

## Forklift Differentials

Forklift Differential - A differential is a mechanical machine which can transmit torque and rotation via three shafts, often but not at all times utilizing gears. It normally works in two ways; in automobiles, it receives one input and provides two outputs. The other way a differential works is to combine two inputs to produce an output that is the difference, sum or average of the inputs. In wheeled vehicles, the differential enables each of the tires to rotate at different speeds while providing equal torque to each of them.

The differential is intended to drive a set of wheels with equal torque while enabling them to rotate at various speeds. While driving around corners, an automobile's wheels rotate at different speeds. Several vehicles such as karts operate without using a differential and make use of an axle as a substitute. If these vehicles are turning corners, both driving wheels are forced to spin at the same speed, normally on a common axle that is driven by a simple chain-drive mechanism. The inner wheel must travel a shorter distance than the outer wheel when cornering. Without utilizing 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 deterioration to the roads and tires.

The amount of traction required to be able to move whatever vehicle would depend upon the load at that moment. Other contributing elements include momentum, gradient of the road and drag. Amongst the less desirable side effects of a conventional differential is that it can limit grip under less than perfect conditions.

The torque provided to each and every wheel is a product of the transmission, drive axles and engine applying a twisting force against the resistance of the traction at that particular wheel. The drive train can usually provide as much torque as necessary unless the load is extremely high. The limiting element is usually the traction under every wheel. Traction could be defined as the amount of torque that could be produced between the road exterior and the tire, before the wheel begins to slip. The car will be propelled in the intended direction if the torque utilized to the drive wheels does not go beyond the threshold of traction. If the torque applied to each and every wheel does go over the traction limit then the wheels will spin constantly.