



# MODEL MB AIR MIX<sup>X</sup>ING BOX™

**PURPOSE:** To mix fresh and return air streams to within  $\pm 6$  degrees of theoretical mixed air temperature and to help equalize downstream velocity thru-out cross section of air handler.

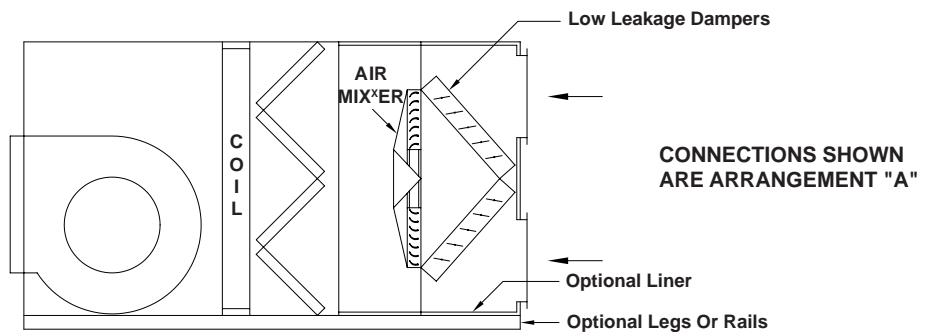
Patent No. 5,364,305



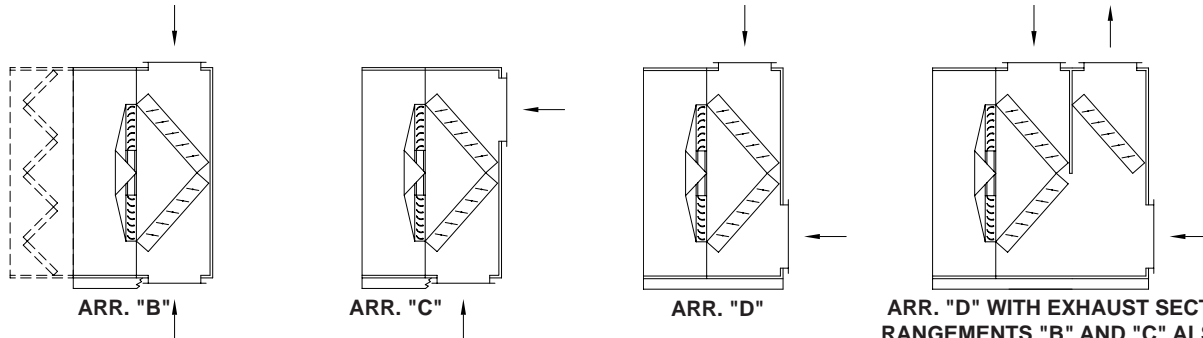
## ADVANTAGES OF FACTORY FURNISHED MIX<sup>X</sup>ING BOX:

- Reduces overall length of air handler.
- Built-in low leakage fresh and return air dampers.
- Proper selection and location of MIX<sup>X</sup>ER insuring best results.

# TYPICAL APPLICATION



## OPTIONAL ARRANGEMENTS



OPTIONAL: INTEGRAL FILTERS OF ALL TYPES WITH ACCESS DOORS

ARR. "D" WITH EXHAUST SECTION. ARRANGEMENTS "B" AND "C" ALSO AVAILABLE WITH EXHAUST SECTIONS.

## STANDARD CONSTRUCTION:

- Designed to fit air handlers of all sizes, either factory or field built.
- 18 ga. galvanized steel outer shell, heavily reinforced.
- 1-1/2 lb. face sealed 1" thick fiberglass insulation on all interior surfaces, clip fastened.
- Galvanized steel inner liner in damper section.
- Damper with leakage of under 10 C.F.M. per sq. ft. at 3" S.P., operable from either side.
- Inlet connections located as selected and having duct collars with Ductmate® flange.
- Flanged outlet drilled to match connecting air handler.
- Support legs to match connecting air handler.

## OPTIONAL FEATURES:

- Perforated inner liner in damper section.
- Double wall construction in MIX\*ER section having solid or perforated liner.
- 2", 1-1/2 lb. insulation with solid or perforated liner.
- Access door in MIX\*ER section, look-thru ports of wire or plexiglass where indicated, and bottom drains as specified.
- Constructed of aluminum or 304-2B stainless steel.
- Integral U.L. Listed fire or smoke dampers.
- Built-in exhaust air section with damper.
- Marine style lights.
- Shipment in sections to allow for ease of handling or access to mechanical room.
- Integral filters with access doors - 2 inch throw-away thru absolutes.

## TYPICAL SPECIFICATIONS:

Provide as shown KEES AIR MIX\*ING BOX (MODEL MB) with AIR MIX\*ER of .081" aluminum construction of size, performance and maximum pressure drop indicated. The plenum shall be fabricated of 18 gauge galvanized steel with 1", 1-1/2# density fiberglass duct liner (or 22 gauge solid (or perforated) liner over 1", 1-1/2# density duct liner, or 22 gauge solid (or perforated) liner over 2", 1-1/2# density duct liner, or uninsulated). The plenum shall have inlet collars with Ductmate® flanges, drilled flange on outlet for mating to adjacent section, low leakage parallel blade dampers with leakage of less than 10 C.F.M. per sq. ft. at 4" W.G., mounting legs or rails as required and other options as listed. The AIR MIX\*ER shall mix two or more air streams of differing temperature to within  $\pm 6^\circ$  F. of theoretical mixed air temperature and provide a more uniform air velocity contour entering a downstream filter or coil bank. A viewport shall be located in the damper housing section. Dampers in RA can be optionally rated smoke type and dampers in FA can include separate minimum and economizer sections. Available are integral filters of size, type and configuration as specified. Insulated access doors shall be provided where indicated. A filter section (optional) shall be an integral part of the housing to further reduce overall length of the air handler and consist of (specify as desired).

**AIR MIX\*ER, AIR MIX\*ING BOX, MIX\*ER, MIX\*ER BOX and MIX\*ING BOX - TRADEMARKS. PATENT NO. 5,364,305**

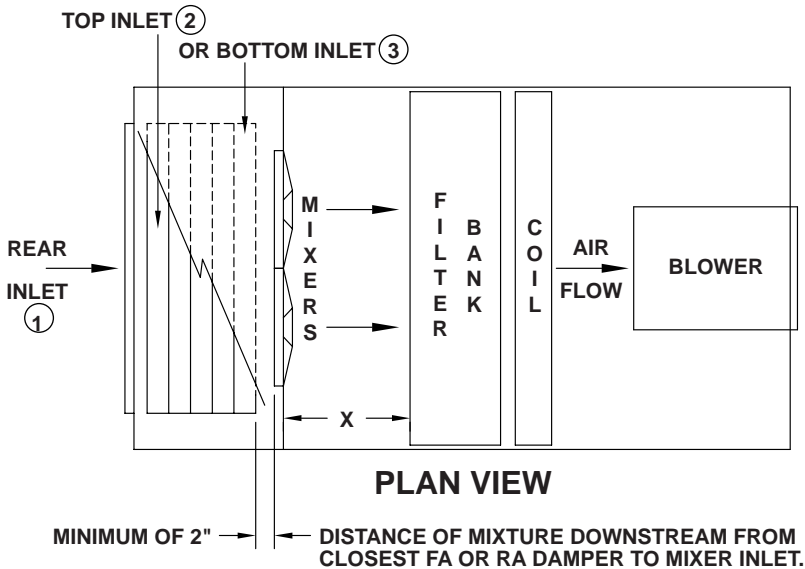
# MB SECTION

The KEES MIXING BOX will have exactly the same width and height dimensions of the air handler to which it is to be connected without the need of transitions. The KEES MIXING BOX will be complete with the same height of legs or rails to which it is to be connected.

Unit pressure drop inches of W.G.				
Air velocity thru housing in FPM				
0.15	0.20	0.26	0.33	0.42
400	500	600	700	800

MB MODEL	CFM RANGE	OVERALL LENGTH (LESS FILTERS)
MB-1	750 - 1,800	24"
MB-2	1,800 - 3,200	30"
MB-3	3,200 - 6,700	32"
MB-4	6,700 - 12,500	42"
MB-5	12,500 - 19,500	48"
MB-6	19,500 - 25,000	57"
MB-7	25,000 - 29,000	62"
MB-8	29,000 - 33,000	65"
MB-9	33,000 - 40,000	74"
MB-10	40,000 - 60,000	83.5"

## CORRECT APPLICATION FOR DRAW-THRU AIR HANDLER



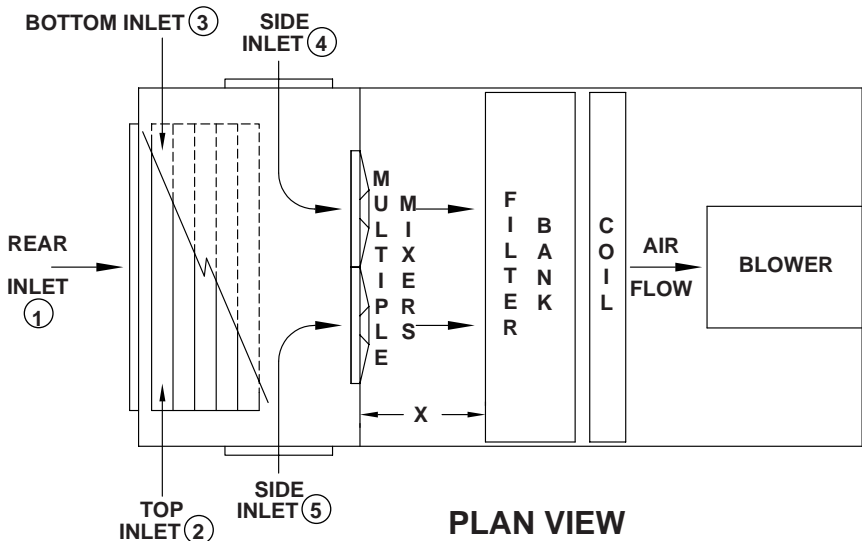
Combinations of FA and RA connections using one or more mixers

- ① and ②,
- ① and ③, or
- ② and ③.

DIMENSION "X" RANGES BETWEEN 1 TO 3/4 OF THE DIMENSION OF ONE SIDE OF A SQUARE MIXER OR AVERAGE OF TWO SIDES OF A RECTANGULAR MIXER.

## INCORRECT APPLICATION FOR DRAW-THRU AIR HANDLER

When one or more side inlets to the mixer is necessitated, only a single mixer can be employed.



Do not use multiple mixers for any combination of

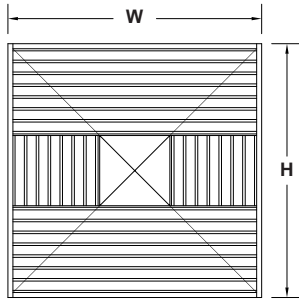
- ④ and ①, ④ and ⑤,
- ④ and ②, ④ and ③,
- ① and ⑤, ⑤ and ②,
- or ⑤ and ③.

USE ONE MIXER IF THERE IS A SIDE INLET.

**ALSO AVAILABLE**  
Refer to Catalog AM for additional information.

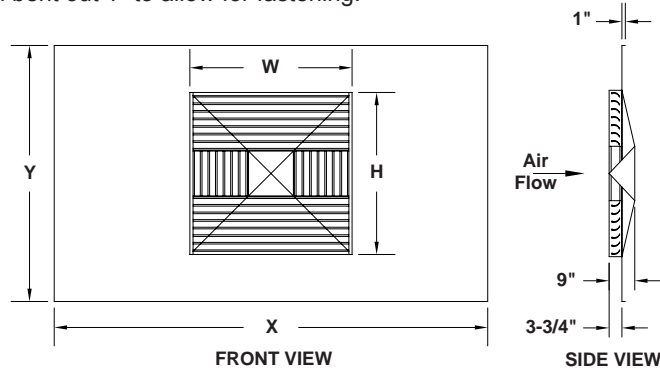
**MIX<sup>X</sup>ER ONLY**

Constructed of aluminum or galvanized steel for mounting in panel within plenum or duct.



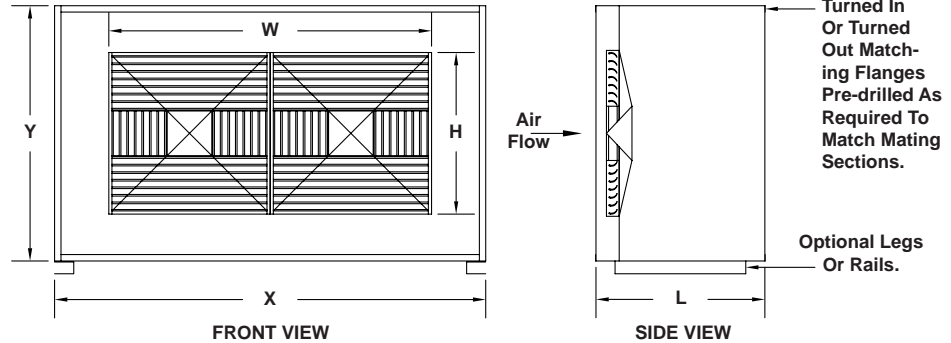
**PANEL MIX<sup>X</sup>ER – MODEL PM**

Consists of one or more aluminum or galvanized steel MIX<sup>X</sup>ERS in a factory furnished aluminum or galvanized steel panel to fit plenum or duct. Edges of panel bent out 1" to allow for fastening.



**PANEL MIX<sup>X</sup>ER IN PLENUM SECTION – MODEL PMP**

Includes a Model PM as described above but also includes a section of insulated or uninsulated duct matching the plenum to which it is to be fastened. All dimensions are optional. Factory bolt holes available to match air handler. Other options available include legs, insulation, access door, lights, painted housing, and inner liner of solid or perforated metal.



**PLENUM SECTION CAN HAVE ONE OR MORE MIX<sup>X</sup>ER UNITS**

**A FEW OF THE OVER 45,000 INSTALLED AIR MIXERS**

AT&T (20 units)  
Bristol Meyers Squib  
Capitol Annex (18 units)  
City Park Structure  
Cory Jr.-Sr. High School (21 units)  
Creighton University (4 units)  
Denver Airport Terminal Bldg. (60 units)  
Detroit Airport Control Tower (12 units)  
Dover AFB  
Eden Prairie High School  
Federal Reserve Center (12 units)  
Halifax International Airport  
Homeland Park Elementary School  
Morningside College (8 units)  
Motorola Executive Offices  
Nellis AFB (26 units)  
Newcomb & Co. Warehouse (4 units)  
O'Hare Airport, Mail Processing  
Ohio University Research Center  
Pyramid Building (26 units)  
Rutgers Univ., Bush Campus Psy. Bldg.  
S.U.N.Y. (2 units)  
Target Distribution Center (3 units)  
Tustumena School (4 units)  
Univ. of WI, Lapham Hall (15 units)  
University of SD, Coyote Student Center  
Wyeth Nutritional (2 units)

Omaha, NE  
Wallingford, CT  
Lexington, KY  
Billings, MT  
Cory, PA  
Omaha, NE  
Denver, CO  
Detroit, MI  
Dover, MD  
Eden Prairie, MN  
St. Louis, MO  
Enfield, NS, Canada  
Anderson, SC  
Sioux City, IA  
Phoenix, AZ  
Las Vegas, NV  
Raleigh, NC  
Chicago, IL  
Athens, OH  
Memphis, TN  
Piscataway, NJ  
Brookport, NY  
Little Rock, AR  
Kenai Peninsula, AK  
Milwaukee, WI  
Vermillion, SD  
Georgia, VT

**PARTIAL LISTING OF MIXER SECTIONS AND MIXER BOXES  
INSTALLED IN HOSPITALS AND MEDICAL FACILITIES**

Allen Hospital (6 units)  
Borgess Medical Center (4 units)  
Composite Medical Facility (11 units)  
Flowers Hospital (6 units)  
Forbes Regional Health Center (2 units)  
Iuka Hospital (5 units)  
Krier & Blain Medical Office (2 units)  
Luther Hospital (5 units)  
Lynchburg General Hospital (4 units)  
Mayo Regional Hospital  
Mercy Hospital  
Methodist Hospital (4 units)  
Mt. Sinai Hospital (2 units)  
Palmyra Medical Center  
Porter Hospital (6 units)  
Robert Packer Hospital (4 units)  
Rock Hospital (24 units)  
Saul Prairie Memorial Hospital (2 units)  
St. Mary's Hospital (4 units)  
St. Vincent Hospital  
Sturdevant Hospital (11 units)  
Taylor County Hospital (2 units)  
United Medical Center (3 units)  
Univ. of KY Medical Center (23 units)  
V.A. Hospital (6 units)  
V.A. Medical Center (4 units)  
Valley View Nursing Home

Waterloo, IA  
Kalamazoo, MI  
Las Vegas, NV  
Dothan, AL  
Pittsburgh, PA  
Iuka, MS  
Sioux Falls, SD  
Eau Claire, WI  
Lynchburg, VA  
Dover-Foxcroft, ME  
Devils Lake, ND  
Indianapolis, IN  
Hartford, CT  
Albany, GA  
Denver, CO  
Elmira, NY  
St. Louis, MO  
DeForest, WI  
Lewinston, ME  
Albuquerque, NM  
St. Albert, AB, Canada  
Campbellsville, KY  
Cheyenne, WY  
Lexington, KY  
Cincinnati, OH  
Topeka, KS  
Glasgow, MT