



Installation and Maintenance Manual

IM 1073-1

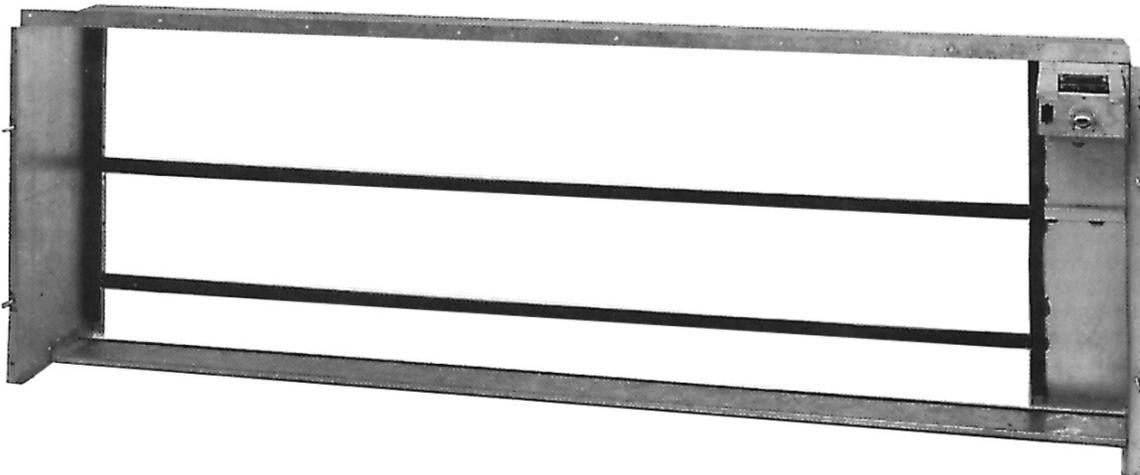
Group: **Unit Ventilator**

Document PN: **910291762**

Date: **October 2019**

Daikin Classroom Self-Contained Unit Ventilator Wall Sleeve Installation Instructions

Models AZQ, AZR, AZU and AEQ



IMPORTANT!

Improper installation can cause equipment damage, personal injury or death. Before beginning installation, please read this publication in its entirety.

Develop a thorough understanding before starting the installation procedure.

This manual is to be used as a guide. Each installation is unique, so only general topics are covered.

The order in which topics are covered may not be those required for the actual installation.

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Recognize safety information. When you see a safety symbol on the unit or in these instructions, be alert to the potential for personal injury. Understand the meanings of the words DANGER, WARNING, and CAUTION.

DANGER identifies the most serious hazards that will result in death or severe personal injury.

 DANGER	
	Disconnect all electrical power before servicing unit to avoid injury or death due to electrical shock.

WARNING means the hazards can result in death or severe personal injury.

 WARNING	
Hazardous Voltage! Disconnect all electric power including remote disconnects before servicing. Failure to disconnect power before servicing can cause severe personal injury or death.	

CAUTION identifies unsafe practices that can result in personal injury or product and property damage.

 CAUTION	
Use copper conductors only. Unit terminals are not designed to accept other types of conductors. Failure to do so can cause damage to the equipment	

Improper installation, adjustment, service, maintenance, or use can cause, fire, electrical shock, or other conditions which can result in personal injury or property damage. This product must be installed only by personnel with the training, experience, skills, and applicable licensing that makes him/her “a qualified professional HVACR installer.”

Follow all applicable safety codes. Wear safety glasses and work gloves. Use a quenching cloth for brazing operations. Have a fire extinguisher available. Follow all warnings and cautions in these instructions and attached to the unit. Consult applicable local building codes and National Electrical Codes (NEC) for special requirements.

 CAUTION	
Installation and maintenance are to be performed only by qualified personnel who are familiar with and in compliance with state, local and national codes and regulations, and experienced with this type of equipment. Sharp edges and coil surfaces are a potential injury hazards. Avoid contact with them.	

 WARNING	
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. A qualified licensed electrician or other technician trained and experienced in live electrical components should perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components can result in death or severe injury.	

Important Information

Pride and workmanship go into every Daikin Model AZ and AE self-contained unit ventilator to provide our customers with quality products. Products should be installed and serviced only by qualified installers and service technicians familiar with and in compliance with state, local and national codes and regulations, and experienced with this type of equipment. This installation manual is designed to help with the installation and start-up.

Transportation Damage

Items supplied by Daikin may include louvers, wall sleeve, Model AZ or AE unit and accessories. Each item has been carefully inspected and securely packed in a Daikin-approved carton at the factory. In addition, each Model AZ or AE unit has been operated at the factory to verify proper performance. The carrier checked the items when the shipment was loaded and assumed responsibility for damage or loss upon acceptance of the shipment.

The purchaser is responsible for filing the necessary claims with the carrier. Check each carton upon arrival for external damage or shortages. Note any damage or shortage and any damage on all copies of the freight bill. If damage or shortages are found, the consignee should:

1. Note any visible damage to the shipment or container on all copies of the delivery receipt and have it signed by the carrier's agent. Failure to adequately describe such external evidence of a loss or damage may result in the carrier refusing to honor a claim.
2. Notify carrier promptly with a written request for an inspection.
3. In case of concealed loss or damage, or damage and/or loss that does not become apparent until the product has been unpacked, notify the carrier as soon as possible, preferably within five (5) days and no later than 15 days.
4. File the claim within the six (6) month statute of limitations of the carrier with the following supporting documents:
 - a. Original Bill of Lading, certified copy, or indemnity bond.
 - b. Original paid freight bill or indemnity in lieu thereof.
 - c. Original invoice, or a certified copy thereof, showing trade and other discounts or reductions.
 - d. Copy of the inspection report issued by carrier's representative at the time damage is reported to the carrier.

The carrier is responsible for making prompt inspection of damage and for providing a thorough investigation of each claim. Daikin will not accept claims for transportation damage.

To help avoid concealed damage:

5. Do not stack wall sleeves more than 2 high. See [Figure 2 on page 5](#).

NOTICE

Daikin wall sleeves are carefully packed and thoroughly inspected before leaving the factory. The carrier assumed responsibility for damage or loss upon acceptance of the shipment. Claims for loss or damage sustained in transit must be made upon the carrier as follows:

VISIBLE LOSS OR DAMAGE

Any external evidence of loss or damage must be noted on the freight bill or carrier's receipt and signed by the carrier's agent. Failure to adequately describe such external evidence of loss or damage may result in the carrier's refusing to honor a damage claim. The form required to file a claim will be supplied by the carrier.

CONCEALED LOSS OR DAMAGE

For concealed loss or damage (damage and/or loss that does not become apparent until the product has been unpacked), make a written request for inspection by the carrier's agent within fifteen (15) days of the delivery date. File a claim with the carrier since such damage is the carrier's responsibility.

Equipment Storage

If equipment is stored for any length of time before installation, it should remain in its shipping packaging in a clean, dry, climate controlled area. For extended storage times, rotate indoor fan motor and outdoor fan /motor assemblies periodically to prevent flattening of the bearing.

Lifting and Moving

A forklift with 72" tines, or other lifting device is needed to move these products (Figure 1).

Move the wall sleeve(s) to the location at which it is to be installed before uncrating. Check tagging on carton to confirm that the item is correct for the location. The carton for the unit is imprinted with the Daikin trademark which is the "front" or room side of the unit. The end of the unit carton marked "Truck From This End" should be on the right-hand side when facing the front of the carton.

Forklift-type vehicles may be used to unload and move the cartons. When using a forklift, it is important that the products remain banded to its skid and be lifted only from the end designated on the carton. Move only one unit at a time. Do not drop unit.

⚠ CAUTION

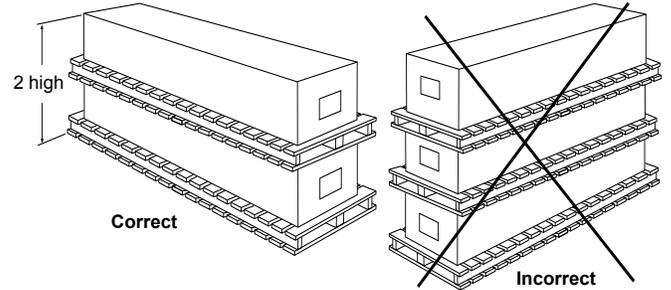
Use 72" length forklift tines. Short tines will damage the unit bottom. Improper handling can damage internal components

Figure 1: Forklift lifting requirements



Wall Sleeve Cartons

Figure 2: Stack wall sleeve maximum 2 high as shown



Complete Installation Procedure Summary

- Read this manual in its entirety and understand the installation procedures
- Wall opening cut
- Lintel(s) in place to support masonry wall over opening
- Electrical and control wiring roughed in
- Rough opening envelope smooth and sealed
- Position of wall sleeve marked where it extends and at points where mounts to wall and floor
- Splitters fabricated
- Metal flashing in place or sealed sloped mortar bed for drainage from wall sleeve "D" seal channel to bottom of louver
- Wall sleeve installed, level and sealed air and water tight
- Splitters attached to wall sleeve and sealed
- Electrical run and control wiring connections made to wall sleeve junction box
- Interior wall finished
- Shut-off valves installed below floor grade for water or steam
- Unit Installed

Carefully arrange the location and installation of each model AZ or AE unit to provide convenient service access for maintenance and, if necessary, removal of the unit. The installation consists of four basic elements in the following order:

1. Louver
2. Galvanized Wall Sleeve
3. Horizontal Air Splitters by others (if required)
4. AZ or AE Self-Contained Unit Ventilator

The louver brings in outdoor air for the condenser fan section and ventilation air to the classroom while providing a path for heated condenser air to exit.

The Wall Sleeve secures the unit, provides a watertight and air tight seal to the building and brings in electrical and control wiring (if required). It contains the unit main power disconnect switch

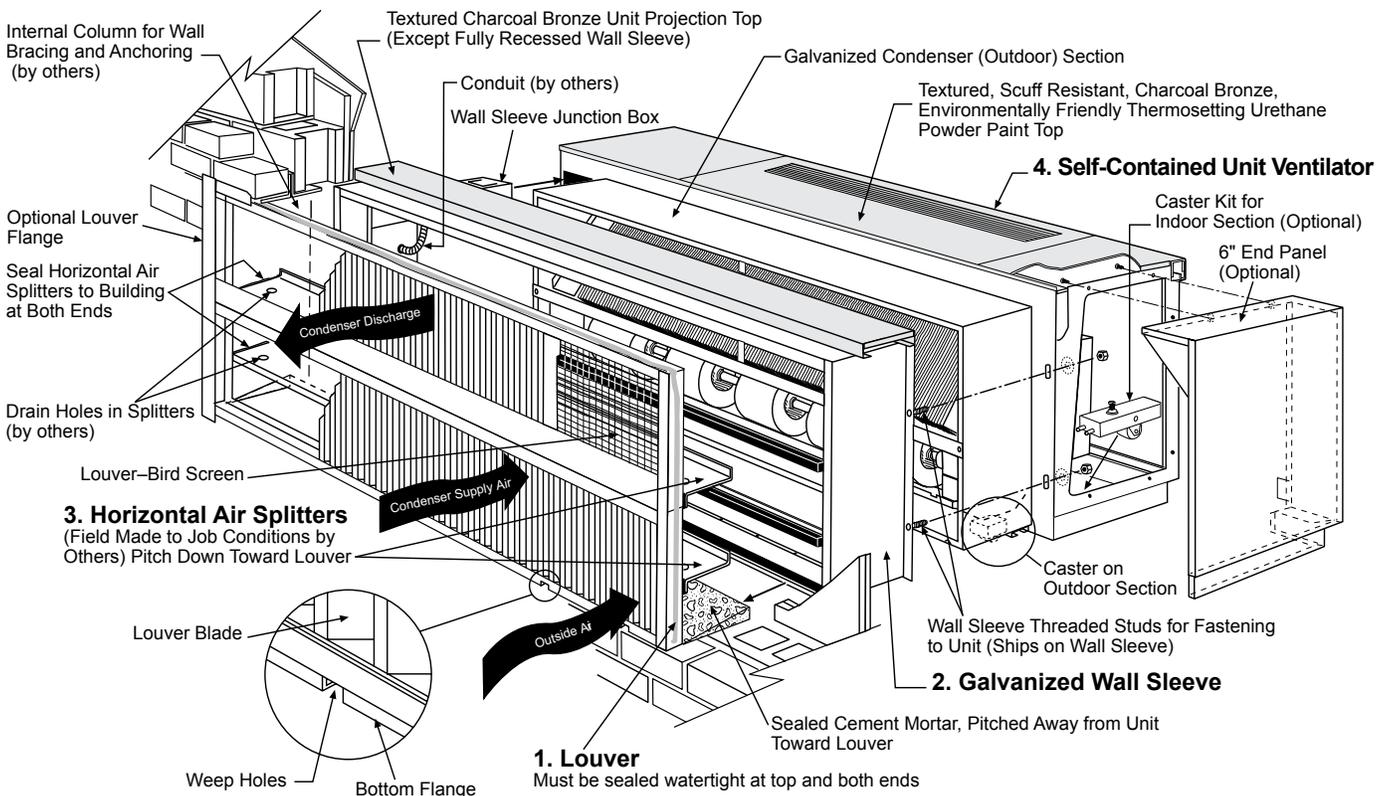
which is located in the wall sleeve junction box. All field electrical connections are made inside this box.

Horizontal Air Splitters provide proper air paths and minimize air recirculation.

The AZ and AE self-contained unit ventilator provides comfort cooling and heating for the space. The Model AZ or AE unit is designed to be installed into or up against an inside wall. The louver, air splitters (if required) and wall sleeve are installed before the AZ/AE unit is installed.

On many jobs, the louver and wall sleeve are shipped ahead of the unit itself. Installation instructions for these components are shipped with the individual components included in this publication.

Figure 3: Typical frame and brick construction with partial recess



An opening in the outside wall is required to accommodate the wall sleeve and louver. The wall opening must be of sufficient size to allow proper fit of the louver and will depend on the type of wall. National and local codes for building construction must be followed and may supercede the suggested methods in this manual.

Locating Wall Opening (Existing Building)

The first step in the installation is to carefully locate the area of interior and exterior wall to be removed. Determine the appropriate location on the interior wall where the unit ventilator is to be installed. Using the rear edge of the wall sleeve as a guide, mark the interior wall surface for the rough-in wall sleeve opening 1/4" larger at each end than the wall sleeve recess dimension, and 1/4" higher (see Table 2 on page 9). In all cases, the bottom of the outdoor louver opening must be at the same height as the floor line.

For non-recessed installations, (full projection), mark the position of the wall sleeve on the interior wall surface with the wall mount flanges removed to help determine the location of the outdoor wall surface rough opening.

Transfer the interior wall opening dimensions to the exterior wall surface, being certain the opening is 1/4" larger at each end than the wall sleeve recess dimension, and 1/4" higher.

NOTICE

Wall and floor must be at 90° to one another. If not, the floor must be leveled (90°) to wall.

Figure 4: No recess (full projection), thin wall construction

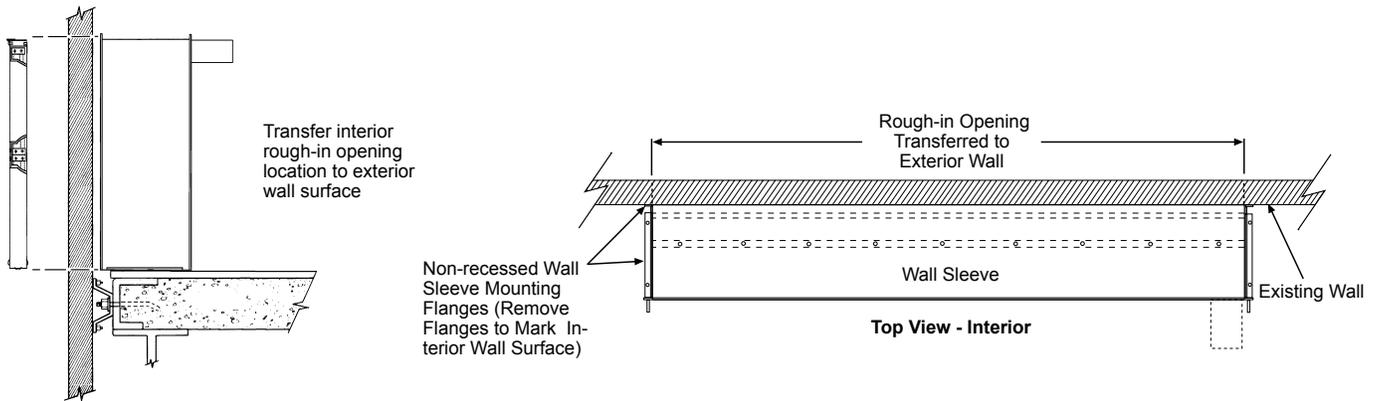


Figure 5: Full recess, thick wall construction

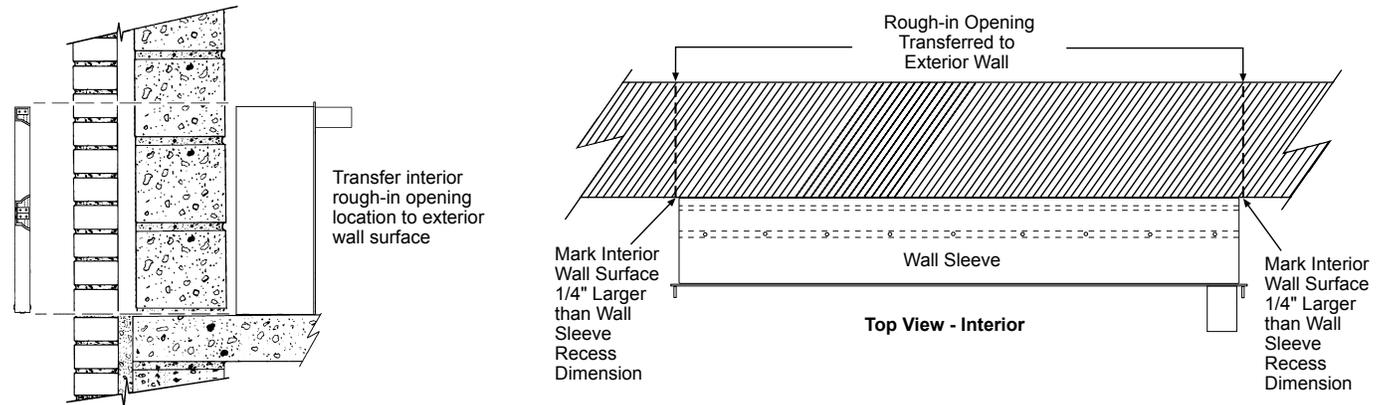
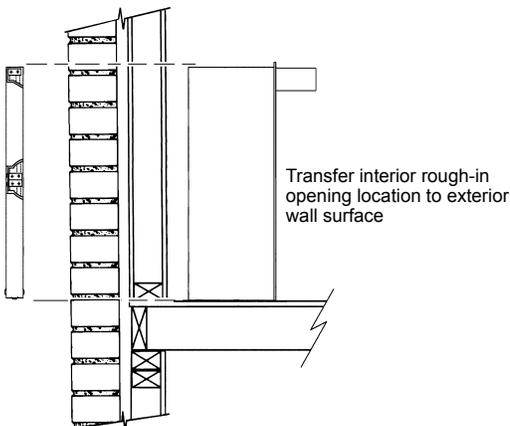


Figure 6: Partial recess, frame and brick construction



⚠ CAUTION

Unit ventilators use fresh air to condition the interior space. Obstructions near the louver wall opening must be removed to allow free flow of entering and discharge air. Building and vehicle exhaust, etc., near the louver intake must be identified and eliminated.

Cutting Exterior Wall Opening

The wall opening must be of sufficient size to allow proper, yet snug, fit of the louver and will depend on the type of wall. If the louver is to be installed in a masonry wall, install a lintel to support the wall above the wall sleeve and louver. Install a sleeve to prevent moisture from seeping into the wall interior. Refer to approved submittal prints for recommended rough wall opening size.

CAUTION

Read louver and wall sleeve installation sections before proceeding (page 8 through page 18). Improper installation can result in property damage.

The following is a typical procedure for installing in existing masonry walls. Follow local codes and safety procedures.

If the unit is to be installed in an existing classroom, an opening must be cut in the outside wall to accommodate the wall sleeve and louver. This is accomplished as follows: First, the outside of the masonry wall is cut with a carborundum or other suitable blade as shown in Figure 7. This opening should be 1/2" larger overall than the size of the louver supplied with the unit (see Figure 7 & Table 1).

Figure 7: Cutting the outside wall rough opening slightly larger than the size of the louver



Figure 8: Rough-in dimensions of exterior wall for louvers

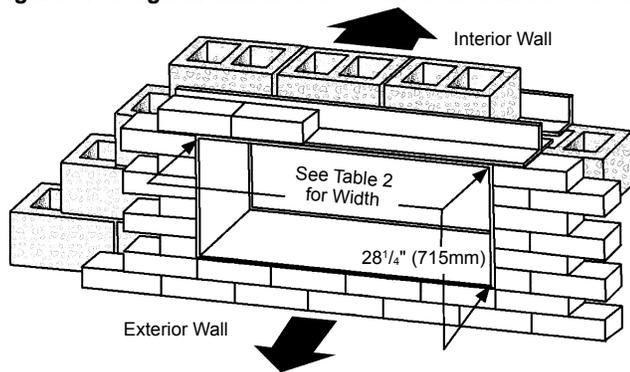


Table 1: Recommended rough-in dimensions for louvers with or without flanges (exterior wall)

Unit Size	Width		Height	
	IN	MM	IN	MM
024	84½	2140	28¾	715
036	96½	2444	28¾	715
044	108½	2747	28¾	715
054				

Note: See louver installation section. Dimensions are approximate and are dictated by job site conditions.

CAUTION

Horizontal splitters (by others) must be installed whenever there is space between the wall sleeve and the louver. Seal the ends of the wall opening. Pitch splitters toward the louver for water drainage (see sealing wall sleeve and horizontal splitters, page 15 & page 17).

Cutting Interior Wall Opening

Next, the interior wall is cut as shown in Figure 9. If any portion of the wall sleeve is to be recessed into the wall, the opening must be large enough to accommodate the wall sleeve (see Table 2 on page 9). In all cases, the bottom of the wall opening must be at the same height as the floor line. Seal the floor of the wall opening to permit water to drain under the louver and away from the building interior. If the building is a panel wall, the sleeve will be non-recessed (full projection) and all of the unit will remain in the room.

Figure 9: The interior wall opening is cut



Table 2: Recommended rough-in wall opening for wall sleeve

Unit Size	Wall Sleeve w/Flange Length	Sleeve (Recessed) Length	Recommended Rough-in Wall Opening	
			Length	Height
024	86" (2184mm)	84" (2145mm)	84½" (2146mm)	28½" (724mm)
036	98" (2489mm)	96" (2489mm)	96½" (2451mm)	28½" (724mm)
044, 054	110" (2794mm)	108" (2755mm)	108½" (2756mm)	28½" (724mm)

The interior wall is then knocked out in the area cut for the wall sleeve as shown in [Figure 10](#).

Figure 10: The interior wall is knocked out in the area cut for the wall sleeve



If the wall consists of concrete block with brick (or other) veneer and the louver opening is smaller than the opening of the wall sleeve (which is to be recessed), be careful to knock out only the veneer that is necessary.

After the opening is finished ([Figure 11](#)), a lintel must be installed above the opening in masonry walls to support the remaining block and brick ([Figure 12](#)). The wall must contain a solid surface or an internal column at each end for bracing and anchoring the wall sleeve and louver (by others).

⚠ CAUTION

Shut-off valves for hot water and steam must be flush with the floor to allow unit installation and removal (refer to IM 1065 for details on piping arrangements).

Figure 11: A Lintel must be installed above the opening to support the remaining block and brick

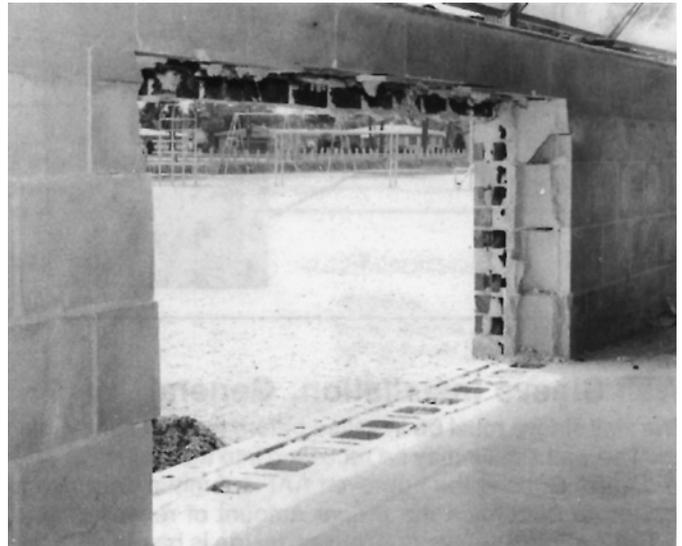
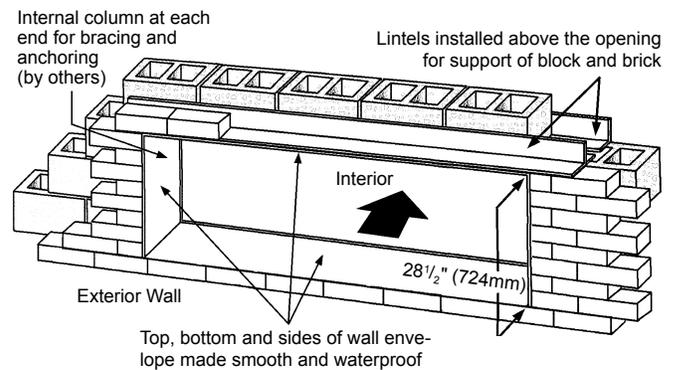


Figure 12: Lintels installed



⚠ CAUTION

The wall opening must be sealed and made watertight. See the louver, splitter and wall sleeve installation sections

New Buildings

In new construction, if any portion of the wall sleeve is to be recessed into the wall, the opening must be large enough to accommodate the wall sleeve (see [Table 2](#)). For smaller wall thickness, the wall sleeve will be non-recessed (full projection) and all of the unit will project into the room. In all cases, the bottom of the wall opening must be at the same height as the floor line. A lintel must be installed above the opening in masonry walls to support the block and brick. The wall must contain a solid surface or an internal column at each end for bracing and anchoring the wall sleeve and louver (by others).

Wall Sleeve Details

Note: Please refer to "Transportation Damage" on page 4 for information on receiving, inspection, and filing claims for damage or loss with the carrier, and handling items supplied by Daikin.

Figure 13: Wall sleeve

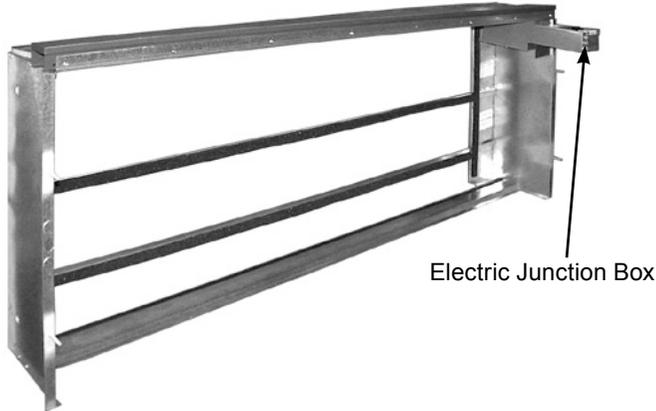


Table 3: Wall sleeve dimensions

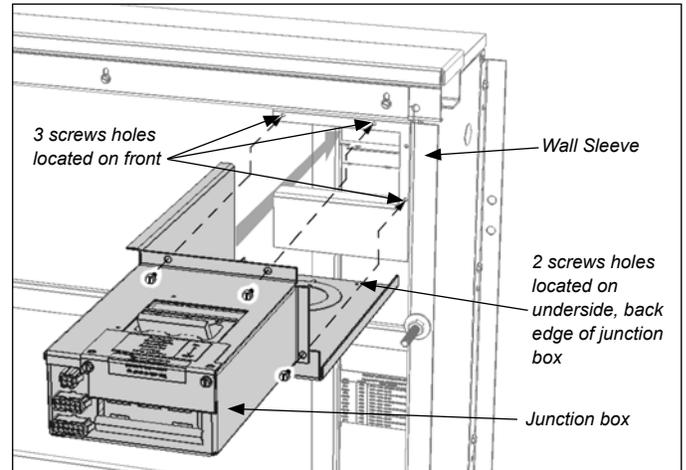
Unit Size	Overall Length "L" (mm)	Sleeve Recess Length "Lr" (mm)
024	86 (2184)	84 (2145)
036	98 (2489)	96 (2450)
044, 054	110 (2794)	108 (2755)

Note: Wall sleeve (electric junction box is strapped to the wall sleeve during shipping and is field mounted).

Mount The Junction Box To Wall Sleeve

Mount the junction box to the wall sleeve as shown in Figure 14 with five (5) provided screws. Three (3) screws on the front and two (2) screws secure the underside back edge of the junction box to the wall sleeve.

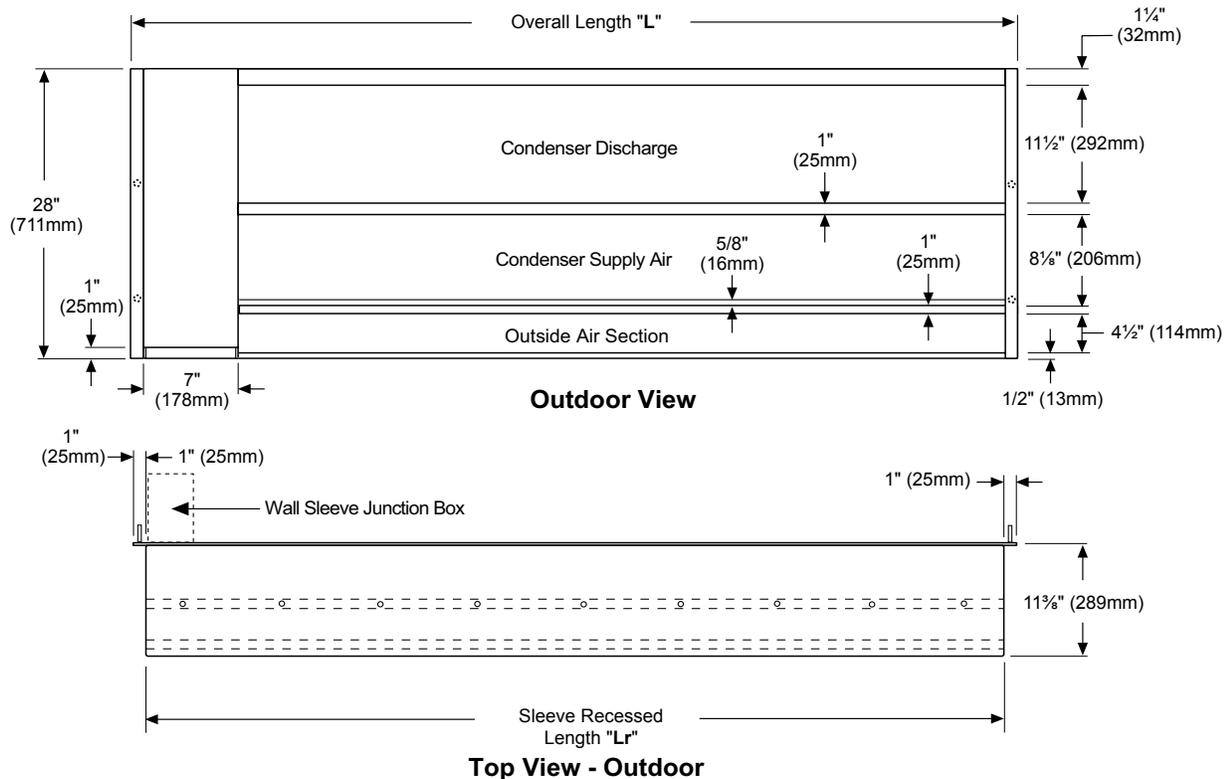
Figure 14: Attach electric junction box to wall sleeve



⚠ CAUTION

The opening between the wall sleeve and the louver must be completely enclosed by the installer to prevent air and water leaks into the building

Figure 15: Wall sleeve dimensions for recessed applications



Pre Wall Sleeve Installation Checklist

- Wall sleeve section of manual read in its entirety with understanding of the installation procedures
- Louver installed and sealed with bird screen toward wall sleeve with 9" exhaust opening at top
- Structural columns exist to attach wall sleeve
- Sides of rough opening smooth and sealed
- Electrical and control wiring stubbed up
- Top, and bottom of wall envelope smooth and sealed and 90 degrees to interior mounting wall
- Splitters installed and sealed for mate-up to wall sleeve
- Metal flashing in place or sealed sloped mortar bed for drainage from wall sleeve "D" seal channel to bottom of louver
- Correct wall sleeve confirmed
- Wall sleeve assembled

CAUTION
 Unit wall sleeve must be anchored to an internal wall column or other suitable support.

The Daikin wall sleeve and louver design is based on a "wet sleeve" concept. In brief, this means the design accommodates the penetration of some moisture into the rear outdoor section of the AZ unit with provisions for containment and disposal of this moisture to the outdoors (see details in [Figure 3 on page 6](#)). Therefore, proper Louver, Splitter and Wall Sleeve installation is critical.

The wall sleeve must be installed before the self-contained unit ventilator can be placed. The recessed portion of the wall sleeve measures approximately 84", 96" or 108" wide by 28" high and may be recessed into the wall up to 11 3/8" in depth. Consult approved Daikin submittal drawings for the job to determine the proper amount of recess, if any, and recommended wall opening size.

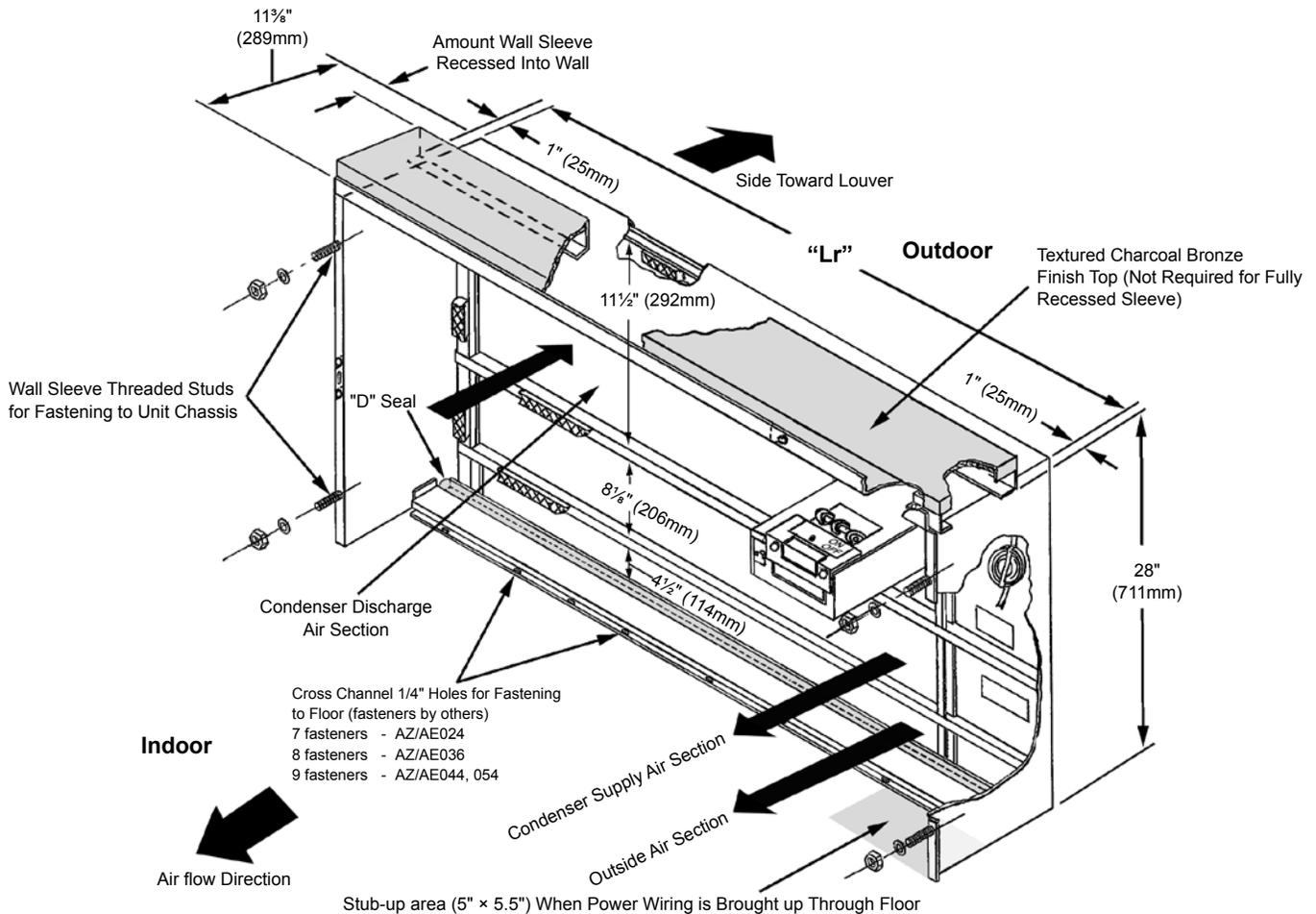
The unit chassis attaches to the wall sleeve threaded studs using 4-nuts and washers ([Figure 16](#)).

NOTICE
 Wall and floor must be at 90 degrees to one another. If not, the floor must be leveled (90 degrees) to wall.

Table 4: Recommended rough-in wall opening

Unit Size	Recommended Rough-in Wall Opening		Sleeve Recess Length "Lr"
	Length (mm)	Height (mm)	
024	84 1/2" (2146)	28 1/2" (724)	84" (2184mm)
036	96 1/2" (2451)		96" (2489mm)
044, 054	108 1/2" (2756)		108" (2794mm)

Figure 16: Wall sleeve details (recessed type)



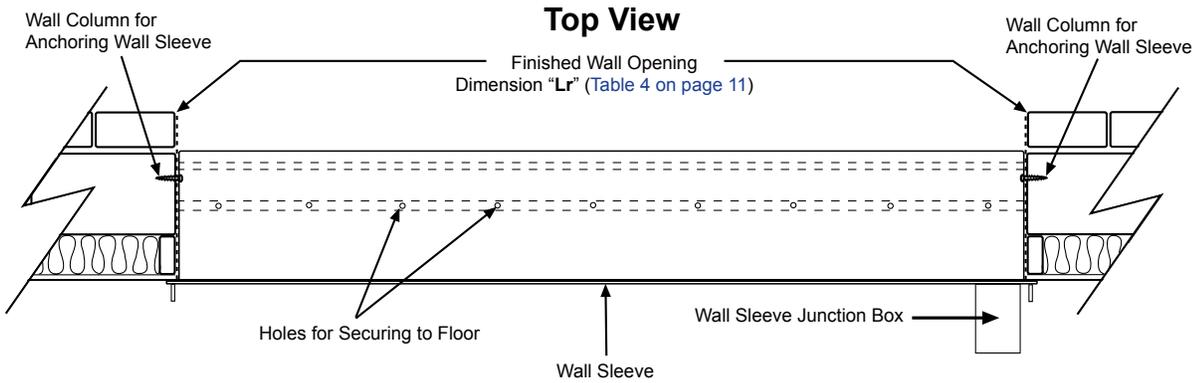
Typical Wall Sleeve Applications

The following is a brief description of three typical methods of installation. Many variations are possible, depending on wall thickness.

Thick Masonry Wall With Full Recess

This example shows the wall sleeve fully recessed into a Masonry (Thick) Wall.

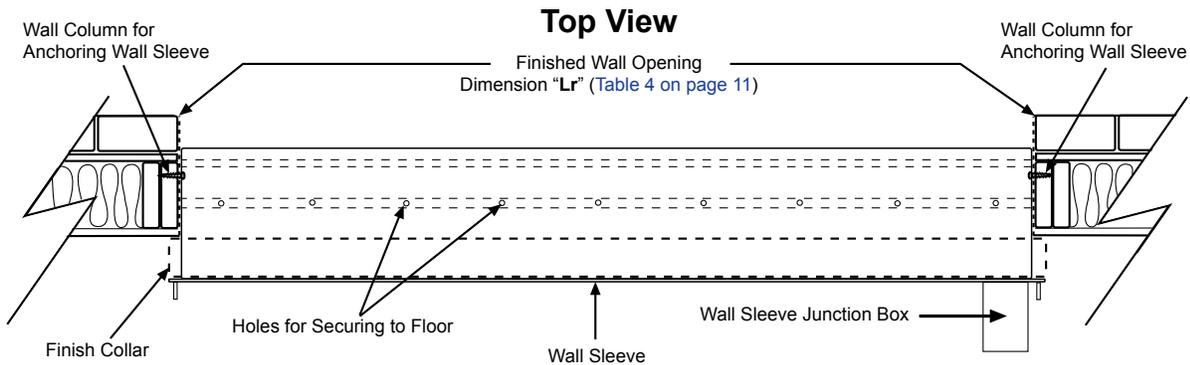
Figure 17: Thick masonry wall with full recess wall sleeve



Masonry Wall With Partial Recess

This example shows the wall sleeve partially recessed into a Masonry (Thick) Wall.

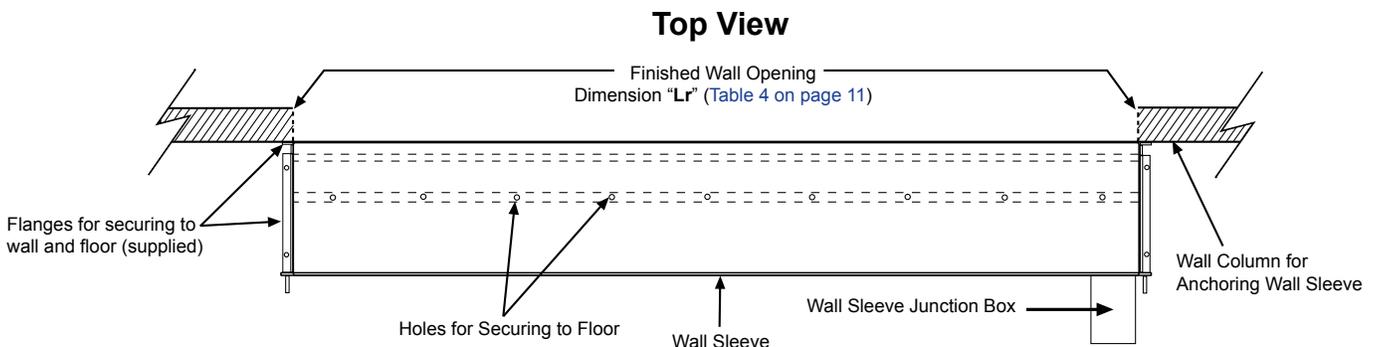
Figure 18: Masonry wall with partial recess wall sleeve



Panel Wall With No Recess (Full Projection)

This is an example of a Panel (Thin) Wall construction with No Recess (full projection). The wall sleeve is secured flush to the wall and floor with the addition of flanges. The wall opening is the same as the wall sleeve recessed length (refer to dimension "Lr" in, Table 4 on page 11).

Figure 19: Panel (thin) wall with no recess (full projection) wall sleeve



General Considerations

The installing contractor shall do the following:

1. Make sure there is a masonry lintel supporting the wall above any masonry opening and vertical wall column on the ends.
2. Frame and seal airtight and watertight all openings between the louver and wall sleeve not enclosed by the wall sleeve.

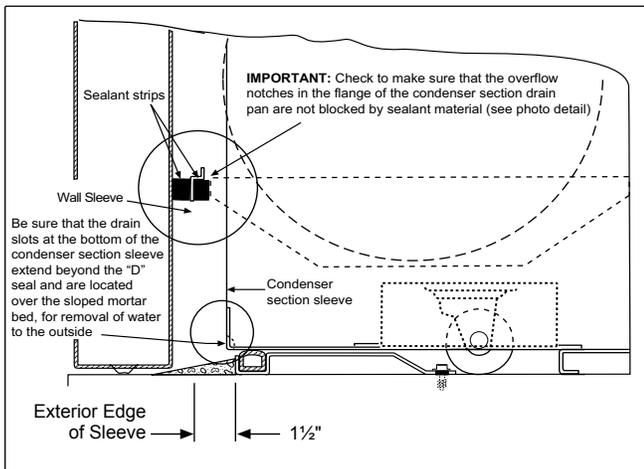
CAUTION

Installation and maintenance are to be performed only by qualified personnel who are familiar with and in compliance with state, local and national codes and regulations, and experienced with this type of equipment. Sharp edges and coil surfaces are a potential injury hazards. Avoid contact with them.

IMPORTANT

Condenser section drain pan drain notches must not be obstructed by splitter or foam seal. Condensate overflow must drain from these notches in order that it can be removed from the drain pan to the outside (Figure 25 & Figure 26).

Figure 25: Wall sleeve sealant material where it contacts the condenser section drain flange



CAUTION

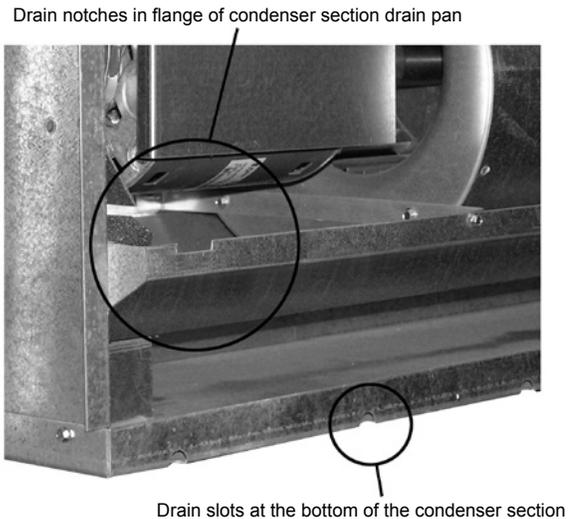
Accumulated moisture can cause property damage if not properly drained. Installing contractor must provide such drainage.

3. For details of required sealing, refer to Figure 28 and Figure 29 for recessed wall sleeve applications and Figure 30 and Figure 31 for non-recessed wall sleeve applications.
4. Seal watertight both ends and top of wall sleeve to building at rear flange of wall sleeve.
5. Seal watertight the bottom of wall sleeve at rear "D" seal to building and pitch toward louver bottom channel. Also fasten the wall sleeve cross channel to the floor through 1/4" holes with fasteners (by others) (7 fasteners - AZ/AE 024), (8 fasteners - AZ/AE 036), (9 fasteners - AZ/AE 044, 054) (refer to Figure 16 on page 11).
6. The louver must be installed with the drain notches located at the bottom and the bird screen located on the unit side. Openings between louver drain notches must be free of mortar or other foreign material for water removal.

CAUTION

Overflow drain notches (2) in the flange of the condenser drain pan **must not be blocked**. Remove any sealant material from wall sleeve bottom splitter rail that may cover these notches.

Figure 26: Check that condenser section drain pan notches are not blocked



Note: The (2) condenser section drain pan notches are located approximately 1" from the left end and right end of the condenser drain pan flange.

7. Apply rubber stripping or sealant material (by others) across full length of wall sleeve splitters.
8. If the louver does not butt up against the wall sleeve:
 - a. Fabricate a horizontal air splitter from galvanized steel, or some other suitable weather resistant material. Pitch the splitters toward the louver for water drainage. The width of the air splitters is determined by the width of the wall opening. The depth of the air splitters is determined by the distance between the louver horizontal splitter and the wall sleeve splitter rails.
 - b. Position a 1" diameter drain hole in the horizontal splitter, approximately 6" from each end, next to the louver.

CAUTION

Use appropriate screws to attach to the wall sleeve splitters. Ensure the screws do not restrict proper mate-up or sealing of the unit to the wall sleeve.

- c. Install the horizontal air splitters by fastening to the wall sleeve splitter rails.
 - d. Apply rubber stripping or sealant material (by others) across full length of horizontal air splitters to seal against louver.
9. Permanently seal any remaining air leaks so that, when finished:
 - a. There is an airtight separation between the condenser inlet air, condenser discharge air and the outdoor air inlet.
 - b. There are no air leaks around the perimeter of the wall sleeve where it adjoins the wall.

Recessed Applications

The installing contractor must do the following:

1. Place the wall sleeve into the wall opening and recess it the amount shown on the approved Daikin submittal drawings.
2. Level the wall sleeve horizontally and plumb the wall sleeve vertically.
3. (See Figure 27). Mark top (A), bottom (at "D" seal flange) (B), and sides where wall sleeve extends into the wall opening (C). Mark the wall sleeve cross channel holes (D). Also mark points where wall sleeve splitters meet the building envelope (E).

Figure 27: Mark edges and points of wall sleeve on building envelope

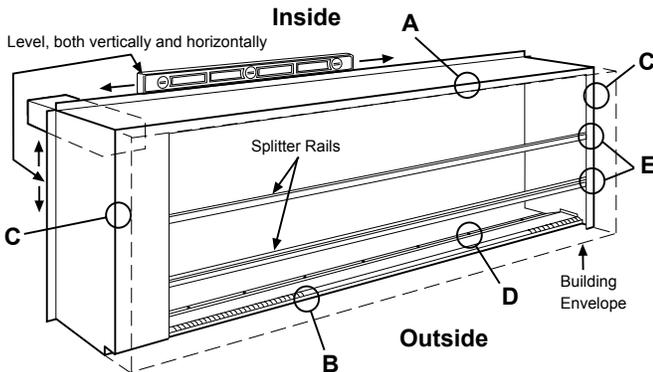
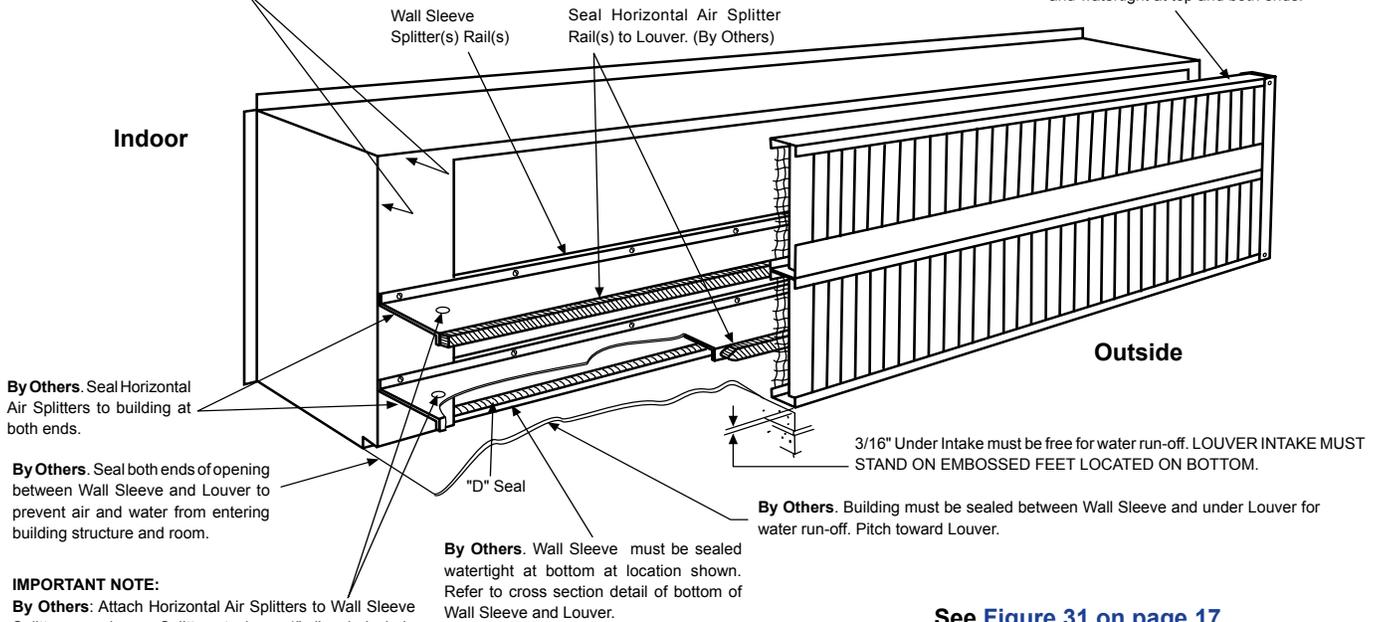


Figure 28: Recessed wall sleeve – mounting and sealing splitters to wall sleeve and louver

By Others. Wall Sleeve must be sealed watertight at top and both ends at location shown.

By Others. Louver must be sealed air and watertight at top and both ends.



By Others. Seal Horizontal Air Splitters to building at both ends.

By Others. Seal both ends of opening between Wall Sleeve and Louver to prevent air and water from entering building structure and room.

IMPORTANT NOTE:

By Others: Attach Horizontal Air Splitters to Wall Sleeve Splitters as shown. Splitters to have 1" dia. drain hole approx. 6" from each end. Pitch splitters toward louver for water drainage. See Figure 31 on page 17 for splitter attachment details.

By Others. Wall Sleeve must be sealed watertight at bottom at location shown. Refer to cross section detail of bottom of Wall Sleeve and Louver.

By Others. Building must be sealed between Wall Sleeve and under Louver for water run-off. Pitch toward Louver.

See Figure 31 on page 17

4. Drill with the appropriate masonry bit, holes to receive fasteners (by others), for securing the wall sleeve to the building envelope.
5. Make a galvanized metal flashing or use sealed cement mortar from marked edge of "D" seal on wall sleeve, and pitch toward louver. The mortar or flashing should be the same height as the "D" seal flange.

CAUTION

Sloped mortar bed or metal flashing must not restrict water drainage under louver.

6. Fabricate splitter enclosure and /or splitters to fit space between louver and wall sleeve, at marked reference points (see splitter details).
7. Apply gasketing (sealant material) to splitters and seal each end where splitters contact building envelope. A thin layer of caulk is suggested along the edge of the flashing or sloped mortar bed, where it contacts the "D" seal flange.
8. Position the wall sleeve into the opening, making sure all critical sealing points make contact. Fasten the wall sleeve securely in place using the previously drilled holes, and through the two knockouts provided on each end.
9. Secure the splitters to the wall sleeve and seal each splitter to each wall sleeve splitter rail (Figure 28 and Figure 31).
10. Caulk or seal any space between the wall sleeve and the wall on both the indoor side and the outdoor side (Figure 28 and Figure 31).

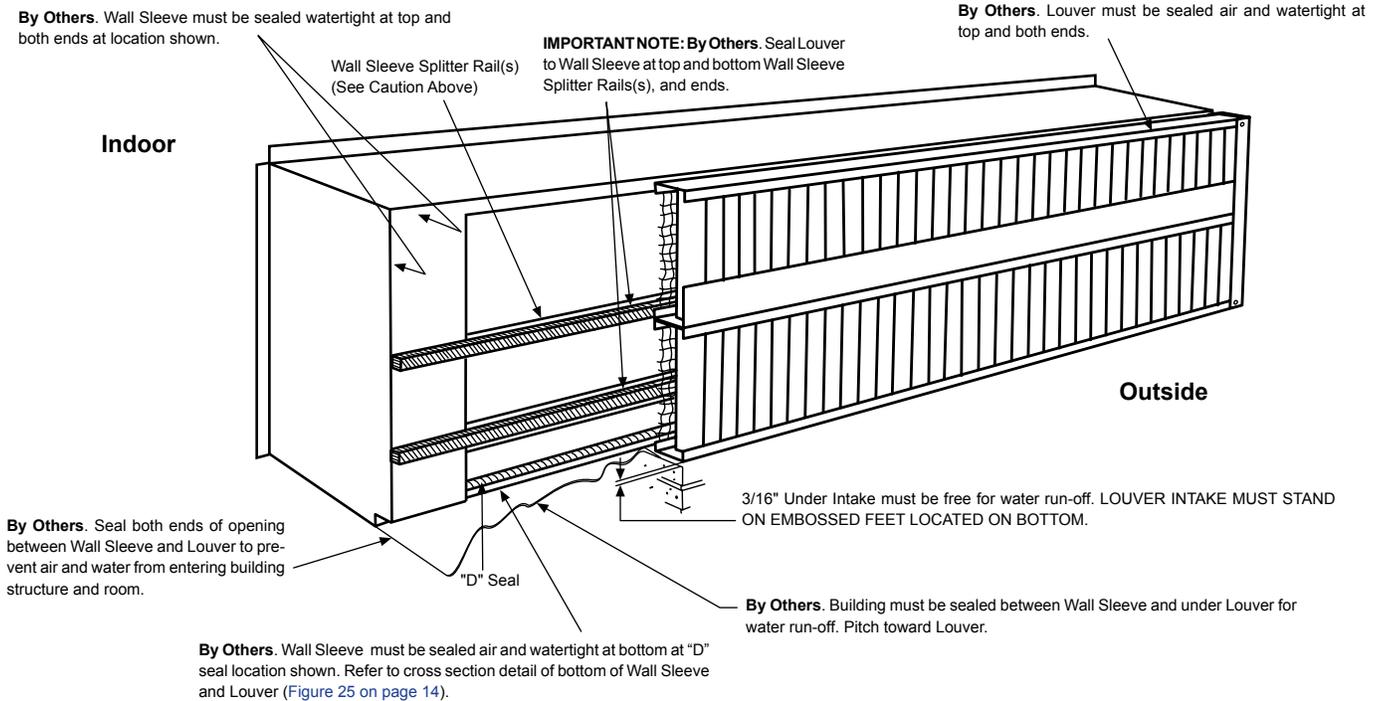
CAUTION

Locate drain lip at bottom of vertical louver to allow proper drainage. Bird screen must always be on side toward unit.

CAUTION

Wall sleeve must be anchored to an internal wall column or other suitable support.

Figure 29: Recessed wall sleeve - direct sealing wall sleeve to louver



CAUTION

Locate drain lip at bottom of vertical louver to allow proper drainage. Bird screen must always be on side toward unit.

CAUTION

Wall sleeve must be anchored to an internal wall column or other suitable support.

Full Projection Applications

The installing contractor must check the following before proceeding:

- A structural wall column exists in the wall for anchoring the wall sleeve to the building.
- The louver is installed correctly and sealed, with the wall cavity air and water tight.
- Electrical and wall sleeve control wiring is roughed in.
- The wall behind the unit is smooth and plumb.
- The seals on the rear of the wall sleeve take up the small irregularities of normal masonry construction.
- Moisture resistant material strips are installed on irregular walls or walls with mullions in order to provide a flush surface for the wall sleeve to seal against.
- Moldings at the floor/wall line are omitted behind the unit.

The installing contractor must do the following:

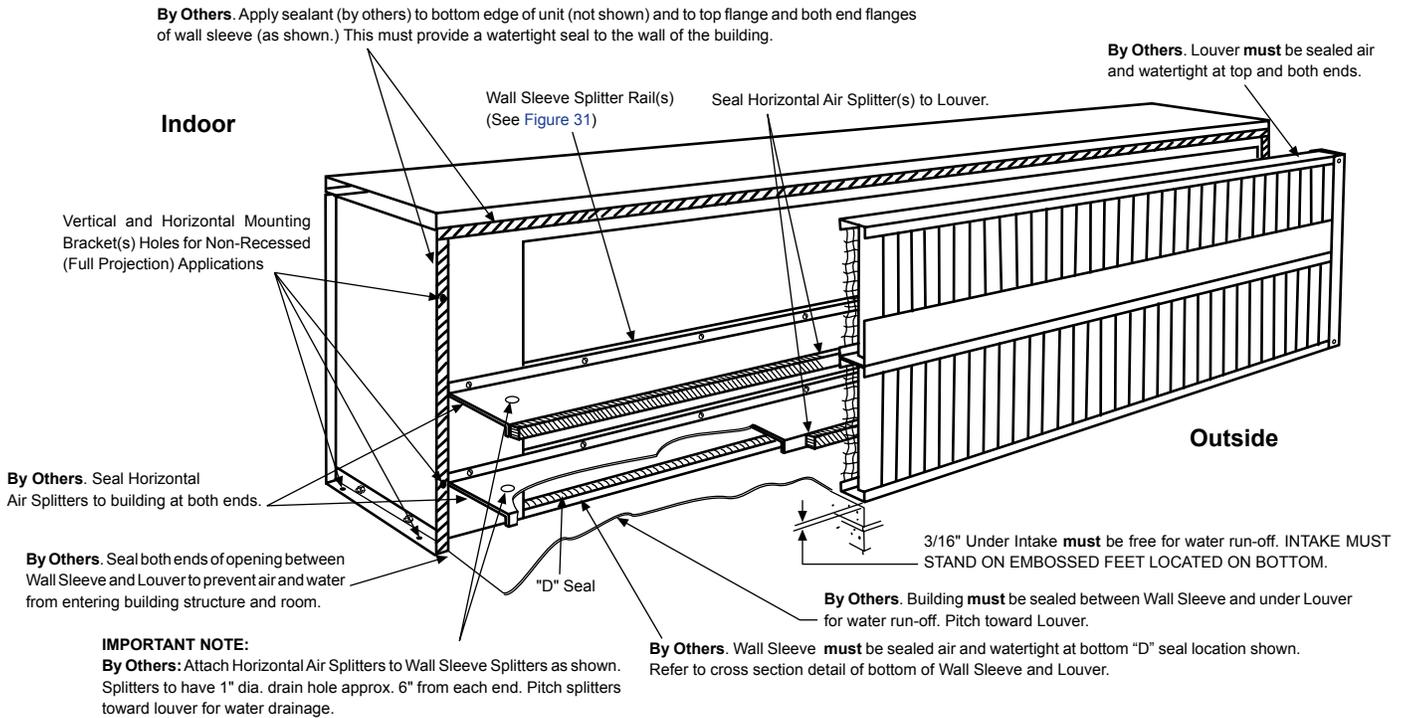
1. Apply sealant (by others) to bottom edge at rear of unit top and both end flanges on rear of wall sleeve to provide air and water tight seal to interior wall of building.
2. Level the wall sleeve horizontally, and plumb the wall sleeve vertically.
3. Mark top, bottom (at "D" seal flange), and sides where wall sleeve extends into the wall opening. Mark the wall sleeve cross channel holes and the vertical frame holes (4). Also mark points where wall sleeve splitters rail(s) meet the building envelope.
4. Drill with the appropriate masonry bit, holes to receive fasteners (by others), for securing the wall sleeve to the building envelope.

5. Make a galvanized metal flashing or use sealed cement mortar from marked edge of "D" seal on wall sleeve, and pitch toward louver.
6. Fabricate splitter enclosure and /or splitters to fit space between louver and wall sleeve, at marked reference points (see splitter details).
7. Apply gasketing (sealant material) to splitters and seal each end where splitters contact building envelope. A thin layer of caulk is required along the edge of the flashing or sloped mortar bed, where it contacts the "D" seal flange to provide an air and water tight seal.
8. Fasten the wall sleeve securely in place by:
 - a. Securing it to the floor through the two (2) 3/8" diameter holes in the turned out bottom flanges of the wall sleeve at each end, and/or:
 - b. Securing it to the wall through the two (2) 3/8" diameter holes in the turned out vertical flanges of the wall sleeve at each end to a wall structural column on each side.
9. Panel wall applications must have:
 - a. The wall opening sleeved to prevent moisture from seeping into the wall interior.
 - b. If the panel wall is less than 2¼" thick, the wall louver must be installed flush to the interior wall and be allowed to extend to the outside as required, and must be air and water tight.
10. Seals on wall sleeve must be compressed to provide a watertight seal after installation is complete.
11. Secure the splitters to the wall sleeve and seal each splitter to each wall sleeve splitter rail (see Figure 30 and Figure 31 on page 17).

CAUTION

Leakage of outdoor air wastes energy, causes drafts and erratic unit ventilator operation. These passages are also a potential pathway for water. Provide a sealing surface at the floor line. Install the wall sleeve in a wall made of noncombustible material, and on a floor made of noncombustible material. Floor must be level, unbroken and structurally strong to support the unit.

Figure 30: Sealing full projection wall sleeve and horizontal air splitters



CAUTION

Wall sleeve must be anchored to an internal wall column or other suitable support.

CAUTION

Locate drain lip at bottom of vertical louver to allow proper drainage. Bird screen must always be on side toward unit.

Figure 31: Attaching splitters to wall sleeve splitter rails and seals

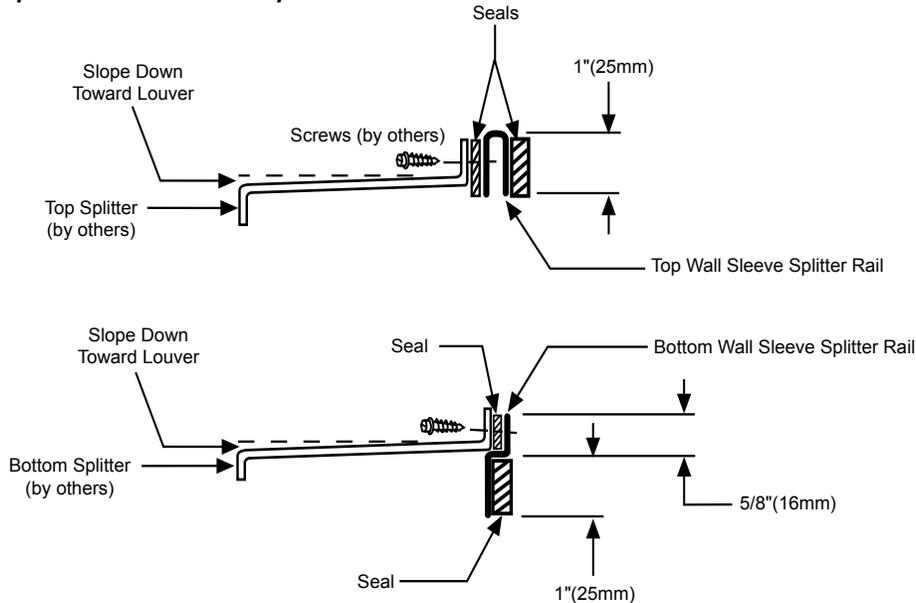
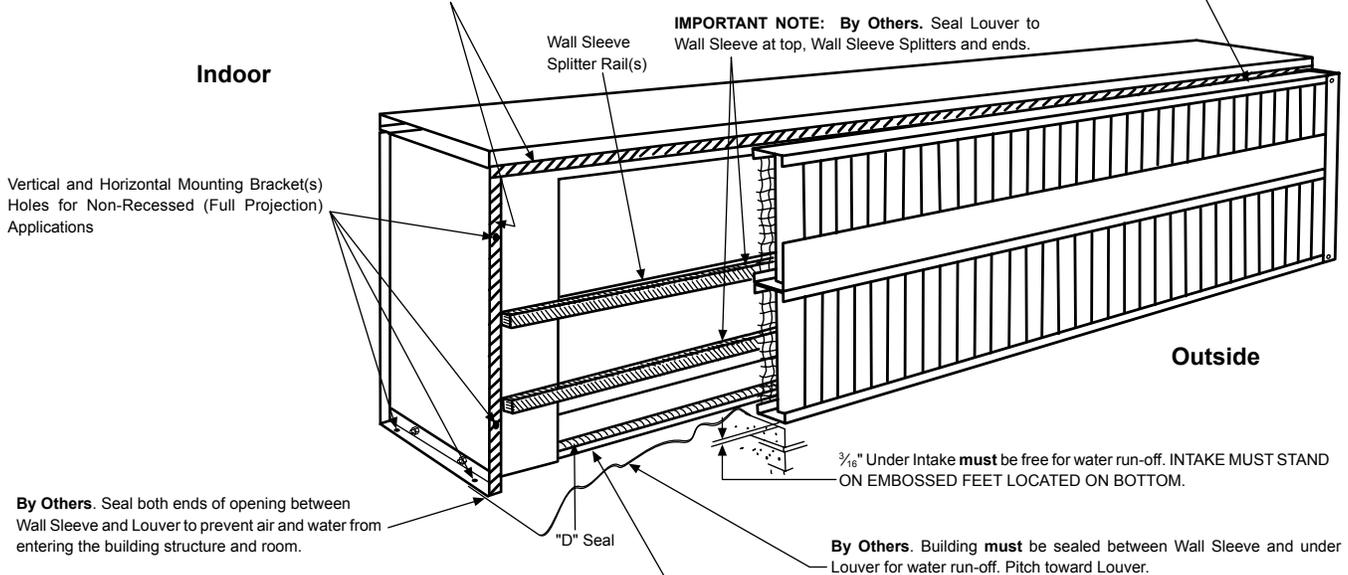


Figure 32: Sealing full projection wall sleeve to louver intake without horizontal air splitters

By Others. Apply sealant (by others) to bottom edge of unit (not shown) and to top flange and both end flanges of wall sleeve (as shown.) This must provide a watertight seal to the wall of the building.

By Others. Louver must be sealed watertight at top and both ends.



CAUTION
Wall sleeve must be anchored to an internal wall column or other suitable support.

By Others. Wall Sleeve must be sealed air and watertight at bottom "D" seal at location shown. Refer to cross section detail of bottom of Wall Sleeve and Louver.

Typical Field Assembled Cross-Over Piping Considerations

Wall sleeves used for unit projections of 21⁷/₈" and 28" into the room can accommodate field hydronic cross-over piping. 1³/₈" O.D. maximum piping with insulation resulting in 1⁷/₈" total can be installed: (Figure 33) through the wall sleeve finish collar top, or (Figure 34) enclosed in wall cavity. Pipes must be well insulated against freezing.

Figure 33: Cross-over piping in wall sleeve top (by others)

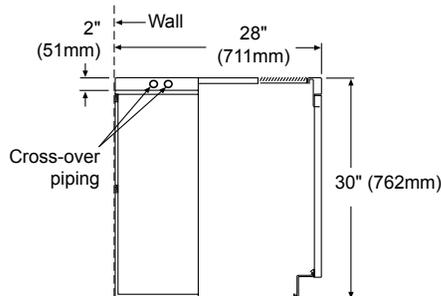
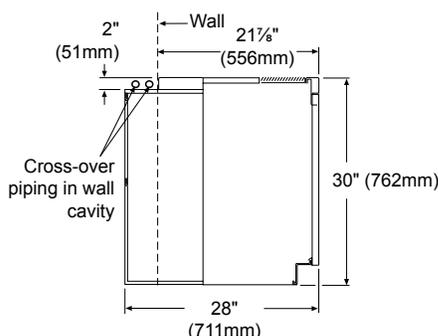
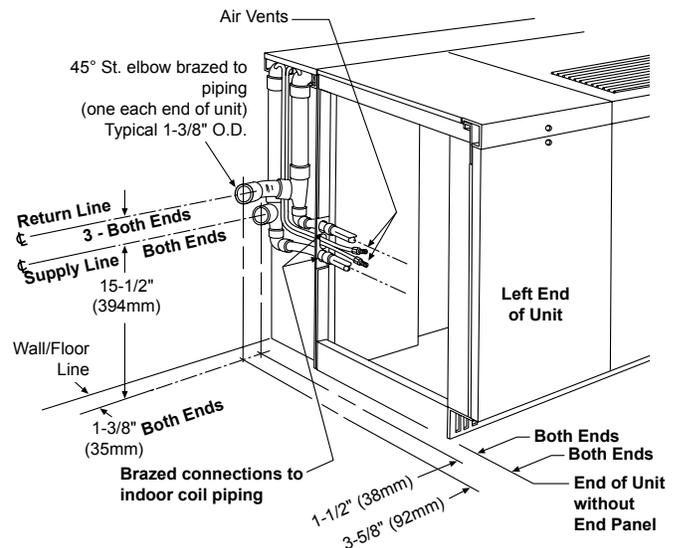


Figure 34: Cross-over Piping in Wall Cavity (By Others)



WARNING
Insulate cross-over piping to help protect against freezing and sweating.

Figure 35: Typical cross-over piping locations through unit wall sleeve top



Refer to the wiring diagram furnished with the unit to determine electrical connections required.

⚠ CAUTION

Use copper conductors only. Aluminum conductors can cause equipment failure and overheating hazards. All wiring in right hand compartment must be class 1.

⚠ CAUTION

All field wiring must be in accordance with the National Electric Code and applicable local codes.

Refer to [Figure 38](#) & [Figure 39](#) on page 20 for stub-up locations. Refer to [page 21](#) and [page 22](#) for main power connections and field wired communication module in IM 1065 for remote wall mounted sensor controls, if any.

Check wall sleeve nameplate to verify it is the correct voltage and amperage for the AZ or AE model to be installed.

Whenever the electric stub-up is brought in through the floor within the confines of the wall sleeve and any portion of the wall sleeve is recessed into the wall, the watertight conduit must be flush with the floor to permit installation of the wall sleeve. Sufficient space must be left around the conduit to permit the attachment of continuing watertight conduit after the wall sleeve is installed. For concrete slabs, it is recommended that this be accomplished either by sleeving the conduit or by recessing a watertight junction box into the slab.

⚠ DANGER

 Disconnect all electrical power before servicing unit to prevent injury or death due to electrical shock.

Procedure – Main Power Connections

The main steps to wiring the wall sleeve are as follows:

1. Confirm that the main power to the wall sleeve wires are de-energized and tagged-out.
2. Remove top cover plate and protective plate covering the terminal lugs on the wall sleeve junction box ([Figure 36](#)).
3. Bring the main power through the waterproof conduit to the junction box on the wall sleeve, to the terminal lugs on the upstream side of SW1-Main Power non-fused “ON-OFF” switch. See [Figure 37](#) for terminal lug locations and phase connections. Insert main power wires into the terminal lugs (A, B, C) and tighten securely. Power wiring must be hooked up with proper phasing. Electrical (3) phasing must be A, B, and C for electrical phase 1, 2, and 3 (A = L1, B = L2, C = L3). Single phase power wiring must be A and C. Check supply power with a phase meter to match the unit phase wiring.

⚠ CAUTION

AZ/AE unit compressors are single-direction rotation compressors and can be damaged if rotated in the wrong direction. For this reason, proper phasing of electrical power is important. Running the compressor backward will damage the compressor and void the warranty

Figure 36: Wall sleeve junction box cover plates

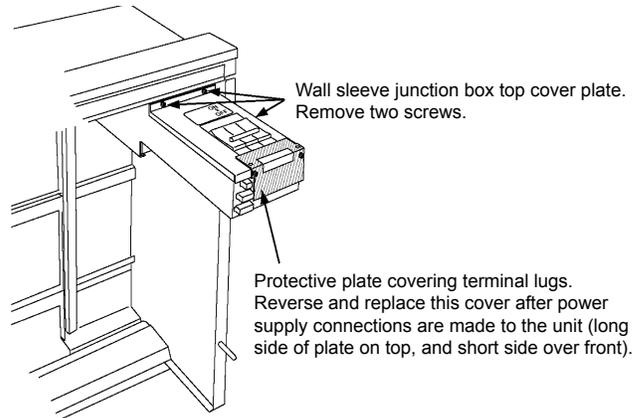
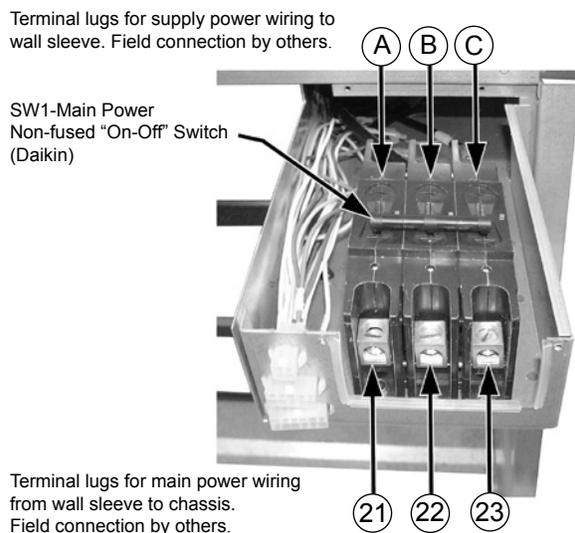


Figure 37: Detail of SW1-Main power connections



Note: (B) and (22) not used on single phase.

⚠ CAUTION

Whenever the electric stub-up is brought in through the floor within the confines of the wall sleeve, and any portion of the wall sleeve is recessed into the wall, the conduit must be flush with the floor to permit installation of the wall sleeve. Sufficient space must be left around the watertight conduit to permit the attachment of continuing conduit after the wall sleeve is installed. For concrete slabs, this should be accomplished either by sleeving the watertight conduit or by recessing a watertight junction box into the slab.

4. Bring the control wiring (optional remote wall sensor, optional building automation control wiring to the optional communication module, optional communications for other external inputs/outputs) through the waterproof conduit to the junction box on the wall sleeve, to the appropriate capped wires within the wall sleeve junction box.
5. Connect remote wall sensors and external input/output devices to the appropriate wires using the existing wire caps. Verify that the wires are securely fastened within the wire caps. Wiring diagrams for doing so are provided in [Figure 40](#) on page 21 through [Figure 41](#).
6. Reinstall the top cover plate and protective plate covering the terminal lugs of the wall sleeve junction box.

Wall Sleeve Electrical Stub-up Details

Figure 38: Wall sleeve with electric stub-up from bottom

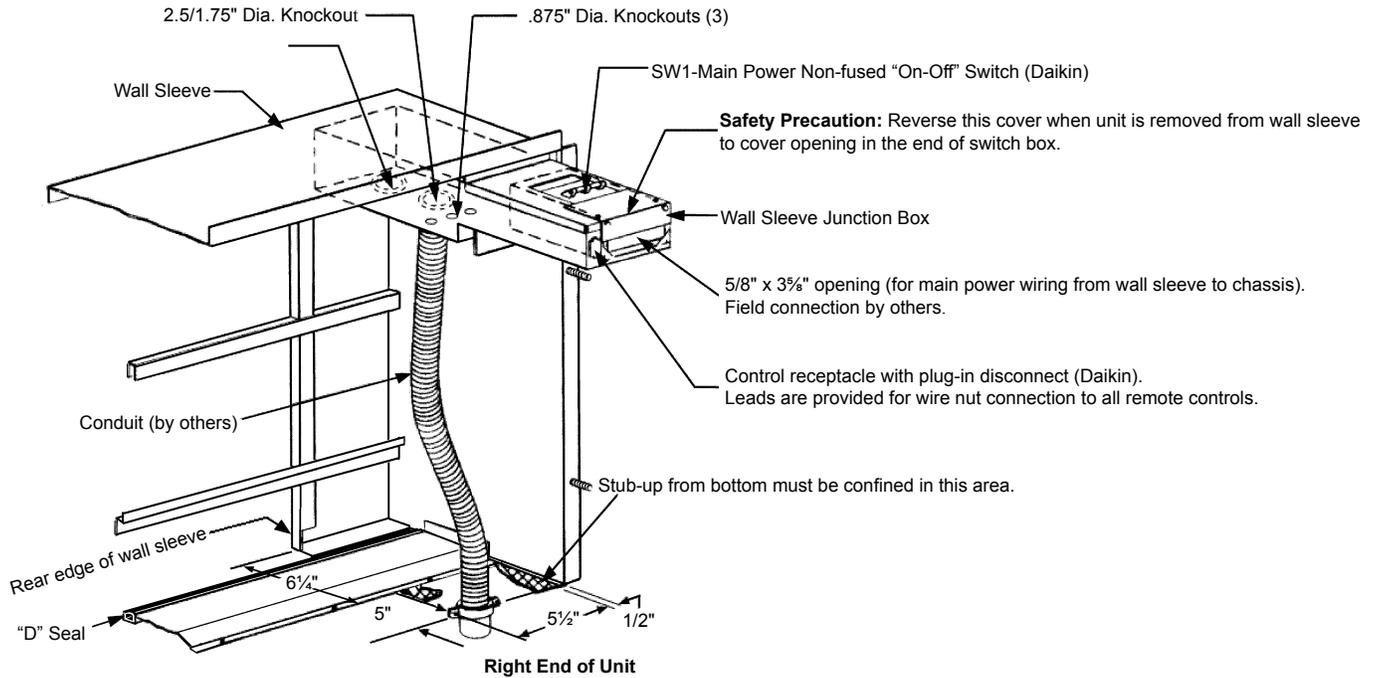
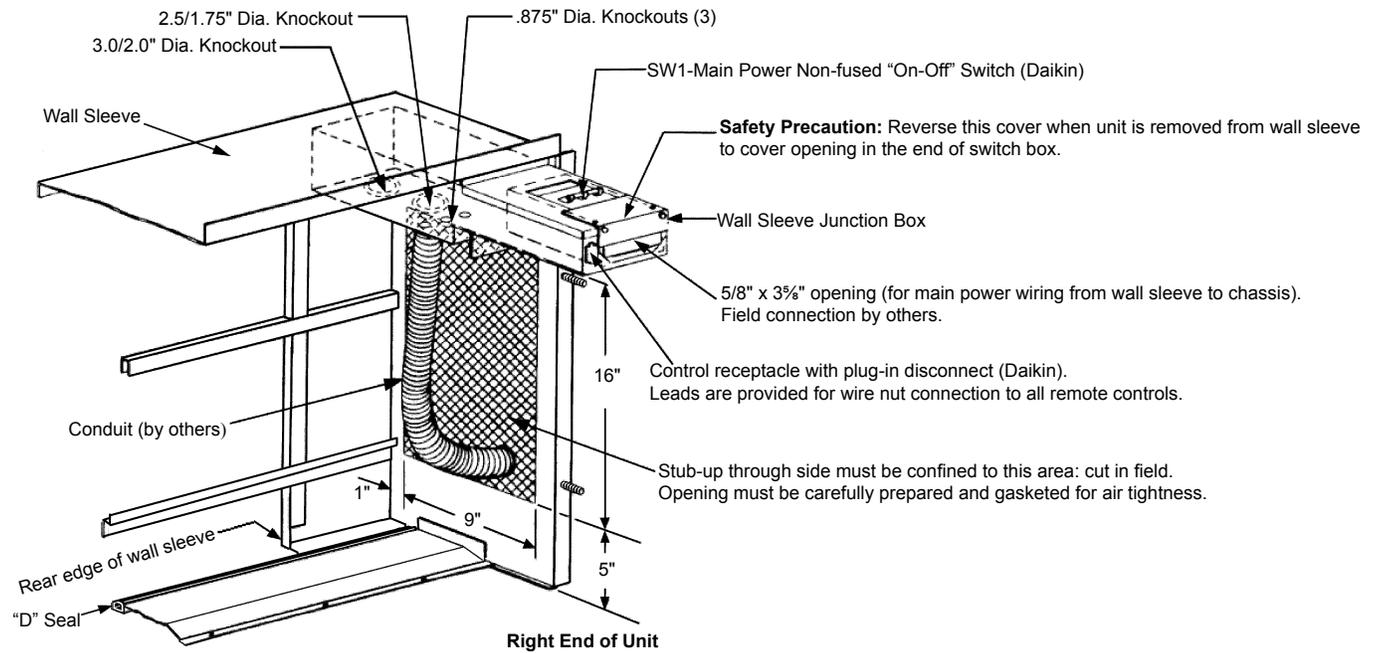


Figure 39: Wall sleeve with electric stub-up from side



⚠ DANGER

Disconnect all electrical power before servicing unit to prevent injury or death due to electrical shock.

⚠ CAUTION

AZ/AE unit compressors are single-direction rotation compressors and can be damaged if rotated in the wrong direction. For this reason, proper phasing of electrical power is important.

Unit Connection Procedure to Wall Sleeve

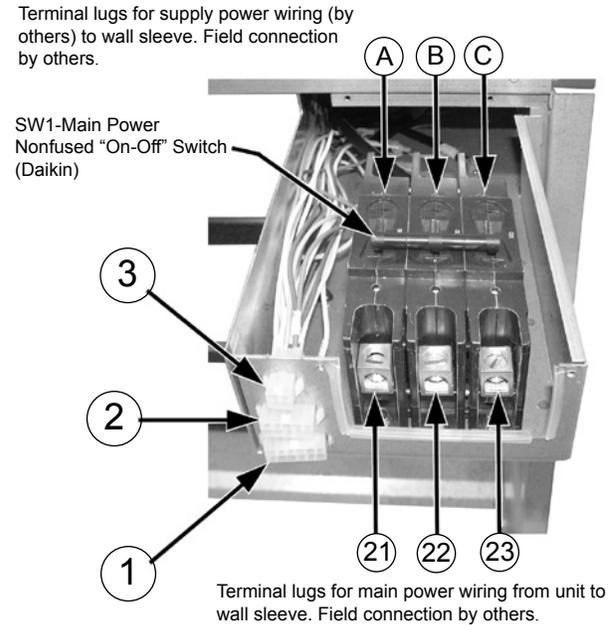
Before installing the unit ventilator into the wall sleeve confirm that power to the wall sleeve is de-energized and tagged out.

After the unit ventilator has been installed into the wall sleeve, do the following:

1. Confirm that power to the wall sleeve is de-energized and locked and tagged-out.
2. Plug in the unit control wiring male plug(s) into the appropriate wall sleeve female plug(s) (Figure 40).
 - Plug in 4-pin (for MicroTech and Electromechanical).
 - 10-pin (MicroTech only).
 - 12-pin (MicroTech only).
3. Remove the wall sleeve junction box terminal lugs cover plate.
4. Insert the unit chassis main power wires (21, 22, and 23) into the wall sleeve disconnect switch terminal lugs. Tighten the terminal lugs securely.
5. Reinstall the wall sleeve terminal lugs cover plate over the main power wires with the label reading correctly, (long edge of plate on top and short edge over front).
6. See IM 1065 for complete electrical procedure.

Note: For electromechanical use ① only (refer to IM 1065). ② and ③ not used for electromechanical. Control connections for electromechanical are made to the terminal block in the left end compartment.

Figure 40: Wall sleeve junction box details for MicroTech

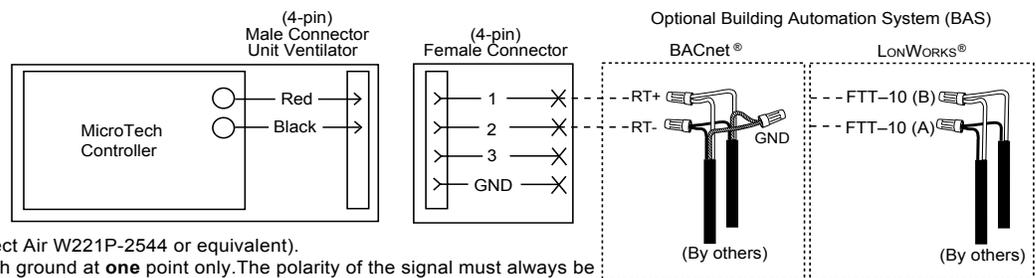


Note: (B) and (22) not used on single phase.

Table 6: Wall sleeve junction box wiring legend

Legend			
	Plug In		Comp Tie Point
	Splice		Optional Wiring
	Tap Conn.		Wired by Others
	Term Conn.		Factory Wired
	Capped Wire		Ground
			External Device by Others

Figure 41: ③ 4-pin plug MicroTech control wiring diagram



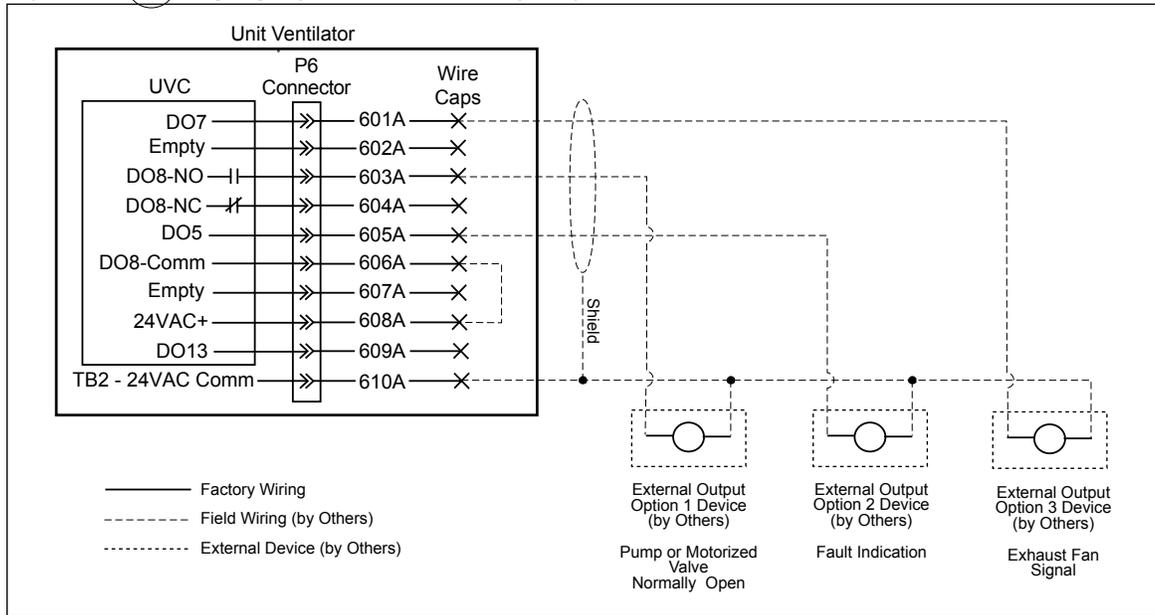
Wiring:

Use twisted shielded pair (Connect Air W221P-2544 or equivalent). Daisy-chain and tie shield to earth ground at **one** point only. The polarity of the signal must always be maintained throughout the network. Always connect + to + and - to -. The shield connection must be continuous throughout the entire network and must be connected to earth ground at **one** (and only one) point.

The BACnet MS/TP bus can use either solid or stranded wires of the following types: 3-wire twisted cable, 2 twisted-pair telephone cable, or two twisted pair with shield. The wiring is polarity sensitive. The polarity of the signal must always be maintained throughout the network. Always connect + to + and - to -. The shield connection must be continuous throughout the entire network and must be connected to earth ground at **one** (and only one) point.

Use Belden 8471, NEMA Level 4, or Echelon-approved equivalent wire. Since the LONWORKS communication wiring is polarity insensitive, no polarity must be observed when making connections via the unshielded twisted-pair wiring.

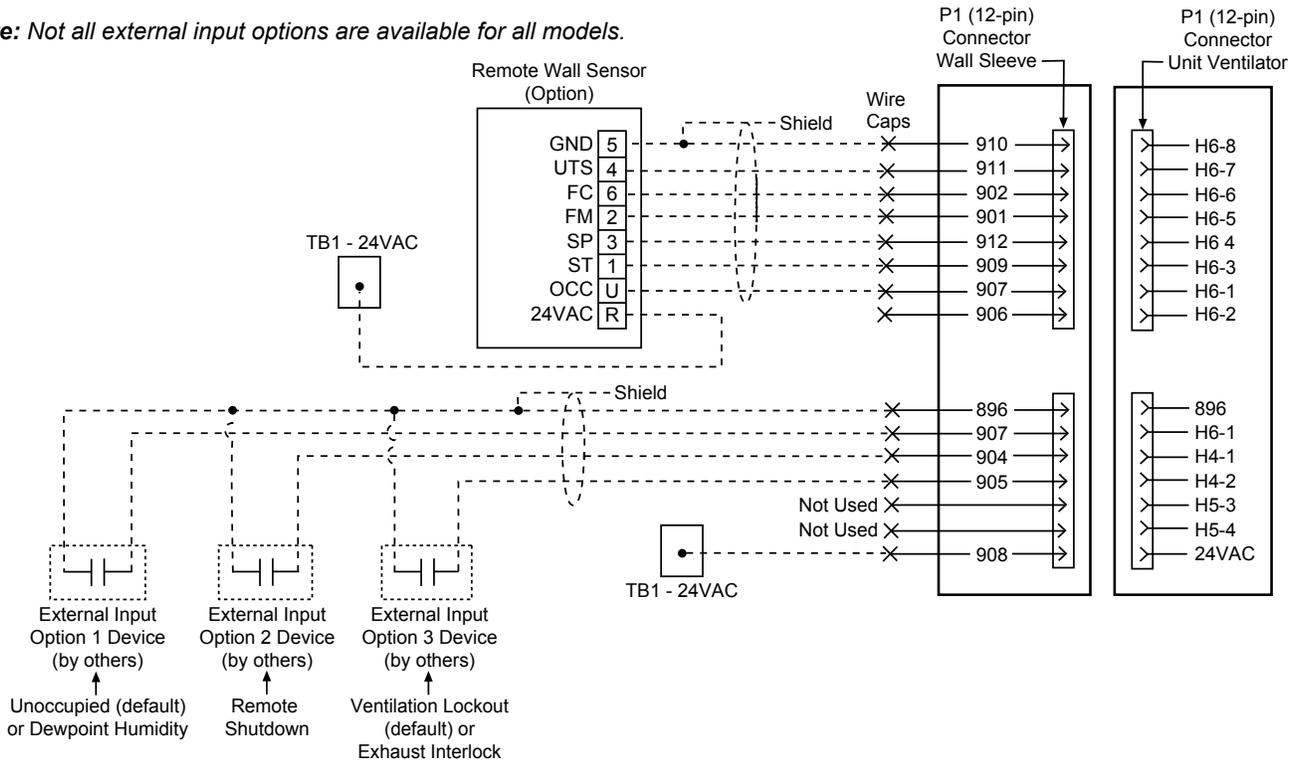
Figure 42: 2 10-pin plug MicroTech® wiring diagram



Note: Not all external input options are available for all models.

Figure 43: 1 12-pin plug MicroTech® control wiring diagram

Note: Not all external input options are available for all models.



Be certain that the wall sleeve is level from end to end and back to front. Using a 4' level is recommended.

⚠ CAUTION

Leakage of outdoor air wastes energy, causes drafts and erratic unit ventilator operation. These passages are also a potential pathway for water. Provide a sealing surface at the floor line. Install the wall sleeve in a wall made of noncombustible material, and on a floor made of noncombustible material. Floor must be level, 90 degrees to wall, unbroken and structurally strong to support the unit.

Figure 44: Bottom splitter rail seal removal

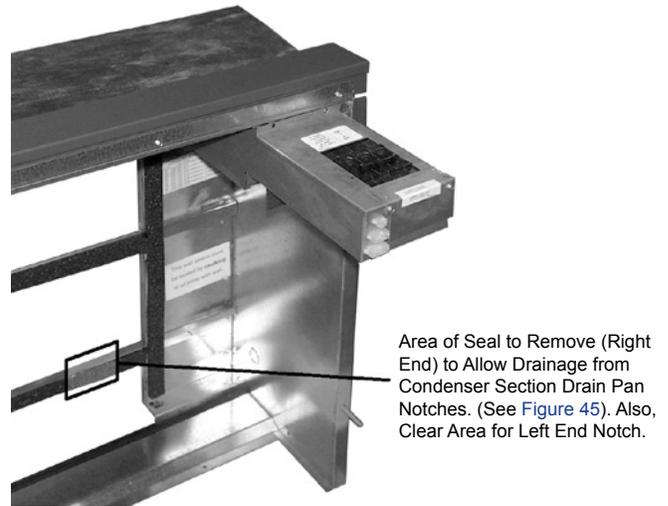
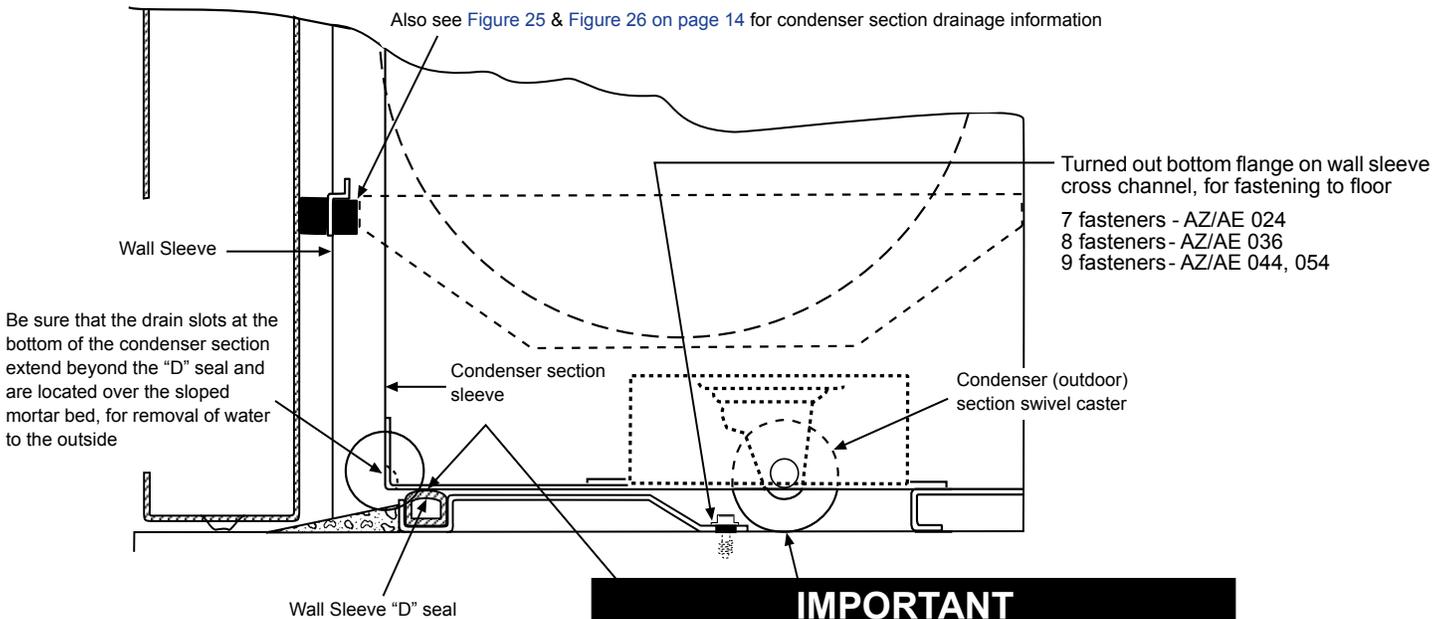


Figure 45: Wall sleeve drainage considerations



IMPORTANT

The floor, at the location of the outside condenser section caster wheels must be smooth and level, and free of any debris. The condenser section must make contact and seal to the "D" seal on the cross channel of the wall sleeve to help prevent air and water leaks into the building.



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