

AHRI CERTIFIED[®]
www.ahridirectory.org

Air-Cooled Water Chilling Packages
AHRI Standards 550/590 and 551/591

Water Cooled
Screw Chillers
Configured Series.



The freedom to customise as per your need.



Water Cooled Screw Chillers

Blue Star, India's largest central air conditioning company has been providing expert cooling solutions for over seven decades now. As a leader in the industry, it has been manufacturing a wide range of scroll, screw and centrifugal chillers that provide cool comfort in airports, green buildings, hotels, malls, offices, industries, etc

Based on its continued thrust for research and product development, Blue Star has launched a new state-of-the-art configured series of AHRI-certified water cooled screw chillers. These chillers provide application versatility, energy efficiency, control precision, reliability, ease of installation and operational cost effectiveness. The chillers are designed to deliver proven performance plus a host of other benefits required for industrial and commercial applications.

World Class Manufacturing.

The new Configured Screw Chiller series is manufactured at Blue Star's ISO 9001 certified factory with the chiller test bench certified by the Air-Conditioning, Heating and Refrigeration Institute (AHRI). The chillers are designed to deliver better efficiencies even at high condenser water temperature and moderate water quality.

Wide Capacity Range

The chillers are offered in a wide range of capacities from 80TR to 450TR with single/twin compressors. The performance is fully validated by AHRI for all the models. The number of passes across cooler and condenser can be modified to suit the capacity, pressure drop and efficiency. The chillers operate at 415V, 50Hz on a 3-phase power supply.

Single Compressor Range:

The Single Compressor range is available from 80TR to 235TR.



Range : 80 - 235TR

Double Compressor Range:

The double compressor range is available from 160TR to 450TR.



Range : 160 - 450TR



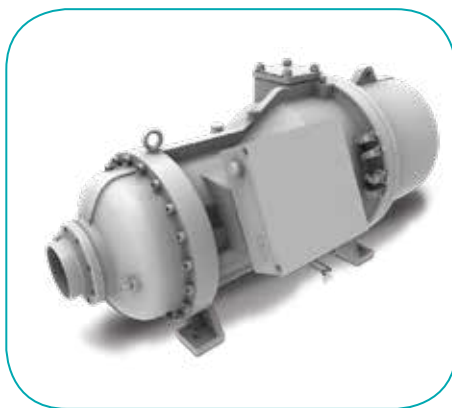
Project-Specific Chiller Design

The new Blue Star Configured Screw Chiller series can be selected based on specific requirement. Unlike the conventional chillers, Blue Star's latest screw chillers are not limited to select capacity models. The configured chillers has an exhaustive range of coolers, condensers and compressors which offers flexibility to select chillers based on varied needs of customers like:

- Capacity
- Energy efficiency
- Pressure drops
- Flow rates
- Dimensions



Condenser



Compressor



Cooler

High Energy Efficiency

The new Blue Star Configured Screw Chiller series is designed for high performance both at full load and part load. This series comes with:

- high efficiency semi-hermetic twin screw compressors.
- electronic expansion device to help in improved utilisation of the evaporator heat exchange surface and also to aid in lowering the condensing pressure for precise capacity control.
- the flooded evaporator and condenser design to reduce the temperature gradient between the refrigerant and water, and to improve the chiller efficiency.
- the exceptional COP and IPLV values exceed the national and international energy norms like ASHRAE 90.1.2019

ASHRAE 90.1.2019

Capacity range	Path A (kw/tr)		Path B (kw/tr)	
	COP	IPLV	COP	IPLV
> 75TR	0.750	0.600	0.780	0.500
75-150 TR	0.720	0.560	0.750	0.490
150-300 TR	0.660	0.540	0.680	0.440
300-600 TR	0.610	0.520	0.625	0.410

*Efficiency of the new series are better than the above values.



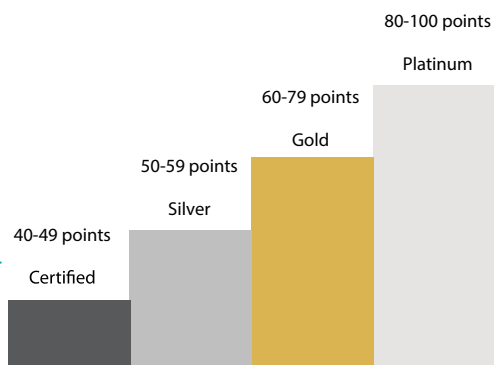
Chillers Designed for Green Building

Green buildings are environmentally sustainable and designed, constructed and operated to minimise any adverse impact to the environment.

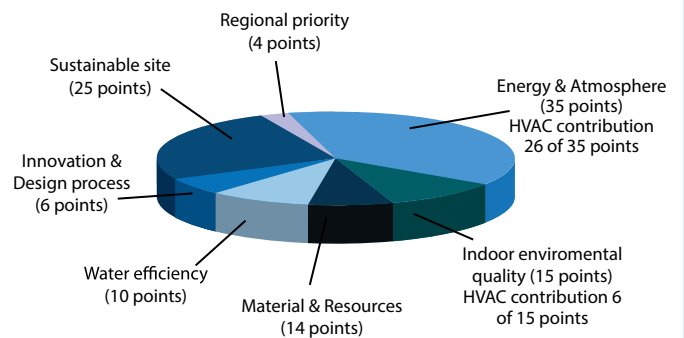
An air conditioning system consumes about 40% of the annual building energy. Therefore selection of the right air conditioning system is one of the main aspects to consider while designing a green building.

The choice of Heating, Ventilation and Air Conditioning (HVAC) products can have a significant impact on LEED certification as it can influence 40% of the available points.

100 Possible LEED Points



Overview of LEED for New Construction and Major Renovations





EA prerequisite 2: Minimum Energy Performance

The chillers shall meet the energy efficiency requirements of ASHRAE 90.1.

EA prerequisite 3: Fundamental Refrigerant Management

The chillers shall not use Chlorofluorocarbon (CFC) refrigerants.

EA credit 4: Enhanced Refrigerant Management

LEED awards the systems that minimise the Ozone Depletion Potential (ODP) and Global Warming Potential (GWP).

EA credit 1: Optimised Energy Performance

One section for this credit requires the energy cost reduction exceeding the ASHRAE 90.1 minimum table beyond EA prerequisite 2.

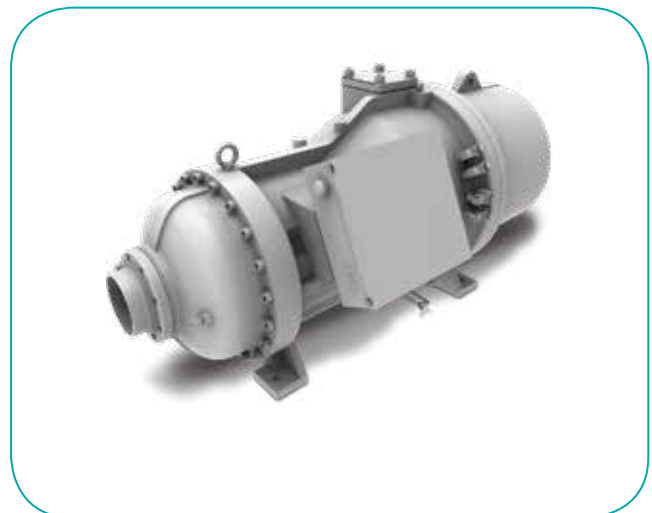
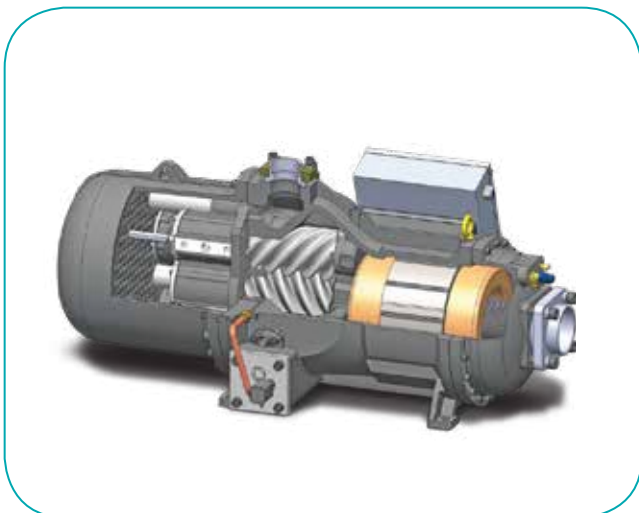
* The new series of chillers shall meet all the above criteria.



High Reliability

The chillers are equipped with twin rotor screw compressors with advanced 5-6 patented profiles for optimum modulation of volumetric ratios at all operating conditions of the chiller and have several other advantages.

- Separate radial and axial force bearings enhance the chiller's life.
- Unlike a mono screw, there is no direct contact between the gate rotor and main rotor, which eliminates wearing out of rotors.
- Advanced control algorithm prevents excessive compressor cycling.
- Automatic compressor unloading in case of abnormally high condensing pressure or discharge temperature and abnormally low suction pressure.
- Simulation tools are employed for the design of critical components including mounting joints, lifting lugs etc.



Simple and Fast Installation

The new Blue Star Configured Screw Chiller series is compact and suited for easy and quick installation. The innovative construction design have the following advantages:

- Chiller with 1.2m width can pass through standard door opening and requires minimum floor space in plant room.

-Simple electrical connections including easily accessible main disconnect switch.

-Victaulic connections on the evaporator and condenser.

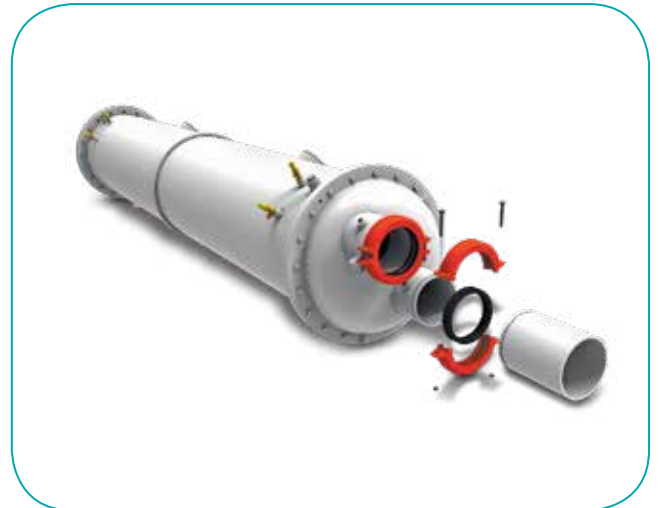
-Practical reference marks for entering and leaving water connections.

-Possibility to reverse the heat exchanger water inlet and outlet at the factory.

-Systematic factory operation test before shipment.

-All compressor components are easily accessible on-site, minimising down-time.

-Discharge line shut-off valve and liquid line service valve for easy maintenance.



Victaulic connections

AHRI Certification for Chillers

The new Blue Star Configured Screw Chiller series is manufactured at the company's own state-of-the-art ISO 9001 factory. The chiller range is certified by the international rating body – the Air-Conditioning, Heating and Refrigeration Institute (AHRI). Blue Star has India's only precision testing facility certified by AHRI to test and rate all the chillers manufactured by it.

Internationally, AHRI-certified test facilities for water cooled screw chillers are in the range above 200TR. However, AHRI has recently announced a voluntary certification program - the sub 200TR range.

Blue Star has volunteered to get the entire screw chiller range tested and certified by AHRI for both full and part load operations. **The new Blue Star Configured Screw Chiller Series, from 80TR to 450TR, are fully certified by AHRI for the performance of chillers.**



Environment-friendly

R-134a is recognised as the most environment-friendly refrigerant, which causes no damage to the atmospheric ozone layer. The new chillers series with R-134a refrigerant are designed with a leak light refrigerant circuit completely avoiding the capillary tubes and flare connections with R-134a refrigerant.

Compact and Light-weight

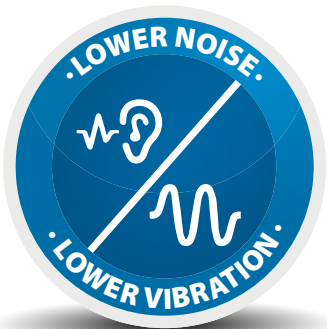
Critical parts like compressors, coolers, condensers etc., of these new generation configured screw chillers, are not only efficient but also compact. This makes the chiller compact. These chillers are as much as 30-50% lesser in size and weight compared to a conventional chiller.

Their compact design helps to free up valuable floor space as well.



Lower Noise and Vibration

The chillers are with the advanced design semi-hermetic compressor that has a lower noise level and better vibration efficiencies as per ASHRAE.





ASME Stamping Option

The new Blue Star Configured Screw Chiller series is available with optional U Stamp for the pressure vessels in compliance with ASME (American Society of Mechanical Engineers), a renowned third party certifying organisation for safety of pressure vessels.

The American Society of Mechanical Engineers



CERTIFICATE OF AUTHORIZATION

The named company is authorized by The American Society of Mechanical Engineers (ASME) for the scope of activity shown below in accordance with the applicable rules of the ASME Boiler and Pressure Vessel Code. The use of the ASME Single Certification Mark and the authority granted by this Certificate of Authorization are subject to the provisions of the agreement set forth in the application. Any construction stamped with the ASME Single Certification Mark shall have been built strictly in accordance with the provisions of the ASME Boiler and Pressure Vessel Code.

COMPANY:

Blue Star Limited
Village Vasuri Khurd, Khanivali Road
PO Khupari, Taluka Wada, District Palghar
Maharashtra 421312
India

SCOPE:

Manufacture of pressure vessels at the above location and field sites controlled by the above location (This authorization does not cover impregnated graphite)

AUTHORIZED: April 19, 2022
EXPIRES: April 19, 2025
CERTIFICATE NUMBER: 52520



Board Chair, Conformity Assessment



Managing Director, Conformity Assessment



Remote Monitoring System

The chillers can operate through an advanced GPRS-based Remote Monitoring System which is available as an option to all users.

This system has the following advantages:



Close monitoring of the site irrespective of location



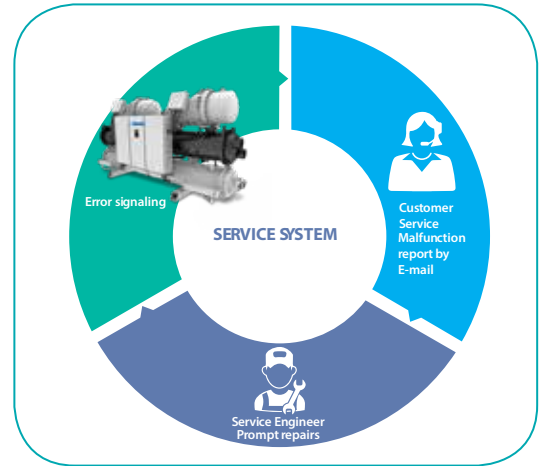
24x7 automatic monitoring



Automatic notification in the form of SMS or email in case of any error



Automatic call login for service



The data captured and sent by RMS to the Central Service Team enables analysis by the local service team so as to be equipped with the necessary solutions to resolve any issues speedily. This ensures:



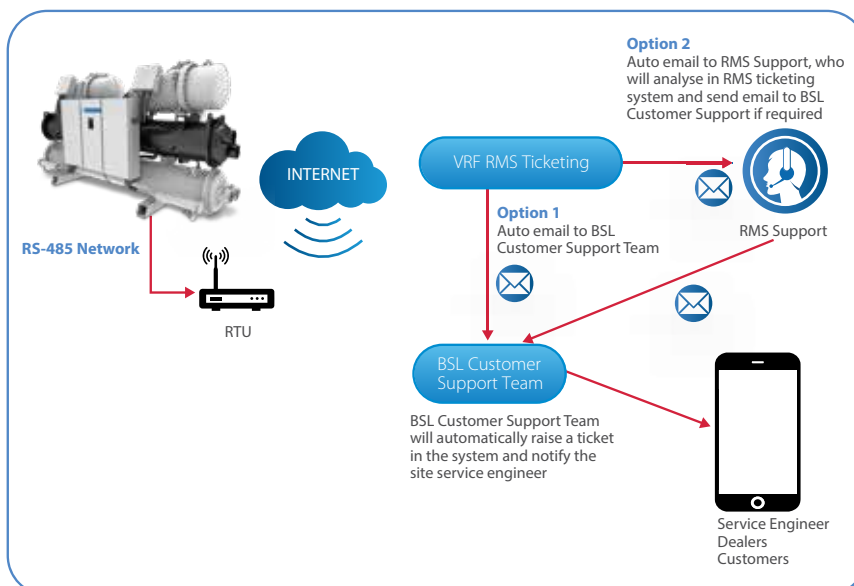
Very quick response time



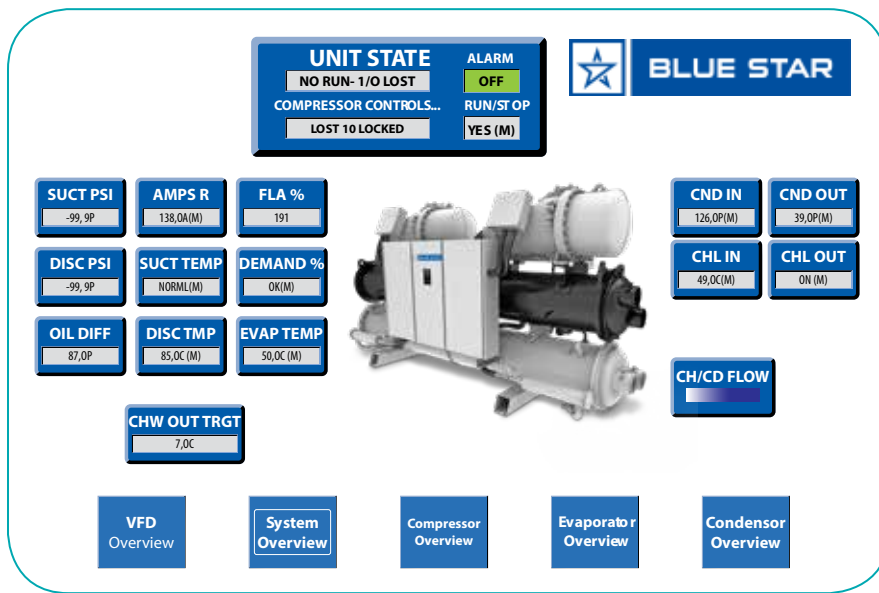
Faster turn around time



Higher uptime of the system



Advanced Features of Controllers:



Precise temperature control of +/- 0.5°C



Anti-freeze and no flow protection



Compressor run time balancing



Automatic backup mode



Single phasing/phase loss protection



Overload protection



Over-current protection



HP/LP protection



Compressor run hours



Password protection



BMS compatibility



User-friendly machine interface



Alarm output



Efficient operating zone algorithm



Efficient oil separator



Self-diagnosis control system



Stored past history and alarm



Display unit flexibility



Demand restriction



DLT protection



Oil level protection

Widest Range Of Products



VRF Systems



Packaged ACs & Ducted Splits



Condensing Units



Inverter scroll chillers



Process Chillers



Tank Chillers



Air cooled & Water cooled
VFD Screw Chillers



Air-Cooled Configured Screw
Chiller - High Efficiency Series



Air Cooled and
Water Cooled Scroll Chiller



Water-Cooled Screw Chillers
Configured Series



Turboacor Chillers



Water Cooled Falling Film
Screw Chillers

For more information, Please contact:



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