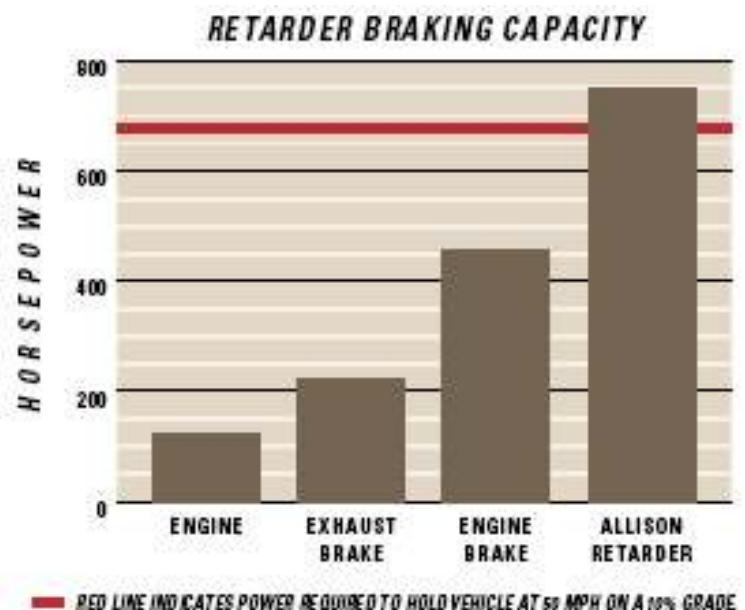


Transmission Retarder Operation -- How Does It Work?

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.



MCI Service Information

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Allison™ Transmission Retarder Operation

This tip is being written as an informational tool for the correct operation of Allison WTEC transmissions equipped with hydraulic retarders. When used properly, this feature assists in the deceleration of the coach which also reduces the wear of brakes/brake shoes.

The transmission retarder is enabled by a switch on the driver's console. When enabled, the transmission retarder is activated by two different methods; either with the application of the service brake pedal or by releasing the throttle pedal. A joystick on the driver's console selects the amount of retardation. Typically, retardation increases as the lever is moved to the rearmost position, but some coaches have been set up with maximum retardation in the foremost position, so refer to the decal next to the joystick for the specific retarder operation.

Inside the air brake valve are two switches that activate the retarder as the brake pedal is applied. Retardation increases with brake pedal travel.

For smooth operation and minimal heat generation, the suggested method of operation is initial application of the retarder in the lowest joystick position, and slowly moving the joystick towards the maximum retardation position as increased deceleration is required.

An Allison transmission retarder provides secondary vehicle braking via the transmission. . Transmission retarders are usually more effective than engine brakes at lower RPMs; at higher RPMs they tend to even out. Transmission retarders generate a lot of heat and their maximum braking horsepower is usually limited by the truck's cooling system. Transmission retarders are priced at a premium to engine brakes so they tend to be very costly.