

CAREL



solutions for
tobacco industry

T e c h n o l o g y & E v o l u t i o n

The ideal humidifiers for the tobacco industry!



CAREL, a leading manufacturer of humidification systems, is the ideal partner for the tobacco industry.

Properties of tobacco:

Tobacco is a plant with a high moisture content that, through a natural process, releases moisture into the environment when the surrounding air is too dry. Considering cigarettes, for example, the moisture content may vary by up to 12% in weight when the humidity of the surrounding air varies in the range from 40% to 70% r.H. (at 24 °C).

Why tobacco needs to be humidified:

Dry air causes the leaves to shrink, leading to a loss in weight, an increase in fragility, cracks and tears. This has negative effects on the production process, as it causes the tobacco to come out of the cigarettes, the cigarette paper to get caught in the machinery, and the tobacco leaves used in the production of cigars to break. For tobacco to maintain its quality and natural aroma when smoked, it must be stored in a place where the relative humidity of the air is 70 to 75%. Humidity control must be reliable, as tobacco reacts quickly to changes in the conditions of the air: if the air is too dry, it rapidly loses its moisture content, if it is too humid, it rapidly deteriorates.

Humidification in tobacco processing:

The air conditions required in the various tobacco processing phases are typically between 20 and 24 °C, 60 and 70% r.H. For storage, the temperature is usually around 20 °C with 70 to 75% r.H. Different humidity levels and temperatures may be required in specific processing phases or during storage.

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Atomising water humidifier

The adiabatic humidification system mc is designed for humidification of medium to large industrial rooms and storehouses. Using special stainless steel nozzles, the correct mixture of compressed air and water produces a highly atomised water spray, which evaporates humidifying and cooling the air. The microprocessor controlled cabinet permits precise, and completely automatic, operation of the mc system regulating the flow rate depending on the actual and required humidity level. Atomising nozzles made in AISI 316 stainless steel feature an exclusive self-cleaning mechanism and the controller manages an automatic cleaning cycle which ensures hygienic operation and minimum maintenance. The mc system requires compressed air to operate supplied by an external air compressor (not supplied by CAREL). The air volume at standard atmospheric pressure required to atomise one litre/h of water is 1.27 m³/h (see user manual).



mc

Technical Specification

- High capacity: 60 and 230 kg/h; nozzles 2.7...10 kg/h each; 1 nozzle minimum;
- suitable for large areas;
- automatic cleaning cycle;
- energy saving and low operative costs: only 116 W/(kg/h), air compressor included;
- hygienically safe (no re-circulated water);
- completely microprocessor controlled;
- For tap (*) or demineralized water (optional).

Centrifugal humidifiers

The *humiDisk₆₅* is a centrifugal humidifier that uses a high speed spinning disk to atomise the water and transform it into millions of minute droplets.

The droplets, blown by the built-in fan, are introduced directly into the environment, where they evaporate, humidifying and cooling the air. Electrical panels are available for the *humiDisk₆₅* to control one or two humidifiers.

These are not an integral part of the humidifier, but rather can be purchased separately.

An electronic board inside the humidifier, as well as managing the normal operation of the appliance, also runs a tank washing cycle when the unit is started, and a drain cycle at the end of the humidification cycle.



humiDisk₆₅

Technical specifications

- **user simplicity;**
- **capacity:** adjustable from 0.85 to 6.5 kg/h (suitable for environments measuring up to 650 m³);
- **very hygienic:** the inside tank contains only a small amount of water (0.055 litres), and is emptied whenever the humidifier stops operation (with the new electrical panels, the water tank is washed whenever humidification STARTS);
- **reduced energy consumption:** just 220 W (290 W with the antifreeze device), 230 Vac 50 Hz power supply;
- **drinking (*) or demineralised water.**

(*) To limit the frequency of maintenance operations and reduce the amount of dust in the environment, the supply water should be demineralised.

Headquarters

CAREL S.p.A.

Via dell'Industria, 11 - 35020 Brugine - Padova (Italy)
Tel. (+39) 0499 716611 - Fax (+39) 0499 716600
carel@carel.com - www.carel.com

Subsidiaries

CAREL Australia Pty Ltd

www.carel.com.au
sales@carel.com.au

CAREL China Ltd.

www.carelhk.com
sales@carelhk.com

CAREL Deutschland GmbH

www.carel.de
info@carel.de

CAREL Export

www.carel.com
carelexport@carel.com

CAREL France Sas

www.carelfrence.fr
carelfrence@carelfrence.fr

CAREL Italia

www.carel.it
carelitalia@carel.com

CAREL Sud America Ltda.

www.carel.com.br
carelsudamerica@carel.com.br

CAREL U.K. Ltd.

www.careluk.co.uk
careluk@careluk.co.uk

CAREL USA L.L.C.

www.carelusa.com
sales@carelusa.com

Affiliated Companies:

CAREL Korea Co. Ltd.

www.carel.co.kr
info@carel.co.kr

CAREL (Thailand) Co. Ltd.

www.carel.co.th
info@carel.co.th