

# School Bus Alternators



**Know the facts**

**SETTING THE STANDARD...AGAIN**

# Know the facts...

When it comes to school buses we take it personally, because it's our children that are on that bus, too. Our school bus alternators are built right here in the USA by men and woman that expect their kids to get on, and then to step off of that bus on time. Every day.

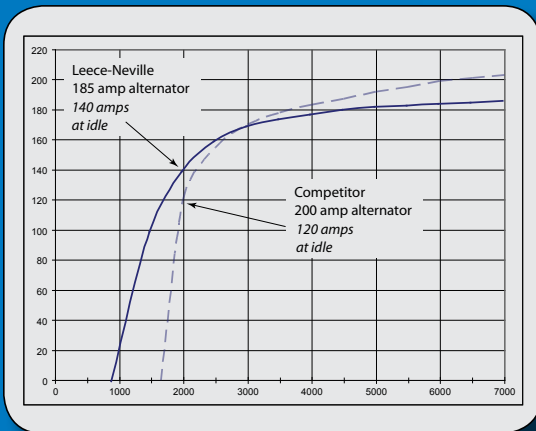
We've been building heavy duty alternators for a long time, in fact it's the only kind we make. We're used to having our products installed on mission-critical applications like military, emergency vehicle, fire truck and school bus. We know that it takes more than a picture of a school bus on the box to make an alternator that can live up to the harsh demands found in these types of applications.

It's precious cargo, and failure is not an option. So let's cut through the hype, and take a look at the cold, hard facts.

## Where is the power?

The alternator on a school bus spends the vast majority of its working life operating at very low speeds. Yet we've seen competitor's output curves that are intentionally compressed, to give the appearance that the curve is 'steeper' than it really is. The fact is most school bus alternators usually operate at about 2,000 rpm and seldom get above 6,000 rpm. The additional data points taking this curve to 20,000 rpm are completely irrelevant (see figure 1).

Figure 2

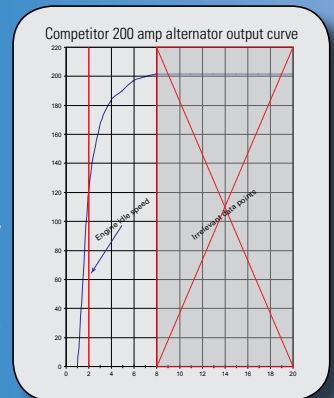


Now let's look at the same curve on a typical graph (see figure 2). The dashed line shows the same competitive curve in the normal alternator rpm for diesel engines.

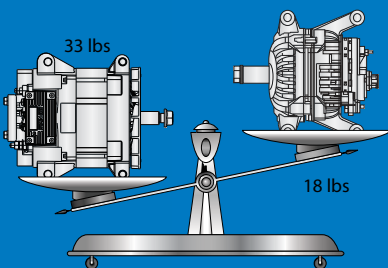
We've also included the output curve for the Leece-Neville 185 amp alternator recommended for school bus operations. Notice that even though this alternator has a lower maximum rating, it **produces 20 amps more at idle!**

This is power where you really need it. The only important rating is the amount of power that the alternator can produce while the engine is idling. Don't be fooled by a 'maximum' rating that your application will never achieve.

Figure 1



## Why is there a 'heavy' in 'Heavy Duty'?



We pack almost 15 pounds of additional copper, steel and aluminum into the same basic footprint as a competitive 200 amp alternator. Our engineers understand that an alternator must have that mass in order to be able to provide the type of power envelope that is required for a product that will be used on school bus applications.

Leece-Neville is well known for the conservative power ratings we use on our products. We do this because we understand the North American heavy duty market, and we know the kind of grueling applications these alternators must be able to survive.

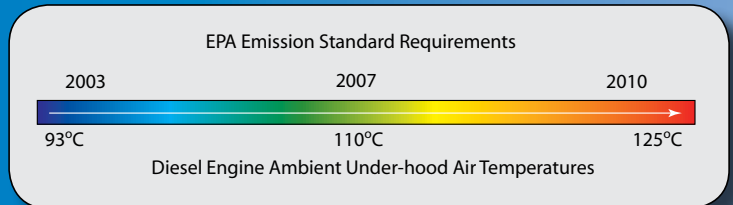
Bosch School Bus	Leece-Neville School Bus
200 amps max rating	185 amps max rating
120 amps @ idle	140 amps @ idle
60% power @ idle	76% power @ idle
	<b>20 additional amps @ idle</b>

... make the right choice

## What is high temperature?

There was a time when a high temperature alternator was one that was rated for operating in temperatures of 93°C. That simply isn't adequate anymore, as new EPA-compliant diesel engines are running hotter than ever before. Modern school buses require alternators that can survive in ambient air temperatures of up to 110°C, yet we see competitors claim that their alternators are 'high temperature' while operating at a much lower 80°C.

All Leece-Neville school bus alternators have been approved for true high temperature applications of 110°C.



## Where is the reliability & support?

When we think about reliability we consider the entire school bus as a complete electrical system. An undersized alternator that limits its output to protect itself from overheating, while allowing the overall health of the electrical system to degrade is of no real long term benefit to the operator. An improperly configured self protecting regulator allows a stressed alternator to partially shut down, thereby insulating itself from failure and allowing the individual claim of a 'reliable' component.

The problem with this scenario is that **it will cost you money!** An undersized alternator sacrifices the reliability of other components within the school bus system (batteries, motors, air conditioning compressors/clutches, engine cooling fan clutches, heater motors, wheel chair lifts, LED lights, etc) for the sake of saving itself. The overall system suffers, and the reliability claimed by the alternator is achieved by sacrificing the reliability of the rest of the system.

Leece-Neville has the most extensive alternator technical services support group, technical publications and training program in North America. We understand the part that our alternators play in the health of the overall system, and supply the support materials and training to help the customer select the correct alternator for their school buses.



We encourage you to visit our website for detailed information on how to maintain a healthy school bus electrical system, or call our technical services group at 866-288-9853.

Training manual for preventative maintenance and diagnostic procedures on heavy duty vehicles:

- [http://www.prestolite.com/pgs\\_training/training\\_0.php](http://www.prestolite.com/pgs_training/training_0.php)

TSB-1025, School Bus Alternator Application Guide

- [http://news.prestolite.com/docs/TSB-1025\\_School\\_Bus\\_App\\_Guide.pdf](http://news.prestolite.com/docs/TSB-1025_School_Bus_App_Guide.pdf)

The latest news about our company and our products

- <http://news.prestolite.com>

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- [http://www.prestolite.com/pgs\\_buy/buy\\_tech.php](http://www.prestolite.com/pgs_buy/buy_tech.php)

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