HITACHI proudly presents to our customers this wide range of **split system air conditioners,** from 4HP to 20 HP which is designed for high and medium outdoor temperature and comply with almost any types of installation requirements. These split system air conditioners are composed of condensing units and cooling units. The condensing units are composed of compressors, air cooled condensers, condenser fans, auxiliary and control equipment compactly packed in a weather proof cabinet. The cooling units are direct expansion fan coil units for indoor installations, and are designed for duct air distribution system in domestic and commercial applications.

- All series is using Hitachi scroll compressor, low vibration and high efficiency.

  New RAS 4CT2S ~ RAS 20CT2S (X4) series is using Hitachi scroll compressor which can proceed suction, compensation, discharge processes at one time to reach low vibration and high efficiency performance.

- New RAS (X4) series is using PCB Control Circuit that can provide completed protection and qualify failure indicative function.

  PCB integrates all protection devices together and it can provide protection function immediately and completely. In case, unit is operating under abnormal condition, flicker on PCB will keep blinking to communicate failure information for service people to identify and solve problems quickly and properly.

- Internal thermostat embedded compressors, and it can react quickly.

  Hitachi embedded internal thermostat in 4HP~12HP compressors, when compressor winding temperature exceeds the setting, internal thermostat can react faster than discharge gas thermostat, this way can provide prompt protection for compressors.

- Hitachi cares about Earth by using eco-parts.

  Since all countries are facing global warming crisis, many countries have announced to ban against importing products included mercury, New RAS (X4) series is adopting over current transformer will send warning message to PCB to stop compressor operation.

- Hitachi brings a new model RAS 20CT2S (X4) to match with RAS 20U2S (X4) for completed series choice and easier installation.

  Hitachi develops a new model RAS 20CT2S (X4) to complete RAS (X4) series from 4HP to 20HP. Full products series can meet customer demands completely.

Cooling Unit:

High Performance Evaporator Fan: The powerful and efficient multi blade centrifugal fan creates high static pressure with minimum power consumption and smooth air flow, Evaporator fan bearings can be replaced without removing fans.

Well Designed Evaporator Highly efficient cross fin coils have been applied to provide a larger cooling capacity with low air speed on the coil.

Condensing Units:-

Energy Saving Design: Highly efficient scroll compressors low power input is achieved by specially designed compressors and heat exchangers and their combinations.

Optional Accessories
Filters Box and filter- A high performance air filter and a filter box are provided for the return air connection of all models.

HITACHI RUA New (X4) Series- All series is using HITACHI scroll compressor, low vibration and high efficiency.

- New RUA 4AT3S ~ RUA 30AT3S (X4) series is using Hitachi scroll compressor which can proceed suction, compensation, discharge processes at one time to provide low vibration and high efficiency performance.
- New RUA (X4) series is using PCB Control Circuit that can provide completed protection and qualify failure indicative function.

  PCB integrates all protection devices together, so it can provide protection function immediately and completely. In case, unit is operating under abnormal condition, flicker on PCB will keep blinking to communicate failure information for service people to identify and solve problems quickly and properly.

- Internal thermostat embedded in compressors and it can react quickly.

  Hitachi embedded internal thermostat in 4HP ~ 12HP compressors, when compressor-winding temperature exceeds the setting, internal thermostat can react faster than discharge gas thermostat, this way can provide prompt protection for compressors.

- Hitachi cares about Earth by using eco-parts.

  Since all countries are facing global warming crisis, many countries have announced to ban against importing products included mercury, New RUA (X4) series is adopting over current transformer to instead of O.C.R, which comprises mercury. Over current transformer works as a senior, when current exceeds setting, over current transformer will send warning message to PCB to stop.

Baked Paint Galvanized Steel Panels:-

Corrosion Resistant Cabinet: The weather proof characteristics of the panels have been significantly reinforced by the adoption of galvanized steel panel which have been coated with synthetic resin paint through our unique baking process. The resistant panels ensure long lasting fine appearance and maintenance work has been minimized.

Reliable Protection System:

Compressor Protection: Each compressor is protected with the following components: reverse phase protection, over current protector, internal thermostat, high pressure switch, delay timer. This wide variety of protection devices provides perfect compressor guarding functions, assuring fewer service calls from customers.

Fan Motor: The evaporator fan motors are protected with thermal over current relay and the condenser fan motors are protected with an internal thermostat.

Energy Saving Design:-

High Efficient Compressor: Low power input is achieved by specially developed compressors and heat exchanger and their suitable combinations.

Condenser: The adoption of a highly efficient super slit fin heat exchanger provides low operation cost.

Evaporator: Highly efficient super slit fin coils and inner grooved tube has been applied to provide a large cooling capacity with low noise.

Insulated Indoor Compartment: The insulation compartment effectively eliminates heat loss.

Capacity control (Dual circuit units): Each unit is equipped with two or three compressors and two or three independent refrigeration cycles so that one compressor operation can reduce the operation cost against a half load of one large compressor (60% load operation is available for RUA 13AT3S and RUA 15AT3S, 66% load operation is available for RUA 30AT3S)

EFFECTIVELY MATCHED SELECTION FOR INDIVIDUAL APPLICATIONS

Optimum Matched Choice
High Temperature Operation- Designed for high outdoor temperatures, these units guarantee reliable operation even under condition up to an ambient temperature of 52°C (125°F).

Attractive Fan Performance- Adequate external static pressure by the evaporator fan can be obtained for individual ducting applications.

Minimum Installation Arrangement

Easy Installation- This easy to install and ready to operate unit ensure rapid and low cost installation work.

Pre-Drilled Duct Flange- Flanges are prepared at the supply and return duct connections so that they can reduce duct connection work at the site.

Factory-Completed- Only System connection work is required, excluding the installation work for auxiliary equipment.

Quiet Operation

Compressor- Noise and vibration have been effectively reduced by the adoption of new hermetic compressor.

Condenser Fan- This direct driven propeller fan is dynamically balanced to ensure smooth air flow.

Evaporator Fan- The centrifugal fan and fan casing are optimum shaped for efficient and low noise operation.

Reduced Maintenance Work

Easy Maintenance- Large service spaces and rapidly removable service panels have been provided for easy maintenance work.

HITACHI air cooled chillers up to 400HP has been developed for various requirements of air conditioning systems and industrial chilled water systems, where these equipment are operated under high ambient temperatures of 52°C. Therefore, the units can be utilized under a wide temperature range.

These water chillers are equipped with newly model changed semi-hermetic HITACHI A type screw compressors, featuring high reliability, low noise and low vibration and highly efficient air cooled condenser, resulting in compact design.

The unit is composed of compressors, air cooled condensers, shell and tube type water coolers, and other auxiliary and control devices, compactly packaged in a weather proof cabinet which is constructed of galvanized steel plates processed with specially baked resin paint.

FEATURES

The most reliable semi hermetic screw type compressor adopting new profile screw rotors, HITACHI have developed the higher performance screw type compressor to obtain a higher reliability and durability of the unit operation.

In this new century when people pay more attention to the change of the environment, HITACHI semi hermetic screw type compressors, which use the R407C refrigerant directly, and reduce the refrigerant leak greatly have been sold 140,000 in the world!

- **Highly Efficiency Operation**
  The appropriate combination of the air side heat exchangers with high performance SLIT fins, highly efficient screw compressors and water side heat exchangers has achieved this high efficiency of operation.

  Air side heat exchanger using in an converse M-type distributing resulting in an equality distribution of the air velocity, achieves highly heat exchange efficiency.

- **Smaller Vibration and Lower Operation Sound**

  Due to the combination of the HITACHI semi-hermetic screw compressors and smooth air flow propeller fans for air side heat exchangers, smaller vibration and lower sound operation has been achieved, therefore in most cases, special vibration absorbing curbs are not required by utilizing factory supplied rubber mats.

- **Capacity Control**

  Continuous Capacity Control
  - Chilled water outlet temperature can be controlled precisely within ± 0.5 of the setting temperature. This control is performed by applying a micro computer to the continuous capacity control type screw compressor.
  - This precise temperature control is not only suitable for air conditioning but also for industrial use.
  - Continuous capacity control is performed by adjusting the slide valve position as shown below. The slide position can be changed freely between 100% and 15% in accordance with cooling load.

- **Micro-processor Control for Various Functions**
  - Alarm indication for each cycle by 7 segment
  - Rotating control of compressor starting order
  - Current limitation control
  - Automatic start after instantaneous power failure

  Complete Standard Accessory
  - Water connection companion flange
  - Vibration- proof Mat
  - Foundation Bolt, Nut, Washer and Blushing
  - Spreader bar for rigging
  - Acoustic panel for compressor
  - Protection net for condenser

- **OTHER OPTION**

  The following specifications are available on order basis. Please contact local HITACHI's distributors if required.

  - RS485 physics connector.
  - High static pressure fan (Max. outside static pressure: 150 Pa)
  - Remote control box
  - Liquid crystal touch panel with big screen (Independent Box)
  - HITACHI water chillers group control system.

HITACHI H series water-cooled water chillers are designed for all the conveniences of chilled water air conditioning systems, especially for hotels, stores, hospitals, modern building and process cooling applications of modern manufacturing industries. HITACHI water-cooled water chillers are equipped with newly developed HITACHI A type semi-hermetic screw compressors which feature higher precision and simplicity of construction by eliminating such items as pistons, connecting rods, valve plates, oil pumps and mechanical linkages for capacity controls in the reciprocating compressors. These features result in lower noise and lower vibration, reliable long period operation, and installation feasibility on any floor of the building. The units are composed of a compressor(s), a condense(s), a direct-expansion water cooler, a electronic expansion valve(s) and auxiliary and control equipment. The units can be operated with the utmost simplicity.

The combination of Hitachi Screw Compressor and Microcomputer inclines HITACHI water-cooled Water Chillers to be perfect.

Micro-processor control for various functions

A microprocessor has been applied to the new models for following various functions.

- Alarm indication for each cycle by 7-segment.
- Rotating control of compressor starting order.
- Current limitation control.
- Automatic start after instantaneous power failure.
- Remote/location switch.
- Communication adapter connecting the unit to BMS (Building Management System) is a optional accessory for the details, please refer to technology catalog 1.

Liquid crystal screen display (Optional)

- Big colorful liquid crystal touch panel (optional).
- Provides English and Chinese display interfaces.
- Leave word board function (for shift)
- Real time information.
- Return to factory setting
- Time starting function
- With RS485 physics connection, communication adapter provides communication to BMS. (Building Management System).

Hitachi's Semi-Hermetic Screw Compressor

The newly developed HITACHI semi-hermetic screw compressors feature long life and quiet operation due to simplicity of construction when compared with the conventional reciprocating compressors.

A Symmetrical Rotor Profile and other Features

This profile of the compressor rotor, five six (male and female) type, assures excellent efficiency even in high compression ranges, in addition to these uniquely profile rotors, the following features are incorporated.

- Use of special bearing, resulting in long life and high reliability
- Patented capacity control system, enabling simple control system.
- High precision and high grade finishing rotors, enabling no oil cooling system.

Automatic Capacity Control

An automatic capacity control mechanism enables the unit to perform economical and energy saving operation depending on various conditions.

Additionally, two (2) independent refrigeration cycles are provided for model (RCU(G)80WHYZ(-E),RCU(G)100WHYZ(-E),RCU(G)120WHYZ(-E),RCU(G)220WHY(-E), RCU(G)260WHYZ(-E), RCU(G)300WHYZ(-E),RCU(G)340WHYZ(-E) and RCU(G)380WHYZ(-E)

Three (3) independent refrigeration cycles are provided for model RCU(G)150WHYZ(-E), RCU(G)180WHYZ(-E), RCU(G)410WHYZ(-E), RCU(G)450WHYZ(-E), RCU(G)490WHYZ(-E) and RCU(G)530WHYZ(-E), RCU(G)570WHYZ(-E) to avoid complete shutdown and ensure 50% of capacity provided at the less even in maintenance.

Easy for Maintenance

Equipped with accessibility components such as pressure relief valve and oil sight glass, easy maintenance is obtained.

Factory Charged

The refrigeration cycle is charged with refrigerant and sealed under the strict quality control therefore installation and operation can be performed in a short period of time.

Factory Wires

Only power wiring and water piping are required in the field.

Most Reliable Protective and Ancillary Components

The units are protected against any assumed failure of operation, based on the following components:

Electronic Timer for compressors, three phase quick response over current relay, internal thermostats for compressor motors, freeze protection thermostats, pressure relief valve, oil sight glass, oil heater, fusible plug and reverse phase protection relays for compressors.

Timer Counter

This timer counter indicates the operation hour of the screw compressor, therefore accurate maintenance time can be checked with this timer counter.

Standard Accessories

The following accessories are supplied with the unit:

- Vibration Proof Rubber Mats
- Foundation Bolts
  The combination of these mats and bolts effectively minimizes noise and vibration, and is coupled with facilitated installation procedures.

The following accessories are chose and bought by customers:

- Communication adapter connecting the unit to BMS (Building Management System) is an optional accessory. (LONWORKS or RS485 for choosing)
- Big colorful liquid crystal screen display (both English and Chinese can be supplied).