



**United Metal  
Products®**

## VAHU

Vertical Air Handling Unit



- 500 to 5,400 CFM @ up to 6.00" TSP
- 2" double wall construction, perforated or solid lined
- 18 gauge G90 galvanized steel cabinet
- 4 standard cabinet sizes available
- Internally isolated direct drive plug fan
- ETL listed and labeled

*Manufacturer of Quality Air Moving Equipment*



**High Quality, High Performance  
Vertical Air Handling Units  
500 to 5,400 CFM @ up to 6.00" TSP.**

**Why the Vertical AHU?**

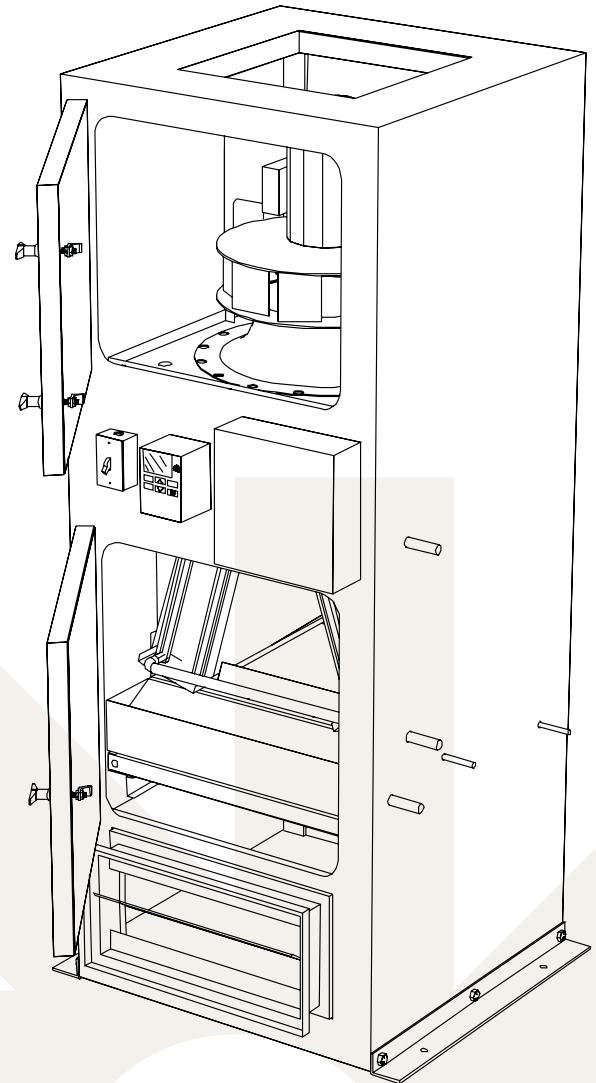
United Metal Products' VAHU line of heating and cooling units offers a high quality, high performance, low maintenance and cost effective small air handling unit where the footprint of a traditional horizontal AHU is not a viable option. The product shares many features with United Metal Products' MFC units - designed with a series of standard features typically found on higher quality, larger custom air handling units.

- Very quiet operation thanks to the direct drive plug fan, even in higher static pressure applications.
- Small footprint.
- Zero maintenance direct drive fans with no belts or bearings, and motors with permanently lubricated sealed bearings.
- #304 SS double sloped drain pans.
- High efficiency filtration for maximum indoor air quality.
- No need for external isolators thanks to the internal isolation under the fan and motor.
- Suitable for Mixed Air, 100% RA, or 100% OSA applications.

**Applications:**

The VAHU heating and cooling units have been designed for those applications where the high quality components of an air handling unit are required along with a fan and cabinet that can produce high static pressures without occupying the larger footprint area of a traditional fan coil unit. The 2" double wall cabinet, component options, speed control and vibration isolation all contribute to make the United Metal Products VAHU suitable for applications including:

- Hospitals
- Museums
- Pharmaceutical Laboratories
- High tech manufacturing
- Clean rooms
- Schools & Colleges
- Commercial
- Institutional
- Other acoustically or IAQ sensitive applications



**Resources Available for This Product:**

- Catalog By Mail
- Catalog Online
- Specification Online

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*Manufacturer of Quality Air Moving Equipment*



**Key Features:**

- 500 to 5,400 CFM @ up to 6.00" TSP.
- 2" double wall construction.
- Perforated or solid liners.
- Low-leak cabinet construction—less than 1% CFM cabinet leakage at a positive pressure of 6"WG TSP.
- 18 gauge G90 galvanized steel cabinet.
- Option for epoxy powder based baked-on coating of all casing panels after all shearing and forming and prior to assembly.
- ASTM B117 1,500 hours salt spray and ASTM D2247 1,500 hours humidity test compliant.
- 4 standard cabinet sizes available.
- Internally isolated direct drive plug fan.
- 460V/3ph, 230V/3ph or 208V/1ph power capability.
- Optional factory mounted energy efficient VFD speed control with disconnect.
- 1, 2, 3, 4, 5 & 6 row chilled water, hot water, steam or DX coils. 5/8" .020" copper tubes, aluminum or copper fins, stainless steel or galvanized casing, ARI certified coils.
- IAQ double sloped #304 stainless steel drain pans with 3/4" drain.
- 2" and 4" filters. Up to 95% efficient high capacity filters available.
- OA / RA intakes available on the front, back, right or left sides—with or without dampers.
- SA discharge is vertical up.
- OSA and RA mixing dampers with airfoil, extruded aluminum low-leak blades—with or without actuators.
- Full size hinged double wall access doors with polished stainless steel butt hinges and adjustable latches.
- Airflow measurement stations available.
- Single piece construction.
- Suitable for ground mounting with factory supplied angle feet.
- ETL listed and labeled to UL1995

**Standard Features:**

- 2" double wall construction
- 3# insulation
- 20ga G-90 solid inner liners
- G-90 galvanized finish casing & liners

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- Low-leak aluminum airfoil profile dampers

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- 2" 30% panel filters

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- 5/8" .020 copper tube coils
- .006 aluminum fins
- Galvanized steel coil casing
- Copper coil connections
- Double sloped IAQ #304 stainless steel drain pan with 3/4" drain
- Coil vent & drain extended to outside of the cabinet

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- Direct drive plug fans
- Motor pre-wired to external J-box

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- Premium efficient ODP motors
- Internal vibration isolation

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- Hinged access doors with locking (or non-locking) "T" handles

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- ETL listed and labeled to UL1995

**Optional Features:**

- 1.5# insulation
- 22ga G-90 perforated inner liners
- #304 stainless steel casing & liners
- #316 stainless steel casing & liners
- Aluminum casing & liners
- Epoxy powder coated casing
- Epoxy powder coated liners

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- Low-leak galvanized dampers
- Low-leak galvanized airfoil profile dampers
- Formed galvanized dampers
- Damper actuators

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- 4" 30% panel filters
- 4" 65%, 85% or 95% cartridge filters
- Filter pressure drop gauges

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- .008/.010 aluminum fins
- .006/.008 copper fins
- #304 stainless steel coil casing
- Red brass coil connections
- Double sloped IAQ #316 stainless steel drain pan with 3/4" drain

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- Motor pre-wired disconnect
- Motor pre-wired to VFD
- Motor pre-wired to VFD and disconnect
- Premium efficient TEFC motors



## VAHU Capacity and Option Details

Model #	VAHU Size & Capacity				
	Air Volume CFM		Exterior Cabinet Size		
	min	max	W	D	H
VAHU-1100	500	1,100	32	22	84.25
VAHU-2500	1,000	2,500	32	32	84.25
VAHU-3750	1,500	3,750	32	41	84.25
VAHU-5400	2,250	5,400	48	48	118.25

Fan Section - See Notes									
Fan Sizes (") and Max. Motor HP / Frame Size Available with ODP Motors									
9	10	11	12	15	16	18	20	22	24
5 HP 184T	5 HP 184T	5 HP 184T	5 HP 184T	x	x	x	x	x	x
x	x	x	5 HP 184T	5 HP 184T	5 HP 184T	2 HP 143T	x	x	x
x	x	x	5 HP 184T	5 HP 184T	5 HP 184T	2 HP 143T	x	x	x
x	x	x	x	x	5 HP 184T	5 HP 184T	5 HP 184T	5 HP 184T	5 HP 184T

Model #	Coil Section							
	Heating Coil			Cooling Coil				
	Face Area sq.ft	1 Row	2 Row	Face Area sq.ft	3 Row	4 Row	5 Row	6 Row
VAHU-1100	1.6	✓	✓	2.33	✓	✓	✓	✓
VAHU-2500	3.21	✓	✓	5.25	✓	✓	✓	✓
VAHU-3750	4.58	✓	✓	7.88	✓	✓	✓	✓
VAHU-5400	10.75	✓	✓	11.33	✓	✓	✓	✓

Filter Section							
Filter Size, Qty & Face Area			Efficiency and Depth				
H x W	Qty.	sq.ft	30%	30%	65%	85%	95%
12 x 24	1	2.00	2"	4"	4"	4"	4"
24 x 24	1	4.00	2"	4"	4"	4"	4"
24 x 24 + 12 x 24	1 + 1	6.00	2"	4"	4"	4"	4"
20 x 20	4	11.11	2"	4"	4"	4"	4"

Model #	Inlet or Mixing Section - See Notes			
	Front and Back Location. Opening or Damper HxW		Left or Right Location. Opening or Damper HxW	
	H	W	H	W
VAHU-1100	12	14	12	14
VAHU-2500	12	24	12	24
VAHU-3750	12	24	12	24
VAHU-5400	30	18	30	18

Supply Discharge	
Top Discharge Opening WxD	
W	D
12	12
18	18
18	18
24	24

**NOTES:**

Add 6" to unit width when including for the 3" angle feet on each side.

All access is from the "Front" of the unit. Doors are hinged on the left side of the door as standard, with 1/4 turn compression latch handles on the right side of the door.

All "Front" mounted dampers will be mounted on the outside of the cabinet and will extend 5" beyond the cabinet unless otherwise noted. "Right", "Left" and "Back" mounted dampers may be recessed depending on the location of the other dampers.

All fans 12" diameter and larger are available with reduced % wheel width.



VAHU Layout Form

By: \_\_\_\_\_ To: \_\_\_\_\_ Date: \_\_\_\_\_
Project: \_\_\_\_\_ Tag: \_\_\_\_\_ Engineer: \_\_\_\_\_

Table with 5 columns: Model, VAHU-1100, VAHU-2500, VAHU-3750, VAHU-5400. Rows include Heating Coil Area, Cooling Coil Area, Filter Area, Unit Width, Unit Depth, Unit Height, and Operating Weight.

Panel Thickness and Insulation Density: [ ] 2" Double Wall [ ] #1.5 Insulation [ ] #3 Insulation
Casing Materials: [ ] 18ga Galv [ ] 18ga Pre-painted Steel [ ] 18ga UMP Painted [ ] 18ga #304 Stainless Steel [ ] 18ga #316 Stainless Steel
Lining Materials: [ ] Smooth [ ] Perforated

Supply Fan: \_\_\_\_\_ CFM: \_\_\_\_\_ TSP: \_\_\_\_\_ ESP: \_\_\_\_\_ Arr: 4 Cl: \_\_\_\_\_

HP: \_\_\_\_\_ RPM: \_\_\_\_\_ Encl: \_\_\_\_\_ Eff: \_\_\_\_\_ V/Ph: \_\_\_\_\_ Frame: \_\_\_\_\_ [ ] JBox [ ] Disc. [ ] VFD [ ] VFD w/ Disc.
[ ] CV [ ] VAV \*\*\* \*\*\* All VAHUs require VFD to set fan speed.

Chilled Water or DX Coil [ ] Rows / FPI \_\_\_\_\_ Tube: \_\_\_\_\_ Fins: \_\_\_\_\_ Cas: \_\_\_\_\_ FV: \_\_\_\_\_
Hot Water or Steam Coil [ ] Rows / FPI \_\_\_\_\_ Tube: \_\_\_\_\_ Fins: \_\_\_\_\_ Cas: \_\_\_\_\_ FV: \_\_\_\_\_
Tubes are 5/8" (0.02") copper. Fins are .006", .0075" or .009" thick Aluminum or Copper. Coil cases are either Galv or Stainless Steel.

Filters: [ ] 2" 30% [ ] 4" 30% [ ] 4" 65% [ ] 4" 85% [ ] 4" 95% Cl: \_\_\_\_\_ Gauge: \_\_\_\_\_ FV: \_\_\_\_\_

Inlet Air Options [ ] Mixing Box [ ] 100% O/A [ ] 100% R/A [ ] Include Damper(s) [ ] Include Damper(s) with free issue actuator(s)

A.M.S. [ ] Mfg: \_\_\_\_\_ Series: \_\_\_\_\_ Power: \_\_\_\_\_ [ ] 0-10VDC [ ] 4-20mA [ ] SA [ ] RA [ ] OSA

Notes: \* Operating weights are based on galvanized construction with 3# insulation, 2 dampers, 2" filters, 2 row heating coil, 4 row cooling coil, with the largest fan and motor available.
\*\* Add 6" to unit width when including for the 3" angle feet on each side.

This layout sketch is the TOP VIEW. Show access door, electrical, OA/RA inlets and coil / drain connection locations.

Series of horizontal lines for notes or additional specifications.

