

## Forklift Differentials

Differentials for Forklifts - A differential is a mechanical tool that is capable of transmitting rotation and torque via three shafts, frequently but not always utilizing gears. It normally operates in two ways; in vehicles, it receives one input and provides two outputs. The other way a differential functions is to combine two inputs to be able to generate an output that is the average, difference or sum of the inputs. In wheeled vehicles, the differential allows each of the tires to be able to rotate at different speeds while supplying equal torque to each of them.

The differential is designed to drive a set of wheels with equal torque while enabling them to rotate at various speeds. While driving around corners, a car's wheels rotate at various speeds. Several vehicles like for instance karts operate without using a differential and use an axle in its place. If these vehicles are turning corners, both driving wheels are forced to rotate at the same speed, normally on a common axle which is powered by a simple chain-drive mechanism. The inner wheel must travel a shorter distance compared to the outer wheel while cornering. Without using a differential, the consequence is the outer wheel dragging and or the inner wheel spinning. This puts strain on drive train, resulting in unpredictable handling, difficult driving and damage to the roads and tires.

The amount of traction needed to be able to move any car will depend upon the load at that moment. Other contributing elements include drag, momentum and gradient of the road. Amongst the less desirable side effects of a traditional differential is that it could limit grip under less than perfect conditions.

The end result of torque being provided to each wheel comes from the transmission, drive axles and engine applying force against the resistance of that traction on a wheel. Commonly, the drive train would supply as much torque as needed unless the load is exceptionally high. The limiting factor is usually the traction under every wheel. Traction can be interpreted as the amount of torque which could be generated between the road surface and the tire, before the wheel begins to slip. The car will be propelled in the planned direction if the torque utilized to the drive wheels does not go beyond the limit of traction. If the torque used to each wheel does go over the traction limit then the wheels will spin continuously.