

# LASER CUTTING MACHINE

The laser cutting machine is a sandbox application that demonstrates the creation of a virtual reality training scenario (maintenance tasks of a machine) through the use of the enabler INTERACT. With the application, the user is taught how to use a Laser cutting machine in a step-by-step process and also validated with a score in the end. The application also illustrates the numerous possibilities such as creating interaction with objects, ease of configuring a scenario, visual effects to the machine etc.

## Target User Groups:

- Engineering students
- Researchers
- Enthusiasts

## Learning Scenario:

The Application comprises of different roles such as teacher, student and observers and the learning scenario is focused on how to maintain a Trotec Speedy 400 laser cutting machine.

In this scenario of Maintaining a laser machine involves several steps to ensure the machine is properly maintained and continues to operate efficiently. The process typically involves turning off the machine and unmounting various components, such as the mirror, lens, and nozzle. The working table and main enclosure are then vacuumed to remove any dust or debris. The plate is wiped with a sponge, and the various components are remounted, and the machine is turned back on. Wiping the lens and nozzle with a fiber cloth including removal or particles is also simulated in the application.

## Difficulty Level:

The application offers few assist features that help the user to finish their task with a to do list - showing all the steps in a chronological order.

Hint - highlights one or more parts where the next step lies.

Skips - skips the current tasks completely.

Note: using these features does affect the score depending on the number of assists used.

## Interactions:

- Controllers tracking from the headset
- Spatial movement
- Grabbing 3d objects and interaction
- Physical interaction with parts

**Enablers: INTERACT**

Other Tools the team is using to build the application:

- Unity
- INTERACT
- 3ds Max
- Pixyz

Programming languages and databases used:

- C# for special scripts
- Low code platform

**Platform**

Operating system that the application is built on:

- Windows 10.

Windows 10 OS and can be used in any VR headset that can connect to Steam VR

**Compatible Hardware Platform:**

The hardware platforms compatible with the app:

Minimum requirements:

- A VR Ready computer is required. The more powerful it is, the more objects you will be able to load in the same scene.
- Minimum configuration: GTX 1070, Core i7, 16Go RAM
- We only support Windows 10.
- Steam VR compatible VR headsets

**Multi-User:**

The app doesn't support multiple users.

**3D Engine + Version:**

The 3D engine and version being used for the app: Unity 2019.4.15f1

**Ownership of 3D Data:**

LS GROUP and EIT Manufacturing

**Media files:**



