Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
Fax 501-834-5416

Date: 5/2/2024
Return Request: 5/12/2024
Project: Little Rock West High School
Supplier: Airetech
Manufacturer: York
Submittal: Air Cooled Scroll Water Chillers
Submittal Number: 23 64 23-01
Drawing # and Installation: Mechanical Drawings

ARCHITECT
Lewis Architects Engineers
11225 Huron Lane, Suite 104
Little Rock, AR 72211
501-223-9302

ENGINEER
Lewis Architects Engineers
11225 Huron Lane, Suite 104
Little Rock, AR 72211
501-223-9302

GENERAL CONTRACTOR
Baldwin & Shell
1000 W. Capitol Ave.
Little Rock, AR 72201
501-374-8677

MECHANICAL SUBCONTRACTOR
Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

chowell@comfortar.com

SUBMITTAL DATA

EQUIPMENT: York Air Cooled Chillers

SPEC SECTION:

TAGS: CH-1, 2, 3

PROJECT: Little Rock West High School

LOCATION: Little Rock, AR

ENGINEER:

CONTRACTOR:

DATE: 4/15/2024

SUBMITTED BY: Nick Moore
nick.moore@airetechcorp.com

EQUIPMENT SUBMITTAL FOR APPROVAL

PROJECT: **Little Rock West High School Chiller**

LOCATION:

Air-Cooled Chiller

EQUIPMENT	YLAA Chiller
UNIT TAGS	CH-1,2,3
QUANTITY	3

SOLD TO:
Comfort Systems USA - AR

CONSULTING ENGINEER:
Lewis Architects Engineers
Wade Mobbs

PREPARED BY:
Nick Moore
Airetech Corporation

DATE:
Thursday, 18 April 2024

REVISION:
0

TABLE OF CONTENTS

(YLAA - Air-Cooled Chiller)

BOM Data

Product Type: YLAA - Air-Cooled Chiller

Unit Tags: CH-1,2,3

BID DATE: 04/18/2024
PROJECT: **Little Rock West High School Chiller**
TO: Interested Bidders

LAST ADDEDNUM: None
NOTE(S)

BILL OF MATERIAL

ITEM	QTY	TAGS	DESCRIPTION
I	3	(3)CH-1,2,3	DIRECT EXPANSION - AIR COOLED SCROLL CHILLER

EQUIPMENT DESCRIPTIONS

EQUIPMENT PROPOSAL

Items Included

- Provide Model YLAA0200HJ46XFB Qty: 3
- Refrigerant Type: R454B
- Brine Application
- Power: 460/3/60 Application
- Control Transformer
- Power Connection: SP Circuit Breaker w/ Lockable Handle
- Starter Type: Across the line starter
- TEAO Fan Motors
- Low Sound Fans with VSD
- Standard Insulation
- Aluminum MCHX Coils
- Both Low/High Ambient Kit
- Wire/Louvered Encl Panels (factory)
- Compressor Parts Only Warranty: 66 Month (2-5 Year) from date of Shipment or from date of Start Up, whichever comes first.
- Refrigerant Warranty: 18 Month (1 Year)
- Entire Unit Parts Only Warranty: 18 Month (1 Year) (Std) (Months are from date of shipment/Years are from date of start up, whichever expires first)
- Entire Unit Labor Only Warranty: 18 Month (1 Year) (Std) (Months are from date of shipment/Years are from date of start up, whichever expires first)
- Chiller Startup
- SC-Equip Board
- Electronic Expansion Valves
- Extension Kit

Items Included but Installed by Others

- Victaulic Flanges

Items NOT Included

- Hauling or Rigging Equipment Into Place.
- External Disconnect Switches or Circuit Breakers

Performance Ratings

Product Type: **YLAA - Air-Cooled Chiller**

Unit Tags: **CH-1,2,3**

Project Name: **Little Rock West High School Chiller** | Unit Tag: **CH-1,2,3** | Qty.: **3** | Model: **YLAA0200HJ46XF**

Full Load - Design

PIN								
YLAA0200HJ	46XFBBXTXA	SXBLXCXX44	XEXXXKHXXV	YAXGXXX3XB	XVX1XXXXXX			
....5...10	....5...20	....5...30	....5...40	....5...50	....5...60	....5...70	....5...80	....5...90

Unit	
Model No.	YLAA0200HJ46XFB
Number of Compressors	6
Compressor Type	Scroll - Hermetic
Number of Compressor Circuits	2
Refrigerant	R454B
Performance Data	
Cooling Capacity [tons.R]	187.1
Total Power Input [kW]	229.6
EER [Btu/W.h]	9.779
NPLV.IP [Btu/W.h]	18.52
A-Weighted Sound Power [dB(A)]	98.0
Electrical Data	
Nominal Voltage / Voltage Limits	460/3/60 / 414-506
Compressor RLA (each circuit) [A]	51.4 / 51.4 / 51.4 / 51.4 / 51.4 / 51.4
High LRA Current (each circuit) [A]	316.0 / 316.0 / 316.0 / 316.0 / 316.0 / 316.0
Fan QTY (each circuit)	6 / 6
Fan FLA (each circuit) [A]	4.0 / 4.0
Min. Circuit Ampacity [A]	374.0
Recommended Fuse / CB Rating [A]	400.0
Max. Inverse Time CB Rating [A]	400.0
Max. Dual Element Fuse Size [A]	400.0
Unit Short Circuit Withstand [kA]	5 kA
Wires Per Phase	2 + 1
Wire Range (Lug Size)	#3/0 AWG - 250 kcmil + 250 - 500 kcmil
Compressor kW	209.4

Performance Impacting Options	
Starter Type	Across the line starter
Power Factor Correction Capacitor	No Power Capacitor required
Remote Evaporator	Standard Cooler required
Sound Kit	No Acoustic Blanket required
Fan	Low Sound Fans with VSD
Weight & Dimensional Data	
Shipping Weight [lbs]	9991
Operating Weight [lbs]	10119
Refrigerant Charge [lbs]	160
Length [in]	274.8
Width [in]	88.3
Height [in]	94.2

Project Name: **Little Rock West High School Chiller** Unit Tag: **CH-1,2,3** Qty.: **3** Model: **YLAA0200HJ46XF**

Heat Exchanger Performance			
Evaporator		**Condenser (Air Cooled)**	
Heat Exchanger Type	Plate Heat Exchanger	Ambient Air Temperature* [ºF]	98.0
Entering Fluid Temperature* [ºF]	54.00	Altitude* [ft]	0.00
Leaving Fluid Temperature* [ºF]	44.00	Condensing Temperature [ºF]	123.02 / 123.02
Flow Rate [USGPM]	469.1	Number of Fans	6 / 6
Fouling Factor* [h ft2 F/Btu]	0.000100	Total Air Flow [cfm]	180000
Fluid Type* / Concentration* [%]	Ethylene Glycol / 20.0	Total Fan Power [kW]	20.16
Fluid Volume [USGAL]	12.7		
Evaporating Temperature [ºF]	37.07		
Evaporator Pressure Drop [ft H2O]	20.8		
Strainer Pressure Drop [ft H2O]	5.68		
Extension Kit Pressure Drop [ft H2O]	1.54		
Total Pressure Drop [ft H2O]	28.0		
Fluid Connection Diameter [in]	5		
Minimum Flow Rate [USGPM]	230.0		
Maximum Flow Rate [USGPM]	625.0		

* Designates user specified input

Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at www.ahridirectory.org. Unit contains freeze protection fluids in the evaporator with a leaving chilled fluid temperature above 32 DEG F [0 DEG C] and is certified when rated per the Standard with water.

Part Load Performance (Based on Standard AHRI Unloading)				
Percent Load	**Ambient [ºF]**	**Capacity [tons.R]**	**Power Input [kW]**	**Unit Efficiency [Btu/W.h]**
100.0	98.0	187.1	229.6	9.779
77.8	82.0	145.6	119.9	14.58
58.9	82.0	110.1	86.55	15.27
64.3	65.9	120.2	73.91	19.52
43.7	65.9	81.75	46.13	21.26
46.3	55.0	86.59	42.12	24.67
22.3	55.0	41.67	20.45	24.45

Sound Power Levels (In Accordance with AHRI 370)										
Percent Load	Ambient [ºF]	Octave Band Center Frequency [Hz]								LWA
		63	125	250	500	1000	2000	4000	8000	
100.0	98.0	101.0	100.0	96.0	96.0	92.0	90.0	86.0	82.0	98.0
77.8	82.0	97.0	96.0	92.0	92.0	88.0	86.0	82.0	78.0	94.0
58.9	82.0	94.0	93.0	89.0	90.0	86.0	85.0	80.0	76.0	92.0
64.3	65.9	94.0	93.0	89.0	90.0	86.0	85.0	80.0	76.0	92.0
43.7	65.9	89.0	88.0	84.0	84.0	82.0	81.0	77.0	71.0	88.0
46.3	55.0	89.0	88.0	84.0	84.0	82.0	81.0	77.0	71.0	88.0
22.3	55.0	86.0	85.0	81.0	81.0	79.0	78.0	74.0	68.0	85.0

Note:Unit is equipped with Low Sound Fans with VSD.

Measurement of sound pressure used to obtain the sound power data presented is based on AHRI-370.

Air-cooled chillers are rated in terms of sound power not sound pressure. Johnson Controls provides estimates of sound pressure, but this is not the rating metric.

For an air-cooled chiller, sound pressure calculated from sound power varies depending on how the chiller is assumed to behave, i.e. the radiation model. In other words, determining sound pressure from sound power requires making assumptions that result in different answers at a given distance from the chiller. The environment also influences sound pressure in the field installation. Sound pressure estimation radiation models pertaining to air-cooled chillers include the ‘traditional’ hemispherical model, parallelepiped model and equivalent hemispherical model.

Regarding sound power, Johnson Controls references tolerance limits based on ASHRAE guidelines. These are +/- 6dB in the 63Hz octave band, +/- 4dB in all other octave bands and +/- 3dB for the overall dBA.

Tolerance limits are based on uncertainties associated with:

1. Measurement Test Procedure

2. Repeatability

3. Production / Manufacturing Variability

Standard deviation associated with air-cooled chiller sound data is a measure of spread i.e. it indicates the range of probability of sound levels. Note that for operating conditions other than AHRI’s Standard Rating Condition, higher levels of uncertainty can be expected.

Lead times for factory performance testing depend on test laboratory availability. Please confirm with Johnson Controls Customer Service.

Performance at AHRI Conditions			
Evaporator		**Condenser**	
EFT [ºF]	54.00	Ambient Temp. [ºF]	95.0
LFT [ºF]	44.00	Altitude [ft]	0.00
Flow Rate [USGPM]	460.3	**Performance**	
Pressure Drop [ft H2O]	18.4	EER [Btu/W.h]	10.38
Fluid Type	Water	IPLV.IP [Btu/W.h]	18.46
Fouling Factor [h ft2 F/Btu]	0.000100	Net Cooling Capacity [tons.R]	192.8
Fluid Volume [USGAL]	12.7		

Note:Unit rated at design condition capacity.

Part Load Performance (Based on AHRI 550/590 - 2018 (IP))				
Percent Load	**Ambient [°F]**	**Capacity [tons.R]**	**Power Input [kW]**	**Unit Efficiency [Btu/W.h]**
100.0	95.0	192.8	222.9	10.38
75.8	80.0	146.1	117.0	14.98
56.8	80.0	109.4	84.24	15.59
61.7	65.0	118.9	72.95	19.56
41.2	65.0	79.40	45.25	21.06
43.5	55.0	83.83	41.74	24.10
21.0	55.0	40.43	20.25	23.95

Notes:

Country of Origin:Mexico

Min flow rate is for chillers using water. For glycol chillers please contact the application engineering team.

This unit does not have a coil coating selected.

Compliant with ASHRAE 90.1 - 2010,2013,2016,2019,2022.

Compliant with IECC - 2012,2015,2018.

Compliant with the requirements of the LEED Energy and Atmosphere Enhanced Refrigerant Management Credit (EAc4).

The product image shown is for illustrative purposes only and is not representative of selected options.

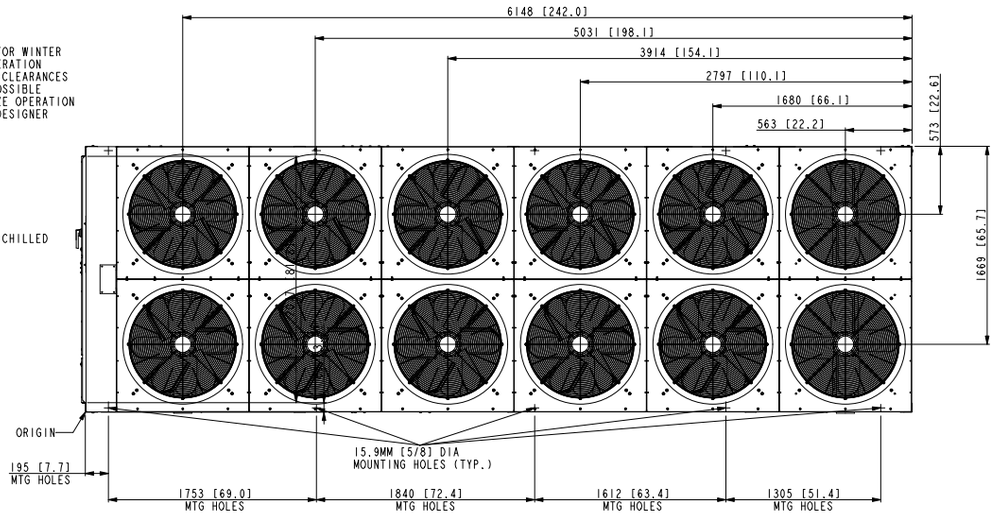
Unit And Wiring Drawings

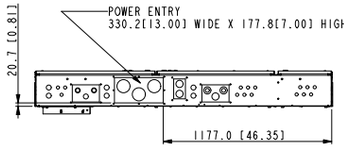
Product Type: **YLAA - Air-Cooled Chiller**

Unit Tags: **CH-1,2,3**

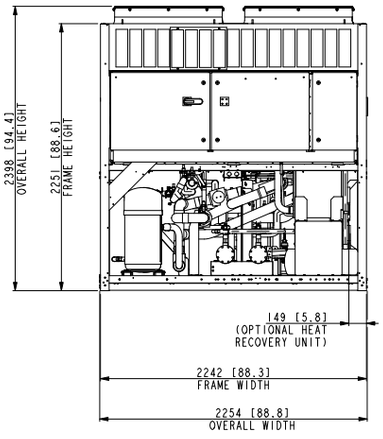
NOTE:

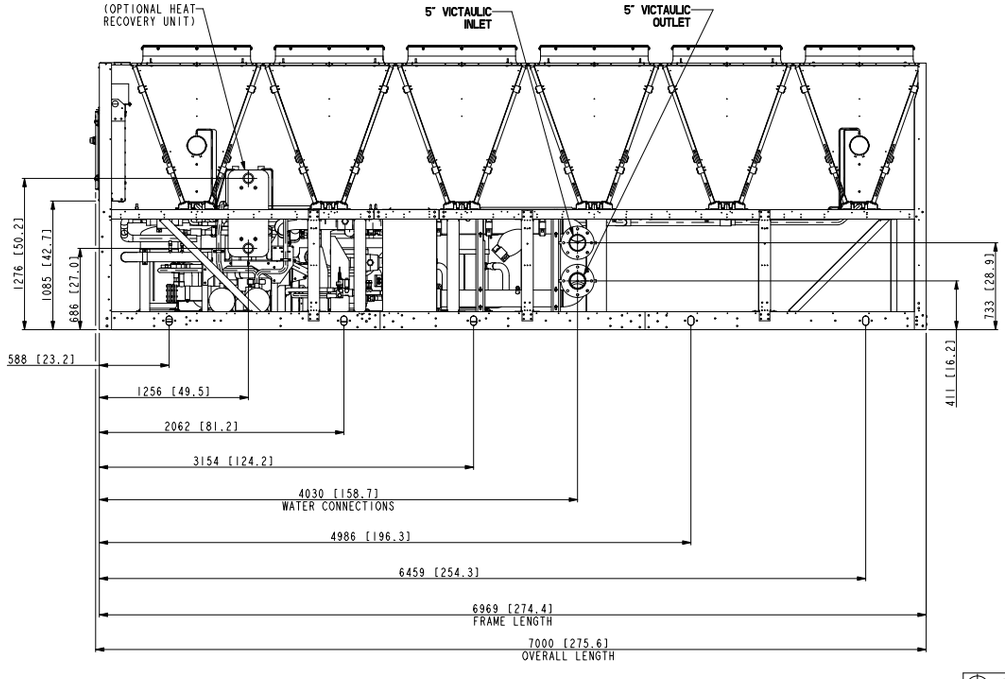
1. PLACEMENT ON A LEVEL SURFACE FREE OF OBSTRUCTIONS (INCLUDING SNOW, FOR WINTER OPERATION) OR AIR-CIRCULATION ENSURES RATE PERFORMANCE, RELIABLE OPERATION AND EASE OF MAINTENANCE. SITE RESTRICTIONS MAY COMPROMISED MINIMUM CLEARANCES INDICATED BELOW, RESULTING IN UNPREDICTABLE AIR FLOW PATTERNS AND POSSIBLE DIMINISHED PERFORMANCE. JOHNSON CONTROLS UNIT CONTROLS WILL OPTIMIZE OPERATION WITHOUT NUISANCE HIGH PRESSURE SAFETY CUTOUT. HOWEVER, THE SYSTEM DESIGNER MUST CONSIDER POTENTIAL PERFORMANCE DEGRADATION.
   1.1. RECOMMENDED MINIMUM CLEARANCES:
      1.1.1. SIDE TO WALL - 1828.8mm [72.00]
      1.1.2. REAR TO WALL - 1828.8mm [72.00]
      1.1.3. CONTROL PANEL TO WALL - 1219.2mm [48.00]
      1.1.4. TOP - NO OBSTRUCTIONS ALLOWED.
      1.1.5. DISTANCE BETWEEN ADJACENT UNITS - 3048mm [120.00]
      1.1.6. NO MORE THAT ONE ADJACENT WALL MAY BE HIGHER THAN UNIT.
2. WEIGHT AND CENTRE OF GRAVITY- REF TO AVM REPORT
3. INSTALLING CONTRACTOR MUST INCLUDE VENT AND DRAIN ACCOMMODATIONS IN CHILLED WATER PIPING NEAR EVAPORATOR.
4. NUMBER OF COMPRESSORS MAY VARY FROM DRAWING.
   4.1. REFER TO YORKWORKS REPORTS
5. FOR MONTERREY, MEXICO AND SAN ANTONIO, TEXAS BUILDS ONLY.

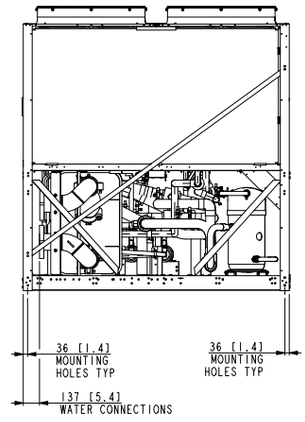




CONTROL PANEL BOTTOM DETAIL







THIS DRAWING PERTAINS TO THE FOLLOWING MODELS:		
YLAA 0200 HE		
YLAA 0230 HE		
YLAA 0200 HJ		
YLAA 0230 HJ		

REVISION	REV.	DATE	EC. NO.	DR.	CHK.	ENG.
	G	09-MAY-2023	ECN23-0279	RWA	DBN	AR
	UPDATE TABLE TO INCLUDE YLAA 0200/0230 "HJ" MODELS					

CONTINUED

THIRD ANGLE

Johnson Controls

JOHNSON CONTROLS - BUILDING EFFICIENCY
507 EAST MICHIGAN STREET, MILWAUKEE, WI, 53202 USA

DO NOT SCALE

YLAA 12-FAN 60HZ 0200 & 0230 WITH OPTIONAL HEAT RECOVERY

DRAWN	M.LUPTON	19-FEB-2016
MODELER	M.LUPTON	19-FEB-2016
CHKD	A.SATCH	19-FEB-2016
ENG	A.KELLY	19-FEB-2016

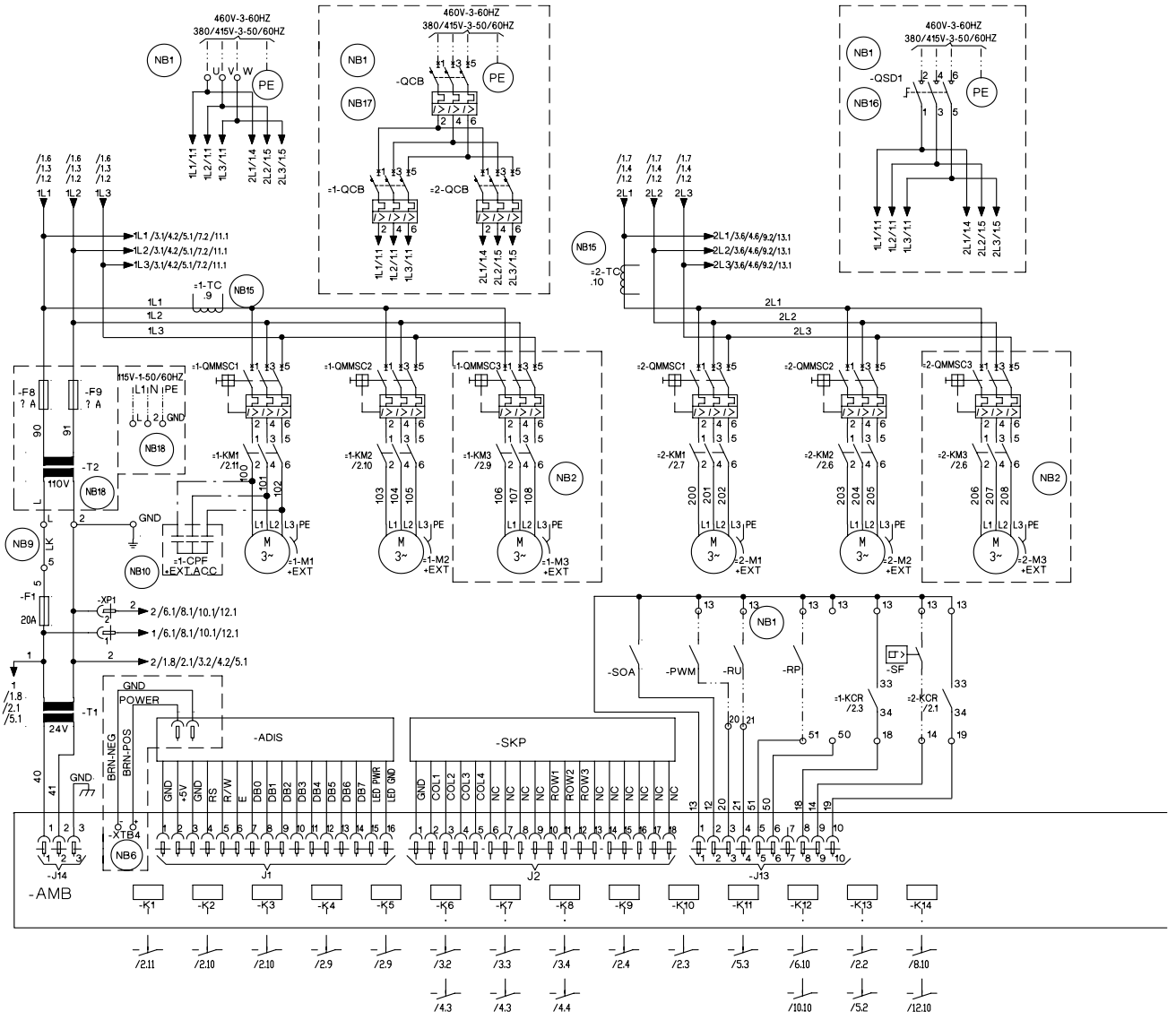
SCALE: 0.050 | MASS (kg): 0.000

MATERIAL -
ENG. STD. -
PART NO. -
CUT SIZE N/A

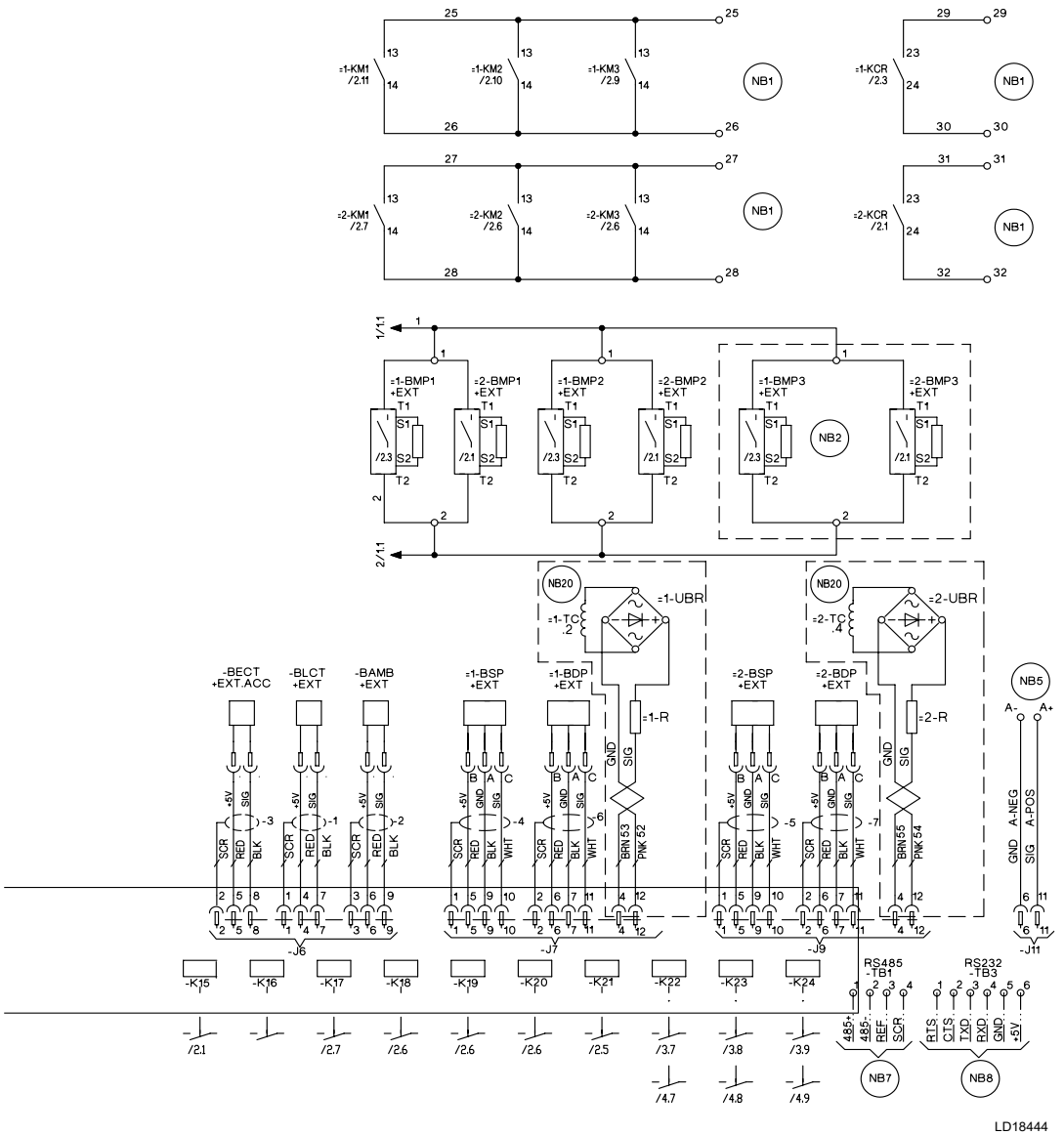
A1 | CAGE NUMBER 66935 | DRAWING NUMBER 035-24059-014 | REVISION G | VERSION 3 | Eng Chg

ORIG. NO.: - | SHEET 1 OF 1

Wiring diagram



Wiring diagram (Cont'd)



Wiring diagram (Cont'd)

Designation	DESCRIPTION
ACC	ACCESSORY
- ADIS	DISPLAY BOARD
- AMB	MICRO BOARD

- BAMB	AMBIENT
- BDP	DISCHARGE PRESSURE
- BECT	ENTERING CHILLED TEMP
- BLCT	LEAVING CHILLED TEMPERATURE
	NOT FITTED ON REMOTE EVAP UNITS

-BMP	MOTOR PROTECTOR COMP
- BSP	SUCTION PRESSURE

-CPF	CAPACITOR POWER FACTOR

- ECH	CRANKCASE HEATER
-EEH	EVAPORATOR HEATER
-EPH	PUMP HEATER
-EXT	EXTERNAL TO CONTROL PANEL

- F	FUSE
- FHP	HIGH PRESSURE CUTOUT
-FSI	FAN SPEED INHIBIT TWO SPEED FAN OPTION ONLY

GND	GROUND
G/Y	GREEN / YELLOW

J	PLUG BOARD CONNECTOR

-K	CIRCUIT BOARD RELAY
-KF	FAN CONTACTOR LINE
-KFH	FAN CONTACTOR HIGH SPEED (INCLUDING COIL SUPPRESSOR)
-KFL	FAN CONTACTOR LOW SPEED (INCLUDING COIL SUPPRESSOR)
-KFOL	FAN OVERLOAD
-KFS	RELAY FAN SPEED
-KM	COMPRESSOR CONTACTOR (INCLUDING COIL SUPPRESSOR)
-KCR	CONTROL RELAY
-KP	PUMP CONTACTOR PART (INCLUDING COIL SUPPRESSOR)

- M	COMPRESSOR MOTOR
-MF	MOTOR FAN
-MP	MOTOR PUMP

NU	NOT USED

PE	PROTECTIVE EARTH
PWM	PULSE WIDTH MODULATION TEMP RESET or REMOTE UNLOAD 2nd STEP

Designation	DESCRIPTION
-QCB	CIRCUIT BREAKER
-QMMSC	MANUAL MOTOR STARTER COMP
-QMMSP	MANUAL MOTOR STARTER PUMP
-QSD	SWITCH DISCONNECT

R	RESISTOR
RED	RED
RP	RUN PERMISSIVE
RU	REMOTE UNLOAD Ist STEP

CR	SCREEN
- SF	FLOW SWITCH
- SKP	KEYPAD
- SOA	SWITCH OFF AUTO

- T	TRANSFORMER
-TC	TRANSFORMER CURRENT

-UBR	BRIGDE RECFIFIER

WHT	WHITE

- XTBC	TERMINAL BLOCK CUSTOMER
- XTBF	TERMINAL BLOCK FACTORY

-YHGSV	HOT GAS SOLENOID VALVE (INCLUDING COIL SUPPRESSOR)
- YLLSV	LIQUID LINE SOLENOID VALVE (INCLUDING COIL SUPPRESSOR)
FIELD MOUNTED AND WIRED ON REMOTE EVAP UNITS	

- ZCPR	COMPRESSOR

NB	NOTE WELL {SEE NOTE}

	WIRING AND ITEMS SHOWN THUS ARE STANDARD YORK ACCESSORIES

	WIRING AND ITEMS SHOWN THUS ARE NOT SUPPLIED BY JOHNSON CONTROLS

	ITEMS THUS ENCLOSED FORM A COMPONENTS OR SETS OFCOMPONENTS

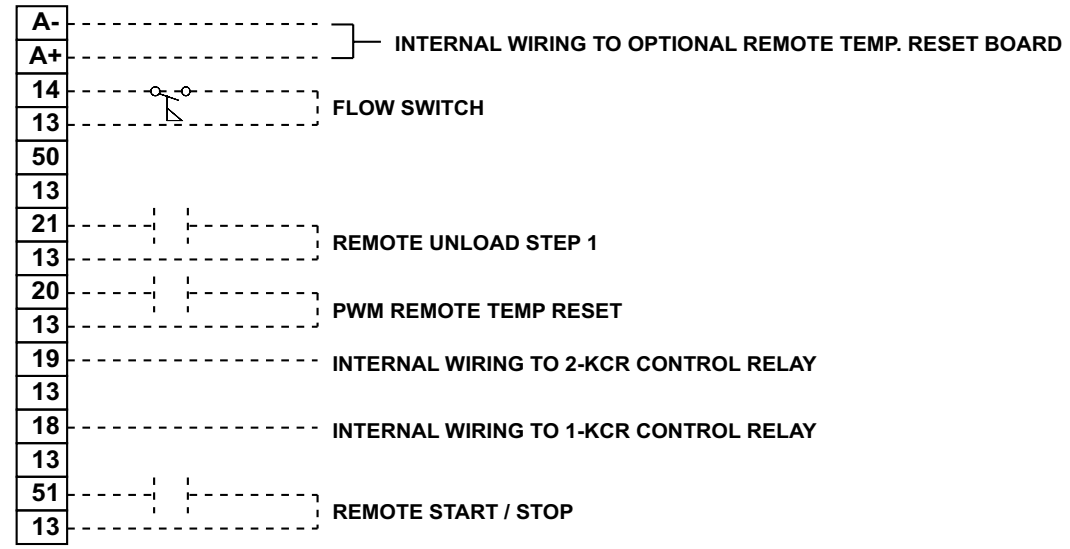
Wiring diagram (Cont'd)

A. This drawing is based on IEC symbols.
B. Field wiring to be in accordance with the relevant electrical code as well as all other applicable codes and specifications.
C. All sources of supply shown on this diagram to be taken from one main isolator, not shown or supplied by the chiller manufacturer.
D. Green and yellow wire is used for earth, multicolored cable used for low voltage. Red wire used for AC control, blue wire for neutral, black wire for AC and DC power. Orange wire should be used for interlock control wiring supplied by external source.
E. Legend designation depicts component abbreviations. Number prefix located, if applicable, on schematic circuit, refers to system thereon, e.g.= 1-FHP2 refers to high pressure cutout no 2 on system no 1.
F. All wiring to control section voltage free contacts requires a supply provided by the customer maximum voltage 240 volts. The customer must take particular care when deriving the supplies for the voltage free terminals with regard to a common point of isolation. Thus, these circuits when used must be fed via the common point of isolation the voltage to these circuits is removed when the common point of isolation to the unit is opened. This common point of isolation is not supplied. The voltage free contacts are rated at 100 VA. All inductive devices {relays} switch by the voltage free contacts must have their coil suppressed using standard r/c suppressors.
G. Customer voltage free contacts connected to terminal 13 must be rated at 30 V 5 mA.
H. No controls {relays etc.} Should be mounted in any section of the control panel. Additionally, control wiring not connected to the control panel should not be run through the panel. If these precautions are not followed, electrical noise could cause malfunctions or damage to the unit and its controls.

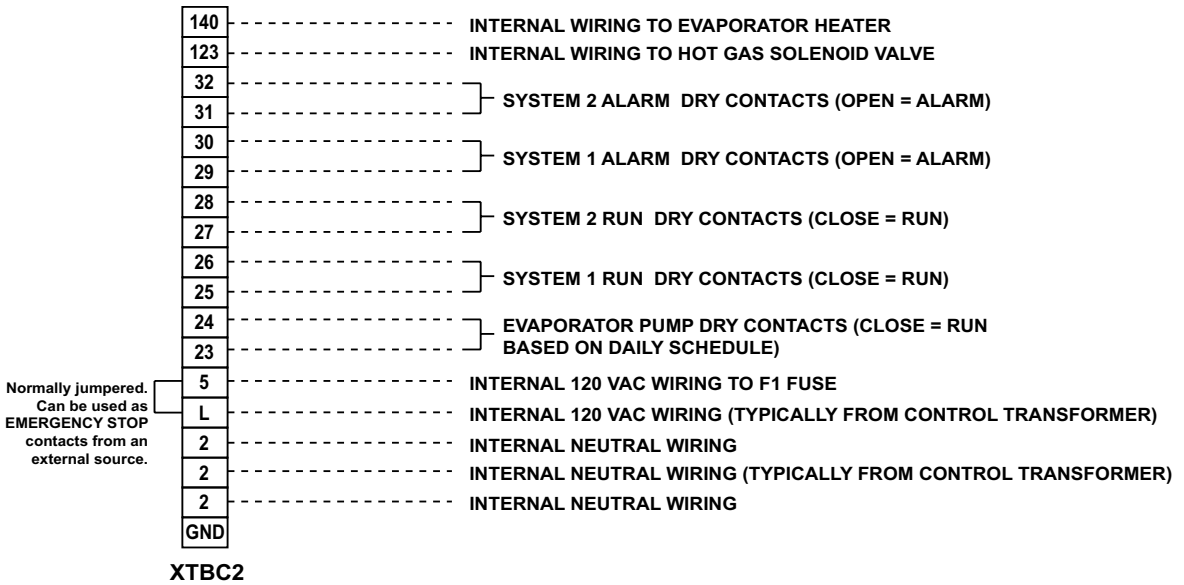
1. Refer to installation commissioning operation and maintenance manual for customer connections and customer connection notes, non compliance to these instructions will invalidate unit warranty.
2. Wiring and components for compressor 3 only fitted when unit has 3 compressors on the system. 1-BMP3 is replaced by a link across terminals 134 and 135. 2-BMP3 is replaced by a link across terminals 234 and 235.
3. FHP2 is only fitted on 0089 and above. When not fitted 1-FHP2 is replaced by a link across terminals 132 and 139. 2-FHP2 is replaced by a link across terminals 232 and 239.
4. Fitted on units with hot gas bypass option.
5. EMS option is wired as shown.
6. This wiring must be used for old display 031-0110-000.
7. Network connection point.
8. Printer port.
9. Remote emergency stop can be wired between terminal I and 5 after removing link.
10. Power factor correction accessory. Power factor correction fitted to each compressor contactor.
11. Not fitted on compressors with internal motor protection. For system 1 terminals 132 and 133, 133 and 134 And 134 and 135 are linked. For system 2 terminals 232 and 233, 233 and 234 and 234 and 235 are linked.
12. Only fitted on systems with 3 or 4 fans.
13. Only fitted on systems with 4 fans.
14. Only fitted on systems with 5 fans.
15. Only fitted on systems with 6 fans.
16. Input switch disconnect or circuit breaker option replaces input terminal block.
17. Input switch disconnect and system circuit breaker option replaces input terminal block.
18. 115 V control circuit requires a 115 V supply unless control circuit transformer -T2 and -F3 are fitted.
19. For optional hydro kit. Heater -EPH is fitted and wired as shown. On single pump -KP1, -QMMSP1 and -MP1 are fitted and wired as shown. On two pump hydro kits -KP2, -QMMSP2 and -MP2 are also fitted and wired as shown.
20. Current measurement option wired as shown.
21. Only fitted on systems with single speed fans.
22. Only fitted on systems with two speed fans.
23. Optional compressor manual motors starters.
24. See sheet 3 of connection diagram for power input options.

User control wiring

User control wiring inputs

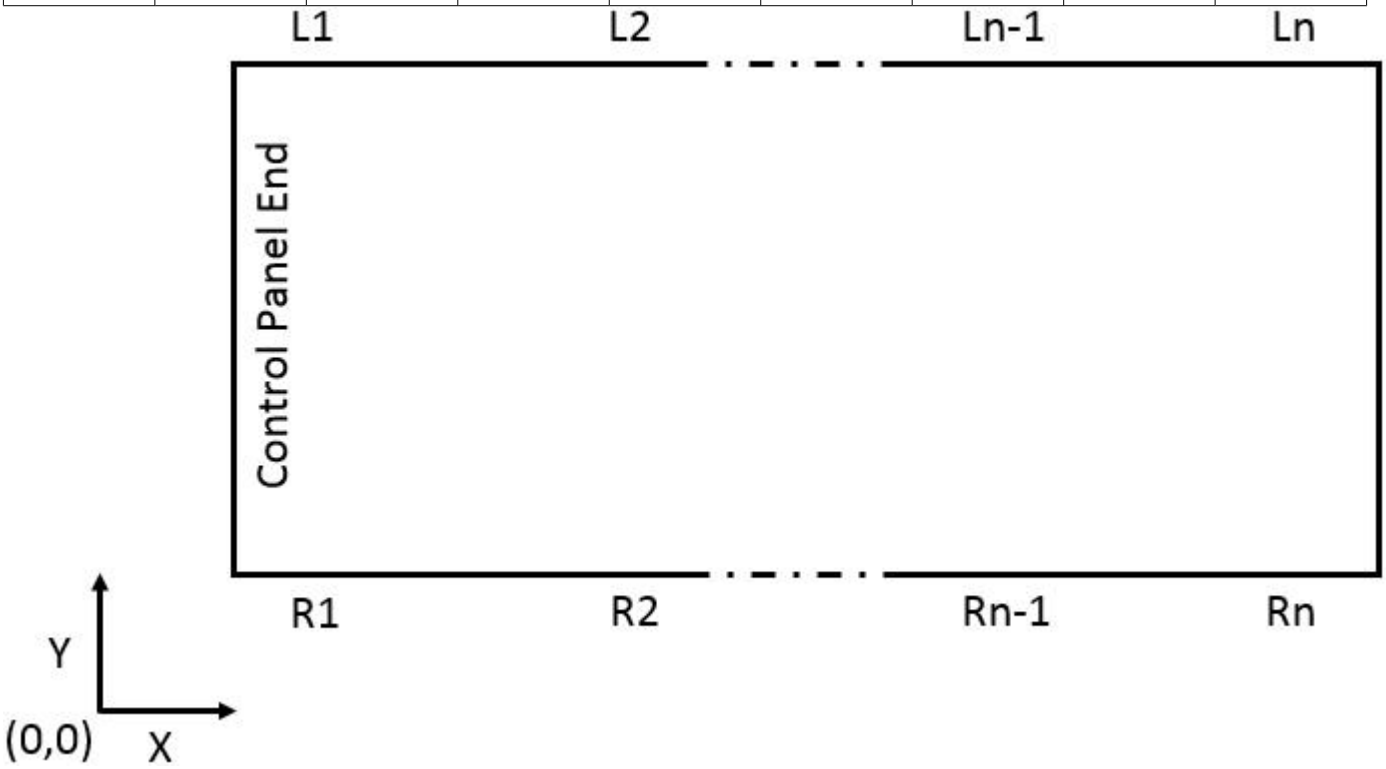


User control wiring outputs



Project Name: **Little Rock West High School Chiller** Unit Tag: **CH-1,2,3** Qty.: **3** Model: **YLAA0200HJ46XF**

PIN								
YLAA0200HJ	46XFBBXTXA	SXBLXCXX44	XEXXXKHXXV	YAXGXXX3XB	XVX1XXXXXX			
....5...10	....5...20	....5...30	....5...40	....5...50	....5...60	....5...70	....5...80	....5...90



LOCATION	X Distance [in]	Y Distance [in]	JCI PART NUMBER	SAP NUMBER	COLOUR	Operating Weights [lb]
R1	7.7	1.4	029-25334-008	433997	DK Purple	814
R2	76.7	1.4	029-25334-009	433998	DK Green	1226
R3	149.1	1.4	029-25334-008	433997	DK Purple	1126
R4	212.5	1.4	029-25334-008	433997	DK Purple	419
R5	263.9	1.4	029-25334-008	433997	DK Purple	770
L1	7.7	86.9	029-25334-008	433997	DK Purple	1052
L2	76.7	86.9	029-25334-012	434000	White	2180
L3	149.1	86.9	029-25334-009	433998	DK Green	1344
L4	212.5	86.9	029-25334-008	433997	DK Purple	419
L5	263.9	86.9	029-25334-008	433997	DK Purple	769

Total Weight [lb]		Centre of Gravity [in]	
Shipping Weight [lb]	9992.0	Xg [in]	121.4
Operating Weights [lb]	10119	Yg [in]	50.1

Unit Specifications Text

Product Type: YLAA - Air-Cooled Chiller

Unit Tags: CH-1,2,3

Air Cooled Scroll Liquid Chiller -YORK YLAA R454B 50Hz & 60Hz

I. GENERAL

a. GENERAL REQUIREMENTS

i. The requirements of this Section shall conform to the general provisions of the Contract, including General and Supplementary Conditions, Conditions of the Contract, and Contract Drawings.

b. SCOPE

i. Provide Microprocessor controlled, multiple scroll compressor, air-cooled, liquid chillers of the scheduled capacities as shown and indicated on the Drawings, including but not limited to:

1. Chiller package
2. Charge of refrigerant and oil
3. Electrical power and control connections
4. Chilled liquid connections
5. Manufacturer start-up

c. QUALITY ASSURANCE

i. Products shall be Designed, Tested, Rated and Certified in accordance with, and Installed in compliance with applicable sections of the following Standards and Codes:

1. AHRI 550/590 – Water Chilling Packages Using the Vapor Compression Cycle
2. AHRI 370 – Sound Rating of Large Outdoor Refrigerating and Air-Conditioning Equipment
3. ANSI/ASHRAE 15 – Safety Code for Mechanical Refrigeration
4. ANSI/ASHRAE 34 – Number Designation and Safety Classification of Refrigerants
5. ASHRAE 90.1 – Energy Standard for Buildings Except Low-Rise Residential Buildings
6. ANSI/NFPA 70 – National Electrical Code (N.E.C.)
7. ASME Boiler and Pressure Vessel Code, Section VIII, Division 1
8. OSHA – Occupational Safety and Health Act
9. Manufactured in facility registered to ISO 9001
10. Conform to Intertek Testing Services for construction of chillers and provide ETL/cETL Listed Mark

ii. Factory Run Test: Chiller shall be pressure-tested, evacuated and fully charged with refrigerant and oil, and shall be factory operational run tested with water flowing through the vessel.

iii. Chiller manufacturer shall have a factory trained and supported service organization.

iv. Warranty: Manufacturer shall Warrant all equipment and material of its manufacture against defects in workmanship and material for a period of eighteen (18) months from date of shipment or twelve (12) months from date of start-up, whichever occurs first.

d. DELIVERY AND HANDLING

i. Unit shall be delivered to job site fully assembled with all interconnecting refrigerant piping and internal wiring ready for field installation and charged with refrigerant and oil by the Manufacturer.

ii. Provide protective covering over vulnerable components for unit protection during shipment. Fit nozzles and open ends with plastic or fabric enclosures.

iii. Unit shall be stored and handled per Manufacturer’ s instructions.

II. PRODUCTS

a. CHILLER MATERIALS AND COMPONENTS

i. General: Install and commission, as shown on the schedules and plans, factory assembled, charged, and tested air cooled scroll compressor chiller(s) as specified herin. Chiller shall be designed, selected, and constructed using a refrigerant with Flammability rating of "1", as defined by ANSI/ASHRAE STANDARD 34 Number Designation and Safety Classification of Refrigerants. Chiller shall include not less than two refrigerant circuits above 50 tons (200kW), scroll compressors, direct-expansion type evaporator, air-cooled condenser, refrigerant, lubrication system, interconnecting wiring, safety and operating controls including capacity controller, control center, motor starting components and special features as specified herin or required for safe, automatic operation.

ii. Cabinet: External structural members shall be constructed of heavy guage, galvanized steel coated with baked on powder paint which, when subject to ASTM B117, 1000 hour, 5% salt spray test, yields minimum ASTM 1654 rating of "6".

iii. Operating Characteristics: Provide low and high ambient temperature control options as required to ensure unit is capable of operation from 30°F to 115°F (-1°C to 46°C) ambient temperature. [Optional: -10°F to 125°F (-23°C to 52°C) ambient.]

iv. Service Isolation valves: Discharge (ball type) isolation valves factory installed per refrigerant circuit. Includes a system high-pressure relief valve in compliance with ASHRAE15.

v. Pressure Transducers and Readeout Capability

1. Discharge Pressure Transducers: Permits unit to sense and display discharge pressure.

2. Suction Pressure Transducers: Permits unit to sense and display suction pressure.

3. High Ambient Control: Allows units to operate when the ambient temperature is above 115°F (46°C). Includes discharge pressure transducers

b. COMPRESSORS

i. Compressors: Shall be hermetic, scroll-type, including:

1. Compliant design for axial and radial sealing.

2. Refrigerant flow through the compressor with 100% suction cooled motor.

3. Large suction side free volume and oil sump to provide liquid handling capability.

4. Compressor crankcase heaters to provide extra liquid migration protection.

5. Annular discharge check valve and reverse vent assembly to provide low-pressure drop, silent shutdown and reverse rotation protection.

6. Initial oil charge.

7. Oil level sight glass.

8. Vibration isolator mouonts for compressors.

9. Brazed-type connections for fully hermetic refrigerant circuits.

10. Compressor Motor overloads capable of monitoring compressor motor current. Provides extra protection against compressor reverse rotation, phase-loss and phase-imbalance.

c. REFRIGERANT CIRCUIT COMPONENTS

i. Each refrigerant circuit shall include: a discharge service ball type isolation valve, high side pressure relief, liquid line shutoff valve with charging port, low side pressure relief device, filter-drier, solenoid valve, sight glass with moisture indicator, thermostatic expansion valves, and flexible, closed-cell foam insulated suction line and suction pressure transducer.

d. HEAT EXCHANGERS

i. Evaporator:

1. Evaporator shall be brazed-plate stainless steel construction capable of refrigerant working pressure of 650 psig (3103 kPa) and liquid side pressure of 150 psig (1034 kPa) [Option for 300 psig (2068 kPa) available].

2. Brazed plate heat exchangers shall be UL listed.

3. Exterior surfaces shall be covered with 3/4" (19mm), flexible, closed cell insulation, thermal conductivity of 0.26k ([BTU/HR-Ft² - °F]/in.) maximum.

4. Water nozzles shall be provided with grooves for field provided ANSI/AWWA C-606 mechanical couplings.

5. Evaporator shall include vent and drain fittings and thermostatically controlled heaters to protect to -20°F (-29°C) ambient in off-cycle.

6. A 20-mesh, serviceable wye-strainer and mechanical couplings shall be provided for field installation on evaporator inlet prior to startup.

7. Evaporator shall be provided with piping extension kit and mechanical couplings to extend liquid connection from evaporator to edge of unit. Thermal dispersion type flow switch shall be factory installed in the evaporator outlet pipe extension and wired to the unit control panel. Insulation and heat trace on piping shall be responsibility of installing contractor. Extension kit nozzle connections shall be ANSI/AWWA C-606 (grooved).

ii. Air-cooled Condenser:

1. Coils: Condenser coils shall be constructed of a single material to avoid galvanic corrosion due to dissimilar metals. Coils and headers are brazed as one piece. Integral sub cooling is included. Coils shall be designed for a design working pressure of 650 PSIG (45 bar). Condenser coil shall be washable with potable water under 100 psi (7 bar) pressure.

2. Low Sound Fans: Shall be dynamically and statically balanced, direct drive, corrosion resistant glass fiber reinforced composite blades molded into a low noise, full-airfoil cross section, providing vertical air discharge and low sound. Each fan shall be provided in an individual compartment to prevent crossflow during fan cycling. Guards of heavy gauge, PVC (poly- vinylchloride) coated or galvanized steel shall be factory installed.

3. Fan Motors: High efficiency, direct drive, 6 pole, 3 phase, insulation class “F”, current protected, Totally Enclosed Air-Over (TEAO) , rigid mounted, with double sealed, permanently lubricated, ball bearings.

4. Low Sound Fans with Variable Speed Drives. All fans shall be powered by VSDs. Fans shall provide vertical air discharge from extended orifices. Fans shall be composed of corrosion resistant aluminum hub and glass-fiber-reinforced polypropylene composite blades molded into a low-noise airfoil section. Fan impeller shall be dynamically balanced for vibration-free operation. Fan guards of heavy gauge, PVC (polyvinyl chloride) coated or galvanized steel.

e. CONTROLS

i. General: Automatic start, stop, operating, and protection sequences across the range of scheduled conditions and transients.

ii. Power/Control Enclosure: Rain and dust tight NEMA 3R powder painted steel cabinet with hinged, latched, and gasket sealed door.

iii. Microprocessor Control Center:

1. Automatic control of compressor start/stop, anti-coincidence and anti-recycle timers, automatic pumpdown at system shutdown, condenser fans, evaporator pump, evaporator heater, unit alarm contacts, and chiller operation from -10°F to 125°F (-23°C to 52°C) ambient. Automatic reset to normal chiller operation after power failure.

2. Software stored in non-volatile memory, with programmed setpoints retained in lithium battery backed real-time-clock (RTC) memory for minimum 5 years.

3. Forty character liquid crystal display, descriptions in English (or Spanish, French, Italian, or German), numeric data in English (or Metric) units. Sealed keypad with sections for Setpoints, Display/Print, Entry, Unit Options & clock, and On/Off Switch.

4. Programmable Setpoints (within Manufacturer limits): display language; chilled liquid temperature setpoint and range, remote reset temperature range, daily schedule/holiday for start/stop, manual override for servicing, low and high ambient cutouts, low liquid temperature cutout, low suction pressure cutout, high discharge pressure cutout, anti-recycle timer (compressor start cycle time), and anti-coincident timer (delay compressor starts).

5. Display Data: Return and leaving liquid temperatures, low leaving liquid temperature cutout setting, low ambient temperature cutout setting, outdoor air temperature, English or metric data, suction pressure cutout setting, each system suction pressure, liquid temperature reset via a 4-20milliamp or 0-10 VDC input, anti-recycle timer status for each compressor, anti-coincident system start timer condition, compressor run status, no cooling load condition, day, date and time, daily start/stop times, holiday status, automatic or manual system lead/lag control, lead system definition, compressor starts/operating hours (each), status of hot gas valves, evaporator heater and fan operation, run permissive status, number of compressors running, liquid solenoid valve status, load & unload timer status, water pump status.

6. System Safeties: Shall cause individual compressor systems to perform auto shut down; manual reset required after the third trip in 90 minutes. System Safeties include: high discharge pressure, low suction pressure, high pressure switch, and motor protector. Compressor motor protector shall protect against damage due to high input current or thermal overload of windings.

7. Unit Safeties: Shall be automatic reset and cause compressors to shut down if low ambient, low leaving chilled liquid temperature, under voltage, and flow switch operation.

8. Alarm Contacts: Low ambient, low leaving chilled liquid temperature, low voltage, low battery, and (per compressor circuit): high discharge pressure, and low suction pressure.

9. BAS Communications: YORKTalk 2, BACnet MS/TP, Modbus and N2 communication capabilities are standard.

iv. Manufacturer shall provide any controls not listed above, necessary for automatic chiller operation. Mechanical Contractor shall provide field control wiring necessary to interface sensors to the chiller control system.

f. POWER CONNECTION AND DISTRIBUTION

i. Power Panels:

1. NEMA 3R/12 rain/dust tight, powder painted steel cabinets with hinged, latched, and gasket sealed outer doors. Provide main power connection(s), control power connections, compressor and fan motor start contactors, current overloads, and factory wiring.

2. Power supply shall enter unit at a single location, be 3 phase of scheduled voltage, and connect to individual terminal blocks per compressor. Separate disconnecting means and/or external branch circuit protection (by Contractor) required per applicable local or national codes.

ii. Compressor, control and fan motor power wiring shall be located in an enclosed panel or routed through liquid tight conduit.

g. ACCESSORIES AND OPTIONS

i. Some accessories and options supersede standard product features. Your Johnson Controls representative will be pleased to provide assistance.

ii. Microprocessor controlled, Factory installed Across-the-Line type compressor motor starters as standard.

iii. Low Ambient Control: Permits unit operation to -10°F ambient. Standard unit controls to 30°F ambient.

1. High Ambient Control: Permits unit operation above 115°F ambient.

iv. Power Supply Connections:

1. Single Point Circuit Breaker: Single point Terminal Block with Circuit Breaker and lockable external handle (in compliance with Article 440-14 of N.E.C.) can be supplied to isolate power voltage for servicing. Incoming power wiring must comply with the National Electric Code and/or local codes.

v. Control Power Transformer: Converts unit power voltage to 120-1-60 (500 VA capacity). Factory-mounting includes primary and secondary wiring between the transformer and the control panel.

vi. Protective Chiller Panels (Factory or Field Mounted)

1. Louvered/Wire Panels: Louvered steel panels on external condenser coils painted as per remainder of unit cabinet. Heavy gauge, welded wire-mesh, coated to resist corrosion, around base of machine to restrict unauthorized access.

vii. Thermal Dispersion Flow Switch (Factory installed and wired in piping extension kit): Normally open, 30bar pressure rating, stainless steel 316L construction, IP67, -4°F to 158°F ambient rating.

viii. Low Temperature Process Glycol: Leaving chilled liquid setpoint range 10°F to 50°F (-12°C to 10°C)

ix. Vibration Isolation (Field installed):

1. 1" Deflection Spring Isolators: Level adjustable, spring and cage type isolators for mounting under the unit base rails.

III. EXECUTION

a. INSTALLATION

i. General: Rig and Install in full accordance with Manufacturer's requirements, Project drawings, and Contract documents.

ii. Location: Locate chiller as indicated on drawings, including cleaning and service maintenance clearance per Manufacturer instructions. Adjust and level chiller on support structure.

iii. Components: Installing Contractor shall provide and install all auxiliary devices and accessories for fully operational chiller.

iv. Electrical: Coordinate electrical requirements and connections for all power feeds with Electrical Contractor (Division 16).

v. Controls: Coordinate all control requirements and connections with Controls Contractor.

vi. Finish: Installing Contractor shall paint damaged and abraded factory finish with touch-up paint matching factory finish.

Warranties

Product Type: YLAA - Air-Cooled Chiller

Unit Tags: CH-1,2,3

CERTIFICATE OF LIMITED WARRANTY
JOHNSON CONTROLS EQUIPMENT

Contract Number: Model No.: YLAA0200HJ46XF Serial Number:
Ship Date: Start Date:

POLICY STATEMENT

Johnson Controls (JCI) warrants all equipment and associated factory supplied materials or start-up services performed by Johnson Controls in connection therewith, against defects in workmanship and material. **The warranty period begins at start up, or six (6) months from the ship date, whichever occurs first.** Subject to the exclusions listed below, Johnson Controls, at its option, will repair or replace, FOB point of shipment, such products or components as it finds defective.

Except for reciprocating replacement compressors, which Johnson Controls warrants for a period of twelve (12) months from date of shipment, Johnson Controls warrants Johnson Controls reconditioned or replacement materials, or installation or start-up services performed by Johnson Controls in connection therewith, against defects in workmanship and material for a period of (90) days from date of shipment.

The above represents the minimum warranty policy Johnson Controls will extend to customers. Additional product specific coverage is provided as outlined herein or in separate related warranty policies. No warranty repairs or replacements will be made until payment for all equipment, materials, components, or services has been received by Johnson Controls.

Warranty Type	Warranty Duration	Expiration Date
Standard - Entire Unit - Parts and Labor	1 Year	Not provided
Extended - Compressor - Parts only	5 Years	Not provided
Extended - Refrigerant	1 Year	Not provided

EXCLUSIONS:

Unless specifically agreed to in the contract documents, or associated with additional warranty options listed above, this warranty does not include the following costs and expenses:

I. Labor to repair, remove, or reinstall any equipment, materials or components.

II. Special shipping, handling or transportation charges, including cranes, safety walks or other safety requirements specific to jobsites.

III. Cost of refrigerant.

IV. Freight damage.

V. Field applied coatings added to any surface or heat exchanger.

VI. Rental chillers.

VII. Normal wear and tear or corrosion.

ALL WARRANTIES ARE VOID IF:

A. Equipment is used with refrigerants, oil, additives, or antifreeze agents other than those authorized by supplying factory.

B. Equipment is used with any material or any equipment such as evaporators, tubing, other low side equipment or refrigerant controls not approved by supplying factory.

C. Equipment has been damaged by freezing because it was not properly protected during cold weather or damaged by fire or any other conditions not ordinarily encountered.

D. Equipment is not applied, installed, operated, maintained and serviced in accordance with instructions issued by Johnson Controls.

E. Equipment is damaged due to dirt, air, moisture, or other foreign matter entering the refrigerant system.

F. Equipment is not properly stored, protected, or inspected by customer during the period from date of shipment to date of initial start-up.

G. Field coating of coil has occurred.

H. Equipment is damaged due to acts of God, abuse, including shipping damage, neglect, sabotage, or acts of terrorists.

I. Equipment has modifications carried out that have an effect on the original design of the product without such work being authorized by the factory. Any on site design changes or unit modification/replacement shall be authorized in advance by the factory.

J. Equipment is moved from the location where it is originally placed in service, unless performed by certified Johnson Controls employees who have followed Johnson Controls' then-current installation and operations procedures as evidenced by signed start-up documentation.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, EXPRESS OR IMPLIED IN LAW OR IN FACT, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE WARRANTIES CONTAINED HEREIN SET FORTH BUYER' S SOLE AND EXCLUSIVE REMEDY IN THE EVENT OF A DEFECT IN WORKMANSHIP OR MATERIALS. IN NO EVENT SHALL JOHNSON CONTROLS' LIABILITY FOR DIRECT OR COMPENSATORY DAMAGES EXCEED THE PAYMENTS RECEIVED BY JOHNSON CONTROLS FROM BUYER FOR THE MATERIAL OR EQUIPMENT INVOLVED, NOR SHALL JOHNSON CONTROLS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. THESE LIMITATIONS ON LIABILITY AND DAMAGES SHALL APPLY UNDER ALL THEORIES OF LIABILITY OR CAUSES OF ACTION, INCLUDING BUT NOT LIMITED TO, CONTRACT, WARRANTY, TORT, (INCLUDING NEGLIGENCE) OR STRICT LIABILITY. THE ABOVE LIMITATIONS SHALL INURE TO THE BENEFIT OF JOHNSON CONTROLS SUPPLIERS AND SUBCONTRACTORS.

Products furnished, but not manufactured, by Johnson Controls are not covered by this warranty. Products furnished but not manufactured by Johnson Controls may be covered by the manufacturer of such products and Buyer's sole and exclusive remedy for such products is limited to any warranty given by said manufacturer.

To qualify for warranty consideration under this Johnson Controls warranty, Buyer must immediately notify Johnson Controls at the earlier of the Buyer's discovery of the defect or the time at which the Buyer should have discovered the defect with the exercise of due diligence. Buyer must also promptly thereafter return to Johnson Controls (freight pre-paid by Buyer) all defective parts. Nothing herein is intended to provide warranty coverage to lessees or anyone other than Buyer and no third-parties are intended to be beneficiaries of this Limited Warranty.

If you are interested in adding additional coverage, contact your local JCI branch for more information about extended warranty.

The extended warranty is in accordance with BE Global Intercompany Equipment Warranty Policy 17-16.101.BEQ.

Customer Signature: _____

Johnson Controls Representative: _____

Date: _____

STANDARD LIMITED WARRANTY
ENGINEERED SYSTEMS EQUIPMENT

SERVICE POLICY	Su persed es: 50.05-NM2 (812)	Form 50.05-NM2 (1212)

POLICY STATEMENT

Johnson Controls (JCI) warrants all equipment and associated factory supplied materials or start-up services performed by Johnson Controls in connection therewith, against defects in workmanship and material for a period of eighteen (18) months from date of shipment, or twelve (12) months from date of start up, whichever occurs first. Subject to the exclusions listed below, Johnson Controls, at its option, will repair or replace, FOB point of shipment, such products or components as it finds defective.

Except for reciprocating replacement compressors, which Johnson Controls warrants for a period of twelve (12) months from date of shipment, Johnson Controls warrants Johnson Controls reconditioned or replacement materials, or installation or start-up services performed by Johnson Controls in connection therewith, against defects in workmanship and material for a period of (90) days from date of shipment.

The above represents the minimum warranty policy Johnson Controls will extend to customers. Additional product specific coverage is provided as outlined in related warranty policies. No warranty repairs or replacements will be made until payment for all equipment, materials, or components has been received by Johnson Controls.

EXCLUSIONS:

Unless specifically agreed to in the contract documents, this warranty does not include the following costs and expenses:

1. Labor to remove or reinstall any equipment, materials or components.
2. Shipping, handling or transportation charges, including cranes, safety walks or other safety requirements specific to jobsites.
3. Cost of refrigerant.
4. Freight damage.
5. Field applied coatings added to any surface or heat exchanger
6. Rental Chillers.

ALL WARRANTIES ARE VOID IF:

1. Equipment is used with refrigerants, oil, additives, or antifreeze agents other than those authorized by supplying factory.
2. Equipment is used with any material or any equipment such as evaporators, tubing, other low side equipment or refrigerant controls not approved by supplying factory
3. Equipment has been damaged by freezing because it was not properly protected during cold weather or damaged by fire or any other conditions not ordinarily encountered.
4. Equipment is not installed, operated, maintained and serviced in accordance with instructions issued by Johnson Controls.
5. Equipment is damaged due to dirt, air, moisture, or other foreign matter entering the refrigerant system.
6. Equipment is not properly stored, protected, or inspected by the customer during the period from date of shipment to date of initial start-up.
7. Field coating of coil has occurred.
8. Equipment is damaged due to acts of god, abuse, including shipping damage, neglect, sabotage, or acts of terrorists.
9. Equipment has modifications carried out that have an effect on the original design of the product without such work being authorized by the factory. Any on site design changes or unit modification/replacement shall be authorized in advance by the factory.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES AND LIA BILITIES, EXPRESS OR IMPLIED IN LAW OR IN FACT, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE WARRANTIES CONTAINED HERE IN SET FORTH BUYER" S SOLE AND EXCLUSIVE REMEDY IN THE EVENT OF A DEFECT IN WORKMANSHIP OR MATERIALS. IN NO EVENT SHALL JOHNSON CONTROLS" LIABILITY FOR DIRECT OR COMPENSATORY DAMAGES EXCEED THE PAYMENTS RECEIVED BY JOHNSON CONTROLS FROM BUYER FOR THE MATERIAL OR EQUIPMENT INVOLVED, NOR SHALL JOHNSON CONTROLS BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES. THESE LIMITATIONS ON LIABILITY AND DAMAGES HALL APPLY UNDER ALL THEORIES OF LIABILITY OR CAUSES OF ACTION, INCLUDING BUT NOT LIMITED TO, CONTRACT, WARRANTY, TORT, (INCLUDING NEGLIGENCE) OR STRICT LIABILITY.THE ABOVE LIMITATIONS SHALL INURE TO THE BENEFIT OFJOHNSON CONTROLS SUPPLIERS AND SUBCONTRACTORS.

Equipment Release Approval Form

SUBMITTAL NOTES

Product Type: YLAA - Air-Cooled Chiller

Unit Tags: CH-1,2,3

The following table must be completed prior to releasing the equipment for fabrication. Please initial the column indicating the information contained in this submittal has been verified, or indicate to refer to a marked-up page.

SUBMITTAL VERIFICATION	
	Purchaser Initials
Electrical voltage and electrical connections are compatible with jobsite requirements.	
Piping / Ductwork connections shown in this submittal are correct .	
Unit tag designations are correct.	
Equipment dimensions (length, width, and height) and weights have been verified to comply with jobsite conditions and rigging requirements. Please indicate approval by your initials on all included drawings.	
Verify “Unit Hand” of any Air Handling Equipment per the definition provided on the **“Equipment Release / Configuration Process”** form.	

SUBMITTAL VERIFICATION	
	Purchaser Initials
Indicate equipment configuration choices on the **Equipment Release /Configuration Process** form (if included on this Submittal package), and sign the form.	

Important Notes:

1) Actual fabrication release cannot commence until this form is signed by the customer and returned to JCI along with a release notification want date and ship to address.

2) Equipment "lead-time" does not start until confirmed release documentation is received, and the order is actually released to the factory.

3) Modifications to equipment configurations after fabrication release may impact cost and lead-time

4) Attached configurations are as shown in the approved equipment submittals or as defined in superseding customer correspondence.

5) AHU "Side" / "Hand" orientation is relative to a person standing inside an AHU with air hitting the back of the head.

6) Note that once this document is confirmed, the equipment configurations defined by this document take precedence over all other documents.

7) "Want date" and/or "ship to address" changes made after this document is confirmed may impact cost and lead-time.

8) Air handler drawings also include shipping split explosions with corresponding weights and dimensions. If additional splits are required, there will be additional costs and the unit length will increase.

Please fill out the following table and refer to the receiving/rigging instructions in this submittal to help ensure a smooth delivery and installation of the equipment.

DELIVERY INFORMATION	
	Please fill out information below
Contact name for coordinating delivery of equipment with transportation company	
Contact phone number	
Advance notice required from transportation company prior to delivering equipment (typically 48 hours)	
Ship to address:	
Other special shipping instructions or requirements	

CUSTOMER APPROVAL:

Customer Name: _____

Signature (*) _____

Date: _____