



A Design of an X-ray Monochromatic Adjustable Slit for HEPS Beamlines

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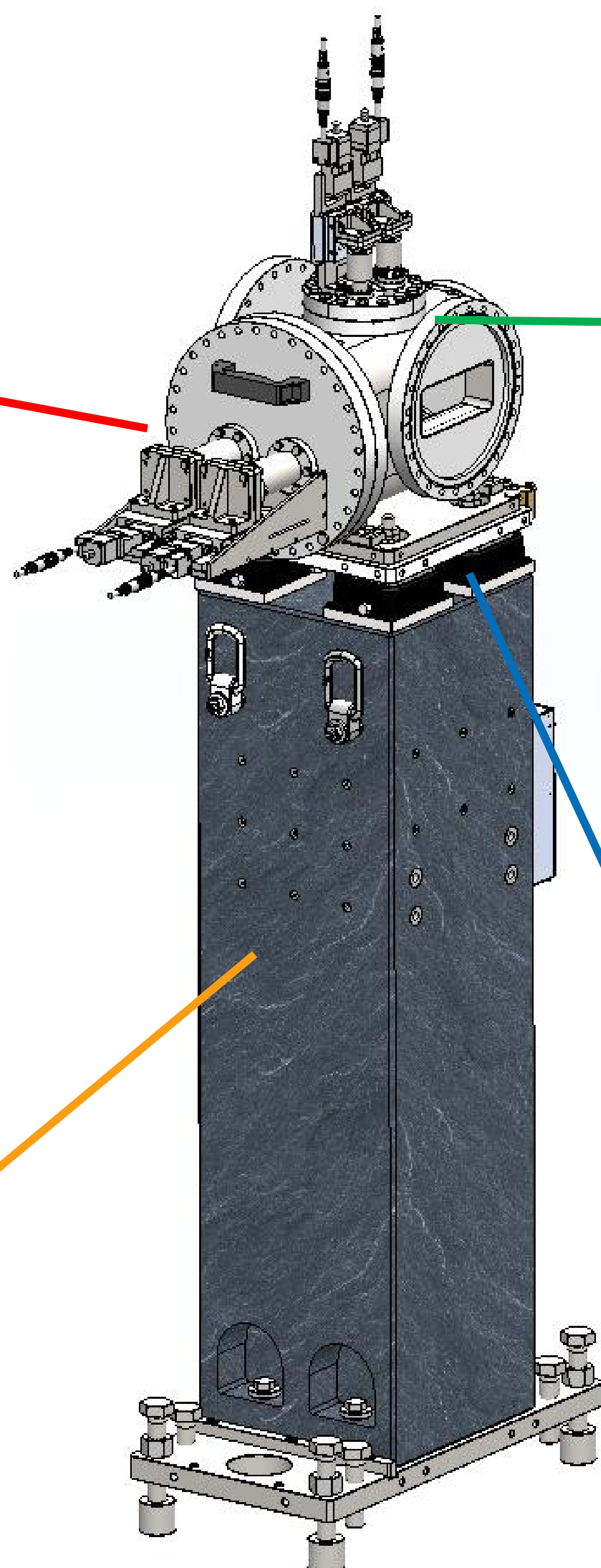
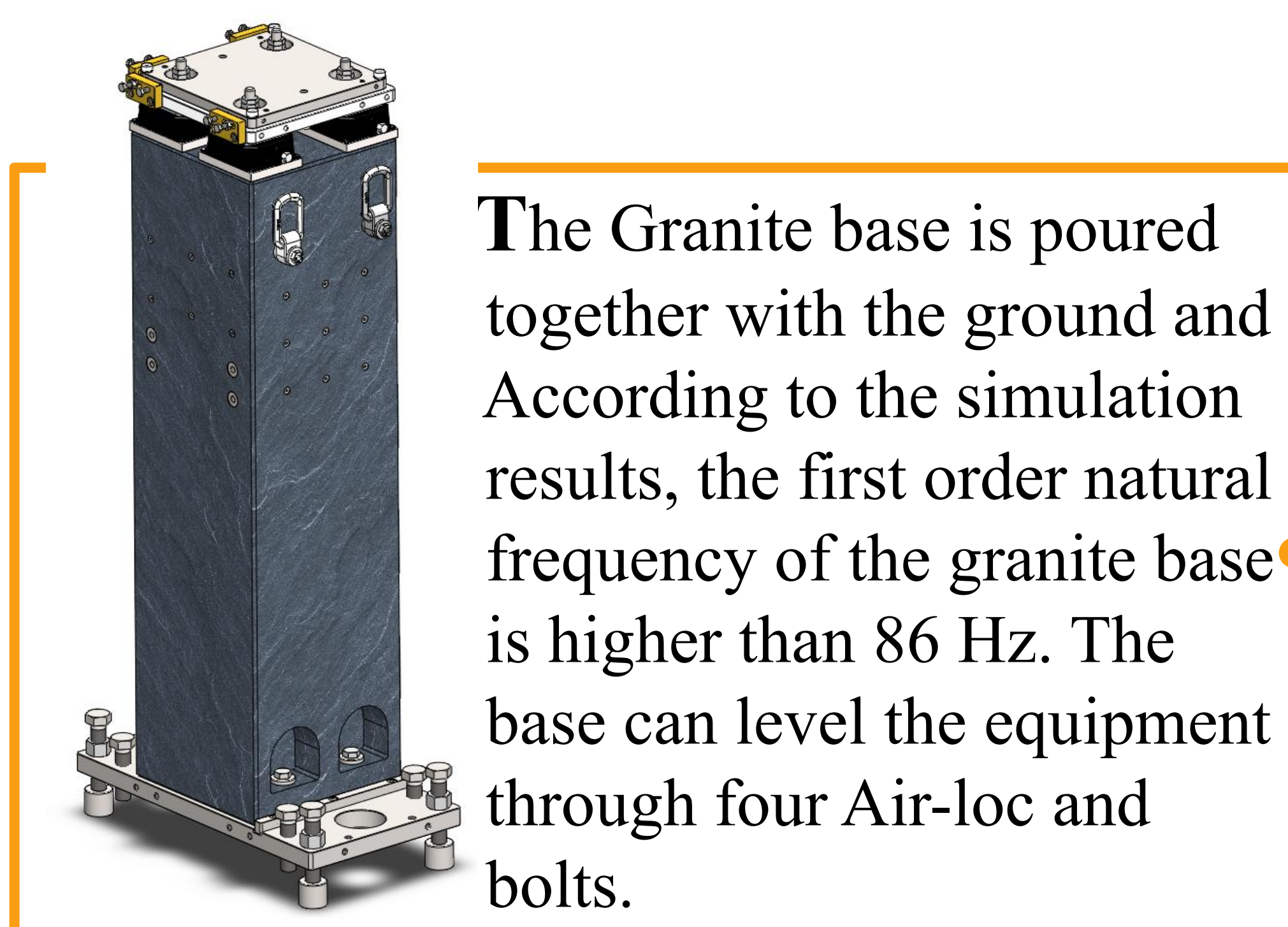
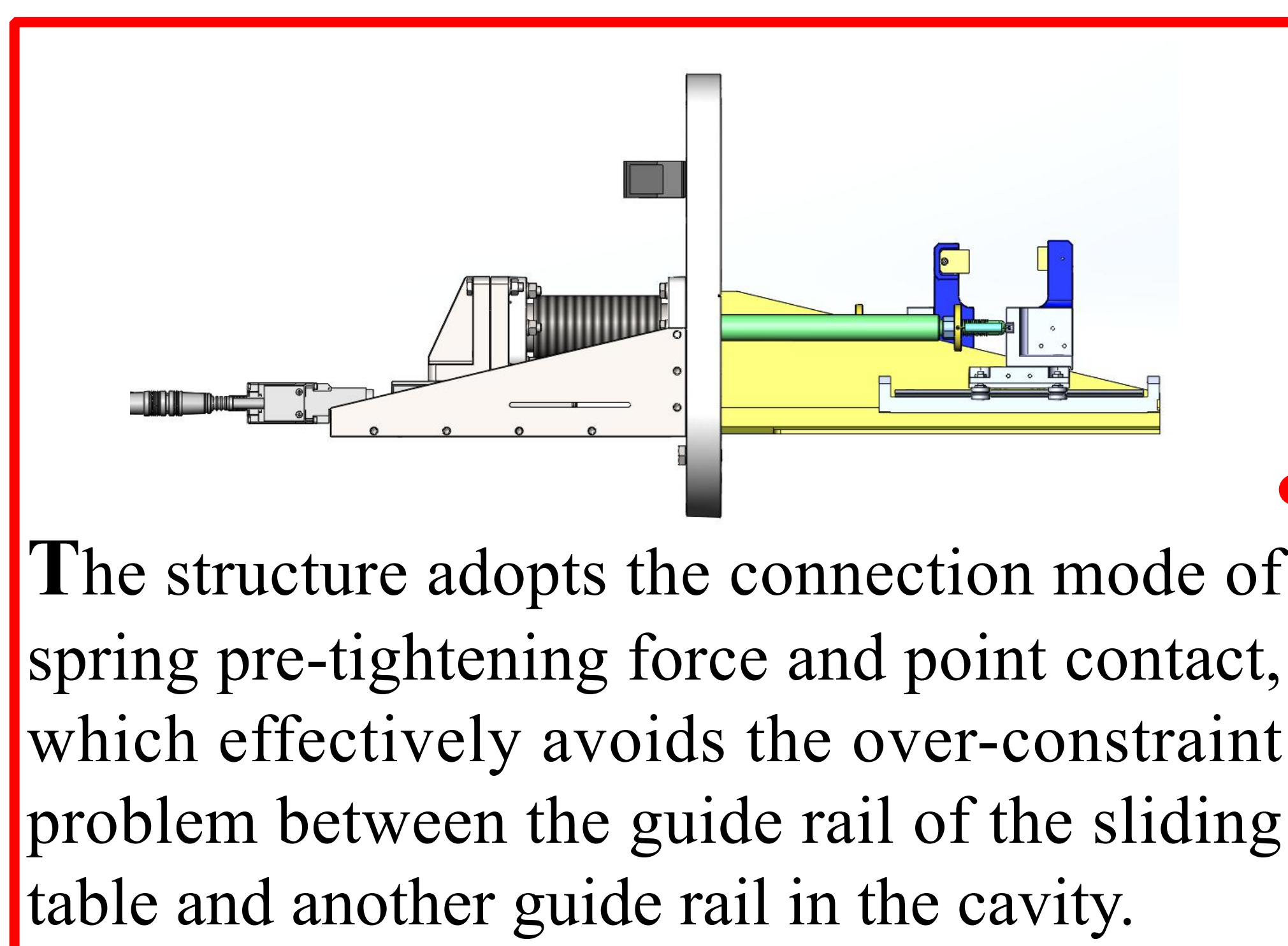
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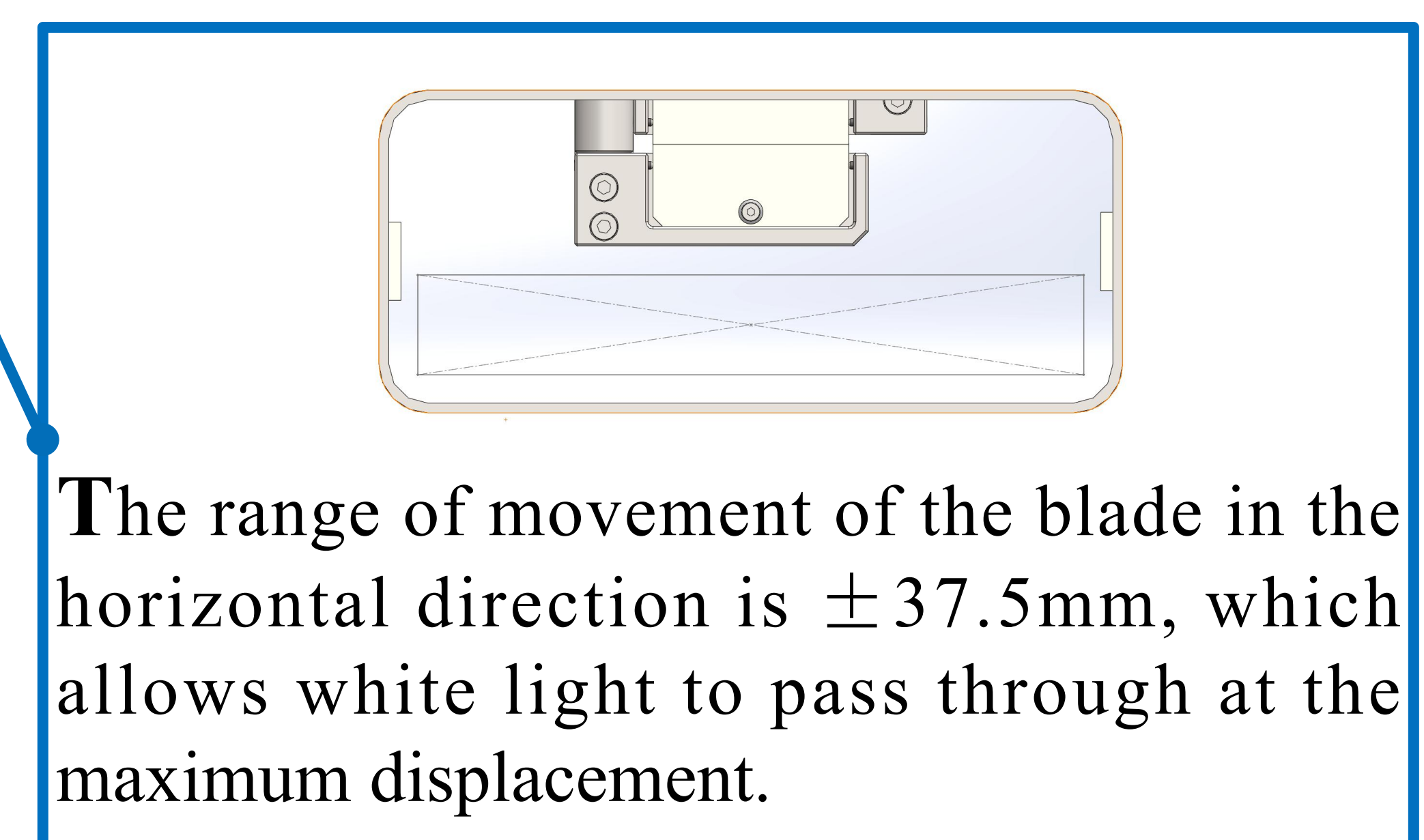
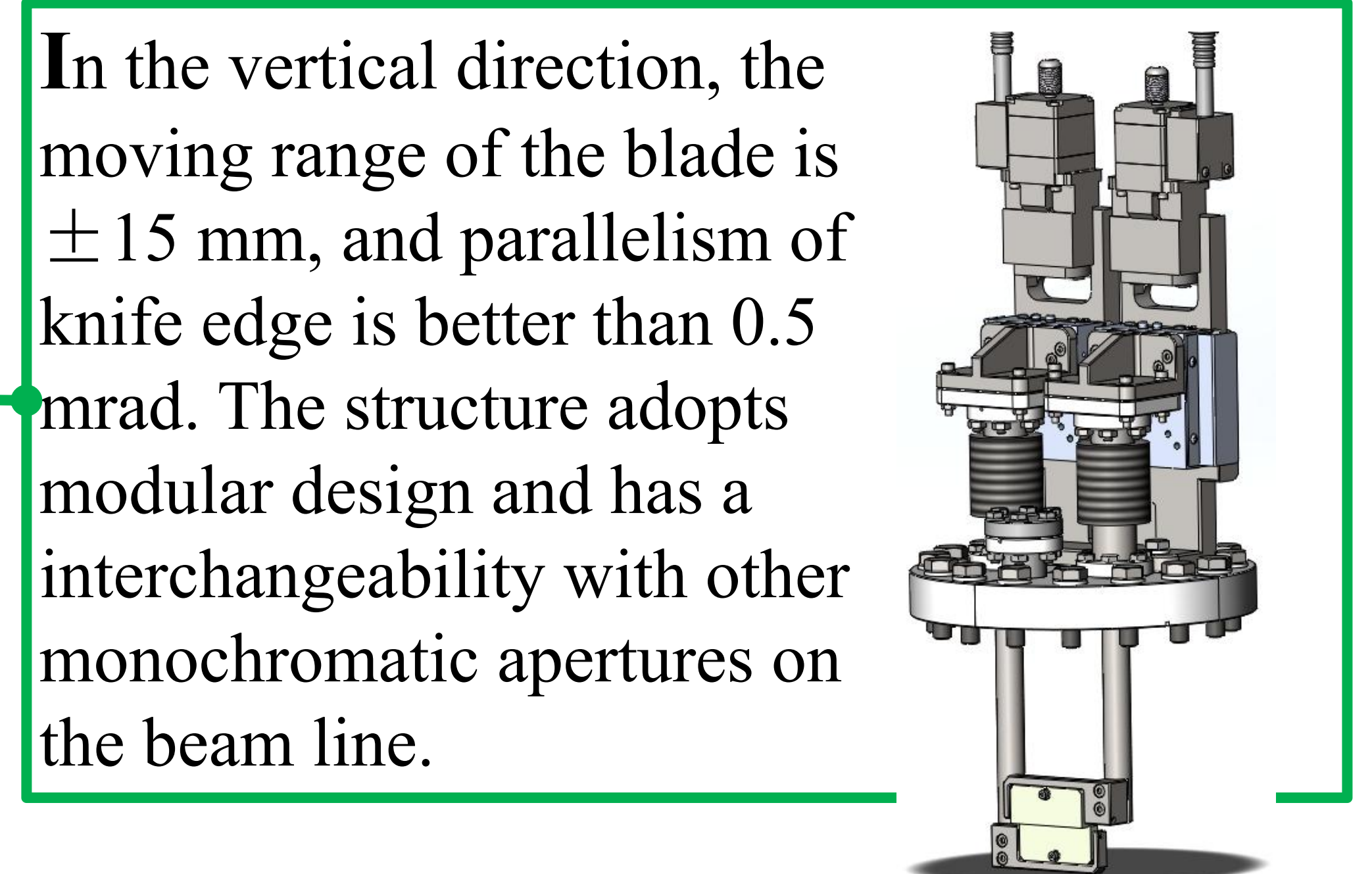
1. Introduction

The monochromatic slit is a commonly used device in HEPS beamlines. It can limit the synchrotron beam-spot within a desired size required by the downstream optical equipment. In addition, the four-blade structure is the most widely used form of slit. The slit with this form usually consists of a pair or two parallel tungsten carbide blades. With their edges close to each other, a slit can be formed, and the size of which can be controlled by micromechanical guides. This structure is very suitable for the case of large beamsizes. In this work, we have designed a monochromatic slit based on the four-blade form for BF-beamline in HEPS. It can be used in ultra-high vacuum, high luminous flux working environment. The maximum opening range is up to 30mm*10mm (H*V), while it can allow a white beam of 136mm*24mm (H*V) to pass through. Furthermore, we adopted a point to surface contact design, which can effectively avoid the over-constraint problem between two guide rails.

2. Mechanical Design



Overview of the monochromatic adjustable slit



3. Conclusion

The monochromatic adjustable slit designed this time has the characteristics of large opening range and compact overall structure. The structural design is still being optimized, and we will carry out further work on the stability of equipment, accuracy of spot size, control system and other issues.

4. Contact

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