

LPS

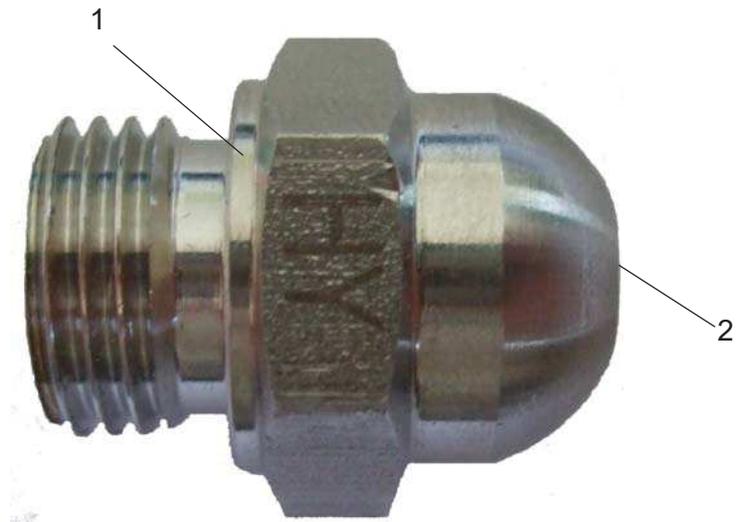
Humidifies and Cools



4.2.4 Atomising nozzles

Desalinated water at a pressure of up to 16 bar reaches the nozzles where the water is atomised to form ultra-fine mist-like aerosols. The aerosols enter the area of the vortexed air stream downstream of the vortex modules where they are intensively mixed.

The atomising nozzle generates a spray cone with a wide opening angle.



1: Nozzle body

2: Nozzle opening

Functionality

The nozzle makes the flowing water rotate and escape through the opening at high speed, generating a very fine water spray. The higher the operating pressure, the finer the droplets.

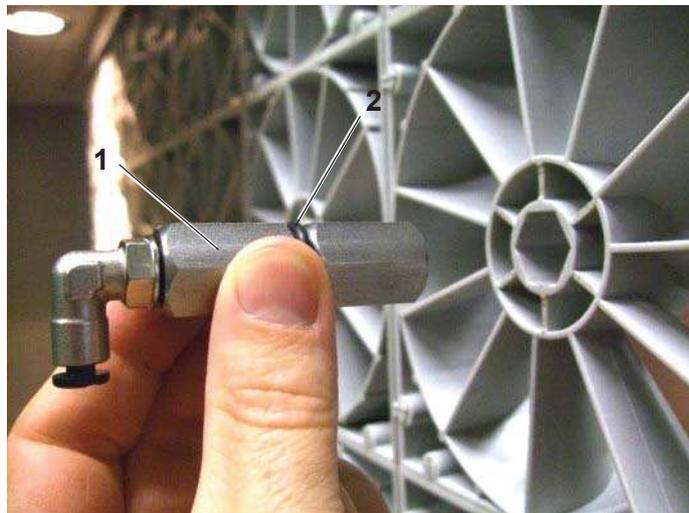
Material of the nozzle

The nozzle is made from corrosion-free stainless steel

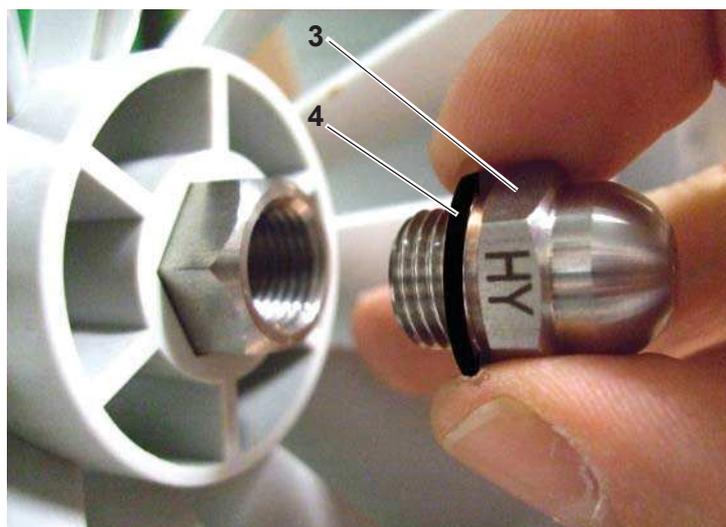
7.4 Installation of the nozzles, the distributor pipe and the tubing

7.4.1 Nozzle Installation

- » Check the nozzle positioning sheet supplied with the system to identify those vortex modules that shall be equipped with a nozzle
- » For all nozzle positions, insert a nozzle body (1) supplied with o-ring (2) into the vortex module bracket (see fig. below) from the side were the flow will occur, allowing for a protrusion of approx. 10 mm on the other side. The nozzle body is held in the bracket by the o-ring



- » Screw nozzle (3) with o-ring (4) firmly into the nozzle body on the downstream side



7.4.2 Mounting the manifold(s)

High-pressure water from the pump station is fed to one or more manifolds (depending on system ordering option) and then to the nozzles.

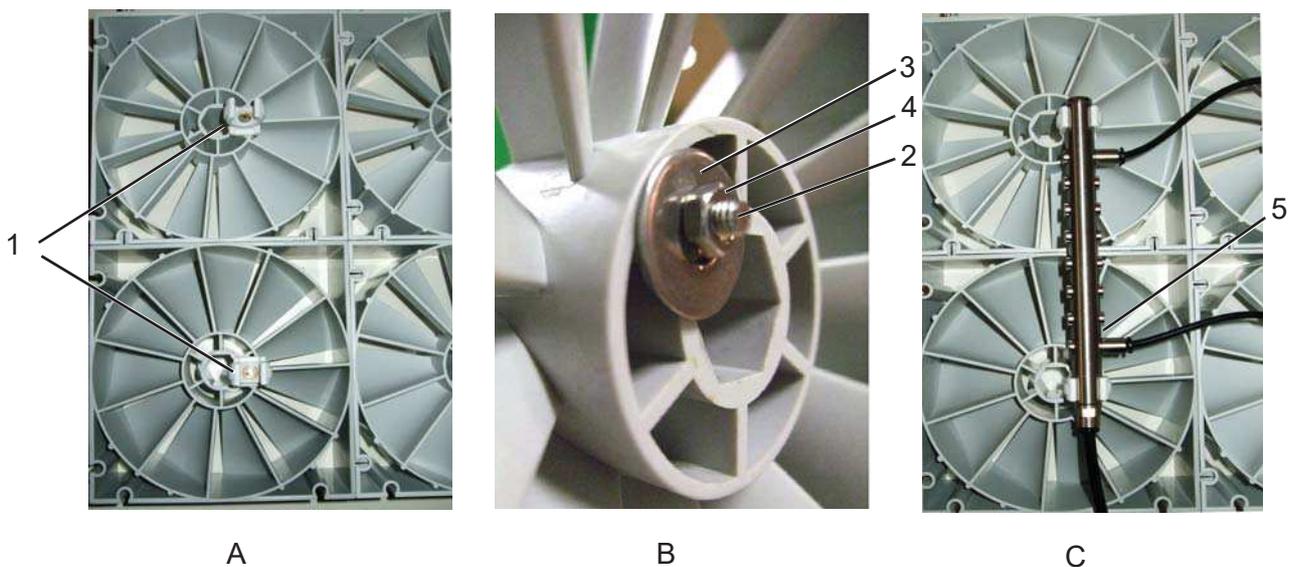
The manifold(s) is/are individually equipped with snap-in connections and/or blind bolts to support the project-specific nozzle configuration defined by the nozzle positioning sheet supplied with the system. They are mounted on the upstream side of the vortex module wall.



Please note: Make sure to position the manifold/s according to the nozzle positioning sheet.

Each single nozzle of the vortex wall is connected to a manifold outlet by means of a hose. The mounting position of a nozzle must generally lie on a higher level than the position of the corresponding manifold outlet so that the water hose has a constant slope.

Manifold installation steps:



The manifold(s) is/are mounted on the flow side of the vortex module wall with fixing points on two discrete vortex modules (s. fig. „A“).

- » Determine manifold retainer clip position on vortex wall in accordance with nozzle positioning sheet (Fig. „A“)
- » Mount a retaining clip (1) in each required position on a vortex module by means of a screw (2), washer (3) and nut (4) as shown in fig „B“
- » Press manifold (5) into the retainer clamps (see fig. „C“). Make sure that it fits tightly

13. Control System

13.1 Control and speed regulation

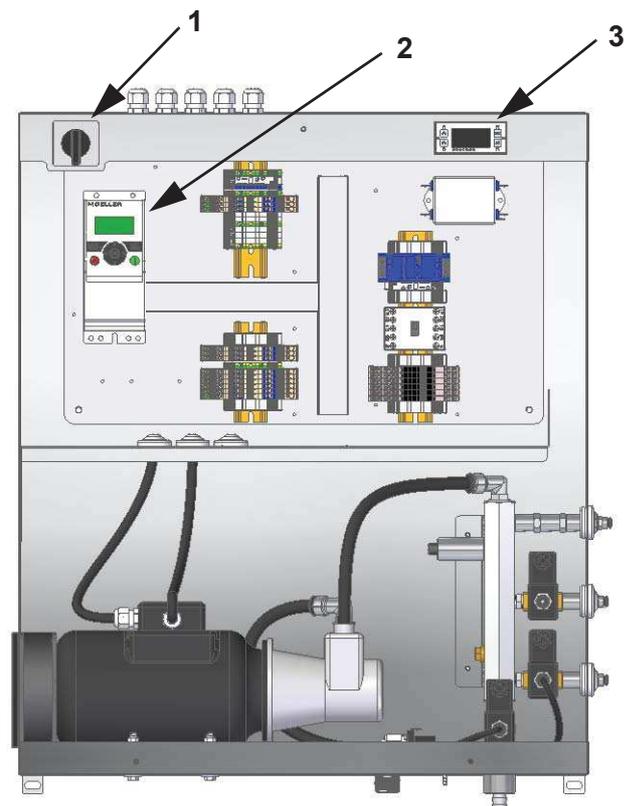
The main switch (item 1 in the figure below) located at the top left-hand side of the housing cover is for switching the HygroMatik low-pressure nozzle system LPS on and off.

All electrical components and terminal stripes are located in the system cabinet under the removable cover. A frequency converter (item 2) supplies different frequencies and voltages for the asynchronous motor of the pumping station located in the lower part of the system cabinet.

A Stored Program Controller (item 3) is responsible for the control function. Important operating data are shown in the control system display.

Depending on the speed of the pump, water pressure and, consequently, the amount of atomized water may be varied. Water pressure is in the range from 5 to 16 bars.

HygroMatik low-pressure nozzle system LPS



- 1 - Main switch
- 2 - Frequency converter
- 3 - SPC control

14.1.3 Cleaning the droplet separators

The droplet separators should be checked every 4 weeks for possible contamination and cleaned if necessary. The droplet separators should be thoroughly cleaned at least once a year.



Cleaning the droplet separators:

1. Pull or lift the droplet separators out of the guide rails.
2. Clean the droplet separators with a cleaning agent and then rinse and dry them.
3. Carry out a visual inspection of the droplet separators, repeat the cleaning step if necessary and replace the droplet separators if damaged.
4. Place the droplet separators back on the guide rails. While doing so ensure that the trap frame drain holes are facing downwards to guarantee free drainage.

14.1.4 Cleaning the vortex module wall

The vortex module wall should be checked for contamination and damage as part of annual maintenance. Any contaminants must be removed with a cleaning agent.



16. Spare parts

E-7800212	Rotary vane pump LPS45
E-3720010	Fan, axial, 230VAC
E-7702200	Protection grill, cabinet fan HDS, incl. filter inlay 120 x 120 mm
B-7800400	Solenoid valve water inlet, incl. pressure switch 1bar
E-7800300	3/2 Solenoid valve, incl. coil 230V/50-60Hz
E-7800310	Plug for solenoid valve
E-7800610	High pressure sensor LPS
E-7800436	Pipe fitting G3/8, 12mm hose
E-7800438	Pipe fitting G3/8, 90°, turnable, 12mm hose
E-7800416	Pipe fitting G1/8, 6mm hose
E-7800444	Female pipe fitting G1/8, 6mm hose
E-7621028	Filter element 10" filter quality 10 µm for water-prefilter HP-pumpstation
E-7705200	Water filter housing, 10" bothside connection 3/4" iD blue sump, pressure release button
B-2504021	Auxiliary relay 230V AC 2 switching contact
E-2505206	Safety fuse 1,6A 5x20mm
E-2504039	Safety fuse 1,6A 5x20mm
E-7704870	Thermal circuit breaker ; NC with automatic reset, switching point at 50°C ± 5K
E-7800544	Transformer 230V/12V 11VA
E-7800500	Frequency converter 0,37kW
E-7800540	Display CPU unit
E-2501005	Main contactor 16A(AC1)coil 230V AC

Artikel-Nr.	Article no.	Vortex-wall
E-7701000	E-7701000	Vortex module
E-7800400	E-7800400	LPS water distribution tube
E-7601630	E-7601630	T-piece female 1/8"
E-7601586	E-7601586	Double nipple G1/8" - G1/8"
E-7800410	E-7800410	Sealing plug M5
E-7800412	E-7800412	Sealing plug male 1/8"
E-7800414	E-7800414	Pipe fitting M5, 4mm hose
E-7800416	E-7800416	Pipe fitting G1/8, 6mm Hose
E-7800472	E-7800472	Fixing clip
E-7800452	E-7800452	Mountin bracket for nozzle
E-7621020	E-7621020	O-ring for nozzle mounting bracket
E-7800450	E-7800450	Nozzle HY 0,27/120°
E-7800454	E-7800454	Nozzle HY 0,27/60°
E-7601572	E-7601572	O-Ring, 10 x 1.5, 70° Shore
E-7800424	E-7800424	Pipe fitting male 1/8", 90°, turnable, 4mm hose
E-7800428	E-7800428	Hose PA, 6mm
E-7800426	E-7800426	Hose PA, 4mm
B-7800301	B-7800301	LPS duct inlet fitting