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## 1 Brief description of the optical bench

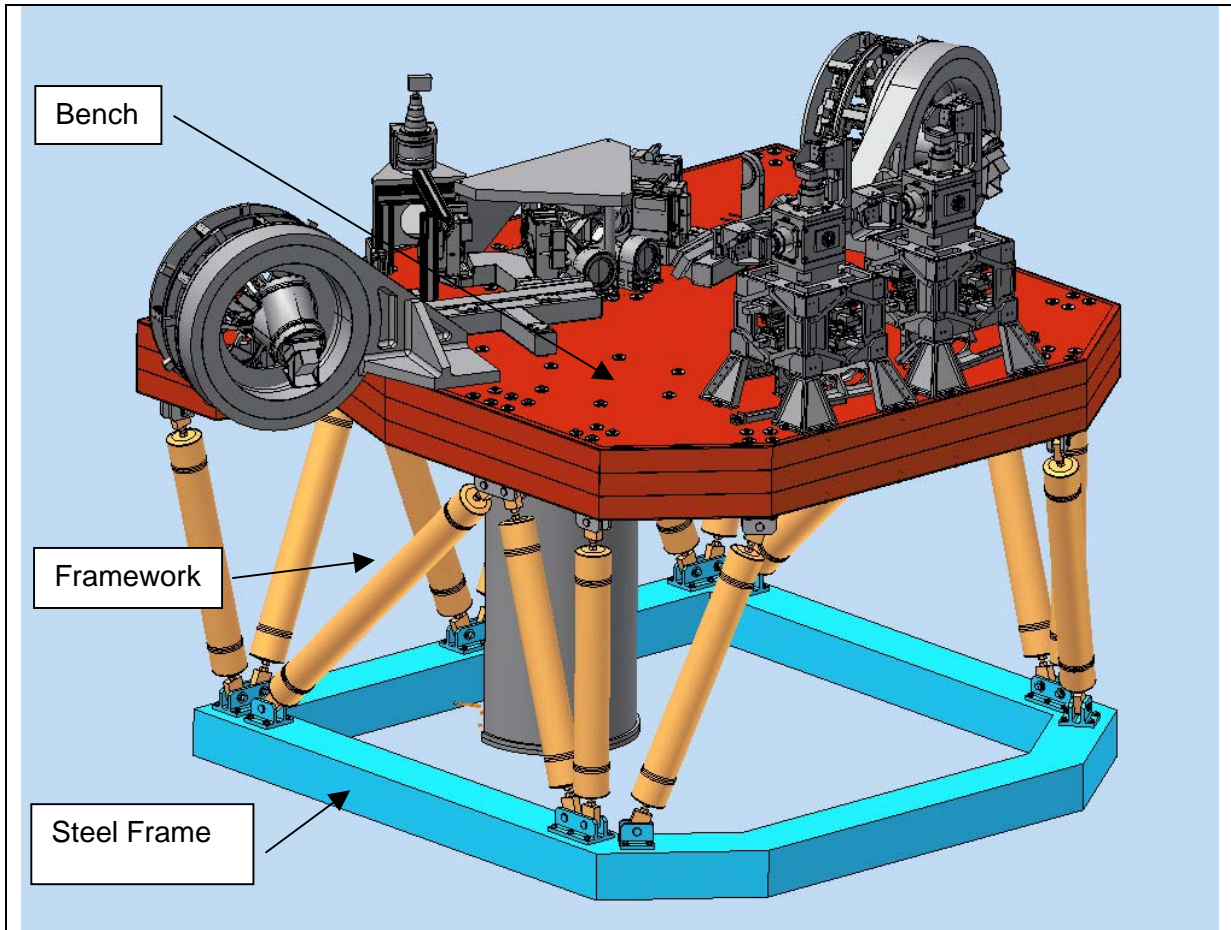


Fig.1: Optical bench assembly with mounted instrumentation

### 1.1 Bench

The bench is set up as a sandwich structure, using aluminium honeycomb as core material and high modulus CFRP plates as face sheets. This design is optimized for a very high bending- and buckling stiffness.

### 1.2 Framework

The framework members are built up as filament winding struts, using ultra high modulus carbon fibres. They are designed with respect to maximum stiffness in tension and compression.

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### 1.3 Steel Frame

The steel frame is a weld structure consisting of two parts. These are assembled by a bolt connection. The steel frame caters as a stiff support for the whole assembly.

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## 2 Packaging / Transport / Storage

### 2.1 Packaging:

Each CFRP element has to be wrapped in a suitable foil in order to protect it against minor impact with obtuse objects.

### 2.2 Transport:

The CFRP tubes and the Optical Bench have to be packed in robust boxes, which protect them against outer impact. The boxes have to be kept dry, should not exceed temperatures higher than 50°C and should not be stressed by heavy loads on the top. The boxes should be marked with a suitable label (e. g. "Handle with care" or " Do not drop with heavy load")

### 2.3 Storage:

The CFRP elements should be stored indoor at a place where they are protected against water, high temperatures and permanent solar radiation.

## 3 Handling

### 3.1 Assembly:

The assembly should be carried out in accordance with the R/S. It is not allowed to use tools or sharp edged objects to fit the struts with the bench.

**The bench face sheets are very sensitive to impact!** The upper surface shall be covered with a rubber layer of 10mm thickness before stepping onto it. This protection shall be kept permanently to prevent impact or unduely high pressure on area. It is not allowed to drill holes into the face sheets.

### 3.2 General:

The CFRP elements should be handled with care. Impacts due to falls should be avoided. The manufacturing of additional holes is not allowed.

## 4 Inspection / Maintenance

### 4.1 Cleaning:

The remove of dirt, lubricants or adherent substances is only allowed without using solvents, purifying agents, alkaline solutions, strong acids, tools or sharp-edged objects.

### 4.2 Visual inspection:

Possible damages are:

- Impact damages of the laminates
- Decomposition of the sandwich structure: These could be indicated by buckling of a cover-plate or vibrating noise response respectively.

In case of any damage, the severity is to evaluate by appropriate methods, such as ultrasonic testing.