RETURN GRILLES and REGISTERS

The beautiful designed natural anodize extruded aluminum angle blade return air grille or register incorporates the following features.

1. The frame is flat with sharp square edges to harmonize with modern aesthetical designs.
2. Angle blades that have clean, sharp lines that can be achieved by extrusions.
3. Slightly over lapped blades to practically eliminate see-through.

NOTE: The angle blade return is standard with the blades in a horizontal position. It is, however, available with the blades in a vertical position by substituting a “V” at the end of the model number.

Example: RALAV

MODEL NUMBERING SYSTEM - M-Series Aluminum Louvered Return Registers and Grilles

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
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<tbody>
<tr>
<td>R</td>
<td>A</td>
<td>L</td>
<td>M</td>
<td>H</td>
<td>0</td>
<td>1</td>
<td>2</td>
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<td>1</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>R - Register &amp; Grille</td>
<td>A - Alum. Grille</td>
<td>N - Alum. Register w/Alum. Damper</td>
<td>DESIGN SERIES</td>
<td>SIZE WIDTH 004 - 4” Minimum</td>
<td>SIZE HEIGHT 04 - 4” Minimum</td>
<td>FRACTIONAL SIZE 0 - 0”</td>
<td>1/8”</td>
<td>1/4”</td>
<td>3/8”</td>
<td>1/2”</td>
<td>5/8”</td>
<td>3/4”</td>
<td>7/8”</td>
<td>Natural Anodize (Standard)</td>
<td>Bright White</td>
<td>Gray (For Other Finishes See Master Finish List)</td>
<td>Fusible Link</td>
</tr>
<tr>
<td>BLADE DEFLECTION</td>
<td>H - Horizontal (Blades Parallel to Width)</td>
<td>V - Vertical (Blades Parallel to Height)</td>
<td>J - Heavy Duty Horizontal (Blades Parallel to Width)</td>
<td>K - Heavy Duty Vertical (Blades Parallel to Height)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HINGED</td>
<td>8 - Plaster Frame with 1/4 Turn Fasteners, No Hinge</td>
<td>H - Long Side to Plaster Frame</td>
<td>J - Short Side to Plaster Frame</td>
<td>D - Long Side to Plaster Frame w/1” Filter Clips</td>
<td>E - Short Side to Plaster Frame w/1” Filter Clips</td>
<td>K - Long Side to Plaster Frame w/2” Filter Clips</td>
<td>L - Short Side to Plaster Frame w/2” Filter Clips</td>
<td>OPTIONS: (Must Be Present In Order Shown, Left Justified, Default Is Standard and Applies If Not Entry Is Made)</td>
<td>51</td>
<td>11</td>
<td>04</td>
<td>F</td>
<td>G</td>
<td>G</td>
<td>8</td>
<td>H</td>
<td>J</td>
</tr>
</tbody>
</table>

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A-281
<table>
<thead>
<tr>
<th>SIZE W x H</th>
<th>AREA*</th>
<th>AIR CAPACITY CFM</th>
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<tbody>
<tr>
<td></td>
<td>Sq. Ft.</td>
<td>300 FPM</td>
</tr>
<tr>
<td>10 x 6</td>
<td>.26</td>
<td>78</td>
</tr>
<tr>
<td>12 x 6</td>
<td>.32</td>
<td>96</td>
</tr>
<tr>
<td>10 x 8</td>
<td>.36</td>
<td>108</td>
</tr>
<tr>
<td>12 x 8</td>
<td>.43</td>
<td>129</td>
</tr>
<tr>
<td>18 x 6</td>
<td>.48</td>
<td>144</td>
</tr>
<tr>
<td>12 x 12</td>
<td>.67</td>
<td>201</td>
</tr>
<tr>
<td>18 x 12</td>
<td>1.02</td>
<td>306</td>
</tr>
<tr>
<td>24 x 12</td>
<td>1.35</td>
<td>405</td>
</tr>
<tr>
<td>18 x 18</td>
<td>1.55</td>
<td>465</td>
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<tr>
<td>30 x 12</td>
<td>1.69</td>
<td>507</td>
</tr>
<tr>
<td>24 x 18</td>
<td>2.05</td>
<td>615</td>
</tr>
<tr>
<td>30 x 18</td>
<td>2.61</td>
<td>783</td>
</tr>
<tr>
<td>24 x 24</td>
<td>2.77</td>
<td>831</td>
</tr>
<tr>
<td>36 x 18</td>
<td>3.13</td>
<td>939</td>
</tr>
<tr>
<td>30 x 24</td>
<td>3.50</td>
<td>1050</td>
</tr>
<tr>
<td>36 x 24</td>
<td>4.21</td>
<td>1263</td>
</tr>
<tr>
<td>36 x 30</td>
<td>5.29</td>
<td>1587</td>
</tr>
<tr>
<td>48 x 24</td>
<td>5.55</td>
<td>1665</td>
</tr>
<tr>
<td>48 x 30</td>
<td>6.98</td>
<td>2094</td>
</tr>
<tr>
<td>48 x 36</td>
<td>8.38</td>
<td>2514</td>
</tr>
</tbody>
</table>

* "Anemometer Effective Area” — Anemometer held directly against face.
### Multi-Panel Construction for the following Registers & Grilles

<table>
<thead>
<tr>
<th></th>
<th>Steel</th>
<th>Stainless Steel</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Deflection</td>
<td>RSSB, RTSB</td>
<td>RLSB, RMSB, RKSBS</td>
<td>RASM, RNSM</td>
</tr>
<tr>
<td>Double Deflection</td>
<td>RSDB, RTDB</td>
<td>RLDB, RMDB, RKBDB</td>
<td>RADM, RNDM</td>
</tr>
<tr>
<td>0° Fixed Return</td>
<td>RSRB, RTRB</td>
<td>RLRB, RMFB, RKRB</td>
<td>RARM, RNRM</td>
</tr>
<tr>
<td>45° Fixed Return</td>
<td>RSAB, RTAB</td>
<td>RLAB, RMAB, RKAB</td>
<td>RAAM, RNAM</td>
</tr>
</tbody>
</table>

### In-line Construction

- **Steel**
  - Single Deflection: RSSB, RTSB
  - Double Deflection: RSDB, RTDB
  - 0° Fixed Return: RSRB, RTRB
  - 45° Fixed Return: RSAB, RTAB

### Ganged Construction

- **Steel**
  - Single Deflection: RSSB, RTSB
  - Double Deflection: RSDB, RTDB
  - 0° Fixed Return: RSRB, RTRB
  - 45° Fixed Return: RSAB, RTAB

### Notes:

1. Maximum single panel width and height is 36” listed size regardless of blade alignment.
2. Panels are made in even inch increments unless specified otherwise.
3. Front blade alignment is as pictured.
4. Grille height & width dimensions shown are listed size dimensions.
5. Panel flanges are sheared and aligned with joining strips.

### Ganged Construction Notes:

1. Maximum single panel width is 36” listed size.
2. Maximum single panel height is 36” listed size.
3. Panels will be made in even inch increments unless specified otherwise.
4. Front blade alignment is always parallel to center support.
5. Either the vertical or horizontal joint can be sheared down, but not both.
6. The center support can be aligned vertically or horizontally, depending on blade alignment desired. It is shown here mounted horizontally.
7. Grille height and width dimensions shown are listed size dimensions.
8. Metric dimensions are shown in millimeters.

### Joining Strips

- **Height:** Up to 36”
- **Width:** Over 72”
- **Three or More Sections**
- **Any blade alignment**

### Center Support Attachment to Wall Opening

- **Center Support** installs flush with wall

### Cross-Sectional View of Center Support with Grilles Attached

- **Duct Height**
- **Duct Width**
- **W: 38” - 72”**
- **H: 38” - 72”**
- **1/2" (13)**
- **1/4" (6)**
- **Joining Strips**
- **Center Support**
- **Wall Angle**
- **Wall**

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These images and tables are from a technical specification sheet provided by Carnes. For detailed visual references, please refer to the original document.
# Multi-Panel Construction

## Multi-Panel Construction for the following Registers & Grilles

<table>
<thead>
<tr>
<th>Steel</th>
<th>Louvered Return</th>
<th>RS LA, RT LA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Perforated Return</td>
<td>RS FA, RT FA</td>
</tr>
</tbody>
</table>

### In-Line Construction

- **Height:** Up to 36”
- **Width:** Over 96”
- **Horizontal Blade Alignment**
- **Three or More Sections**

- **Height:** Up to 48”
- **Width:** Over 72”
- **Vertical Blade Alignment**
- **Three or More Sections**

### Ganged Construction

**Notes:**

1. Panels will be made in even inch increments unless specified otherwise.
2. Dimensions shown are listed size dimensions.
3. Max. blade length on louvered face models is nominal 48”.
4. Panels are sheared and aligned with joining strips.

### Center Support Attachment to Wall Opening

- **Duct Height:**
- **Duct Width:**
- **W:** 50” - 96”
- **H:** 38’ - 74”

- **Joining Strips:**
- **Center Support:**
- **Wall Angle:**
- **Wall:**
- **Cross-Sectional View of Center Support with Grilles Attached:**
- **W:** 2-1/2” (64)
- **H:** 1-1/4” (32)
- **1/2” (13)
- **2-3/8” (60)
- **1/4” (6)
- **Joining Strips**
Multi-Panel In-Line Construction

Notes:
1. Maximum single panel width and height is 48” nominal size, regardless of blade alignment.
2. Panels are made in even inch increments unless specified otherwise.
3. Front blade alignment is always parallel to center support.
4. Grille dimensions shown are nominal dimensions.
5. Panel flanges are sheared and aligned with joining strips.

Multi-Panel Ganged Construction

Notes:
1. Maximum single panel width and height is 48” nominal size, regardless of blade alignment.
2. Panels are made in even inch increments unless specified otherwise.
3. Front blade alignment is always parallel to center support.
4. Either the vertical or horizontal joint can be sheared down, but not both.
5. The center support can be aligned vertically or horizontally, depending on blade alignment desired.
6. Grille dimensions shown are nominal dimensions.
All Sections of Butted Grilles or Registers will be made in Listed Sizes as Standard.

STANDARD REGISTERS AND GRILLES
Applies to all models except louvered return air registers and grilles and door partition grilles. Registers and grilles over 36” x 36” butting two or more grilles together.

NOTES:
Extruded aluminum supporting members with mounting angles, are furnished where required. Center support may run vertically or horizontally, depending upon combination of grilles used. Combination of panels will be furnished to fit duct opening with satisfactory clearance.
## Screw Hole Location for the following Registers & Grilles

<table>
<thead>
<tr>
<th>Type</th>
<th>Steel</th>
<th>Aluminum</th>
<th>Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Deflection</td>
<td>RSSB, RTSB</td>
<td>RASM, RNSM</td>
<td>RLSB, RMSB, RKSB</td>
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</tr>
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<td>0° Fixed Return</td>
<td>RSRB, RTRB</td>
<td>RARM, RNRM</td>
<td>RLRB, RMRB, RKRB</td>
</tr>
<tr>
<td>45° Fixed Return</td>
<td>RSAB, RTAB</td>
<td>RAAM, RNAM</td>
<td>RLAB, RMAB, RKAB</td>
</tr>
<tr>
<td>Louvered Return</td>
<td>RSLA, RTLA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perforated Return</td>
<td>RSFA, RTFA</td>
<td>RAFM, RNFM</td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
- Screw holes on the face are standard on Registers and Grilles.
- Steel R&G can be ordered without screw holes, for use with concealed hangers (Opt. N).
- The screw holes is 5/32" in diameter.
- Each Register or Grille is provided with the appropriate number of screws as standard.
- The standard screw is #8 x 1-1/4" pan head screw, with a flat blade head.
- Tamper-proof screws are available as an option (Opt. B).

### Diagrams

**One Screw hole per Side**
Nominal Size Range 4” through 18”.

**Two Screw holes per Side**
Nominal Size Range 19” through 31”.

**Three Screw holes per Side**
Nominal Size Range 32” through 48”.