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TRIPODE JOINT KEY

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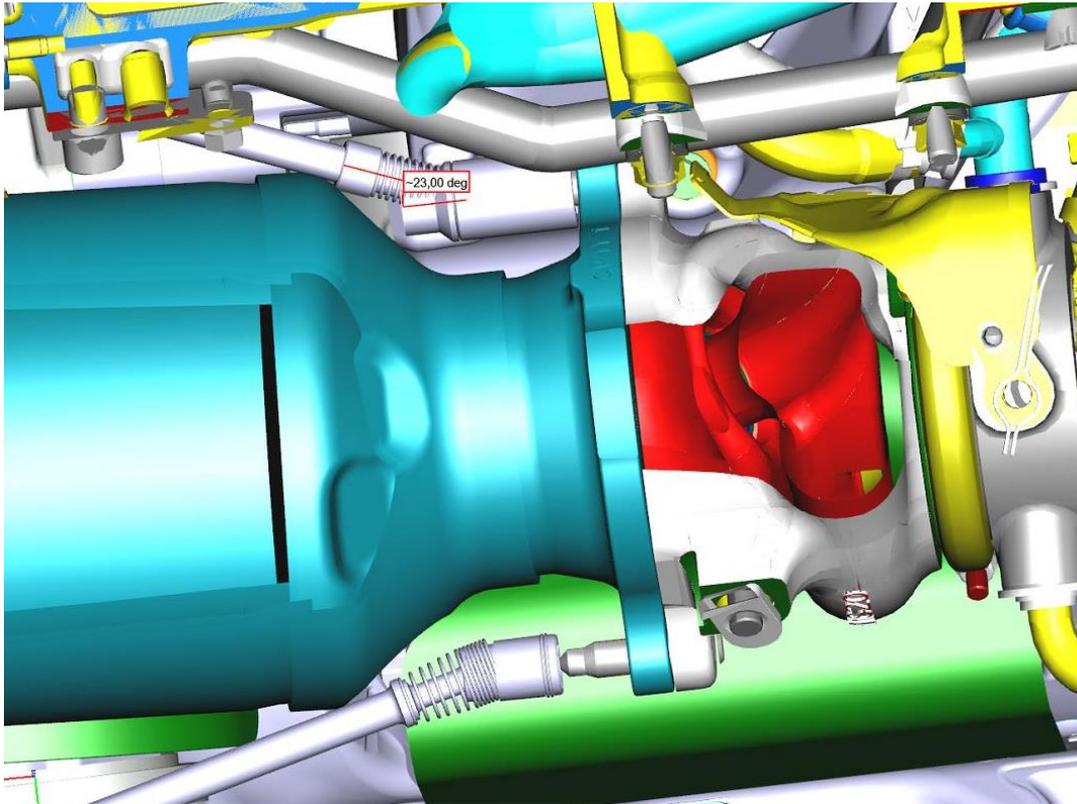
TRIPODE JOINT KEY

Technical task:

Bolting of screws or nuts that are difficult to access by means of a tool with a bending angle.

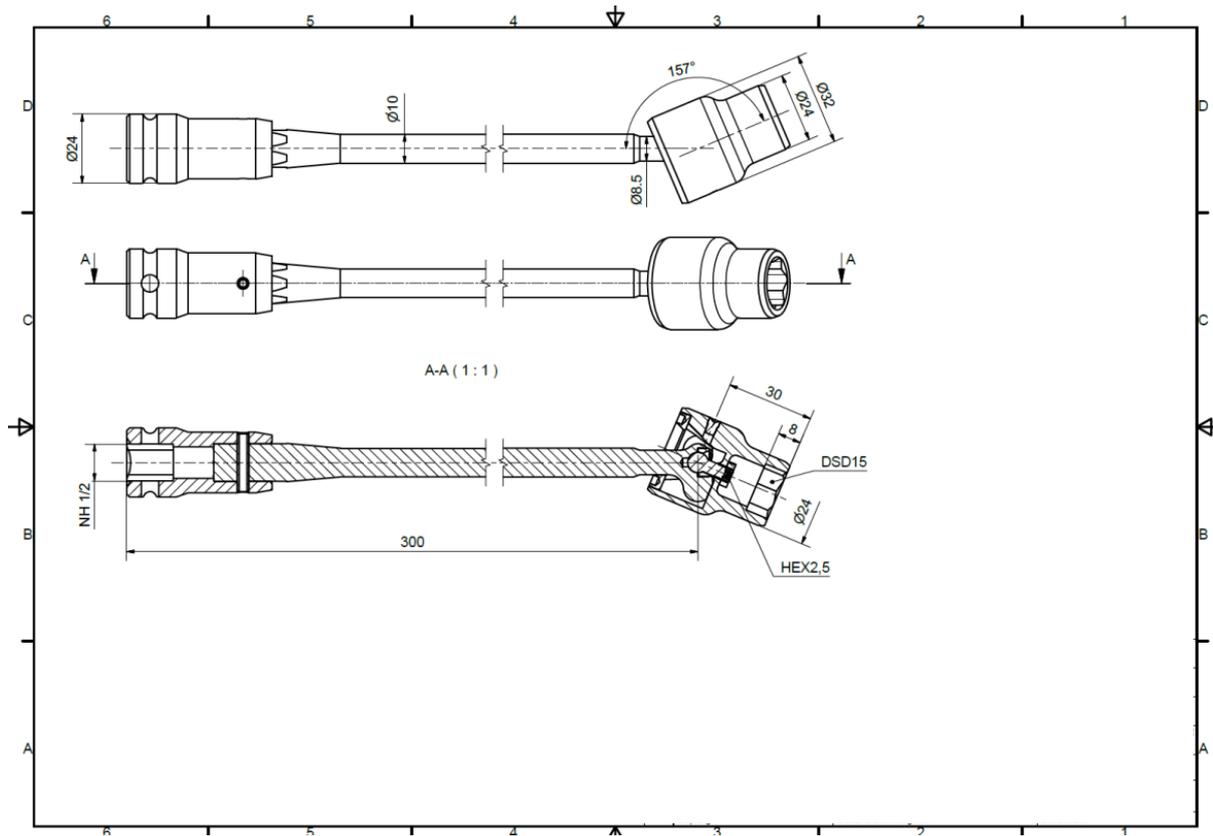
Initial situation:

So-called ball joint wrenches are used wherever there is no direct access to a screwing point and the tool can only be brought up to the screw or nut at a certain bending angle. Among other things, this is common in vehicle assembly. Due to the joint, which can be mathematically reduced to a universal joint, an ever-increasing gimbal error (non-uniformity error) occurs under an increasing deflection angle, which prevents a process-safe screw connection according to the specifications AD18 (Md tolerance of +/- 15 %). Alternatively, a tripod joint wrench already exists which is manufactured for agricultural machinery manufacturers for very high torques, but also in a very large design.



Solution:

One solution is to reduce or eliminate to a minimum the gimbal error that occurs in the ball joint wrench previously used, while maintaining accessibility and transmitting a torque corresponding to the thread size. This is possible by a joint, designed as a tripod joint, which exhibits the irregularity movement mentioned in the first paragraph only in a greatly attenuated form. This tool must be scaled so that it fits into the given installation space. For example, a screwdriving tool equipped with such a tripod joint instead of a ball joint has the advantage that a significantly smaller tolerance is used when the desired tightening torque is reached at the same deflection angle.



Advantages:

- Accessibility of the screws by bending angle
- Increased process reliability when tightening screws or nuts that are difficult to access by reducing the tolerance values when a desired tightening torque is reached.
- Minimized or eliminated gimbal error (non-uniformity error)
- Suitable for use in vehicle assembly