

Pinion for Forklift

Forklift Pinion - The main axis, known as the king pin, is found in the steering mechanism of a forklift. The first design was a steel pin 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 movement of the remainder 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 nevertheless featured on several heavy trucks for the reason that they have the advantage of being capable of lifting much heavier weights.

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

The kingpin inclination or also called KPI is also known as the steering axis inclination or SAI. This is the definition of having the kingpin set at an angle relative to the true vertical line on the majority of 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 go back to the centre or straight ahead position. The centre location is where the wheel is at its uppermost point relative to the suspended body of the forklift. The 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 items 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 much more practical to slant the king pin and make use of a less dished wheel. This likewise provides the self-centering effect.