VOPPEL Compression chamber Grating stages fault finding, characterisation and testing.

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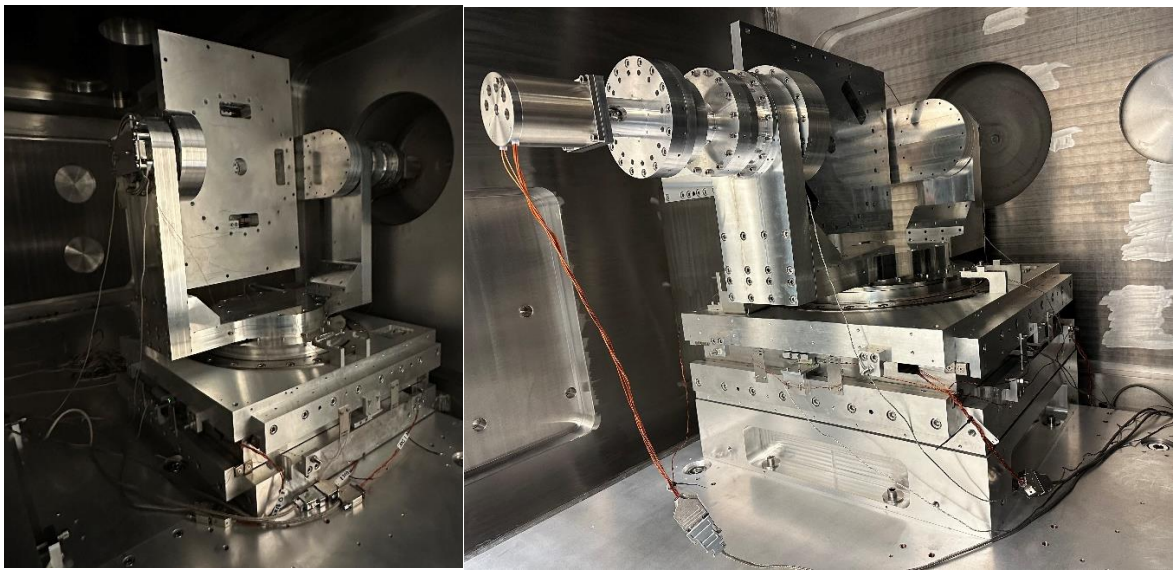
The new VOPPEL project for TAP includes the design and development of two ultra-high vacuum, five axis, precision stages used as grating mounts for laser alignment and manipulation. Designed by Andy Stallwood of the mechanical engineering design group and assembled in house by the mechanical technician group. The controls team were involved in the testing and development of these stages ensuring the motors, encoders and drive system can deliver linear and rotational movement to a high degree of accuracy; repeatedly and reliably. These stages were developed and characterised ready to be integrated with existing Parker drive system employed in TAP, as well as the ACS drive system, with work carried out including replacing motors unable to deliver enough torque, aligning optical encoders to ensure best readback signals and setting limit ranges to prevent collision. The results of testing these stages demonstrated capabilities of repeatable and accurate incremental linear motion as low 2 nano meters and minimal angular movement to 0.2 micro radians.



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