

Pinion for Forklift

Forklift Pinion - The main axis, referred to as the king pin, is seen in the steering mechanism of a forklift. The very first design was a steel pin which the movable steerable wheel was attached to the suspension. Able to freely rotate on a single axis, it limited the degrees of freedom of movement of the remainder of the front suspension. In the 1950s, the time its bearings were replaced by ball joints, more comprehensive suspension designs became accessible to designers. King pin suspensions are nonetheless used on various heavy trucks because they could lift a lot heavier weights.

The new designs of the king pin no longer restrict to moving like a pin. Today, the term may not even refer to a real pin but the axis wherein the steered wheels revolve.

The KPI or otherwise known as kingpin inclination may also be called the SAI or steering axis inclination. These terms describe the kingpin if it is positioned at an angle relative to the true vertical line as viewed from the front or back of the forklift. This has a vital effect on the steering, making it tend to return to the centre or straight ahead position. The centre location is where the wheel is at its uppermost position relative to the suspended body of the lift truck. The motor vehicles weight has the tendency to turn the king pin to this position.

Another impact of the kingpin inclination is to arrange the scrub radius of the steered wheel. The scrub radius is the offset between the projected axis of the steering down through the kingpin and the tire's contact point with the road surface. If these points coincide, the scrub radius is defined as zero. Though 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 much more sensible to slant the king pin and use a less dished wheel. This also offers the self-centering effect.