Forklift Pinions

Pinion for Forklifts - The main pivot, known as the king pin, is seen in the steering machinery of a forklift. The first design was a steel pin wherein the movable steerable wheel was connected to the suspension. Able to freely rotate on a single axis, it restricted 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 comprehensive suspension designs became available to designers. King pin suspensions are still utilized on some heavy trucks as they can carry a lot heavier cargo.

The newer designs of the king pin no longer limit to moving similar to a pin. Nowadays, the term may not even refer to an actual pin but the axis wherein the steered wheels revolve.

The kingpin inclination or KPI is likewise called the steering axis inclination or also known as SAI. This is the explanation of having the kingpin placed at an angle relative to the true vertical line on nearly all new designs, as looked at from the front or back of the lift truck. This has a major impact 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 highest 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.

The kingpin inclination likewise sets the scrub radius of the steered wheel, which is the offset between projected axis of the tire's connection 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 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 more sensible to incline the king pin and make use of a less dished wheel. This also supplies the self-centering effect.