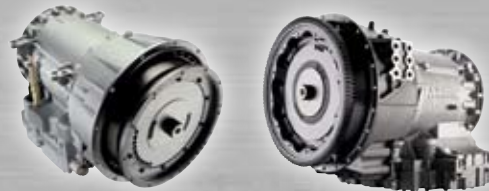


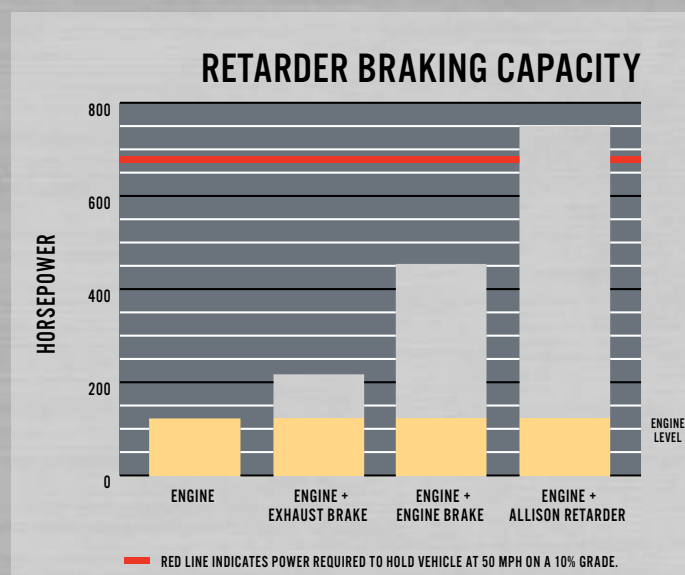
The Allison integral retarder is available on:



3000 and 4000 Vocational Model Series Transmissions

**Brakes at work.** The truck industry is constantly improving its vehicles. Bigger engines, heavier chassis, aerodynamic designs, smaller wheels – all make trucks faster and more efficient. These same advances have made trucks harder to stop. But, brake technology hasn't kept up, so we're using the same brakes to slow bigger vehicles. This creates a problem: frequent (and costly) brake pad replacement. Allison Automatics with hydraulic retarders can help provide a solution.

**Stopping power to spare.** Allison's integral retarder is part of the transmission and cooled by the vehicle's cooling system. It's also ABS compatible. The retarder can handle virtually the entire braking demand in most situations. In the mountains, use it to maintain a safe speed without riding the brakes. In traffic, use it to slow the vehicle from the moment the accelerator is released. Use the service brakes to come to a complete stop – or as a safety backup.



How powerful is an Allison retarder? In a 60,000 lb tandem-axle vehicle with a 300 HP engine, an Allison 4000 HS with a retarder produces about 600 HP braking force at 50 MPH. That's more than enough to control the vehicle's speed, even on a 10% grade.

DRIVING TRANSMISSION TECHNOLOGY™

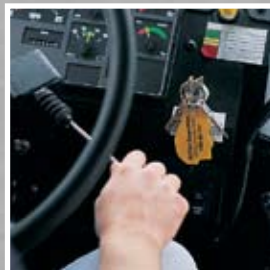


## The Intelligent Choice for Auxiliary Braking

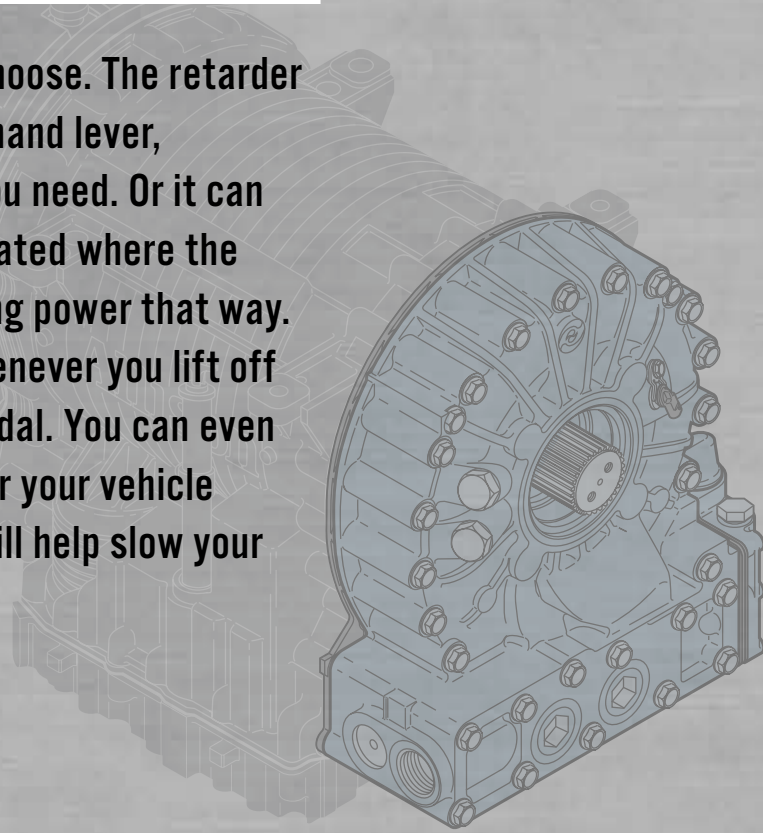


"THE RETARDER IS A SAFETY FEATURE AS FAR AS I'M CONCERNED. WE FIND THAT IN HILLY TERRAIN THE RETARDER WILL GIVE THE DRIVER BETTER CONTROL. THEY DON'T HAVE TO USE THEIR BREAKS AS MUCH."

Enoch Long  
Fleet Manager  
San Diego Unified School District

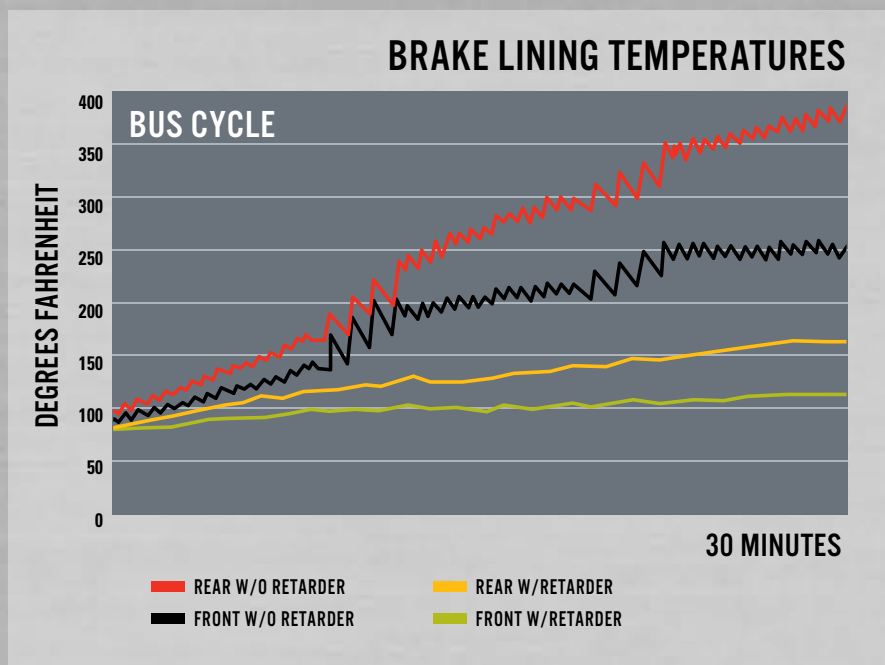


How do you activate the retarder? However you choose. The retarder can be configured with a switch on the dash or a hand lever, allowing you to select how much braking power you need. Or it can be activated by a separate foot pedal (usually located where the clutch pedal would be), so you can regulate braking power that way. It can also be set up to engage automatically, whenever you lift off the accelerator or when you depress the brake pedal. You can even choose the level of retardation that works best for your vehicle and your environment. In any case, the retarder will help slow your vehicle, seamlessly and silently.



## Get Speed Control down to a Science

The hot topic. Brake life, brake fade, brake wear – it's all about heat, the enemy of brake performance and lifespan. Several factors contribute to brake heat, from the obvious – weight, speed, hills – to the less apparent – traffic, vehicle aerodynamics. It's a simple equation: every time the brake pedal goes down, brake temperature goes up. And it stays up, thanks to modern, wind-cheating vehicle bodies. Their lower stance means less resistance, but it also means less airflow over the brakes, depriving them of their only cooling source. The only sure way to keep brakes cool is to stay off them. An Allison retarder can help you do that.



**Braking through resistance.** Allison's hydraulic retarder is basically a vaned flywheel in the transmission housing. The transmission directs oil into the retarder housing to absorb the vehicle's energy through the drive shaft. The absorbed energy is converted to heat and dissipated through the vehicle's cooling system.

Resistance to the flywheel, augmented by stators on the inside of the housing, delivers braking power to the driving wheels. More oil in the housing means stronger braking. And since there's no mechanical friction or wear to shock the drivetrain, you'll have better control of maintenance costs, too.

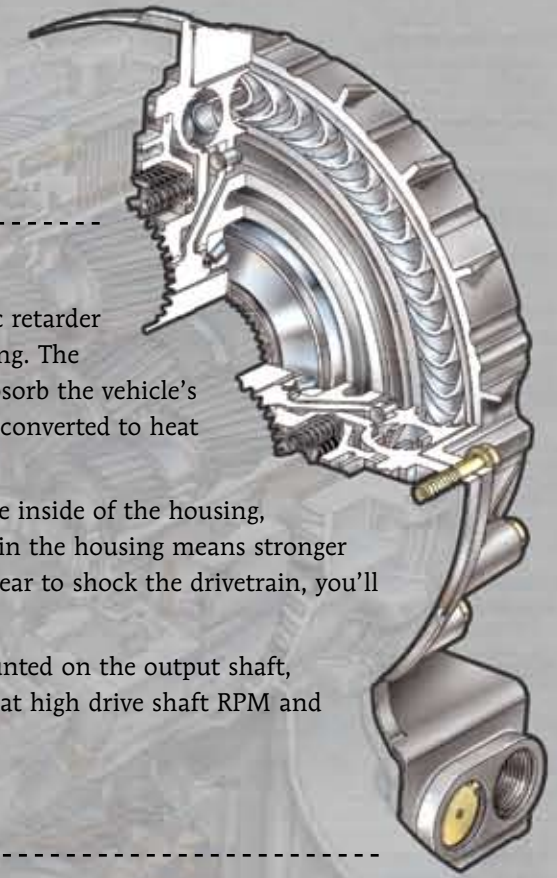
Allison models are available with output retarders mounted on the output shaft, behind the gearing. They generate the greatest braking at high drive shaft RPM and work independent of engine speed or gear ratio.

**The secret of longer life.** Brake pads are a wear item, and you expect to replace them. We just think you should expect to replace them less often. The key is preventing overheating. Tests conducted at the Transportation Research Center in East Liberty, Ohio, proved the Allison retarder's effectiveness in a taxing, level stop-and-go duty cycle. Without the retarder, front brake temperature reached 266°F, while the rear linings topped out at 390.2°F. With the retarder applied, brake lining temperatures on the front brakes only reached 120.2°F, and 172.4°F on the rear brake pads – less than half the increase measured without the retarder.

**Automatically better.** The most advanced technology makes Allison transmissions the automatic choice for efficiency, productivity and longevity. Over the years we've received over 675 patents for our products. As a result, we build the transmissions that set the standard for performance in medium- and heavy-duty vehicles.

The same ingenuity and durability have gone into Allison's integral hydraulic retarder. We're not saying our retarder can replace the service brakes. But it can eliminate a great deal of brake use, extend brake life, make costly brake replacements less frequent, and help make vehicles safer.

For more information about Allison Automatics with retarders, talk to your truck dealer or contact your Authorized Allison Distributor. For the representative close to you, visit [www.allisontransmission.com](http://www.allisontransmission.com).



"NOISE POLLUTION IS A MAJOR CONCERN SINCE MANY HIGHWAYS BORDER RESIDENTIAL AREAS. ENGINE AND EXHAUST BRAKING HAVE BEEN ILLEGAL IN OUR URBAN ENVIRONMENT FOR QUITE SOME TIME. THANKS FOR SAVING MY BRAKES, QUIETLY."

Louie Bieniek  
General Manager  
R&M Trucking