

## Forklift Differential

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

The differential is intended to drive a pair of wheels with equivalent torque while enabling them to rotate at various speeds. While driving round corners, an automobile's wheels rotate at different speeds. Several vehicles like karts work without using a differential and make use of an axle as a substitute. When these vehicles are turning corners, both driving wheels are forced to rotate at the same speed, usually on a common axle that is powered by a simple chain-drive mechanism. The inner wheel has to travel a shorter distance compared to the outer wheel while cornering. Without a differential, the result 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 tires and the roads.

The amount of traction considered necessary to be able to move the car at any given moment is dependent on the load at that moment. How much friction or drag there is, the vehicle's momentum, the gradient of the road and how heavy the car is are all contributing elements. Among the less desirable side effects of a conventional differential is that it could reduce traction under less than perfect conditions.

The torque supplied to each wheel is a product of the transmission, drive axles and engine applying a twisting force against the resistance of the traction at that specific wheel. The drive train can normally supply as much torque as required except if the load is very high. The limiting element is usually the traction under every wheel. Traction could be interpreted as the amount of torque which could be generated between the road exterior and the tire, before the wheel starts to slip. The car will be propelled in the planned direction if the torque utilized to the drive wheels does not go over the limit of traction. If the torque applied to each and every wheel does go beyond the traction limit then the wheels would spin continuously.