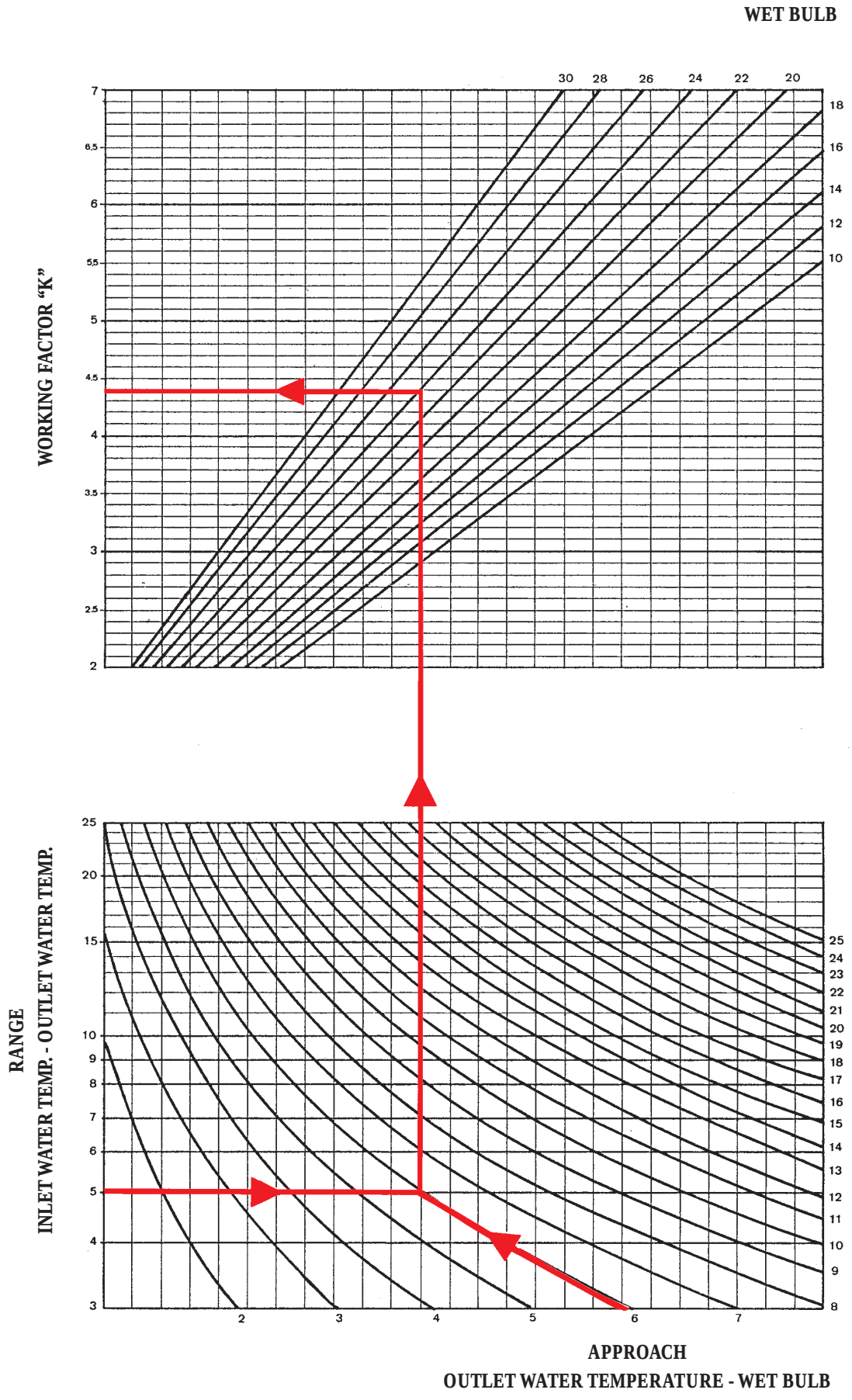
Graphic to determinate factor “K”

Graphic 1



Working principle

The fluid to be cooled (usually water) flows through the tubes of the coil without coming into direct contact with the external air, preventing dirt or pollution from entering the primary water circuit.

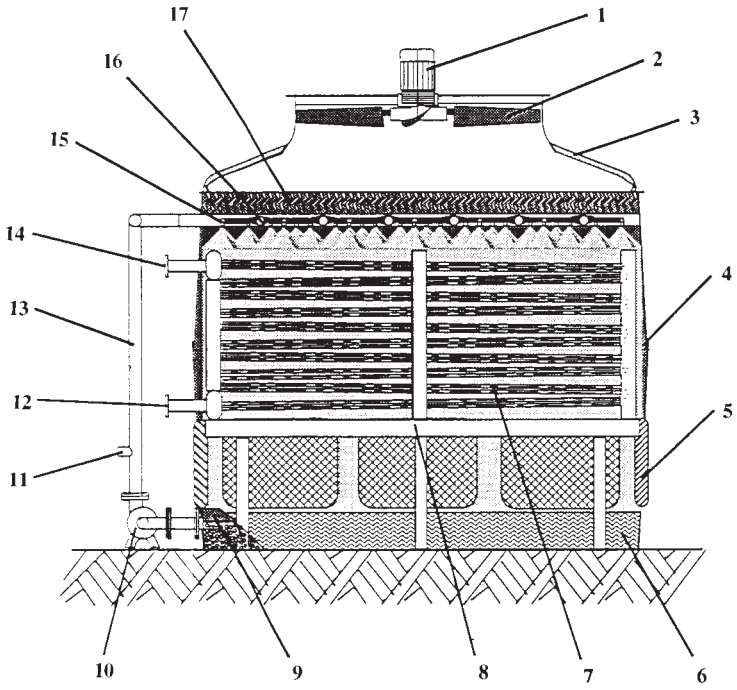
The heat is transmitted from the fluid through the tube walls to the water, which is being continuously sprayed over the coil.

The fan situated at the top of the tower intakes air in counterflow to the water, thereby evaporating a small part of the re-circulating water, drawing off the necessary heat for evaporation and releasing it into the atmosphere.

The rest of the water is re-circulated with a spray water pump from the basin to the spray nozzles. (Secondary circuit).

A small quantity of heat is transmitted by convection to the external air, just as for an air cooler.

1. Motor
2. Fan
3. Polyester top casing
4. Polyester cladding
5. Air intake louvres
6. Water-collecting basin in polyester
7. Coil
8. Coil support
9. Filter
10. Secondary circuit pump
11. Blow-off valve
12. Outlet
13. Secondary circuit piping
14. Inlet
15. Spray nozzles
16. Water distributor
17. Droplet separator



Closed-Circuit Cooling Towers

- Polyester casing
- Direct coupled. No belts and pulleys
- Corrosion free
- Low energy consumption
- HCS coil (High Conductivity System)

www.sulzercoolingtowers.com

EWK Former SULZER

Layout conditions

- Water flow to be cooled in m^3/h
- Inlet water temperature
- Outlet water temperature
- Wet bulb temperature

Range: Inlet water temperature - Outlet water temperature

Approach: Outlet water temperature - Wet bulb temperature

Procedure

1.- Working factor "K" can be determined by entering the range, the approach and the wet bulb temperature into graphic 1.
2.- The water flow to be cooled divided by the working factor "K", gives a selection factor "S".
3.- Finally the closed-circuit cooling tower model can be determined by using table 2 and selecting the model in excess.

Example of selection

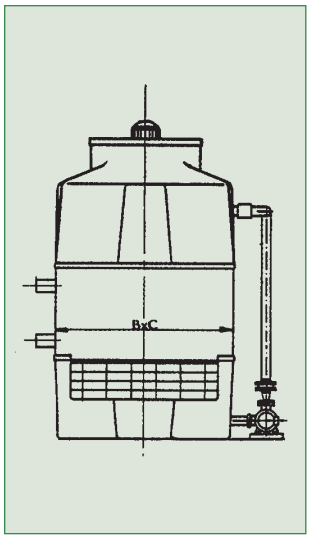
- Water flow to be cooled 90 m^3/h
- Inlet water temperature 35° C
- Outlet water temperature 30° C
- Wet bulb 24° C

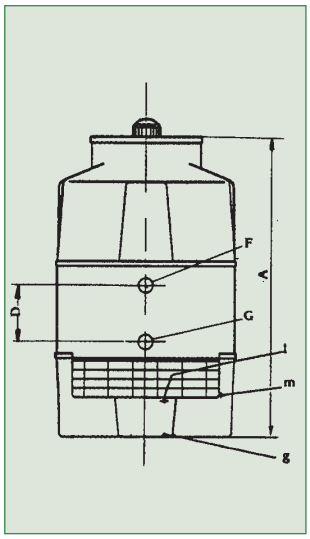
1.- According to graphic 1 the working factor is K=4.4.
2.- The selection factor thus is S=90/4.4=20.45.
3.- The selected model according to table 2 is EWK-C 900/5, whose selection factor is S=22.5, therefore the cooling capacity of this model under the above conditions is 22.5 x 4.4 = 99m^3/h (+10%).

Closed-circuit towers	
"S" = Water flow m^3/h ÷ "K"	
Tower type EWK-C	factor "S"
EWK-C 144/4	2
EWK-C 225/3	4
EWK-C 225/4	5
EWK-C 225/5	6
EWK-C 324/4	7
EWK-C 324/5	8
EWK-C 441/4	9
EWK-C 441/5	11
EWK-C 441/6	15
EWK-C 576/5	15.5
EWK-C 576/6	17
EWK-C 900/5	22.5
EWK-C 900/6	25
EWK-C 1260/5	34
EWK-C 1260/6	40.5
EWK-C 1800/5	46
EWK-C 1800/6	53

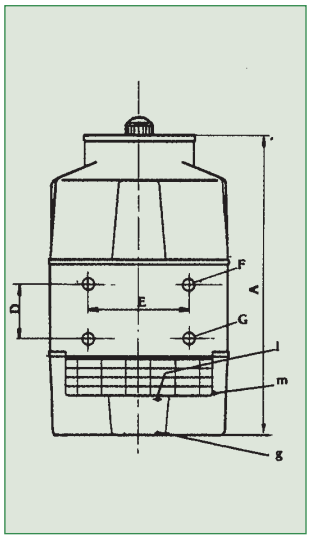
Table 2

Towers type EWK-C

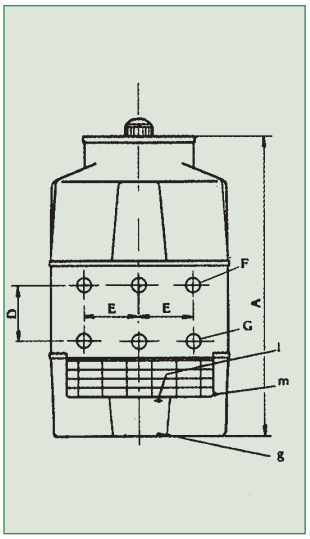




EWK-C 144 to EWK-C 225



EWK-C 324 to EWK-C 576

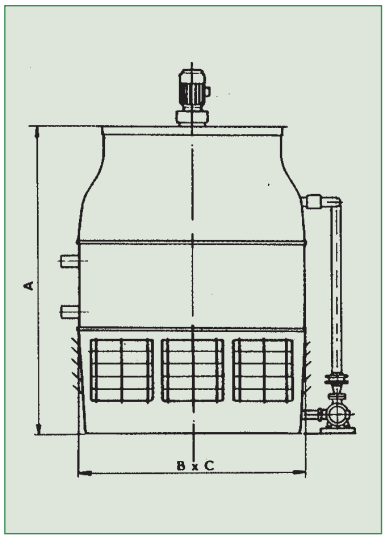


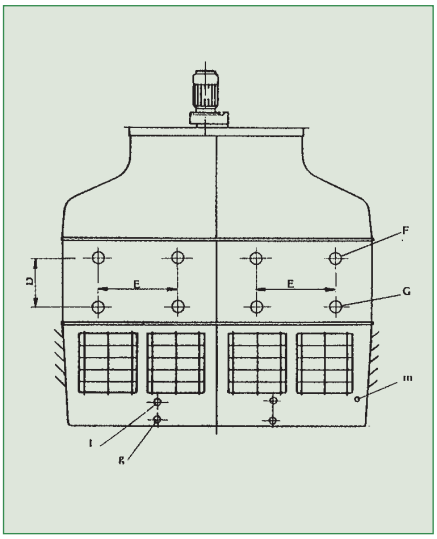
EWK-C 900

NOTE: EWK has a continuously advancing policy in the development of models. Therefore the specifications are subject to changes without prior notice.

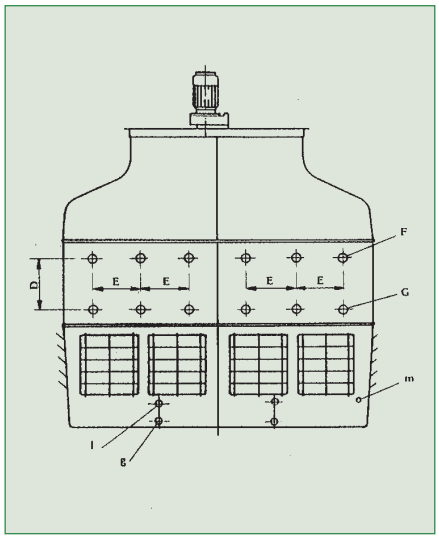
i = Overflow
m = Float valve
g = Drainage

Tower type	Airflow (m^3/s)	Motor fan Kw	Water flow (l/s)	Motor pump Kw	Weight in service (Kg)
EWK-C 144/2	5	1,5	4	0,75	1190
EWK-C 144/3	5	1,5	4	0,75	1290
EWK-C 144/4	5	1,5	5	0,75	1440
EWK-C 225/3	8	2,2	5	0,75	2140
EWK-C 225/4	8	2,2	7	0,75	2305
EWK-C 225/5	10	3	9	1,1	2535
EWK-C 324/4	10	3	9	1,1	3030
EWK-C 324/5	13	4	13	1,5	3340
EWK-C 441/4	13	4	13	1,5	4245
EWK-C 441/5	16	5,5	13	2,2	4600
EWK-C 441/6	20	7,5	18	2,2	5010
EWK-C 576/5	20	7,5	18	2,2	5460
EWK-C 576/6	23	7,5	22	2,2	5930
EWK-C 900/5	30	9	30	3	9185
EWK-C 900/6	35	11	35	3	9795
EWK-C 1260/5	40	15	39	2 x 2,2	13865
EWK-C 1260/6	45	15	50	2 x 3	14900
EWK-C 1800/5	58	22	60	2 x 3	20570
EWK-C 1800/6	65	22	70	2 x 3	23820





EWK-C 1260



EWK-C 1800

Weight empty (Kg)	Dimensions (mm)						
	A	B	C	D	E	F	G
650	2.320	1.220	1.220	380		2 1/2"	2 1/2"
750	2.620	1.220	1.220	570		2 1/2"	2 1/2"
900	2.620	1.220	1.220	760		2 1/2"	2 1/2"
1180	2.660	1.534	1.534	570		3"	3"
1345	2.660	1.534	1.534	760		3"	3"
1575	2.960	1.534	1.534	950		3"	3"
1756	2.890	1.825	1.825	760	800	2 x 2 1/2"	2 x 2 1/2"
2075	3.190	1.825	1.825	950	800	2 x 2 1/2"	2 x 2 1/2"
2085	2.940	2.140	2.140	760	807	2 x 3"	2 x 3"
2440	3.240	2.140	2.140	950	807	2 x 3"	2 x 3"
2850	3.540	2.140	2.140	1.160	807	2 x 3"	2 x 3"
2960	3.520	2.440	2.440	950	1.156	2 x 4"	2 x 4"
3430	3.820	2.440	2.440	1.160	1.156	2 x 4"	2 x 4"
4385	3.980	4.125	2.025	950	660	3 x 3"	3 x 3"
4995	4.280	4.125	2.025	1.160	660	3 x 3"	3 x 3"
7265	4.360	4.260	3.040	950	950	4 x 3"	4 x 3"
8300	4.660	4.260	3.040	1.160	950	4 x 3"	4 x 3"
8810	4.290	4.100	4.100	950	660	6 x 3"	6 x 3"
10200	4.590	4.100	4.100	1.160	660	6 x 3"	6 x 3"