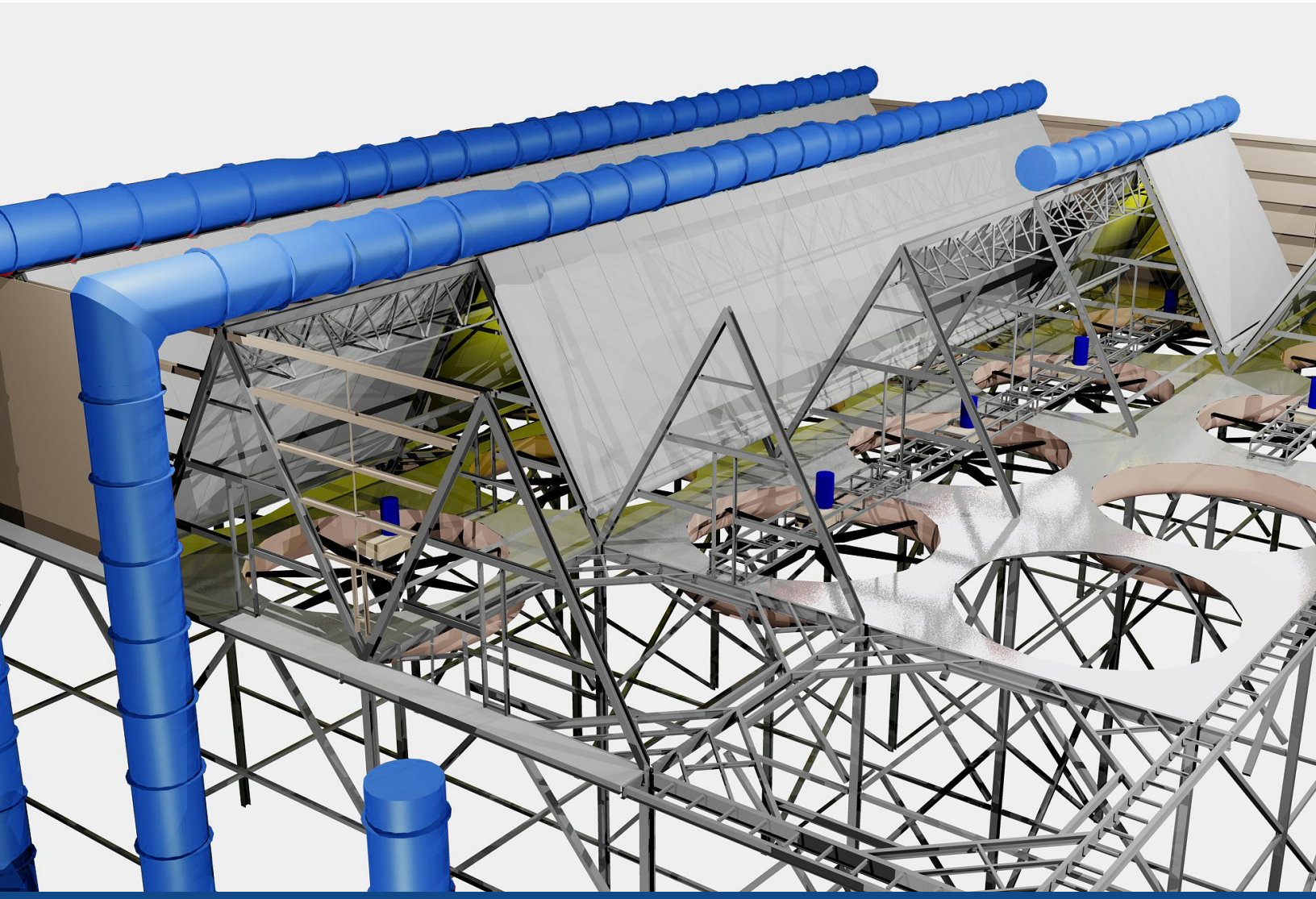
HOLTECASIA

HI-MAX and HI-KOOL Air-Cooled Condensers

A Transformative Air-Cooling Technology That Ends Reliance on Large Quantities of Cooling Water to Reject Waste Heat



Delivering Turnkey Equipment and
Innovative Technology Solutions Worldwide

www.holtecasia.com

Holtec Asia was established in 2010 as a wholly-owned subsidiary of Holtec International. Holtec Asia is a vertically-integrated company of engineers and manufacturing experts that provides state-of-the-art technologies to the solar, petrochemical, geothermal and fossil power industries. Incorporated under the laws of the Republic of India, Holtec Asia's engineering facility in Pune, Maharashtra was initially established to support the efforts of its US-based parent company.

Supporting the "Make in India" initiative, our operational center of excellence serves the Asia, Middle East and North Africa regions and beyond. Due to the exponential demand for innovative heat transfer solutions in the Middle East and North Africa region, Holtec Asia quickly grew into an engineering and manufacturing powerhouse.

Holtec Asia's Precision Fabrication Systems manufacturing plant in Dahej opened in 2017. This facility fabricates state-of-the-art technologies, including Holtec's Air-Cooled Condensers and other Heat Transfer equipment to support the solar, petrochemical, geothermal and fossil power industries worldwide. Holtec Asia's engineers specialize in the areas of Mechanical Design, Applied Mechanics, Fluid Mechanics, Heat Transfer and more.

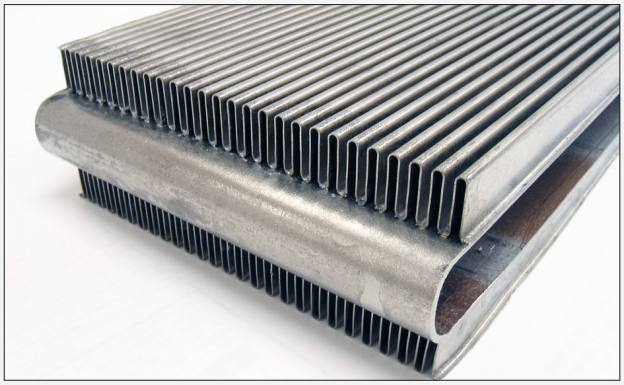
Air-Cooled Condensers

Holtec's Air-Cooled Condenser systems (ACCs) feature transformative air-cooling technology that ends reliance on large quantities of cooling water by rejecting waste heat. Featuring space-saving modular components, these proven technologies reduce construction and maintenance costs, and root out operational problems typically present in cyclical, load-following power plants.

Holtec's engineers utilize Computational Fluid Dynamics to predict thermal-hydraulic performance, Finite Element Analysis to study fatigue effects, and Dynamic Structural Analysis to define the effects of wind loading and earthquakes on ACCs. These computer models predict the system's performance under extremely hot and extremely cold ambient conditions with high reliability.

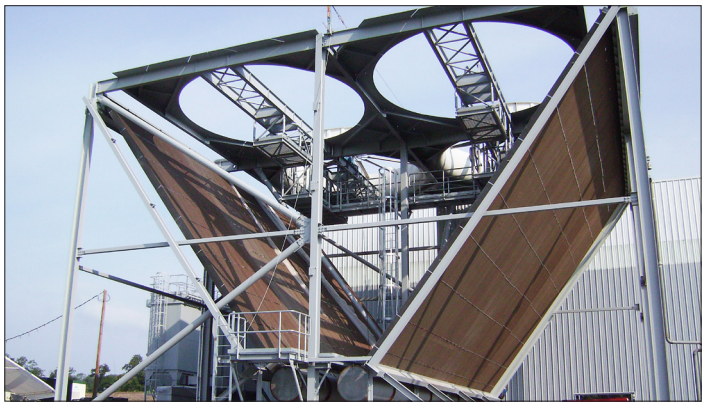
HI-MAX and HI-KOOL

Holtec's HI-MAX (Holtec International MAXimum reliability) features finned metallic obround tubes integrated into a fully modularized structure for ease of erection. Its strength-bonded aluminum fins achieve maximum service life and condensate purity. The thickness, height and spacing of the fins have been optimized using state-of-the art computational fluid dynamics codes to provide maximum fin efficiency for air flow parameters.



HI-KOOL, available in carbon-steel or stainless-steel, represents a transformative shift in the technology to reject waste heat to ambient air. The coolant ambient air is pulled across the obround finned tubes by the overhead blower, extracting the latent heat from the low-pressure steam flowing inside the tubes. HI-KOOL incorporates numerous design enhancements that allow for ease of construction, reducing assembly times. Additionally, it has a relatively low profile; it is at least 30 feet shorter in elevation than a typical "forced draft" air-cooled condenser.

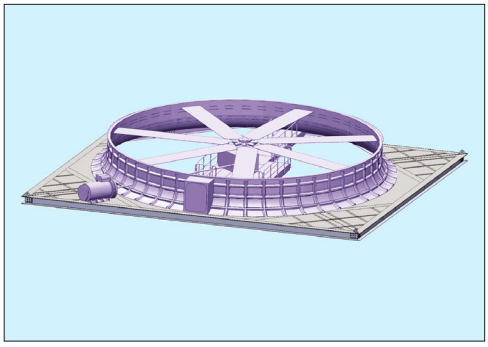
Parallel Condensing



Holtec's water-cooled condenser expertise is well known; Holtec has supplied over 120 wet condensers over the past three decades to power plants around the world, garnering an enviable record of performance and reliability. Our expertise in dry and wet condensing technology enables us to provide dual, parallel condensing solutions that optimize the increasingly scarce cooling water supply at each site. Parallel condensing refers to condensing the turbine exhaust steam in a water-cooled steam surface condenser and ACC in parallel. Benefits of this system include:

- Improved performance in comparison to an all dry system under high ambient conditions
- Significantly reduced capital costs compared to all dry systems
- Significant water savings over an all-wet system
- Elimination of cooling tower plumes in winter weather

Standardization

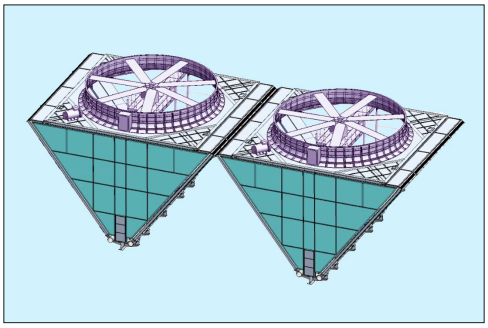


Holtec's HI-MAX and HI-KOOL are the industry's first standardized ACCs designed to meet any site requirements without extensive custom engineering. The pre-engineered, standard cell can be designed to meet the performance specification and erection strategy at any site. The result is an efficient design process that is fully endorsed by our Quality Assurance Program. The benefits of standardization include:

- Reduced construction lead-times
- Flexibility in the field during construction
- Shorter overall project schedule

Modularization

Traditionally, ACCs are erected in a stick built fashion, where field construction costs can exceed the cost of the equipment. Holtec's engineers have reduced construction time and cost by optimizing the modular ACC erection sequence and reducing the number of pieces shipped to a site. Furthermore, on-site work that is normally performed at elevations as high as 130 feet, can now be completed at grade. Since assembly at elevation is limited by the reach and lifting capacity of the site's crane, an entire fully loaded Holtec cell can be assembled at grade and placed on the support structure in a single lift.



Our Mission

- To support the "Make in India" initiative by providing innovative technology solutions to the regions of Asia, Middle East, North Africa and beyond.
- To develop technologies that protect public health and safety, and provide the utmost protection to the workers who use our structures, systems and components.
- To maintain our corporate focus on developing technologies that help protect the environment by producing pollution-free energy.
- To continue to treat every project as a solemn undertaking in which on-time performance and superb quality of goods and services are non-negotiable requirements.
- To expect unimpeachable integrity from our associates in all of their dealings with clients, vendors and regulatory agencies.
- To foster a stimulating work environment wherein every associate has the opportunity to realize his or her professional potential to the maximum extent.
- To remain a learning organization, forever striving for a higher plateau of excellence.

Key Facts

- Holtec is a vertically-integrated organization possessing in-house capabilities to design, engineer, analyze, license, fabricate and perform on-site construction.
- Holtec has a global presence with operation centers located in 10 countries around the world.
- Holtec's engineers helped develop the modern ASME Code, HEI and TEMA standards for design and construction parameters for shell and tube heat exchangers, water-cooled and air-cooled condensers.
- Holtec has four manufacturing facilities (one in India and three in the U.S.) covering nearly 1.5 million square feet of manufacturing floor space.
- Since its founding in 1986, Holtec has maintained a solid record of consistent profitability. Today, Holtec has a bonding capacity of $100 million and a platinum credit rating.
- Holtec has been granted over 100 patents in areas of equipment design, fabrication processes and materials.
- Holtec Manufacturing Division (HMD) is one of America's largest exporters of capital equipment for the nuclear industry. It is also among the largest manufacturers of ASME Code components.

Culture of Quality

Holtec Asia operates under Holtec's International's Corporate Quality Assurance, Safety and Corporate Governance Programs. This ensures the high quality of deliverables, superb personnel safety metrics, and a clean and transparent corporate culture. The completeness and effectiveness of these programs have been approved by regulators and clients.

As Holtec Asia grows and expands its services, we look forward to revolutionizing technologies that provide client satisfaction and protect the environment.

Holtec Asia produces Air-Cooled Condenser Systems and other Heat Transfer equipment using techniques that ensure the highest levels of quality, performance and cost competitiveness in the global market. For more information, please visit www.holtecasia.com.

Holtec World Headquarters
1001 N US Highway 1
Jupiter, FL 33477, USA
Tel: +1.561.427.2300

Holtec Corporate Center
Krishna P. Singh Technology Campus
Advanced Manufacturing Division
1 Holtec Boulevard
Camden, NJ 08104, USA
Tel: +1.856.797.0900

Holtec Asia
Corporate Office
A504, G-O-Square
Aundh-Hinjewadi Link Road
Wakad, Pune
Maharashtra, 411057, India
Tel: +91.20.6792.0900

Orrvilon Manufacturing Division
1400 Dairy Lane
Orrville, OH 44667, USA
Tel: +1.330.684.9400

Holtec Asia
Precision Fabrication Systems
Z/103/E, Dahej SEZ Part II
Vagra, Bharuch
Gujarat, 392130, India
Tel: +91.26.4127.7900

Holtec Manufacturing Division
200 Braddock Avenue
Turtle Creek, PA 15145, USA
Tel: +1.412.823.3773

Holtec Britain
Leiston Enterprise Centre
Leiston, Suffolk
IP16 4US, UK
Tel: +44.11.668.0294

Holtec Ukraine
120 Saksaganskoho Street
No. 16, 6th Floor
Kyiv, 01032, Ukraine
Tel: +380.44.583.0370