



BLUE STAR

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.

Made in India. Made for India.

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



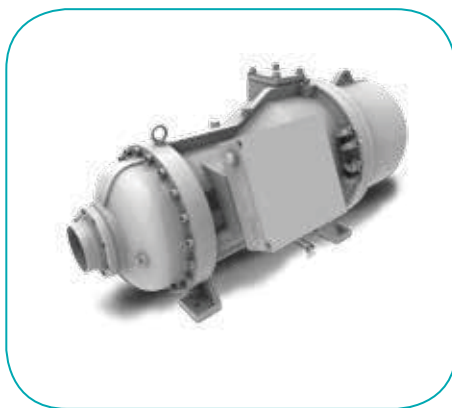
Project-Specific Chiller Design

The new Blue Star Configured Screw Chiller series can be selected based on Project specific requirement. Unlike the conventional chillers, Blue Star's latest screw chillers are not limited to select capacity models. The configured chillers have 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 ECBC and ASHRAE 90.1.

ECBC VALUES

Chiller type	Capacity	COP	IPLV
WC Screw/Scroll	<150TR	4.70	5.49
WC Screw/Scroll	150 to 300TR	5.40	6.17
WC Screw/Scroll	>300TR	5.75	6.43

ASHRAE 90.1.2015

Capacity range	Path A (kw/tr)		Path B (kw/tr)	
	COP	IPLV	COP	IPLV
> 75TR	0.75	0.6	0.78	0.5
75-150TR	0.72	0.56	0.75	0.49
150-300TR	0.66	0.54	0.68	0.44
300-600TR	0.61	0.52	0.62	0.41

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

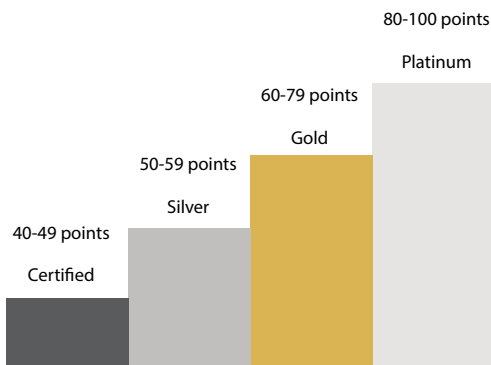
Chillers Designed for Green Building

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

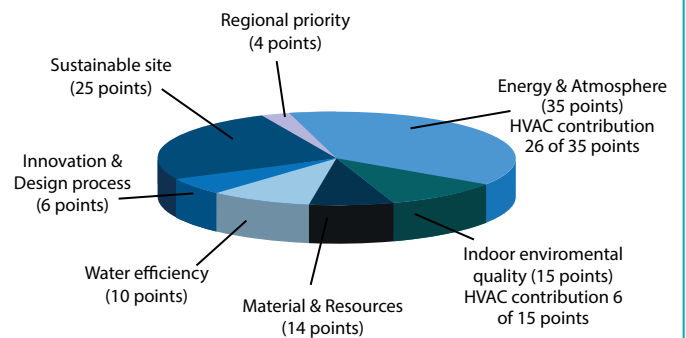
An air conditioning system consumes about 40% of the annual building energy. Therefore selection of the right air conditioning system is one of the main aspects to consider while designing a green building.

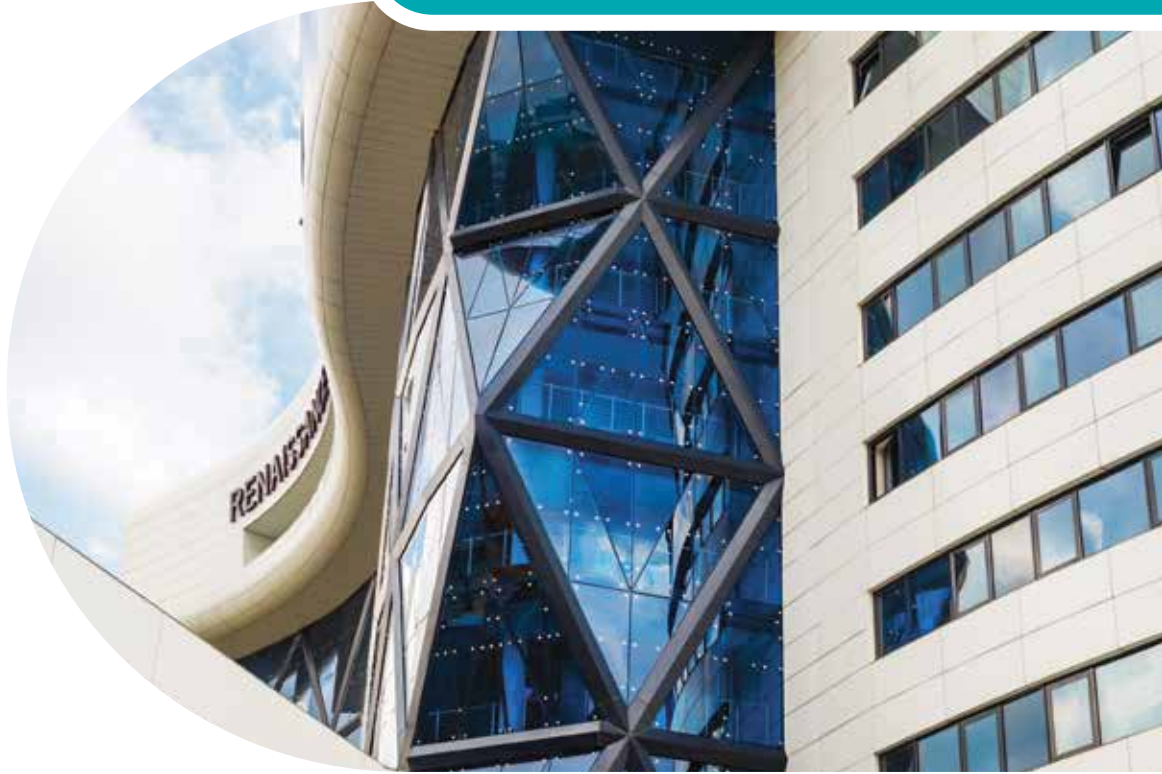
The choice of Heating, Ventilation and Air Conditioning (HVAC) products can have a significant impact on LEED certification as it can influence 40% of the available points.

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.

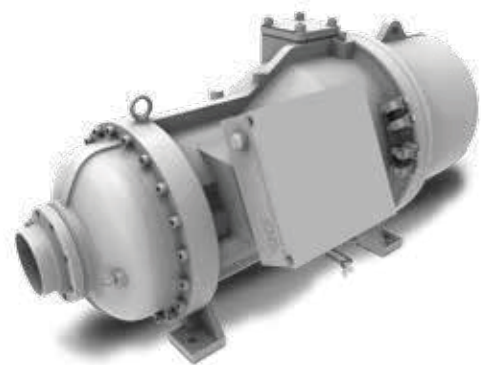
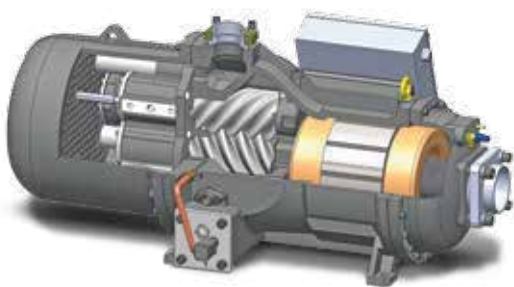
* The new series of chillers shall meet all the above criteria.



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.

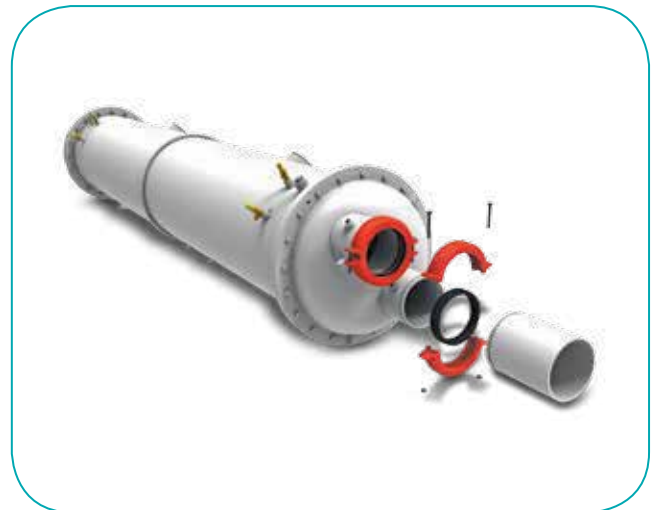
- Separate radial and axial force bearings enhance the chiller's life.
- **Unlike a mono screw, there is no direct contact between the gate rotor and main rotor, which eliminates wearing out of rotors.**
- Advanced control algorithm prevents excessive compressor cycling.
- Automatic compressor unloading 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 has 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 for 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 R134 refrigerant.

Compact and Light-weight

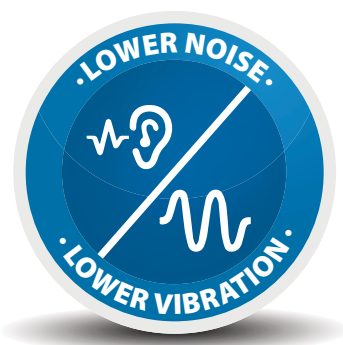
Critical parts like compressors, coolers, condensers etc., of these new generation configured screw chillers, are not only efficient but also compact. This makes the chiller compact. These chillers are as much as 30-50% lesser in size and weight compared to a conventional chiller.

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.



Economiser

The Configured Screw Chiller series is equipped with economisers. These plate-type heat exchangers help in further sub-cooling the liquid refrigerant. The economiser system enhances the unit's refrigeration effect by providing more circulated refrigerant. This yields 5% higher cooling capacity and higher COP as compared to conventional chillers.



ASME Stamping

The new Blue Star Configured Screw Chiller series is available with 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 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 this 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, 2016
EXPIRES: April 19, 2019
CERTIFICATE NUMBER: 52,520


 Richard Rottmann
 Board Chair, Conformity Assessment


 Joseph L. L. L.
 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



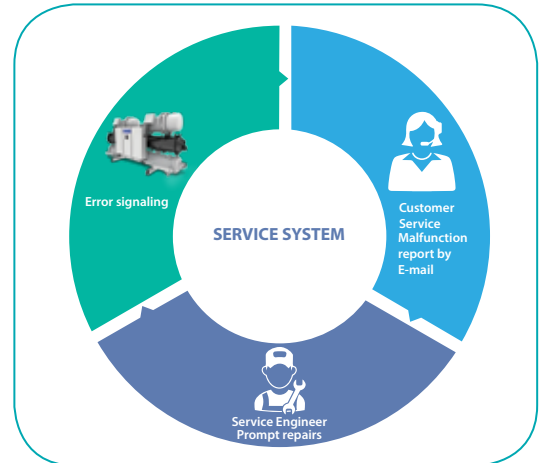
24x7 automatic monitoring



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:



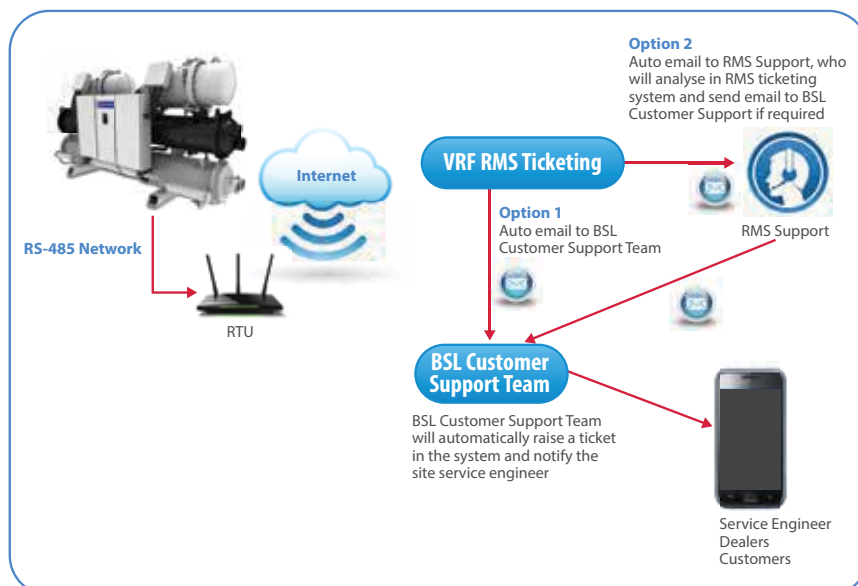
Very quick response time



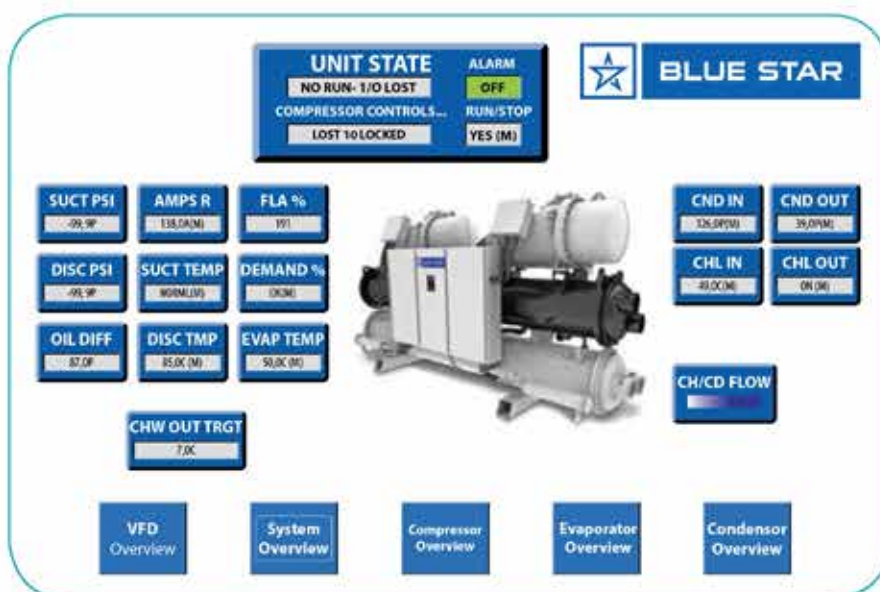
Faster turn around time



Higher uptime of the system



Advanced Features of Controllers:



- | | | | |
|---|--|---|------------------------------------|
|  | Precise temperature control of +/- 0.5°C |  | User-friendly machine interface |
|  | Anti-freeze and no flow protection |  | Alarm output |
|  | Compressor run time balancing |  | Efficient operating zone algorithm |
|  | Automatic backup mode |  | Efficient oil separator |
|  | Single phasing/phase loss protection |  | Self-diagnosis control system |
|  | Overload protection |  | Stored past history and alarm |
|  | Over-current protection |  | Display unit flexibility |
|  | HP/LP protection |  | Demand restriction |
|  | Compressor run hours |  | DLT protection |
|  | Password protection |  | Oil level protection |
|  | BMS compatibility | | |

NOTES

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Widest Range Of Products



VRF IV Plus - 100% VRF System



VRF IV S - Side Discharge VRF System



VRF Sprint - Pre-piped VRF System



Inverter Ducted Splits & Packaged ACs



Packaged ACs & Ducted Splits



Water Cooled Centrifugal Chillers



Turbocor Chillers



Water Cooled Screw Chillers with VFD



Air Cooled Screw Chillers



Air Cooled and Water Cooled Scroll Chillers



Air Cooled & Water Cooled Condensing Units



Process Chillers



BLUE STAR

BUILT ON TRUST

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