okgach

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- 1) The steering knuckle is designed with 4x safety margin for 4130 steel at 1,2 G cornering and 1,0 G braking load cases
- 2) The tie rod position is redesigned for increased steering angle
- 3) Brake caliper mounting tabs are 8mm steel Q420D plate
- 4) Other sheet metal is 3mm steel Q420D
- Wheel bearing housing is machined from solid bar of 4130 Steel to transition fit for OEM wheel bearing
- 6) Top kingpin shaft is machined from solid 4130 steel bar and features stress relief grooves for increased fatigue resistance
- 7) Bottom ball joint is machined from solid 4130 steel bar
- Welding assembly is welded together in a jig using GTAW welding method and meet EN ISO 13920-B for tolerances and EN ISO 5817-C for quality.

Design process involves calculating loads at different suspension mounting points during cornering and braking scenarios and applying them to design models using Finite Element Analyses and the topology is optimised to meet minimum 4x safety margin for material yield strength.



Figure 1. GKTech Skyline R32-34 front steering knuckle