Forklift Pinion

Forklift Pinion - The main pivot, referred to as the king pin, is found in the steering machinery of a forklift. The initial design was a steel pin which the movable steerable wheel was connected to the suspension. Able to freely turn on a single axis, it limited the degrees of freedom of motion of the rest of the front suspension. In the nineteen fifties, the time its bearings were substituted by ball joints, more in depth suspension designs became available to designers. King pin suspensions are nevertheless featured on some heavy trucks as they could carry a lot heavier load.

The newer designs of the king pin no longer limit to moving similar to a pin. Nowadays, the term might not even refer to a real pin but the axis where the steered wheels revolve.

The KPI or kingpin inclination can likewise be known as the steering axis inclination or SAI. These terms describe the kingpin if it is set at an angle relative to the true vertical line as viewed from the front or back of the lift truck. This has a vital effect on the steering, making it tend to go back to the centre or straight ahead position. The centre location is where the wheel is at its peak position 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 contact point with the road surface and the steering down through the king pin. If these items 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 much more practical to tilt the king pin and use a less dished wheel. This also supplies the self-centering effect.