

Air-Cooled Scroll Chillers

with refrigerant R407C & R22



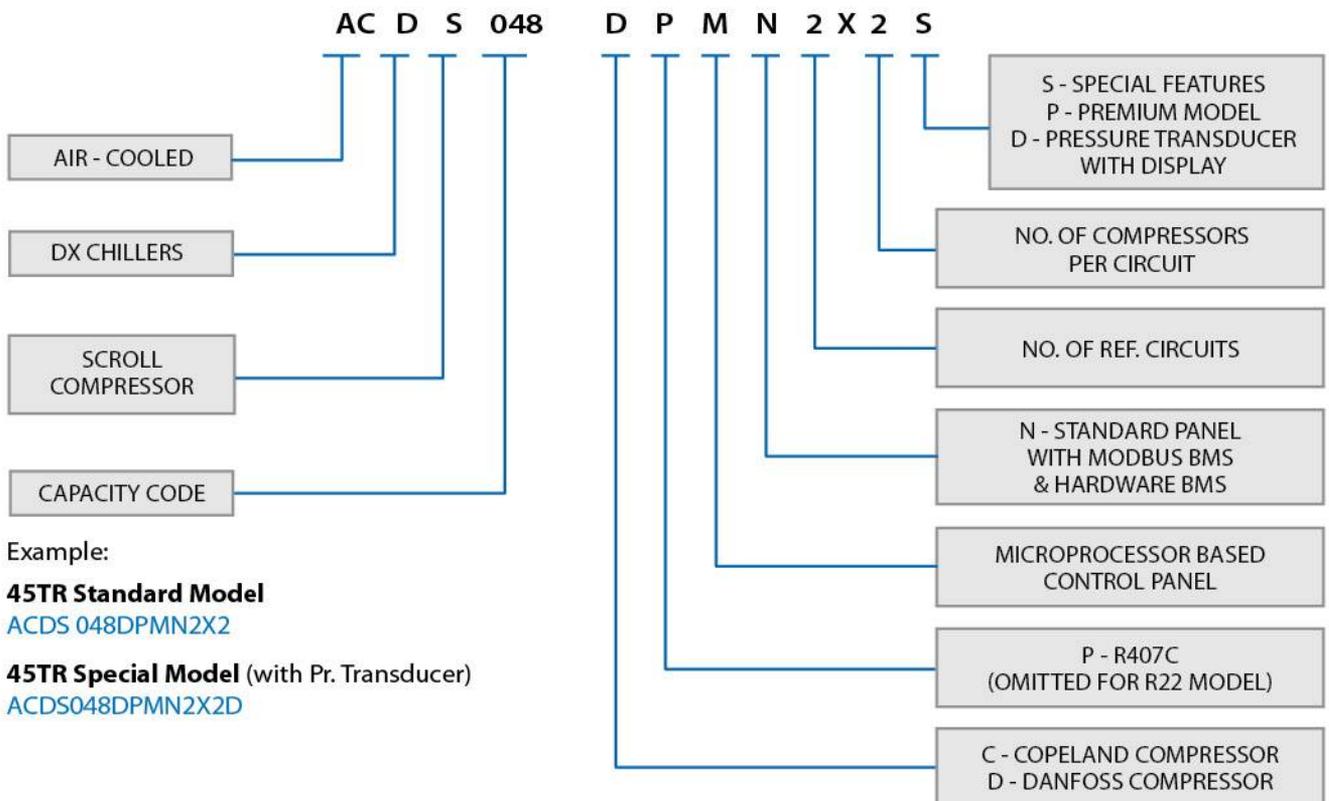
AIR-COOLED SCROLL CHILLER

Voltas is the pioneer and a leading provider of integrated end-to-end solutions in the field of electromechanical and refrigeration. We are committed to provide customers with technology that suits their needs and have introduced a wide variety of air-cooled and water-cooled scroll chillers with R 22 and R 407 C refrigerant options.

With ISO 9001 standard certified factories, Voltas possesses total capability in the manufacture of scroll chillers. These chillers are available in a wide range of capacities from 12 TR to 90 TR. They are easy to install and commission and can handle varying cooling requirements, aided by multiple compressor configurations.

Voltas scroll chillers have become an ideal choice for various air conditioning applications including, office spaces, banks, hotels, hospitals, shopping malls, multiplexes, commercial complexes and process cooling requirements.

MODEL NOMENCLATURE



FEATURES

- Scroll Compressor with R 22 & R 407 C Refrigerant Options
- Energy Efficiency
- Modular Design
- Application Flexibility
- Low Noise & compact
- Easy-to-use Microprocessor Panel & Controls

POWERFUL FEATURES:

Voltas chillers are available in a wide range of models, with R 407C & R 22 refrigerants.

SCROLL CHILLERS								
Air - Cooled Chillers (Nominal Capacity)								
R407C	11 TR	22 TR	34 TR	45 TR	56 TR	68 TR	75 TR	87 TR
R22	12 TR	24 TR	36 TR	48 TR	60 TR	72 TR	80 TR	90 TR

Energy Efficiency

A range of sophisticated components such as highly energy efficient imported compressor, superior design of water-cooled condenser & chiller, internally grooved, cross-hatched copper tube coil with matched circuitry, and a microprocessor controller, results in low power consumption.

Higher energy efficiency – Tandem compressor models

Scroll chillers from 48 TR to 90 TR use compressors operating in tandem. This improves the operating efficiency during part load periods, since the entire condenser area is utilized for the heat rejection even though only one compressor may be in operation.

Capacity Modulation

Multiple compressors are used in most of the models, with independent refrigerant circuits. The microprocessor controller ensures that only the required number of compressors operate during part load conditions, thereby saving power.

Operating Reliability

The compressor is a no contact scroll design with the motor cooled by the suction gas. Higher capacity scroll chillers use tandem compressors with suction gas distribution restrictor which allows balanced operation of compressor. The chillers are charged & tested in the factory prior to despatch, enhancing operating reliability.

Quiet Operations

The chillers use ultra quiet, high efficiency scroll compressors. The condenser fans are designed for low noise levels.

Easy to install

The chillers are pre-wired, fully charged and run tested at the factory, saving installation and start up time.

Voltas Countrywide After Sales Service

A nationwide service network backs every unit. After the initial warranty period, Voltas offers annual service schemes. More than 90% of the customers have opted for these schemes. You cannot get a better insurance.

MICROPROCESSOR - BASED CONTROLLER

Specially designed controller has multiple features with following benefits:

Three modes of operation :

- **Local mode** : Start / Stop & control through
- **Remote mode** : Remote Start / Stop through Digital input connected through cables.
- **BMS Mode** : Remote data access through MODBUS RTU protocol. Available communication port RS485 can be linked to Building Management System (BMS).
- **MMI** : Touch Pad / Key Pad with 32 character LCD Display.



Touch Screen

Equalization of Compressor Runtime :

- The Micro processor Controller ensures equal running of compressors in multiple compressors units. This ensures longer life of compressors.

Safety & Protection :

- Microcomputer Motor Protection Device (**MPD**) : Protects chiller from
 - *Phase unbalance* • *Phase loss* • *Phase reversal* • *Overload* • *Underload*
- Microcomputer Voltage Protection Device (**VPD**) : Protects chiller from
 - *Phase loss* • *Phase reversal*
- Safety features protect the system from :
 - *Freezing* • *Low Pressure* • *Anti Recycle* • *Low Chilled Water Temperature*
 - *High Pressure* • *Sensor Error* • *Low Water Flow in condenser, Chiller*

Touch Pad :

- Provides user friendly interface with graphical display
- Gives visual annunciation for safety trips
- Sturdy design for all environment
 - *4.3" Resistive Touch Screen* • *65536 colours TFT - LCD Display* • *Resolution : 480 x 272*
 - *Humidity : 10% - 85% non condensing* • *Operating Temperature : -20°C to + 60°C*
 - *Protection level : IP55 (surface)*

Self diagnosis Function

- Digital Display of all digital inputs & output such as Outlet temperature for Chillers, Current, Voltage & Compressor run hours, low water flow, etc.
- Diagnose mode for easy trouble shooting – shows alarm history for the last 100 trips with Date, Time & Cause of failure.

Controls & Interlocks

- The chilled water pump is interlock with compressors.
- The safety controls are preset at factory while operating controls are field adjustable, depending on actual operating requirements.

Optional Features:

- Dual-mode chillers for thermal storage system.
- Condenser Coil with anti-corrosion coating.
- Suction & discharge pressure transducers & pressure display.
- Control Panel as per NEMA standard.

TECHNICAL DATA A/C SCROLL CHP (R407C)								
Unit Model No.	ACDS 012DPMN 1X1	ACDS 024DPMN 2X1	ACDS 036DPMN 3X1	ACDS 048DPMN 2X2	ACDS 060DPMN 3X1	ACDS 072DPMN 3X2	ACDS 080DPMN 2X2	ACDS 090DPMN 2X2
* Nom. Capacity (TR)	11	22	34	45	56	68	75	87
COMPRESSOR								
Compressor Type	Hermetic Scroll							
Compressor Qty.	1	2	3	4	3	6	4	4
Rpm	2900	2900	2900	2900	2900	2900	2900	2900
Unit Capacity Reduction Steps in %	100/50	100/50	100/66.7/33.3	100/75/50/25	100/66.7/33.3	100/83.3/66.7/50/33.3/16.7	100/75/50/25	100/75/50/25
Max. Allowable Operating Current Per Compr. (Amps At 400 volts)	35	35	35	35	69	35	69	72
Operating Current per Compr.- Amps	23	23	23	23	37	23	37	44
EVAPORATOR								
Evaporator Type	Shell & Tube - DX							
Water Flow Rate (USgpm)	29	59	90	120	149	180	200	225
**Water Nozzle Size NB (mm)	65	65	80	100	100	125	125	150
CONDENSER								
Condenser Type	Fin & Tube							
Fan Qty.	2	2	2	4	4	4	4	6
Total CFM	11,000	22,000	26,000	42,000	44,000	48,000	52,000	66,000
UNIT DIMENSION								
Length (mm)	2500	2535	2535	2625	2625	2625	2625	3900
Width (mm)	650	1270	1270	2236	2236	2236	2236	2236
Height (mm)	1400	2340	2340	2340	2400	2440	2400	2400

Note1 : *Capacity rated for evap. inlet water temp 12° C, leaving water temp 7° C & and at design ambient of 35° C. Evap. Water side fouling factor of 0.000018 m²°C/W.

Power & control supply voltage is 360 - 440 V & 210-240 V respectively and frequency is 50Hz.

Note 2 : ** Size of water piping to be done at site to be determined based on operating tonnage & available pump head .

Note 3 : For chilled water outlet allowable temperature range is 5°C to 12°C. For other temperature, higher ambient / other duty / flow application please refer to Voltas Sales Team.

AIR-COOLED SCROLL CHILLER

TECHNICAL DATA A/C SCROLL CHP (R22)								
Unit Model No.	ACDS 012DMN 1X1	ACDS 024DMN 2X1	ACDS 036DMN 3X1	ACDS 048DMN 2X2P	ACDS 060DMN 3X1	ACDS 072DMN 3X2	ACDS 080DMN 2X2	ACDS 090DMN 2X2P
* Nom. Capacity (TR)	12	24	36	48	60	72	80	90
COMPRESSOR								
Compressor Type	Hermetic Scroll							
Compressor Qty.	1	2	3	4	3	6	4	4
Rpm	2900	2900	2900	2900	2900	2900	2900	2900
Unit Capacity Reduction Steps in %	100/50	100/50	100/66.7/33.3	100/75/50/25	100/66.7/33.3	100/83.3/66.7/50/33.3/16.7	100/75/50/25	100/75/50/25
Max. Allowable Operating Current Per Compr. (Amps At 400 volts)	35	35	35	35	69	35	69	72
Operating Current per Compr.- Amps	23	23	23	23	37	23	37	44
EVAPORATOR								
Evaporator Type	Shell & Tube - DX							
Water Flow Rate (USgpm)	32	64	96	128	160	192	213	237
**Water Nozzle Size NB (mm)	65	65	80	100	100	125	125	150
CONDENSER								
Condenser Type	Fin & Tube							
Fan Qty.	2	2	2	4	4	4	4	6
Total CFM	11,000	22,000	26,000	42,000	44,000	48,000	52,000	66,000
UNIT DIMENSION								
Length (mm)	2500	2535	2535	2625	2625	2625	2625	3900
Width (mm)	650	1270	1270	2236	2236	2236	2236	2236
Height (mm)	1400	2340	2340	2340	2400	2440	2400	2400

Note 1 : *Capacity rated for evap. inlet water temp 12° C, leaving water temp 7° C & and at design ambient of 35° C. Evap. Water side fouling factor of 0.000018 m²°C/W.

Power & control supply voltage is 360 - 440 V & 210-240 V respectively and frequency is 50Hz.

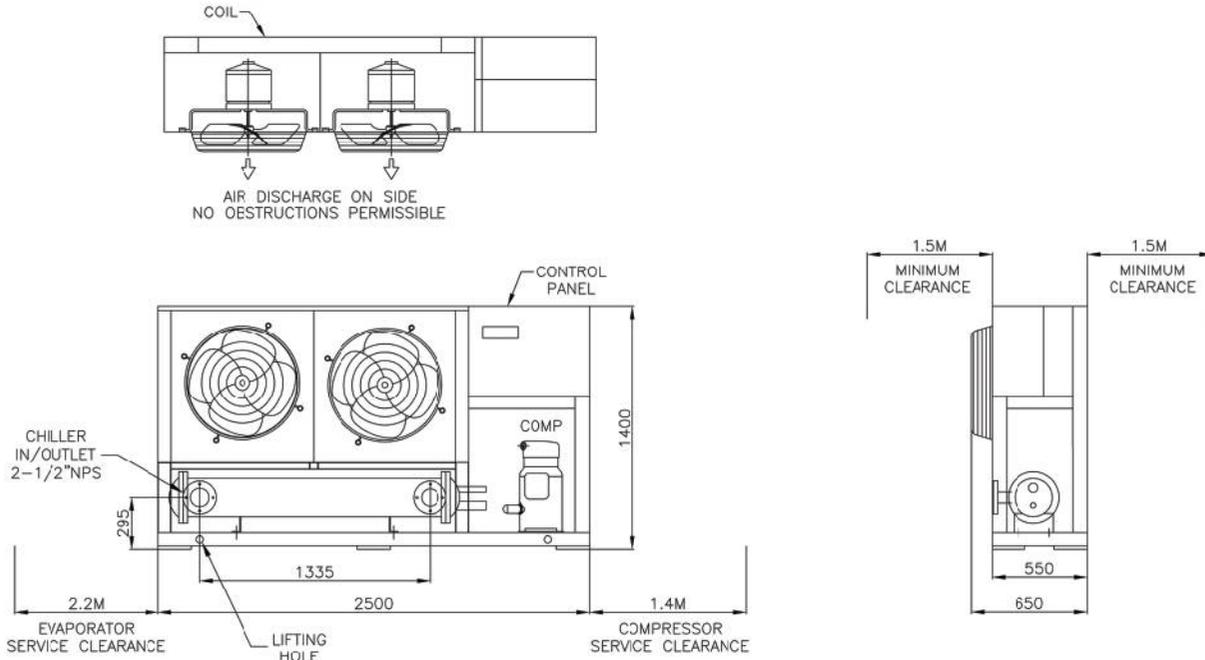
Note 2 : ** Size of water piping to be done at site to be determined based on operating tonnage & available pump head .

Note 3 : For chilled water outlet allowable temperature range is 5°C to 12°C. For other temperature, higher ambient / other duty / flow application please refer to Voltas Sales Team.

AIR-COOLED SCROLL CHILLER

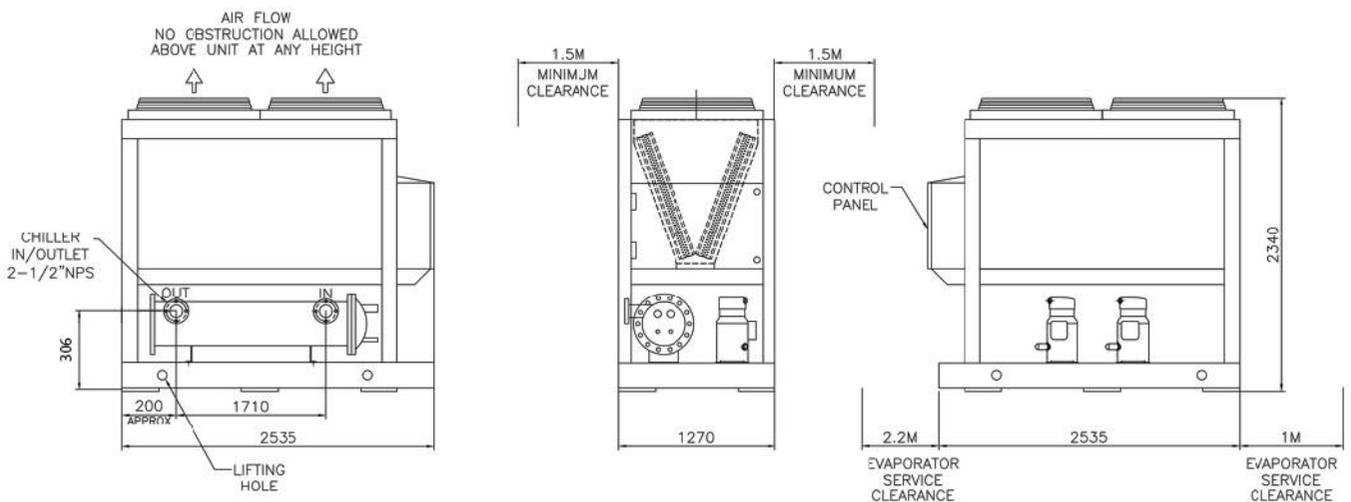
G. A DRAWING OF CHILLER PACKAGE MODEL

ACDS012DPMN1X1 | ACDS012DMN1X1



G. A DRAWING OF CHILLER PACKAGE MODEL

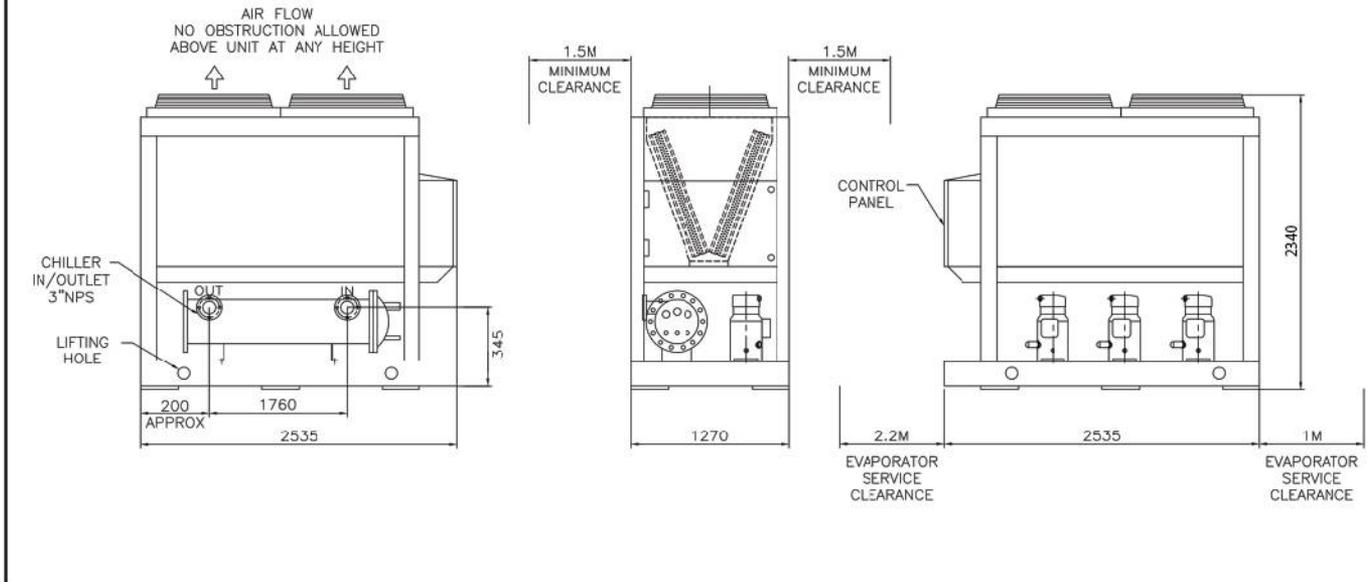
ACDS024DPMN2X1 | ACDS024DMN2X1



AIR-COOLED SCROLL CHILLER

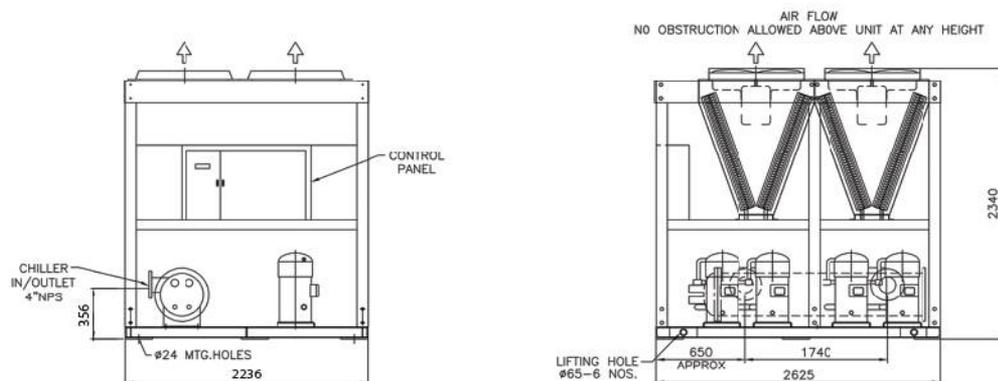
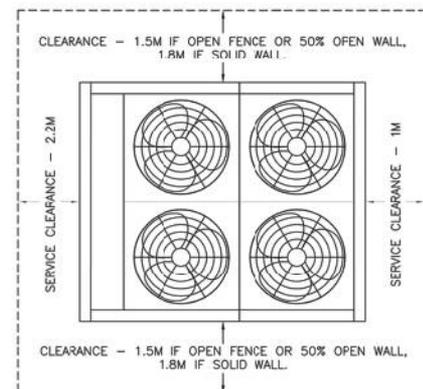
G. A DRAWING OF CHILLER PACKAGE MODEL

ACDS036DPMN3X1 | ACDS036DMN3X1



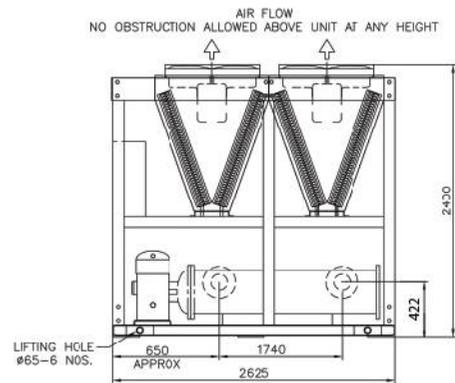
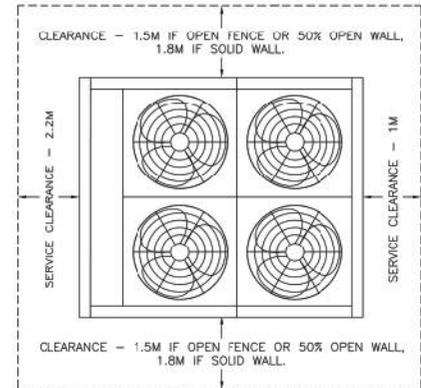
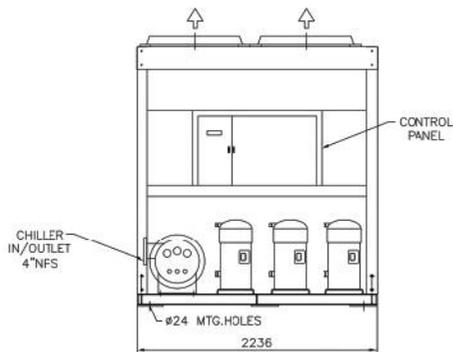
G. A DRAWING OF CHILLER PACKAGE MODEL

ACDS048DPMN2X2 | ACDS048DMN2X2P

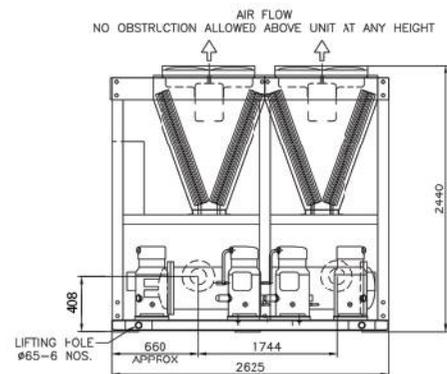
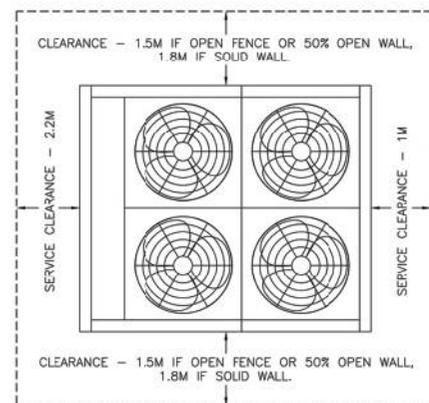
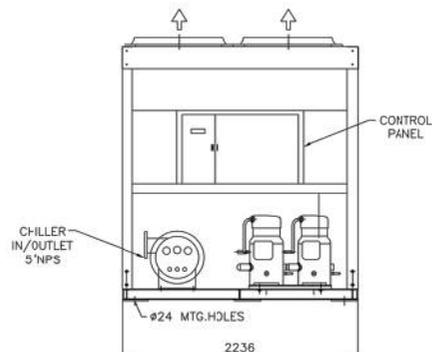


AIR-COOLED SCROLL CHILLER

G. A DRAWING OF CHILLER PACKAGE MODEL
 ACDS060DPMN3X1 | ACDS060DMN3X1

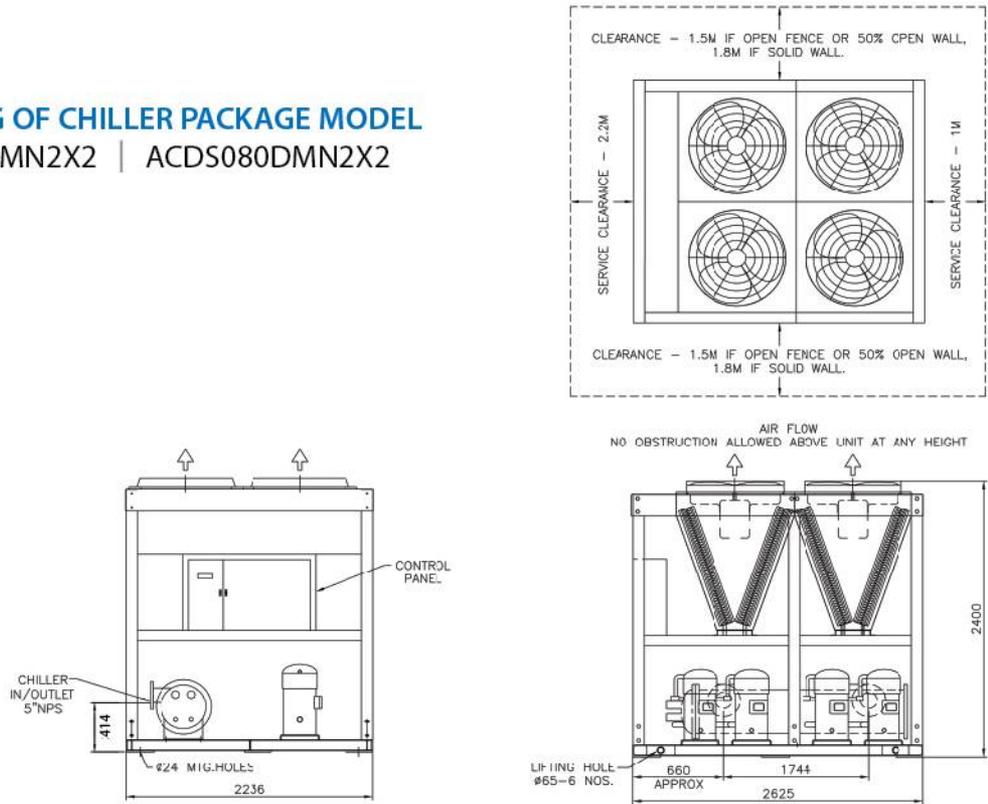


G. A DRAWING OF CHILLER PACKAGE MODEL
 ACDS072DPMN3X2 | ACDS072DMN3X2

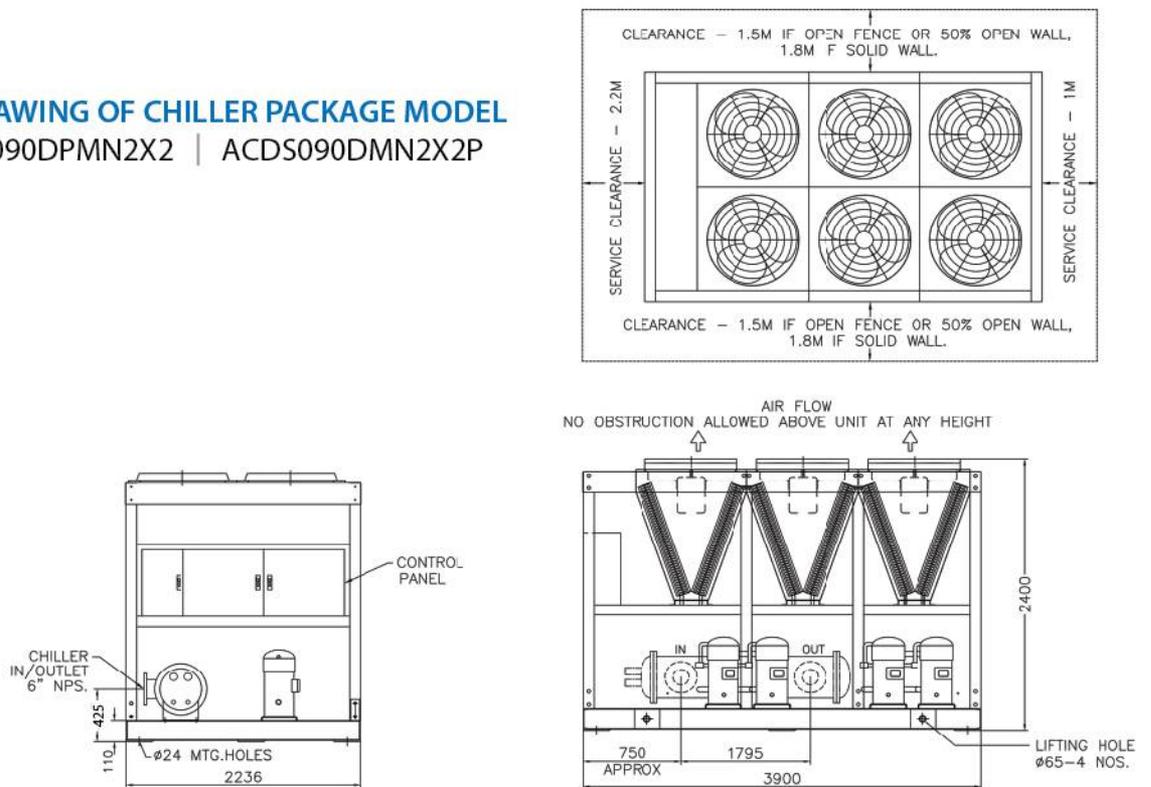


AIR-COOLED SCROLL CHILLER

G. A DRAWING OF CHILLER PACKAGE MODEL ACDS080DPMN2X2 | ACDS080DMN2X2

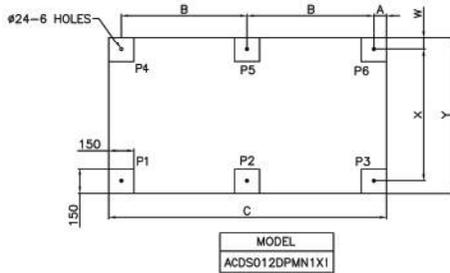


G. A DRAWING OF CHILLER PACKAGE MODEL ACDS090DPMN2X2 | ACDS090DMN2X2P

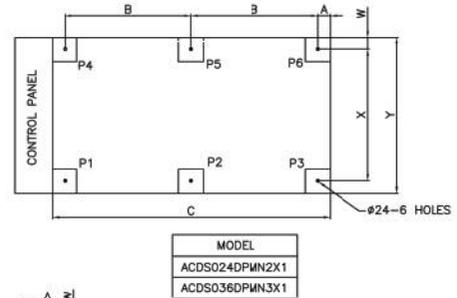


POINT LOAD DRAWING OF AIR-COOLED SCROLL CHILLING PACKAGE

R407C

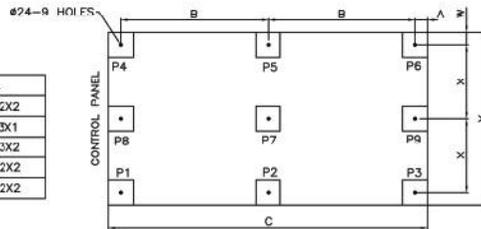


MODEL
ACDS012DPMN1X1



MODEL
ACDS024DPMN2X1
ACDS036DPMN3X1

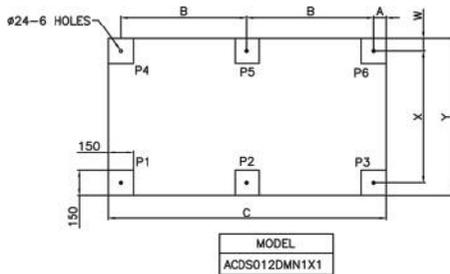
MODEL
ACDS048DPMN2X2
ACDS060DPMN3X1
ACDS072DPMN3X2
ACDS080DPMN2X2
ACDS090DPMN2X2



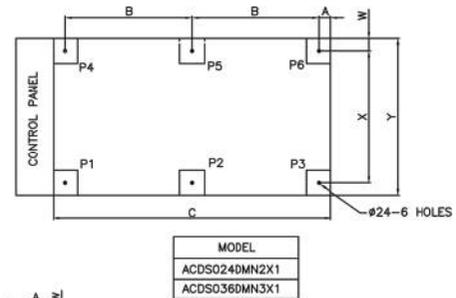
MODEL	PAD LOCATION IN MM.						OPERATING WT.PER POINT (KG.)								
	A	B	C	W	X	Y	P1	P2	P3	P4	P5	P6	P7	P8	P9
ACDS012DPMN1X1	75	1175	2500	75	400	550	109.8	109.8	109.8	109.8	109.8	109.8	—	—	—
ACDS024DPMN2X1	100	1167.5	2535	100	1070	1270	176.3	176.3	176.3	176.3	176.3	176.3	—	—	—
ACDS036DPMN3X1	100	1167.5	2535	100	1070	1270	233.5	233.5	233.5	233.5	233.5	233.5	—	—	—
ACDS048DPMN2X2	100	1212.5	2625	100	1018	2236	227.5	227.5	227.5	227.5	227.5	227.5	227.5	227.5	227.5
ACDS060DPMN3X1	100	1212.5	2625	100	1018	2236	261.5	261.5	261.5	261.5	261.5	261.5	261.5	261.5	261.5
ACDS072DPMN3X2	100	1212.5	2625	100	1018	2236	304	304	304	304	304	304	304	304	304
ACDS080DPMN2X2	100	1212.5	2625	100	1018	2236	292	292	292	292	292	292	292	292	292
ACDS090DPMN2X2	100	1850	3900	100	1018	2236	372	372	372	372	372	372	372	372	372

POINT LOAD DRAWING OF AIR-COOLED SCROLL CHILLING PACKAGE

R22

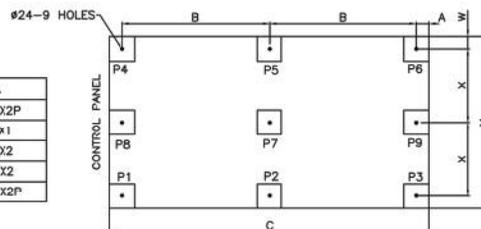


MODEL
ACDS012DMN1X1



MODEL
ACDS024DMN2X1
ACDS036DMN3X1

MODEL
ACDS048DMN2X2P
ACDS060DMN3X1
ACDS072DMN3X2
ACDS080DMN2X2
ACDS090DMN2X2P



MODEL	PAD LOCATION IN MM.						OPERATING WT.PER POINT (KG.)								
	A	B	C	W	X	Y	P1	P2	P3	P4	P5	P6	P7	P8	P9
ACDS012DMN1X1	75	1175	2500	75	400	550	109.8	109.8	109.8	109.8	109.8	109.8	—	—	—
ACDS024DMN2X1	100	1167.5	2535	100	1070	1270	176.3	176.3	176.3	176.3	176.3	176.3	—	—	—
ACDS036DMN3X1	100	1167.5	2535	100	1070	1270	233.5	233.5	233.5	233.5	233.5	233.5	—	—	—
ACDS048DMN2X2P	100	1212.5	2625	100	1018	2236	227.5	227.5	227.5	227.5	227.5	227.5	227.5	227.5	227.5
ACDS060DMN3X1	100	1212.5	2625	100	1018	2236	261.5	261.5	261.5	261.5	261.5	261.5	261.5	261.5	261.5
ACDS072DMN3X2	100	1212.5	2625	100	1018	2236	304	304	304	304	304	304	304	304	304
ACDS080DMN2X2	100	1212.5	2625	100	1018	2236	292	292	292	292	292	292	292	292	292
ACDS090DMN2X2P	100	1850	3900	100	1018	2236	372	372	372	372	372	372	372	372	372

SPECTRUM OF HVAC PRODUCTS & SYSTEMS



PACKAGED & DUCTABLE SPLIT UNIT



VARIABLE REFRIGERANT FLOW SYSTEM (VRF)



ENERGY EFFICIENT
AIR COOLED SCREW CHILLER



ENERGY EFFICIENT
WATER COOLED SCREW CHILLER



AIR COOLED SCROLL CHILLER



WATER COOLED SCROLL CHILLER



AIR COOLED RECIPROCATING CHILLER



WATER COOLED RECIPROCATING CHILLER



DOUBLE EFFECT VAM



CO-GEN VAPOUR ABSORPTION MACHINE (VAM)



PROCESS REFRIGERATION PACKAGE



IAQ & ENERGY REDUCTION SYSTEM



COILOTRON (UV FOR AHU COILS)



STP EA ODOUR / H₂S REMOVAL SYSTEM



AIR HANDLING UNIT

VOLTAS

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Domestic Projects Group

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