



IMT Oradea
2022
Romania

Computer-aided design of Jack-screw with rotating nut

Authors: PRADA Gabriel - 3 TCM & TĂMĂȘAN Mihai – 2 TCM

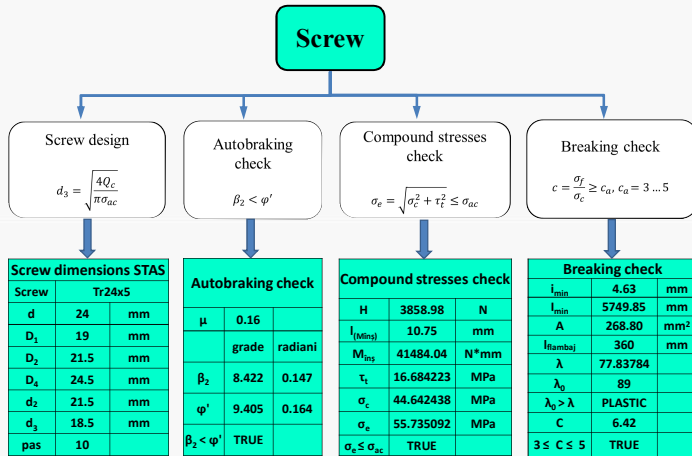


Facultatea de Inginerie
Materiala si Tehnologica
Departamentul de
INGINERIE
INDUSTRIALA

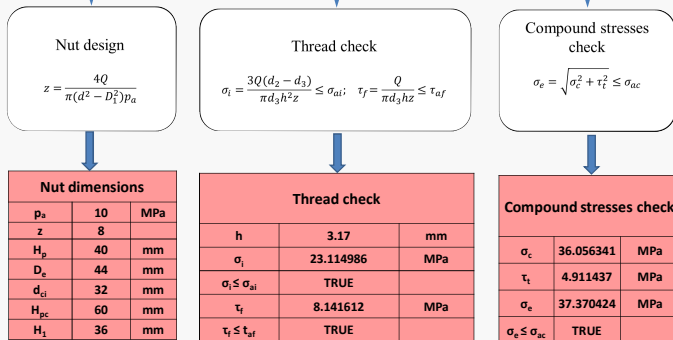
KEY WORDS

Jack-screw with rotating nut, screw, rotating nut, CAE, CAD, Solid Edge.

1. COMPUTER-AIDED ENGINEERING (TECHNICAL CALCULATION REPORT)



Rotating nut



2. COMPUTER-AIDED DESIGN (NONSTANDARD ELEMENTS DESIGN)

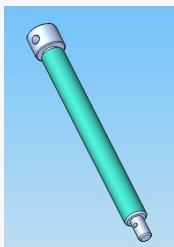


Fig.1 Screw

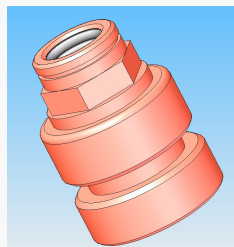


Fig.2 Rotating nut

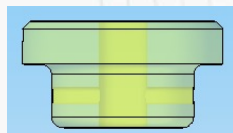


Fig.3 Cup

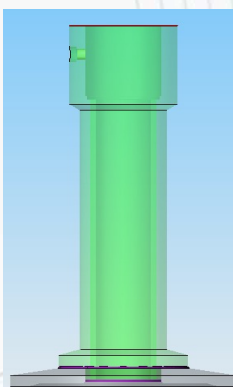


Fig.6 Body

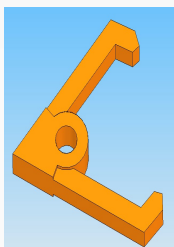


Fig.4 Pawl

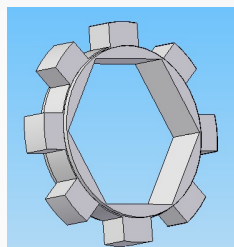


Fig. 5 Pawl wheel

3. COMPUTER-AIDED DESIGN (STANDARD ELEMENTS DESIGN)



Fig.7 Elastic ring Ø7

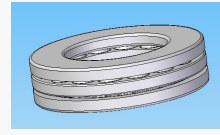


Fig.8 Radial axial ball bearing 51105

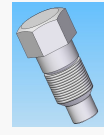


Fig.9 Cylindrical end screw M8

4. COMPUTER-AIDED DESIGN (3D MODEL DESIGN)

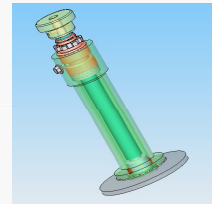


Fig.10 Body subassembly

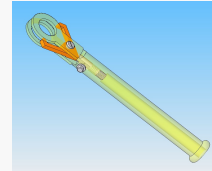


Fig.11 Lever subassembly



Fig.12. Jack-screw with rotating nut assembly

5. COMPUTER-AIDED DESIGN (2D DRAWINGS)

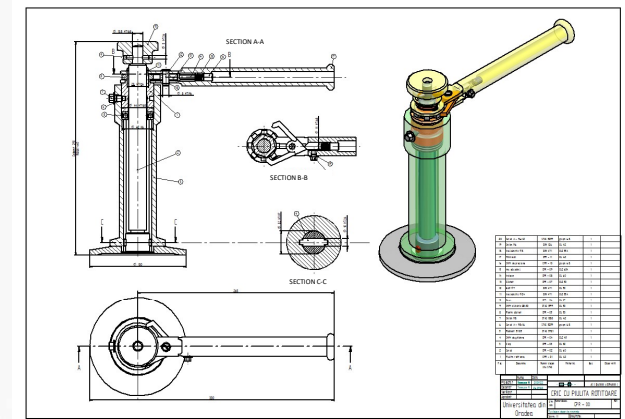


Fig.13 Assembly drawing

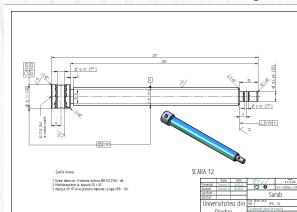


Fig.14 Screw draft

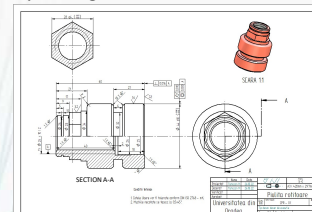


Fig.15 Nut draft

6. CONCLUSIONS

This project tried to highlight how to combine computer-aided engineering with computer-aided design in order to create a functional jack-screw with rotating nut. Thereby, the calculations presented in the technical report were realized using Microsoft Excel and the design was made using Solid Edge software by Siemens.

7. BIBLIOGRAPHY

- Jula, A., ș.a., Mecanisme șurub-piuliță. Îndrumar de proiectare, Editura Lux Libris, Brașov 2000
- https://www.plm.automation.siemens.com/plmapp/education/solid-edge/en_us/free-software/student

COORDINATORS: Prof. dr. ing. BLAGA Florin & Conf. dr. ing. TARCA Ioan