



PVAN Series Plenum Accessory For Vertical AHU's Installation, Operation and Maintenance Manual

Magic Aire PVAN Series accessory plenums are for use with model NDB vertical upflow air handling units, available in sizes 800 cfm (08) through 4000 cfm (40). Accessory plenum is field installed and is available with or without 4" filter rack and 4" MERV 13 filter.

How to Use this Manual:

This manual gives instructions regarding installation, operation and maintenance for the ND Series vertical air handling units. For more information refer to:

Catalog brochure for unit dimensions, options, guide specifications and performance information.

New Magic 4 software for faster selection of new equipment.

Unit Mounted Wiring Diagram and Label for all electrical connections. Follow NEC (National Electrical Code) and local codes.

Website www.magicaire.com for replacement parts guide, software downloads, product data and contact info for your local Magic Aire representative.

Replacement Parts – Identify parts needed using the replacement parts guide available at www.magicaire.com.

Use these instructions in conjunction with other appropriate instructions, including but not limited to those instructions supplied with the outdoor unit (if applicable). Installation must comply with all applicable local codes.



GENERAL

Installation and maintenance are to be performed **ONLY** by qualified personnel who are familiar with local codes and regulations and are experienced with HVAC equipment of this type.

When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.

WARNING: Sharp edges, coil surfaces and rotating fans are a potential injury hazard – avoid contact.

WARNING: Hazardous voltage – Disconnect and Lock Out all incoming power sources before servicing or installing unit. ELECTRIC SHOCK CAN CAUSE DEATH.

WARNING: Air handlers are not accessible to the general public.



WARNING: Hazardous voltage. Only qualified personnel must install the electrical service. Disconnect and Lock Out all incoming power sources and ensure that all supply mains wiring is disconnected on all poles as allowed by the NEC and local codes before connecting, servicing, or installing unit.

WARNING: This appliance must be permanently grounded in accordance with the National Electrical Code and local code requirements. All field wiring must conform to the Class II temperature limitations described in the NEC.

Table of Contents and Safety Instructions

Safety Icon Explanation



DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.



NOTICE is used to address practices not related to personal injury.



CAUTION without the safety alert symbol, is used to address practices not related to personal injury.



CHECK the assembly and component weights to be sure that the rigging equipment can handle them safely.
Note also, the centers of gravity and any specific rigging instructions.

CHECK for adequate ventilation so that fumes will not migrate through ductwork to occupied spaces when welding or cutting inside air-handling unit cabinet or plenum.

WHEN STEAM CLEANING COILS be sure that the area is clear of personnel.

DO NOT remove access panel fasteners or open access doors until fan is completely stopped. Pressure developed by a moving fan can cause excessive force against the panel which can injure personnel.

DO NOT work on dampers until their operators are disconnected.

BE SURE that fans are properly grounded before working on them.

Failure to follow these warnings could result in personal injury or equipment damage.



NEVER enter an enclosed fan cabinet or reach into a unit while the fan is running.
LOCK OPEN AND TAG the fan motor power disconnect switch before working on a fan. Take fuses with you and note removal on tag. Electric shock can cause personal injury or death.
LOCK OPEN AND TAG the electric heat coil power disconnect switch before working on or near heaters.
Failure to follow these warnings could lead to personal injury or death.



WATER MAINS—when connecting to water mains, always use permanent connections. DO NOT USE hose sets.

DANGER

This Accessory is used with model ND which is a PARTIAL UNIT AIR CONDITIONER, complying with PARTIAL UNIT requirements of this standard, and must only be connected to other units that have been confirmed as complying to corresponding PARTIAL UNIT requirements of this Standard, UL 60335-2-40/ CSA C22.2 No. 60335-2-40, or UL1995/ CSA C22.2 No 236.

Verify refrigerant marked on nameplate is the refrigerant being used in the current system.

Verify all components are rated to the same maximum operating pressure.

Units are not to be used by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.

Children being supervised are not to play with the unit.

Units are designed to be used up to a maximum of 10,000 ft (3048m) altitude.

The bottom of the ductwork should be installed no lower than 7.21 ft (2.2m) from the floor.

WARNING

Personal Protective Equipment (PPE) Required!

Installing/servicing this unit could result in exposure to electrical, mechanical and chemical hazards.

- Before installing/servicing this unit, technicians **MUST** put on all PPE required for the work being undertaken. **ALWAYS** refer to appropriate MSDS sheets and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate MSDS sheets and OSHA guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.
- If there is a risk of arc or flash, technicians **MUST** put on all PPE in accordance with NFPA 70E or other country-specific requirements for arc flash protection, **PRIOR** to servicing the unit.

Failure to follow instructions could result in death or serious injury.

DANGER

INSURE THAT UNIT IS ADEQUATELY SUPPORTED FROM STRUCTURE TO PREVENT DAMAGE OR INJURY CAUSED BY FALLING EQUIPMENT!

If uncertain about how to connect to the structure, consult a qualified structural engineer.

DANGER

FLAMMABLE REFRIGERANTS

Refer to addendum titled “Installation, Operation and Maintenance Manual Addendum for units with Flammable Refrigerants” dated 02/23/2024, or latest version at www.magicaire.com, for specific warnings and instructions when using this product with flammable refrigerants.

Model PVAN accessory plenums do not contain refrigerants but are used with air handling units that may have field charged refrigerant coils. Installation of the AHU must comply with the instructions in the above Addendum and all local, state and federal regulations.

NOTICE

UNPACKING-CHECK FOR DAMAGE!

Immediately inspect each unit for damage upon receipt.

- Inspect units for external and concealed damage immediately.
- File any damage claims in accordance with Magic Aire Freight Damage Policy and Terms and Conditions (available at www.magicaire.com).
- Do not repair damaged units without written authorization.
- Protect stored units from damage.

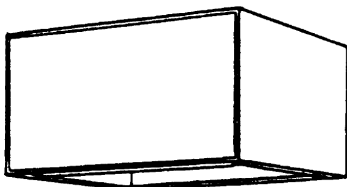
PREINSTALLATION

1. Check items received against packing list.
2. Do not stack unit components or accessories during storage. Stacking can cause damage or deformation.
3. If unit is to be stored for more than 2 weeks prior to installation, observe the following precautions:
 - a. Choose a dry storage site that is reasonably level and sturdy to prevent undue stress or permanent damage to the unit structure or components. Do not store unit on vibrating surface. Damage to stationary bearings can occur. Set unit off ground if in heavy rain area.
 - b. Remove all fasteners and other small parts from jobsite to minimize theft. Tag and store parts in a safe place until needed.
 - c. Cover entire unit with a tarp or plastic coverall. Extend cover under unit if stored on ground. Secure cover with adequate tie-downs or store indoors. Be sure all coil connections have protective shipping caps.
 - d. Monthly — Remove tarp from unit, enter fan section through access door or through fan inlet, and rotate fan and motor slowly by hand to redistribute the bearing grease and to prevent bearing corrosion.

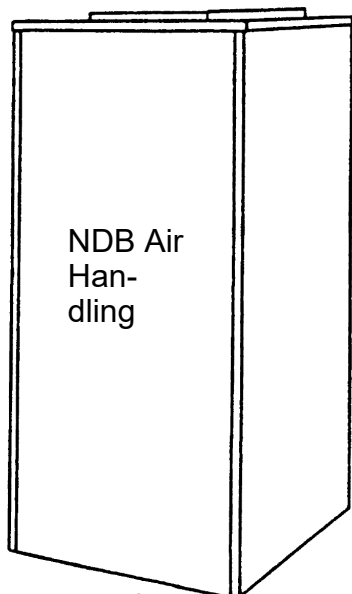
Rigging — Do not remove shipping skids or protective covering until unit is ready for final placement. Use slings and spreader bars as applicable to lift unit. *Do not lift unit by coil connections or headers.* Do not remove protective caps from coil piping connections until ready to connect piping.

Symbols Explanation

	Please read this instruction manual carefully before proceeding.
	Maintenance personnel should read this manual and installation and maintenance manual carefully before operation.
	More information can be found in installation and maintenance manual, control guides, unit wiring diagrams, and other product literature available.



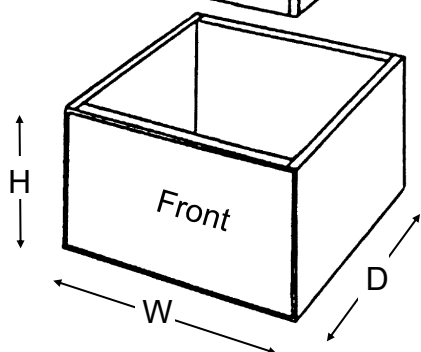
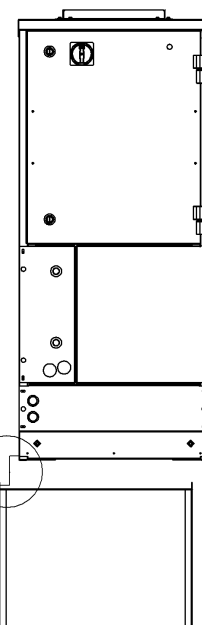
Plenum (field discharge grille or duct not shown)



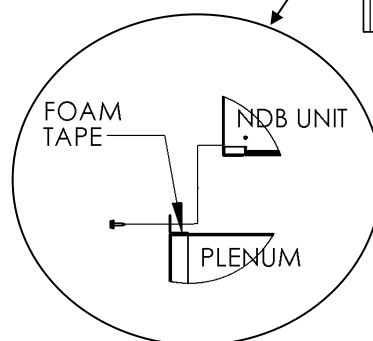
NDB Air Handling

Features:

- 19ga galvanized steel with polyester baked-on powder coating
- 3/4" foil-faced closed cell insulation
- 5 closed sides to allow field-cut openings for grilles or ductwork (see note 2)
- Can be used as return plenum (bottom) or supply plenum (top)



Plenum (field return grille or duct not shown)



Attachment Details

Plenum Accessory Dimensions (inches)

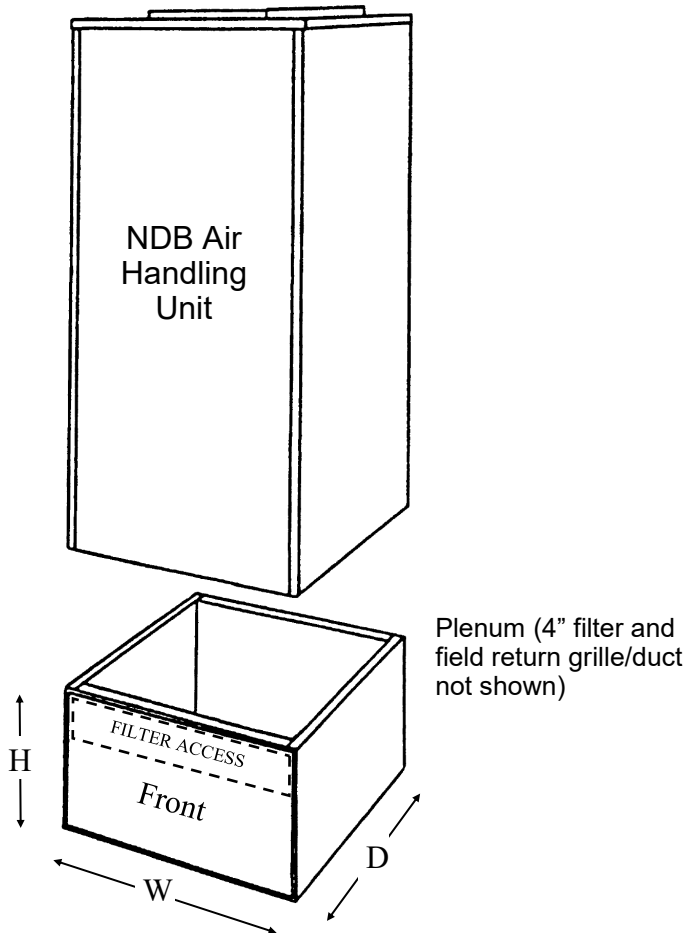
Unit Size	Plenum Part No.	Plenum Model No.	W	D	H
08	473-550117-000	PVANA08DAA116AAM	22.0	23.5	16.0
12	473-550118-000	PVANA12DAA116AAM	22.0	23.5	16.0
16	473-550161-000	PVANA16DAA120AAM	25.0	23.5	20.0
20	473-550162-000	PVANA20DAA120AAM	29.3	25.7	20.0
30	473-550170-001	PVANA30DAA124AAM	43.0	32.8	24.0
40	473-550171-001	PVANA40DAA124AAM	55.0	32.8	24.0

Notes:

1. Height dimension "H" does not include 0.75" side flanges, which don't add to total height. See Attachment Details.
2. **For best structural support, allow minimum 1.5" clear** from each edge to field cut duct or grille openings.
3. Discharge plenum not compatible with field installed electric heater accessory.

Features:

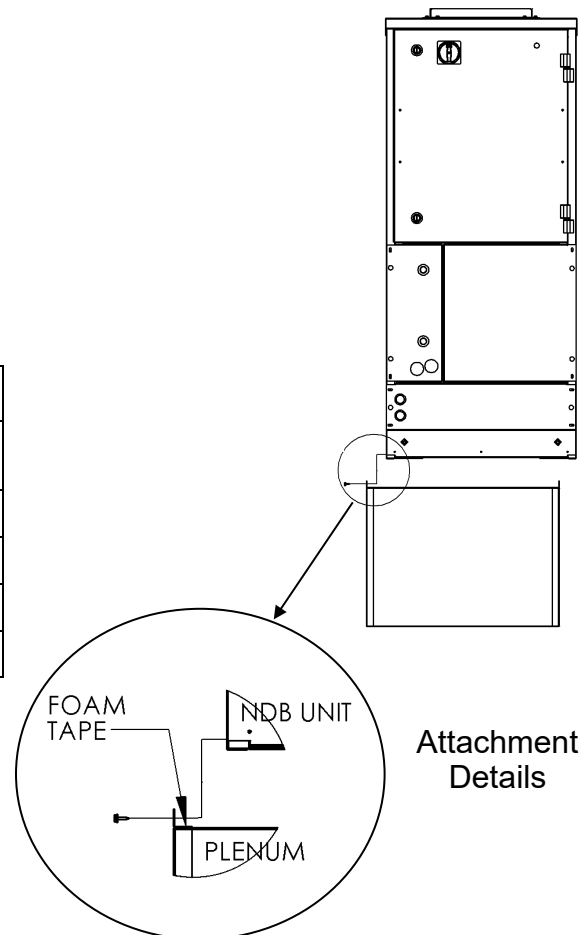
- 19ga galvanized steel with polyester baked-on powder coating
- 3/4" foil-faced closed cell insulation
- 5 closed sides to allow field-cut openings for grilles or ductwork (see note 2)
- 4" MERV 13 Filter with hinged front access door and 1/4-turn latches

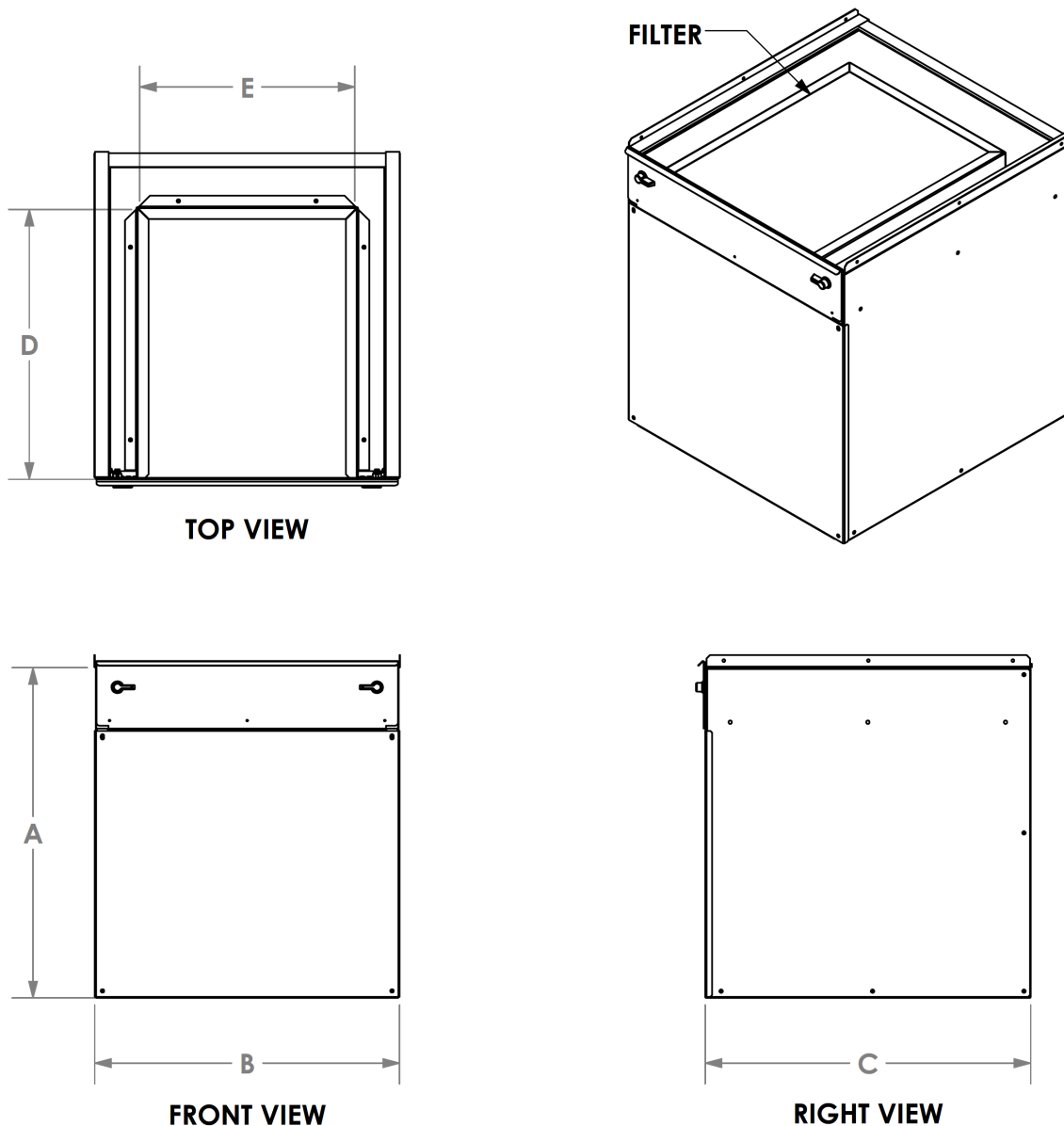


Plenum Accessory-with Filter—Dimensions (inches)					
Unit Size	Part No.	Model No.	W	D	H
08	473-550157-001	PVANA08HAA120AAM	22	23.63	20.0
12	473-550158-001	PVANA12HAA120AAM	22	23.63	20.0
16	473-550137-001	PVANA16HAA120AAM	25	23.63	20.0
20	473-550152-001	PVANA20HAA120AAM	29.4	25.38	20.0

Notes:

1. Height dimension "H" does not include 0.75" side flanges, which don't add to total height. See Attachment Details.
2. **For best structural support, allow minimum 1.5" clear** from each edge to field cut duct or grille openings.





	HEIGHT	WIDTH	DEPTH	NOM FILTER SIZE	
MODEL	A	B	C	D	E
PVAN08/12	20	22	23.63	20	16
PVAN16	20	25	23.63	20	20
PVAN20	20	29.41	25.38	24	24

PVAN Plenum Accessory

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