



ENGINEERED FOR EFFICIENCY, BUILT FOR RELIABILITY

COUNTER FLOW COOLING TOWERS



***“GLOBAL LEADER IN DESIGNING, MANUFACTURING & SUPPLY OF
COOLING TOWERS & ALLIED UTILITY SOLUTIONS”***

BLUECHIP make **Counter Flow Cooling Tower** is a cooling system where the flow of air and water moves in opposite directions, enabling efficient heat exchange. Hot water enters at the top and flows downward through the fill media, while air is drawn upward from the bottom, directly opposing the water flow. Counterflow cooling towers are valued for their superior cooling efficiency and space-saving design, making them ideal for high-performance cooling needs in industrial and commercial settings.



KEY FEATURES:

- **AIR FLOW PATTERN:** The counterflow of air and water maximizes contact, enhancing heat transfer efficiency.
- **PRESSURIZED WATER DISTRIBUTION:** Typically uses spray nozzles to distribute water over the fill, requiring higher water pressure.
- **COMPACT DESIGN:** Requires less ground space compared to crossflow cooling towers.

ADVANTAGES:

- **HIGH EFFICIENCY:** Counterflow design allows for better air-to-water contact, leading to improved cooling performance.
- **SMALLER FOOTPRINT:** Ideal for locations with limited space.
- **REDUCED WATER EXPOSURE:** Enclosed water distribution reduces contamination risks.

CONSIDERATIONS:

- **MAINTENANCE ACCESS:** The compact design can make it harder to access internal components.
- **ENERGY DEMAND:** Pressurized spray systems may require higher energy input.

WHY CHOOSE A BLUECHIP MAKE COUNTERFLOW COOLING TOWER?

- **High Efficiency:** Superior thermal performance due to advanced counterflow design.
- **Compact Design:** Space-efficient towers for installations with limited area.
- **Durability:** Built with premium-grade materials for long-lasting performance.
- **Low Energy Consumption:** Designed to reduce operational costs and carbon footprint.
- **Easy Maintenance:** Accessible features for quick inspections and servicing.

TECHNICAL SPECIFICATIONS:

SPECIFICATION	DETAILS
Cooling Capacity	Customizable (5 – 10000+ TR) per cell capacity
Flow Rate	3 m3/h to 20,000 m3/h per cell capacity
Material Options	Treated Timber, Pultruded FRP, Steel, RCC
Noise Levels	Low-noise operation (<85 dBA)
Water Drift Loss	<0.005%
Operating Temperature Range	Suitable for extreme conditions (3 Degrees to 75 Degrees)

APPLICATIONS:

BLUECHIP Counter Flow Cooling Towers are versatile and ideal for:

INDUSTRIAL APPLICATIONS	COMMERCIAL APPLICATIONS	SPECIALIZED INDUSTRIES
Power Plants	HVAC Systems	Food and Beverage
Petrochemical and Refining	Data Centers and IT	Pharmaceutical and Chemical
Metal and Steel	Hospitals and Healthcare	Automotive and Aerospace

CUSTOMER SUPPORT AND SERVICES:

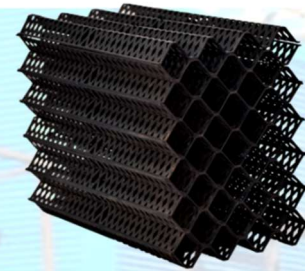
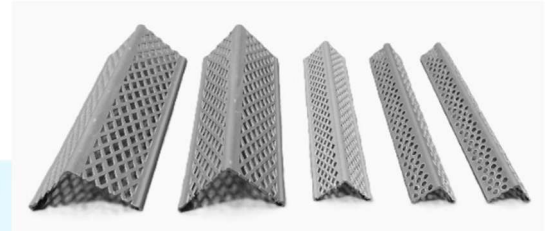
- ❖ **CONSULTATION AND DESIGN:** Custom cooling solutions tailored to your specific needs.
- ❖ **INSTALLATION ASSISTANCE:** Expert installation and commissioning support.
- ❖ **MAINTENANCE PLANS:** Comprehensive service plans to ensure optimal performance.
- ❖ **24 / 7 TECHNICAL SUPPORT:** Our team is always ready to assist you.

***INNOVATING COOLING TECHNOLOGY FOR
A SUSTAINABLE FUTURE***

COMPONENTS THAT BUILT A BLUECHIP COUNTERFLOW COOLING TOWER

1. FILL MEDIA

- **MATERIAL:** High-performance PVC or PP material for enhanced durability.
- **FUNCTION:** Maximizes heat exchange by creating a large contact area between water and air.
- **DESIGN VERSATILITY:** Compatible with various types of fills, including:
 - **HONEYCOMB FILLS:** Provides high surface area for efficient cooling.
 - **TRICKLE FILLS:** Ideal for low-fouling applications.
 - **V BAR FILLS:** Enhances water distribution for optimal performance.
 - **SPLASH FILLS:** Suitable for applications requiring higher turbulence.
- **CLOG-RESISTANT DESIGN:** Engineered to prevent blockages and maintain consistent operation.



2. WATER DISTRIBUTION SYSTEM

- **PRESSURIZED SPRAY NOZZLES:** Ensures uniform water distribution over the fill media for optimal cooling.
- **PIPING:** Made from corrosion-resistant materials to maintain system integrity.
- **AVAILABLE PIPING OPTIONS:** GI / PVC / PP / PPRC



3. DRIFT ELIMINATORS

- **PURPOSE:** Prevents water loss by capturing droplets carried with airflow.
- **MATERIAL:** High-efficiency, corrosion-resistant materials ensure long-term performance.



4. AIR INLET LOUVERS

- **MATERIAL:** FRP louvers protect internal components and improve airflow.
- **FUNCTION:** Prevents debris entry and minimizes water splash-out.



5. FANS AND MOTOR ASSEMBLY

FANS: High-efficiency axial fans ensure smooth and quiet operation.

MOTORS: Available in Direct Drive and Geared Driven systems for enhanced reliability and efficiency.



DIRECT DRIVEN MOTOR ADVANTAGES:

- **REDUCED MECHANICAL COMPLEXITY:** Fewer moving parts compared to belt drive systems. Ideal for Small cooling towers.
- **HIGHER ENERGY EFFICIENCY:** Direct connection eliminates power losses from belts and gears.
- **LOWER MAINTENANCE:** No belts to adjust or replace, elimination of gears and complex oil schedules, reducing downtime.

GEARED DRIVEN MOTOR ADVANTAGES:

- **HIGH TORQUE CAPABILITY:** Suitable for larger cooling towers with heavy loads.
- **COMPACT DESIGN:** Efficient power transfer ensuring applicability in smaller footprint.
- **DURABLE AND ROBUST:** Designed for demanding industrial applications.

COMPARISON WITH BELT DRIVE SYSTEMS:

- **EFFICIENCY:** Direct drive and geared systems deliver higher efficiency by reducing energy losses inherent in belt-driven systems.
- **MAINTENANCE:** Eliminates the need for frequent belt adjustments or replacements.
- **LONGEVITY:** Reduces wear and tear on components, extending the lifespan of the motor and fan assembly.

6. STRUCTURAL FRAME

- **MATERIAL:** Treated Timber, Pultruded FRP, Galvanized Steel, Stainless Steel for long life corrosion resistance and structural integrity.
- **DESIGN:** Reinforced structure to withstand mechanical stress and environmental conditions.



SAFETY FEATURES:

FAN GUARD: Protects against accidental contact with rotating components.

HANDRAIL AND LADDER: Ensures safe access for maintenance and inspections.

SAFETY CAGE: Ladder with safety cage for enhanced worker protection.

ANTI-SLIP FANDECK: Facilitates safe movement during maintenance.



MONITORING INSTRUMENTS

- **OIL LEVEL SWITCH:** Monitors gearbox oil levels to ensure optimal performance.
- **VIBRATION LIMIT SWITCH:** Detects abnormal vibrations to prevent potential damage.



COOLING TOWER ACCESSORIES

- **ANCHOR BOLTS:** Securely fasten the cooling tower to its foundation, ensuring stability during operation.
- **DOUBLE DECK STAIRCASE:** Provides safe and efficient access to multiple levels of the cooling tower.
- **DERRICK ARM ARRANGEMENT:** Assists in lifting heavy components for maintenance or replacement, improving operational efficiency.



LONG TERM ASSOCIATED CUSTOMERS & CONSULTANTS

Aarti Industries Ltd	Inox Air Products Ltd	Alfa Laval India
AWL Agri Business (Adani Wilmar)	Ishan Dyes & Chemical Ltd	JSW Steel
TATA Steel	Congo Oil and Derivatives	Grassland Industries
Deepak Nitrite Ltd	Coromandel International Ltd	Lupin India Ltd
Dorf Ketal India Ltd	Chemie Organics Ltd	UPL
Meghmani Organics Ltd	Sun Pharma Ltd	Zydus Lifesciences Ltd
IFFCO	Tata Steel India Ltd	Cipla Ltd
Pidilite India Ltd	Aditya Birla Group Ltd	Kumar Metal India
Servotech India	Valiant Organics Ltd	Anupam Rasayan Ltd
Valiant Advance Science Pvt Ltd	JRS Pharma	Goenka Group
Surface Wilmer	Alchemie Finchem Pvt. Ltd.	Calcimag Chemicals India
Deepak Phenolics Ltd	Aarti Drugs Ltd	Aarti Surfactants Ltd
Meghmani Finechem Ltd	Songwon India Ltd	ZCL Chemicals Ltd
Lubrizol India	Mitsuchem Plast Ltd	Hindustan Monomers Ltd
Hikal Ltd	Hetero India Ltd	Nath Industries Ltd
Institute of Chemical Technology (ICT), Mumbai	Associated Alcohol and Breweries Ltd (AABL)	Enmax Engineering India
Servotech India	Piramal Glass	Sajjan India Ltd
Kuwait Refinery	Mount Meru Millers	Alembic Pharma
Prasol Chemicals	Krishna Phoschem Ltd	Madhya Bharat Agro Ltd
Excelsource India	Time Technoplast Ltd	Chemie Organics Ltd
Indo Amines Ltd	Bluejet Healthcare Ltd	Echjay Industries Ltd

Toyo Engineering	Shroff Engineers	Lele Consultants
Technophil Consultants	TKT Consultants	Mott MacDonald
L&T Engineering	Jacobs	JNCE Engineering
Enmax Engineering	Universal MEP Projects and Engineering Services Limited (UMPESL)	Ketav Consultants
Zeppelin	Knexir	Aevitas

SITE IMAGES



SPARES

BLUECHIP MAKE Spares are designed to ensure seamless cooling tower operations with a comprehensive range of high-quality components, including fill media, fans, motors, drift eliminators, nozzles, and water distribution systems. Engineered for compatibility, reliability, & efficiency, BLUECHIP - approved spares minimize downtime and enhance performance, making them an essential choice for effective maintenance and extended service life. Trust BLUECHIP MAKE Spares to deliver unmatched quality and durability for your cooling tower needs.

Mechanical Equipment:

1. Aero foil-Type Fans:

- FRP/FRVE Blades with HDG Hub: Lightweight, energy-efficient, and available in multiple configurations.
- Aluminum Blades with Hub: Durable, low power consumption, and long-lasting.
- Plastic Blades with Aluminum Hub: Ideal for small cooling towers.

2. Gearboxes

- BLUECHIP make Spiral Bevel Right Angle Gearboxes: Factor $\geq 2.5\%$ efficiency $\geq 98\%$ with robust design, minimal maintenance.

3. Drive Shafts

- Materials: HDG Steel, SS304, Carbon Fiber, SS316, Hastelloy Dynamically balanced for superior durability.

Fills, Drift Eliminators, and Fill Supports

1. Fills

- BLUECHIP PVC & ABS Honeycomb Fills: Compact design for clean and high-temperature applications.
- Splash and Trickle Fills: Perfect for dirty water and high TSS/TDS applications.

2. Drift Eliminators

- BLUECHIP Designs: S-Type, Wave-Type, Herringbone for minimized water loss.

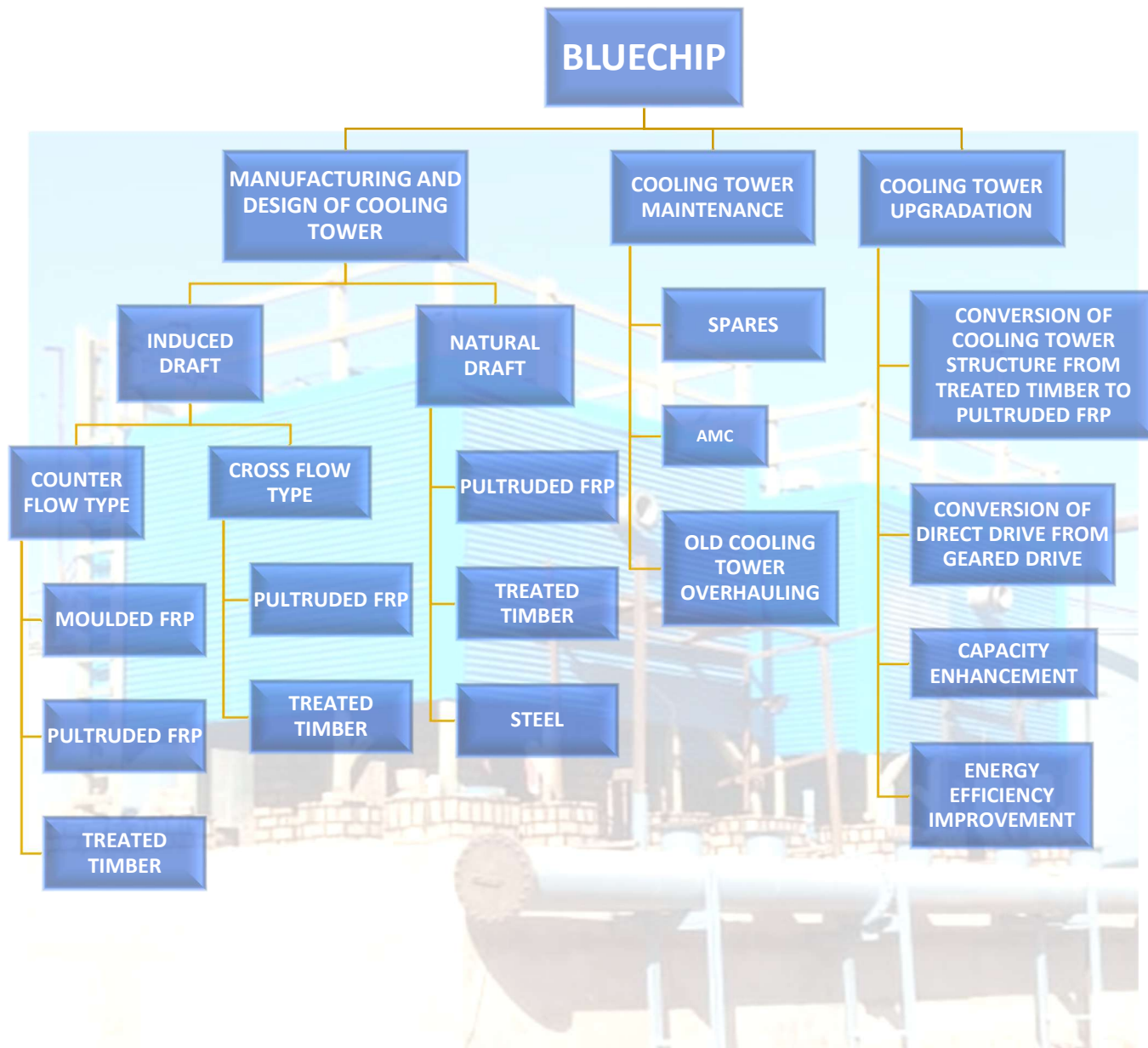
3. Water Distribution Systems

- Nozzles: PP / ABS precision-engineered for efficient water distribution.

Why Choose BLUECHIP Make Spares?

- **QUALITY ASSURANCE:** Premium materials and components for unmatched performance.
- **EXPERTISE:** Trusted by industries for durable and efficient cooling solutions.
- **TAILORED SOLUTIONS:** Customized for your cooling tower needs.

BLUE CHIP INDUSTRIES OFFERINGS / PRODUCTS



Maximize your cooling efficiency and reduce operational costs with BLUECHIP's Counter Flow Cooling Towers. Let us help you achieve unparalleled performance for your industrial and commercial cooling needs.



Phone: +91 9653150937 / 9321780765

Email: office@bluechip-industries.com

Website: www.bluechip-industries.com

Registered Factory Address:

Plot No - **G88**, MIDC-Tarapur, MIDC Road, Boisar,
District - Palghar, Maharashtra - 401506.