APPLICATION FOR OSHPD SPECIAL SEISMIC CERTIFICATION PREAPPROVAL (OSP)

OFFICE USE ONLY	
APPLICATION #:	OSP – 0391 – 10

OSHPD Special Seismic Certification Preapproval (OSP)

Type: ☐ New ☒ Renewal

Manufacturer Information

Manufacturer: Daikin Applied

Manufacturer's Technical Representative: Zach Morris

Mailing Address: 207 Laurel Hill Road, Verona, VA 24482

Telephone: (540) 248-9516 Email: Zach.moris@daikinapplied.com

Product Information

Product Name: AGZ Trailblazer

Product Type: Air-Cooled Scroll Compressor Chiller

Product Model Number: AGZ030E through AGZ241E and AGZ075D through AGZ130D
(List all unique product identification numbers and/or part numbers)

General Description: Outdoor Air-Cooled Scroll Compressor Chiller. Seismic enhancements made to the test units & modifications required to address the anomalies observed during testing shall be incorporated into the production units

Mounting Description: Base mounted neoprene or spring isolated

Applicant Information

Applicant Company Name: Structural Integrity Associates, Inc. dba TRU Compliance

Contact Person: Andrew Coughlin, SE

Mailing Address: 5215 Hellyer Ave, Suite 210, San Jose, CA 94608

Telephone: (844) 878-0200 Email: acoughlin@structint.com

I hereby agree to reimburse the Office of Statewide Health Planning and Development review fees in accordance with the California Administrative Code, 2016.

Signature of Applicant: Date: 12/21/2017

Title: Director, TRU Compliance Company Name: Structural Integrity Associates, Inc.

California Licensed Structural Engineer Responsible for the Engineering and Test Report(s)

Company Name: Structural Integrity Associates, Inc. dba TRU Compliance

Name: Andrew Coughlin, SE California License Number: S6082

Mailing Address: 5215 Hellyer Ave, Suite 210, San Jose, CA 94608

Telephone: (844) 878-0200 Email: acoughlin@structint.com

Supports and Attachments Preapproval

☐ Supports and attachments are preapproved under OPM- _____
(Separate application for OSHPD Preapproval of Manufacturer's Certification (OPM) of Supports and attachments is required)

☒ Supports and attachments are not preapproved

Certification Method

☒ Testing in accordance with: ☒ ICC-ES AC156

☐ Other (Please Specify): _____

Testing Laboratory

Company Name: U.S. Army Engineer Research and Development Center, Construction Engineering Research Laboratory (ERDC-CERL)

Contact Name: Jim Wilcoski

Mailing Address: 2902 Newmark Dr. Champaign, IL 61822

Telephone: (217) 373-6763 Email: James.wilcoski@usace.army.mil

Company Name: Dynamic Certification Laboratories

Contact Name: Dr. Ahmad Itani, SE

Mailing Address: 1315 Greg Street, Suite 109, Sparks, NV 89431

Telephone: (775) 358-5085 Email: erinne@shaketest.com

Seismic Parameters

Design in accordance with ASCE 7-10 Chapter 13: ☒ Yes ☐ No

Design Basis of Equipment or Components (F_p/W_p) = See Attachment

S_{DS} (Design spectral response acceleration at short period, g) = See Attachment

a_p (In-structure equipment or component amplification factor) = 2.5

R_p (Equipment or component response modification factor) = 2.5 (Neoprene Isolated) & 2.0 (Spring Isolated)

Ω_0 (System overstrength factor) = 2.0

I_p (Importance factor) = 1.5

z/h (Height factor ratio) = See Attachment

Equipment or Component Natural Frequencies (Hz) = See Attachment

Overall dimensions and weight (or range thereof) = See Attachment

Equipment or Components @ grade designed in accordance with ASCE 7-10 Chapter 15: ☐ Yes ☒ No

Design Basis of Equipment or Components (V/W) =

S_{DS} (Design spectral response acceleration at short period, g) =

S_{D1} (Design spectral response acceleration at 1 second period, g) =

R (Response modification coefficient) =

Ω_0 (System overstrength factor) =

C_d (Deflection amplification factor) =

I_p (Importance factor) = 1.5

Height to Center of Gravity above base =

Equipment or Component Natural Frequencies (Hz) =

Overall dimensions and weight (or range thereof) =

Tank(s) designed in accordance with ASME BPVC, 2015: ☐ Yes ☒ No

List of Attachments Supporting Special Seismic Certification

☒ Test Report(s) ☐ Drawings ☐ Calculations ☒ Manufacturer's Catalog

☒ Other(s) (Please Specify): Product and Subcomponent Matrices, UUT Summaries

OSHPD Approval (For Office Use Only) – Approval Expires on December 31, 2022

Signature: Timothy J. Piland Date: February 26, 2018

Print Name: Timothy J. Piland Title: SSE

Special Seismic Certification Valid Up to : S_{DS} (g) = See Above z/h = See Above

Condition of Approval (if applicable):

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 1700737

TRU COMPLIANCE

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers

TABLE 1

Certified Product Construction Summary:
Powder-coated carbon steel base and frame with seismic cross bracing

Certified Options Summary:
208-230V or 460V, controller, condenser fans, motors, condenser coils, hermetic scroll compressors, and brazed plate evaporators

Mounting Configuration:
Base mounted - neoprene or spring isolated
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: ***CBC 2016*** ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 F_P/W_P = 3.60 (Neoprene), 4.50(Spring) I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Trailblazer Air-Cooled Scroll Compressor Chillers "E" Vintage	AGZ030E	88	94.3	100.2	2960	4 fan	1
	AGZ035E	88	94.3	100.2	2887	4 fan	Interp.
	AGZ040E	88	94.3	100.2	2964	4 fan	Interp.
	AGZ045E	88	94.3	100.2	3112	4 fan	Interp.
	AGZ050E	88	94.3	100.2	3114	4 fan	Interp.
	AGZ055E	88	94.3	100.2	3128	4 fan	Interp.
	AGZ060E	88	94.3	100.2	3155	4 fan	Interp.
	AGZ065E	88	94.3	100.2	3155	4 fan	Interp.
	AGZ070E	88	94.3	100.2	3497	4 fan	2
Trailblazer Air-Cooled Scroll Compressor Chillers "D" Vintage	AGZ075D	88	134.9	100.4	5350	6 fan	Interp.
	AGZ080D	88	134.9	100.4	5385	6 fan	Interp.
	AGZ090D	88	134.9	100.4	5420	6 fan	Interp.
	AGZ100D	88	134.9	100.4	5675	6 fan	Interp.
	AGZ110D	88	173.1	100.4	6340	6 fan	Interp.
	AGZ125D	88	173.1	100.4	6475	8 fan	Interp.
	AGZ130D	88	173.1	100.4	6520	8 fan	3

SPECIAL SEISMIC CERTIFICATION
CERTIFIED COMPONENT MATRIX

TRU PROJECT NO. 1700737

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers

TABLE 2

Certified Product Construction Summary:
Powder-coated carbon steel base and frame with seismic cross bracing

Certified Options Summary:
208-230V or 460V, controller, condenser fans, motors, condenser coils, hermetic scroll compressors, and brazed plate evaporators

Mounting Configuration:
Base mounted - neoprene or spring isolated
Note: Installed mounting configuration must be of similar configuration and equivalent strength and stiffness to those tested.

Building Code: ***CBC 2016*** | ***Seismic Certification Limits:*** | S_{DS} = 0.63 g, z/h = 1.0, F_P/W_P = 1.13 (Neoprene), 1.42 (Spring) | S_{DS} = 0.79 g, z/h = 0.0, F_P/W_P = 0.47 (Neoprene), 0.59 (Spring) | I_P = 1.5

Model Line	Model	Dimensions (in)			Weight (lb)	Notes	UUT
		Depth	Width	Height			
Trailblazer Air-Cooled Scroll Compressor Chillers "E" Vintage	AGZ075E	88	147	98.6	4451	6 fan, UUT2 is lower bound	Interp.
	AGZ080E	88	147	98.6	4579	6 fan	Interp.
	AGZ090E	88	147	98.6	4609	6 fan	Interp.
	AGZ100E	88	147	98.6	4780	6 fan	Interp.
	AGZ110E	88	192.1	98.6	5528	8 fan	Interp.
	AGZ120E	88	192.1	98.6	5796	8 fan	Interp.
	AGZ130E	88	192.1	98.6	5903	8 fan	Interp.
	AGZ140E	88	237.2	98.6	6674	10 fan	Interp.
	AGZ150E	88	237.2	98.6	6745	10 fan	Interp.
	AGZ160E	88	237.2	98.6	6802	10 fan	Interp.
	AGZ161E	88	237.2	98.6	7065	10 fan	Interp.
	AGZ170E	88	237.2	98.6	7307	10 fan	Interp.
	AGZ180E	88	237.2	98.6	7560	10 fan	Interp.
	AGZ191E	88	282.3	98.6	8785	12 fan	Interp.
	AGZ211E	88	282.3	98.6	8819	12 fan	Interp.
	AGZ226E	88	327.4	98.6	9600	14 fan	Interp.
	AGZ241E	88	327.4	98.6	9688	14 fan	4

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 1700737

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers

TABLE 3

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 F_P/W_P = 3.60 (Neoprene), 4.50(Spring) I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Control Panel	Siemens	POL687.70/MCQ 460V	MicroTech III, 10"x72"x40" (DxWxH)	NEMA 1, Painted Galvanized CS	1
		POL687.70/MCQ 208-230V	MicroTech III, 10"x72"x40" (DxWxH)	NEMA 1, Painted Galvanized CS	2,3
Condenser Fans	Hess Air	HAP-9001174	30" dia, 4 Blades, 28 deg Pitch, 5 lbs	Al Blade/SS Hub	1
		HAP-9001132	30" dia, 4 Blades, 33 deg Pitch, 5 lbs		2,3
Fan Motors	Marathon	5K49ZN6302S	208-230V, 3-Phase, 1.5 HP	CS Housing	1
		5K49ZN6301S	460V, 3-Phase, 2 HP	CS Housing	2
		5K49ZN6270BS	460V, 3-Phase, 2 HP	CS Housing	3
Condenser Coils	Sanhua	X1470023	Microchannel	Galvanized CS Case, Al Channels	2
	Daikin	020889500200C2R01	Tube and Fin	Galvanized CS, Cu Tubes, Al Fins	1
	Daikin	022021000100C1R01	Tube and Fin	Galvanized CS, Cu Tubes, Al Fins	3
Scroll Compressor	Copeland	ZP90KCE	7.5 HP, Tandem or Trio Config.	CS Shell, Tandem Config. Tested	1
		ZP104KCE	9 HP, Tandem or Trio Config.	CS Shell	Interp.
		ZP122KCE	10 HP, Tandem or Trio Config.	CS Shell	Interp.
		ZP137KCE	12 HP, Tandem or Trio Config.	CS Shell	Interp.
		ZP154KCE	13 HP, Tandem or Trio Config.	CS Shell	Interp.
		ZP182KCE	15 HP, Tandem or Trio Config.	CS Shell, Tandem Config. Tested	2
		ZP236KCE	20 HP, Tandem or Trio Config.	CS Shell, Tandem Config. Tested	2
		ZP296KCE	25 HP, Tandem or Trio Config.	CS Shell, Trio Config. Tested	3

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 1700737

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers

TABLE 3

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 2.0 g z/h = 1.0 F_P/W_P = 3.60 (Neoprene), 4.50(Spring) I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Evaporators	Alfa Laval	ACH230DQ-78	SS Plate Brazed with Cu		1
		ACH230DQ-86	SS Plate Brazed with Cu		Interp.
		ACH230DQ-94	SS Plate Brazed with Cu		Interp.
		ACH230DQ-110	SS Plate Brazed with Cu		Interp.
		ACH230DQ-126	SS Plate Brazed with Cu		Interp.
		ACH230DQ-134	SS Plate Brazed with Cu		Interp.
		ACH230DQ-154	SS Plate Brazed with Cu		2
		ACH500DQ-94	SS Plate Brazed with Cu		Interp.
		ACH500DQ-106	SS Plate Brazed with Cu		Interp.
		ACH500DQ-114	SS Plate Brazed with Cu		Interp.
		ACH500DQ-134	SS Plate Brazed with Cu		Interp.
		ACH500DQ-142	SS Plate Brazed with Cu		Interp.
		ACH500DQ-162	SS Plate Brazed with Cu		Interp.
		ACH500DQ-182	SS Plate Brazed with Cu		3
Expansion Valves	Sporlan	OZE-20-N-BP15	20 tons Nominal	Brass Bar Body w/ Cu Tubing	1
		OZE-25-N-BP15	25 tons Nominal	Brass Bar Body w/ Cu Tubing	Interp.
		OZE-35-N-BP15	35 tons Nominal	Brass Bar Body w/ Cu Tubing	2
		OZE-50-N-BP15	50 tons Nominal	Brass Bar Body w/ Cu Tubing	Interp.
		OZE-60-N-BP15	60 tons Nominal	Brass Bar Body w/ Cu Tubing	3

SPECIAL SEISMIC CERTIFICATION
CERTIFIED SUBCOMPONENT MATRIX

TRU PROJECT NO. 1700737

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers

TABLE 4

Building Code: CBC 2016 ***Seismic Certification Limits:*** S_{DS} = 0.63 g z/h = 1.0 F_P/W_P = 1.13 (Neoprene), 1.42 (Spring); S_{DS} = 0.79 g z/h = 0.0 F_P/W_P = 0.47 (Neoprene), 0.59 (Spring) I_P = 1.5

Component Type	Manufacturer	Model	Description	Notes	UUT
Control Panel	Siemens	POL687.70/MCQ 208-230V	MicroTech III, 10"x72"x40" (DxWxH)	NEMA 1, Painted Galvanized CS	4
Condenser Fans	Hess Air	HAP-9001132	30" dia, 4 Blades, 33 deg Pitch, 5 lbs	Al Blade/SS Hub	4
Fan Motors	Marathon	5K49ZN6270BS	460V, 3-Phase, 2 HP	CS Housing	4
Condenser Coils	Sanhua	X1470038	Microchannel	Galvanized CS Case, Al Channels	4
Evaporators	Alfa Laval	ZP296KCE	25 HP, Tandem or Trio Config.	CS Shell, Trio Config. Tested	3
		ZP385KCE	30 HP, Tandem or Trio Config.	CS Shell	Interp.
		ZP485KCE	40 HP, Tandem or Trio Config.	CS Shell, Trio Config. Tested	4
		ACH500DQ-94	SS Plate Brazed with Cu		Extrap.
		ACH500DQ-106	SS Plate Brazed with Cu		Extrap.
		ACH500DQ-114	SS Plate Brazed with Cu		Extrap.
		ACH500DQ-134	SS Plate Brazed with Cu		Extrap.
		ACH500DQ-142	SS Plate Brazed with Cu		Extrap.
		ACH500DQ-162	SS Plate Brazed with Cu		Extrap.
		ACH500DQ-182	SS Plate Brazed with Cu		3
		ACH1000DQ-186	SS Plate Brazed with Cu		Interp.
		ACH1000DQ-230	SS Plate Brazed with Cu		4
Expansion Valves	Sporlan	SERI-GS	20 tons Nominal	Brass Bar Body w/ Cu Tubing	Extrap.
		SERI-JS	35 tons Nominal	Brass Bar Body w/ Cu Tubing	Extrap.
		SERI-KS	63 tons Nominal	Brass Bar Body w/ Cu Tubing	4
		SERI-LS	85 tons Nominal	Brass Bar Body w/ Cu Tubing	4

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

Manufacturer: Daikin Applied

Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers

UUT	Unit Description	Report Number	Testing Laboratory	S_{DS}	z/h	I_P
1	AGZ030E Air Cooled Chiller	DCL No: 98902-1301	Dynamic Certification Laboratory (DCL)	2.0	1.0	1.5
2	AGZ070E Air Cooled Chiller	DCL No: 98902-1301	Dynamic Certification Laboratory (DCL)	2.0	1.0	1.5
3	AGZ130D Air Cooled Chiller	DCL No: 98902-1301	Pacific Earthquake Engineering Research Center (PEER)	2.0	1.0	1.5
4	AGZ241E Air Cooled Chiller	1700737-TR-001 (UUT 5a)	ERDC-CERL	0.63 0.79	1.0 0.0	1.5

Notes:

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

UUT 1

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers
Model Number: AGZ030E ***Serial Number:***

Product Construction Summary:
Powder coated structural carbon steel skid and frame.

Options/Subcomponent Summary:
208V, controller, condenser fans and motors, condenser coil, scroll compressors, evaporator and expansion valves

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
2880	88	94.4	100.4	UUT1a: 4.8 UUT1b: 2.5	UUT1a: 4.8 UUT1b: 2.3	UUT1a: 5.8 UUT1b: 4.8

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.33	0.53

Test Mounting Details:

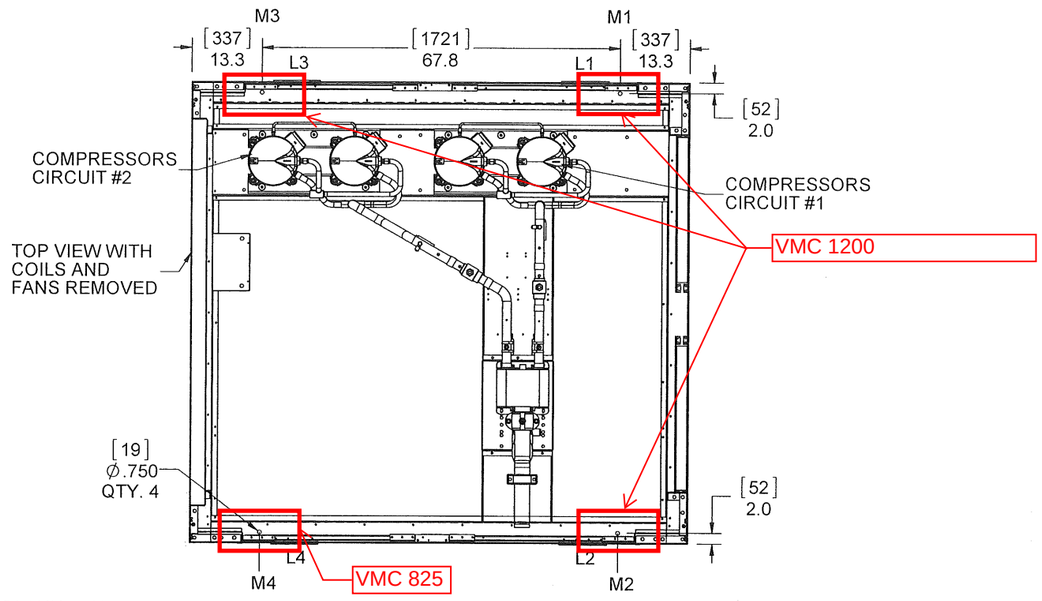
UUT1a

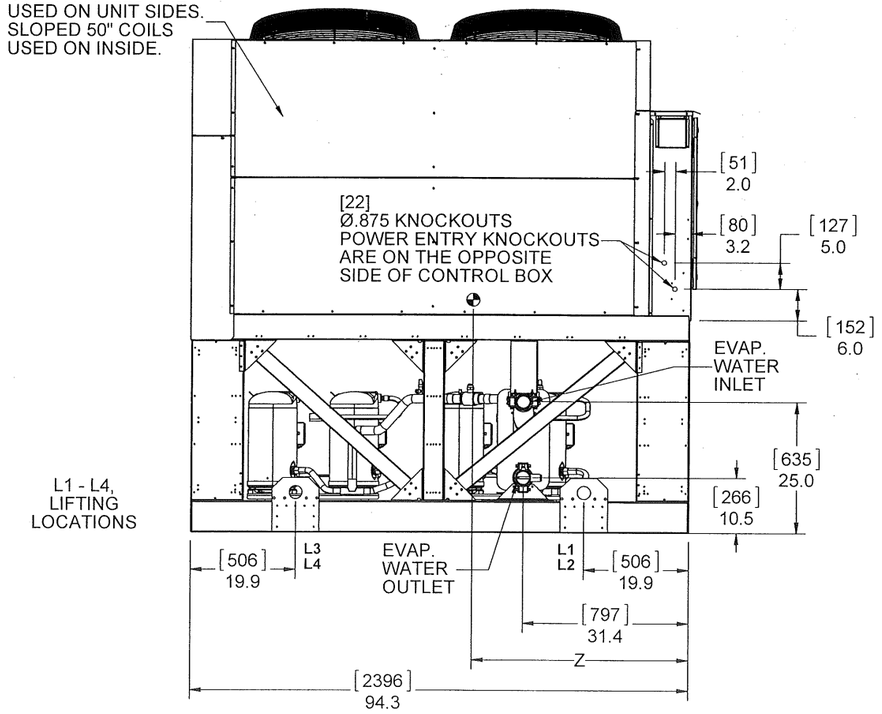
UUT1b

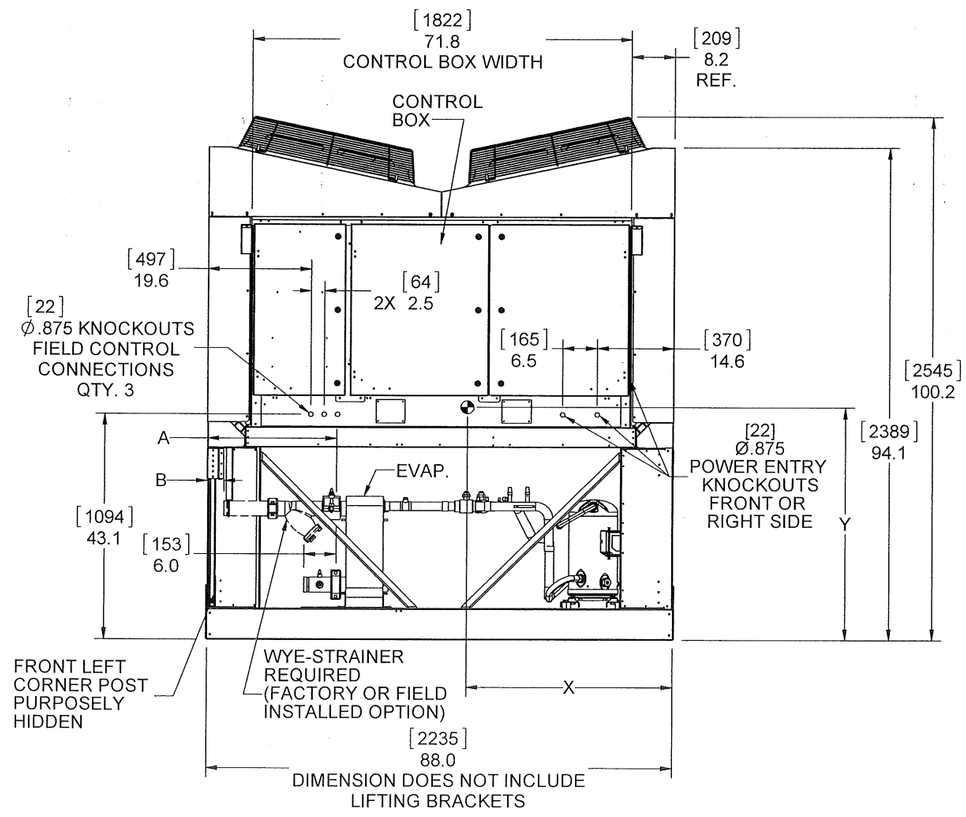
UUT1a was base mounted to the shake table interface plate through the skid using 0.75" VMC Maxflex neoprene pads and four 3/4"-diameter Grade 5 bolts. UUT1b was base mounted to the shake table interface plate through the skid using four spring isolators: three VMC Model 1200, and one VMC Model 825. The unit was attached to each spring isolator with one 3/4"-diameter Grade 8 bolt. Each spring isolator was then attached to the shake table interface plate using four 3/4"-diameter Grade 5 bolts. Unit maintained structural integrity and remained functional per manufacturer requirement. Contents were included in testing per operating conditions.

PART NUMBER	REV.	PART DESCRIPTION	RAW MATL DESCRIPTION	RAW MATL PART NO.
334548701	0A	SEISMIC DWG. AGZ 4 FANS		

M1 - M4, ISOLATOR MOUNTING HOLE LOCATIONS ON BOTTOM SURFACE OF UNIT BASE







DSN	MJL	ENG	DRN	DATE	ECO	DESIGN SOURCE	CADD DRAWING ATTACHED TO
		ZAM	SNW	02-11-14	C000309027	334547101	

REVISION CHANGE HISTORY	REV.
BDA 3-2-14 C000315250 SEE SHEET 2	0A

02/26/2018

OSP-0391-10

MASTER

DIMENSIONING AND TOLERANCING CONFORMS TO ASME Y14.5M-1994

TOLERANCE DATA UNLESS OTHERWISE SPECIFIED

.X = ± .
.XX = ± .
.XXX = ± .
ANGLES = °

FINISH: 125 MICROINCH ON MACHINED SURFACES

DAIKIN

ALL DIMENSIONS ARE IN DECIMAL INCHES

SCALE NONE

THIRD ANGLE PROJECTION

3345487 D 0A 1 OF 2

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

UUT 2

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers
Model Number: AGZ070E ***Serial Number:***

Product Construction Summary:
Powder coated structural carbon steel skid and frame. See next page for seismic upgrades.

Options/Subcomponent Summary:
460V, controller, condenser fans and motors, condenser coil, scroll compressors, evaporator and expansion valves.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
3300	88	94.4	100.4	UUT2a: 3.0 UUT2b: 2.0	UUT2a: 3.0 UUT2b: 1.8	UUT2a: 7.3 UUT2b: 4.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.33	0.53

Test Mounting Details:

UUT2a

UUT2b

UUT2a was base mounted to the shake table interface plate through the skid using 0.75" VMC Maxflex neoprene pads and four 3/4"-diameter Grade 5 bolts. UUT2b was base mounted to the shake table interface plate through the skid using four spring isolators: one VMC Model 825N, two VMC Model 1200N, and one VMC Model 1400. The unit was attached to each spring isolator with one 3/4"-diameter Grade 8 bolt. Each spring isolator was then attached to the shake table interface plate using four 3/4"-diameter Grade 5 bolts. Unit maintained structural integrity and remained functional per manufacturer requirement. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

UUT 2

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers
Model Number: AGZ070E ***Serial Number:***

Product Construction Summary:

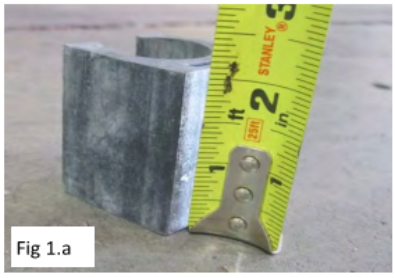


Fig 1.a

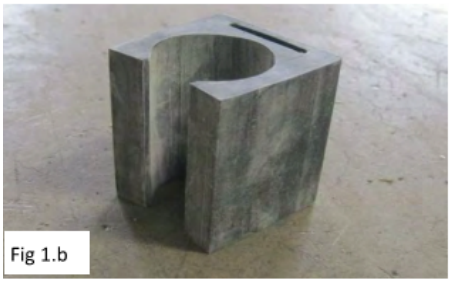


Fig 1.b

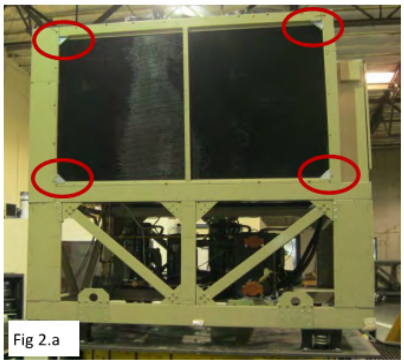


Fig 2.a

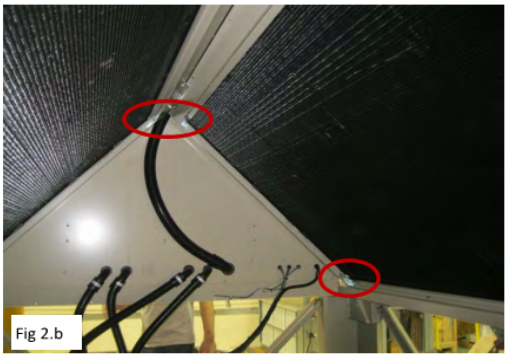


Fig 2.b

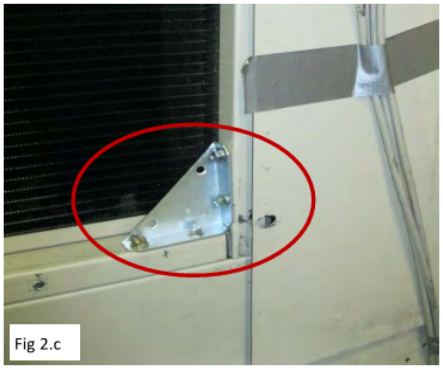


Fig 2.c

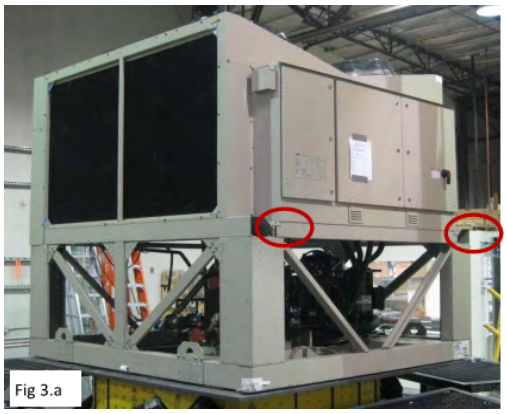


Fig 3.a


Fig 3.b

1. Figures 1.a and 1.b show neoprene support blocks added to the interior of the coil sections of UUT2a-b, used to prevent excessive displacement during an earthquake but still allow the coil to expand and contract during normal operation.
2. Figures 2.a through 2.c show corner braces installed on each coil, on the exterior and interior face (16 corner braces total). Brackets were Everbilt 3" heavy duty corner braces, Model 15444, 0.06" thick zinc plated carbon steel with 0.87" flange height.
3. Figures 3.a and 3.b show support channel angle brackets added prior to the shake test (one bracket on each corner). Brackets were Everbilt 2" corner braces, Model 15267, 12 gage galvanized carbon steel, 0.62" wide.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

UUT 2

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers
Model Number: AGZ070E ***Serial Number:***

Product Construction Summary:

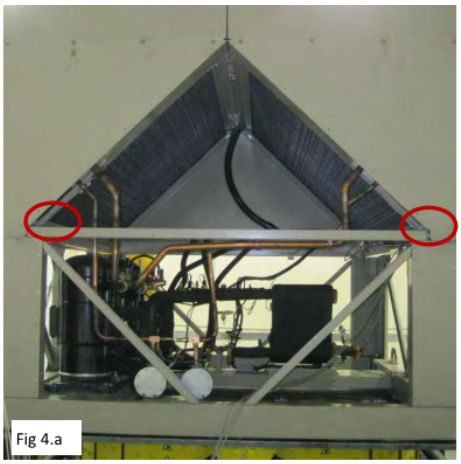


Fig 4.a


Fig 4.b

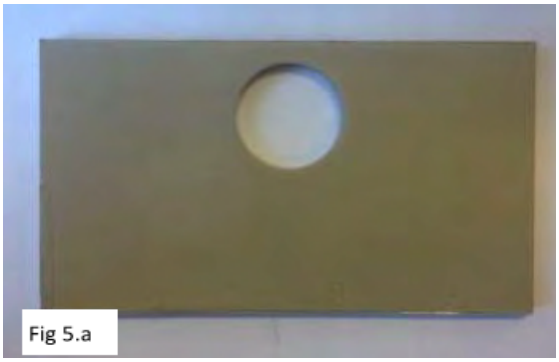


Fig 5.a

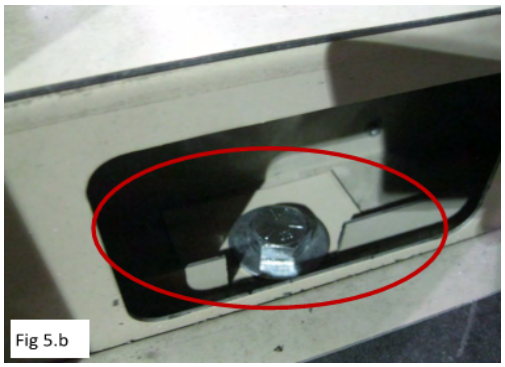
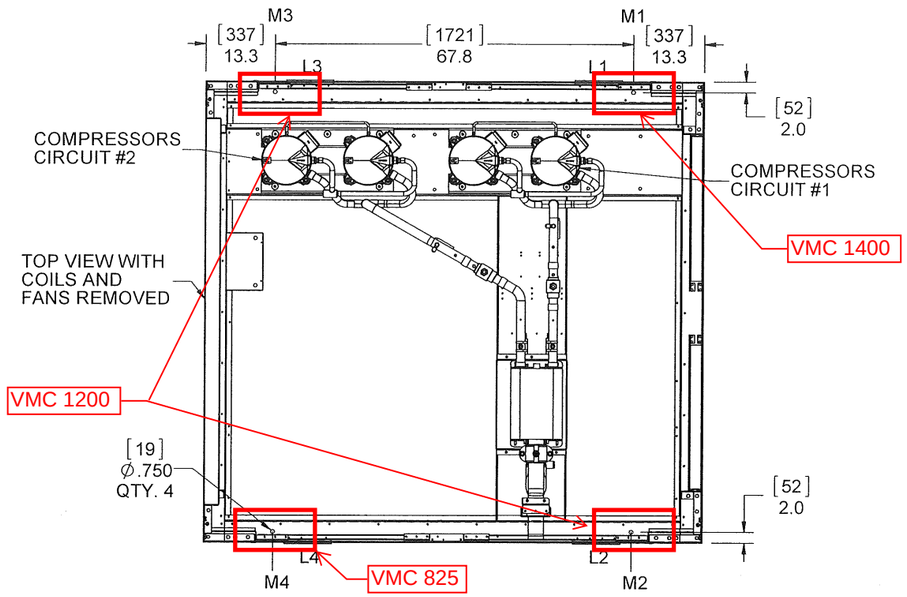


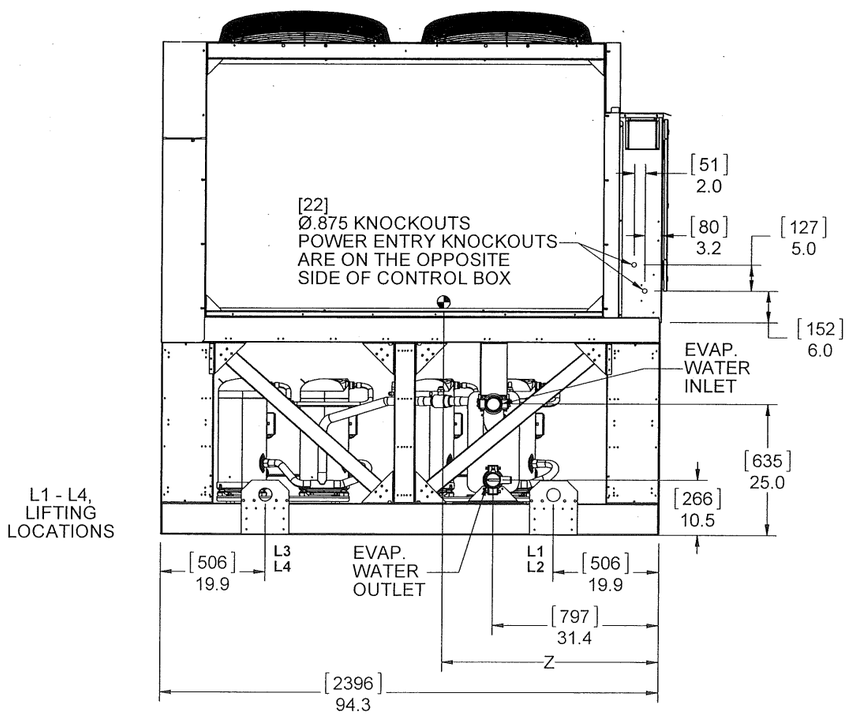
Fig 5.b

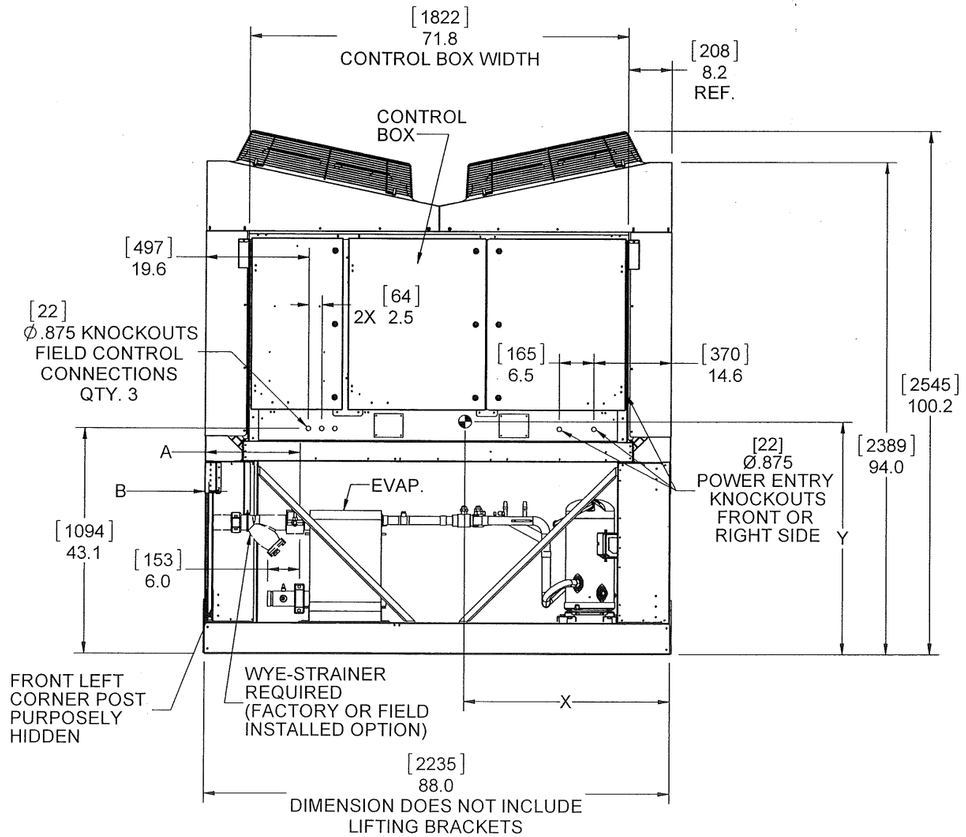
4. Figures 4.a and 4.b show angle brackets that were installed at each corner of the coil pair, connecting the coil frame to the coil rail (8 brackets total). Brackets were Everbilt 2" corner braces, Model 15267, 12 gage galvanized carbon steel, 0.62" wide.
5. Figures 5.a and 5.b show the stiffener plates added to the base channel at each mounting bolt location. Each stiffener plate was 4"x2.25” with a .875” diameter hole. Each plate was made of pre-painted G60, 10 gauge steel with a nominal thickness of 0.138”.

PART NUMBER	REV.	PART DESCRIPTION	RAW MATL DESCRIPTION	RAW MATL PART NO.
334548701	0A	SEISMIC DWG. AGZ 4 FANS		

M1 - M4, ISOLATOR MOUNTING HOLE LOCATIONS ON BOTTOM SURFACE OF UNIT BASE







FOR	MFG	ENG	DRN	DATE	ECO	DESIGN SOURCE	CADD DRAWING ATTACHED TO
		ZAM	SNW	02-11-14	C000309027	334547101	

REVISION CHANGE HISTORY							REV.
02/26/2018		BDA	3-2-14	C000315250	ADDED CORNER BRACKETS TO COIL THAT WERE REQUIRED AFTER SEISMIC TESTING		0A

DOC	MFG	ENG	DRN	DATE	ECO	REVISION CHANGE HISTORY	REV.

OSP-0391-10

MASTER

DIMENSIONING AND TOLERANCING CONFORMS TO ASME Y14.5M-1994

TOLERANCE DATA UNLESS OTHERWISE SPECIFIED

.X = ± . ANGLES = °
.XX = ± .
.XXX = ± .

FINISH: 125 MICROINCH ON MACHINED SURFACES

DAIKIN

ALL DIMENSIONS ARE IN DECIMAL INCHES

SCALE 1/4 | THIRD ANGLE PROJECTION

3345487 D | 0A | 2 OF 2

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

UUT 3

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers
Model Number: AGZ130D ***Serial Number:***

Product Construction Summary:
Powder coated structural carbon steel skid and frame. See next page for seismic upgrades.

Options/Subcomponent Summary:
460V, controller, condenser fans and motors, condenser coil, scroll compressors, evaporator and expansion valves.

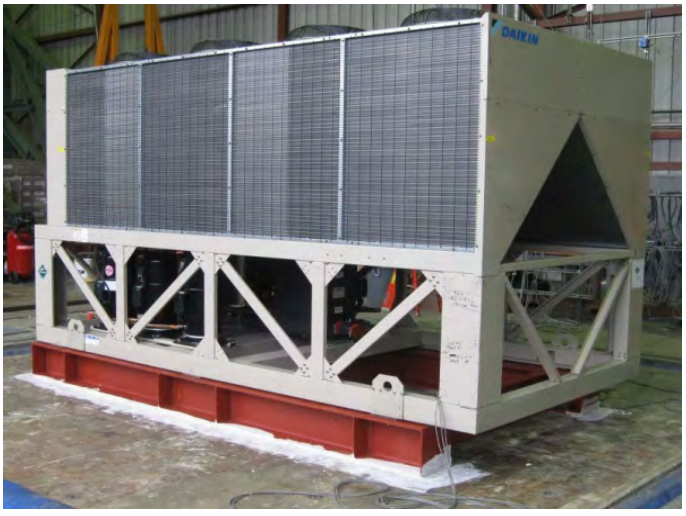
UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
6520	88	173.1	100.4	UUT3a: 5.8 UUT3b: 2.8	UUT3a: 4.0 UUT3b: 2.0	UUT3a: 10.8 UUT3b: 4.3

UUT Highest Passed Seismic Run Information

Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	2.0	1.0	1.5	3.2	2.4	1.33	0.53

Test Mounting Details:



UUT3a

UUT3b

UUT3a was base mounted to the shake table interface plate through the skid using 0.75" VMC Maxflex neoprene pads and six 3/4"-diameter Grade 5 bolts. UUT3b was base mounted to the shake table interface plate through the skid using six spring isolators: two VMC Model 1200N, two VMC Model 1700N, and two VMC Model 2000. The unit was attached to each spring isolator with one 3/4"-diameter Grade 8 bolt. Each spring isolator was then attached to the shake table interface plate using four 3/4"-diameter Grade 5 bolts. Unit maintained structural integrity and remained functional per manufacturer requirement. Contents were included in testing per operating conditions.

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

Manufacturer:	Daikin Applied	**UUT 3**
Model Line:	AGZ Trailblazer Air-Cooled Scroll Compressor Chillers	
Model Number:	AGZ130D	***Serial Number:***

Product Construction Summary:

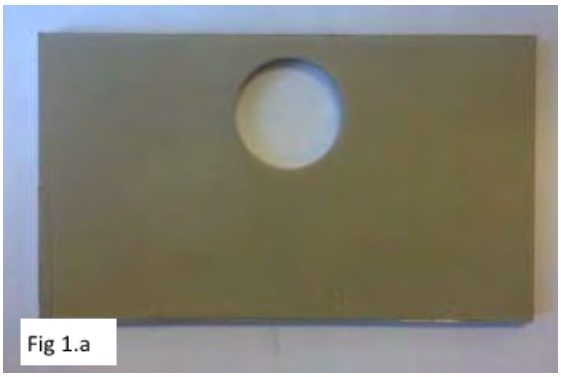


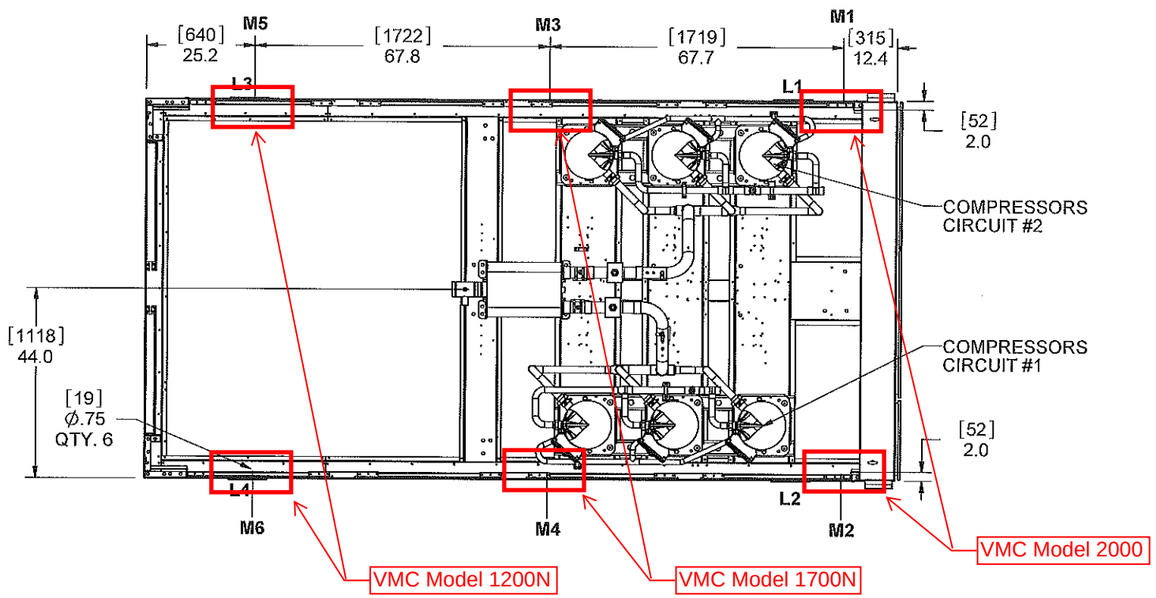
Fig 1.a

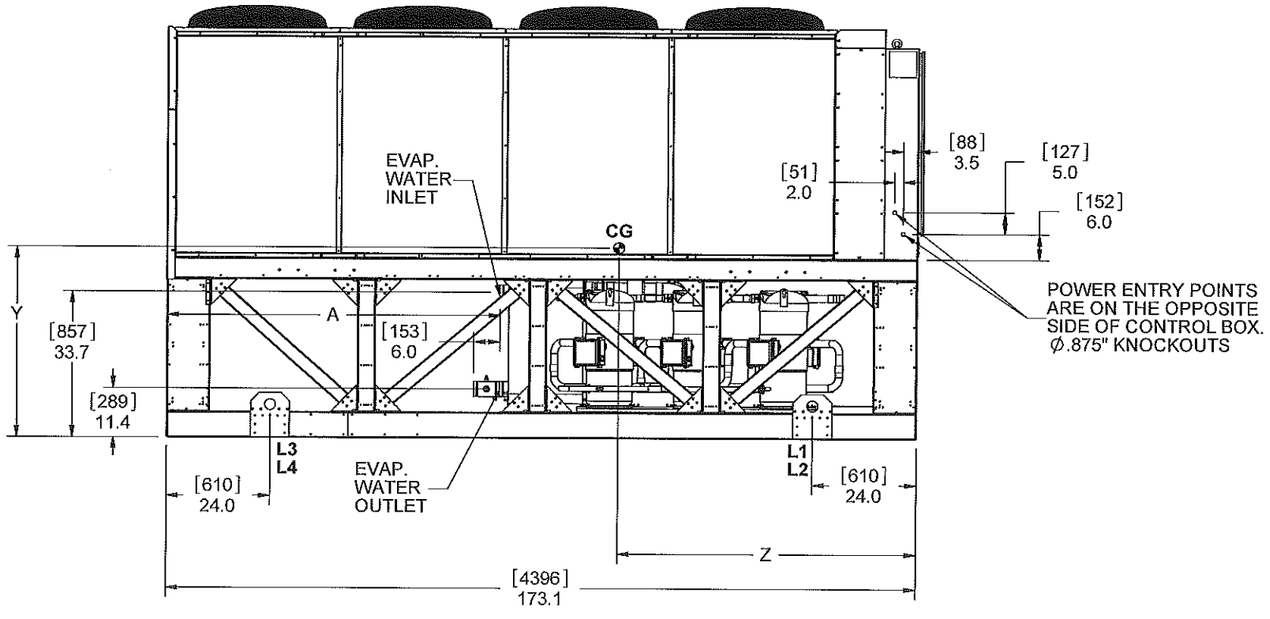
Fig 1.b

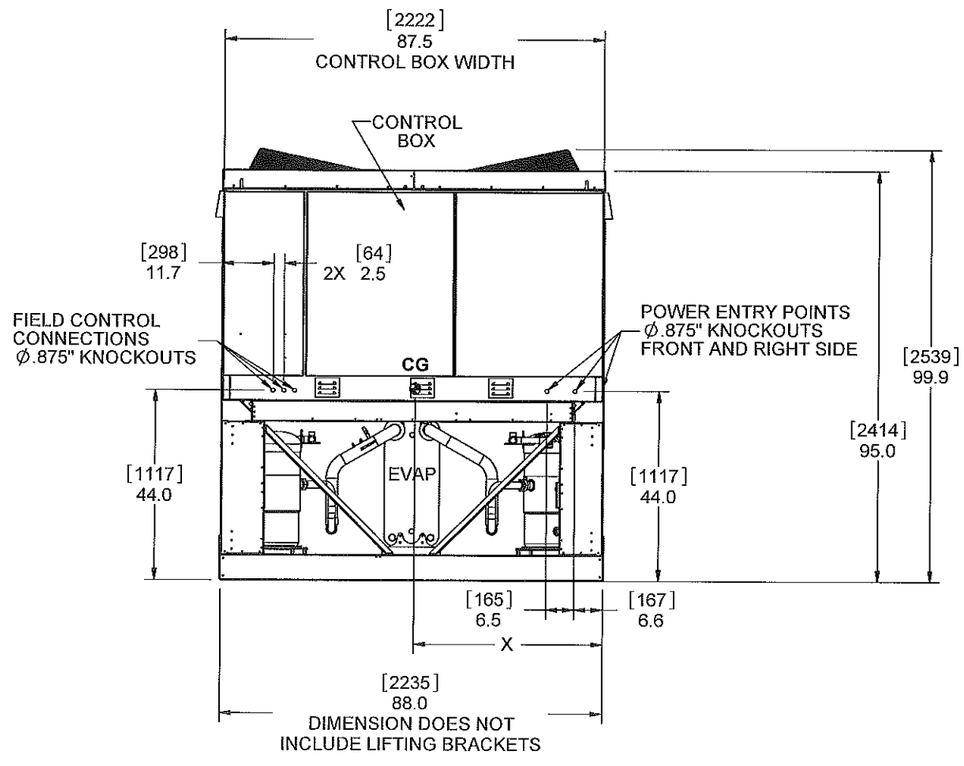
1. Figures 1.a and 1.b show the stiffener plates added to the base channel at each mounting bolt location. Each stiffener plate was 4"x2.25" with a .875" diameter hole. Each plate was made of pre-painted G60, 10 gauge steel with a nominal thickness of 0.138".

PART NUMBER	REV.	PART DESCRIPTION	RAW MATL DESCRIPTION	RAW MATL PART NO.
334548703	00	SEISMIC DWG, AGZ 8 FANS		

ISOLATOR MOUNTING HOLE LOCATIONS ON BOTTOM SURFACE OF UNIT BASE







PUR	MZ.	DWG	DRN	DATE	ECO	DESIGN SERVICE	CADD DRAWING ATTACHED TO	DOC	MZ.	DWG	DRN	DATE	ECO	REVISION CHANGE HISTORY	REV.
			SNW	02-12-14	C000309027	331749223									

REVISION CHANGE HISTORY REV.

MASTER

DIMENSIONING AND TOLERANCING CONFORMS TO ASME Y14.5M-1994

TOLERANCE DATA
UNLESS OTHERWISE SPECIFIED
.X = ±. ANGLES =
.XX = ±
.XXX = ±.
FINISH: 125 MICROINCH
ON MACHINED SURFACES
STANDARD TOLERANCES 735070200

DAIKIN

ALL DIMENSIONS ARE IN DECIMAL INCHES

SCALE NONE | THIRD ANGLE PROJECTION

3345487 D	00	2 OF 2
DRAWING NUMBER	REV.	SHEET

S:\CAD1\Units\AGZ\AGZ R-410A\Unit Models\AGZ-D New 20-25HP CMPR\AGZ R-410A 08 Fan NEW 20-25HP CMPR Final Assembly.SLDDRW

UNIT UNDER TEST (UUT) SUMMARY SHEET

TRU PROJECT NO. 1700737

UUT 4

Manufacturer: Daikin Applied
Model Line: AGZ Trailblazer Air-Cooled Scroll Compressor Chillers
Model Number: AGZ241E ***Serial Number:*** STNU170800043

Product Construction Summary:
Powder coated structural carbon steel skid and frame.

Options/Subcomponent Summary:
460V, controller, condenser fans and motors, condenser coil, scroll compressors, evaporator and expansion valves.

UUT Properties

Weight (lb)	Dimension (in)			Lowest Natural Frequency (Hz)		
	Depth	Width	Height	Front-Back	Side-Side	Vertical
10150	88	327.4	98.6	2.1	3.2	4.3

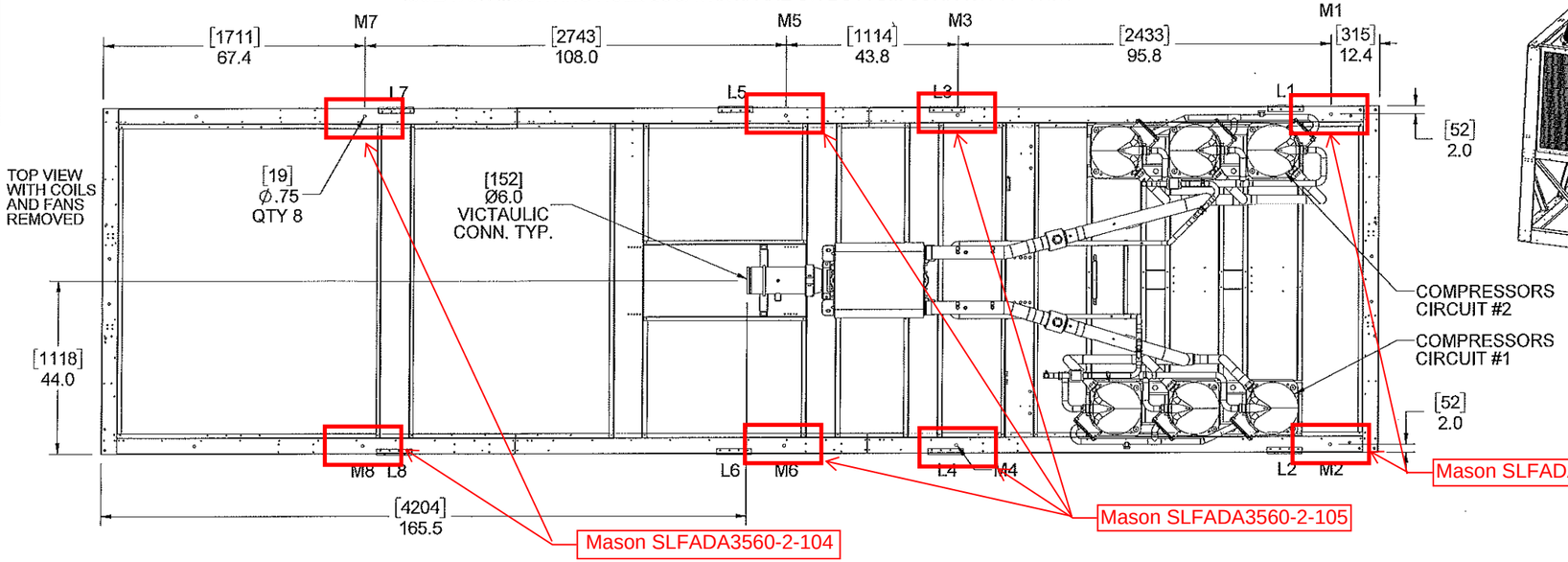
UUT Highest Passed Seismic Run Information

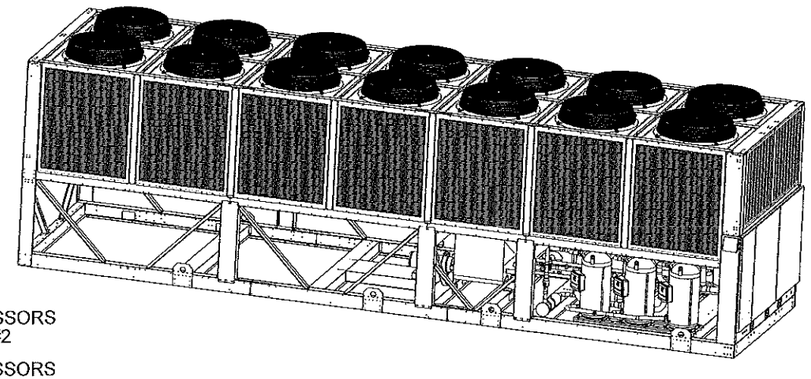
Building Code	Test Criteria	S_{DS} (g)	z/h	I_P	A_{FLX-H} (g)	A_{RIG-H} (g)	A_{FLX-V} (g)	A_{RIG-V} (g)
CBC 2016	ICC-ES AC156	0.63	1.0	1.5	1.01	0.76	-	-
		0.79	0.0	1.5	-	-	0.53	0.21

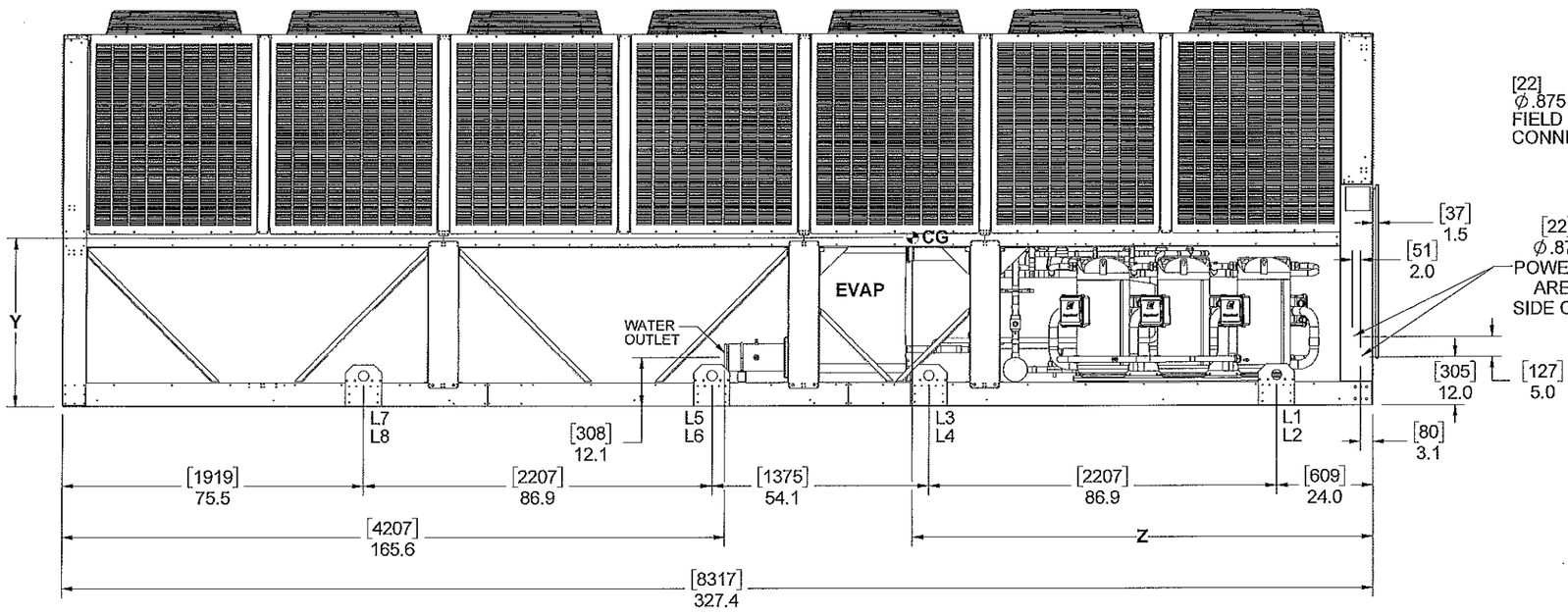
Test Mounting Details:

UUT4 was base mounted to the table fixture using eight spring isolators: (2) SLFADA3560-2-104, (4) SLFADA3560-2-105, and (2) SLFADA3560-2-106. The unit was attached to each spring isolator with one 7/8"-diameter Grade 8 bolt. Each spring isolator was then attached to the fixutre using four (4) 3/4"-diameter Grade 8 bolts. The fixture was mounted to the table using (36) 1-1/4"-diameter Grade 8 bolts. Unit maintained structural integrity and remained functional per manufacturer requirement. Contents were included in testing per operating conditions.

ISOLATOR MOUNTING HOLE LOCATIONS ARE ON BOTTOM SURFACE OF UNIT.



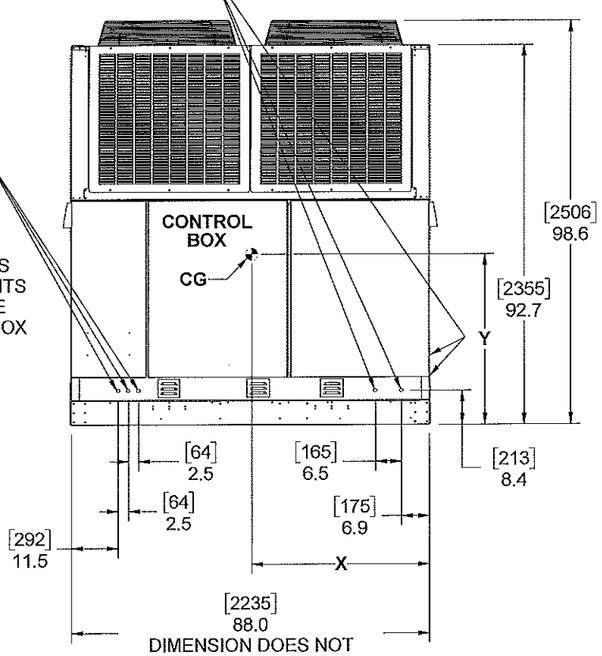




[22] ϕ.875 KNOCKOUTS FIELD CONTROL CONNECTIONS

[22] 1 ϕ.875 KNOCKOUTS POWER ENTRY POINTS ARE ON OPPOSITE SIDE OF CONTROL BOX

[22] 1 ϕ.875 KNOCKOUTS POWER ENTRY POINTS FRONT AND RIGHT SIDE



UNIT MODEL	SHIP WEIGHT		OPER. WEIGHT		LIFTING (SHIPPING) WEIGHT BY CORNER														MOUNTING (OPERATING) WEIGHT													
					L1		L2		L3		L4		L5		L6		L7		L8		M1		M2		M3		M4		M5		M6		M7		M8	
	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG	LBS	KG
AGZ241E	10253	4651	10440	4735	1688	766	1677	761	1381	626	1372	622	1190	540	1183	537	884	401	878	398	1589	721	1579	716	1367	620	1358	616	1265	574	1257	570	1015	460	1009	458

UNIT MODEL	CG LOCATION					
	X		Y		Z	
	IN.	MM	IN.	MM	IN.	MM
AGZ241E	43.9	1115	44.2	1123	119.1	3025

NOTE:
LIFTING WEIGHTS ARE BASED ON UNIT SHIPPING WEIGHTS. MOUNTING WEIGHTS ARE BASED ON UNIT OPERATING WEIGHT WITH EVAPORATOR WATER INCLUDED. SHIPPING AND OPERATING WEIGHTS DO NOT INCLUDE THE WEIGHTS OF ANY OPTIONS OR ACCESSORIES.

NOTE:
1. IT IS RECOMMENDED THAT THE SIDE LOCATIONS BE USED FOR POWER ENTRY WIRE SIZES LARGER THAN 350 MCM.

02/26/2018

OSP-0391-10

			FIT	FORM	FUNCTION	SAFETY
PRODUCT	ENGINEERING	KPC		◇		S
PROCESS	ME & QE	KCC		△		S

DEFAULT TOLERANCE
TOLERANCES ONLY APPLY TO FINISHED VIEW DIMENSIONS ONLY
X.X= ±0.1 | X.XX= ±0.03 | COPPER TUBING
ANGLE = ±2° | X.XXX= ±0.005 | ANGLE ±3° | X.XX = ±0.06
HOLES Up to 0.500= ±0.004 or Over 0.500= ±0.007
Finish: 125 MICROINCH ON MACHINED SURFACES

PART RELEASE APPROVALS			
DRN	DATE	ECO NUMBER	CL = N/A
BAJ	8/15/2017	C000687670	

REVISION CHANGE DESCRIPTION
INITIAL RELEASE

SCALE NONE | UNITS INCHES | RAW MAT

DAIKIN
THIRD ANGLE PROJECTION

DESCRIPTION: INSTR,CERTIFIED DWG,AGZ-E 14 FANS, ACH1000 EVAP

SHEET	PART NUMBER	SIZE	REVISION
1 of 1	334547		00