ADDENDUM #1

Project Name:
ICIW Unit 9 Chiller Replacement
DAS#9302.00
RFQ 930200-01
Addendum #1
Dated: May 26, 2023

This Addendum forms a part of the Quote and contract documents. This Addendum supersedes and supplements all portions of the original quote and contract documents dated March 24, 2023, with which it conflicts.

ACKNOWLEDGE RECEIPT OF THIS ADDENDUM IN THE SPACE PROVIDED ON THE PRICING FORM. FAILURE TO DO SO MAY SUBJECT THE BIDDER TO DISQUALIFICATION.

1. BID CLARIFICATIONS

A. An additional site visit will be scheduled on 5-30-23 at 2:00 PM (CST). See RFQ for location.
B. Bids will be due on 6-7-23 @ 2:00 PM (CST)

2. SPECIFICATIONS

A. None

3. DRAWINGS

A. None

4. QUESTIONS AND CLARIFICATIONS

A. Is there a video or audio recording of the first site visit meeting? **Answer- No.**

B. What is the cost of the owner provided chiller? **Answer - $91,000.00**

5. ATTACHMENTS

A. Chiller submittal

DAVENPORT OFFICE 351 W. 76th Street, Davenport, IA 52806 • Phone: 563.324.0137
DES MOINES OFFICE 9550 White Oak Ln. Suite #100, Johnston, IA 50131 • Phone: 515.276.9005
CEDAR RAPIDS OFFICE 805 Wright Brothers Blvd. SW Suite #4, Cedar Rapids, IA 52404 • Phone: 319.366.1033

Date: 1/15/2023
Project: IDOC ICIW Unit 9 Chiller Replacement

SUBMITTAL

Contractor: Samuels Group	**Location:** Mitchellville, IA
Attn: Jason McLendon	**Architect:** N/A
Specification: 236430 Air Cooled Water Chillers	**Engineer:** IMEG
Revision: Original	**Salesperson:** Chad Raymer

Included:

☒ Performance Data	☐ Warranty	☐ Color Samples
☒ Drawings	☐ Installation & Operations Manual	☐ Other

Notes:

Please Note:

- Freeze protection external to the chiller is the responsibility of the installation contractor.

Evaporator Freeze Protection

Evaporator freeze-up can be a concern in the application of air-cooled water chillers in areas experiencing below freezing temperatures. To protect against freeze-up, insulation and an electric heater are furnished with the evaporator. AGZ-E chillers have an external plate heater and thermostat that helps protect the evaporator down to -20°F (-29°C) ambient air temperature. Although the evaporator is equipped with freeze protection, it does not protect water piping external to the unit or the evaporator itself if there is a power failure or heater burnout, or if the chiller does not directly control the chilled water pumps. Use one of the following recommendations for additional protection:

Job Information	*Technical Data Sheet*
Job Name	X23MCQ0037-CMR IDOC ICIW Unit 9 Chiller Replacement
Date	1/15/2023
Submitted By	Chad Raymer
Software Version	13.40
Unit Tag	CH9-1

Image may not represent ordered unit

Unit Overview

Model Number	Capacity ton	Voltage	Unit Starter Type	ASHRAE 90.1	LEED Enhanced Refrigerant Management Credit
AGZ091E	78.44	460 V / 60 Hz / 3 Ph	Across the Line	'07, '10, '13 & '16	Pass

Unit

Unit Type	Platform	Unit Revision
Air-Cooled Scroll Compressor Chiller	High Efficiency Packaged	0B

Head Pressure	Tubing
VFD's w/Control Box Heaters Only [High Efficiency]	Replaceable Filter Dryer with Discharge & Liquid Valves, no HGBP

Unit Controls	Display
Electronic Expansion Valve	On Controller only

Refrigerant Type	Refrigerant Weight
R410A	90 lb (per unit)

Pump Controls
Dual Evaporator Pumps - Dual Control Output

Approval
ETL/cETL, AHRI & ASHRAE 90.1

Evaporator

Fluid Volume:	5.9 gal
Connection Hand:	Universal Connection - Facing out back
Connection Size:	3.0 in
Insulation:	Single Layer Insulation to Suction at each Compressor

Entering Fluid Temperature	Leaving Fluid Temperature	Fluid Type	Glycol Concentration	Fluid Flow	Fluid Flow (with glycol) Min / Max	Pressure Drop	Pressure Drop (with glycol) Min / Max	Fouling Factor
56.00 °F	44.00 °F	Propylene Glycol	50.0 %	179.1 gpm	143.4 / 382.4 gpm	20.6 ft H_2O	12.1 / 67.2 ft H_2O	0.000100 °F.ft².h/Btu

Note: Evaporator Pressure Drop includes Factory Installed Strainer. Pressure drop without strainer is 17.6. Minimum flow is based on a Constant Flow Pumping System Type.

Condenser

Coil Fins:	MicroChannel
Guards:	Condenser Coil Louvers & Base Frame Louvers

Design Ambient Air Temperature	Altitude	Fan Diameter	Minimum Design Ambient Temperature
105.0 °F	0.000 ft	30.0 in	0.0 °F

Unit Performance

Design			
Capacity	**Input Power**	**Efficiency (EER)**	**IPLV.IP (EER)***
78.44 ton	107.0 kW	8.793 Btu/W.h	17.55 Btu/W.h

Performance Points rated at AHRI Ambient Relief - with Glycol

Unit					Evaporator				Condenser	
Point #	**% Load**	**Capacity** ton	**Input Power** kW	**Efficiency (EER)** Btu/W.h	**Fluid Flow** gpm	**Pressure Drop** ft H_2O	**Entering Fluid** °F	**Leaving Fluid** °F	**Ambient Air** °F	**Altitude** ft
1	100.0	78.44	107.0	8.793	179.1	17.6	56.00	44.00	105.0	0.000
2	90.0	70.59	82.66	10.25	179.1	17.5	54.80	44.00	97.5	0.000
3	80.0	62.75	64.33	11.70	179.1	17.5	53.60	44.00	90.0	0.000
4	70.0	54.91	49.99	13.18	179.1	17.5	52.40	44.00	82.5	0.000
5	60.0	47.06	38.54	14.65	179.1	17.5	51.20	44.00	75.0	0.000
6	50.0	39.22	28.19	16.69	179.1	17.5	50.00	44.00	67.5	0.000
7	40.0	31.37	20.00	18.82	179.1	17.5	48.80	44.00	60.0	0.000
8	30.0	23.53	13.52	20.88	179.1	17.5	47.60	44.00	55.0	0.000
9	20.0	This load point is below the chiller minimum load.								
10	10.0	This load point is below the chiller minimum load.								

** IPLV reflects AHRI standard rating conditions with water and does not change with user defined conditions*
Note: Evaporator Pressure Drop in this table does Not include strainer. For strainer pressure drop data see 'Evaporator' table on page 1.

Sound (without insulation)

Sound Pressure (*at 30 feet*)

63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA
67	67	67	64	62	56	54	54	**67**	66	64	63

Sound Power

63 Hz dB	125 Hz dB	250 Hz dB	500 Hz dB	1 kHz dB	2 kHz dB	4 kHz dB	8 kHz dB	Overall dBA	75% Load dBA	50% Load dBA	25% Load dBA
94	95	92	91	89	83	81	81	**93**	92	90	89

Octave band is non 'A' weighted and overall readings are 'A' weighted. Sound data rated in accordance with AHRI Standard-370.

Physical

Unit

Length*	Height	Width*	Shipping Weight*	Operating Weight*
150 in	99 in	88 in	5100 lb	5169 lb

**Shipping and Operating Weights are based on 'worst case' unit configuration variations and include the below listed Option weights but do not include the weights of any Accessories. Contact Chiller Applications for additional information.*

Option Weights

Louvers:	560 lb
Total:	560 lb

Note: Option weights shown may be 'worst case' and should not be used to calculate unit weight without the option present.

Electrical

Unit Electrical Data

Voltage	Starter Type	Fan Motor Quantity	LRA Fan Motor (each)	FLA Fan Motors (each)
460 V / 60 Hz / 3 Ph	Across the Line	6	17.8 A	3.6 A

Power Connection Type:	Single Point Disconnect Switch with Circuit Protection
Short Circuit Current Rating:	5 kA
Phase Voltage:	Phase & Under/Over Voltage Protection with LED

Single Point Power Connection

Minimum Circuit Ampacity (MCA):	175 A
Recommended Overcurrent Protection Size:	200 A
Maximum Overcurrent Protection Size(MOCP):	200 A
Lug Connection Size:	(1) 4 - 300 MCM

Compressor Electrical Data

Compressor Type	Compressor Quantity	Starter Type
Scroll	4	Across the Line

Circuit #:	**1**		**2**	
Compressor #:	**1**	**3**	**2**	**4**
Rated Load Amps (RLA):	30.8 A	37.8 A	30.8 A	37.8 A
Inrush Current:	229 A	320 A	229 A	320 A

Note: Power wiring connections to the chiller may be done with either copper or aluminum wiring. Wire should be sized per NEC and/or local codes. Wire sizing and wire count must fit in the power connection lug sizing listed above. Please contact your local sales office for more information.

Options

Basic Unit

Control Box Ambient:	High Ambient with Exhaust Fans (125ºF maximum)
Suction Shut-off Valve:	Included
Evaporator Strainer:	Factory Installed Evaporator Strainer – 175 PSI Pressure Rating

Control

Communication:	BACnet MS/TP

Electrical

Water Flow Indicator:	Thermal Dispersion Type

Warranty

Unit Startup	Domestic
Standard Warranty:	1st Year Entire Unit Parts & Labor
Extended Compressor Warranty:	Compressor Only; extended 4 years parts & labor (5 Years Total)

AHRI Certification

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 liquids in the evaporator and is certified when rated per the Standard with water.

Performance at AHRI Standard Condition – with Water

Unit					Evaporator				Condenser	
% Load	Capacity ton	Input Power kW	Efficiency (EER) Btu/W.h	IPLV.IP* (EER) Btu/W.h	Fluid Flow gpm	Pressure Drop ft H_2O	Entering Fluid °F	Leaving Fluid °F	Ambient Air °F	Altitude ft
100	87.70	98.36	10.70	17.55	209.9	11.9	54.00	44.00	95.0	0.000

Note: Performance with water given as reference only to show compliance with AHRI Standard 550/590. Unit will be configured from the factory to support glycol performance as rated. The unit must not operate with water only without consulting the factory.

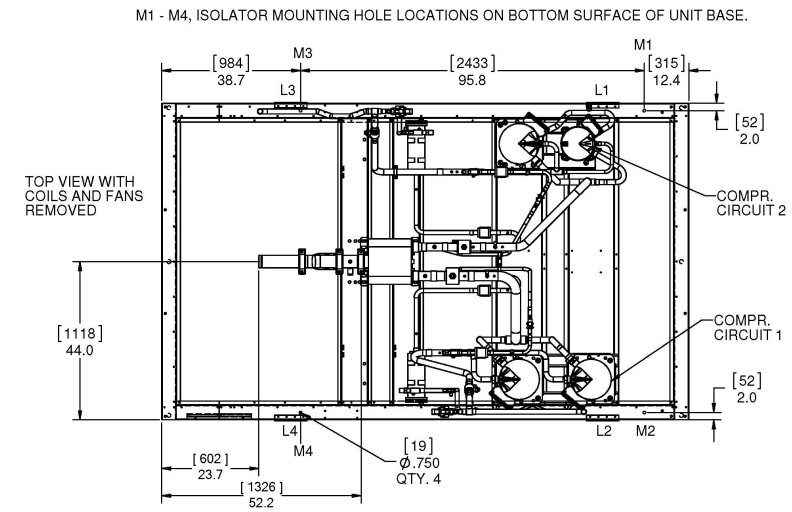
Accessories

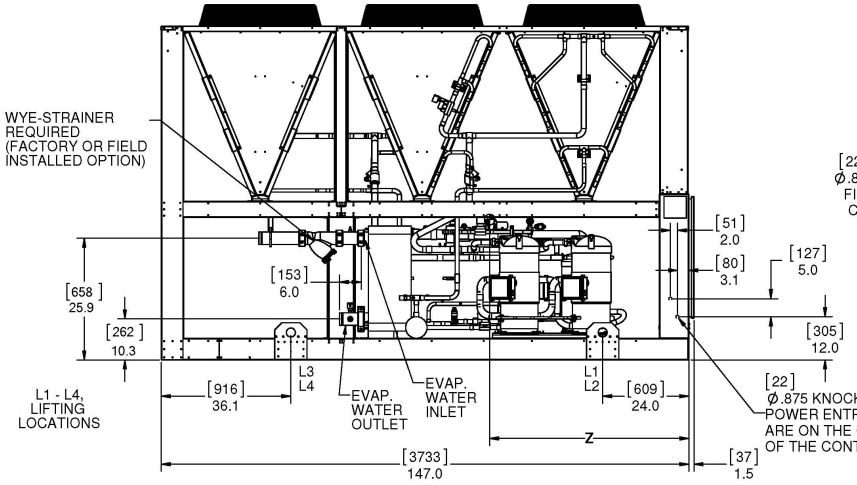
Optional

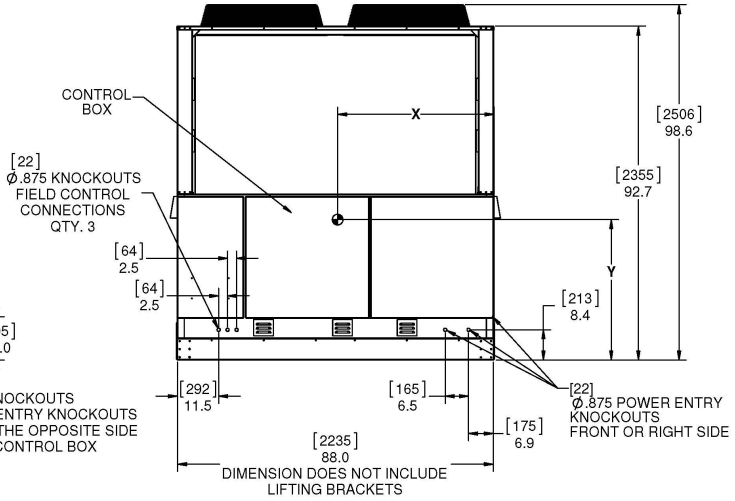
Part Number	Description
332325101	RIS Isolator Kit; AGZ: Packaged, Microchannel,Al&Cu Fins, 030-071E (non-Seismic),25-65D,30-65C; M'Chnl,75-101E (non-S'mc); Al Fin,70C/D;Remote,Al&Cu Fin,30-70E (non-S'mc); Pump Pkg, M'Chnl&Al Fin,30-65E (non-S'mic); Cu Fin,30-55E(non-S'mic)

AGZ091E Packaged (Microchannel Condenser)

Unit Dimensions







Unit Weight Data										
Units	Weight		Lifting Weight				Mounting Weight			
	Shipping	Operating	L1	L2	L3	L4	M1	M2	M3	M4
lb	4540	4609	1456	1466	806	812	1276	1285	1020	1028
kg	2059	2091	660	665	366	368	579	583	463	466

Unit and Center of Gravity Dimensions						
Units	A (No Strainer)	B (With Strainer)	Connection Size (Victaulic)	Center of Gravity		
				X	Y	Z
in	54.4	25.9	3.0	44.2	39.2	55.0
mm	1382	658	76	1122	995	1397

NOTE
A water strainer must be installed at the inlet of the evaporator to protect it from damage. Please refer to the IOM for additional details.

Product Drawing	Unit Tag: CH9-1			Sales Office: Mechanical Sales, Inc.		
Product: Air-Cooled Scroll Chiller	Project Name: X23MCQ0037-CMR IDOC			Sales Engineer: Chad Raymer		
Model: AGZ091E	Jan. 15, 2023	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 1.0"	Dwg Units: in [mm]

DAIKIN
13600 Industrial Park Blvd. Minneapolis, MN 55441
www.DaikinApplied.com
Software Version: 13.40

No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job specifications.

AGZ-E Guards: Condenser Coil and Base Louvers, Painted Base

Diagram Notes
Diagram simulates wrap, grille and louver options as selected only. Refrigeration components may vary depending on selected options.

Product Drawing	Unit Tag: CH9-1			Sales Office: Mechanical Sales, Inc.			DAIKIN
Product: Air-Cooled Scroll Chiller	Project Name: X23MCQ0037-CMR IDOC			Sales Engineer: Chad Raymer			13600 Industrial Park Blvd. Minneapolis, MN 55441
Model: AGZ075-101E	Jan. 15, 2023	Ver/Rev:	Sheet: 1 of 1	Scale: N/A	Tolerance: N/A	Dwg Units: N/A	www.DaikinApplied.com Software Version: 13.40

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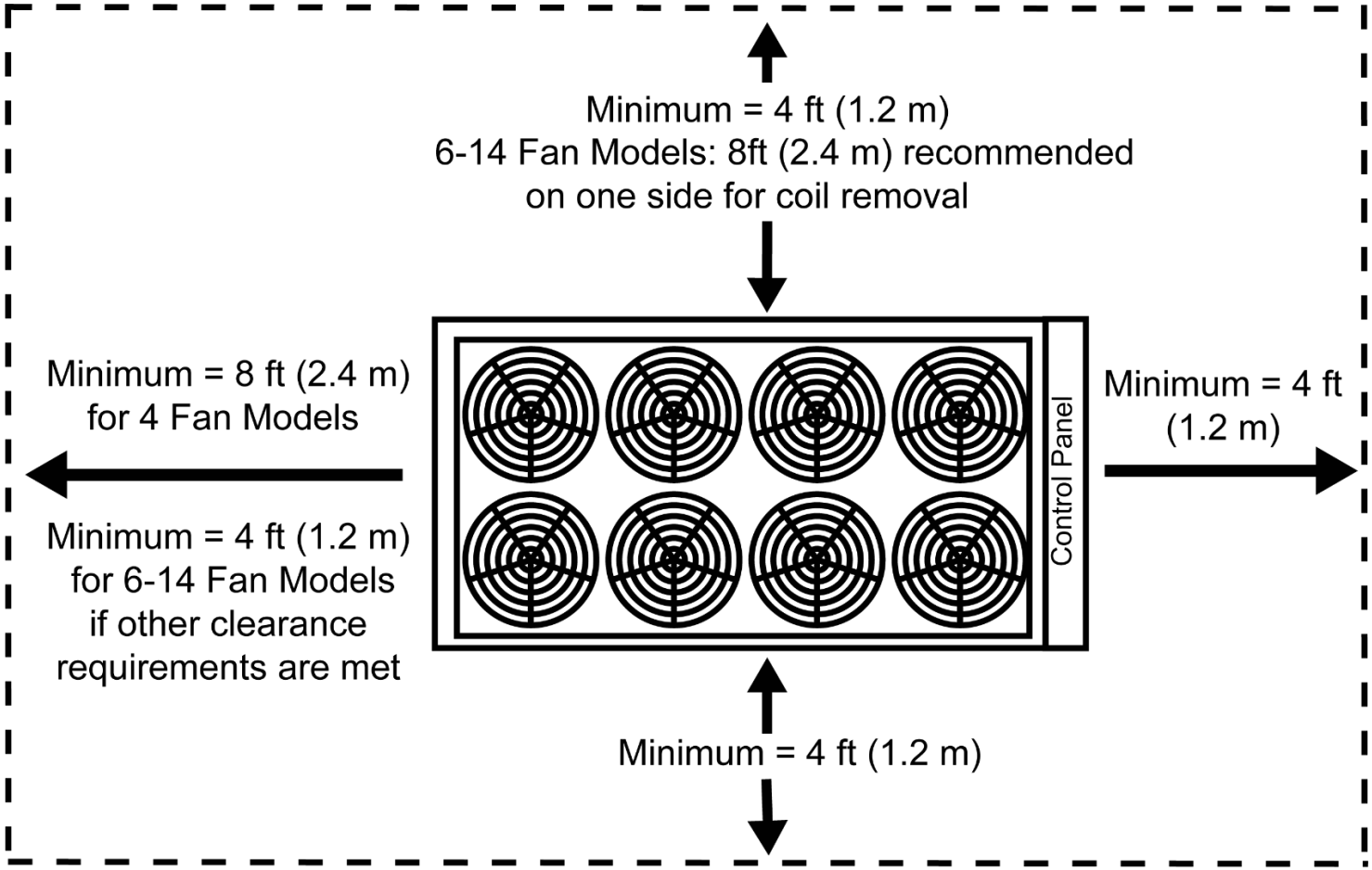
0B

AGZ-E Service Clearance



- NOTE: Additional clearance may be required for proper airflow. Please consult Close Spacing drawings and IOM for additional details.

Product Drawing	Unit Tag: CH9-1			Sales Office: Mechanical Sales, Inc.			DAIKIN
Product: Air-Cooled Scroll Chiller	Project Name: X23MCQ0037-CMR IDOC			Sales Engineer: Chad Raymer			13600 Industrial Park Blvd. Minneapolis, MN 55441
Model: AGZ-E	Jan. 15, 2023	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 1.0"	Dwg Units: in [mm]	www.DaikinApplied.com Software Version: 13.40

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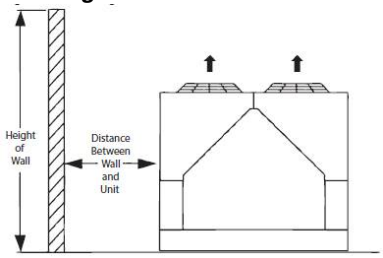
AGZ-E Close Spacing Performance | 0A

The graphs below are based on individual cases and should not be combined with other scenarios

Case 1: Building or Wall on One Side of Unit

Assumes a solid height wall taller than unit. Refer to Case 4 for partial wall openings

Building or Wall on One Side of Unit



For models AGZ030-101E, maintain a 4 feet minimum from a wall of any height.

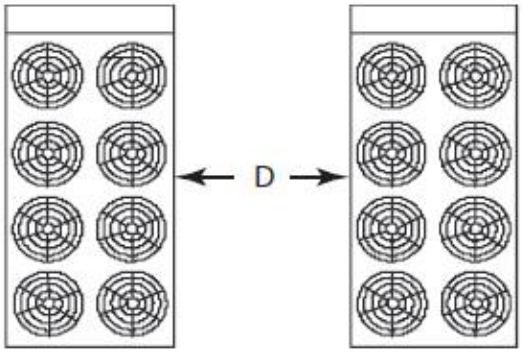
For models AGZ110-130E, maintain a 6 feet minimum from a wall of any height.

For models AGZ140-241E, maintain an 8 feet minimum from a wall of any height.

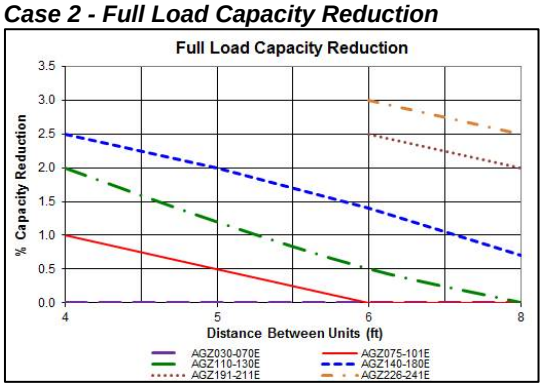
Case 2: Two Units, Side-by-Side

For models 030-180, there must be a minimum of 4 feet between two units placed side-by-side; however, performance may be affected at this distance. For models 191-241, the minimum is 6 feet as closing spacing may cause air recirculation and elevated condenser pressure. Assuming the requirement of one side having at least 8 feet of service clearance is met, Case 2 figures show performance adjustments as the distance between two units increases.

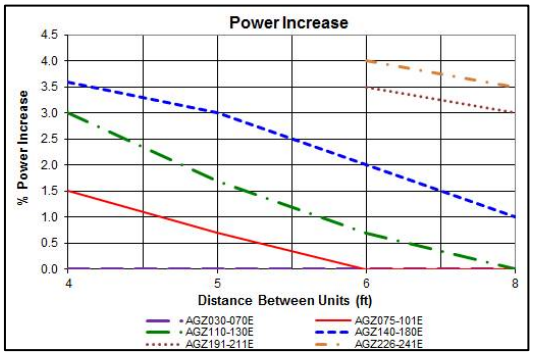
Two Units, Side-by-Side



Case 2 - Full Load Capacity Reduction



Case 2 – Power Increase



Product Drawing						
Product: Air-Cooled Scroll Chiller	Project Name:					
Model: AGZ-E	Sales Office: Mechanical Sales, Inc.					
Sales Engineer: Chad Raymer	Jan. 15, 2023	Ver/Rev:	Sheet 1 of 1	Scale: NTS	Tolerance: +/-1.0"	Dwg Units: in [mm]

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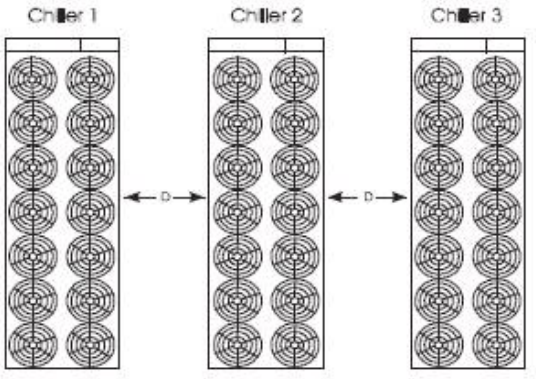
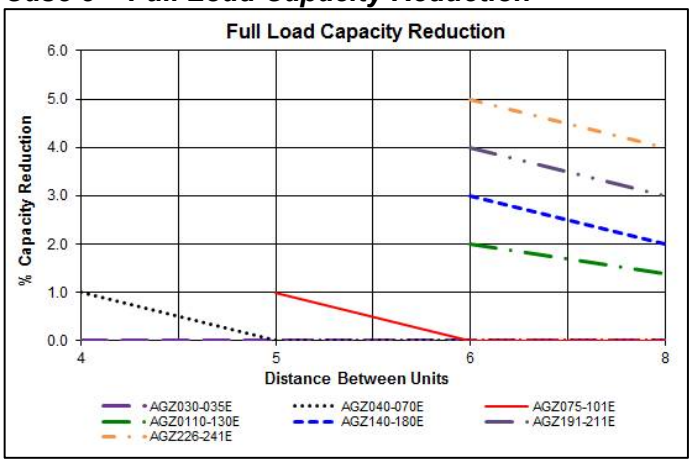
Case 3: Three or More Units, Side-by-Side

For all models, there must be a minimum distance between any units placed side-by-side; however, performance may be affected at this distance. Minimum distances are: models 030 to 070 - 4 feet, models 075 to 101 - 5 feet, models 110 to 241 - 6 feet. The Case 3 charts below depict Case 3 performance adjustments as the distance between units increases. Data shown is for the middle unit with a unit on each side. See Case 2 adjustment factors for the two outside units.

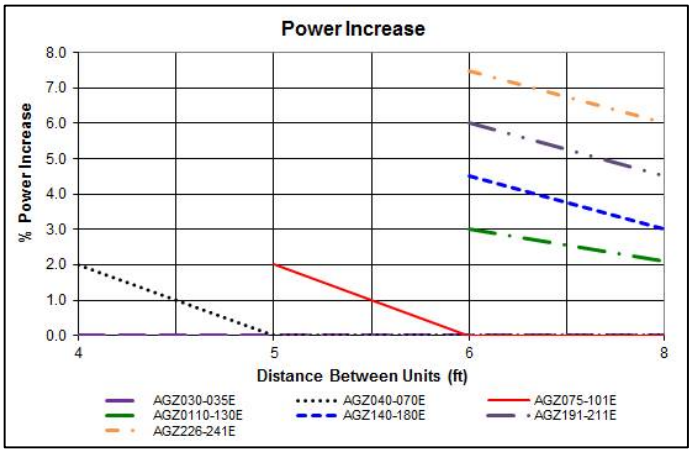
Three or More Units, Side-by-Side



Case 3 – Full Load Capacity Reduction



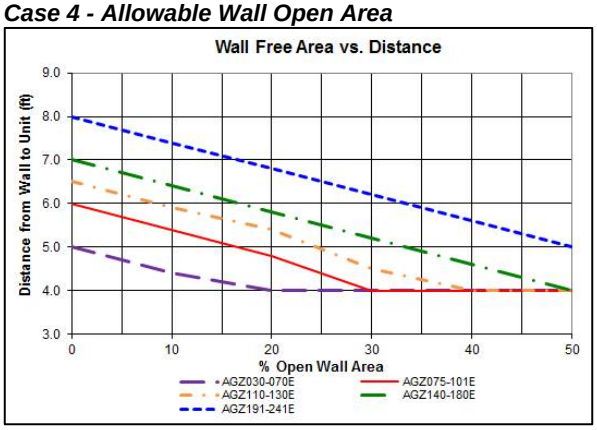
Case 3 – Power Increase



Case 4: Open Screening Walls

Decorative screening walls are often used to help conceal a unit either on grade or on a rooftop. When possible, design these walls such that the combination of their open area and distance from the unit (see chart below) do not require performance adjustment. If the wall opening percentage is less than recommended for the distance to the unit, it should be considered as a solid wall. It is assumed that the wall height is equal to or less than the unit height when mounted on its base support. If the wall height is greater than the unit height, see Case 5: Pit Installation for performance adjustment factors. The distance from the sides of the unit to the side walls must be sufficient for service, such as opening control panel doors. For uneven wall spacing, the distance from the unit to each wall can be averaged providing no distance is less than 4 feet. Values are based on walls on all four sides.

Case 4 - Allowable Wall Open Area



Case *5: Pit Installation*

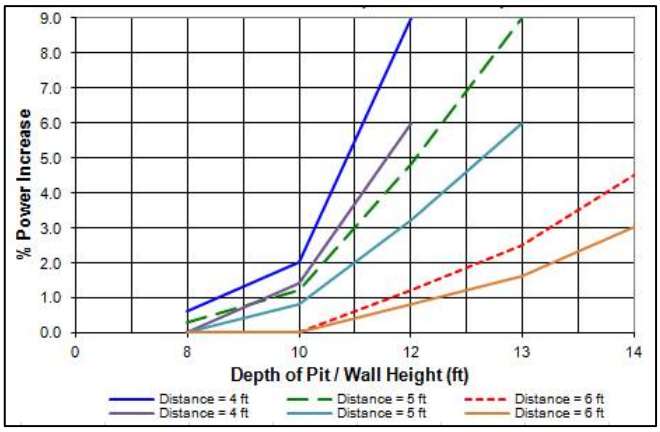
Pit installations can cause operating problems resulting from air recirculation and restriction and require care that sufficient air clearance is provided, safety requirements are met and service access is provided. A solid wall surrounding a unit is substantially a pit and this data should be used. Derates are based on single chiller installation only.

Steel grating is sometimes used to cover a pit to prevent accidental falls or trips into the pit. The grating material and installation design must be strong enough to prevent such accidents, yet provide abundant open area to avoid recirculation problems. Have any pit installation reviewed by the Daikin Applied sales representative prior to installation to ensure it has sufficient air-flow characteristics and approved by the installation design engineer to avoid risk of accident.

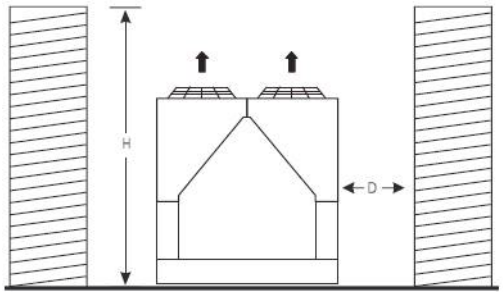
Models AGZ030-070E:

The Case 5 figures for models AGZ030-070E show adjustment factors for pit/wall heights of 4 feet, 5 feet, and 6 feet.

Case 5 - Full Load Capacity Reduction and Power Increase (AGZ030E-070E)



Case 5- Pit Installation



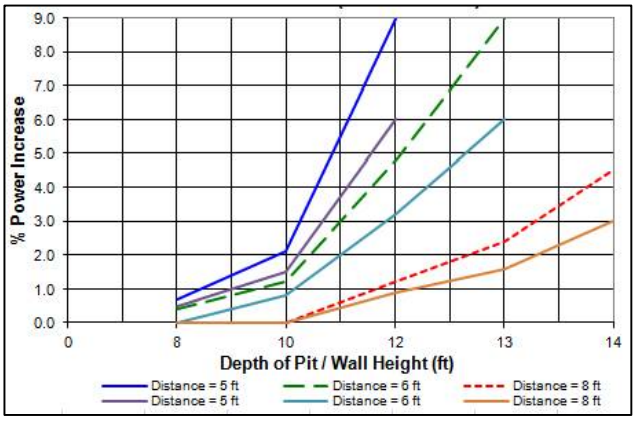
KEY:

- - - - - - - - - - : ***Power Increase***

_____***: Capacity Reduction***

Models AGZ075-130E:
The Case 5 figures for models AGZ075-130E show adjustment factors for pit/wall heights of 5 feet, 6 feet, and 8 feet.

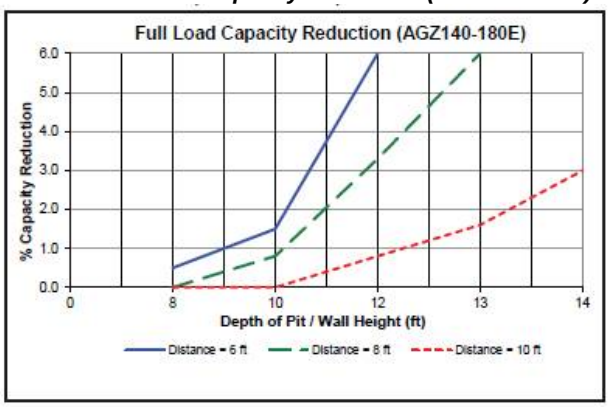
Case 5 - Full Load Capacity Reduction and Power Increase (AGZ075-130E)



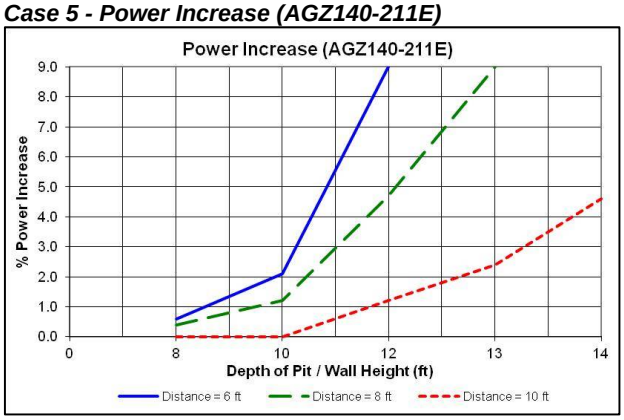
KEY:
- - - - - - - - - - : ***Power Increase***
_____***: Capacity Reduction***

Models AGZ140-241E:
The Case 5 figures for models AGZ140-241E show adjustment factors for pit/wall heights of 6 feet, 8 feet, and 10 feet.

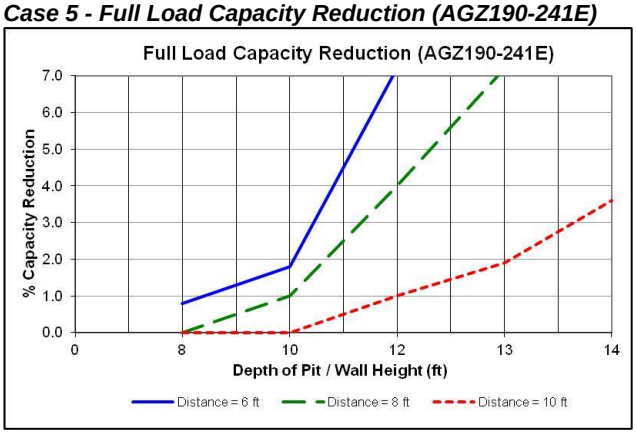
Case 5 - Full Load Capacity Reduction (AGZ140-180E)



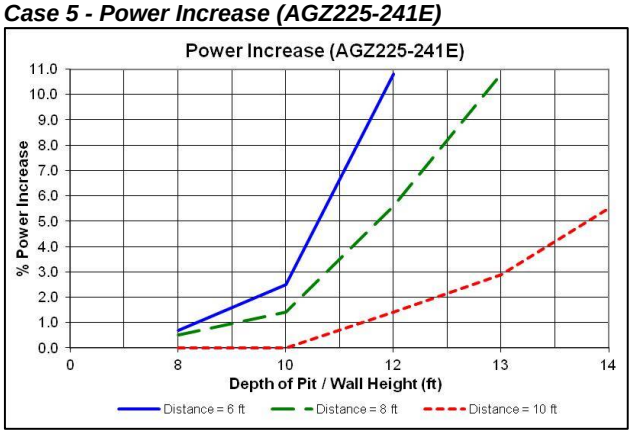
Case 5 - Power Increase (AGZ140-211E)



Case 5 - Full Load Capacity Reduction (AGZ190-241E)

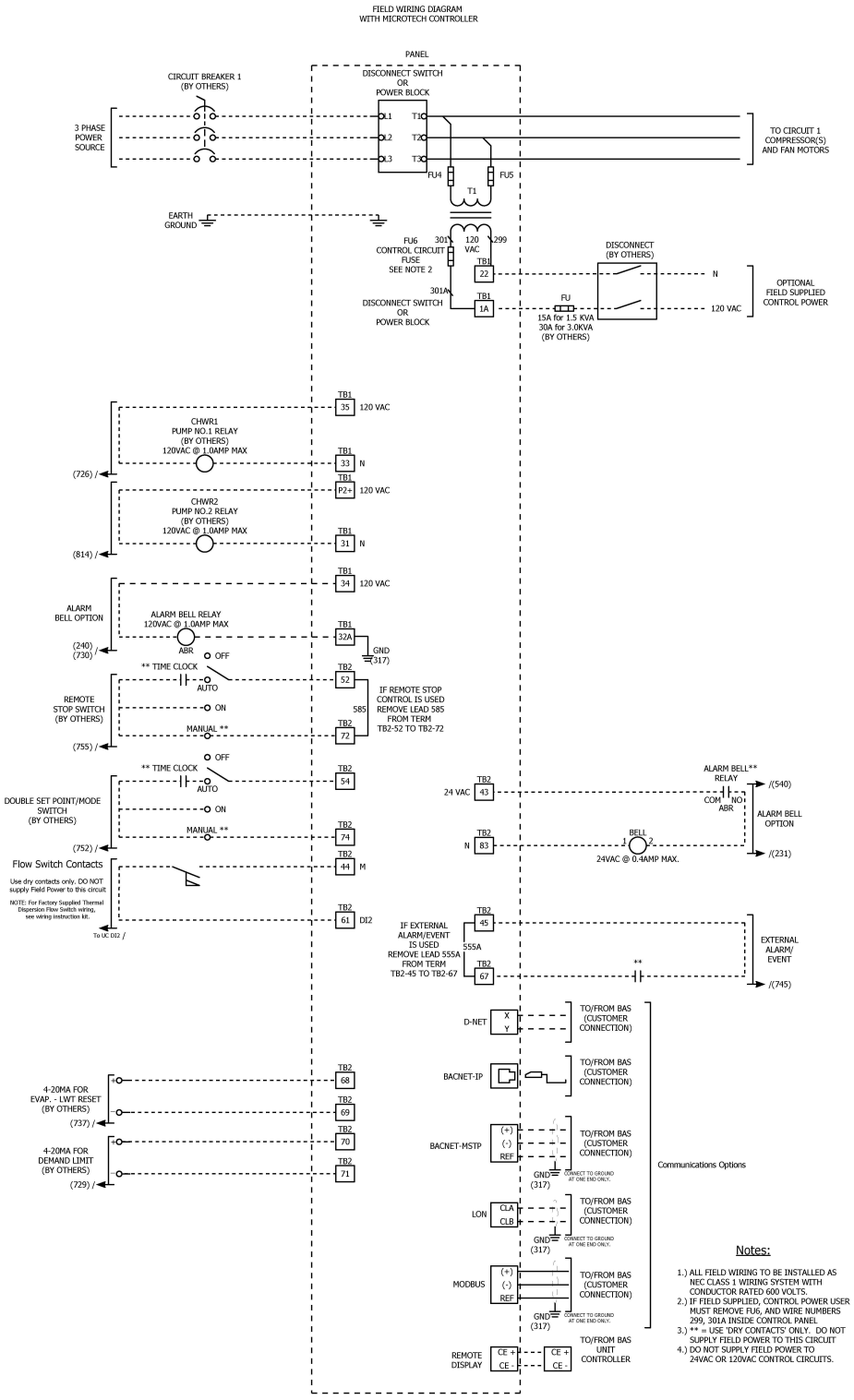


Case 5 - Power Increase (AGZ225-241E)



0D

AGZ030-241E Single-Point Connection Field Wiring Diagram

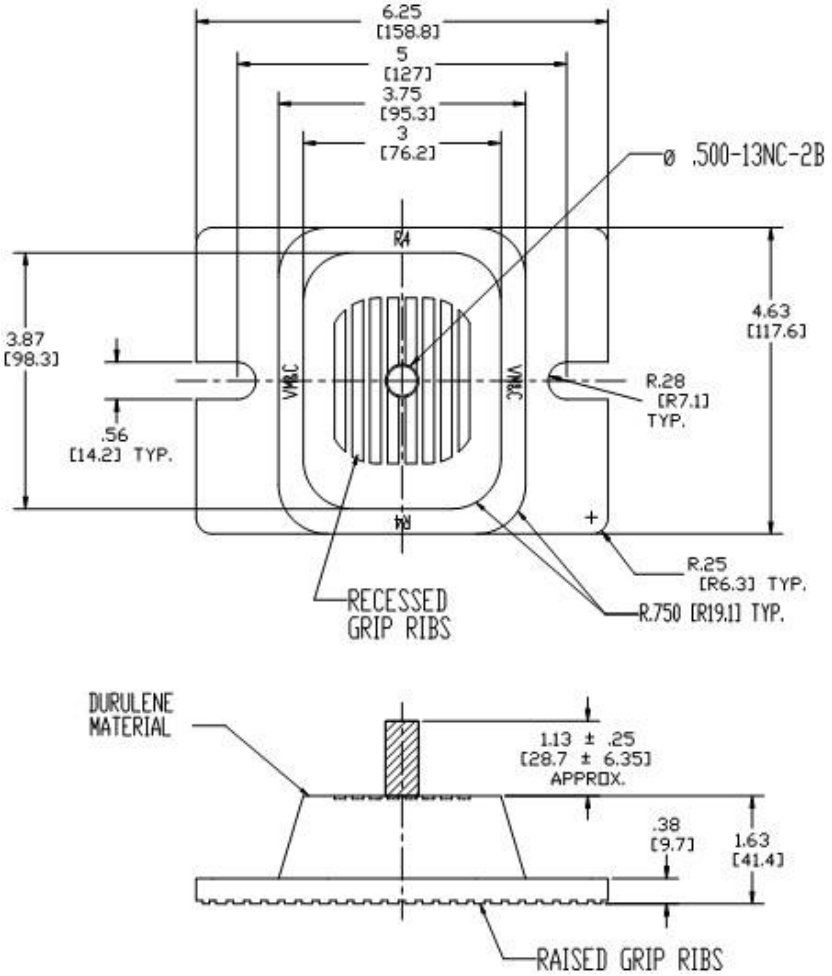


Field Wiring Diagram	Unit Tag: CH9-1			DAIKIN		
Product: Air-Cooled Scroll	Project Name: X23MCQ0037-CMR			13600 Industrial Park Blvd. Minneapolis, MN 55441		
Model: AGZ030-241E Single-Point	Sales Office: Mechanical Sales, Inc.			www.DaikinApplied.com	Software Version: 13.40	
Sales Engineer: Chad Raymer	Jan. 15, 2023	Ver/Rev:	Sheet 1 of 1	Scale: N/A	Tolerance: N/A	Dwg Units: N/A

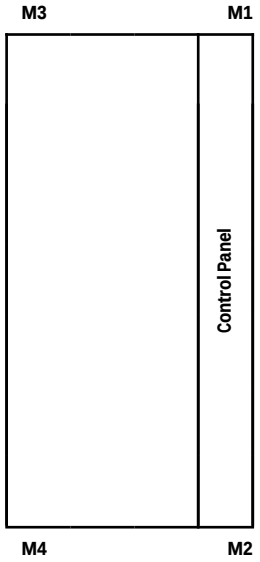
No change to this drawing may be made unless approved in writing by Daikin Applied. Purchaser must determine that the equipment is fit and sufficient for the job

Rubber-in-Shear (RIS) Isolator Kit

Dimensions and Placement



Mounting Location			
M1	**M2**	**M3**	**M4**
Brown	Brown	Brown	Brown



Product Drawing	Unit Tag: CH9-1			Sales Office: Mechanical Sales, Inc.			DAIKIN
Accessory: Rubber-in-Shear (RIS) Isolator Kit	Project Name: X23MCQ0037-CMR IDOC			Sales Engineer: Chad Raymer			13600 Industrial Park Blvd. Minneapolis, MN 55441
Kit Part Number: 332325101	Jan. 15, 2023	Ver/Rev:	Sheet: 1 of 1	Scale: NTS	Tolerance: +/- 1.0"	Dwg Units: in [mm]	www.DaikinApplied.com Software Version: 13.40

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END OF ADDENDUM