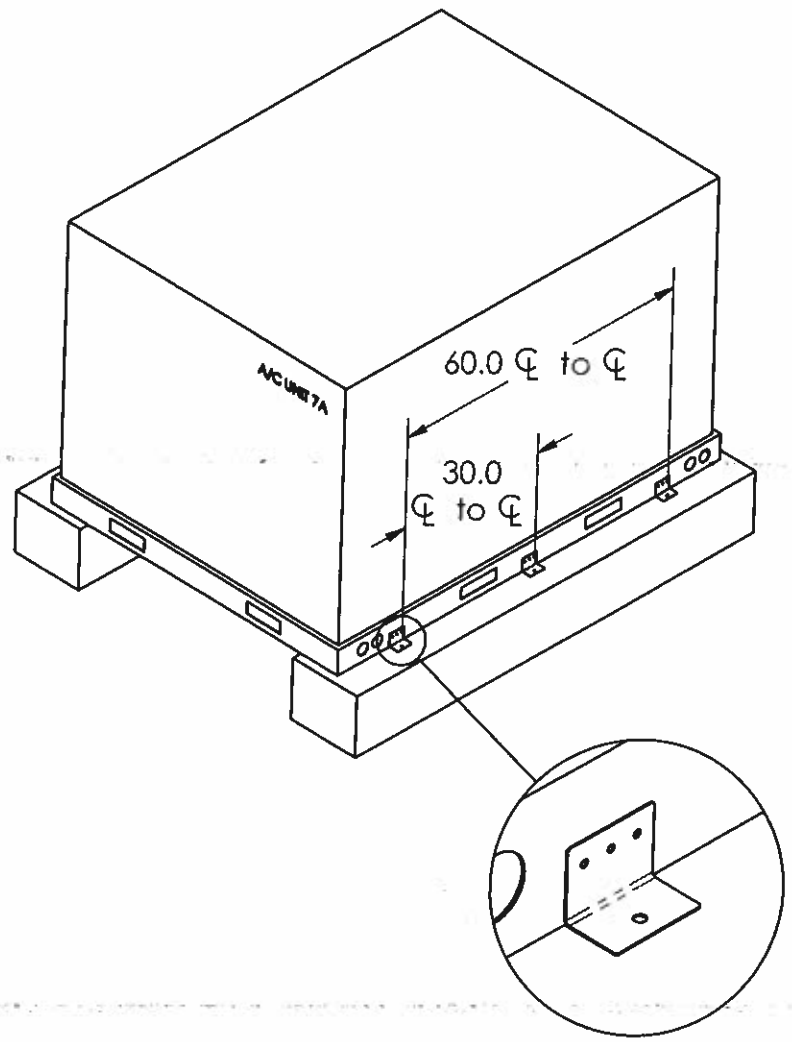
Mounting to Concrete or Stand



DETAIL A
SCALE 1 : 5

QTY. 4 -1/4" SDSM
SCREWS AND WASHERS
PER BRACKET, (6) BRACKETS

QTY. 1 - 3/8" SAE GR5 bolt, nut and washer per bracket into properly designed Metal Stand (by others)
or
QTY. 1 - 3/8" Powers Wedge-Bolt+ anchor per bracket into minimum 2000psi concrete (by others), as follows:
2-1/8" min embed
2-3/4" edge distance
2-1/2" min spacing

BRYANT Chassis 7A:

Models: 569J--D, 569J--A and 575J size 25

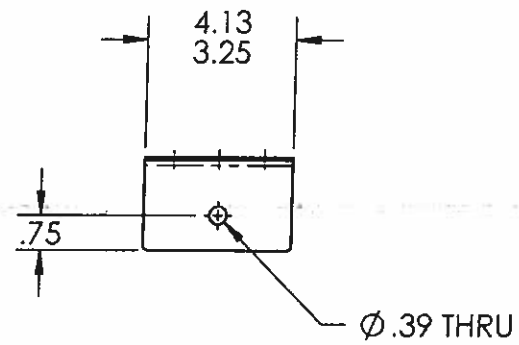
Each condenser unit listed above conforms to the Florida Building Code 6th Edition (2017) requirements for installation including High Velocity Hurricane Zone (HVHZ), Risk Category III/IV (V =186 MPH), exposure category "D", and installation height up to and including 65 feet above grade.

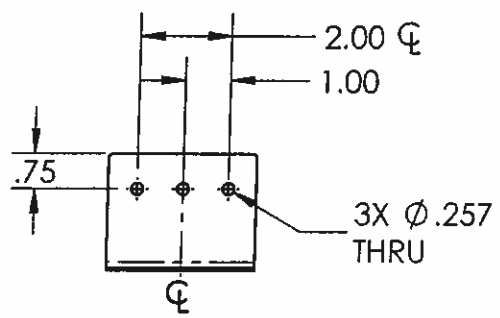
Worst Case is -25 (Chassis 7) 86-3/8" x 67-1/8" x 50-3/8"

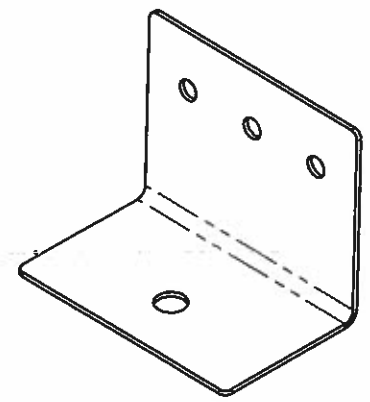
ALLOWABLE DESIGN PRESSURES FOR THE UNIT ITSELF:

Design Lateral Pressure = 197.2 psf
Design Uplift Pressure = 95.4 psf

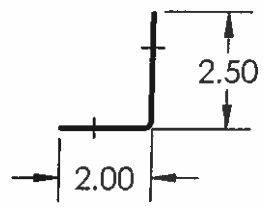
Unit itself will withstand wind loads imposed by 197.2 psf lateral and 95.4 psf uplift design pressures, provided the 16 GA. galvanized base rails are fastened to a properly designed concrete slab, metal stand, curb, curb adapter, or other suitable mounting arrangement and all factory supplied assembly fasteners are in place.







ISOMETRIC
VIEW



MATERIAL: GALVANIZED STEEL OR APPROVED EQUIVALENT
DESCRIPTION: 16 GA., 90 DEG. BRACKET

Job No: Bryant Condenser Units
Title: Model List and Details
Job No: Chassis 7A
Date: 03-23-16
Created by: CORE

Rational Analysis: 20 TON Chassis 7A - 86-3/8" x 67-1/8" x 50-3/8"

Design Pressures complying to FBC Building 1620.6 (HVHZ): V = 186 mph (Risk Cat. IV), Exposure "D"
Z = 65 ft, Kz = 1.33, Kzt = 1.0, Kd = 0.90
Qz = .00256 Kz Kzt Kd V^2 = 106.0 psf

Lateral Wind Pressure = WL = Qz (3.1) = 328.6 psf — Design Lateral Pressure = WL(0.6) = 197.2 psf
Uplift Wind Pressure = UL = Qz (1.5) = 159.0 psf — Design Uplift Pressure = UL(0.6) = 95.4 psf

Lateral Positive Design Pressure = 197.2 (0.8) / (0.8 + 0.5) = 121.3 psf (Worst Case Positive)
Lateral Negative Design Pressure = 197.2 (0.5) / (0.8 + 0.5) = 75.8 psf
Sidewall Negative Design Pressure = 197.2 (0.7) / (0.8 + 0.5) = 106.2 psf (Worst Case Negative)

22 GA. posts, 20 panels, the 18 GA. cover, and 16 GA. base rails are fastened together using #10-12 serrated washer, self-tapping screws having 0.425" head diameter, 0.19" nominal diameter, and 0.14 minor diameter. These screws are expected to exhibit the following properties based upon ICC-ES Report ESR-2196:

Pullout Strength (22 GA.) = 306 lbs (ultimate) — Shear Strength (22 GA.) = 684 lbs
Pullout Strength (20 GA.) = 351 lbs (ultimate) — Shear Strength (18 GA.) = 723 lbs
Pullout Strength (18 GA. min.) = 450 lbs (ultimate) — Shear Strength (16 GA.) = 927 lbs

Components and Cladding:

"Top Cover" (50HE500278): 85.0" x 57.4" draw formed 18 GA. cover, with (4) large holes
(4) cover-post screws at (2) corners by 22 GA. posts
(10) cover-panel screws along (3) edges by 20 GA. panels
(6) cover-cover screws along top seam of the unit by a second 18 GA. cover
The overturning moment across the unit, applied to the cover-post screws (4), created the highest load approximation given the uplift design pressure, number of fasteners and (1) edge trapped by adjacent cover connection. The individual screw load calculation simplifies to dividing the total uplift load by 6.
Total Area = 33.9 sq.ft. – 11.0 sq.ft. = 22.8 sq.ft.
Uplift Load = 22.8 (95.4) = 2176.9 lbs
Screw Load = 2176.9/6 = 362.8 lbs
Safety Factor = 723/362.8 = 2.0x OK for Components and Cladding

"Top Cover" (38AU500226): 84.96" x 8.90" draw formed 18 GA. panel, Area = 5.25 sq.ft.
(8) screws through the inside flange, perpendicular to face
(6) screws through the outside flange, parallel to face
(1) screws through left side flange, parallel to face
(1) screws through right side flange, parallel to face
Load = 5.25 (95.41) = 501.0 lbs
For top cover (15 screws, 6 in tension):
Screw Load = 501.0 (6)/15 = 200.4 lbs (tension)
Safety Factor = 450/200.4 = 2.2x OK for Components and Cladding
Screw Load = 501.0 (9)/15 = 300.6 lbs (shear)
Safety Factor = 927/300.6 = 3.1x OK for Components and Cladding

"Outdoor Panel" (38AU500661): 45.49" x 29.73" draw formed 20 GA. panel, Area = 9.39 sq.ft.
(3) screws through top panel and into face at the top
(2) screws through post (trapped) along right vertical edge, perpendicular to face
(2) screws through left vertical edge of the flange, perpendicular to face
(3) screws 7/16 inch above bottom edge through panel into base rail.
Load = 9.39 (106.17) = 997.19 lbs
Screw Load = 997.19/10 = 99.72 lbs
Safety Factor = 351/99.72 = 3.5x OK for Components and Cladding

"Side Panel" (38AU500664): 45.54" x 34.99" draw formed 20 GA. panel, Area = 11.07 sq.ft.
(4) screws through top panel into face at top
(2) screws through left vertical edge through flange, parallel to face.
(2) screws through right vertical edge through flange, perpendicular to face.
(4) screws at 7/16 inch above bottom edge through panel into base rail.
Load = 11.07 (106.18) = 1174.90 lbs
Screw Load = 1174.90/12= 97.91 lbs
Safety Factor = 351/97.91 = 3.6x OK for components and cladding

"Front Panel" (38AU500078): 43.2" x 45.1" draw formed 20 GA. panel, Half Area = 6.8 sq.ft.
(2) screws through post (trapped) along the vertical edge
(2) screws along vertical edge
(3) screws 7/16 inch above bottom edge through panel into base rail
Top edge of "Front Panel" is trapped inside the "Top Cover" (38AU500226), the bottom subtends the lower half of the panel, and the failure criterion along the bottom edge yields (5) screws for load consideration.
Load = 6.8 (106.2)/2 = 718.3 lbs
Screw Load = 718.3/5 = 143.7 lbs
Safety Factor = 351/143.7 = 2.4x OK for components and cladding

"Center Post" (38AU500662): 45.37" x 19.95" draw formed 20 GA. panel, Area = 6.29 sq.ft.
(2) screws through top panel and into face at the top
(2) screws through post (trapped) along the vertical edge
(2) screws along vertical edge of flange
(3) screws 7/16 inch above bottom edge through panel into base rail
Load = 6.29 (106.2) = 667.4 lbs
Screw Load = 667.4/9 = 74.2 lbs
Safety Factor = 351/74.2 = 4.7x OK for components and cladding

Connection of upper frame and panels to base rails:

Total overturning moment applied across the width of the rails, to the (13) rail-panel screw shear capacity, 20 GA. (min) cladding, into 16 GA. base rails, is the chosen load approximation in order to maximize design calculation variables for increased safety factor – (8) rail-post screw capacity neglected.

Connection of 20 GA. panels to 16 GA. (min) rails around the perimeter:
Screw Load = (150,110 + 128,960)/13(67.4) = 317.2 lbs (shear)
Safety Factor = 1119/317.2 = 3.5x OK for components and cladding

Unit itself will withstand wind loads imposed by 197.2 psf lateral and 95.4 psf uplift design pressures provided the 16 GA. galvanized base rails are fastened to a properly designed concrete slab, metal stand, curb, curb adapter, or other suitable mounting arrangement with all factory supplied assembly fasteners at the proper torque.

Connection of unit base rails to properly designed Metal Stand or Concrete:

Metal Stand or Concrete Connection:
Using (4) brackets, 2-1/2" x 2" x 3-1/4 - 4-1/8" wide, 16 GA. (min), spaced 30.0" (min) on-center into base rails,
Using (3) screws per bracket, (3) brackets each long side:
Screw Load = 5959/(18) = 331.1 lbs (tension)
Safety Factor = 573/331.1 = 1.7x OK for components and cladding
Screw Load = (150,110 + 99,835)/(3)(3)(67.13) = 413.7 lbs (shear)
Safety Factor = 1389/413.7 = 3.4x OK for components and cladding

Metal Stand Fasteners:
Using (3) brackets, 2-1/2" x 2" x 3-1/4 - 4-1/8" wide, 16 GA. (min), spaced 30.0" (min) on-center into base rails,
Using (1) 3/8" SAE GR5 bolt/washer per bracket, (3) brackets each long side:
Bolt Load = (150,110 + 99,835)/(1)(3)(67.13) = 1241 lbs (tension)
Bolt Load = 5959/6 = 993.0 lbs (shear)
Safety Factor = 3720/1241= 3.0x (tension) OK
Safety Factor = 1937/993.0 = 1.9x (shear) OK

Concrete Fasteners:
Using 2000psi (min) concrete, 4" (min) thick (by others),
Using (1) 3/8" Powers Wedge-Bolt+ anchors per bracket, (3) brackets each long side:
Anchor/Bolt Load = (150,110 + 99,835)/(1)(3)(67.13) = 1241 lbs (tension)
Anchor/Bolt Load = 5959/(6) = 993.0 lbs (shear)
Safety Factor = 3000/1241= 2.4x (tension) OK
Safety Factor = 3100/993.0= 3.1x (shear) OK

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