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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) Spindle is machined from solid bar of 4130 Steel to transition fit for OEM wheel hub
- 3) The tie rod position is adjustable and all related components are from 4130 steel
- 4) Brake caliper mounting tabs are single 8mm plate for rigidity and low weight
- 5) Other sheet metal is 3mm 4130 steel
- 6) S13 and S14 specific versions for precise fitment without play
- 7) Strut mounting area is reinforced to endure wheel impacts
- 8) Bottom ball joint is machined from solid 4130 steel bar
- 9) 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. Each different version has been designed for specific chassis and use as ProDrift, V2 and Grip front steering knuckle are designed and manufactured using the same materials and manufacturing methods.



Figure 1. GKTech ProDrift S13-S14-S15 front steering knuckle