GEM Equipments Limited

GEM

Since 1984

Compressed Air & Cooling Systems

GCT Series

SCB Series

SCT Series

Evaporative Cooling Tower

WORLD CLASS COOLING TOWERS

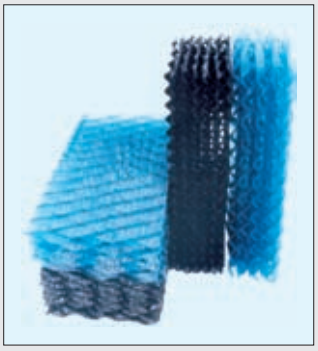
DNV

Capacity: 7.5 to 1000 TR • Inlet Temperature: 30 to 90°C • Outlet Temperature: WBT +2° to 4°C

PRODUCT FEATURES

Design : Evaporative (FRP) Cooling towers are of vertical induced draft counterflow design with uniform water distribution and optimal heat transfer. Towers can be installed independent of wind direction.

Casing : The tower casing is made of tough fibreglass reinforced plastic (FRP) and has sufficient structural strength to withstand high wind velocities and vibrations. UV - stabilised resin is used along with gel coat for longer life. It is resistant to local impacts and even if slight damage occurs, local repairs can easily be done. The portion of casing housing fill and eliminator has a round cross section. The water collection sump, also of FRP, is leak proof & avoids water spillage.



Fill : The fill is of rigid Poly Vinyl Chloride (PVC) and is of honeycomb design with very large contact surface area. The fill splits the air and water into several streams, increasing the time of contact and also heat transfer between water and air. The fill is in modules and is packed in the tower casing without any cutting for curves. The air pressure drop through the fill is negligible. The fills are available with flute height of 6mm, 12mm, and 19mm with sheet thickness of 1mm and 1.2mm.

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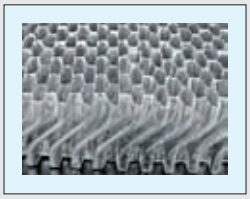

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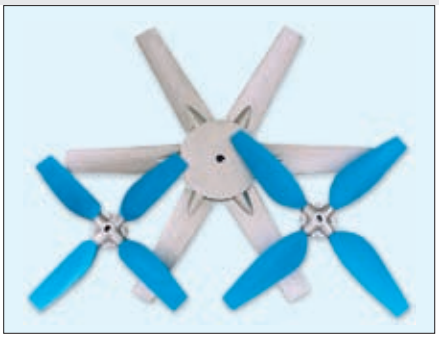
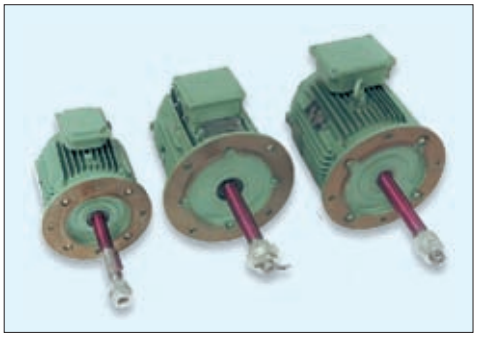


Axial Fan : Specially designed energy efficient fans are of induced-draft axial type with adjustable pitch. Material chosen are non corrosive of plastic, FRP or aluminium alloy. The high efficiency design ensures low running cost and the lowest possible noise level. Fan blade pitch is factory set and dynamically balanced.

Motors : The motors are totally enclosed (IP55), flange type, 415 V, 3 ph, 50 Hz, induction weather proof with SS304 extended shaft and are specially designed for cooling tower application.



Corrosion Free : The tower casing is of FRP, fill and eliminator are of PVC, and SS304 fasteners are used, thus eliminating corrosion, the biggest enemy of cooling tower. All steel components such as motor support, water distribution pipes, hardware etc., are hot dip or spray galvanized.

Lightweight: The towers are compact and light weight resulting in easy delivery to site and installation. Light weight also saves on structural and masonry. Roof installation can also be done without any special reinforcements.

Installation, Service & Maintenance : Towers of lower capacity are completely factory assembled before despatch. At site the tower has just to be bolted, on the RCC / brick masonry foundation, thus saving a lot of installation time. Towers of higher capacity can easily be assembled at site and then installed in a manner similar to small towers. Maintenance is considerably reduced because fan, sprinkler fill and eliminator can easily be approached from the top without disturbing the cooling tower casing.

TECHNICAL SPECIFICATION

Cooling Tower, Evaporative, Round Type

Base Model	Model Variance			Motor HP / rpm	Fan Dia, mm	In / Out Size (NB)	Overall Dimension (DxH), mm	Shipping Weight, kg	Operating Weight, kg
	L	H	P						
GCT 007	✓	✓	✓	0.5 / 1440	450 (PVC)	1½" / 1½"	930 x 1500	90	225
GCT 010	✓	✓	✓	0.5 / 1440	450 (PVC)	1½" / 1½"	930 x 1690	90	340
GCT 015	✓	✓	✓	0.75 / 1440	700 (FRP)	2" / 2"	1180 x 1650	90	440
GCT 020	✓	✓	✓	1 / 950	750 (Nylon)	2" / 2½"	1380 x 1800	110	470
GCT 030	✓	✓	✓	1 / 950	750 (Nylon)	2½" / 3"	1660 x 1860	180	550
GCT 040	✓	✓	✓	1 / 950	850 (Nylon)	3" / 3"	1780 x 1950	210	710
GCT 050	✓	✓	✓	2 / 950	900 (Nylon)	3" / 3"	1900 x 2120	275	775
GCT 060	✓	✓	✓	3 / 950	1160 (Al)	3" / 3"	1920 x 2720	340	810
GCT 080	✓	✓	✓	3 / 950	1160 (Al)	4" / 4"	2150 x 2670	385	900
GCT 100	✓	✓	✓	5 / 950	1400 (Al)	5" / 5"	2895 x 3050	625	1900
GCT 125	✓	✓	✓	5 / 950	1400 (Al)	5" / 5"	2950 x 3250	810	2310
GCT 150	✓	✓	✓	5 / 950	1600 (Al)	5" / 5"	3000 x 3950	1010	2700
GCT 200	✓	✓	✓	7.5 / 710	1800 (Al)	6" / 6"	3300 x 4230	1100	3060
GCT 300	✓	✓	✓	12.5 / 600	2400 (Al)	8" / 8"	4450 x 3900	2200	4070

Model Nomenclature :

GCT (Product Series Round type) — xxx (Capacity in TR) — x
- L - Low Temperature Fills, 55°C
- H - High Temperature Fills, 85°C
- P - PP Rings, 60°C

Cooling Tower, Evaporative, Square Type

Base Model	Model Variance			Motor HP / rpm	Fan Dia, mm	In / Out Size (NB)	Overall Dimension (LxWxH), mm	Shipping Weight, kg	Operating Weight, kg
	L	H	P						
SCB 010	✓	✓	✓	0.5 / 1440	450 (PVC)	2" / 2½"	815 x 815 x 1600	80	220
SCB 015	✓	✓	✓	0.5 / 1440	450 (PVC)	2" / 2½"	815 x 815 x 1950	80	220
SCB 030	✓	✓	✓	1 / 950	750 (Nylon)	2" / 2½"	1130 x 1130 x 2235	235	790
SCB 040	✓	✓	✓	2 / 950	1000 (Al)	3" / 3"	1440 x 1440 x 2590	255	805
SCB 060	✓	✓	✓	3 / 950	1000 (Al)	3" / 3"	1740 x 1740 x 2810	310	1070
SCT 100	✓	✓	✓	5 / 950	1400 (Al)	5" / 5"	2130 x 2130 x 3100	575	1675
SCT 150	✓	✓	✓	5 / 950	1400 (Al)	6" / 6"	2650 x 2150 x 3200	690	2075
SCT 200	✓	✓	✓	7.5 / 710	1800 (Al)	8" / 8"	2650 x 2650 x 3225	950	2200
SCT 250	✓	✓	✓	10 / 710	1800 (Al)	8" / 8"	3150 x 2650 x 3350	1075	2340
SCT 300	✓	✓	✓	12.5 / 600	2200 (Al)	8" / 8"	3150 x 3150 x 3500	1270	2605
SCT 400	✓	✓	✓	15 / 360	2400 (FRP)	10" / 10"	4000 x 4000 x 3965	2150	4300
SCT 500	✓	✓	✓	20 / 360	3000 (FRP)	10" / 10"	4500 x 4500 x 3965	2400	4700
SCT 600	✓	✓	✓	20 / 270	3660 (FRP)	10" / 10"	5200 x 5200 x 4465	2700	5200
SCT 800	✓	✓	✓	25 / 270	4260 (FRP)	12" / 12"	6000 x 6000 x 4465	3200	5600
SCT 1000	✓	✓	✓	25 / 200	4870 (FRP)	14" / 14"	6700 x 6700 x 5020	3800	5900

Model Nomenclature :

SCB (Product Series Square type with Basin) — xxx (Capacity in TR) — x
- L - Low Temperature Fills, 55°C
- H - High Temperature Fills, 85°C
- P - PP Rings, 60°C

Model Nomenclature :

SCT (Product Series Square type without basin) — xxx (Capacity in TR) — x
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- H - High Temperature Fills, 85°C
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Input Parameters required for selection

1. Hot water temperature
2. Cold water temperature
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4. Water flow

Note: **SCB model variance from 100 to 300 TR are also available.**

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Artimish Biotech - Hyderabad, AP
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Ashok Leyland, Hosur, TN
B. Seenaiah & Company Projects, Chittore, AP
Bajajsons Ltd, Nashik, MH
Bannari Amman Sugars, Sathyamangalam, TN
Bedmutha Wire Company Ltd, Sinnar, Nashik, MH
BOC India Ltd, Kolkata, WB
Capro Engineering India Pvt Ltd, Jamshedpur, JH
Cethar Vessals Ltd, Trichy, TN
Chettinad Cements, Karur, TN
Crompton Greaves Ltd, Nashik, MH
Delta Finochem, Nashik, MH
Elgi Equipments Ltd, Coimbatore, TN
Finolex Industries, Pune, MH
Hetro Drugs Ltd, Hyderabad, AP
Hetro Labs Ltd, Hyderabad, AP
Hi-Tech Minerals Industries, Salem, TN
Hyndai Ltd, Sriperumpudur, TN
JBM Auto Ltd, Nashik, MH
Jyoti Structures Ltd, Nashik, MH
Kannappan Iron & Steel, Karaikkal, TN
Kilburn Chemicals, Tuticorin, TN
L.S. Mills, Theni, TN
Lakshmi Machine Works, Coimbatore, TN
Micro Labs Ltd, Bangalore, KA
Nutrine Confectionery, Chittore, AP
ONGC, Jorhat, Assam
Peekay Steels Pvt Ltd, Cochin, Kerala
Pioneer Miyagi Chemicals, Cuddalore, TN
Premier Mills Ltd, Coimbatore, TN
Pricol Ltd, Coimbatore, TN
Rajshree Sugars & Chemicals Ltd, Villupuram, TN
Regency Garments, Thiruvallur, TN
Reliable Auto Tech Pvt Ltd, Nashik, MH
RMKV, Tirunelveli, TN
Saint - Gobain Glass India Ltd, Sriperumpudur, TN
Sakthi Sugars, Erode, TN
Seagram Distillaries Ltd, Nashik, MH
Seshasayee Paper Board, Erode, TN
Shanti Gears Ltd, Coimbatore, TN
Shree Cements Industries, Rajasthan
Sree Akkamamba Textiles, Tanuku, AP
Sri Shanmugavel Mills, Dindugal, TN
Sri Srinivasa Paper Mills, Tiruvallur, TN
Sri Venkatachalapathi Paper Board, Thiruvallur, TN
SSM Fine Yarns, Dindugal, TN
Suguna Poultry, Coimbatore, TN
Suguna Poultry, Nashik, MH
Tata Projects, Singur, WB
Texmo Precision, Coimbatore, TN
Triveny Engineering, Bangalore, KA
Venture Steels, Pune, MH
Vijeshwari Textiles, Coimbatore, TN
Webal SL Energy Systems Ltd, Kolkata, WB

Typical Application

Air Compressor
Air Conditioning Plants
Alumnium Die Casting Machinery
Diesel Generator
Furnace
Plastic Machinery
Process Industries

Sales & Customer Care

GEM Equipments Limited

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F/MKT/044

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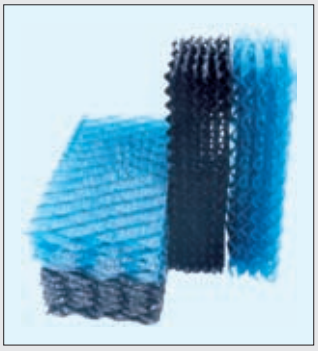

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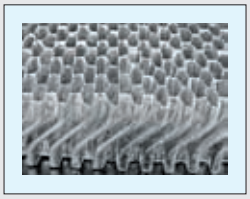

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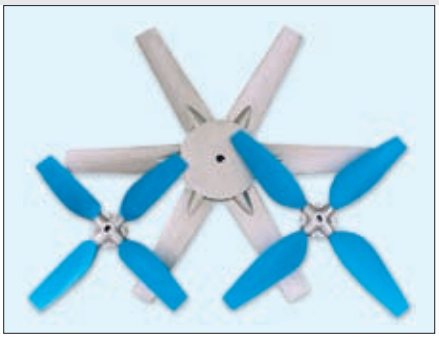

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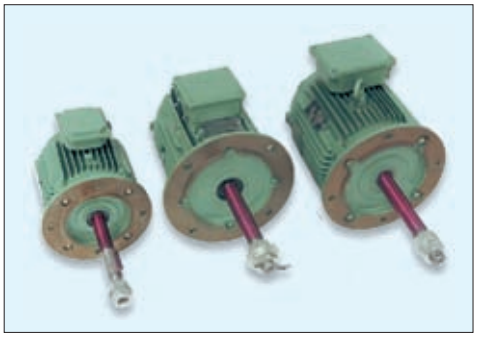

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Model Nomenclature :

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Cooling Tower, Evaporative, Square Type

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SCT 250	✓	✓	✓	10 / 710	1800 (Al)	8" / 8"	3150 x 2650 x 3350	1075	2340
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Input Parameters required for selection

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Hi-Tech Minerals Industries, Salem, TN
Hyndai Ltd, Sriperumpudur, TN
JBM Auto Ltd, Nashik, MH
Jyoti Structures Ltd, Nashik, MH
Kannappan Iron & Steel, Karaikkal, TN
Kilburn Chemicals, Tuticorin, TN
L.S. Mills, Theni, TN
Lakshmi Machine Works, Coimbatore, TN
Micro Labs Ltd, Bangalore, KA
Nutrine Confectionery, Chittore, AP
ONGC, Jorhat, Assam
Peekay Steels Pvt Ltd, Cochin, Kerala
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Premier Mills Ltd, Coimbatore, TN
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Rajshree Sugars & Chemicals Ltd, Villupuram, TN
Regency Garments, Thiruvallur, TN
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Saint - Gobain Glass India Ltd, Sriperumpudur, TN
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SSM Fine Yarns, Dindugal, TN
Suguna Poultry, Coimbatore, TN
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Tata Projects, Singur, WB
Texmo Precision, Coimbatore, TN
Triveny Engineering, Bangalore, KA
Venture Steels, Pune, MH
Vijeshwari Textiles, Coimbatore, TN
Webal SL Energy Systems Ltd, Kolkata, WB

Typical Application

Air Compressor
Air Conditioning Plants
Alumnium Die Casting Machinery
Diesel Generator
Furnace
Plastic Machinery
Process Industries

Sales & Customer Care

GEM Equipments Limited

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F/MKT/044

GEM Equipments Limited

GEM

Since 1984

Compressed Air & Cooling Systems

GCT Series

SCB Series

SCT Series

Evaporative Cooling Tower

WORLD CLASS COOLING TOWERS

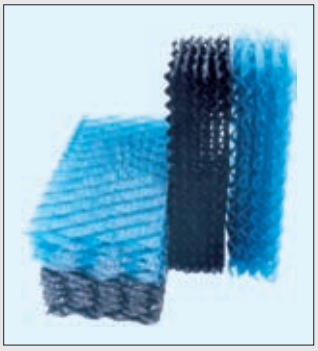
DNV

Capacity: 7.5 to 1000 TR • Inlet Temperature: 30 to 90°C • Outlet Temperature: WBT +2° to 4°C

PRODUCT FEATURES

Design : Evaporative (FRP) Cooling towers are of vertical induced draft counterflow design with uniform water distribution and optimal heat transfer. Towers can be installed independent of wind direction.

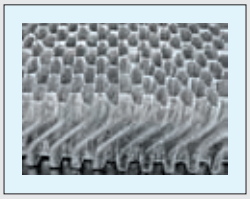
Casing : The tower casing is made of tough fibreglass reinforced plastic (FRP) and has sufficient structural strength to withstand high wind velocities and vibrations. UV - stabilised resin is used along with gel coat for longer life. It is resistant to local impacts and even if slight damage occurs, local repairs can easily be done. The portion of casing housing fill and eliminator has a round cross section. The water collection sump, also of FRP, is leak proof & avoids water spillage.



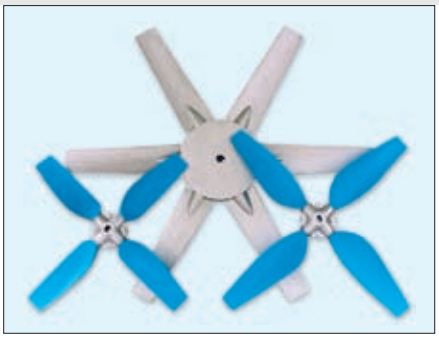
Fill : The fill is of rigid Poly Vinyl Chloride (PVC) and is of honeycomb design with very large contact surface area. The fill splits the air and water into several streams, increasing the time of contact and also heat transfer between water and air. The fill is in modules and is packed in the tower casing without any cutting for curves. The air pressure drop through the fill is negligible. The fills are available with flute height of 6mm, 12mm, and 19mm with sheet thickness of 1mm and 1.2mm.

Sprinkler: Automatic rotary sprinkler system made of Nylon 66 material, with rotary head and sprinkler pipe distributes the hot water over the entire space of the filler. Sprinkler pipes are non-clogging, require low pressure to operate and assures uniform water flow with minimal operating pump head. The FRP eliminators attached to sprinkler pipe are specifically designed for low pressure drop and minimises the drift loss of water.

SCSP Nozzles: The performance of cooling tower greatly depends upon the water distribution over the fills. SCSP nozzles distribute water evenly through a wide spray angle without any dry pockets. They are lightweight and reduce the frequency of clogging. The Solid Cone Square Pattern (SCSP) nozzles produce a solid cone spray of water that is distributed in a square pattern onto the fills.

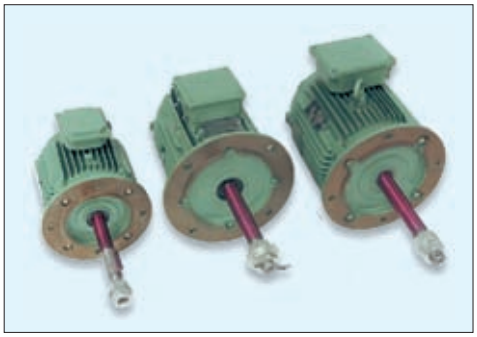


Drift Eliminator: Reduces carry over losses of water. The eliminator is of rigid PVC (Applicable for square type cooling tower). The individual drift eliminators of S-shaped corrugated sheets are bonded with subsequent layers to create the structure. The entire area is thus divided into several fine S shaped mini zones each removing water droplets on the entire surface of the cell.



Axial Fan : Specially designed energy efficient fans are of induced-draft axial type with adjustable pitch. Material chosen are non corrosive of plastic, FRP or aluminium alloy. The high efficiency design ensures low running cost and the lowest possible noise level. Fan blade pitch is factory set and dynamically balanced.

Motors : The motors are totally enclosed (IP55), flange type, 415 V, 3 ph, 50 Hz, induction weather proof with SS304 extended shaft and are specially designed for cooling tower application.



Corrosion Free : The tower casing is of FRP, fill and eliminator are of PVC, and SS304 fasteners are used, thus eliminating corrosion, the biggest enemy of cooling tower. All steel components such as motor support, water distribution pipes, hardware etc., are hot dip or spray galvanized.

Lightweight: The towers are compact and light weight resulting in easy delivery to site and installation. Light weight also saves on structural and masonry. Roof installation can also be done without any special reinforcements.

Installation, Service & Maintenance : Towers of lower capacity are completely factory assembled before despatch. At site the tower has just to be bolted, on the RCC / brick masonry foundation, thus saving a lot of installation time. Towers of higher capacity can easily be assembled at site and then installed in a manner similar to small towers. Maintenance is considerably reduced because fan, sprinkler fill and eliminator can easily be approached from the top without disturbing the cooling tower casing.

TECHNICAL SPECIFICATION

Cooling Tower, Evaporative, Round Type

Base Model	Model Variance			Motor HP / rpm	Fan Dia, mm	In / Out Size (NB)	Overall Dimension (DxH), mm	Shipping Weight, kg	Operating Weight, kg
	L	H	P						
GCT 007	✓	✓	✓	0.5 / 1440	450 (PVC)	1½" / 1½"	930 x 1500	90	225
GCT 010	✓	✓	✓	0.5 / 1440	450 (PVC)	1½" / 1½"	930 x 1690	90	340
GCT 015	✓	✓	✓	0.75 / 1440	700 (FRP)	2" / 2"	1180 x 1650	90	440
GCT 020	✓	✓	✓	1 / 950	750 (Nylon)	2" / 2½"	1380 x 1800	110	470
GCT 030	✓	✓	✓	1 / 950	750 (Nylon)	2½" / 3"	1660 x 1860	180	550
GCT 040	✓	✓	✓	1 / 950	850 (Nylon)	3" / 3"	1780 x 1950	210	710
GCT 050	✓	✓	✓	2 / 950	900 (Nylon)	3" / 3"	1900 x 2120	275	775
GCT 060	✓	✓	✓	3 / 950	1160 (Al)	3" / 3"	1920 x 2720	340	810
GCT 080	✓	✓	✓	3 / 950	1160 (Al)	4" / 4"	2150 x 2670	385	900
GCT 100	✓	✓	✓	5 / 950	1400 (Al)	5" / 5"	2895 x 3050	625	1900
GCT 125	✓	✓	✓	5 / 950	1400 (Al)	5" / 5"	2950 x 3250	810	2310
GCT 150	✓	✓	✓	5 / 950	1600 (Al)	5" / 5"	3000 x 3950	1010	2700
GCT 200	✓	✓	✓	7.5 / 710	1800 (Al)	6" / 6"	3300 x 4230	1100	3060
GCT 300	✓	✓	✓	12.5 / 600	2400 (Al)	8" / 8"	4450 x 3900	2200	4070

Model Nomenclature :

GCT (Product Series Round type) — xxx (Capacity in TR) — x
- L - Low Temperature Fills, 55°C
- H - High Temperature Fills, 85°C
- P - PP Rings, 60°C

Cooling Tower, Evaporative, Square Type

Base Model	Model Variance			Motor HP / rpm	Fan Dia, mm	In / Out Size (NB)	Overall Dimension (LxWxH), mm	Shipping Weight, kg	Operating Weight, kg
	L	H	P						
SCB 010	✓	✓	✓	0.5 / 1440	450 (PVC)	2" / 2½"	815 x 815 x 1600	80	220
SCB 015	✓	✓	✓	0.5 / 1440	450 (PVC)	2" / 2½"	815 x 815 x 1950	80	220
SCB 030	✓	✓	✓	1 / 950	750 (Nylon)	2" / 2½"	1130 x 1130 x 2235	235	790
SCB 040	✓	✓	✓	2 / 950	1000 (Al)	3" / 3"	1440 x 1440 x 2590	255	805
SCB 060	✓	✓	✓	3 / 950	1000 (Al)	3" / 3"	1740 x 1740 x 2810	310	1070
SCT 100	✓	✓	✓	5 / 950	1400 (Al)	5" / 5"	2130 x 2130 x 3100	575	1675
SCT 150	✓	✓	✓	5 / 950	1400 (Al)	6" / 6"	2650 x 2150 x 3200	690	2075
SCT 200	✓	✓	✓	7.5 / 710	1800 (Al)	8" / 8"	2650 x 2650 x 3225	950	2200
SCT 250	✓	✓	✓	10 / 710	1800 (Al)	8" / 8"	3150 x 2650 x 3350	1075	2340
SCT 300	✓	✓	✓	12.5 / 600	2200 (Al)	8" / 8"	3150 x 3150 x 3500	1270	2605
SCT 400	✓	✓	✓	15 / 360	2400 (FRP)	10" / 10"	4000 x 4000 x 3965	2150	4300
SCT 500	✓	✓	✓	20 / 360	3000 (FRP)	10" / 10"	4500 x 4500 x 3965	2400	4700
SCT 600	✓	✓	✓	20 / 270	3660 (FRP)	10" / 10"	5200 x 5200 x 4465	2700	5200
SCT 800	✓	✓	✓	25 / 270	4260 (FRP)	12" / 12"	6000 x 6000 x 4465	3200	5600
SCT 1000	✓	✓	✓	25 / 200	4870 (FRP)	14" / 14"	6700 x 6700 x 5020	3800	5900

Model Nomenclature :

SCB (Product Series Square type with Basin) — xxx (Capacity in TR) — x
- L - Low Temperature Fills, 55°C
- H - High Temperature Fills, 85°C
- P - PP Rings, 60°C

Model Nomenclature :

SCT (Product Series Square type without basin) — xxx (Capacity in TR) — x
- L - Low Temperature Fills, 55°C
- H - High Temperature Fills, 85°C
- P - PP Rings, 60°C

Input Parameters required for selection

1. Hot water temperature
2. Cold water temperature
3. Wet bulb temperature
4. Water flow

Note: **SCB model variance from 100 to 300 TR are also available.**

Illustrations / Specifications are subject to change due to constant upgradation of products.
For Shipping dimension of Overseas supply, please contact factory.

Some Of Our Valuable Customers

Advanced Enzyme Technologies Ltd, Sinnar, Nashik, MH
Arjun Naturals, Alway, Kerala
Artimish Biotech - Hyderabad, AP
Ashok Iron Works, Belgaum, KA
Ashok Leyland, Hosur, TN
B. Seenaiah & Company Projects, Chittore, AP
Bajajsons Ltd, Nashik, MH
Bannari Amman Sugars, Sathyamangalam, TN
Bedmutha Wire Company Ltd, Sinnar, Nashik, MH
BOC India Ltd, Kolkata, WB
Capro Engineering India Pvt Ltd, Jamshedpur, JH
Cethar Vessals Ltd, Trichy, TN
Chettinad Cements, Karur, TN
Crompton Greaves Ltd, Nashik, MH
Delta Finochem, Nashik, MH
Elgi Equipments Ltd, Coimbatore, TN
Finolex Industries, Pune, MH
Hetro Drugs Ltd, Hyderabad, AP
Hetro Labs Ltd, Hyderabad, AP
Hi-Tech Minerals Industries, Salem, TN
Hyndai Ltd, Sriperumpudur, TN
JBM Auto Ltd, Nashik, MH
Jyoti Structures Ltd, Nashik, MH
Kannappan Iron & Steel, Karaikkal, TN
Kilburn Chemicals, Tuticorin, TN
L.S. Mills, Theni, TN
Lakshmi Machine Works, Coimbatore, TN
Micro Labs Ltd, Bangalore, KA
Nutrine Confectionery, Chittore, AP
ONGC, Jorhat, Assam
Peekay Steels Pvt Ltd, Cochin, Kerala
Pioneer Miyagi Chemicals, Cuddalore, TN
Premier Mills Ltd, Coimbatore, TN
Pricol Ltd, Coimbatore, TN
Rajshree Sugars & Chemicals Ltd, Villupuram, TN
Regency Garments, Thiruvallur, TN
Reliable Auto Tech Pvt Ltd, Nashik, MH
RMKV, Tirunelveli, TN
Saint - Gobain Glass India Ltd, Sriperumpudur, TN
Sakthi Sugars, Erode, TN
Seagram Distillaries Ltd, Nashik, MH
Seshasayee Paper Board, Erode, TN
Shanti Gears Ltd, Coimbatore, TN
Shree Cements Industries, Rajasthan
Sree Akkamamba Textiles, Tanuku, AP
Sri Shanmugavel Mills, Dindugal, TN
Sri Srinivasa Paper Mills, Tiruvallur, TN
Sri Venkatachalapathi Paper Board, Thiruvallur, TN
SSM Fine Yarns, Dindugal, TN
Suguna Poultry, Coimbatore, TN
Suguna Poultry, Nashik, MH
Tata Projects, Singur, WB
Texmo Precision, Coimbatore, TN
Triveny Engineering, Bangalore, KA
Venture Steels, Pune, MH
Vijeshwari Textiles, Coimbatore, TN
Webal SL Energy Systems Ltd, Kolkata, WB

Typical Application

Air Compressor
Air Conditioning Plants
Alumnium Die Casting Machinery
Diesel Generator
Furnace
Plastic Machinery
Process Industries

Sales & Customer Care

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F/MKT/044

GEM Equipments Limited

GEM

Since 1984

Compressed Air & Cooling Systems

Dry Cooling Tower

DCT Series

WORLD CLASS COOLING TOWERS

DNV

CONSERVE WATER

Range: 120 to 2000 kVA Diesel Generator
1 to 10 MW Diesel Power Plant

INTRODUCTION

DRY COOLING TOWER is an equipment which is used to cool and maintain the temperature of process hot water at a particular level. This operates on the principle of heat transfer by a hear exchanger with extended fins. The fan is driven by an Electric motor.

TECHNICAL SPECIFICATION

Copper Tubes The best quality imported (5/8") OD copper tubes in Level Wound Coils are used. This ensure coils with the minimum number of joints by forming a hair pin bends as well as to form a uniform wall thickness that eliminates embarrassing and expensive leaks after installation. Tubes are staggered in the path of airflow for better heat transfer efficiency.

Return Bends They are die-formed from thick walled tubing that is heavier than the standard tubing used in the rest of the coils. This provides the toughness and durability required in the most vital parts of the coils

Headers Inlet and outlet headers are constructed of heavy wall steel pipes with shoulders formed at each brazed connection to the 5/8" tube in the coil. This shoulders intruded with special tooling provides the strength to the brazed joint that eliminates another source of leak during transit and installation.

Mechanical Tube Expansion Tubes are Mechanically expanded for an optium bond between tube and fin. This positive and controlled expansion procedure provides a clean, smooth inner tube surface for allow water pressure drop and guarantees uniform heat transfer between tube.

Heat Transfer Coils

Improved Circuiting The GEM Cooling Tower Design of water circuiting provides flexibility in selection and unequaled performance optimization. All inlet and outlet connections are provided on the same end thus reducing expensive piping and installation costs..

Rigid Construction A die formed galvanized steel frame provides stacking and shipping support and protection against tube damage during expansion and installation.

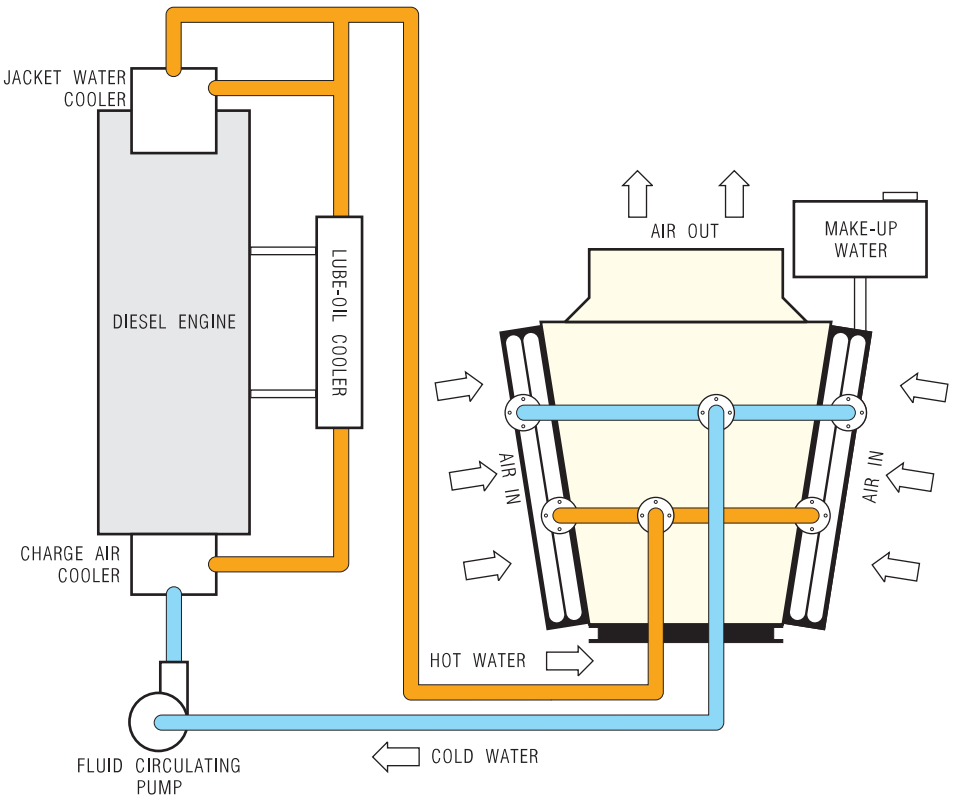
Venting, Draining and Expansion Tank Each water duty coil is provided with a convenient vent connection at the highest point and a drain connection at the lowest point apart from a small expansion tank.

Pressure Testing Each coil is pressure tested after manufacture, by air under water at 300 psi for water application.

Computerized Selection Speeds up and simplify the selection of right coil for your specific requirement.

Quick Selection Chart for Diesel Gensets

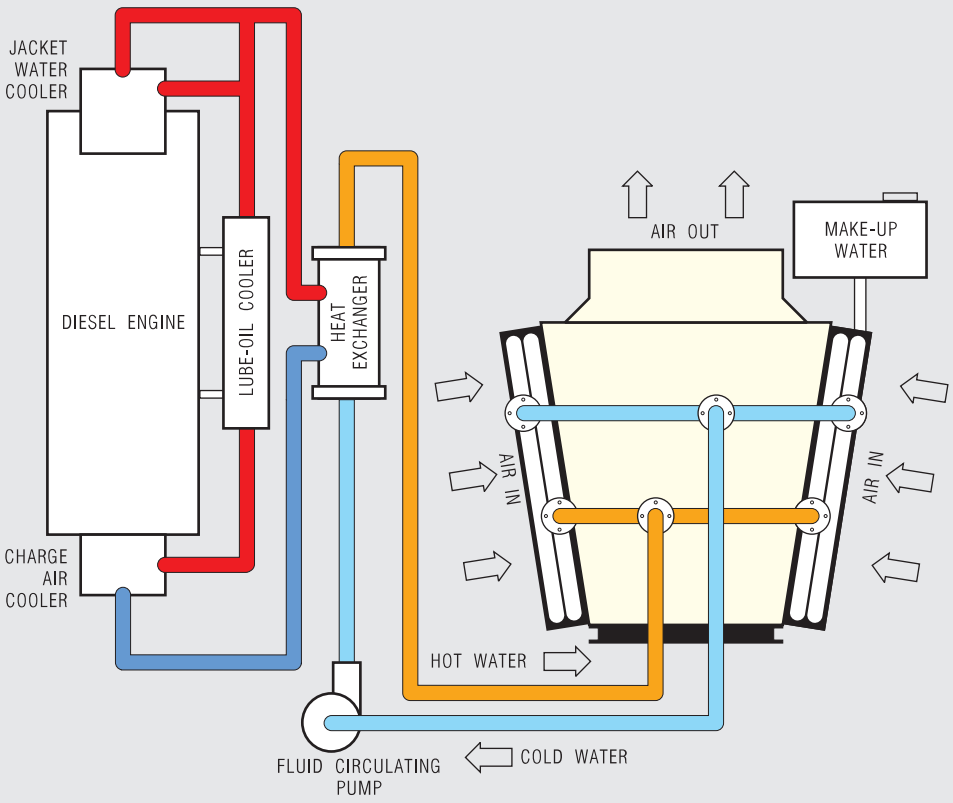
PRIMARY CIRCUIT



Engine Capacity kVA	Heat Load kcal / h	Model Suggested	Motor	
			Power HP	Quantity
150	81,000	DCT-020	2	2
300	1,50,000	DCT-030	2	2
380	2,70,000	DCT-040	3	2
500	3,30,000	DCT-050	5	2
600	3,30,000	DCT-060	5	2
750	4,20,000	DCT-080	5	2
1000	5,40,000	DCT-100	7.5	2
1250	6,50,000	DCT-120	7.5	2
1500	7,50,000	DCT-140	7.5	2

Water Temperature Inlet = 80°C Outlet = 70°C

SECONDARY CIRCUIT

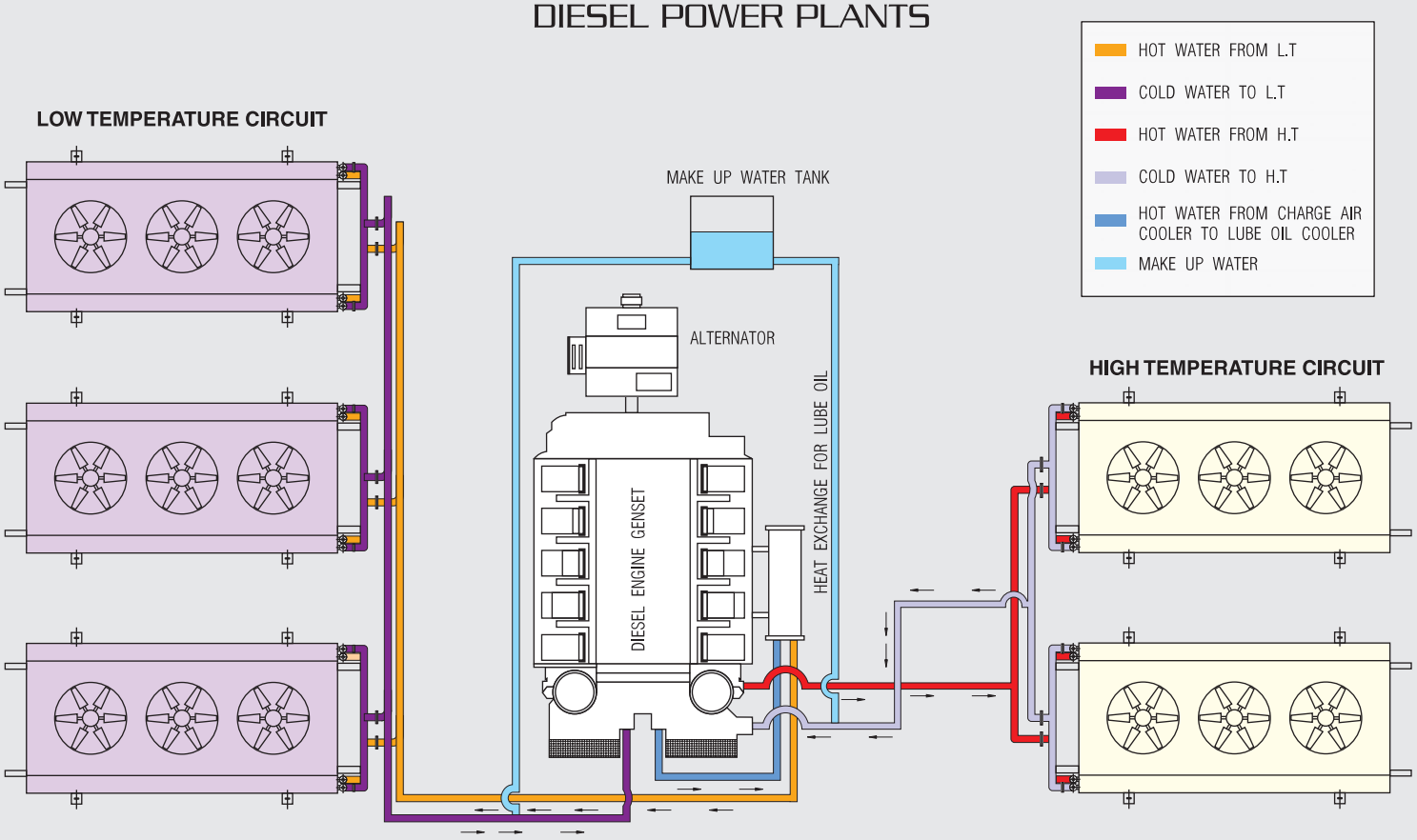


Engine Capacity kVA	Heat Load kcal / h	Model Suggested	Motor	
			Power HP	Quantity
150	81,000	DCT-020	2	2
300	1,50,000	DCT-040	3	2
380	2,70,000	DCT-050	5	2
500	3,30,000	DCT-060	5	2
600	3,30,000	DCT-080	5	2
750	4,20,000	DCT-100	7.5	2
1000	5,40,000	DCT-120	7.5	2
1250	6,50,000	DCT-140	7.5	2
1500	7,50,000	DCT-160	7.5	3

Water Temperature Inlet = 66°C Outlet = 56°C

For other models and applications, contact factory

QUICK SELECTION CHART FOR DIESEL POWER PLANTS



Engine Capacity MW	LT CIRCUIT				HT CIRCUIT			
	Heat Load kcal / h	Model Suggested	Motor		Heat Load kcal / h	Model Suggested	Motor	
			Power HP	Quantity			Power HP	Quantity
1.0	4,50,000	DCT-200	10	3	2,50,000	DCT-060	5	2
2.0	9,00,000	DCT-160 x 2	7.5	6	5,10,000	DCT-080	5	2
3.0	13,50,000	DCT-240 x 2	7.5	8	7,50,000	DCT-100	7.5	2
4.0	17,50,000	DCT-200 x 3	10	9	10,00,000	DCT-160	7.5	3
5.0	24,00,000	DCT-240 x 3	7.5	12	13,50,000	DCT-180	10	3
	Air Temprature = 40°C Water Temperature Inlet = 66°C Outlet = 56°C				Air Temprature = 40°C Water Temperature Inlet = 80°C Outlet = 70°C			

For other models and applications, contact factory

Water loss In Evaporative Cooling Towers

Capacity	Approx. Water Circulated lpm	Loss of Water/Day * Litres	Cost of Water Conserved / Day # INR
1.0 MW	1100	31,680	**1,584.00**
2.0 MW	2200	62,400	**3,120.00**
3.0 MW	3250	93,600	**4,680.00**
4.0 MW	4400	1,26,720	**6,336.00**
5.0 MW	5500	1,58,400	**7,920.00**

* **Maximum of 2% due to:**
- Evaporation
- Drift
- Spillage
- Blow Down

Assumning the cost of water 5 paise per litre

Our Esteemed Customers

M/s. Cummins India Ltd., Pune, MH
M/s. Powerica Ltd., Blr, Karnataka
M/s. Clarke Energy India Pvt. Ltd., Pune, MH
M/s. Triveni Engineering Industries Ltd., Blr, Karnataka
M/s. Guascor Gas Engines Pvt. Ltd., Mumbai, MH
M/s. BR Agro Industries Ltd., Kalam, HP
M/s Hindustan Syringes Ltd., Delhi
M/s. Showa Munjal Ltd., Manessar
M/s. SAP India Ltd., Blr, Karnataka
M/s. Karpagambal Mills Ltd, Rajapalayam, TN
M/s. Premier Fine Yarns Ltd, Udumalpet, TN
M/s. Ramalinga Mills Ltd, Arupukottai, TN
M/s. P.K.P.N Spinning Mills (P) Ltd, Erode, TN
M/s. Tnupathi Spinning Mills, Avinashi, TN
M/s. Quipo Infrastructure Equipment Ltd., Gujurat
M/s. Mani Spinning Mills (P) Ltd, Vedasandur, TN
M/s. Jayajothi Textiles Mills Ltd, Rajapalayam, TN
M/s. Coimbatore Poly Tex Ltd., Coimbatore, TN
M/s. Indo Shell Cast Pvt. Ltd., Coimbatore, TN
M/s. Craftsman Automation, Coimbatore, TN
M/s. Govindaraja Spinning Mills, Aruppukkottai, TN
M/s. Thiagarajar Mills Ltd., Madurai,TN
M/s. Virudhunagar Textiles Ltd, Virudhunagar, TN
M/s. Saravana Spinning Mills, Dindigul, TN
M/s. Nithin Textiles, Dindigul, TN
M/s. V.R. Textiles, Puliampatti, TN
M/s. Ram E&I System, TN
M/s. Shivatex Yarn Ltd., TN
M/s. R.H. Agro Ltd., Sonepat,
M/s. Viking Textiles, Tiruppur, TN
M/s. Lakshmi Machine Works, Coimbatore, TN
M/s. Aswinram Spinning Mills, Coimbatore, TN
M/s. Jailakshmi Spinning Mills, Arupukottai, TN
M/s. Spectrum Dyes And Chemicals, Surat, Gujarat
M/s. Ascent Circuits Ltd. Hosur, TN
M/s. Wheels India Ltd, Chennai, TN
M/s. Globalpolybags Industries, Virudhunagar, TN
M/s. Sandfit Foundries, Coimbatore, TN
M/s. Amarjothi Spinning Mills, Nambiyur, TN
M/s Nachiar Health Care, Rajapalayam, TN
M/s, Nav Bharat Exports, Rampur, UP
M/s. Ferro Links, Coimbatore, TN
M/s. Hindustan Lever Limited, Pondicherry
M/s. Premier Polyweaves P Limited, Perundurai, TN
M/s. Shanmuagvel Mills Group, Vedasandur, TN
M/s. Magnus Power Pvt. Ltd, Kutch, Gujarat
M/s. Super Auto Forge, Chennai, TN
M/s. Integra Automation (P) Ltd, Coimbatore, TN
M/s. S.J.L.T. Textiles, Namakal, TN
M/s. Sambandam Spinning Mills, Salem, TN
M/s. Mehala Carona Textiles, Gobi, TN
M/s. Saint Gobin Glass Ltd., Bangalore, Karnataka
M/s. CRI Pumps Pvt. Ltd., Coimbatore, TN
M/s. V.H. Engineers, Mumbai, MH
M/s. TIL Limited, Delhi

Construction And Operation

Dry Cooling Tower is mounted on a heavy duty channel base frame.

Non corrosive fibre glass / GI panels are used for enclosure.

Aero dynamically balanced high efficiency axial flow fans with low noise are used.

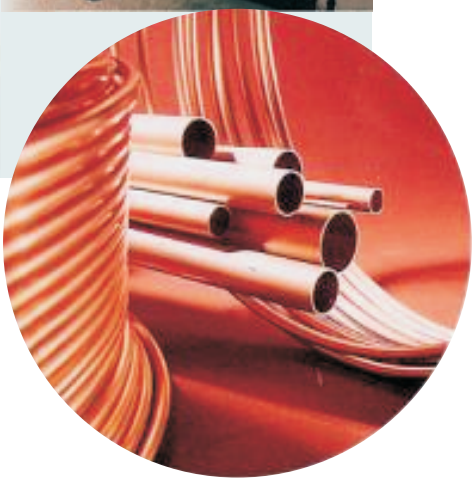
The motors are IP 55 class with extended SS shaft. The low speed of the motor minimises noise and increases efficiency. Motors are specially designed to withstand moisture, rain and dust.

The hot water from the diesel engine is sent to the inlet of the Dry Cooling Tower. This hot water is cooled and cold water from the outlet of the cooling tower is connected to a pump which pumps the water to the diesel engine (or any other load) to pick up the heat from the generator.

Comparision Chart

Dry Cooling Tower	Evaporative Cooling Tower and Heat Exchanger
1. No water consumption.	1. Huge loss of water due to evaporation, drift, spray loss and blow down.
2. No preparation is required for atmospheric air is available in plenty.	2. Water is scarce. Bringing water to site is expensive. Water has to be treated before use.
3. No scale formation. No cleaning of Heat Exchanger.	3. Scale formation is unavoidable. Frequent cleaning is required leading to high down time and expensive labour.
4. No moving parts except fan and motors - negligible maintenance.	4. Maintenance is required on a day to day basis. V belts, bearings blocks, Pump couplings, Sprinkler nozzles has to be cleaned.
5. No mixing of dust, dirt, fly ash or living organisms with process water.	5. Water exposed to dust and dirt will be contaminated. Fungus formation and living organisms will foul heat exchanger which require cleaning.
6. No restriction on plant location.	6. Water source decides the location of large plants.
7. No corrosions due to air.	7. Steel parts in contact with water are corroded.

MANUFACTURING



State of the art machines installed and operated by skilled work force. Careful selection of components and proper planning of process with trained staff help to produce World Class Dry Cooling Towers.

Standardisation of parts and flexibility in computer aided manufacturing facilitate faster deliveries, better productivity and lower cost.

TECHNOLOGY

Technically qualified team of engineers with computer aided design facility and software to meet specific application needs.

GEM Equipments Limited is experienced in designing industrial cooling towers for the past two decades to cater to the demanding applications of numerous customers.

Shipping Data

DCT Model	Overall Dimension L x W x H mm	Header Pipe & Flange Size	Fan Diameter mm	Quantity	Motor Power HP	Dry Weight kg	Wet Weight kg
DCT-040	3290x1450x1370	3"/3"NB	1060	2	3	400	480
DCT-050	3450x1450x1370	3"/3"NB	1060	2	5	500	600
DCT-060	3290x1450x1650	3"/3"NB	1060	2	5	600	720
DCT-080	3290x1450x1975	3"/3"NB	1200	2	5	800	960
DCT-100	3450x1450x2425	3"/3"NB	1200	2	7.5	1000	1200
DCT-120	3750x1450x2425	3"/3"NB	1200	2	7.5	1200	1420
DCT-140	4200x1450x2425	3"/3"NB	1200	2	7.5	1400	1680
DCT-160	4800x1450x2425	4"/4"NB	1200	3	7.5	1600	1920
DCT-180	5290x1450x2425	4"/4"NB	1200	3	7.5	1800	2160
DCT-200	5795x1450x2425	4"/4"NB	1200	3	7.5	2000	2400
DCT-220	6350x1450x2425	4"/4"NB	1200	4	7.5	2200	2640
DCT-240	6800x1450x2425	4"/4"NB	1200	4	7.5	2400	2880
DCT-280	7800x1450x2425	4"/4"NB	1200	4	10	2800	3360
DCT-320	8935x1450x2425	4"/4"NB	1200	5	10	3200	3840

Motor make: SIEMENS

Typical Application

Automobile Industry
Chemical Industry
Electronics Industry
Food & Beverage Industry
Glass Industry
Pharmaceutical Industry
Textile Industry

Cement Plants
Distilleries / Breweries
Health Care / Hospitals
Paper Mills
PET - Stretch Blow Moulding
Power Plants
Sand Blasting
Spinning / Knitting / Hosiery Mills
Sugar Mills

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F/MKT/045 REV:00

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GEM Equipments Limited

GEM

Since 1984

Compressed Air & Cooling Systems

GEM Aqua Saver
Dry Cooling Tower

GAS Series

WORLD CLASS
COOLING TOWERS

DNV

CONSERVE WATER

• 100 to 4100 kW Induction Furnaces • 100 to 1000 HP Compressors •
• Plastic Injection Moulding • Hydraulic Power Pack • Aluminium Die Casting •

Introduction

GEM Aqua Savers are designed to meet your cooling requirements while minimizing or eliminating expensive water and sewer costs. All **GEM Aqua Savers** feature a weather proof enclosure which contain all necessary electrical components.

Function & Feature

Casing

Built to last with corrosion resistant bright GI / Aluminium sheet. The casing is divided by baffles, into individual fan sections, to ensure proper air distribution through the coils and maximize efficiency at part loads.

Coils

Constructed with Copper tubes and Aluminum fins for maximum performance. Coils are leak tested at 300 psig, dehydrated, evacuated, and sealed prior to shipment, to ensure safe reliable operation.

Fans

Made from durable aluminium / FRP and dynamically balanced for quiet, vibration free operation.

Fan Motors

415 Volt, 3 Ph motor, IP54 and mounted on rigid galvanized steel supports.

Single and Dual Pump Module*

The module comes complete with industrial grade, close-coupled, centrifugal pumps. The pumps are mounted on a common base and include inlet and discharge piping with throttling, isolating, and check valves.

Electrical Controls*

All electrical components are located in a weather proof enclosure which is integral to **GEM Aqua Savers**. A built in disconnect is provided as a standard feature. Installation costs are greatly reduced. Fan cycling is also provided as an energy saving feature on all multi fan coolers.

Energy Saving Control Panel*

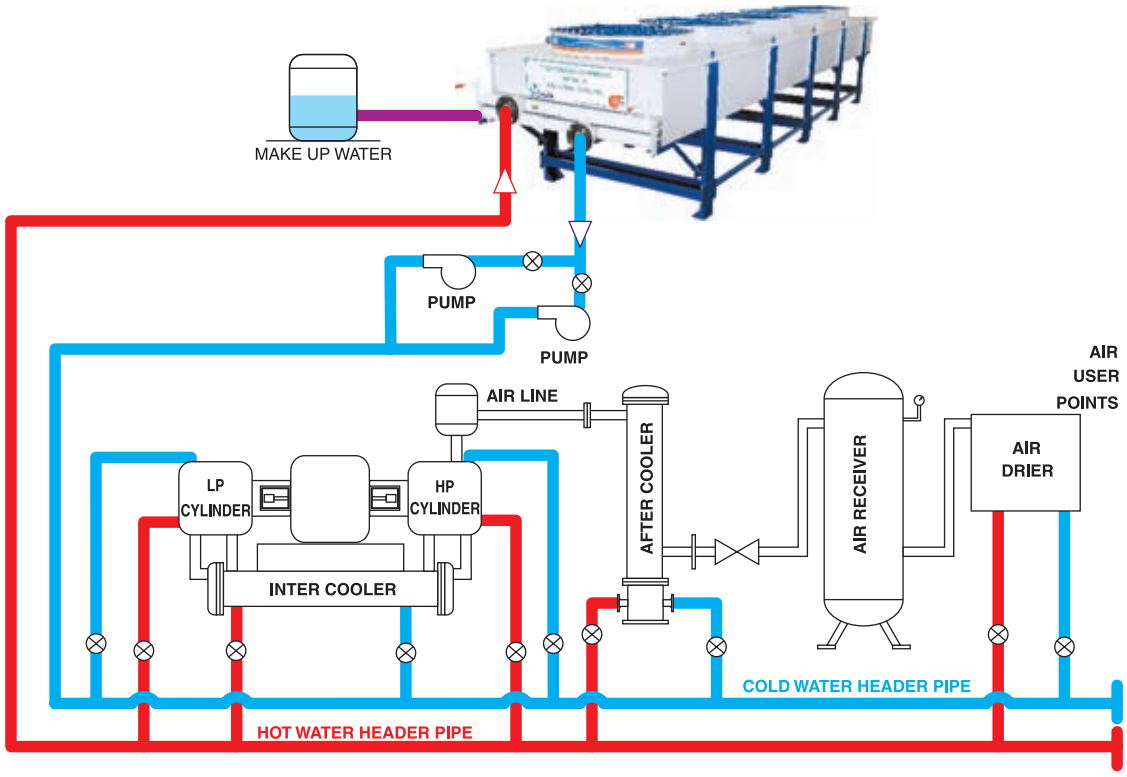
GEM Aqua Saver series heat exchangers include on/off switch, Power on indicator, fan motor starter and fan cycling thermostats. Fan cycling saves energy and provided temperature control under varying load and ambient conditions

Closed Loop
Clean Water
Cooling System

** Optional*

Aqua Saver Installation

Water Cooled Compressor Cooling



Can be installed to suit water cooled Rotary Compressor (Screw & Centrifugal)

Selection Guide For Air Compressors

Model	# Compressor with after cooler at ambient temp. 35° C HP	# Compressor with after cooler at ambient temp. 40° C HP	Total Connected Power HP	Water In / Out
GAS-045/2	15	10	2	3"/3" NB
GAS-058/2	25	20	4	3"/3" NB
GAS-075/2	30	25	6	3"/3" NB
GAS-090/2	40	30	4	3"/3" NB
GAS-090/3	75	60	6	3"/3" NB
GAS-145/2	100	75	6	3"/3" NB
GAS-145/3	120	100	9	3"/3" NB
GAS-160/2	150	125	6	3"/3" NB
GAS-175/2	175	150	8	3"/3" NB
GAS-175/3	200	175	12	3"/3" NB
GAS-225/2	250	200	8	4"/4" NB
GAS-275/2	275	250	10	4"/4" NB

 # Approximate capacity at 40°C ambient, 45°C Outlet temperature and 52°C Inlet temperature

** Power selection based on specific conditions*

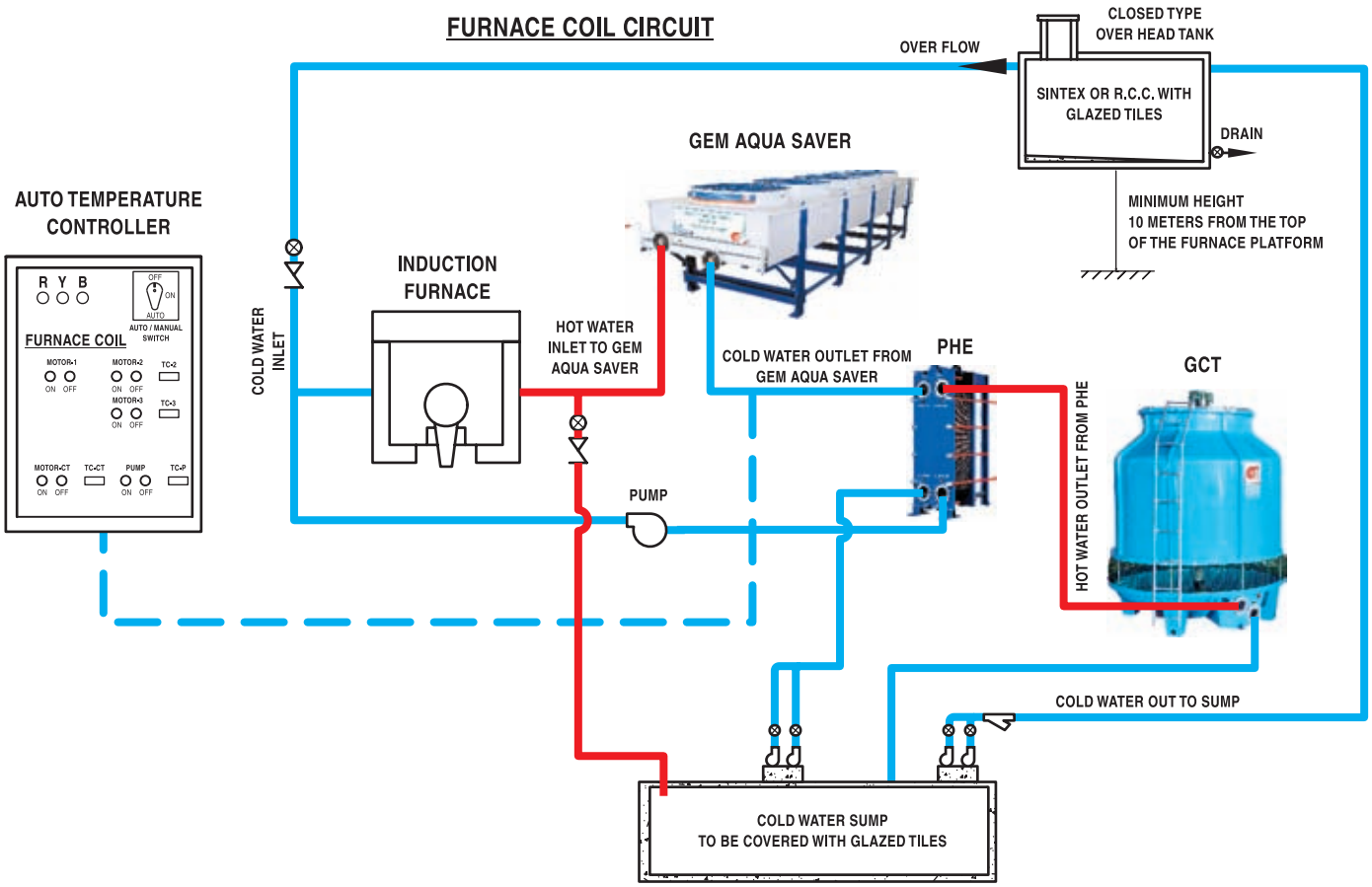
** For all other selections, please contact factory*

** Select higher model for ambient temperature above than 40°C or if extra safety is required*

** Specifications are bound to change due to constant development and improvement*

Aqua Saver Installation

Induction Furnace Coil & Electrical Control Panel Cooling



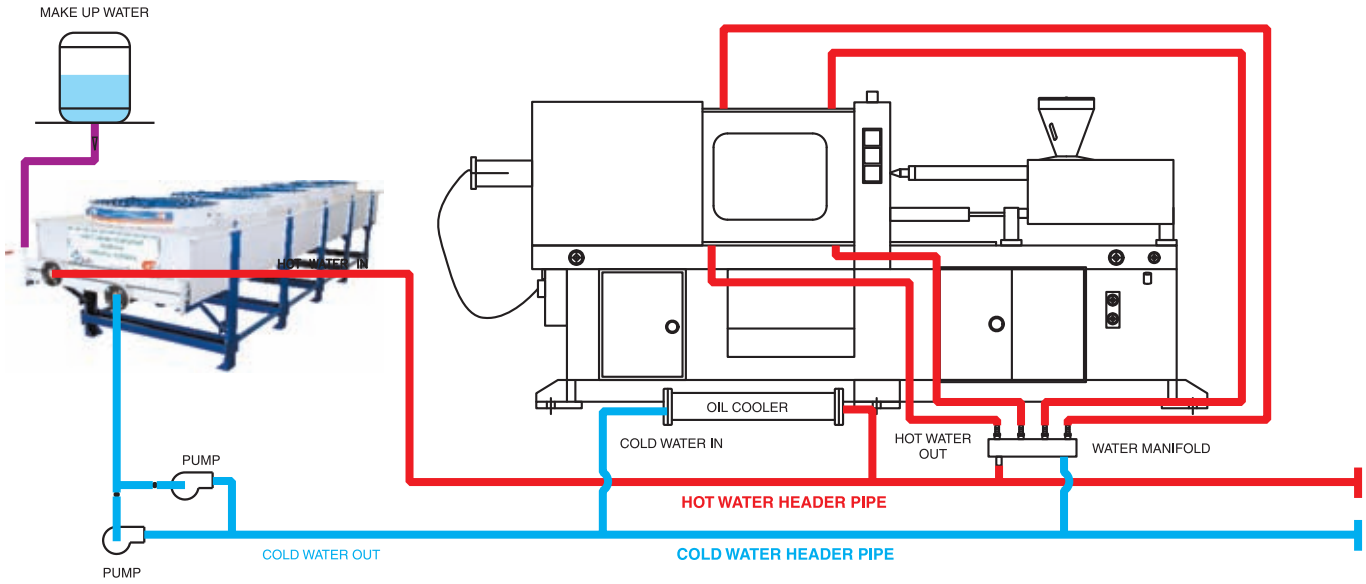
Selection Guide For Induction Furnaces

Furnace Capacity kW	Coil Cooling water flow rate lpm	Model Suggested for combination system	Combination system Max. water consumption per day
250	150	GAS - 145/2 - 1 no. GCT - 10TR - 1 no.	1250*
500	300	GAS - 225/2 - 1 no. GCT - 20TR - 1 no.	2500*
750	430	GAS - 275/2 - 1 no. GCT - 40TR - 1 no.	3750*
1000	575	GAS - 225/2 - 2 nos. GCT - 50TR - 1 no.	5000*
1250	720	GAS - 275/2 - 2 nos. GCT - 60TR - 1 no.	6250*
2000	1150	GAS - 225/2 - 3 nos. GCT - 100TR - 1 no.	10000*
4000	2300	GAS - 275/2 - 5 nos. GCT - 200TR - 1 no.	20000*

** Design based on 45°C, Max ambient temperature*
Water inlet temperature to coil cooling, maximum 39°C
For panel cooling requirement, please contact factory
PHE can also be supplied against requirement
Sufficient safety margin has been considered for safe operation

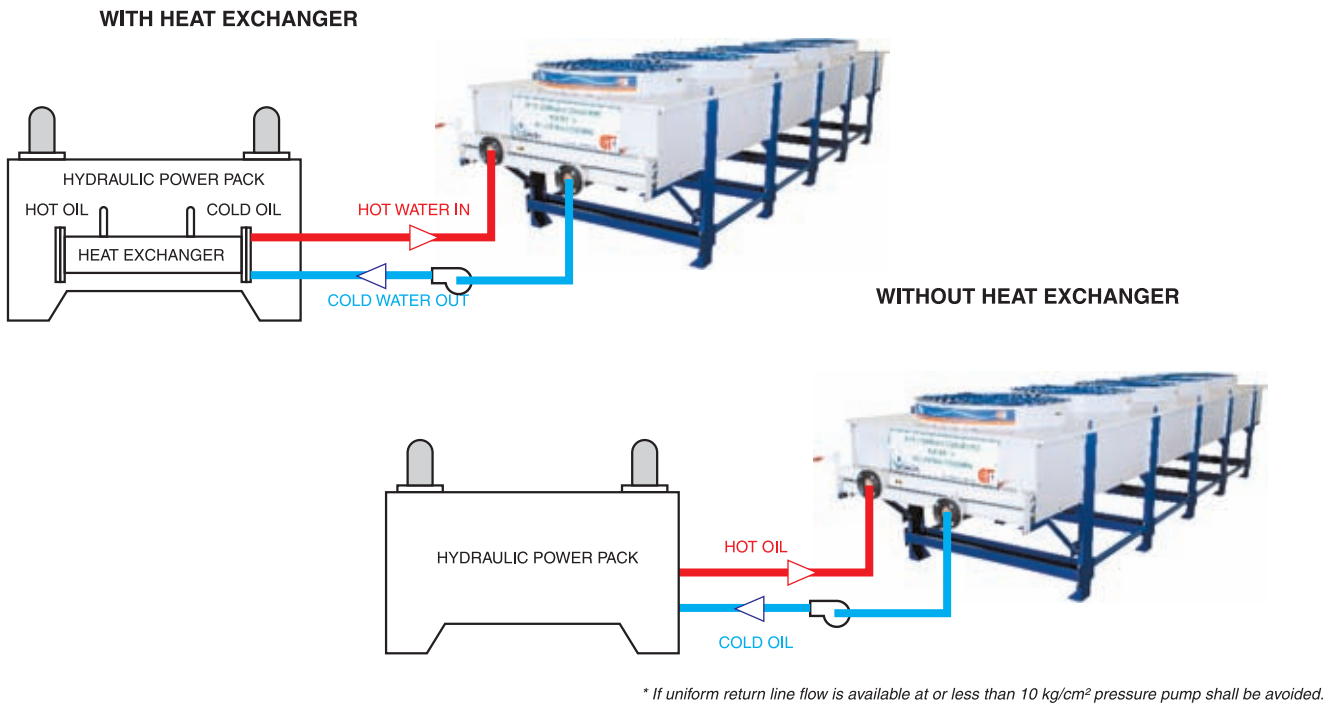
Aqua Saver INSTALLATION

Plastic Injection Moulding Machine Cooling



Model Selection: Based on heat load, inlet and outlet temperature

Hydraulic Power Pack Cooling

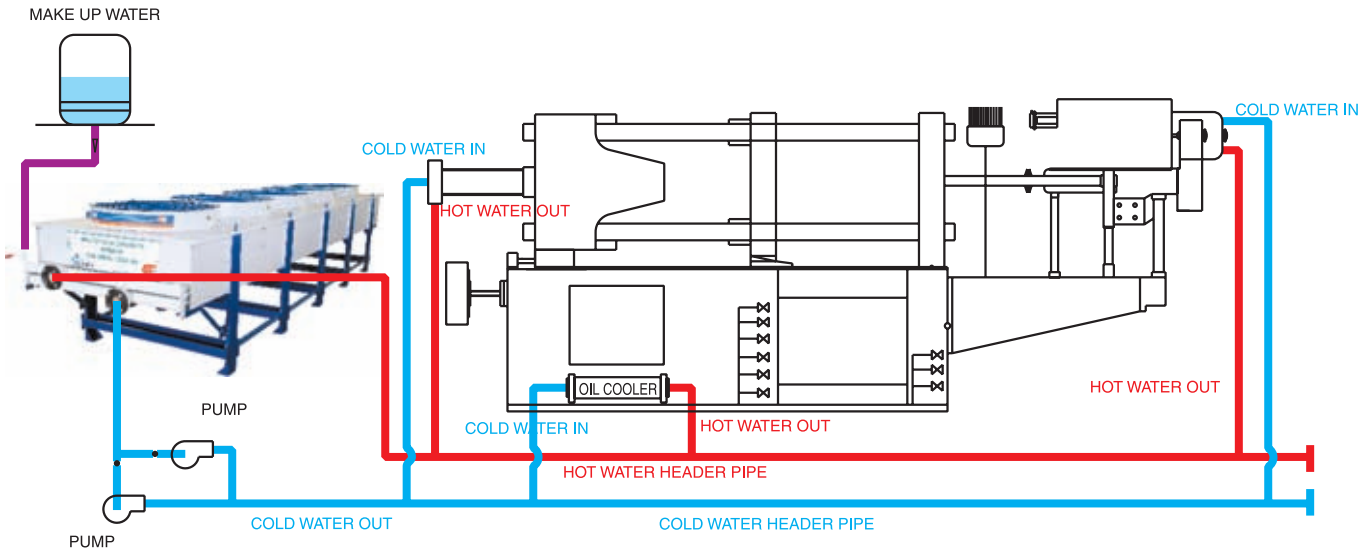


** If uniform return line flow is available at or less than 10 kg/cm² pressure pump shall be avoided.*

Model Selection: Based on heat load, inlet and outlet temperature

Aqua Saver Installation

Aluminium Die Casting Machine Cooling



Model Selection: Based on heat load, inlet and outlet temperature

Benefits

- Reduce water usage by over 95% with an Aqua Saver System.
- Eliminate algae and bacteria type problems.
- No water consumption.
- Eliminate sewer charges.
- Adaptable to heat recovery.
- Eliminate scale and corrosion.
- Extend equipment life.
- Reduce maintenance cost.
- Reduce down time.
- Easy installation.

Options

- Dual Pump Module
- Weather Proof Electrical Controls
- Energy Saving Control Panel
- Packaged Aqua Saver Systems.
- Freeze-Protector heat transfer fluid.
- Fan Cycling High Temperature indicator and / or alarm.
- Pump failure indicator and / or alarm.
- Pump auto start (duplex pump only).
- TEFC Motors, fan(s) and pump(s)

Some Of Our Esteemed Customers

COMPRESSOR APPLICATION

Ammarun Foundries, Coimbatore, TN
Armstrong Spinning Mills, Gobi, TN
Eastman Spinning Mills , Vedasandur, TN
Indian Nippon Electricals, Hosur, TN
Jai Jagathambiga Textiles, Arupukottai, TN
Leeds Spg. Mills, Sathy, TN
Livia Polymers P. Ltd., Trichy, TN
Megala Carona Textiles, Gobi, TN
Prabhu Spinning Mills, Vedasandur, TN
Prabhu O.E. Division, Vedasandur, TN
Sivaraj Spinning Mills, Vedasandur, TN
Sri Velaythaswamy Spg. Mills, Vedasandur, TN
Sri Shanmugavel Weaving Division, Vedasandur, TN
S.J.L.T. Textiles, Namakal, TN
Sambandam Spinning Mills, Salem, TN
Sri Jaya Jothi Textiles, Rajapalayam, TN
Sambandam Siva Textiles, Salem, TN
Jayanthi Drinks, Alwar, RJ
Lekhraj Narender Kumar , Kaithal, HR
Megala Carona Textile Unit - II, Vadamadurai, TN
Sri Krishna Rice Mills, Kapurthala, PN
Ramalinga Mills Unit - A, Arupukottai, TN
Ashok Leyland Unit - II, Hosur, TN
Saint Gobain, Bangalore, KA
Sarmangal Synthetics Ltd. TN
Sun Star Overseas Ltd., HR
Lakshmi Machine Works, Coimbatore, TN
Virudhunagar Textiles & Mills Ltd., Virudhunagar, TN
Rasi Techni Tex, Salem, TN
Bhageswari Spinning Mills Ltd., Salem, TN
Sri Ramalinga Mills Ltd., Arupukottai, TN
K.P.R. Textiles Pvt. Ltd., Coimbatore, TN
Avanitha Textiles Pvt. Ltd., Coimbatore, TN
Wheels India Limited, Chennai, TN

FURNACE APPLICATION

Ammarun Foundries, Coimbatore, TN
Ferro Links, Coimbatore, TN
Indo Shell Cast (P) Ltd., Coimbatore, TN
Meltech Castings (P) Ltd., Coimbatore, TN
Sandfit Foundries, Coimbatore, TN
V.R. Foundries, Coimbatore, TN
Super Auto Forge (P) Ltd., Chennai, TN
Castech Foundries (P) Ltd., Rajkot, GJ
Creative Castings Pvt. Ltd., Rajkot, GJ
Rolex Rings Pvt. Ltd., Rajkot, GJ
KOSO Fluid Control Systems, Coimbatore, TN
Rangasayee Alloy Castings, Coimbatore, TN
Amteck Castings Pvt. Ltd., Coimbatore, TN
Sarvalakshmi Foundries, Coimbatore, TN
Dakshin Foundry Pvt. Ltd., Bangalore, KA
PSG Foundry Division, Coimbatore, TN
Sandfit Foundries Pvt. Ltd., Coimbatore, TN
LMW Unit - III, Coimbatore, TN
Amex Alloys, Coimbatore, TN
Indo Shell Automotive System, Coimbatore, TN
Lakshmi Ring Travellers, Coimbatore, TN
Hi-Tech Minerals Industries Ltd., Salem, TN
Defree Engg. Coimbatore, TN
Electrotherm India Ltd. GJ

Technology

Technically qualified team of engineers with computer aided design facility and software to meet specific application needs.

GEM Equipments Limited is experienced in designing industrial cooling towers for the past two decades to cater to the demanding applications of numerous customers.

SHIPPING DATA

GAS Model	Overall Dimension L x W x H mm	Header Pipe & Flange Size	Fan Diameter mm	Quantity	Dry Weight kg	Wet Weight kg
GAS-045/2	1300x1300x1346	2”/2”NB	1060	1	448	472
GAS-058/2	1910x995x1346	2”/2”NB	750	2	504	496
GAS-075/2	2825x995x1346	2”/2”NB	750	3	756	810
GAS-090/2	2520x1300x1345	2”/2”NB	1060	2	896	960
GAS-090/3	2520x1300x1346	2”/2”NB	1060	2	896	960
GAS-145/2	3740x1300x1345	3”/3”NB	1060	3	1344	1440
GAS-145/3	3740x1300x1346	3”/3”NB	1060	3	1344	1440
GAS-160/2	3740x1610x1345	3”/3”NB	1060	3	1680	1780
GAS-160/3	3740x1610x1346	3”/3”NB	1060	3	1680	1780
GAS-175/2	4960x1300x1345	3”/3”NB	1060	4	1792	1920
GAS-175/3	4960x1300x1346	3”/3”NB	1060	4	1792	1920
GAS-225/2	4960x1610x1345	4”/4”NB	1060	4	2240	2400
GAS-225/3	4960x1610x1346	4”/4”NB	1060	4	2240	2400
GAS-275/2	6180x1610x1345	4”/4”NB	1060	5	2800	3000
GAS-275/3	6180x1610x1346	4”/4”NB	1060	5	2800	3000

Motor make: SIEMENS

TYPICAL APPLICATION

- Air compressor
- Induction furnace
- Plastic Injection moulding machine
- Hydraulic power pack
- Aluminium die casting machine
- Pressure die casting machine
- Process cooling

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