Application
Architecturally pleasing unit with low sound levels. Provides the perfect balance between the architectural need for full-face eggcrate and the cost requirement for efficient installation.

Standard Features
• Aluminum (RA) or Steel (RU) frame.
• 1/2"x1/2"x1/2" or 1/2"x1/2"x1" eggcrate core.
• Removable core.
• Access to balancing damper without need to remove core.
• Round inlets 6" - 18" on 24"x24" nominal face units.
• Square inlets 6"x6" - 18"x18" on 24"x24" nominal face units.
• Round inlets 6" - 8" on 12"x12" nominal face sizes.
• Square inlets 6"x6" - 8"x8" on 12"x12" nominal face sizes.
• The standard finish is electrocoat acrylic baked enamel.
• The standard color is #11 bright white.

Optional Features
• Grilles can be set in panels for mounting in grids that are larger than the nominal face (p. A267).

Accessories
• Recommended damper for the round inlet models is model KXMB (p. A429).
• Recommended damper for the square inlet models is model KXAA (p. A435).
• To surface mount this product, use auxiliary frame KXFA (p. A447).

Quick Select Chart
This shows 24"x24" units with:
• A maximum NC/RC of 35.
• A minimum duct velocity of 400 FPM.

<p>| CFM  | 0  | 75 | 150 | 225 | 300 | 375 | 450 | 525 | 600 | 675 | 750 | 825 | 900 | 975 | 1050 | 1125 | 1200 | 1275 | 1350 | 1425 | 1500 | 1575 | 1650 | 1725 | 1800 | 1875 | 1950 | 2025 | 2100 | 2175 | 2250 | 2325 | 2400 |
|------|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|</p>
<table>
<thead>
<tr>
<th>Size</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>10&quot;</th>
<th>12&quot;</th>
<th>14&quot;</th>
<th>16&quot;</th>
<th>18&quot;</th>
<th>6&quot;x6&quot;</th>
<th>10&quot;x10&quot;</th>
<th>14&quot;x14&quot;</th>
<th>18&quot;x18&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(78-315)</td>
<td>(140-489)</td>
<td>(314-942)</td>
<td>(558-1396)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(100-400)</td>
<td>(278-890)</td>
<td>(544-1361)</td>
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<td></td>
<td>(900-1925)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Model Numbering System

Options
- Grille or Register
- Design Series
- Nominal Face Size
- Inlet Size
- Inlet Shape, Mounting
- Set in Larger T-Bar Panel

A - Alum. Core w/Alum. Frame
U - Alum. Core w/Steel Frame
P - 1/2"x1/2"x1/2" Eggcrate Core
T - 1/2"x1/2"x1" Eggcrate Core
D - Round Neck, T-bar Mount
E - Square Neck, T-bar Mount

FINISH
- 11 - Bright White (Default)
- 01 - White

www.carnes.com
### 1/2" x 1/2" x 1/2" Core Models RAPB, RUPB

<table>
<thead>
<tr>
<th>Dim.</th>
<th>Description</th>
<th>Nominal Face Size</th>
<th>12&quot; x 12&quot;</th>
<th>24&quot; x 24&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Face O. D.</td>
<td>11-3/4&quot;</td>
<td>23-3/4&quot;</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Square Neck Unit Height</td>
<td>2-15/16&quot;</td>
<td>3-3/16&quot;</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Round Neck Unit Height</td>
<td>2-1/2&quot;</td>
<td>2-3/4&quot;</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Square Neck I. D.</td>
<td>Nom. +1/8&quot;</td>
<td>Nom. +1/8&quot;</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Round Neck O. D.</td>
<td>Nom. -1/8&quot;</td>
<td>Nom. -1/8&quot;</td>
<td></td>
</tr>
</tbody>
</table>

### Notes
- The inlet on the round neck units is undersized by 1/8" to fit inside the duct.
- The inlet on the square neck units is oversized by 1/8" to fit over the duct.

### Application
This option is used when the ceiling style requires a grid that is larger than the face of the grille. As an example, when the design calls for a 24" x 24" face grille, but the ceiling is a 24" x 48" grid.

#### Panel Options 12, 22 and 24

- **Option 12**: 12" x 12" face unit set in a 12" x 24" panel.
- **Option 22**: 12" x 12" face unit set in a 24" x 24" panel.
- **Option 24**: 24" x 24" face unit set in a 24" x 48" panel.
### Performance Data

**Ducted Eggcrate Return (RAPB, RUPB, RATB, RUTB)**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Flow (CFM)</th>
<th>Duct Velocity (fpm)</th>
<th>Pressure (W.G.)</th>
<th>Sound (NC/RC)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6&quot;</td>
<td>700</td>
<td>0.031</td>
<td>0.113</td>
</tr>
<tr>
<td></td>
<td>8&quot;</td>
<td>118</td>
<td>0.074</td>
<td>0.113</td>
</tr>
<tr>
<td></td>
<td>10&quot;</td>
<td>196</td>
<td>0.092</td>
<td>0.113</td>
</tr>
<tr>
<td></td>
<td>12&quot;</td>
<td>235</td>
<td>0.113</td>
<td>0.113</td>
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<td>14&quot;</td>
<td>274</td>
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<td></td>
<td>16&quot;</td>
<td>325</td>
<td>0.113</td>
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<td></td>
<td>18&quot;</td>
<td>375</td>
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<td>12&quot; x 12&quot;</td>
<td>236</td>
<td>0.012</td>
<td>-/-</td>
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<tr>
<td></td>
<td>14&quot; x 14&quot;</td>
<td>321</td>
<td>0.013</td>
<td>-/-</td>
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<tr>
<td></td>
<td>16&quot; x 16&quot;</td>
<td>419</td>
<td>0.015</td>
<td>-/-</td>
</tr>
<tr>
<td></td>
<td>18&quot; x 18&quot;</td>
<td>530</td>
<td>0.019</td>
<td>-/-</td>
</tr>
</tbody>
</table>

**Notes on Performance Data**

- Performance data is based on tests conducted in accordance with ANSI/ASHRAE Standard 70-1991.
- Actual performance in the field may vary.
- Testing was conducted in isothermal conditions.
- Sound level values are based on a room absorption of 10db re 10^-12 watts.

**Units of Measure Used:**

- Velocity is given in Feet per Minute (fpm).
- Pressure given in Inches of Water (W.G.).
- Air flows are given in Cubic Feet per Minute (CFM).
- Sound data is given in both NC and RC. NC is first with RC second, separated by a slash.
### 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, RKSMB</td>
<td>RASM, RNSM</td>
</tr>
<tr>
<td>Double Deflection</td>
<td>RSDB, RTDB</td>
<td>RLDB, RMDB, RKDB</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

- **W**: Over 72"  
  - Height: Up to 36"  
  - Width: Up to 36"  
  - Three or more 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

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

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

#### 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.
Multi-Panel Construction

Multi-Panel Construction for the following Registers & Grilles

<table>
<thead>
<tr>
<th>Steel</th>
<th>Louvered Return</th>
<th>Perforated Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<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"
- Vertical Blade Alignment
- Three or More Sections

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

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

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.

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
- Duct Height
- Duct Width
- Wall Angle
- Wall
- 2-3/8" (60)
- 1/2" (13)
- 1-1/4" (32)
- 2" (51)

Cross-Sectional View of Center Support with Grilles Attached

- 1/4" (6)
- 1/2" (13)
- 2-1/2" (64)
### 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.

**Cross-Sectional View of Center Support**

- Height: 50-96”
- Width: Up to 48”
- Any Blade Alignment

### 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**

- Height: Over 96”
- Width: Up to 48”
- Three or more Sections
- Any Blade Alignment

**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>Stainless Steel</th>
<th>Steel</th>
<th>Aluminum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Deflection</td>
<td>RSSB, RTSB</td>
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<td>RSRB, RTRB</td>
<td>RARM, RNRM</td>
</tr>
<tr>
<td>45° Fixed Return</td>
<td>RSAB, RTAB</td>
<td>RAAM, RNAM</td>
</tr>
<tr>
<td>Louvered Return</td>
<td>RSLA, RTLA</td>
<td>— — — — — —</td>
</tr>
<tr>
<td>Perforated Return</td>
<td>RSFA, RTFA</td>
<td>RAFM, RNFM</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".