



SPXB-HW Series

Single Package Vertical Unit

Cooling with Hot Water Heat
1 through 2 tons, up to 47,800 BTUH Heating



"Rear install" shown

The **SPXB-HW** Series "Suite 20" is a compact, through-the-wall single package vertical HVAC unit that delivers conditioned air from a single unit to multiple rooms. Warm, efficient space heating is provided by connecting the **SPXB-HW** hot water coil to a properly sized individual natural gas or oil fired water heater or to a boiler (for boiler applications, a motorized zone valve must be powered by an external voltage source). Having a small footprint (20" X 20") allows the **SPXB-HW** to use a minimal amount of floor space. The **SPXB-HW** installs easily into a closet having an exterior wall. Like your home, a standard wall mounted thermostat controls the **SPXB-HW** unit. Applications for the **SPXB-HW** include:

- Hotels / Motels
- High rise apartments / Condominiums
- Assisted Living / Independent care facilities
- Student housing
- Manufactured / Modular buildings

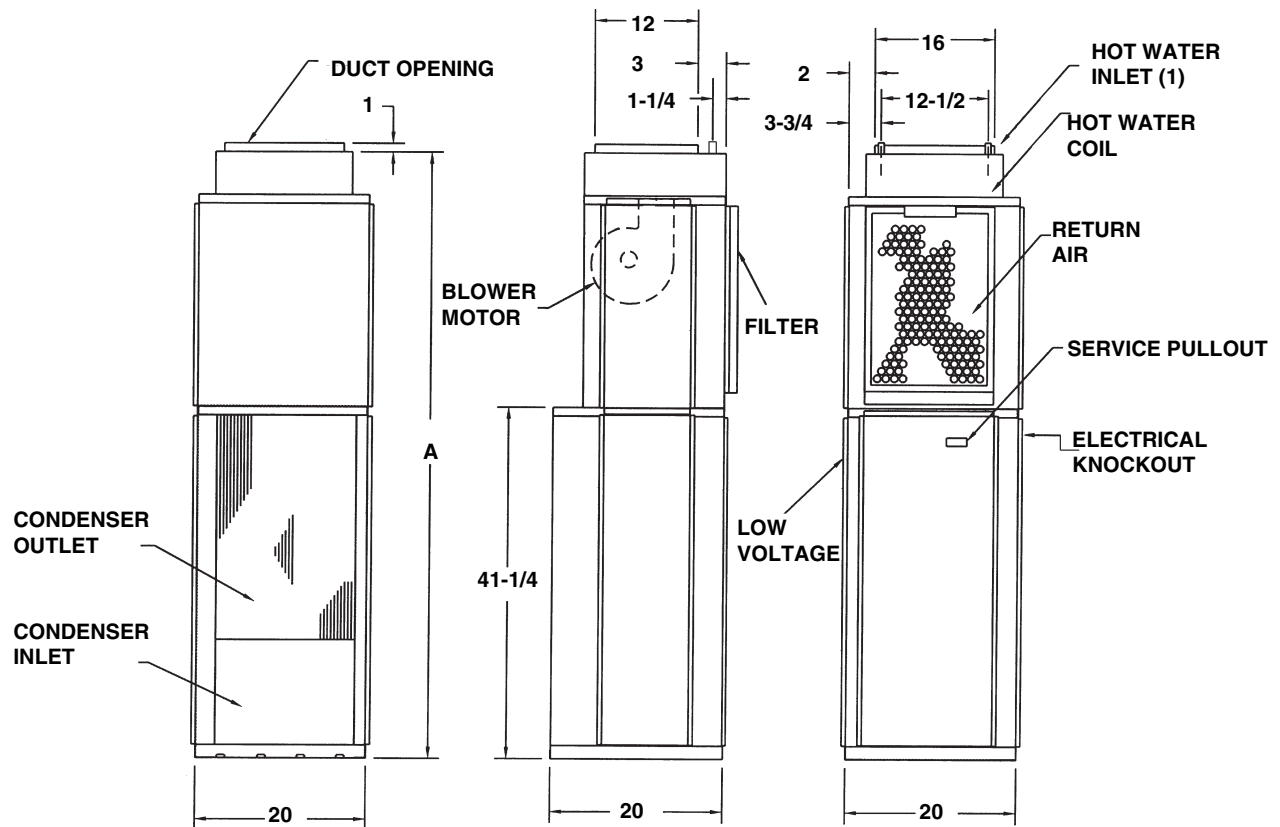
Standard Features: (see pages 4 and 5 for further information)

- Completely pre-charged with environmentally friendly refrigerant
- Easy access for in-place service of most components
- Multi-function micro-processor board that includes the following functions:
 - Evaporator coil low temperature protection
 - Low ambient lockout
 - ECM motor utilized on SPXB18 & 24 models
 - Random restart
 - Compressor restart delay
 - Front desk control capability
 - Fan-off delay in the cooling mode
 - Low voltage fuse protection
- Service disconnect
- Completely insulated cabinet for sound attenuation and weather infiltration
- Adjustable fresh air damper
- No tool needed to replace the filter
- Weight-supporting, single piece wall sleeves (except side access sleeves) for various wall thicknesses from 5" to 20"
- Sleeves have primary condensate drain connection with secondary overflow to building exterior
- All sleeves are shipped with a weather guard

Optional Accessories

- Hurricane grille / sleeve combinations
- Various louvered and non-louvered interior access panels
- Digital wall mount thermostats with high and low temperature limits
- "Flow control module" for connecting to water heaters (contact factory)
- **(NEW!) Insulation kit** - Adds additional 5/8" insulation to three sides of the **SPXB-HW** units (see pages 5 & 8)

SPXB-HW Series



(1) Hot water coil connections are 7/8" O.D., Sweat

UNIT	A	FILTER
9,12,18SPXB-HW	71-1/4	18 x 24 x 1
924SPXB-HW	73-1/4	18 x 26 x 1

In keeping with its policy of continuous progress and product improvement, First Co. reserves the right to make changes without notice. Maintenance for all First Co. products is available under "Product Maintenance" at www.firstco.com.

ELECTRICAL DATA 208/230V - 1PH - 60Hz											
UNIT MODEL	BLOWER DATA		CONDENSER DATA				MINIMUM CIRCUIT AMPACITY		MAXIMUM CIRCUIT PROTECTION		SHIP. WT.
	EVAPORATOR MOTOR		COMPRESSOR		CONDENSER MOTOR						
	AMPS	HP	RLA	LRA	FLA	HP	208V	230V	208V	230V	
9SPXB-HW	0.70	1/10	4.4	25	0.5	1/15	7	7	15	15	250
12SPXB-HW	0.70	1/10	4.7	25	0.72	1/10	8	8	15	15	250
18SPXB-HW	1.4	1/4	7	38	2.3	1/4	13	13	20	20	250
24SPXB-HW	2.8	1/3	13.5	58.3	2.3	1/4	22	22	30	30	250

BLOWER DATA									
UNIT MODEL	MOTOR SPEED	CFM vs EXTERNAL STATIC PRESSURE							
		0.05	0.10	0.15	0.20	0.25	0.30	0.35	0.40
9SPXB-2HW	LOW (C)	325	315	310	300	290	275	260	---
	LOW (H)	325	315	310	300	290	275	260	---
12SPXB-2HW	HIGH (C)	510	500	490	480	465	450	435	420
	MED (H)	380	370	360	350	340	330	320	310
18SPXB-2HW	MED (C)	800	780	765	750	735	720	700	680
	LOW (H)	700	690	680	670	655	640	630	620
18SPXB-3HW	MED (C)	780	760	745	730	715	700	680	660
	LOW (H)	690	680	670	660	645	630	620	610
24SPXB-2HW	Tap 2 (C)	765	755	740	730	715	705	690	675
	Tap 1 (H)	600	585	575	560	545	530	515	495
24SPXB-3HW	Tap 2 (C)	745	735	720	710	695	685	670	655
	Tap 1 (H)	590	575	565	550	535	520	505	485



(1) Factory Settings:
(H) = Heating, (C) = Cooling

COOLING / PERFORMANCE DATA		
UNIT MODEL	STANDARD RATING (1)	EER
9SPXB-HW	9000	10.0
12SPXB-HW	11400	10.0
18SPXB-HW	17500	10.0
24SPXB-HW	21400	10.0

NOTES:

- (1) Tested at 95°F DB/75°F WB outdoors and 80°F DB/67°F WB indoors.
(2) Tested in accordance with AHRI Standard 390.

HOT WATER HEATING DATA						
UNIT MODEL	AIR FLOW (CFM)	GPM	P.D. (FT. WATER)	BTUH (1000) @ ENTERING WATER TEMPERATURE		
				120°F	140°F	180°F
9SPXB-2HW	300	4	3.2	9.3	13.0	20.4
		3	1.9	9.0	12.6	19.8
		2	0.9	8.6	12	18.9
12SPXB-2HW	500	4	3.2	12.7	17.8	28.0
		3	1.9	12.2	17.1	26.9
		2	0.9	11.5	16.1	25.3
	370	4	3.2	10.6	14.8	23.3
		3	1.9	10.2	14.3	22.5
		2	0.9	9.6	13.5	21.2
18SPXB-2HW	780	4	3.2	16.4	22.9	36.0
		3	1.9	15.7	22.0	34.6
		2	0.9	14.6	20.4	32.0
	690	4	3.2	15.3	21.4	33.6
		3	1.9	14.7	20.6	32.4
		2	0.9	13.6	19.1	30.0
18SPXB-3HW	760	4	4.7	21.1	29.5	46.3
		3	2.7	20.2	28.3	44.5
		2	1.3	18.8	26.3	41.3
	680	4	4.7	19.7	27.6	43.4
		3	2.7	18.9	26.5	41.6
		2	1.3	17.6	24.7	38.8
24SPXB-2HW	820	4	3.2	16.8	23.5	36.9
		3	1.9	16.1	22.5	35.3
		2	0.9	14.9	20.8	32.7
	590	4	3.2	14.0	19.6	30.8
		3	1.9	13.4	18.8	29.5
		2	0.9	12.6	17.6	27.6
24SPXB-3HW	800	4	4.7	21.7	30.4	47.8
		3	2.7	20.8	29.1	45.7
		2	1.3	19.2	26.9	42.3
	580	4	4.7	17.9	25.0	39.3
		3	2.7	17.1	24.0	37.7
		2	1.3	16.1	22.5	35.3

Note: Use 3 GPM capacities when First Co. "Flow Control Module" (Part number 940-3CV) is used.



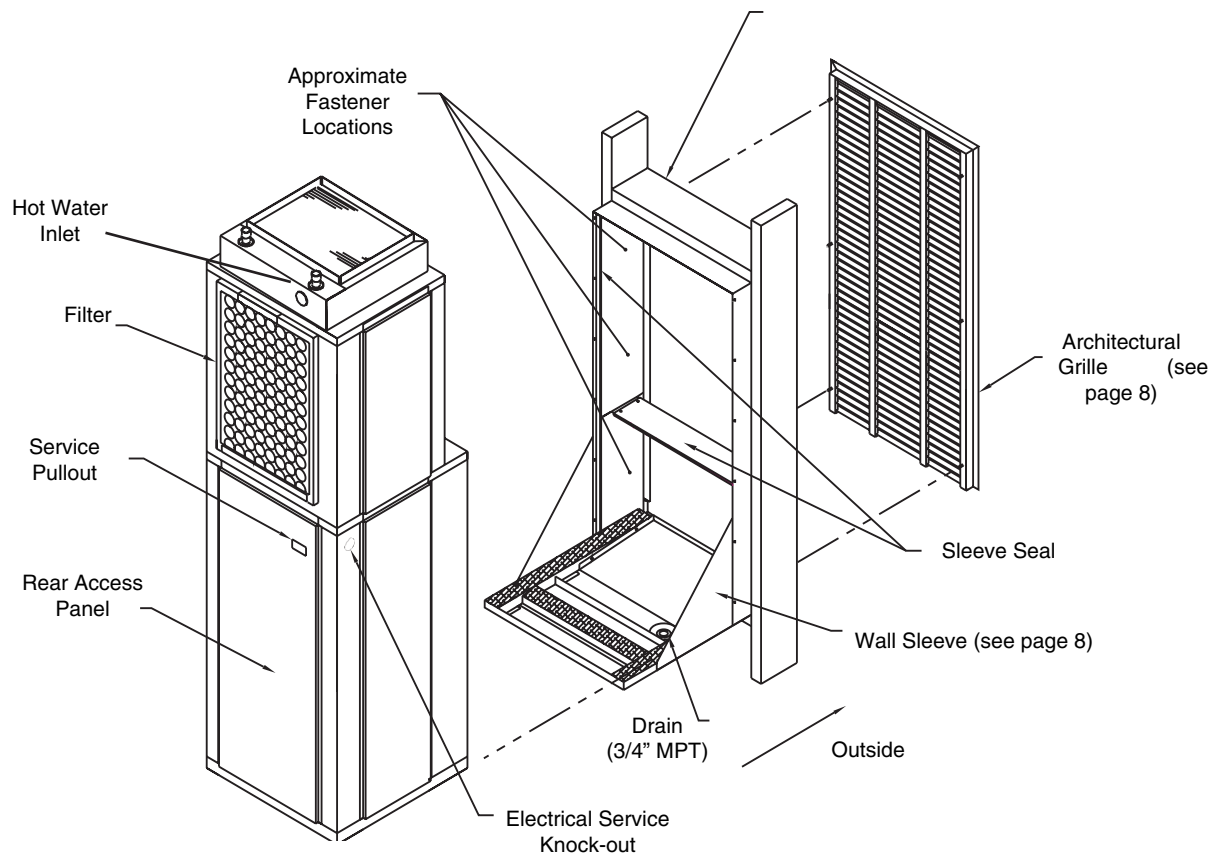


Figure 1 - General Assembly

FEATURES AND BENEFITS

1. Solid State Circuit Board - Incorporates the following control features:

- **Evaporator coil low temperature protection** – During the cooling mode, should the evaporator coil experience either a low temperature condition that could result in ice build up on the coil or a reduced air flow situation, a temperature sensor attached to the coil will de-energize the **SPXB-HW** unit. The sensor will re-energize the **SPXB-HW** unit when the coil warms back up.
- **Low ambient lockout** – Locks out compressor when the sensor registers temperatures of 40 degrees F and below to extend compressor life.
- **Random restart** – When power is turned on after a power outage, a built-in random restart (3 to 4 minutes) prevents all compressors from restarting simultaneously.
- **Compressor restart delay** – This delay ensures that system pressures are allowed to equalize before a compressor restart, which extends compressor life.
- **Front desk control** – When wired to a front desk console, each unit can then be enabled or disabled from the front desk, thus saving the energy used to condition unoccupied rooms.
- **Fan delay** – A fan delay allows the evaporator blower to continue running for up to 45 seconds after the thermostat is satisfied. This feature maximizes cooling performance.
- **Low voltage fuse protection**

2. Service Pullout - Factory installed for service convenience and maintenance.

3. Adjustable fresh air (manual) - To meet code requirements for fresh air introduction. When opened, the fresh air vent (see Figure 8) allows up to 50 CFM of outside air to be introduced into the equipment closet. The air then mixes with return air entering the closet through the return air grille.

4. Wall-mounted thermostat – (See “accessories”, P.8) The **SPXB-HW** is easily controlled by a standard low voltage wall thermostat rather than complicated unit-mounted controls. Low voltage wires are “stubbed” out the left side of the cabinet.

5. 40VA transformer

FEATURES AND BENEFITS (CONT.)

5. **Wall Sleeve** – (See Figures 1, 4 and 5) Rear or side install wall sleeves are provided for installation during rough-in and, when ready, the **SPXB-HW** unit is simply slid into the sleeve and the ductwork and electrical connected. The sleeve is a weight-bearing sleeve that supports the entire weight of the **SPXB-HW** unit and provides a weather tight seal against wind and water infiltration. A 3/4" male NPT fitting is provided in the bottom of the sleeve for field connection to a condensate riser. Four wall sleeve depths are available to accommodate wall thickness from 5" to 20". Each sleeve includes a factory installed "weather guard" to cover the sleeve opening during construction.
6. **Unique "Sleeve Drain" Condensate System** - (Also see Figure 4) A factory installed drain line connects the evaporator drain pan to a vertical pipe connection in the **SPXB-HW** base pan. Evaporator condensate is delivered from the

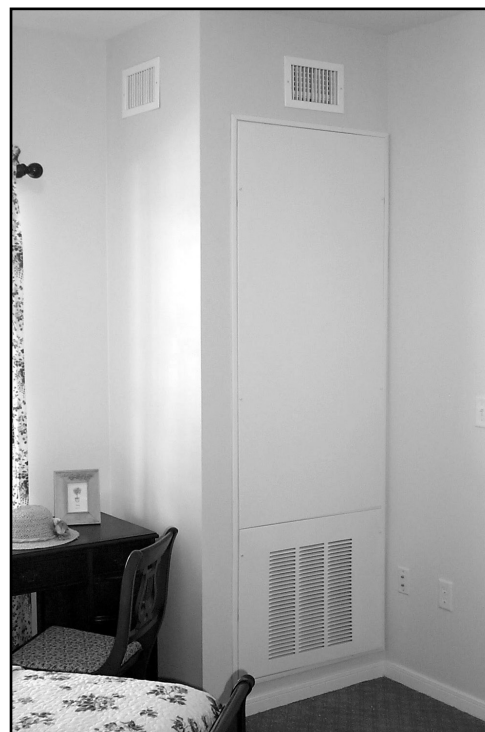


"Rear Install"
sleeve shown

SPXB-HW unit to a catch tray in the wall sleeve and exits the sleeve through the 3/4" male NPT fitting. This design allows the plumber to completely pipe the drain to a condensate riser during the rough-in stage, thus eliminating condensate connection problems usually encountered when trying to connect the HVAC drain to the riser after the HVAC unit is installed in the closet. This features also allows the **SPXB-HW** unit to be removed for service without disconnecting the condensate piping! This configuration does not require any additional closet space to make the drain connection, as do some competitive products.

7. **Secondary overflow:** If for any reason the primary condensate riser becomes clogged, water will fill the catch tray and then be diverted through the sleeve to the exterior of the building, rather than be allowed to overflow into the closet or living area. Rain water entering the sleeve is automatically diverted to the 3/4" sleeve drain.
8. **Ductable return air** – Return air can be ducted to the unit. However, most installations would not normally require ducted return air.
9. **New "Flush Style" Architectural Grille** – (See Figure 6) This new grille is an attractive extruded aluminum architectural grille that attaches to the outside face of the wall sleeve. The blades of this unique grille recess into the wall sleeve for a neat, "flush" appearance. Grilles install from the inside of the wall sleeve. Do not install the **SPXB-HW** unit into the sleeve before installing the grille.
10. **Filter Brackets** – (See Figure 7) Filter Brackets and throw away filter are shipped with each unit and are field installed over the unit's evaporator coil.
11. **Insulation kit (#91K01)** - The interior of all **SPXB-HW**'s is lined with 1/2" fiberglass as standard. The 91K01 kit is designed to be used in any application where additional insulation is desired. The kit includes three sections of 5/8" foil faced ductboard insulation that are screwed together in the field and cover the three sides of the condenser section.

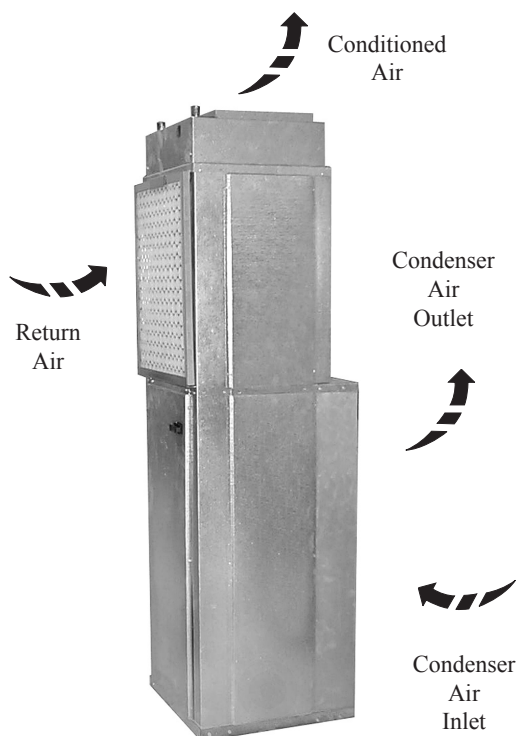
Figure 2



SHOWN WITH OPTIONAL LOUVERED ACCESS PANEL
(See P.8)

NOTE: A solid door or panel in front with a side wall return air grill will result in lower sound levels.

Figure 3



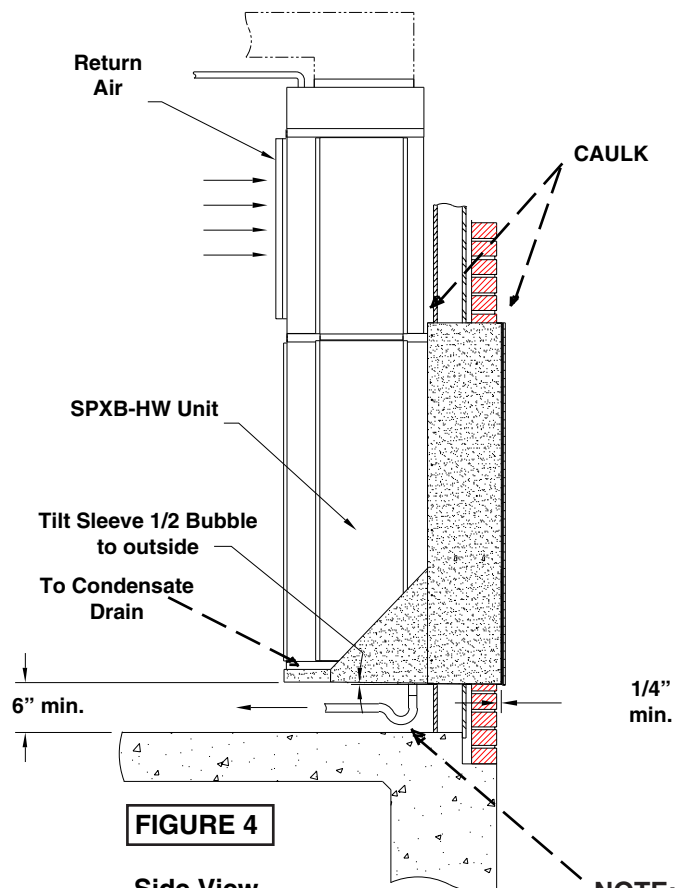


FIGURE 4

**Side View
(with "Rear install" sleeve)**

NOTE: "P" Trap is shown for illustration purposes only. It may not be required by local codes.

UNIT / SLEEVE DIMENSIONS					
Part Number		Fots Wall Thickness	A	B	C
Rear Install	Side Install				
936-1B	936-11B	5" - 8" wall	9"	17.5"	26"
936-2B	936-12B	8" - 12" wall	13"	17.5"	30"
936-3B	936-13B	12" - 15" wall	16"	17.5"	33"
936-4B	936-14B	15" - 20" wall	21"	17.5"	38"

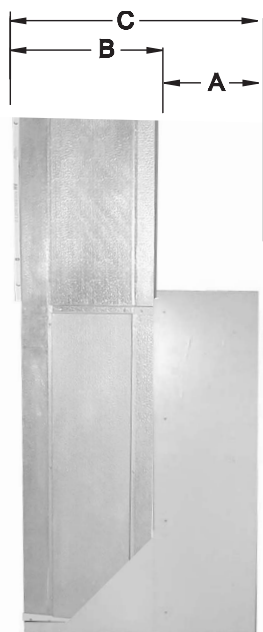
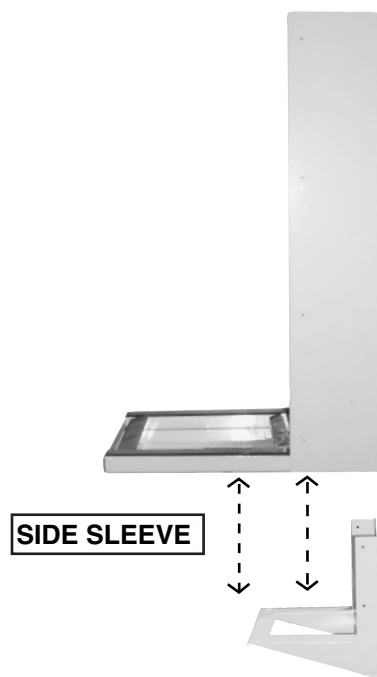


FIGURE 5

(Unit shown with "Rear Install" sleeve)



SIDE SLEEVE

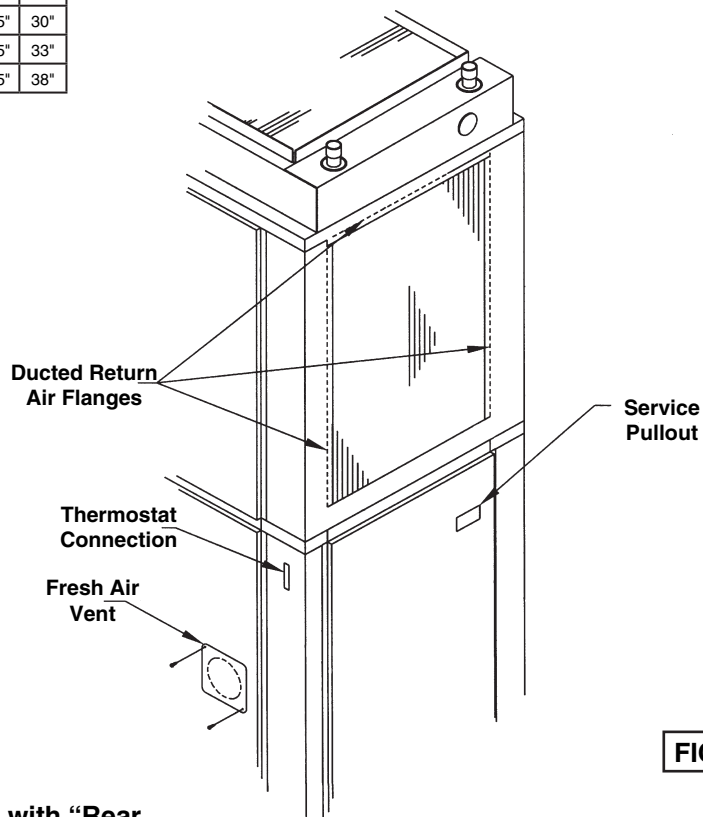


FIGURE 6

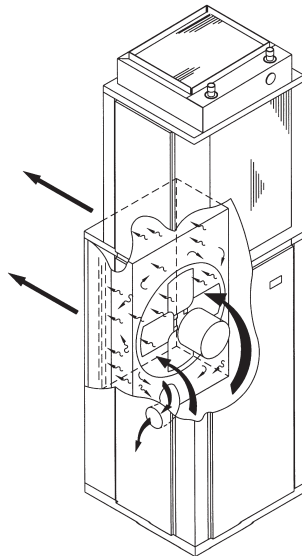
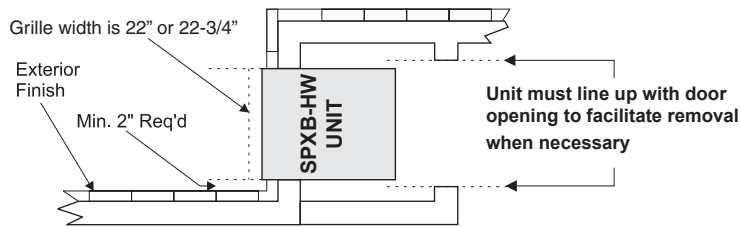


FIGURE 7

One end of a 4" aluminum vent pipe is connected to the condenser venturi and the other end is connected to the side of the **SPXB-HW** cabinet. A mesh screen is installed inside the vent pipe and a metal plate on the side of the cabinet covers the opening of the vent pipe. Up to 50 CFM of fresh air is introduced into the equipment closet by removing the metal cover plate. The fresh air then mixes with the return air and is then pulled through the evaporator coil and into the supply duct. The cover plate can be re-installed to partially close the fresh air opening if less than 50 CFM is desired. An external source of negative pressure (i.e. a bathroom fan) could be used to introduce more than 50 CFM of fresh air. Consult with factory for further details.

SPXB-HW Rear Installation Detail



Notes:

1. Sleeve rough-in opening is 44"(H) X 21-5/8"(W).
2. Bottom of opening should be approx. 6" above floor level.
3. Minimum 3" of clearance is required on all sides of the **SPXB-HW** unit.

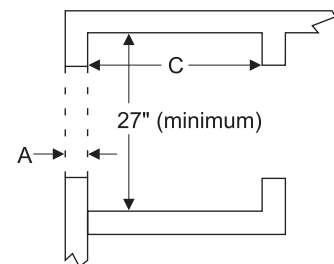
SPXB-HW Closet Dimensions - Rear Installation

Instructions:

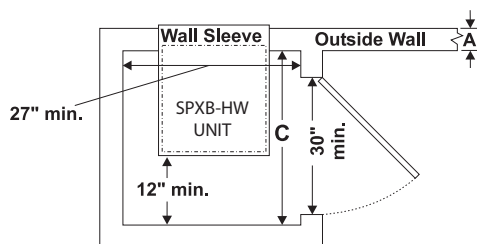
To find the minimum closet depth (dimension "C"), use the following method:

Determine dimension "A" which is the total finished wall thickness.

- For 5"-8" outside wall thickness, subtract "A" from 29".
("C" = 29 - "A")
- For 8"-12" outside wall thickness, subtract "A" from 33".
("C" = 33 - "A")
- For 12"-15" outside wall thickness, subtract "A" from 36".
("C" = 36 - "A")



SPXB-HW Closet Dimensions - Side Installation



Instructions:



To find the minimum closet depth (dimension "C"), use the following method:

Determine dimension "A" which is the total finished wall thickness.

- For 5"-8" outside wall thickness, subtract "A" from 29".
("C" = 29 - "A")
- For 8"-12" outside wall thickness, subtract "A" from 33".
("C" = 33 - "A")
- For 12"-15" outside wall thickness, subtract "A" from 36".
("C" = 36 - "A")

Notes:

1. Sleeve rough-in opening is 44"(H) X 21-5/8"(W).
2. Bottom of opening should be approx. 6" above floor level.
3. Minimum 3" of clearance is required on the sides of the **SPXB-HW** unit and 12" clearance on the rear of the unit.

ACCESSORIES (sleeves, louver, and thermostat required for each installation)								
ACCESSORY	DESCRIPTION	DIMENSIONS (H X W X D)	PART NUMBERS				SHIP WT. (EA)	
			STANDARD SLEEVES		HURRICANE (5)			
			REAR INSTALL (non-Hurricane)	SIDE INSTALL (3) (non-Hurricane)	REAR INSTALL	SIDE INSTALL	REAR	SIDE
WALL SLEEVES (2)	For 5" - 8" thick walls	43-3/4 x 21-3/8 x 26	936-1B	936-11B	936-1H	936-11H	59 (4)	64 (4)
	For 8" - 12" thick walls	43-3/4 x 21-3/8 x 30	936-2B	936-12B	936-2H	936-12H	63 (4)	68 (4)
	For 12" - 15" thick walls	43-3/4 x 21-3/8 x 33	936-3B	936-13B	936-3H	936-13H	68 (4)	73 (4)
	For 15" - 20" thick walls	43-3/4 x 21-3/8 x 38	936-4B	936-14B	936-4H	936-14H	75 (4)	80 (4)
ARCHITECTURAL GRILLES			Custom Painted	For Field Painting	Anodized Aluminum			
	Standard	44 x 22	G205S (1)	G205PPA	G205A	- - -	12	
	Hurricane	45-5/8 x 22-3/4	G215S (1)	G215P	G215A	- - -	22	
THERMOSTATS	Straight Cool (24V) Digital cool - off - heat, auto - on w/limits-(6-wire)	4 x 5 (Horizontal)	T1020NC			- - -	- - -	
	Programmable (5-2) St. Cool/Ht. Pump (24V) cool-off-heat, auto-on w/Em. Ht. & limits (6-wire)	4 x 5 (Horizontal)	T2220NC			- - -	- - -	

NOTES:

- (1) "S" indicates custom color, to be provided by customer. Minimum order quantity is 20 per color.
- (2) Rear install application provides better access to the **SPXB-HW** unit and is recommended over "side install" wherever possible.
- (3) Side install application requires different closet size and configuration. (See P.7) Contact factory for further information.
- (4) All wall sleeves are shipped two (2) per carton.
- (5) Hurricane sleeves require special grille (see "Architectural Grilles" above)
(contact the factory for information about hurricane sleeves and grilles)

OPTIONAL ACCESSORIES (field installed)					
COMPONENT	DESCRIPTION	DIMENSIONS (H X W)		PART NUMBER	SHIP WT.
ACCESS / RETURN AIR PANEL (3)(4)	LOUVERED (1)	FRAME	OPENING	931-11	55
	NON-LOUVERED (2)	87 X 31	84 X 28	931-12	
INSULATION KIT	5/8" DUCTBOARD	N/A		91K01	---
FREEZE PROTECTOR	ENERGIZES PUMP WHEN COIL TEMPERATURE FALLS BELOW 38°F	N/A		941-1	---

NOTE: A solid door or panel with a side wall return air grille will result in lower sound levels.

NOTES:

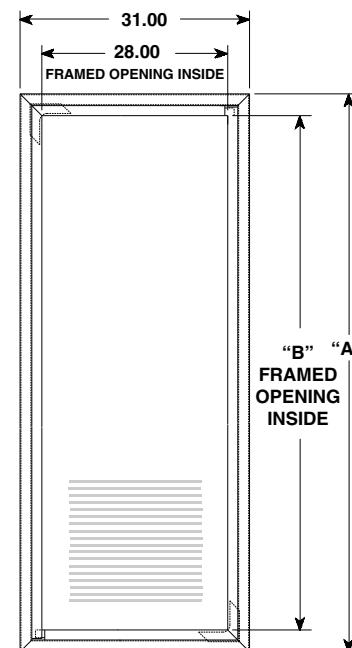
- (1) Includes 18 x 24 x 1 filter.
- (2) Requires external return air grille and unit mount filter.
- (3) Both panels are insulated for sound reduction and have tamperproof screws.
- (4) Panels are shipped ten per carton.
- (5) Contact factory for "Flow Control Module" information.



(91K01)

MODEL NUMBER NOMENCLATURE

18	SPXB	-	3 HW
NOM. CAPACITY (CLG.)			
12 - 12,000 BTUH			
18 - 18,000 BTUH			
24 - 24,000 BTUH			
SERIES			
SPXB - SLIM VERTICAL PTAC (R-410A)			
		HOT WATER COIL ROWS	
		2HW = 2 ROWS	
		3HW = 3 ROWS	



PART NO.	"A"	"B"
931-11	87.00	84.00
931-13	82.00	79.00