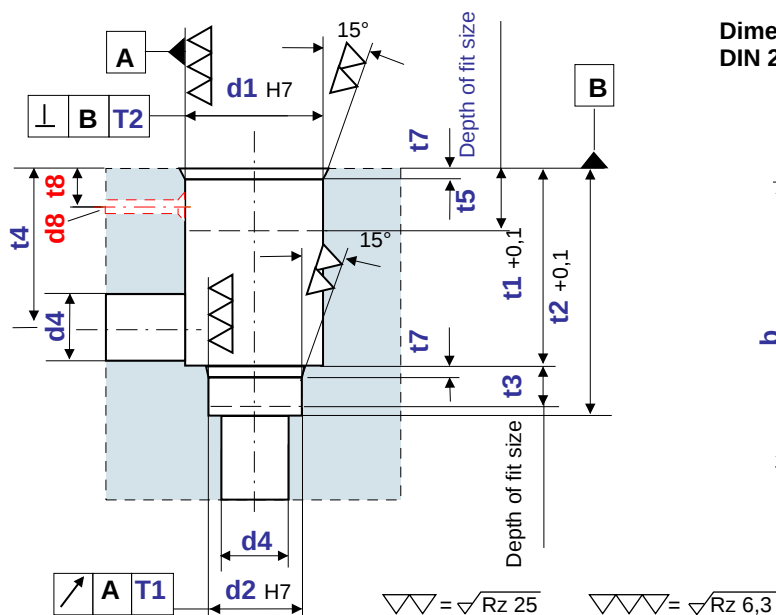
Up to 350 bar - ND 16 to 100
for water, oil and gas

OPTIONS:

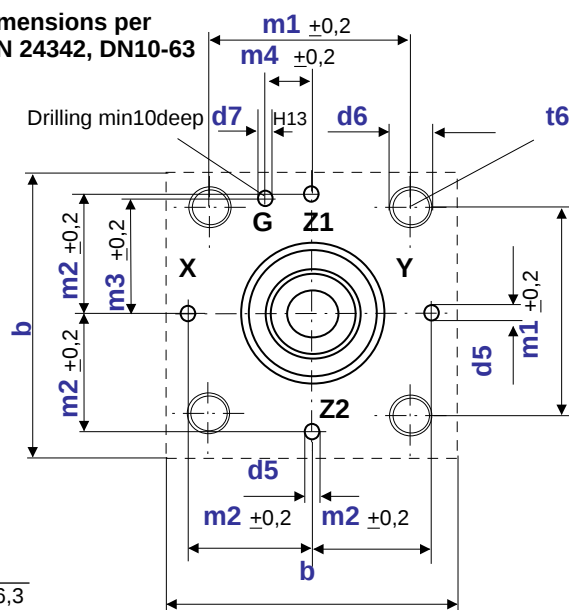
Seawater resistant versions, expanded temperature range (200°C),
expanded pressure range to 420bar (10% reduced flow rate)



CARTRIDGE PROGRAM



Dimensions per
DIN 24342, DN10-63



SLUICE OR DIRECTIONAL VALVES TYPE WEV

2/2, 3/2 Directional Valves

Type WEV 06

These robust and smooth operating valves can be used with compressed air, oil, water and emulsions. All ports can be pressurised. The valves type 500100, 500106 and 500008 are equipped with soft seats for a leak-free function. The piston is spring biased in the closed position and allows a fail safe operation so that the valve can be used for accumulator safety functions also.

Variations:

- solenoid operated
- manually operated
- hydraulically operated
- Limit switches

Type WEV 06 - 500100

NP 250bar ND6mm

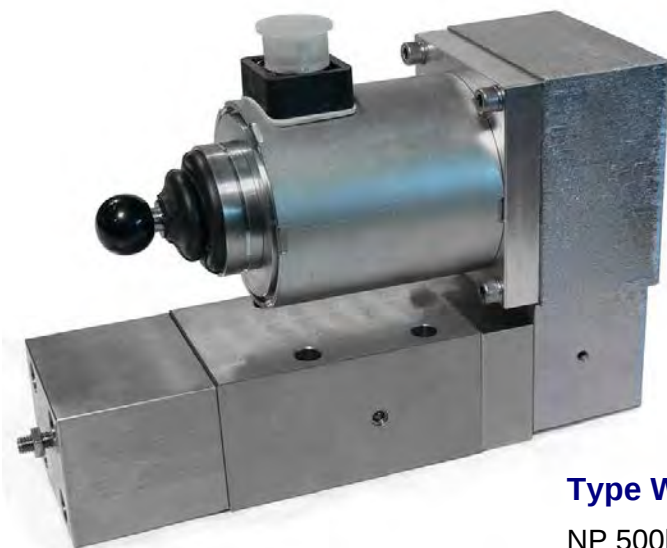
compressed air,
gases Group 2 on request



Type WEV 06 - 500138

NP 250bar ND6mm

Water, oil and emulsions



Type WEV 06 - 500106

NP 350bar ND6mm

compressed air,
gases Group 2 on request

Type WEV 06 - 500008

NP 500bar ND6mm

Water, oil and emulsions

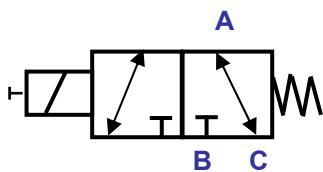


HL Hydraulik GmbH

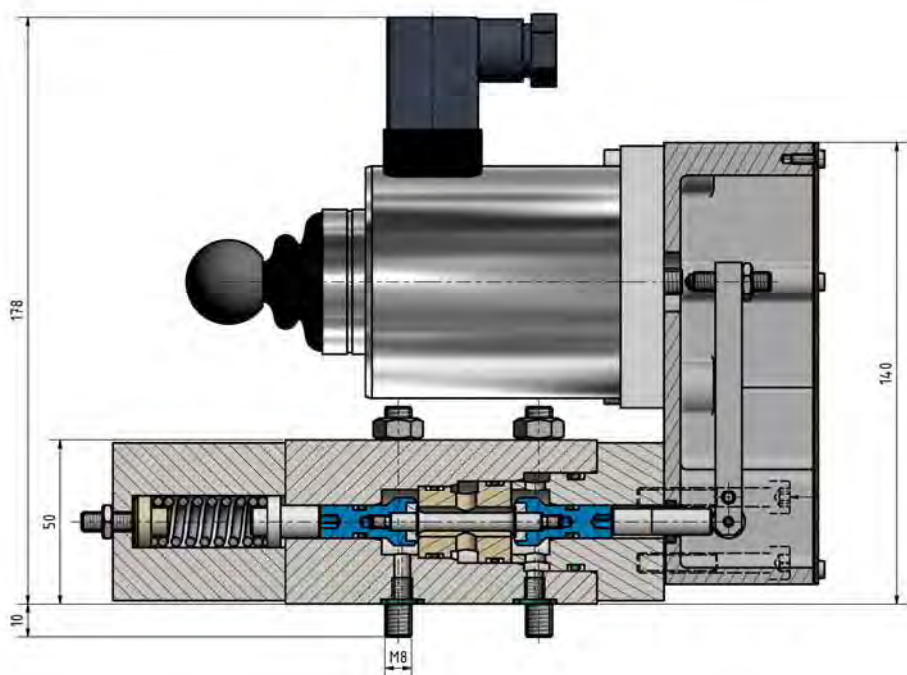
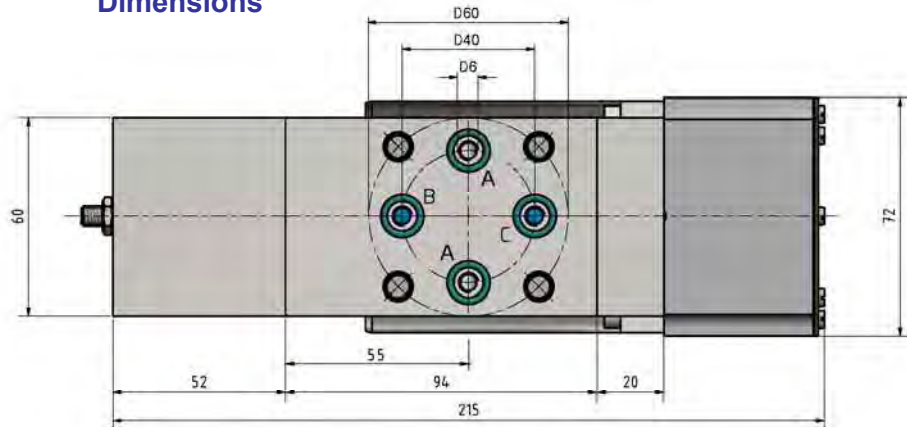
Kupferhütte 5C
57562 Herdorf
Tel +49 2744-9324-0
info@hl-hydraulik.de
www.hl-hydraulik.de

SLUICE OR DIRECTIONAL VALVES TYPE WEV

Symbol

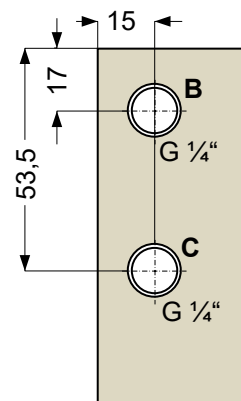
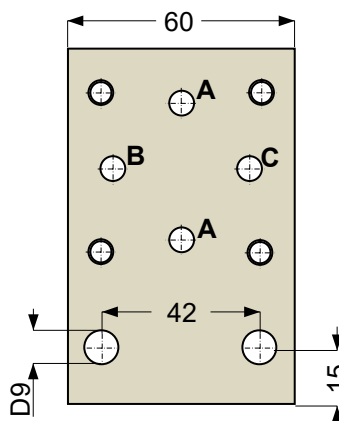
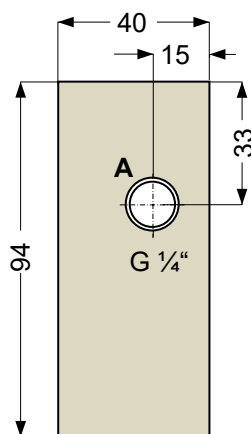


Dimensions



Subplate for WEV 500106-01

Dimensions



Ordering Code

Subplate: 850252

E1.7.2

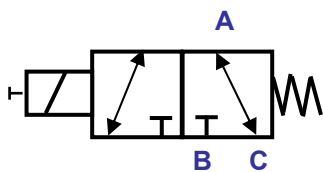
FEB20

HP-Pneumatics

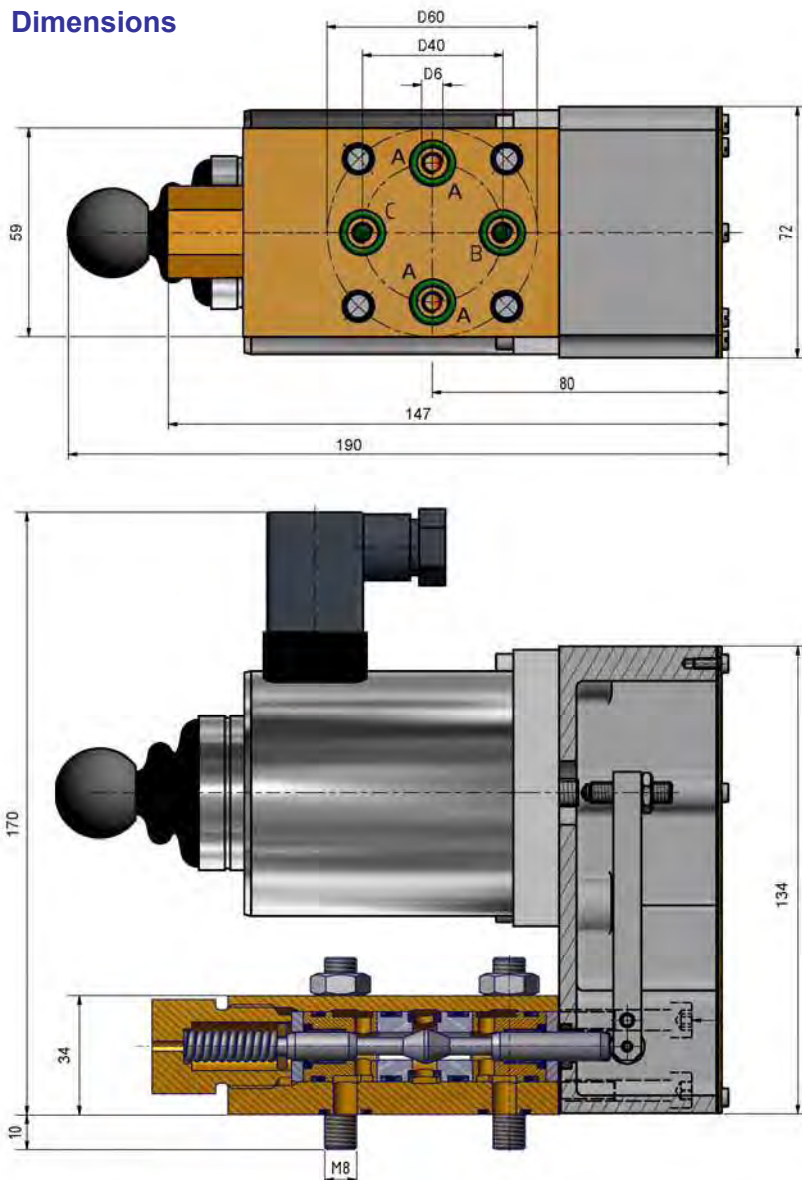


SLUICE OR DIRECTIONAL VALVES TYPE WEV

Symbol

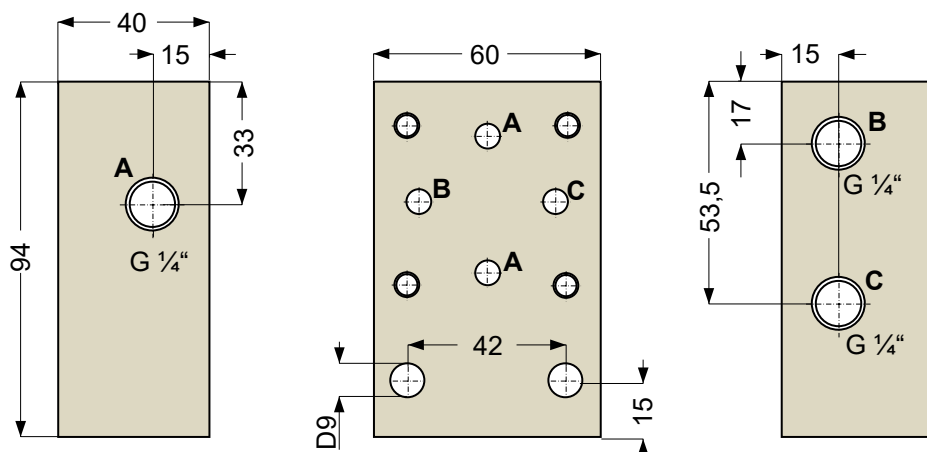


Dimensions



Subplate for WEV06P

Dimensions



Ordering Code

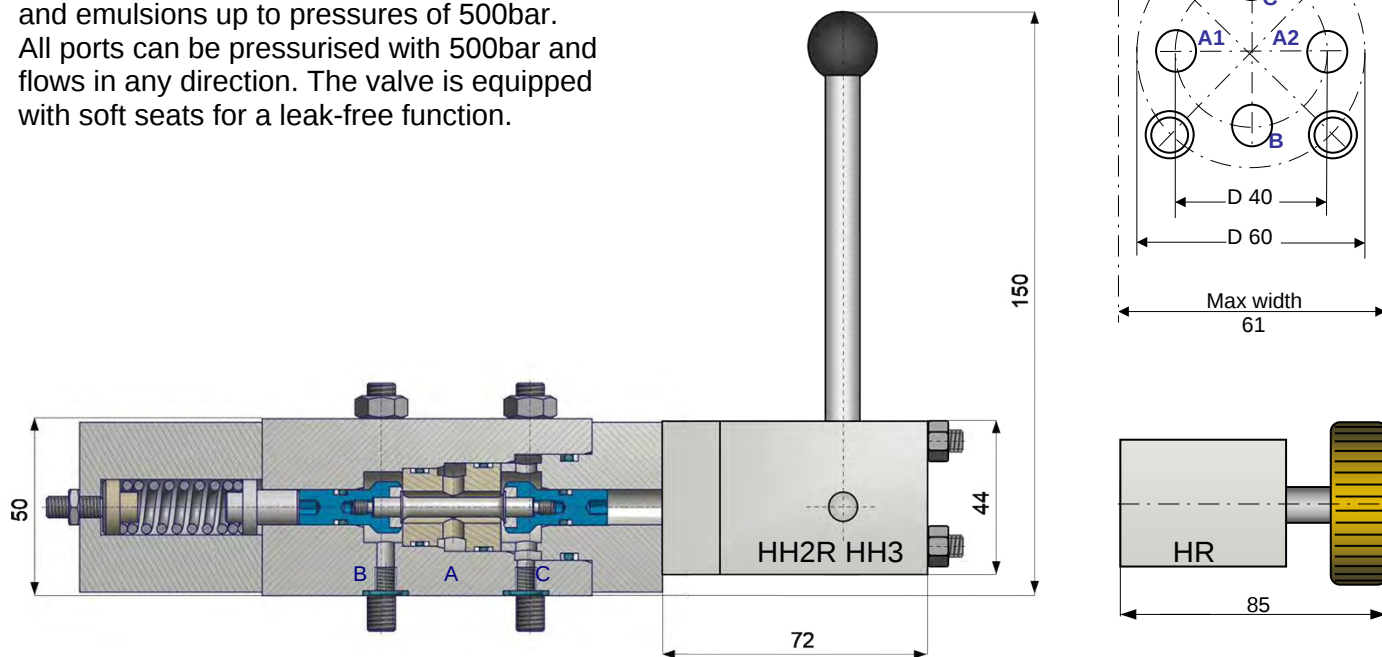
Subplate: 850252



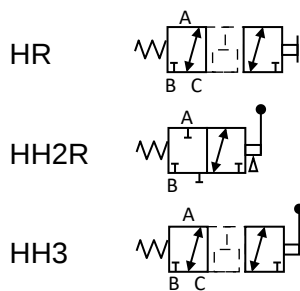
SLUICE OR DIRECTIONAL VALVES TYPE WEV

Manual Operated Valves Type 500008 / 500106

can be used with compressed air, oil, water and emulsions up to pressures of 500bar.
All ports can be pressurised with 500bar and flows in any direction. The valve is equipped with soft seats for a leak-free function.



Technical Data



Operating Pressure

Nominal Size

Operating Temperature

Ambient Temperature

Medium

Recommended Filtration

0 to 350bar

350bar to 500bar

Material

0-500 bar

DN6

-20 bis +80 °C

max 70 °C

Gases, Water, Oil

25 my

10 my

Stainless Steel, Brass, Delrin, Viton

Ordering Code

Valve: WEV06P-250-500008-HR

HR (Hand-Wheel)

HH2R (Lever, 2/2 directional function, NC including Ratchet)

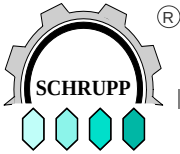
HH3 (Lever, 3/2 and 2/2 directional functions)

500008 for liquids

500106 für gases

Max operational pressure in bar

Others on request



SLUICE OR DIRECTIONAL VALVES TYPE WEV

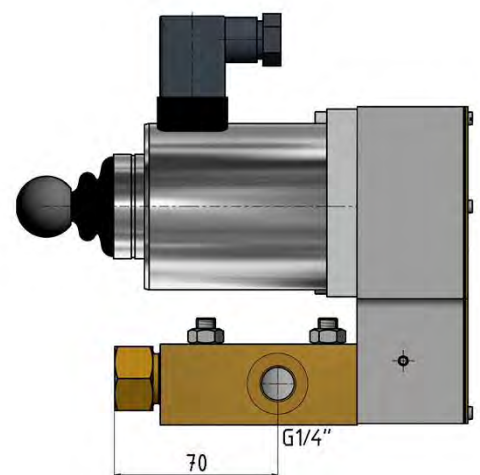
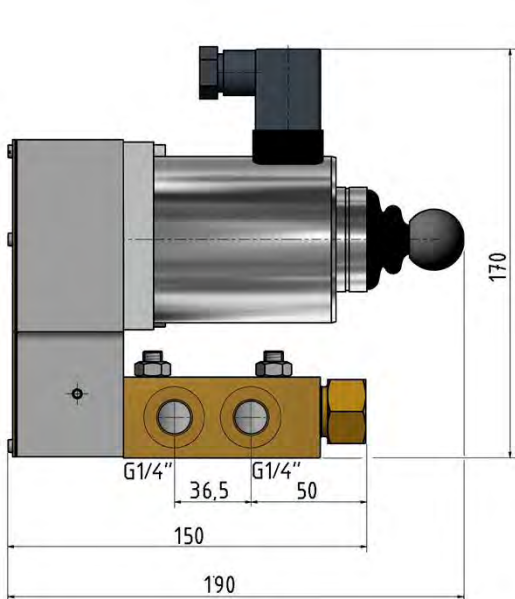
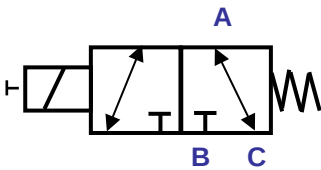
3/2, 2/2 Directional Valve DN6 PN250 with Thread Connections

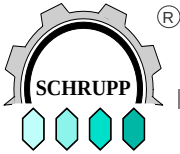
TYPE: WEV06RL-250-500104-01-024G 24V DC
110W 110V/50Hz (60Hz)
220W 220V/50Hz (60Hz)
 max operation pressure [bar]

Partnumber: 500104

These directional control valves are identical to series 500100 but have a housing with threaded connections. The valve can be used compressed for air and gas media up 250bar operating pressure.

Please find technical data at catalogue E1.7.3.



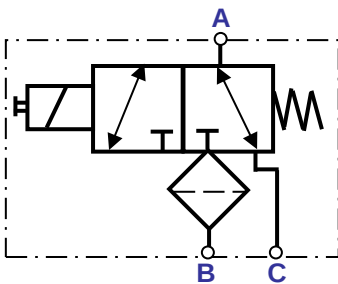


SLUICE OR DIRECTIONAL VALVES TYPE WEV

3/2, 2/2 directional Control Valve DN6 PN250 with filter, for compressed air

TYPE: WEV06FL- 250 - (Part no.) - 024G 24V DC
110W 110V/50Hz (60Hz)
220W 220V/50Hz (60Hz)

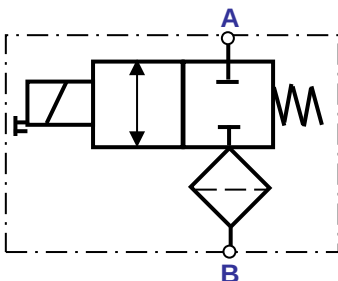
These directional control valves are used to channel air from a high pressure reservoir to operating vessels with a lower pressure. An integrated 80 micron cleanable filter at port R protects the valve against dirt particles. The Schrupp sluice valves are direct solenoid operated 2/2 way valves size NG6 (3/8") or can be combined with our leak free cartridge assembly for larger sizes, or in combination with other devices including pressure reducing valves. Max operating pressure 250bar.



Ports A, B, C - G1/4"
Part no. 451443-01

Spare parts for filter:

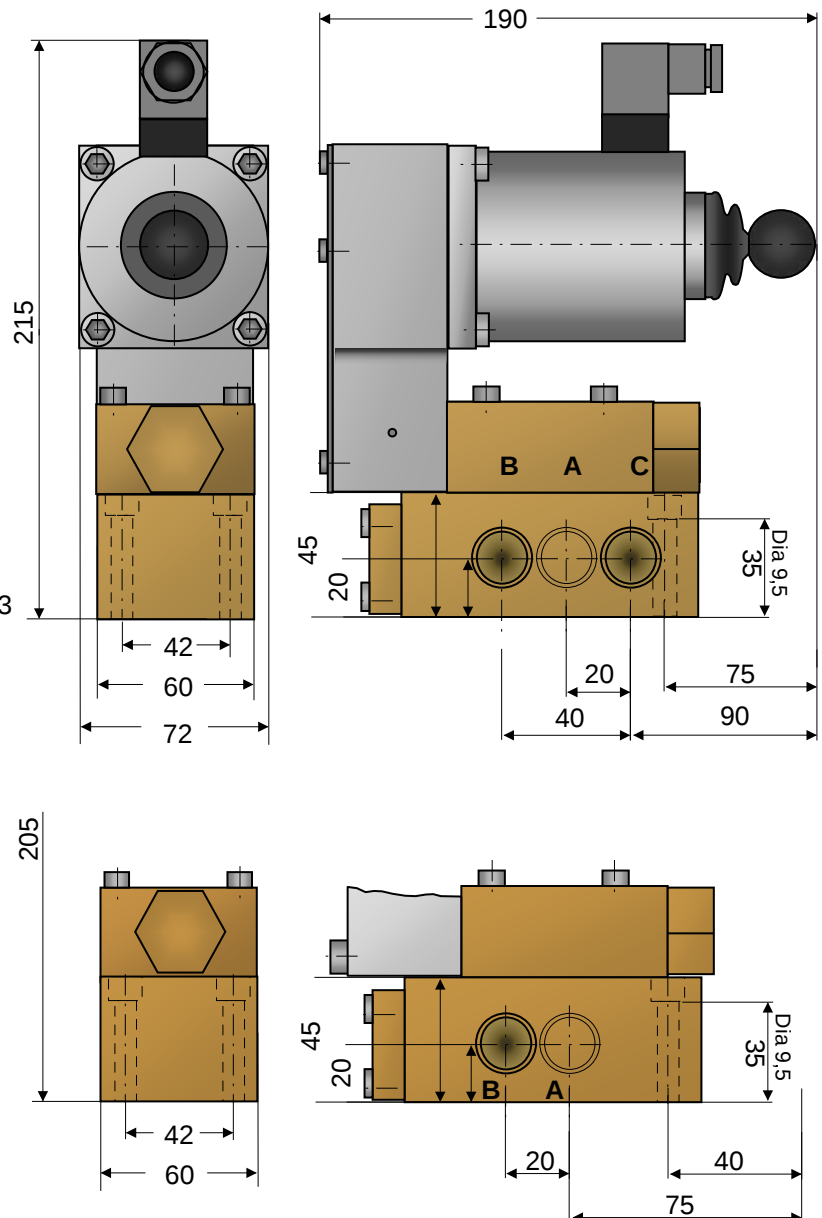
1Stk filter element Part no. 157346
 1Stk O – Ring Part no. 080098
 Spare parts for directional valve see page E1.7.3

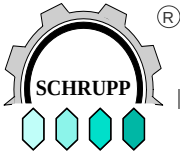


Ports A, B - G1/2"
Part no. 503690-01

Ports A, B - M22x1,5
Part no. 503382-01

Spare parts see above





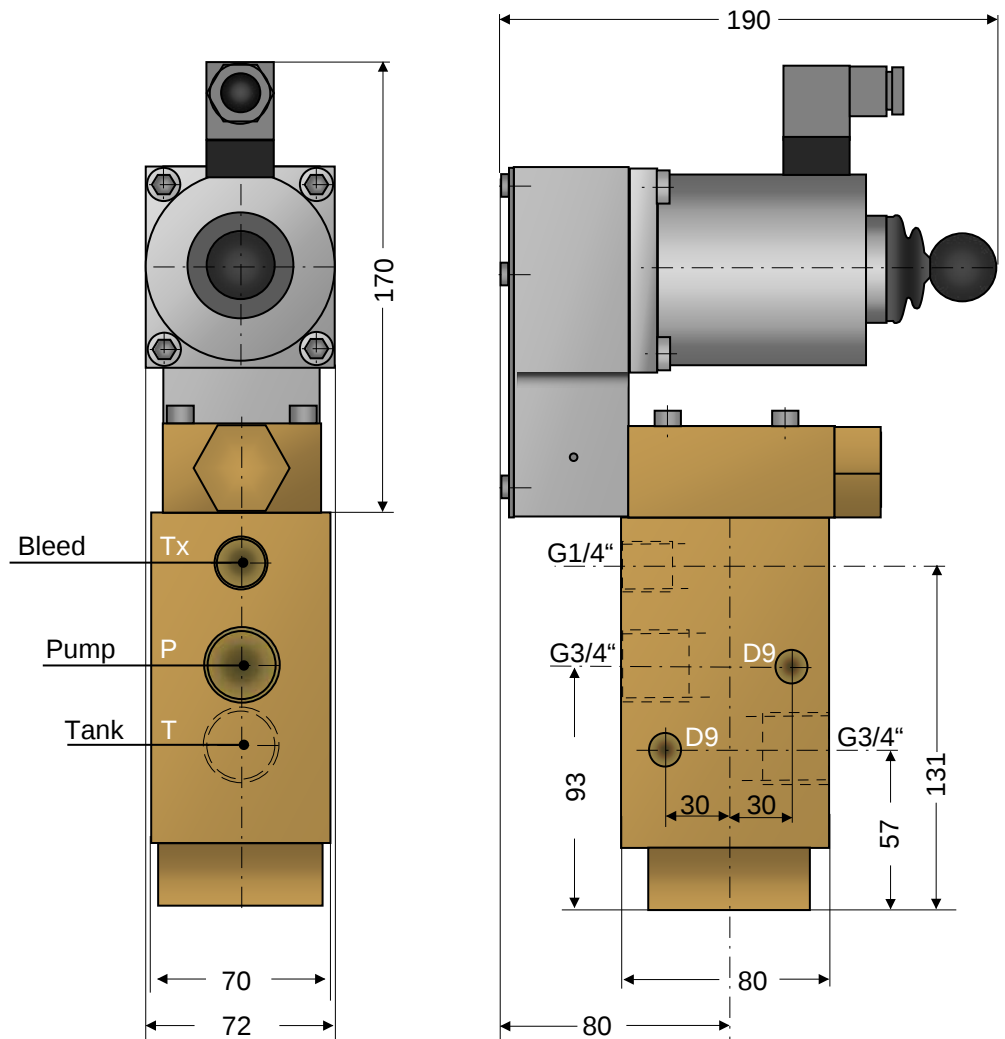
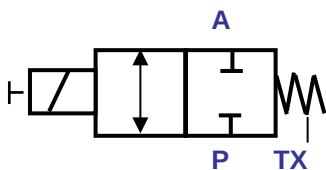
SLUICE OR DIRECTIONAL VALVES TYPE WEV

2/2 Directional Control Valve DN16 PN250 with threaded ports for compressed air, water, oil

TYPE: WEV16RL-250- (Part no.) - 024G 24V DC
110W 110V/50Hz (60Hz)
220W 220V/50Hz (60Hz)
 Max operating pressure [bar]

Part no. 450737-01

These leak free directional valves size 16mm with threaded connections can be used in compressed air systems up to 250bar. Special designs for water or oil applications on request. All ports can be operated with the maximum pressure. The valve includes a soft seated DIN cartridge size 16 type EO-16-00-6D/S, that is piloted by a type 500100 pilot valve.



Spare Parts

Pilot valve see page E1.7.3

Cartridge valve ND 16

Part no. 165991



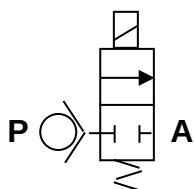
SLUICE OR DIRECTIONAL VALVES TYPE WEV

2/2 Directional Valve DN16 PN250 with Check Valve

Application

These valves are used as sluice valves between high and low pressure reservoirs. They combine a 2/2 way pilot operated directional control valve and a check valve. The Schrupp WEV 16 R directional valves can also be used for diesel engine start up.

Technical Data



Housing – Brass
Internal Parts – Stainless Steel
Seals – Viton, Teflon, Delrin

Pressure Range
Nominal Size
Temperature Range
Ambient Temperature
Medium
Voltages
Max.Power Consumption
I.D.
Electrical Protection Class
Voltage Tolerance

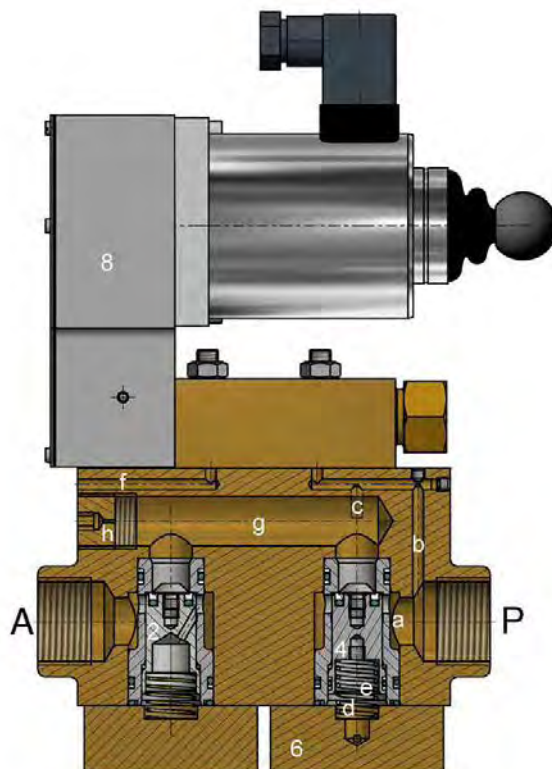
0-250bar
DN 16
-20 to+80°C
max 70°C
compressed air,Gases
24-240V Gs/ Ws
43W
100%
IP 65
+5bis –10% VDE580

Functional Description

When the solenoid of the 3/2 way pilot valve is de-energized, piston area d is connected through drillings band c to port P. The piston of cartridge valve position 4 is closed by the spring. By energizing the solenoid of the pilot valve, drilling b will be blocked and c and f are connected. The cartridge valve will be opened by the pressure in Port P. The check valve allows flow only from P to A. During this operation a small volume of air will pass through a nozzle.

Spare Parts WEV 16 VTS

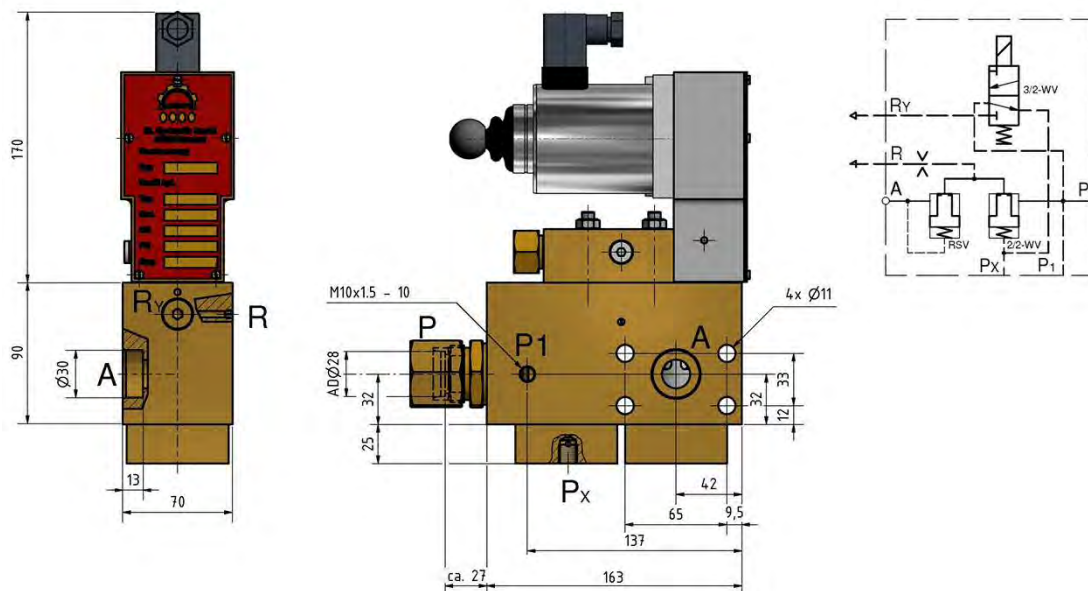
Item	Quantity	Description	Part no:
2	1	Check Valve DN16	165997
4	1	Cartridge Valve DN 16	166074
6	1	Rd-Ring	080050
8	1	Pilot Valve DN 6	500000



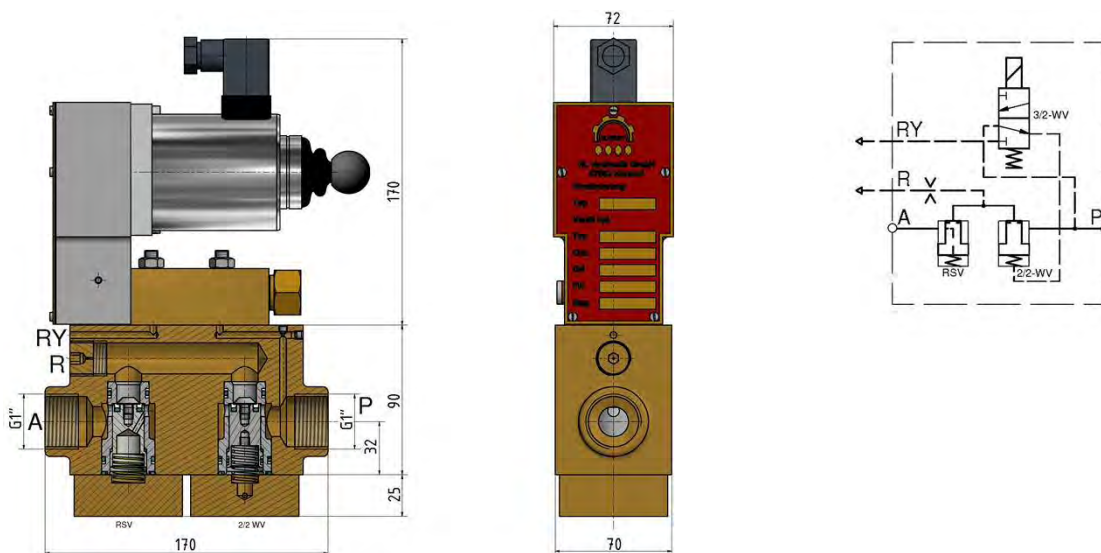


SLUICE OR DIRECTIONAL VALVES TYPE WEV

Part No.: 168870-01



Part No.: 452617-01



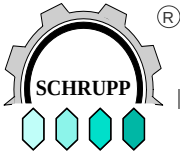
Ordering Code:

WEV 16 R **024V**

Voltage

024V, 110V/50-60Hz, 220-240V/50-60Hz
others on request

Part No.



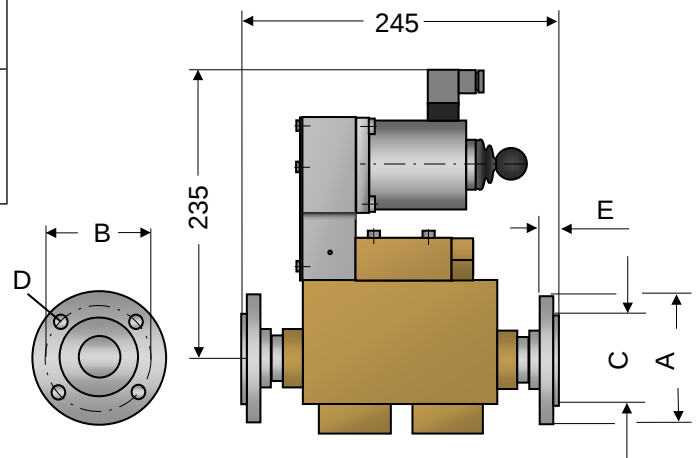
SLUICE OR DIRECTIONAL VALVES TYPE WEV

Modification Sets and Accessories (do not use for new applications)

Valve Type 168870 with Flange connections

Part No.	Flange	A	B	C	D	E	Flange per
452631	DN 20	105	75	58	14	18	DIN 2567
452632	DN 25	115	85	68	14	18	PN 40
542633	DN 40	150	110	88	18	18	
452634	DN 20	130	90	68	18	22	DIN 2569
452635	DN 25	140	100	78	18	24	PN 100
452636	DN 40	170	125	98	23	26	

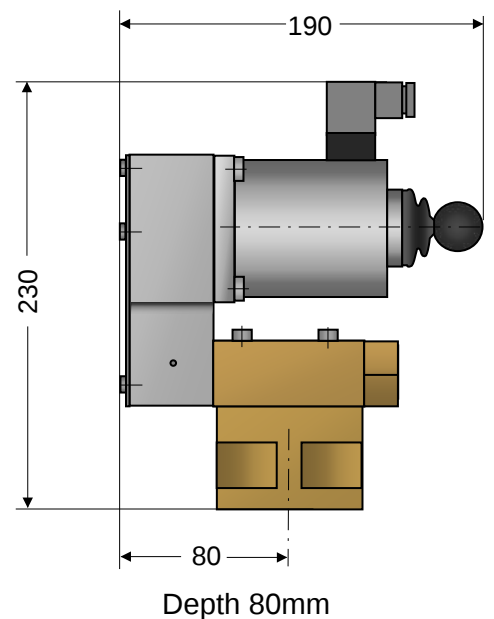
Part No for Valve type 168870 including flanges



Modification set

In many systems there are still type AP 1820, AP 6225 or AP 6733 valves in operation. For technical reasons, it is not still possible to produce the original pilot valves. To upgrade these valves with new pilot valves Type 500000 it is necessary to assemble a modification set. Especially when the main stage of the valve is in good condition it is more economical to replace only the pilot valve than it is to invest in a complete new valve.

Part no. modification set 502136



GAS DRYER STATIONS

SCHRUPP GAS DRYER STATIONS

Optional with Bypass

For compressed Air and other
non- aggressive gaseous media:

- drying
- de-oiling
- filtering

this means

- less corrosion
- less wear and
- no icing
- depressurized standby function

and therefore

- greater service life
- lower maintenance costs and
- fail safe operation

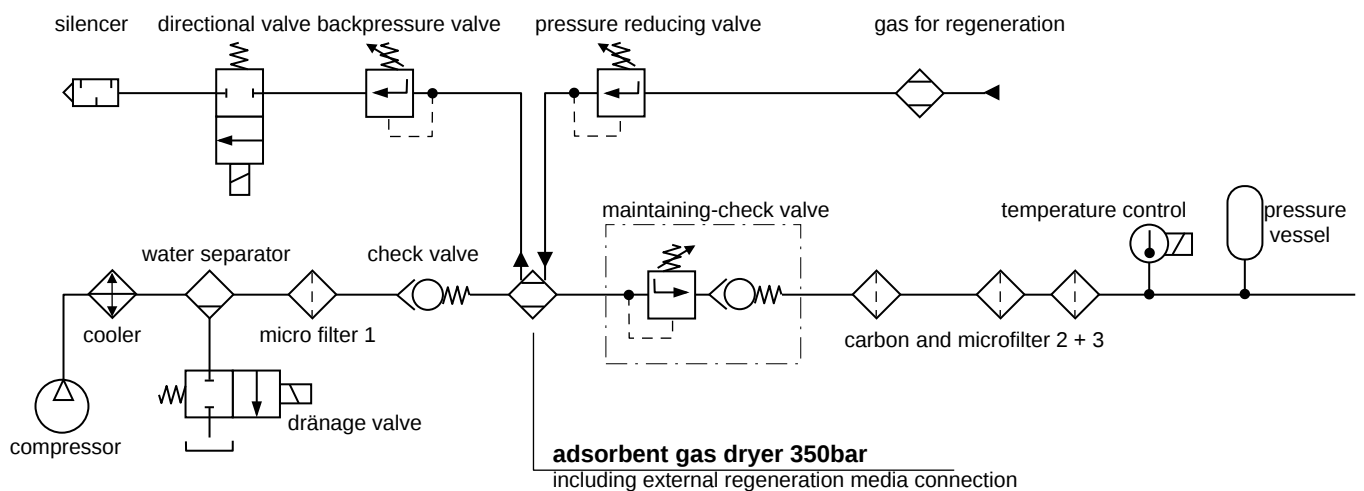


GAS DRYER STATIONS

Gas Processing Systems

Efficient Solutions for processing breathing air or industrial atmosphere.

- designed for continuous production of compressed air or class 2 gases
- excellent efficiency by use of an external regeneration media
- dew points below -50°C
- temperature compensated processing
- drying process independent from inlet temperature
- no thermal regeneration necessary
- operation pressures up to 350bar



GAS DRYER STATIONS

Gas dryer stations are assembled and tested and will be supplied ready for installation according to customers' requirements. Normally all components are assembled on a common frame but it is also possible to select the items separately and integrate them into an existing system.

Variations:

Pressure ranges 30-65 bar, 65-250bar, 250-350bar

Media: industrial air, breathing air, non-flammable and non-aggressive chemical or toxic gases

Flowrates up to 1000L/min and up to 1400L/min

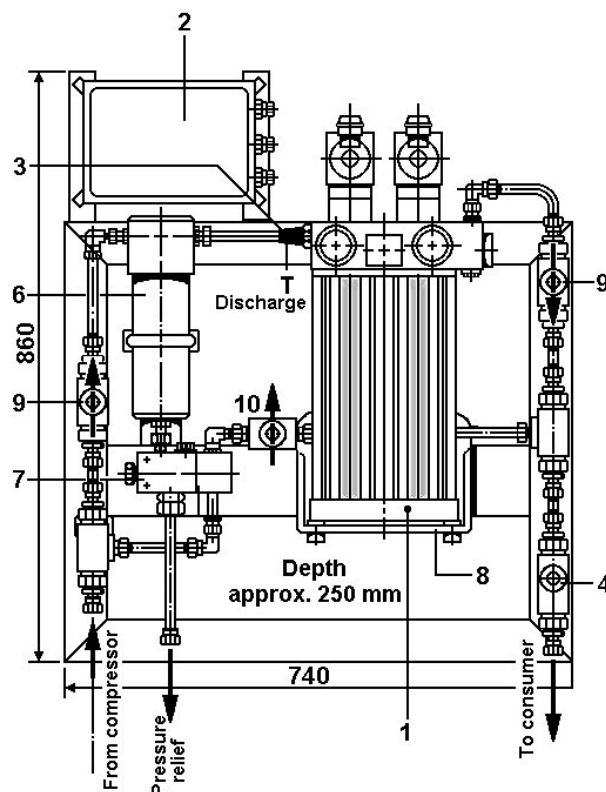
Special solutions for external regeneration gases, offshore atmospheres, additional filtration and absorber filters for breathing or clean air applications. TÜV or GL certificates available.

Systems and components shown in this catalogue are only examples to explain the general function of our products. Please contact us for details or any special applications.

GAS DRYER STATION GTS (Example: unit for industrial application)

- | | | |
|------|---------------------------------------|-----------------------|
| 1 | 1 Gas dryer | Type GTR |
| | Operating pressure | 30 - 350 bar |
| | Flow rates up to | 1400 l/min |
| | Regeneration air | 5-10% |
| | Control voltage | AC or DC |
| 2 | 1 Electrical control unit | 3 1 Silencer |
| 4 | 1 Pressure maintaining valve | 5 2 Check valves |
| 6 | 1 Fine filter | 7 1 Directional valve |
| 8 | 1 Mounting frame | |
| 9/10 | 1 Version with bypass (Option) | |
| | 3 shut off valves + additional piping | |

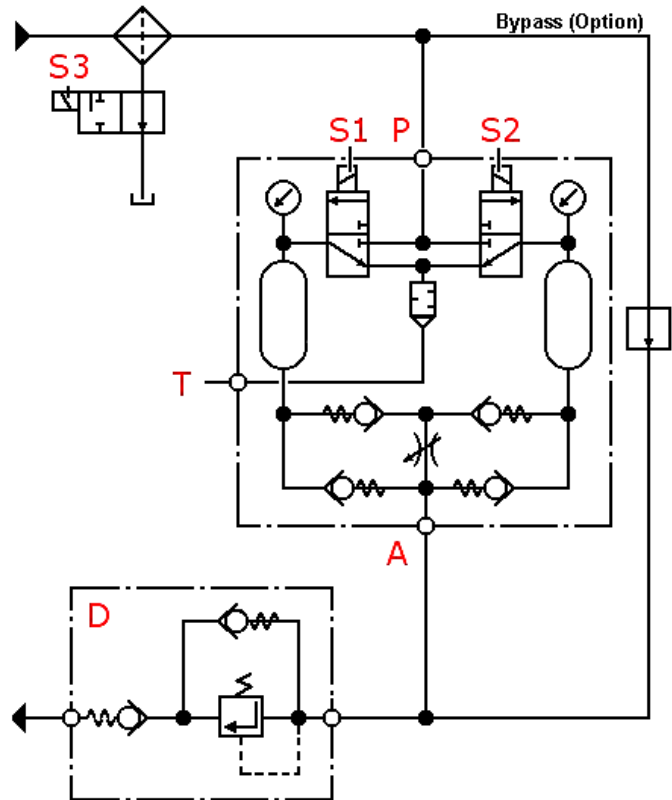
Unit complete assembled and tested



GAS DRYER STATIONS

Functional Diagram

- S3 Fine filter +
electrically operated drain valve
- P High pressure inlet GTR
- B Bypass (Option)
(maintenance)
- T Vent connection
- A High pressure outlet GTR
- D Pressure maintaining unit



Functional description

The gas dryer station consists of a gas dryer, fine filter with drain valve, pressure maintaining check valve, shut off valves, optional bypass and an electrical control unit.

All components are assembled on a mounting frame, piped, wired and tested..

Compressed air from the copressor with high humidity passes the fine filter (S3) and enters into the Gas dryer (P). The fine filter separates free water particles from the compressed air which will be drained automatically by the directional valve if the compressor is not in operation.

The two directional valves (S1, S2) at the dryer will connect the inlet (P) to one adsorber reservoir, so that air with low humidity will exit at Port A. (For detailed information please see page E1.8.7).

The pressure maintaining check valve unit (D) creates an adjustable back pressure during the operation and keeps the system pressure lower if the compressor is not in operation so that the system can be drained.

The optional bypass allows repairs or maintenance work without an interruption of the air supply.

GAS DRYER STATIONS

For high pressure air and
non aggressive Medium for:

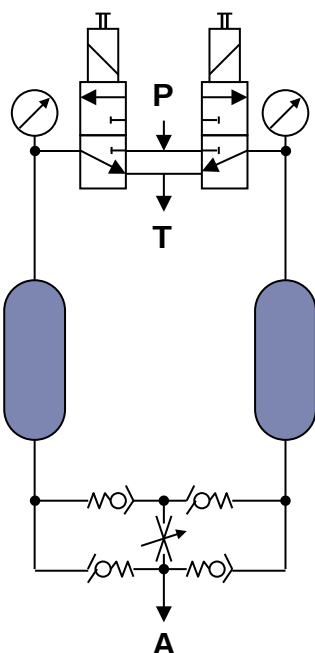
- drying
- de-oiling
- filtering

- Benefits

- less corrosion
- less wear
- no icing

and consequently

- longer service life
- lower maintenance costs
- fail-safe operation



Orderno. and example

GTR 10 **HP 335** **024**

Voltage

024 24V DC

240 220-240V/50Hz

Oper. pressure

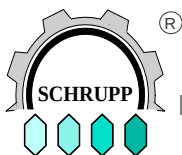
MP 30-250bar

HP 250-350bar

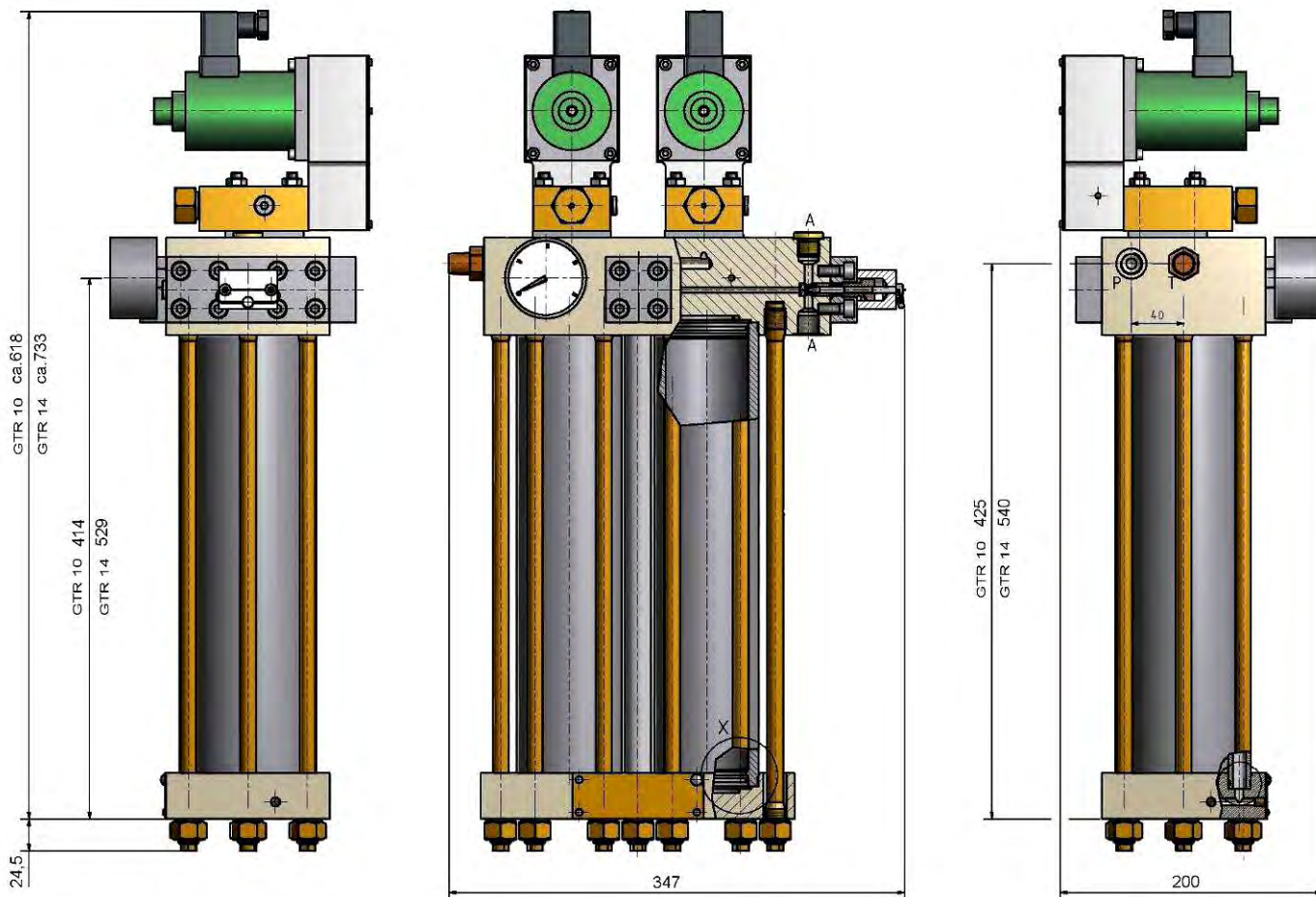
Type

GTR 10 Q max 1000L/min

GTR14 Q max 1400L/min



GAS DRYER STATIONS

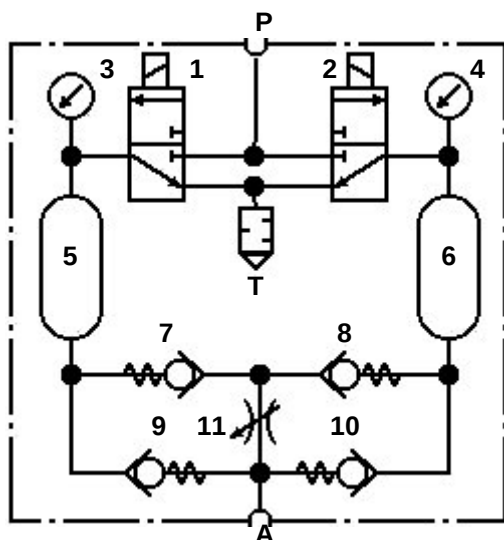


Technical Data	GTR 10 MD	GTR 10 HD	GTR 14 MD	GTR 14 HD
Operating pressure	30-250bar	250-350bar	30-250bar	250-350bar
Flow rate	1000L/min		1400L/min	
Regeneration air	5-10% of inlet flow rate			
Air volume	0,7L each reservoir		0,99L each reservoir	
Max. temperature	40°C			
Humidity	100%			
Voltage	24V DC, 240V/50Hz	24V DC	24V DC, 240V/50Hz	24V DC
Power consumption	27W	31W	27W	31W
Dew point	-40 bis -60°C			
Material Covers	SS / MS option	SS	SS / MS option	SS
Material tube	Steel nickel coated			
Main connections	G3/4“			
Mass	58Kg	61,5Kg	58Kg	61,5Kg

GAS DRYER STATIONS

GAS DRYER TYPE GTR

The gas drier consists of two reservoirs filled with highly porous hydrostatic materials (adsorbents), into which damp compressed air and dried depressurized air are alternately admitted for the regeneration phase.



- P High pressure inlet HP
- 1; 2 3/2-directional valve
- 3; 4 Pressure gauge
- 5; 6 Reservoir with adsorbent
- 7; 8 Check valve LP
- 9;10 Check valve HP
- 11 Throttle
- T Vent
- A High pressure outlet

The gas drier consists of two reservoirs filled with highly porous hydrostatic materials (adsorbents), into which damp compressed air and dried depressurized air are alternately admitted for the regeneration phase.

The damp air coming from the compressor passes through the fine filter and the energized open 3/2-way valve DN 6 (1), which voltage is being passed, and reaches the reservoir (5).

The adsorbent in reservoir (5) removes the moisture from the damp compressed air as it passes through this reservoir. The now dry air passes via the check valve (9) to out let port /A). A small portion of this dried compressed air is depressurized in the throttle valve (11) and flows through the check valve (8) to the reservoir (6). This dried air absorbs the water from the damp adsorbents and passes via the 3/2-way valve (2) into the atmosphere, thus regenerating the adsorbents. An dryer system requires an additional fine filter at the inlet and an pressure maintaining unit at the outlet of the dryer (for more details please see page E1.8.4).

The inlet and outlet of the adsorbent reservoirs are each fitted with a sintered metal disk. These disks filter the water and oil particles out of the incoming damp air and any particles of adsorbate material from the outgoing air. Since drying and regeneration are performed in a counter-flow procedure, any residues are removed from the sintered metal disks at each reversal of the direction of flow. After the preset time interval (e.g. 10 minutes), the two 3/2-way valves (1 and 2) are automatically reversed via a timer switch.

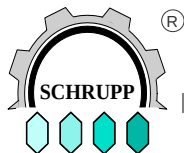
The procedure described above is now repeated but with the reservoirs “reversed”.

The drying procedure is connected to the operation of the compressor. When the compressor is switched off, both 3/2-way valves (1 and 2) are closed (off position).

In a complete dryer system the pressure relief valve opens and the condensate in the fine filter is discharged.

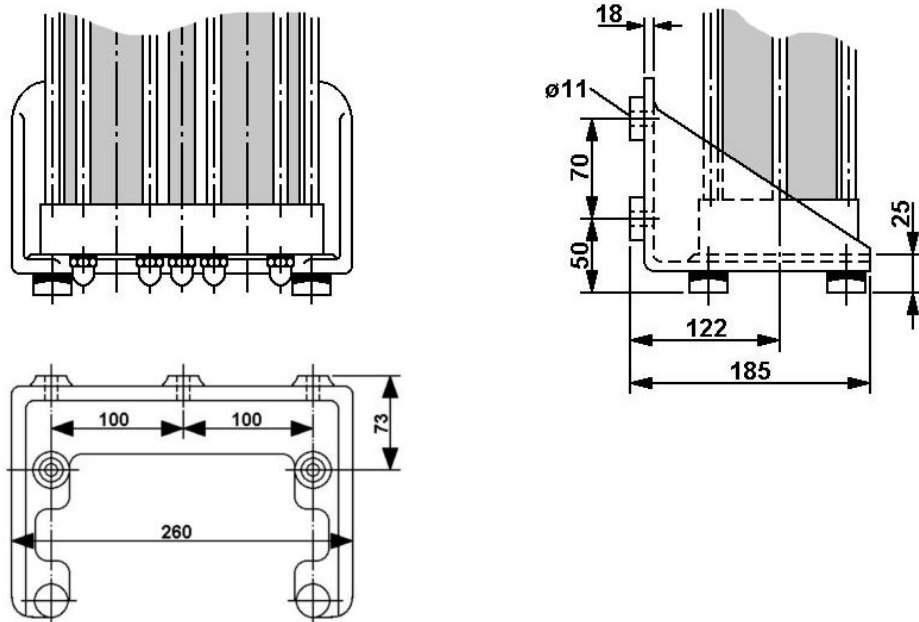
When the compressor is restarted, the drying procedure is continued where it was interrupted.

Using this method, extremely low pressure dew points can be achieved (depending on the operating pressure, down to -50°C and lower measured at the drier outlet).

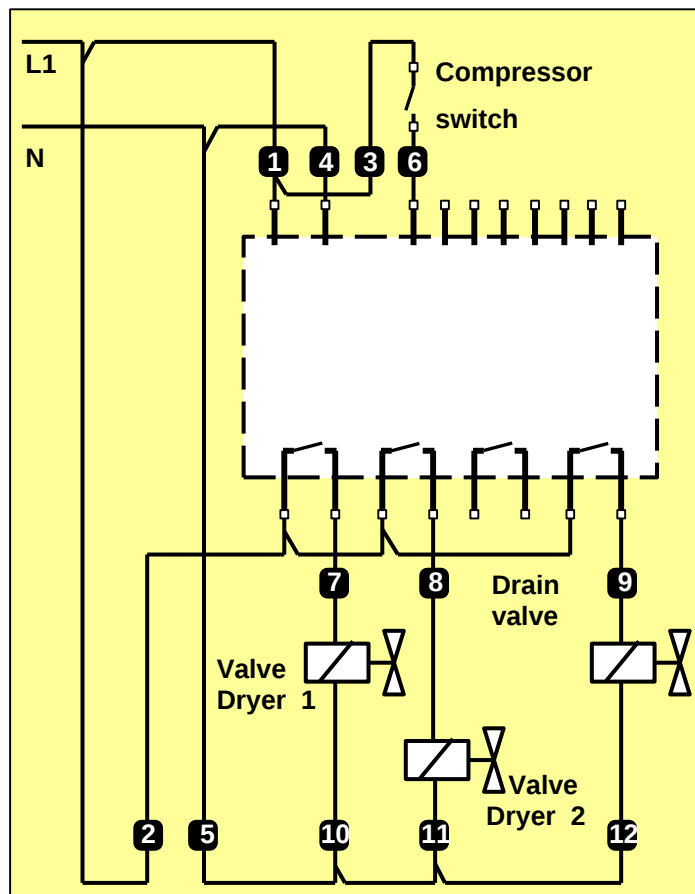
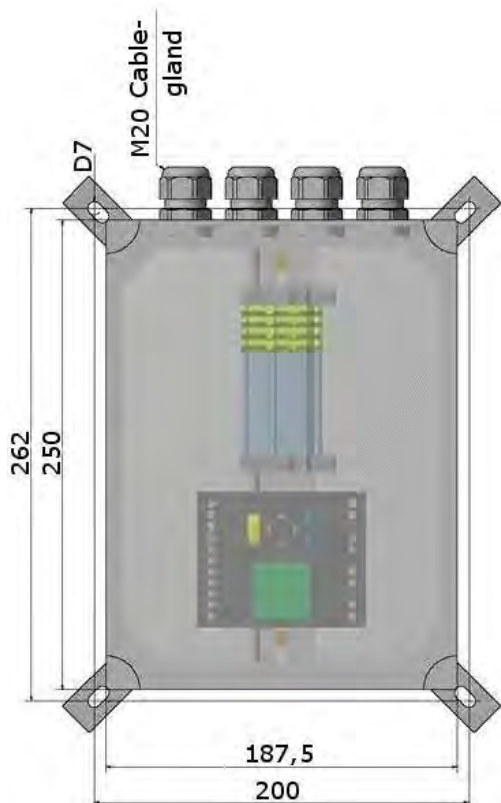


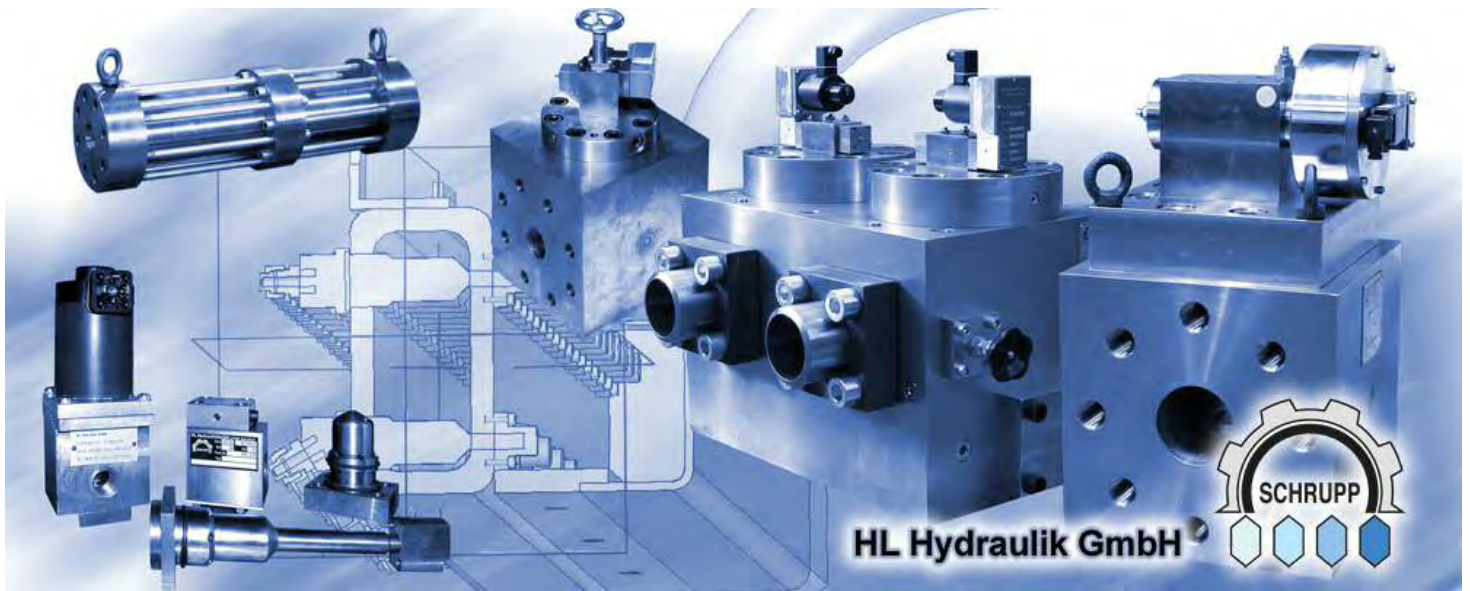
GAS DRYER STATIONS

Ordering information bracket
GTR K 507335



Ordering information control Unit
GTR PS 24GL





WATER- AND SPECIAL FLUID HYDRAULICS

System solutions for industry

HP Pneumatics

Water- and Special- Fluid Hydraulics

Equipment for Road Safety Training Centres

Fire Fighting Systems for Transformers

Live Line Washing Systems for Insulators

HL-Hydraulik GmbH

Kupferhütte 5C

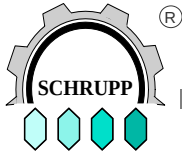
D-57562 Herdorf

Tel: **+49 (0)2744-9324-0**

web: **www.hl-hydraulik.de**

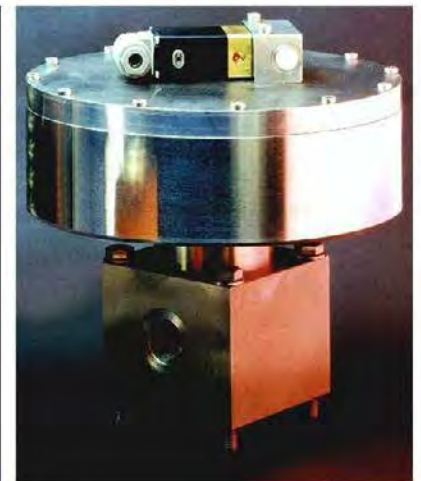
e-mail: **schrupp@hl-hydraulik.de**

E2 FEB22



WATER AND SPECIAL HYDRAULICS

System Solutions for Industry



HP Pneumatic

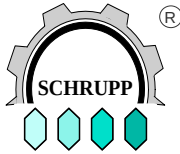
Water- and Special- fluid Hydraulics

Equipment for Road Safety Training Centres

Fire Fighting Systems for Transformers

Insulator Cleaning Systems

0



WATER – AND SPECIAL- FLUID HYDRAULICS

System Solutions for Industry

CARTRIDGE PROGRAM

Hard seat cartridges DN16 to 32, 350bar, pressure and throttle functions for clean water applications

Soft seat cartridges DN10 to 250, 350bar, directional and shut-off functions for clean and descaling water applications

Soft seat cartridges DN10 to 40, 800bar, directional functions for clean water applications

Individual designs for special fluids and gases possible

Dimensions acc. to ISO/DIN

Material stainless steel

Cartridge covers



PILOTVALVES

2 and 3 directional pilot valves solenoid, pneumatically or manually operated, pressure pilot valves. DN4 to DN25, up to PN350, special designs up to 800bar.



SPECIAL VALVES

Individual designed valves

Sea water resistant for Off Shore and Sub Sea applications

Pulsation Technology

Special cartridge valves with additional functions

Leak free valves for oil hydraulic applications



COMPLETE VALVES

Directional, pressure and throttling functions for water, emulsions, oil and special fluids.

DESCALING TECHNOLOGY

Complete Valves for descaling applications up to 350bar and DN250mm, including 2 and 3 directional pilot valves, solenoid, pneumatically oilhydraulically or manually operated.

Multistage breakdown orifices and accessories.

SPRAY VALVES

For roller cooling systems at steel or aluminium rolling mills

Size 6 to 25mm.

Valves, pilots, complete spray barns and accessoires



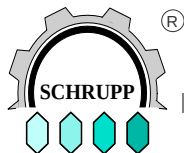


TABLE OF CONTENTS

Since 1934 valves and components for fluids and gases have been manufactured under the trade name SCHRUPP for the international market.

HL Hydraulik GmbH now owns all rights to the Schrupp[®] program. Continuous development allows improvements to this program to follow the requirements of the market.

The valves are designed for use with water, water and oil emulsions, oil and gases. Their robust construction and compact design provide long life, ease of maintenance, and high performance. The sealed poppet design provides drop tight, leak free shut off.

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E2.3 PILOT VALVES

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E2.4 COMPLETE VALVES (Selection)

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2/2, 3/2 Directional Valves ND65, 80, 100mm NP40

E2.8 SPRAY VALVES

We reserve the right to make technical modifications without prior notification

CARTRIDGE PROGRAM



Stainless Steel Cartridge valves according to DIN24342

The valves are designed for use with water, water and oil emulsions, oil and gases. Their robust construction and compact design provide long life, ease of maintenance, and high performance.

These slip in cartridge type valves can be combined in many different ways to satisfy the requirements of a wide variety of applications. The sealed poppet design provides drop tight, leak free shut off.

Product range:

Cartridges for directional functions

Soft seated ND10 to 100 for water, oil and pneumatic applications up to 350bar

Soft seated ND10 to 250 for water, descaling water and oil up to 350bar

Soft seated ND10 to 40 for water, oil and pneumatic applications up to 800bar

Hard seated ND 16 to 32 water and oil up to 350bar

Cartridges for pressure relief functions

Hard seated ND 16 to 32 for water and oil up to 350bar

Cartridges for pressure reducing functions

Hard seated ND 16 to 32 for water and oil up to 350bar

CARTRIDGE PROGRAM

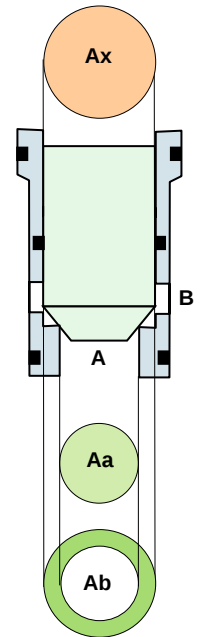
Functional description

These valves are designed for use with special fluids:

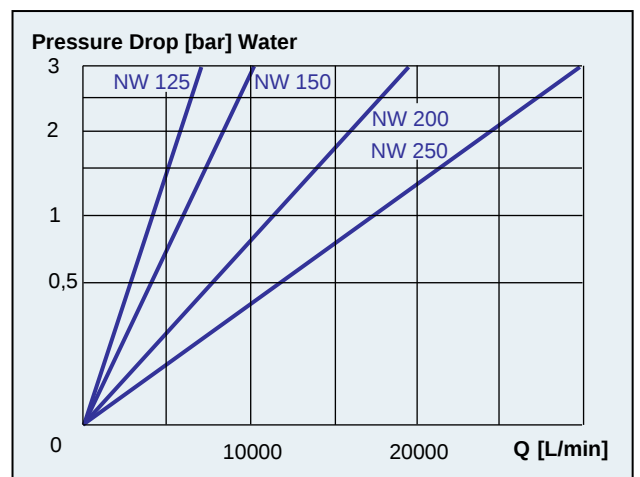
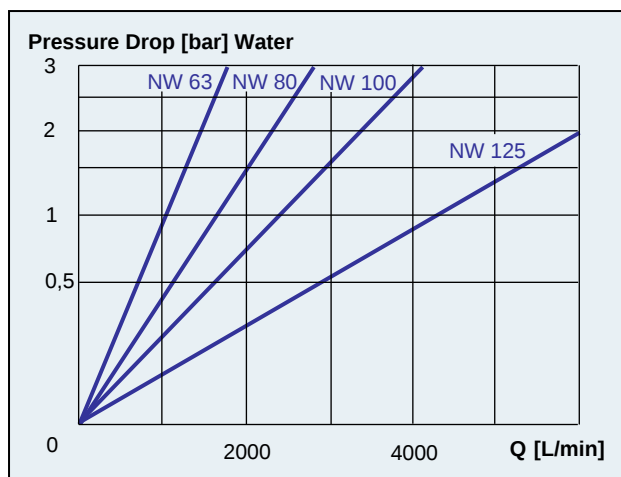
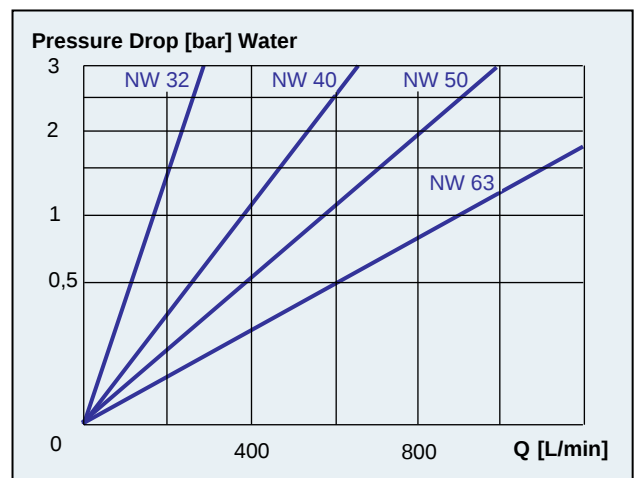
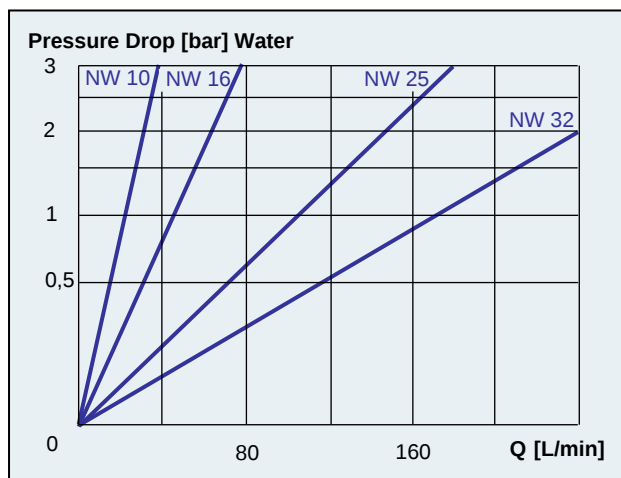
- No metal to metal contact at the sliding surfaces.
 - the use of non-lubricating mediums is possible.
- All pressurized areas are separated by soft seals
 - for thin fluids and gases under high pressure.
- Special geometry and non-corroding material
 - for water and descaling applications.

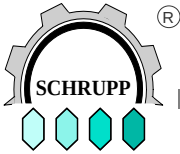
An important dimension for the function of cartridge valves is the surface ratio of the seat area A_a and the annulus area A_b to the pilot area P_x . By using a surface ratio of 1:1 the valve can be operated only in one direction. By using a surface ratio of 1:1.6 or 1:2 the valve can be operated in both directions, but cannot be used for pressure functions because of the pressure ratio which creates pre-opening of the pilot valve.

Soft-seated valves are suitable for use in shut-off and directional functions. These valves are absolutely leak-free even for long-term operation in gas or high-pressure circuits. Hard seated valves are suitable for use in pressure control functions. Because of their robust seats they can be used also in high pressure water hydraulic circuits.



Diagrams





CARTRIDGE PROGRAM

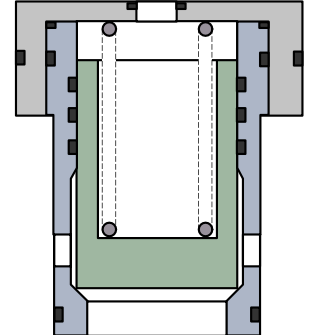
Cartridge Valve Type 1

For directional, pressure and flow-control applications
Dimensions according to DIN 24342
Material: stainless steel
Hard seated
Area ratio 1:1 / 45°

Example / Order code

EO - 025 - 00 - 0.0 - 1D / 0

└─ Nominal size 016, 025, 032



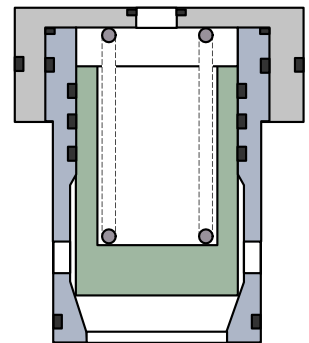
Cartridge Valve Type 2

For pressure-control applications
Dimensions according to DIN 24342
Material: stainless steel
Hard seated
Area ratio 1:1 / 15°

Example / Order code

EO - 025 - 00 - 0.0 - 2D / 0

└─ Nominal. size 016, 025, 032



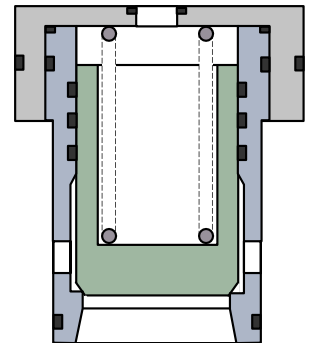
Cartridge Valve Type 3

For directional and shut off applications
Dimensions according to DIN 24342
Material: stainless steel
Hard seated
Area ratio 1:1.6 / 45°

Example / Order code

EO - 025 - 00 - 0.0 - 3D / 0

└─ Nominal. size 016, 025, 032



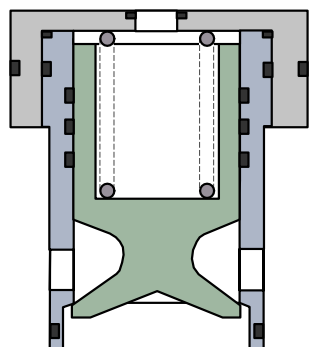
Cartridge Valve Type 4

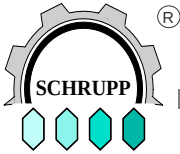
For pressure reducing, check and flow control functions
Dimensions according to DIN 24342
Material: stainless steel
Hard seated
Area ratio 1:1

Example / Order code

EO - 025 - 00 - 0.0 - 4D / 0

└─ Nominal. size 016, 025, 032





CARTRIDGE PROGRAM

Cartridge Valve Type 6

For directional and shut off applications

Dimensions according to DIN 24342

Material: stainless steel, soft seated, metal support
area ratio 1:2, Type /Z 1:1.6

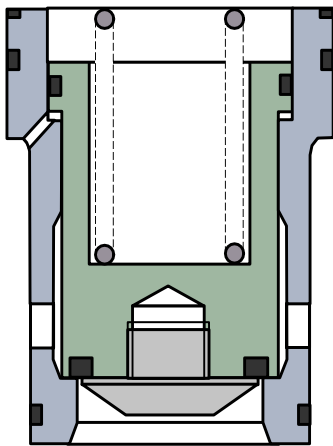
Example / Order code

EO - 125 - 00 - 5.5 - 6D / Z

/ S =Standard design
/ R =Non return valve
/ A =Active valve
/ Z =Descaling valve
/ H1 =High pressure valve

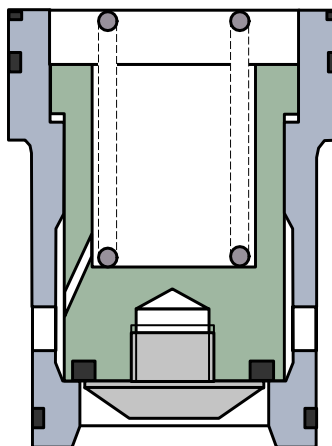
Nozzle dimension in mm
only type /Z

Size 010, 016, 025, 032, 040, 050, 063,
080,100, 125, 150, 200, 250mm



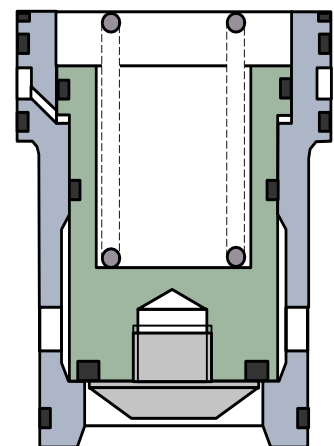
**Standard design
Type 6D / S**

350bar - ND 010 to 100
for water, oil and gas.
For descaling applications up
to size ND 250



**Non return valve
Type 6D / R**

Up to 350bar - ND 010, 016,
025 for water, descaling water,
oil and gas.



**Active valve
Type 6D / A**

Up to 350 bar - ND 16 to 100
for water, oil and gas

OPTIONS:

Seawater resistant versions, expanded temperature range (200°C),
expanded pressure range to 420bar (10% reduced flow rate)

CARTRIDGE PROGRAM

High pressure valve Type 6D / H1

These valves are designed for static pressures up to 1000bar.
Pressurized opening and closing is possible with the following pressure differences:

Continuous operation water 600bar, frequently operation water 800bar.
Continuous operation oil, compressed air 800bar

Media: water, emulsions, oil and compressed air.

Because of the stronger wall thickness the flow rate is reduced.
For calculation please use the following flow curves:

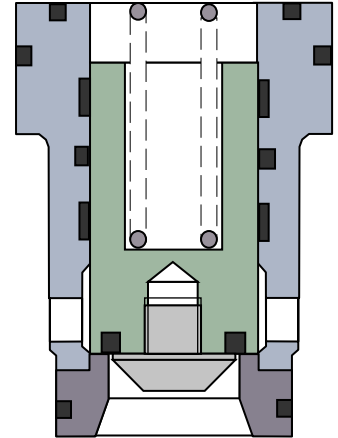
ND 16 = flow curve ND 10

ND 25 = flow curve ND 16

ND 32 = flow curve ND 25

ND 40 = flow curve ND 32

Options on request: larger sizes, sea water resistant versions, extended temperature versions (200°C)



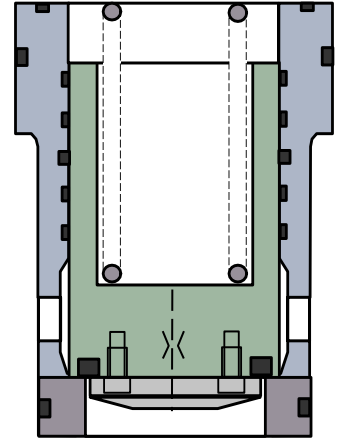
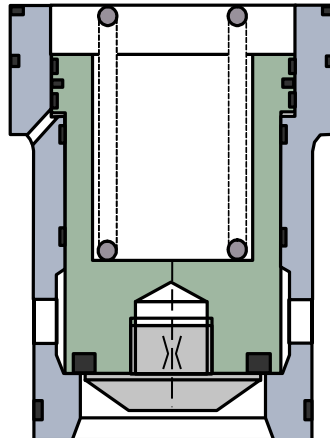
Descaling valve Type 6D / Z

Up to 350bar - ND 063 to 250

ND 63 – 100mm area ratio 1:2

ND125 – 250mm area ratio 1:1.6

for water, descaling water and oil



Manual operated Valve Type 7D

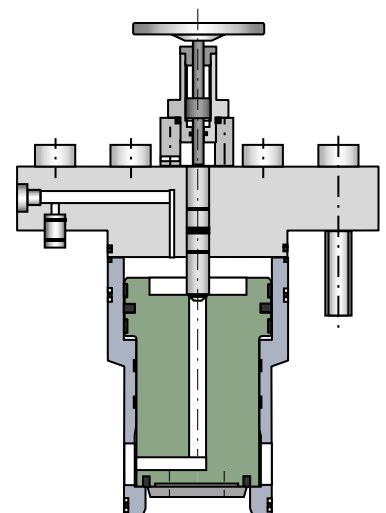
Up to 350bar - ND 063 to 150

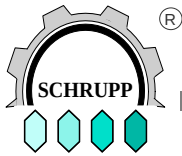
for Water and Oil

These valves are designed for shut off functions. The servo system reduces the necessary manual power so that the valve can be operated under high pressure.

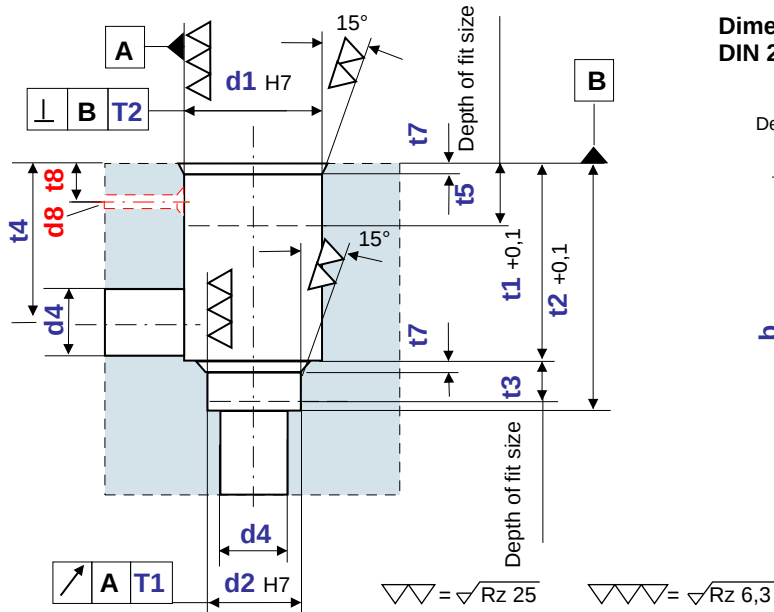
The manual spindle locks the piston in closed position even under pressure.

For more information please see catalogue DE2.4.13

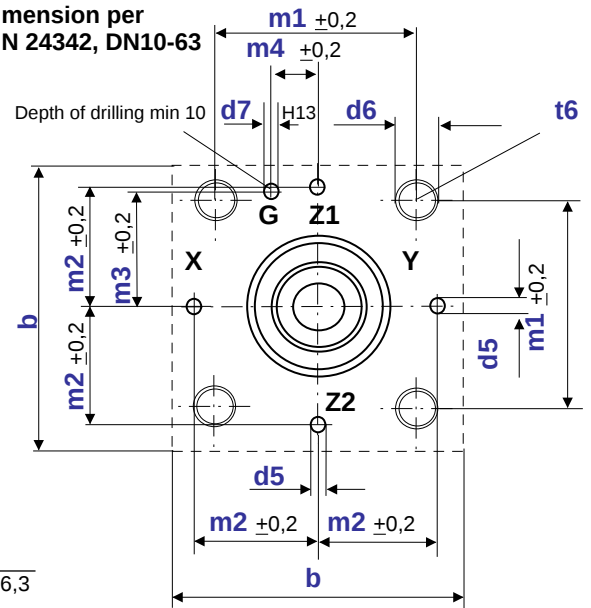




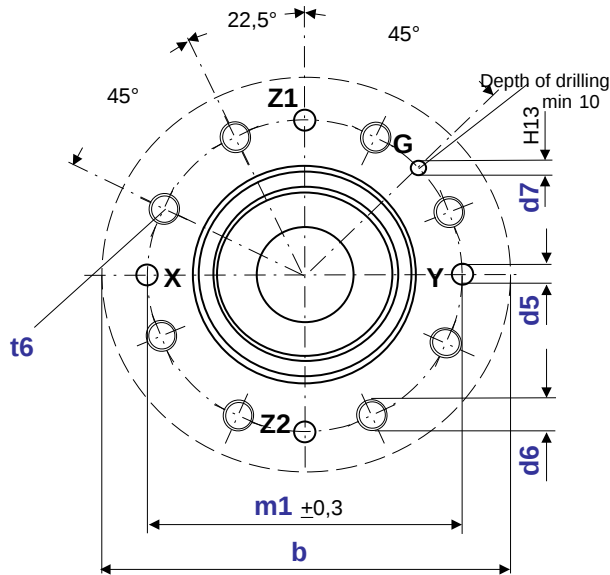
CARTRIDGE PROGRAM



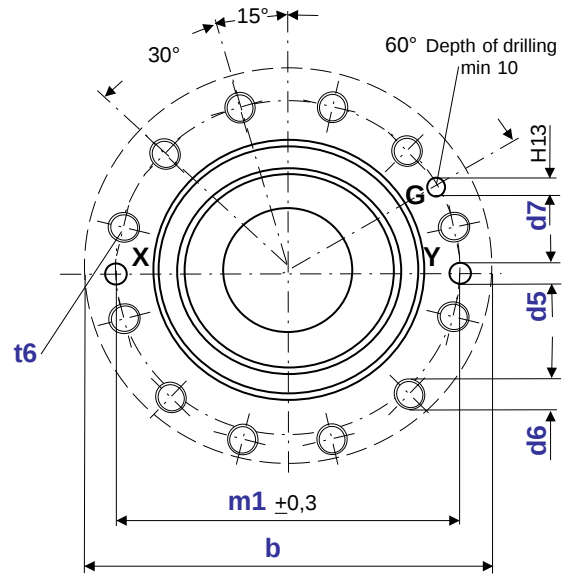
Dimension per
DIN 24342, DN10-63



Dimensions per DIN 24342, DN80-100



Dimensions per DIN 24342, DN125-250



DN	b	d1	d2	d4	d5	d6	d7	d8	m1	m2	m3	m4	t1	t2	t3	t4	t5	t6	t7	t8	T1	T2
10	52	20	16	10	3	M5	3	-	40	19	17	12	26	35	8	20	13	10	1,5	-	0,03	0,05
16	65	32	25	16	4	M8	4	4	46	25	23	10,5	43	56	11	34	24	20	2	13	0,03	0,05
25	85	45	34	25	6	M12	6	5	58	33	29	16	58	72	12	44	30	25	2,5	15	0,03	0,05
32	102	60	45	32	8	M16	6	5	70	41	35	17	70	85	13	52	34	35	2,5	21	0,03	0,1
40	125	75	55	40	10	M20	6	6	85	50	42,5	23	87	105	15	64	42	35	3	27	0,05	0,1
50	140	90	68	50	10	M20	8	8	100	58	50	30	100	122	17	72	46	40	4	30	0,05	0,1
63	180	120	90	63	12	M30	8	8	125	75	62,5	38	130	155	20	95	62	55	4	35	0,05	0,2
80	250	145	110	80	16	M24	10	10	200	-	-	-	175	205	25	130	88	45	5	55	0,05	0,2
100	300	180	135	100	20	M30	10	10	245	-	-	-	210	245	29	155	110	55	5	-	0,05	0,2
125	360	220	180	125	20	M33	10	-	290	-	-	-	264	305	41	188	50	70	5	-	0,05	0,2
150	400	255	210	150	20	M36	10	-	330	-	-	-	310	355	41	225	55	70	5	-	0,05	0,2
200	530	355	275	200	20	M48	10	-	435	-	-	-	410	455	41	300	55	95	5	-	0,05	0,2
250	625	430	306	250	20	M48	10	-	530	-	-	-	510	555	41	375	60	95	5	-	0,05	0,2

Details of the cavities for cartridge valve 6D/A (active) please see our separate datasheets



CARTRIDGE COVERS

These stainless steel cartridge covers are used for complete valve assemblies with Schrupp cartridge valves according to DIN 24342 and Schrupp pilot valves.

In addition to the standard types shown it is possible to produce special versions for individual applications:

Special covers for descaling valves

Cover with integrated functions such as position indicators, pilot combinations, special dimensions.

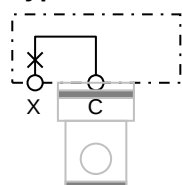
Covers for compressed air pilot valve ND6

Covers for filter

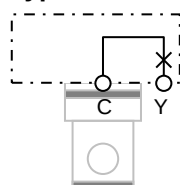
Covers with stroke limiter

Hydraulic piloting and non-return function

Type HX



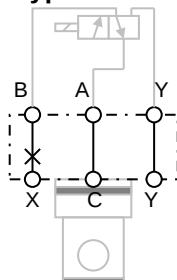
Type HY



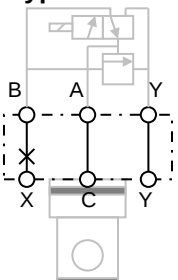
10	16	25	32	40	50	63	Size
25	35	35	35	40	45	50	Height
M5 x30	M8 x40	M12 x40	M16 x45	M20 x55	M20 x60	M30 x70	Fixing screws

Pressure and directional functions

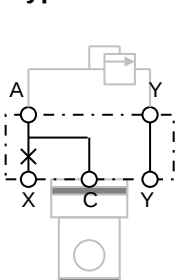
Type WX



Type WX



Type DX



16	25	32	Size
35	35	35	Height
M8 x40	M12 x40	M16 x45	Fixing screws

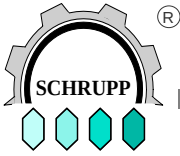
Example / Ordering Code

WX – 025 – 0.5

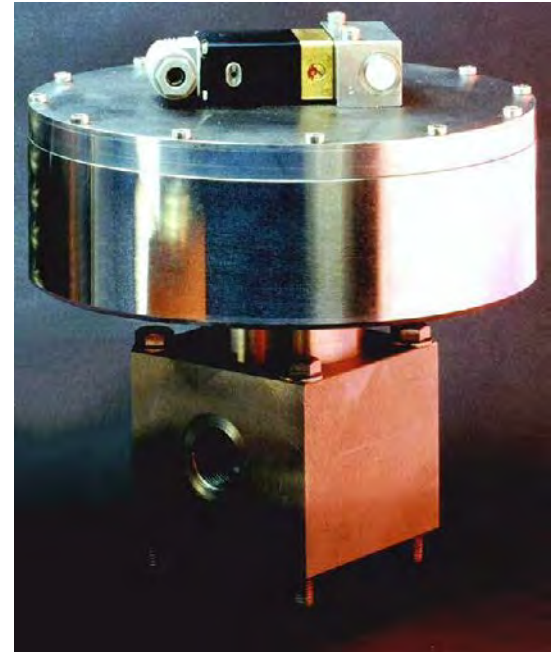
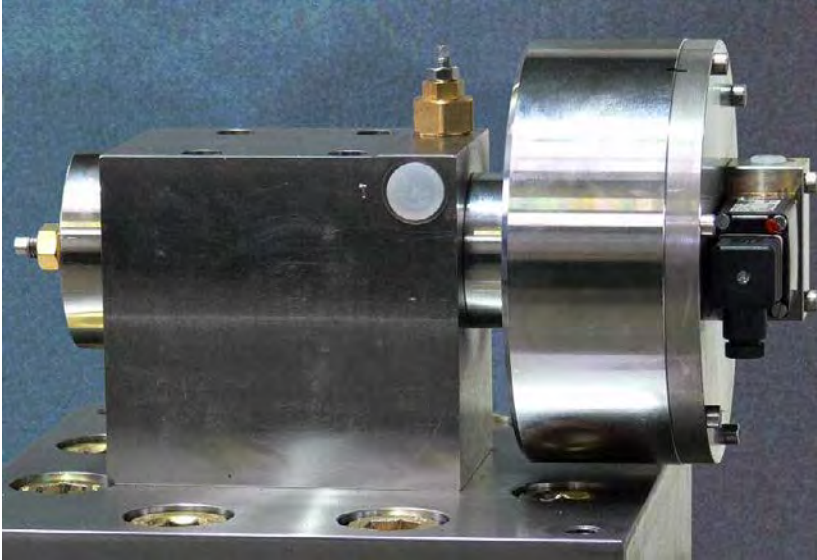
Orifice 0.5, 0.6, 0.7, 0.8, 0.9, 1.0, 1.1, 1.2

Sizes 010, 025, 032, 040, 050, 063 for HX and HY
016, 025, 032 for WX and DX

Cover type WX, DX, HX, HY



PILOT VALVES



Valves for water hydraulic and descaling applications

These pilot valves can be used to operate cartridge valves from size 10 to 250mm.

The robust construction and compact design provide direct operation in circuits.
Available as pressure and directional control valves up to 350bar.

2/2 and 3/2 way directional control valves ND 2 to 32mm

Pressure relief and reducing valves ND 2mm

Please also see our catalogues:

Cartridge program up to 350bar/pressure valves ND16 to 3/2 directional valves ND10 to 250

Complete Valves

Descaling Valves

High Pressure Valves up to 800bar

PILOT VALVES

2/2, 3/2 Directional Valves

Type WEV 06

These robust and smooth operating valves can be used with compressed air, oil, water and emulsions. All ports can be pressurised. The valves type 500100, 500106 and 500008 are equipped with soft seats for a leak-free function. The piston is spring biased in the closed position and allows a fail safe operation so that the valve can be used for accumulator safety valves also.

Variations:

- solenoid operated
- manually operated
- hydraulically operated
- Limit switches

Type WEV 06 - 500100

NP 250bar ND6mm

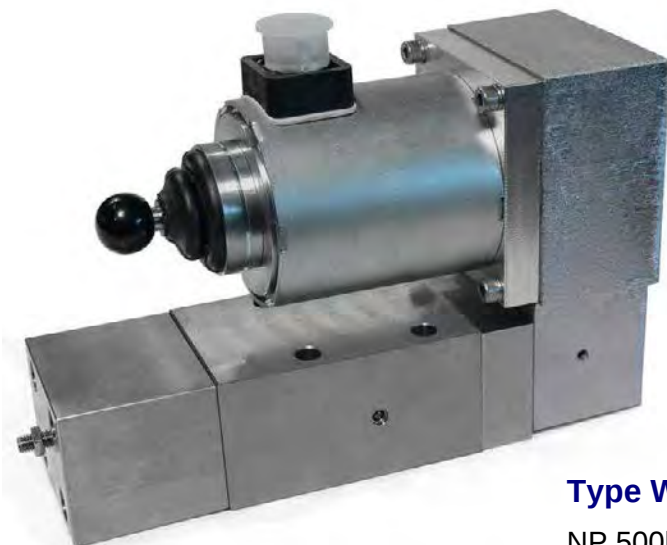
compressed air,
gases Group 2 on request



Type WEV 06 - 500138

NP 250bar ND6mm

Water, oil and emulsions



Type WEV 06 - 500106

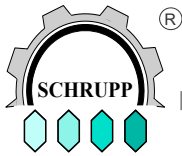
NP 350bar ND6mm

compressed air,
gases Group 2 on request

Type WEV 06 - 500008

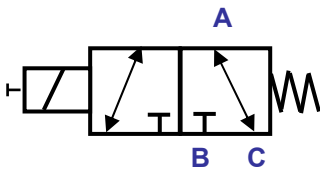
NP 500bar ND6mm

Water, oil and emulsions

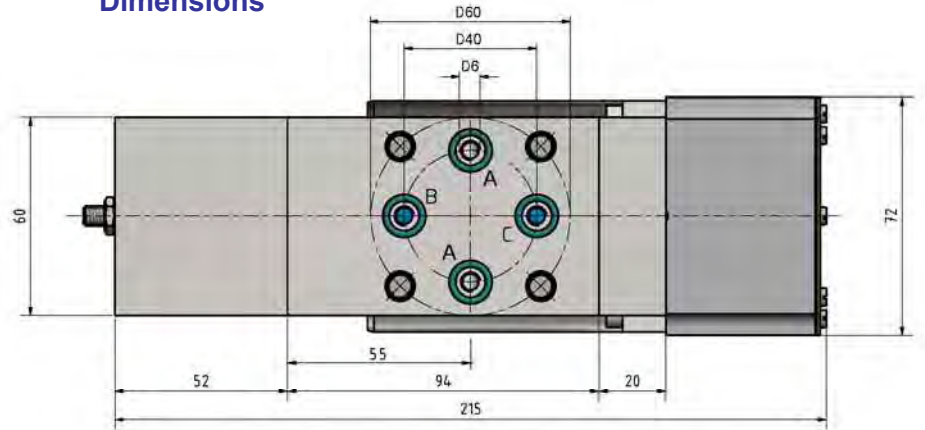


PILOT VALVES

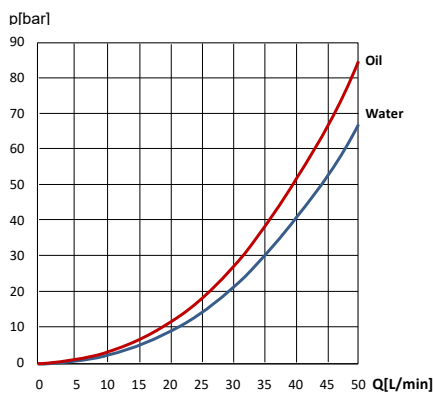
Symbol



Dimensions

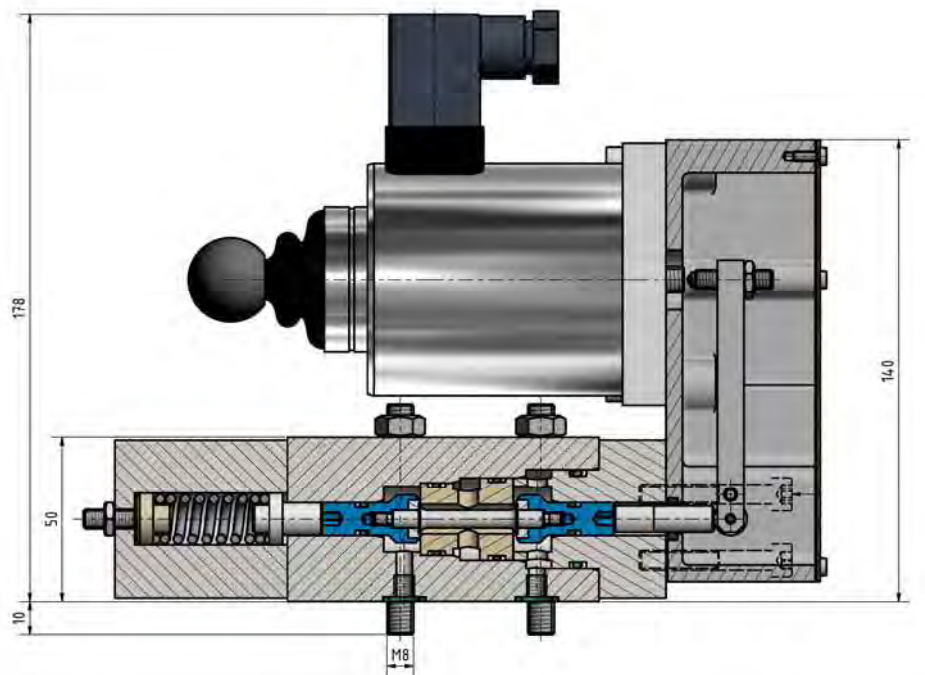


Flow Characteristics



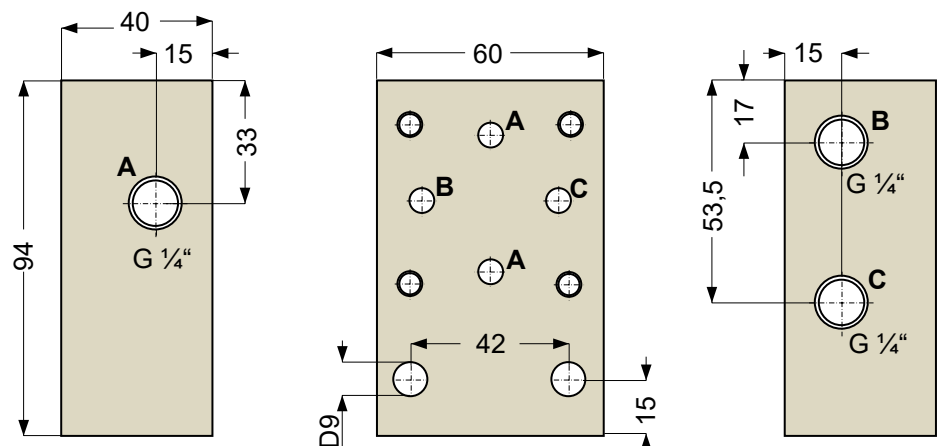
Higher operating pressures will require an orifice nozzle.

Ports A, B and C are equipped with M6 threads deep 8mm.



Subplate for WEV06P

Dimensions



Ordering Code

Subplate: 850252

PILOT VALVES

2/2, 3/2 Directional Valve Type 500138

can be used with oil, water and emulsions up to pressures of 250bar. This robust and smooth operating valve can be used also in descaling or dirty water applications. It can be used for flow in any direction.

All ports can be pressurised with 250bar. The valve is equipped with hardened seats. The piston is spring biased in the closed position and allows a fail safe operation so that the valve can be used for accumulator safety valves.

Variations:

- solenoid operated
- gas or fluid operated
- manual operated



Technical Data

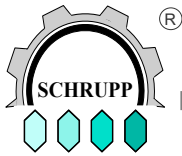
Operating Pressure	0-250 bar
Size	DN6
Operating Temperature	-20 bis+80 °C
Ambient Temperature	max 70°C
Medium	Wasser, Öl, Emulsion
Recommended Filtration	
0-65bar	25 micron
65-250bar	10 micron
150-250bar water service only occasionally operated	
Max. Power consumption	42 W
ED	100%
Protection Class	IP 65
Voltage Tolerance	+5bis -10% VDE580
Opening and closing time	100 - 200 ms
Material	Stainless Steel, Brass, Delrin, Viton

Ordering Code

Valve: WEV06P-250-500138-01-024G 24V DC
 120W 110V/50Hz (60Hz)
 240W 220V/50Hz (60Hz)
 — max. operating pressure in bar

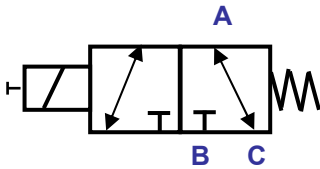
*other voltages on request

Seal Kit: WEV06VTS-500038-01-92

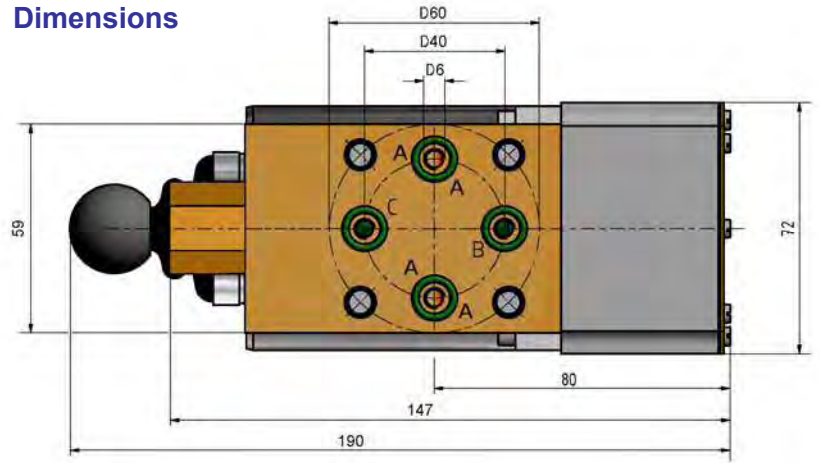


PILOT VALVES

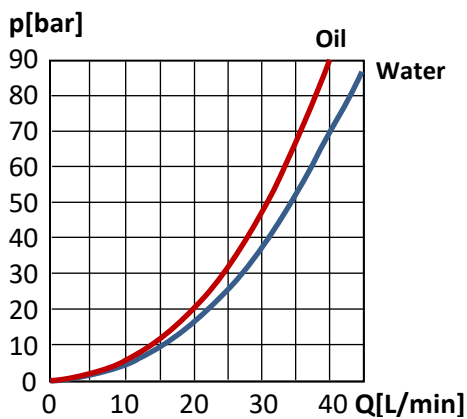
Symbol



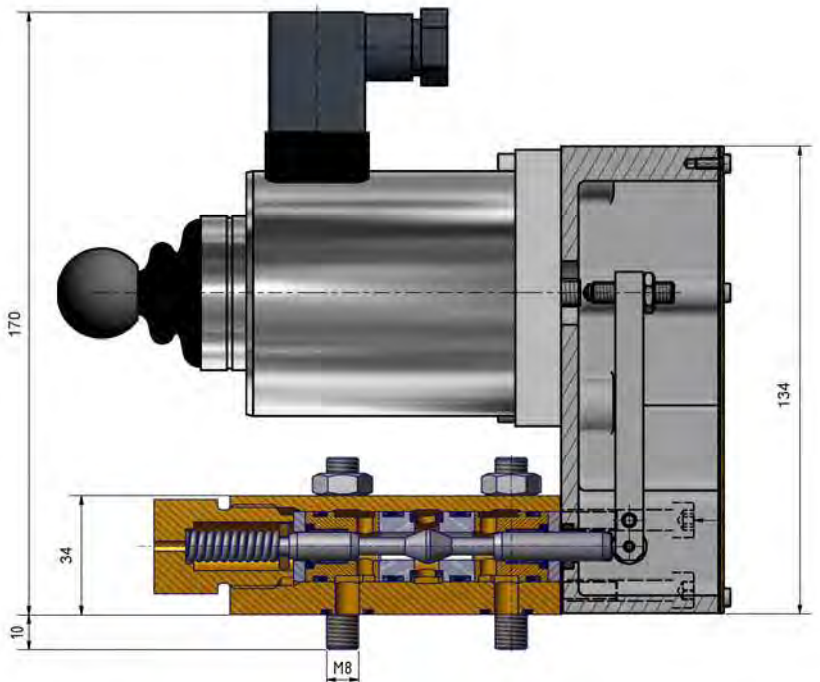
Dimensions



Flow Characteristics

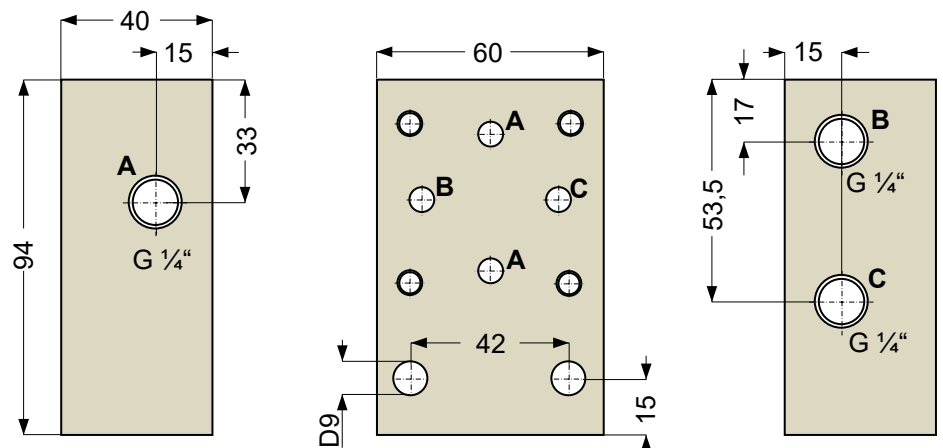


Higher operating pressures
will require an orifice nozzle.



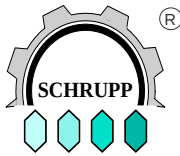
Subplate for WEV06P

Dimensions



Ordering Code

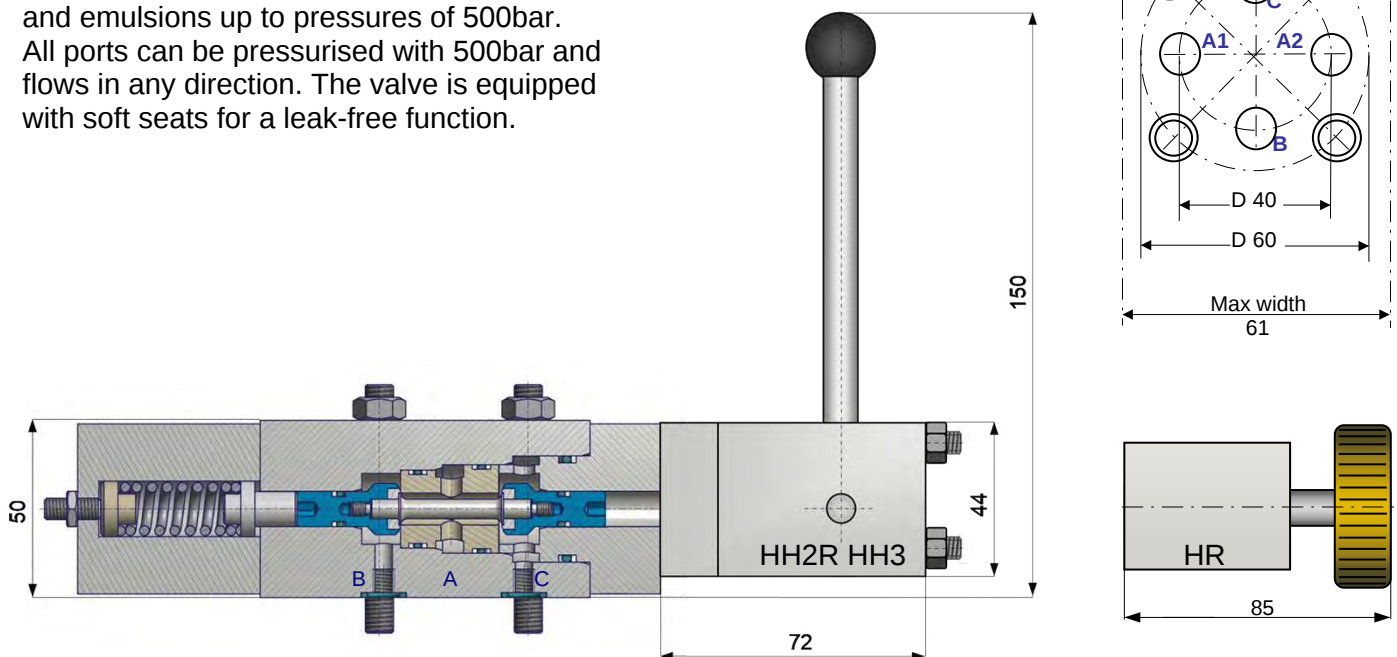
Subplate: 850252



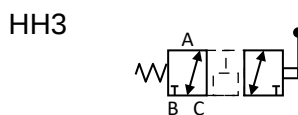
PILOT VALVES

Manual Operated Valves Type 500008 / 500106

can be used with compressed air, oil, water and emulsions up to pressures of 500bar. All ports can be pressurised with 500bar and flows in any direction. The valve is equipped with soft seats for a leak-free function.



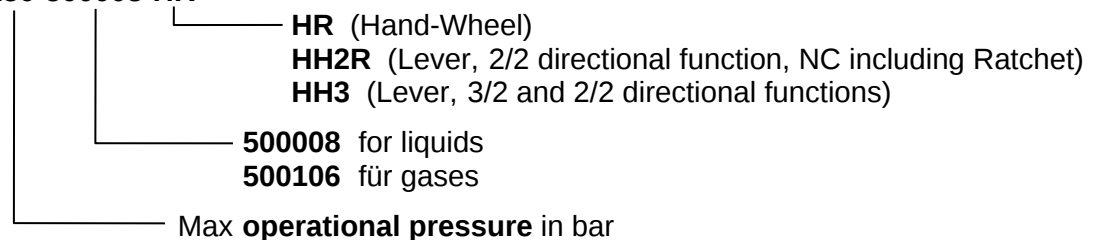
Technical Data



Operating Pressure	0-500 bar
Nominal Size	DN6
Operating Temperature	-20 bis +80 °C
Ambient Temperature	max 70 °C
Medium	Gases, Water, Oil
Recommended Filtration	25 my
0 to 350bar	10 my
350bar to 500bar	
Material	Stainless Steel, Brass, Delrin, Viton

Ordering Code

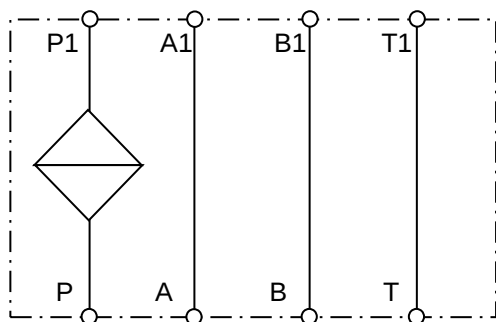
Valve: WEV06P-250-500008-HR



Others on request



PILOT VALVES



Filter Sandwich Plates Type 851014

Are used to protect type 500000 and 500002 pilot valves against contamination of dirt particles in compressed air, water or oil medium up to an operating pressure of 350bar. The spiral wound metal filter elements can be cleaned easily and have a filtration rate of 80 micr. These sandwich filters are used in systems with long distances between the central filter system and the pilot valves so that corrosion and dirt particles from the piping cannot penetrate into the pilot systems. The central filter system should have a filtration rate of 80micr or better.

Material

Stainless Steel, PTFE, PEEK, Viton

Technical Data

Operating pressure	0-350 bar
Nominal size	DN4
Operating temperature	-20 to +80 °C
Ambient temperature	max 45 °C
Medium	Air, Water, Oil
Filtration	80 micr
Spiral wound metal filter-element, cleanable	

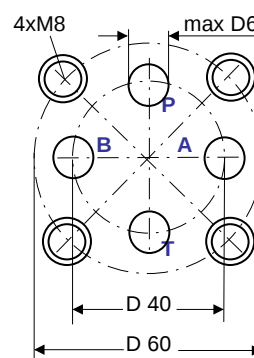
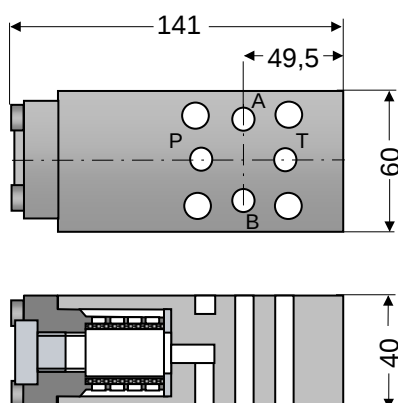
Order No.

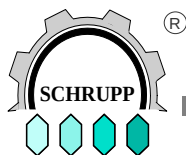
Sandwichfilter complete

851014

Spare filter-element

157346





PILOT VALVES

3/2 Directional Pilot Valves

Schrupp pilot valves are soft seated with metal support especially designed to withstand the high pressures and levels of contamination found in typical steel mill descaling systems. The integrated throttle valves allow an adjustment of the opening and closing speed of the main valve. The valves are designed for fail safe operation, which means that the main valve will close automatically even if the electric or pneumatic power is off

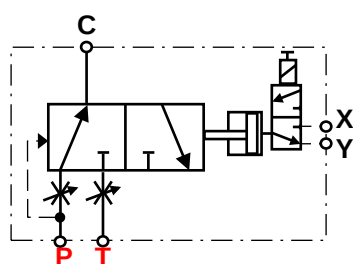
(i.e accumulator shut off valves).

Technical Data:

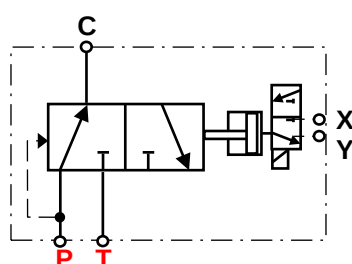
ND	10 mm
Hydraulically oper, pressure	15-350bar
Pneumatic Pressure	2-10bar
Filtration	50-100 mic
Power Consumption	8W
Tolerance Voltage	10%
Protection Class	IP65

Diagram

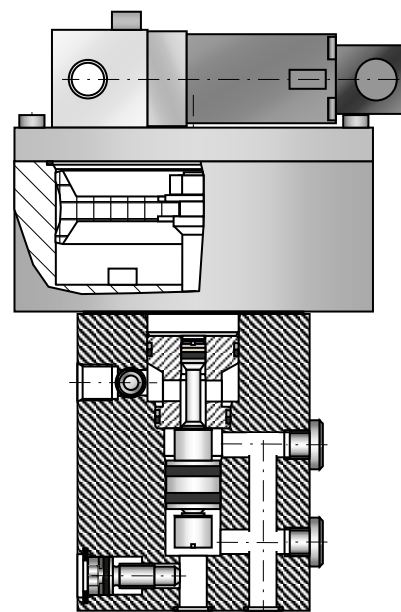
Version with integrated opening and closing speed adjustment



Version without speed adjustment



Type 851037



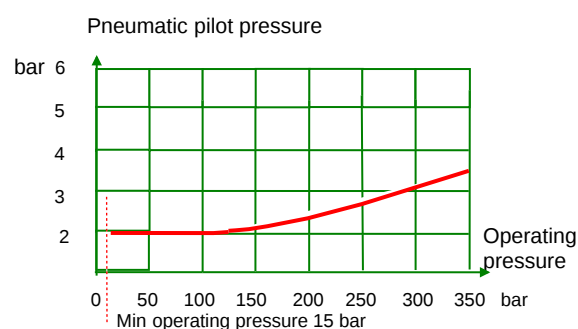
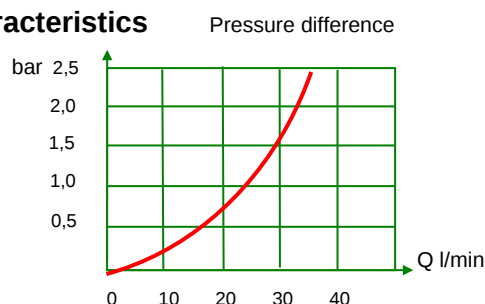
Ordering Code

Version with speed adjustment

24V GL	851037 24V
110-120V 50/60Hz	851037 120V
220-240V 50/60Hz	851037 240V

Special designs:
F.e. manual override, position indicator,
different pilot pressure range,
special materials

Characteristics



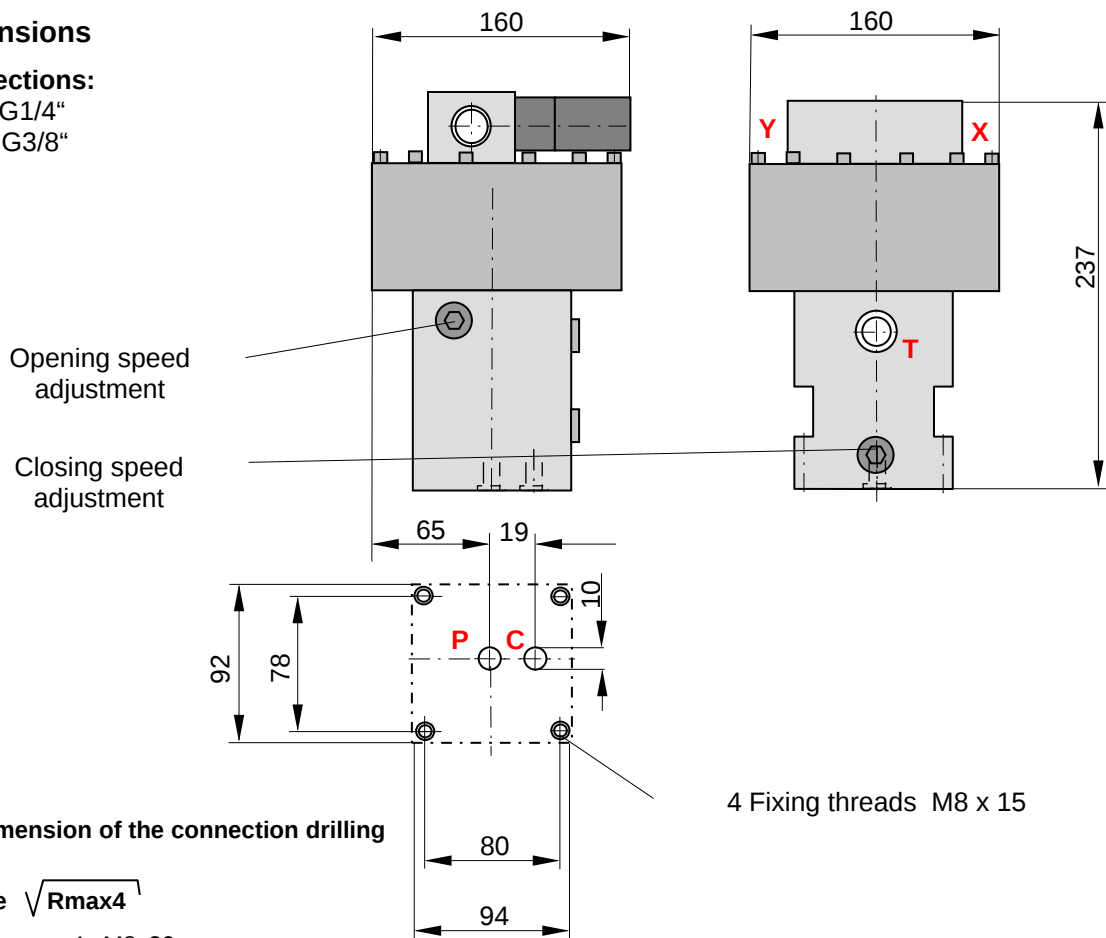
PILOT VALVES

Dimensions

Connections:

X,Y = G1/4"

T = G3/8"



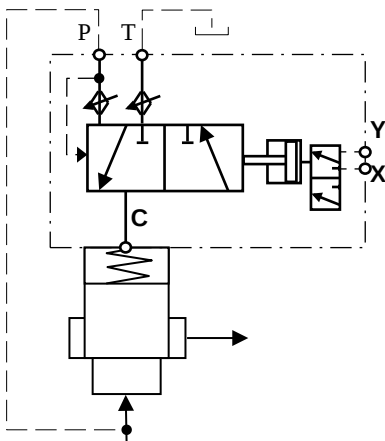
**Max dimension of the connection drilling
10mm.**

Surface $\sqrt{R_{\max 4}}$

Fixing screws 4x M8x30mm.

The fixing threads have to have a depth of 15mm min.

Altern. thread and screws 5/16" – 18 UNC

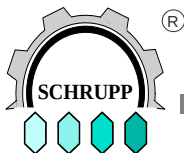


Example

Typical application for an ND10 pilot valve in combination with a large cartridge valve.

The valve is spring loaded and closed without electrical or pneumatic power.

The pilot valve can be used for cartridges ND50 to ND100mm



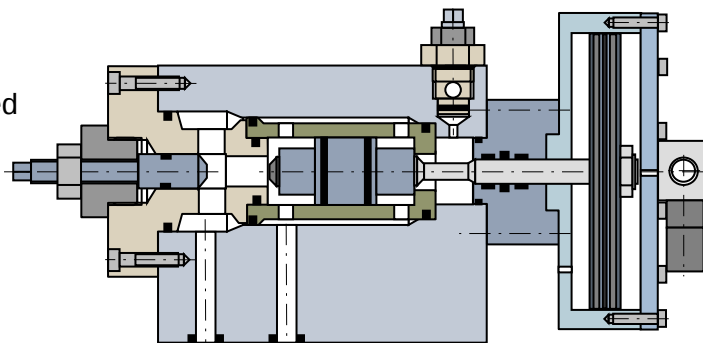
PILOT VALVES

3/2 Way Pilot Valve

Schrupp pilot valves are soft seated with metal support especially designed to withstand the high pressures and levels of contamination found in typical steel mill descaling systems. The integrated throttle valves allow an adjustment of the opening and closing speed of the main valve. The valves are designed for fail safe operation, which means that the main valve will close automatically even if the electric or pneumatic power is off

(i.e accumulator shut off valves).

Series 850885



Technical Data

ND	16 mm
Hydraulically oper, pressure	7-350bar
Pneumatic Pressure	3-10bar
Filtration	50-100 mic
Power Consumption	8W
Tolerance Voltage	10%
Protection Class	IP65

Ordering Code

Version with speed adjustment

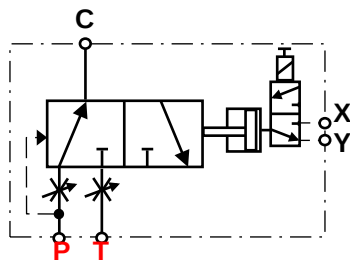
24V GL	850885 24V
110-120V 50/60Hz	850885 120V
220-240V 50/60Hz	850885 240V

Version without speed adjustment

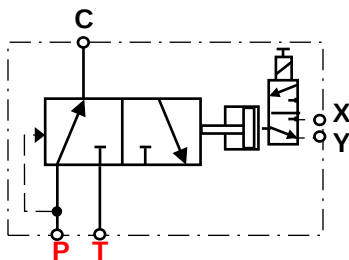
24V GL	850885-01 24V
110-120V 50/60Hz	850885-01 120V
220-240V 50/60Hz	850885-01 240V

Diagram

Version with integrated opening and closing speed adjustment

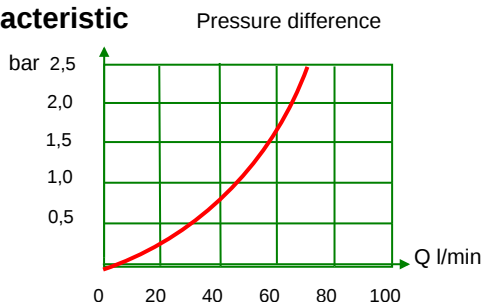


Version without speed adjustment

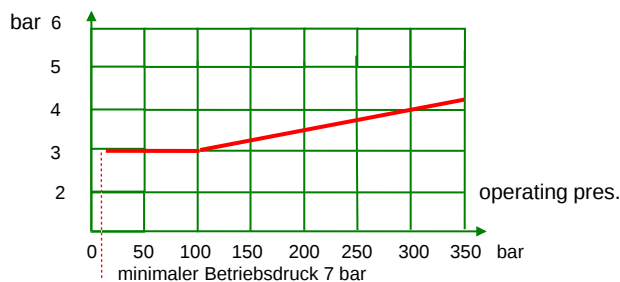


Special designs:
F.e. manual override, position indicator,
different pilot pressure range, special materials

Characteristic



Pneumatic pilot pressure



PILOT VALVES

Dimensions

Connections:

X, Y = G1/4"

T = G1/2"

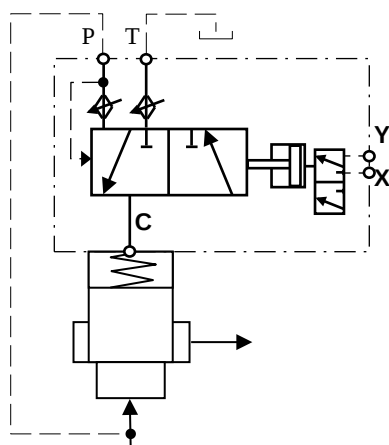
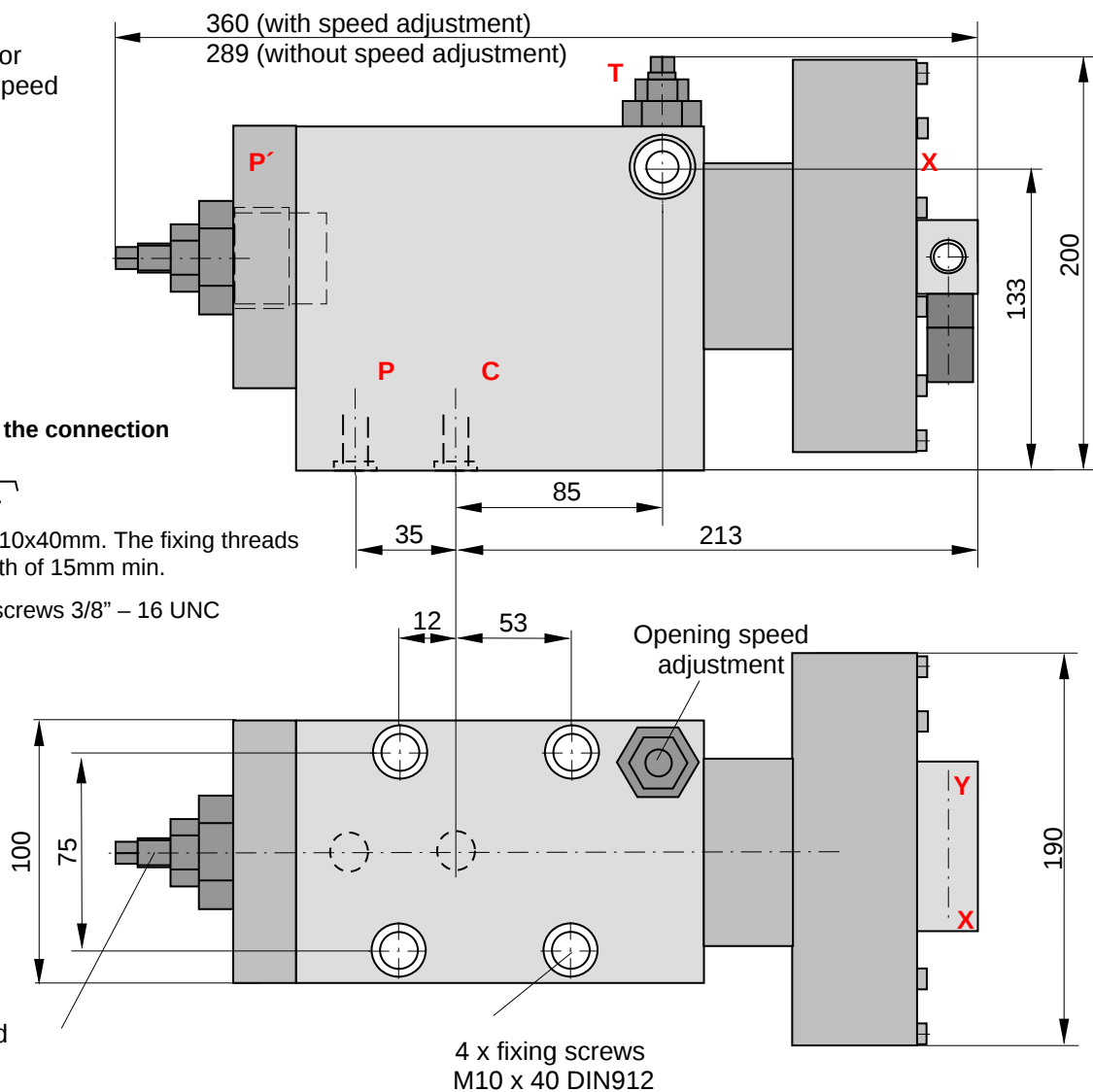
P' = G1" (only for version without speed adjustment)

Max dimension of the connection drilling 25mm.

Surface $\sqrt{R_{max}4}$

Fixing screws 4x M10x40mm. The fixing threads have to have a depth of 15mm min.

Altern. thread and screws 3/8" – 16 UNC

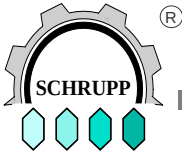


Example

Typical application for a P6P valve in combination with a large cartridge valve.

The valve is spring loaded and closed without electrical or pneumatic power.

The pilot valve can be used for cartridges ND65 to ND250mm



PILOT VALVES

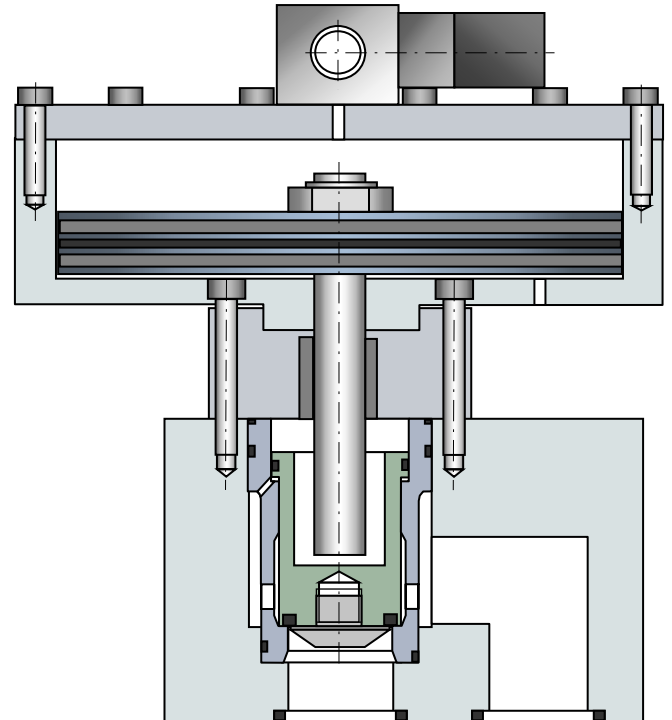
2/2 Directional Pilot Valve

Type P2P

Pilot valves Type 2 are used for control of Schrupp water hydraulic valves, especially in those systems with contaminated media such as descaling systems. These robustly designed valves are frequently used without pilot filtration and can also be used as 2/2 way directional control valves.

Technical Data

Size	10,16, 25 mm
Hydraulic pressure	350bar
Pneumatic pressure	2-10bar
Recommended filtration	50 mic
Electrical power consumption	8W
Voltage tolerance	10%
Electrical protection	IP65



Ordering Code

P2P 16 - 6 - 1 - F - 024G

- S V Ratio if special

024 G = 24v DC

220 W = 220v/50Hz

F = Fluid
G = Gas

0 = without Pilot
1 = normal open
2 = normal close

3 = Hard Seat
6 = Soft Seat (Standard)

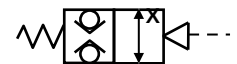
16 = Size 10,16, 25 (mm)

P2P = for subplate mounting

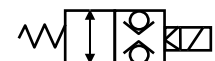
P2R = with threaded connections (on request)

Diagrams

Without pilot valve



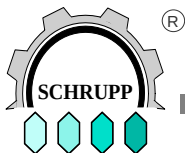
Normally open



Normally closed

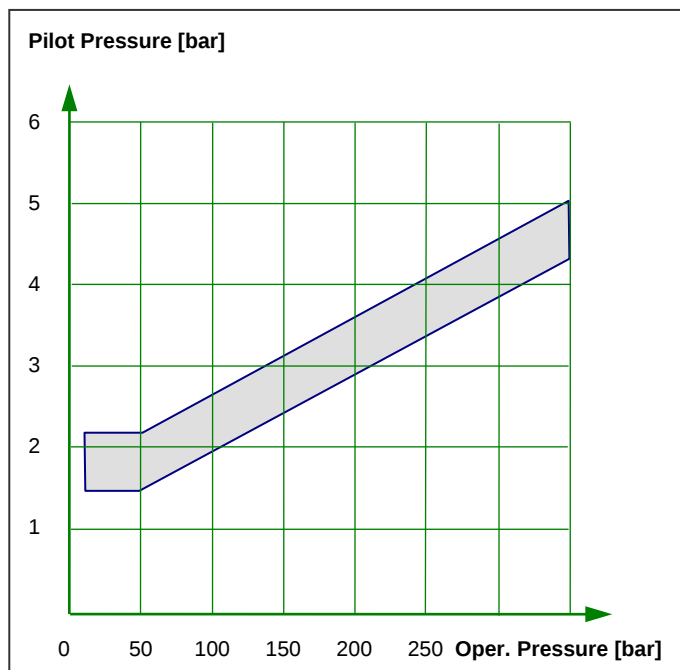
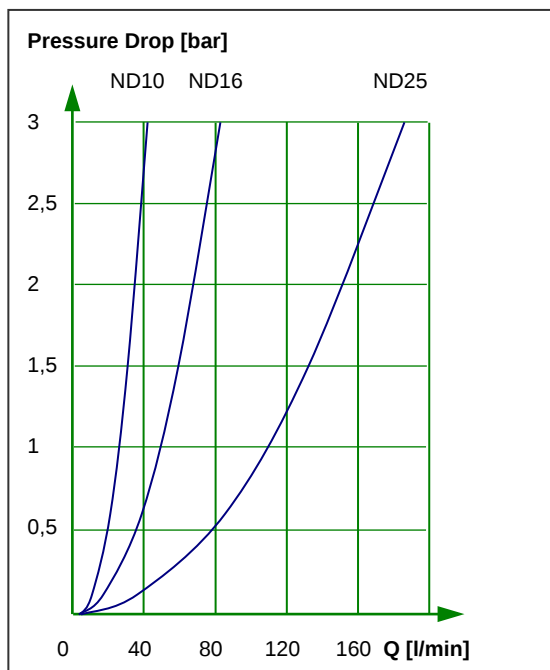


Others on request

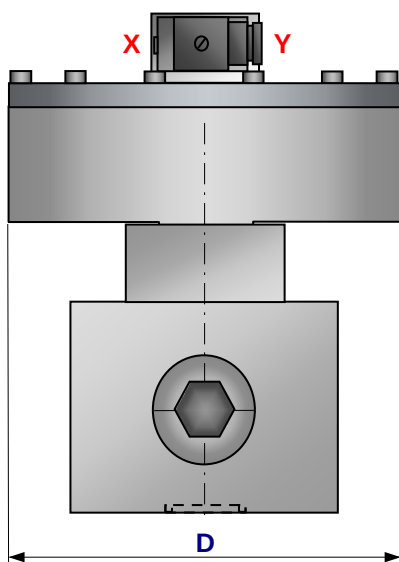


PILOT VALVES

Characteristics



Dimensions



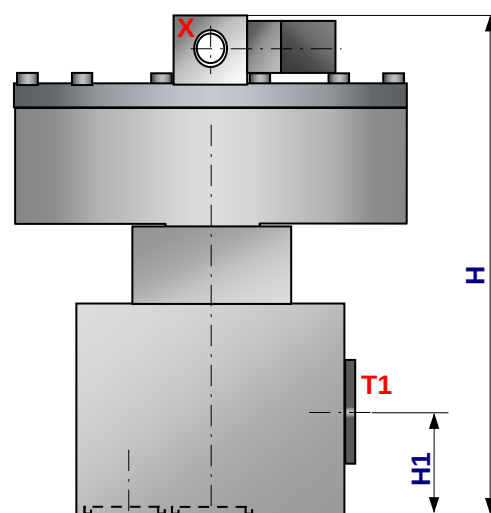
Connections:

X Pilot Pressure = G1/4"

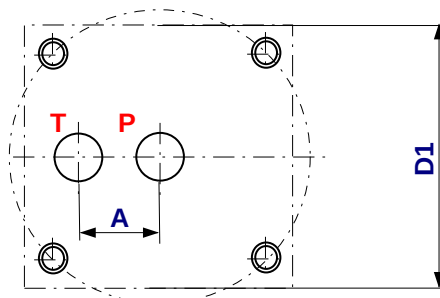
Y Vent = G1/4"

T,P main connections

T1 Alternative connection



NW	D	D1	H	H1	A	T, P	T1	Fixing Bolts	
								thread	Thread depth
25	275	140	268	(51)	38,5	D25	(G3/4")	M12	20
16	211	112	176	29	28	D16	G3/8"	M10	20
10	130	74	139	22,5	22	D10	G1/8	M8	12

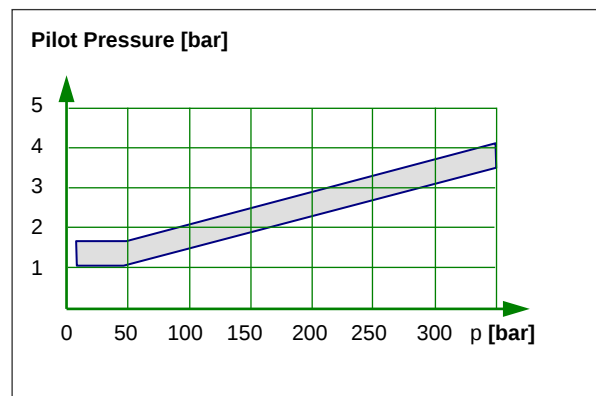
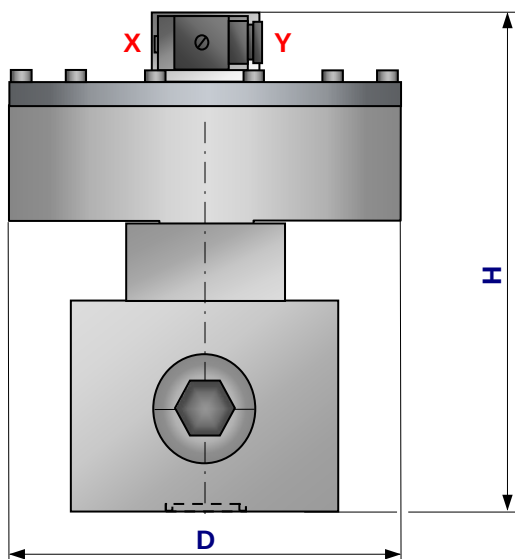


PILOT VALVES

2/2 Directional Pilot Valve

Special application with larger pilot cylinder

Type P2P



NW	D	H	Other dimensions and characteristics identical to standard version Ordering Code - SV
16	235	216	
10	160	156	

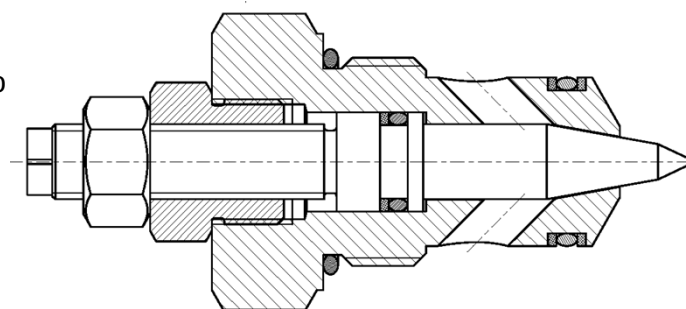
Throttle Valves

are used in combination with pilot valves type P2P for the adjustment of the opening and closing speed and can be integrated into the cartridge cover or into an separate sandwich plate.

Ordering Code:

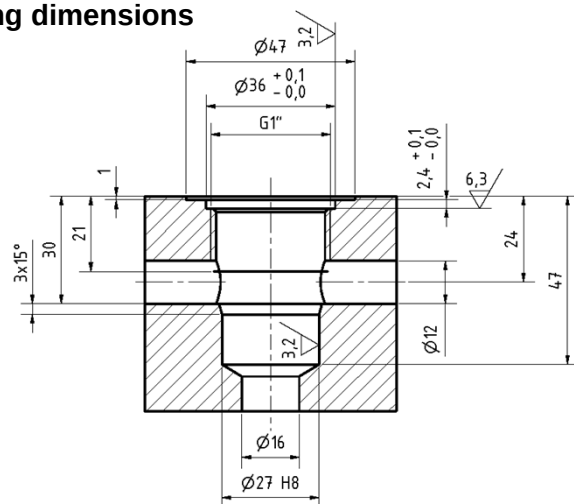
DN 10 PN350 **654261**

DN 16 PN350 **654192**

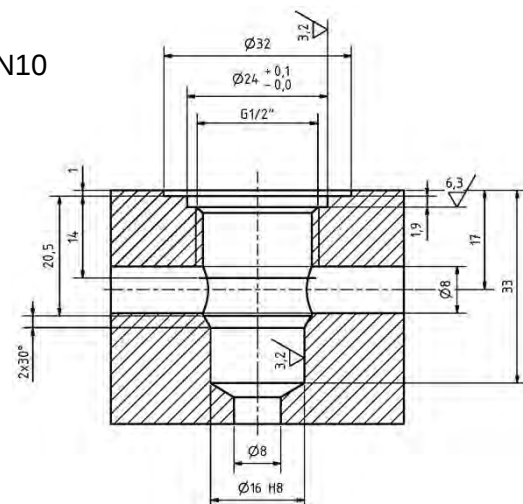


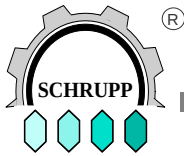
Drilling dimensions

DN16



DN10





PILOT VALVES

Pressure Valves

Valves DBP, DBZ are used to pilot cartridge valves in pressure control functions. Because of their robust design they are also used for direct operations.

Technical Data:

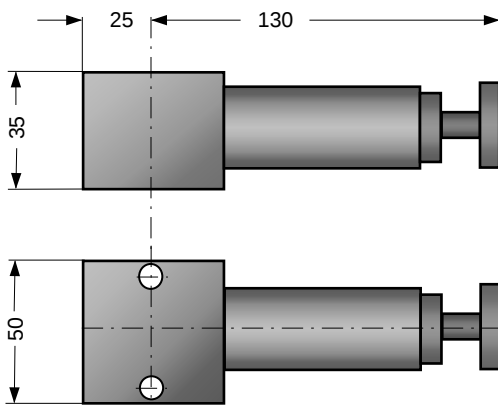
Size		2 mm
Pressure max		350bar / 400 bar
Filtration min		10 mic
Installation possible)		vertical (others

Example / ordering code

DBP2 - S

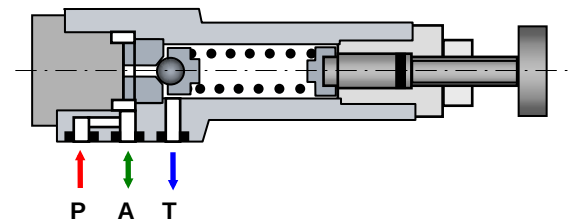
PDBP2= Relief valve sub plate for mounting NW 2
PDBZ2 = Sandwich type relief vale

Dimensions

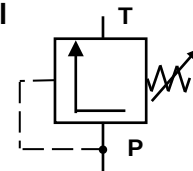


Type PDBP/PDBZ

Type

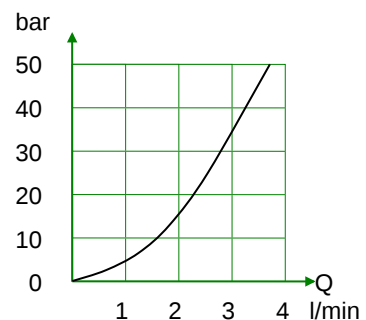


Symbol

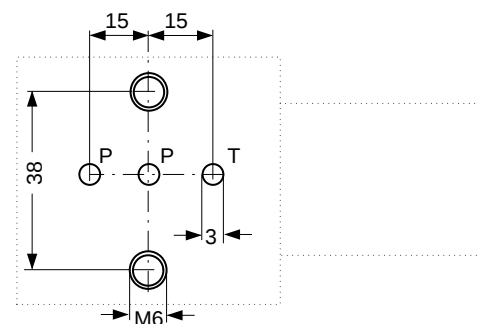


Diagram

Pressure difference, medium water



Connections



PILOT VALVES

Position indicator optical

to indicate the position of the piston of a cartridge type valve. The robust design is based on permanent magnets and does not need any dynamic seals, so that a safe operation even with contaminated water is possible.

Technical data:

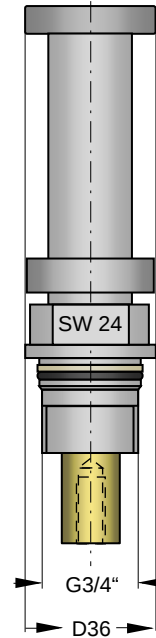
Operating pressure: 350 bar / 400 bar

Rec.filtration 300 micron or better

Media: Water, oil, gases

Installation: vertical (others possible)

Length: varies with cartridge valve dimension



Position indicator with adjustable switches

up to 4 individual adjustable switches indicates the actual position of the piston of a cartridge type valve. The robust design is based on permanent magnets and does not need any dynamic seals, so that a safe operation even with contaminated water is possible.

Technical data:

Operating pressure: 350 bar / 400 bar

Rec.filtration 300micron or better

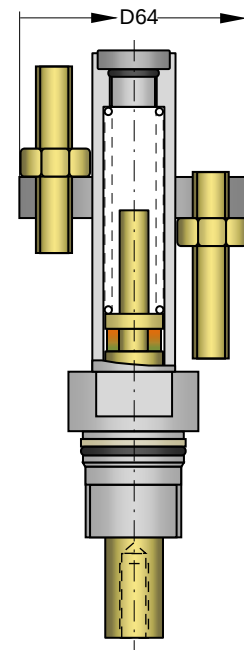
Media: Water, oil, gases

Installation: vertical (others possible)

Length: varies with cartidge valve

Electrical switches 24v, 10W NO.

Others on request



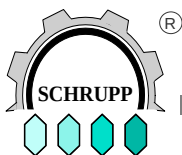


COMPLETE VALVES

Cartridge type valves can be combined in many different ways. This selection gives an overview of the most popular valves. Special designs on request.

Pos	Type	Medium	Pilot	Press. max	Size	Symbol	Page
KV 12	Directional valve	Water, Air, Oil	Electro-hydraulic operated x,y internal or external ND6 Type WEV06	350bar	25 mm 40,50 mm		2 3,4
KV 2	Directional valve	Water, Air, Oil	Electro-hydraulic ND6 Type WEV06	350bar	10-40mm		5
KV 3	Directional Valve	Water, Air, Oil	Electro-hydraulic ND6 Type WEV06	350bar	16-32mm		6
KV 4	Directional Valve with mainstream filter	Water, Air, Oil	Electro-hydraulic ND6 Type WEV06	350bar	16mm		7
KV 7	Pressure relief valve	Water	Pressure relief NDG2 Type DBP2	350bar	16-32mm		10
KV 8	Pressure reducing valve	Water	Pressure relief NDG2 Type DBP2	350bar	16-32mm		11
KV 9	Medium operated valves, non-return valves, stroke limiter,	Water, Air, Oil	Medium operated	350bar	10-40mm		12
KV 13	Throttle Valves	Water Emulsion Oil	Manual operated with servo-hydraulic assistance	350bar	25-200mm		13
KV 10	Directional valve	Water, Air, Oil	Electro-pneumatic-hydraulic	800bar	10-25mm		14
KV 11	Directional valve	Water, Air, Oil	Electro-hydraulic	800bar	10-40mm		15

Valve Type KV6 and KV7 according to produkt data sheet E2.4.8 and D2.4.9 are not available anymore



COMPLETE VALVES

Type 2/2 Directional Valve 850233

This robust soft seated valves can be used for the directional control of gases and fluids.

Replacement for V2003

Technical Data:

Nominal Pressure: 3 - 350bar

Nominal Size: 25mm

Media: Water Emulsion, Oil, compressed Air, others on request

Pilot pressure has to be equal or higher than the operating pressure. Pilot pressure max 400bar

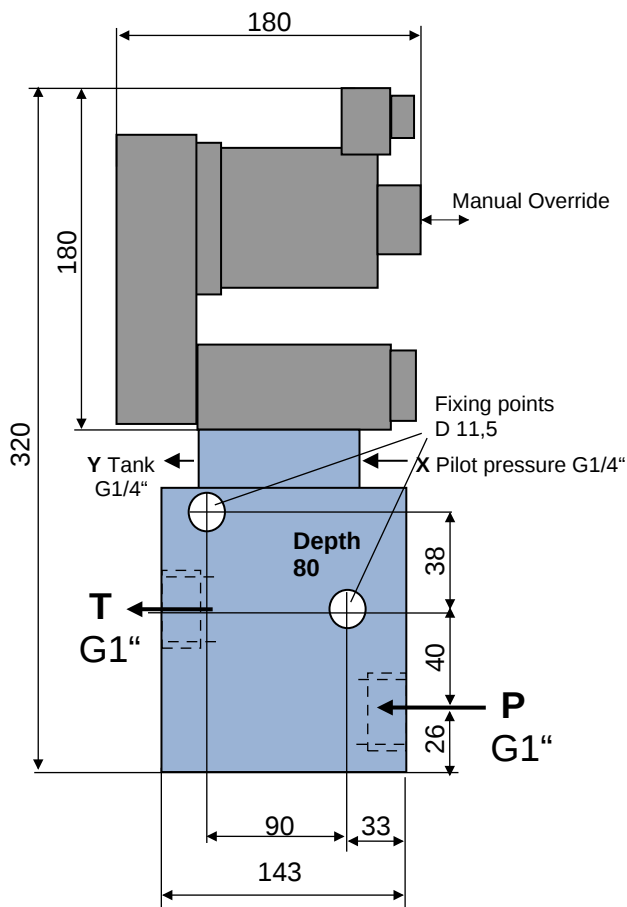
Pressure at port y-for internal operation at port T, has to be min 5bar below the operating pressure at P.

Material: Stainless Steel, Viton, Teflon

Soft seated with metal support

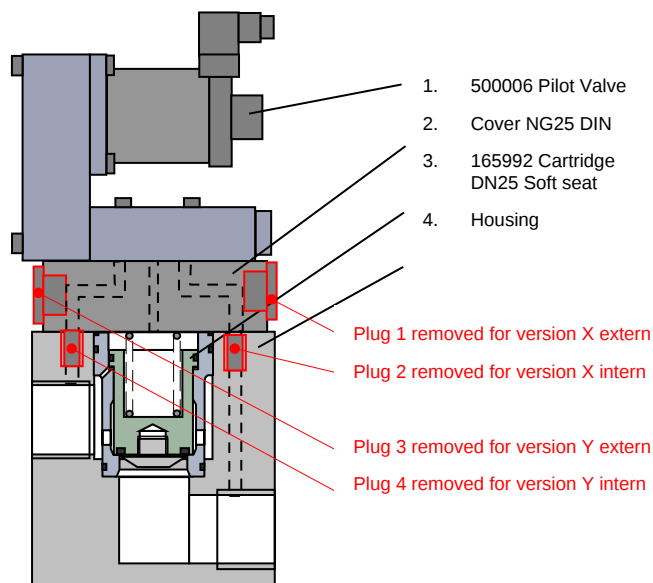
Ambient temperature: 0-50°C

Protection Class: IP65



Ordering Code

850233	x-internal / y-internal	024GL	KV12
	x-extern / y-internal	220 WS	
	x-internal / y-extern	110 WS	
	x-extern / y-extern	048 GL	





COMPLETE VALVES

Type 2/2 Directional Valve 850269

This robust soft seated valve can be used for the directional control of gases and fluids.

Replacement for V2006

Technical Data:

Nominal Pressure: 3 - 350bar

Nominal Size: 50mm

Media: Water Emulsion, Oil, compressed Air, others on request

Pilot pressure has to be equal or higher than the operating pressure. Pilot pressure max 400bar

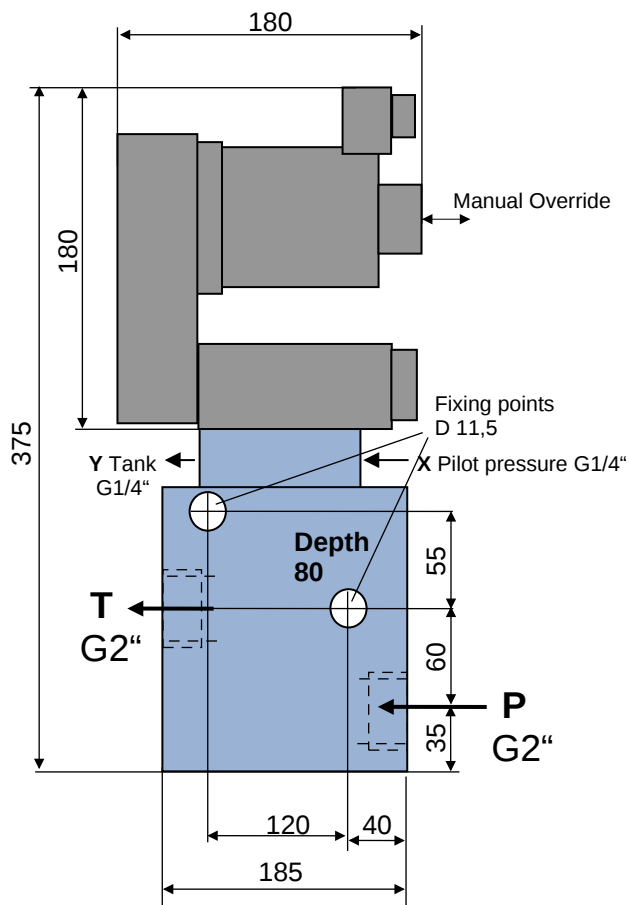
Pressure at port y-for internal operation at port T, has to be min 5bar below the operating pressure at P.

Material: Stainless Steel, Viton, Teflon

Soft seated with metal support

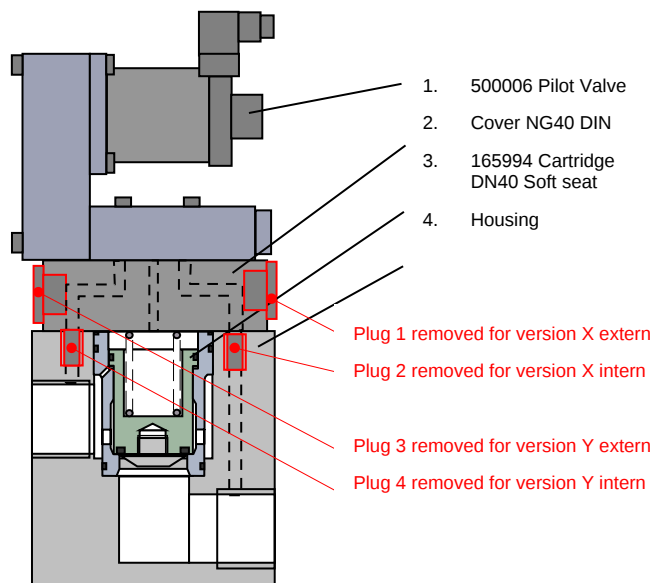
Ambient temperature: 0-50°C

Protection Class: IP65



Ordering Code

850269	x-internal / y-internal	024GL	KV12
	x-external / y-internal	220 WS	
	x-internal / y-external	110 WS	
	x-external / y-external	048 GL	





COMPLETE VALVES

Type 2/2 Directional Valve 850312

This robust soft seated valve can be used for the directional control of gases and fluids.

Replacement for V2005

Technical Data:

Nominal Pressure: 3 - 350bar

Nominal Size: 40mm

Media: Water Emulsion, Oil, compressed Air, others on request

Pilot pressure has to be equal or higher than the operating pressure. Pilot pressure max 400bar

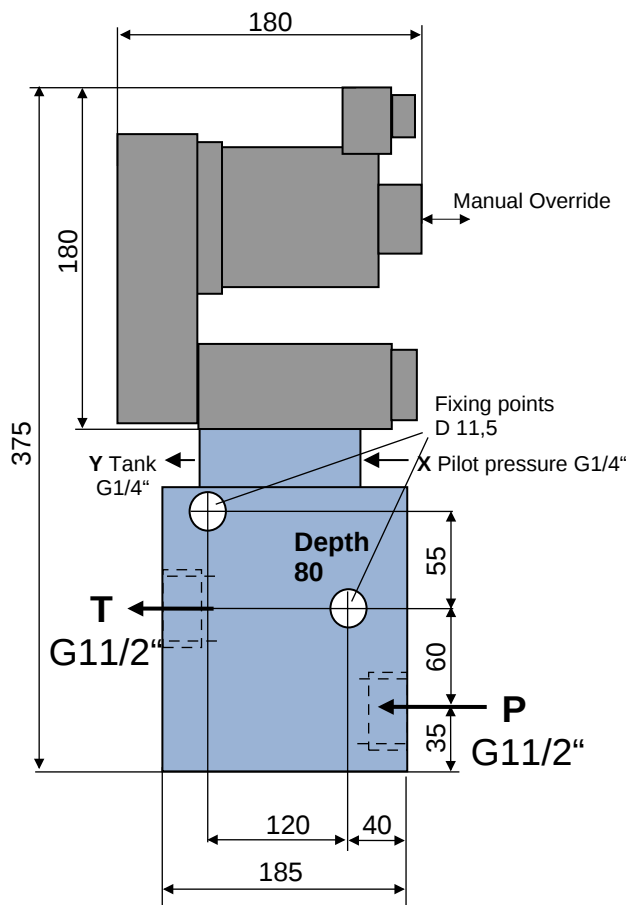
Pressure at port y-for internal operation at port T, has to be min 5bar below the operating pressure at P.

Material: Stainless Steel, Viton, Teflon

Soft seated with metal support

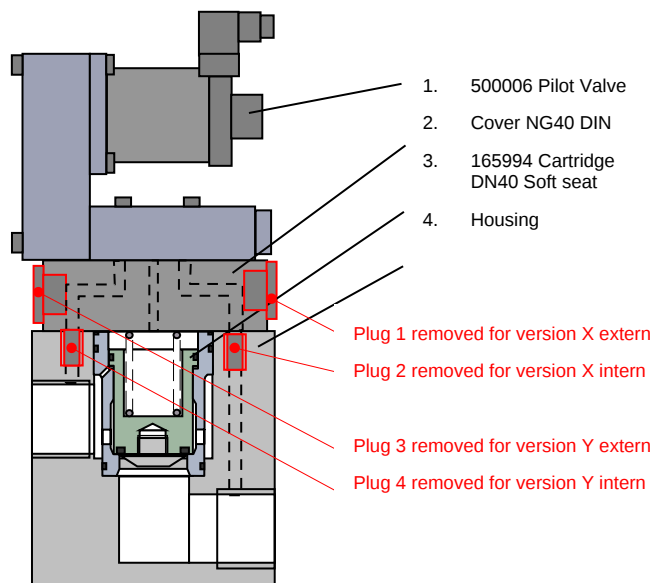
Ambient temperature: 0-50°C

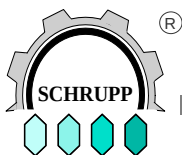
Protection Class: IP65



Ordering Code

850312	x-internal / y-internal	024GL	KV12
	x-external / y-internal	220 WS	
	x-internal / y-external	110 WS	
	x-external / y-external	048 GL	





COMPLETE VALVES

Type 2/2 Way Directional Valve

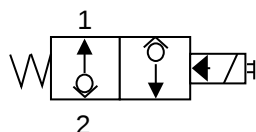
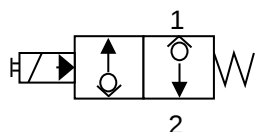
Medium Water, Air, Oil
Oper. Press. 350bar
Filtration 25mic
Sealing Soft seat, metal supported

Material SS, brass
Sizes* 10, 16, 25, 32, 40 mm
Voltage* 24V, 48V, 98V, 196V dc
Additional rectifier 110V/50Hz, 220V/50Hz ac

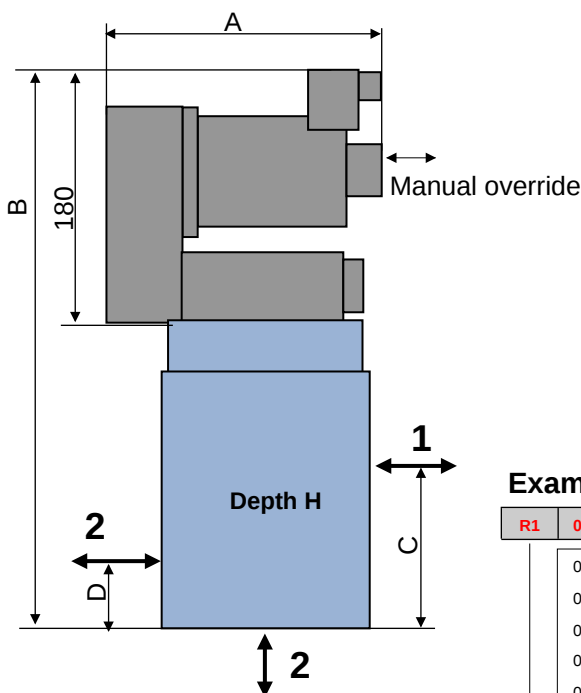
Not applicable for descaling water (please see our catalogue Descaling Valves, Pilot Valves)

*Other voltages on request.

Symbol



Dimensions



ND	Connections			A	B	C	D	H
10		G1/2"		180	280	55	26	60
16	G1/2"	G3/4"	SAE 3/4" Standard	180	320	71	32	65
25	G3/4"	G1"	SAE 1" Standard	180	345	86	36	85
32	G1"	G1 1/4"	SAE 1 1/4" Standard	180	370	103	39	102
40		G1 1/2"	SAE 1 1/2" Standard	180	400	116	47	125

Example / Ordering Code

R1	016		17		024G	B	KV2
----	-----	--	----	--	------	---	-----

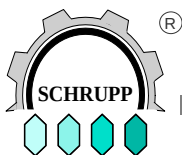
010 = Size 10
016 = Size 16
025 = Size 25
032 = Size 32
040 = Size 40

R10 = ND10 thread-connections G1/2"
R12 = ND10 flanges SAE 1/2"
R1 = ND16 thread-connections G1/2"
R2 = ND16 thread-connections G3/4"
R3 = ND16 flanges SAE 3/4"
R4 = ND25 thread-connections G3/4"
R5 = ND25 thread-connections G1"
R6 = ND25 flanges SAE 1"
R7 = ND32 thread-connections G1"
R8 = ND32 thread-connections G1 1/4"
R9 = ND32 flanges SAE 1 1/4"
R13 = ND32 thread-connect. G1 1/2"
R14 = ND32 flanges SAE 1 1/2"

B = Square ac connector small
D = Square dc connector large
F = Square conn. for ac and dc with ign.light

024G = 24V dc
098G = 98V dc
196G = 196V dc
110W = 110V ac
220W = 220V ac

17 = Normally closed (NC)
18 = Normally open (NO)



COMPLETE VALVES

Type 2/2 Way Directional Valve

Medium Water, Air, Oil
Oper. Press. 350bar
Filtration 80mic
Sealing Soft seat, metal supported

Material SS, brass
Sizes* 16, 25, 32mm
Voltage* 24V, 48V, 98V, 196V dc
Additional rectifier 110V/50Hz, 220V/50Hz ac

* Other voltages and sizes on request.

Symbol

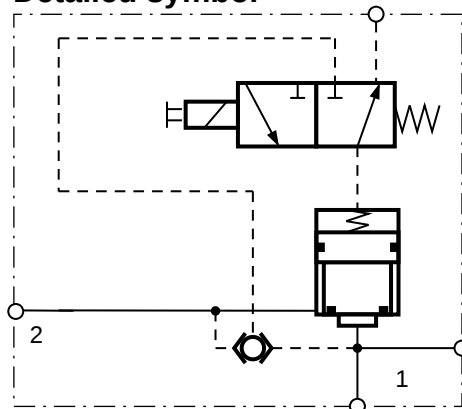


Description

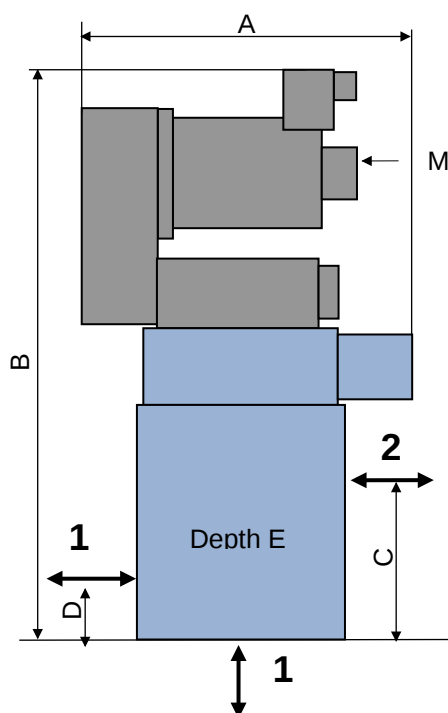
This valve can be used where air has to be sluiced from a high into a low-pressure reservoir. A pilot pressure input from the inlet and outlet side makes sure that the valve stays closed in case of failure even when the pressure in high-pressure port 1 is lower than in port 2.

The robust and compact design allows use of the valve in various fields of applications.

Detailed symbol



Dimensions



Manual override

ND	Connections			A	B	C	D	E
16	G1/2"	G3/4"	SAE 3/4" Standard	180	325	71	32	68
25	G3/4"	G1"	SAE 1" Standard	180	350	86	36	85
32	G1"	G1 1/4"	SAE 1 1/4" Standard	180	375	103	43	102

Example / Ordering Code

R2	016		17		024G	B	KV3
----	-----	--	----	--	------	---	-----

016 = Size 16
025 = Size 25
032 = Size 32

R1 = ND16 thread-connections G1/2"
R2 = ND16 thread-connections G3/4"
R3 = ND16 flanges SAE 3/4"
R4 = ND25 thread-connections G3/4"
R5 = ND25 thread-connections G1"
R6 = ND25 flanges SAE 1
R7 = ND32 thread-connections G1"
R8 = ND32 thread-connections G1 1/4"
R9 = ND32 flanges SAE 1 1/4"

B = Square ac connector small
D = Square dc connector large
F = Square conn. for ac and dc with ign.light

024G = 24V dc
098G = 98V dc
196G = 196V dc
110W = 110V ac
220W = 220V ac

17 = normally closed (NC)
18 = normally open (NO)



COMPLETE VALVES

Type 2/2 Way Directional Valve

Medium Water, Air, Oil
Oper. Press. 350bar
Filtration 80mic integrated
Sealing Soft seat, metal supported

Material SS, brass
Sizes 16, 25, 32mm
Voltage* 24V, 48V, 98V, 196V dc
Additional rectifier 110V/50Hz, 220V/50Hz ac

* Other voltages on request.

Symbol

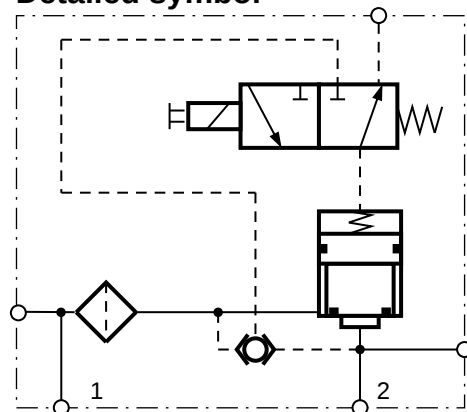


Description

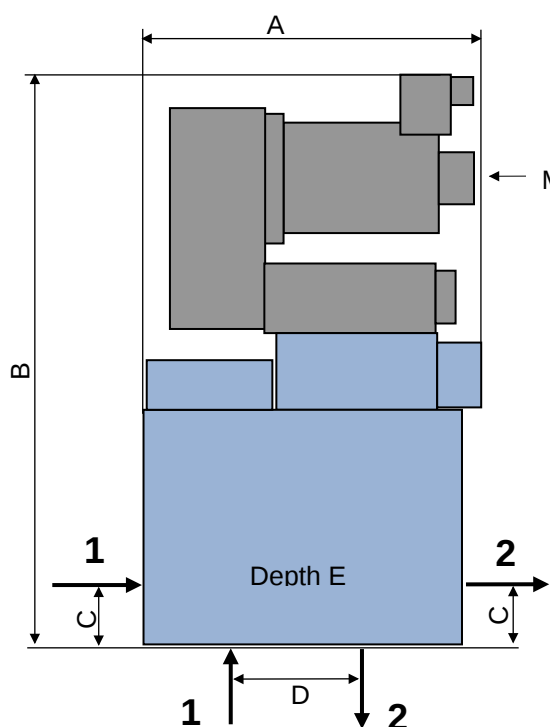
This valve can be used where air has to be sluiced from a high into a low-pressure reservoir. A pilot pressure input from the inlet and outlet side makes sure that the valve stays closed in case of failure even when the pressure in high-pressure port 1 is lower than in port 2. An 80micron filter is integrated to protect main and pilot valve.

The robust and compact design allows use of the valve in various fields of applications.

Detailed symbol



Dimensions



ND	Connections			A	B	C	D	E
16	G1/2"	G3/4"	SAE 3/4" Standard	200	325	32	70	70

Manual override

Example / Ordering Code

R11	016	17	024G	B	KV4
-----	-----	----	------	---	-----

B = Square ac connector small
D = Square dc connector large
F = Square conn. for ac and dc with ign.light

024G = 24V DC
098G = 98V DC
196G = 196V DC
110W = 110V AC
220W = 220V AC

17 = Normally Closed (NC)
18 = Normally open (NO)



COMPLETE VALVES

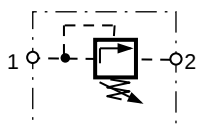
Type Pressure Relief Valve

Medium Water
Oper. Press. 350bar
Filtration 25mic
Sealing Hard seated

Material SS, brass
Sizes* 16, 25, 32mm

*Other sizes on request.

Symbol

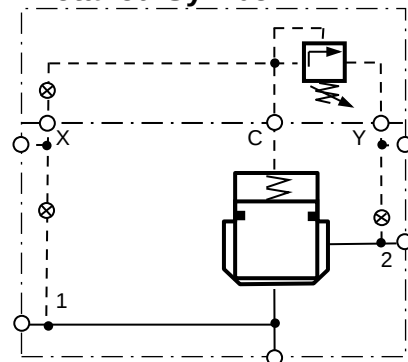


Description

This valve can be used to protect a system against overpressure. Also it is possible to remotely operate the valve by an external pressure.

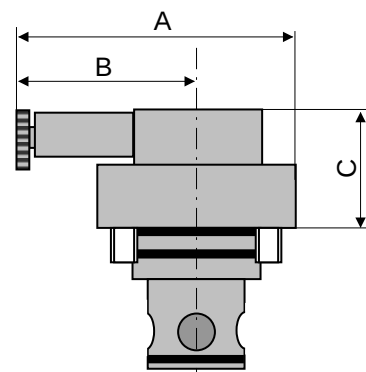
The robust and compact design allows use of the valve in various fields of applications.

Detailed Symbol



Dimensions

ND	Connections 1,2			A	B	C	D	E	F	G	H
16	G1/2"	G3/4"	SAE 3/4" Standard	160	128	70	32	71	175	170	65
25	G3/4"	G1"	SAE 1" Standard	170	128	70	36	86	200	180	85
32	G1"	G1 1/4"	SAE 1 1/4" Standard	180	128	70	43	103	225	187	102

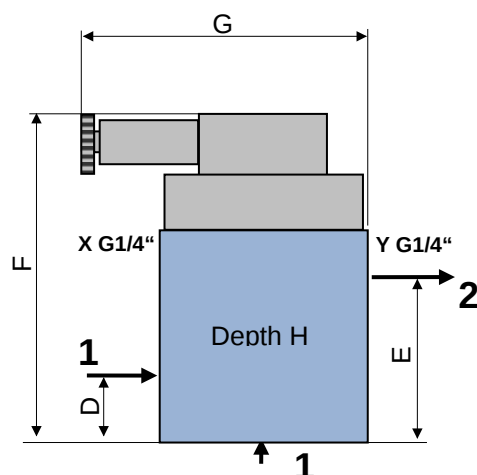


Example / Ordering Code

EO	016	DX	05	2	D	23	FS	0000	0	H KV7
----	-----	----	----	---	---	----	----	------	---	-------

016 = Size 16
025 = Size 25
032 = Size 32

EO = for manifold mounting
R1 = ND16 thread-connections G1/2"
R2 = ND16 thread-connections G3/4"
R3 = ND16 flanges SAE 3/4"
R4 = ND25 thread-connections G3/4"
R5 = ND25 thread-connections G1"
R6 = ND25 flanges SAE 1
R7 = ND32 thread-connections G1"
R8 = ND32 thread-connections G1 1/4"
R9 = ND32 flanges SAE 1 1/4"





COMPLETE VALVES

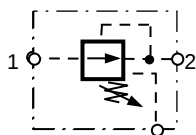
Type Pressure Reducing Valve

Medium Water
Oper. Press. 350bar
Filtration 25mic
Sealing Hard seated

Material SS, brass
Sizes* 16, 25, 32mm

*Other sizes on request.

Symbol

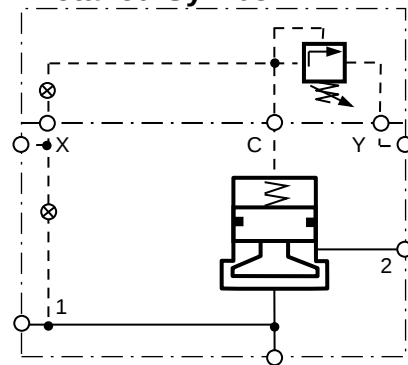


Description

This valve can be used to reduce a pressure from a high-pressure circuit to a constant lower pressure, without any pressure influence from the feeding pressure system. Also it is possible to remotely operate the valve by an external pressure.

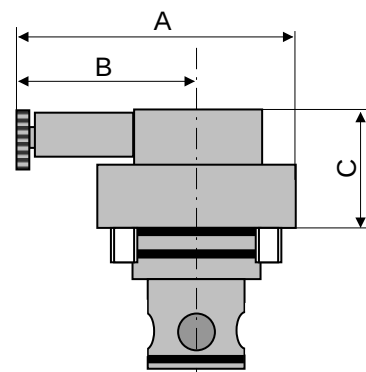
The robust and compact design allows use of the valve in various fields of applications.

Detailed Symbol



Dimensions

ND	Connections 1,2			A	B	C	D	E	F	G	H
16	G1/2"	G3/4"	SAE 3/4" Standard	160	128	70	32	71	175	170	65
25	G3/4"	G1"	SAE 1" Standard	170	128	70	36	86	200	180	85
32	G1"	G1 1/4"	SAE 1 1/4" Standard	180	128	70	43	103	225	187	102

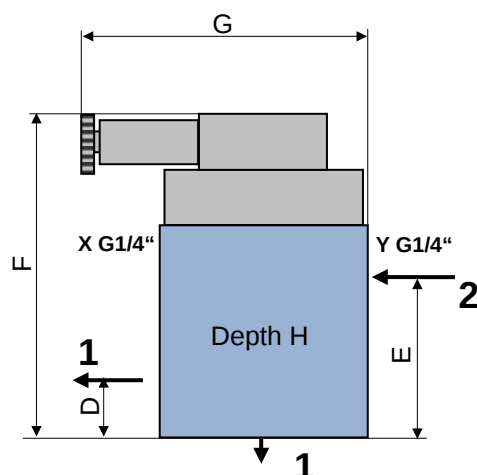


Example / Ordering Code

EO	016	DX	05	2	D	24	FS	0000	0	H KV8
----	-----	----	----	---	---	----	----	------	---	-------

016 = Size 16
025 = Size 25
032 = Size 32

EO = for manifold mounting
R1 = ND16 thread-connections G1/2"
R2 = ND16 thread-connections G3/4"
R3 = ND16 flanges SAE 3/4"
R4 = ND25 thread-connections G3/4"
R5 = ND25 thread-connections G1"
R6 = ND25 flanges SAE 1
R7 = ND32 thread-connections G1"
R8 = ND32 thread-connections G1 1/4"
R9 = ND32 flanges SAE 1 1/4"





COMPLETE VALVES

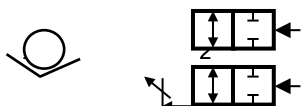
Typ Non Return and hydraulically operated Valves, Stroke Limiters

Medium Water, Airl, Oil
Ope. pressure 350bar
Filtration 25mic
Sealing Soft seat, metal supported

Material SS, brass
Sizes* 10, 16, 25, 32, 40 mm

*Other sizes on request.

Symbol

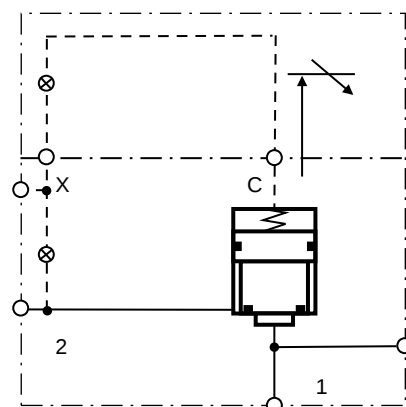


Description

These valves are used for directional control and shut off functions. Additional stroke limiters allow also a throttling of the flow.

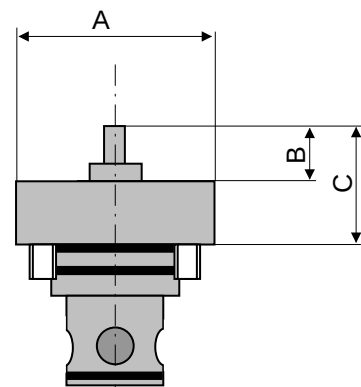
The robust and compact design allows use of the valve in various fields of applications.

Detailed Symbol



Dimensions

ND	Connections			A	C	B	D	E	F	G	H
10		G1/2"		52	50	25	26	55	125	70	52
16	G1/2"	G3/4"	SAE 3/4" Standard	65	75	40	32	71	180	85	65
25	G3/4"	G1"	SAE 1" Standard	85	92	57	36	86	222	105	85
32	G1"	G1 1/4"	SAE 1 1/4" Standard	102	114	79	39	103	269	120	102
40		G1 1/2"	SAE 1 1/2" Standard	125	120	80	47	116	300	145	125



Example / Ordering Code

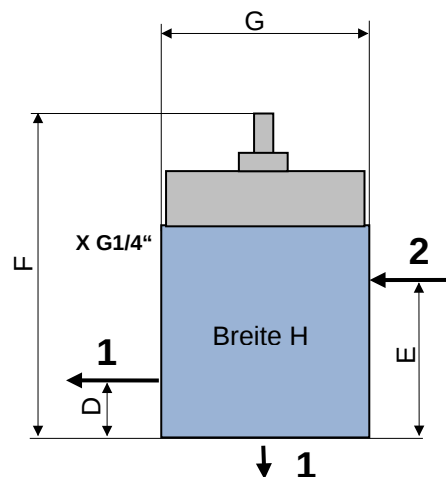
EO	016	SX	08	6	D	11	F0	0000	0	0 KV9
----	-----	----	----	---	---	----	----	------	---	-------

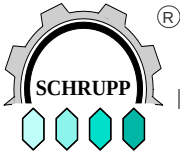
010 = Size 10
to
040 = Size 40

02 = Cover without limiter
11 = Cover with stroke limiter

EO = Manifold mounting
R1 = ND16 thread-connections G1/2"
R2 = ND16 thread-connections G3/4"
R3 = ND16 flanges SAE 3/4"
R4 = ND25 thread-connections G3/4"
R5 = ND25 thread-connections G1"
R6 = ND25 flanges SAE 1
R7 = ND32 thread-connections G1"
R8 = ND32 thread-connections G1 1/4"
R9 = ND32 flanges SAE 1 1/4"

HX = no stroke limiter
SX = stroke limiter



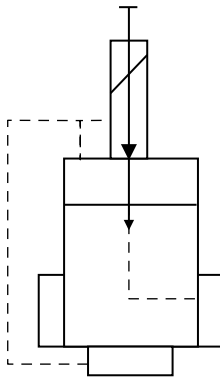


COMPLETE VALVES

Servo Cartridges

Servo assisted throttle and shut off Valves

This robust and leak-free closing valve with patented servo assistance allows an easy operation with very low manual force even after a long period of non-use. For accumulator shut off functions the valve can be operated in combination together with an electrically operated pilot valve. Without electrical power the valve will close automatically (fail safe). It is always possible to close it manually or in case of maintaining the system to secure it in closed position even if the pilot valve will be energized.



Technical Data:

Operating Pressure:	up to 350bar
Sizes:	25 – 200mm
Media:	Water, Oil
Material:	Stainless Steel, Buna, Viton, Teflon
Temperature:	0-50°C

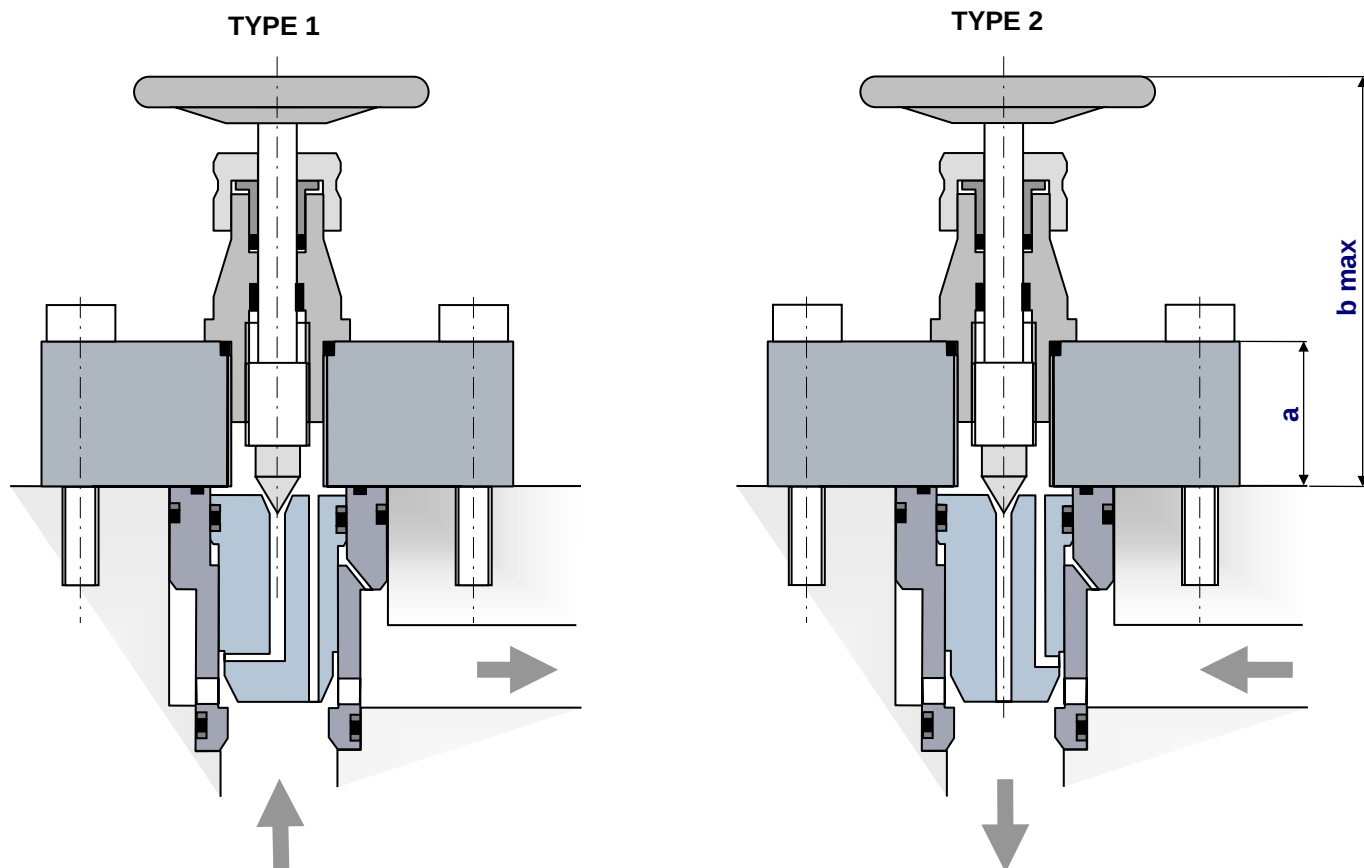




COMPLETE VALVES

Servo Cartridges

Servo assisted throttle and shut off Valves



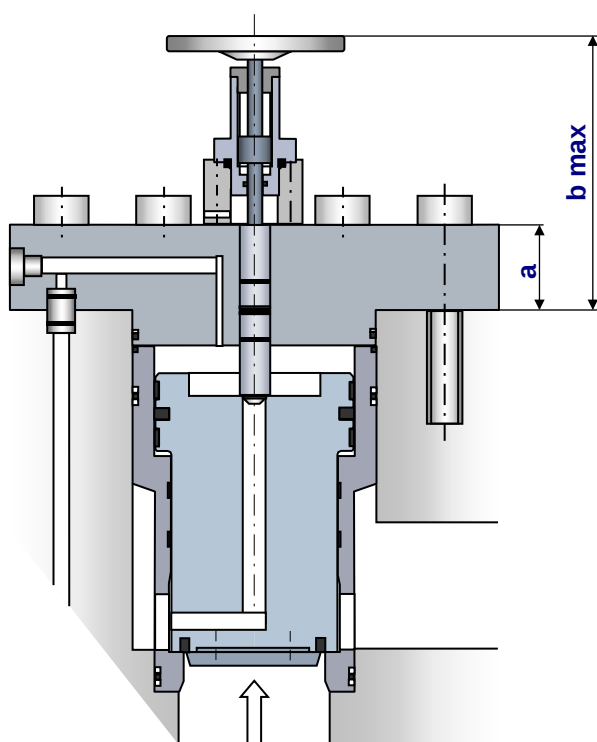
DN	a	b max	PART NO.
25 TYPE 1	27	114	850193
25 TYPE 2	27	114	850193-01
32 TYPE 1	40	126	851281
32 TYPE 2	40	126	851281-01
40 TYPE 1	40	126	851276
40 TYPE 2	40	126	851276-01

COMPLETE VALVES

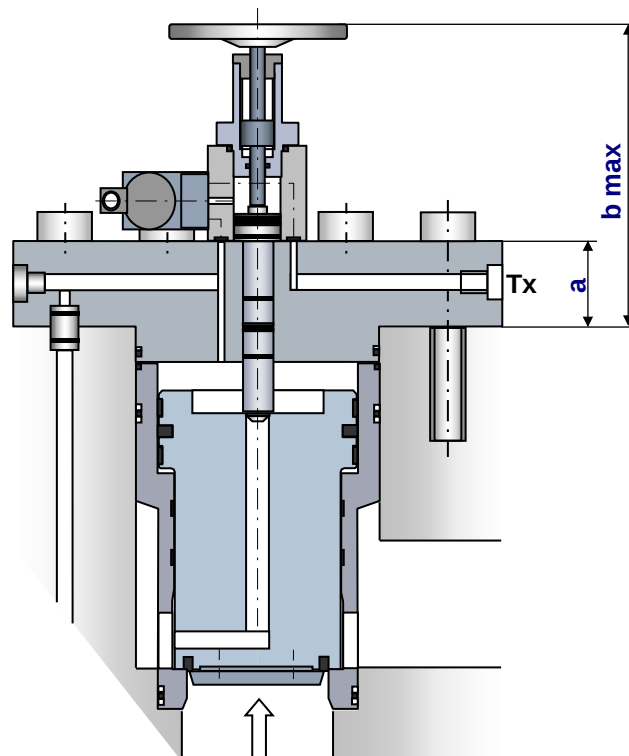
Servo Cartridges

Servo assisted throttle and shut off Valves

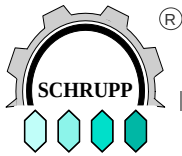
TYPE 1
manually operated



TYPE 2:
solenoid and electrically operated



DN	a	b max	Tx	PART NO.
50 TYPE 1	45	249	-	851270
50 TYPE 2	45	288	G 1/2"	851270-01
63 TYPE 1	50	254	-	851223
63 TYPE 2	50	293	G 1/2"	851223-01
80 TYPE 1	80	284	-	851216
80 TYPE 2	80	323	G 1/2"	851216-01
100 TYPE 1	80	284	-	851233
100 TYPE 2	80	323	G 1/2"	851233-01
125 TYPE 1	100	388	-	851243
125 TYPE 2	100	427	G 1/2"	851243-01
150 TYPE 1	120	408	-	851247
150 TYPE 2	120	447	G 1/2"	851247-01
200 TYPE 1	150	512	-	851261
200 TYPE 2	150	551	G 1/2"	851261-01

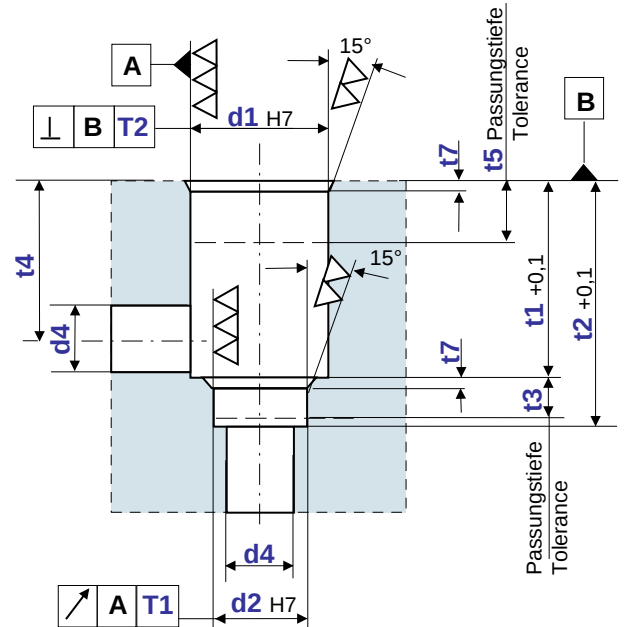
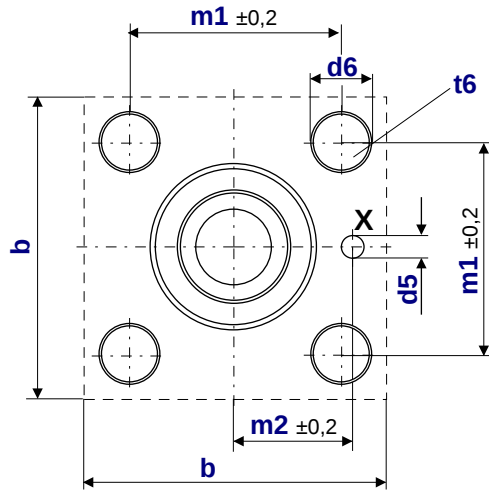


COMPLETE VALVES

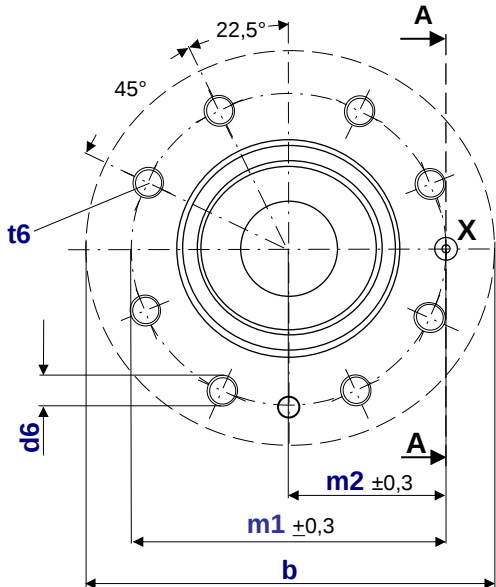
Servo Cartridges

Servo assisted throttle and shut off Valves

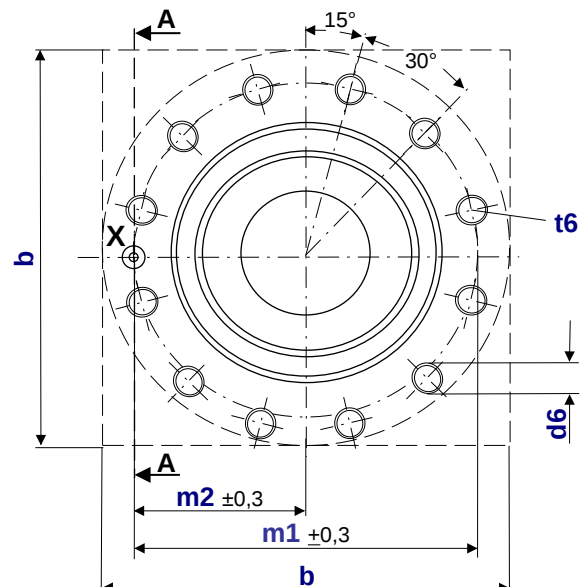
Abmessungen / Dimensions DIN 24342, DN25-50



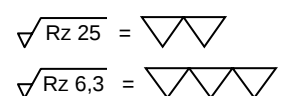
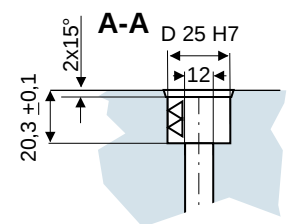
Abmessungen / Dimensions DIN 24342, DN63-100

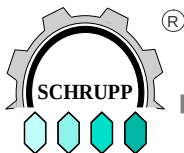


Abmessungen / Dimensions DIN 24342, DN125-200



DN	b	d1	d2	d4	d5	d6	m1	m2	t1	t2	t3	t4	t5	t6	t7	T1	T2
25	85	45	34	25	-	M12	58	-	58	72	12	44	30	13	2,5	0,03	0,05
32	102	60	45	32	-	M16	70	-	70	85	13	52	34	25	2,5	0,03	0,1
40	125	75	55	40	-	M20	85	-	87	105	15	64	42	30	3	0,05	0,1
50	140	90	68	50	8	M20	100	58	115	137	17	87	61	30	4	0,05	0,1
63	225	120	90	63	-	M24	175	87,5	150	175	20	115	82	35	4	0,05	0,2
80	250	145	110	80	-	M24	200	100	195	225	25	150	108	35	5	0,05	0,2
100	300	180	135	100	-	M30	245	125	230	265	29	175	130	40	5	0,05	0,2
125	360	220	180	125	-	M36	290	145	284	325	41	208	70	50	5	0,05	0,2
150	400	255	210	150	-	M36	330	165	330	375	41	245	75	50	5	0,05	0,2
200	530	355	275	200	-	M48	435	217,5	430	475	41	320	75	70	5	0,05	0,2





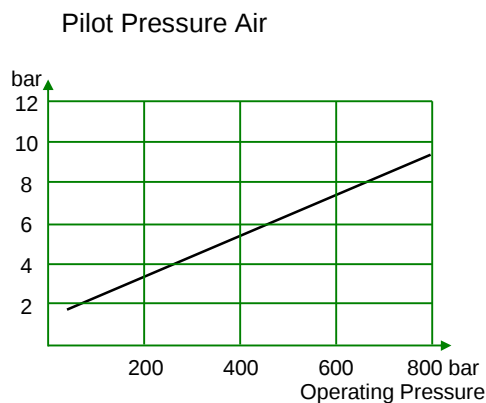
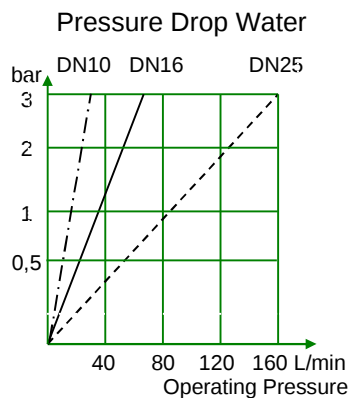
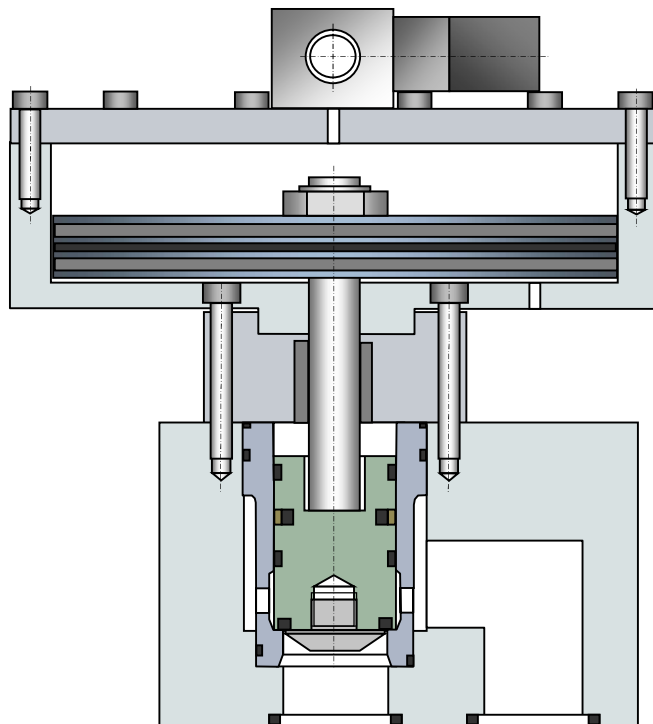
COMPLETE VALVES

2/2 Way Directional Valve 800bar with electro-pneumatic Pilot valve

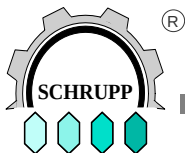
These electro-pneumatically piloted valves are designed for use in the harsh environments found in the steel and aluminum industries. Housing and the leak free soft seat cartridge are manufactured from stainless steel. Housings are also available with flange connections or for manifold mounting.

Technical Data:

Nominal Dimensions	10,16,25mm
Operating Pressure	800bar
Pneumatic Pilot Pressure	2-10bar
Filtration Rate min	50micron
Electrical Power Consumption	8W
Voltage Tolerance	10%
Electrical Protection	IP65



Design details on request



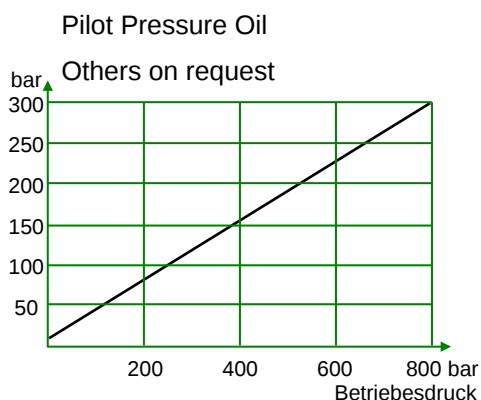
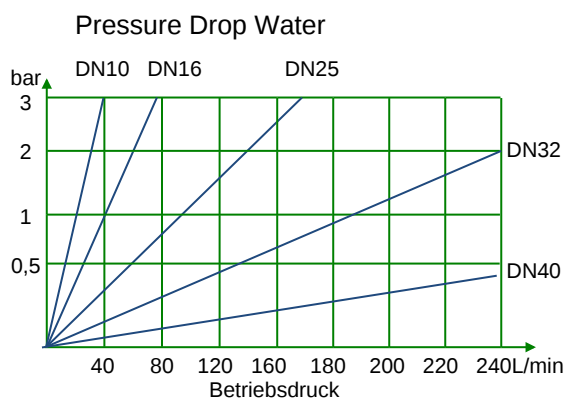
COMPLETE VALVES

2/2 Way Valve 800bar with solenoid operated pilot

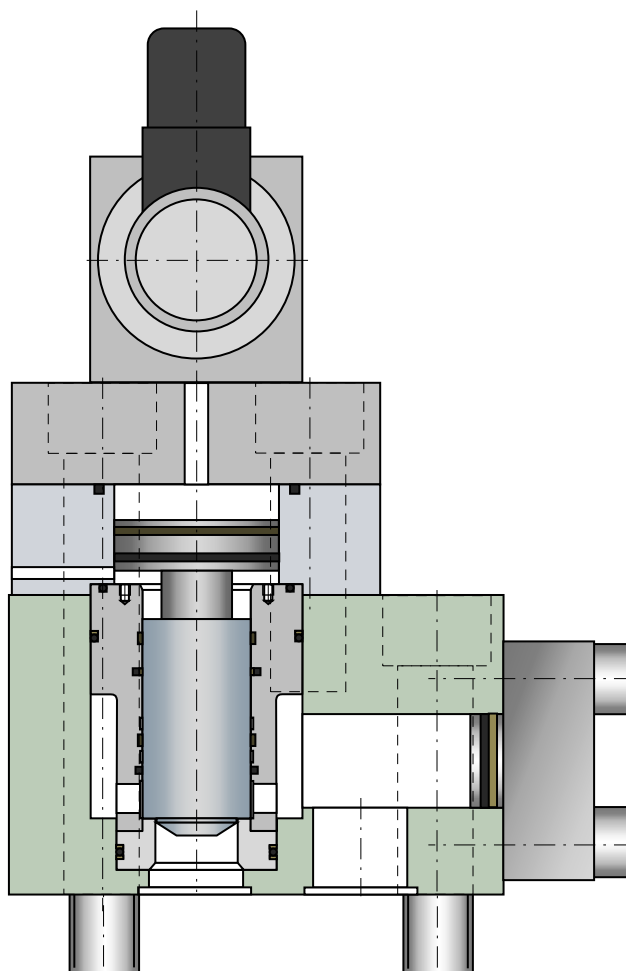
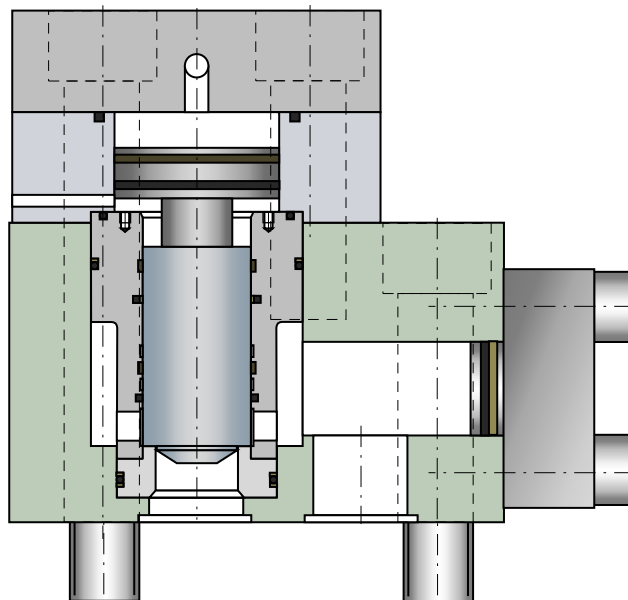
These electro-hydraulically piloted valves are designed for use in the harsh environments found in the steel and aluminum industries or at offshore applications. Housing and the leak free soft seat cartridge are manufactured from stainless steel. Housings are also available with flange connections or for manifold mounting.

Technical Data:

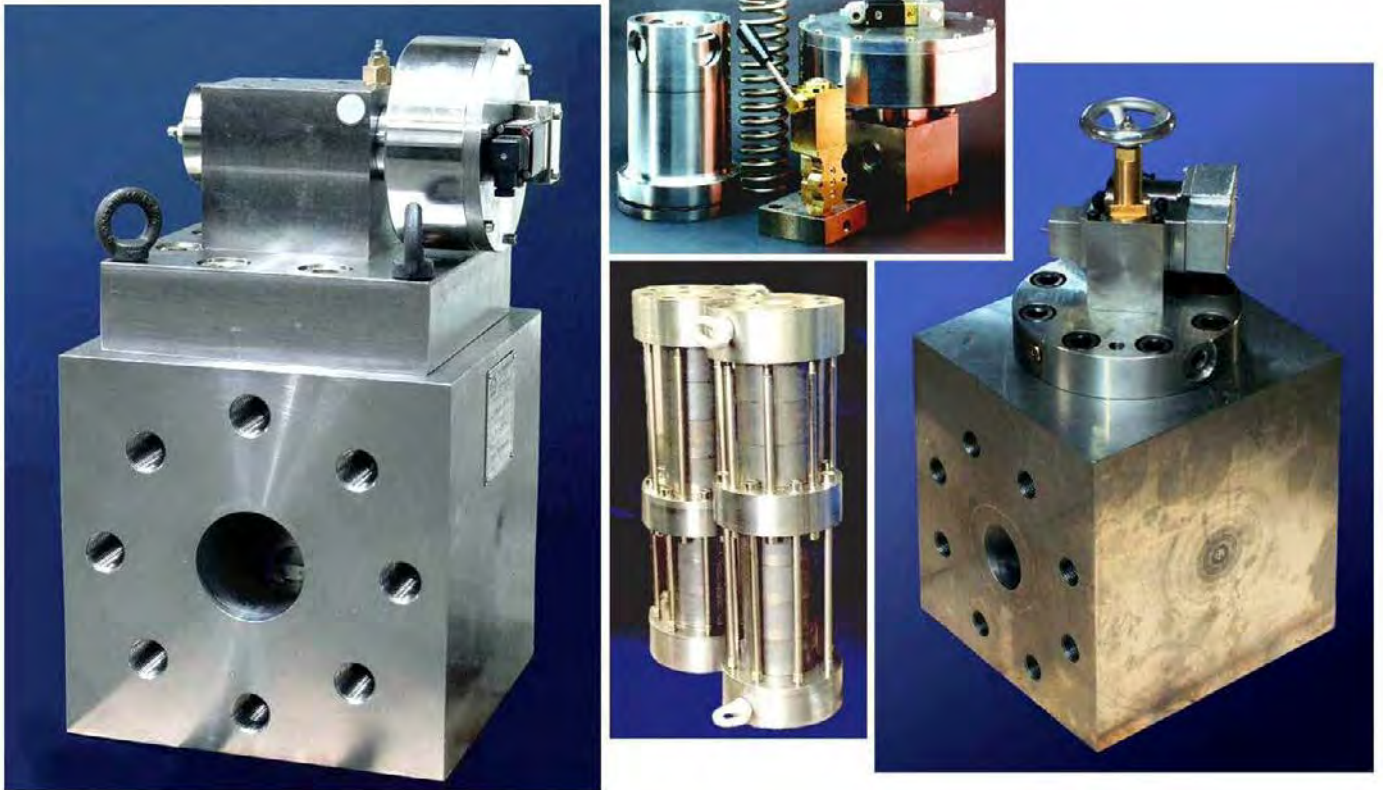
Nominal Dimensions	10,16,25mm
Operating Pressure	800bar
Pneumatic Pilot Pressure	2-10bar
Filtration Rate min	50micron



Design details on request



ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY



Entzunderungssysteme werden in Stahlwerken benötigt, um nach jedem Walzvorgang die Zunderschicht von der Materialoberfläche zu entfernen. Ohne ein effektives Entzunderungssystem können die heutigen Qualitätsanforderungen an Stahlprodukte nicht mehr erfüllt werden. HL Hydraulik GmbH fertigt und vertreibt unter dem Handelsnamen Schrupp die hierzu erforderlichen Ventile sowie mehrstufige Bypass Düsen.

Das Produktprogramm umfasst

- Absperrventile
- Rückschlagventile
- Magnetbetätigte Ventile
- Ventilkombinationen
- Düsenpakete
- 2- und 3- Wege Vorsteuerungen

Die Ventile sind einsetzbar bis zu Drücken von 350bar (Sonderanwendungen bis 800bar) und Volumenströmen bis 30.000 l/min

Descaling systems are used in steel rolling mills to remove the scale after each rolling procedure. Without a modern descaling system it is not possible to produce a high quality steel product. HL Hydraulik GmbH manufactures all kinds of valves and multistage break down orifices under the trade name Schrupp for this application.

The product range includes:

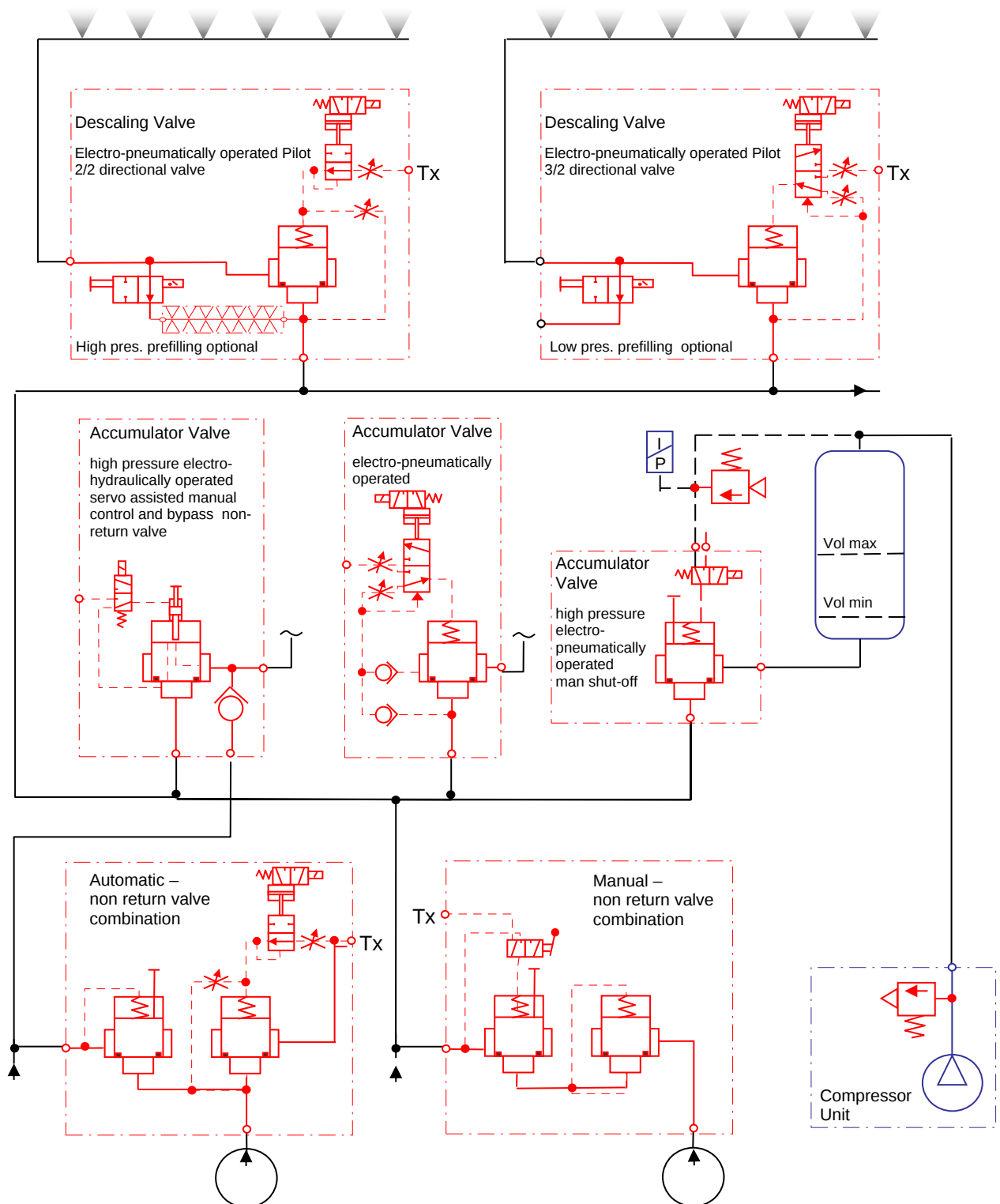
- On Off valves (Descaling Valves)
- Non Return Valves (Check Valves)
- Automatic Valves (Accumulator Safety Shut Off Valves)
- Valve Combinations
- Multistage Break Down Orifices
- 2 and 3 Way Pilot Valves

The valves are suitable for pressures up to 350bar (special applications up to 800bar) and flow rates up to 30.000 l/min

ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

Systeme mit Konstantpumpen (Kolben Pumpen)

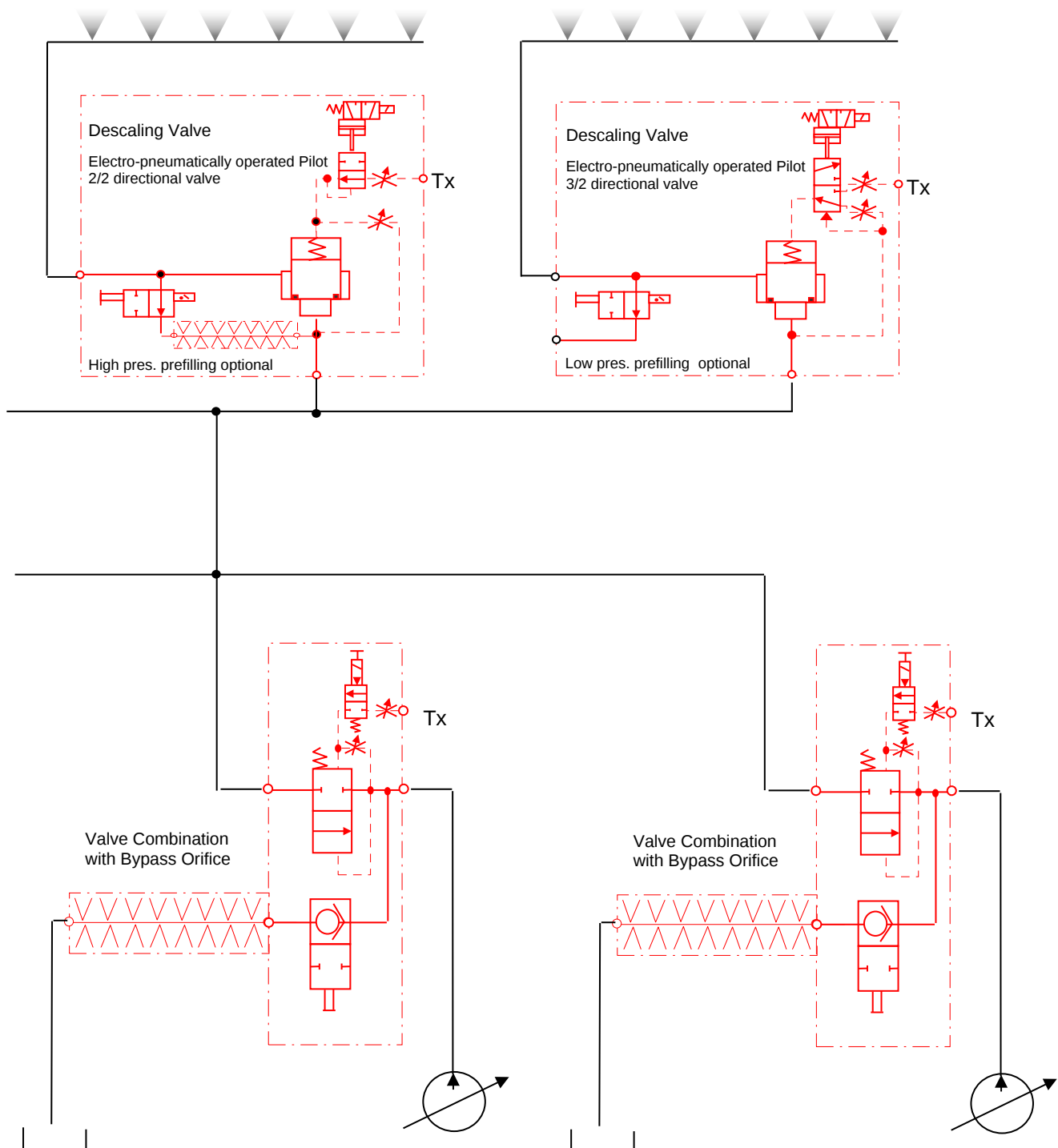
Systems for pumps with continuous flow rates (plunger pumps)



Beispiele für eine typische Anwendungen. Rot dargestellte Komponenten stellen HL Hydraulik GmbH Produkte dar, blau dargestellte Komponenten können ebenso angeboten werden.
Examples of typical applications. Red items are products of HL-Hydraulik GmbH blue Items can also be quoted.

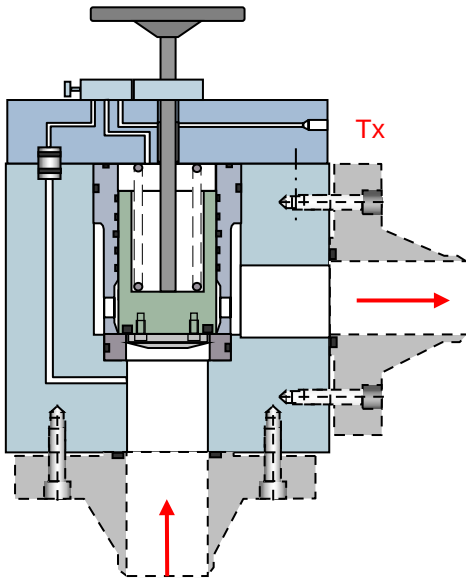
ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

Systeme mit Pumpen mit veränderlichen Volumenströmen (Zentrifugal Pumpen) Systems for pumps with variable flow rates (centrifugal pumps)



Beispiel für eine typische Anwendung. Rot dargestellte Komponenten stellen HL Hydraulik GmbH Produkte dar.
Example of a typical application. Red items are products of HL Hydraulik GmbH.

ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY



Handabsperrrventil

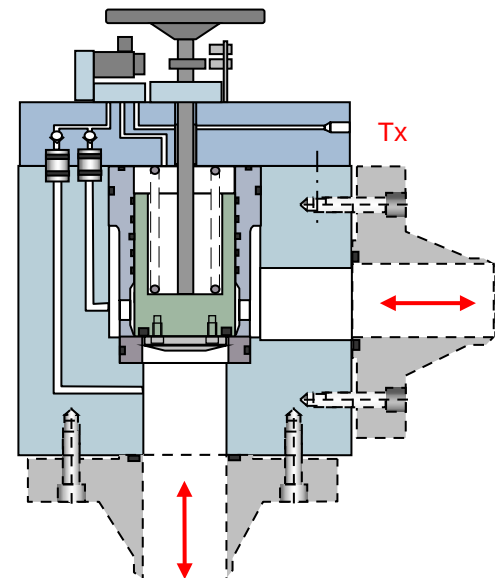
Einfach aufgebautes Ventil zur Absperrung von Rohrleitungen für eine Strömungsrichtung. Betätigung erfolgt durch 3/2 Wege hand- oder elektrisch betätigtes Ventil. Verriegelung erfolgt durch mechanische Spindel. Anders als bei handelsüblichen Spindelventilen sind die Bedienkräfte gering.

- Optionen:
- Rückschlagventile für Ventile mit beidseitiger Durchströmung
 - elektrisch betätigtes Ventil
 - Endschalter

Manual Shut Off Valve

robust design for flows in one (both) direction. The valve will be operated hydraulically by a manually or electrically operated 3/2 directional valve and can be locked by a spindle. The operating force is much lower than for a standard spindle operated valve.

- Options:
- Check valves for flows in both directions
 - electrically operated pilot valve
 - limit switches



Rückschlagventil

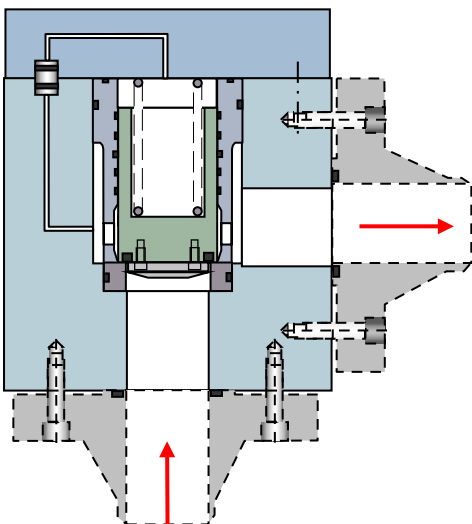
Einfach aufgebautes Ventil zur einseitigen Absperrung von Rohrleitungen.

- Option: - Spindel zur Verriegelung in geschlossener Position.

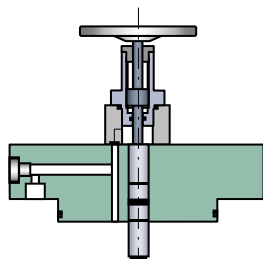
Non Return Valve

Robust design to allow flows only in one direction

- Option: - locking spindle for closed position.



ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

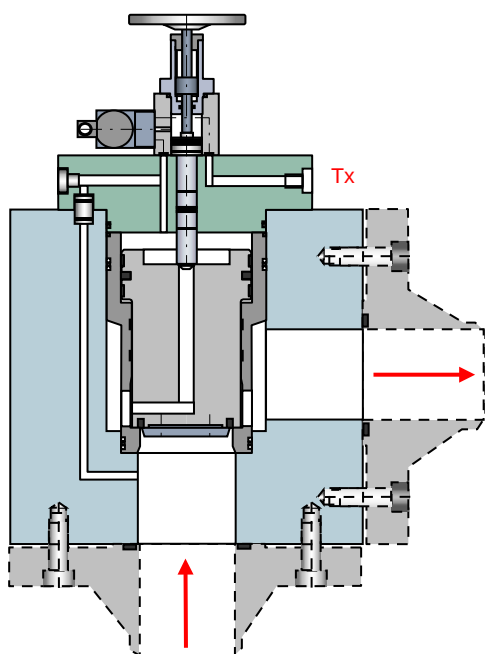


Absperrventil mit Servounterstützung

Diese robusten dichtschießenden Ventile mit patentierter servo-hydraulischer Verstellung ermöglichen eine zuverlässige Betätigung selbst nach langen Stillstandszeiten mit geringstem Kraftaufwand. In Kombination mit einem elektrischen Vorsteuerventil ist es für den Einsatz als Speicherschnellschlussventil bestens geeignet. Das Ventil schließt bei Stromausfall automatisch (fail safe) und kann jederzeit ebenso manuell geschlossen werden. Bei Wartungsarbeiten am System kann die manuelle Betätigung als Sicherheitsverriegelung genutzt werden, so dass das Ventil selbst bei Betätigung der elektrischen Vorsteuerung nicht geöffnet werden kann.

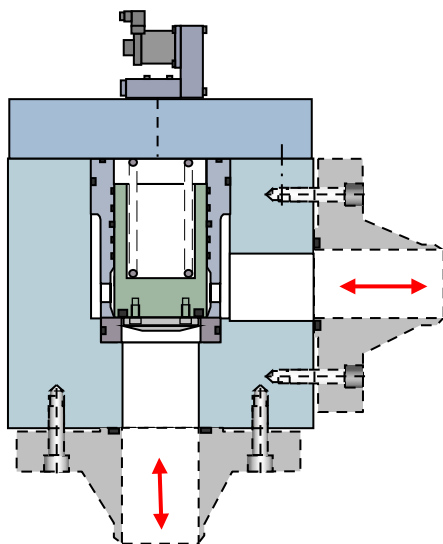
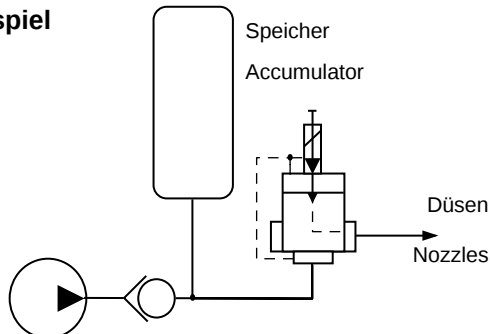
Shut- Off Valve with Servo Assistance

This robust and leak-free shut off valve with patented servo assistance allows an easy operation with very low manual force even after long periods of non-use. For accumulator shut off functions the valve can be operated in combination with an electrically operated pilot valve. Without electrical power the valve will close automatically (fail safe). It is always possible to close it manually or in case of maintaining the system to secure it in the closed position even if the pilot valve will be energized.



Anwendungsbeispiel

Example



Absperrventil mit elektro- hochdruckpneumatischer Vorsteuerung - fail safe

Dieses preiswerte, robuste und dichtschießende Ventil wird für Anwendungen mit hoher Schalzhäufigkeit wie zum Beispiel als Speicherabsperr- und Automatikventil eingesetzt. Da der pneumatische Vorsteuerdruck mindestens so hoch sein muss wie der Betriebsdruck wird das Vorsteuerventil in vielen Fällen direkt mit dem Windkessel der Entzunderungsanlage verbunden.

Shut - Off Valve with Electro- High Pressure Pneumatic Pilot - fail safe

This robust and leak-free closing, low cost valve, is designed for the continuous use as an accumulator or automatic valve. The pneumatic pilot pressure has to be min the same as the hydraulic pressure, so that oftentimes the pilot valve is connected to the pressure vessel of the descaling system.

ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

Absperrventil mit elektro-pneumatischem 2/2 Wege Vorsteuerventil

Diese robusten dicht schließenden Ventile werden für den Einsatz in verschmutzten Wässern und mit hoher Schalthäufigkeit, zum Beispiel als Entzunderungs- oder Automatikventil eingesetzt. Durch die im Hauptkolben eingesetzte Düse wird eine Selbstreinigung erzielt.

Der pneumatische Versorgungsdruck beträgt 4-10bar, andere Ausführungen möglich.

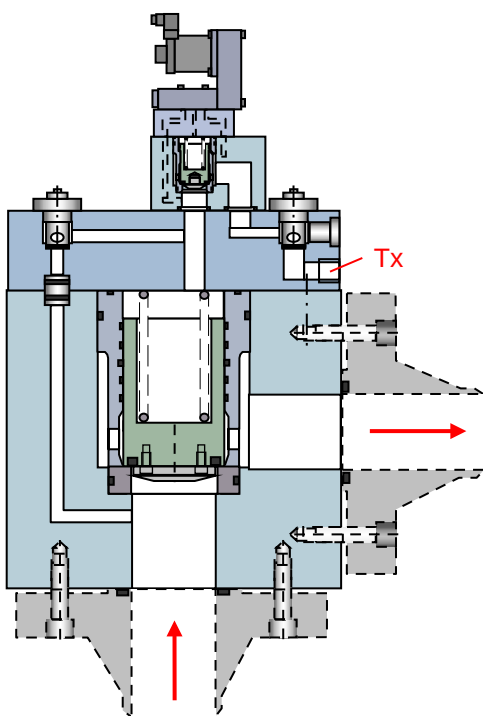
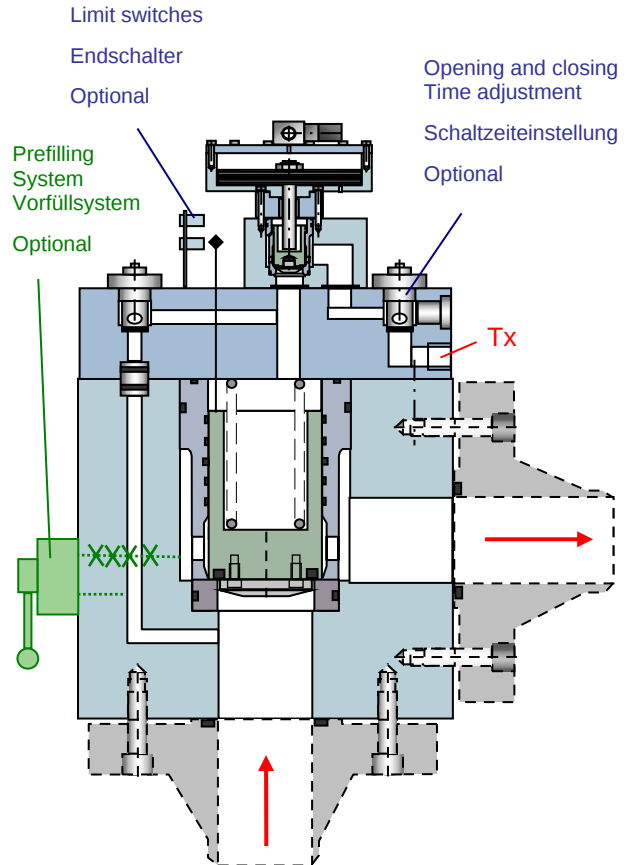
Option: -Endschalter
-Schaltzeiteinstellung
-Vorfüllsystem manuell oder elektrisch betätigt.

Shut - Off Valve with Electro- Pneumatic 2/2 Directional Pilot Valve

This robust and leak-free closing valve is designed for use in systems with low water quality and continuous service i.e as descaling-, automatic valve. A nozzle at the main piston effects a continuous cleaning.

The pneumatically operated pilot power is 4-10 bar, other pressures on request.

Option: - Limit switches
- opening and closing speed control
- manual or electrically operated prefilling system



Absperrventil mit elektro-hydr. Vorsteuerung

Dieses robuste dichtschießende Ventil wird für Anwendungen mit hoher Schalthäufigkeit wie zum Beispiel als Entzunderungs- oder Automatikventil eingesetzt. Statt des wasserhydraulischen Vorsteuerventils kann auch ein ölhydraulisches Vorsteuerventil eingesetzt werden und dieses mit einer externen Druckversorgung betrieben werden. Der Vorsteuerdruck hierbei muß mindestens dem Betriebsdruck entsprechen.

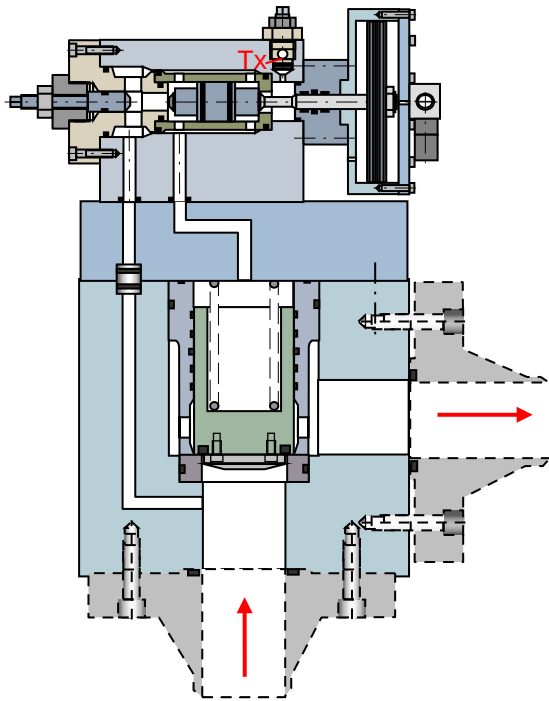
Option: -Endschalter
-Schaltzeiteinstellung
-Vorfüllsystem manuell oder elektrisch betätigt.

Shut - Off Valve with electro-hydraulically Pilot

This robust and leak-free closing valve is designed for continuous use as descaling- and automatic valve. Instead of a water hydraulic pilot an oil hydraulic pilot can be used which will be serviced by an external hydraulic pumping unit. The pilot pressure has to be equal or higher than the operating pressure.

Option: - Limit switches
- opening and closing speed control
- manual or electrically operated prefilling system

ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY



Absperrventil mit elektro- pneumatischer 3/2 Wege Vorsteuerung – fail safe

Dieses robuste dichtschießende Ventil wird für Anwendungen mit hoher Schalthäufigkeit wie zum Beispiel als Speicherabsperr- oder Automatikventil eingesetzt. Die Vorsteuerung ermöglicht eine deutliche Reduzierung der Leckagemenge am Ausgang Tx und eine komfortablere Einstellung der Schaltzeiten. Der pneumatische Versorgungsdruck beträgt 4-10bar, andere Ausführungen möglich.

- Option: -Endschalter
-Schaltzeiteinstellung
-Vorfüllsystem manuell oder elektrisch betätigt.

Shut - Off Valve with 3/2 directional Electro-Pneumatic Pilot – fail safe

This robust and leak-free closing valve is designed for continuous use as an accumulator shut-off or automatic valve. The design allows for the reduction of leakage flow at port Tx to a minimum and a more comfortable adjustment of the opening and closing times.

- Option: - Limit switches
- opening and closing speed control
- manual or electrically operated prefilling system

Absperrventil mit elektro- hydraulischer 3/2 Wege Vorsteuerung – fail safe

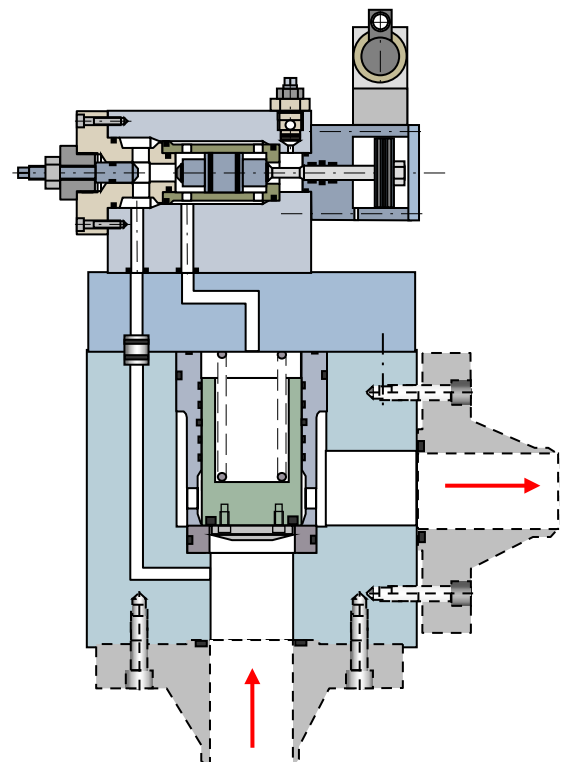
Dieses robuste dichtschießende Ventil wird für Anwendungen mit hoher Schalthäufigkeit wie zum Beispiel als Speicherabsperr- oder Automatikventil eingesetzt. Die Vorsteuerung ermöglicht eine deutliche Reduzierung der Leckagemenge am Ausgang Tx und eine komfortablere Einstellung der Schaltzeiten. Die Ansteuerung erfolgt mit gefiltertem Eigenmedium.

- Option: -Endschalter
-Schaltzeiteinstellung
-Vorfüllsystem manuell oder elektrisch betätigt.
- Separater Filter für Vorsteuerung

Shut - Off Valve with 3/2 directional Electro-hydraulic Pilot – fail safe

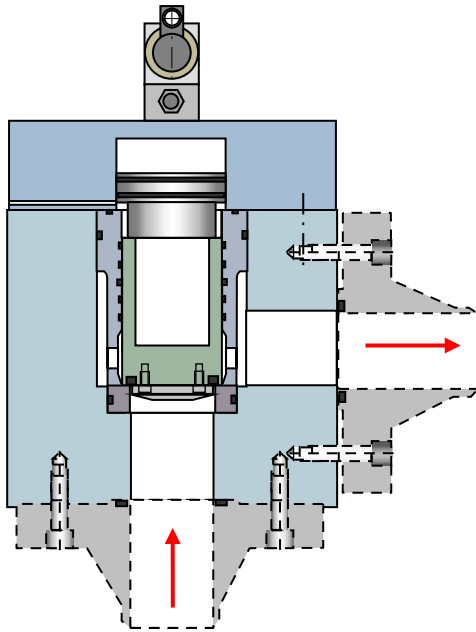
This robust and leak-free closing valve is designed for continuous use as an accumulator shut-off or automatic valve. The design allows for the reduction of leakage flow at port Tx to a minimum and a more comfortable adjustment of the opening and closing times.

- Option: - Limit switches
- opening and closing speed control
- manual or electrically operated prefilling system
- separate pilot filter



ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

Absperrventil mit ölhydraulischer 3/2 Wege Vorsteuerung



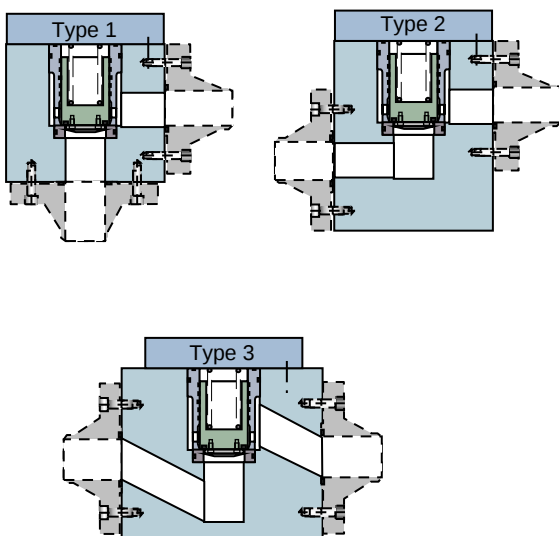
Dieses robuste dichtschießende Ventil wird für Anwendungen mit hoher Schalthäufigkeit wie zum Beispiel als Automatikventil eingesetzt. Das ölhydraulische Vorsteuersystem ermöglicht sehr kurze Schaltzeiten und einen Entfall von Vorsteuerfiltern. Die Einstellung der Schaltzeiten erfolgt auf der ölhydraulischen Seite. Zwei separate Dichtungssysteme und eine Entlüftungsbohrung verhindert die Vermischung von Steuer und Betriebsmedium und lässt Undichtigkeiten sofort erkennen.

Option: -Endschalter
-Schaltzeiteinstellung
-Vorfüllsystem manuell oder elektrisch betätigt.

Shut - Off Valve with 3/2 directional oil-hydraulic Pilot

This robust and leak-free closing valve is designed for continuous use as an automatic valve. The oil-hydraulic pilot system allows very short opening and closing times and does not need additional pilot filters. Opening and closing times can be adjusted at the oil hydraulic side. To eliminate the risk of a penetration of oil into the water media, the system is equipped with two separate seals and a vent. A leakage at the oil or water side can be indicated immediately.

Option: - Limit switches
- opening and closing speed control
- manual or electrically operated prefilling system



Ventilgehäuse

Unabhängig von der Funktion können die standardisierten Einbaukomponenten in verschiedenen individuell hergestellten Gehäusen untergebracht werden. Abmessungen, Material sowie Flanschgeometrie können auf den jeweiligen Bedarfsfall abgestimmt werden.

Gehäuse Typ 1 stellt die preisgünstigste und kompakteste Bauform dar. Typ 2 und 3 bieten gegenüberliegende Abgänge.

Valve Housings

The standardised components can be integrated into individual housings. Housing dimensions, material and flange type are according to customer's specification.

Housing Type 1 is the most compact and economical, versions Type 2 and 3 are inline versions.

ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

Ventilkombinationen

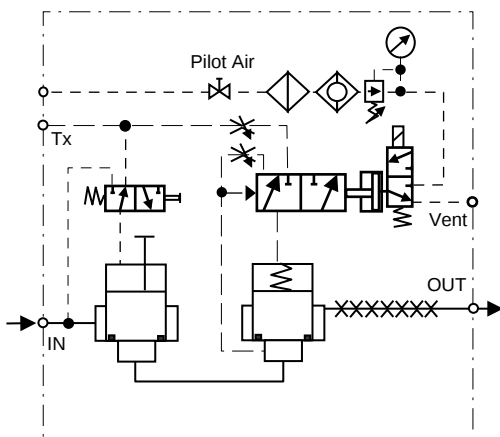
Unabhängig von der Funktion und Nennweite können die standardisierten Einbaukomponenten in Kombinationsblöcken untergebracht werden.

- Vorteile:
- Kompakte Bauweise
- Geringere Kosten bei der Montage und Wartung vor Ort
- Entfall zusätzlicher Verrohrungen und Montagerahmen

Valve Combinations

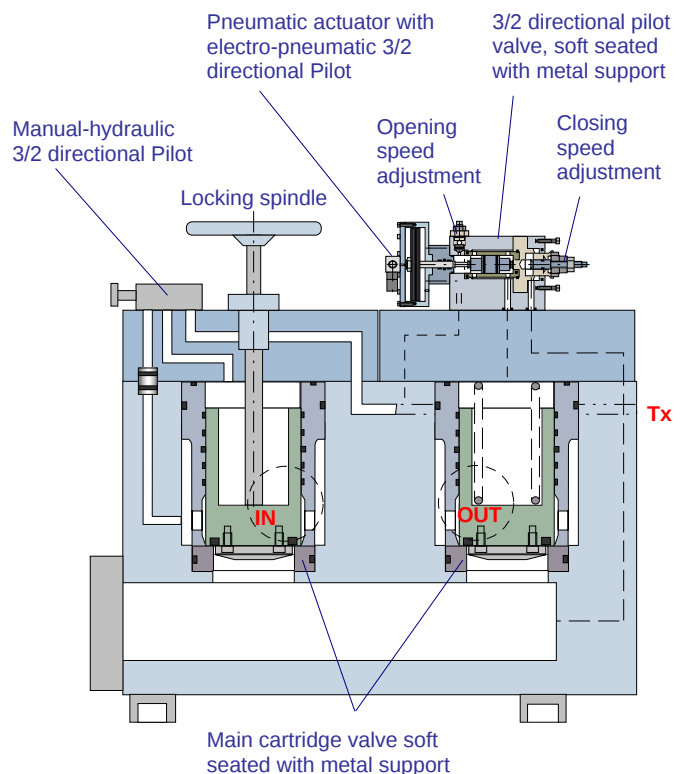
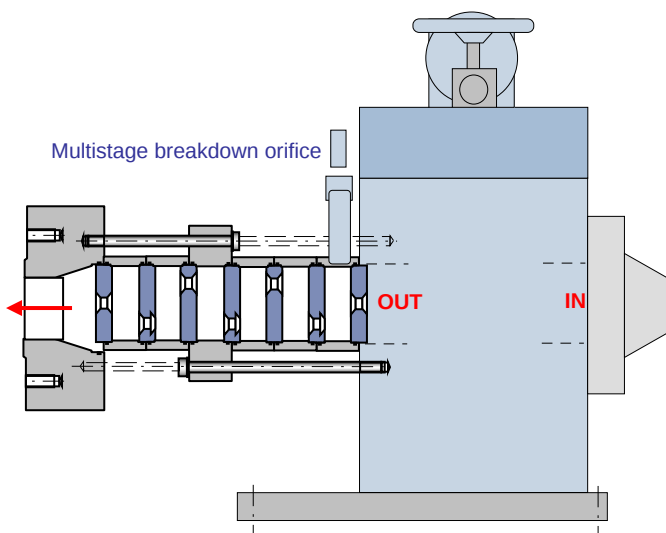
The standardized components can be integrated into combination manifolds. It is possible to combine different valve sizes and functions.

- Benefits:
- Compact design.
- Less installation and maintenance costs.
- Reduction of intermediate piping



Beispiel eines elektrisch betätigten Pumpen Bypassventils mit mehrstufiger Entlastungsdüse und Handabsperrenteil mit Verriegelungsspindel.

Example of an electrically controlled pump-bypass-valve with multistage breakdown orifice and manual shut-off valve with locking spindle.



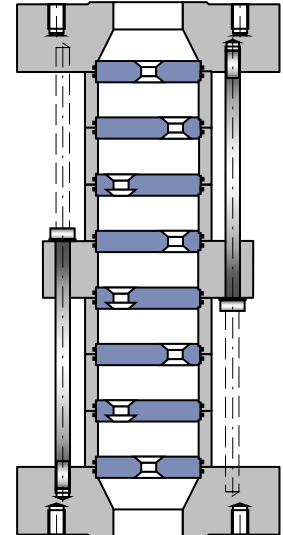
ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

Mehrstufige Düsen / Multistage Breakdown Orifice

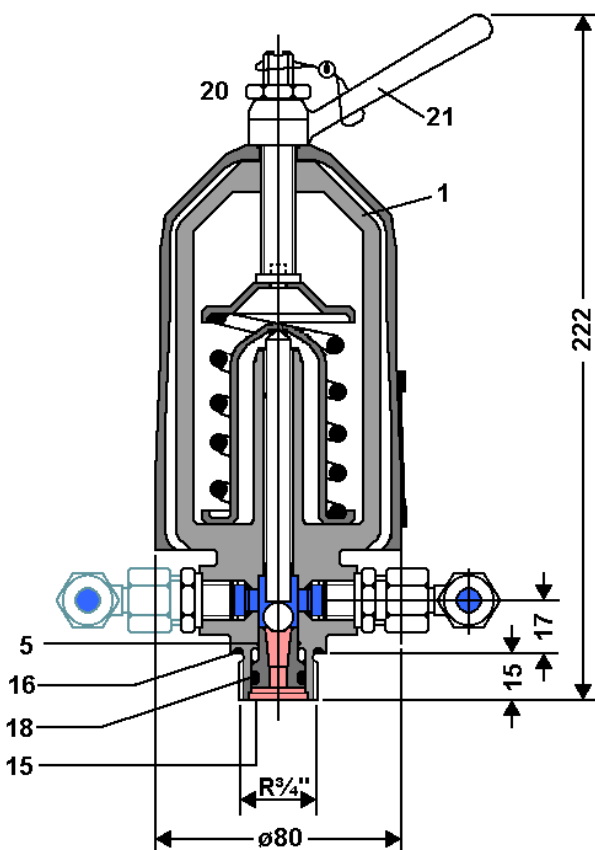
Betriebsdruck / Operating pressure up to 360/720bar
Druckdifferenz / Pressure difference max 360bar
Durchflußmenge / Flow rate up to 5000l/min
Druckdifferenz pro Stufe 4 bis 12 stufig max 30bar
Pressure difference for each stage max 30 bar 4 to 12 stages
Flansche / Flanges DIN or ANSI

Material

Gehäuse, Flansche: 1.4104
Drosselplatte: Messing (2.0405/Ms58),
Alt. Edelstahl gehärtet, auf Wunsch TIC beschichtet
Housing, Flanges: Stainless Steel (1.4104)
Orifice plates: Brass (2.0405/Ms58)
Alt. Stainless Steel, hardened, TIC coating possible



■ = Primary Pressure
■ = Relieved Pressure



Speichersicherheitsventil

Federbelastetes Druckluftsicherheitsventil zur Absicherung von Behältern.
Konformität gemäß Druckgeräterichtlinie 97/23/EC
Gase Gruppe 2, Kategorie IV. Baumusterprüfung nach Modul B (TÜV).

Gutes Ansprechverhalten und Reproduzierbarkeit auch unter extremen Bedingungen
Kleine Bauweise
Nennweite 6mm
Betriebsdruck 55 - 350bar
Durchsatz[l/min] = $32,2 \times p[\text{bar}]$
Betriebstemperatur 0-70°C
Masse 1,3kg

Accumulator Safety Valve

Spring loaded pneumatic safety relief valve for pressure vessels according to 97/23/EC for gases group 2, Category IV, with TÜV cert module B.

Low hysteresis and good operational control even under adverse conditions.
Compact design
Size 6mm
Operating pressure 55-350bar
Flow rate compressed air [l/min] = $32,2 \times p(\text{bar})$
Ambient Temperature 0-70 °C
Weight 1.3KG



ENTZUNDERUNGSTECHNIK DESCALING TECHNOLOGY

This catalogue gives only an overview of the various possibilities for our cartridge type valve technology. With this modular program an individual solution can be designed for each different application. The standard elements like Cartridge Valves and Pilots are already used worldwide in many systems. Valve housings and covers are custom made according to the individual standards and customers requests.

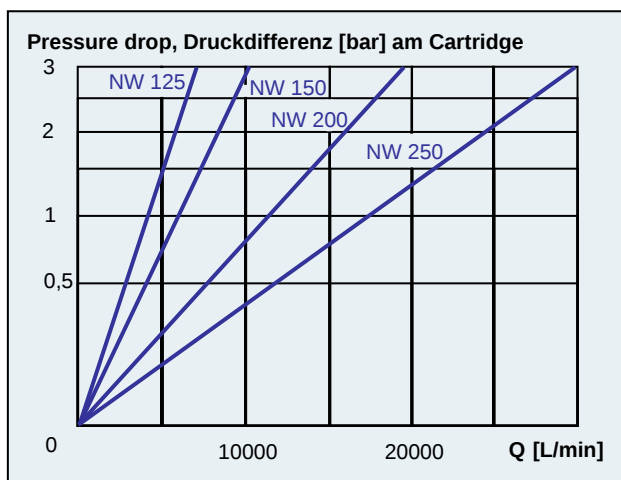
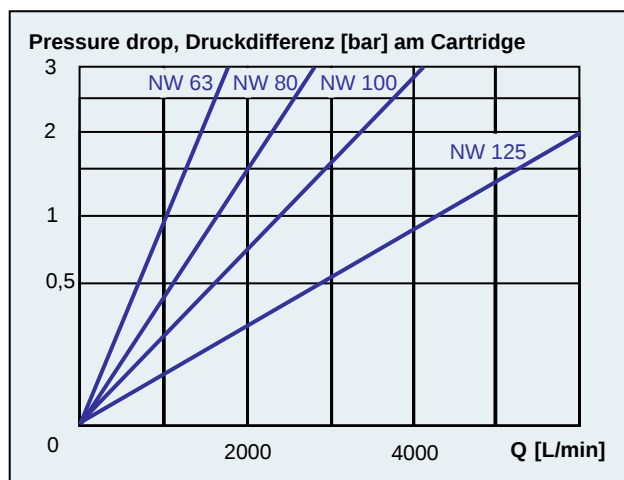
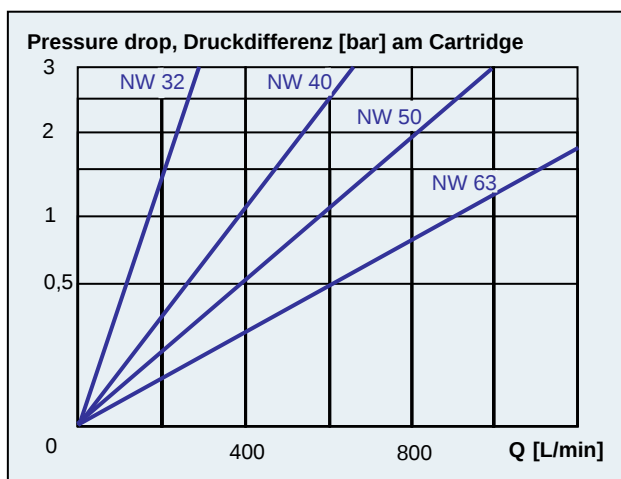
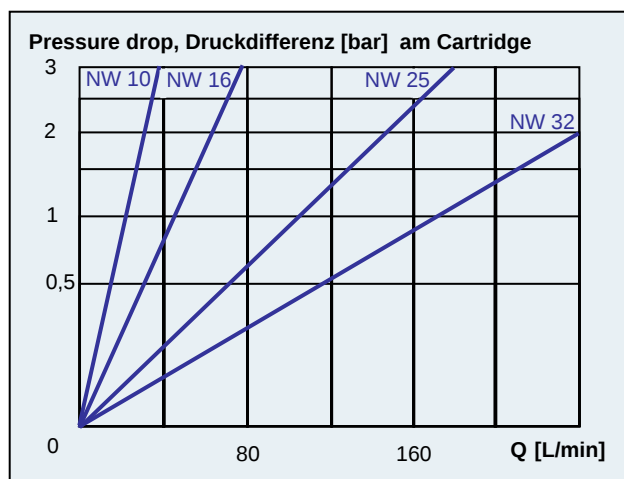
Dieser Katalog kann lediglich einen Überblick über die zahlreichen Kombinationsmöglichkeiten unserer Cartridgeventil geben. Das modular aufgebaute Programm ist bereits in vielen Systemen weltweit im Einsatz. Standardisierte Cartridges und Vorsteuerungen zusammen mit individuell nach Erfordernissen gefertigten Ventilgehäusen erlauben maß- geschneiderte Lösungen für Ihre Anwendungen.

Technical Information, technische Informationen:

Cartridge Valves DIN Type, Stainless Steel, soft seated with metal support.

Cartridge Ventile mit Einbaumaßen nach DIN, Edelstahl, weichdichtend mit metallischer Abstützung.

Flow characteristics, Kennlinien



Benefits, Vorteile

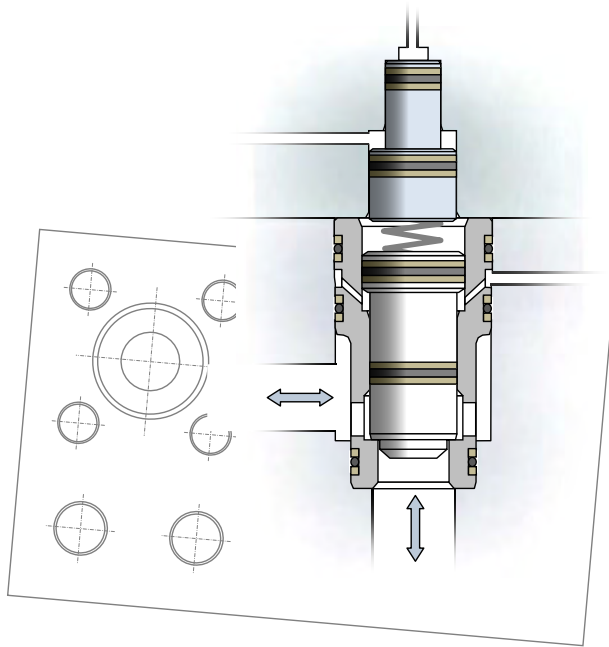
Low maintenance costs because valves and seals can be changed individually without machining. Valve housings can stay in the system during maintenance or repair. Minimal requirement of stock material because of the modular program.

Geringe Wartungskosten, da Ventile und Dichtungen ohne zusätzliche mechanische Bearbeitung separat austauschbar sind. Die Ventilgehäuse können während der Wartung eingebaut bleiben. Durch den baukastenartigen Aufbau sind nur eine geringe Anzahl an verschiedenen Ersatzteilen erforderlich.

Please find more technical details in our catalogue WATER- and SPECIAL HYDRAULICS

Weitere technische Einzelheiten finden Sie in unserem Katalog WASSER- und SONDERHYDRAULIK

SPECIAL VALVES



Customised Design

Individual development or design for single or serial applications.

Our main focus is on cartridges and pilot valves from 40 to 800bar with sizes of 2 to 250mm.

Depending on the design the valves can be used with water, seawater, oil media, special fluids and gases.

Off Shore and Sub Sea Valves

Valves are coated or can be produced from seawater resistant stainless steel material.

Pulsation Valves

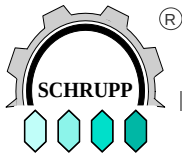
Fast responding valves with separate pilot fluid supply and materials conforming to the application.

Replacement Valves for existing Systems

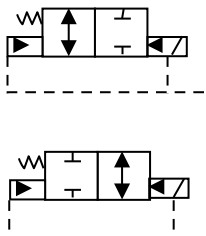
Valves to optimise the function of an existing system or to replace original valves which cannot be produced anymore.

New Application

New valve development in close cooperation with the customer, optimised to the project.

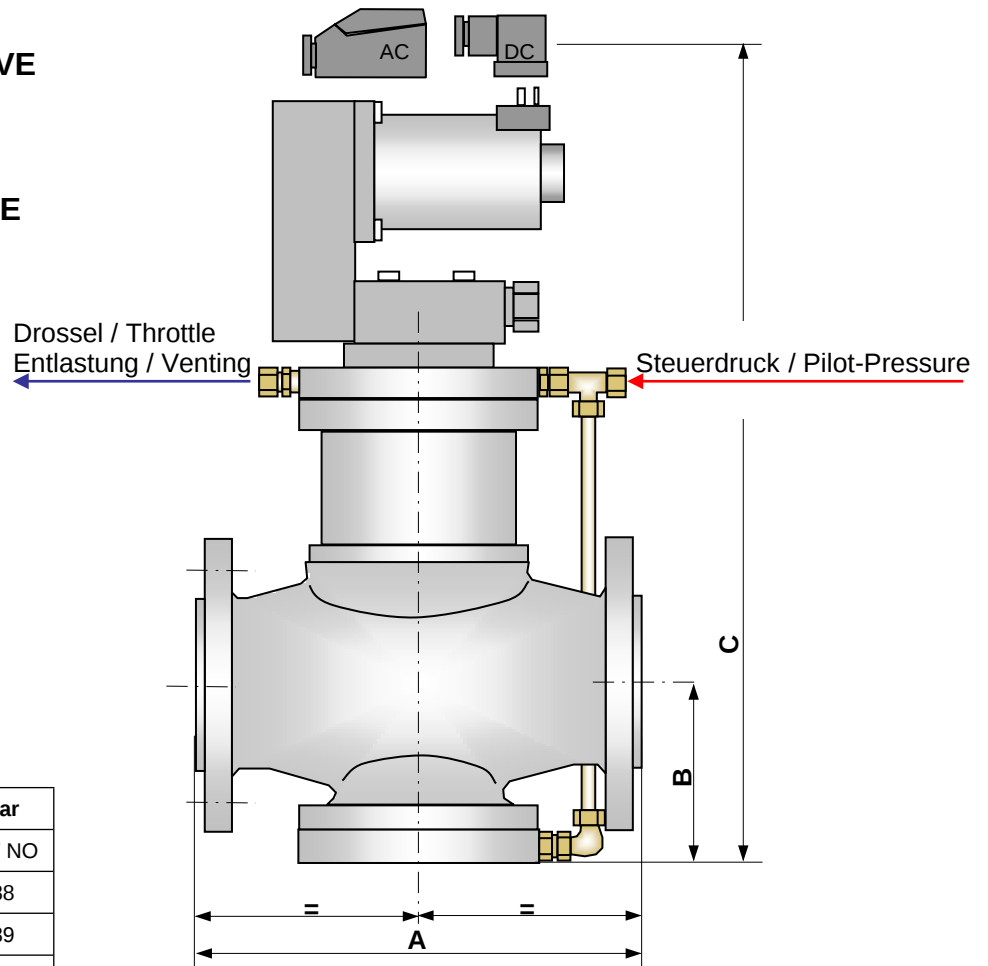


2/2 WAY – DIRECTIONAL 2/2 WEGE - VENTILE



NEGATIVE

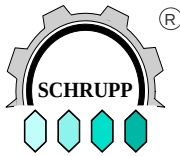
POSITIVE



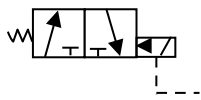
2/2 Directional valve DIN2635 PN40bar					
DN	A	B	C	MASS	PART NO
65	290	116	460	350 N	168488
80	310	128	490	400 N	168489
100	350	148	540	650 N	168490

Technische Daten / Technical Data

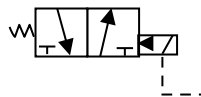
Medium	Öl, Wasser, Luft	Medium	Oil, water, compressed air
Betriebsdruck	2 – 40 bar	Operating pressure	2 – 40 bar
Nennweite	65 – 100 mm	Nominal size	65 – 100 mm
Betriebstemperatur	0 – 80°C	Operating temperature	32 – 176°F
Umgebungstemperatur	40°C max	Ambient temperature	104°F
Vorsteuerdruck	max 40bar / min. Betriebsdruck	Pilot pressure	Max 40bar / min operating pressure
Vorsteueranschlüsse	Rohr AD 8mm	Pilot connections	Pipe AD 8mm
Spannung	12 – 260V DC oder AC 100%ED	Voltage	12 – 260V DC or AC 100%ED
Schutzart	IP65	Protection class	IP 65
Stromaufnahme	46W max	Power consumption	46W max
Werkstoff Gehäuse Innenteile Dichtungen	GGG 40 Edelstahl, Messing, Rotguß Perbunan, Delrin	Material housing other parts seals	GGG 40 Stainless, Brass Buna N, Delrin



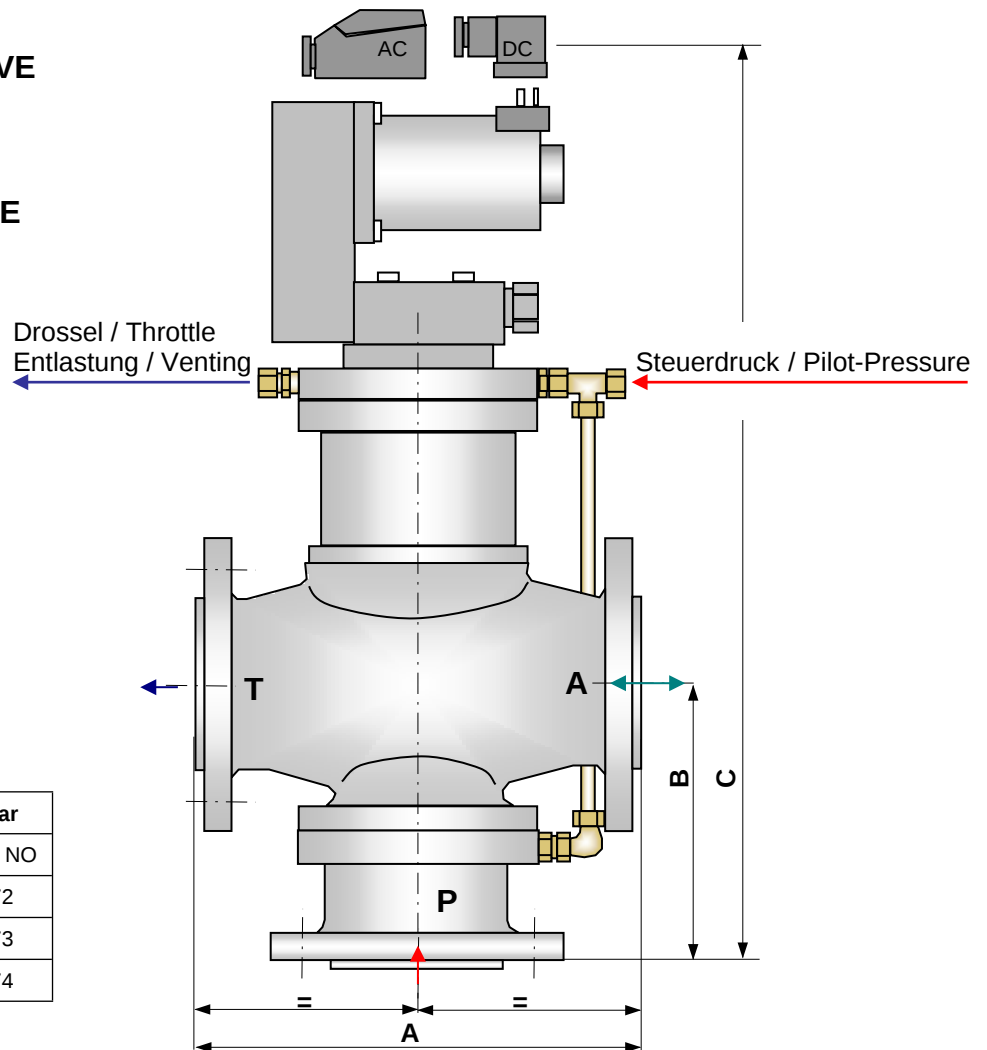
2/2 WAY – DIRECTIONAL 2/2 WEGE - VENTILE



NEGATIVE



POSITIVE



3/2 Directional valve DIN2635 PN40bar					
DN	A	B	C	MASS	PART NO
65	290	175	610	400 N	168472
80	310	202	640	500 N	168473
100	350	230	700	750 N	168474

Technische Daten / Technical Data

Medium	Öl, Wasser, Luft	Medium	Oil, water, compressed air
Betriebsdruck	2 – 40 bar	Operating pressure	2 – 40 bar
Nennweite	65 – 100 mm	Nominal size	65 – 100 mm
Betriebstemperatur	0 – 80°C	Operating temperature	32 – 176°F
Umgebungstemperatur	40°C max	Ambient temperature	104°F
Vorsteuerdruck	max 40bar / min. Betriebsdruck	Pilot pressure	Max 40bar / min operating pressure
Vorsteueranschlüsse	Rohr AD 8mm	Pilot connections	Pipe AD 8mm
Spannung	12 – 260V DC oder AC 100%ED	Voltage	12 – 260V DC or AC 100%ED
Schutzart	IP65	Protection class	IP 65
Stromaufnahme	46W max	Power consumption	46W max
Werkstoff Gehäuse Innenteile Dichtungen	GGG 40 Edelstahl, Messing, Rotguß Perbunan, Delrin	Material housing other parts seals	GGG 40 Stainless, Brass Buna N, Delrin

SPRÜHVENTILE SPRAY VALVES



Leckagefreies Sitzventil

Beständig gegen übliche Medien zur
Walzenkühlung

Sprühdüse kann integriert werden

Zum direkten An- oder Einbau in Sprühbalken

Geringe Abmessungen

Kurze Schaltzeiten

Lange Lebensdauer

Non-leak valve with soft seat

Resistant to cooling media

Spray nozzle can be integrated

Assembly in or onto spray
beams

Small size

Short actuating time

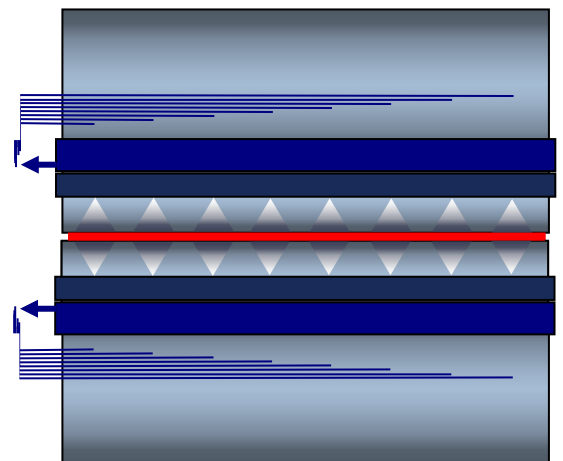
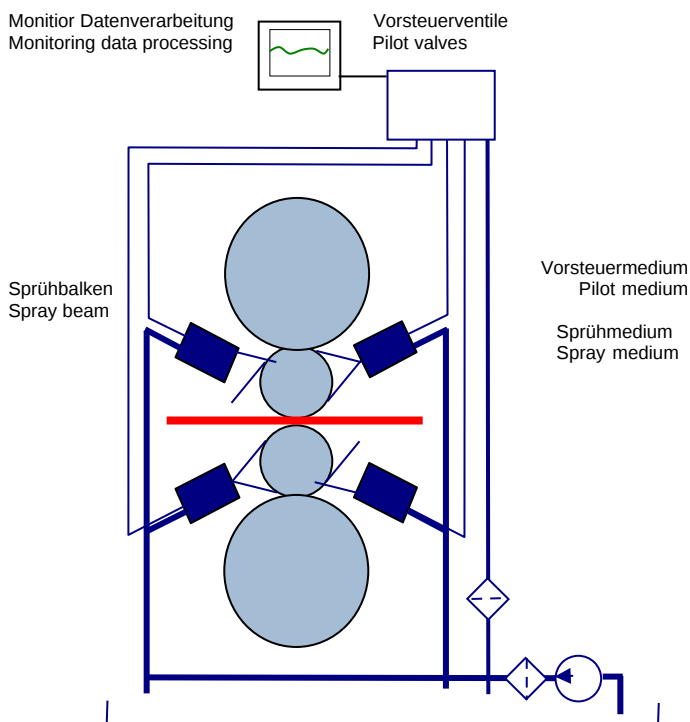
Long expected lifetime

SPRÜHVENTILE SPRAY VALVES

ANWENDUNG / APPLICATION

Moderne Walzverfahren zur Herstellung von Feinblech aus Aluminium oder Stahl erfordern eine schnell ansprechende partielle Walzenkühlung eng aneinander liegender Walzzonen. Schrupp Sprühventile lassen sich direkt in oder auf den Sprühbalken montieren. Die Sprühdüse kann in das Ventil integriert werden. Eine einfacher und robuster Konstruktion ermöglicht den Aufbau einer kompakten und schnell reagierenden Walzenkühlung.

Modern rolling processes for the production of aluminium or steel sheets require a quick acting valve to provide partial cooling of roller areas situated close to each other. Schrupp spray valves can be assembled in or onto the spray beam. The spray nozzle can be integrated into the valve. With their ease of maintenance and robust design the valves can be used in rapidly responding compact roller cooling systems.

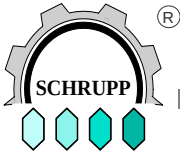


Zu unserem Lieferprogramm gehören:

Sprühventile
Sprühbalken
Vorsteuer- und Ventilstände
Verbindungstechnik

Our manufacturing program includes:

Spray Valves
Spray Beams (Headers)
Pilot Valves and Valve Stands
Piping and connections



SPRÜHVENTILE SPRAY VALVES

EINBAUVENTILE / CARTRIDGE TYPE

FUNKTION / FUNCTION

Die Funktionsweise entspricht der eines normalen 2/2 Wegeventils. Wird der Kolben über die Steuerbohrung (Anschluss Px) entlastet, öffnet der an der Differenzfläche anstehende Betriebsdruck P den Kolben entgegen der Federkraft.

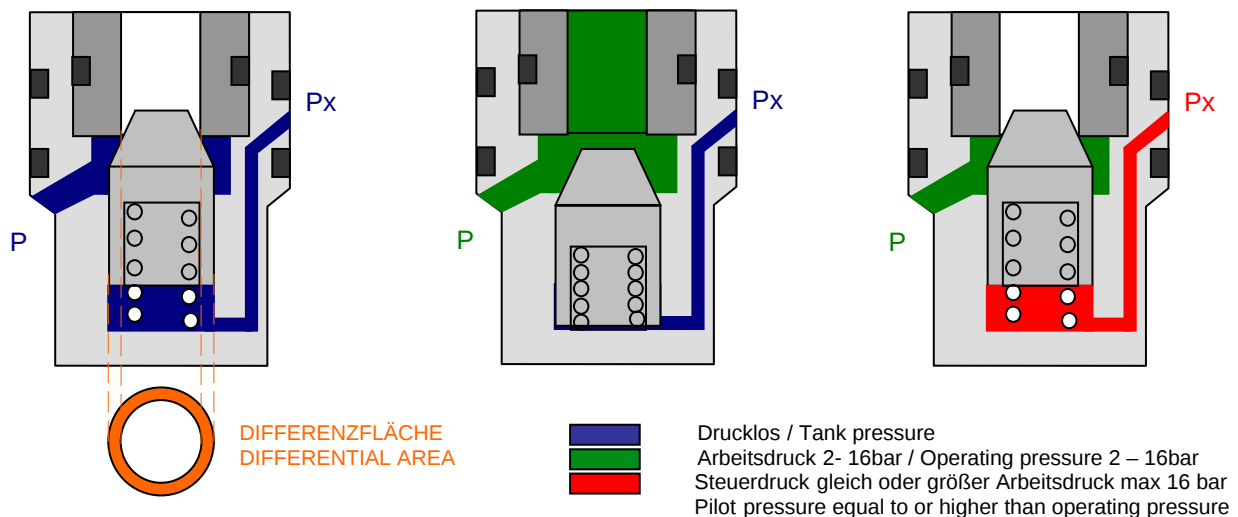
Steht an der Steuerbohrung ein Druck gleich oder größer dem Betriebsdruckes an, schließt das Ventil.

Die erforderlichen Pilotventile können außerhalb des Walzgerüsts installiert und mittels Rohren oder Schläuchen mit den Sprühventilen verbunden werden. Grundsätzlich können die Ventile mit Eigen- oder Fremdmedium vorgesteuert werden. Voraussetzung ist jedoch immer, dass der Vorsteuerdruck am Ventil gleich oder größer dem momentan anstehenden Betriebsdruck ist.

The function of the valve is identical to the function of a 2/2 way directional control valve. If the piston is unloaded via the control bore (port Px), the operating pressure P at the differential area opens the valve against the spring force.

A pressure at Px equal or higher than the operating pressure will close the valve.

The pilot valves can be located separately and outside of the roller stand and can be connected with pipes or hoses to the spray valves. The valves can be piloted by using the spraying media or compressed air or fluids. It is important, that the pilot pressure is always equal to or higher than the operating pressure.





SPRÜHVENTILE SPRAY VALVES

TECHNISCHE DATEN / TECHNICAL DATA

Nennndruck	Nominal pressure	16 bar
Betriebsdruck	Operating pressure	2-16 bar
Öffnungsdruck	Opening pressure	2 bar
Betriebstemperatur	Operating temperature	80°C max
Medium	Wasser, Emulsion, Walzöl	Water, emulsion, rolling oil
Nennweiten	Sizes	6, 8, 12, 16 mm

Werkstoffe

Gehäuse, Kolben, Deckel: Edelstahl

Sitz: Peek

Dichtungen: Viton oder Perbunan

Sonderausführungen mit anderen Nennweiten oder Abmessungen auf Anfrage
Please ask for other valves with different sizes and dimensions

Material

Housing , piston, covers: stainless steel

Seat: peek

Seals: viton or buna-N

Lebensdauer / Life expectancy

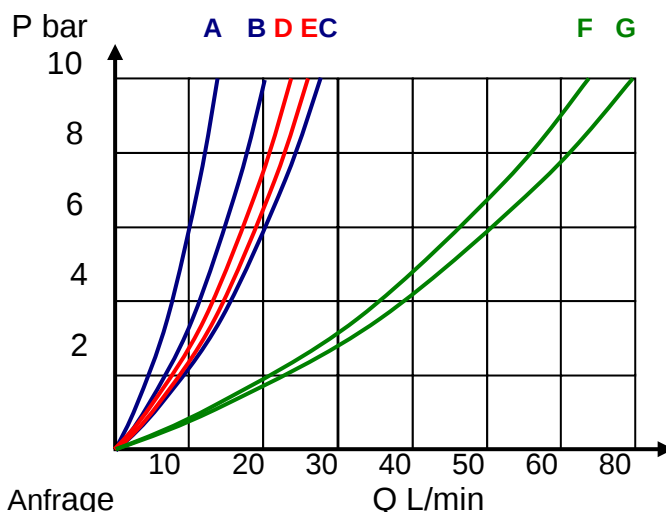
Die Lebenserwartung der Ventile ist stark abhängig von den verwendeten Betriebsmedien und deren Zustand. In Prüfstandsversuchen und in der Praxis konnten Lebenserwartungen mit gut gepflegten Medien von über 6Mio Schaltspielen erreicht werden. Der wartungsfreundliche Aufbau der Ventile ermöglicht es Verschleißteile wie Dichtungen und Sitze auszutauschen und damit die Lebenserwartung der Ventile zu verlängern.

The kind and condition of the operating media has strong influence on the expected lifetime of the valves. From test runs and also from customer`s experience we know that the lifespan of the valves can be more than 6 million cycles by using a high quality medium with good maintenance. The design allows an easy replacement of all critical parts like seats and seals, which helps to increase the life span of the valve.

Kennlinien für Ventile mit Düsen / Diagram for valve including nozzle

FU1-652.721	Valve ND 6	A
FU1-652.761	Valve ND 6	B
FU1-562.842	Valve ND 6	C
FU1-652.801	Valve ND 8	D
FU1-652.843	Valve ND 8	E
FU3- 656.962.30	Valve ND 16	F
FU3-656.964	Valve ND 16	G

Test Medium Wasser, water



Other flow curves on request / weitere Kennlinien auf Anfrage



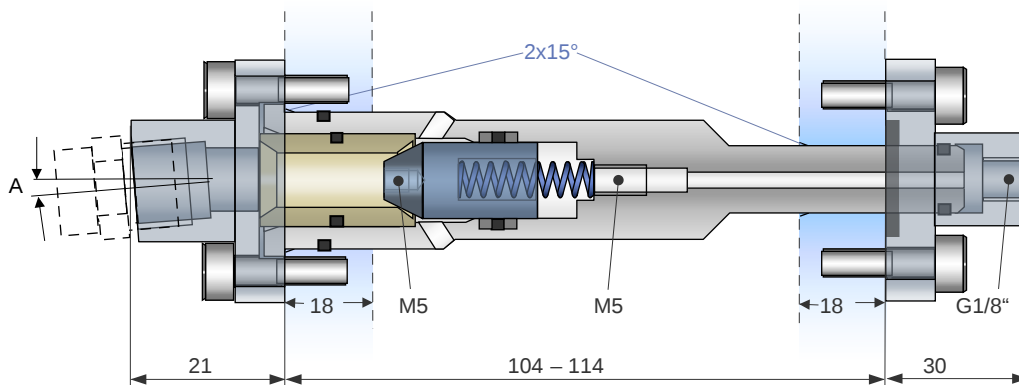
SPRÜHVENTILE SPRAY VALVES

SPRÜHVENTIL / SPRAY VALVE DN8 PN16

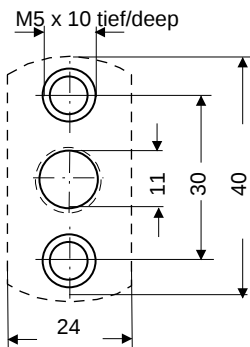
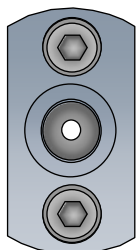
3 Deckel / Cover

1 Grundventil / Valve DN8 PN16

2 Adapter / Adaptor



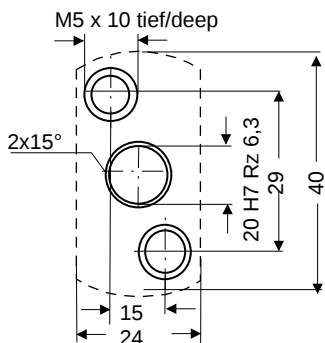
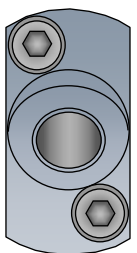
Adapter / Adaptor



Bestellbezeichnung / Ordering code

Pos	Bezeichnung Part name	Anschluß- gewinde Connection	Winkel Spray Angle A	Teilenr. Part no.
1	Grundventil / Valve DN8, PN16			850202
2	Adapter / Adaptor	G 1/8"	0	654630
3	Deckel / Cover	RP 1/4	0	654631
3.1	Deckel / Cover	RP 1/4	5°	654632
3.2	Deckel / Cover	RP 1/4	10°	850201
3.3	Deckel / Cover	RP 1/4	15°	645633
Demontagewerkzeug / Disassembling tool				654039

Deckel / Cover



Ein komplettes Sprühventil besteht jeweils aus: 1 Stk Grundventil, 1 Stk Deckel, 1 Stk Adapter. Schrauben und Dichtungen sind enthalten. Die Düse gehört nicht zum Lieferumfang. Vernickelte Deckel, Adapter sowie abweichende Ausführungen auf Anfrage.

A complete Spray Valve consists of: 1pce valve, 1pce cover, 1pce adaptor. Bolts and seals are included. Spray nozzles are not included. Please ask for special designs; for example nickel plated covers and adaptors.

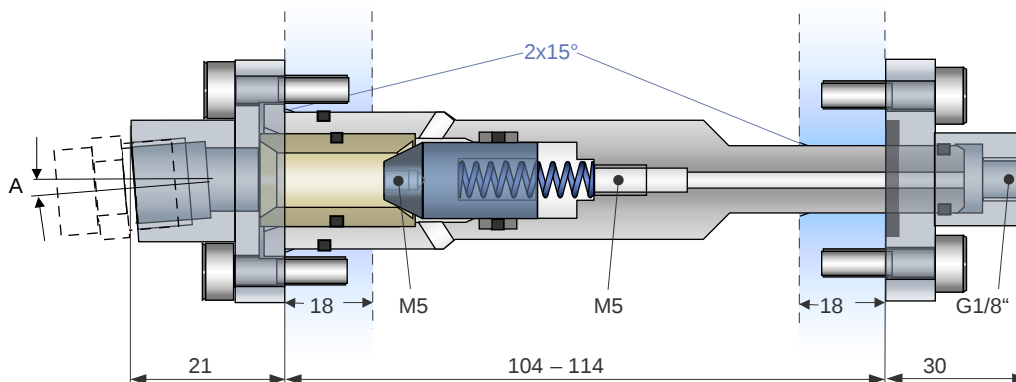
SPRÜHVENTILE SPRAY VALVES

SPRÜHVENTIL / SPRAY VALVE DN12 PN16

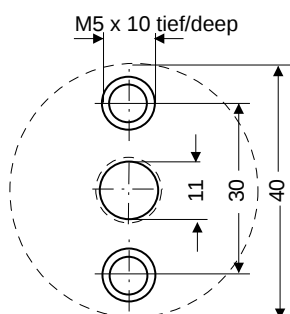
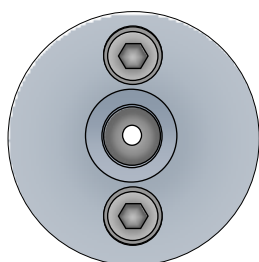
3 Deckel / Cover

1 Grundventil / Valve DN12 PN16

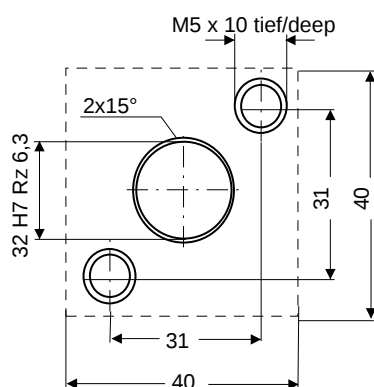
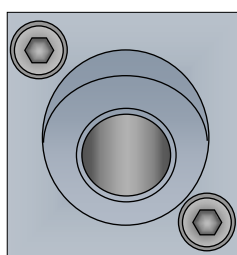
2 Adapter / Adaptor



Adapter / Adaptor



Deckel / Cover



Bestellbezeichnung / Ordering code

Pos	Bezeichnung Part name	Anschluß- gewinde Connection	Winkel A	Teilenr. Part no.
1	Grundventil / Valve DN12, PN16			655043
2	Adapter / Adaptor	G 1/8"	0	655047
3	Deckel / Cover	RP 1/4	0	654653
3.1	Deckel / Cover	RP 1/4	5°	655046
3.2	Deckel / Cover	RP 1/4	10°	655045
3.3	Deckel / Cover	RP 1/4	15°	655044
3.4	Deckel / Cover	G 3/4"	0	850198
Demontagewerkzeug / Disassembling tool				654039

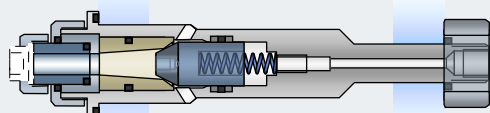
Ein komplettes Sprühventil besteht jeweils aus:

1 Stk Grundventil, 1 Stk Deckel, 1 Stk Adapter. Schrauben und Dichtungen sind enthalten. Die Düse gehört nicht zum Lieferumfang. Vernickelte Deckel, Adapter sowie abweichende Ausführungen auf Anfrage.

A complete Spray Valve consists of:

1pce valve, 1pce cover, 1pce adaptor. Bolts and seals are included. Spray nozzles are not included. Please ask for special designs; for example nickel plated covers and adaptors.

Weitere Typen auf Anfrage
Other valve types on request



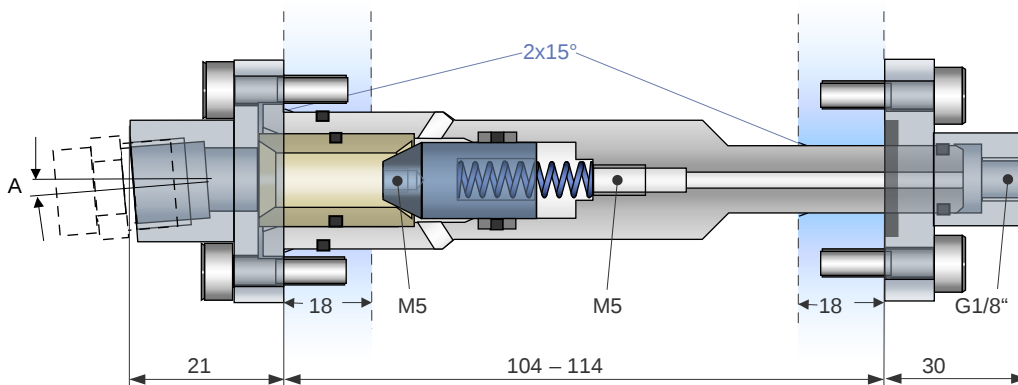
SPRÜHVENTILE SPRAY VALVES

SPRÜHVENTIL / SPRAY VALVE DN16 PN16

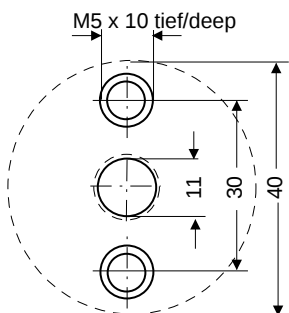
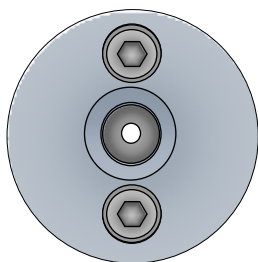
3 Deckel / Cover

1 Grundventil / Valve DN16 PN16

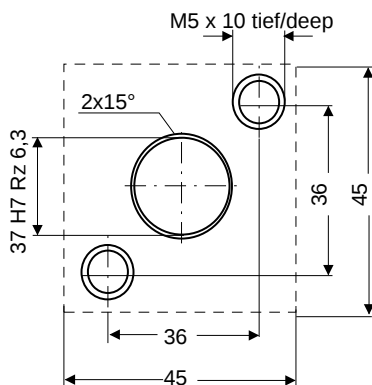
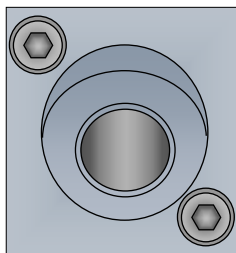
2 Adapter / Adaptor



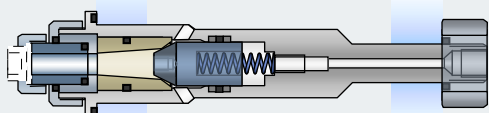
Adapter / Adaptor



Deckel / Cover



Weitere Typen auf Anfrage
Other valve types on request



Bestellbezeichnung / Ordering code

Pos	Bezeichnung Part name	Anschluß- gewinde	WinkelA	Teilenr. Part no.
1	Grundventil / Valve DN16, PN16			850339
2	Adapter / Adaptor	G 1/8"	0	850350
3	Deckel / Cover	RP 1/4	0	
3.1	Deckel / Cover	RP 1/4	5°	
3.2	Deckel / Cover	RP 1/4	10°	
3.3	Deckel / Cover	RP 1/4	15°	
3.4	Deckel / Cover	RP 1/2	10°	850850
3.5	Deckel / Cover	G 3/4"	0	850340
Demontagewerkzeug / Disassembling tool				654039

Ein komplettes Sprühventil besteht jeweils aus:

1 Stk Grundventil, 1 Stk Deckel, 1 Stk Adapter. Schrauben und Dichtungen sind enthalten. Die Düse gehört nicht zum Lieferumfang. Vernickelte Deckel, Adapter sowie abweichende Ausführungen auf Anfrage.

A complete Spray Valve consists of:

1pce valve, 1pce cover, 1pce adaptor. Bolts and seals are included. Spray nozzles are not included. Please ask for special designs; for example nickel plated covers and adaptors.



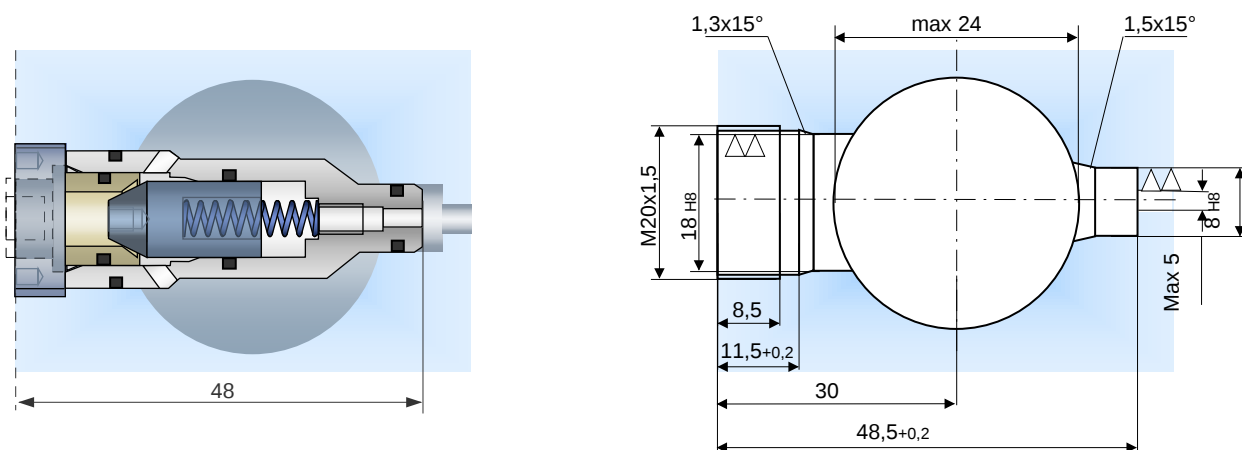
SPRÜHVENTILE SPRAY VALVES

SPRÜHVENTIL / SPRAY VALVE DN6 PN16

Ein komplettes Sprühventil besteht jeweils aus: 1 Stk Grundventil, 1 Stk Deckel. Schrauben und Dichtungen sind enthalten. Die Düse Typ FU1 gehört nicht zum Lieferumfang. Vernickelte Deckel sowie abweichende Ausführungen auf Anfrage.

A complete Spray Valve consists of: 1pce valve, 1pce cover. Bolts and seals are included. Spray nozzle type FU1 are not included. Please ask for special designs; for example nickel plated covers.

Bestellnr. für Ventil mit Deckel / Order no. for valve and cover: **501225**



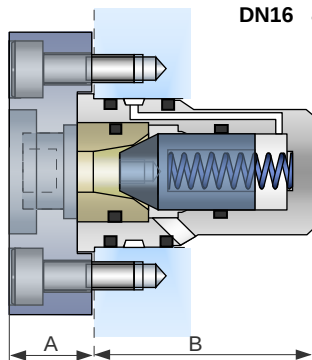
SPRÜHVENTIL / SPRAY VALVE DN8,12,16 PN16

Ein komplettes Sprühventil besteht jeweils aus: 1 Stk Grundventil, 1 Stk Deckel. Schrauben und Dichtungen sind enthalten. Die Düse Typ FU1 gehört nicht zum Lieferumfang. Vernickelte Deckel sowie abweichende Ausführungen auf Anfrage.

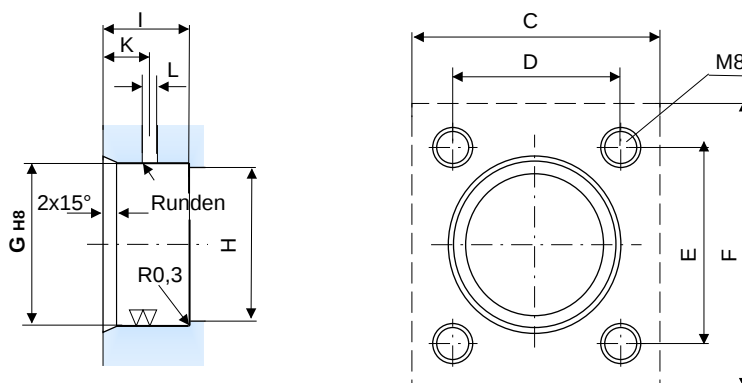
A complete Spray Valve consists of: 1pce valve, 1pce cover. Bolts and seals are included. Spray nozzles type FU1 are not included. Please ask for special designs for example nickel plated covers.

Bestellnr. für Ventil mit Deckel / Order no. for valve and cover:

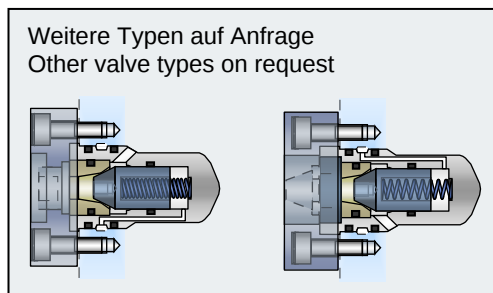
DN8 501400
DN12 501555
DN16 459761



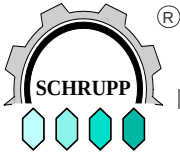
Einbaumaße / Dimensions



Weitere Typen auf Anfrage
Other valve types on request



Partno. Teilenr.	Type	A	B	C	D	E	F	G	H	I	K	L
501400	DN8 PN16	20	47	49	36	36	49	37	32,5	18	11	6
501555	DN12 PN16	18	46	49	32	46	65	40	35,5	17,5	11	6
459761	DN16 PN16	18	60	49	34	50	65	45	42,5	19	11	6



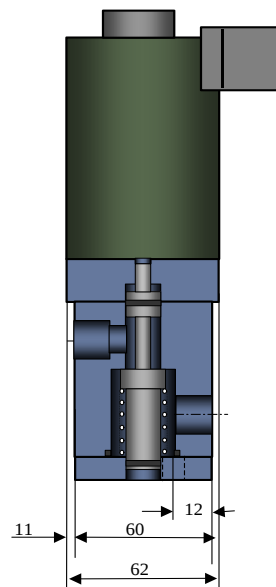
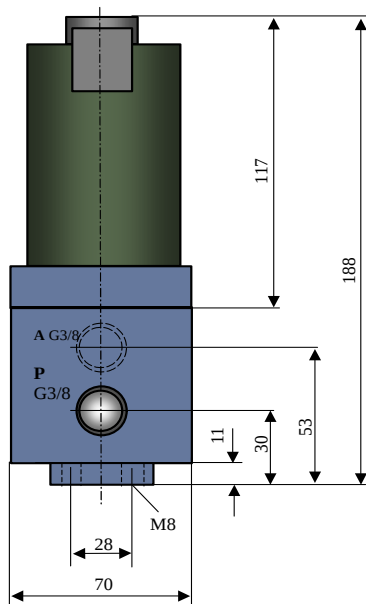
SPRÜHVENTILE SPRAY VALVES

SONDERVENTILE / VALVES FOR SPECIAL APPLICATIONS

Sprühventil für Plattenaufbau / Spray valve for inline mounting

Diese Ventile werden in Bereichen eingesetzt, wo hohe Anforderung bezüglich Dichtigkeit und Druckfestigkeit bestehen. Die schmutzunempfindliche Weichdichtung mit metallischer Abstützung ist besonders geeignet für dünnflüssige Medien und Wasser. Lieferbar ist das Ventil in den Nennweiten 10, 16, 25, 32, 40 für Druckbereiche von 5-25bar Sonderausführungen bis 350bar möglich.

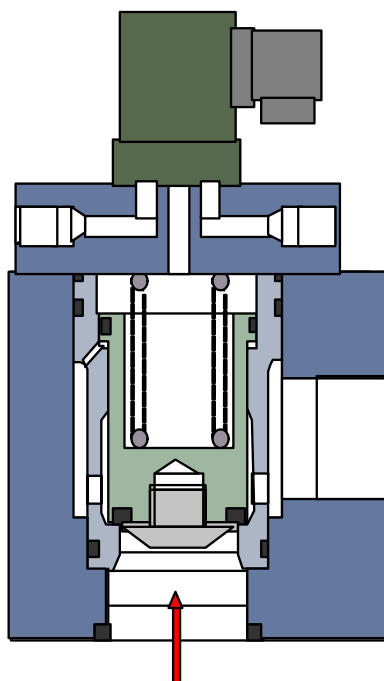
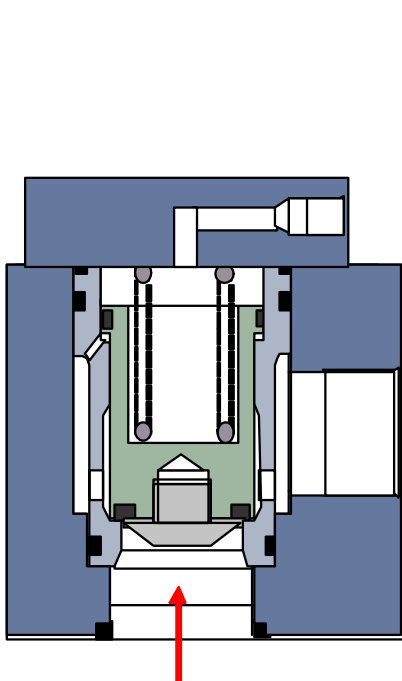
The standard valve are available in nominal sizes 10, 16, 25, 32 and 40 for pressures from 5 – 25bar. Special implementations are available with pressures to 350bar. These valves are installed into areas which require high pressure and limited space. The contamination tolerant soft-seat with metallic piston and housing is suitable for use with thin-fluid media and especially water.



Technische Daten

Spannung	48V DC
Nennndruck	16bar
Nennweite	12mm
Leistungsaufnahme	43W
Durchflußmenge	50L/min

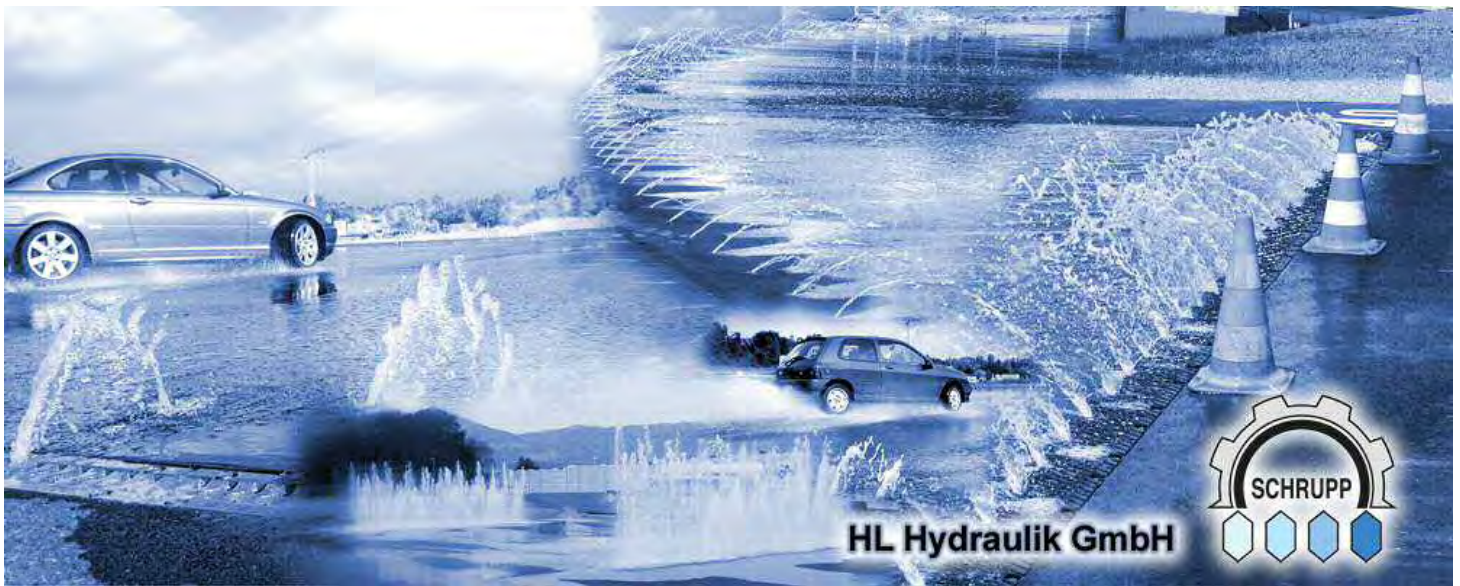
Ausführung
stromlos geschlossen



Technische Daten:

PN	5 - 25 bar
DN	10 - 40mm

Weiter Informationen auf Anfrage
Additional information on request



EQUIPMENT FOR ROAD SAFETY TRAINING CENTRES

System Solutions for Industry

HP Pneumatics

Water- and Special- Fluid Hydraulics

Equipment for Road Safety Training Centres

Fire Fighting Systems for Transformers

Live Line Washing Systems for Insulators

HL-Hydraulik GmbH

Kupferhütte 5C

D-57562 Herdorf

Tel: **+49 (0)2744-9324-0**

web: **www.hl-hydraulik.de**

e-mail: **info@hl-hydraulik.de**

E3 FEB22

DRIVING CENTER EQUIPMENT



The HL Hydraulik water technology enables road safety training centers to simulate critical situations encountered by drivers during various realistic street and weather conditions. The training helps teach the driver to handle these situations.

A combination of event center and safety driving center have the flexibility to test and demonstrate the newest functions of assistance systems, to familiarize the driver with the car's technology, learn safety and have fun testing and driving a car like you have no chance on a normal road.

We supply individual components for planners and operators, that can be combined as needed for the requirements and size of the exercise area.

We assist in planning of water technology and advise on the design of the training surface.

Some aspects of our water technology suit especially small applications because the products can also be installed by the operator or a local company.

During product development special attention has been placed on high reliability at low operational costs.

The entire water technology is designed for use in a closed water cycle.

Since large volumes of water are distributed into the air (water obstacles) or onto the road surface (roadway irrigation), this approach is in most cases the more economic option for future operating costs.

Our delivery program contains:

WATER OBSTACLES

ROADWAY IRRIGATION SYSTEMS

VEHICLE SKIDDING DEVICES





DRIVING CENTER EQUIPMENT

CONTENT

1.	Water obstacles	E3.03
1.1	Basic construction of a water obstacle:	E3.04
1.2	Economic feasibility is our specialty.	E3.05
1.3	Final assembly pattern of a water obstacle	E3.05
2	Roadway irrigation	E3.06
2.1	General advantages of low-pressure technique	E3.06
2.2	Hilltop irrigation of the roadway	E3.07
2.2.1	Principle operation of hilltop-irrigation	E3.07
2.3	Irrigation out of Water Obstacles	E3.08
2.3.1	Operation of Post-Irrigation	E3.09
2.4	Road-circle irrigation	E3.09
2.5	Lateral roadway irrigation	E3.10
3	Skidding devices for every application and claim	E3.11
3.1	The passenger car skidding device – 3.0 metric tons axle load, dynamic	E3.11
3.1.1	Technical data	E3.12
3.2	The truck skidding device – 10.0 & 30.0 metric tons, dynamic	E3.13
3.2.1	BUS & Truck device, 1-axle to slide, 10.0 metric tons per axle	E3.13
3.2.2	Technical Data	E3.14
3.2.3	Heavy Trucks or special-purpose vehicles / 30.0 metric tons	E3.15
3.2.4	Technical data	E3.16
3.3	The passenger car skidding device “PLUS” – 8.0 metric tons axle load, dynamic	E3.17
3.3.1	Technical data	E3.18

DRIVING CENTER EQUIPMENT

1. Water obstacles

There are two different nozzle types available since 2012:



Type 1:
Obstacle heights of
2,00m to 2,50m



Type 2:
Obstacle heights of
2,60m to 3,20m

Type 1 is optimized for car usage, Type 2 for truck usage.

The basic configuration of the water obstacles is the same for both types, so that switching between the two obstacle heights is possible at any time.

DRIVING CENTER EQUIPMENT

1.1 Basic construction of a water obstacle:

Each 1m of water obstacle contains four nozzles and is supplied with water by one pump.
(0.75 KW/m operational power)

This enables the creation of individual spray patterns for each 1m of obstacles.

Concrete Case for water obstacle



“Hanging” design



Obstacle cover



the individual parts before assembly



DRIVING CENTER EQUIPMENT

1.2 Economic feasibility is our specialty.



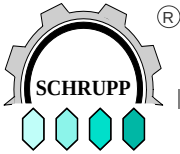
- Most of the used water is re-captured.
- The pumps have less than 1.5KW power consumption and require only 0.75 KW input during operation.
- Only the pumps that are required for the actual pattern consume electric energy.
- Our "low-pressure-system" requires, compared to "high-pressure-system", significant lower pump capacities in the central water supply.

DRIVING DIRECTION →

1.3 Final assembly pattern of a water obstacle

including roadway irrigation and detachable electric supply.





DRIVING CENTER EQUIPMENT

2. Roadway irrigation

2.1 General advantages of low-pressure technique

- Running water will not freeze – winter usage is supported that way
- The flexibility to choose between different irrigation directions.
- cross irrigation
water is applied crossways the driving direction and is flowing along or against direction of drive
- longitudinal irrigation
water is applied parallel to the driving direction, at the edge of the road or near the dynamic surface, and crosses the dynamic surface at a 90° angle.
- The irrigation outlets can be driven over without any driving disturbances.
- Insensitive against dirt, due to large (8mm) irrigation outlets.
- With consideration of a required down-grade the irrigation can be settled at each point of the track. (outskirts, in the asphalt, curved, alongside, etc.)
- Expandable, if the center “grows“
- Winterproofed without trace heating system or other technical utilities.
- Working pressure of the irrigations: 0.2 - 0.5 bar
- Insensitive to de-icing salt.
- Easy to clean.
- Resistent to breakdown (except total electric blackout)
- Easy to operate and maintain.

DRIVING CENTER EQUIPMENT

2.2 Hilltop irrigation of the roadway

At the beginning of a vehicle dynamic area it is possible to supply the irrigation with water from the central water system or a following water obstacle. Supply from a water obstacle is realized by our own pumps.

The irrigation pattern is variable by water pressure and number of nozzles, and will be set for each surface individually.

e.g. setting for large amount of water

or for regular passenger car operation
with minimal vision interference



Driving direction →

Due to the low outlet height both settings secure, that neither the drivers windshield is sprinkled, nor will the driver be distracted by visual interferences in the driving area.

Our water technique uses the the down-grade of the road for road irrigation.

The advantage exists in the few places where water is applied.

An excellent accessibilty for maintenance is granted by the irrigation draining into standard concrete cassettes.

This draining technique approved especially for gradient routes and short dynamic surfaces.

2.2.1 Principle operation of hilltop-irrigation

Nozzles entrain water out of a flooded cassette. The surge of water, that generates on short distances a broad expanse of water, flows thereafter over the surface that is intended to be wetted. The water is applied to the complete driving range by nozzles diverted into 25 - 50cm intervals. Individual adaption to the given circumstances are possible.

DRIVING CENTER EQUIPMENT

2.3 Irrigation out of Water Obstacles

The water supply is carried out by our own pump, directly out of the water obstacle case..

The desired water amount is adjusted by a flow restrictor.



Mounted roadway irrigation – distinct stream only



The water distribution gets optimized continuously



DRIVING CENTER EQUIPMENT

2.3.1 Operation of Post-Irrigation

A clear waterstream is generated by nozzles. This stream enables a very thorough roadway irrigation. The water is distributed to the complete road surface (if desired and needed) by nozzles divided in approx. 25 cm gaps.

2.4 Road-circle irrigation

The aim was to irrigate a circle from the outside inwards.
Robust, efficient and without visual disability.

Installed warm-, or cold-grouted
in the bearing layer until 2005

Since 2006 installed under the asphalt with
a homogeneous asphalt surface.



Since 2006 the irrigation-system may be installed in segments, which can be controlled individually (1/4-, 1/2- or full-circle-irrigation).

Inner- and outer-lane-irrigation enables a diverse usage, in that motorcycles can use the dry outer-lane e.g. for curve exercises, even though cars had practiced braking in wet and slippery curves in the inner-lane shortly before.

The subdivision into segments also enables the system to alternate between wet and dry surfaces in the inner- or outer-lane circle.

The asphalt covered technique enables a road-circle irrigation, which is winterproofed and insensitive against the driving operation. Inspection chambers allow the cleaning of the irrigation system.

DRIVING CENTER EQUIPMENT

Installation of the road-circle segments “in and under” the asphalt



2.5 Longitudinal roadway irrigation

Our longitudinal roadway and road-circle irrigation is based upon the same technique and complies with the same specifications.

- Insensitive against the driving operations and winter hardness.
- No visual distraction for the exercise participants.
- No visual obstruction through sprayed water on the front shield.
- Very uniform water distribution on the dynamic surface.
- Low water consumption.

Both systems can be supplied with water by a central pump, out of a near water obstacle or by a independent supply area with our provided pumps.

Installation of the irrigation system:



DRIVING CENTER EQUIPMENT

3. Skidding devices for every application and claim

We offer vehicle skidding devices for passenger cars, middle size trucks and heavy trucks. We entered a cooperation, to provide this technique as mature and professional as our other products. Our partner has built up a good reputation over several years in the automotive industry. He has introduced his experience in the production of inspection and testing devices into the development of skidding devices.

3.1 The passenger car skidding device – 3.0 metric tons axle load, dynamic

The skidding device is approved for vehicles with a max. axle load of 3.0 metric tons. It contains the following:

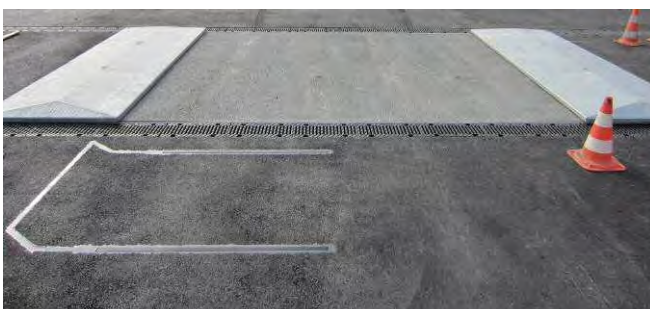
- Galvanized, moving plate 4.80 x 2.96m.
- Galvanized frame without floor and with lateral steel formwork (6.00 x 3.00 x 1.15m deep).
- Complete hydraulics under the plate.
- Switch box with operating devices.
- External speed indicator, 2 digits, 25cm height

Frame, plate and hydraulics are delivered completely assembled. The switch box and the speed indicator are assembled separately at site. The installation requires one day. The initiation after the pit-filling requires only a few hours.

Installation of the device



The sensors and the lateral coverage

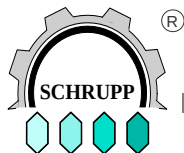


Complete hydraulics under the plate



Operator panel





DRIVING CENTER EQUIPMENT

3.1.1 Technical data

Loads and dimensions

Max. Axle load	3.0 t (metric)	optional 7.5t traversable, without dynamic
Max. Vehicle weight	6.0 t (metric)	optional 15.0t traversable, without dynamic
Device depth	2.96 m	
Drive through width	3.75 m	optional 4.50m (semitrailer tractor)

Dynamic

Velocity	22 – 99km/h	Range optional adjustable!
Max. Acceleration	2 g	
Max. Velocity	2.5 m/s	
Max. Vehicle offset	0.45 m	
Stroke	0.9 m	
Amount of skidding	5.0 1/min	

Electrical data

Electrical connection	3 x 400 V	
Connecting line	4.0 kW	motor
	0.5 kW	control
No heating necessary!		

Hydraulic

Tank volume	100 Litres
Working pressure	170 bars
Accumulator	20 Litres

The plate is designed for largely maintenance free operation. Each time that it is initiated, the system conducts a check-up of all components and indicates their status on a display. The check-up takes about 30 sec.

In front of the device (in driving direction), two sensors are implemented in the asphalt. The sensors record the overrun of the tires and the computer-control of the system determines the speed and the wheelbase of the car using the recorded data. Using a single proportional valve, the hydraulic system executes an exact movement, regarding the speed, wheelbase and the selected level of difficulty. There are 4 levels of difficulty selectable. The impulse can be executed either to the left or the right side. The impulse can also be chosen to be alternating. This can either be selected or controlled by a random generator.

The device can execute an impulse every 12 sec with an input power of 4 kW only. The device activates at an overrun speed of 22 km/h up to 99.9 km/h. It is possible to set an individual limit for the max. /min. speed.

The vehicles may travel at a speed of even **up to 60 km/h**, depending on the constitution of the following sliding-surface. This velocity requires however a large run-out.

DRIVING CENTER EQUIPMENT

3.2 The truck skidding device – 10.0 & 30.0 metric tons, dynamic

3.2.1 BUS & Truck device, 1-axle to slide, 10.0 metric tons per axle

The skidding device is approved for vehicles up to an axle load of 10.0 tons (metric).
It contains the following:

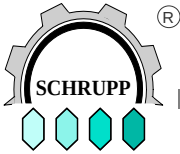
- Galvanized, moving plate 6.80 x 4.42m
- Galvanized side panels with the dimensions (8.90 x 4.46 x 1.25m deep)
- Complete hydraulics under the plate
- Control panel with operating devices
- External speed indicator, 2-digits, 25cm height

Installation, adjustment of the Halfen-reinforcements with templates



Suitable for passenger-cars also!





DRIVING CENTER EQUIPMENT

3.2.2 Technical Data

Loads and dimensions

Max. Axle load	10.0	t (metric)
Device depth	4.46	m
Drive through width	5.20	m

Dynamic

Velocity	22 – 99 km/h	Range optional adjustable!
Max. Acceleration	2	g
Max. Velocity	3.6	m/s
Max. Vehicle offset	0.9	m
Stroke	1.8	m
Amount of skidding	5.0	1/min

Electrical data

Electrical connection	3 x 400 V	
Connecting line	30.0 kW	pump-engine
	0.5 kW	partial-flow filter pump-engine
	1.0 kW	control
No heating necessary!		

Hydraulic

Tank volume	400	Litres
Working pressure	170	bars
Accumulator	120	Litres

The technical description accords to the description of the passenger car device.

The device may also be used for passenger cars.

If device is used by passenger cars, the vehicles may travel at up to a velocity of 80 km/h, depending on the constitution of the following sliding-surface. This velocity requires however a large run-out.

DRIVING CENTER EQUIPMENT

3.2.3 Heavy Trucks or special-purpose vehicles / 30.0 metric tons

The device is approved for vehicles with an axle load of up to 30.0 t (metric), three axles in a row with 10t per axle (metric) are allowed.

The device contains the following:

- Galvanized, moving plate 7.60 x 4.76m
- Galvanized side panels with the dimensions (10.00 x 4.80 x 1.25m deep)
- Complete hydraulics under the plate
- Control panel with operating devices
- External speed indicator, 2-digits, 25cm height

The construction is executed in three steps:

1. Delivery and support in alignment of the Halfen-reinforcement. The reinforcement is for the bottom-plate which is required for the mounting of our structures. (The bottom plate is casted by customer).
2. Delivery and construction of the side panels. The height of the side panels need to be adjusted on the later road level.
(In case of concrete panels the mounting of a frame on the completed concrete walls is executed only.)
3. Installation and initiation of the system after the completion of the asphalt surface.

Installation and alignment of the Halfen-reinforcements are executed similarly to the 10t (metric) device. Construction of the steel side panels, In case of concrete panels the mounting of a frame on the completed concrete walls is executed only



DRIVING CENTER EQUIPMENT

Installation of the bearing structure and the hydraulics



3.2.4 Technical data

Loads and dimensions

Max. Axle load	10.0	t (metric)	up to 3 axles simultaneously
Max. Load on the device	30.0	t (metric)	
Device depth	4.76	m	
Drive through width	5.70	m	

Dynamic

Velocity	22 – 99	km/h	Range optional adjustable!
Max. Acceleration	2	g	
Max. Velocity	4.0	m/s	
Max. Vehicle offset	1.12	m	
Stroke	2	m	
Amount of skidding	5.0	1/min	

Electrical data

Electrical connection	3 x 400 V	
Connecting line	37.0	kW pump-engine
	0.75	kW partial-flow filter pump-engine
	1.0	kW control
No heating necessary!		

DRIVING CENTER EQUIPMENT

Hydraulic

Tank volume	800	Litres
Working pressure	170	bars
Accumulator	2x80	Litres

The technical description applies to the description of the passenger car device.

The device may also be used for passenger cars.

If device is used by passenger cars, the vehicles may even travel at up to a velocity of 80 km/h, depending on the constitution of the following sliding-surface. This velocity requires however a large run-out.

3.3 The passenger car skidding device “PLUS” – 8.0 metric tons axle load, dynamic

The skidding device is approved for vehicles with a max. axle load of 8.0 metric tons.

The “Special” of the Car-plus is its bigger dimensions and a tuning of the original hydraulic of the car device. This device work up to 4.0 to (metric) with its 100% power and between 4.1 to 8.0 tons (metric) the power soften linear to the active weight.

This feature combines an optimum between economical wishes and maximum option for the training.

It contains the following:

- Galvanized, moving plate 6.10 x 3.56m.
- Galvanized frame without floor and with lateral steel formwork (7.00 x 3.60 x 1.15m deep).
- Complete hydraulics under the plate.
- Switch box with operating devices.
- External speed indicator, 2 digits, 25cm height

Frame, plate and hydraulics are delivered completely assembled. The switch box and the speed indicator are assembled separately at site. The installation requires one day.

The initiation after the pit-filling requires only a few hours.

Installation of the device



Complete hydraulics under the plate

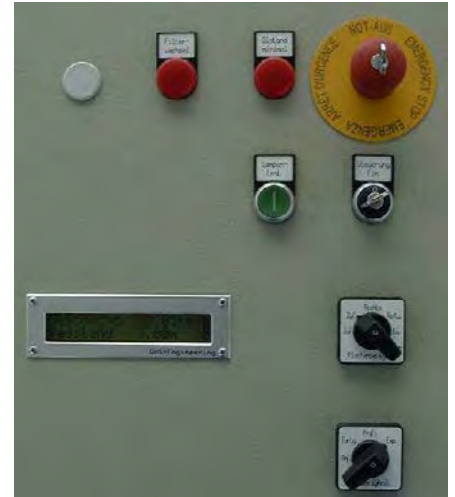


DRIVING CENTER EQUIPMENT

The sensors and the lateral coverage



Operator panel



3.3.1 Technical data

Loads and dimensions

Max. Axle load	8.0 t (metric)	
Max. Vehicle weight	16.0 t (metric)	
Device depth	3.56 m	
Drive through width	4.50 m	optional 4.50m (semitrailer tractor)

Dynamic

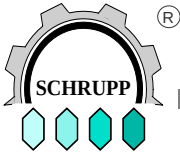
Velocity	22 – 99km/h	Range optional adjustable!
Max. Acceleration	2 g	
Max. Velocity	2.5 m/s	
Max. Vehicle offset	0.6 m	
Stroke	1.5 m	
Amount of skidding	5.0 1/min	

Electrical data

Electrical connection	3 x 400 V	
Connecting line	15 kW	motor
	0.5 kW	control
No heating necessary!		

Hydraulic

Tank volume	200 Litres
Working pressure	170 bars
Accumulator	60 Litres



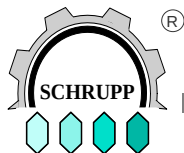
DRIVING CENTER EQUIPMENT

The technical description applies to the description of the passenger car device.

The device may also be used for passenger cars.

If device is used by passenger cars, the vehicles may even travel at up to a velocity of **70 km/h**,
depending on the constitution of the following sliding-surface. This velocity requires however a large run-out.

We would be glad to provide you with further information about the skidding devices, as preliminary Information.



DRIVING CENTER EQUIPMENT





SPRÜHFLUTSYSTEME FIREFIGHTING AND CLEANING SYSTEMS

**Systemlösungen für die Industrie
System solutions for industry**

HP Pneumatik

Wasser und Sonderhydraulik

Technik für Fahrsicherheitszentren

Feuerlöschsysteme für Transformatoren

Isolatorenreinigungssysteme

HP Pneumatics

Water- and Special- Fluid Hydraulics

Equipment for Road Safety Training Centres

Fire Fighting Systems for Transformers

Live Line Washing Systems for Insulators

HL-Hydraulik GmbH

Kupferhütte 5C

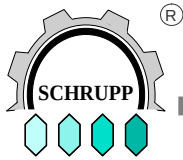
D-57562 Herdorf

Tel: **+49 (0)2744-9324-0**

web: **www.hl-hydraulik.de**

e-mail: **schrupp@hl-hydraulik.de**

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**SPRÜHTECHNIK
SPRAYING SYSTEMS**

Kupferhütte 5C
57562 Herdorf
+49 (0)2744-9324-0
info@hl-hydraulik.de
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Isolatoren Reinigungssysteme

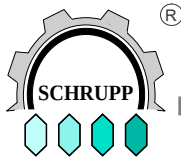
**Live Line Insulator Cleaning
Systems**

**Feuerlöschsysteme für
Transformatoren**

**Fire Fighting Systems for
Transformers**



Systemlösungen für die Industrie - System Solutions for Industry



Isolatoren-Reinigungsanlagen / Insulator hot line washing systems

Wir liefern komplette Systeme für die Energieversorgung, z.B. für Umspannwerke und Kraftwerke. Während des Reinigungsvorgangs kann der elektrische Strom fließen. Unsere Anlagen können automatisch oder manuell betrieben werden, wobei Wasserleitfähigkeit, Verschmutzung sowie Windgeschwindigkeit und Richtung regelungstechnisch berücksichtigt werden.

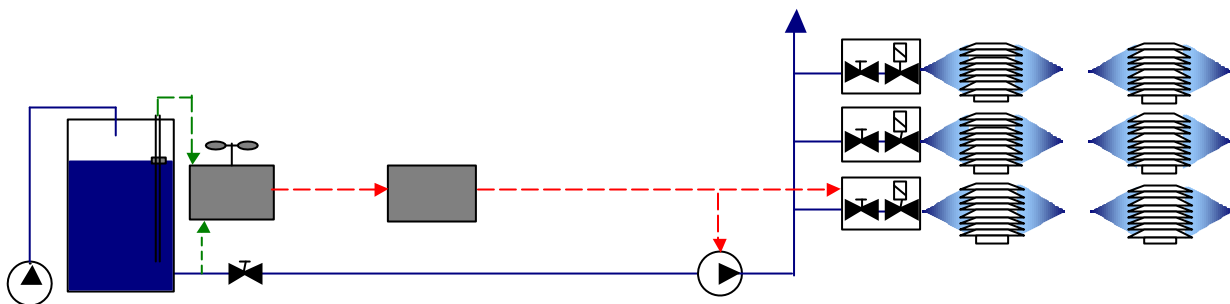
We are manufacturing live line washing systems for power stations and substations to secure energy supply. Our live line washing plants can be operated automatically or manually. Essential parameters like water conductivity, dirt contermination, windvelocity and direction can be monitored by our automatic control system.

Betriebsdruck	8 bis 15bar
Medium	Wasser, max 150 uS
Pumpe	Je nach Düsenanzahl
Behälterinhalt	Ausreichend für eine Waschdauer von 1-5min
Düsen	Flachstrahldüsen 30°-120° 18-25l/min
Werkstoffe	Rohre und Zubehör - Stahl, feuerverzinkt; Düsen -Messing; Tank 400 um Innenanstrich, 200 um Grundierung außen.

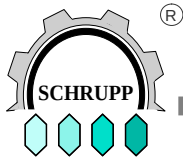
Operating pressure	8 to 15bar
Medium	Water, max 150 uS
Pump capacity	Depending on number of nozzles
Tank capacity	Sufficient for a washing period of 1-5min
Nozzles	Flat discharge nozzle 30°-120°, 18-25l/min
Material	Piping – hot galvanized carbon steel; nozzles – brass; Reservoir 400 um inside coating, 200 um outside primer.

Für die Ausarbeitung eines Angebotes erbitten wir Zeichnungen des Waschobjektes mit einem Lageplan der Anlage und Angaben über die Art der Wasserversorgung.

In order to submit a quotation we require drawings of the object to be washed, a site plan and information about the water supply system.



Tankanlage	Meßstationen	Steuerstation	Pumpenstation	Ventilstände	Abspritzgruppen
Reservoir group	Monitoring systems	Automatic control cabinet	Pumping Station	Valvestands	Washing groups



SPRÜHTECHNIK SPRAYING SYSTEMS

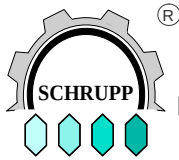
Isolatorenreinigungsanlagen können für nahezu alle Isolatorentypen eingesetzt werden. Speziell angepasste Rahmen mit individuell einstell- und austauschbaren Düsen ermöglichen eine einfache Montage. Anders als bei mobilen Systemen ist eine allseitige Reinigung des Isolators bei geringstmöglichen Wasserverbrauch unter Spannung möglich. In Abhängigkeit von Länge und Durchmesser der jeweiligen Isolatoren werden daher zwischen 3 und 8 Düsen mit verschiedenen Sprühwinkeln eingesetzt.

Insulator Live Line Cleaning Systems can be used for nearly each insulator type. Special cleaning frames with individual adjustable and interchangeable nozzles allow a comfortable installation. In difference to mobile systems it is possible to clean the insulators from all sides with a minimum of water consumption. Depending on the length and dimension of the Insulator the cleaning frame includes between 3 and 8 for nozzles with different spraying angles.



Das demineralisierte Wasser kann in Hoch- oder Erdtanks zentral bevorratet werden. Pumpen, Mess- und Regeleinrichtungen sind in einem Gebäude untergebracht, um sie vor Umwelteinflüssen zu schützen. Die elektrisch betätigten Absperrventile befinden sich in separaten Ventilschränken in der Nähe der jeweiligen Waschgruppen.

The demineralized water can be stored in a central reservoir in or above ground. Pumping unit and electrically controlled valves are located in a separate building, to protect the equipment against environmental conditions. The electrically operated shut-off valves are located in separate cabinets close to the individual washing group.



Feuerlöschanlagen / Fire fighting systems

Wir liefern komplette Systeme für den Transformatorenschutz, wobei die Energie zur schnellen Versorgung der Löschkäfige in Druckbehältern gespeichert wird. Dadurch kann das System im Gefahrenfall vollkommen unabhängig von Fremdenergie betrieben werden. Die Auslösung des Systems kann mittels Schmelzdüsen, elektrisch oder manuell erfolgen. Die Löschkäfige sind freitragend und mit Kupplungen versehen, so dass ein eventuell notwendiger Austausch der Transformatoren möglich ist.

We are manufacturing complete systems for transformer protection. The energy for quick supply of the fire fighting apparatus will be stored in pressure tanks so that in case of an emergency no external power input is required to operate the system. The spraying cage is cantilever and assembled with particular couplings ready for a quick change of the transformer if necessary. The start up of the extinguishing process will be effected by either melting nozzles, an electrical signal or manually.

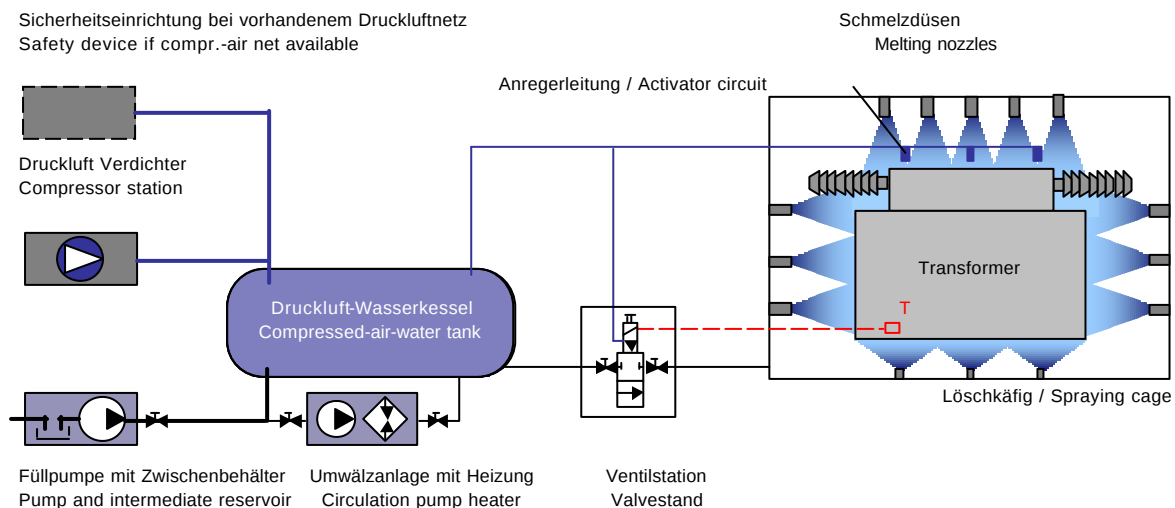
Betriebsdruck	10bar
Verdichter	275l/min; 10,5bar; 2,5KW
Füllpumpe	6m³/h; 10,5bar; 4KW
Behälterinhalt	Ausreichend für min 5min Löschdauer
Heizungsanlage	Umlaufheizung nach Bedarf
Düsen	Vollkegeldüsen ca. 50l/min; Pralldüsen ca. 80l/min
Werkstoffe	Rohre und Zubehör Stahl feuerverzinkt, Halterungen Aluminium; Düsen Messing; Druckluftleitungen Kupfer; Erdleitungen dukt. Gussrohr mit Verankerungsschellen (Beton Wiederlager bauseits); Druckwasserkessel innen 400 um Anstrich außen Grundanstrich gegf. Isolierung.

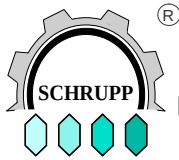
Operating pressure	10bar
Compressor	275l/min; 10,5bar; 2,5KW
Refilling pump	6m³/h; 10,5bar; 4KW
Tank capacity	Sufficient for min 5min operation
Heater	Circular heating system if required
Nozzles	Full-cone type apr. 50l/min; Impact type apr. 80l/min
Material	Water piping carbon steel hot galvanized; claps aluminium; nozzles brass; air piping copper; Underground piping cast steel with anchoring brackets (foundation not included); Pressure vessel inside coating 400 um outside primer 200 um optional isolated.

Für die Ausarbeitung eines Angebotes erbitten wir Zeichnungen des Transformators mit einem Lageplan der Anlage und Angaben über die Art der Wasserversorgung.

In order to submit a quotation we require drawings of the transformer, a site plan and information about the water supply system.

Sicherheitseinrichtung bei vorhandenem Druckluftnetz
Safety device if compr.-air net available





SPRÜHTECHNIK SPRAYING SYSTEMS

Kupferhütte 5C
57562 Herdorf
+49 (0)2744-9324-0
info@hl-hydraulik.de
www.hl-hydraulik.de



Druckwasser - Feuerlöschanlagen kühlen den Transformator und verhindern den Sauerstoffaustausch im Gefahrenfall bevor ein Brand entsteht und vermeiden im Gegensatz zu Schaumlöschanlagen die Zerstörung des teuren Equipments.

Water operated Fire Fighting Systems are cooling the transformator down and will stop the air circulation. The difference to an traditional foam fire fighting system is that the Schrupp system will prevent fire an helps to protect the expensive equipment.

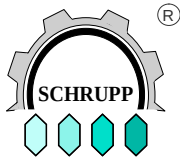
Druckwasser - Feuerlöschanlagen für den Innenbereich verhindern Brände ohne dabei die im Raum befindlichen Personen, wie bei Gaslöschanlagen, zu gefährden.

Water operated Fire Fighting Systems prevent fire without any danger for the personal in the room, like gas operated fire fighting systems.



Die pneumatisch vorgesteuerte Ventile öffnen selbständig ohne Fremdenergie und schließen im Gegensatz zu Klappenventilen automatisch nach Beendigung des Löschvorganges, so das die noch im Druckbehälter vorhandene Luft nicht austreten kann. Mit Hilfe des vorgeschalteten Handschiebers können jederzeit Funktionsprüfung oder Wartungsarbeiten am Sytem durchgeführt werden ohne das Wasser versprüht oder der Druckbehälter entleert werden muß.

The pneumatically controlled valves are opening without any external energy and will close - in diffrence to standard flap valves - automatically after the fire fighting cycle to keep the compressed air in the pressure vessel. An additional manual gate valve allows system "dry" testing and maintenace without loosing water.



HL Hydraulik GmbH



www.hl-hydraulik.de

Kupferhütte 5c
D 57562 Herdorf
Tel +49 (0)2744-9324-0
schrupp@hl-hydraulik.de