RETURN GRILLES and REGISTERS

RETURN GRILLE
The return air grille is styled to match the Carnes extruded aluminum supply registers and grilles. The face bars are not adjustable but are locked into either a 0°, 35° or 45° position at the factory. The frame is flat with sharp square edges to harmonize with modern aesthetical design. Gaskets are not furnished with return grilles.

MODEL NOS.

<table>
<thead>
<tr>
<th>Blade Spacing</th>
<th>Blade Setting</th>
<th>Front Blades Horizontal</th>
<th>Front Blades Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>0°</td>
<td>RNHMH</td>
<td>RARMV</td>
</tr>
<tr>
<td></td>
<td>35°</td>
<td>RNAMH</td>
<td>RAAMV</td>
</tr>
<tr>
<td></td>
<td>45°</td>
<td>RNJMH</td>
<td>RAJMV</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>0°</td>
<td>RNHMH</td>
<td>RARMV</td>
</tr>
<tr>
<td></td>
<td>35°</td>
<td>RNAMH</td>
<td>RAAMV</td>
</tr>
<tr>
<td></td>
<td>45°</td>
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<td>RAJMV</td>
</tr>
<tr>
<td>Heavy Duty</td>
<td>0°</td>
<td>RARMJ</td>
<td>RARMK</td>
</tr>
<tr>
<td></td>
<td>35°</td>
<td>RAAMJ</td>
<td>RAAMK</td>
</tr>
</tbody>
</table>

RETURN REGISTER
The return air register is a combination of grille with fixed face bars and an opposed blade extruded aluminum damper. The blades are gang operated by means of a key and assure positive control of air passing through the register for systems where precise balancing is required. Gaskets are not furnished on return models.

MODEL NOS.

WITH ALUMINUM DAMPERS

<table>
<thead>
<tr>
<th>Blade Spacing</th>
<th>Blade Setting</th>
<th>Front Blades Horizontal</th>
<th>Front Blades Vertical</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4&quot;</td>
<td>0°</td>
<td>RNHMH</td>
<td>RARMV</td>
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<td></td>
<td>35°</td>
<td>RNAMH</td>
<td>RAAMV</td>
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<tr>
<td></td>
<td>45°</td>
<td>RNJMH</td>
<td>RAJMV</td>
</tr>
<tr>
<td>1/2&quot;</td>
<td>0°</td>
<td>RNHMH</td>
<td>RARMV</td>
</tr>
<tr>
<td></td>
<td>35°</td>
<td>RNAMH</td>
<td>RAAMV</td>
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<td></td>
<td>45°</td>
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<td>RAJMV</td>
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<tr>
<td>Heavy Duty</td>
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</tr>
<tr>
<td></td>
<td>45°</td>
<td>RNRMJ</td>
<td>RNRMK</td>
</tr>
</tbody>
</table>
### Model Numbering System - M-Series Aluminum Return Registers and Grilles

**Options:**

- (Must be present in order shown, left justified. Default is standard and applies if not entry is made)
- **R:** Register & Grille
- **A:** Alum. Grille
- **M:** Alum. Register w/Alum. Damper
- **H:** 0° Setting 3/4" Spacing Return
- **0:** 0° Setting 1/2" Spacing Return
- **1:** 45° Setting 3/4" Spacing Return
- **2:** 45° Setting 1/2" Spacing Return
- **3:** Register & Grille
- **4:** Fusible Link
- **5:** Gasket
- **6:** Gasket & Fusible Link
- **7:** Natural Anodize
- **8:** Bright White (Default)
- **9:** Gray (For Other Finishes See Master Finish List)
- **10:** Standard Screws (Default)
- **11:** No Screw Holes
- **12:** Tamper-Proof Screws
- **13:** Concealed Hangers
- **14:** Sheared Frame for T-bar Panel 23-3/4"x23-3/4"
- **15:** Standard Screws (Default)
- **16:** Plaster Frame with 1/4 Turn Fasteners, No Hinge
- **17:** Long Side to Plaster Frame
- **18:** Short Side to Plaster Frame w/1" Filter Clips
- **19:** Long Side to Plaster Frame w/2" Filter Clips
- **20:** Short Side to Plaster Frame w/2" Filter Clips

### Design Series

- **H:** Horizontal (Blades Parallel to Width)
- **V:** Vertical (Blades Parallel to Height)
- **J:** Heavy Duty Horizontal (Blades Parallel to Width)
- **K:** Heavy Duty Vertical (Blades Parallel to Height)

### Blade Deflection

- **R:** 0° Setting 3/4" Spacing Return
- **A:** 45° Setting 3/4" Spacing Return
- **M:** 0° Setting 1/2" Spacing Return
- **N:** 45° Setting 1/2" Spacing Return

### Fractional Size

- **0:** 0"
- **1:** 1/8"
- **2:** 1/4"
- **3:** 3/8"
- **4:** 1/2"
- **5:** 5/8"
- **6:** 3/4"
- **7:** 7/8"

### Mounting

- **N:** No Screw Holes
- **B:** Tamper-Proof Screws
- **C:** Concealed Hangers
- **S:** Sheared Frame for T-bar
- **T:** T-bar Panel 23-3/4"x23-3/4"
- **Y:** Standard Screws (Default)

### Damper Operation

- **X:** Standard Operator (Default)
- **8:** Plaster Frame with 1/4 Turn Fasteners, No Hinge
- **9:** Long Side to Plaster Frame
- **10:** Short Side to Plaster Frame w/1" Filter Clips
- **11:** Long Side to Plaster Frame w/2" Filter Clips
- **12:** Short Side to Plaster Frame w/2" Filter Clips

### Selection Chart - Return Registers and Grilles

<table>
<thead>
<tr>
<th>Models: RNRM, RNAM, RNHM, RNJM, RARM, RAAM, RAHM, RAJM</th>
<th>Area* Sq. Ft.</th>
<th>300 FPM</th>
<th>400 FPM</th>
<th>500 FPM</th>
<th>600 FPM</th>
<th>700 FPM</th>
<th>800 FPM</th>
<th>900 FPM</th>
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<tbody>
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<td>W x H</td>
<td></td>
<td>10 x 6</td>
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<tr>
<td>10 x 8</td>
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<td>575</td>
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<td>1.00</td>
<td>330</td>
<td>440</td>
<td>550</td>
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<td>1.47</td>
<td>440</td>
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<td>735</td>
<td>880</td>
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<tr>
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<td>495</td>
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<td>3790</td>
<td>4740</td>
<td>5690</td>
<td>6640</td>
<td>7580</td>
<td>8520</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Steel</th>
<th>Stainless Steel</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSSB, RTSB</td>
<td>RLSB, RKSB</td>
<td>RASM, RNSM</td>
</tr>
<tr>
<td>RSDB, RTDB</td>
<td>RLDB, RKDB</td>
<td>RADM, RNDM</td>
</tr>
<tr>
<td>RSAB, RTAB</td>
<td>RLAB, RKAB</td>
<td>RAAM, RNM</td>
</tr>
<tr>
<td>RSRB, RTRB</td>
<td>RLRB, RKRB</td>
<td></td>
</tr>
<tr>
<td>RSAB, RTAB</td>
<td>RLAB, RKAB</td>
<td></td>
</tr>
</tbody>
</table>

In-line Construction

W: Over 72"  
H: Up to 36"  
• Height: Up to 36"  
• Width: Over 72"  
• Three or more sections  
• Any blade alignment

W: 38" - 72"  
H: Up to 36"  
• Height: Up to 36"  
• Width: 38" to 72"  
• Two sections  
• Any blade alignment

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.

W: Up to 36”  
H: Over 72”  
• Height: Over 72”  
• Width: Up to 36”  
• Three or More Sections  
• Any blade alignment
**Multi-Panel Construction**

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

<table>
<thead>
<tr>
<th>Louvered Return</th>
<th>Perforated Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSLA, RTLA</td>
<td>RSFA, RTFA</td>
</tr>
</tbody>
</table>

**In-Line Construction**

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

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

- **Height**: 38-72"
- **Width**: Up to 48"
- **Horizontal Blade Alignment**
- **Two Sections**

- **Height**: 50-96"
- **Width**: Up to 36"
- **Vertical Blade Alignment**
- **Two Sections**

**Ganged Construction**

**Notes:**
1. Either the vertical or horizontal joint can be sheared down, but not both.
2. Maximum single panel width is 48" listed size.
3. Maximum blade length on louvered face models is listed size 48".
4. Maximum single panel height is 36" listed size.
5. Panels are made in even inch increments unless specified otherwise.
6. Blade alignment is always parallel to center support.
7. The center support can be aligned vertically or horizontally, depending on the blade alignment desired. It is shown here mounted horizontally.
8. Grille dimensions shown are listed size dimensions.

**Center Support Attachment to Wall Opening**

- **Center Support** install flush with wall

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

- **2-1/2" (64)**
- **1/2" (13)**
- **1-1/4" (32)**
- **2" (51)**

**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.
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 as pictured.
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 are 48” nominal size.
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.

Cross-Sectional View of Center Support

Center Support installs flush with wall
Center Support Mounted flush with wall (Shown aligned horizontally).
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></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, RKSB</td>
</tr>
<tr>
<td>Double Deflection</td>
<td>RSDB, RTDB</td>
<td>RADM, RNDM</td>
<td>RLDB, RKDB</td>
</tr>
<tr>
<td>0° Fixed Return</td>
<td>RSRB, RTRB</td>
<td>RARM, RNRM</td>
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<tr>
<td>45° Fixed Return</td>
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<td>— — — —</td>
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<tr>
<td>Perforated Return</td>
<td>RSFA, RTFA</td>
<td>RAFM, RN FM</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).

#### 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”.

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![Diagram](image-url)