

Steel Clad Aluminum Brake Rotor

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

Advantages:

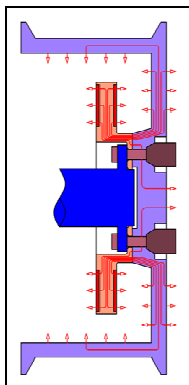
- 30% to 50% weight reduction
- Less brake pad drag
- Increase gas mileage about 3% on average
- Faster heat dissipation and lower braking temperatures
- Greater corrosion resistance
- No heat dissipation degradation due to rusting
- Approximately 30% less wear on brake pads
- Lasts over 10 years or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



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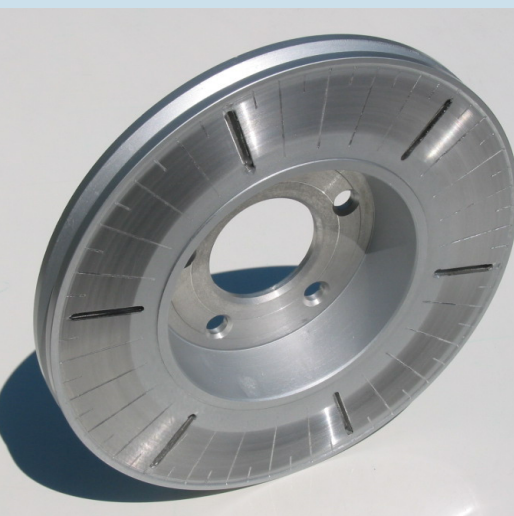
200 Michigan Street, Suite 438
Hancock, MI 49930
USA
www.litebrake.com

Phone: 906-369-0806
E-mail: sales@litebrake.com

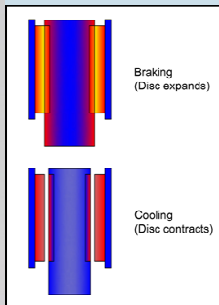


Uses connected aluminum rim as the brake heat sink and radiator to lower brake temperatures.

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.



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



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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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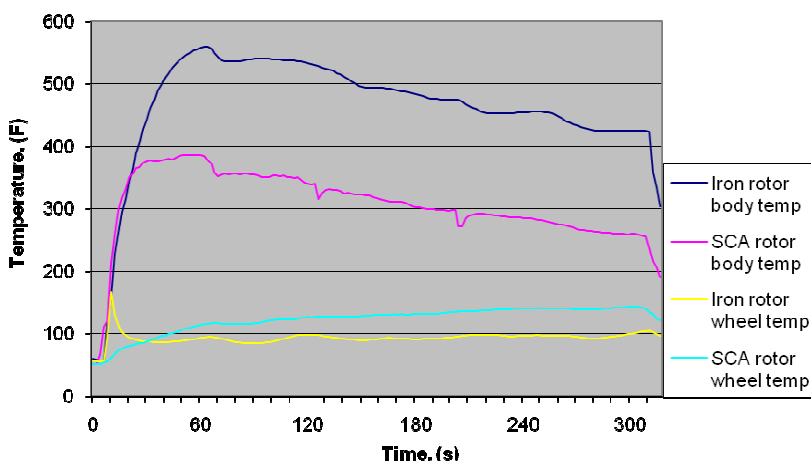
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Rotor and Wheel Temperatures vs Cooling Time

(Second Downhill Braking Test)

Windstar vented Iron rotor: 1.03" thick and Windstar solid SCA rotor: 0.8" thick



Pad Wear Comparison*

Pads	Original Thickness**	Final Average Thickness	Wear	Wear Reduction
Outboard against cast iron rotor	0.416"	0.09"	0.326"	0
Inboard against cast iron rotor	0.416"	0.05"	0.366"	0
Outboard against SCA rotor	0.416"	0.17"	0.246"	24.5%
Inboard against SCA rotor	0.416"	0.18"	0.236"	35.5%

* After driving 42,800 miles; ** excluding 0.252" thick steel backing plate.

Braking Friction Coefficient Comparison*

Rubbing Surface	Average Friction Coefficient	Increase
Cast iron rotor	0.378	0
SCA rotor with type #2 steel cladding	0.433	14.5%

* Dyno test results with identical pads

Rotor Wear Comparison*

Rotor Type	Original Thickness	Final Thickness	Wear	Wear Reduction
Cast iron	1.030"	1.014"	0.016"	0
SCA	1.014"	1.003"	0.011"	31.3%

* After driving 42,800 miles

Gas Mileage Tests*

Front Brakes	Test MPG	EPA MPG
2 cast iron rotors	21.0	22
2 SCA rotors	23.4	

* 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.