







SELECTOSPRAY THE RIGHT CHOICE

SELECTOSPRAY is a highly customizable system for selective roll cooling. Due to the different requirements on site, there can be no “one size fits all” valve solution. But there can be one that perfectly fits your rolling mill.

	Pneumatic valves		Electropneumatic valves				Electric valves	
								
Series	Modulax TS	Mini Modulax TS	Modulax DSA quick connect	Modulax DSA split design	Mini Modulax DSA quick connect	Mini Modulax DSA split design	EVA	Mini EVA
Information on page	14	14	18		18		22	22
Min. zoning 26 mm		•				•		•
Failure-open	•	•		•		•		
Failure-close							•	•
Use with water	•	•		•		•	•	•
Use with emulsion	•	•		•		•		
Use with rolling oil	•	•		•		•	•	•
Pulsing				•		•	•	•
Hot sprays		•						•
For steel hot mills	•			•				
For steel cold mills	•	•		•		•		
For aluminum hot mills	•	•		•		•		
For aluminum cold mills	•	•		•		•	•	•
For non-ferrous mills		•				•		•
Removable to header front	•	•		•		•	•	•

SELECTOSPRAY pneumatic systems

Modulax TS and Mini Modulax TS

The Modulax TS (Twin Seal) valves are used in rolling mills where the ability to fail open is beneficial. This is applicable especially where emulsions or dispersions are used as coolants.

A fully pneumatic SELECTOSPRAY system requires no electrical equipment in the spray bars. All electrical components are housed protected in the control cabinet.

Polyamide tubes connect the solenoid valves in the control cabinet with the Modulax TS spray valves in the headers. Robust quick-release multiple air hoses with up to 44 single Polyamide tubes deliver the compressed air from the solenoid valves in the control cabinet to the spray valves in the headers. Each solenoid valve controls two spray valves for selective cooling in the same zone above and under the pass-line. The basic cooling/lubricating spray valves are controlled from the center outwards, while one solenoid valve operates up to four spray valves.

Operation

When pressurized air passes through the opened solenoid in the control cabinet, it acts on the rear of the piston, moving it forward closing the Modulax TS valve. When air pressure is removed by the closing of the solenoid in the remote cabinet, liquid pressure forces the piston back, opening the valve, and allowing the coolant to flow to the nozzle.

Cooling efficiency

Large inlet ports in the valve body permit coolant to enter directly and laminar to the nozzle. Due to the perfect shape inside the valve, the nozzle forms a perfect blade-like flat jet for optimized heat transfer.



Features Modulax TS and Mini Modulax TS:

- 2 : 1 coolant/air pressure ratio
- Four large coolant inlets for laminar flow
- Completely removable from the header front

Advantages:

- Efficient cooling by blade-shaped sprays
- Reduced downtimes due to easy maintenance
- Simple integration thanks to use of standard shop air

Benefits:

- No electrics in the mill – easy maintenance
- Contamination tolerant – can be used with emulsion
- Works with shop air – no extra compressor required



Modulax TS valve 52 mm/2"

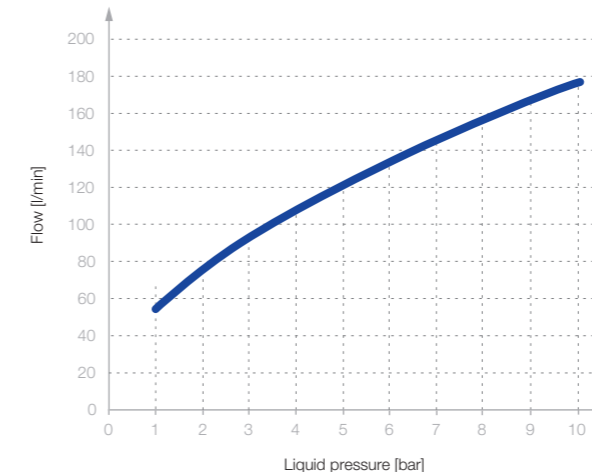
The Modulax TS valve features a modular design for laminar flow in axial direction and has proven its value in reams of rolling mills all over the world. Thanks to only one moving part – the Delrin piston with twin lip seals – it is extremely easy to maintain.



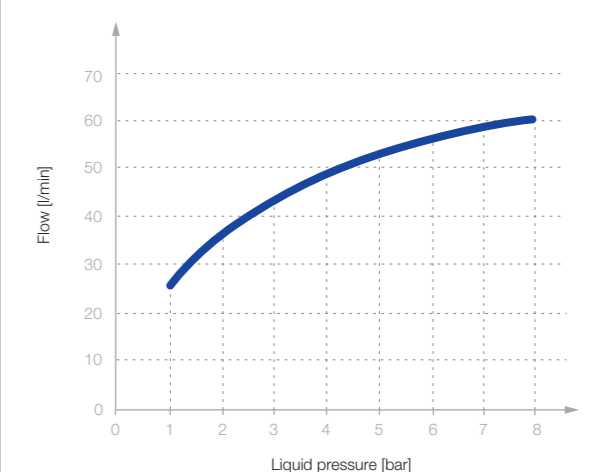
Mini Modulax TS valve 26 mm/1"

The Mini Modulax TS valve is the little brother of the Modulax TS, and is used in rolling mills where space is restricted and where small zonings below 50 mm are required. The operating principle is the same as the Modulax TS.

Modulax TS flow data



Mini Modulax TS flow data

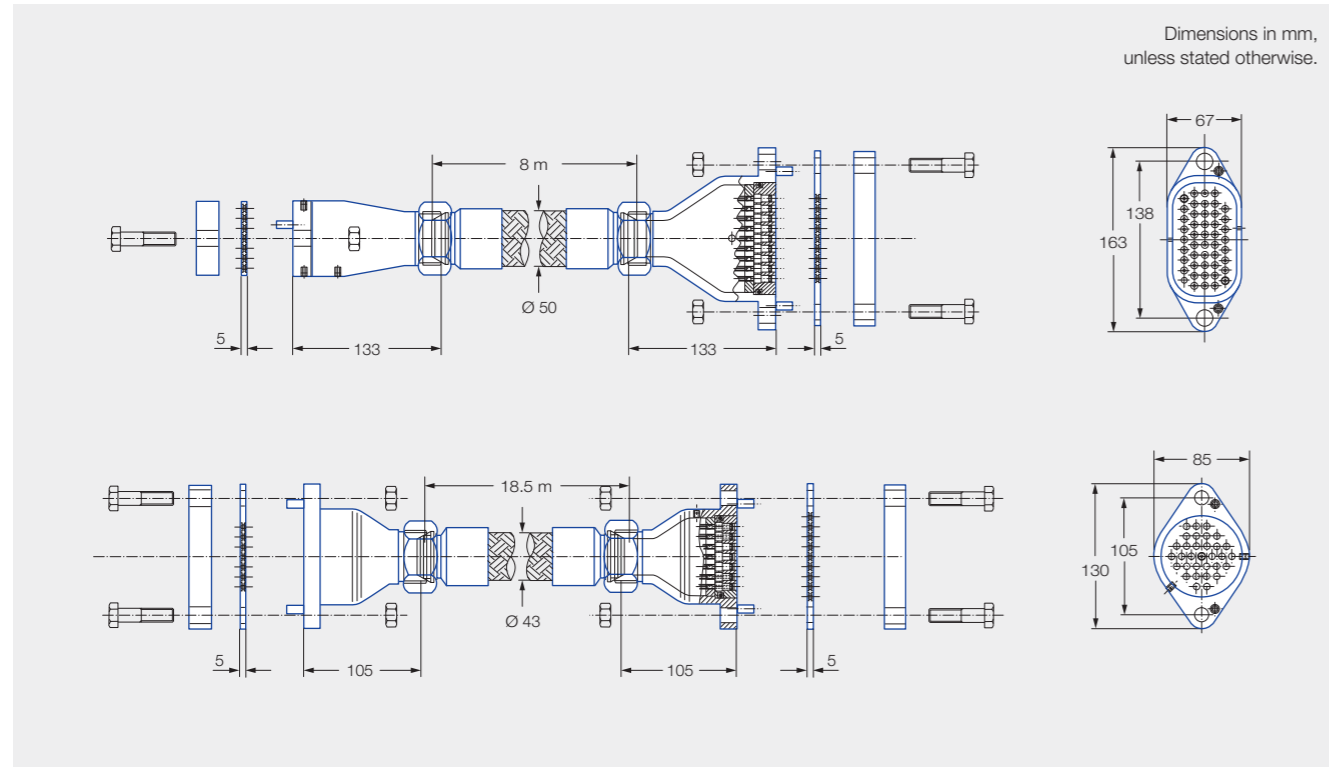


Maximum valve flow table (other flows are available with the correct Lechler nozzle selection)

SELECTOSPRAY pneumatic systems

Pneumatic control hoses

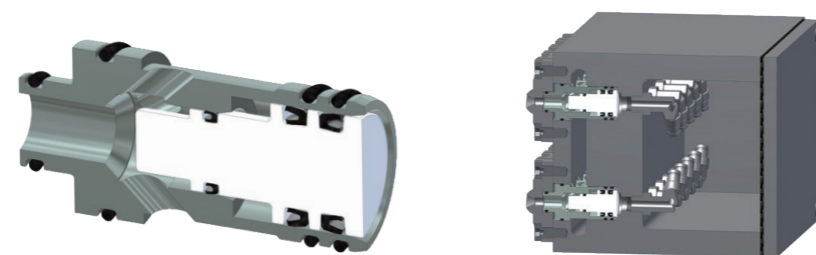
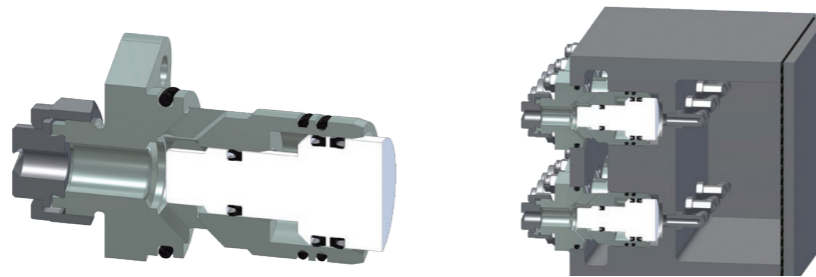
Our pneumatic control hoses connect any control panel with other apparatus and will provide control in difficult environments. With simple and easy to install fittings the connectors have keyed locations that make the task quick and a single person job.



Pneumatic valves



Valves removable from the front of the header



SELECTOSPRAY pneumatic systems

Spray headers and nozzles

The Lechler header design concepts ensure faster times to market and a more competitive pricing. By developing smaller valves that match the flow of traditional larger valve designs, we can provide more compact headers that make room for flatness optimization even in confined environments.

	Modulax TS	Mini Modulax TS
Use with control hose	Air hose	Air hose
Product code	961.MDX.00.00.00.0	961.000.00.MM.TS.0
Recommended horizontal pitch	52 mm (min 50 mm)	26 mm (min 25 mm)
Solenoid	Inside control cabinet	Inside control cabinet
Power consumption solenoid	1.7 W @ 24 VDC (other voltages available)	1.7 W @ 24 VDC (other voltages available)
Max flow	159 l/min @ 8 bar	59 l/min @ 8 bar
Response time	50 ms per meter of control hose length (typical)	50 ms per meter of control hose length (typical)
Pulse frequency	n. a.	n. a.
Coolant working pressure	Min. 3 bar, max 9 bar	Min. 3 bar, max 9 bar
Coolant filtration requirement	250 micron	250 micron
Coolant metal particle content	100 ppm	100 ppm
Coolant temperature	Max 120 deg C	Max 120 deg C
Air pressure	Min 5 bar, max 8 bar	Min 6 bar, max 8 bar
Air filtration	40 micron	40 micron
Dew point	2-5 deg C	2-5 deg C
Header dimensions approx. (width by depth)	170 x 165 mm (2 rows) 215 x 165 mm (3 rows)	120 x 100 mm (2 rows) 160 x 100 mm (3 rows)
Materials Nozzle and valve housing	Stainless steel	Stainless steel
Materials Piston	Delrin (POM)	Delrin (POM)
Materials Seals	Viton	Viton
Materials Air tube	Nylon (Polyamide)	Nylon (Polyamide)

SELECTOSPRAY electropneumatic systems

Modulax DSA and Mini Modulax DSA

The Modulax DSA (Direct Solenoid Actuation) valves offer all the benefits of the Modulax TS valves, with the enhanced feature of an integrated solenoid actuator. It is used in rolling mills where pulsing mode and the ability to fail open is beneficial. Typically, where emulsions or dispersions are used as the coolant.

The solenoid valves are integral parts of the DSA valves in the spray header. Consequently, the spray headers are equipped with air pressure feeds to serve the solenoid valves. Robust quick-connect multicore control cable hoses with up to 108 single cables deliver the control signals from the cabinet to the spray headers.

Operation

The discreet solenoid actuator allows to be pulsed up to 5 Hz. If a front coolant seal fails due to mechanical damage, the secondary seal becomes energized, forcing the piston back and preventing any coolant from flowing through the solenoid into the rear chamber, ensuring improved integrity. In the event of a seal failure, the Modulax DSA indicates a problem by releasing coolant through the front vent.

Cooling efficiency

Both electropneumatic valve types feature large inlet ports that permit coolant to enter directly and laminar to the nozzle. Due to the perfect shape inside the valve, the nozzle forms a perfect blade-like flat jet for optimized heat transfer.



Features Modulax DSA and Mini Modulax DSA:

- 2 : 1 coolant/air pressure ratio
- Four large coolant inlets
- Only one moving part, the low inertia Delrin piston assembly
- Electropneumatic actuation
- Can be fitted with nozzle blocks or the self-aligning dovetail fixing of the SELECTOSPRAY nozzle range
- Easily, completely removable from the front of the header
- Solenoid valves located directly behind the valve

Advantages:

- Long-life low-friction lip seals
- Tested to over 20 million cycles
- Header solenoid protection
- Visible seal damage indicator
- Cost effective replacement
- Segregation of air and coolant by a secondary protection barrier seal

Benefits:

- Fast response time – ready for pulsing mode
- Contamination tolerant – can be used with emulsion
- Works with shop air – no extra compressor needed



Modulax DSA valve 52 mm/2"

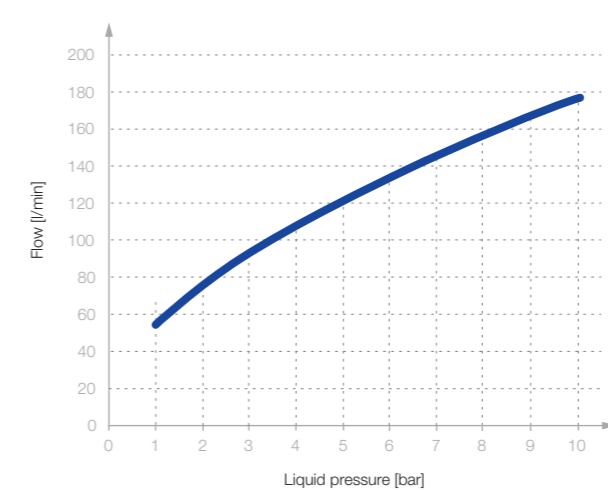
The Modulax DSA valve is based on the Modulax TS valve, but has the actuating solenoid valve directly attached.



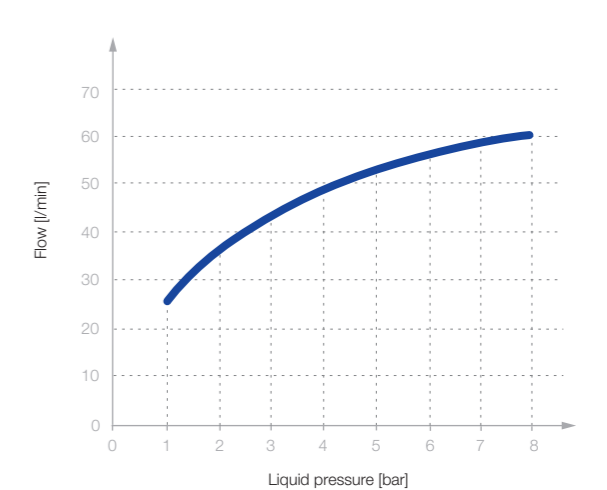
Mini Modulax DSA valve 26 mm/1"

The Mini Modulax DSA valves are the little brothers of the Modulax DSA valves. They are used in rolling mills where pulsing mode is required, space is restricted, and where small zonings below 50 mm are required. The operating principle is the same as the Modulax DSA.

Modulax DSA flow data



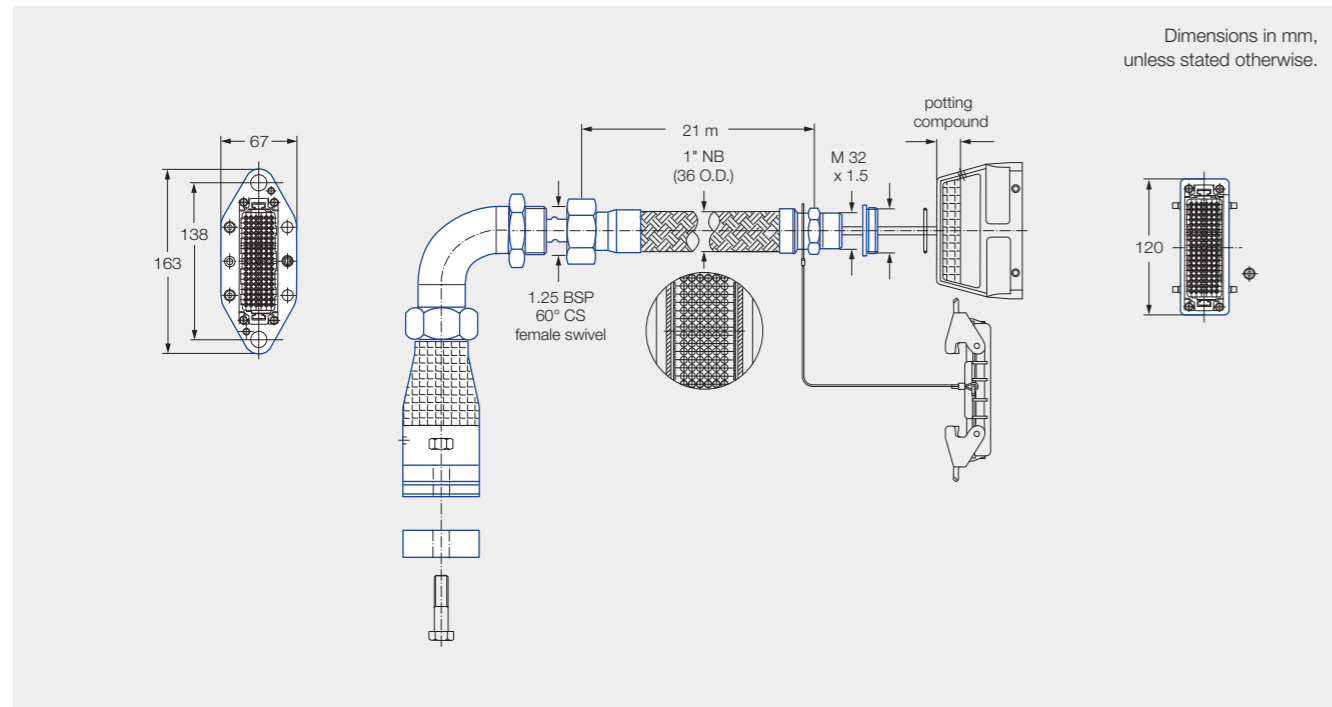
Mini Modulax DSA flow data



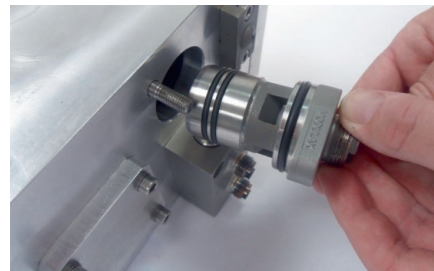
Maximum valve flow table (other flows are available with the correct Lechler nozzle selection)

SELECTOSPRAY electropneumatic systems Electrical control hoses

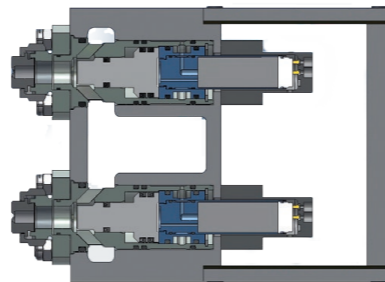
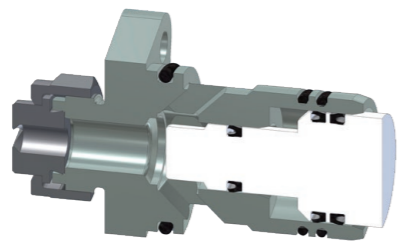
Our electrical control hoses contain up to 108 single cables. Fitted with standard couplings on the cabinet side and extra robust couplings on the header side, convoluted stainless steel hoses and stainless steel braiding, they withstand the harsh conditions in rolling mills.



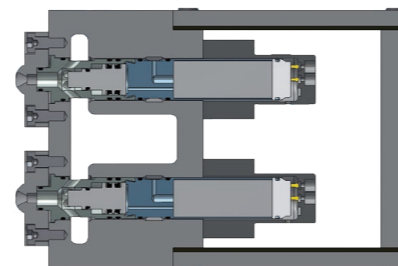
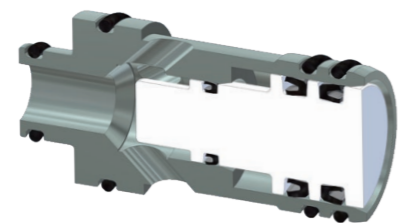
Electropneumatic valves



Valves removable from the front of the header



Modulax DSA quick connect



Mini Modulax DSA quick connect

SELECTOSPRAY electropneumatic systems Spray headers and nozzles

The Lechler header design concepts ensure faster times to market and a more competitive pricing. By developing smaller valves that match the flow of traditional larger valve designs we can provide more compact headers that make room for flatness optimization even in confined environments.

	Modulax DSA	Mini Modulax DSA
Use with control hose	Cable hose	Cable hose
Product code	961.DSA.00.QC.00.0 961.DSA.00.SP.00.0	961.DSA.MM.QC.00.0 961.DSA.MM.SP.00.0
Recommended horizontal pitch	52 mm (min 50 mm)	26 mm (min 25 mm)
Solenoid	Inside header	Inside header
Power consumption solenoid	1.5 W @ 24 VDC (NC)	1.5 W @ 24 VDC (NC)
Max flow	159 l/min @ 8 bar	59 l/min @ 8 bar
Response time	30 ms @ coolant pressure 6.5 bar, air pressure 5 bar	30 ms @ coolant pressure 6.5 bar, air pressure 5 bar
Pulse frequency	5 Hz	5 Hz
Coolant working pressure	Min. 3 bar, max 9 bar	Min. 3 bar, max 9 bar
Coolant filtration requirement	250 micron	250 micron
Coolant metal particle content	100 ppm	100 ppm
Coolant temperature	Max 90 deg C	Max 90 deg C
Air pressure	Min 6 bar, max 8 bar	Min 6 bar, max 8 bar
Air filtration	40 micron	40 micron
Dew point	2-5 deg C	2-5 deg C
Header dimensions approx. (width by depth)	200 x 220 mm (2 rows)	125 x 210 mm (2 rows)
Materials Nozzle and valve housing	Stainless steel	Stainless steel
Materials Piston	Delrin (POM)	Delrin (POM)
Materials Seals	Viton	Viton
Materials Air tube	Nylon (Polyamide)	Nylon (Polyamide)

SELECTOSPRAY electric systems EVA and Mini EVA

The Lecher EVA (Electric Valve Actuation) is used in rolling mills where inflammable rolling oil, kerosene or water is used as a coolant.

In the event of a malfunction, the Lechler EVA stops the flow of the flammable coolant and prevents the risk of a major fire. Because it does not require compressed air to operate, it fulfils all the demands, both functional and commercial, of a modern rolling facility.

Operation

EVA and Mini EVA valves both work on the same principle. Electrical control signals 24 V control an internal pilot valve. As soon as it is opened, the pressurized coolant activates the piston and exits through the nozzle. The valves do not require compressed air to operate.

Cooling efficiency

Large inlet ports permit coolant to enter directly and laminar to the nozzle. Due to the perfect shape inside the valve, the nozzle forms a perfect blade-like spray for optimized heat transfer.



Features EVA and Mini EVA:

- Completely cable free
- Self-aligning, ensuring a perfect connection every time
- Class leading flow capability
- Pulse rate up to 5 Hz
- Operating typically at 52 mm centers (50 mm optional).
52/50 mm centers = EVA
26/25 mm centers = Mini EVA
- Stainless steel construction
- Long life and easy to maintain
- Can be fitted with nozzle blocks or the Lechler SELECTOSPRAY nozzle range

Advantages:

- No control air required
- Large orifices for a laminar flow and a stable spray pattern, providing effective and precise roll cooling
- Easily and completely removable from the front of the header
- No requirement to remove the header from the mill window

Benefits:

- Fast response time – capable for pulsing mode
- Failure close – suitable for inflammable coolants
- Temperature range up to 120 deg C – suitable for hot sprays



EVA quick connect 52 mm/2" with offset pins

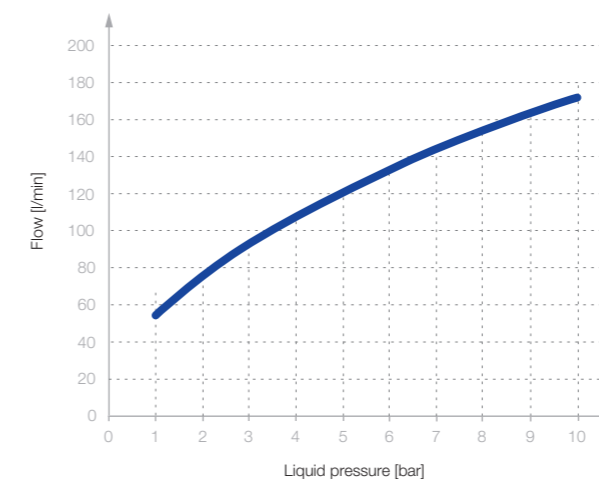
The EVA valve is used in rolling mills where inflammable rolling oil or kerosene is used as a coolant. In applications such as aluminum cold or foil mills, there is the demand for valves that have the built-in function to fail closed. In the event of a mill fire, the risk of prolonging the hazard is reduced. The EVA valve does not require compressed air to operate.



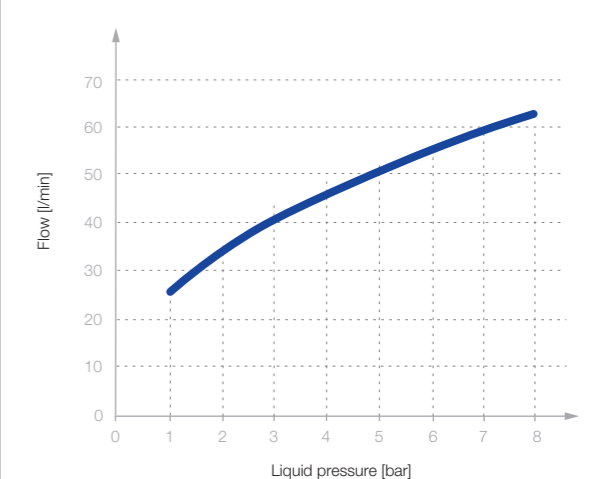
Mini EVA quick connect 26 mm/1" with offset pins

The Mini EVA valve encompasses the same design principles as the 52 mm EVA valve with the built-in function to fail closed. The Mini EVA has a class leading flow rate for a 26 mm envelope. This enables Lechler engineers to design low aspect roll cooling headers allowing the optimum positioning of the header inside the mill window.

EVA flow data



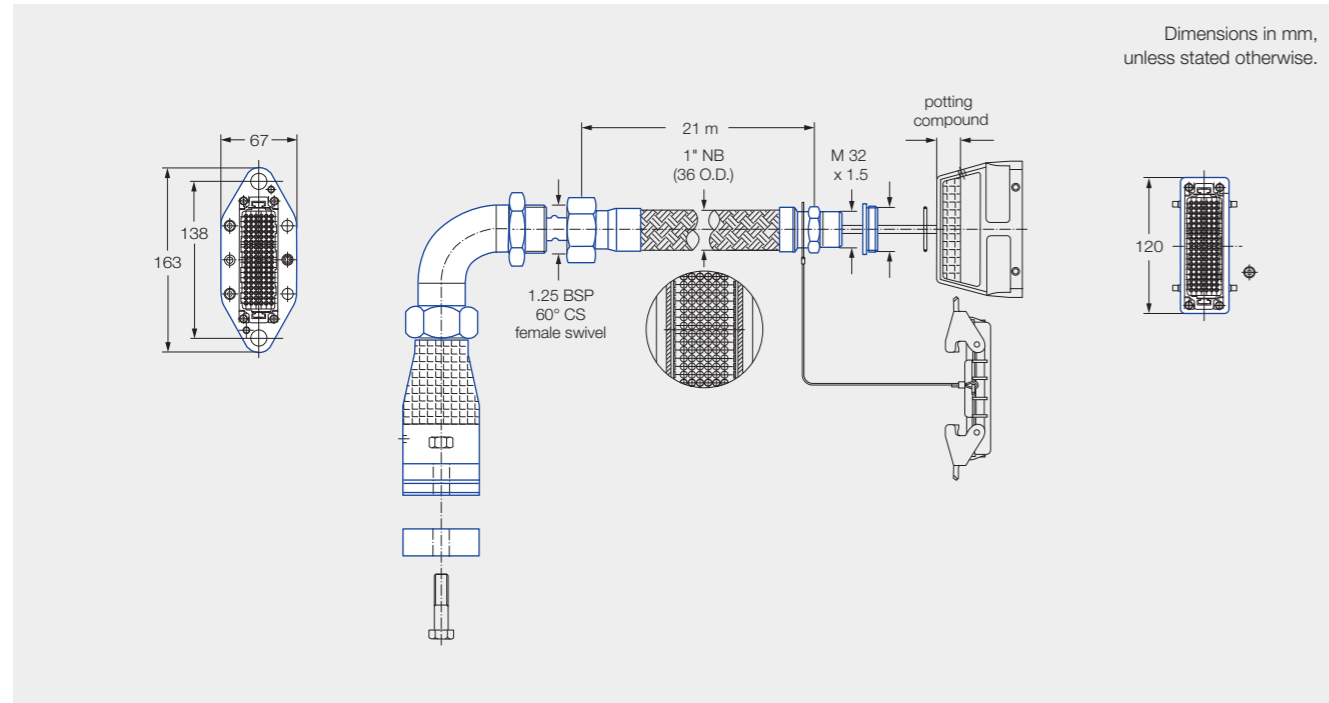
Mini EVA flow data



Maximum valve flow table (other flows are available with the correct Lechler nozzle selection)

SELECTOSPRAY electric systems Electrical control hoses

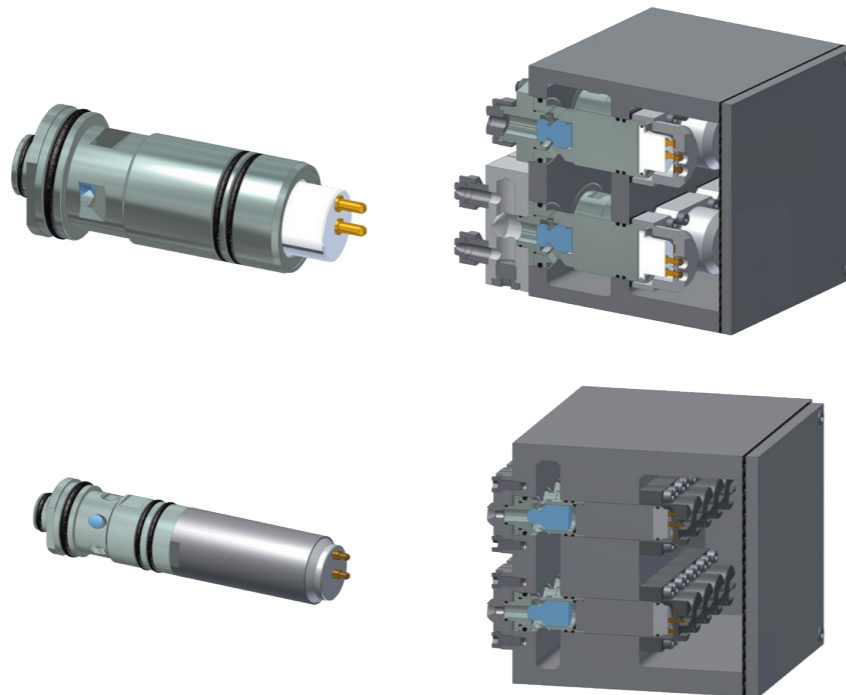
The cables provide connections between the control cabinet and other devices in an environment that is challenging for electrical signals. The internal PTFE coating of the cables ensures long-term connectivity.



Electric valves



Totally serviceable from the header front



SELECTOSPRAY electric systems Spray headers and nozzles

The Lechler header design concepts ensure faster times to market and a more competitive pricing. By developing smaller valves that match the flow of traditional larger valve designs we can provide more compact headers that make room for flatness optimization even in confined environments.

	EVA	Mini EVA
Use with control hose	Cable hose	Cable hose
Product code	961.EVA.CS.QC.OP.0	961.EVA.MM.QC.00.0
Recommended horizontal pitch	52 mm (min 50 mm)	26 mm (min 25 mm)
Solenoid	Inside header	Inside header
Power consumption solenoid	9.7 W @ 24 VDC	10.2 W @ 24 VDC
Max flow	159 l/min @ 8 bar	59 l/min @ 8 bar
Response time	30 ms @ coolant pressure 6.5 bar	30 ms @ coolant pressure 6.5 bar
Pulse frequency	5 Hz	5 Hz
Coolant working pressure	Min. 3 bar, max 9 bar	Min. 3 bar, max 9 bar
Coolant filtration requirement	25 micron	25 micron
Coolant metal particle content	100 ppm	100 ppm
Coolant temperature	Max 120 deg C	Max 120 deg C
Air pressure	n. a.	n. a.
Air filtration	n. a.	n. a.
Dew point	n. a.	n. a.
Header dimensions approx. (width by depth)	185 x 180 mm (2 rows) 280 x 180 mm (3 rows)	135 x 150 mm (2 rows) @ 52 mm pitch 195 x 150 mm (3 rows)
Materials Nozzle and valve housing	Stainless steel	Stainless steel
Materials Piston	Delrin (POM)	Delrin (POM)
Materials Seals	Viton	Viton
Materials Air tube	n. a.	n. a.