CLOSED COOLING TOWER

Model HSA - Z

Closed cooling tower HSA - Z

Description

The media that we want to cool circulates through the heat exchanger. It is not in direct contact with the environment and therefore protects the media of the primary circuit from pollution or any other form of impurities.

Operation

During the operation, heat is transferred from the media through the walls of the heat exchanger to spray water (secondary circuit).
Water from secundary circuit absorbs the heat in heat exchanger and flows into the outer manifold and out of it in the inner manifold. Inside the tower hot water is sprayed and flows through the fills to the collection basin. Air moves in the opposite direction. The fan which is installed at the top of the cooling tower, provides the air flow. Some of the heat from the secondary spray water is transferred to the air which flows through the tower and passes the fan to reach the environment. After water in secondary circuit is cooled down (some of the water evaporates during the air flow), it collects in the collection basin. From there it flows into the heat exchanger with the help of circulation pump. From heat exchanger it flows to the manifold and then through nozzles to the fills of the cooling tower.

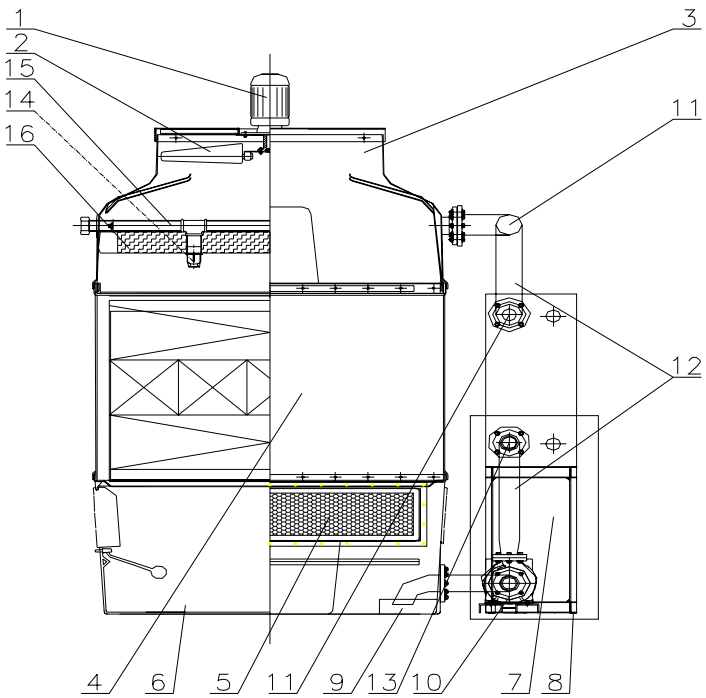
Design

The casing is made of reinforced polyester, which is resistant to corrosion, UV rays and other external influences. The heat exchanger is positioned by the casing of the tower. The heat exchanger is flat and demountable. If necessary, the heat exchanger can be quickly and easily replaced or cleaned due to the simple design of the cooling tower.
Spraying system of secondary circuit consists pipes and nozzles that provide good water distribution. Interior nozzle surface is very smooth, due to the nozzle shape at water flow vortices are generated which prevent clogging.
Film type fillers are made of PP and provide efficient cooling of spray water and have long life endurance.
Circulation pump with electric motor drive and a filter is connected on the suction pipeline from the collection basin and is suitable for operation outdoors.
At the air inlet are installed specific blinds, which prevent the loss of water due to spraying.
Between the spray nozzles and fan are also installed water drops eliminators, on which small droplets of water, that travel together with the air through the tower, are stopped.
Closed cooling tower must have a fan that ensures the air flow.
Fans are axial, quiet, have long life endurance and are easy to maintain. Smaller fans are connected with the electric motor directly, bigger are connected over the gearbox.

Specifications

Type	Flow rate (m^3/h)	Fan motor (kW)	Water heater (kW)	Pump motor (kW)
HSA-Z 1/06	5	1,5	2	0,55-2,2
HSA-Z 1/09	5	1,5	2	0,55-2,2
HSA-Z 1/09	6	2,2	2	0,55-2,2
HSA-Z 2/06	8	2,2	2	0,55-2,2
HSA-Z 2/09	8	2,2	2	0,55-2,2
HSA-Z 2/09	10	3,0	2	0,75-3
HSA-Z 3/06	13	3,0	2	0,75-3
HSA-Z 3/09	13	3,0	2	0,75-3
HSA-Z 4/06	13	4,0	2 x 2	1,1-5,5
HSA-Z 4/09	16	5,5	2 x 2	1,1-5,5
HSA-Z 4/09	20	7,5	2 x 2	1,1-5,5
HSA-Z 6/06	20	7,5	2 x 2	1,51-7,5
HSA-Z 6/09	23	7,5	2 x 2	1,51-7,5
HSA-Z 9/09	30	9,2	2 x 2	2,2-11
HSA-Z 9/09	35	11,0	2 x 2	2,2-11

Parts of cooling tower



1.....Fan motor
2.....Fan blade
3.....The upper part of the casing (diffuser)
4.....The middle part of the casing
5.....Air inlet blinds
6.....Collection basin of secondary circuit
7.....Heat exchanger
8.....Heat exchanger carrier
9.....Filter
10...Secondary circuit pump
11...Water drain from the heat exchanger
12...Secondary circuit penstock
13...Water supply into the heat exchanger
14...Spray nozzle
15...Pipeline manifold of secondary circuit
16...Water drops eliminator