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DAMPING ELEMENT FOR DOWNHOLDER

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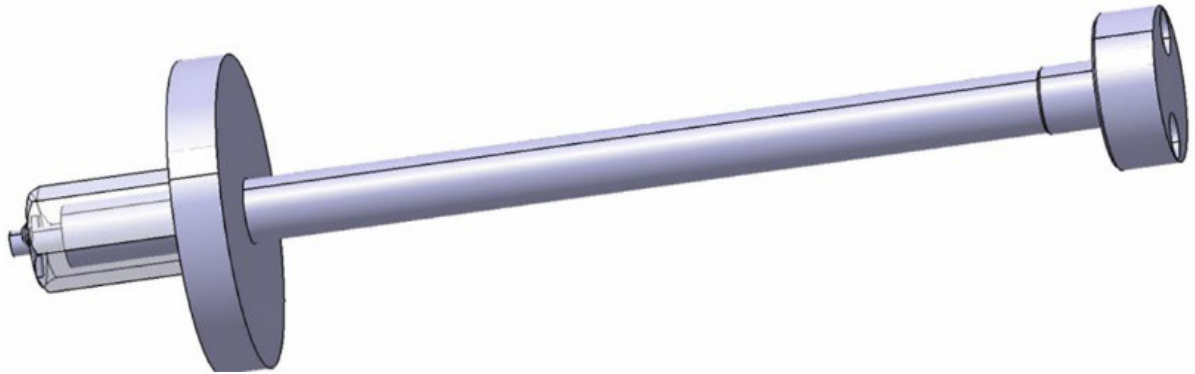
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DAMPING ELEMENT FOR DOWNHOLDER

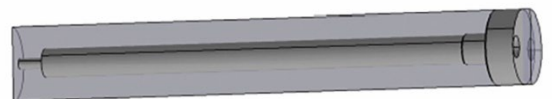
State of the art damping element for blank holder of a press tool:

Standard

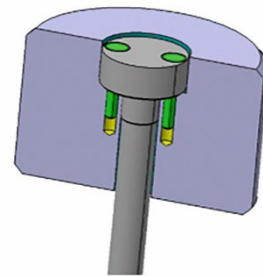


Disadvantage:

The one-piece bar requires a semi-finished product > Ø 50 mm.
The machining rate is more than 80%



Due to the one-piece character (rod and "head"), the element must be secured against rotation with two screws.
(loosening torque of the lower nut)



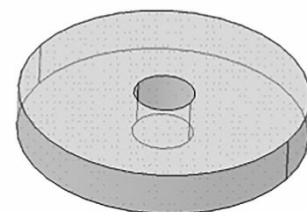
The disc is manufactured as a turned part (insert part)

Three steps are necessary for this:

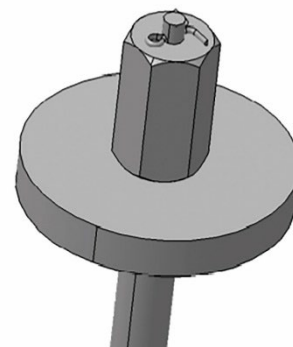
1. sawing
2. machining of the first side
3. machining of the second side

Continuous automation is not possible.

The saw cut alone takes several minutes.

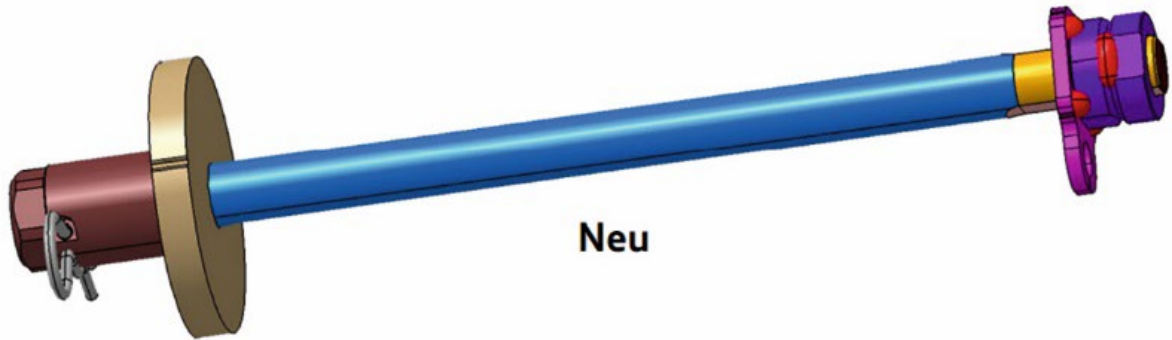


A very small cotter pin is used to prevent loss. Time-consuming assembly and risk of injury.



Solution:

New damping element for hold-downs



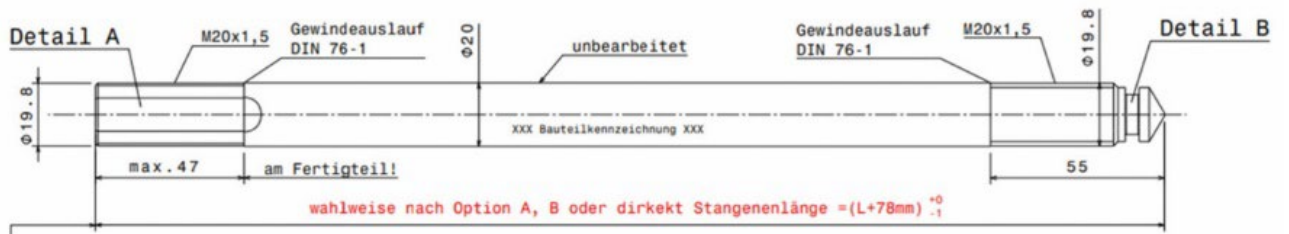
**Drehteil
Zugstange**
(Pos 1)

42CrMoS4 (1.7227) kaltgezogen/geschält vergütet h9

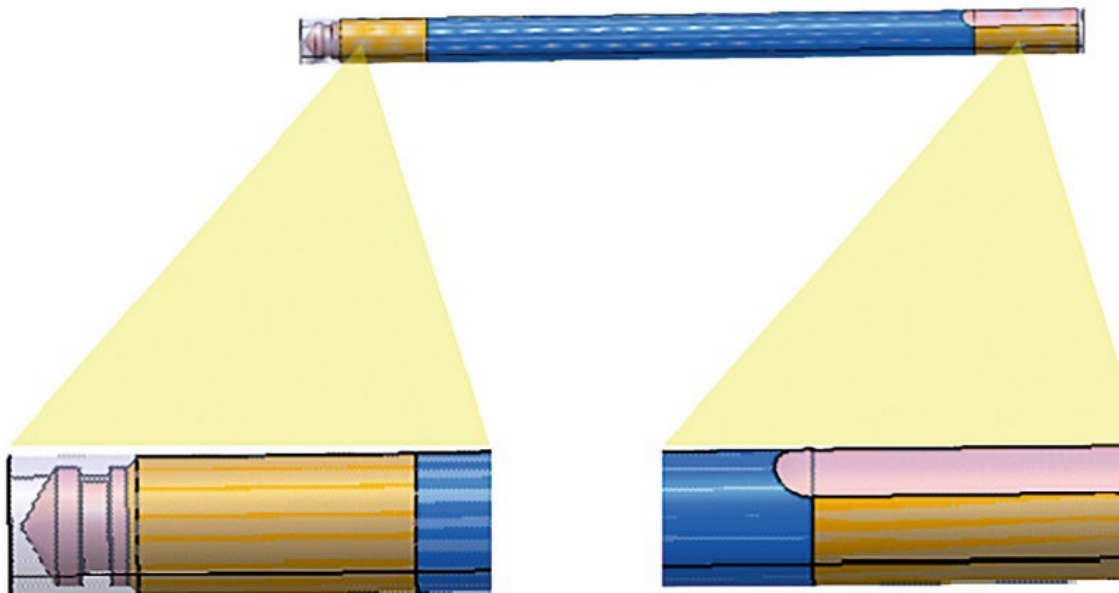
$R_e=750N/mm^2$

Neu

Halbzeug ist ein Rundmaterial mit Durchmesser 20mm
in vergütetem Zustand!

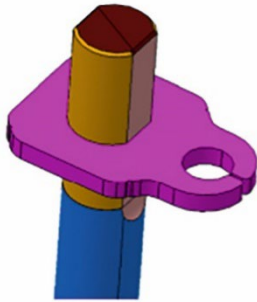


Advantages:

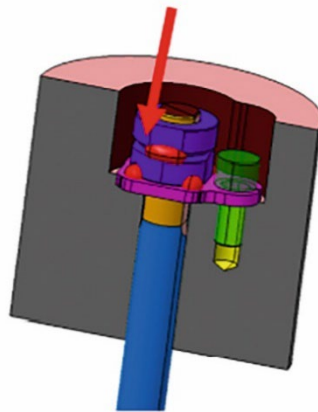


The tie rod requires a semi-finished product \varnothing 20 mm
The amount of machining is approx. 5%

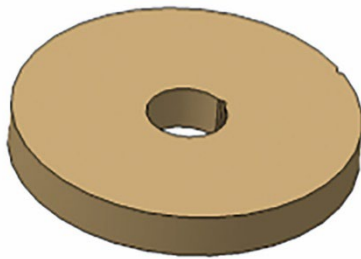
Force closure



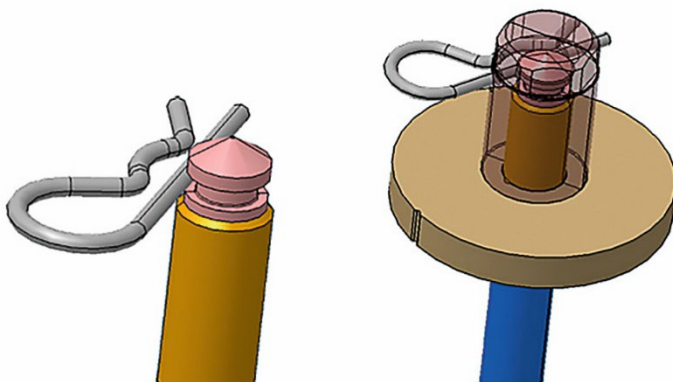
Form closure



Through the combination of a "defined pre-stressed" and secured screw connection (frictional connection) and the geometry on the anti-rotation device and tie rod (positive connection), equivalent strength properties are achieved and at the same time a screw connection can be omitted.



The disc is produced as a laser part.



Fully automated production in a matter of seconds.

Here, a cotter pin that can be quickly installed and removed is used. This is made possible by an "alternative" application of such a spring cotter. Instead of a central hole, the spring cotter is pushed through an off-centre hole in the nut and a recess in the rod. This arrangement makes it possible to push through in any end position of the nut on the rod.