



BLUE STAR



INVERTER
SCROLL
CHILLER

BIG ON ENERGY EFFICIENCY

FIRST-EVER SCROLL CHILLER EXCEEDING 3 STAR RATING



Inverter Scroll Chillers

With over seven decades of experience in the HVAC industry and the largest installation base of scroll chillers across the country, Blue Star is the market leader in scroll chiller systems in India.

Now, Blue Star introduces state-of-the-art Inverter Scroll Chillers packed with innovation and cutting-edge technology to strengthen that leadership position further.

Blue Star's Inverter Scroll Chiller is the first scroll chiller in India that exceeds the 3 Star efficiency norm of the Chiller Labelling Program. It offers phenomenal savings on power consumption and a very high return on investment.

Manufactured at Blue Star's world-class ISO 9001-certified factory, the new range of Inverter Scroll Chillers is available in a wide range of capacities from 10TR to 78TR. These machines can handle varying cooling requirements thanks to the combination of inverter and fixed speed compressor configurations. This makes these machines ideal for air conditioning spaces such as offices, hotels, hospitals, industries, etc., which see large fluctuations in load through the day and/or through different seasons.



Inverter Compressor Technology

The new range of Scroll Chillers has advanced inverter compressors which are equipped with Intermediate Discharge Valve (IDV) and a Variable Frequency Drive. These components exactly regulate the capacity of the system depending on load requirements. This capacity regulation helps in optimizing power consumption by 25% as compared to conventional scroll chillers.



Chiller Labelling Program's Efficiency Norms

Efficiencies of air-cooled chillers for Star Rating:

| COOLING CAPACITY (TR) | COP | ISEER COP | | | | |
|-----------------------|-----|-----------|--------|--------|--------|--------|
| | | 1 Star | 2 Star | 3 Star | 4 Star | 5 Star |
| < 75 | 2.4 | 3.0 | 3.3 | 3.6 | 4.0 | 4.4 |
| 75 & Above | 2.6 | 3.1 | 3.5 | 3.9 | 4.3 | 4.7 |

Efficiencies of water-cooled chillers for Star Rating:

| COOLING CAPACITY (TR) | COP | ISEER COP | | | | |
|-----------------------|-----|-----------|--------|--------|--------|--------|
| | | 1 Star | 2 Star | 3 Star | 4 Star | 5 Star |
| < 75 | 4.2 | 4.8 | 5.2 | 5.6 | 6.1 | 6.6 |
| 75 – 149 | 4.7 | 5.0 | 5.6 | 6.2 | 6.8 | 7.4 |

Blue Star’s Inverter Scroll Chillers Exceed Norms For 3-star Efficiency



Blue Star Inverter Scroll Chillers – An Innovative Design

The Blue Star Inverter Scroll Chiller is a hybrid system designed with a variable capacity inverter scroll compressor combined with multiple fixed speed scroll compressors. The advanced controllers use unique logic which optimizes the workings of the required number of fixed speed compressors and inverter compressor at various load conditions.

PRODUCT RANGE:



AIR-COOLED



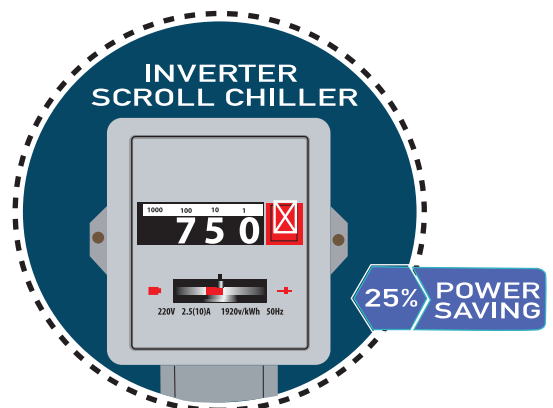
WATER-COOLED



Key Features:

The following components have been carefully designed and selected to deliver optimum cooling, maximum efficiency and high system reliability:

- Inverter & Fixed speed scroll compressors
- Inverter drives
- Intelligent controller
- High efficiency heat exchangers

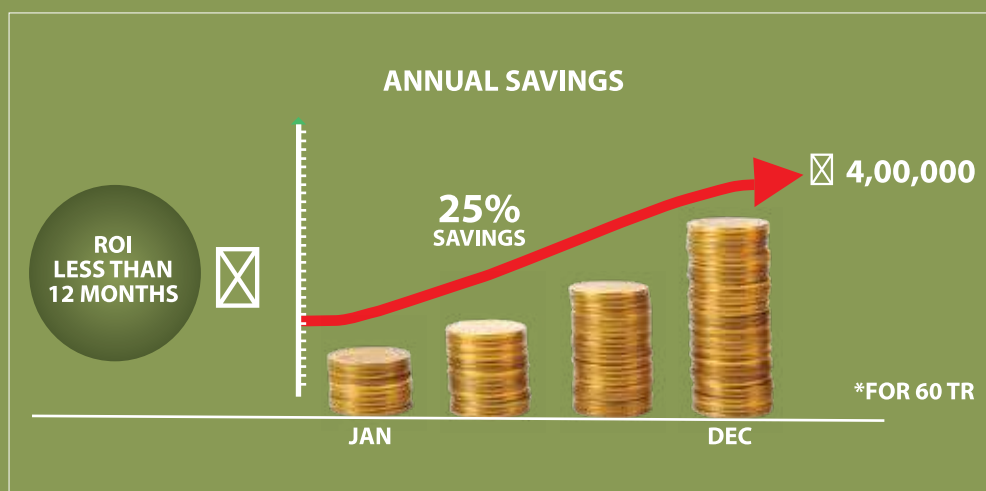




Attractive Return on Investment:

The new generation inverter scroll chillers are designed with highly efficient scroll compressors, enhanced coil face area & advanced controllers making it one of the most energy efficient scroll chillers available in the country. The power savings will be more than 25% as compared to conventional scroll chillers. The return on investment would be less than 1 year.

The ROI is even better for industries, hotels, hospitals where working hours are higher.



World Class Design:

The new Inverter Scroll Chillers have been given a complete make-over from conventional design to give them aesthetically pleasing looks. The new innovative 'Y' design condenser also has a lower footprint, thereby occupying much less floor space.



INVERTER SCROLL CHILLER



Compact Design:

The Inverter Scroll Chiller range is designed with a new innovative 'Y' design condenser to optimize the foot print of chillers. The savings in floor space would be approximately 25% as compared to conventional scroll chillers.



CONVENTIONAL
SCROLL CHILLER



INVERTER SCROLL
CHILLER



High Reliability:

The advanced control logic will ensure that variation in chiller loads is managed by inverter scroll compressors. This will drastically reduce on-off cycles of fixed speed compressors thereby enhancing the overall life of chillers.

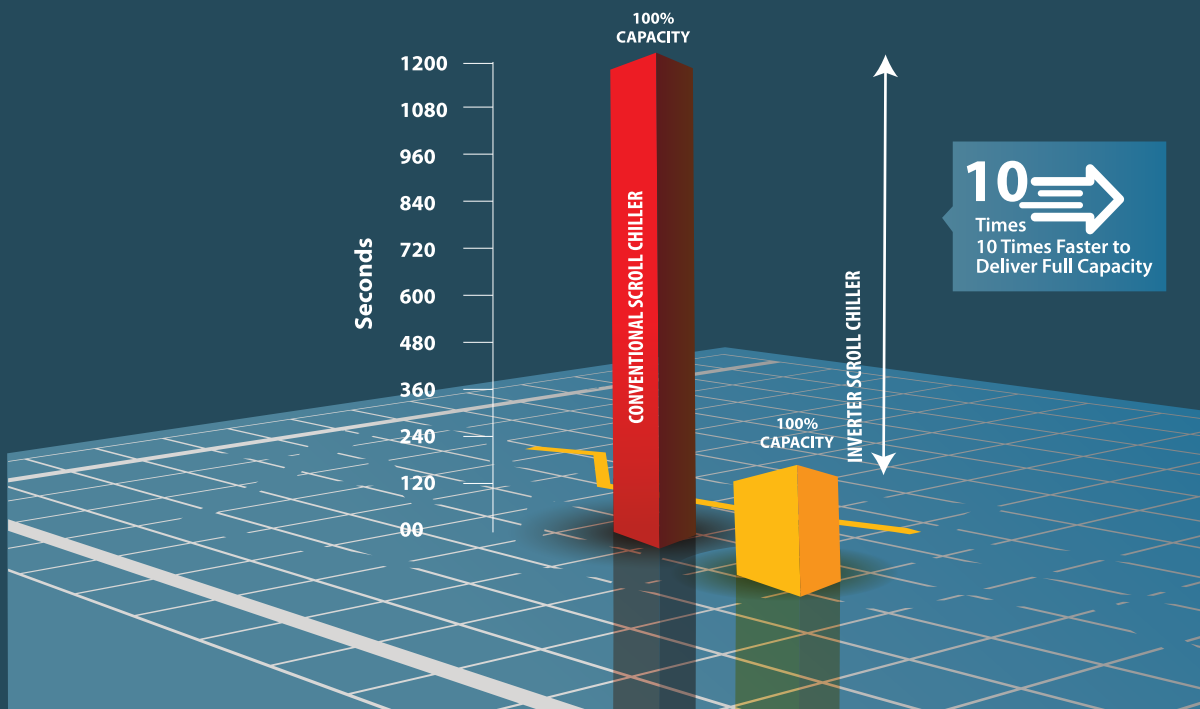


Rapid Cooling Mode:

Scroll chillers are widely used for process cooling, pharmaceutical and critical industrial applications. The load variation in these applications can vary significantly and to achieve 100% capacity conventional chillers would take approximately 20 minutes. This can significantly impact process cooling requirements.

The new inverter scroll chillers are designed with a unique rapid cooling mode. This feature will enable customers to achieve 100% cooling within 2 mins. This will help to maintain the required chilled water temperature in a short span of time.

RAPID COOLING



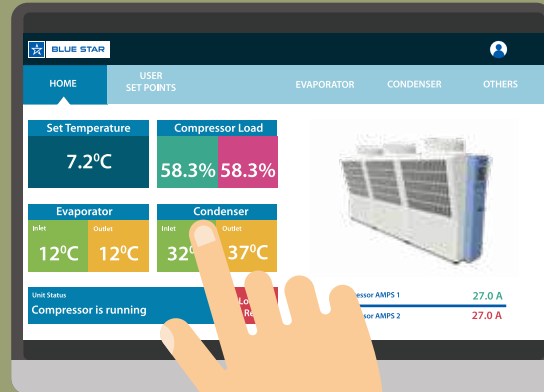
Intelligent Microprocessor Control

The new range of scroll chillers are offered with a BMS compatible microprocessor control which allows the chiller to be operated through central Building Management Systems.



Touch Screen Option

The new controller has an elegant looking touch screen with a backlight display. It helps in easy operation of the unit and also provides a user-friendly graphical interface to access various parameters.



Precise Temperature Control

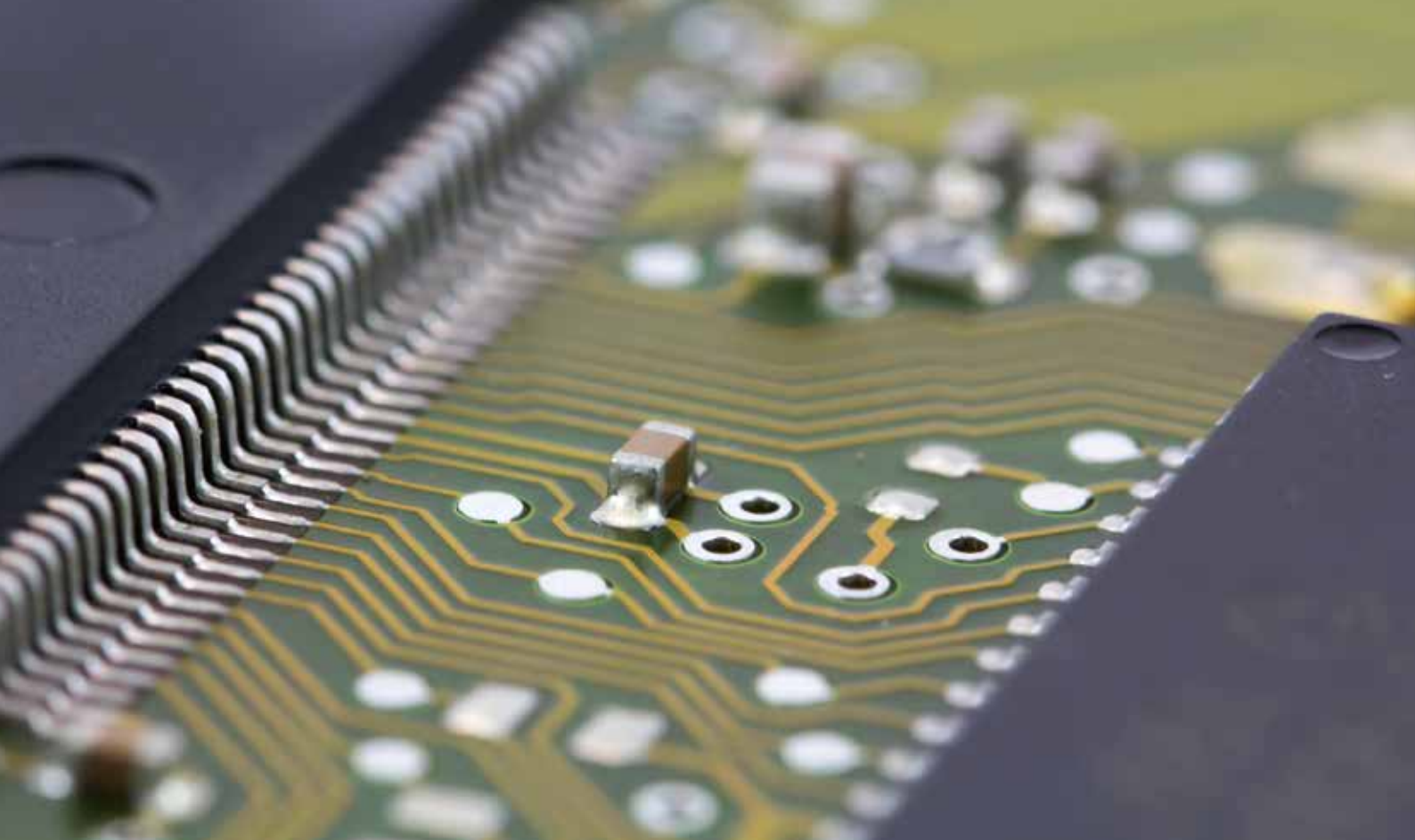
Conventional scroll chillers are provided with manual controllers where the chilled water setting can be to the tune of $\pm 1^\circ\text{C}$.

The new microprocessor based controller operates on digital control which allows chilled water temperature settings to the tune of $\pm 0.1^\circ\text{C}$. This enables to achieve process cooling temperature precisely and also substantial power savings.



Easy and Quick Installation:

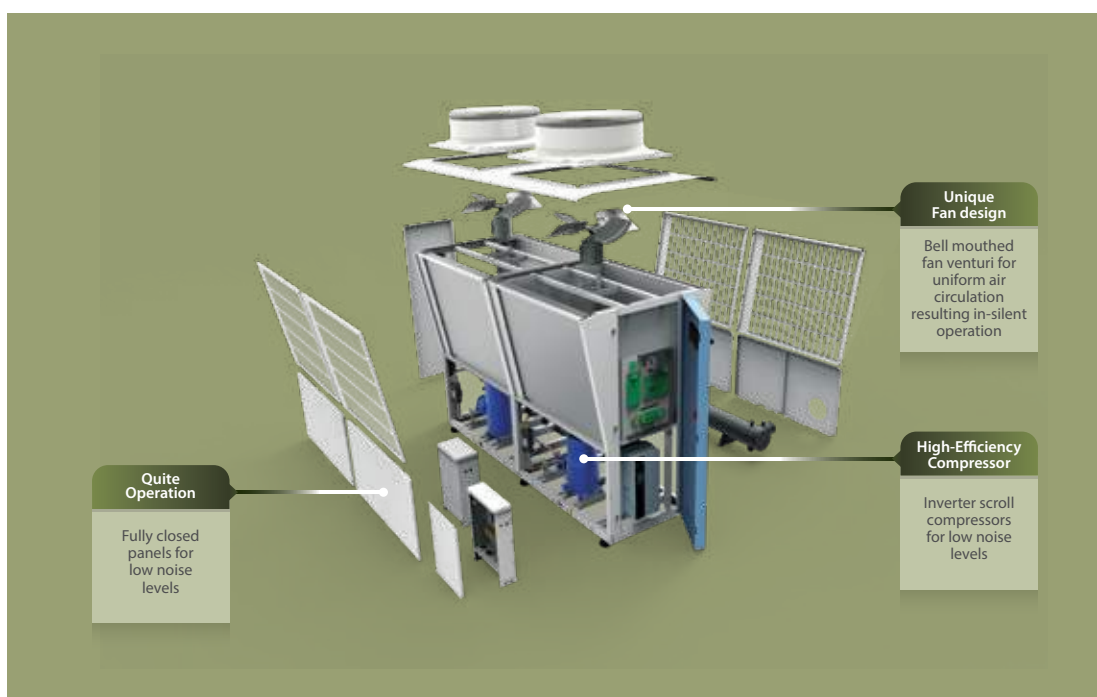
The new Inverter Scroll Chillers are fully charged, pre-wired & tested completely at our factory prior to dispatch. This enables customers to install the chillers immediately and reduce installation time. This also avoids an impact in performance when refrigerant charging is done manually on site like with most conventional chillers.



Silent Operation:

The new range of scroll chillers is designed to minimize noise levels by the following design enhancements

- The entire compressor section is enclosed by panels on all four sides (for air-cooled applications).
- Condensers with special bell-mouth venturi are designed to optimize air cutting noise of fans (for air-cooled applications).
- The inverter compressor optimizes the on-off cycle of fixed speed compressors thereby reducing noise level of chillers.

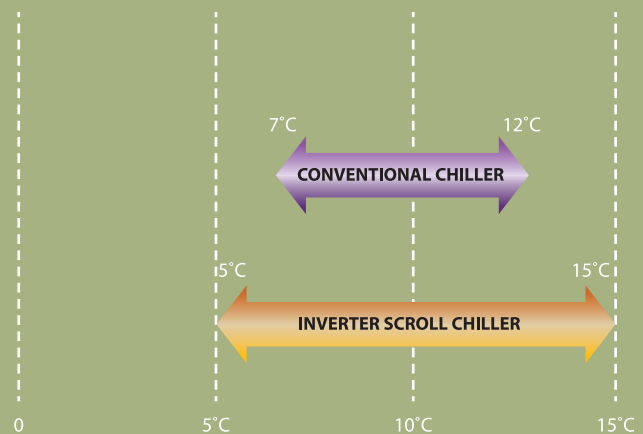




Wide Operating Range:

Conventional scroll chillers will operate at 12°C chilled water inlet and 7°C chilled water outlet offering a temperature differential of only 5°C. However there are many applications where the chilled water temperature differential can be even higher than 5°C.

The new range of inverter scroll chillers operates on a temperature differential upto 10°C, that helps cater to various process cooling requirements. This feature can be used to optimize running costs of chillers.



Safety Protections:

The inverter scroll chillers are equipped with protection against the following:

- Anti-freeze
- HP/LP
- Single phase
- Phase loss
- Overload
- Over current
- Under current
- Reverse rotation protection for inverter compressor
- Oil shortage



Anti-Corrosion Condenser Fin Coating

Specially treated blue fins for air-cooled condensers are available as an option for improving the life of chillers in corrosive environments.



Eco-Friendly

The inverter scroll chillers come with zero ODP R-410A refrigerant.

Technical Specifications

| DESCRIPTION | UNITS | XAC2VS-012MR3 | XAC2VS-024MR3 | XAC2VS-036MR3 | XAC2VS-048MR3 | XAC2VS-060MR3 | XAC2VS-072MR3 |
|------------------------------|-------|--|---------------|---------------|---------------|---------------|---------------|
| Nominal Cooling Capacity | TR | 12 | 24 | 36 | 48 | 60 | 72 |
| Quantity of Compressors | Nos. | 2 | 2 | 3 | 4 | 5 | 6 |
| Type | | Hermetically Sealed Scroll | | | | | |
| Motor Type | | Refrigerant Cooled , 3 Ph, 2 Pole Squirrel Cage Induction Motor | | | | | |
| Operating Speed | RPM | 2900 | | | | | |
| Electrical Power Supply | | 400V(+/-10%), 3Ph,50Hz | | | | | |
| Condenser | | | | | | | |
| Tube Material | | Copper | | | | | |
| Fin Material | | Aluminium | | | | | |
| Quantity of Fan | Nos. | 1 | 2 | 3 | 4 | 5 | 6 |
| Condenser Fan Motor Details | | | | | | | |
| Type | | Totally Enclosed, Pad Mounted | | | | | |
| Quantity | Nos. | 1 | 2 | 3 | 4 | 5 | 6 |
| Speed | RPM | 910 | | | | | |
| Airflow Quantity | CFM | 9000 | 18000 | 27000 | 36000 | 45000 | 54000 |
| DX Cooler | | | | | | | |
| Tube Material | | Copper | | | | | |
| Water Connection Size In/Out | mm | 50 | 80 | | | | |
| No. of Refrigerant Circuit | Nos. | 2 | 2 | 3 | 4 | 5 | 6 |
| Overall Dimensions | | | | | | | |
| Length | mm | 1285 | 2500 | 3700 | 5000 | 6200 | 7400 |
| Width | mm | 1050 | | | | | |
| Height | mm | 1917 | | | | | |

Note : Pl refer GA drawings for exact dimension

Technical Specifications

| DESCRIPTION | UNITS | XWC2VS-013AR3 | XWC2VS-026AR3 | XWC2VS-039AR3 | XWC2YVS-052AR3 | XWC2YVS-065AR3 | XWC3YVS-078AR3 |
|-----------------------------|-------|--|---------------|---------------|----------------|----------------|----------------|
| Nominal Cooling Capacity | TR | 13 | 26 | 39 | 52 | 65 | 78 |
| Quantity of Compressors | Nos. | 2 | 2 | 3 | 3 | 3 | 4 |
| Type | | Hermetically Sealed Scroll | | | | | |
| Motor Type | | Refrigerant Cooled , 3 Ph, 2 Pole Squirrel Cage Induction Motor | | | | | |
| Operating Speed | RPM | 2900 | | | | | |
| Electrical Power Supply | | 400V(+/-10%), 3Ph, 50Hz | | | | | |
| Flooded - Condenser | | | | | | | |
| Tube Material | | Copper | | | | | |
| No. of Pass (Water Side) | Nos. | 4 | 4 | 2 | 2 | 2 | 2 |
| No. of Refrigerant Circuit | Nos. | 2 | 2 | 2 | 2 | 2 | 3 |
| DX Cooler | | | | | | | |
| Tube Material | | Integral Finned Copper Tubes | | | | | |
| No. of Pass (Ref. Side) | Nos. | 4 | 2 | 2 | 2 | 2 | 2 |
| No. of Refrigerant Circuit | Nos. | 2 | 2 | 2 | 2 | 2 | 3 |
| Overall Dimensions (Approx) | | | | | | | |
| Length | mm | 2340 | 2340 | 2340 | 2650 | 2650 | 2650 |
| Width | mm | 1000 | 1065 | 1065 | 1065 | 1065 | 1075 |
| Height | mm | 1275 | 1450 | 1450 | 1600 | 1600 | 1700 |

Note : PI refer GA drawings for exact dimensions



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Blue Star products comply with RoHS regulations as per E-Waste (Management & Handling) Rules, 2016. For disposal of E-Waste, kindly visit our website www.bluestarindia.com or call our customer care 1800 209 1177 (Toll Free) or 1860 266 6666.