

## AccuShower

The Woollard & Henry AccuShower is a tried and tested waterspray system improving the papermaking process to control moisture profile and remoisturization of the sheet. Using the latest fluid technology based on our experience and detailed FEM calculations, the AccuShower atomizes the water into extremely small particles forming a fine mist.

Benefits are:

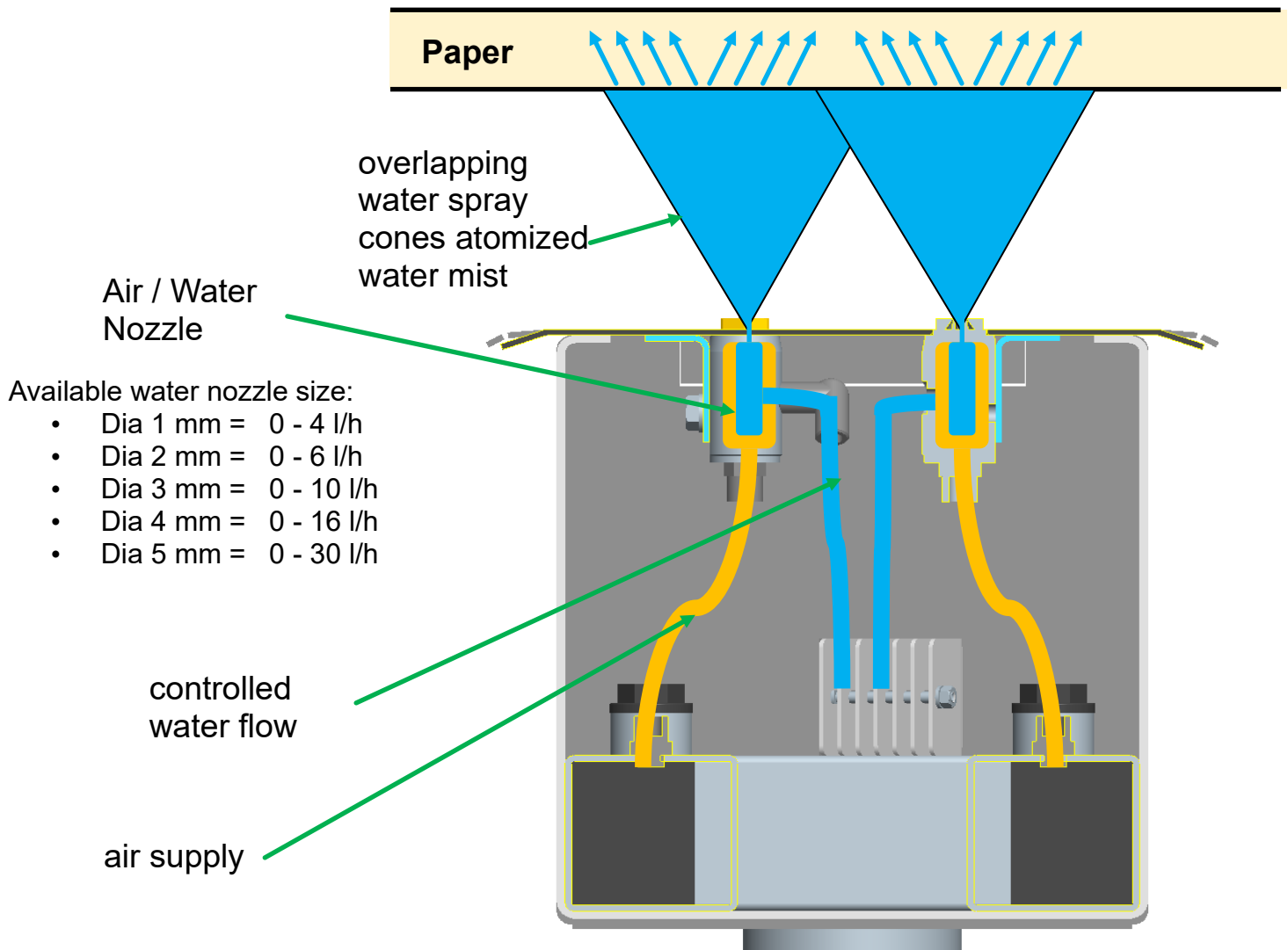
- Increase in Moisture and improved Moisture Control / Profile
- Remoisturizing process: controllable range 0 - 3,0 %
- Profile Control: Peak to Peak max 0,25% moisture difference
- Installation Position: Dryer Section, Cooling Cylinder or before Calender
- No water drops or water mist outside the spray system
- Working width: 0 - 9000 mm
- Nozzle centers: 100 mm / double row (off-set) to give 50mm

Air / Water Nozzle

2 rows of nozzles each pitched at 100 mm with an offset of 50 mm results in a 50 mm spacing possible for an extremely fine spray mist



## AccuShower – Cross section



In the Air / Water nozzle the controlled amount of water will be atomized in extremely small water particles.

The 50 mm offset of the air water nozzles create a perfect water application in the form of a continuous water mist without any water drops

The water mist will be absorbed by the paper sheet and rewet the complete paper in each direction

# AccuShower – System Overview

## 1. AccuShower - Water Spray Unit

Air / Water Nozzles allow an individually controlled application of water in cross machine direction. All Nozzles are supplied by a central air pipe. The compressed air atomizes the water inside the nozzle. The water flow is controlled by digital valves located in the Control Cabinet. Each nozzle is supplied by an individual water tube.

## 2. Water Supply Unit (WSU)

Contains pressure control loop, gate valve, strainer, filter and pump. Cooled condensate water from the mill, will be filtered and pressurized to supply the control cabinet. The water pressure will be adjusted by controlling the pump motor by frequency converter.

## 3. Air Supply Unit (ASU)

Contains pressure control loop, filter and blower. Air will be filtered and pressurized to supply the internal air pipe of the AccuShower. The air pressure will be adjusted by controlling the blower motor by frequency converter.

## 4. Control Station

Contains all electronic components to control the AccuShower including Water- and Air Supply. A separate sealed part contains the digital water valves supplying the nozzles in the AccuShower unit. The cabinet is connected and supplied by the Water Supply Unit (WSU).

## 6. Motor Control Center MCC

installed by customer, to control pump, suction fan and blower motor by frequency converter.

## 7. Suction Unit

Optional unit attached to the water spray unit to catch water drops and spray mist, connected to the suction fan.

## 8. Suction Fan

connected to the Suction Unit to evacuate excessive spray mist.

### Try before you buy:

**We are so confident of the production and commercial benefits of our AccuShower range that we now offer trial units to assess accurate quality improvement and ROI figures**

## AccuShower - Control

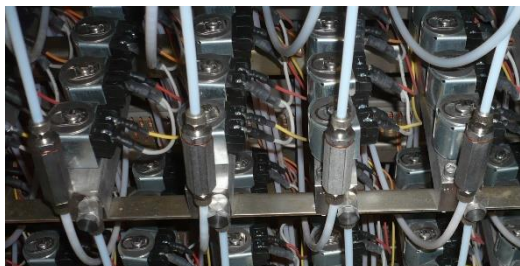
The Woollard & Henry AccuShower is controlled by W&H Control Cabinet containing all necessary Hard- and Software. We are open to connect and implement our solution in any existing QCS / DCS installation.

Standard Rittal Cabinet  
Divided in an electronic and water  
flow control part



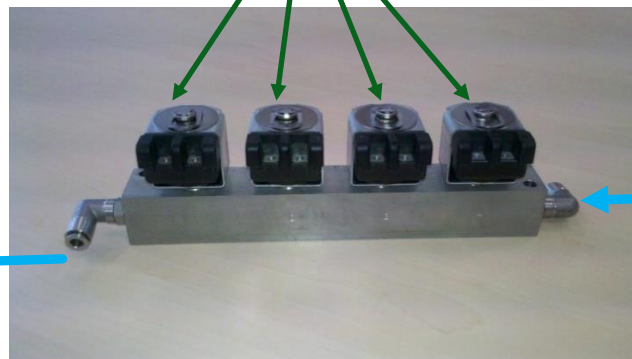
Right Side  
Electronic Part  
Siemens  
Hardware

Left Side  
Water Flow Control  
with 4-bit digital  
valves



A combination of 4 solenoid ON/OFF valves  
with different valve seats allows  
16 steps and a flow control  
of 0 - 25 liters per hour

water outlet  
connected to  
spray nozzle



water inlet

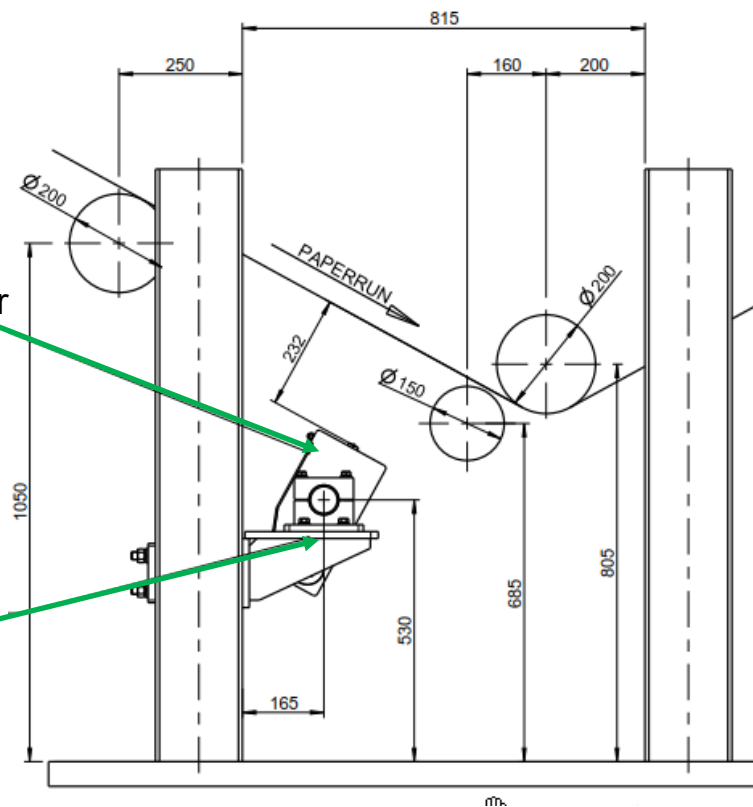
# AccuShower Installation Dry End



Remoisturizing of Filter Paper  
before Reeler  
2.5 - 3 % Moisture increase  
profile control  
160 g/m<sup>2</sup> Filter paper  
at 130 m / min

W&H AccuShower  
Water Spray  
System

Adjustable  
Supports



## AccuShower Installation before Calender

Installation in front of Reeler  
Tea Bag Paper 23 - 28 g/m<sup>2</sup> at 230 m/min machine speed  
Very low amount of water  
Application absolute driplless  
Suction unit around the Water Spray System

2.7 % Moisture Increase  
main purpose moisture profile control  
2 sigma reduction 1.58 down to 0.18 !



Complete Suction Unit  
around Spray System  
(two rows of nozzles)

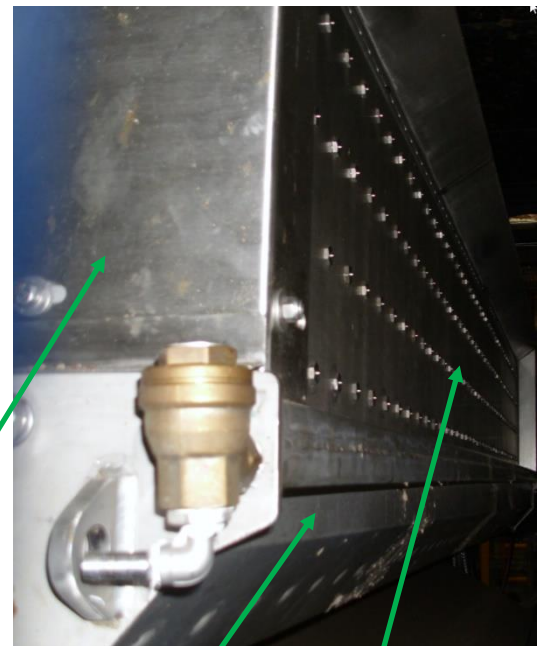
## AccuShower Installation before Calender

Installation in front of Calender Heavy Board Paper;  
High amount of water; Installation with outside heated  
Suction unit around the Water Spray Unit  
3.0 % Moisture increase to improve calender process  
130 - 480 g/m<sup>2</sup> board paper  
at 250 - 700 m/min machine speed



Retraction  
Unit

Water Spray  
System



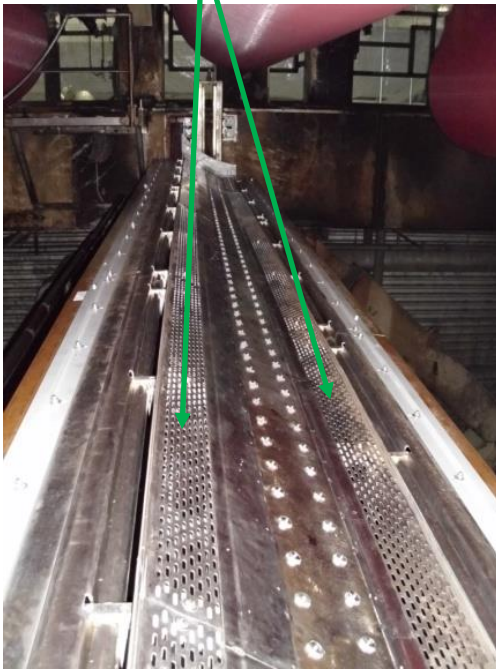
Suction Unit

4 Row of  
Nozzles  
Water Spray  
System

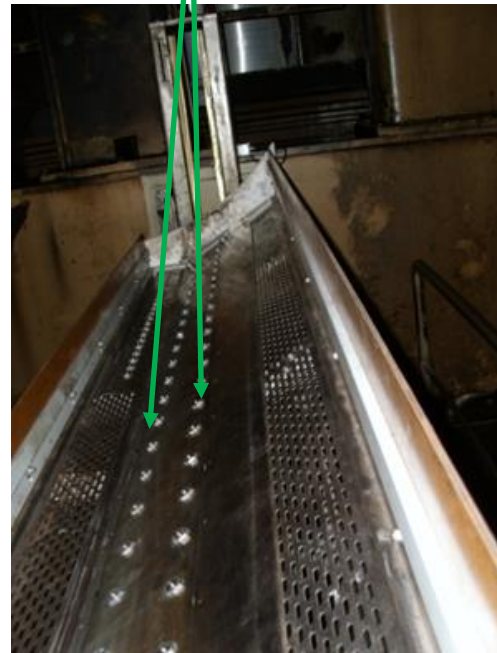
# AccuShower Installation in Dryer section

AccuShower 9.5 m working width 230  
Spray Nozzles  
installed underneath Dryer Cylinder

Suction  
Housing  
Inlet and  
Outlet



2 Row Water  
Spraysystem



2-3 % Moisture Increase  
main purpose moisture profile control  
Newsprint Paper 50g/m<sup>2</sup>  
at 1200 – 1300 m/min