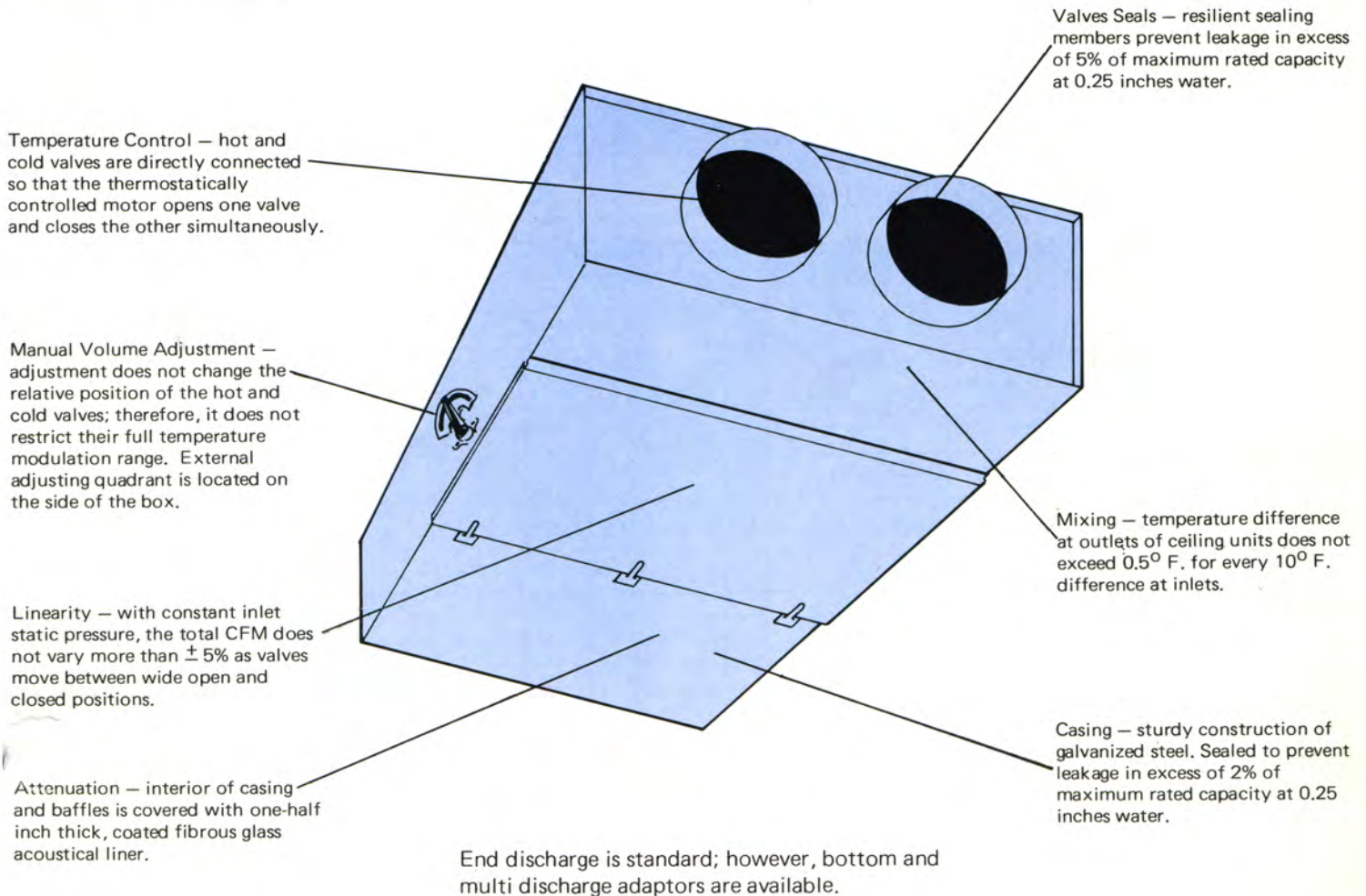


# Mechanitrol Low Velocity



## Designed for:

Capacities to 1200 CFM. Maximum rated capacity is based on inlet velocity not greater than 1500 FPM and static pressure drop not greater than 0.25 inches water.

Sound ratings — PWL-NC index (re  $10^{-12}$  watt) method gives sound power level radiated by unit. Level heard in the average room will be at least 8 db lower, depending upon room attenuation and ductwork between unit and outlet.

## Suggested Specifications:

Low velocity dual duct acoustic terminal control units shall be provided as follows:

Each unit shall contain a pair of hot and cold air valves to be operated by one

thermostatically controlled pneumatic (or electric) motor to be furnished by the control contractor.

The maximum rated capacity shall be the flow rate thru the wide open valve based on inlet velocity of not greater than 1500 FPM and static pressure drop (inlet SP) of not greater than 0.25 in water. Discharge velocities shall not exceed 1000 FPM.

Valve performance shall be linear so that with constant inlet SP the total capacity shall not vary more than  $\pm 5\%$  as valves move between wide open and closed positions. Valves shall incorporate resilient sealing members to prevent leakage in excess of 5% of max. rated capacity when closed against inlet SP of 0.25 in. water.

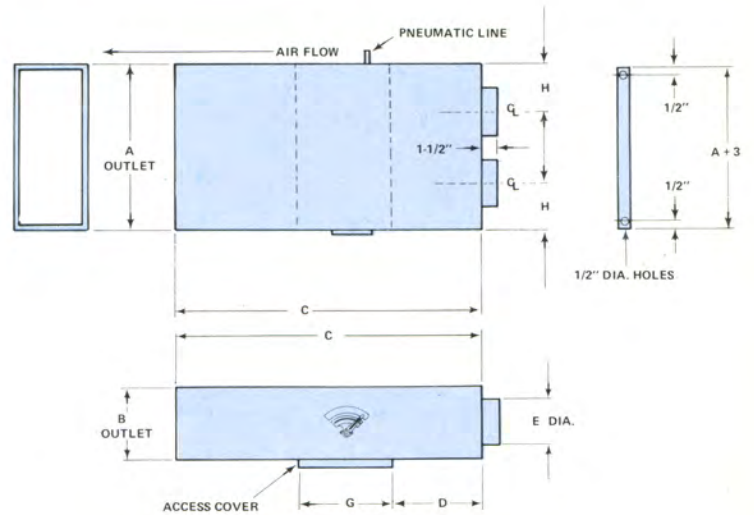
Each unit shall contain a manual volume control, externally adjustable without restricting the full temperature modulation range of the hot and cold valves.

Provision for blending the hot and cold air in ceiling models shall be such that the temperature difference at the outlets shall not exceed  $0.5^{\circ}$  F. for each  $10^{\circ}$  F. between inlet temperatures.

Units shall be baffled and internally lined with fibrous glass acoustical and thermal liner at least  $1/2''$  thick, coated to prevent air-erosion. Casing shall be of galvanized steel, sealed to prevent leakage of more than 2% of max. rated capacity with all connections sealed and internal pressure of 0.25 in. water.

# Dimensions Low Velocity

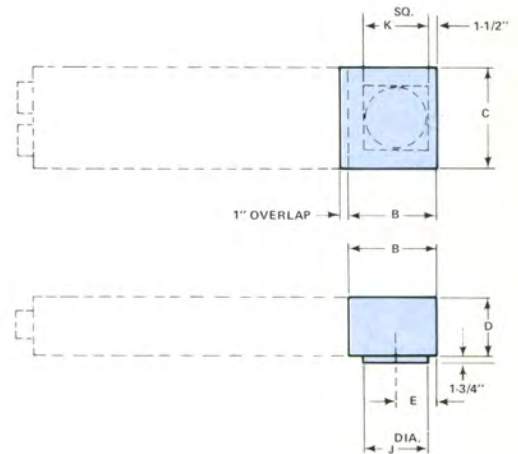
	Unit Size Number						
	0005	0006	0007	0008	0009	0010	0012
	Dimensions – Inches						
A	21	23	25	27	29	31	35
B	8	9	10	11	12	13	15
C	37-1/4	39-1/4	47-1/4	47-1/4	47-1/4	51-1/4	59-1/4
D	11-3/8	11-3/8	13-3/8	13-3/8	13-3/8	13-3/8	19-3/8
E Dia.	5	6	7	8	9	10	12
G	15	16-1/4	21-3/4	20-3/4	20	23-1/4	25-1/2
H	6-3/4	7-1/4	7-3/4	8-1/4	8-3/4	9-1/4	10-1/4



# Dimensions Accessories

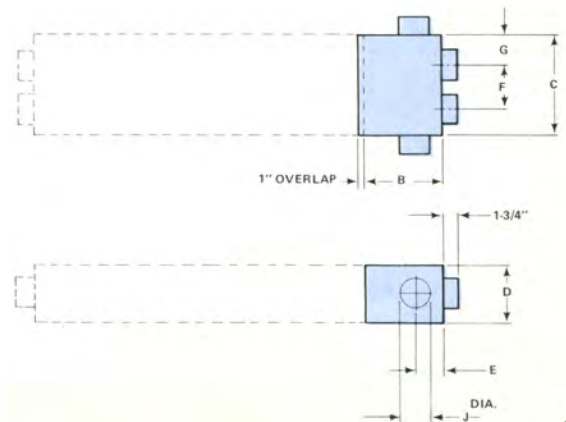
## For Bottom Discharge

	Unit Size Number						
	0005	0006	0007	0008	0009	0010	0012
	Dimensions – Inches						
B	13	15	18	19	21	21	27
C	21-1/8	23-1/8	25-1/8	27-1/8	29-1/8	31-1/8	35-1/8
D	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	15-1/8
E	6-1/2	7-1/2	8-1/2	9-1/2	9-1/2	10-1/2	13-1/2
J Cir. Std.	10	12	14	16	16	18	24
K Sq. Std.	9	12	15	15	18	18	24



## For Multi Discharge

	Unit Size Number						
	0005	0006	0007	0008	0009	0010	0012
	Dimensions – Inches						
B	13	15	18	19	21	21	25
C	21-1/8	23-1/8	25-1/8	27-1/8	29-1/8	31-1/8	35-1/8
D	8-1/8	9-1/8	10-1/8	11-1/8	12-1/8	13-1/8	15-1/8
E	4-1/2	5	5-1/2	6	6-1/2	7	8
F	6-1/2	7-1/2	8-1/2	9-1/2	10-1/2	11-1/2	13-1/2
G	4-1/4	5-1/4	5-1/4	5-1/4	5-3/4	6-1/4	8-1/4
J Dia.	5	6	7	8	9	10	12



# Model Numbering System

M	H	C	R	B	0012															
<b>Type of Unit</b>	<b>Velocity</b>	<b>Control</b>	<b>Hand</b>	<b>Design Sequence</b>	<b>Size from Catalog</b>															
M = Dual Duct S = Single Duct w/o Valve T = Single Duct w/valve W = Window Perimeter Dual Duct D = Duct Mounted	H = High L = Low	M = Manual C = Constant Volume V = Reset Constant Volume	Hand signifies side of normally open inlet: R = Right L = Left N = Not Applicable (Duct Mtd. Only)	B = Second Generation	On window perimeter units size will be as follows:  <table border="1"> <tr> <td>1</td> <td>5</td> <td>36</td> </tr> <tr> <td>Inlet Position</td> <td>Inlet Size</td> <td>Outlet Length</td> </tr> <tr> <td>1 = Side</td> <td>4</td> <td>24</td> </tr> <tr> <td>2 = End</td> <td>5</td> <td>36</td> </tr> <tr> <td></td> <td>6</td> <td>48</td> </tr> </table>	1	5	36	Inlet Position	Inlet Size	Outlet Length	1 = Side	4	24	2 = End	5	36		6	48
1	5	36																		
Inlet Position	Inlet Size	Outlet Length																		
1 = Side	4	24																		
2 = End	5	36																		
	6	48																		

## Engineering Data

### Sound Ratings:

PWL-NC index indicates the sound power level (PWL) in decibels, re  $10^{-12}$  watt, radiated from the discharge end of the unit.

By definition, the PWL-NC index is a single number assigned to the PWL spectrum of a noise source indicating the minimum NC curve which will not be exceeded in any octave band (when subsequent attenuation is zero).

The NC (Noise Criteria, sound-pressure level in decibels re 0.0002 microbar) which will result in the room served will be less than the tabulated decibels, depending upon:

- The attenuation of the system downstream of the unit, due to branches, lined duct and bends, and end reflection.
- The attenuation of the room (RA) due to its acoustical characteristics.

NC values show the noise criteria which will result in the average room (RA = 8 db when PWL is re  $10^{-12}$  watt) under two conditions:

0' is based on no acoustically lined duct between the unit and room outlet, and all the air is discharged from one properly sized outlet.

5' is based on five feet of acoustically lined duct (1" thick and 1.5 pcf density) between the unit and room outlet, and a maximum of 600 CFM per outlet. Rating "L" means that the NC will be less than 20 db.

Additional attenuation will be provided by more lengths of lined duct, lining of square elbows and tees, and more outlets per ATC unit. For further information see ASHRAE GUIDE & DATA BOOK.

PWL-NC index values were determined with no lined duct on outlet of unit.

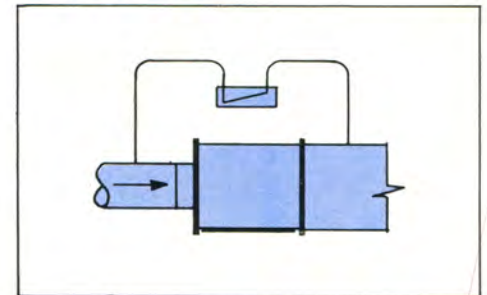
Casing radiation: If units are installed exposed, rather than behind a ceiling or wall, add 3 db to the ratings of PWL-NC index and of NC with 0'. In this case, the addition of down-stream attenuation can effect a maximum decrease of only 3 db since the casing radiation noise will control the resultant room level.

Unit Sizes	Octave Band						
	2	3	4	5	6	7	8
1004	-2	0	-8	-12	-26	-29	-28
2004	+1	0	-8	-12	-24	-27	-27
0005	-2	0	-8	-15	-28	-28	-28
0006	+6	+4	0	-7	-19	-23	-24
0007	+8	+4	0	-6	-18	-20	-21
0008	+4	0	-6	-9	-21	-26	-28
0009	+4	0	-6	-16	-24	-30	-31
0010	+5	+3	0	-9	-19	-22	-26
0012	+3	0	-6	-15	-22	-23	-29
1414							
1620	+10	+6	+1	-4	0	-8	-13

The 0\* point is where the spectrum and the NC curve are tangent. To draw a spectrum, pass a horizontal line thru the tangent point and apply the plus or minus numbers to this line.

Sound tests per ASHRAE Standard 36B-63.

### Static Pressure:



SPD = STATIC PRESSURE DROP (Inches of water) measured across the inlet and discharge openings of the unit.

The minimum SPD required is 0.75 inches. The maximum SPD rated is 8.0 inches.

The total minimum SP required at the inlet of the controller for the required CFM is the sum of 0.75 plus the resistances of the downstream ductwork and outlets.