Retarder Systems

Increased safety - increased service brake life

Safe and reliable braking

The brakes of heavy commercial vehicles have to endure severe duties. Not only in long or steep descents and on winding secondary roads, but also in dense traffic. In these conditions additional retarder systems are essential to secure safe and reliable braking and to reduce wear of the brake pads.

For these purposes the retarder functions are fully integrated in the service brake operation. Two different retarder systems are available:

- the primary retarder, MX Engine Brake with exhaust brake, is integrated in the engine and most effective at higher engine speeds
- the secondary retarder, ZF Intarder, is integrated in the gearbox and very effective at vehicle speeds over 50 km/h

Torque control

In the torque control mode three different braking torque levels may be selected with the right-hand steering column handle.

MX Engine Brake

The MX Engine Brake is a hydraulically operated compression brake combined with a butterfly valve in the exhaust system. The brake power is independent of the engine temperature, and amounts to max. 340 kW with engine MX-11 and max. 360 kW with engine MX-13.

ZF Intarder

The ZF Intarder is a hydrodynamic retarder. The maximum brake power is 500 kW, if not reduced due to high engine temperatures.

Recommended retarder choice

There is no strict formula for the preferred type of retarder. Apart from performance, there are factors like operating conditions, route characteristics, added weight, control comfort, fuel efficiency and purchase price that play a role. Some general guidelines can be based on the specific qualities of the two retarder systems.

Retarder Systems

Increased safety - increased service brake life

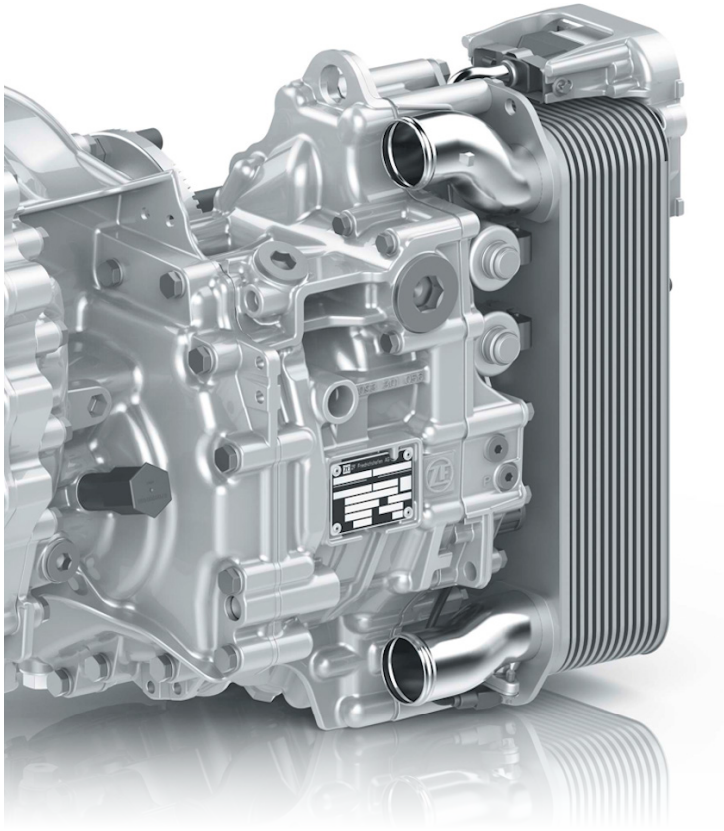
The MX Engine Brake is the best choice for most applications. It performs independent of vehicle speed and engine temperature, adds only 15 kg of weight and has no impact on the fuel consumption.

Heavy haulage

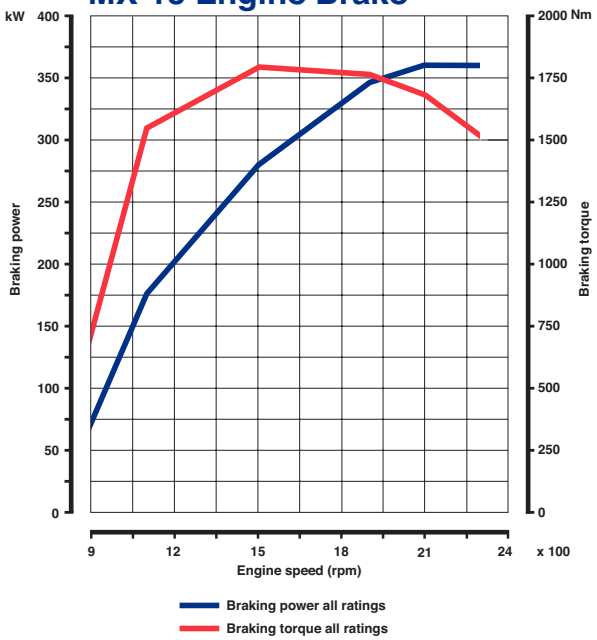
A combination of MX Engine Brake and ZF Intarder is recommended for heavy haulage applications. The engine brake is essential for low speed descents, while the combination provides continuous high brake performance in the higher speed range.

The ZF Intarder performs chiefly at higher vehicle speeds. Therefore its higher price and weight (80 kg) are worth considering for applications with long, high-speed descents.

Endurance braking may be impeded due to a high engine temperature. The fuel consumption is slightly affected by viscuous friction in the oil circuit.



MX-13 Engine Brake



ZF Intarder - TraXon