

Forklift Pinions

Pinion for Forklift - The main axis, known as the king pin, is found in the steering machine of a forklift. The very first design was a steel pin which the movable steerable wheel was attached to the suspension. Able to freely revolve on a single axis, it limited the levels of freedom of movement of the rest of the front suspension. In the nineteen fifties, the time its bearings were replaced by ball joints, more detailed suspension designs became available to designers. King pin suspensions are still used on various heavy trucks because they have the advantage of being capable of carrying much heavier weights.

New designs no longer restrict this apparatus to moving like a pin and now, the term may not be used for an actual pin but for the axis in the vicinity of which the steered wheels pivot.

The KPI or kingpin inclination may likewise be called the SAI or steering axis inclination. These terms define the kingpin when it is placed at an angle relative to the true vertical line as viewed from the back or front of the lift truck. This has a vital effect on the steering, making it tend to return to the centre or straight ahead position. The centre location is where the wheel is at its uppermost position relative to the suspended body of the forklift. The vehicles' weight has the tendency 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 between the projected axis of the steering down through the kingpin and the tire's contact point with the road surface. If these points coincide, the scrub radius is defined as zero. Even if 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 use a less dished wheel. This also offers the self-centering effect.