

Forklift Pinions

Forklift Pinions - The king pin, normally constructed from metal, is the major axis in the steering mechanism of a vehicle. The initial design was actually a steel pin wherein the movable steerable wheel was mounted to the suspension. As it can freely rotate on a single axis, it limited the degrees of freedom of movement of the rest of the front suspension. In the 1950s, the time its bearings were replaced by ball joints, more detailed suspension designs became available to designers. King pin suspensions are nonetheless used on some heavy trucks in view of the fact that they can lift much heavier load.

The new designs of the king pin no longer restrict to moving similar to a pin. Today, the term might not even refer to an actual pin but the axis in which the steered wheels revolve.

The KPI or otherwise known as kingpin inclination could also be known as 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 major impact on the steering, making it tend to go back to the straight ahead or center position. The centre location is where the wheel is at its highest point relative to the suspended body of the lift truck. The vehicles' weight tends to turn the king pin to this position.

Another impact of the kingpin inclination is to fix the scrub radius of the steered wheel. The scrub radius is the offset among the projected axis of the steering down through the kingpin and the tire's contact point with the road surface. If these items coincide, the scrub radius is defined as zero. Although a zero scrub radius is likely 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 sensible to slant the king pin and use a less dished wheel. This also supplies the self-centering effect.