

INSTALLATION &
OPERATION MANUAL



ML

Modulinear Supply Diffuser

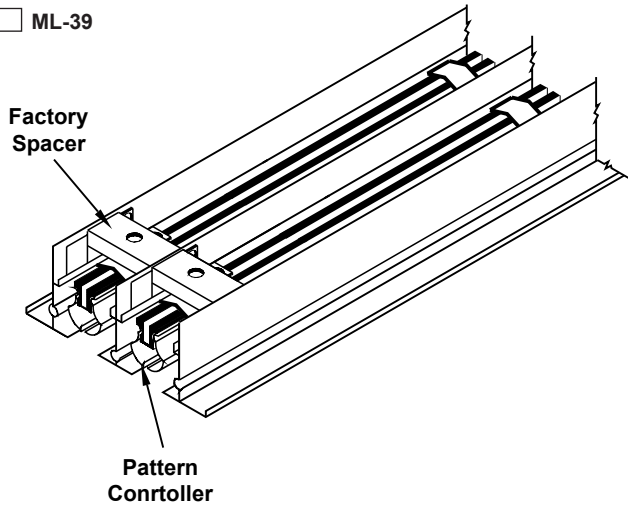
ML-37 / ML-38 / ML-39

MLR-37 / MLR-38 / MLR-39

Linear Slot Ceiling Diffusers

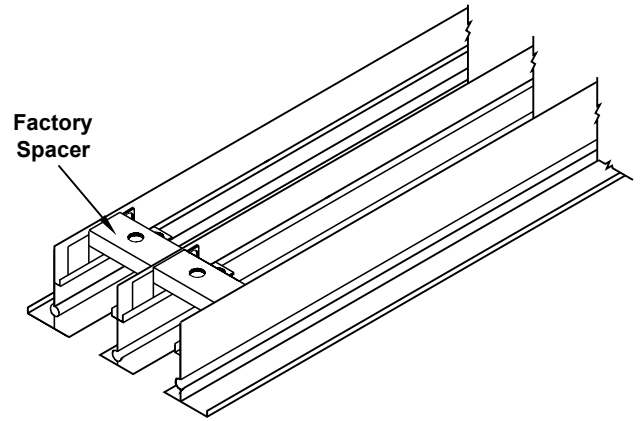
Factory Cut Supply

- ML-37
- ML-38
- ML-39



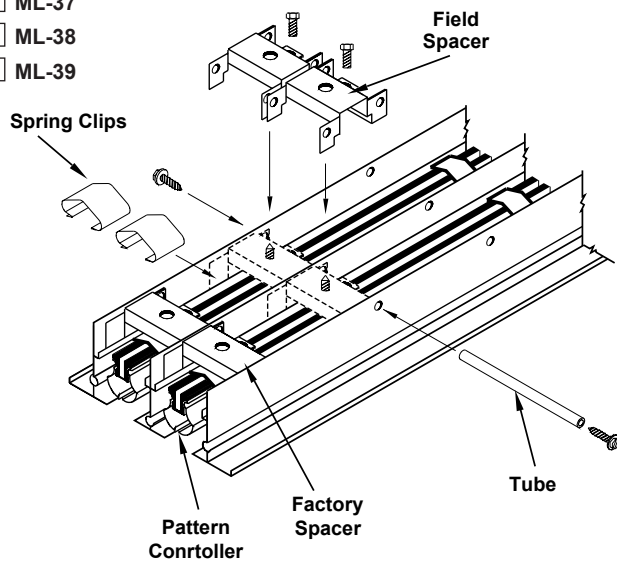
Factory Cut Return

- MLR-37
- MLR-38
- MLR-39



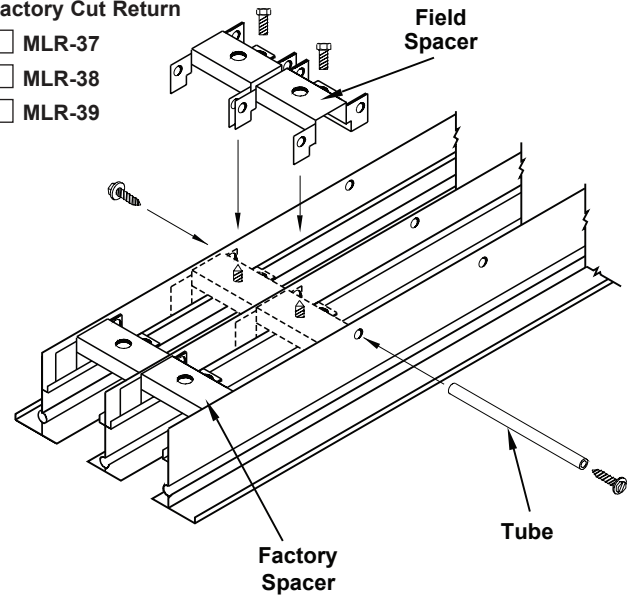
Factory Cut Supply

- ML-37
- ML-38
- ML-39



Factory Cut Return

- MLR-37
- MLR-38
- MLR-39



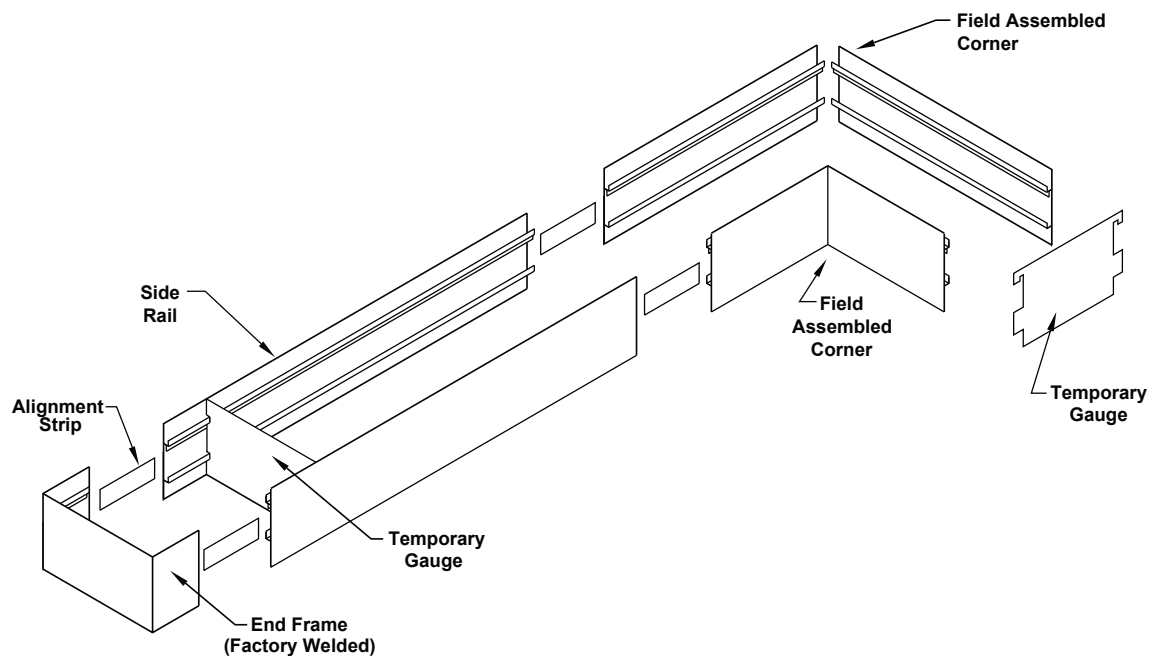
End Fabrication

Note: Mounting frame is used only on Frame & Border Types 3, 4, 6, 7A, 7B, 11.

1. Determine size of duct opening. Duct width depends upon model, frame & border type and number of slot. See Duct Dimensions D' table (Page 13). Duct length is as ordered.
2. First install end frames and field assembled corner pieces in ceiling opening. Then cut side rails to length and install. Use alignment strips furnished with frame parts to connect side rails, corners and end frames to each other.

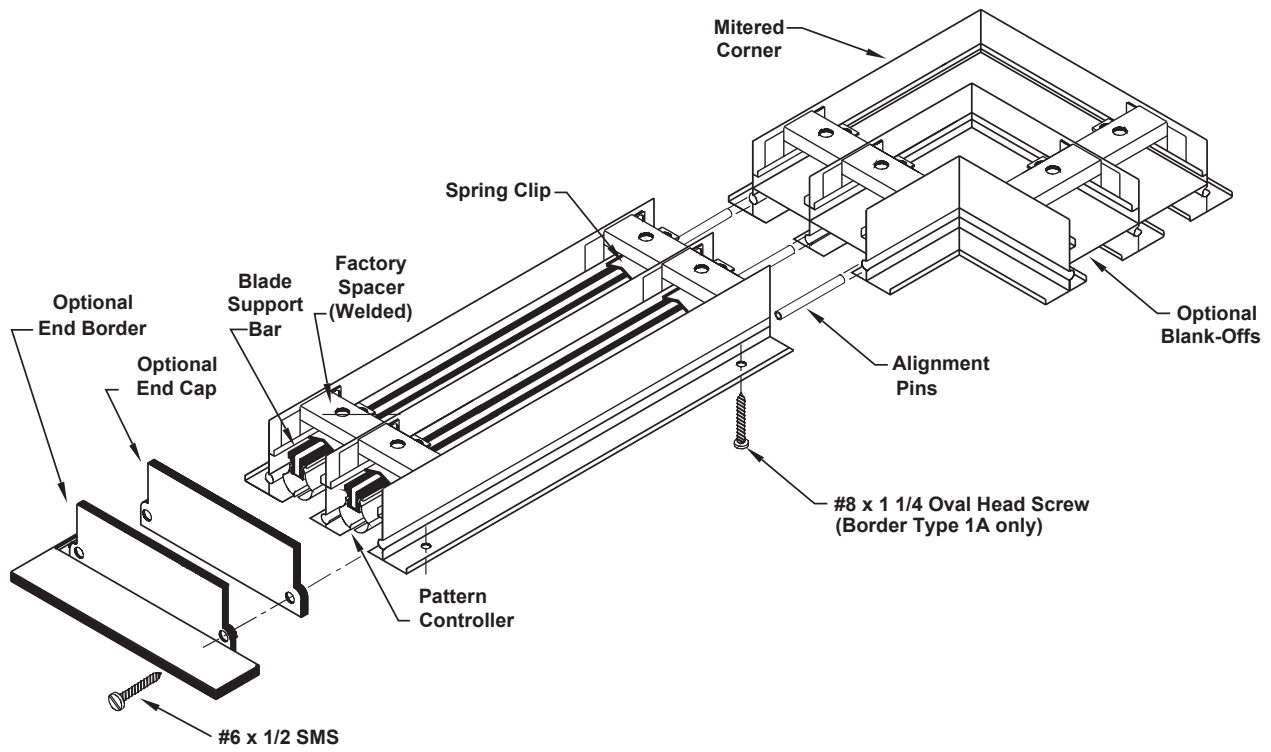
Note: When end borders are not to be used with diffuser, mounting frame ends are not furnished.

3. Use removable gauges furnished with frame parts to ensure proper fit of diffuser into mounting frame. Gauges snap into place between side rails as shown above. If mounting frame is to be plastered into place, use wood blocks to stiffen side rails and maintain correct inside dimensions.



Diffuser Assembly Instructions

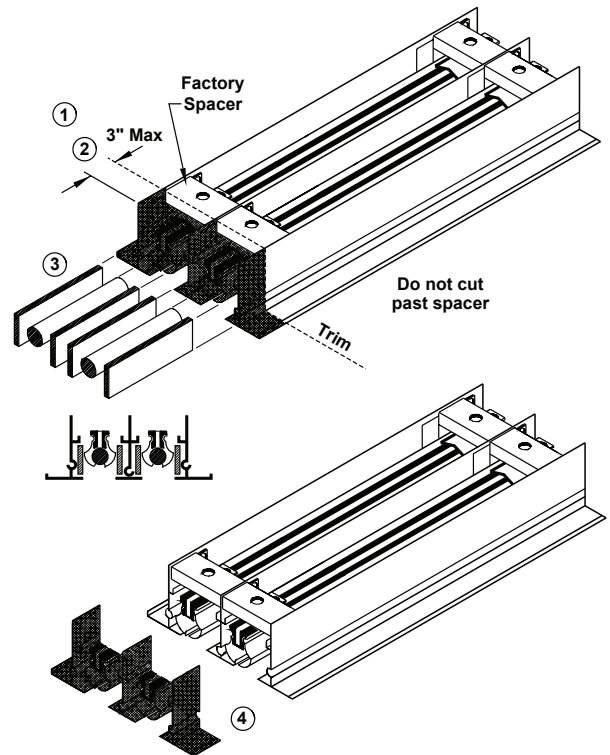
1. Assemble diffuser with alignment pins as shown above. End borders or caps, where ordered, are attached at factory.
2. Install diffuser in ceiling. See Hanger Bracket Mounting Instructions (Page 7).



Field Cutting Instructions — Trimming

1. Measure length of diffuser to be cut.
2. Mark ML or MLR for cut. You can cut as much as 3" on each end for a maximum of 6". Do not cut passed weld spacer.
3. Insert 1/2" dowel into center of each pattern controller. Insert wood blocks or dowels on outside of pattern controller. Wood will support pattern controller when cutting through diffuser.
4. Cut ML or MLR with circular saw. Recommended metal cutting saw blade:
 - 14 x 152 teeth or
 - 10 x 80 teeth
 - 3/32 " thickness

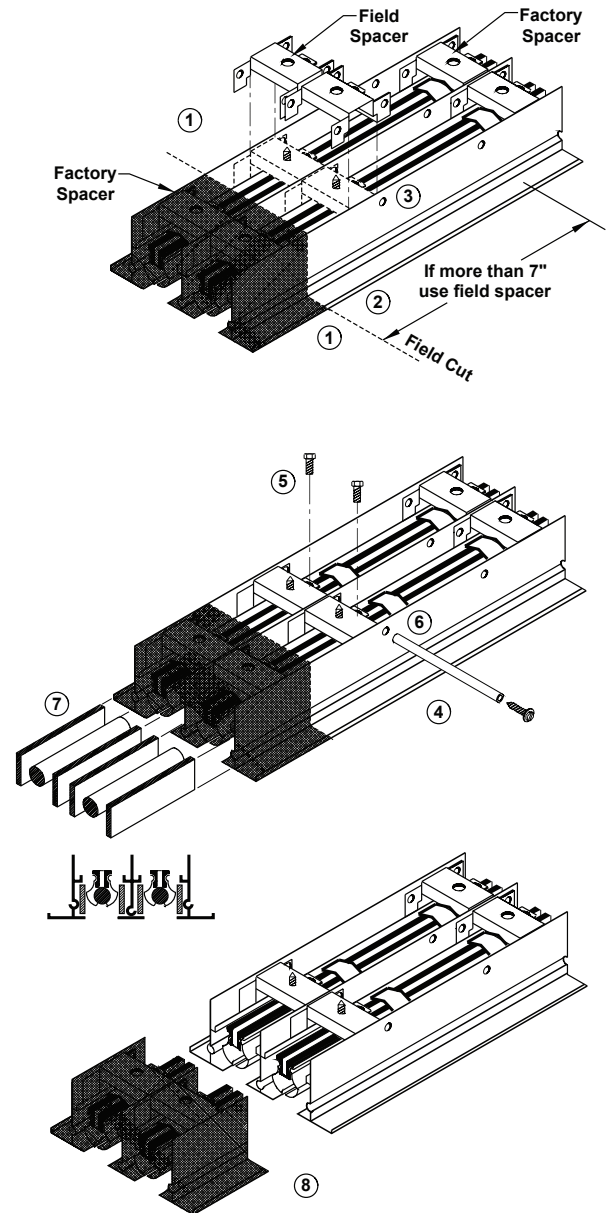
Note: Apply lubricant while cutting.



Field Cutting Instructions

1. Measure length of diffuser to be cut.
2. Mark MLF or MLRF for field cut. NOTE: If 6" or less is to be cut off, use Trimming instructions shown above. To ensure proper support of pattern controller deflector blades, there should be 7" or less between end of diffuser and next spacer. If after marking there is more than 7" between the field cut mark and the factory spacer, install field spacer.
3. **If field spaces is required:** Line up wholes on side of field spacer with predrilled holes in diffuser. Make sure field cut is between factory weld spacer and field spacer.
4. Install tube through diffuser field spacer. Next install screws in both ends of the tube and tighten.
5. For MLF with pattern controllers, install screw through lower tab hole of field spacer and tighten into threaded channel on blade support bar.
6. For MLF with pattern controllers install additional spring clips on top of blade support bar. Place clip 2" from edge or directly behind spacer if space is in the way. See spring clip for detail, Page 7.
7. Insert 1/2" dowel in center of each controller. Insert wood blocks or dowels on outside of pattern controller. Wood support pattern controller when cutting through diffuser.
8. Cut MLF or MLRF with circular saw. Recommended metal cutting saw blade:
 - 14 x 152 teeth or
 - 10 x 80 teeth
 - 3/32" thickness

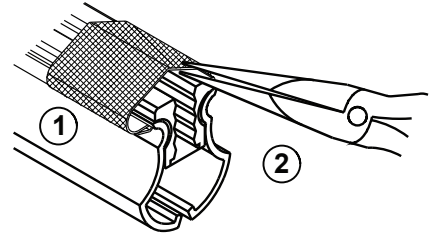
Note: Apply lubricant while cutting.



Spring Clip — Attaching to Field Cut Diffuser

To attach spring clip to field cut diffuser:

1. Start spring clip on side of blade support bar.
2. Use needle nose pliers or screwdriver to expand spring clip until it hooks over other side of blade support bar.



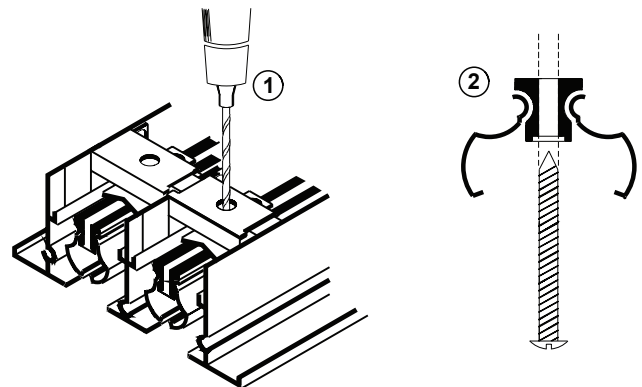
Hanger Bracket Mounting Instructions

Field Cut Diffuser Only - All Frame & Border Types

1. 1. Drill through top of blade support with 7/32" drill. Use hole in top of field spacer as guide for drill.

Note: Blade supports are pre-drilled under factory spacers at at end of diffusers

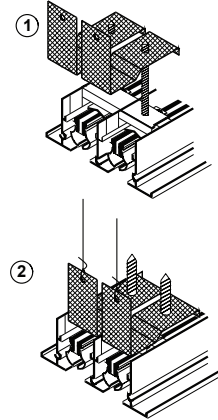
2. Hole in blade support will be used as clearance hole for inserting screw through face of diffuser, upward into hanger bracket.



Hanger Bracket Mounting Instructions (continued)

Hanger Bracket for Border Types 9A, 9B, 12, 15:

1. Insert #10 screw through face of diffuser, through hole in blade support and into foot of hanger bracket above diffuser.
2. Attach hanger wires (by others).



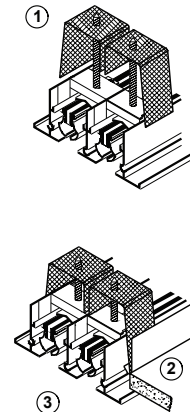
Hanger Bracket for Border Types 2A, 2B:

1. Insert #10 screw through face of diffuser, through hole in blade support. Start screw in top of hanger bracket above diffuser.

Note: See submittal Y-ML for duct dimension D'.

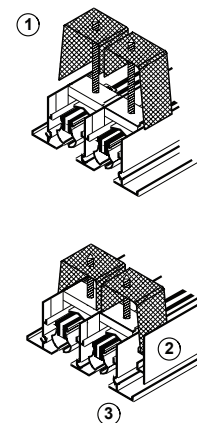
2. Slide diffuser up into duct until hanger bracket ends are above hem of duct.
3. Tighten screws to draw diffuser border snug against ceiling.

Caution: Do not overtighten.

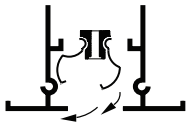


Hanger Bracket for Frame & Border Types 3, 4, 6, 7A, 7B, 11:

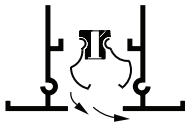
1. Insert #10 screw through face of diffuser, through hole in blade support. Start screw in top of hanger bracket above diffuser.
2. Slide diffuser up into mounting frame until hanger bracket ends are above channel on inside of mounting frame.
3. Tighten screws to draw diffuser border snug against ceiling.



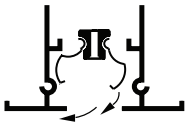
Pattern Controller Blade Settings



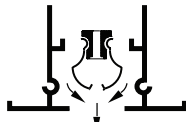
Horizontal Left



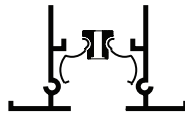
Horizontal Right



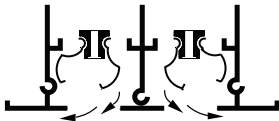
Dampered
Horizontal Left



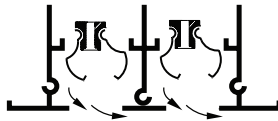
Vertical



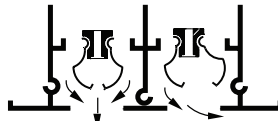
Fully Dampered



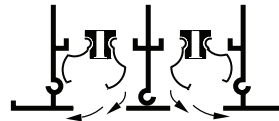
Opposed



One Way



Vertical & Horizontal



Opposed Unequal Flow
(One Slot Dampered)

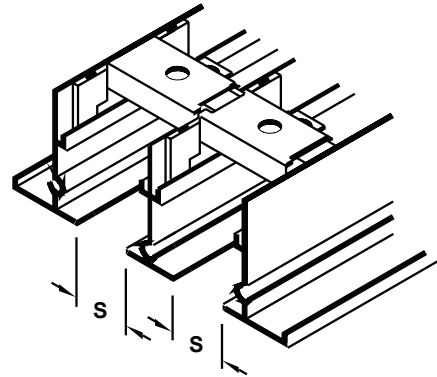
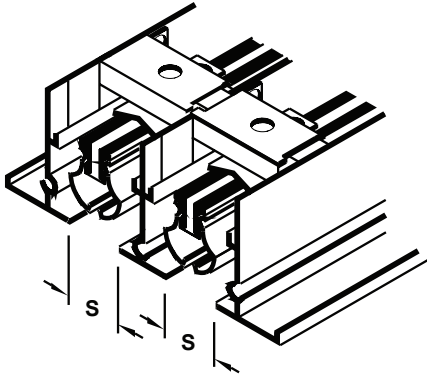
Frame & Border Types, Dimensions

Supply

- Model ML-37 S=1/2"
 ML-38 S=3/4"
 ML-39 S=1"

Return

- Model MLR-37 S=1/2"
 MLR-38 S=3/4"
 MLR-39 S=1"



Border Type 1A

With

- Flange Border
- Screw Mounting

Border Type 1B

With

- Flange Border
- Duct Mounting

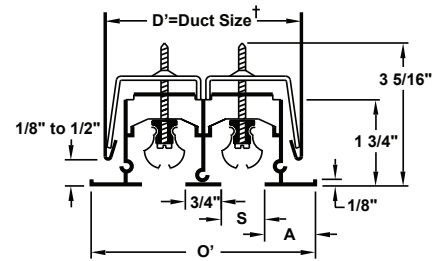
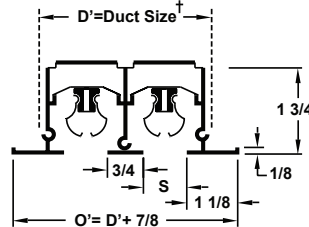
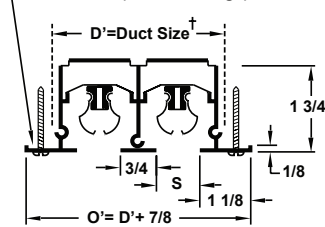
Border Type 2A

Border Type 2B

Both with

- Flange Border
- Concealed Mounting

Countersunk Screw Holes for #8 SMS (5/16 from Edge)



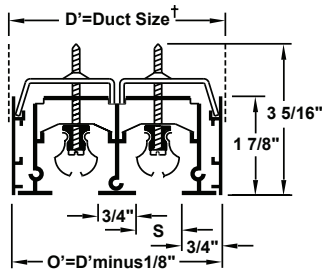
Type	A	O'
2A	1 1/8	D' + 3/4
2B	7/8	D' + 1/4

Frame & Border Types, Dimensions (continued)

Frame & Border Type 3

With

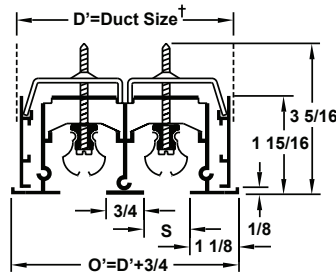
- Flush Border
- Concealed Mounting



Frame & Border Type 4

With

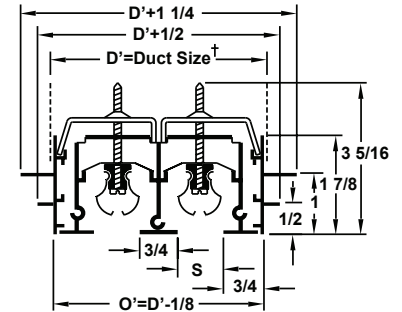
- Flange Border
- Concealed Mounting



Frame & Border Type 6

With

- Plaster & Tile Mounting Frame
- Flush Border
- Concealed Mounting

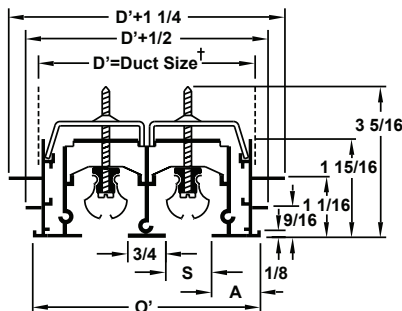


Frame & Border Type 7A

Frame & Border Type 7B

Both with

- Plaster & Tile Mounting Frame
- Flange Border
- Concealed Mounting



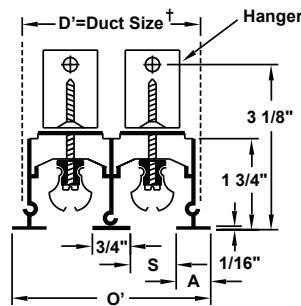
Type	A	O'
7A	1 1/8"	D' + 3/4"
7B	7/8"	D' + 1/4"

Border Type 9A

Border Type 9B

Both with

- Flange Border
- Ceiling Hangers

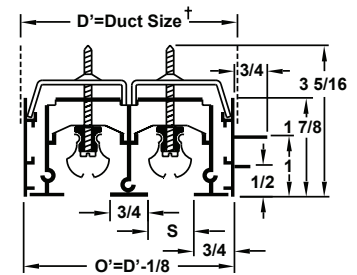


Type	A	O'
9A	3/4"	D' + 3/4"
9B	1 7/8"	D' + 1 3/8"

Border Type II

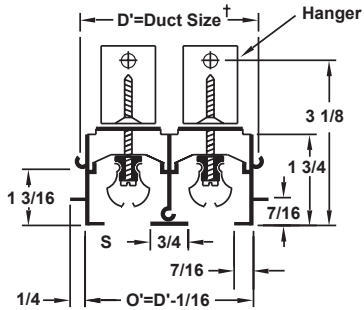
With

- Perimeter Plaster & Tile Mounting Frame
- Flush Border
- Concealed Mounting

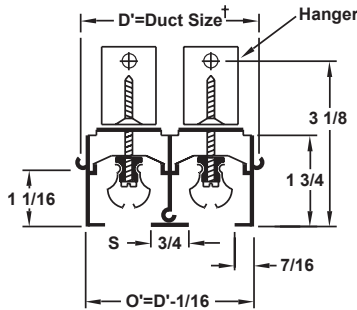


Frame & Border Types, Dimensions (continued)

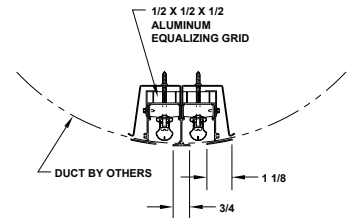
- Border Type 12**
With
- Spline Border
 - Ceiling Hangers



- Border Type 15**
With
- Flush Border
 - Ceiling Hangers



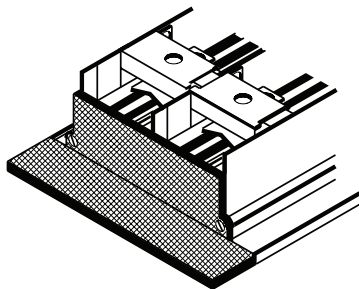
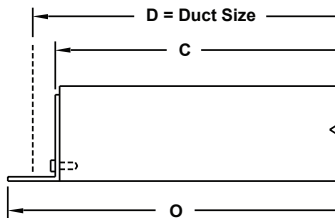
- Border Type 16**
With
- Curved Flange Border
 - Concealed Mounting
 - Equalizing Grid



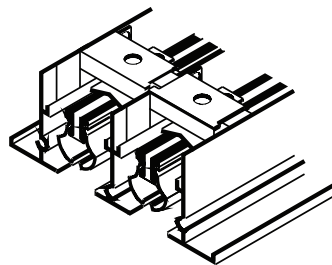
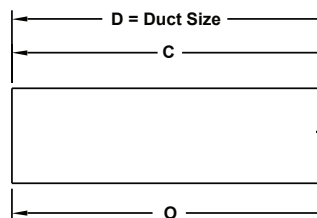
Border Type 16 standard selections:
ML-38 only
1 slot: duct diameters 10, 14, 18, 22, 24"
2 slot: duct diameter 14, 18, 22, 24"

End Fabrication

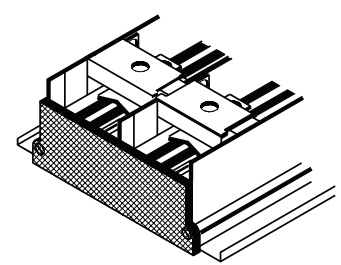
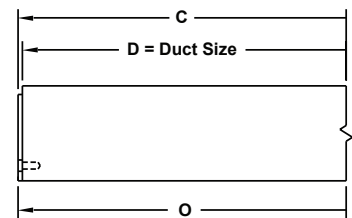
X End Border



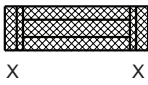
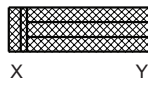
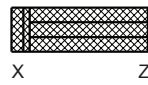
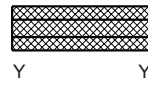
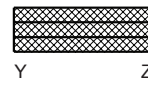
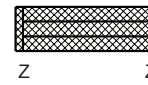
Y Open End



Z End Cap



Overall Length for Various End Fabrications

Frame and/or Border Type												
	X-X		X-Y		X-Z		Y-Y		Y-Z		Z-Z	
	C	O	C	O	C	O	C	O	C	O	C	O
1A, 1B, 9B	$D - 1 \frac{3}{8}$	$D + \frac{3}{4}$	$D - \frac{11}{16}$	$D + \frac{3}{8}$	$D + \frac{5}{8}$	$D + \frac{7}{16}$	D	D	$D + \frac{1}{16}$	$D + \frac{1}{16}$	$D + \frac{1}{8}$	$D + \frac{1}{8}$
2A, 4, 7A, 16	$D - 1 \frac{3}{8}$	$D + \frac{3}{4}$	$D - \frac{11}{16}$	$D + \frac{3}{8}$	$D + \frac{5}{8}$	$D + \frac{7}{16}$	D	D	$D + \frac{1}{16}$	$D + \frac{1}{16}$	$D + \frac{1}{8}$	$D + \frac{1}{8}$
3, 6, 11	$D - 1 \frac{3}{8}$	D	$D - \frac{11}{16}$	D	$D + \frac{5}{8}$	$D + \frac{1}{16}$	D	D	$D + \frac{1}{16}$	$D + \frac{1}{16}$	$D + \frac{1}{8}$	$D + \frac{1}{8}$
2B, 7B	$D - 1 \frac{3}{8}$	$D + \frac{1}{4}$	$D - \frac{11}{16}$	$D + \frac{1}{8}$	$D + \frac{5}{8}$	$D + \frac{3}{16}$	D	D	$D + \frac{1}{16}$	$D + \frac{1}{16}$	$D + \frac{1}{8}$	$D + \frac{1}{8}$
9A	$D - 1 \frac{3}{8}$	D	$D - \frac{11}{16}$	D	$D + \frac{5}{8}$	$D + \frac{1}{16}$	D	D	$D + \frac{1}{16}$	$D + \frac{1}{16}$	$D + \frac{1}{8}$	$D + \frac{1}{8}$
12, 15	$D - 1 \frac{11}{16}$	D	$D - \frac{5}{16}$	D	$D + \frac{1}{4}$	$D + \frac{1}{16}$	D	D	$D + \frac{1}{16}$	$D + \frac{1}{16}$	$D + \frac{1}{8}$	$D + \frac{1}{8}$

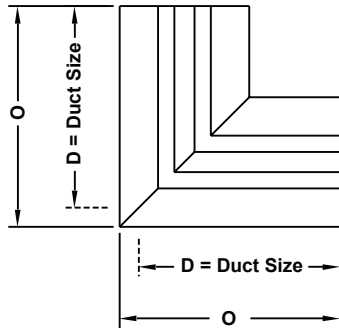
Duct Dimensions D' (Width) for Various Frame & Border Types

No. of Slots	Types 1A, 1B			Types 2A, 2B, 4, 7A, 7B, 16			Types 3, 6, 11			Types 9A, 9B			Types 12, 15		
	ML/MLR 37	ML/MLR 38	ML/MLR 39	ML/MLR 37	ML/MLR 38	ML/MLR 39	ML/MLR 37	ML/MLR 38	ML/MLR 39	ML/MLR 37	ML/MLR 38	ML/MLR 39	ML/MLR 37	ML/MLR 38	ML/MLR 39
	S = 1/2	S = 3/4	S = 1	S = 1/2	S = 3/4	S = 1	S = 1/2	S = 3/4	S = 1	S = 1/2	S = 3/4	S = 1	S = 1/2	S = 3/4	S = 1
1	1 7/8	2 1/8	2 3/8	2	2 1/4	2 1/2	2 1/8	2 3/8	2 5/8	1 3/8	1 5/8	1 7/8	1 3/8	1 5/8	1 5/8
2	3 1/8	3 5/8	4 1/8	3 1/4	3 3/4	4 1/4	3 3/8	3 7/8	4 3/8	2 5/8	3 1/8	3 5/8	2 5/8	3 1/8	3 5/8
3	4 3/8	5 1/8	5 7/8	4 1/2	5 1/4	6	4 5/8	5 3/8	6 1/8	3 7/8	4 5/8	5 3/8	3 7/8	4 5/8	5 3/8
4	5 5/8	6 5/8	7 5/8	5 3/4	6 3/4	7 3/4	5 7/8	6 7/8	7 7/8	5 1/8	6 1/8	7 1/8	5 1/8	6 1/8	7 1/8
5	6 7/8	8 1/8	9 3/8	7	8 1/4	9 1/2	7 1/8	8 3/8	9 5/8	6 3/8	7 5/8	8 7/8	6 3/8	7 5/8	8 7/8
6	8 1/8	9 5/8	11 1/8	8 1/4	9 3/4	11 1/4	8 3/8	9 7/8	11 3/8	7 5/8	9 1/8	10 5/8	7 5/8	9 1/8	10 5/8
7	9 3/8	11 1/8	12 7/8	9 1/2	11 1/4	13	9 5/8	11 3/8	13 1/8	8 7/8	10 5/8	12 3/8	8 7/8	10 5/8	12 3/8
8	10 5/8	12 5/8	14 5/8	10 3/4	12 3/4	14 3/4	10 7/8	12 7/8	14 7/8	10 1/8	12 1/8	14 1/8	10 1/8	12 1/8	14 1/8

Accessories (Optional)

Optional Miter Corner

- MLF-37 • 1/2" Slot
- MLF-38 • 3/4" Slot
- MLF-39 • 1" Slot

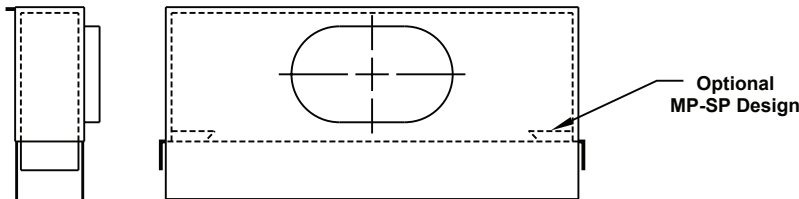


No. of Slots	1A, 1B		2A, 4, 7A		2B, 7B		3, 6, 11		9A		9B		12, 15	
	O	D	O	D	O	D	O	D	O	D	O	D	O	D
1, 2	12 7/16	12	12 3/8	12	12 1/8	12	11 7/8	12	12 5/16	12	12 11/16	12	12	12
3-8	24 7/16	24	24 3/8	24	24 1/8	24	23 7/8	24	24 5/16	24	24 11/16	24	24	24

All dimensions are in inches.

Optional Mitered Corner Check if provided

- MC-37 • 1/2" Slot
- MC-38 • 3/4" Slot
- MC-39 • 1" Slot

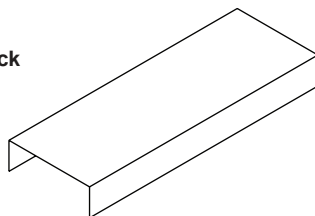


Note:

- MP and MPI are available for all frames and border types.
- Standard nominal length are 2, 3, 4 and 5 feet.
- Request Submittal Y-MP for details.
- Option MP-SP available with maximum spread pattern.

Optional Blank-offs

- BLKS • Cold Rolled Steel • Fit over Neck
- BLKS • Vinyl • Fits in Slot



Notes



605 Shiloh Rd
Plano TX 75074
ofc: 972.212.4800
fax: 972.212.4884

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