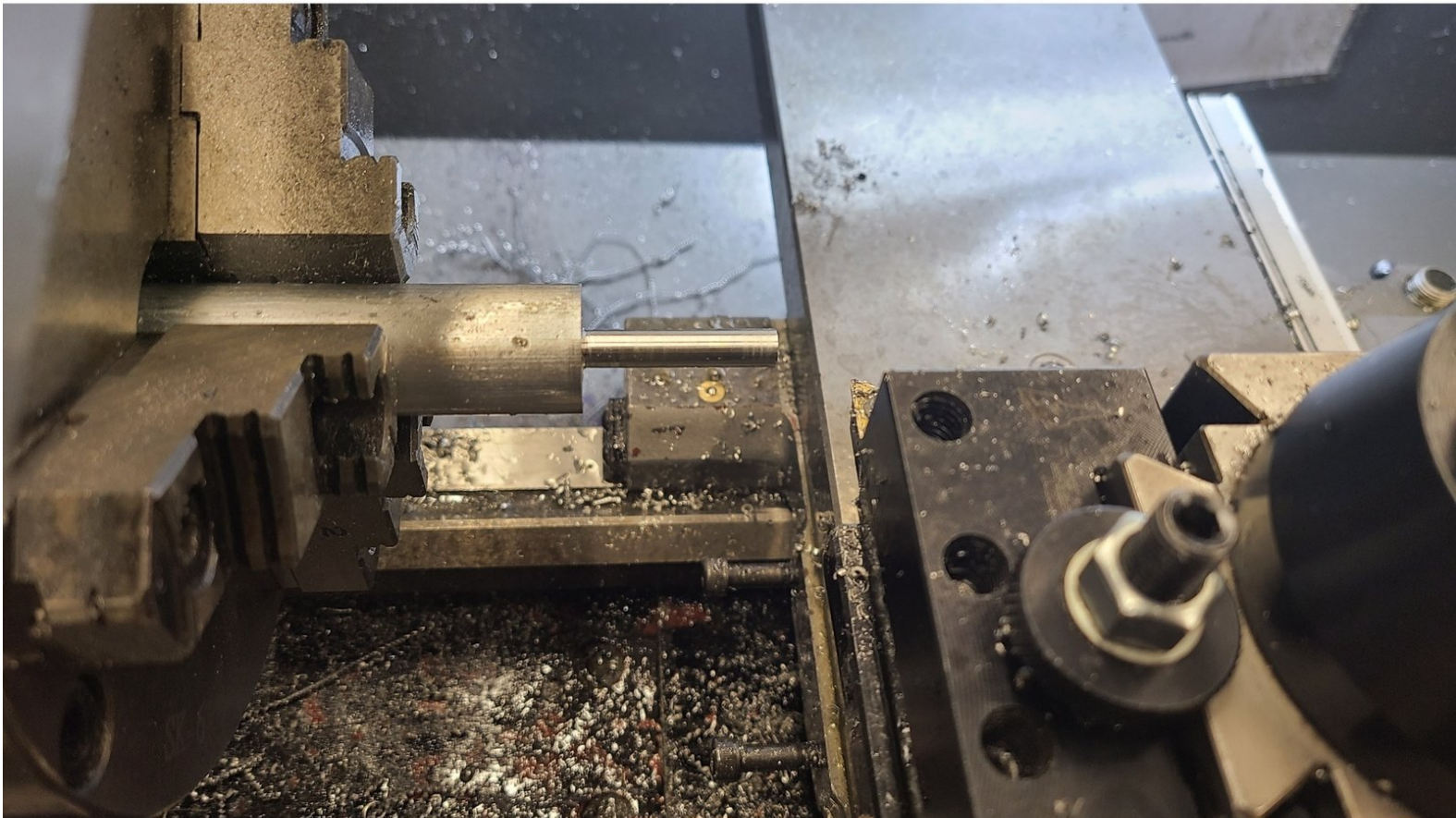




IFL Training Shift 07-3: Lathe (Advanced Rocket Part)

Lathe training guide for trainees in the Instructional Fabrications Lab.

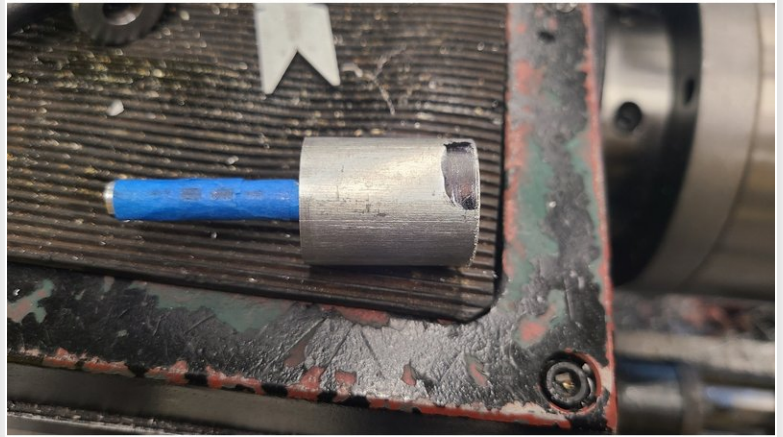
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Introduction

- As part of your onboarding with the lathe, you will create a rocket from 1" aluminum stock. It consists of three separate pieces: a nose cone, a spacer, and the tail.
- The engineering drawings that you will follow to make the part are attached on the lathe. They will also be linked in this guide
- If you have any questions while completing the part, feel free to ask and SLM or LC in the lab!

Step 1 — Nose Cone (1)



- The first stage will be completed in three checkpoints, pictures from each checkpoint are included for reference.
- **Checkpoint 1:** Turning down the part of the stage that will be threaded and cutting it out (Pictures 1 & 2). This step requires the parting and face turning tools.

Step 2 — Nose Cone (2)



- **Checkpoint 2:** Turning down the angled taper on the nose cone (Pictures 1 and 2). This step requires the face turning tool.
- **Checkpoint 3:** Threading the end (Picture 3). This step requires the 5/16-18 die.

Step 3 — Spacer (1)



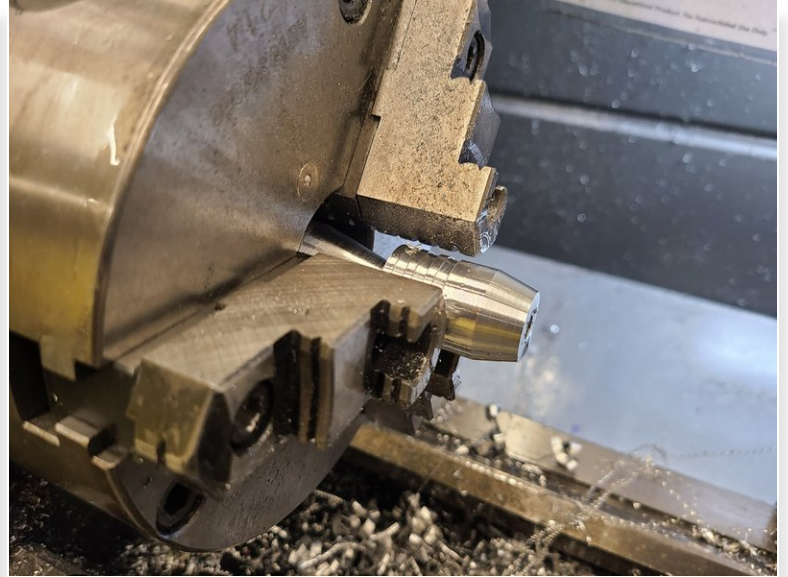
- The second stage will be completed in two checkpoints, pictures from each checkpoint are included for reference.
- **Checkpoint 1:** Turning down *part* of the length to the diameter of the smaller end (Picture 1). This step requires a face turning tool.
 - ⚠ If you turn down the entire length of the part to be the smaller diameter, you will have to restart the part.
- **Checkpoint 2:** Turning the angle taper on the inside of the stage (Picture 2). This step requires the center turning tool.

Step 4 — Tail (1)



- The third stage will be completed in four checkpoints, pictures from each checkpoint are included for reference.
- **Checkpoint 1:** Drilling the hole in the bottom in preparation for boring (Picture 1). This step requires the 5/8" drill bit.
- **Checkpoint 2:** Boring to widen the hole in the base of the stage (Picture 2). This step requires a boring tool.
- **Checkpoint 3:** Turning the internal taper at the base of the stage (Picture 3). This step requires the face turning tool.

Step 5 — Tail (2)



- **Checkpoint 4:** Parting the stage from the stock and turning down the taper (Pictures 1 and 2). This step requires the face milling tool and the parting tool.