## Forklift Differential

Forklift Differential - A mechanical device capable of transmitting torque and rotation through three shafts is referred to as a differential. Occasionally but not all the time the differential will use gears and will work in two ways: in cars, it provides two outputs and receives one input. The other way a differential works is to combine two inputs in order to create an output that is the sum, average or difference 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 pair of wheels with equal torque while enabling them to rotate at different speeds. While driving around corners, a car's wheels rotate at different speeds. Certain vehicles like for example karts work without utilizing a differential and utilize an axle as an alternative. Whenever these vehicles are turning corners, both driving wheels are forced to spin at the same speed, typically on a common axle which is driven by a simple chain-drive apparatus. The inner wheel must travel a shorter distance than 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 roads and tires.

The amount of traction necessary in order to move the automobile at whatever given moment depends 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 factors. One of the less desirable side effects of a conventional differential is that it could reduce traction under less than perfect circumstances.

The torque provided 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 particular wheel. The drive train can normally provide as much torque as required unless the load is extremely high. The limiting element is usually the traction under every wheel. Traction can be interpreted as the amount of torque which can be generated between the road exterior and the tire, before the wheel begins to slip. The automobile would be propelled in the intended direction if the torque applied 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 constantly.