



VOLTAS LIMITED
EM&R Business Group

A TATA Enterprise



WATER-COOLED
SCROLL
CONDENSING UNIT

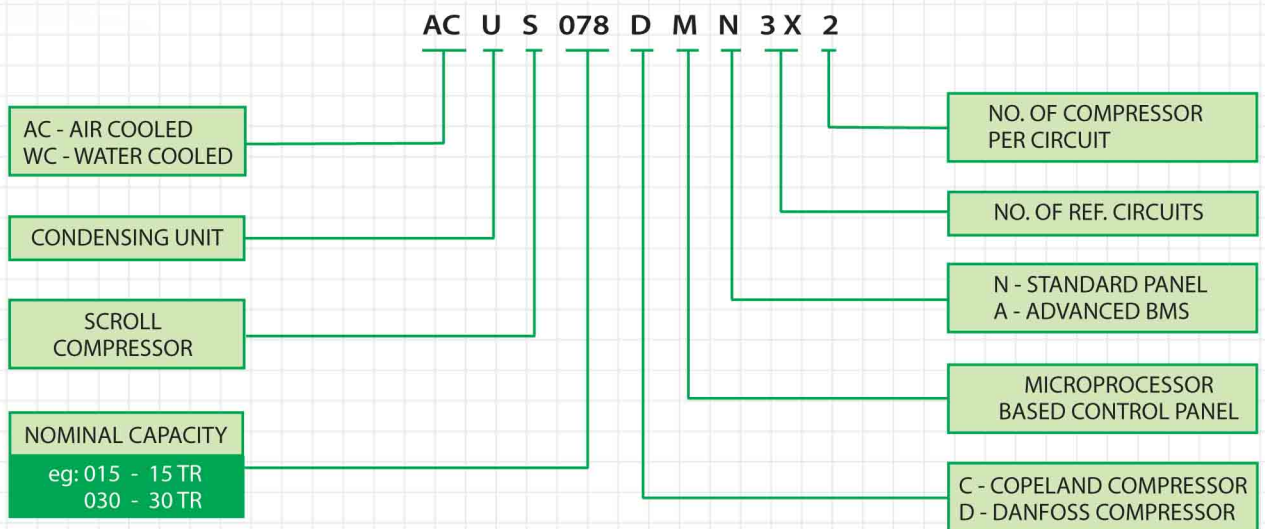


AIR-COOLED
SCROLL
CONDENSING UNIT

AIR / WATER - COOLED SCROLL CONDENSING UNIT

Electro-mechanical & Refrigeration Business Group of Voltas, an ISO 9001 company, is pioneer and leader in India in the field of electromechanical & refrigeration. As a result of its commitment to provide customers the technology that suits their requirements and 'best value for money', Voltas Condensing Units with Scroll Compressors have become an ideal choice for various air conditioning applications and are available in wide range of capacities.

MODEL NOMENCLATURE



FEATURES

Hermatic Scroll Compressor

- Sourced from reputed international manufacturer
- Enhanced reliability and extended life with no contact scroll design and motor, cooled by suction gas
- Higher energy efficiency in hermetic design
- Oil sight glass & drain port available
- Crankcase heaters provided
- Tandem design available in higher capacity units with proper design of suction & discharge header and oil equilization circuit

Compressor Drive

- Squirrel cage induction motor Total Enclosed Fan Cooled (TEFC) or Screen Protected Drip Proof (SPDP) constructions are available

Water Cooled Condensers

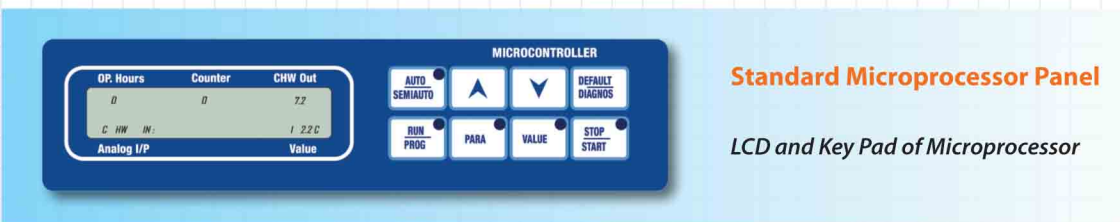
- Manufactured incorporating latest technology from world renowned heat exchanger manufacturer
- State of art technology makes the unit highly compact and heat energy efficient, using most advanced IGT tubes

Air Cooled Condensers

- Air cooled condensers are manufactured using IGT tubes with slotted louvered fins resulting compact units
- Each coil pneumatically tested
- High efficiency multiple blade fans driven by IP 55 motors
- Smallest footprint saves your space by V configuration of unit structure

Microprocessor Control Panel for user-friendly operation

- Three mode options are available: Programmed Mode, Auto Mode & Test Service Mode
 - Programmed Mode : Auto start & stop, programmable for entire year. This minimises operator interface. This mode facilitates auto restart on power restoration after a load shedding or grid supply failure
 - Auto Mode : Manual single button to be used for start and stop, reset operation sequence is programmed automatically
 - Test Service Mode : Facilitates testing of the unit under supervision, for service or default detection
- All operating parameters & safety limits can be pre set as per customer application



Standard Microprocessor Panel

LCD and Key Pad of Microprocessor

Displays with diagnostic capabilities

- Digital Display of all vital parameters such as
 - Room temperature
 - Suction, Discharge & Oil Pressure of compressor
 - Current
 - Voltage
 - Compressor run hours

Capacity Control & reduction in energy consumption

- The electronic temperature sensor measures the temperature precisely and provide feedbacks to microprocessor. Based on this precise data and actual load requirements, microprocessor monitors individual compressor ON/OFF cycling for optimum operation to best efficiency of the plant

Safety & Protection

- Microcomputer Motor Protection device (μ MPD) and Microcomputer Voltage Protection Device (μ VPD) protect condensing unit from phase unbalance, phase loss, phase reversal, overload, under/over voltage and supply failure
- Programmed safety features available using sensitive, accurate temperature transducers & pressure switches which protects the system from:
 - High Pressure
 - Anti Recycle
 - Low Room Air Temperature
 - Low Pressure
 - Sensor Error
- Maintenance trip for compressor 50 hours before completion of 8000 hours of operation
- Alarm history of last 5 faults with date, time and cause of failure

Optional Features offered

- Dual mode chillers for thermal storage system
- Communication port RS 485 for remote connectivity, status and fault indication
- Advanced BMS compatibility with ASCII or RTu MODBUS protocol can be linked to Integrated Building Management Systems (IBMS)
- Limited hardware BMS for remote control and operation

AIR-COOLED SCROLL CONDENSING UNIT

TECHNICAL DATA SHEET (R 22)

UNIT MODEL	ACUS013DMN1X1	ACUS026DMN2X1	ACUS039DMN3X1	ACUS052DMN2X2	ACUS078DMN3X2
*Nominal cooling capacity -TR	13	26	39	52	78
COMPRESSOR					
Compressor type	Hermatic scroll				
Compressor model	SM185	SM185	SM185	SM185	SM185
Compressor qty.	1	2	3	4	6
RPM	2900	2900	2900	2900	2900
Unit capacity reduction steps in %	100	100 /50	100 /66/33	100 /75/50/25	100 /83.3/66.7/50/33.3/16.7
Oil type	Mineral / 160 P				
Oil charge / compr (Ltr.)	6.6	6.6	6.6	6.6	6.6
Unit max. starting current -amps at 400 volts	175	206.6	231.6	263.2	319.8
Max. allowable operating current per compr. -amps at 400Volts	35	35	35	35	35
CONDENSER					
Condenser module	9AB12	9AV20-16FPI	9AV35-3 ^{ckt} 16FPI	9AV20-16FPI	9AV20-16FPI
Condenser module XQTY.	1	1	1	2	3
Fan qty.	4	2	2	4	6
Total CFM	10,000	26,000	24,000	52,000	78,000
UNIT DIMENSION & WEIGHTS					
Length.(MM)	2400	2536	2536	2642	3710
Width .(MM)	650	1270	1270	2236	2236
Height.(MM)	1390	2310	2310	2335	2335
Operating Wt. (KG.)	1035	1343	1675	2386	3280

*Capacity rated at design ambient of 35 °C and for SST of 7.2 35 °C

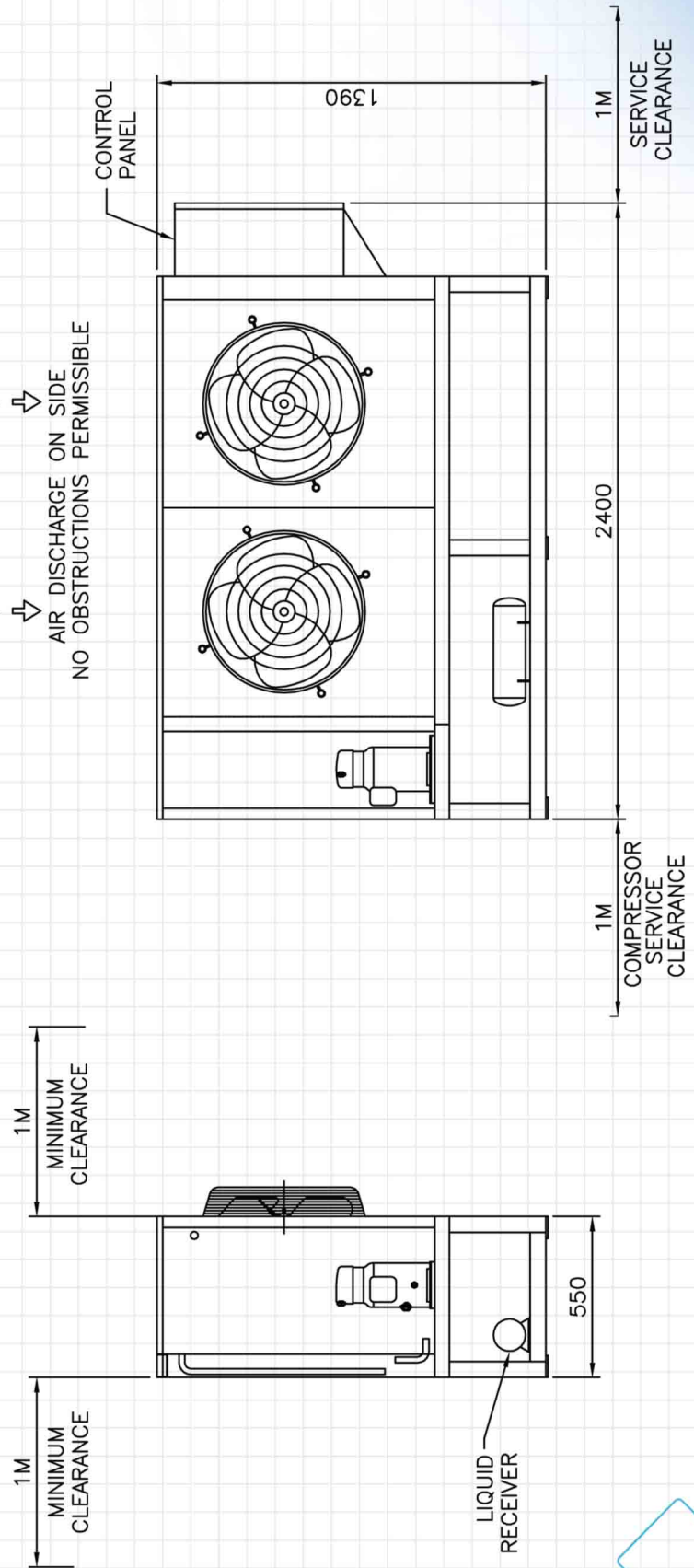
Power & control supply voltage is 340 - 440 V & 210-240 V respectively and frequency 50Hz

Note : For higher ambient application pl. refer to EM&R BG Engg.



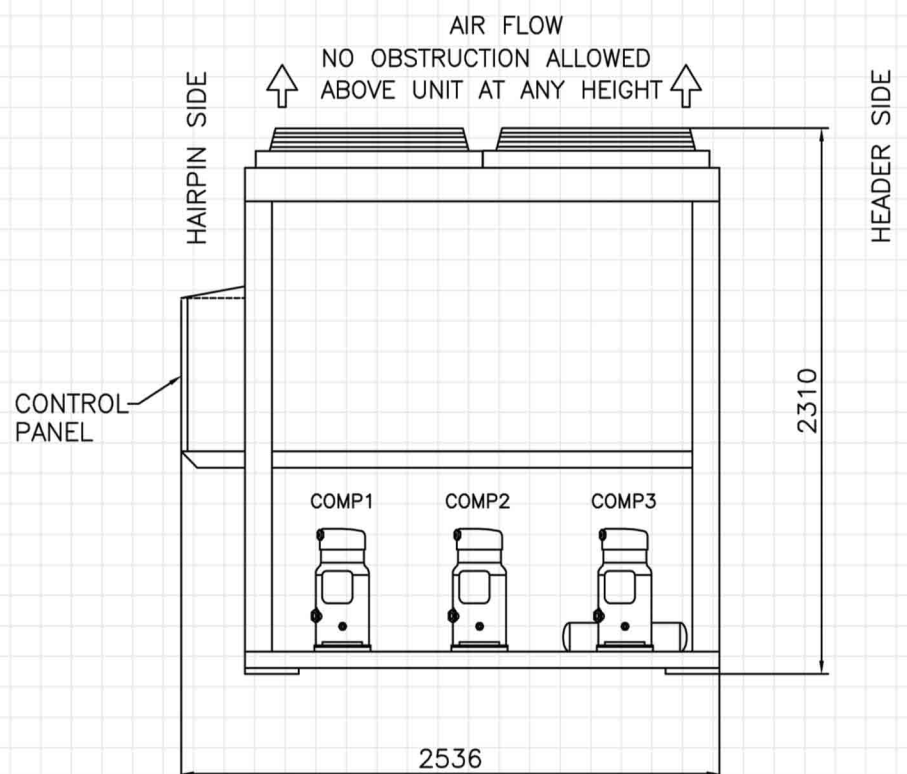
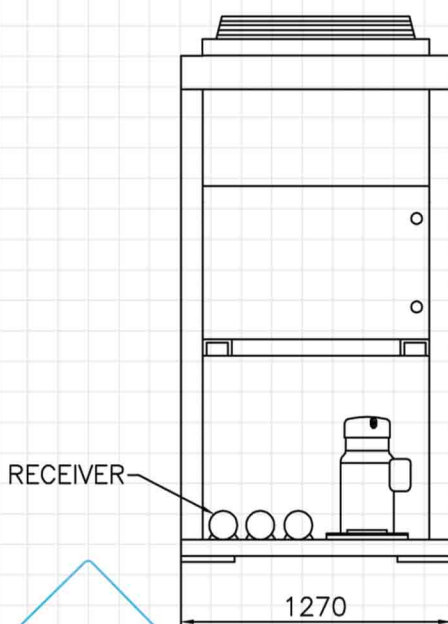
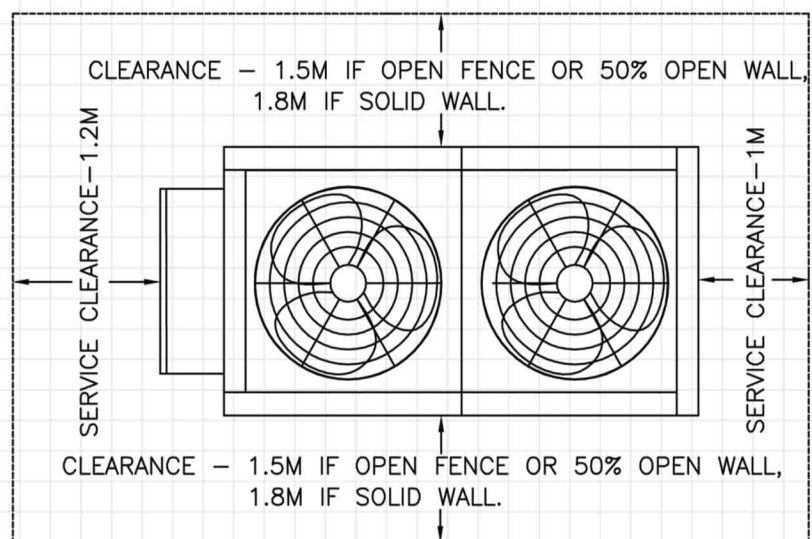
G. A DRAWING OF A/C SCROLL CONDENSING UNIT

MODEL	ACUS013DMN1X1
COND.COIL	9AB12 - 1 NO.
COMPRESSOR	1x SM185
FANxHPXQTY.	Ø24"x0.5X2 NOS.

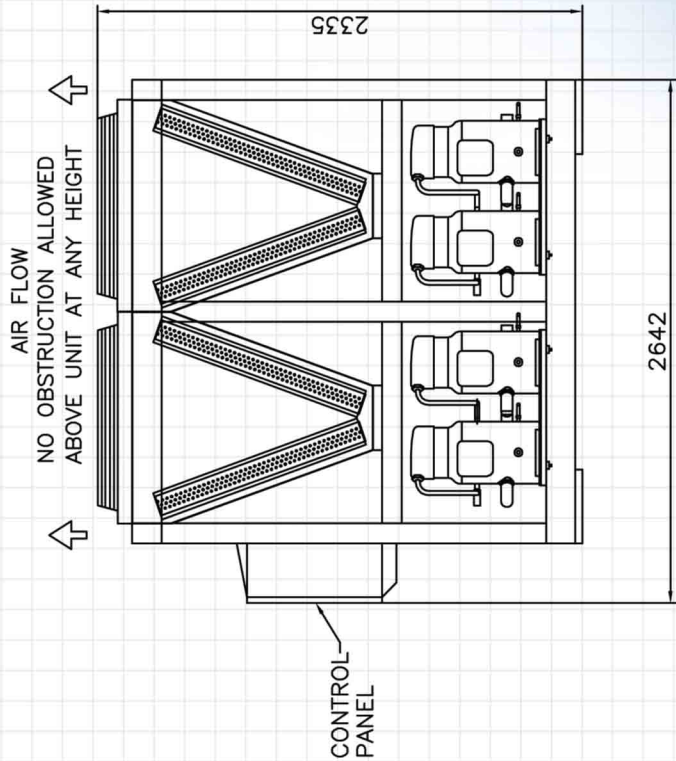
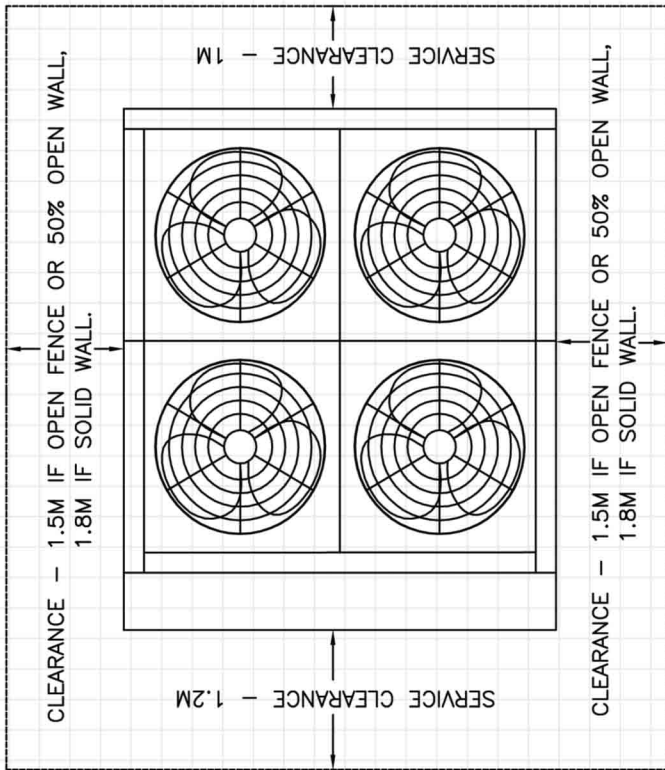


G. A DRAWING OF A/C SCROLL CONDENSING UNIT

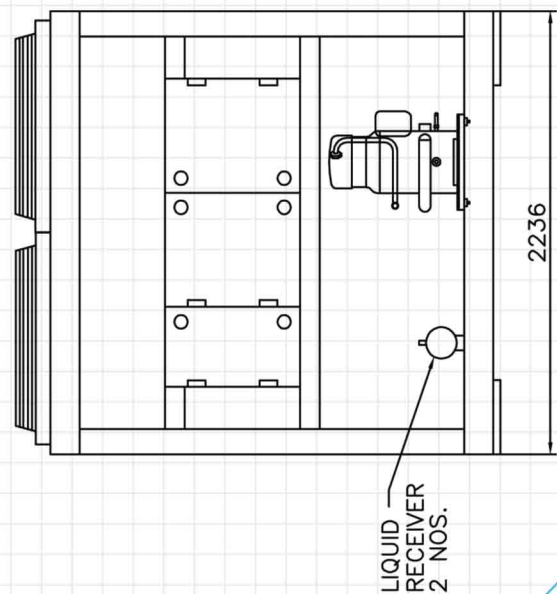
MODEL	ACUS026DMN2X1	ACUS039DMN3X1
COND.COIL	1x9AV20	1x9AV35-3CKT
COMPRESSOR	2XSM185	3XSM185
FANxHPXQTY.	ø34x3x2	ø34x3x2



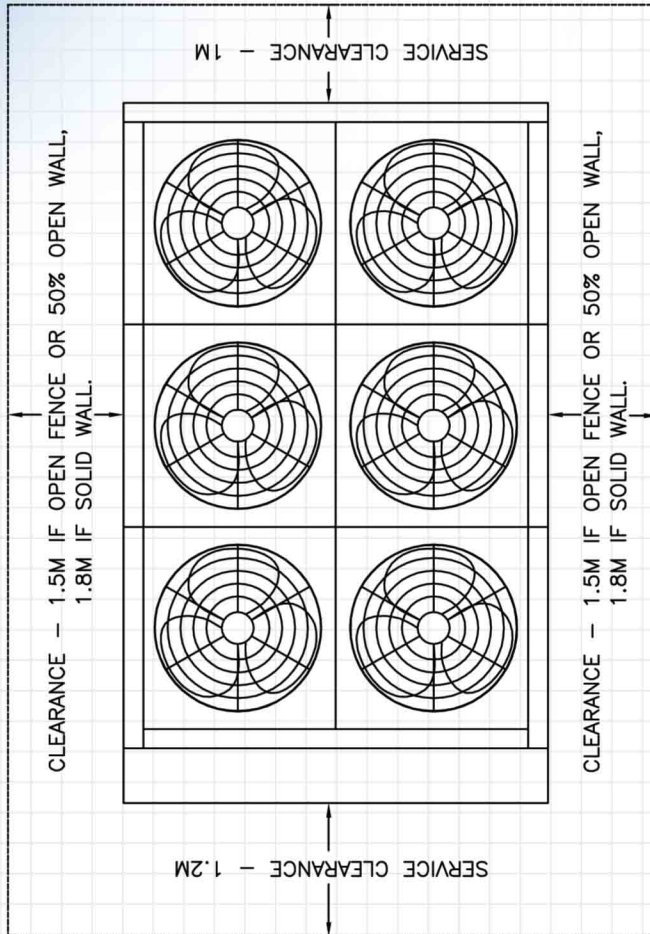
G. A DRAWING OF A/C SCROLL CONDENSING UNIT



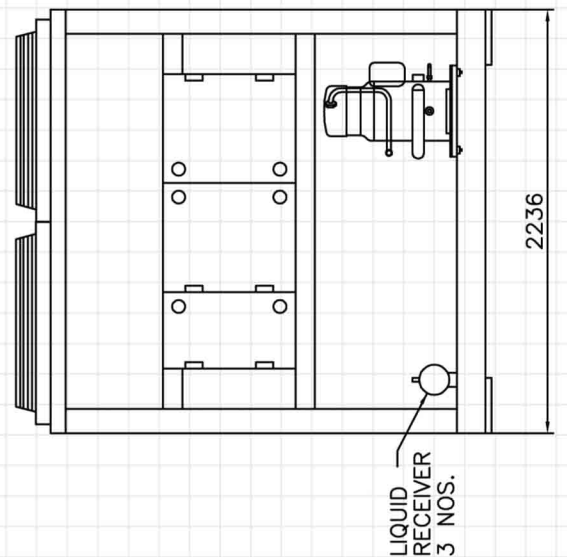
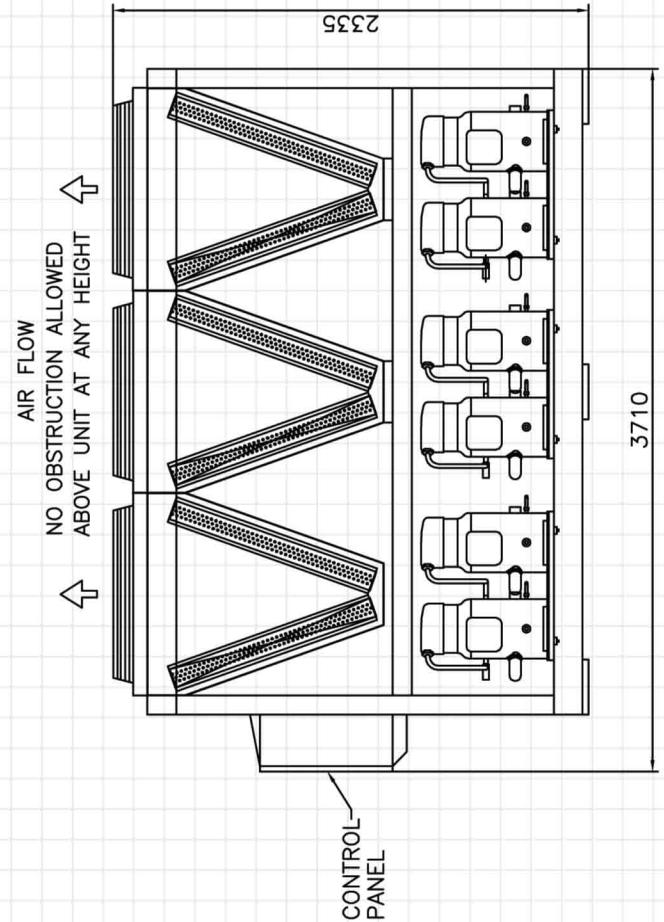
MODEL	ACUS052DMN2X2
COND.COIL	2x9AV20
COMPRESSOR	4XSM185
FANxHPXQTY.	ø34x3x4



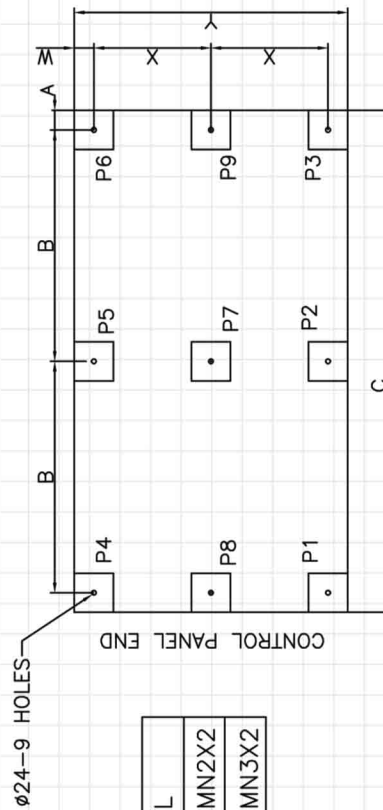
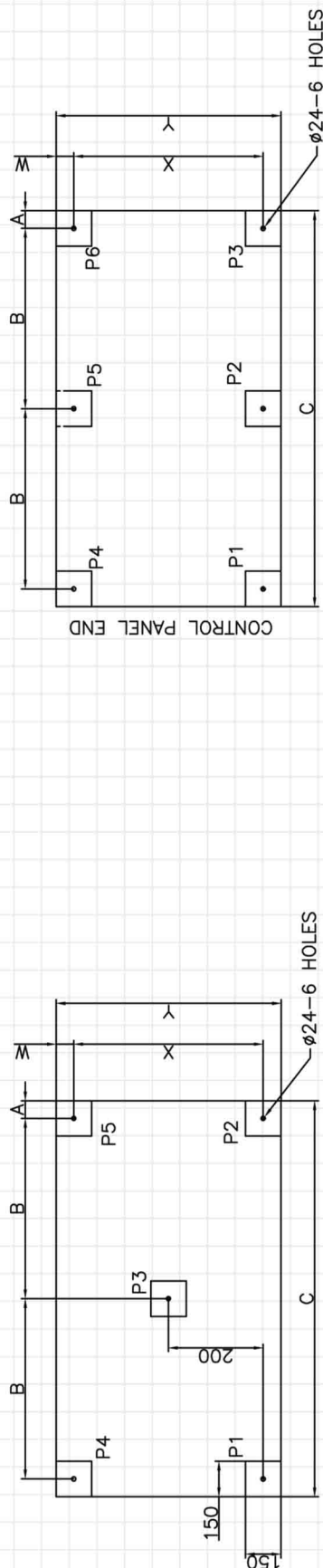
G. A DRAWING OF A/C SCROLL CONDENSING UNIT



EQUIPMENT	MODEL
COND.COIL	ACUS078DMN3X2
COMPRESSOR	3x9AV20
FANxHPXQTY.	6XSM185
	ø34x3x6



POINT LOAD DIAGRAM OF A/C SCROLL CONDENSING UNIT



MODEL	PAD LOCATION IN MM.						LOAD PER POINT - KG.								
	A	B	C	W	X	Y	P1	P2	P3	P4	P5	P6	P7	P8	P9
ACUS013DMN1X1	75	975	2100	75	400	550	180	180	240	210	195	-	-	-	-
ACUS026DMN2X1	75	1043	2236	75	1120	1270	157	137	108	157	152	167	467	-	-
ACUS039DMN3X1	75	1043	2236	75	1120	1270	255	110	100	260	210	190	550	-	-
ACUS052DMN2X2	100	1068	2336	100	1018	2236	254	254	254	254	254	254	354	254	254
ACUS078DMN3X2	100	1603	3406	100	1018	2236	370	370	370	370	370	370	370	345	345

WATER-COOLED SCROLL CONDENSING UNIT

TECHNICAL DATA SHEET (R 22)

UNIT MODEL	WCUS014DMN1X1	WCUS028DMN2X1	WCUS042DMN3X1	WCUS056DMN2X2	WCUS084DMN3X2
*Nominal cooling capacity -TR	14	28	42	56	84
COMPRESSOR					
Compressor Typee	Hermatic scroll				
Compressor model	SM185	SM185	SM185	SM185	SM185
Compressor qty.	1	2	3	4	6
RPM	2900	2900	2900	2900	2900
Unit capacity reduction steps in %	100.00	100/ 50	100/ 66/33	100 /75/50/25	100/83.3/66.7 /50/33.3/16.7
Oil type	Mineral / 160 P				
Oil charge/compr.,Liter	6.6	6.6	6.6	6.6	6.6
Unit starting current -amps at 400 volts	175	206.6	231.6	263.2	319.8
Max. allowable operating current per compr. -amps at 400Volts	35	35	35	35	35
CONDENSER					
Condenser Module	09018TX -4P	09018TX -4P	09018TX -4P	9036	9036
Condenser module qty/unit	1	2	3	2	3
Cond. Water flow rate (USGPM)	54	108	162	216	324
UNIT DIMENSION & WEIGHTS					
Length.(MM)	1316	1500	1900	2500	2500
Width.(MM)	500	850	850	850	1300
Height.(MM)	1120	1150	1150	1400	1500
Operating wt.(KG.)	661	1072	1450	1580	2352

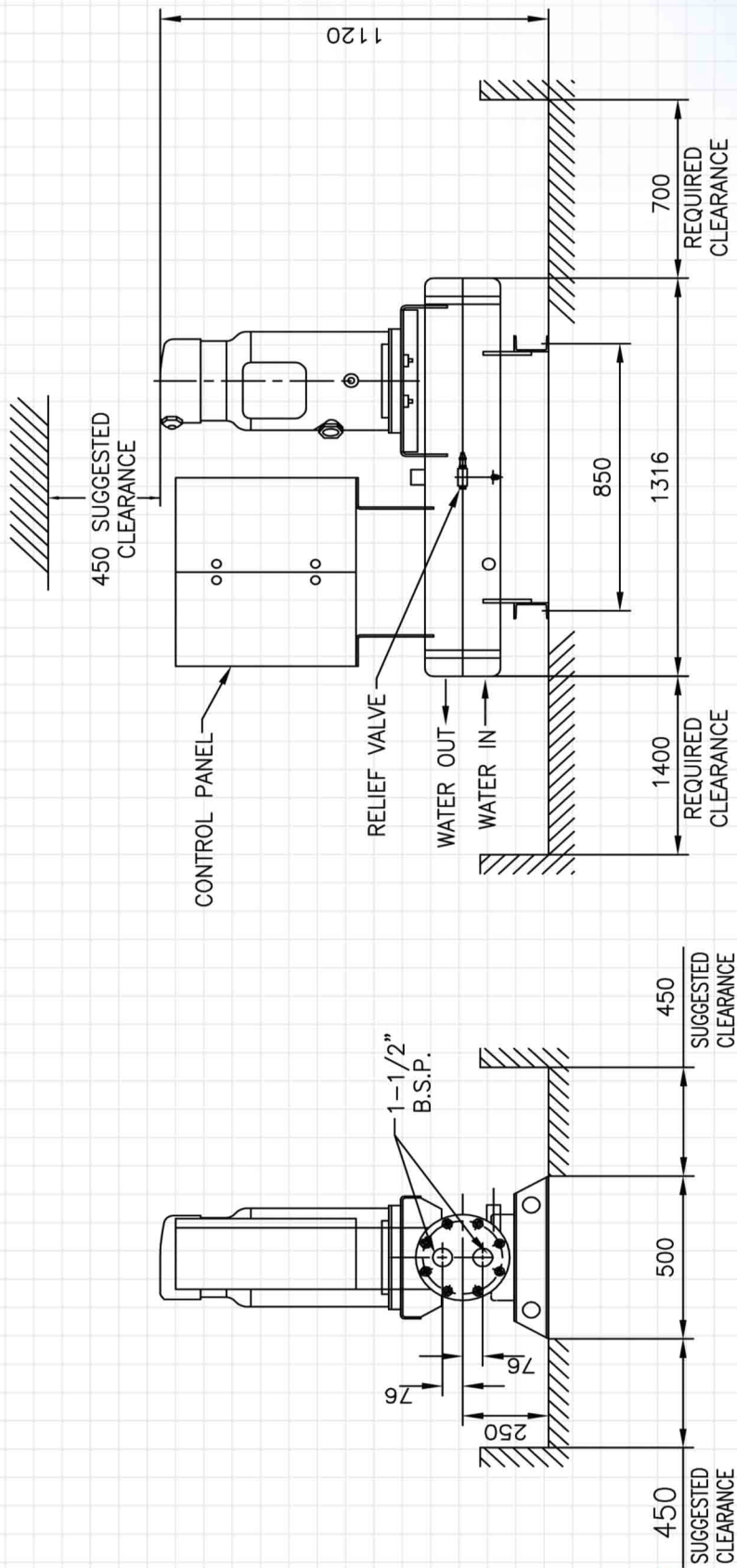
*Capacity rated at design condenser water inlet temp.of 32 °C,water side fouling factor of 0.000044 m2.deg.C/W & for SST of 7.2 °C ;

Power & control supply voltage is 340 - 440 V & 210-240 V respectively and frequency 50Hz

Note : For higher ambient application pl. refer to EM&R BG Engg.

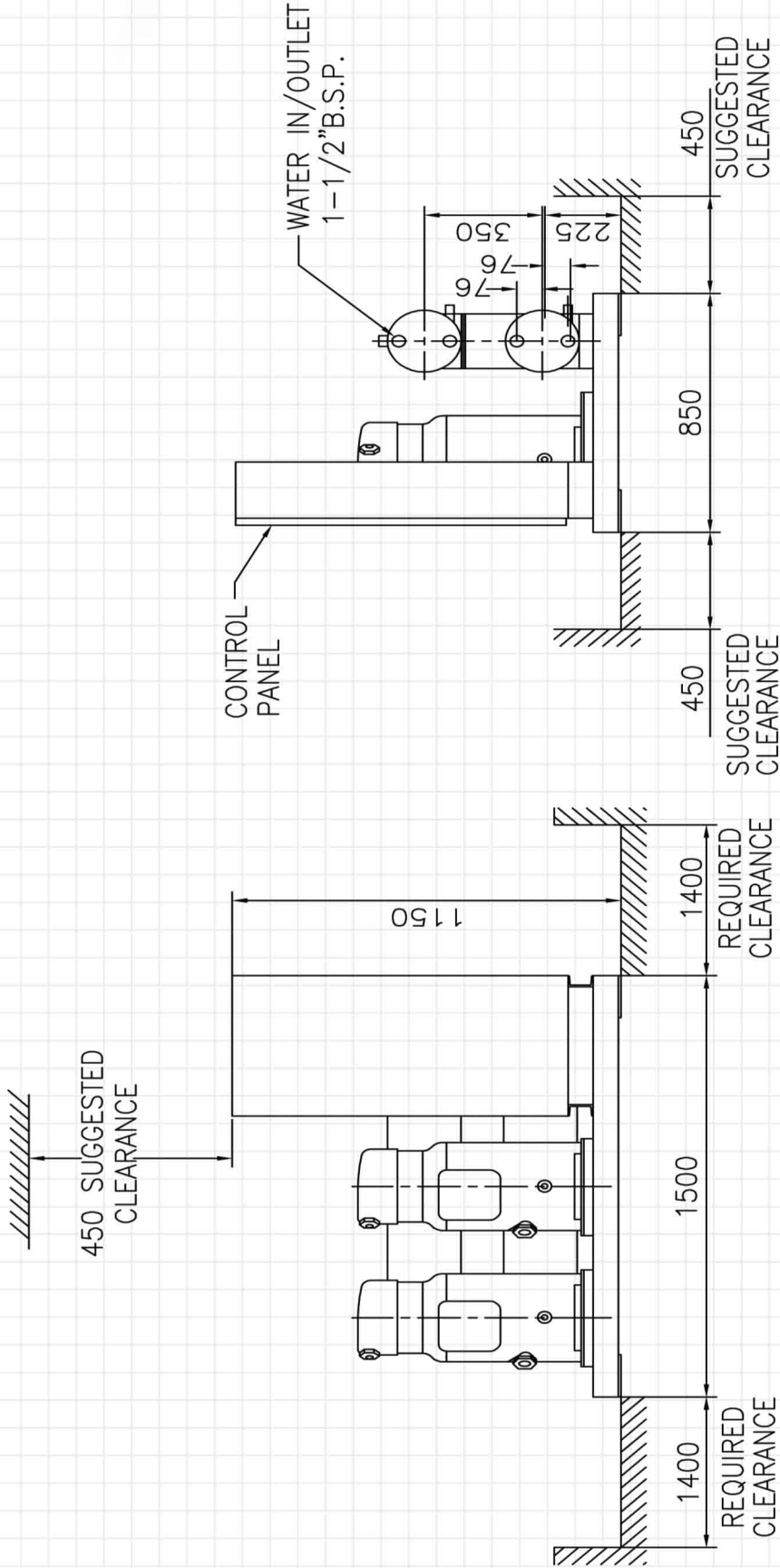
G. A DRAWING OF W/C SCROLL CONDENSING UNIT

MODEL	WCUS014DMN1X1
CONDENSER W/C	1x09018TX-4P
COMPRESSOR	1xSM185



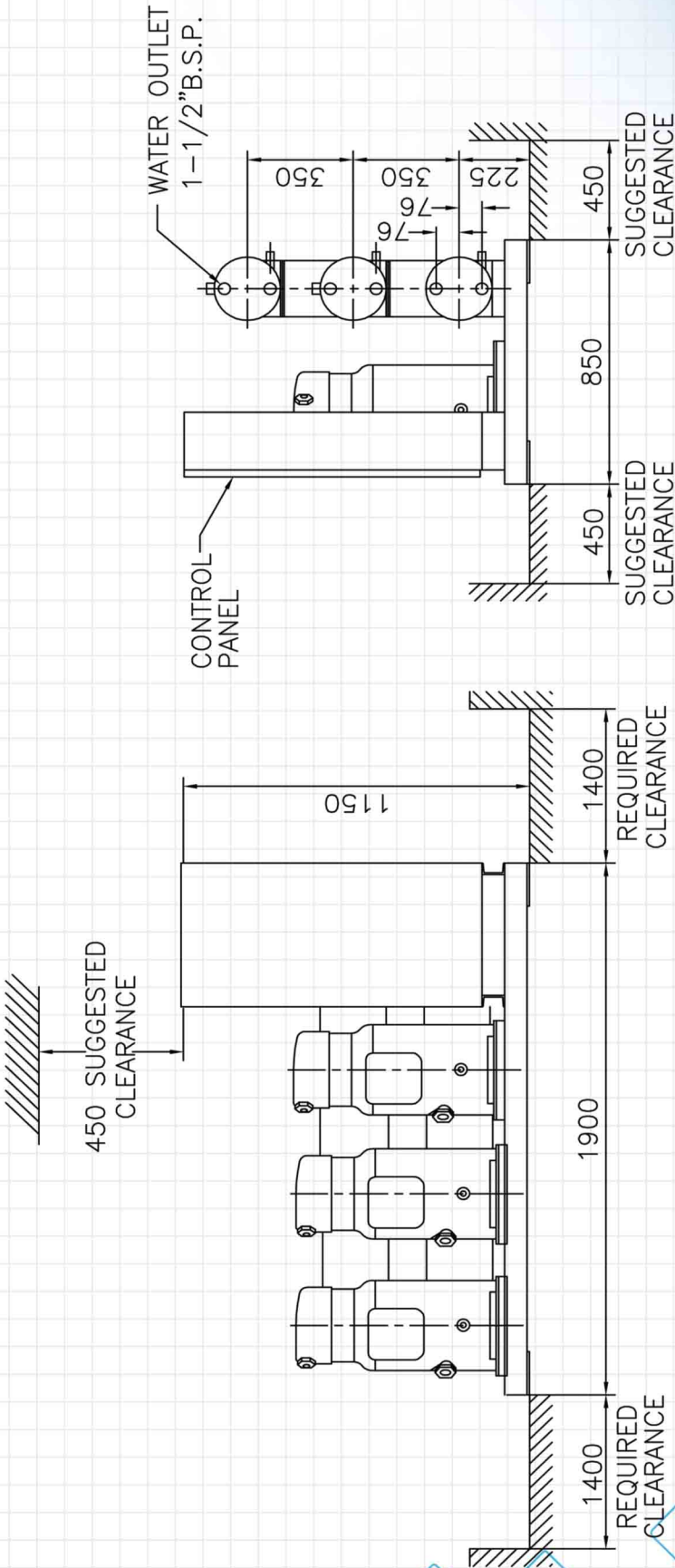
G. A DRAWING OF W/C SCROLL CONDENSING UNIT

MODEL	WCUS028DMN2X1
CONDENSER W/C	2x9018TX-4P
COMPRESSOR	2xSM185



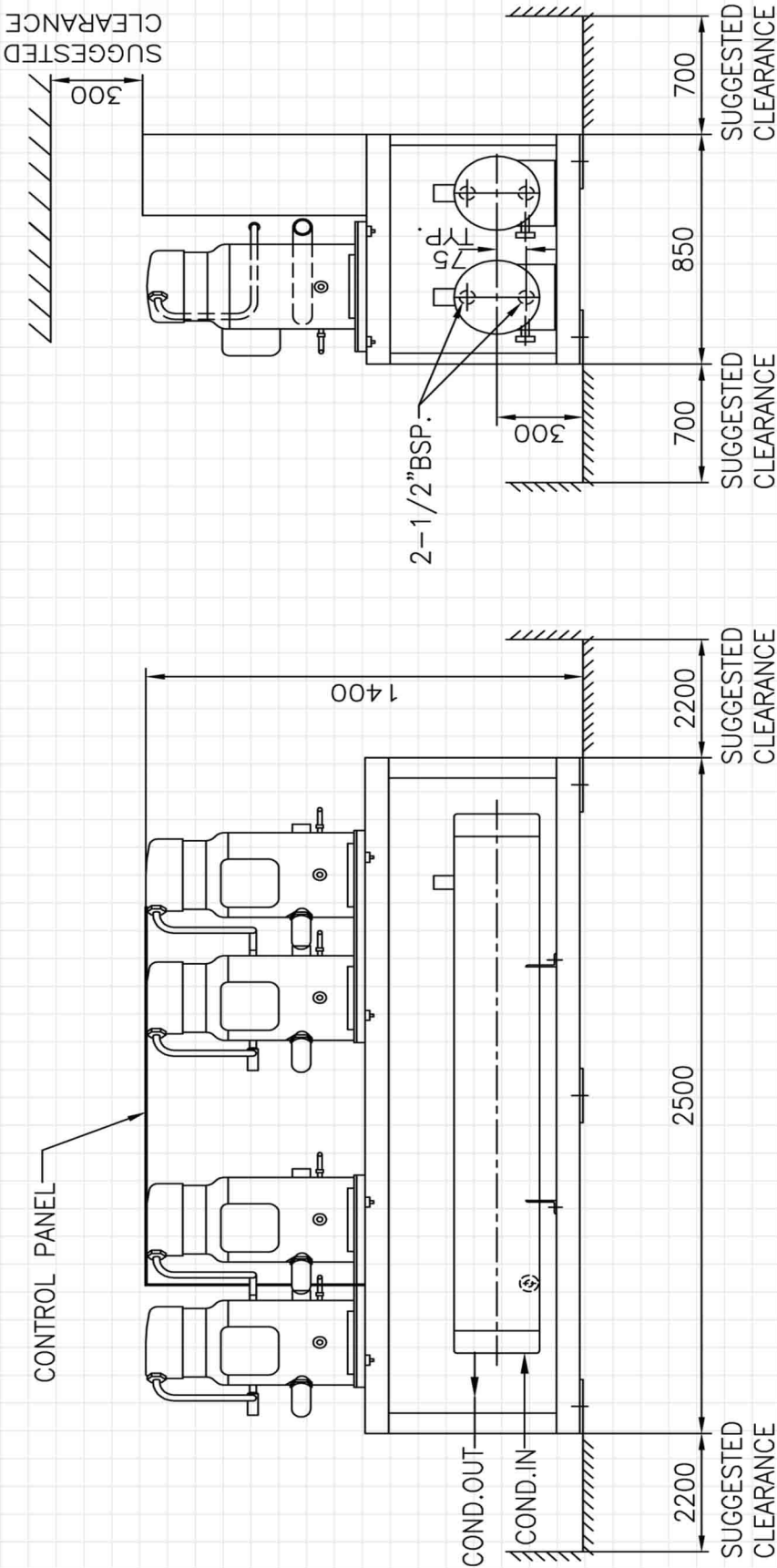
G. A DRAWING OF W/C SCROLL CONDENSING UNIT

MODEL	WCUS042DMN3X1
CONDENSER W/C	3x9018TX-4P
COMPRESSOR	3xSM185



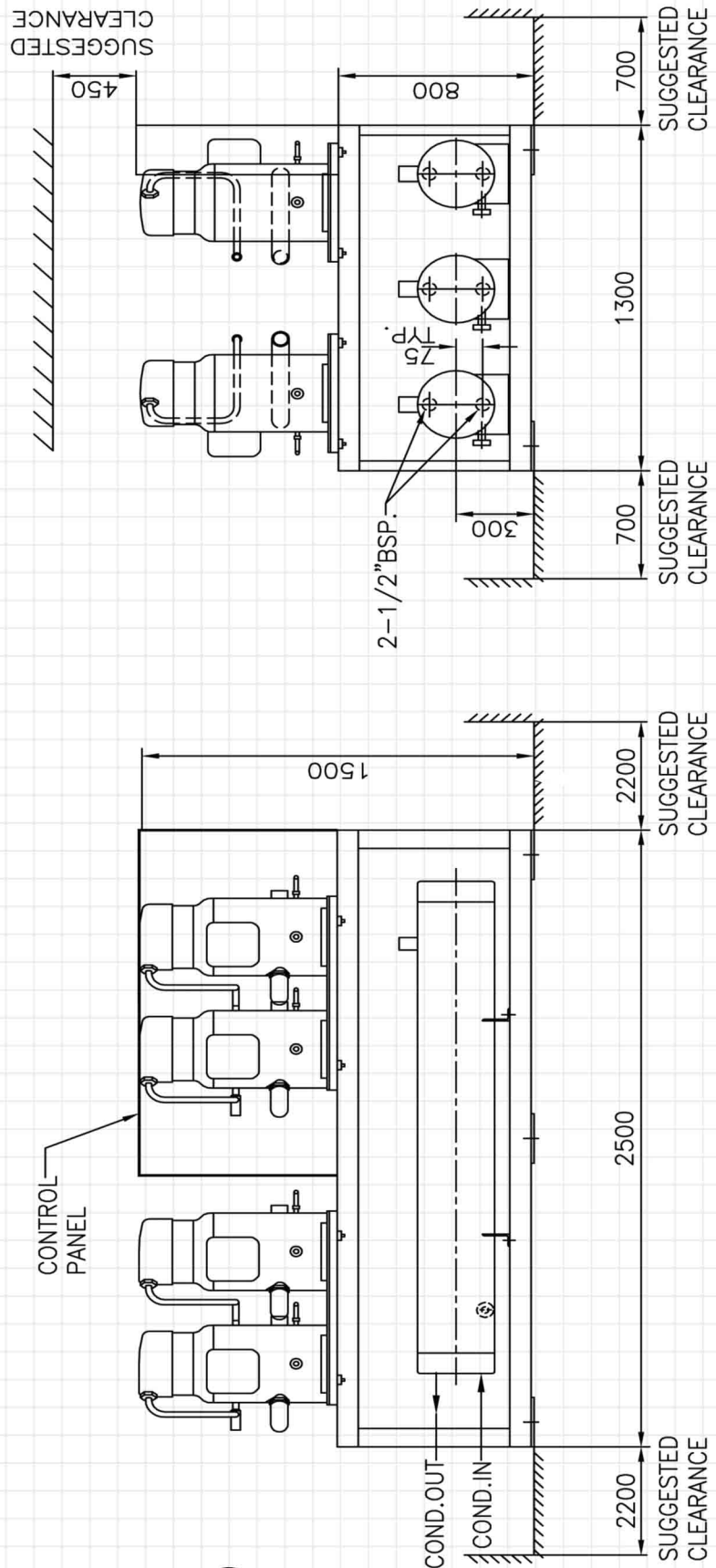
G. A DRAWING OF W/C RECIPROCATING CONDENSING UNIT

MODEL	WCUS056DMN2X2	
CONDENSER W/C	2x09036	
COMPRESSOR	4XSM185	

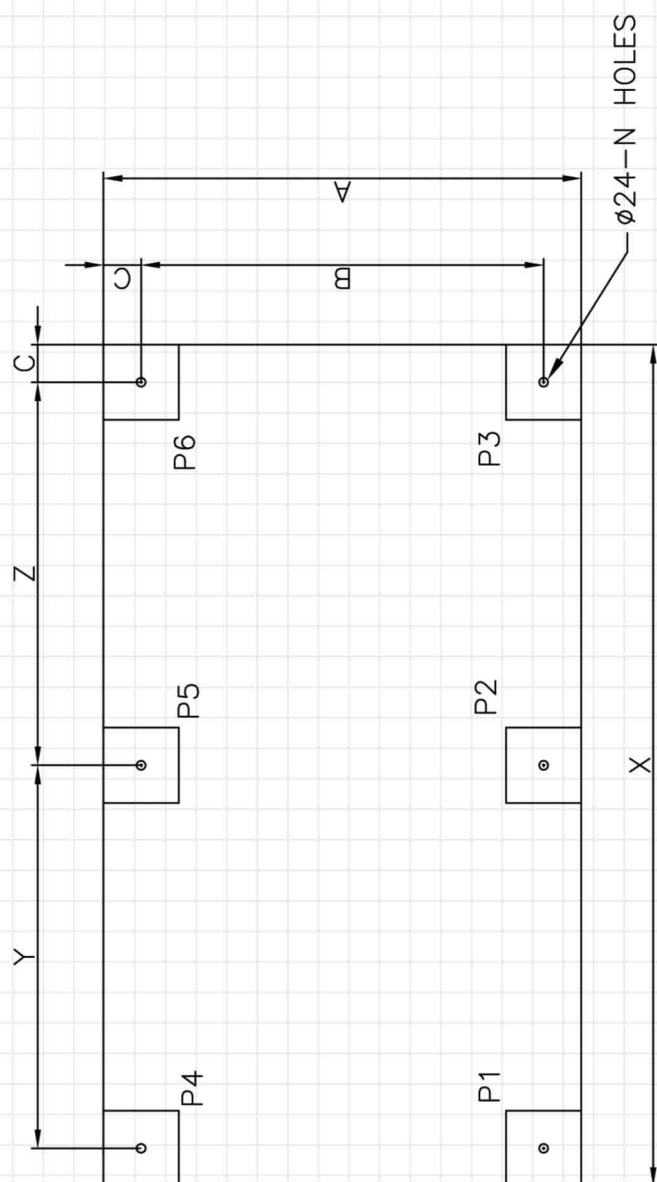


G. A DRAWING OF W/C RECIPROCATING CONDENSING UNIT

MODEL	WCUS084DMN3X2
CONDENSER W/C	3x09036
COMPRESSOR	6XSM185



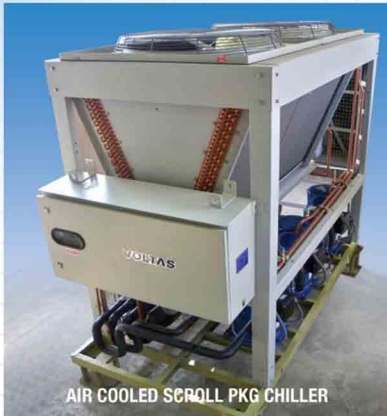
POINT LOAD DIAGRAM OF W/C RECIPROCATING CONDENSING UNIT



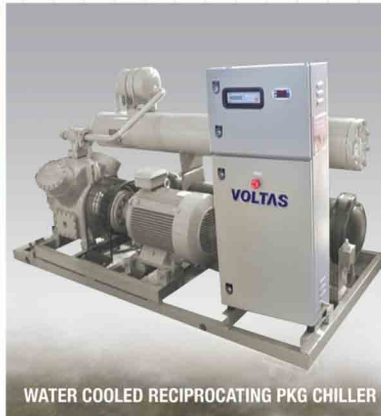
MODEL	LOAD PER POINT – KG.												
	A	B	C	X	Y	Z	N	P1	P2	P3	P4	P5	P6
WCUS014DMN1X1	—	400	—	—	850	—	4	164	—	159	159	—	179
WCUS028DMN2X1	850	700	75	1500	1350	—	4	258	—	258	278	—	278
WCUS042DMN3X1	850	700	75	1900	875	875	6	245	175	245	290	215	280
WCUS056DMN2X2	850	650	100	2500	1075	1075	6	280	330	280	230	230	230
WCUS084DMN3X2	1300	1100	100	2500	1150	1150	6	417	417	417	417	367	317

AIR / WATER - COOLED SCROLL CHILLERS

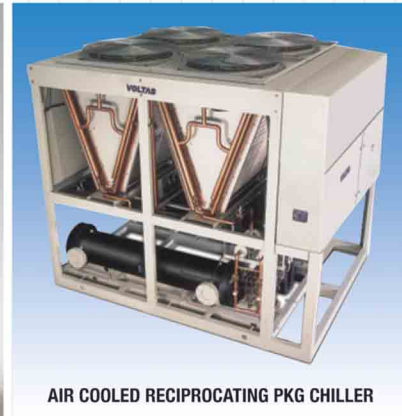
HVAC PRODUCT RANGE



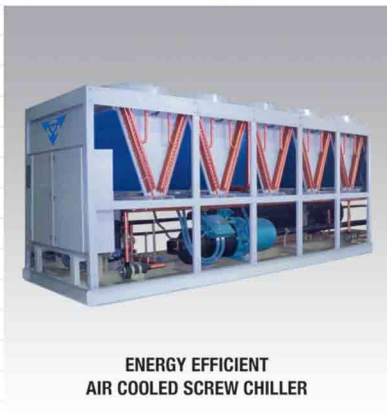
AIR COOLED SCROLL PKG CHILLER



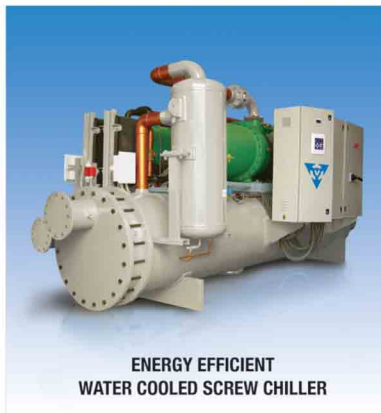
WATER COOLED RECIPROCATING PKG CHILLER



AIR COOLED RECIPROCATING PKG CHILLER



ENERGY EFFICIENT
AIR COOLED SCREW CHILLER



ENERGY EFFICIENT
WATER COOLED SCREW CHILLER



WATER COOLED SCREW CHILLER



WATER COOLED SCROLL CHILLER



CO-GEN VAPOUR ABSORPTION MACHINE (VAM)



DOUBLE EFFECT VAM



PACKAGED & DUCTABLE SPLIT UNITS



VARIABLE REFRIGERANT FLOW SYSTEM (VRF)



AIR HANDLING UNIT (AHU)

ALL INDIA CONTACT NUMBERS

OFFICE	TELEPHONE		FAX
NORTHERN REGION			
DELHI (Branch)	011	66505550	66505697
	011	66505570	26950081
Chandigarh	0172	2663669	2604625
Gurgaon	0124	5060504	
Jaipur	0141	25179983	2213728
Jalandhar	0181	2227687	
LUCKNOW (Branch)	0522	2238538	2238532
	0522	2237856	
Dehradun	0135	2750401	
WESTERN REGION			
AHMEDABAD (Branch)	079	66301107	66301199
	079	66301108	
Ankleshwar	02646	238199	
Rajkot	0281	2578124	
Silvassa	0260	2640363	
Surat	0261	2422761	
Vadodara	0265	2351706	2332098
MUMBAI (Branch)	022	66656757	66656797
	022	66656761	66656768
Goa	0832	2463664	
Indore	0731	2498616	
Nagpur	0712	5618846	
Nasik	0253	2455169	
PUNE (Branch)	020	66046602	66046600
	020	66046603-5	66046601
Aurangabad	0240	2320510	

OFFICE	TELEPHONE		FAX
EASTERN REGION			
JAMSHEDPUR (Branch)	0657	2431062	2432201
	0657	2434322	
Patna	0612	2232717	
Raipur	0771	5059303	
KOLKATA (Branch)	033	66266283	22300108
	033	66266264	
Bhubaneswar	094371	78427	
Cuttack	0671	2332366	
Guwahati	0361	2340519	
SOUTHERN REGION			
BANGALORE (Branch)	080	67132500	22270172
	080	67132504	22998508
Mangalore	0824	2453316	
CHENNAI (Branch)	044	66760349	24342178
	044	66760375	
Coimbatore	0422	2241188	2218771
	0422	2244384	
Madurai	0452	2535818	
HYDERABAD (Branch)	040	66500407	66203882
	040	66500451	
Vijaywada	0866	2435282	2431507
Vishakhapatnam	0891	2754051	2570864
	0891	2754665	
KOCHI (Branch)	0484	2359621	2357129
	0484	2359648	
Calicut	0495	2770503	
Thiruvananthapuram	0471	2338873	

Backed by Voltas countrywide after sales service.



VOLTAS

INTEGRATING SYSTEMS.

INCOMPARABLE VALUE.

www.voltas.com

Voltas Limited, Electro-mechanical & Refrigeration Business Group.

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