INSTALLATION MANUAL

TBH/TBV

BELT DRIVE BLOWER-COIL UNITS
HORIZONTAL

Titus
Redefine your comfort zone.™

Table of Contents

Safety Symbols & Considerations:

The following symbols are used in this document to alert the reader to areas of potential hazard:

danger
indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

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

caution
identifies a hazard which could lead to damage to the machine, damage to other equipment and or environmental pollution. Usually an instruction will be given, together with a brief explanation.

note
is used to highlight additional information which may be helpful to you.

The equipment covered by this manual is designed for safe and reliable operation when installed and operated within its design specification limits. To avoid personal injury or damage to equipment or property while installing or operating this equipment, it is essential that qualified, experienced personnel perform these functions using good judgment and safe practices. See the following cautionary statements.

ELECTRICAL SHOCK HAZARDS

All power must be disconnected prior to installation and serving this equipment. More than one source of power may be present. Disconnect all power sources to avoid electrocution or shock injuries.

MOVING PARTS HAZARDS

Motor and Blower must be disconnected prior to opening access panels. Motors can start automatically, disconnect all power and control circuits prior to servicing to avoid serious crushing or dismemberment injuries.

HOT PARTS HAZARDS

Electric Resistance heating elements must be disconnected prior to servicing. Electric Heaters may start automatically, disconnect all power and control circuits prior to servicing to avoid burns.

Check that the unit assembly and component weights can be safely supported by rigging and lifting equipment.

All assemblies must be adequately secured during lifting and rigging by temporary supports and restraints until equipment is permanently fastened and set in its final location.

All unit temporary and permanent supports must be capable of safely supporting the equipment's weight and any additional live or dead loads that may be encountered. All supports must be designed to meet applicable local codes and ordinances.

All fastening devices must be designed to mechanically lock the assembly in place without the capability of loosening or breaking away due to system operation, vibration, impact or seismic event.

Secure all dampers when servicing damper, actuator or linkages. Dampers may activate automatically, disconnect control circuits or pneumatic control systems to avoid injury.

Protect adjacent flammable materials when brazing, Use flame and heat protection barriers where needed. Have fire extinguisher available and ready for immediate use.

Return/Exhaust Casing Extension:

PRE-START

Improper installation, adjustment, alterations, service or maintenance can cause injury and property damage, as well as possible voiding of factory warranty. For assistance or additional information, consult a qualified contractor.

RECEIVING AND INSPECTING

Thoroughly examine the exterior and interior of all units for transportation damage to the cabinet, piping, blower(s), motor(s), coil(s), electric heat and electrical components. Interior damage may occur, even with no visible exterior damage. If damage is found, immediately file a claim with the carrier. Note the damage on the bill of lading before signing for the shipment.

Check the bill of lading for verification that all items shown (including loose items) have been received. Notify the manufacturer's representative of any shortages or items shipped in error.

UNIT RIGGING AND PLACEMENT

Install ductwork to comply with ASHRAE Fundamentals Handbook, SMACNA, NFPA 90A and local code.

The installation must conform with local building codes and the National Electric Code.

Locate unit support in accordance with the mechanical and structural plans. If so equipped, locate the isolator placement and correct size as shown on the submittal drawing.

Ceiling suspension of horizontal units have factory provisions for thru bolt hanger rods, except double wall units (which require external rigging). If floor mount isolators are required for either horizontal or verticalunits, then factory or field provisions must be made for isolator attachment. Vertical units can be mounted directly to the floor or on a base rail. For units with isolators but no base rail, 6" legs are required and will need to be mounted to the base of the unit. If a base rail is provided, isolators can be installed in mounting holes provided on this base rail.

Do not handle the unit using coil stubout connectors, as damage may occur at brazed joint(s).

CLEARANCE

All units, including those with electric heat, are listed for zero clearance to combustibles.

Sufficient clearance for normal servicing of this equipment is recommended.

All electrical panels must have 36" working space in front of panel to meet National Electric Code; however, local inspectors may wave this requirement if the hinged cover has a 90° free swing.

FIELD WIRING

Prior to installing any wiring, check the unit name plate for main power voltage, control voltage, transformer sizing and any fuse sizing. All field wiring must comply with National Electric Code and local code requirements.

Tighten all wiring lugs and terminals prior to connecting power to the unit, as they may loosen during transportation.

Route the power lines to the power distribution terminals inside the control enclosure. If a factory wired disconnect switch is installed, then connect the power lines to the line side of the switch.

Mount and wire any field installed items as indicated on the factory supplied wiring diagram. When mounting field installed components, do not jumper out or rewire any factory wiring without written approval from Johnson Controls. Violation will void warranty.

Return/Exhaust Casing Extension:

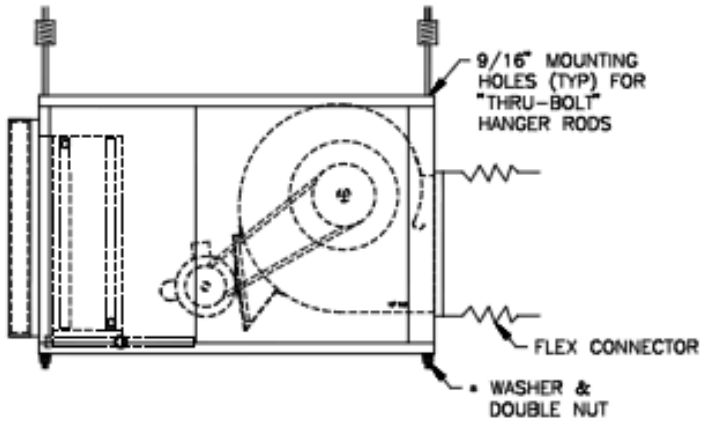


Figure 1
Horizontal Unit (All Sizes) without optional base rail

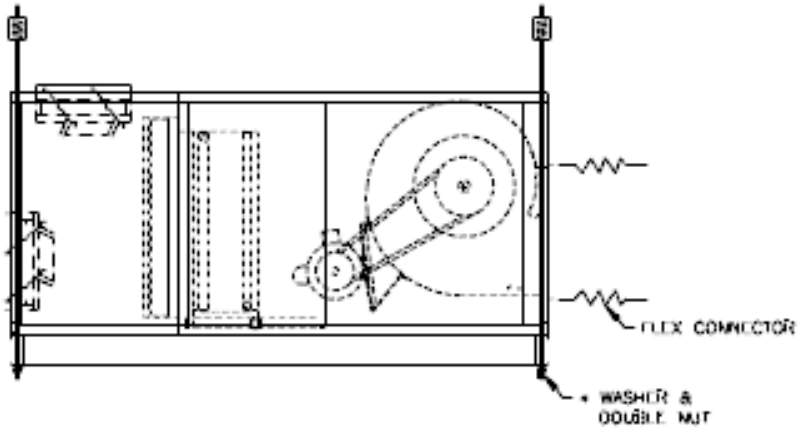


Figure 2
Horizontal Unit (All Sizes) with base rail
Suspension rods are external to the unit casing

caution

It is critical to the installation of the AHU unit that the mechanical fastener used form a "mechanical lock" so that it is incapable of backing off due to vibration. Serious injury and/or property damage may occur if not properly addressed.

Belts / Drives / Deflection

BELTS, DRIVES, AND BEARINGS

caution

For safety, please turn off all power before checking belt tension.

Prior to starting the unit, tighten all set screws on the fan(s), sheaves and bearings where applicable. Set screws may loosen during transportation.

Sheaves must be in line. Use a straight edge to verify.

General belt tension rules for V-Belt drives:

- Ideal tension is the lowest tension at which the belt will not slip under peak load conditions
- Check tension frequently during the first 24-48 hours of operation
- Over tensioning shortens belt and bearing life
- Keep belts free from foreign material which may cause slip
- Make V-Belt inspection on a periodic basis. Tension when slipping. Never apply belt dressing, as this will damage the belt and cause early failure.
- The resilient blower bearing must not deflect laterally once belt is tightened

DETERMINING DEFLECTION FORCE
(see Figure 3)

Example	Solution
Belt Span = 20" Belt Type - A, new, unnotched RPM = 1000 Small Sheave Diameter = 4.0"	Deflection = 20/64 = .313" (round to 5/16"). Referring to table below, deflection force at calculated deflection is 6.8lbs.

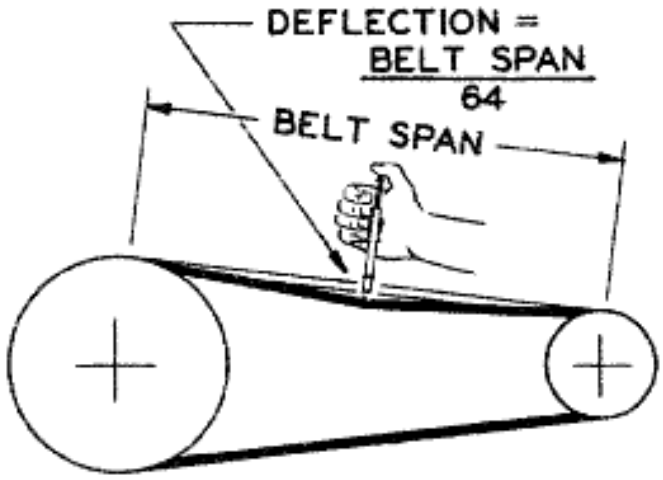


Figure 3
Computing Deflection Force
See table below for deflection force in pounds

DEFLECTION FORCE - LBS

Belt Type	Smallest Sheave Diameter Range	RPM Range	Super Gripbelts and Unnotched Gripbands		Gripnotch Belts and Notched Gripbands	
			Used Belts	New Belts	Used Belts	New Belts
A, AX	3.0 - 3.6"	1000 - 2500	3.7	5.5	4.1	6.1
	3.8 - 4.8"	1000 - 2500	4.5	6.8	5.0	7.4
	5.0 - 7.0"	1000 - 2500	5.4	8.0	5.7	9.4
B, BX	3.4 - 4.2"	860 - 2500	Not Recommended		4.9	7.2
	4.4 - 5.6"	860 - 2500	5.3	7.9	7.1	10.5
	5.8 - 8.6"	860 - 2500	6.3	9.4	8.5	12.6

Replacement Parts / Piping

REPLACEMENT PARTS

Replacement parts may be ordered from the Titus representative. Factory replacement parts should be used wherever possible to maintain agency listings. Should replacement parts not be purchased from the factory, use only parts duplicating the exact type, size, voltage and other operating characteristics of the original part. Contact the Titus representative before using any substitute part or making unit modifications. Any substitutions and/or modifications not authorized by the factory will void the unit warranty and could result in personal injury and/or property damage.

When ordering parts, the following information must be supplied to ensure proper part identification:

1. Complete unit model number
2. CO number from the unit nameplate
3. Complete parts description, including any identification numbers

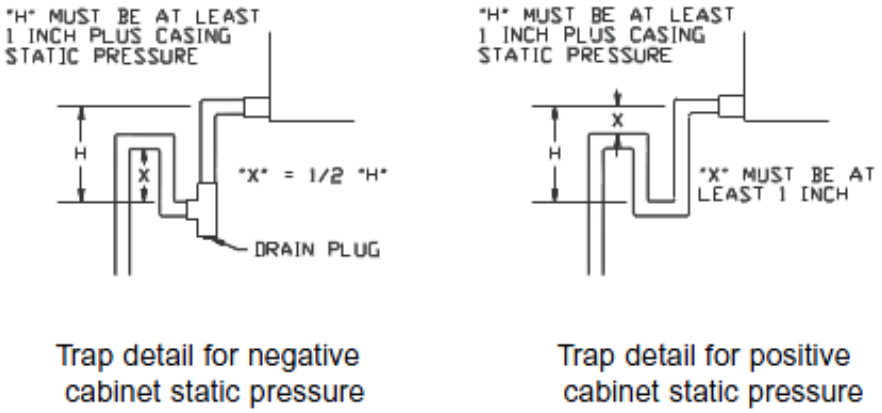
PIPING

- All piping must comply with applicable state and local codes
- On water coils, the piping must be in a counterflow configuration; water inlet on the leaving air side of the coil and at the bottom of the coil to provide the necessary purging of air
- All water piping should be designed and installed to meet the job requirements
- Where applicable, freeze protection should be used
- Supply and return water piping should be supported
- Do not suspend piping, controls, and/or shutoff valves from coil headers
- All refrigerant piping (split systems) should be designed and installed in accordance with AHRI and ASHRAE. Leak testing should be performed before any startup procedures are initiated. On refrigeration systems, follow recommended system evacuation from the condenser unit manufacturer.

Condensate Drain and Traps

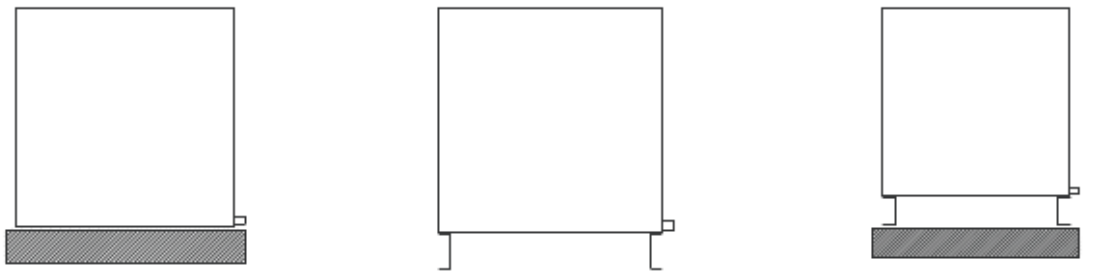
CONDENSATE DRAIN AND TRAPS

Drain lines should be at least the same size as the drain pan connection. Properly sized traps should be used to allow the condensate from the coils to drain from the drain pan. See Fig. 4.



Trap detail for negative cabinet static pressure

Trap detail for positive cabinet static pressure



NO BASE RAIL

Housekeeping pad Required to accommodate trap height

WITH BASE RAIL

Depending on static pressure, housekeeping pad may not be needed for trap installation

WITH BASE RAIL AND HOUSEKEEPING PAD

Figure 4
Condensate drain & traps

General Belt and Bearing Maintenance

GENERAL BELT AND BEARING MAINTENANCE

Frequency of bearing re-lubrication depends upon the operating conditions. The proper amount of lubricant in the bearings is very important. Both excessive and inadequate lubrication may cause failure. The bearings should be re-lubricated while they are rotating (if it is safe to do so); the grease should be pumped in slowly until a slight bead forms around the seals. It is solely the owner's responsibility for maintaining a proper lubrication schedule. Failure to do so may cause substantial unit damage and voiding of the factory warranty. Note that only those bearings equipped with a grease fitting can be re-lubricated. The following is a generic guide intended for standard equipment used in common situations.

This manual is not intended to supplant regulations or local codes having jurisdiction. It is recommended that these items be reviewed and completed prior to initiating equipment start-up.

Maintenance to be Performed	Every 3 Months of Operation	Every Fall
Filters (as required)	x	
Grease Bearings	x	
Inspect & Clean Blower Wheel		x
Lubricate Fan Motor (if applicable)		x
Check Belt Tension	x	
Check Electrical Connections		x
Check Bearings, Drives & Blower Wheel for Tightness		x

Normal operation is based on 8 hours a day. If unit runs more than this, adjust accordingly.

Recommended Torque for Tightening Set Screws		
Set Screw Diameter	Minimum Recommended Torque	
#10	Inch lbs.	Foot lbs.
	28	2.3
¼	66	5.5
5/16	126	10.5
3/8	228	19.0
7/16	348	29.0
½	504	42.0
5/8	1104	92.0

Arrangements

MOTOR ELECTRICAL DATA

Horsepower	Maximum Motor Amperage							
	Voltage							
	115/1	208/1	230/1	277/1	208/3	230/3	460/3	575/3
1/3	6.3	3.5	3.2	2.6	1.7	1.5	0.8	-
½	7.8	4.3	3.9	3.6	2.2	2.1	1.1	0.9
¾	10.6	5.4	5.3	5.0	3.2	3.0	1.5	1.2
1	15.0	8.3	7.5	5.5	4.0	3.6	1.8	1.4
1 ½	-	-	-	-	5.3	5.0	2.5	1.9
2	-	-	-	-	7.0	6.4	3.2	2.5
3	-	-	-	-	9.1	9.0	4.5	3.2
5	-	-	-	-	14.2	12.8	6.4	5.2

Notes:

1. Actual motor nameplate AMPs may vary, but will not exceed values shown
2. Consult factory for applications requiring special motors

UNIT WEIGHT DATA

Component		Unit Size					
		08	12	16	20	30	40
Base Unit		135 [61]	157 [71]	177 [80]	200 [90]	290 [131]	360 [163]
Damper Section		46 [21]	54 [24]	65 [29]	90 [41]	105 [46]	162 [73]
Blow Thru Electric Heater		42 [19]	42 [19]	42 [19]	50 [23]	55 [25]	55 [25]
Coil Rows	1 Row - Dry	12 [5]	14 [6]	17 [8]	21 [10]	26 [12]	32 [15]
	1 Row - Wet	14 [6]	16 [7]	20 [9]	25 [11]	32 [15]	41 [19]
	2 Row - Dry	17 [8]	21 [10]	26 [12]	33 [15]	42 [19]	52 [24]
	2 Row - Wet	21 [10]	26 [12]	32 [15]	42 [19]	54 [25]	69 [31]
	3 Row - Dry	23 [10]	28 [13]	35 [16]	45 [20]	57 [26]	72 [33]
	3 Row - Wet	29 [13]	36 [16]	44 [20]	59 [27]	75 [34]	95 [43]
	4 Row - Dry	29 [13]	35 [16]	44 [20]	57 [26]	73 [33]	91 [41]
	4 Row - Wet	37 [17]	45 [20]	56 [25]	74 [34]	96 [44]	121 [55]
	6 Row - Dry	40 [18]	49 [22]	62 [28]	81 [37]	104 [47]	132 [60]
	6 Row - Wet	52 [24]	64 [29]	81 [37]	106 [48]	138 [63]	178 [81]

Note: Unit weight data is shipping weight in pounds (kilograms)

MOTOR/DRIVE WEIGHT DATA

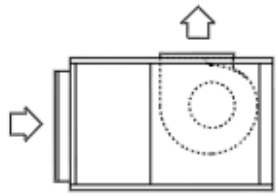
Type	Motor HP							
	1/3	½	¾	1	1 ½	2	3	5
Single Phase	37 [17]	37 [17]	45 [20]	47 [21]	-	-	-	-
Three Phase	34 [15]	34 [15]	40 [18]	43 [20]	46 [21]	53 [24]	81 [37]	94 [43]

Notes:

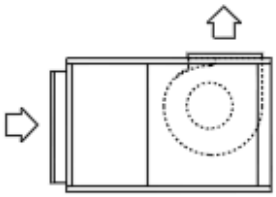
1. Includes motor, pulleys, belts, and motor base
2. Motor/drive weight data is shipping weight in pounds [kilograms]

Arrangements

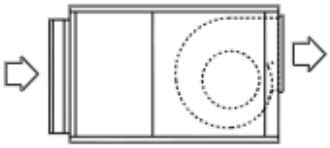
Model TBH (Horizontal) Arrangements



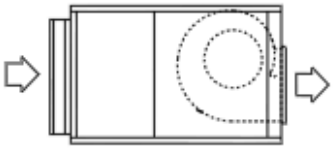
ARRANGEMENT 1



ARRANGEMENT 2

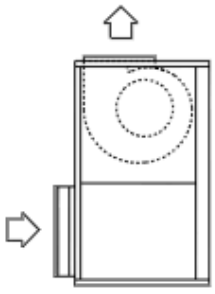


ARRANGEMENT 3



ARRANGEMENT 4

Model TBV (Vertical) Arrangements



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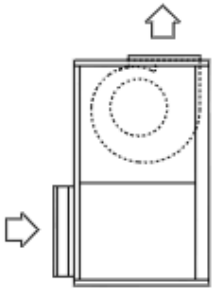
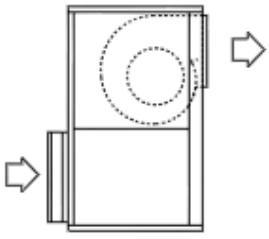


ARRANGEMENT 2



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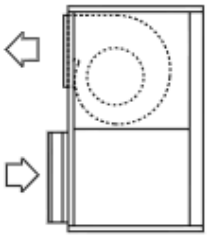


ARRANGEMENT 7

Notes:

1. Refer to Dimensional Data for unit dimensions
2. All drawings subject to change without prior notice
3. Fan arrangements are also available with inlet damper section
4. Electric heaters are available in fan arrangements 3 and 4 only

Inspection & Start-Up Checklist

RECEIVING & INSPECTION

- [ ] Unit Received Undamaged
- [ ] Unit Arrangement/Hand Correct

HANDLING & INSTALLATION

- [ ] Unit Mounted Level & Square
- [ ] Proper Electrical Service Provided
- [ ] Proper Service Switch/Disconnect Provided
- [ ] Proper Chilled Water Line Size to Unit
- [ ] Proper Refrigerant Line Sizes to Unit
- [ ] Proper Steam Condensate Trap on Return Line
- [ ] All Services to Unit in Code Compliance

COOLING/HEATING CONNECTIONS

- [ ] Protect Valve Package Components from Heat
- [ ] Connect Field Piping to Unit
- [ ] Install Drain Line & Traps as Required
- [ ] Install Condensate Pan under Piping as Required

DUCTWORK CONNECTIONS

- [ ] Install Ductwork, Fittings & Grilles as Required
- [ ] Control Outside Air for Freeze Protection

ELECTRICAL CONNECTIONS

- [ ] Refer to Unit Wiring Diagram
- [ ] All Field Wiring in Code Compliance

UNIT STARTUP

- [ ] General Visual Unit & System Inspection
- [ ] Record Ambient Temperature
- [ ] Close All Unit Isolation Valves
- [ ] Fill Systems with Water/Refrigerant
- [ ] All Ductwork & Grilles in Place
- [ ] Start Fans, etc
- [ ] Check All Ductwork & Units for Air Leaks
- [ ] Record All Final Settings for Future Use
- [ ] Check All Dampers for Proper Operation
- [ ] Verify Proper Heating Operation

BLOWER/MOTOR

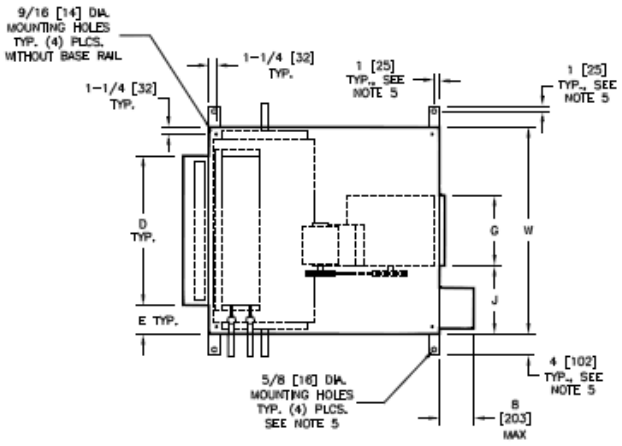
- [ ] Check Sheave Set Screw Tightness
- [ ] Check Blower Wheel Set Screw Tightness
- [ ] Adjust Blower Speed as Necessary for Balancing Airflow
- [ ] Check/Adjust Sheave Alignment
- [ ] Check/Adjust Belt Tension
- [ ] Unit Received Complete as Ordered
- [ ] Unit Structural Support Complete & Correct
- [ ] Proper Access Provided for Unit & Accessories
- [ ] Proper Overcurrent Protection Provided
- [ ] Proper Hot Water Line to Unit
- [ ] Proper Steam Line Sizes to Unit
- [ ] Proper Steam Supply Pressure to Unit (15psi Max)
- [ ] All Shipping Screws & Braces Removed
- [ ] Proper Mechanical Fasteners Used for all Horizontal Ceiling Hung Units
- [ ] Mount Valve Packages
- [ ] Pressure Test All Piping for Leaks
- [ ] Insulate All Piping as Required
- [ ] Proper Supply & Return Grille Type & Size Used
- [ ] Insulate All Ductwork as Required
- [ ] Connect Incoming Power Service or Services
- [ ] Record Electrical Supply Voltage
- [ ] Check All Wiring for Secure Connections
- [ ] Flush Water Systems
- [ ] Vent Water Systems as Required
- [ ] All Unit Panels & Filters in Place
- [ ] Check for Overload Condition of All Units
- [ ] Balance Air Systems as Required
- [ ] Check Piping & Ductwork for Vibration
- [ ] Verify Proper Cooling Operation
- [ ] Reinstall All Covers & Access Panels

Dimensions

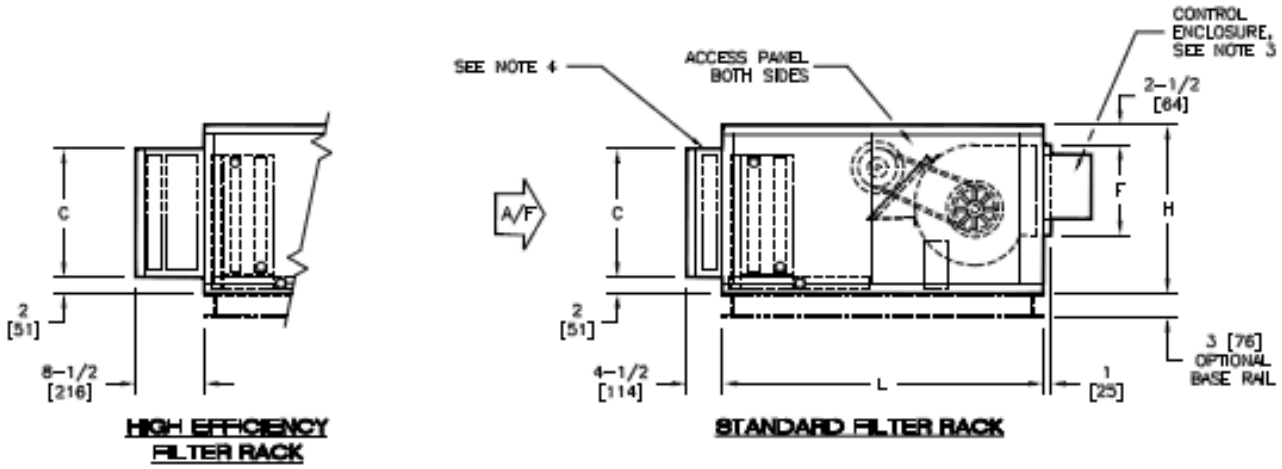
Model TBH Basic Unit – Discharge Arrangement 3

Notes:

1. All dimensions are inches [mm]. All dimensions are +/- ¼" [6mm]. Metric values are soft conversions
2. Right-hand unit shown, left-hand unit opposite. Motor/drive location may be specified left-hand or right-hand. Standard-control enclosure location matches motor/drive position.
3. Provide sufficient clearance to permit access to controls and comply with applicable codes and ordinances
4. See page 16 for filter rack details
5. Base rail is optional on the base unit. See page 18. Base rails must be used with mixing box.
6. See coil connection detail drawings for coil connection sizes and locations



TOP VIEW



HIGH EFFICIENCY FILTER RACK

STANDARD FILTER RACK

SIDE VIEWS

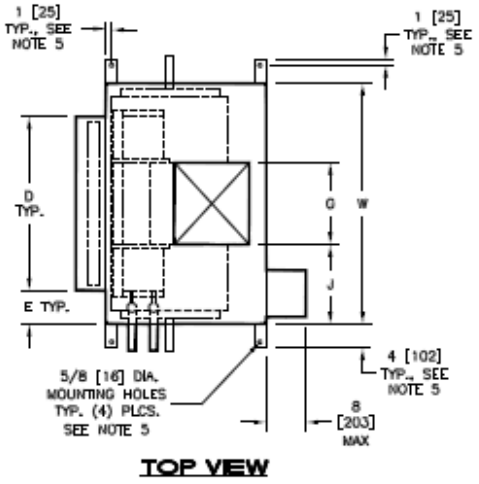
Unit Size	Dimensions									
	Fan Size	L	W	H	C	D	E	F	G	J
08	9" x 4" [229 x 102]	40" [1016]	30" [762]	21" [533]	16" [406]	20" [508]	5" [127]	10¼" [260]	6⅞" [175]	11 9/16" [294]
12	9" x 6" [229 x 152]	40" [1016]	36" [914]	21" [533]	16" [406]	25" [635]	5½" [140]	11¼" [286]	8¼" [210]	13⅞" [352]
16	10" x 8" [254 x 203]	40" [1016]	44" [1118]	21" [533]	16" [406]	39½" [1003]	2¼" [57]	11⅜" [289]	10¼" [238]	16⅞" [429]
20	10" x 10" [254 x 254]	40" [1016]	50" [1270]	21" [533]	16" [406]	44½" [1130]	2¾" [70]	11⅜" [289]	13¼" [337]	18⅜" [467]
30	15" x 9" [381 x 229]	46" [1168]	59" [1499]	30" [762]	25" [635]	51" [1295]	4" [102]	16" [406]	13¼" [337]	22⅞" [581]
40	15" x 11" [381 x 279]	46" [1168]	68" [1727]	30" [762]	25" [635]	59" [1499]	4½" [114]	16" [406]	15" [381]	26½" [673]

Dimensions

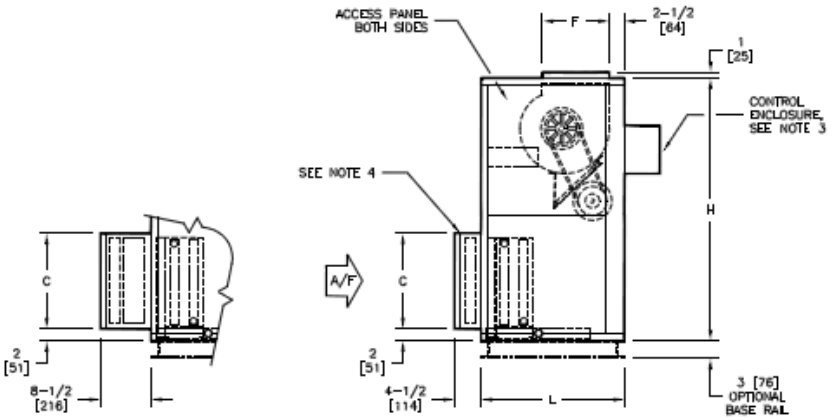
Model TBV Basic Unit – Discharge Arrangement 2

Notes:

1. All dimensions are inches [mm]. All dimensions are +/ ¼" [6mm]. Metric values are soft conversions
2. Right-hand unit shown, left-hand unit opposite. Motor/drive location may be specified left-hand or right-hand Standard-control enclosure location matches motor/drive position.
3. Provide sufficient clearance to permit access to controls and comply with applicable codes and ordinances
4. Flat filter rack may be located at unit inlet as required. See page 16 for filter rack details.
5. Base rail is optional on the base unit. See page 18. Base rails must be used with mixing box.
6. See coil connection detail drawings for coil connection sizes and locations



TOP VIEW

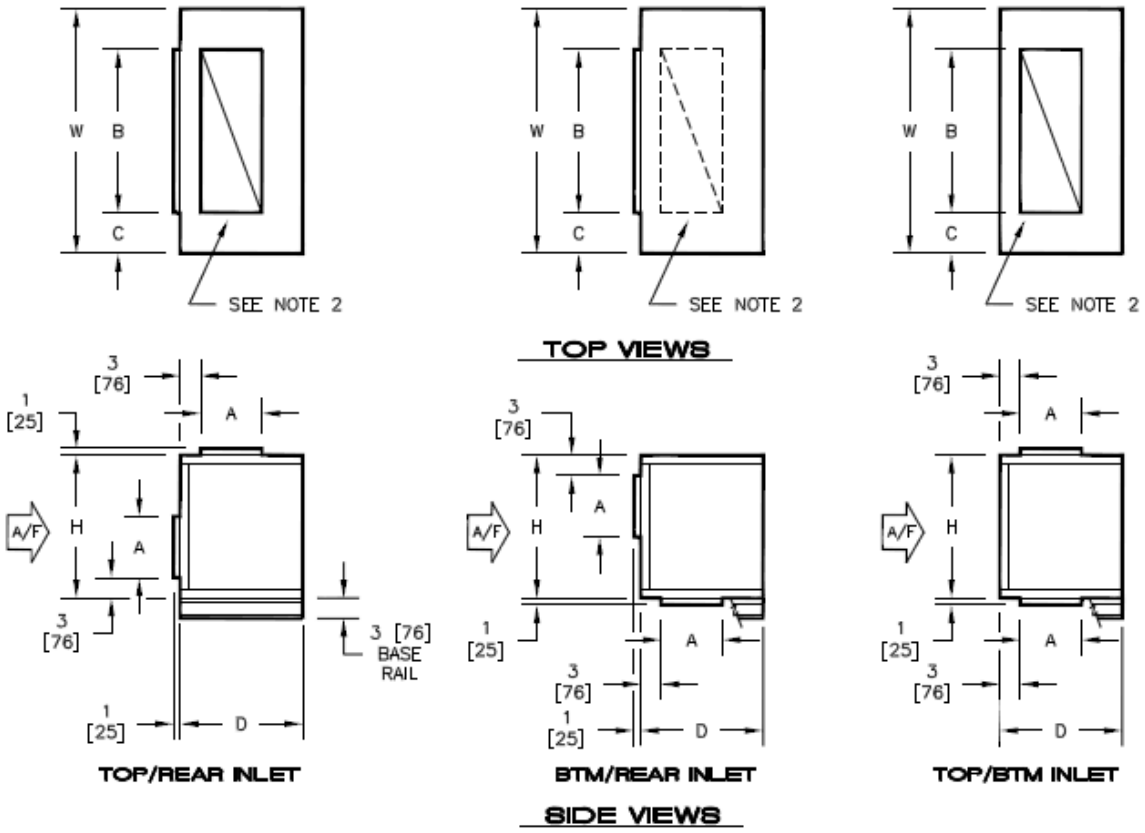


SIDE VIEWS

Unit Size	Dimensions									
	Fan Size	L	W	H	C	D	E	F	G	J
08	9" x 4" [229 x 102]	24" [610]	30" [762]	44" [1118]	16" [406]	20" [508]	5" [127]	10¼" [260]	6⅞" [175]	11 9/16" [294]
12	9" x 6" [229 x 152]	24" [610]	36" [914]	44" [1118]	16" [406]	25" [635]	5½" [140]	11¼" [286]	8¼" [210]	13⅞" [352]
16	10" x 8" [254 x 203]	24" [610]	44" [1118]	44" [1118]	16" [406]	39½" [1003]	2¼" [57]	13½" [343]	10¼" [238]	16⅞" [429]
20	10" x 10" [254 x 254]	30" [762]	50" [1270]	50" [1270]	16" [406]	44½" [1130]	2¾" [70]	13½" [343]	13¼" [337]	18⅜" [467]
30	15" x 9" [381 x 229]	30" [762]	59" [1499]	56" [1422]	25" [635]	51" [1295]	4" [102]	16" [406]	13¼" [337]	22⅞" [581]
40	15" x 11" [381 x 279]	30" [762]	68" [1727]	59" [1499]	25" [635]	59" [1499]	4½" [114]	16" [406]	15" [381]	26½" [673]

Mixing Box

Models TBH/TBV Standard Mixing Box



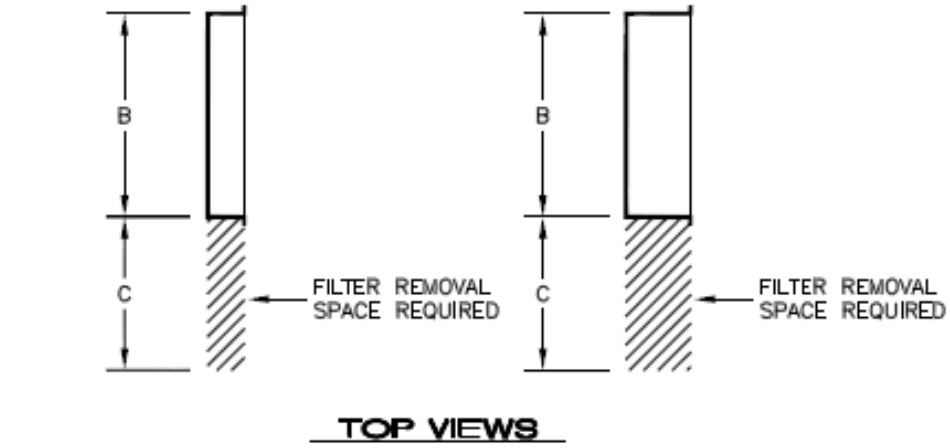
Notes:

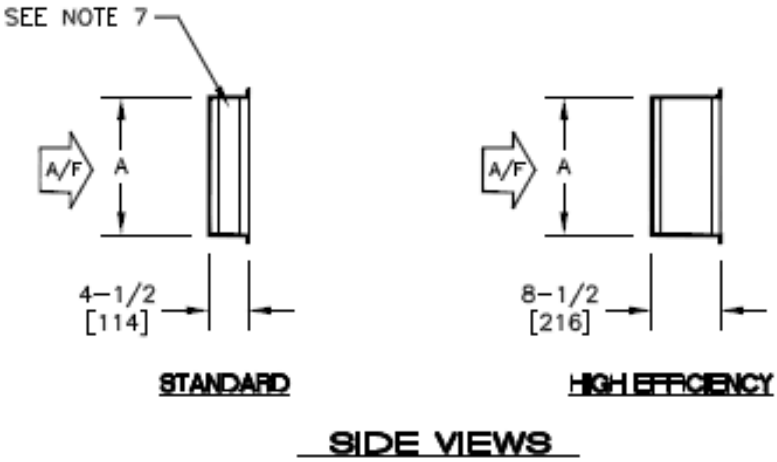
1. All dimensions are inches [mm]. All dimensions are +/- ¼" [6mm]. Metric values are soft conversions.
2. Damper-drive rods are internal, located on both sides of unit
3. Mixing box includes space for standard flat-filter rack
4. See page 18. Base rails must be used with mixing box.

Unit Size	Dimensions					
	H	W	A	B	C	D
08	21" [533]	30" [762]	9" [229]	18" [457]	6" [152]	18" [457]
12	21" [533]	36" [914]	9" [229]	24" [610]	6" [152]	18" [457]
16	21" [533]	44" [1118]	9" [229]	30" [762]	7" [178]	18" [457]
20	21" [533]	50" [1270]	12" [305]	36" [914]	7" [178]	21" [533]
30	30" [762]	59" [1499]	12" [305]	45" [1143]	7" [178]	21" [533]
40	30" [762]	68" [1727]	15" [381]	48" [1219]	10" [254]	24" [610]

Standard Flat Filter Rack

Models TBH/TBV Standard Flat Filter Rack





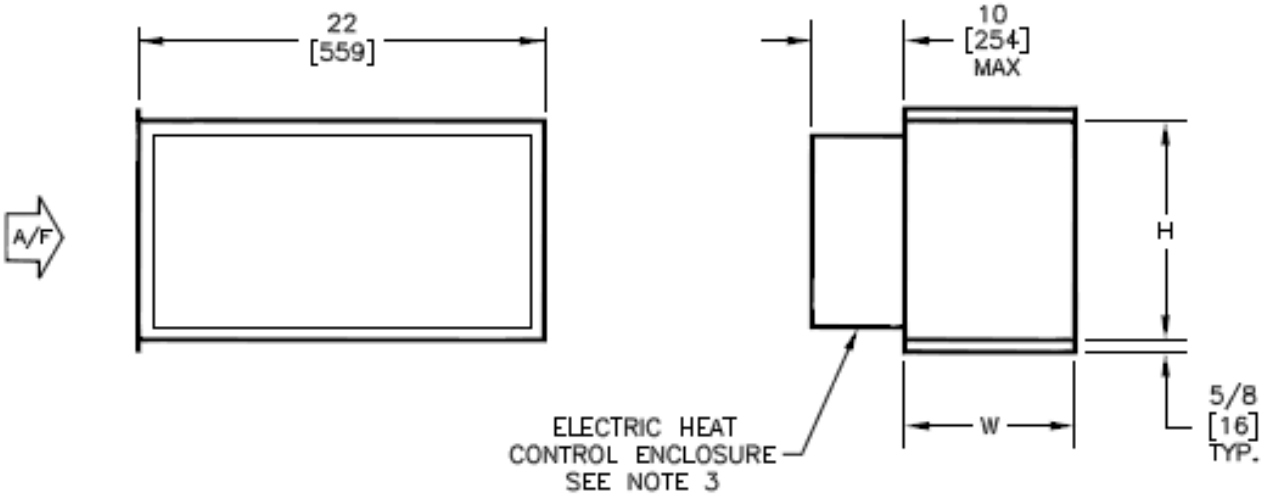
Notes:

1. All dimensions are inches [mm]. All dimensions are +/- ¼" [6mm]. Metric values are soft conversions
2. Flat filter rack may be located at unit inlet as required
3. Standard rack will accept nominal 1" or 2" thick filters
4. High efficiency rack will accept nominal 2" and/or 4" thick filters
5. High efficiency rack not available on TBH and TBV unit mixing box
6. 1" duct connection space provided on entering side of rack for connection of field ductwork
7. Hinged cover provided on both sides of externally mounted filter racks. Internal standard filter racks have pivoting bar type filter retainer.
8. See individual unit submittal drawings for location of filter rack on unit

Unit Size	Dimensions			
	A	B	C	(Qty) & Size Filters
08	16" [406]	20" [508]	20" [508]	(1) 16" x 20"
12	16" [406]	25" [635]	25" [635]	(1) 16" x 25"
16	16" [406]	39½" [1003]	20" [508]	(2) 16" x 20"
20	16" [406]	44½" [1130]	25" [635]	(1) 16" x 20" (1) 16" x 25"
30	25" [635]	51" [1295]	25" [635]	(2) 16" x 25" (1) 20" x 25"
40	25" [635]	59" [1499]	25" [635]	(3) 20" x 25"

Blow-Thru Electric Heat

Models TBH/TBV Blow-Thru Electric Heat



BT
BLOW THRU
ELECTRIC HEAT
SECTION

Notes:

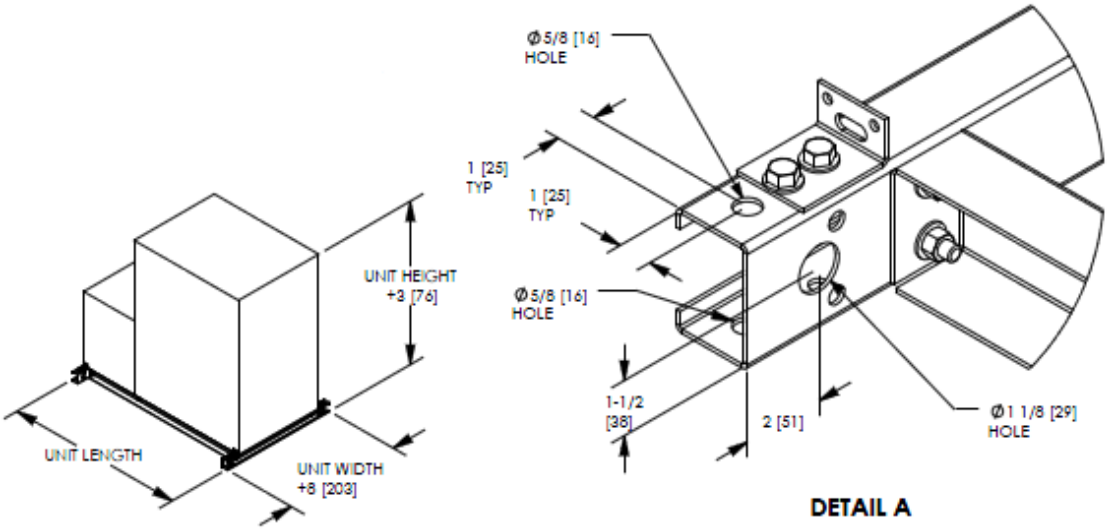
1. All dimensions are inches [mm]. All dimensions are +/- ¼" [6mm]. Metric values are soft conversions.
2. Motor/drive location may be specified Left or Right Hand. Standard control enclosure location matches motor/drive position.
3. Provide sufficient clearance to permit access to controls and comply with applicable codes and ordinances.
4. Available for horizontal discharge only.

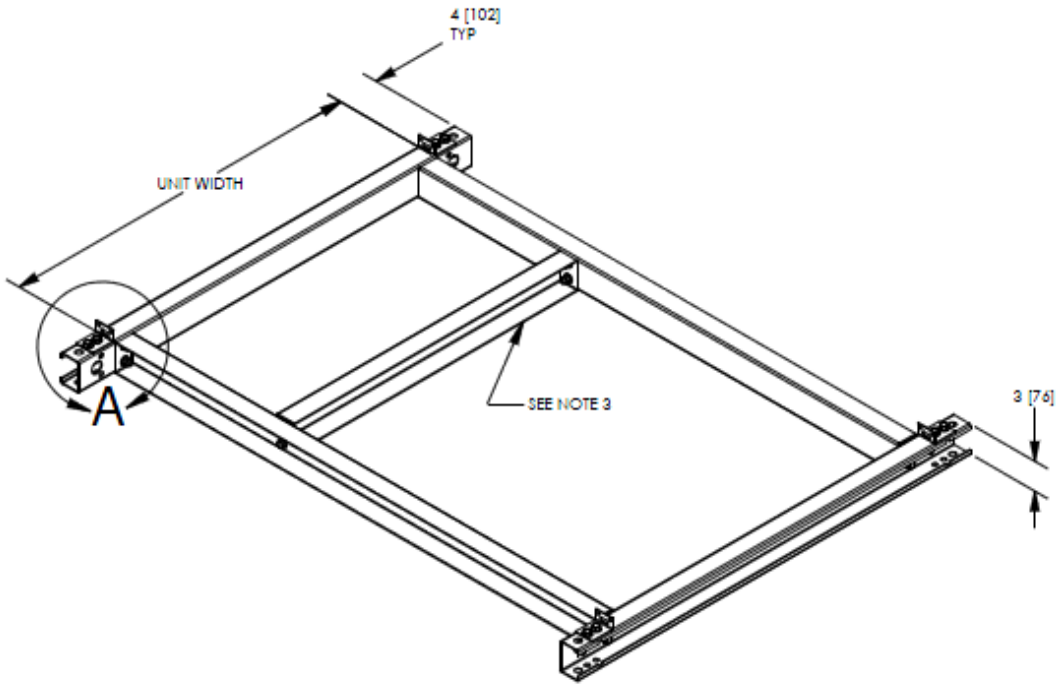
Unit Size	Dimensions		
	H	W	Weight in lbs [kg]
08	$11^{7}/_{8}$" [302]	$8^{7}/_{8}$" [225]	42 [19]
12	$11^{7}/_{8}$" [302]	$8^{7}/_{8}$" [225]	42 [19]
16	12" [305]	$10^{7}/_{8}$" [275]	42 [19]
20	12" [305]	$13^{7}/_{8}$" [352]	50 [23]
30	$16^{5}/_{8}$" [422]	$13^{7}/_{8}$" [352]	55 [25]
40	$16^{5}/_{8}$" [422]	$15^{5}/_{8}$" [397]	55 [25]

3-inch Baserail Assembly

Notes:

1. All dimensions are inches [mm]. All dimensions are +/- ¼" [6mm].
2. Vertical unit shown, typical for both vertical and horizontal units
3. Support used on units with length over 50 [1270]





Notes

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