

# Núcleos de Interfase

## Torres de Refrigeración

### The equipment

The cooling tower is a equipment designed for cooling water by direct contact with the enviroment. When they contact air and water is a sensible heat exchange, or heat transfer water to air by temperature difference and an exchange of latent heat, or moisture absorption of water by air to reach saturation (for each kg. Evaporated water absorbed 542,4 Kcal).

The properties of the air that intervenes in this proces are temperature and it's moisture grade, measured together with the wet bulb temperature of air.

The cooling of the water in a tower will depend on the difference between the temperature of the hot water (input water) and the wet temperature of the air, the quantity of air input in the tower, and, very important, the surface of contact between the water and the air, or interface core.

The main components of a cooling tower are: the ventilator, the fill and the water distribution, in addition to a drift eliminator of high efficiency.

The parameters that define a tower are the temperature of wet bulb, the water flow or calorific power to evacuate, the thermic jump or the difference between temperatures of entry and exit of the water, and the temperature which desires the water to exit.



### Our ADVANTAGES Our DIFFERENCES

- ❖ Pad not blockable of long life  
– Consistent performance
- ❖ Fill of flexible plastic very easy to replace  
(The workman will appreciate it)
- ❖ High efficiency drift eliminator (CERTIFIED)
- ❖ Easy cleaning
- ❖ Free of corrosion

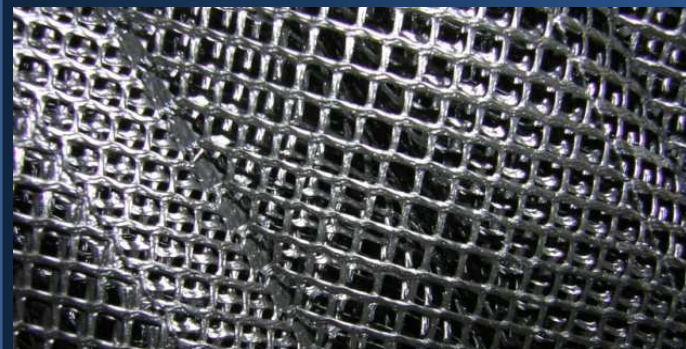
### System Núcleos de Interfase

The cooling towers made by Control y Ventilación, S.L., under the trademark **Núcleos de Interfase**, they are designed to have a long lifetime, both structural and mechanical, maintaining of the benefits.

For this, the system **Núcleos de Interfase** incorporate high quality materials mechanical and constructive the casing of reinforced polyester, high density polyethylene in the contact body air and axial fan with polypropylene impeller.

The system **Núcleos de Interfase** incorporates a flexible mesh of polyethylene both in the contact body air-water as in the drift eliminator, giving to the tower the following advantages :

- ❖ High density of contact surface air-water with a lesser aerodynamic resistance of air flow,
- ❖ High retention of dripping, giving a moist air and avoids the contamination problems (Certified by the Universidad Miguel Hernández)
- ❖ Hight support capacity of solids deposits or contaminants (lime, salt, dust, mud...) without any modification in the benefits





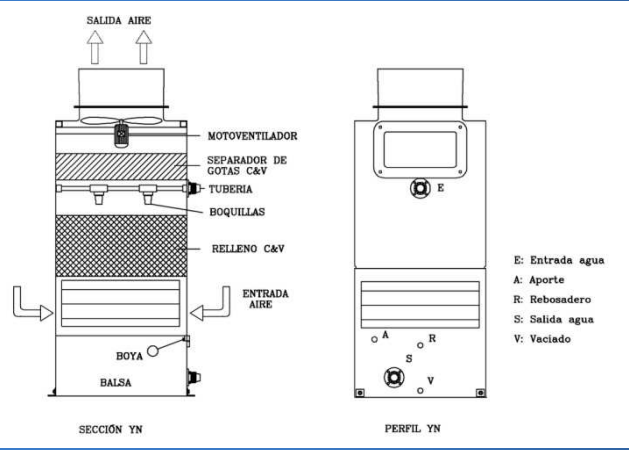
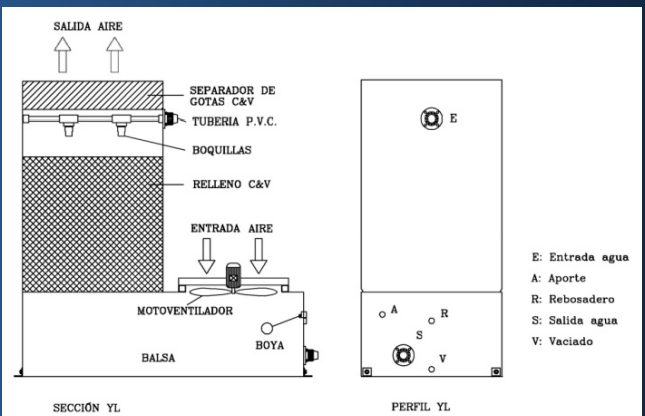
In its construction, Control y ventilación manufactures two different types of towers, giving rise to two different series:

### Serie YL

Formed by two pieces coupled with a simple support.

Lower unit or water basin is elongated, giving to the tower an "L" shape. This allows a large volume of water in circulation, also facilitates the access to the motor-driven ventilator which is situated in the water basin, supported by a stainless steel structure. The axial fan is connected directly to the axis of the motor.

Upper unit is the place where happens the thermal interchange, including blocks of fill superimpose, the water distribution and the drift eliminator. Due to that group motor-ventilator is in the lower part this offers an easy access for do maintenance jobs in the upper unit (replacement and /or clean fill and drift eliminator)



### Serie YN

Formed by two pieces coupled with a simple support.

Lower unit that includes the water basin, also is the place where happens the thermal interchange, including block of fill superimpose, and the air inlet.

Upper unit incorporates the drift eliminator and the motor-ventilator. There is also an opening for maintenance and inspection purposes. The axial fan is connected directly to the axis of the motor, positioning this horizontally fastened to the roof of the tower.

MODEL	AREA OF INTERCHANGE m <sup>2</sup>	AIR FLOW m <sup>3</sup> /h	COOLING CAPACITY (kW)*	LOW SPEED (LS)		HIGH SPEED (HS)	
				WATER FLOW m <sup>3</sup> /h	AIR FLOW m <sup>3</sup> /h	COOLING CAPACITY (kW)*	WATER FLOW m <sup>3</sup> /h
YLA 224 / YNA 224	224	8.270	141	22	12.700	211	33
YLA 324 / YNA 324	280	8.270	147	23	12.700	230	36
YLA 424 / YNA 424	336	8.270	160	25	12.700	237	37
YLB 224 / YNB 224	504	18.700	320	50	28.100	480	75
YLB 324 / YNB 324	630	18.700	339	53	28.100	512	80
YLB 424 / YNB 424	756	18.700	352	55	28.100	531	83
YLC 224 / YNC 224	896	35.300	608	95	47.500	812	127
YLC 324 / YNC 324	1.120	35.300	640	100	47.500	857	134
YLC 424 / YNC 424	1.344	35.300	665	104	47.500	889	139
YLD 224 / YND 224	1.344	46.900	799	125	62.500	1.068	167
YLD 324 / YND 324	1.680	46.900	844	132	62.500	1.126	176
YLD 424 / YND 424	2.016	46.900	883	138	62.500	1.177	184



Water flow cooled for the following temperatures

Water entry (°C)	33,00	34,50	36,00	37,50	39,00
Water exit (°C)	27,50	29,00	30,50	32,00	33,50
Humid bulb (°C)	23,00	25,00	27,00	29,00	31,00

