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Inspections Division
Approved with Conditions

SUBMITTAL DATA

Date: 11/03/15

JOB NAME: Shipyard Brewery Upgrades

DATE: July 17, 2015

EQUIPMENT: CH-1 & CH-2

Owner:	Contractor:	Submitted By:
Shipyard Brewing Co Attn: Paul Hendry 86 Newbury Street Portland, ME 04101	Mechanical Services, Inc. Attn: James Dwyer 400 Presumpscot Street Portland, ME 04103	Johnson Controls, Inc Ryan MacLean 477 Congress Street, 6th Floor Portland, ME 04101

NOTES:

- Please note evaporator is three pass, inlet and outlet piping connections are on opposite ends
- A (1) year parts and labor warranty is included as well as a (5) year compressor parts only warranty
- Please note revised footprint, performance, and electrical data from previous design documents

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Inspections Division
Approved with Conditions

Date: 11/03/15

TABLE OF CONTENTS

(DX Air Cooled VSD Screws)

BOM Data

Unit Spec Text

Unit And Wiring Drawings

Performance Ratings

Receiving / Rigging

Equipment Release/Configuration Form

Warranties

Submittal Approval Page

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Inspections Division
Approved with Conditions

Bill Of Material (BOM) Data Section

Date: 11/03/15

Product Type: DX Air Cooled VSD Screws

Unit Tags: CH-1, CH-2

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BILL OF MATERIAL DATA

Date: 11/03/15

EQUIPMENT	**DX Air Cooled VSD Screws**
UNIT TAGS	**CH-1, CH-2**
QTY	**2**

Items Included by Johnson Controls

- Provide Model YVAA0248CSV46BA: Qty: 2 (135 tons output at design conditions)
- Refrigerant Type: R134a
- 460/3/60 Application
- Control Transformer supplied.
- Power Connection: Single Point Non-Fused Disc. Switch w/Lockable Handle
- Starter Type: VSD
- TEAO Fan Motors
- 1-1/2" Thick Insulation of Evaporator
- Condenser Coils with Dipped Cured Phenolic Coating Fins
- Service Isolation Valves
- Louvered Enclosure Panels for Condenser only.
- Low Sound Condenser Fan Motors with VFDs
- Compressor Sound Attenuator
- Low Temperature Brine Application
- Water Box Heaters (require separate 120/1 feed by others in field)
- One Flow Switch per chiller (field installed by others, for flow verification only – not measurement)
- Three pass evaporator
- Neoprene Vibration Isolators (field installed by others)
- 1 year parts and labor warranty on entire unit (refrigerant not covered)
- 5 year compressor parts warranty
- Startup by JCI Service
- One Unit to have modified orifice for low temp/low load operation

NOT INCLUDED: BMS Interfacing Assistance, Maintenance Agreement, Rigging, Dedicated Trucks, Pumps, Glycol Makeup, Expansion or Buffer Tanks, Extended Labor Warranty, Refrigerant Warranty

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Inspections Division
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Unit Specification Text Section

Date: 11/03/15

Product Type: DX Air Cooled VSD Screws

Unit Tags: CH-1, CH-2

Air Cooled Screw Liquid Chiller -YORK YVAA R134a 50Hz &
Guide Specifications

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Inspections Division
Approved with Conditions

Date: 11/03/15

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

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.

1.02 SCOPE

Provide Microprocessor controlled, twin-screw 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 fluid connections
5. Manufacturer start-up

1.03 QUALITY ASSURANCE

A. 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

B. 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.

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

D. 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.

1.04 DELIVERY AND HANDLING

A. 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.

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

C. Unit shall be stored and handled per Manufacturer's instructions.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 11/03/15

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. The design shown on the Drawings is based on YORK model YVAA chiller manufactured by Johnson Controls / YORK. Alternate equipment will be acceptable if the manufacturer's equipment meets the scheduled performance and complies with these specifications. If equipment manufactured by a manufacturer other than that scheduled is utilized, then the Mechanical Contractor shall be responsible for coordinating with the General Contractor and all affected Subcontractors to insure proper provisions for installation of the furnished unit. This coordination shall include, but not be limited to, the following:

1. Structural supports for units.
2. Piping size and connection/header locations.
3. Electrical power requirements and wire/conduit and overcurrent protection sizes.
4. Chiller physical size on plant layout.
5. Site noise considerations.

B. The Mechanical Contractor shall be responsible for all costs incurred by the General Contractor, Subcontractors, and Consultants to modify the building provisions to accept the furnished alternate equipment.

2.02 GENERAL

A. Description: Furnish, Install, and Commission factory assembled, charged, and operational run tested air-cooled screw compressor chiller as specified herein and shown on the Drawings. Chiller shall include, but is not limited to: a complete system with multiple independent refrigerant circuits, semi hermetic twin screw compressors, shell and tube hybrid falling film type evaporator, air-cooled condenser, R134a refrigerant, lubrication system, interconnecting wiring, safety and operating controls including capacity controller, control center, motor starting components, and special features as specified herein or required for safe, automatic operation.

B. Operating Characteristics:

1. Provide low and high ambient temperature control options as required to ensure unit is capable of operation from 0°F to 125°F (-18°C to 52°C) ambient temperature.
2. Provide capacity control system capable of reducing unit capacity to 10% of full load for 2 compressor units. Compressor shall start in unloaded condition. Application of factory installed hot gas bypass shall be acceptable as required to meet specified minimum load.

C. Cabinet: Unit panels, structural elements, control boxes and heavy gauge structural base shall be constructed of painted galvanized steel. All exposed sheet steel shall be coated with baked on powder paint to meet 500-hour salt spray test in accordance with the ASTM B117 standard.

D. Shipping: Unit shall ship in one piece and shall require installer to provide only a single evaporator inlet and outlet pipe connection. If providing chiller model that ships in multiple pieces, bid shall include all the material and field labor costs for factory authorized personnel to install a trim kit to connect the pieces as well as all interconnecting piping and wiring.

2.03 COMPRESSORS

A. Compressors: Shall be direct drive, semi hermetic, rotary twin-screw type, including: muffler, temperature actuated 'off-cycle' heater, rain-tight terminal box, discharge shut-off service valve, suction shut-off service valve for each compressor, and precision machined cast iron housing. Design working pressure of

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 11/03/15

entire compressor, suction to discharge, shall be 350 psig (24 barg) or higher. Compressor Recognized.

B. Compressor Motors: Refrigerant suction-gas cooled accessible hermetic compressor motor, f flow through 0.006" (0.1524 mm) maximum mesh screen, with inherent internal the protection and external current overload on all three phases.

C. Balancing Requirements: All rotating parts shall be statically and dynamically balanced.

D. Lubrication System: External oil separators with no moving parts, 450 psig (31 barg) design working pressure, and ETL listing shall be provided on the chiller. Refrigerant system differential pressure shall provide oil flow through service replaceable, 0.5 micron, full flow, cartridge type oil filter internal to compressor. Filter bypass, less restrictive media, or oil pump not acceptable.

E. Capacity Control: Compressors shall start at minimum load. Provide Microprocessor control to command compressor capacity to balance compressor capacity with cooling load.

2.04 REFRIGERANT CIRCUIT COMPONENTS

A. Refrigerant: R-134a. Classified as Safety Group A1 according to ASHRAE 34.

B. Equipment supplied shall comply with LEED Energy & Atmosphere Credit 4, Enhanced Refrigerant Management.

C. Each independent refrigerant circuit shall incorporate all components necessary for the designed operation including: liquid line shut-off valve with charging port, low side pressure relief device, removable core filter-drier and sight glass with moisture indicator.

D. Chiller manufacturer shall provide an independent circuit for each compressor to provide maximum redundancy during chiller operation. If equipment does not have independent circuits per compressor, manufacturer shall provide owner one spare compressor of each unique size.

E. Discharge lines shall be provided with manual compressor shut-off service valves.

2.05 HEAT EXCHANGERS

A. Evaporator:

1. Evaporator shall be shell and tube, hybrid falling film type with 3 pass arrangement to optimize efficiency and refrigerant charge. Tubes shall be high-efficiency, internally and externally enhanced type copper tubes with 0.035" (0.89 mm) minimum wall thickness at all intermediate tube supports to provide maximum tube wall thickness at the support area. Each tube shall be roller expanded into the tube sheets providing a leak proof seal, and be individually replaceable. Independent refrigerant circuits shall be provided per compressor.

2. Constructed, tested, and stamped in accordance with applicable sections of ASME pressure vessel code for minimum 235 psig (16 barg) refrigerant side design working pressure and 150 psig (10 barg) liquid side design working pressure.

3. Water boxes shall be removable to permit tube cleaning and replacement. Water boxes shall include liquid nozzle connections suitable for ANSI/AWWA C-606 couplings, welding, or flanges.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 11/03/15

4. Provide vent and drain fittings, and thermo-statically controlled heaters to protect to ambient temperature in off-cycle. A separate power connection for evaporator heaters i shall be provided by the Contractor.

5. Connection location: Chilled liquid inlet and outlet nozzle connections are located at control panel) end of unit.

B. Air-cooled Condenser:

1. Condenser coils shall be microchannel type, parallel flow aluminum alloy tubes metallurgically brazed as one piece to enhanced aluminum alloy fins. Condenser coils shall be made of a single material to avoid galvanic corrosion due to dissimilar metals. Tube and fin type condenser coils are an acceptable alternate when tubes and fins are fabricated of the same metal material to avoid galvanic corrosion due to dissimilar metals. Coils shall be post-coated with an electro-deposited and baked flexible epoxy coating that is finished with a polyurethane UV resistant top-coat suitable for highly corrosive applications. Unit shall include Louvered Panels Painted steel to match unit panels, over internal components.

2. 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.

3. Fan Motors: High efficiency, direct drive, 3-phase, insulation class “F”, current protected, Totally Enclosed Air-Over (TEAO), with double sealed, permanently-lubricated ball bearings. Open Drip Proof (ODP) fan motors will not be acceptable.

2.06 INSULATION

A. Material: Closed-cell, flexible, UV protected, thermal insulation complying with ASTM C 534 Type 2 (Sheet) for preformed flexible elastomeric cellular thermal insulation in sheet and tubular form.

B. Thickness: 3/4" (19mm.)

C. Thermal conductivity: 0.26 (BTU/HR-Ft2-°F/in) maximum at 75°F mean temperature.

D. Factory-applied insulation over cold surfaces of liquid chiller components including evaporator shell, water boxes, and suction line. Liquid nozzles shall be insulated by Contractor after pipe installation.

E. Adhesive: As recommended by insulation manufacturer and applied to 100 percent of insulation contact surface including all seams and joints.

2.07 ACOUSTICAL DATA

A. Provide acoustical sound power or sound pressure level data in decibels (dB) at the scheduled eight (8) octave band center frequencies. A-weighted sound data alone is not acceptable.

B. Provide all sound power or sound pressure level data at 100%, 75%, 50%, and 25% load.

C. Supplied equipment shall not exceed scheduled sound power or sound pressure level data at any load point. The mechanical Contractor shall be responsible for any additional costs associated with equipment deviation.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 11/03/15

D. Acoustical performance ratings shall be in accordance with AHRI Standard 370.

2.08 POWER AND ELECTRICAL REQUIREMENTS

A. Power/Control Panel:

1. Factory installed and wired NEMA 3R, powder painted steel cabinets with tool lockable, hinged, latched, and gasket sealed outer doors equipped with wind struts for safer servicing. Provide main power connection(s), compressor starters and fan motor contactors, current overloads, and factory wiring.
2. Panel shall include control display access door.

B. Single Point Power:

1. Provide single point power connection to chiller, shall be 3 phase of scheduled voltage.
2. Single Point Disconnect: A non-fused disconnect and lockable external handle shall be provided at the point of incoming single point connection for field connection, interconnecting wiring to the compressors, and isolating the unit power voltage for servicing. Separate external fusing must be supplied, by others, in the incoming power wiring which must comply with local codes.

C. Control Transformer: Power panel shall be supplied with a factory mounted and wired control transformer that will supply all unit control voltage from the main unit power supply. Transformer shall utilize scheduled line voltage on the primary side and provide 115V/1Ø on secondary.

D. Short Circuit Withstand Rating of the chiller electrical enclosure shall be (380, 400, & 460V: 50,000 Amps.) Rating shall be published in accordance with UL508.

E. Motor Starters: Motor starters shall be zero electrical inrush current (Variable Frequency Drives) or reduced inrush type (Closed transition Wye-Delta or Solid State) for minimum electrical inrush. Open transition Wye-Delta and Across the Line type starters will not be acceptable.

F. Power Factor:

1. Provide equipment with power factor correction capacitors as required to maintain a displacement power factor of 95% at all load conditions.
2. The installing contractor is responsible for additional cost to furnish and install power factor correction capacitors if they are not factory mounted and wired.

G. All exposed power wiring shall be routed through liquid-tight, UV-stabilized, non-metallic conduit.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 11/03/15

H. Supplied equipment shall not exceed scheduled Minimum Circuit Ampacity mechanical Contractor shall be responsible for any additional costs assc equipment deviation.

2.09 CONTROLS

A. General:

1. Provide automatic control of chiller operation including compressor start/stop and load/unload, anti-recycle timers, condenser fans, evaporator pump, evaporator heater, unit alarm contacts and run signal contacts.
2. Chiller shall automatically reset to normal chiller operation after power failure.
3. Unit operating software shall be stored in non-volatile memory. Field programmed set points shall be retained in lithium battery backed regulated time clock (RTC) memory for minimum 5 years.
4. Alarm contacts shall be provided to remote alert for any unit or system safety fault.

B. Display and Keypad:

1. Provide minimum 80 character liquid crystal display that is both viewable in direct sunlight and has LED backlighting for nighttime viewing. Provide one keypad and display panel per chiller.
2. Display and keypad shall be accessible through display access door without opening main control/electrical cabinet doors.
3. Display shall provide a minimum of unit setpoints, status, electrical data, temperature data, pressures, safety lockouts and diagnostics without the use of a coded display.
4. Descriptions in English (or available language options), numeric data in English (or Metric) units.
5. Sealed keypad shall include unit On/Off switch.

C. Programmable Setpoints (within Manufacturer limits): Display language, chilled liquid cooling mode, local/remote control mode, display units mode, system lead/lag control mode, remote temperature reset, remote current limit, remote sound limit, low ambient temperature cutout enable/disable, leaving chilled liquid setpoint and range, maximum remote temperature reset.

D. Display Data: Chilled liquid leaving and entering temperatures; outside ambient air temperature; lead system; evaporator pump status; active remote control; compressor suction, discharge, and oil pressures per refrigerant circuit; compressor discharge, motor, and oil temperatures per refrigerant circuit; saturation temperatures per refrigerant circuit; compressor speed; condenser fan status; condenser subcooling temperature; condenser drain valve percentage open; compressor capacity in percentage of Full Load Amps; compressor number of starts; run time; operating hours; evaporator heater status; history data for last ten shutdown faults; history data for last 20 normal (non-fault) shutdowns.

Reviewed for Code Compliance
Inspections Division
Approved with Conditions
Date: 11/03/15

E. Predictive Control Points: Unit controls shall avoid safety shutdown whe outside design conditions by optimizing the chiller controls and cooling lo stay online and avoid safety limits being reached. The system shall monitor tl parameters and maintain the maximum cooling output possible without shut equipment: motor current, suction pressure, discharge pressure, starter inter temperature, and starter baseplate temperature.

F. System Safeties: Shall cause individual compressor systems to perform auto-reset shut down if: high discharge pressure or temperature, low suction pressure, low motor current, high/low differential oil pressure, low discharge superheat, high motor temperature, system control voltage.

G. Unit Safeties: Shall be automatic reset and cause compressors to shut down if: high or low ambient temperature, low leaving chilled liquid temperature, under voltage, flow switch operation. Contractor shall provide flow switch and wiring per chiller manufacturer requirements.

H. 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.

2.10 ACCESSORIES AND OPTIONS

Some accessories and options supersede standard product features. All options are factory-mounted unless otherwise noted.

A. CONTROLS OPTIONS:
1. Gateway: Provides communication for Building Automation Systems, including BACnet (MS/TP), Modbus, N2, and LON. **(Field Commissioned by BAS Manufacturer)**

B. GENERAL OPTIONS:
1. Flow Switch: Vapor proof SPDT, NEMA 3R switch, 150 psig (10.3 barg), -20°F to 250°F (-28.9°C to 121.1°C). (Field Mounted by Contractor)
2. Vibration Isolation (All Options Field Mounted by Contractor):
   Provide Elastomeric Isolators

PART 3 - EXECUTION

3.01 INSTALLATION

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

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Inspections Division
Approved with Conditions
Date: 11/03/15

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

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

D. Electrical: Coordinate electrical requirements and connections for all power feeds with Electrical Contractor.

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

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

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Unit and Wiring Drawings Section

Date: 11/03/15

Product Type: DX Air Cooled VSD Screws

Unit Tags: CH-1, CH-2

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Date: 11/03/15

NOTES:

1. PLACEMENT ON A LEVEL SURFACE FREE OF OBSTRUCTIONS (INCLUDING SNOW, FOR WINTER OPERATION) OR AIR RECIRCULATION ENSURES RATED PERFORMANCE, RELIABLE OPERATION AND EASE OF MAINTENANCE. SITE RESTRICTIONS MAY COMPROMISE MINIMUM CLEARANCES INDICATED BELOW, RESULTING IN UNPREDICTABLE AIR FLOW PATTERNS AND POSSIBLE DIMINISHED PERFORMANCE. YORK'S UNIT CONTROLS WILL OPTIMIZE OPERATION WITHOUT NUISANCE HIGH PRESSURE SAFETY CUTOUT; HOWEVER, THE SYSTEM DESIGNER MUST CONSIDER POTENTIAL PERFORMANCE DEGRADATION, ACCESS TO THE UNIT CONTROL CENTER ASSUMES THE UNIT IS NO HIGHER THEN ON SPRING ISOLATORS RECOMMENDED MINUMUM CLEARANCES:
   SIDE TO WALL 6' REAR TO WALL - 6'; CONTROL PANEL TO WALL - 4';
   TOP - NO OBSTRUCTIONS ALLOWED; DISTANCE BETWEEN ADJACENT UNITS - 10'. NO MORE THEN ONE ADJACENT WALL MAY BE HIGHER THEN THE UNIT.
2. WEIGHTS (LB):SHIPPING - 19,217, OPERATING - 19,980.
3. CENTER OF GRAVITY FROM ORIGIN: X= 169.9", Y= 44.1".
4. WATER CONNECTIONS ARE GROOVED FOR VICTAULIC CONNECTION.
5. ELASTOMERIC (NEOPRENE) ISOLATORS (NOT SHOWN) WILL INCREASE OVERALL UNIT HEIGHT BY APPROXIMATELY 2-3/4".

VIEW B-B

POWER ENTRY IS ON BOTTOM OF PANEL

VIEW A-A

POWER: SP NF DISCONNECT SWITCH W/LOCKABLE HANDLE

PRODUCT DRAWING

AIR-COOLED SCREW CHILLER
MODEL: YVAA0248CSV46
NOT FOR CONSTRUCTION

Project Name : Shipyard Brewery Upgrades
Location :
Engineer :
Contractor :
For :

Sold To :
Cust Purch Order# :
York Contract# :

UNIT TAG: CH-1, CH-2

Date : 7/17/2015 8:9:37
Rev. Date :
Form : 201.28-EG1
Dwg. Lev. : 01/11
Dwg. Scale : NTS

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Performance Ratings Section

Date: 11/03/15

Product Type: DX Air Cooled VSD Screws

Unit Tags: CH-1, CH-2

YORK®
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Air Cooled Performance

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Date: 11/03/15

Unit Tag	Qty	Model No.	Capacity (Tons)	V
CH-1, CH-2	2	YVAA0248CSV46	135.0	

Pin:

BASE MODEL	POWER	CONTROLS	PIPING	COMP	EVAPORATOR	COND	CABINET	MISC	WARR
YVAA0248CSV46BA	VNXX	XEAXLXXXX36	24XOSXX	V182W	1SXSA3B	NXV	7RNXX	XXXX	JXSX

5 10 15 20 25 30 35 40 45 50 55 60 65

Evaporator Data		Evaporator Data (Cont.)		Performance Data	
EWT (°F)	30.0	Min. Flow Rate (gpm)	200.0	EER / COP	8.3 / 2.4
LWT (°F)	24.0	Max. Flow Rate (gpm)	750.0	NPLV	12.6 / 3.7
Design Flow Rate (gpm)	574.3			Minimum Unit Capacity	10 %
Pressure Drop (ft.)	37.1	**Condenser Data**		**Physical Data**	
Fluid	P.G. 30.0%	Ambient Temp. Design (°F)	95.0	Rigging Wt. (lbs.)	19217
Fouling Factor	0.00010	Altitude (ft.)	0	Operating Wt. (lbs.)	19980
Water Volume (gal)	73.0	Ambient Temp. Min (°F)	0.0		

Electrical Data				
Circuit	1	2	3	4
Compressor RLA	158	122		
Fan QTY/FLA (each)	8/2.4	8/2.4		

Single Point				
Min. Circuit Ampacity	361			
Recommended Fuse/CB Rating	450			
Max. Inverse Time CB Rating	500			
Max. Dual Element Fuse Size (Amps)	500			
Unit Short Circuit Withstand (STD)	50 kA			
Wire Lugs Per Phase*	3			
Wire Range (Lug Size)	#2 - 600 KCM			
Unit Power Factor	0.95			
Control KVA	2.0		**Operating Condition Electrical Data**	
Starter Type	VSD		Compressor kW	188.6
			Total Fan kW	7.6
			Total kW	196.3
			Total Current at Rated Conditions	N/A

Notes:

Outside the scope of AHRI Air-Cooled Water-Chilling Packages Using Vapor Compression Cycle Certification Program, but is rated in accordance with AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI)., Auxiliary components included in total KW - Oil heaters, Chiller controls. Auxiliary power is already included in the compressor and fan power

* Use Copper Conductors only

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Air Cooled Performance

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Part Load Rating Data				
Load %	Ambient (°F)	Capacity (Tons)	Compressor kW	
100.0	95.0	135.0	188.6	
75.0	80.0	101.2	102.2	
50.0	65.0	67.5	52.1	15.3 / 4.6
25.0	55.0	33.7	21.5	15.3 / 4.5

SOUND POWER LEVELS (In Accordance with AHRI 370) – Octave Band Center Frequency, Hz YVAA0248CSV46 (Equipped with Low Sound Fans with Variable Speed Control and Low Sound Kit(level 1 reduction))										
Load %	Ambient (°F)	63	125	250	500	1K	2K	4K	8K	LWA
100.0	95.0	88.0	92.0	89.0	90.0	89.0	81.0	76.0	71.0	92.0
75.0	80.0	90.0	89.0	89.0	89.0	85.0	80.0	75.0	70.0	90.0
50.0	65.0	88.0	90.0	89.0	89.0	86.0	79.0	75.0	70.0	90.0
25.0	55.0	85.0	87.0	86.0	86.0	83.0	76.0	72.0	67.0	87.0

SOUND PRESSURE LEVELS in dB at 30.0 (ft.) ** YVAA0248CSV46 (Equipped with Low Sound Fans with Variable Speed Control and Low Sound Kit(level 1 reduction))										
Load %	Ambient (°F)	63	125	250	500	1K	2K	4K	8K	dBA
100.0	95.0	61.0	64.0	62.0	63.0	62.0	53.0	49.0	44.0	65.0
75.0	80.0	63.0	62.0	62.0	62.0	58.0	52.0	48.0	43.0	63.0
50.0	65.0	61.0	63.0	61.0	62.0	59.0	52.0	48.0	43.0	63.0
25.0	55.0	58.0	59.0	59.0	59.0	56.0	49.0	45.0	40.0	60.0

** Chiller is assumed to be a point source on a reflecting (hemispherical radiation)

YVAA0248CSV46	Performance at AHRI Conditions				
Evaporator Data		Condenser Data		Performance Data	
EWT (°F)	54.0	Ambient Temp. (°F)	95.0	EER / COP	11.0 / 3.2
LWT (°F)	44.0	Altitude (ft.)	0	EER IPLV/COP IPLV	19.8 / 5.8
Flow Rate (gpm)	512.1			Capacity (Tons)	213.4
Pressure Drop (ft.)	27.8				
Fluid	Water				
Fouling Factor	0.00010				
Water Volume (gal)	73.0				

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RECEIVING / RIGGING INSTRUCTIONS

Date: 11/03/15

The installing contractor is responsible to provide Johnson Controls / YORK with a contact to coordinate the delivery of the equipment in this submittal. Please fill out the information requested in the Submittal Approval Form section in the back of this submittal.

It is the installing contractor's responsibility to verify the following prior to signing the bill of lading presented by the transportation company:

- Ensure everything on the bill of lading was delivered.
- Visually perform a thorough inspection of all equipment for any signs of shipping damage

Any short-shipments or shipping damage must be noted on the bill of lading prior to signing.

The transportation company will provide you withinstructions for filing a claim. It is the installing contractor's responsibility to work directly with the transportation company to resolve any shipping claims.

Reviewed for Code Compliance
Inspections Division
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Warranties Section

Date: 11/03/15

Product Type: DX Air Cooled VSD Screws

Unit Tags: CH-1, CH-2

Johnson Controls	LIMITED WARRAN ENGINEERED SYST EQUIPMENT	
SERVICE POLICY	Supersedes: 50.05-NM2 (1008)	F

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Approved with Conditions

Date: 11/03/15

POLICY STATEMENT

Johnson Controls, Inc. (JCI) warrants all new Engineered Systems Equipment and materials, or installation or start-up services performed by JCI 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. This warranty does not extend to products used for rental chiller duty. Subject to the exclusions listed below, JCI, at its option, will repair or replace, FOB point of shipment, such JCI products or components as it finds defective.

Except for reciprocating replacement compressors, which JCI warrants for a period of twelve (12) months from date of shipment, JCI reconditioned or replacement materials, or installation or start-up services performed by JCI in connection therewith, warrants against defects in workmanship and material for a period of ninety (90) days from date of shipment. Subject to the exclusions listed below, JCI, at its option, will repair or replace, FOB point of shipment, such JCI products or components as it finds defective.

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.
3. Cost of refrigerant.
4. Cost of rental chillers or other temporary cooling equipment.

No warranty repairs or replacements will be made until payment for all equipment, materials, or components has been received by JCI.

ALL WARRANTIES ARE VOID IF:

1. Equipment is used with refrigerants, oil, or antifreeze agents other than those authorized by JCI.
2. Equipment is used with any material or any equipment such as evaporators, tubing, other low side equipment, or refrigerant controls not approved by JCI.
3. Equipment has been damaged by freezing because it is 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 JCI.
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. Equipment is damaged due to acts of god, abuse, neglect, sabotage, or acts of terrorists.

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 JCI'S LIABILITY FOR DIRECT OR COMPENSATORY DAMAGES EXCEED THE PAYMENTS RECEIVED BY JCI FROM BUYER FOR THE MATERIALS OR EQUIPMENT INVOLVED. NOR SHALL JCI 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 JCI'S SUPPLIERS AND SUBCONTRACTORS.

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P.O. Box 423, Milwaukee, WI 53203
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Reviewed for Code Compliance
Inspections Division
Approved with Conditions

OPTIONAL 18 MONTHS (YEAR 1) LABOR ONLY WARRANTY
FOR THE ENTIRE UNIT
YORK INTERNATIONAL CORPORATION
ENGINEERED SYSTEMS - YORK AMERICAS

Date: 11/03/15

PRODUCT TYPE: AIR COOLED
YORK CONTRACT NO.:
UNIT MODEL NUMBER: YVAA0248CSV46
UNIT SERIAL NUMBER:
UNIT TAG ID: CH-135T
UNIT LOCATION:

COMPRESSOR

PROJECT NAME: SHIPYARD BREWERY UPGRADES
Installation Address:

Shipping Date

The term of this agreement is 18 months, commencing _____ and expires _____.

LIMITED WARRANTY

WHEN PROPERLY ENDORSED, THIS PROTECTION PLAN BETWEEN YORK INTERNATIONAL CORPORATION (YORK) AND CUSTOMER, WARRANTS, TO THE CUSTOMER NAMED HEREIN, LABOR ONLY FOR THE ENTIRE UNIT. IT DOES NOT COVER REFRIGERANT COST, FREIGHT CHARGES, OR ANY OTHER COSTS.

THIS WARRANTY EXCLUDES IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND WE DO NOT ASSUME, OR AUTHORIZE ANY OTHER PERSON TO ASSUME OTHER WARRANTIES FOR US. THIS WARRANTY IS OFFERED AS AN EXTENSION TO THE STANDARD LIMITED WARRANTY (FORM 50.05-NM2) AND IS SUBJECT TO THE SAME LIMITATIONS AND EXCLUSIONS, EXCEPT WHERE NOTED.

THIS PROTECTION PLAN DOES NOT COVER FAILURE OR DAMAGE RESULTING FROM FIRE, FLOOD, ABUSE, OR ACT OF GOD. ALSO EXCLUDED ARE DAMAGES OR FAILURES CAUSED BY INSTALLATION, OPERATION, OR MAINTENANCE CONTRARY TO YORK RECOMMENDATIONS, OR THOSE OF THE MANUFACTURER IF OTHER THAN YORK. IN NO EVENT SHALL YORK BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGE, LOSS, OR INJURY. WARRANTY FOR EXCHANGE OR PARTS PROCUREMENT SERVICE SHALL BE AVAILABLE THROUGH THE SERVICER LISTED HEREIN DURING NORMAL WORKING HOURS.

DISTRICT SERVICE OFFICE: _____

OFFERED BY: _____ York Selling Representative Print/Sign _____ Date

APPROVED BY: _____ York Area Service Manager Print/Sign _____ Date

ACCEPTED BY: _____ Customer Signature _____ Date
(Manufacturer's Use Only)

AUTHORIZED BY: Robert D. Holczynski Manager, Warranty Administration 7/17/2015 AT 9:21 Date

Product Code Ref: 8123

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

OPTIONAL 66 MONTHS (5 YEAR) PARTS ONLY WARRANTY
FOR THE COMPRESSORS
YORK INTERNATIONAL CORPORATION
ENGINEERED SYSTEMS - YORK AMERICAS

PRODUCT TYPE: AIR COOLED
YORK CONTRACT NO.:
UNIT MODEL NUMBER: YVAA0248CSV46
UNIT SERIAL NUMBER:
UNIT TAG ID: CH-135T
UNIT LOCATION:

COMPRESSOR Date: 11/03/15

PROJECT NAME: SHIPYARD BREWERY UPGRADES
INSTALLATION ADDRESS:

_____
Shipping Date

The term of this agreement is 66 months, commencing _____ and expires _____.

LIMITED WARRANTY

WHEN PROPERLY ENDORSED, THIS PROTECTION PLAN BETWEEN YORK INTERNATIONAL CORPORATION (YORK) AND CUSTOMER, WARRANTS, TO THE CUSTOMER NAMED HEREIN, PARTS ONLY FOR THE COMPRESSORS. IT DOES NOT COVER REFRIGERANT COST, FREIGHT CHARGES, LABOR COST, OR ANY OTHER COSTS.

THIS WARRANTY EXCLUDES IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND WE DO NOT ASSUME, OR AUTHORIZE ANY OTHER PERSON TO ASSUME OTHER WARRANTIES FOR US. THIS WARRANTY IS OFFERED AS AN EXTENSION TO THE STANDARD LIMITED WARRANTY (FORM 50.05-NM2) AND IS SUBJECT TO THE SAME LIMITATIONS AND EXCLUSIONS, EXCEPT WHERE NOTED.

THIS PROTECTION PLAN DOES NOT COVER FAILURE OR DAMAGE RESULTING FROM FIRE, FLOOD, ABUSE, OR ACT OF GOD. ALSO EXCLUDED ARE DAMAGES OR FAILURES CAUSED BY INSTALLATION, OPERATION, OR MAINTENANCE CONTRARY TO YORK RECOMMENDATIONS, OR THOSE OF THE MANUFACTURER IF OTHER THAN YORK. IN NO EVENT SHALL YORK BE LIABLE FOR CONSEQUENTIAL, INCIDENTAL, OR INDIRECT DAMAGE, LOSS, OR INJURY. WARRANTY FOR EXCHANGE OR PARTS PROCUREMENT SERVICE SHALL BE AVAILABLE THROUGH THE SERVICER LISTED HEREIN DURING NORMAL WORKING HOURS.

DISTRICT SERVICE OFFICE: _____

OFFERED BY: _____ _____
York Selling Representative Print/Sign — Date

APPROVED BY: _____ _____
York Area Service Manager Print/Sign — Date

ACCEPTED BY: _____ _____
Customer Signature — Date

(Manufacturer's Use Only)

AUTHORIZED BY: Robert D. Holczynski — 7/17/2015 AT 9:21
Manager, Warranty Administration — Date

Product Code Ref: 8520

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Inspections Division
Approved with Conditions

Equipment Release Approval Form

Date: 11/03/15

SUBMITTAL NOTES

Product Type: DX Air Cooled VSD Screws

Unit Tags: CH-1, CH-2

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.	

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Inspections Division
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Date: 11/03/15

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.

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Date: 11/03/15

Please fill out the following table and refer to the receiving/rigging instructi
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	

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CUSTOMER APPROVAL:

Customer Name: _____

Signature (*) _____

Date: _____