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A concept improvement design of the girder adjustment system for TPS storage ring

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The girder adjustment system of TPS storage ring can fine adjust each girder in 6 axes with 6 kinematic mounting motorized cam movers. The installation of the TPS had demonstrated this design. However, this design is freely mounted with gravity and the 1st natural frequency is less than 30 Hz even with supplement side locking system. Moreover, the motor controller restricts the beginning power output and sometimes the girder will falling when the electromagnetic motor brake is released. A concept improvement design is thus introduced to modify these situations. In this design, a worm gearbox addition can raised the reduction ratio to prevent the falling and inverse kinematic mounting movers with strong springs not only firmly lack the girder to raise the natural frequency but also preserve the motorized algorithm. This paper describes the design in detail.

Footnotes

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