

## Differentials for Forklifts

Forklift Differential - A mechanical device which can transmit rotation and torque through three shafts is known as a differential. Occasionally but not always the differential would use gears and will operate in two ways: in automobiles, it receives one input and provides two outputs. The other way a differential works is to combine two inputs so as to generate an output that is the sum, average or difference of the inputs. In wheeled vehicles, the differential allows each of the tires to rotate at different speeds while supplying equal torque to each of them.

The differential is designed to drive a set of wheels with equivalent torque while allowing them to rotate at different speeds. While driving round corners, an automobile's wheels rotate at various speeds. Several vehicles like for example karts function without a differential and use an axle as an alternative. If these vehicles are turning corners, both driving wheels are forced to spin at the same speed, typically on a common axle that is powered by a simple chain-drive apparatus. The inner wheel must travel a shorter distance than the outer wheel while cornering. Without utilizing a differential, the consequence is the outer wheel dragging and or the inner wheel spinning. This puts strain on drive train, causing unpredictable handling, difficult driving and deterioration to the tires and the roads.

The amount of traction required in order to move whichever car will depend upon the load at that moment. Other contributing elements include drag, momentum and gradient of the road. Among the less desirable side effects of a traditional differential is that it could limit traction under less than perfect situation.

The end result of torque being provided to each wheel comes from the drive axles, transmission and engine applying force against the resistance of that traction on a wheel. Usually, the drive train will provide as much torque as required unless the load is exceptionally high. The limiting element is normally the traction under each and every wheel. Traction could be defined as the amount of torque which can be generated between the road surface and the tire, before the wheel starts to slip. The car will be propelled in the intended direction if the torque applied to the drive wheels does not go over the limit of traction. If the torque applied to each and every wheel does exceed the traction limit then the wheels would spin constantly.