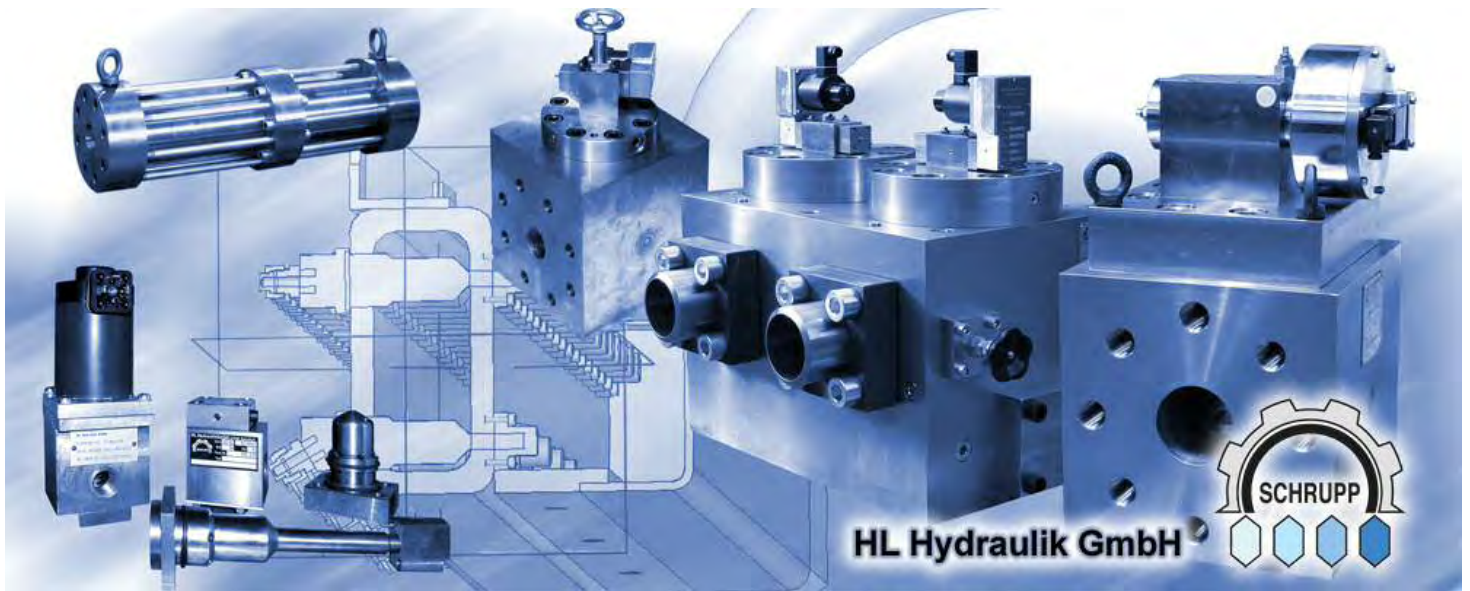




WATER- AND SPECIAL FLUID HYDRAULICS

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

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E2 FEB22



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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

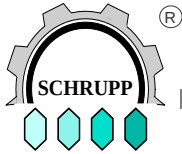


Isolatorenreinigungssysteme

Stationäre Wassersprühsysteme zur Reinigung unter Spannung

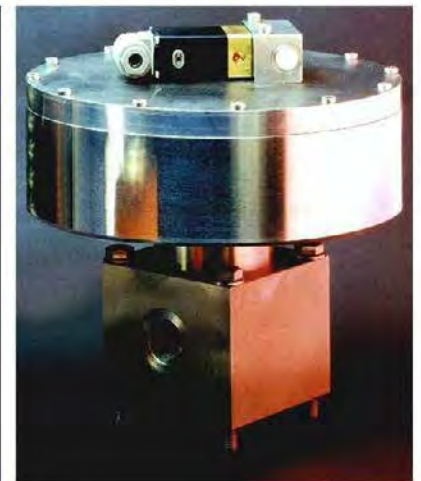
Insulator Cleaning Systems

Water spraying systems for stationary live electrical line cleaning



WATER AND SPECIAL HYDRAULICS

System Solutions for Industry



HP Pneumatic

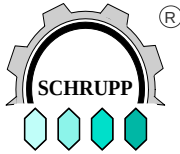
Water- and Special- fluid Hydraulics

Equipment for Road Safety Training Centres

Fire Fighting Systems for Transformers

Insulator Cleaning Systems

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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



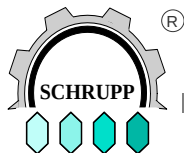


TABLE OF CONTENTS

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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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

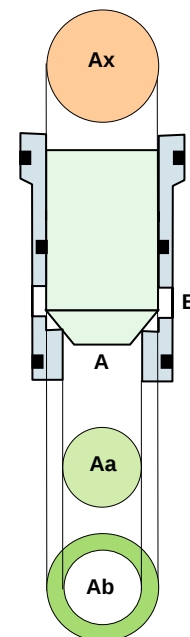
Functional description

These valves are designed for use with special fluids:

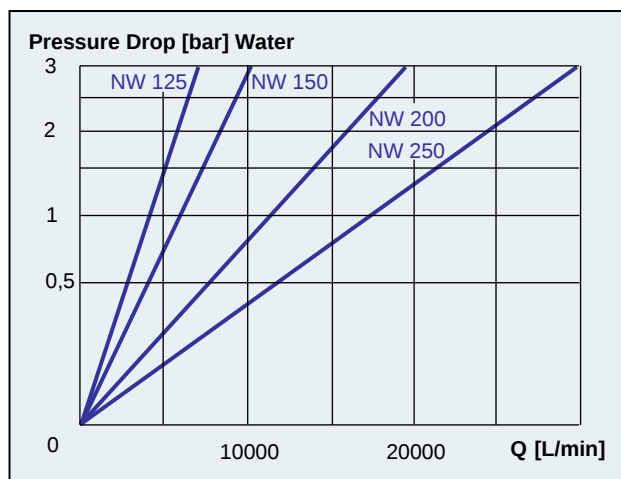
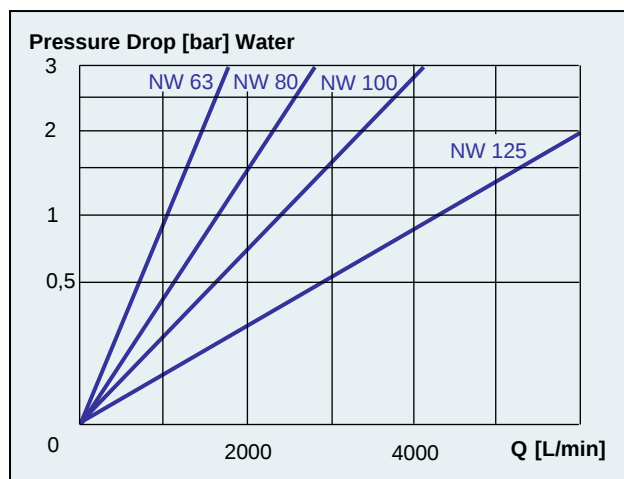
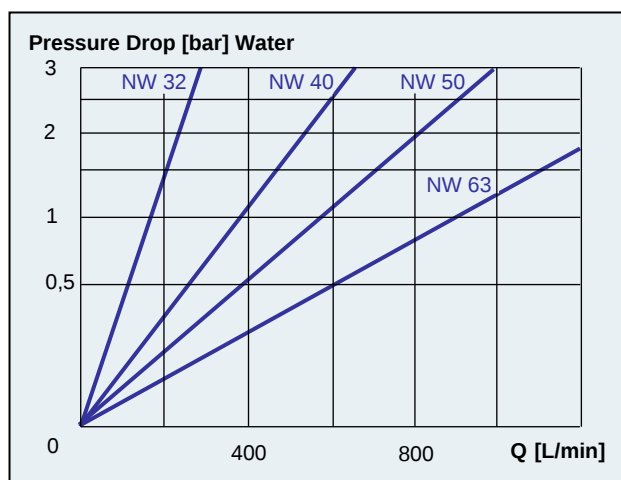
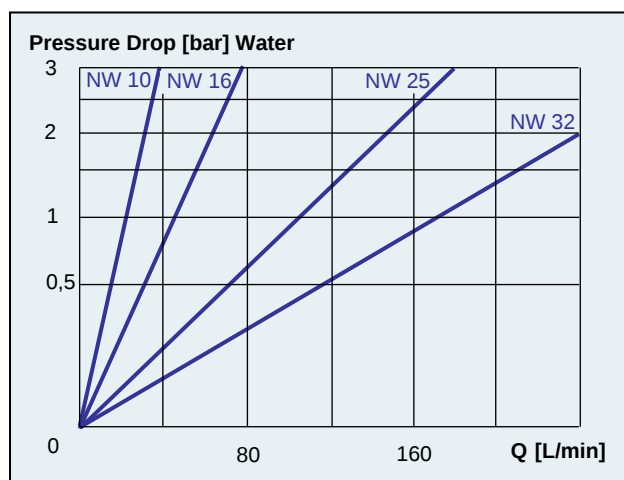
- No metal to metal contact at the sliding surfaces.
 - the use of non-lubricating mediums is possible.
- All pressurized areas are separated by soft seals
 - for thin fluids and gases under high pressure.
- Special geometry and non-corroding material
 - for water and descaling applications.

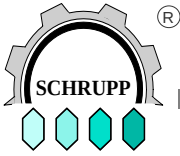
An important dimension for the function of cartridge valves is the surface ratio of the seat area A_a and the annulus area A_b to the pilot area P_x . By using a surface ratio of 1:1 the valve can be operated only in one direction. By using a surface ratio of 1:1.6 or 1:2 the valve can be operated in 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.

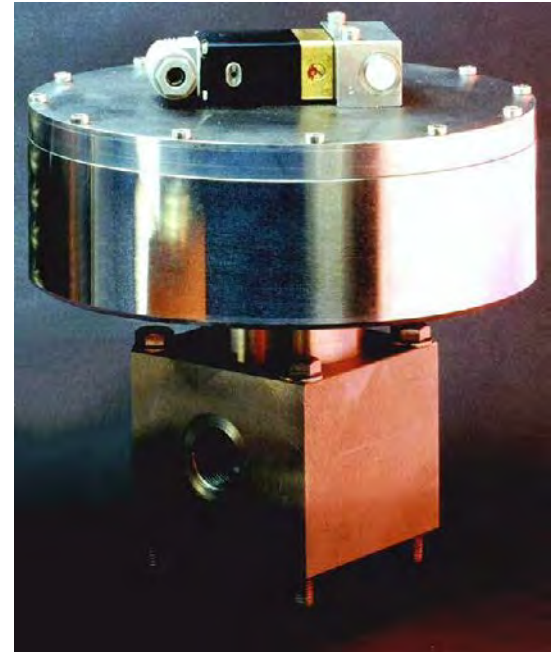
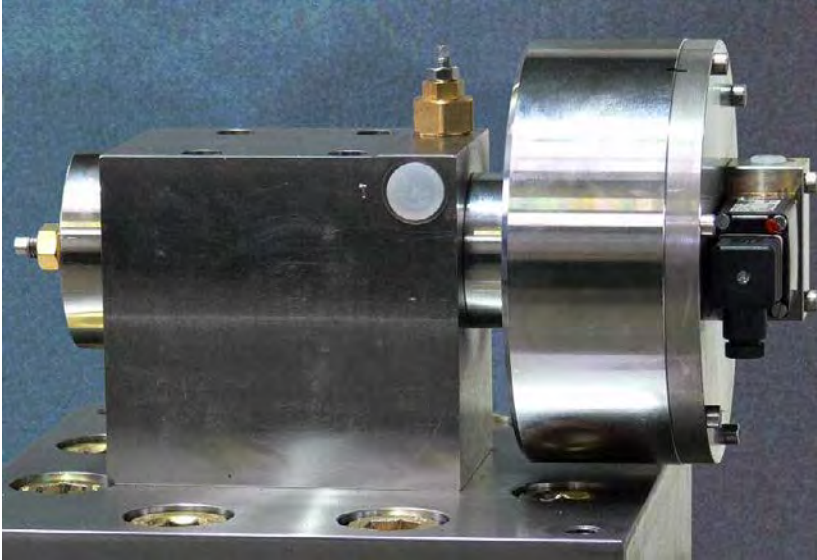


Diagrams





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

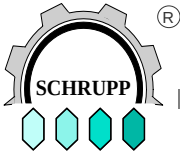


COMPLETE VALVES

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

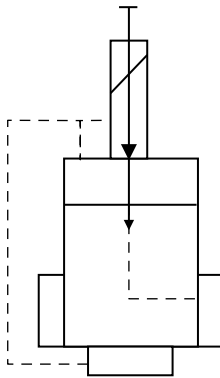


COMPLETE VALVES

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



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

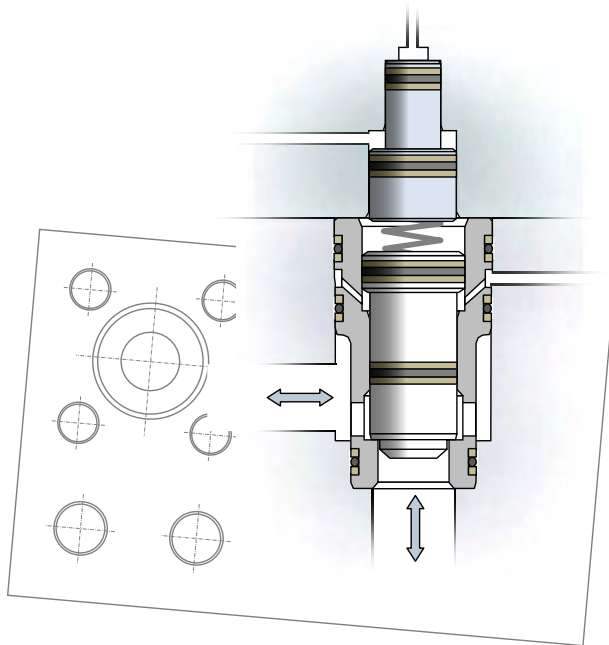
Descaling systems are used in steel rolling mills to remove the scale after each rolling procedure. Without a modern descaling system it is not possible to produce a high quality steel product. HL Hydraulik GmbH manufactures all kinds of valves and multistage break down orifices under the trade name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

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.

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

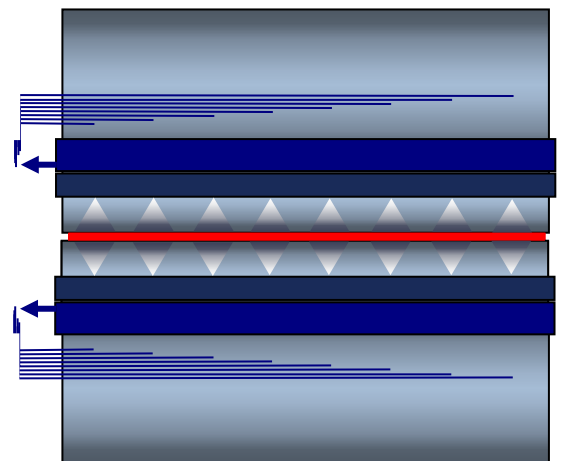
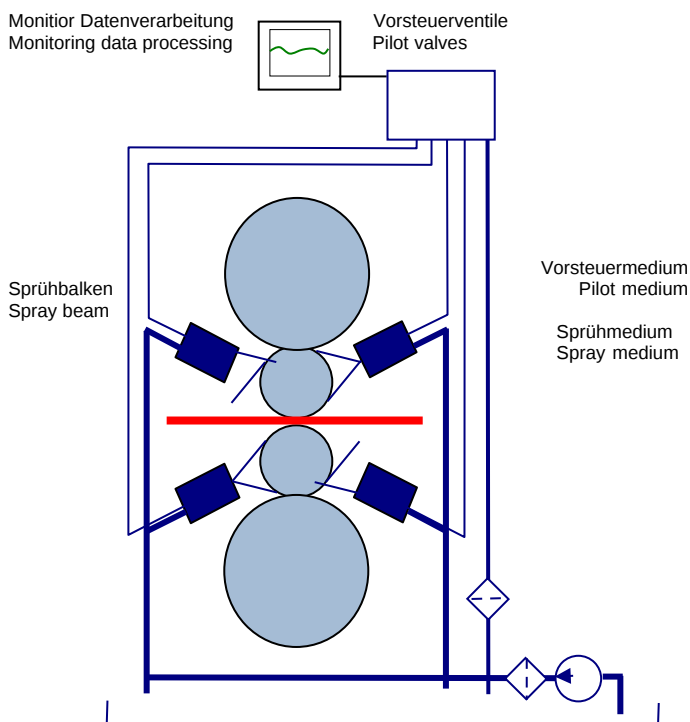
Non-leak valve with soft seat
Resistant to cooling media
Spray nozzle can be integrated
Assembly in or onto spray beams
Small size
Short actuating time
Long expected lifetime

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.

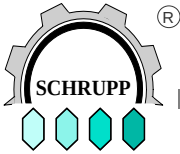


Zu unserem Lieferprogramm gehören:

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.

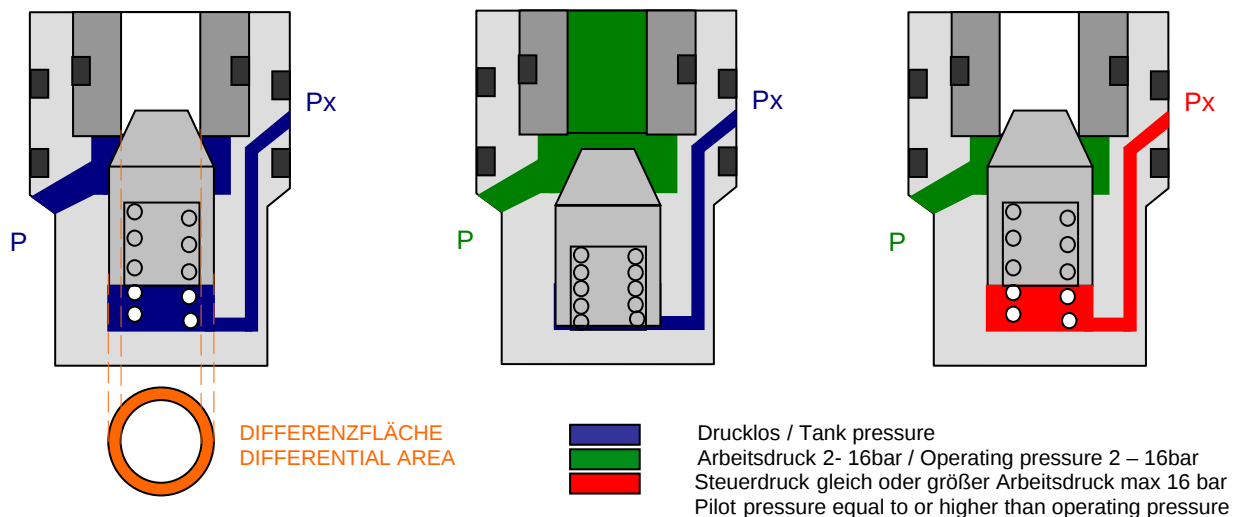
Steht an der Steuerbohrung ein Druck gleich oder größer dem Betriebsdruckes an, schließt das Ventil.

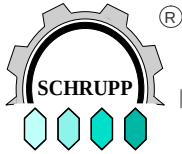
Die erforderlichen Pilotventile können außerhalb des Walzgerüsts installiert und mittels Rohren oder Schläuchen mit den Sprühventilen verbunden werden. Grundsätzlich können die Ventile mit Eigen- oder Fremdmedium vorgesteuert werden. Voraussetzung ist jedoch immer, dass der Vorsteuerdruck am Ventil gleich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





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