Forklift Pinion

Forklift Pinion - The king pin, normally made out of metal, is the major axis in the steering device of a motor vehicle. The initial design was actually a steel pin on which the movable steerable wheel was mounted to the suspension. Able to freely revolve on a single axis, it restricted the degrees of freedom of motion of the rest of the front suspension. In the nineteen fifties, when its bearings were substituted by ball joints, more detailed suspension designs became available to designers. King pin suspensions are nevertheless used on various heavy trucks because they have the advantage of being capable of carrying a lot heavier load.

New designs no longer restrict this particular machine to moving like a pin and these days, the term may not be used for a real pin but for the axis in the vicinity of which the steered wheels pivot.

The kingpin inclination or also called KPI is also called the steering axis inclination or likewise known as SAI. This is the definition of having the kingpin put at an angle relative to the true vertical line on most modern designs, as looked at from the front or back of the lift truck. This has a major effect on the steering, making it likely to return to the straight ahead or center position. The centre arrangement is where the wheel is at its peak point relative to the suspended body of the forklift. The vehicles' weight tends to turn the king pin to this position.

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