Sabro

Est 1969

Pioneering

HVAC Manufacturing in Pakistan

55 Years Of Excellence

ISO 9001:2008 CERTIFIED

APPROVED CE

CORPORATE PROFILE& Catalogue

www.sabrotechnology.com

Inspired By The Stimulus to Grow through Knowledge, interlaced with the zeal and sheer commitment, of an enthusiastic team and **Gripped by the Obsession of Three Brothers** of turning the dream into reality, Sabro has evolved, grown and expanded since its inception in 1969.

It was the fruit of commitment, hope and hard work that enabled us to be the pioneers of HVAC manufacturing in Pakistan, exporting to over 22 countries, encapsulating 3 continents. We now thrive as an agile manufacturer for a complete range of HVAC manufacture including Chillers(Hermetic-Scroll/S.H. Reciprocating/Screw), Self-Contained units, Air-Side Equipment, Mini Split Units & a menagerie of customized manufacture tailored to suit every HVAC requirement of the customer.

For over five decades, Sabro has been a trusted brand name that has exceeded expectations nationwide & internationally, catering to the needs of both domestic as well international customers.

SABRO reserves the right to change, in parts or in whole the specifications of its Air Conditioning Equipment at any time in order to add the latest technology. Therefore, the enclosed information may change without any prior notice.

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Exclusive Distributor in Pakistan

Sabro Engineering & Services
< Sales - Distribution - Service >

|SABRO AIR CONDITIONING|

In the field of PAK HVACR Poducts

[Solely Manufactured In PAKISTAN]

"1st In PAKISTAN!1969-2023"

1970s:

Introduced 1st Central station Air Handling Unit (AHU) In Pakistan.
Introduced 1st Commercial-based Self-contain Package type Unit (ASC Model series) In Pakistan.
Introduced 1st Commercial-based Split Package type Unit (ASU Model series) In Pakistan.

1980s:

Introduced 1st Commercial-based Water-cooled package Unit (WCP Model series) In Pakistan.
Introduced 1st Commercial-based Water-cooled package Unit (WCP Model series) In Pakistan.
Introduced 1st Split Package type Unit with remote Condenser (ARC Model series) In Pakistan.
Introduced 1st Commercial-based Air-cooled package Chiller (AWC Model series) In Pakistan.
Introduced 1st Commercial-based Water-cooled package Chiller (WWC Model series) In Pakistan.

1990s:

Introduced 1st "Split-Package Wall - mounted A-C" (Mini - Split Models series) for Domestic use In Pakistan.
Introduced 1st Commercial-based Fan Coil Unit (FCU Model series) In Pakistan.
Introduced 1st **Commercial-based High efficiency Fan** (Fresh Air/Exhaust-vent Fan Models – Forward Curved/Backward Inclined) In Pakistan.
Introduced 1st Commercial-based Hot Water Generator (HWG Model series) In Pakistan.
Introduced 1st Commercial-based Electrical Steam Humidifier (ESH Model series) In Pakistan.
Introduced 1st Commercial-based Air Curtain (A-C Model series) In Pakistan.
Introduced 1st Commercial-based Refrigerated De-humidifier (DH Model series) In Pakistan.

THE COMPANY 55 YEARS

|SABRO AIR CONDITIONING|

In the field of PAK HVACR Poducts

[Solely Manufactured In PAKISTAN]

"1st In PAKISTAN!1969-2023"

New Millennium

2001	Produced **Spark Free Air-conditioners** for Qatar Army.
2002	Developed **Microprocessor Controller**.
2003	**Expanding Exports** to Saudi Arabia, Kuwait, Qatar and UAE.
2004	Launching of **Polyurethane Foaming Setup** (insulation density of 40 kg/m3) Design, development and production of **Commercial units for Pak Navy**.
2005	Award in **12th HVACR** expo Lahore. Launching of **Full-fledged R & D village**. **Foundation of Sabro Technology (Pvt.) Ltd.** Design, development and production of **Commercial units for PAF**. Achievement of **Biggest ever Export order for Kuwait**.
2006	Development of **Thermal break Aluminum profile** in commercial Air Handling units of all types. Development and production in all types of commercial units **CFC free (Environment Friendly) refrigerant.**
2007	Development of **Shell & tube type shell**. Award in **14th HVACR** expo Karachi.
2008	Development & production of **Precision Air conditioners with latest techniques** of dehumidification through infrared glass tubes heater.
2009	Research & development on **Propane heating systems**. Award in **16th HVACR** expo Islamabad. Branding of **Precision AC** with a name **LUCRE**. **International Contract** signed with **Etiselat**.
2010	Research & development on **Environment friendly Refrigerant based HVAC systems**.
2011	Design, development and production of **Commercial units for Afghanistan.**
2012	Design, development and production of **BMS technology**.
2013	Research & development on **Cost effective, Energy efficient cooling/heating systems**.
2014	Obtained **BS EN ISO 9001:2008**
2015	Design & development of **Precision design draw-through floor standing units**.
2016	Design and development of **Precision cabinets for solar based power generation**.
2017	Design and development of **Air Cooled/Water Cooled Screw/Centrifugal Chillers..**
2018	Development of **energy efficient Air/Water Cooled Screw/Centrifugal Chillers..**
2019	Development of **Plasma Air Sterilizers against COVID-19..**
2020	Development of **DESICCANT ROTOR BASED DeHumidification systems**.
2021/22	Development of **DC Invertor Commercial systems**.
2022/23	Development of **DC 24V-AC Package unit for vehicle air-conditioning.**
2023/24	Development of **Direct-driven/Belt-driven Plug Fans(Centrifugal Ventilators)..**

NEW LAUNCH

InnovativelyCreative ...

TRUST THE AIR XPERTS

Product-Line with DC INVERTER Technology

- ASC DC Inverter Models
- ASU DC Inverter Models
- AWC DC Inverter Models
- WWC DC Inverter Models
- WCP DC Inverter Models
- AHU DC Inverter Models

DC-Inverter Systems

DESICCANT De-Humidifier

Process Air: 100 - 2000

Custom Make Available
Up to 12000 of Process Air

Sabro

www.sabrotechnology.com

InnovativelyCreative ...

TRUST THE AIR XPERTS

Product-Line with DC INVERTER Technology

RANGE

1.5 TON TO 8.5 TON DC INVERTER AC.

- Efficient design
- High efficiency
- Energy modelling
- Energy control
- Dehumidification control
- Quiet operation
- Benefits for Users
- Eco - friendly

1.5Ton-2 Ton
Wall Mounted Model

1.5Ton-2Ton-4 Ton
Ducted Concealed Unit

2 Ton-4.25 Ton
Cassette Type Unit

4.25 Ton
Floor Standing Unit

1.5Ton-8.50 Ton
Out Door Unit

8.50 Ton
Floor Standing Unit

InnovativelyCreative ...

TRUST THE AIR XPERTS

Product-Line with SCREW Compressor Technology

Air cooled Screw Chiller Models Series
127kw to 1698kw

Water cooled Screw Chiller Models Series
220kw to 1724kw

InnovativelyCreative ...

TRUST the AIRXperts

DC 24VAC PACKAGE UNIT

FOR VEHICLE AIR-CONDITIONING

Specially Designed,
For Buses, Trucks, Containers,Boats & Hovercrafts.
DC Power Battery Air-conditioner is engine direct-driven. A Package unit (backed with DC Powered battery) that best suits your all needs for Vehicle Air-conditioning.

SPECIAL PURPOSE

AIR CLEANING UNIT

EXCLUSIVE FEATURE

Various effective purification and disinfection techniques (AL, G4 refine paper Filter, BAG & HEPA Filters, Bi-Polar ionizer etc.) are employed to purify and disinfect indoor air. Hospitals and clinics use our purifiers to disinfect and purify air in endoscope department, patient wards, operating room etc. to reduce the risk of airborne infection.

Contents

Prologue

Sabro group (Pvt.) Ltd. is a pioneer heating ventilation and air conditioning (HVAC) system company in Pakistan. The history of Sabro corporate dates back to more than five decades of continuous achievements.

It started in the year 1969, when a dream became a reality. Three Brothers laid the foundation for one of the biggest Air Conditioning Company in South East Asia region. After 55 years of continuous efforts and hard work, Sabro stands tall in the field of HVAC.

Sabro strongly believes in self-reliance hence our corporation consists of following sister organizations which work hand in hand with Sabro manufacture of various products;

S.a. Brothers (Pvt.) Ltd Islamabad.
Sabro Technologies (Pvt.) Ltd Islamabad.

Sabro established the first ever Research and Development facility back in 1986, ever since importance has been provided for the manufacturing of products that possess durability and reliability.

Sabro is the first ever and the largest Pakistani HVAC original equipment manufacturer that is exporting to **Afghanistan, Bahrain, Bangladesh, Kuwait, Keniya, Morocco, Malaysia, Oman, Qatar, Saudi Arabia, Srilanka & UAE.**

Mission Statement

I- To abide by Islamic rules and ways.

II- To sincerely back up our business alliance.

III- To support our employees through better career opportunity.

IV- To provide highest possible return on shareholders investments.

V- To fulfill our customer's desire for quality product worth their price.

Quality Assurance & Control

I- Develop and maintain a total quality culture within the organization.

II- Develop and harness the full capabilities of each person,
by continuous training.

III- Refine and update work processes.

IV- Eliminate all waste, rejects, defective and rework,
To "Get it right the first time".

All products manufactured must pass all stringent quality testing procedures. A standard inspection and testing plan is followed for all jobs. Quality is a continuous process at Sabro. This means that we continuously concentrate on improving our own performance to ensure that our clients continuously benefit from it. Our aim is to meet your expectations every time. We take a proactive stance towards quality moving beyond QC to QA, so you can be confident that your requirements will be met with best quality-consistently:.

I- Obtained ISO 9002 Certification in 1997.
II- Obtained ISO 9001 Certification in 2000.
III- Obtained BS EN ISO 9001:2008 in 2014
(HVAC Equipment(OEM) From NQA).

We are grateful that history has endowed Sabro with continuous opportunities. Since the establishment of Sabro in 1969, we have led technology advancement in the field of air conditioning as sole manufacturer of HVACR products in Pakistan. Our sole commitment to satisfy and serve our customers has been an unshaken constant.

It was a thrilling and eventful ride when my two brothers and myself started this company from zero in 1969, we made a small air handling unit from very limited resources for cinema theater. It is of great price that the unit is still operational to prove that it came from a great culture of quality innovation and continues customer satisfaction. Our mission statement is our driving force as we grow future to excel global market, our role in consumer comfort envision has become a trusted household brand.

The sixth decade of excellence dawns upon us with new horizons of not only geographical expansion but also in the state of the art technology innovation. Continuous improvement leads us to the diverse ventures like consumer and industrial electronics, software, CNC machine tools and even plastics. Time has constantly proved us in past five decades. The one thing that remains unparalleled is our commitment to customer.

My Number One Goal has always been to ensure that our clientele, suppliers as well employees are treated fairly and with respect. We have achieved this goal, establishing long standing glowing relationship.

We evidently plan to take this forward with even more excitement and energy.

Ch. Muhammad Siddique

Sabro has led the industry with smart innovations, cutting-edge technology that Enhances consumers' lifestyles.

We find solution, to satisfy genuine consumer needs through products with unique, progressive features and design **"Standardized + Customized + Specialized"** products that are technologically advanced, modern in the appearance and always a step ahead of the competition.

Sabro is convinced that **a truly superior product that meets all consumer expectations** can only be made by strictly adhering to very highest standards of quality. For this very reason, we do not compromise on quality in any way.

Our quality control system ensures that our products are developed according to well quality standards.

NEW LAUNCH--ASC MODELS, ASU MODELS, WCP MODELS, AHU MODELS, AIR-COOLED WATER-COOLED CHILLERS ARE AVAILABLE WITH DC INVERTER TECHNOLOGY.

Domestic Split Air Conditioner

Sabro Group Sabro **Proudly Announces its 55th Anniversary Addition, Offering latest technology split inverter Wall-mounted air conditioners.**

In 1989-90 SABRO Introduced 1st "Split-Package Wall - mounted A-C" (Mini - Split Models series) for Domestic use In **Pakistan.**

RANGE: 1.0 TON 1.5 TON 2.0 TON **DC INVERTER AC.**

Salient Features

- Efficient Design
- High Efficiency
- Energy Modeling
- Energy Control
- Dehumidification control
- Quiet Operation
- Precise Comfort Control
- Benefits For Users
- Benefits For Installars

VRF System for Commercial Use

- Efficient Design
- High Efficiency
- Energy Modeling
- Energy Control
- Quiet Operation
- Benefits For Users
- Precise Comfort Control
- Dehumidification Control
- Benefits For Installers
- oem with Sabro trademark

Variable refrigerant flow (VRF) is an air-conditioning system configuration where there is one outdoor condensing unit and multiple indoor units. The term variable refrigerant flow refers to the ability of system to control the amount of refrigerant flowing to multiple evaporators (indoor units), enabling the simultaneous use of many evaporators of different capacities and configurations connected to a single condensing unit.

- The arrangement provides an individualized comfort control and simultaneous heating and cooling in different zones.

Commercial Type Air Conditioner

ASC Models Series

Self Contain Package Air-Conditioner

(3.25 Ton to 42.25 Ton)

Sabro air-cooled self-contained air conditioners are single package air conditioners. These are factory charged, tested and internally wired for rapid installation. There is no additional refrigeration work required at installation site.
These units are designed to provide maximum efficiency at tropical conditions.

The weather proof design of units permits the complete installation of units outside the building. These units consist of compressor, condenser coil, condenser fan and motor, evaporator coil, evaporator fan and motor and all other necessary electrical-refrigeration controls equipped with accessories.
If required, the units can be provided with reverse cycle / duct heater arrangements as optional feature.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

ASU Models Series

Split Package Air-Conditioner

(3.25 Ton to 42.25 Ton)

Sabro air-cooled split air conditioners comprise of two sections.

A Condensing unit for outdoor installation

An Evaporator unit for indoor installation

The indoor unit may be standard ducted model, floor standing ducted model "V" or floor standing free discharge model "VC".

Both sections are connected with refrigerant copper piping at installation site. The ASU unit is designed to provide maxim efficiency at tropical conditions.

The weather proof design of units permits the complete installation of units outside the building. These units consist of compressor, condenser coil, condenser fan and motor, evaporator coil, evaporator fan and motor and all other necessary electrical-refrigeration controls equipped with accessories.

If required, the units can be provided with reverse cycle / duct heater arrangements as optional feature.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

ASU-CU(CF) Models Series

Top Ducted Split Evaporator With Air Cooled Condenser-(Cetrifugal Fans)

Sabro uniquely designed ASU-<CU(CF)> models series comprises of two sections.
An Evaporator unit for indoor installation(Floor mounted, Vertical ducted top discharge).
A Condensing unit for the indoor installation (Floor/ceiling mounted front ducted discharge with centrifugal fans.
The indoor unit may be standard ducted model, floor standing ducted model "V" or floor standing free discharge model "VC".
Both sections are connected with refrigerant copper piping at installation site. The ASU unit is designed to provide maxim efficiency at tropical conditions.

These units consist of compressor, condenser coil, condenser fan(Centrifugal Type) and motor, evaporator coil, evaporator fan(Blower) and motor and all other necessary electrical-refrigeration controls equipped with accessories.
If required, the units can be provided with reverse cycle / duct heater arrangements as optional feature.

Available with Environment Friendly Refrigerant + DC Inverter

FCU(Fan Coil Unit)

300 to 2000 CFM

Available with water proof motor arrangement
Available with acrylic protective coating

CSU(Cold Storage Unit)

16000 to 106500 BTU/Hr

Available in single & double skin, Panel thickness-37mm-standard to 50 mm-optional, PU foaming & Polystyrene insulation
Available with Custom make High static pressure applications
Available with sterile air conditioning gadgets
Available with explosion proof set-up

Larger Capacities Models are available on Demand

Commercial/Scroll Chillers

AWC Models Series

Air Cooled Water Chiller

(2.7 Ton to 147.5 Ton)

Sabro commercial type Air-cooled water chillers provide chilled water for all commercial/industrial air-conditioning applications.

Air-cooled water chillers are suitable to maintain stable cooling even in the high ambient conditions.

These units are also available with reverse cycle arrangement for hot water(heating) in winter season.

Evaporator Chiller Series

WWC Models Series

Water Cooled Water Chiller

(3.0 Ton to 176 Ton)

Sabro commercial type Water-cooled water chillers provide chilled water for all commercial/industrial air-conditioning applications.

Water-cooled water chillers are suitable to maintain stable cooling even in the high ambient conditions with combination of suitable cooling-tower.

Evaporator Chiller Series

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Commercial Type Screw Chillers
Air/Water Cooled Screw Chillers

Air cooled Screw Chillers
(28.0 Ton to 220 Ton)

Water cooled Screw Chillers
(63.5 Ton to 490 Ton)

Sabro technologies is a wholly owned subsidiary of Sabro group Pvt., Ltd., specializing in research, development and manufacturing of screw type products. The company sells water cooled screw chillers with optimum COP & EER(HIGH ENERGY EFFICIENCY RATIO).

Adhering to the principle of integrity, innovation and excellence, the company constantly creates new products every year according to the market demands. The water cooled screw chillers/ water source heat pumps have the features of high energy efficiency ratio, high reliability, high efficiency, and high automation etc., which continues to lead the domestic refrigeration energy industry, opening a new era of high efficiency screw type of products.

Centrifugal Chillers

WCC Models Series
Water Cooled Centrifugal Chiller
(500 Ton to 3000 Ton)

Sabro technologies is a wholly owned subsidiary of Sabro group Pvt., Ltd., specializing in research, development and manufacturing of centrifugal type products. The company sells water cooled centrifugal chillers with optimum COP & EER(HIGH ENERGY EFFICIENCY RATIO).

Adhering to the principle of integrity, innovation and excellence, the company constantly creates new products every year according to the market demands. The water cooled centrifugal chillers/ water source heat pumps have the features of high energy efficiency ratio, high reliability, high efficiency, and high automation etc., which continues to lead the domestic refrigeration energy industry, opening a new era of high efficiency screw type of products.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Sabro Fan Series
FC, BI & Plug Fans

Forward curve & Backward inclined Fans
(300 - 129,000 CFM)

SPF (Plug Fans)
(295 - 41200 CFM)

Sabro technologies is a wholly owned subsidiary of Sabro group Pvt., Ltd., specializing in research, development and manufacturing high efficiency centrifugal fans. Their ratings are based on AMCA tests and procedures for air performance, sound, and FEG.
The volume flow of the FC & BI Fan Series(Direct-Drive & Belt-Drive ranges from 300 to 129,000 CFM.
The volume flow of the SPF(Direct Drive Plug Fans) Series ranges from 295 to 41,200 CFM. Some of the features and characteristics of these fans are: compact structure, high efficiency, low noise, and low power consumption. These fans are ideal for use in central air conditioning systems, in purifiers. They are also suitable for use in a variety of other ventilation applications.
Adhering to the principle of integrity, innovation and excellence, the company constantly creates new products every year according to the market demands and continues to lead the domestic HVAC energy industry, opening a new era of high efficiency centrifugal fan type of products.

Desiccant Dehumidifiers
CFM(Process Air):100 to 2000

Sabro technologies is a wholly owned subsidiary of Sabro group Pvt., Ltd., specializing in research, development and manufacturing of Desiccant type Dehumidifiers. The company sells desiccant dehumidifiers with optimum effect(RELATIVE HUMIDITY) as per specific requirement at installation space.
Adhering to the principle of integrity, innovation and excellence, the company constantly creates new products every year according to the market demands. Sabro-make Desiccant dehumidifiers have the features of high energy efficiency ratio, high reliability, high efficiency, and high automation etc., which continues to lead the domestic/commercial refrigeration energy industry, opening a new era of high efficiency desiccant type of products.

Custom Make: UP To 12000 CFM(Process Air)

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

AHU Models Series

Central Station Air Handling Unit

Sabro' air - handling units are used for installation in any commercial buildings, subways, exhibition centers, hotels, restaurants, operational theaters, shopping malls, pharmaceutical factories and micro--processor plants.These units are designed to give central air conditioning i.e. cooling, heating, humidi--fying, pre heating, mixing and filtering with sets of standard and optional components sections.

The standard model consists of flat filter section, with internal insulation of 30mm thick polyurethane. (50mm thick polyurethane insulation-On Demand).

These units are available in different arrangements like HDT(horizontal draw through), VDT(vertical draw through), MZBT(multi - zone blow through), SZBT (single - zone blow through), DS (double skin).

Exclusively designed and produced with thermal break aluminum profile.

Sabro' AHUs Accord with Pharma Grade hvac (design for pharmaceutical facilities)

Available with Thermal Break Aluminum Profile

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Larger Capacities Models are available on Demand

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

LUCRE Series
Precision Air Conditioner

To maintain the Precise Environmental Conditions, SABRO (Lucre Series) has produced a new range of precision air conditioning units.

Precision units have been designed and developed to meet the air conditioning needs of data based processing centers, digital telephone exchanges, computer rooms & other technological environment which radiate high heat.

Sabro's Precision Air Conditioning range is designed for a wide range of applications where close control, high precision air conditioning is essential, including data center cooling, medium & low density server milieu, telecom switching stations, medical operating theaters & clean-hygienic environs.

WCP Models Series
Water cooled Package AC

(44000 to 510000 BTU/Hr)

Available in single & double skin, Panel thickness-37mm-standard to 50 mm-optional, PU foaming & Polystyrene insulation
Available with Custom make High static pressure applications
Available with sterile air conditioning gadgets
Available in customized construction of vertical type to meet space limitations for critical installations
Available with explosion proof set-up
Available with Hi-Grade Thermal Break Profile
Available with acrylic protective coating

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

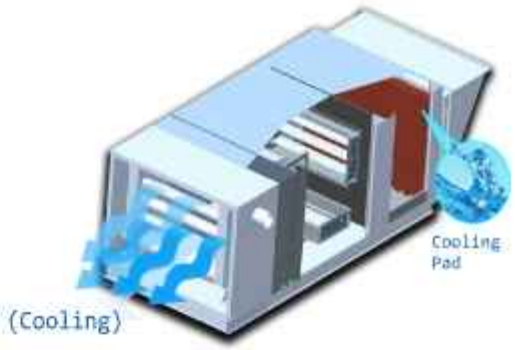
Packaged

Environmental Control Unit With Evaporative Cooling &

Evaporating Cooling

Evaporative Pad 85% Efficiency.

Reduces DX / chilled water cooling requirements for fresh air.
Cuts mechanical cooling costs 25% to 65%.
Provides 100% make-up air cooling at half the cost of mechanical equip cooling.
Increases heat exchanger life.
Brings in outside air and exhausts all stale air, smoke, odors, and germs.
Helps maintain natural humidity levels, which benefits both people and furniture.
Reduces static electricity.
Does not need an air-tight structure for the maximum efficiency, so building occupants can open doors and windows.



Optional

Mechanical cooling by adding DX coil & Compressors.

Commercial Type Air Conditioner

Packaged

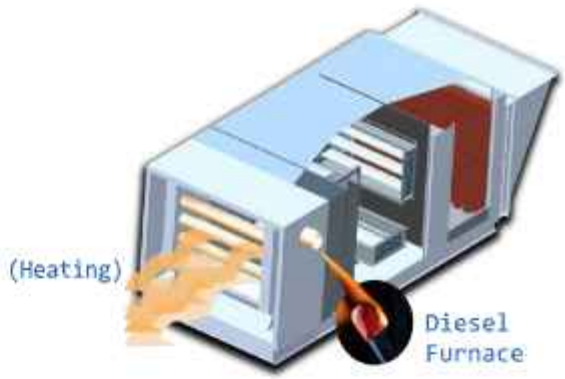
Environmental Control Unit With Evaporative Cooling &

Diesel Furnace Heating

Normally the heat exchanger is capable to rise the air temperature to 32°C(90°F)

There special design do not permit the combustion gases to mix in the air and all the time healthy air is supplied to the room.

Indirect fired heating technology is the most efficient and economical than any other heating option such as electric heating and heat pump equipment.



Optional

Mechanical cooling by adding DX coil & Compressors. (If Required with both heating/cooling modes)

Indegenous Development for Inter-Services

Pak Army | Pak Navy | Pak Air Force

For Robust Operating conditions

Especially designed for PAF Radar System.

Especially designed for fighter air crafts of PAF.

Especially designed for Pak Navy.

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

5HP-10HP Hermetic Scroll

EXJ Series

Air Cooled Condensing Unit

Durable, bake painted, metal body
Service friendly, draw-through design for easy coil cleaning
Synthetic filter media protected by aluminum mesh & frame,
Ideal for industrial, commercial and residential applications,
Hidden thermostat to avoid public misuse,
Perfect for high-foot-fall areas,
Custom color options.

Commercial Type Air Conditioner

Self-Contain Package Type AC
For Pakistan Railway

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

ECJ Series
1-4.25 HP

EHJ Series
1-5 HP

5HP-10HP Hermetic Scroll

Air Cooled Condensing Unit

EVJ Series

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

Air Curtain Series
36", 48" & 60" Width

Air cooled Condenser
Custom Make

Air Make-up unit
Custom Make

Fan Coil Unit
300 to 2000 CFM

Cassette Type Unit
1.5-5 HP

Electric Unit Heater
1KW-12 KW

Sabro Heater
1KW-12 KW

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

Elec. Steam Humidifier
3.0-6.0 KG/HR

Cold Storage Split
3.5HP-20HP

Fresh Air Unit
300-2000 CFM

Mini WCP Series
0.9HP-3.2HP

Refrigerated De-Humidifier
23.0 LIT/Day
47.3 LIT/Day
94.5 LIT/Day

Hot Water Generator
3.0-30 TONS

Exhaust/Ventilation Fan
300-129000 CFM

Desiccant Dehumidifier
100-2000 CFM

Plug Fans (Centrifugal Ventilators)
295-41200 CFM

Larger Capacities Models are available on Demand

Commercial Type Air Conditioner

Self-Contain Package Type AC
Special Make

HVAC
CUSTOM MAKE

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

BMS Air Condiotioning

A Building Management System (BMS) is a central computerized system for managing and operating systems within a building. A BMS usually incorporates controls for air conditioning, for energy management & maintenance systems.

A BMS is an essential tool in tuning the operation of any building and just like a well-tuned car, well-tuned building consistently runs more efficiently, BMS generally provides better performance. This ensures well that operating costs are minimized and occupants are more comfortable.

To manage energy use, it can monitor various parameters in the building such as temperature control, humidity and energy use and occupancy pattern. By doing so services such as air-conditioning, ventilation and heating, lift services, hot water systems and lighting are able to be controlled in ways that minimize energy use while optimizing comfort and function.

ASC Model Series

Air Cooled Self Contained Package ACs

MODEL	COMP. HP	COMPRESSOR TYPE	AIR FLOW RATE CFM	COOLING/HEATING CAPACITY BTU/HR	KCAL/HR
ASC 040-S	1x3.75	Hermetic Scroll	1200	39400/40000	9935/10080
ASC 050-S	1x5.0	Hermetic Scroll	1500	51000/51500	12860/12986
ASC 060-S	1x6.0	Hermetic Scroll	1800	60500/61000	15246/15372
ASC 080-S	1x8.0	Hermetic Scroll	2400	79500/80250	20034/20223
ASC 080-D	2x3.75	Hermetic Scroll	2200	78800/80000	19858/20160
ASC 100-D	2x5.0	Hermetic Scroll	3000	102000/103000	25704/25956
ASC 120-D	2x6.0	Hermetic Scroll	3600	121000/121500	30492/30618
ASC 160-S	1x16	Hermetic Scroll	4800	155000/156200	39060/39363
ASC 160-D	2x8.0	Hermetic Scroll	4800	159000/159705	40068/40246
ASC 200-D	2x10	Hermetic Scroll	6000	212000/212700	53424/53600
ASC 240-D	2x12	Hermetic Scroll	7000	240000/241000	60480/60732
ASC 320-D	2x16	Hermetic Scroll	9000	310000/312400	78120/78725
ASC 370-D	21+16	Hermetic Scroll	10500	359000/365000	90468/91980
ASC 420-D	2x21	Hermetic Scroll	11500	408000/415000	102816/104580
ASC 480-T	3x16	Hermetic Scroll	13000	465000/NA	117180/NA
ASC 500-D	2x25	Hermetic Scroll	14500	506000/508000	127512/128016

The capacities are based on evaporator entering air temp at 80°F db(26.6°C), 67°F wb(19.5°C) & condenser entering air temp at 95°F db(35°C).
Due to continuous improvement in our products, specs may change without notice.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

ASU Model Series

Air Cooled Split Package ACs

MODEL	COMP. HP	COMPRESSOR TYPE	AIR FLOW RATE CFM	COOLING/HEATING CAPACITY BTU/HR	KCAL/HR
ASU 040-S	1x3.75	Hermetic Scroll	1200	39400/40000	9935/10080
ASU 050-S	1x5.0	Hermetic Scroll	1500	51000/51500	12860/12986
ASU 060-S	1x6.0	Hermetic Scroll	1800	60500/61000	15246/15372
ASU 080-S	1x8.0	Hermetic Scroll	2400	79500/80250	20034/20223
ASU 080-D	2x3.75	Hermetic Scroll	2200	78800/80000	19858/20160
ASU 100-D	2x5.0	Hermetic Scroll	3000	102000/103000	25704/25956
ASU 120-D	2x6.0	Hermetic Scroll	3600	121000/121500	30492/30618
ASU 160-S	1x16	Hermetic Scroll	4800	155000/156200	39060/39363
ASU 160-D	2x8.0	Hermetic Scroll	4800	159000/159705	40068/40246
ASU 200-D	2x10	Hermetic Scroll	6000	212000/212700	53424/53600
ASU 240-D	2x12	Hermetic Scroll	7000	240000/241000	60480/60732
ASU 320-D	2x16	Hermetic Scroll	9000	310000/312400	78120/78725
ASU 370-D	21+16	Hermetic Scroll	10500	359000/365000	90468/91980
ASU 420-D	2x21	Hermetic Scroll	11500	408000/415000	102816/104580
ASU 480-T	3x16	Hermetic Scroll	13000	465000/NA	117180/NA
ASU 500-D	2x25	Hermetic Scroll	14500	506000/508000	127512/128016

The capacities are based on evaporator entering air temp at 80°F db(26.6°C), 67°F wb(19.5°C) & condenser entering air temp at 95°F db(35°C).
Due to continuous improvement in our products, specs may change without notice.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

LUCRE Model Series

Precison Cool/Heat ACs

MODEL	COMP. HP	COMPRESSOR TYPE	AIR FLOW RATE CFM	COOLING/HEATING CAPACITY BTU/HR/KW	KCAL/HR/KW
APD 100-D	2x5.0	Hermetic Scroll	4800	102023/6.0	25727/6.0
APD 120-D	2x6.0	Hermetic Scroll	5000	112635/8.0	28403/8.0
APD 150-D	2x7.5	Hermetic Scroll	6900	148496/10.0	37446/10.0
APD 200-D	2x10	Hermetic Scroll	10260	217797/14.0	54922/14.0
APD 300-D	2x15	Hermetic Scroll	12400	288562/18.0	72766/18.0

Specifications are based on, room temp at 24°C db(75°F), RH 50%,
outside temp at 35°C db(95°F).
Dimensions are subject to change without prior notice.

ARC Model Series

Split Evaporator with Remote Condenser

MODEL	COMP. HP	COMPRESSOR TYPE	AIR FLOW RATE CFM	COOLING/HEATING CAPACITY BTU/HR	KCAL/HR
ARC 040-S	1x3.75	Hermetic Scroll	1200	39400/40000	9935/10080
ARC 050-S	1x5.0	Hermetic Scroll	1500	51000/51500	12860/12986
ARC 060-S	1x6.0	Hermetic Scroll	1800	60500/61000	15246/15372
ARC 080-S	1x8.0	Hermetic Scroll	2400	79500/80250	20034/20223
ARC 080-D	2x3.75	Hermetic Scroll	2200	78800/80000	19858/20160
ARC 100-D	2x5.0	Hermetic Scroll	3000	102000/103000	25704/25956
ARC 120-D	2x6.0	Hermetic Scroll	3600	121000/121500	30492/30618
ARC 160-S	1x16	Hermetic Scroll	4800	155000/156200	39060/39363
ARC 160-D	2x8.0	Hermetic Scroll	4800	159000/159705	40068/40246
ARC 200-D	2x10	Hermetic Scroll	6000	212000/212700	53424/53600
ARC 240-D	2x12	Hermetic Scroll	7000	240000/241000	60480/60732
ARC 320-D	2x16	Hermetic Scroll	9000	310000/312400	78120/78725
ARC 370-D	21+16	Hermetic Scroll	10500	359000/365000	90468/91980
ARC 420-D	2x21	Hermetic Scroll	11500	408000/415000	102816/104580
ARC 480-T	3x16	Hermetic Scroll	13000	465000/NA	117180/NA
ARC 500-D	2x25	Hermetic Scroll	14500	506000/508000	127512/128016

The capacities are based on evaporator entering air temp at 80°F db(26.6°C),
67°F wb(19.5°C) & condenser entering air temp at 95°F db(35°C).
Due to continuous improvement in our products, specs may change without notice.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

WCP Model Series

Water Cooled Package ACs

MODEL	COMP. HP	COMPRESSOR TYPE	AIR FLOW RATE CFM	COOLING CAPACITY BTU/HR	KCAL/HR
WCP 040-S	1x3.75	Hermetic Scroll	1200	39500	9961
WCP 050-S	1x5.0	Hermetic Scroll	1500	52525	13245
WCP 060-S	1x6.0	Hermetic Scroll	1800	61875	15603
WCP 080-S	1x8.0	Hermetic Scroll	2400	85250	21497
WCP 080-D	2x3.75	Hermetic Scroll	2300	79000	19921
WCP 100-D	2x5.0	Hermetic Scroll	3000	105050	26490
WCP 120-D	2x6.0	Hermetic Scroll	3600	123750	31205
WCP 160-S	1x16	Hermetic Scroll	4800	166500	41985
WCP 160-D	2x8.0	Hermetic Scroll	4900	170500	42994
WCP 200-D	2x10	Hermetic Scroll	6500	225500	56863
WCP 240-D	2x12	Hermetic Scroll	7500	258500	65184
WCP 320-D	2x16	Hermetic Scroll	9500	333000	83971
WCP 370-D	21+16	Hermetic Scroll	11000	383000	96579
WCP 420-D	2x21	Hermetic Scroll	12500	433000	109187
WCP 480-T	3x16	Hermetic Scroll	14500	499500	125956
WCP 500-D	2x25	Hermetic Scroll	15000	510000	128604

The capacities are based on evaporator entering air temp at 80°F db(26.6°C),
67°F wb(19.5°C) & condenser water entering temp at 85°F db(29.4°C).
Due to continuous improvement in our products, specs may change without notice.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

AWC Model Series

Air Cooled Package Chillers

MODEL	COMP. HP	COMPRESSOR TYPE	WATER FLOW RATE (US GPM)	COOLING CAPACITY BTU/HR	KCAL/HR
AWC 040-S	1x3 .75	Hermetic Scroll	6.5	32500	8195
AWC 050-S	1x5 .0	Hermetic Scroll	9.00	45000	11347
AWC 060-S	1x6 .0	Hermetic Scroll	10.20	51000	12860
AWC 080-D	2x3 .75	Hermetic Scroll	13.00	65000	16391
AWC 100-D	2x5 .0	Hermetic Scroll	18.00	90000	22695
AWC 120-D	2x6 .0	Hermetic Scroll	20.40	102000	25721
AWC 160-S	1x16	Hermetic Scroll	26.00	130000	32781
AWC 160-D	2x8.0	Hermetic Scroll	26.20	131000	33034
AWC 200-D	2x10	Hermetic Scroll	35.92	179600	45289
AWC 200-Q	4x5 .0	Hermetic Scroll	36.00	180000	45390
AWC 240-Q	4x6.0	Hermetic Scroll	40.80	204000	51442
AWC 240-D	2x12	Hermetic Scroll	40.90	204500	51568
AWC 260-D	16+10	Hermetic Scroll	43.96	219800	55426
AWC 320-D	2x16	Hermetic Scroll	52.00	260000	65563
AWC 370-D	21+16	Hermetic Scroll	60.42	302100	76179
AWC 420-D	2x21	Hermetic Scroll	70.00	350000	88258
AWC 500-D	2x25	Hermetic Scroll	81.66	408300	102959
AWC 640-D	2x32	Hermetic Scroll	106.75	533750	134593
AWC 700-D	2x35	S.H.Reciprocating	108.00	540000	136169
AWC 800-D	2x40	S.H.Reciprocating	118.00	590000	148777
AWC 1050-T	3x35	S.H.Reciprocating	162.00	810000	204253
AWC 1200-T	3x40	S.H.Reciprocating	177.00	885000	223165
AWC 1280-Q	4x32	HermeticScroll	213.50	1067500	269185
AWC 1400-Q	4x35	S.H.Reciprocating	216.00	1080000	272337
AWC 1600-Q	4x40	S.H.Reciprocating	236.00	1180000	297554
AWC 1920-H	6x32	Hermetic Scroll	320.25	1601250	403778
AWC 2100-H	6x35	S.H.Reciprocating	324.00	1620000	408506
AWC 2400-H	6x40	S.H.Reciprocating	354.00	1770000	446331

The capacities are based on 55°F(12.4°C) entering water temperature and 45°F(7.2°C) leaving water temp. from chiller & air entering temp. at condenser 95°F(35°C).
Due to continuous improvement in our products, specs may change without notice.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

ACS Model Series

Air Cooled Screw Chillers(single compressor)

Model Number ACS			127-S	180-S	216-S	265-S	310-S	373-S	445-S	520-S	600-S
Nominal cooling capacity		Tons	36	50.7	61.4	75.3	88	106	126.5	148	170
Standard conditions		KW	126.5	178	216	265	309	373	445	520	598
Compressor Power input		KW	39	54	65.5	80.5	90	111	132	153	178
Compressor EER/COP			11.0/3.2	11.3/3.3	11.3/3.3	11.2/3.3	11.6/3.4	11.6/3.4	11.5/3.4	11.5/3.4	11.5/3.4
Compressor r ated current		Amps.	70	94	113	136	150	188	230	270	318
Chiller Water flow rate		GPM / l/s	86/5.45	122/7.7	147/9.3	181/11.4	211/13.3	254/16	303/19.1	355/22.3	408/25.7
Cooling capacity		Tons	31.8	44.9	54.3	66.6	77.7	94.0	112.0	131.0	150.0
High ambient conditions		KW	112	158	191	234	273	330	394.0	460.5	527.5
Compressor Power input		KW	51	70	85	102	114	142	168	196	225
EER/COP			7.5/2.2	7.7/2.26	7.6/2.22	7.6/2.3	8.0/2.34	8.0/2.32	8.0/2.34	8.0/2.34	8.0/2.34
Compressor r ated current		Amps.	88.0	116	142.0	172	190	236	285	330	390
Chiller Water flow rate		GPM / l/s	76/4.8	108/6.8	130/8.2	160/10.0	187/11.7	225/14.3	269/16.9	314/19.8	360/22.7
Compressor		Type	Semi hermetic Twin screw								
Compressor qty/ numbers of refrigerant circuits			1	1	1	1	1	1	1	1	1
Capacity steps		%	35-50-75-100 / stepless								
Starting method			y-Δ(star - delta)								
Refrigerant			R134-a								
Power supply			380-415-3-50Hz								
Refrigerant control			electronic expansion valve								
Evaporator (cooler)	Type		Shell and bundle of tubes								
	Water Pr. drop app.	KPa/feet	27/9	30/10	35.8/12	41.84/14	47.8/16	51/17	47.8/16	53.8/18	59.7/20
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN76	DN100	DN100	DN100	DN100	DN125	DN125	DN125	DN125
		Inch	3	4	4	4	4	5	5	5	5
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins								
	Copper tube	Size	3/8"OD (Rifled)								
	Fins/inch	FPI	14	14	14	14	14	14	14	14	14
	Coil test pressure	KPa/PSI	3100/450 under water.								
Condenser Fan	Type		Propeller direct drive								
		Qty	2	4	4	6	6	8	8	10	12
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30	762/30	762/30	762/30	762/30
	Motor power (each)	Watts	1500	1500	1500	1500	1500	1500	1500	1500	1500
Dimensions (MM)		length	1200	2000	2000	3000	3000	4000	4000	5000	6000
		width	2286	2286	2286	2286	2286	2286	2286	2286	2286
		Height	2446	2446	2446	2446	2446	2446	2446	2446	2446
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,								
Operating limits	Leaving Chilled water temp.		5°C-15°C (42°F – 59°F)								
	Entering condenser air temp.		20°C-51.6°C (68°F – 125°F)								

Specifications are based on following conditions,
Entering/leaving chilled water 12.7°C/7.2°C (55°F/45°F)

* Nominal cooling capacity at 35°C (95°F) and high temperature capacity at 46°C (115°F) condenser enter air temp.

Fouling factor 0.0001Btu/hr/ft²/°F

Specifications are subject to change keeping in view improvement in product.

ACS Model Series

Air Cooled Screw Chillers(double compressor)

Model Number ACS			432-D	492-D	530-D	580-D	620-D	650-D
Nominal cooling capacity		Tons	122.8	140	150.6	165	176	185
Standard conditions		KW	432	492	530	580	618	650.5
Compressor Power input		KW	66 x 2	74 x2	80.5 x2	88 x2	90 x2	97 x2
Compressor EER/COP			11.3/3.3	11.3/3.3	11.3/3.3	11.3/3.3	11.6/3.4	11.4/3.35
Compressor rated current		Amps.	113x 2	126X2	136 x2	146 x2	150 x2	166 x2
Chiller Water flow rate		GPM / l/s	295/18.6	336/21.1	361/22.7	396/24.9	422/26.6	444/27.9
Cooling capacity		Tons	108.6	123.8	133	146	155.0	163.7
High ambient conditions		KW	382	435.4	468	513	545	575.8
Compressor Power input		KW	84x2	95 X 2	102 x2	112 x2	114 x2	123 x2
Compressor EER/COP			7.8/2.3	7.8/2.3	7.8/2.3	8.0/2.3	8.0/2.34	8.0/2.34
Compressor rated current		Amps.	140.0 x2	160 x2	172 x2	186 x2	190 x2	208 x2
Chiller Water flow rate		GPM / l/s	260/16.4	297/18.7	319/20.1	350/22.0	372/ 23.4	393/24.7
Compressor		Type	Semi hermetic Twin screw					
Compressor qty/ numbers of refrigerant circuits			2	2	2	2	2	2
Capacity steps		%	35-50-75-100 / step less					
Starting method			y-Δ (star-delta)					
Refrigerant			R134a					
Power supply			380-415-3-50Hz					
Refrigerant control			electronic expansion valve					
Evaporator (cooler)	Type		Shell and bundle of tubes					
	Water pressure drop app.	KPa/feet	35.8/12	41.84/14	47.8/16	51/17	47.8/16	53.8/18
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN125	DN125	DN125	DN125	DN125	DN150
		Inch	5	5	5	5	5	6
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins					
	Copper tube	Size	3/8"OD (Rifled)					
	Fins/inch	FPI	14	14	14	14	14	14
	Coil test pressure	KPa /PSI	3100/450 under water.					
Condenser Fan	Type		Propeller direct drive					
		Qty	8	8	12	12	12	12
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30	762/30
	Motor power (each)	Watts	1500	1500	1500	1500	1500	1500
Dimensions (MM)		Length	4000	6000	6000	6000	6000	6000
		width	2286	2286	2286	2286	2286	2286
		Height	2446	2446	2446	2446	2446	2446
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,					
Operating limits	Leaving Chilled water temp.		5°C-15°C (42°F – 59°F)					
	Entering condenser air temp.		20°C-51.6°C (68°F – 125°F)					

Specifications are based on following conditions,

Entering/leaving chilled water 12.7°C/7.2°C (55°F/45°F)

* Nominal cooling capacity at 35°C (95°F) and high temperature capacity at 46°C (115°F) condenser enter air temp.

Fouling factor 0.0001Btu/hr/ft²/°F

Specifications are subject to change keeping in view improvement in product.

ACS Model Series

Air Cooled Screw Chillers(double compressor)

Model Number ACS			745-D	830-D	890-D	1040-D	1196-D
Nominal cooling capacity		Tons	212	235.8	253	296	340
Standard conditions		KW	745.4	829	890	1041	1196
Compressor Power input		KW	111 x2	121 x 2	132 x2	153 x2	178 x2
Compressor EER/COP			11.6/3.4	11.6/3.4	11.6/3.4	11.6/3.4	12.3/3.6
Compressor rated current		Amps.	188 x2	208x 2	230 x2	270 x2	318 x2
Chiller Water flow rate		GPM / l/s	509/32	566/35.6	607/38.2	710/44.7	816/25.7
Cooling capacity		Tons	188	208	224	262	300
High ambient conditions		KW	661	731	787.6	921	1055
Compressor Power input		KW	142	156 x2	168 x2	196 x2	225 x2
Compressor EER/COP			8.0/2.32	8.0/2.34	8.0/2.34	8.0/2.35	8.0/2.34
Compressor rated current		Amps.	236 x2	260 x2	285 x2	330 x2	390 x2
Chiller Water flow rate		GPM / l/s	451/28.4	499/31.4	538/33.9	629/39.6	720/45.3
Compressor		Type	Semi hermetic Twin screw				
Compressor qty/ numbers of refrigerant circuits			2	2	2	2	2
Capacity steps		%	35-50-75-100 / step less				
Starting method			y-Δ (star-delta)				
Refrigerant			R134a				
Power supply			380-415-3-50Hz				
Refrigerant control			electronic expansion valve				
Evaporator (cooler)	Type		Direct expansion Shell and bundle of tubes				
	Water pressure drop app.	KPa/feet	47.8/16	51/17	47.8/16	53.8/18	59.7/20
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN150	DN150	DN150	DN150	DN200
		Inch	6	6	6	6	8
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins				
	Copper tube	Size	3/8"OD (Rifled)				
	Fins/inch	FPI	14	14	14	14	14
	Coil test pressure	KPa /PSI	3100/450 under water.				
Condenser Fan	Type		Propeller direct drive				
		Qty	16	16	16	20	24
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30
	Motor power each	Watts	1500	1500	1500	1500	1500
Dimensions (MM)		length	8000	8000	8000	10000	12000
		width	2286	2286	2286	2286	2286
		Height	2497	2497	2497	2547	2547
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,				
Operating limits	Leaving Chilled water temp.		5°C-15°C (42°F – 59°F)				
	Entering condenser air temp.		20°C-51.6°C (68°F – 125°F)				

Specifications are based on following conditions,

Entering/leaving chilled water 12.7°C/7.2°C (55°F/45°F)

* Nominal cooling capacity at 35°C (95°F) and high temperature capacity at 46°C (115°F) condenser enter air temp.

Fouling factor 0.0001Btu/hr/ft²/°F

Specifications are subject to change keeping in view improvement in product.

ACS Model Series

Air Cooled Screw Chillers(double compressor)

Model Number ACS			1310-D	1415-D	1515-D	1610-D	1700-D
Nominal cooling capacity		Tons	373	402	431	457	483
Standard conditions		KW	1311	1413	1515	1607	1698
Compressor Power input		KW	193 x 2	193+ 216	216 x2	216 +243	243 x2
Compressor EER/COP			11.6/3.4	11.8 / 3.45	11.96 /3.5	11.95/ 3.5	11.95/ 3.5
Compressor rated current		Amps.	340 x2	340 +380	380 x2	380 +430	430 x2
Chiller Water flow rate		GPM / l/s	895 /56.4	965 /60.7	1034 /65.1	1097 /69.0	1159 /73.0
Cooling capacity		Tons	330	355	381	403	426
High ambient conditions		KW	1160	1248	1340	1417	1498
Compressor Power input		KW	248 x2	248 +278	278 x2	278 +312	312 x2
Compressor EER/COP			8.0/ 2.34	8.18987	8.2 /2.4	8.2 /2.4	8.2 /2.4
Compressor rated current		Amps.	430	430 +475	475	475 +540	540 x2
Chiller Water flow rate		GPM / l/s	792 /49.9	852 /53.7	914 /57.6	967 /61.0	1022 /64.4
Compressor		Type	Semi hermetic Twin screw				
Compressor qty/ numbers of refrigerant circuits			2	2	2	2	2
Capacity steps		%	35-50-75-100 / step less				
Starting method			y-Δ (star-delta)				
Refrigerant			R134a				
Power supply			380-415-3-50Hz				
Refrigerant control			electronic expansion valve				
Evaporator (cooler)	Type		Direct expansion Shell and bundle of tubes				
	Water pressure drop app.	KPa/feet	47.8/16	51/17	47.8/16	53.8/18	59.7/20
	working pressure	KPa/PSI	1000/145	1000/145	1000/145	1000/145	1000/145
	Water connection	mm	DN150 x2	DN150 x2	DN150 x2	DN150 x2	DN150 x2
		Inch	6 x2	6 x2	6 x2	6 x2	6 x2
Condenser Coil	Material		Copper tube mechanically expanded into aluminum fins				
	Copper tube	Size	3/8"OD (Rifled)				
	Fins/inch	FPI	14	14	14	14	14
	Coil test pressure	KPa /PSI	3100/450 under water.				
Condenser Fan	Type		Propeller direct drive				
		Qty	24	28	28	32	32
	Fan diameter	MM/inch	762/30	762/30	762/30	762/30	762/30
	Motor power each	Watts	1500	1500	1500	1500	1500
Dimensions (MM)		length	12000	14000	14000	16000	16000
		width	2286	2286	2286	2286	2286
		Height	2547	2547	2547	2547	2547
Protection devices			High pressure cut out, low pressure cut out, power phase protection, anti-freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,				
Operating limits	Leaving Chilled water temp.		5°C-15°C (42°F – 59°F)				
	Entering condenser air temp.		20°C-51.6°C (68°F – 125°F)				

Specifications are based on following conditions,

Entering/leaving chilled water 12.7°C/7.2°C (55°F/45°F)

* Nominal cooling capacity at 35°C (95°F) and high temperature capacity at 46°C (115°F) condenser enter air temp.

Fouling factor 0.0001Btu/hr/ft²/°F

Specifications are subject to change keeping in view improvement in product.

WWC Model Series

Water Cooled Package Chillers

MODEL	COMP. HP	COMPRESSOR TYPE	WATER FLOW RATE(US GPM)	COOLING CAPACITY BTU/HR	KCAL/HR
WWC 040-S	1x3 .75	Hermetic Scroll	7.24	36179	9123
WWC 050-S	1x5 .0	Hermetic Scroll	9.81	49050	12369
WWC 060-S	1x6 .0	Hermetic Scroll	11.36	56774	14316
WWC 080-D	2x3 .75	Hermetic Scroll	14.48	72358	18246
WWC 100-D	2x5 .0	Hermetic Scroll	19.62	98100	24737
WWC 120-D	2x6 .0	Hermetic Scroll	22.72	113548	28633
WWC 160-S	1x16	Hermetic Scroll	28.94	144717	36492
WWC 160-D	2x8.0	Hermetic Scroll	28.90	144500	36438
WWC 200-D	2x10	Hermetic Scroll	39.10	195500	49298
WWC 200-Q	4x5 .0	Hermetic Scroll	39.24	196200	49475
WWC 240-Q	4x6.0	Hermetic Scroll	45.42	227096	57265
WWC 240-D	2x12	Hermetic Scroll	45.53	227651	57405
WWC 260-D	16+10	Hermetic Scroll	48.49	242467	61142
WWC 320-D	2x16	Hermetic Scroll	57.89	289434	72985
WWC 370-D	21+16	Hermetic Scroll	66.44	332200	83769
WWC 420-D	2x21	Hermetic Scroll	74.99	374966	94553
WWC 500-D	2x25	Hermetic Scroll	89.10	445524	112345
WWC 640-D	2x32	Hermetic Scroll	117.04	585176	147560
WWC 700-D	2x35	S.H. Reciprocating	124.35	621750	156783
WWC 800-D	2x40	S.H. Reciprocating	140.83	704125	177555
WWC 1050-T	3x35	S.H. Reciprocating	186.53	932625	235175
WWC 1200-T	3x40	S.H. Reciprocating	211.24	1056188	266333
WWC 1280-Q	4x32	Hermetic Scroll	237.67	1188352	299660
WWC 1400-Q	4x35	S.H. Reciprocating	248.70	1243500	313566
WWC 1600-Q	4x40	S.H. Reciprocating	281.65	1408250	355110
WWC 1920-H	6x32	Hermetic Scroll	351.11	1755528	442681
WWC 2100-H	6x35	S.H. Reciprocating	373.05	1865250	470349
WWC 2400-H	6x40	S.H. Reciprocating	422.48	2112375	532665

The capacities are based on 55°F(12.4°C) entering water temperature and 45°F(7.2°C) leaving water temp. from chiller & water entering/leaving temp. at condenser 85°F/95°F(29.4°C/35.0°C).
Due to continuous improvement in our products, specs may change without notice.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

WCS Model Series

Water Cooled Screw Chillers(single compressor)

Model Number			WFSC-234-S	WFSC-260-S	WFSC-280-S	WFSC-298-S	WFSC-323-S	WFSC-348-S	WFSC-380-S	WFSC-406-S
Nominal cooling capacity		Tons(RT)	66.5	74	80.4	85	92	98.6	108	115
		KW	234	260	283	298	323	346.7	380.7	405.7
		kCal/h x1000	201	224	243	257	278	211	326	348
Power input		KW	44.5	48.1	53.8	57.8	60.5	65.8	71.0	73.1
Rated current		Amps.	79.9	85.2	92.2	98.1	105	112.4	121.2	125
Power supply		Voltage	380-415-3-50Hz							
Energy efficiency ratio		EER (COP)	17.9 (5.25)	18.5 (5.40)	17.9 (5.26)	17.64 (5.15)	18.24 (5.33)	18 (5.26)	18.25 (5.36)	19 (5.54)
Capacity steps		%	25-50-75-100 OR step less as optional							
Compressor	Type		Semi-hermetic twin screw							
	Quantity		One	One	One	One	One	One	One	One
	Starting Method		y-Δ	y-Δ	y-Δ	y-Δ	y-Δ	y-Δ	y-Δ	y-Δ
	Rated speed (RPM)		2950	2950	2950	2950	2950	2950	2950	2950
Refrigerant			134a	134a	134a	134a	134a	134a	134a	134a
No. of refrigerant circuits			One	One	One	One	One	One	One	One
Refrigerant control			Orifice + electronic expansion valve							
Evaporator (cooler)	Type		Shell and Tube Flooded							
	Water passes		2	2	2	2	2	2	2	2
	Water flow rate EWFR	USGPM	159.6	177.6	193	204	221	237	259	276
		m^3/h	36.2	40.3	43.8	46.3	50.2	53.8	59	62.3
	Water pressure drop	KPa/feet	34/11	36/12	38/13	41/14	43/14	45/15	45/15	46/15
	Water side working pressure	MPa/PSI	1/145	1/145	1/145	1/145	1/145	1/145	1/145	1/145
	Water connection	mm	DN76	DN76	DN102	DN102	DN102	DN102	DN102	DN102
		Inch	3	3	4	4	4	4	4	4
Condenser	Type		Shell and tube							
	Water passes		2	2	2	2	2	2	2	2
	Water flow rate CWFR	USGPM	199.5	222	241.2	255	276	296	324	345
		m^3/h	45.3	50.42	55	58	62.7	67.2	73.6	78
	Water pressure drop	KPa/feet	36/12	38/13	40/13	43/14	44/14	47/16	48/16	48/16
	Water side working pressure	MPa/Psi	1/145	1/145	1/145	1/145	1/145	1/145	1/145	1/145
	Water connection	mm	DN76	DN76	DN102	DN102	DN102	DN102	DN102	DN102
		Inch	3	3	4	4	4	4	4	4
Dimensions (mm)		Length	3450	3450	3450	3450	3650	3640	3640	3640
		width	1500	1500	1500	1500	1550	1550	1550	1600
		height	1600	1600	1600	1600	1650	1650	1650	1700
Operating weight		Kg	2800	3000	3200	3450	3450	3450	3550	3550
Protection devices	High pressure cut out, low pressure cut out, power phase protection, anti -freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,									
Operating limits	Leaving Chilled water temp.		5°C-15°C (41°F – 59°F)							
	Entering condenser water temp.		20°C-35°C (68°F – 95°F)							

Specifications are based on standard conditions,

Entering/leaving chilled water 12.7°C/7.2°C(55°F/45°F)

Entering/leaving condenser water 30°C/35°C(85°F/95°F)

Fouling factor 0.0005 Btu/hr/Sqft/°F

Specifications are subject to change keeping in view the improvement in product.

Available with Environment Friendly Refrigerant + DC Inverter

WCS Model Series

Water Cooled Screw Chillers(single compressor)

Model Number			WFSC-430-S	WFSC-490-S	WFSC-545-S	WFSC-585-S	WFSC-684-S	WFSC-785-S	WFSC-860-S
Nominal cooling capacity		Tons(RT)	121	139	155	166	194.5	223	245
		KW	427.3	490.3	544	585	684	783	862
		kCal/h x1000	366	420	469	502	588	674	741
Power input		KW	79	90.5	99.5	107.4	122	142	154.5
Rated current		Amps.	136.4	157	172	186.4	210	251	270
Power supply		Voltage	380-415-3-50Hz						
Energy efficiency ratio		EER (COP)	18.4 (5.4)	18.4 (5.41)	18.7 (5.46)	18.54 (5.45)	19.13 (5.6)	19 (5.5)	19 (5.6)
Capacity steps		%	25-50-75-100 OR step less as optional						
Compressor	Type		Semi-hermetic twin screw						
	Quantity		One	One	One	One	One	One	One
	Starting Method		y-Δ	y-Δ	y-Δ	y-Δ	y-Δ	y-Δ	y-Δ
	Rated speed (RPM)		2950	2950	2950	2950	2950	2950	2950
Refrigerant			134a	134a	134a	134a	134a	134a	134a
No. of refrigerant circuits			One	One	One	One	One	One	One
Refrigerant control			Orifice + electronic expansion valve						
Evaporator (cooler)	Type		Shell and Tube Flooded						
	Water passes		2	2	2	2	2	2	2
	Water flow rate EWFR	USGPM	290.4	333.6	372	398.4	467	535	588
		m^3/h	66	76	84.5	89.3	106	121.5	133.5
	Water pressure drop	KPa/feet	50/17	53/18	56/19	58/19	60/20	63/21	65/22
	Water side working pressure	MPa/Psi	1/145	1/145	1/145	1/145	1/145	1/145	1/145
	Water connection	mm	DN125	DN125	DN125	DN150	DN150	DN150	DN150
		Inch	5	5	5	6	6	6	6
Condenser	Type		Shell and tube						
	Water passes		2	2	2	2	2	2	2
	Water flow rate CWFR	USGPM	363	417	465	498	583.5	669	735
		m^3/h	82.4	95	105.6	113	132.5	152	167
	Water pressure drop	KPa/feet	52/18	55/18	58/19	59/20	60/20	62/21	66/22
	Water side working pressure	MPa/Psi	1/145	1/145	1/145	1/145	1/145	1/145	1/145
	Water connection	mm	DN125	DN125	DN125	DN150	DN150	DN150	DN150
		Inch	5	5	5	6	6	6	6
Dimensions (mm)		Length	3640	3640	3640	3640	3640	3640	3640
		width	1600	1600	1700	1700	1800	1800	1850
		height	1850	1850	1900	2000	2200	2200	2200
Operating weight		Kg	4000	4800	5500	5900	6200	6500	7000
Protection devices	High pressure cut out, low pressure cut out, power phase protection, anti -freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,								
Operating limits	Leaving Chilled water temp.		5°C-15°C (41°F – 59°F)						
	Entering condenser water temp.		20°C-35°C (68°F – 95°F)						

Specifications are based on standard conditions,

Entering/leaving chilled water 12.7°C/7.2°C(55°F/45°F)

Entering/leaving condenser water 30°C/35°C(85°F/95°F)

Fouling factor 0.0005 Btu/hr/Sqft/°F

Specifications are subject to change keeping in view the improvement in product.

Available with Environment Friendly Refrigerant + DC Inverter

WCS Model Series

Water Cooled Screw Chillers(double compressor)

Model Number (WFSC)			850-D	980-D	1088-D	1170-D	1370-D	1570-D	1725-D
Nominal cooling capacity @65HZ	Tons(RT)		243	278	309	332	389	445	490
	KW		854	980	1087	1169	1368	1566	1724
	KCal/hx1000		735	841	934	1004	1177	1346	1482
Power input (each comp.)	KW		79 +79	90 + 90	99 + 99	107+107	122+122	142+142	155+155
Rated current (each)	Amps.		136+136	157+157	172+172	187+187	211+211	252 +252	270+270
Power supply	Voltage		380-415-3-50Hz						
Energy efficiency ratio	EER COP		18.4 5.4	18.5 5.4	18.7 5.5	18.6 5.5	19.1 5.6	18.8 5.5	18.9 5.6
Capacity control	%		25-50-75-100% OR step less as optional						
Compressor	Type		Semi-hermetic twin screw						
	Quantity		two						
	Starting Method		Y-Δ						
	Rated speed		2950RPM						
Refrigerant			134a						
No. of refrigerant circuits			Two						
Refrigerant control			Orifice + electronic expansion valve						
Evaporator (cooler)	Type		Shell and tube flooded						
	Water passes		2						
	Water flow rate EWFR	USGPM	583	667	742	797	943	1068	1176
		m^3/h	134.4	151.5	168.5	181	214	242.5	267
	Water pr. drop	Kpa/feet	55/18	58/19	60/20	60/20	65/22	70/23.5	72 / 24
	Water side working Pr.	Mpa/PSI	1.0MPa/145						
	Water connection	MM	DN150	DN150	DN200	DN200	DN200	DN200	DN 200
		Inch	6	6	8	8	8	8	8
Condenser	Type		Shell and tube						
	Water passes		2	2	2	2	2	2	2
	Water flow rate CWFR	USGPM	729	834	927	996	1167	1335	1470
		m^3/h	165.6	189.4	210.5	226	265	303	334
	Water pr. drop	Kpa/feet	58/19	62/21	65/22	70/23	70/23	74/25	80/26
	Water side working pr.	Mpa/PSI	1.0MPa/145						
	Water connection	MM	DN150	DN150	DN200	DN200	DN200	DN200	DN 200
		Inch	6	6	8	8	8	8	8
Dimensions MM (inches)	Length		4600 (181)			4650(183)			
	width		1750 (69)			1800 (72)			
	height		2000 (79)			2210 (87)			
Operating weight APP.	Kg		6500	6850	7200	7400	7800	8500	9200
Protection devices	High pressure cut out, low pressure cut out, power phase protection, anti freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,								
Operating limits	Leaving Chilled water temp.		5°C-15°C (41°F – 59°F)						
	Entering condenser water temp.		20°C-35°C (68°F – 95°F)						

Specifications are based on standard conditions,

Entering/leaving chilled water 12.7°C/7.2°C(55°F/45°F)

Entering/leaving condenser water 30°C/35°C(85°F/95°F)

Fouling factor 0.0005 Btu/hr/Sqft/°F

Specifications are subject to change keeping in view the improvement in product.

Available with Environment Friendly Refrigerant + DC Inverter

WCS Model Series

Water Cooled Inverter Screw Chillers(single compressor)

Model Number (WFSC)			220-SV	260-SV	304-SV	370-SV	420-SV	500-SV	556-SV	760-SV
Nominal cooling capacity @65HZ		Tons(RT)	63.4	74.8	86.4	104.8	119.5	140.8	158.0	216
		KW	223	263	304	368.6	420	495	556.0	760
		KCal/hx1000	192	226	261	317	361	426	478	653
Power input		KW	45	51.2	59.1	71.0	80.4	94	104	142.4
Rated current		Amps.	76	87	101	122	137.2	160	179	242.5
Power supply		Voltage	380-415-3-50Hz							
Energy efficiency ratio		EER	16.98	17.5	17.5	17.7	17.8	17.97	18.2	18.2
		COP	4.9	5.13	5.14	5.19	5.22	5.26	5.34	5.34
Capacity control			(Modulating) variable speed							
Compressor	Type		Semi-hermetic twin screw							
	Quantity		one							
	Starting Method		By inverter, speed up 0HZ to 65HZ							
	Rated speed @ 65HZ		3840RPM							
Refrigerant			134a							
No. of refrigerant circuits			one							
Refrigerant control			Orifice + electronic expansion valve							
Evaporator (cooler)	Type		Shell and tube flooded							
	Water passes		2							
	Water flow rate	USGPM	152	179.5	207	252	287	338	380	518
	EWFR	m^3/h	43.5	40.8	47.0	57.2	65.2	76.8	86.3	117.6
	Water pr. drop	Kpa/feet	34/11	36/12	41/14	45/15	47/16	53/18	56 / 19	63/21
	Water side working Pr.	Mpa/PSI	1.0MPa/145							
	Water connection	MM	DN76	DN76	DN102	DN102	DN125	DN125	DN 125	DN150
		Inch	3	3	4	4	5	5	5	6
Condenser	Type		Shell and tube							
	Water passes		2	2	2	2	2	2	2	2
	Water flow rate CWFR	USGPM	190	224	259	314	358	422	474	648
		m^3/h	43.2	50.9	58.8	71.3	81.3	95.8	108	147
	Water pr. drop	Kpa/feet	36/12	38/13	43/14	48/16	48/16	55/18	60/20	62/21
	Water side working pr.	Mpa/PSI	1.0MPa/145							
	Water connection	MM	DN76	DN76	DN102	DN102	DN125	DN125	DN 125	DN150
		Inch	3	3	4	4	4	5	5	6
Dimensions MM (inches)		Length	3450 (136)			3640 (136)		3640 (136)		
		width	1500 (59)			1550 (61)		1700 (67)		
		height	1600 (63)			1650 (65)		2200 (87)		
Operating weight APP.		Kg	2800	3000	3500	3550	4000	4800	5500	6200
Protection devices	High pressure cut out, low pressure cut out, power phase protection, anti freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,									
Operating limits	Leaving Chilled water temp.		5°C-15°C (41°F – 59°F)							
	Entering condenser water temp.		20°C-35°C (68°F – 95°F)							

Specifications are based on standard conditions,

Entering/leaving chilled water 12.7°C/7.2°C(55°F/45°F)

Entering/leaving condenser water 30°C/35°C(85°F/95°F)

Fouling factor 0.0005 Btu/hr/Sqft/°F

Specifications are subject to change keeping in view the improvement in product.

WCS Model Series

Water Cooled Inverter Screw Chillers(double compressor)

Model Number (WFSC)			840-DV	915-DV	990-DV	1050-DV	1110-DV	1315-DV	1520-DV
Nominal cooling capacity @65HZ	Tons(RT)		239	260	281	298	316	374	432
	KW		840	915	990	1050	1110	1315	1520
	KCal/hx1000		723	786	850	901	956	1131	1306
Power input (each comp.)	KW		80 +80	80 + 94	94 + 94	94+ 104	104+104	104+142	142+142
Rated current (each)	Amps.		137+137	137+160	160+160	160179	179+179	179 +243	243+243
Power supply	Voltage		380-415-3-50Hz						
Energy efficiency ratio	EER		16.93	17.9	17.9	18.0	18.2	18.5	18.25
	COP		5.2	5.25	5.25	5.3	5.33	5.43	5.35
Capacity control			(Modulating) variable speed						
Compressor	Type		Semi-hermetic twin screw						
	Quantity		two						
	Starting Method		By inverter, speed up 0HZ to 65HZ						
	Rated speed @ 65HZ		3840RPM						
Refrigerant			134a						
No. of refrigerant circuits			Two						
Refrigerant control			Orifice + electronic expansion valve						
Evaporator (cooler)	Type		Shell and tube flooded						
	Water passes		2						
	Water flow rate EWFR	USGPM	574	624	675	715	758	898	1037
		m³/h(CMH)	130.4	142	153	162.3	172	204	236
	Water pr. drop	Kpa/feet	55/18	58/19	60/20	60/20	65/22	70/23.5	72 / 24
	Water side working Pr.	Mpa/PSI	1.0MPa/145						
	Water connection	MM	DN150	DN150	DN200	DN200	DN200	DN200	DN 200
		Inch	6	6	8	8	8	8	8
Condenser	Type		Shell and tube						
	Water passes		2	2	2	2	2	2	2
	Water flow rate CWFR	USGPM	717	780	843	894	948	1122	1296
		m³/h	163	177	191	203	215	255	294
	Water pr. drop	Kpa/feet	58/19	62/21	65/22	70/23	70/23	74/25	80/26
	Water side working pr.	Mpa/PSI	1.0MPa/145						
	Water connection	MM	DN150	DN150	DN200	DN200	DN200	DN200	DN 200
		Inch	6	6	8	8	8	8	8
Dimensions MM (inches)	Length		4600 (181)			4650(183)			
	width		1750 (69)			1800 (71)			
	height		2000 (79)			2210 (87)			
Operating weight APP.	Kg		6500	6850	7200	7400	7600	7900	8200
Protection devices	High pressure cut out, low pressure cut out, power phase protection, anti freeze protection, frequent start protection, over current protection, over heat protection Comp., water flow protection, reverse phase protection,								
Operating limits	Leaving Chilled water temp.		5°C-15°C (41°F – 59°F)						
	Entering condenser water temp.		20°C-35°C (68°F – 95°F)						

Specifications are based on standard conditions,

Entering/leaving chilled water 12.7°C/7.2°C(55°F/45°F)

Entering/leaving condenser water 30°C/35°C(85°F/95°F)

Fouling factor 0.0005 Btu/hr/Sqft/°F

Specifications are subject to change keeping in view the improvement in product.

Larger Capacities Models are available on Demand

Refrigerated Dehumidifiers

DE HUMIDIFIER MODEL		DH-050-S	DH-100-S	DH-100-D	DH-200-S
Moisture Removing Capacity		48PINTS/Day	100PINTS/Day	100PINTS/Day	200PINTS/Day
(Dehumidifying Capacity)		23Liters/Day	47Liters/Day	47Liters/Day	94.50Liters/Day
Compressor	Type	Hermetic (Rotary)	Hermetic (Rotary)	Hermetic (Rotary)	Hermetic (Rotary)
	Quantity	1 No.	1 No.	2 No.	1 No.

Due to continuous improvement in our products, specs may change without notice.

Fan Coil Units

MODEL	AIR FLOW RATE (CFM)	WATER FLOW RATE (GPM)	CAPACITY COOLING BTU/HR (KCAL/HR)
FCU 300	300	1.8	9000 (2270)
FCU 400	400	2.4	12000 (3026)
FCU 600	600	3.6	18000 (4539)
FCU 800	800	4.8	24000 (6052)
FCU 1000	1000	6.0	30000 (7565)
FCU 1200	1200	7.2	36000 (9078)
FCU 1600	1600	9.6	48000 (12104)
FCU 2000	2000	12.0	60000 (15130)

Due to continuous improvement in our products, specs may change without notice.

Central Station AHUs

AHU MODEL	AIR FLOW RANGE (CFM)	NOMINAL AIR FLOW (CFM)
110A4,A6,B4,B6(Forward Curved)	800~1600~Low&MedStaticPr.	900(A4&A6),1400(B4&B6)
112A4,A6,B4,B6,C4,C6(F.C)	1500~3800~Low&MedStaticPr.	1800(A4&A6),2500(B4&B6),3500(C4&C6)
115A4,A6,B4,B6,C4,C6(F.C)	4000~6500~Low&MedStaticPr.	4200(A4&A6),5400(B4&B6),6100(C4&C6)
118A4,A6,B4,B6(F.C)	6500~8500~Low&MedStaticPr.	7000(A4&A6),7800(B4&B6)
122A4,A6,B4,B6(F.C)	9500~13500~Low&MedStaticPr.	10500(A4&A6),12500(B4&B6)
125A4,A6,B4,B6(F.C)	12000~16500~Low&MedStaticPr.	13500(A4&A6),15000(B4&B6)
110A4,A6,B4,B6(Backward Inclined)	800~1600~HighStaticPr.	900(A4&A6),1400(B4&B6)
112A4,A6,B4,B6,C4,C6(B.I)	1500~3800~HighStaticPr.	1800(A4&A6),2500(B4&B6),3500(C4&C6)
115A4,A6,B4,B6,C4,C6(B.I)	4000~6500~HighStaticPr.	4200(A4&A6),5400(B4&B6),6100(C4&C6)
118A4,A6,B4,B6(B.I)	6500~8500~HighStaticPr.	7000(A4&A6),7800(B4&B6)
122A4,A6,B4,B6(B.I)	9500~13500~HighStaticPr.	10500(A4&A6),12500(B4&B6)

Due to continuous improvement in our products, specs may change without notice.

Available with Environment Friendly Refrigerant + DC Inverter

Larger Capacities Models are available on Demand

Desiccant Dehumidifiers

(100-1200 CFM)Process Air

Description		DHF 100	DHF200	DHF 400	DHF 600	DHF 900	DHF 1200
Process air							
Air flow rate	Lit/sec	47.2	94.4	189	283	424	566
(Standard)	M3/h	170	340	680	1020	1529	2038
	CFM	100	200	400	600	900	1200
Fan external	Pa	150	150	200	200	200	200
static pr. (ESP)	In H2O	0.6	0.6	0.8	0.8	0.8	0.8
Process fan motor power KW		0.11	0.11	0.37	0.55	1.1	1.5
Motor winding insulation class		F	F	F	F	F	F
Reactivation air							
Air flow rate	Lit/sec	16	28	59	95	142	193
(Standard)	M3/h	56	102	212	340	510	695
	CFM	33	60	125	200	300	409
Fan external	Pa	100	100	150	150	150	150
Static pr. (ESP)	In of H2O	0.4	0.4	0.6	0.6	0.6	0.6
Process fan motor power KW		0.09	0.09	0.11	0.37	0.55	0.75
Motor winding insulation class		F	F	F	F	F	F
Reactivation heater							
Heater power	KW	1.9	3.5	7.5	12	16	22
Air temperature rise °F (°C)		182(83)	184 (84)	189 (87)	189 (87)	189 (87)	184 (84)
Electrical data							
Total power	KW	2.11	3.71	8.0	12.94	17.7	24.2
Voltage supply		220-1-50HZ			380-415-3- 50-HZ		
Air filter class		Eu3 grade leak tight filter					
Dimensions	Height	500	500	500	550	580	600
(MM)	Width	914	965	1016	1040	1143	1219
	Depth	610	635	685	725	790	865
Weight	KG	47	58	80	110	165	182

Due to continuous improvement in our products, specs may change.

With IMPROVED TECHNOLOGY of DESICCANT WHEEL.

Larger Capacities Models(Up to 12000CFM(Process Air)

Are Available On Demand

Air Curtains

(Standard 36", 48", 60" Width)

CATEGORY			SUPER THIN			STANDARD			DELUXE	
MODEL			FM-1209	FM-1212	FM-1215	FM-1509	FM-1512	FM-1515	FM-4012	FM-4015
OPERATING VOLTAGE			220~ 240V -1 Phase -50 Hz							
POWER INPUT (Watts)			140	230	280	230	300	350	440	530
Air Velocity At Discharge	H	(M/S)	11.1	11.1	11.1	12.8	12.8	12.8	15	15
		FPM	2185	2185	2185	2520	2520	2520	2953	2953
	L	(M/S)	8	8	8	10	10	10	16	16
		FPM	1575	1575	1575	1969	1969	1969	3150	3150
AIR VOLUME	H	CMH	1150	1750	2180	1512	2316	2820	1900	2300
		CFM	677	1030	1283	890	1363	1660	1118	1354
	L	CMH	900	1200	1500	1260	1930	2350	1500	1900
		CFM	530	706	883	742	1136	1383	883	1118
NOISE (d B(A))			<57	<58	<59	<65	<66	<66	<58	<61
NET WEIGHT (Kg)			12	15	18	19.5	24	28	18	23
DIMENSIONS MM(Inches)		H	215(8.46)	215(8.46)	215(8.46)	240(9.45)	240(9.45)	240(9.45)	230(9)	230(9)
		W	900(35.43)	1200(47.3)	1500(59)	900(35.43)	1200(47.3)	1500 (59)	1200(47.3)	1500(59)
		D	180(7)	180(7)	180(7)	210(8.26)	210(8.26)	210(8.26)	215(8.46)	215(8.46)
Air Velocity (M/S)			11.1			12.8			15	
Air Velocity At Different Distances		1 M	5.2			7.1			8.2	
		2 M	3.1			5.0			6.0	
		3 M	1.7			2.5			3.0	
		4 M	1.2			2.0			2.3	

Due to continuous improvement in our products, specs may change.

Cabinet Heater&Package Unit Heater

(Specifications)

Model	CH 300-X(1,2,3)			CH 600-X(4,4.5,5,6)				CH 1000-X(8.4,10)		CH 1200-X(12)
Electric Heater Details										
Electric voltage supply	220-240-1-50Hz									
Heater power in	1Kw	2Kw	3Kw	4Kw	4.5Kw	5Kw	6Kw	8.4Kw	10Kw	12Kw
Air flow	300 CFM			600 CFM				1000 CFM		1200 CFM
Heater element type	Fin Type Resistance PTC Heater									
Current at 220V A	4.5	9.1	13.7	18.2	20.5A	22.7A	27.3A	38.6A	46A	55A
Current at 240V Am	4.9A	9.8A	14.7A	19.6A	22.4A	24.8	30.0A	42.5A	49A	60A
Heating capacity at 220V Btu/h	3380	6830	10245	13660	15370	17079	20498	28983	34540	41298
Heating capacity at 240V Btu/h	4013	8030	12045	16060	18350	20317	24573	34815	40136	49148
Thermostat t	Unit mounted electromechanical									
Safety Device	High temperature Cutout and Fuse									
Supply Air Fan / Mot or Details										
Fan type	Forward Curved Centrifugal									
Drive type	Direct Driven									
ESP	Free Discharge									
Fan motor type	3-Speed (PSC)									
Fan motor Qty	1	1	1	1	1	1	1	2	2	2
Motor watts X Q	100	10	10	120	12	120	125	125x2	125 x 2	125 x 2
Construction Details										
Construction	Galvanized steel sheet									
Outer finish	Electrostatic backed powder paint									
Unit dimension H x W x D (mm)	457x610x250			510x930x290				673x1829x290		673x1829x290
Unit weight (Kg)	20	20	20	40	40	40	40	60	60	70

With Improved Technology of Energy Efficient Design

Cabinet Heater can be provided on other voltage supply.
Please contact factory for other requirement.
X with numbers Shows the heater KW. For example> CH300-X2, means Model CH300 with 2KW heater,
Keeping in view the improvement, specifications subject to change without notice.

Technologies

CNC Machines & Tools

We are working on the following type of machines which have been converted to CNC.
(Computerized Numerically Controlled) machines:

- Machining Centers
- Milling Machines
- Lathe Machines
- Cutters and Benders
- Fin Presses
- Plastic Injection Molding Machines
- U-Bend Cutter

Molds & Dies

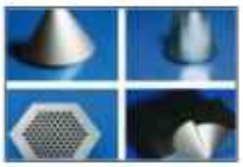
We have developed various plastic and metal molds and dies with finish of international standards, and have made dies for diverse applications.

Robotics

Our Research and Development team is working on Robotics as a joint technological venture with our subsidiary company NDT. We are looking for consumer robotics as our outcome.

We have the following machinery for mechanical field related needs

- Vertical Machining center 3000x1000x1000
- CNC milling 1500x1000x400
- CNC milling 700x500x300
- EDM
- CNC wire cut 2 no's
- Vertical Milling No-3 2 no's
- Horizontal milling No4
- Turret milling No-2 2 no's
- Surface grinder 250x600
- Surface grinder 300x600
- Surface grinder 2000x1000
- Planer
- Radial Drill
- Vertical column drill
- JP Dynamic Fan balancing machine
- Haco Omatic 212 RH CNC Punching
- Fanuc CNC-3 axis vertical machining Center



Manufacturing in the Digital Age

We use the power of the global market place to develop the highest quality product, industrial tools & machinery at the lowest possible prices, all while ensuring fast delivery.
This gives our company the edge by ensuring you have the product you need, when you need it-and more importantly allows you to use our product at an effective & affordable cost.

Research & Development Department

Sabro R&D department was established in **1986**. The sole purpose of establishing R & D Department was to develop the products which benefit our customers. By encouraging research activities, the quality of the products was improved further and the product lines were broadened. Sabro believes in quality and quality can only be achieved by continuous improvement. Every effort is directed towards making high quality products which are reliable, safe and user friendly.
At Sabro, Precision Test & Balance Lab engages in testing & balancing of HVAC Systems under supervision of professional engineers who are devoted, dedicated, determined & enthusiastic..

The R&D arm approaches these activities while keeping vigilant eyes on both customers' needs & what it takes to satisfy them.
Simply stated, our efforts to develop fundamental technologies are directed towards customer needs. **Sabro's R&D Department has two top priorities:**

- Researching and developing basic technologies that can be used to create future business opportunities.
- Researching and developing new technologies that can be utilized to further expand current business opportunities.

2016: Research and development of precision design draw-through floor standing units.
2017: Research and development of precision cabinets for solar based power generation system-erect.
2018: Research, development and production of **Energy Efficient De Humidifiers** with **Desiccant rotor technology..**
2019/20: Research and Development of energy efficient Air Cooled/Water Cooled Screw/Centrifugal Chillers..
2020/21: Research & Development of **Plasma Air Sterilizers against COVID-19..**
2021/22: Research & Development of **DC Inverter Commercial Systems..**
2022/23: Development of **DC 24V-AC Package unit for vehicle Air-conditioning..**
2022/23: Development of Direct-driven/Belt-driven **Plug Fans(Centrifugal Ventilators)..**

Manufacturing Facilities at 150,000 Sq. Feet Area

- The salient features of our manufacturing facility are;
  Total manufacturing covered area of 150,000 Sq. feet,

with highly competitive professional employees working in 30 different specialized departments.
Our production capacity is 2500-3000 horse powers per day for;

- **Standardized**
- **Customized**
- **Specialized**
- **Domestic**, **Industrial** and **Commercial** units.

Right Solutions At Right Time

In a highly competitive environment besides innovative technology; right solution are needed at the right time to adapt to different situation.

Just Tell Us Your HVAC Need

WE'LL MAKE IT!

ANYTHING!
FROM BASIC AIR CONDITIONING
TO THE MOST COMPLEX CUSTOMIZED HVAC SOLUTIONS
YOU CAN STOP READING NOW, EVERYTHING CAN BE TAKEN CARE OF,
JUST TELL US WHAT YOU NEED US TO MAKE - WE'LL MAKE IT!

CNC Multi Tools Operation Set-Up

CNC Machining automates fabrication processes.

At Sabro, manufacturing facility is equipped with advanced division making and control techniques to optimize, integrate and automate material processing at every stage in the manufacturing process. This helps us in maximizing quality and efficiency while giving room for improvements without slowing down production.
We make an effective use of our high profile technological machinery set-up.

Manufacturing & Testing Facilities

- CNC sheet punching and fins punching machines
- Documented Quality Management System
- R&D facilities
- Electronics Research and Development dept.
- Manufacturing facilities at 150,000 Sq. Ft area
- CNC Lathe Machines (Horizontal/Vertical)
- CNC Boring Machines
- CNC Jig Machines
- Specialized Tools
- Plastic Molding Machines
- Metal Dies
- Ammunition (Tear Gas Shell)

Industrial Machines Manufacturing

- CNC Lath M/C
- CNC Milling M/C
- Machining Centre
- Special kind of CNC M/Cs for customized machining
- Jigs and Fixtures with Combo of CNC M/Cs

Industrial Tool Making

- Injection Molding Tools/Molds
- Sheet Metal fabrication and Sheet Metal Tools & Dies
- Retrofitting of Old conventional M/Cs to convert into CNC M/Cs
- Manual M/Cs to Automated M/Cs

Manufacturing Capability-SPV & MRV-Defence

- Sabro is capable of manufacturing SPV(Special purpose vehicles) & MRV(Multi Role Vehicles) for Pak Defense.

Machining Services & Solutions

Machining

- Employing the latest technology in conventional and CNC machining,

We Offer

- Precision machining and manufacturing on job shop or production basis.

We Specialize In

- Turning, Boring, Drilling-Tapping, Milling,
- Surface , Shaping, Grinding, Assembly, Balancing

You Are Assured Of

- Manufacturing quality, guaranteed by in-process & final inspection.

Continuous Improvement

- We are continually upgrading the Machining equipment in order to better Serve our customers.

Comprehensive Manufacturing Scope

- We offer parts from partially machined to completely finished to the Customer requirements and satisfaction.

Molding

- This is our Total commitment
  We serve your total molding needs to give you Unbeatable competitive advantage. Experience in tool making and engineering capabilities of our people decided that today plastic injection molds & aluminum pressure die casting dies Constitute the product line of the company.
- We are specialized in many fields such as:
  - Molds For Air-Conditioning Industry
  - Injection Molds
  - Molds For Electronics
  - Defense Industry
  - General Industry

Die Making

- Precision, Commitment, Excellence
- We build top quality dies for all types of industries that produce verity of products.
- We build press dies, samples, vinyl's, stripping tools, blanking tools, counter plates
- Full service from design to delivery, Years of experience both as die cutters & die makers
  Contact us to provide you with New solutions to your in-house die cutting operations. We have technical consulting services by experienced personnel. We have Total Quality Control processes from start to finish.
- We offer a competitive pricing structure that meets all your quoting and estimating needs.

Machining Services & Solutions

Tool Making

If you are looking for

Tooling designed for high performance and quality and yet at the prices that help you to stay more competitive, then Consider us your suppliers.

We have got all the expertise and experience

- **We bring our**
  Customers the unique Advantage of Complete tooling Solution.
- **When Our customers**
  Bring their tool design challenges to us,
  they benefit from our experience;
  in the commercial, defense, air-conditioning, manufacturing industries.
- **Our facilities are**
  Completely temperature controlled eliminating any need to Compensate for expansion & contraction during the tool manufacturing and inspection cycle.
- **Due to the**
  Size and complexity of major tools that are manufactured at our premises,

Jigs & Fixtures

- We are
  Specialized in manufacturing of best quality jigs and fixtures
  Press tools and special purpose machines.
- We *At* **Sabro**
  Design and manufacture fixtures
  For your latest automation and production lines.
- We have supplied
  Jigs and fixtures for the different types of manufacturing industries.
- The core abilities
  of our in-house jig and tool design facilities enable simple jigs & more complex fixtures to be designed Suiting the customer's requirements.
  We provide you customized jigs & fixtures, at competitive prices.

Mechanical Services

- CAD/CAM services; 3D Modeling
- Surface modeling; Solid modeling
- 2D to 3D conversion; Reverse engineering
- Art work CAD/CAM; Training
- Structural and motion analysis
- Product Designing & Development
- Mold-Tool designing & manufacturing
- Solid modeling - Surface modeling - Hybrid modeling
- Mold/Tool designing; CNC machining
- CAM design & Art work CAD/CAM

Machining Services & Solutions

Machining Services

We have the following machinery for mechanical field related needs

- Vertical Machining center 3000x1000x1000
- CNC milling 1500x1000x400
- CNC milling 700x500x300
- EDM
- CNC wire cut 2 no's
- Vertical Milling No-3 2 no's
- Horizontal milling No4
- Turret milling No-2 2 no's
- Surface grinder 250x600 Surface grinder 300x600
- Surface grinder 2000x1000
- Planer
- Radial Drill
- Vertical column drill
- Fan balancing machine
- Haco Omatic 212 RH CNC Punching
- Fanuc CNC-3 axis vertical machining Center

Fanuc Series-180MC-General Flow Operation

CNC-3 axis Vertical Machining center

Machining Services & Solutions

JP Dynamic Fan Balancing Machine

The Powerful Industrial Control Measuring Instrument JP 580-B

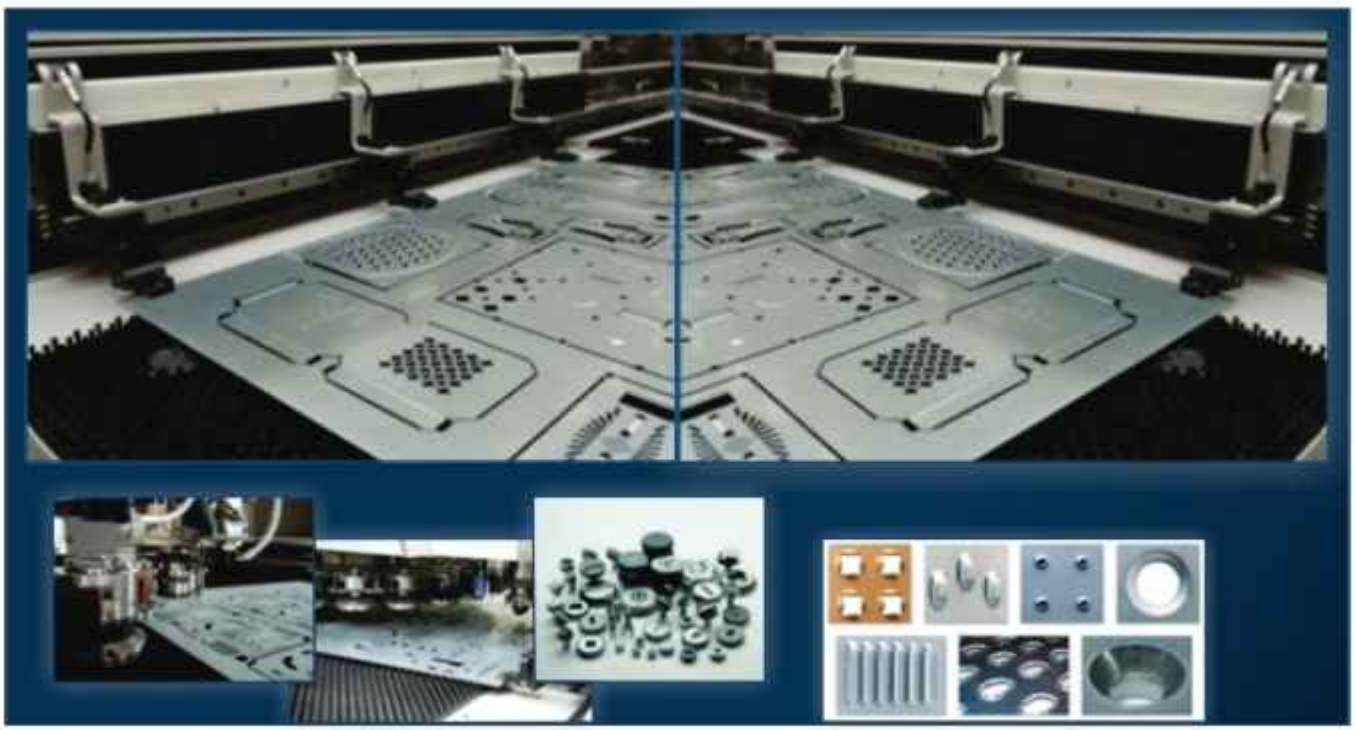
- Auxiliary assistance for correction, higher balance efficiency
- Rotation Range: 120-12000r/min
- Minimum Resolution: 0.01mg
- Shortest Measuring Time: 3s
- Measuring Dynamic Range: 1:100000

Place the rotor on the bearings, set the rotor parameters and start to run the rotor.

- Adjust the photoelectric head(for belt drive balancing only) until the speed meter signal column changes, showing the speed & signal. Process bar starts to show the process once the speed reaches the set Rev.
- The Unbalance amount displays when the process is half. When the process is 100% done, it displays GOOD for approval of the balance or NOT for disapproval of the un balance indicated in Green or Red as well. At this point/ time, digit displayed remains unchanged, suggesting the completion of the measuring process.

Hi-Tech CNC Punching Machines

Multi Stations Tool turret with Tool Holders



Pharma

- AGP Pharma
- Aventis Pharma
- Abbott Laboratories
- Bio Labs
- GSK Pharma
- Glitz Pharma
- Glaxo Welcome Pharma
- Global Pharma
- High Noon Laboratories
- Hilton Pharma
- Hoechst Pharma
- Martin Dow
- Novartis Pharma
- Sci-Life Pharma
- Smithkline Beecham
- Sami Pharma
- SANOFI
- Vision Pharma
- Wyeth Laboratories

Hospitals

- Allied Hospital Faisalabad
- Agha Khan Hospital Karachi
- Civil Hospital Lahore
- Jinah Hospital Lahore
- Liaqat National Hospital Karachi
- Medicsi Hospital
- PIMS
- Sheikh Zayyed Hopital & Medical College RYK
- Shifa International Hospital

Universities, Colleges

- Akhtar Saeed Medical College Lahore
- Beacon House National University Lahore
- Islamia University Bahawalpur
- Lahore University of Management Sciences
- Pakistan School of Fashion Design Lahore
- NUST
- Quaid-e-Azam Medical College Bahwalpur

Telecom Sector

- Al-catel
- Al-Warid
- Huawei
- Mobilink
- Pak Telecom
- Telenor Pakistan Ltd.
- Telecard
- World Call

Banks

- Citibank
- Hong Kong Association of Banks
- National Bank of Pakistan Ltd.
- UBL

Hotels, Marquees, Theatres, Clubs

- Avari Hotels
- Bahria Theatre, Bahria Town Lahore
- DESOM Club Lahore
- Holiday Inn
- Islamabad Club
- Marriott Hotels
- Mughal-e-Azam Lahore
- Pearl Continental Hotels
- Qasr-e-Noor Lahore
- Qasr-e-Noor Banquet Hall Country Club Lahore Cantt.
- Siddique Marriage Hall

Government Sector

- FWO- Forantier Works Organization
- Art Council Sahiwal
- British High Commission
- CDA
- Lok Virsa Museum, Islamabad
- Pakistan Monument, Islamabad
- PTV
- Pakistan Railways
- Qatar Embassy
- State Life Insurance
- Sui Northern Gas Co. Ltd.

Air Ports

- Islamabad International Airport
- Alama Iqbal International Airport, Lahore
- Q.A International Airport, Karachi

Poultry

- Islamabad Farm
- Islamabad Feeds
- Jadid Poultry
- KNN
- Sadiq Poultry
- Zubair Poultry

Pak Defence

- Army Welfare Trust
- Pakistan Army
- Pakistan Navy
- Pakistan Airforce
- PAEC

Commercial Buildings, Work sites

- FTC Building Karachi
- Atlas Honda Ltd.
- Bata
- Coca Cola
- Dvcom
- Fuji Films Ltd.
- Halliburton
- ICI Industries
- KFC
- Pakistan Tobacco Co.
- Pepsi
- Schlumberger
- Shell Pakistan Ltd.
- Services Industries
- Toyota Indus Motors, Karachi
- Unilever
- Coronet Foods Pvt Ltd.

KFC

ICI

Unilever

Coronet Foods Private Limited

Sabro quality products are being exported to below mentioned countries:

Exports World-wide

- Afghanistan
- Bangladesh
- Bahrain
- Kuwait
- Kenya
- Malaysia
- Morocco
- Oman
- Qatar
- Saudi Arabia
- Sri Lanka
- UAE

1985	1st prize in national industrial exhibition held in Islamabad.
1986	Merit trophy for best industrialist by ICCI.
1989	Special prize in N.I exhibition Lahore by ministry of industries Punjab.
1991	Shield of valuable tax payer by Pakistan customs. Special prize in science&technology fair Islamabad by Pakistan science foundation. RCCI export trophy for excellent export performance of split units. Merit trophy for best export performance by FPCCI. Gold medal in 10th industrial exhibition by ICCI
1992	RCCI shield for the best performance in HVAC industry.
1993	Excellence award by Pakistan science foundation.
1994	Excellence award in 11th annual international industrial exhibition of Islamabad chamber of commerce. Trophy expo94 by Pakistan scientific and technology information center.
1995	RCCI export trophy for excellent performance in export of split Acs. Award in 6th all Pakistan software competition and exhibition. Excellence quality award95 at industrial fair Lahore. Award RAC95 at second national conference and exhibition Award in 3rd national conference on RAC by HVACR society.
1996	Award in 4th national conference on RAC by HVACR society.
1997	Achieved ISO 9001 certificate. Award in the 4th national conference exhibition on RAC.
1998	Excellence award by Islamabad chamber of commerce & industry. Award in 5th national conference exhibition on RAC.
1999	Award in 6th national conference exhibition on RAC.
2000	Obtained Updated ISO 9001 certificate. Produced spark free air conditioners for Qatar army. Award in 7th HVACR expo Lahore. Developed Microprocessor controller.
2001	Award in 8th HVACR expo Karachi.
2002	Tremendous increase in production capacity.
2003	Award in 10th HVACR expo Islamabad. Expanding exports to Saudi Arabia, Kuwait, Qatar and Dubai. Design, development and production of commercial units for Pak railway.

2004	Launching of polyurethane foaming setup (insulation density of 40 kg/m3)
	Design, development and production of commercial units for Pak Navy.
2005	Award in 12th HVACR expo Lahore.
	Launching of R & D village.
	Foundation of Sabro Technology (Pvt.) Ltd.
	Design, development and production of commercial units for PAF.
	Achievement of biggest ever export order for Kuwait.
2006	Development of thermal break aluminum profile in commercial Air Handling units of all types.
	Development and production in all types of commercial units CFC free (Environment Friendly) refrigerant.
2007	Development of shell & tube type shell.
	Award in 14th HVACR expo Karachi.
2008	Development & production of precision air conditioners with latest techniques of dehumidification through infrared glass tubes heater.
2009	Research & development on propane heating systems.
	Award in 16th HVACR expo Islamabad.
	Branding of precision AC with a name LUCRE.
	International Contract signed with Etiselat.
2010	Research & development on environment friendly refrigerant based HVAC systems.
2011	Design, development and production of commercial units for afghanistan.
2012	Design, development and production of BMS technology.
2013	Research & development on cost effective, energy efficient cooling/heating systems.
2014	Obtained BS EN ISO 9001:2008
2015	Design & development of precision design draw-through floor standing units.
2016	Design and development of precision cabinets for solar based power generation.
2017	Design and development of Air Cooled/Water Cooled Screw/Centrifugal Chillers..
2018	Development of **energy efficient Air/Water Cooled Screw/Centrifugal Chillers**..
2019/20	Development of **Plasma Air Sterilizers against COVID-19..**
2020/21	Development of **DESICCANT ROTOR BASED DeHumidification systems**.
2021/22	Development of **DC Invertor Commercial systems**.
2022/23	Development of **DC 24V-AC Package unit for vehicle air-conditioning.**
2023/24	Development of Direct-driven/Belt-driven **Plug Fans(Centrifugal Ventilators)..**


This is to certify that

Export Awards

Merit Trophy for Export Performance by FPCCI

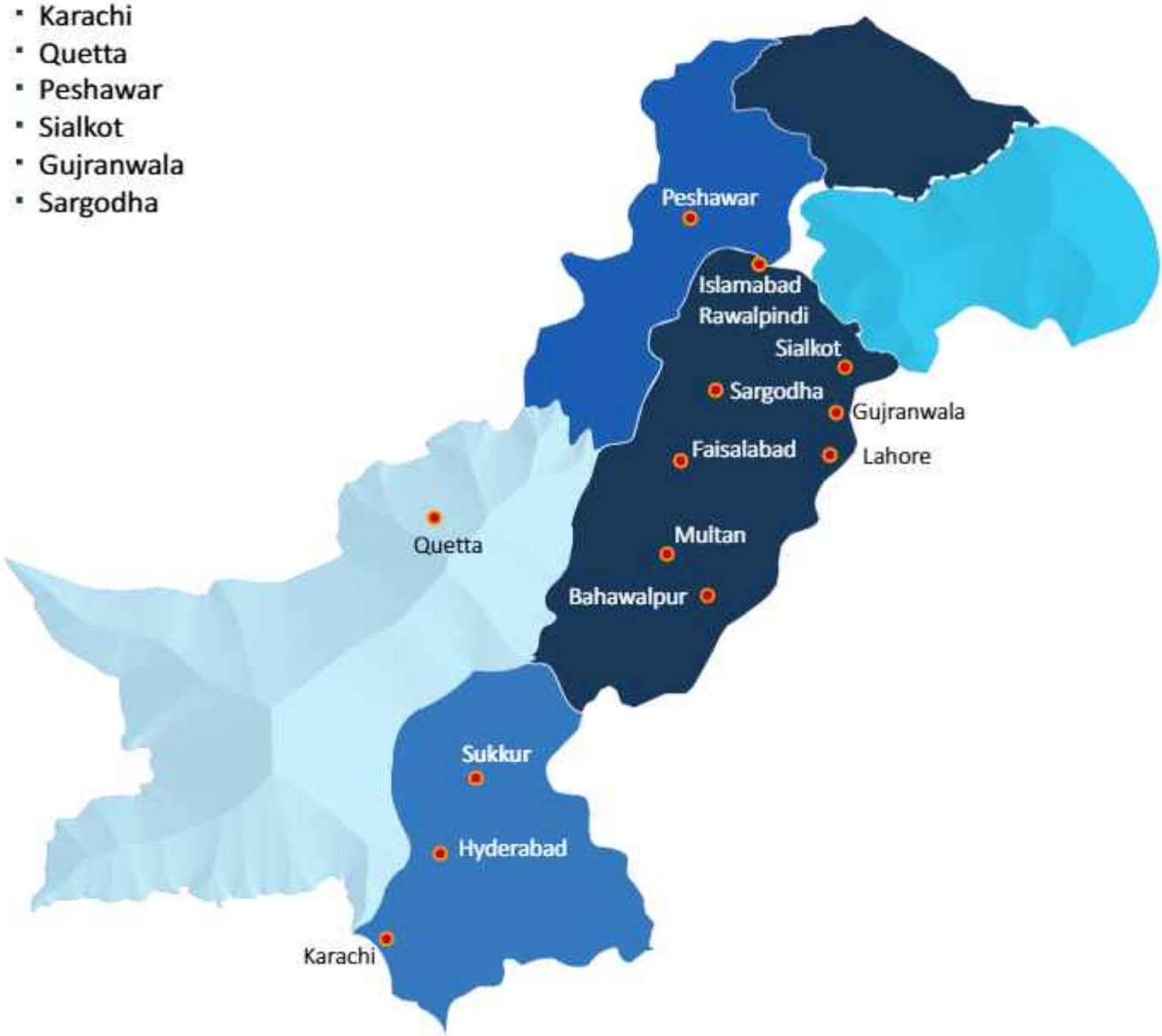
RCCI Export Trophy for excellent performance in Export of Split ACs
Award in 6th All Pakistan Software Competition & Exhibition

Quality Awards

1995	**Excellence Quality Award 95 in Industrial Fair Lahore** **Award RAC 95 Second National Conference and Exhibition On Air Conditioning Refrigeration Technology** **Obtained Award in 3rd National Conference On Air Conditioning & Refrigeration Technology Pakistan HVACR Society**
1997	**Achieved ISO 9002 Certificate** **Award in the 4th National Conference Exhibition On PRC**
2000	**Obtained Updated ISO 9001 certificate.**
2014	**Obtained BS EN ISO 9001:2008**
2018-19	**Obtained Achievement Award in HVAC expo**

Sabro is proud to have the biggest sales and service dealers network in Pakistan.
Our sales & services network spans all over Pakistan.

- Islamabad
- Rawalpindi
- Lahore
- Faisalabad
- Multan
- Bahawalpur
- Hyderabad
- Sukkur
- Karachi
- Quetta
- Peshawar
- Sialkot
- Gujranwala
- Sargodha



Sabro

Made In
PAKISTAN
Since 1969

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