

# REVOLUTIONARY PRODUCTS FOR SUGAR INDUSTRY

*(High Efficiency Cooling & Vacuum System for Water / Energy Conservation)*



**imitating nature**



**Mist Ressonance Engg. Pvt. Ltd.**, is in the field of Vacuum Generation and Mist Cooling System for the last 25 years and has successfully commissioned over 300 units in India and overseas.

We offer various designs of our system to accommodate specific requirements of the industries.



## ADVANCE MIST COOLING SYSTEM

*High efficiency Cooling in Pond of small size*

MIST COOLING SYSTEM is used as a superior alternative for various types of spray systems and conventional cooling towers. Due to unique design of our Advance MCS, you can expand your sugar factory without any extension of your spray pond.

While expanding the plant capacity it becomes necessary to extend the Spray Pond, causing tremendous civil construction cost as well as consuming additional space. Considering this aspect, MREPL has introduced a new concept of Revolutionary 8-way Header Design with Enhanced Efficiency Mist Creator Nozzles. It is now possible to install entirely new MCS for Final expanded capacity of Sugar Plant by replacing old Spray System in the existing Spray Pond only, saving considerable cost and space. This is achieved without compromising the original efficiency of our Mist Cooling System.

Advance MCS ensures a constant cold water temp. of 32°C with a temperature drop of 10°C to 12°C throughout year with a very low working pressure of 0.8 to 1 kg/cm<sup>2</sup>. **Advance MCS has been successfully commissioned at various plants with Gravity Condensing System also.**

You may also adopt our "Louver Type Mist Cooling System (LTMCS) Design" which requires very small area, which many Sugar Plants have started adopting



*Advance Mist Cooling System.*



*Louver Type Mist Cooling System.*

### Advance Mist Cooling System - Cost Benefit Analysis

	Sugar Plant Capacity	Spray System					Advance Mist Cooling System	
		Pond Size in mtrs	Expanded Area For Spray Pond	Cost Incurred for regular expansion of Pond			Pond Size in Mtrs	MCS Cost of Equipment for Final capacity
				Civil	Spray System	Total		
CASE - A	Original - 2500 TCD	40x80	--	--	--	--	--	--
	Expanded - 5000 TCD	60x80	1600 m <sup>2</sup>	65 Lakhs	15 Lakhs	80 Lakhs	40x80	60 Lakhs
CASE - B	Original - 5000 TCD	60x80	--	--	--	--	--	--
	Expanded - 8500 TCD	80x100	3200 m <sup>2</sup>	125 Lakhs	20 Lakhs	145 Lakhs	60x80	100 Lakhs

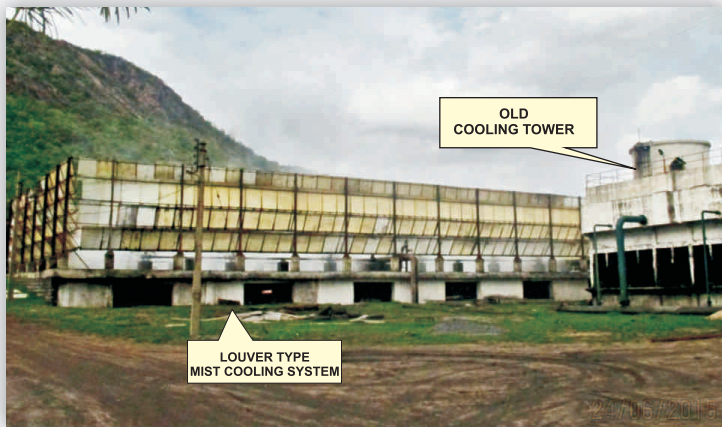
**Note - The above table shows how Advance Mist Cooling System gets installed in the original pond size for final expanded capacity of plant saving huge initial investment and precious land.**

## MIST COOLING TOWER (MCT)

*for condensate water cooling in Stainless Steel 304 MOC*

Mist Cooling Tower built out of complete stainless steel material of construction is effectively used to cool hot water from 90°C to around 32°C in one stroke, thus saving huge amount of pumping / fan power. Plot size required is equivalent to Cooling Tower. Due to special Material of Construction which is suitable for Hot Water Temperature upto 95°C, it ensures a minimum life of 10-15 years.





Louver Type Mist Cooling System working at Rukmini Power & Steel Ltd., at Raigarh, Chhattisgarh

## LOUVER TYPE MIST COOLING SYSTEM

### for Co-Generation Power Plant

Louver Type Mist Cooling System (NO FANS USED) is used for water cooling in Power Plants as a superior alternative to conventional cooling towers.

MCS ensures an approach of 2 to 3°C to WBT with a  $\Delta T$  of 10 to 12°C. The head required for MCS at GL is equivalent to the height of Cooling Tower. Hence power required at Circulation Water Pumps remains same for Mist Cooling System & Cooling Tower. However MCS does not require any Fans, thus saving huge amount of Power.

This is ultimate solution for Power Plants in order to maintain designed vacuum of 0.1 ATA throughout the operation.

Due to **NO MOVING PARTS**, Choke-less Nozzle design & Fill-less / Fin-less design, MCS offers maintenance free operation throughout its lifetime.



## MIST TYPE SINGLE ENTRY CONDENSER

### for Energy Conservation

Our uniquely designed single entry condensers work on the principal of mist formation, and ensures required vacuum of 650 mm hg with minimum water to vapour ratio of 35 to 40 kg/kg. All nozzles inside the condenser are made out of stainless steel 304 M.O.C. with chokeless design thus making these condensers far more superior than other available condensers in the market. Condensers can be offered in manual or Fully Auto mode.

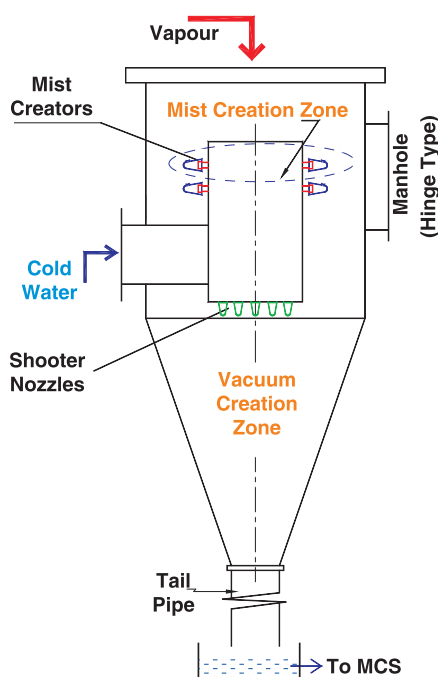
#### Direct Benefits of Mist Type Condenser

1. Approach of **6 to 8°C** to vapour temperature
2. Steady Vacuum upto 660 mm Hg
3. Water to Vapour ratio : 35 to 40 Kg/Kg
4. Very low water consumption & hence huge saving in power
5. Pay Back Period of less than 1 year

#### Indirect Benefits of MCS with Mist Type Condenser

1. Higher Production Capacities
2. Huge saving in steam consumption for same capacities of boiling house
3. Better Quality and Quantity of product
4. Very low maintenance cost

### BLOCK DIAGRAM



### Special Features

1. Mist Formation inside the Condenser
2. Quick Vacuum Development in less than 2 minutes
3. 30 to 40% Saving in Power over conventional Systems
4. Minimum life of 15 years due to high quality material used



#### SOME OF OUR PROMINENT CLIENTS

- ◆ Vitthalrao Shinde S. S. K. Ltd., Maharashtra
- ◆ Shri Chhatrapati Shahu S. S. K. Ltd., Maharashtra
- ◆ Sahyadri S. S. K. Ltd., Maharashtra
- ◆ Sonhira S. S. K. Ltd., Maharashtra
- ◆ Nira Bhima S. S. K. Ltd., Maharashtra
- ◆ Natural Sugars & Allied Industries Ltd., Maharashtra
- ◆ Udgiri Sugar & Power Ltd., Maharashtra
- ◆ Jaywant Sugars Ltd., Maharashtra
- ◆ Manjara S. S. K. Ltd., Maharashtra
- ◆ Purti Sakhar Karkhana Ltd., Maharashtra
- ◆ Pannageshwar Sugar Mills Ltd., Maharashtra
- ◆ Vaidyanath S. S. K. Ltd., Maharashtra
- ◆ Shri Vridheshwar S. S. K. Ltd., Maharashtra.
- ◆ Shri Khedut S.K.U.M.Ltd., Gujarat
- ◆ Shri Bileshwar K.U.K.S.M.Ltd., Gujarat
- ◆ HPCL Bio-Fuels, Bihar
- ◆ The Nizam Sugars Ltd., Andhra Pradesh
- ◆ ICL Sugars Ltd., Karnataka

#### OVERSEAS

- ◆ Sugar Corporation of Uganda Ltd. Lugazi, Uganda
- ◆ Gula Padang Terap Bhd., Malaysia

**OVER 300 INSTALLATIONS TILL DATE IN PROCESS  
INDUSTRIES AND POWER PLANTS**

#### OTHER PRODUCTS FROM MREPL

- ◆ MCS as water spray support for Air Cooled Condensers
- ◆ Mist Evaporation System for Zero Liquid Discharge



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