

Pinion for Forklift

Forklift Pinion - The king pin, usually made out of metal, is the major axis in the steering mechanism of a vehicle. The first design was actually a steel pin wherein the movable steerable wheel was connected to the suspension. Able to freely revolve on a single axis, it limited the levels 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 available to designers. King pin suspensions are nevertheless featured on various heavy trucks as they have the advantage of being capable of lifting a lot heavier weights.

The newer designs of the king pin no longer restrict to moving similar to a pin. Today, the term may not even refer to a real pin but the axis in which the steered wheels turn.

The KPI or otherwise known as kingpin inclination may also be referred to as the SAI or steering axis inclination. These terms describe the kingpin when it is placed at an angle relative to the true vertical line as looked at from the back or front of the lift truck. This has a vital effect on the steering, making it likely to return to the centre or straight ahead position. The centre arrangement is where the wheel is at its uppermost point relative to the suspended body of the lift truck. The motor 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 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 if 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 a lot more sensible to slant the king pin and make use of a less dished wheel. This also provides the self-centering effect.