APPLICATION BULLETIN

Form # H20221221A

December 21st, 2022

Supersedes A.001 September, 2017

Subject: H-Series Outdoor Unit Stacking

Introduction:

This bulletin provides supplemental instruction for H-Series outdoor units, when a "stacked" installation is to be considered. Stacking is defined as having more than one outdoor unit installed in a vertical arrangement, generally in areas where installation space is limited. For a complete description of H-Series installation and clearance requirements, please refer to the applicable model Installation Manual and Design and Technical Manual.

Discussion:

Stacking Methods

Methods described herein for H-Series outdoor unit stacking can be categorized as:

- In-line– no offset, Fig. 1.
- Offset– offset from front to rear, viewed from unit side, Fig. 2.

Fig. 1.

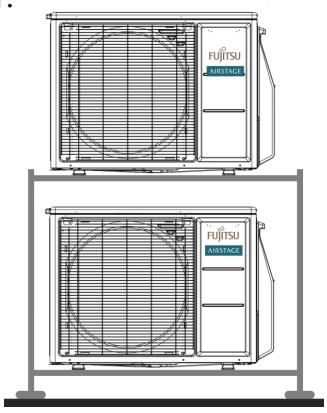
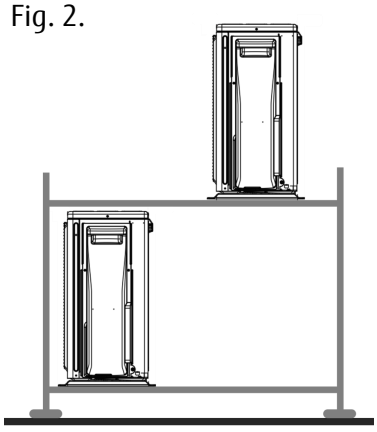


Fig. 2.



IMPORTANT– outdoor units should never be directly stacked on top of each other!

- The lower unit shall not be used to support upper unit weight

Outdoor temperature considerations

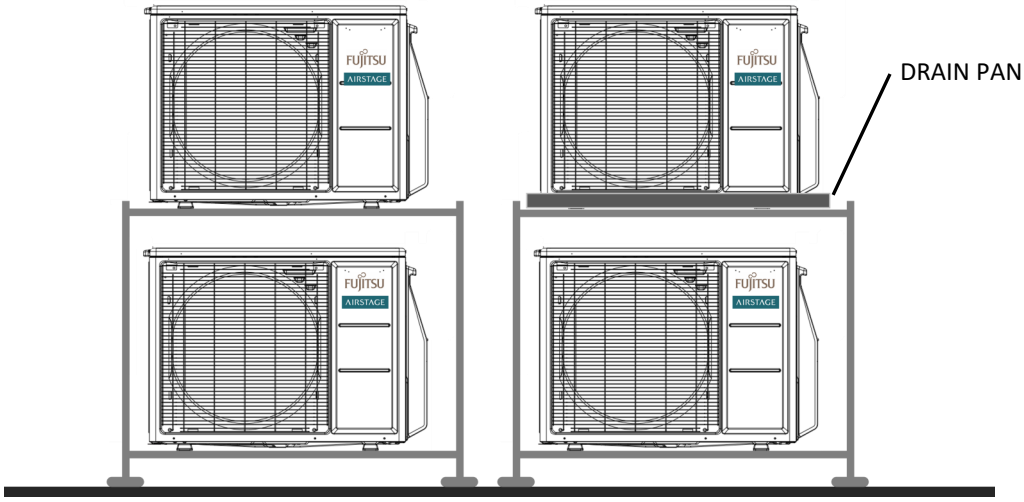
The air temperature which the Airstage outdoor units are subjected to will determine the need to consider using an offset method for stacking. See Figures 1 & 2 for stacking method reference:

- Outdoor air temperature > 37° F. (0° C)
  - ◊ In-line or offset
- Outdoor air temperature ≤ 37° F. (0° C)
  - ◊ Offset

1. In-line (no offset) Fig. 3.– This method may be used where the outdoor temperature **is above** 37° F. There are no offsets in this method; the upper outdoor unit may be installed in direct alignment with the bottom unit.

    - Outdoor unit clearances– A service clearance of at least 18" is recommended between the top and bottom outdoor units. If insufficient clearance is not provided, accessibility to perform some service procedures for the lower unit may be compromised.
    - Drain pan– Fig. 3a.– A field provided drain pan is recommended between the top and bottom unit, with a side drainage connection to divert drainage from the upper unit away from the lower unit.

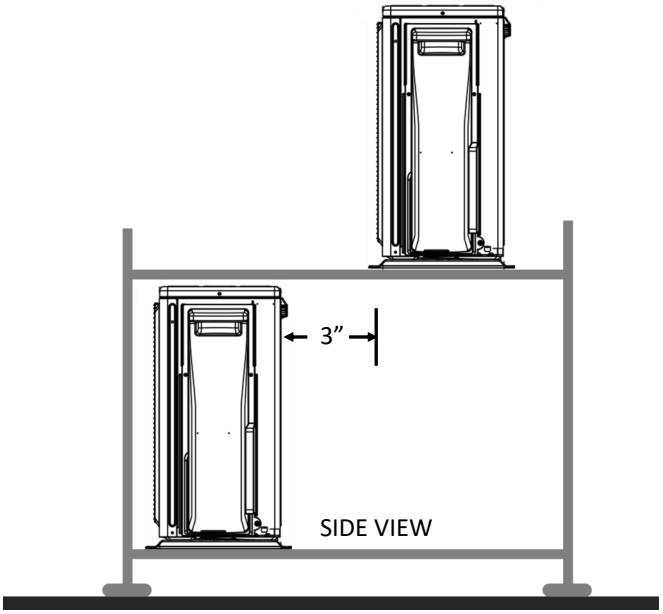
Fig. 3. Fig. 3a.



2. Offset- Fig. 4.– This method is used where the outdoor temperature **is below** 37° F., however may also be used with temperatures above 37° F. as well. An offset exists between the front and rear upper and lower outdoor unit; the discharge air pattern may be in either direction, factoring required clearances to walls or other units.

    - Offset clearances– A clearance of at least 3" between the top and bottom outdoor units is recommended to help ensure ice / snow formations do not interfere with operation of the lower unit.

Fig. 4.



- Accessory drain pipe– Do not install the provided drain pipe accessory where outdoor air temperatures are below 37° F., as water may approach freezing and result in drain blockage.

Ground clearance

The outdoor units should always be installed above the highest anticipated snow level, with a minimum of 2" above ground.

Outdoor unit stand

Stacking of H-Series outdoor units in any method requires use of a commercially available or fabricated mount, to support the outdoor unit weight and additional rigging requirements. Outdoor unit stand / bracket construction, materials and rigging must conform to all code requirements, especially in regions where hurricane force or high winds dictate unique mounting methods.

Outdoor unit support types are generally grouped as either:

- Wall bracket– for installing outdoor units on an exterior wall
- Stand– for installing outdoor units on the ground or rooftop

Outdoor unit mounting

When mounting the outdoor unit to the stand, use the hardware provided by the stand manufacturer or commercially available hardware, such as M10 nuts, bolts and washers.

- Mounting locations– Install the mounting hardware at the (4) support leg locations as shown in Fig. 5.
- Bolt height- The mounting bolts should extend beyond the stand frame 1", as shown in Fig. 6.

Fig. 5.

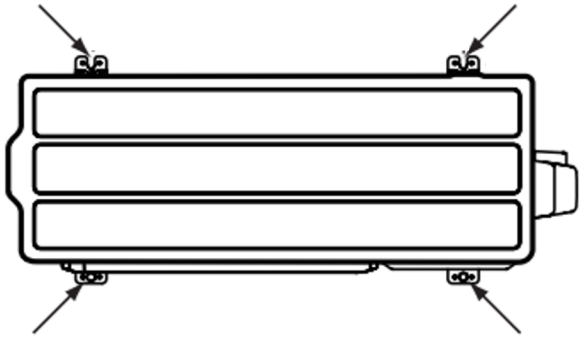
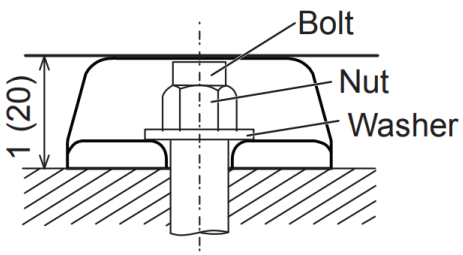


Fig. 6.



Additional installation considerations:

1. Extreme locations– The outdoor unit(s) must be installed in accordance with any and all applicable high wind and seismic requirements as required per local codes. Fujitsu General America does not offer prescribed methods for extreme location mounting.
2. Vibration– Structure born vibration into the building is possible, especially when using wall brackets. Use the vibration dampening accessories provided by the stand or bracket manufacturer, or other commercial available accessories for vibration dampening as necessary.
3. Snow hood use– Use of the Fujitsu Airstage UTZ-DUSH**A Snow Hood accessory is permitted in outdoor unit stacking installations. Refer to the Snow Hood Installation Instructions and Application bulletin A20211124B (or latest revision) for clearance details with snow hood use.
4. Unit clearances– All other unit clearances not referenced in this bulletin are to be provided per the outdoor unit Installation Manual and Design & Technical Manuals.

Reference literature

This bulletin is to provide supplemental instruction to the outdoor unit Installation Manual and Design & Technical Manual for unit stacking applications only. Please log onto the Fujitsu **CONNECT** site for Airstage H-Series Installation and Design & Technical Manual downloads.

Additional notes

The information in this bulletin is subject to change without notice. All installation details for 3rd party stands shall conform to the manufacturer installation instructions. Fabricated stands must support the full unit weight and any additional installation requirements and conform to all applicable codes.

To obtain additional support, please contact your regional Distributor TSA, Technical Service Advisor, or Fujitsu General America Technical Support, **servicehvac@fujitsugeneral.com .**