

Pinions for Forklift

Forklift Pinion - The king pin, usually constructed from metal, is the main axis in the steering mechanism of a vehicle. The original design was really a steel pin on which the movable steerable wheel was attached to the suspension. Able to freely rotate on a single axis, it restricted the degrees of freedom of motion of the rest of the front suspension. During the 1950s, the time its bearings were replaced by ball joints, more detailed suspension designs became obtainable to designers. King pin suspensions are still used on several heavy trucks since they could carry a lot heavier weights.

The new designs of the king pin no longer restrict to moving similar to a pin. These days, the term may not even refer to an actual pin but the axis where the steered wheels turn.

The KPI or kingpin inclination could also be called the steering axis inclination or SAI. These terms describe the kingpin if it is positioned at an angle relative to the true vertical line as looked at from the back or front 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 highest position relative to the suspended body of the lift truck. The motor vehicles weight tends to turn the king pin to this position.

Another effect of the kingpin inclination is to set the scrub radius of the steered wheel. The scrub radius is the offset amid the tire's contact point with the road surface and the projected axis of the steering down through the king pin. If these points coincide, the scrub radius is defined as zero. Even though a zero scrub radius is likely 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 a lot more practical to tilt the king pin and make use of a less dished wheel. This likewise offers the self-centering effect.