
INSTALLATION INSTRUCTIONS

ADJUSTABLE FRESH AIR DAMPER

MODELS:

AFAD-2

AFAD-3

**For Use With Bard 2½ through 3 Ton
Wall Mount Air Conditioners
and Heat Pumps**



Bard Manufacturing Company, Inc.
Bryan, Ohio 43506
Since 1914 . . . Moving ahead, just as planned.

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GENERAL INFORMATION

The ventilator should only be installed by a trained heating and air conditioning technician. These instructions serve as a guide to the technician installing the ventilator package. They are not intended as a step by step procedure with which the mechanically inclined owner can install the package.

The ventilator housing is shipped in one carton which contains miscellaneous hardware and installation instructions.

UNPACKING

Upon receipt of the equipment be sure to compare the model number found on the shipping label with the accessory identification information on the ordering and shipping document to verify that the correct accessory has been shipped.

Inspect the carton housing of each ventilator as it is received, and before signing the freight bill, verify that all items have been received and that there is no visible damage. Note any shortages or damage on all copies of the freight bill. The receiving part must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent. Concealed damage not discovered until after loading must be reported to the carrier within 15 days of its receipt.

DESCRIPTION

The AFAD-2 ventilator is designed to be used with Bard 2½ - 3 ton wall mount series air conditioners and heat pumps. It is a mechanical vent system designed to provide fresh air to meet indoor air quality standards. Models W18A1, W18H1, W24A1 and W24H1 have built in exhaust provisions. It is manually adjustable. It incorporates exhaust air provisions when used with W18A1, W18H1, W24A1 and W24H1.

The AFAD-3 ventilator is designed to be used with Bard 2½ - 3 ton wall mount series air conditioners and heat pumps. It is a mechanical vent system designed to provide fresh air to meet indoor air quality standards. Models WA301, WA361,

WA371, WH301 and WH361 have built in exhaust provisions. It is manually adjustable. It incorporates exhaust air provisions when used with WA301, WA361, WA371, WH301 and WH361. When used with WH261 and WH311, **no** exhaust provision is made. Depending on the tightness of the building structure, and the amount of ventilation air desired, a separate field supplied and installed exhaust provision may be required.

BASIC INSTALLATION

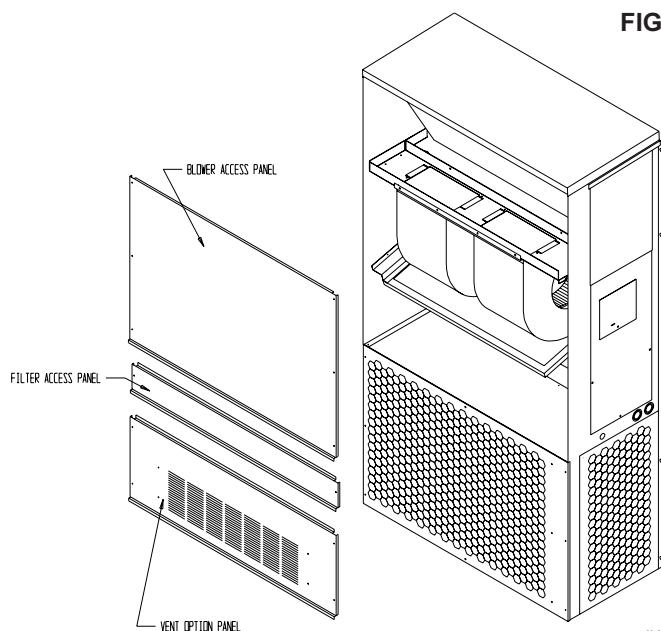
1. Unpack the ventilator assembly which includes the integral ventilator and miscellaneous hardware.
2. Remove and save the existing exterior blower access and service access panels on the Bard Wall mount units. (See Figure 1.)

WARNING

Open and lock unit disconnect switch before installing this accessory to prevent injury or death due to electrical shock or contact with moving parts. Turn thermostat to off.

Model	For Use with the Following Units	
AFAD-2	W18A1 W24A1	W18H1 W24H1
AFAD-3	WA301 WA361 WA371	WH301 WH361 WH261 WH311

FIGURE 1



MIS-344 A

3. Remove and save existing unit return air filter and left side filter support bracket by removing two screws from left side of unit. Remove and save top four (4) screws from front grille. (See Figure 2.)
4. **Models WA301, WA361, WA371, WH301 & WH361 and W18A1, W24A1, W18H1 & W24H1 only** – remove and discard the exhaust cover plate and install FAD exhaust plate with screen facing down. The cover plate must remain installed on models WH261 and WH311. If it is removed, the condenser fan will blow air into the return air opening. (Figure 2)
5. Install ventilator by inserting the ventilator into the unit to the far left side clearing the right filter bracket. Once the ventilator is fully inserted, slide the ventilator to the right until it is tight against the back of the control panel. (See Figure 3.)

IMPORTANT: Position front lip of ventilator under front grille and on top of condenser partition. (See Figure 3 inset.) This is important to ensure proper drainage of any water entering damper assembly.

6. Replace left filter support, filter and four (4) screws in condenser grille.
7. Reinstall the blower access panel at top of unit and secure with sheet metal screws.
8. Adjust desired blade setting. See Tables 1 through 6 for required blade setting versus ventilator air.
9. Replace mist eliminator. Be sure it is installed with the drain holes to the bottom.
10. Remove blank off plate or barometric fresh air damper installed on service access door. Plug 4 mounting holes with plastic plugs provided with the ventilator.
11. Replace service access panel.
12. Ventilator is now ready for operation.

FIGURE 2

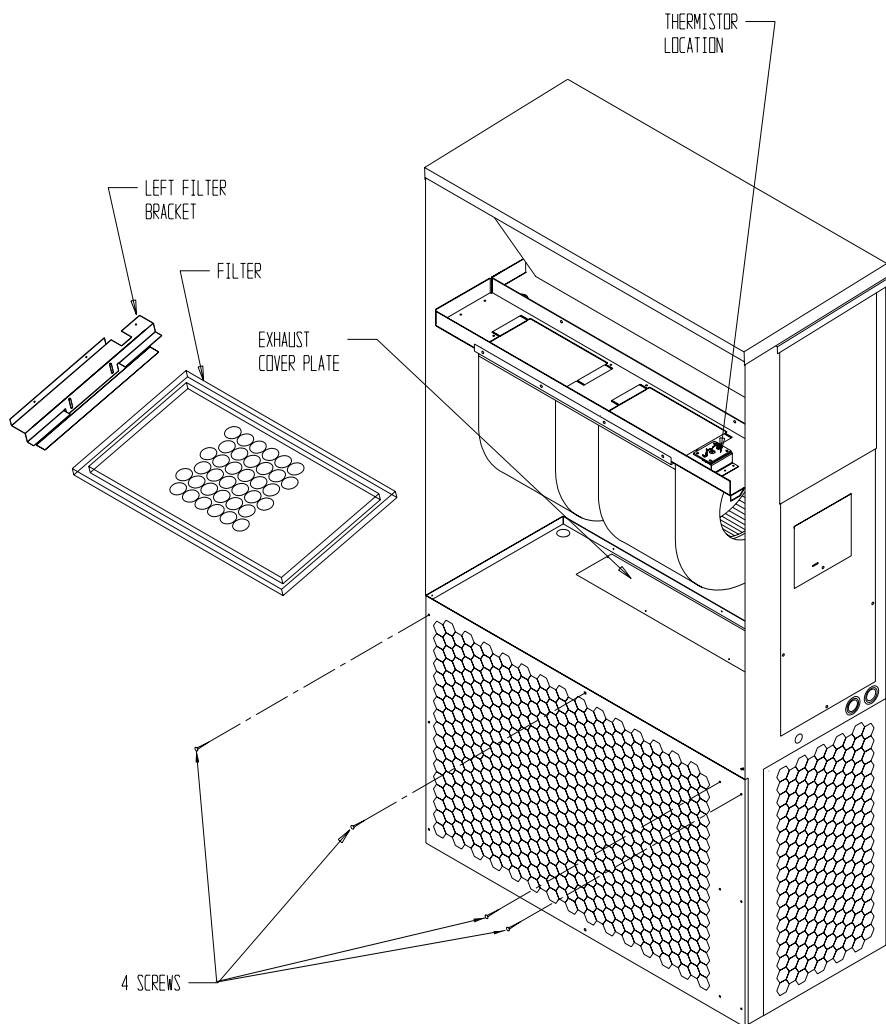
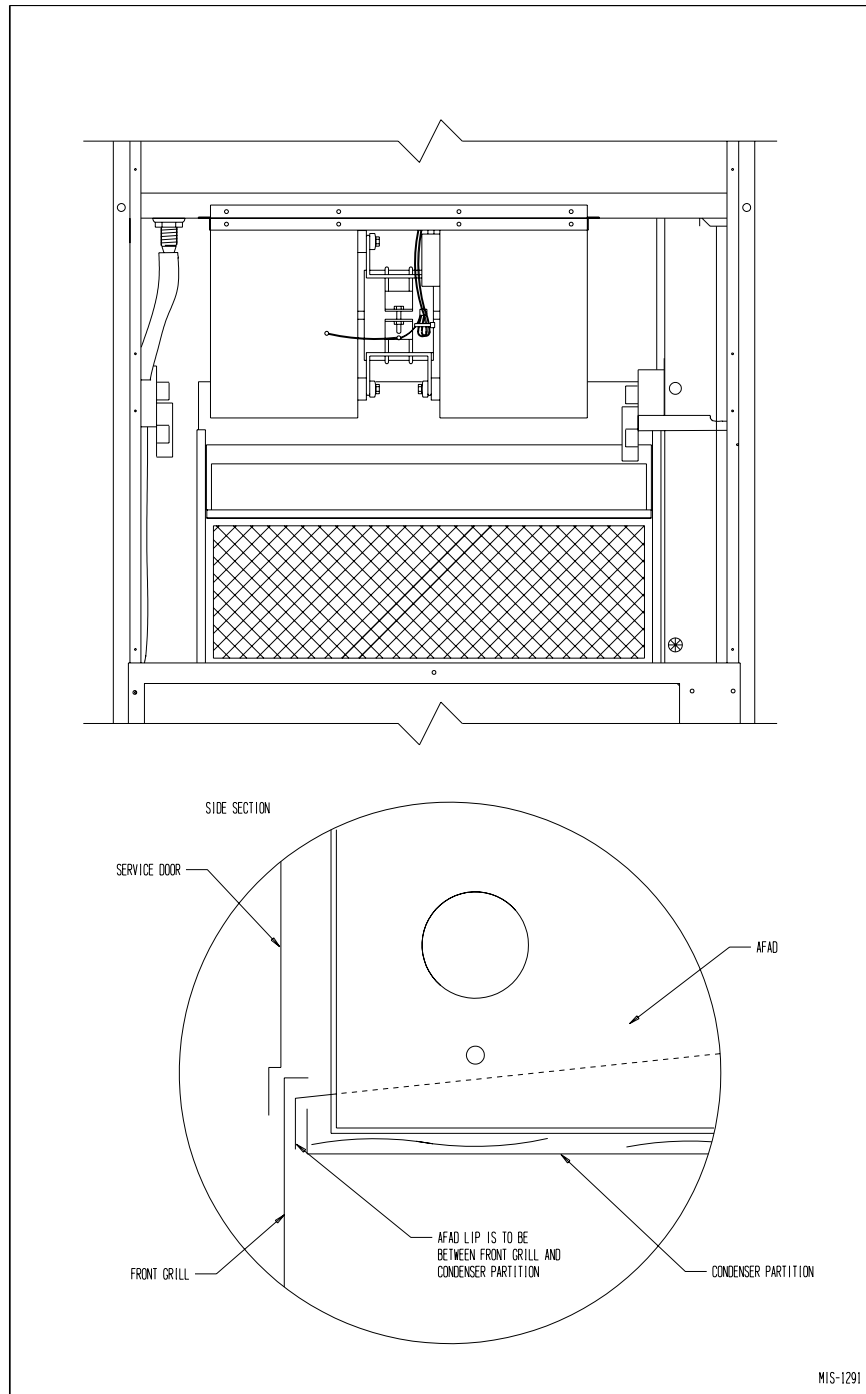


FIGURE 3



BLADE ADJUSTMENT FOR DESIRED VENTILATOR AIR

The amount of ventilation air supplied by the adjustable fresh air damper is dependent on four factors.

1. Return air duct static pressure drop.
2. Supply air duct static pressure drop.
3. Indoor blower motor speed.
4. Damper blade open position setting.

To determine the amount of fresh air that will be supplied to the structure first determine the pressure drops of the supply and return air ducts. For free blow application with return air filter grille and supply grille assume .05 supply static, .10 return static.

Determine on what speed the evaporator motor is running.

Refer to the tables on the next pages to determine the blade setting necessary to achieve the ventilation air required at the supply and return static duct pressures.

TABLE 1

**ADJUSTABLE FRESH AIR DAMPER AFAD-3
VENTILATION AIR WITH DUCTED SYSTEM
Models WA301, WA361, WA371, WH301, WH361**

HIGH SPEED BLOWER

0.10 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	130	481	180	225	275	320	365
	B	220	240	265	300	340	375	410
	C	310	325	350	375	400	425	450
	D	390	405	420	440	450	470	485
	E	470	480	485	498	505	515	520
Return Static Pressure		0	.05	.10	.15	.20	.25	.30

HIGH SPEED BLOWER

0.20 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	115	140	180	225	275	320	365
	B	220	240	265	300	340	375	410
	C	310	325	350	375	400	425	450
	D	390	405	420	440	450	470	485
	E	435	445	450	460	165	480	490
Return Static Pressure		0	.05	.10	.15	.20	.25	.30

HIGH SPEED BLOWER

0.30 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	110	140	180	235	290		
	B	185	215	250	290	330		
	C	260	285	315	340	405		
	D	330	350	370	385	400		
	E	400	140	415	430	435		
Return Static Pressure		0	.05	.10	.15	.20	.25	.30

HIGH SPEED BLOWER

0.40 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	100	140	180				
	B	160	200	240				
	C	225	260	295				
	D	295	315	340				
	E	365	370	380				
Return Static Pressure		0	.05	.10	.15	.20	.25	.30

TABLE 1 (continued)

LOW SPEED BLOWER

0.00 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	100	135	175	225	275		
	B	165	205	245	285	325		
	C	240	275	310	345	375		
	D	315	345	375	400	415		
	E	400	420	440	450	455		
Return Static Pressure		0	.05	.10	.15	.20	.25	.30

LOW SPEED BLOWER

0.10 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	100	135	180	225	280		
	B	160	200	240	280	325		
	C	230	265	300	335	370		
	D	310	335	360	385	405		
	E	395	410	425	430	435		
Return Static Pressure		0	.05	.10	.15	.20	.25	.30

LOW SPEED BLOWER

0.20 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	100	140	190	240	295		
	B	160	200	245	290	330		
	C	220	260	300	330	360		
	D	290	320	350	370	390		
	E	365	380	394	405	420		
Return Static Pressure		0	.05	.10	.15	.20	.25	.30

TABLE 2

**NON-DUCTED FREE BLOW APPLICATION VENTILATION AIR
WITH RETURN AIR FILTER GRILLE AND SUPPLY AIR GRILLE**
Models WA301, WA361, WA371, WH301, WH361

		Ventilation Air (CFM)	
		High Speed	Low Speed
Damper Position	A	180	175
	B	265	245
	C	360	305
	D	430	370
	E	495	450

TABLE 3

AFAD-3 TOTAL DELIVERED AIR
Models WA301, WA361, WA371, WH301, WH361

HIGH SPEED BLOWER

		Total Delivered Air (CFM)					
Damper Position	Close	1370	1300	1230	1133	1035	935
	A	1360	1293	1225	1124	1022	920
	B	1355	1289	1223	1119	1016	913
	C	1350	1285	1220	1115	1010	905
	D	1325	1258	1190	1085	980	875
	E	1300	1230	1160	1055	950	845
Total Static Pressure		0	.10	.20	.30	.40	.50

LOW SPEED BLOWER

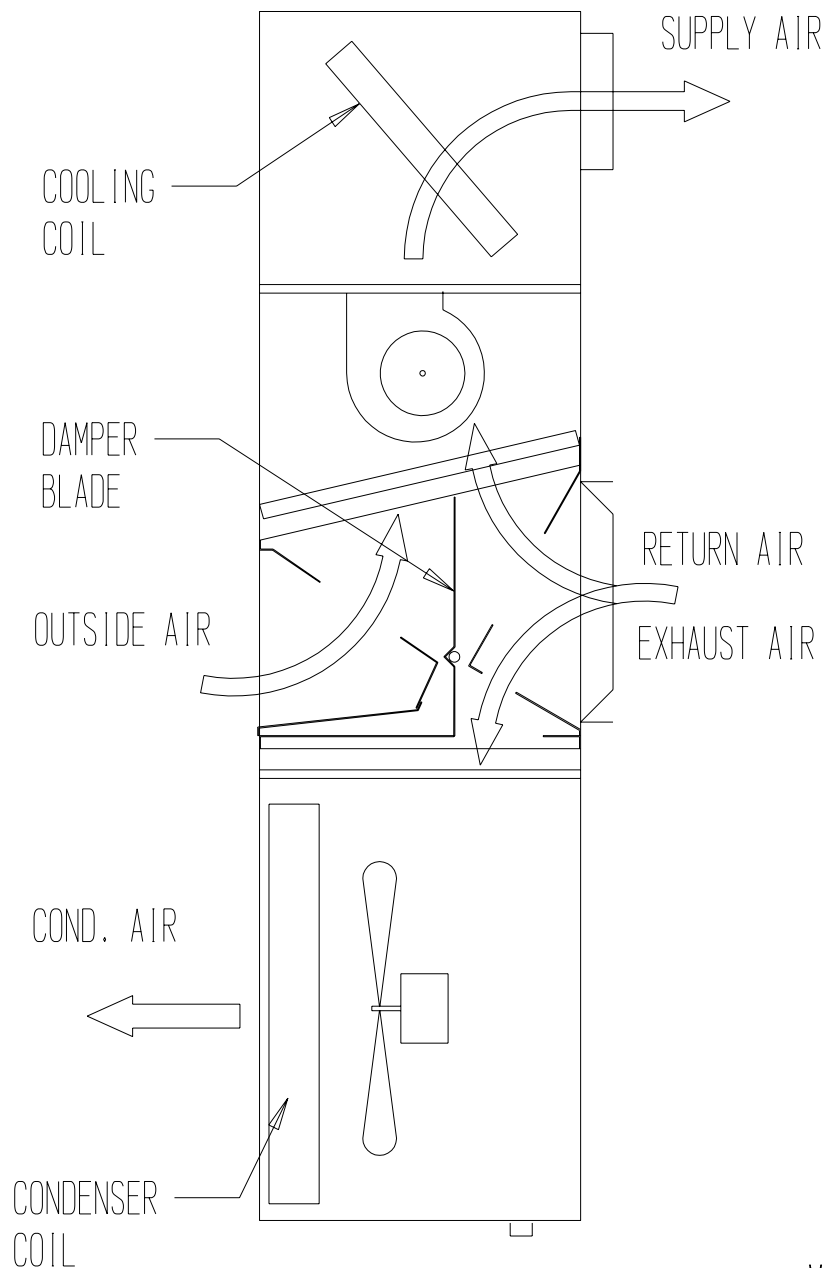
		Total Delivered Air (CFM)				
Damper Position	Close	1027	1009	990	930	869
	A	1016	998	979	918	856
	B	994	984	972	907	841
	C	972	969	966	896	825
	D	962	945	928	856	783
	E	951	921	890	816	741
Total Static Pressure		0	.05	.10	.15	.20

**ADJUSTABLE FRESH AIR DAMPER –
W18A1, W18H1, W24A1, W24H1, W30A1,
W30H1, W36A1 and W36H1 ONLY**

FEATURES

- One piece construction. Easy to install.
- Exhaust air damper. Provides exhaust air capability to prevent pressurization of tight buildings.
- Provides up to 75 percent of outside air.

FIGURE 4



MIS-347

**COMMERCIAL ROOM VENTILATOR – CRV-2
VENTILATION AIR WITH DUCTED SYSTEM**

TABLE 4

0.00 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	120	145	175	210	245	275	305
	B	175	195	220	250	280	309	335
	C	225	245	260	290	320	340	360
	D	285	300	310	325	345	360	380
	E	345	355	360	365	370	385	400
Return Static Pressure		.00	.05	.10	.15	.20	.25	.30

0.10 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	110	145	175	210	240	275	310
	B	165	185	215	245	270	300	330
	C	210	230	250	280	305	330	350
	D	265	280	290	310	330	345	365
	E	320	330	335	345	355	365	380
Return Static Pressure		.00	.05	.10	.15	.20	.25	.30

0.20 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	103	140	177	206	234		
	B	150	179	209	235	262		
	C	197	219	240	265	290		
	D	247	260	273	293	313		
	E	296	301	305	320	335		
Return Static Pressure		.00	.05	.10	.15	.20	.25	.30

0.30 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	95	135	175				
	B	135	165	200				
	C	175	200	220				
	D	221	235	250				
	E	268	275	280				
Return Static Pressure		.00	.05	.10	.15	.20	.25	.30

0.40 SUPPLY AIR STATIC

		Ventilation Air (CFM)						
Damper Position	A	87						
	B	120						
	C	152						
	D	196						
	E	239						
Return Static Pressure		.00	.05	.10	.15	.20	.25	.30

**NON-DUCTED BLOW APPLICATION VENTILATION AIR
WITH RETURN AIR FILTER GRILLE AND SUPPLY AIR GRILLE**

TABLE 5

		Ventilation Air (CFM)
Damper Position	A	175
	B	215
	C	255
	D	300
	E	345

CRV-2 TOTAL DELIVERED AIR

TABLE 6

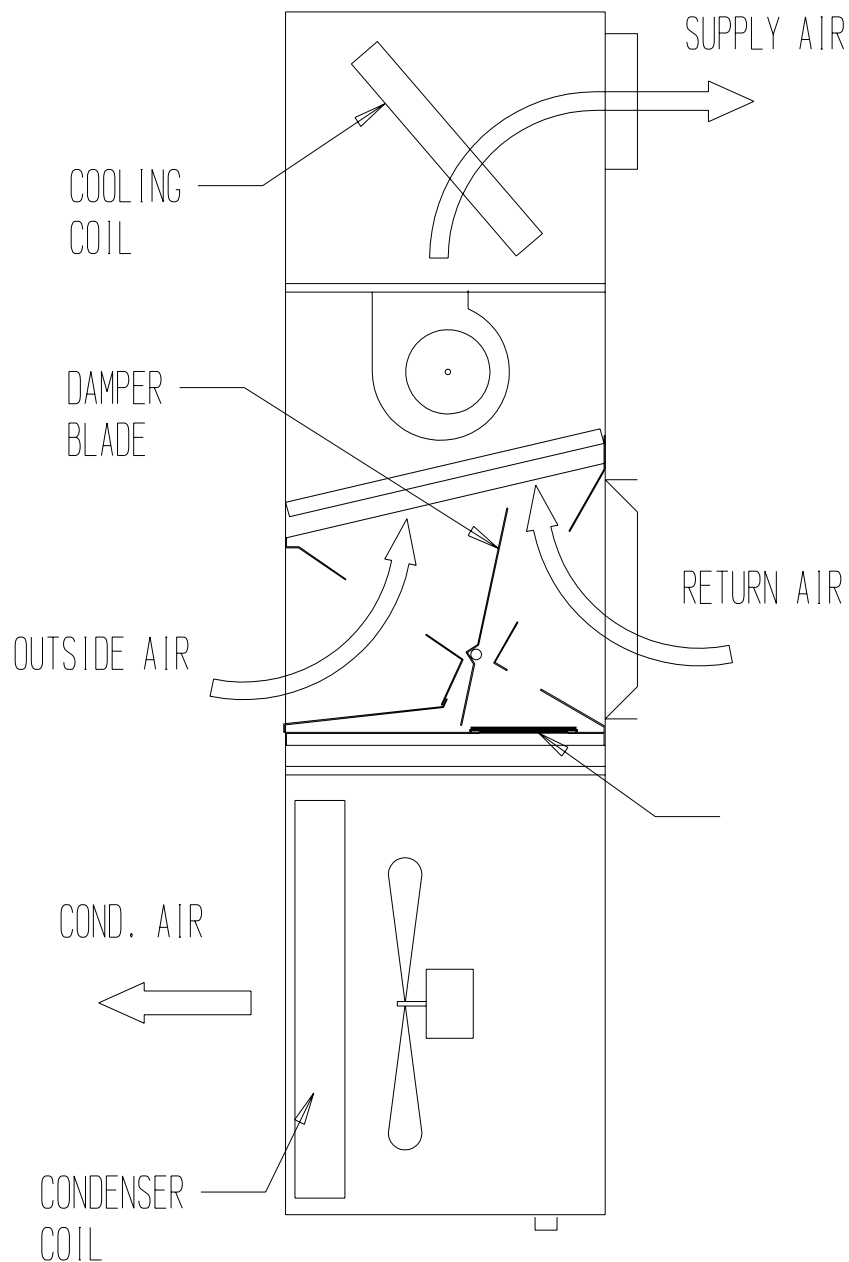
		Ventilation Air (CFM)				
Damper Position	Close	1006	946	886	789	691
	A	1001	943	884	785	685
	B	990	931	873	775	677
	C	978	920	862	765	668
	D	945	888	832	738	645
	E	912	857	801	711	621
Total Static Pressure		.00	.10	.20	.30	.40

ADJUSTABLE FRESH AIR DAMPER – W26H1 and W31H1 ONLY

FEATURES

- One piece construction. Easy to install.
- Provides up to 75 percent of outside air.
- External barometric pressure relief may be required

FIGURE 5



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