

Pinion for Forklifts

Forklift Pinions - The main pivot, known as the king pin, is seen 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 restricted the degrees of freedom of movement of the remainder of the front suspension. During the 1950s, when its bearings were substituted by ball joints, more comprehensive suspension designs became available to designers. King pin suspensions are nonetheless featured on various heavy trucks in view of the fact that they can carry much 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 wherein the steered wheels turn.

The kingpin inclination or KPI is also referred to as the steering axis inclination or SAI. This is the description of having the kingpin set at an angle relative to the true vertical line on the majority of recent designs, as looked at from the back or front 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 peak position relative to the suspended body of the lift truck. The 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 among 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 possible 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 slant the king pin and utilize a less dished wheel. This also provides the self-centering effect.