



SQA MODEL

Ordinary maintenance activities





WHAT WILL WE TALK ABOUT?

- Introduction to ordinary maintenance of a **SQA Model**
- Maintenance in an open circuit Cooling Tower
- 3 sections assembled
- **Upper** fan section
- **Intermediate** exchange section
- **Lower** section of water collection basin





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BASIN SECTION MAINTENANCE

- **Removal and check** of air inlet grids
- **Check** water outlet protection filter
- **Internal check** of the basin
- **Check** for water drop from the exchange filling



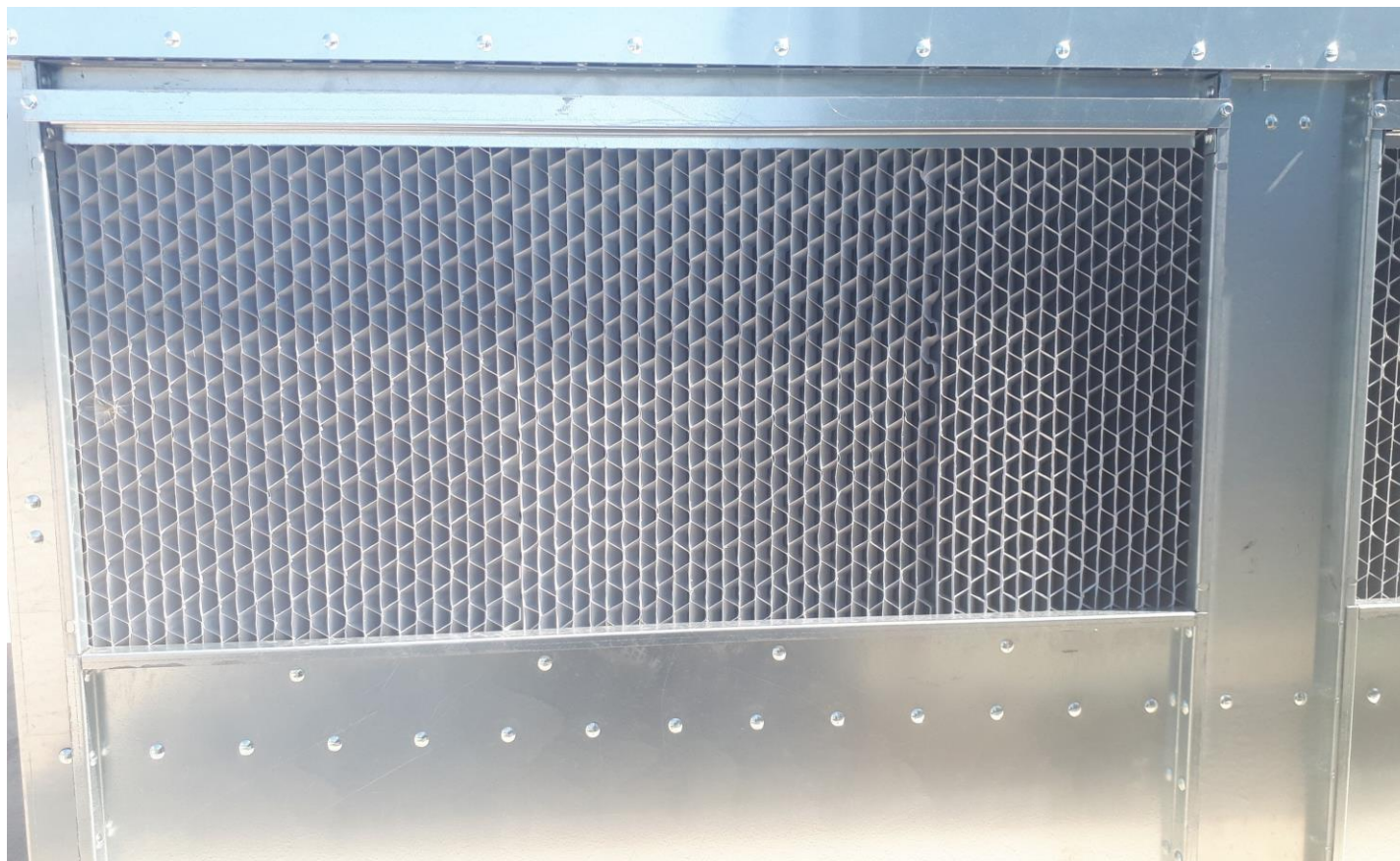
BASIN SECTION



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AIR INLET GRIDS REMOVAL





EXCELLENCE OF MADE IN ITALY



DIRTY INLET GRIDS





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BASIN SECTION INSPECTION

- **Corrosion / fouling** check
- **Water outlet filter** check



- **Water drop** check



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CORROSION / FOULING





W A T E R P A R A M E T E R S

Parameters for the water used by **SQA Series Cooling tower**

Parameter	Material					
	HDGS Z-725	DecsaProt	FRP	AISI 304	AISI 316	Decsa Coating
PH	7÷9.2	6.5÷9.5	6.5÷9.5	6.5÷9.5	6.5÷9.5	6.5÷9.5
Total hardness (CaCO ₃)	50÷650 mg/l	50÷800 mg/l	50÷800 mg/l	50÷800 mg/l	50÷800 mg/l	50÷800 mg/l
Total alkalinity (CaCO ₃)	< 550 mg/l	< 650 mg/l	< 650 mg/l	< 650 mg/l	< 650 mg/l	< 650 mg/l
Total dissolved solids (TDS)	< 1600 mg/l	< 2100 mg/l	< 2100 mg/l	< 2100 mg/l	< 2100 mg/l	< 2100 mg/l
Total suspended solids (TSS)	< 25 mg/l	< 25 mg/l	< 25 mg/l	< 30 mg/l	< 30 mg/l	< 30 mg/l
Chlorides	< 250 mg/l	< 300 mg/l	< 300 mg/l	< 300 mg/l	< 350 mg/l	< 350 mg/l
Sulphates	< 250 mg/l	< 350 mg/l	< 350 mg/l	< 350 mg/l	< 350 mg/l	< 350 mg/l
Conductivity	< 2400µS/cm	< 3000µS/cm	< 3300µS/cm	< 3300µS/cm	< 3300µS/cm	< 3300µS/cm
Free chlorine (continuous chlorination)	< 1.2 mg/l	< 1.2 mg/l	< 1.2 mg/l	< 1.8 mg/l	< 1.8 mg/l	< 1.8 mg/l
Free chlorine (discontinuous chlorination)	5÷15 mg/l max 6 hours	5÷15 mg/l max 6 hours	5÷15 mg/l max 6 hours	5÷15 mg/l max 6 hours	5÷15 mg/l max 6 hours	5÷15 mg/l max 6 hours

To make it easy to read and interpret data relevant to the water treated, it is reminded that water hardness is usually expressed in French degrees (°f): one degree represents 10 mg of calcium carbonate (CaCO₃) per litre of water (1 f = 10 mg/l = 10 ppm - parts per million). Usually, water is classified based on its hardness:

< 7 °f	VERY SOFT	22÷32 °f	MODERATELY HARD
7÷14 °f	SOFT	32÷54 °f	HARD
14÷22 °f	SLIGHTLY HARD	> 54 °f	VERY HARD



Water quality check is a fundamental activity to optimise performance of Evaporative Condenser: the formation of deposits and encrustations reduces heat exchange. It is advised to refer to a specialised firm in water treatment, to obtain more specific technical instructions.



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EXCHANGE SECTION MAINTENANCE





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EXCHANGE SECTION MAINTENANCE



- **Nozzles and secondary headers** check
- **Exchange surface** check



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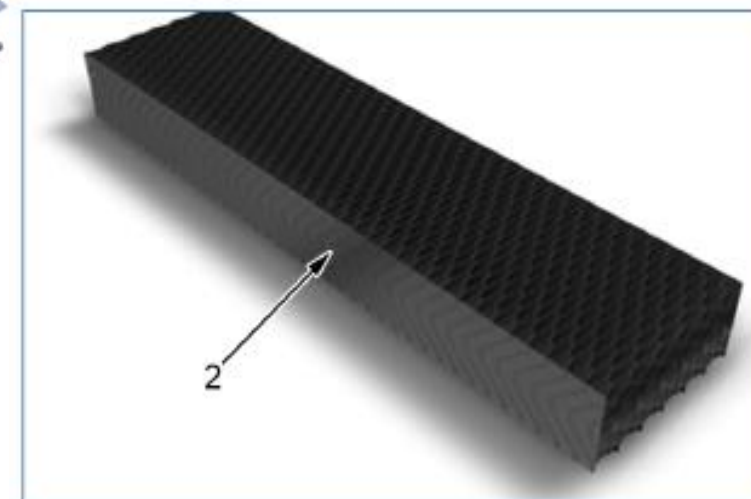
FAN SECTION MAINTENANCE



- **Work at altitude**



Drift eliminators removal



1. Drift eliminator position
2. Drift eliminator



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FAN SECTION INSPECTION



- Direct coupling



- Gear box transmission



- Belt / pulley transmission



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BELT TENSION CHECK

By use of tensiometer

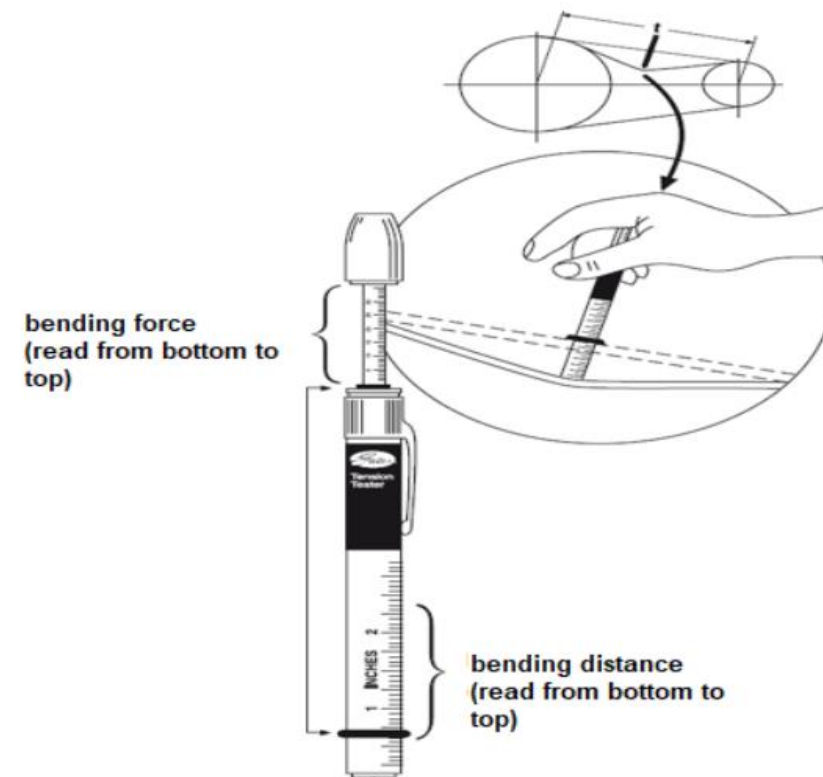
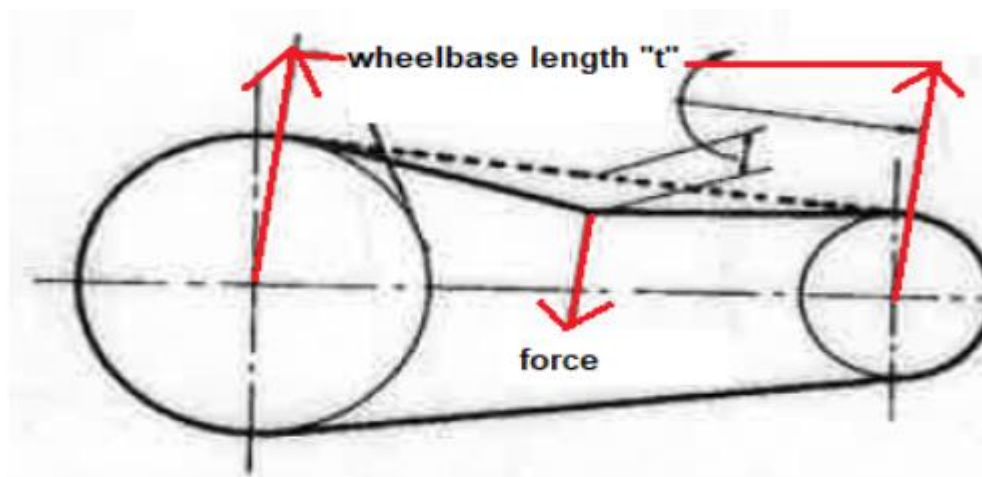
Measure the length of the wheelbase t.

At the center of the wheelbase (t) apply a force (perpendicular to the wheelbase) just enough to flex the belt 1.6cm every 1,000mm of wheelbase, just to understand:

- 1.6cm every 1,000mm
- 3.2cm every 2,000mm ... etc ...

Compare the force applied with the values in the table. If it is between the "Min" and "Max" values, the tension is correct. Otherwise we must act to have a correct tension.

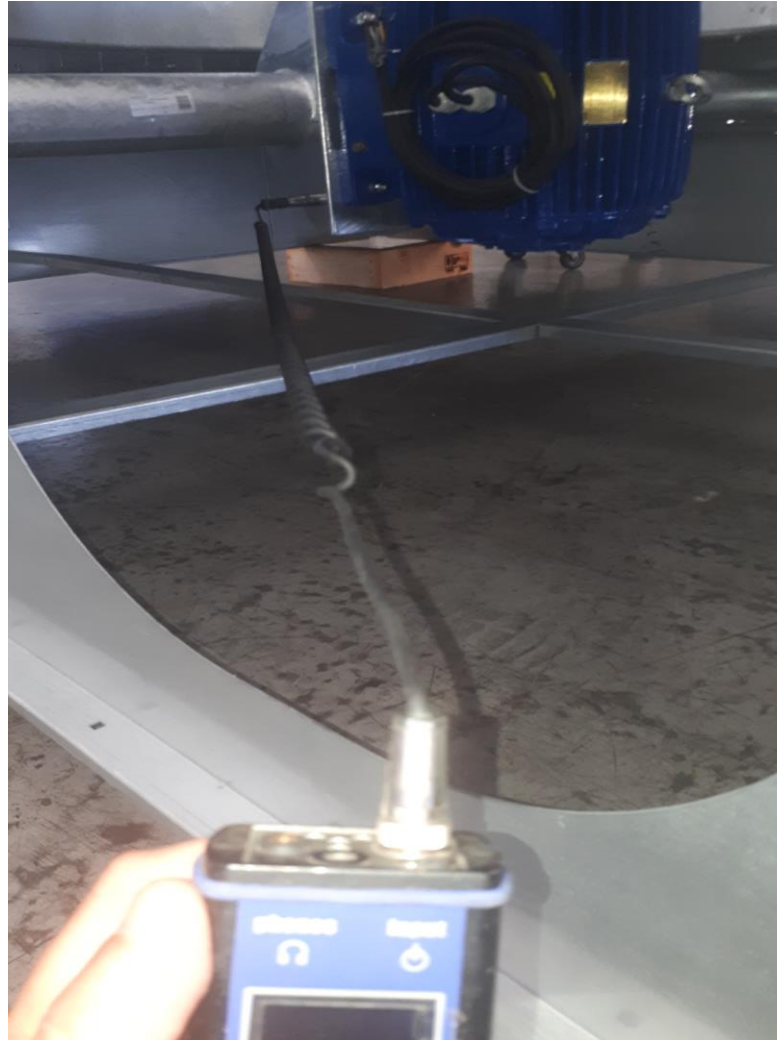
belt type	force	
	Min.	Max.
	Kg.	Kg.
A	0,68	1,02
B	1,58	2,38



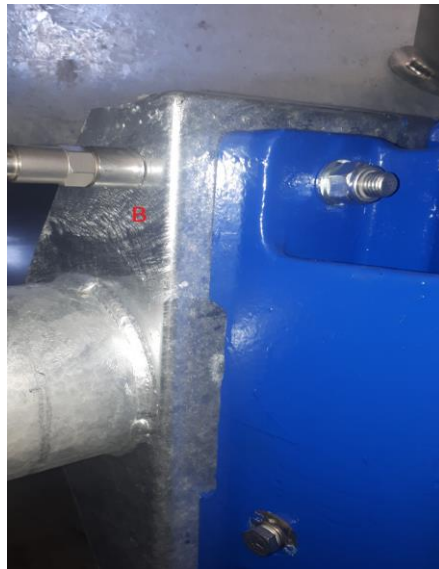
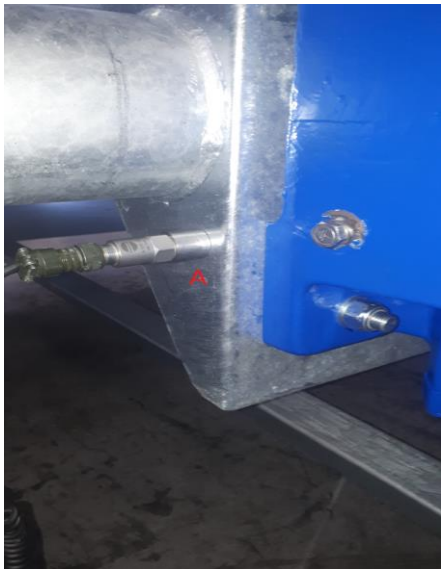


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VIBRATIONS CHECK



- Vibrometer
- Tollerance = **4,5 mm/s**





Thanks for your attention!

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