

ROSEMEX

CLIMATAIR
COMPARTMENT
AIR HANDLING UNITS



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INTRODUCTION

COMPARTMENT CLIMATAIR units are conventional air handling units (blowers, coils, filters, silencers) fully enclosed in a compact chamber designed for maximum sound attenuation. They are commonly used in high rise office buildings where quiet variable air volume systems are required for a floor-by-floor design concept. The units consist of fans capable of varying the volume of air supplied in response to building load requirements, cooling coils to cool the air supplied to required conditions, filters to remove dust, return and supply air silencers to provide for quiet operation.

UNIT DESCRIPTION

COMPARTMENT CLIMATAIR units are available in 6 different sizes ranging from 6,000 to 26,000 CFM. Each model consists of 3 main modules.

1. Inlet Silencer
2. Fan/Coil Sections
3. Outlet Silencer

Unit design is based on backward inclined airfoil fans with Varimark II air volume control devices.

APPLICATION

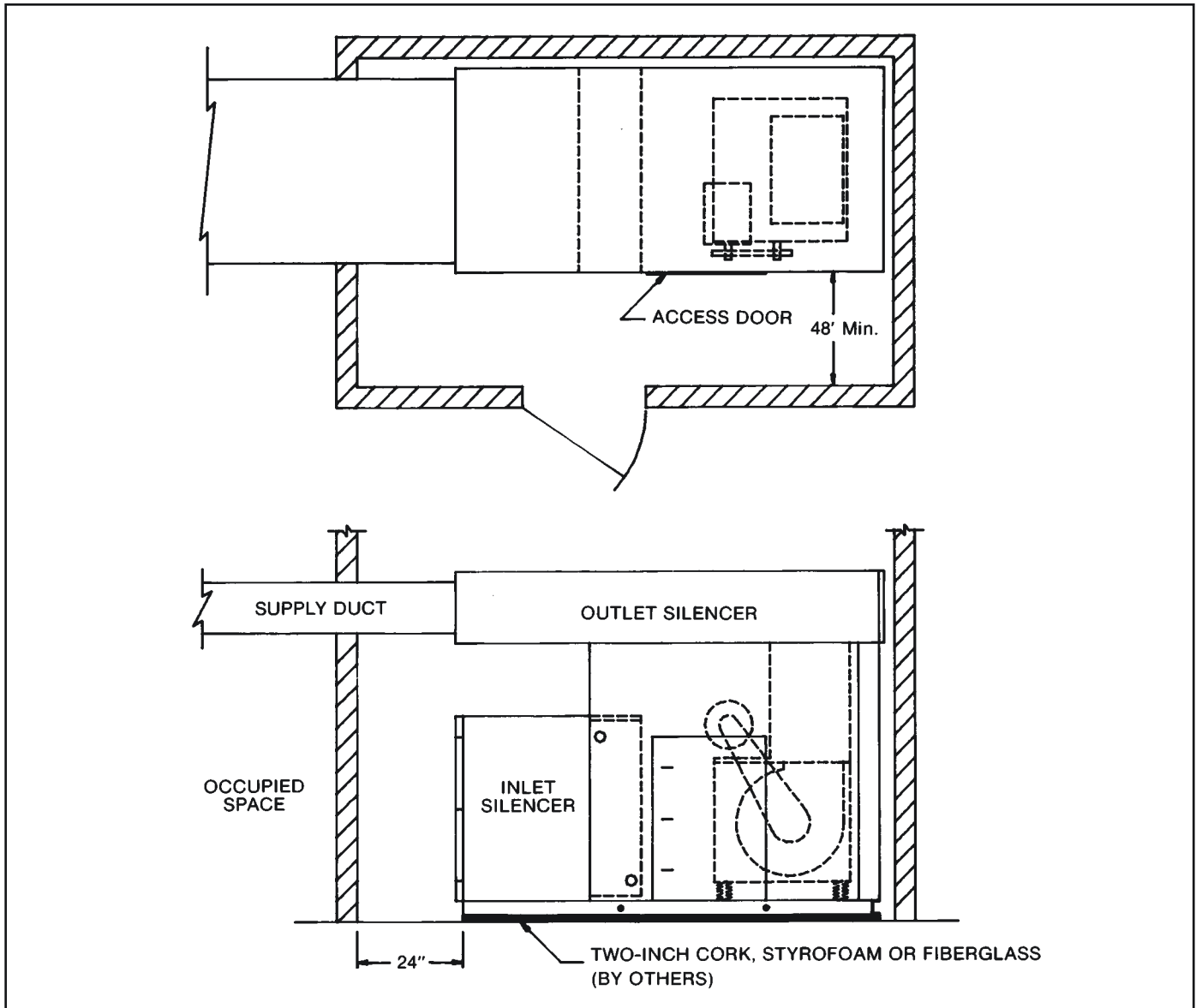
COMPARTMENT CLIMATAIR units are required when mechanical rooms for air handling and air conditioning are located in the core areas next to occupied spaces. The proximity of the equipment to office space dictates that the units must be quiet. Since rentable floor space is being lost to provide mechanical rooms, it is essential that the space required by the equipment be kept to a minimum.

GENERAL DATA

MODELS	AIR FLOW (CFM)	COIL SQ. FT.	COIL SIZE QTY - H x L	WHEEL SIZE	MAX. HP MOTOR	FILTER QTY - SIZE	FILTER SQ. FT.
VAV-07	5600 - 7700	14.00	(1) - 36" x 56"	16" - 18"	7 1/2	2 - 16" x 20" 1 - 20" x 25" 2 - 20" x 20" 1 - 16" x 25"	16.25
VAV-09	7450 - 10250	18.67	(1) - 48" - 56"	18" - 20"	10	8 - 16" x 25"	22.22
VAV-12	9650 - 13250	24.10	(1) - 24" x 68" (1) - 27" x 68"	20" - 22"	15	3 - 16" x 25" 6 - 20" x 25"	29.17
VAV-17	13200 - 18150	33.00	(2) - 33" x 72"	24" x 27"	20	1 - 16" x 20" 3 - 20" x 20" 2 - 16" x 25" 6 - 20" x 25"	36.94
VAV-22	17500 - 23000	43.75	(1) - 36" x 84" (1) - 39" x 84"	27"	25	8 - 20" x 20" 8 - 20" x 25"	50.00
VAV-26	23000 - 26500	52.00	(2) - 39" x 96"	30" x 33"	30	16 - 16" x 20" 8 - 20" x 20"	61.25

OPTIONS:	Marine light ☐	Pilot light switch for marine light ☐	Extended lube-lines ☐
		Varimark pneumatic operator ☐	Varimark electric operator ☐
	Motor junction box ☐	Four-inch filters ☐	Filter gauge ☐

TYPICAL INSTALLATION



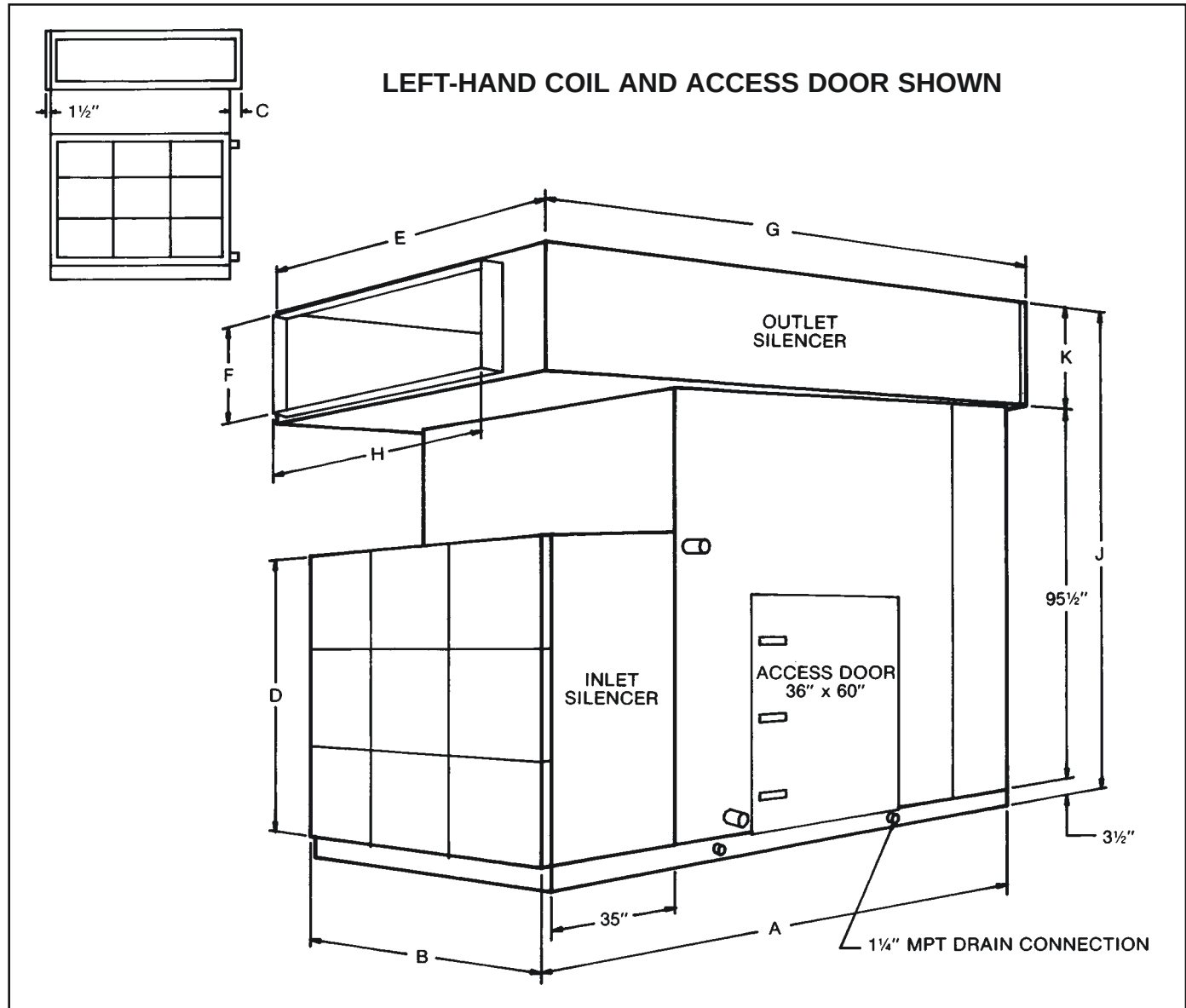
SOUND PERFORMANCE

With ROSEMEX COMPARTMENT CLIMATAIR units, sound levels are NC40 or less in adjacent occupied spaces, based on laboratory tests simulating field applications.

Description of the simulated field application

- | | |
|-------------------------------------|---|
| a) Mechanical equipment room walls: | eight-inch concrete construction or equivalent. |
| b) Return air opening: | located in the equipment room wall above the ceiling tiles, air velocity not to exceed 600 FPM. |
| c) Room sound absorption: | typical 16' x 12' office space having ceiling tiles of 3/4" fiberglass or better. |
| d) Supply ductwork: | static pressure loss of 1.5 inch WG. |
| e) Supply duct: | insulated for 30 feet from outlet silencer. |

DIMENSIONAL DATA



UNIT DIMENSIONS (IN.)

MODELS	A	B	C	D	E	F	G	H	J	K
VAV-07	116	68	1 1/2	41	71	16	117 1/2	60	119	20
VAV-09	116	68	1 1/2	53	71	16	117 1/2	60	119	20
VAV-12	128	80	1 1/2	59	83	16	129 1/2	72	119	20
VAV-17	132	84	1 1/2	74	87	20	133 1/2	76	123	24
VAV-22	132	96	2 1/2	83	99	20	133 1/2	88	123	24
VAV-26	144	108	1 1/2	86	111	20	145 1/2	100	123	24

APPROXIMATE WEIGHTS

OUTLET SILENCER	INLET SILENCER	BLOWER & COIL	TOTAL LBS
320	320	1860	2500
360	360	2080	2800
400	400	2300	3100
600	600	3500	4700
800	800	4100	5700
940	940	4800	6680

NOTE: Each ROSEMEX COMPARTMENT CLIMATAIR unit will be shipped in three sections to be assembled by the contractor: Outlet silencer, Inlet silencer and Blower/Coil sections.

SELECTION PROCEDURE

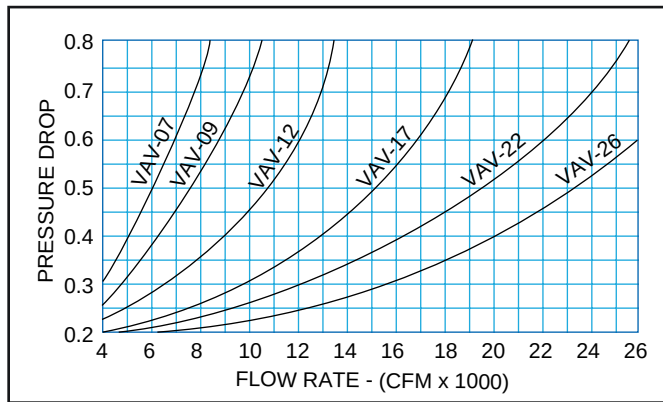
COMPARTMENT CLIMATAIR units should be selected with a CFM equal to or less than the nominal CFM (UNIT SIZE).

PROCEDURE:

1. Select Compartment size (nominal CFM)
2. Select the coil from coil catalogue
3. Determine pressure drops
 - a) silencer & plenum from table
 - b) coil from table
 - c) filter from table
 - d) external static pressure

Total static pressure = (a + b + c + d)
4. Select the fan size from fan catalogue

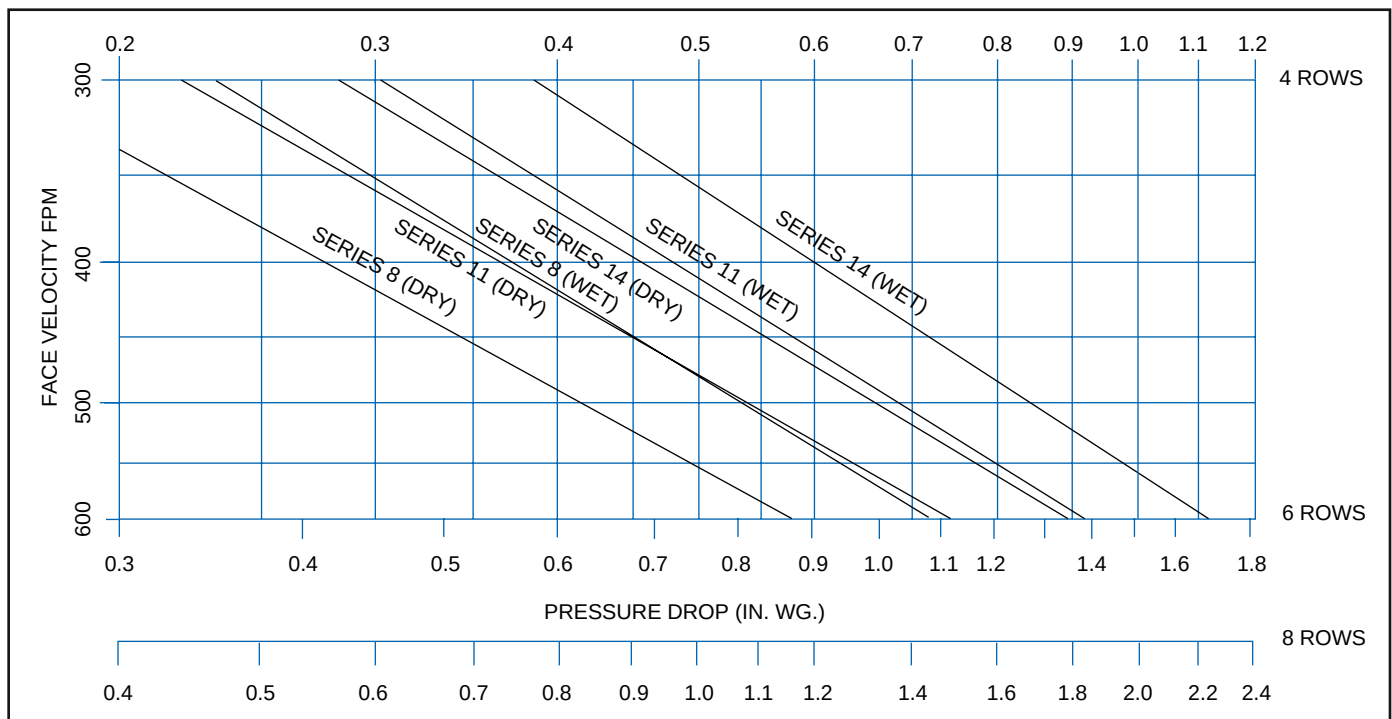
SILENCERS & PLENUM PRESSURE DROP (IN.WG.)



FILTER PRESSURE DROP (IN.WG.)

FILTER FACE VELOCITY	300	350	400	450	500	550	600
2-INCH T/A	0.10	0.11	0.13	0.15	0.17	0.19	0.21
4-INCH T/A	0.20	0.22	0.26	0.30	0.34	0.38	0.42
REPLACEABLE MEDIA	0.10	0.11	0.13	0.15	0.17	0.19	0.21

WATER COIL AIR PRESSURE DROP (IN.WG.)



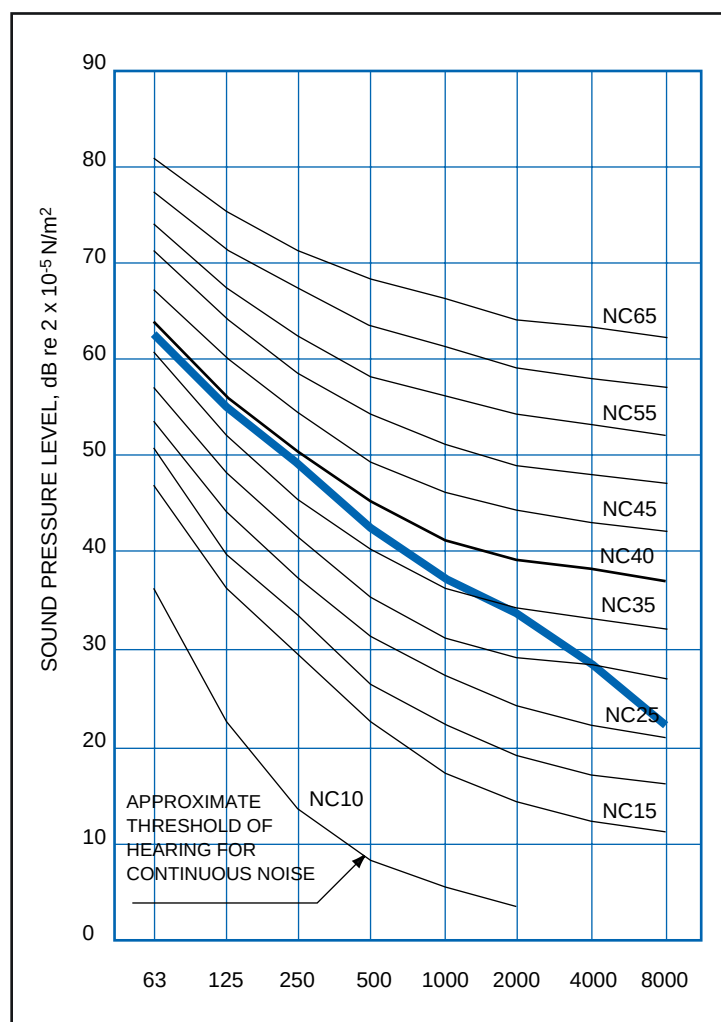
In recent years sound levels have become among the most critical of air-conditioning design criteria.

ROSEMEX research and development group has significantly contributed to progress in this area, and its COMPARTMENT UNITS represent an eloquent testimony thereto.

ROSEMEX has been manufacturing COMPARTMENT UNITS since their first introduction to the market place. By means of its team of research engineers and its test facilities, the product has been modified and refined to the ultimate in efficiency and low sound levels.

NOTE ROSEMEX does not limit itself to the sizes and geometric configurations illustrated in this brochure, it can and will design and manufacture to meet any special requirements.

SOUND PERFORMANCE



Comprehensive laboratory testing has established that COMPARTMENT UNITS perform at noise levels of NC40 or lower in areas adjacent to mechanical rooms.



Performance testing of a CLIMATAIR COMPARTMENT UNIT in laboratory.

GUIDE SPECIFICATIONS

Supply and install ROSEMEX COMPARTMENT CLIMATAIR units in locations as shown on the drawings. Units sizes and model numbers must be as detailed in the unit schedule. Each compartment unit shall be complete with the following components:

- . Fan section
- . Coil section
- . Filter section
- . Inlet silencer
- . Outlet silencer

FAN SECTION

Fan shall be of centrifugal-type with backward inclined airfoil blades and a VARIMARK II air-volume control device. Bearings shall be split pillow-block type. Motor shall be mounted on top of the fan housing frame and the fan-motor assembly shall be isolated from the cabinet with vibration isolators, providing 98% isolation efficiency. The fan discharge shall be flex connected to an internally insulated duct. An access door (36" x 60") shall be provided for free access to the fan, motor and drives.

COIL SECTION

Coil shall be constructed of 5/8" O.D. copper tubes, mechanically bonded to aluminium plate fins with steel headers (threaded connections). The fin/tube assembly shall be enclosed in a galvanized steel casing. On large units where two coils are used, an intermediate drain pan between coils shall be provided with copper drain tubes at each end. The sliding frame provides for easy removal of coils from either side.

FILTER SECTION

The filter section shall contain 2" throw-away filters, removable from either side.

INLET SILENCER

Shall consist of 8" thick aerodynamic modules. The flat exposed surface shall be covered with air-abrasion resistant insulation and the interior shall be made of fiberglass. The silencer shall provide sufficient attenuation to meet the requirements as described in the sound specification.

OUTLET SILENCER

Silencer shall consist of a stream-line type module to maximize sound attenuation. The flat exposed surfaces shall be covered with air-abrasion resistant insulation and the interior shall be made of fiberglass. The silencer shall be provided with a flanged outlet to facilitate connection to the supply air duct. Sufficient attenuation shall be provided to meet the supply air sound requirements as described in the sound specification.

CASING CONSTRUCTION

All casing panels shall be fabricated from heavy gauge steel, reinforced and braced with steel angles for maximum rigidity. All internal areas shall be acoustically lined with 4" insulation. The flat exposed surfaces shall be covered with air-abrasion resistant insulation. Drain pan and the base of the fan section shall be made of 12 gauge galvanized steel. All insulation used in the construction of the units shall meet NFPA-90A standards. The complete structure shall be assembled with bolts and panels shall be caulked at all joints during assembly, to prevent sound and air leakage. The entire unit shall be painted (inside and out) with a baked grey epoxy finish.



Products

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