

# Munters Reventa

## High pressure cooling

### Cooling systems

The high pressure cooling is a spray cooling system, that feeds misty water at a pressure of max. 70 bar through high pressure nozzles to the stable air. The sprayed water mist is so fine that it evaporates immediately. During this process, heat energy is extracted from the hot air, resulting in the quick cooling of the stable air.

#### Advantages

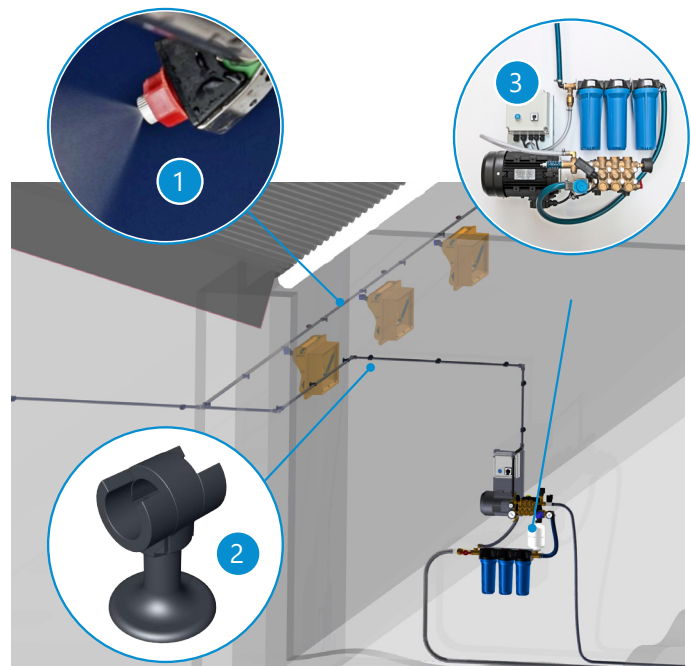
- Flexibility due to nozzles that can be positioned as required
- Efficient, easy to assemble and low maintenance requirements
- Temperature reductions of up to 7 Kelvin are possible
- Drop size approx. 10-20 micrometers = excellent efficiency
- Cooling without formation of wetness due to high water pressure
- Effective dust binding
- Special anti-drain valves prevent water from dripping

Due to this cooling effect, the ventilation rate can be decreased, which favors the saving of energy.

With this high pressure cooling system, an economical and low-maintenance alternative to conventional high pressure cooling systems is now available. The unique design of the high pressure nozzles does not only prevent dripping, but additionally, due to the patented pipe brackets, can be assembled in a flexible manner and requires very little maintenance.

During the development of the high-performance pump system, special attention was paid to ensure that the pump only requires little technology without incurring a loss in performance.

In this manner, it is ensured that the pump does not need much servicing, which in turn enhances the service life. In addition, dust is bounded in the compartment and temperature reductions of up to 7 Kelvin are possible



#### Main components of a high pressure cooling

- 1 Unique high pressure nozzle design for an ideal spray pattern of 10-20 micrometers
- 2 Patented pipe brackets for the flexible positioning of the nozzles
- 3 High-performance high pressure pump system for optimal flow capacities

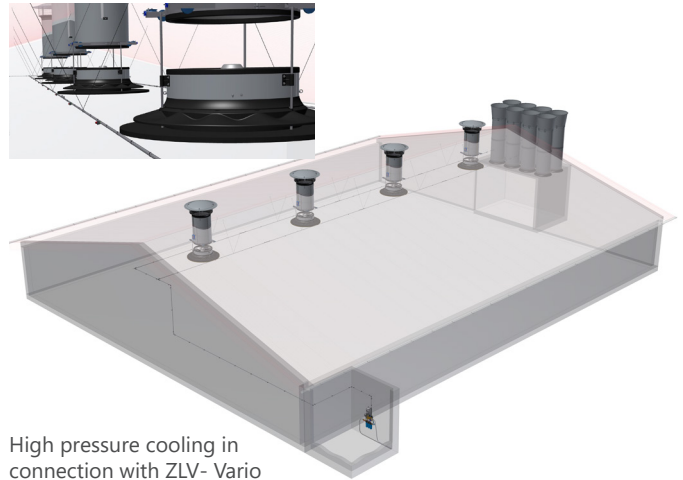
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#### Example

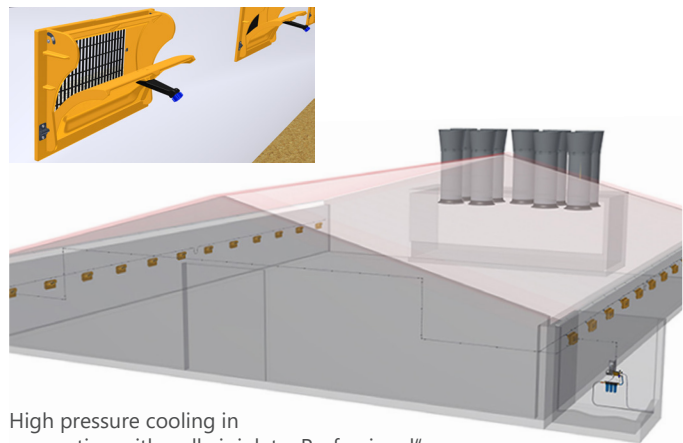
- Maststall 90 m x 21 m
- Zuluftverteiler Vario (4 Stück)
- Luftvolumenstrom 270.000 m<sup>3</sup>/h
- Klimaregion Deutschland (Nordeuropa)  
Wasserzusatz 3,0 g/m<sup>3</sup>
- Düse 0,3 mm (6,5 l/h bei 70 bar; 5,5 l/h bei 50 bar)



High pressure cooling in connection with ZLV- Vario

#### Example

- Growing stable 90m x 21m (295 x 68 ft)
- Fresh air distributor ZLV-Vario (4 pieces)
- Air flow 270,000 m<sup>3</sup>/h (159,000 cfm)
- Climatic region Germany (Northern europe)water additive  
3.0 g/m<sup>3</sup> (0.00019 lb/ft<sup>3</sup>)
- Nozzle 0.3 mm (6.5 l/h at 70 bar; 5.5 l/h at 50 bar)



High pressure cooling in connection with wall air inlets „Professional“

### Technical specifications

	High pressure cooling								
High pressure pump type	Pump 5.5 l/min (330l/h)		Pump 12.0 l/min (720l/h)		Pump 21.0 l/min (1,260l/h)		Pump 30.0 l/min (1,800l/h)		
Connected loads	400V / 50Hz; 1,1kW; 3,0A		400V / 50Hz; 2,2kW; 5,3A		400V / 50Hz; 3,0kW; 6,8A		400V / 50Hz; 4,0kW; 8,2A		
Color of nozzle head	Red	Black	Red	Black	Red	Black	Red	Black	
nozzle head Ø	[mm]	0,3	0,4	0,3	0,4	0,3	0,4	0,3	0,4
Flow rate per nozzle at 70 bar	[l/h]	6,5	10,0	6,5	10,0	6,5	10,0	6,5	10,0
Flow rate per nozzle at 50 bar	[l/h]	5,5	8,0	5,5	8,0	5,5	8,0	5,5	8,0
Number of nozzles 70 bar min.	[unit]	15	10	33	22	58	38	83	54
Number of nozzles 70 bar max.	[unit]	51	33	111	72	194	126	277	180
Number of nozzles 50 bar min.	[unit]	18	12	39	27	69	47	98	68
Number of nozzles 50 bar max.	[unit]	60	41	131	90	229	158	327	225

Max. number of nozzles depending on the flow rate and operating pressure of the 4 pump types