Introduction to Mechanical Engineering, HW CAD ASM 2

Complex Assembly

Innopolis University

Short Task Description

Description:

1. Make CAD models of needed files
2. Make the assembly, using right naming conventions.
3. Produce a video with disassembling the unit.
4. Generate Bill of Materials (BOM).

Artifacts:

- Zip archive with NX detail files (.prt)
- BOM in pdf format (.pdf)

Extended Task Description

Assembly designation: IME2023.01

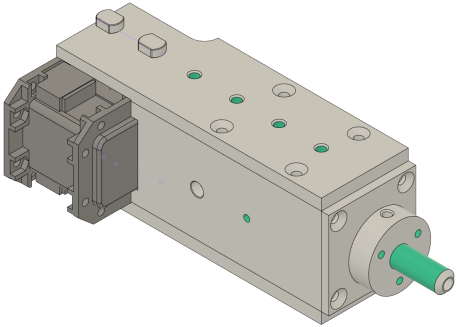
Zip archive, which contains all needed data: *HWs/HW_CAD_ASM2/task_data*

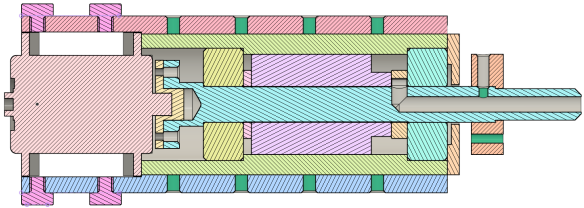
1. Make an assembly using naming conventions. It is based on the blueprint. You should be aware:
   - To rename details with wrong names;
   - Some of them you did on previous HW;
   - Some of them have only drawings, others — (.step) file;
   - You should have at least one subassembly;
   - You should use «Top-Down» approach (at least one detail should contains «Wave» technology).
2. Add correct material for each detail.
3. Add screws, nuts and bearings, using Common Parts Library. *Tip*: you should use these types of screws: *DIN 912* and *DIN 7991*
4. Make a video of disassembling, using *Assemblies* → *Sequence* application. It should look like a real disassembling.
5. Generate BOM + calculate the general amount of common parts (CP) for overall assembly.

Bugs in drafts

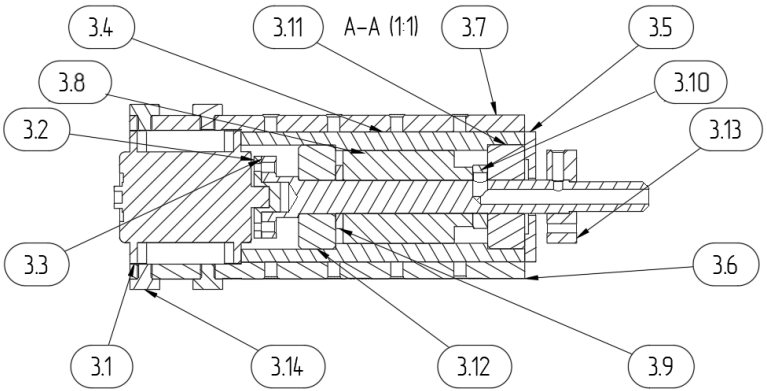
1. *Shaft cap.pdf* — diameter 76 is incorrect. Take an appropriate data from Shaft box (good idea to use Top-Down approach)

General view + Section View





Assembly drawing



Item	Qty	Part Number
3	1	Cad_model
3.1	1	MX-28T_R v1
3.2	1	Disk
3.3	1	Shaft
3.4	1	Shaft box
3.5	1	Shaft cap
3.6	1	Plate down
3.7	1	Plate
3.8	1	Current collector
3.9	1	Spacer
3.10	1	Spacer with a hole
3.11	1	Bearing
3.12	1	Bearing (1)
3.13	1	Disk lapka
3.14	4	Pipka

Deserve “A” grade!

– Oleg Bulichev

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Room 105 (Underground robotics lab)