Steel Clad Aluminum Brake Rotor
Higher Gas Mileage and Less Rotor and Pad Wears to Improve Taxicab Profitability

Advantages:
• 30% to 50% weight reduction
• Less brake pad drag
• Increase gas mileage about 3% on average
• Faster heat dissipation and lower braking temperatures
• Greater corrosion resistance
• No heat dissipation degradation due to rusting
• Approximately 30% less wear on brake pads
• Lasts over 10 years or 100,000 miles
• Shorter stopping distance
• Faster car acceleration
• More precise steering due to un-sprung weight reduction

Incorporates a better steel with dozens of slots to increase the braking friction.

Utilizes greater thermal expansion coefficient of aluminum to create a “force free pad return” reducing pad drag and increasing gas mileage.

Uses connected aluminum rim as the brake heat sink and radiator to lower brake temperatures.

The use of SCA brake rotors on a taxicab will reduce the frequencies of brake rotor and pad replacements, and save significant brake maintenance cost. The lighter rotating weight and the intrinsic pad drag reduction increase the gas mileage remarkably and will save a few hundred dollars in gas expense every year and get better braking performance as well. See reverse side for more information.

Currently Available Rotors for:
• Ford Escape
• Mercury Mariner
• Chevrolet Equinox
• Saturn VUE
• Toyota Camry
• Toyota Prius
• Toyota Corolla
• Toyota Sienna
• Toyota Solara
• Toyota Avalon
• Lexus ES300
• Honda Accord
• Honda Civic
• Honda CR-V
• Honda Element
• Dodge Caravan
• Chrysler Town & Country

More coming soon! Check www.litebrake.com for update information
The installation of four SCA rotors reduces the unsprung rotation weight of a passenger car by 20 to 50 pounds. Combined with the intrinsic pad drag reduction, the SCA rotor enables a passenger car drive 30-50 miles farther with a full tank of gas.

The SCA brake rotor is a solid type and replaces the traditional convective cooling of ventilation surfaces of a vented rotor with conductive cooling to a connected aluminum wheel. The design is based on the three time higher thermal conductivity of aluminum than steel and the SCA rotor is capable of passing heat to the aluminum wheel quickly. The aluminum wheel has a large volume, being an excellent heat sink, and much larger surface area than a vented rotor’s ventilation surface area, being a great radiator. The result is much lower brake temperatures. The lining materials of brake pads are commonly bonded with an organic binder which limits the pad’s maximum working temperature. Higher brake temperatures increase pad wear considerably.

The SCA rotor has the freedom to select the best steel for its cladding surfaces to increase friction coefficient with less wear and still use the commercially available pads. From our experiments, ceramic pads are the best suitable type.

The SCA rotor has passed the FMVSS-135 certification test.

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**Steel Clad Aluminum Brake Rotor**

**Higher Gas Mileage and Less Rotor and Pad Wears to Improve Taxicab Profitability**

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**Pad Wear Comparison**

<table>
<thead>
<tr>
<th>Rubbing Surface</th>
<th>Original Thickness</th>
<th>Final Average Thickness</th>
<th>Wear</th>
<th>Wear Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outboard against cast iron rotor</td>
<td>0.46&quot;</td>
<td>0.06&quot;</td>
<td>0.326&quot;</td>
<td>0</td>
</tr>
<tr>
<td>Inboard against cast iron rotor</td>
<td>0.46&quot;</td>
<td>0.05&quot;</td>
<td>0.366&quot;</td>
<td>0</td>
</tr>
<tr>
<td>Outboard against SCA rotor</td>
<td>0.46&quot;</td>
<td>0.17&quot;</td>
<td>0.246&quot;</td>
<td>21.0%</td>
</tr>
<tr>
<td>Inboard against SCA rotor</td>
<td>0.46&quot;</td>
<td>0.18&quot;</td>
<td>0.236&quot;</td>
<td>20.5%</td>
</tr>
</tbody>
</table>

* After driving 42,000 miles. ** excluding 0.252" thick steel backing plate.

**Braking Friction Coefficient Comparison**

<table>
<thead>
<tr>
<th>Rubbing Surface</th>
<th>Average Friction Coefficient</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cast iron rotor</td>
<td>0.378</td>
<td>0</td>
</tr>
<tr>
<td>SCA rotor with type #7 steel cladding</td>
<td>0.433</td>
<td>14.5%</td>
</tr>
</tbody>
</table>

* Dyno test results with identical pads

**Rotor Wear Comparison**

<table>
<thead>
<tr>
<th>Rotor Type</th>
<th>Original Thickness</th>
<th>Final Thickness</th>
<th>Wear</th>
<th>Wear Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cast iron rotor</td>
<td>1.030&quot;</td>
<td>1.046&quot;</td>
<td>0.016&quot;</td>
<td>0</td>
</tr>
<tr>
<td>SCA</td>
<td>1.044&quot;</td>
<td>1.032&quot;</td>
<td>0.012&quot;</td>
<td>31.3%</td>
</tr>
</tbody>
</table>

* After driving 42,000 miles

**Gas Mileage Tests**

<table>
<thead>
<tr>
<th>Front Brakes</th>
<th>Test MPG</th>
<th>EPA MPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 cast iron rotors</td>
<td>21.0</td>
<td>22</td>
</tr>
<tr>
<td>2 SCA rotors</td>
<td>23.4</td>
<td></td>
</tr>
</tbody>
</table>

* highway gas mileage, driven with full tanks of fuel to empty on a 2008 Ford Escape 4WD, 6 cyl, 3.0 L

**Wear comparison:** the top pad was worn against the SCA rotor and the bottom pad was worn against the cast iron rotor on different sides of a 1998 Ford Windstar van.