Forklift Pinion

Pinion for Forklifts - The main axis, referred to as the king pin, is seen in the steering device of a lift truck. The very first design was a steel pin which the movable steerable wheel was connected to the suspension. Able to freely rotate on a single axis, it restricted the degrees of freedom of motion of the remainder of the front suspension. During the 1950s, when its bearings were substituted by ball joints, more in depth suspension designs became obtainable to designers. King pin suspensions are nevertheless used on various heavy trucks because they could lift a lot heavier cargo.

Newer designs no longer limit this device to moving like a pin and these days, the term might not be used for a real pin but for the axis in the vicinity of which the steered wheels turn.

The KPI or kingpin inclination can likewise be called the SAI or steering axis inclination. These terms define the kingpin when it is positioned at an angle relative to the true vertical line as looked at from the back or front of the forklift. This has a major effect on the steering, making it likely to return to the straight ahead or center position. The centre position is where the wheel is at its uppermost point relative to the suspended body of the forklift. The motor vehicles weight has the tendency to turn the king pin to this position.

The kingpin inclination also sets the scrub radius of the steered wheel, which is the offset between projected axis of the tire's communication point with the road surface and the steering down through the king pin. If these points coincide, the scrub radius is defined as zero. Even though a zero scrub radius is possible without an inclined king pin, it needs a deeply dished wheel so as to maintain that the king pin is at the centerline of the wheel. It is more practical to slant the king pin and utilize a less dished wheel. This also offers the self-centering effect.