

Section D - Indoor Unit Installation - High ESP Duct

Introduction - Overview

High ESP Duct Product Information

The High ESP Duct Indoor Air Handler ships consisting of a single assembly. The High ESP Duct indoor unit is operated via a factory supplied wired remote control.

The High ESP Duct unit will install above the ceiling or in a soffit area. It is mounted using threaded rods that fit into brackets that are located at all four corners of the High ESP Duct assembly.

The High ESP Duct unit receives 230 volt line voltage from a connection at the outdoor condensing unit. There is no requirement for independent line voltage connections.

The High ESP Duct unit has a built-in condensate pump and associated float switch that manages the operation of the condensate pump. A flexible hose is included with the High ESP Duct unit. This hose connects the High ESP Duct condensate drain outlet to the building's condensate drain system.

Included with the High ESP Duct unit is factory provided insulating tape. This tape should be placed over the refrigerant piping connections at the indoor unit to prevent sweating.

YR-E17 Wired Controller

See Section E for more information



Built-in
Condensate
Pump and
Float Switch



Slim Duct Indoor Unit Specifications

Indoor	AM24LP2VHA	AM36LP2VHA	AM48LP2VHA
Rated Cooling Capacity Btu/hr	24,000	35,000	47,000
Rated Heating Capacity Btu/hr	26,500	37,500	52,000
Voltage, Cycle, Phase V/Hz/-	208/230/60/1	208/230/60/1	208/230/60/1
Fan Speed Stages	4+Auto	4+Auto	4+Auto
Airflow (Turbo/High/ Med/Low/Quiet) CFM	845/670/530/470	1100/950/735/675	1350/1150/930/765
Motor Speed (Turbo/High/ Med/Low/Quiet) RPM	950/860/760/700	1000/920/860/810	1180/1080/1010/960
Max. External Static Pressure in.W.G (Pa)	0,6(150)	0,6(150)	0,6(150)
Indoor Sound Level dB (Turbo/High/ Med/Low)	38/35/32/29	32/28/25/23	41/36/33/31
Dimension: Height in (mm)	9 7/8 (250)	9 7/8 (250)	9 7/8 (250)
Dimension: Width in (mm)	37 5/8 (957)	59 (1500)	59 (1500)
Dimension: Depth in (mm)	25 3/4 (655)	28 3/8 (720)	28 3/8 (720)
Weight (Ship/Net)- lbs (kg)	81,1/68,8(36,8/31,2)	130,1/121,3 (59/55)	132,3/114,6 (60/52)
Connections	Flare	Flare	Flare
Liquid O.D. in	3/8	3/8	3/8
Suction O.D. in	5/8	5/8	5/8
Drainpipe Size O.D. in	1 1/4	1 1/4	1 1/4
Internal Condensate Pump	Standard	Standard	Standard
Max. Drain-Lift height in(mm)	27 9/16(700)	27 9/16(700)	27 9/16 (700)

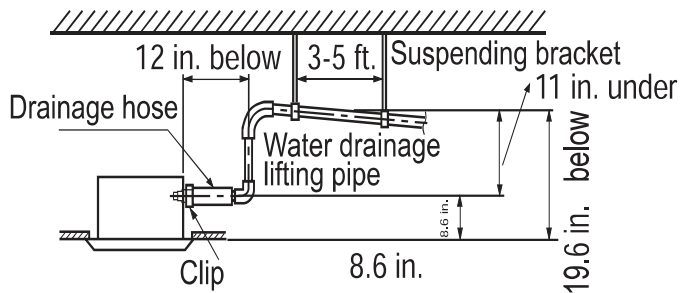
Condensate Handling

The High ESP Duct unit has a built-in condensate pump and water level safety switch. There are also two optional ports for gravity drainage. The condensate pump is rated to lift water up to 24" from the point of discharge on the High ESP Duct unit.

The High ESP Duct unit comes with a grey connection hose with clamp. This hose is connected to the High ESP Duct unit condensate discharge hose port. The other end of the hose is sized to accept 3/4 inch PVC piping.



Recommended condensate piping configurations are shown here:

**Electrical Power**

Follow all local codes and regulations when installing electrical wiring.

Route required electrical power to area where the High ESP Duct unit is to be located. Maintain at least a 10 foot separation between TV and Radio wiring and the power to the indoor unit.

14 Gauge AWG stranded wire should be used to make the electrical connection between indoor and outdoor units. This wiring will serve to power the indoor unit and establish a communication link between indoor and outdoor units.

The wiring is connected at the indoor unit electrical terminal blocks screws 1, 2, 3 and ground. There should be no splices in the wires connected to terminals 1 or 3 as these serve as communication signal wires and electrical power connections. If a safety switch needs to be in place to shut off power to the indoor unit, break wire 2 only.

**Air Delivery Clearances**

Make certain to maintain proper clearances around the High ESP Duct unit.

Inadequate clearances can cause system freezing and temperature control problems.

Service and Maintenance Clearances

Make sure there are adequate clearances for future maintenance and service. Allow enough room to access the condensate pump assembly and the electrical control box.

Step 1 - Preparation

Required Tools for Installation

- Drill
- Wire Snipper
- Hole Saw 2 3/4"
- Vacuum pump
- Soap-and-water solution or gas leakage detector
- Torque wrench
- 17mm, 22mm, 26mm
- Tubing cutter
- Flaring tool
- Razor knife
- Measuring tape
- Level
- Micron gauge
- Nitrogen
- Mini-Split AD-87 Adapter (1/4" to 5/16")
- A - Non-adhesive Tape
- B - Adhesive Tape
- C - Saddle (L.S.) with screws
- D - Electrical wiring
- E - Drain hose (Included)
- F - Insulation
- G - Piping hole cover (Included)

Procedure for Selecting the Location

- Place above the ceiling or in soffit area where you have enough space to position the unit.
- Place where the drainage pipe can be properly positioned.
- Place where the inlet and outlet air of the indoor unit will not be blocked.
- Do not install the unit in a place with heavy oil or moisture (e.g. - kitchens and workshops)
- Do not install in a location with destructive gas (such as sulfuric acid gas) or pungent gas (thinner and gasoline) are used or stored.
- Choose a place solid enough to bear the weight and vibration of the unit and where the operation noise will not be amplified.
- Install where there are no expensive items like a television or piano below the indoor unit.
- Leave enough space for maintenance.
- Install at least 3 ft. away from televisions and radios to avoid interference.

Note:

1) R-410A refrigerant is a safe, nontoxic and nonflammable refrigerant. However, if there is a concern about a dangerous level of refrigerant concentration in the case of refrigerant leakage, add extra ventilation.

Threaded Rod Mounting Information

The High ESP Duct unit should be mounted to the building structure using threaded rods. The threaded rods should have washers and nuts to allow the height and level of the High ESP Duct unit to be adjusted.

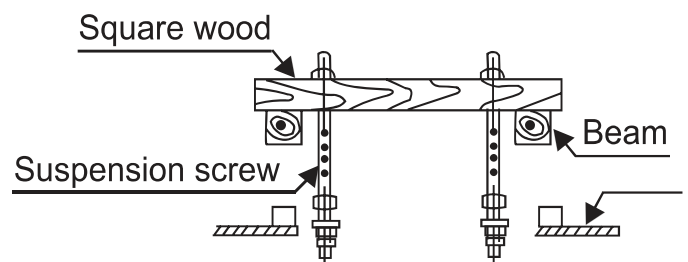
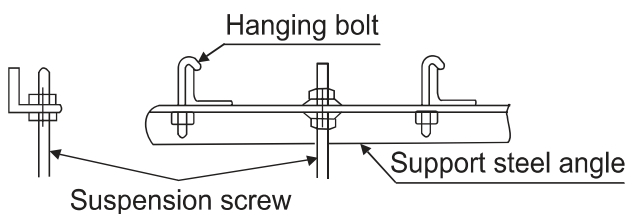
The threaded rods and attachment brackets are field supplied items. The materials required for mounting to the brackets on the High ESP Duct unit include:

4- 3/8" Threaded Rods

4- Mounting Brackets

Washers

Nuts (Double nut the assembly as shown in step 2.3)



Step By Step Guide To High ESP Duct Unit Installa

2.1 Step 2.1

Determine and mark the position of where the High ESP Duct unit is to be installed. Install the hardware necessary to mount the threaded rods. Always select a location strong enough to support the indoor High ESP Duct unit.

2.2 Step 2.2

Install the threaded rods to the hardware attached to the structure.

2.3 Step 2.3

Lift the High ESP Duct unit and position the threaded rods into the 4 mounting clips, one located on each corner of the unit.

2.4 Step 2.4

Using a level, adjust the nuts on the threaded rods to obtain level readings both side to side and front to back on the High ESP Duct unit.

2.5 Step 2.5 - 2.5A

Prior to routing the refrigerant lines to the unit, install the supplied flare nuts onto the refrigerant lines. Using a flaring tool, flare the refrigerant lines. Remove the caps attached to the ends of the refrigerant line connections at the High ESP Duct unit. Holding charge should leak out. Attach the refrigerant lines to the air handler.

Using a torque wrench, torque the fittings to the proper specifications. (See Outdoor Unit Section for flare torque settings.)

2.6 Step 2.6

Connect the grey flexible drain hose supplied with the High ESP Duct unit to the condensate pump discharge pipe of the High ESP Duct unit. Tighten the clamp securely. Using 3/4" PVC, connect the flexible hose to the building's condensate drain system.

2.7 Steps 2.7 - 2.7A - 2.7B

Route the 14AWG stranded 4 conductor power/communication cable and the wired remote cable to the air handler. Use reducing washers and appropriate connector to attach the power/communication cable to the unit. The wired remote cable will enter the unit through a rubber grommet. The 4 conductor cable connects to the terminal block at terminals 1, 2, 3, and ground. The wired remote cable connects to the air handler main board at connector CN1. Re-install electrical box cover.

2.8 Step 2.8

The unit is now ready for connection to the ductwork. The return air duct can be configured as either a rear side inlet or bottom side inlet.

Step 2.1



Step 2.2



Step 2.3



Step 2.4



Step 2 - Installation of the High ESP Duct Unit

Step 2.5



Step 2.7A



Step 2.5A



Step 2.7B
Re-install electrical box cover

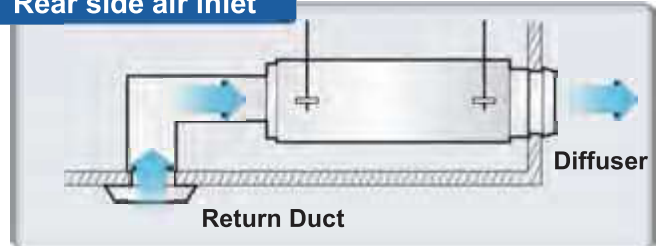


Step 2.6

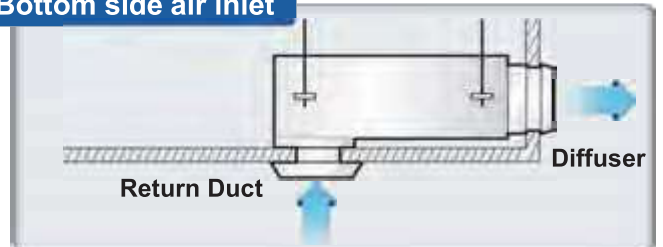


Step 2.8

Rear side air inlet



Bottom side air inlet



Step 2.7



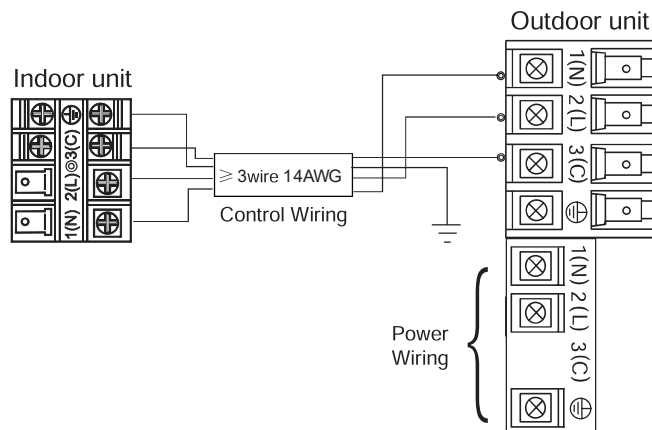
INSTALLATION IS NOW COMPLETE

Step 3 - Electrical Connections

Electrical Connections Indoor and Outdoor Units

14 AWG Stranded Wire Only. (Central Controller Not Used)

Maintain 10 feet of separation between TV and any Radio wiring.



Note: High ESP Duct unit ships with YR-E17 wired controller. See Section E for more information.

Step 4 - Pull Vacuum on System

See Step 3.2 of the outdoor unit installation section for how to pull a vacuum.

Indoor High ESP Duct Unit Installation Complete