

NEW LARGE SLIP TABLE AND QUAD EXPANDER

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ABSTRACT

This paper presents some of the main features of the new KARI vibration test facilities, designed by SEREME and commissioned in 2017:

- Versatile slip table (large and small plate)
- Large vertical multi shaker system

These 2 facilities implemented in parallel, represent a global solution for large and heavy spacecraft (11 tons) vibration tests, and complete the range of KARI facilities.

Versatile slip table is composed of:

- Reaction mass (250 tons) decoupled from environment thanks to suspension system
- Stiff structure
- Hydraulic bearings (50 SEREME Z bearings, 5 SEREME YZ bearings, 8 dummy bearings)
- A drive bar
- 2 aluminum plates, a large (3,6 x 3,2 m) and a small (1,75 m x 2,1 m)
- Dedicated hydraulic power unit
- Electrical cabinet ensuring security functioning of the facility
- A 280 kN force electrodynamic shaker

Large vertical multi shaker system is composed of:

- Reaction mass (350 tons) decoupled from environment thanks to suspension system
- 16 guiding PAD bearings
- 4 x drive bars designed to protect shakers guiding system
- 1 large magnesium welded table (3,25 x 3,25 m)
- Dedicated hydraulic power unit
- Electrical cabinet ensuring security functioning of the facility
- 4 x 160 kN force electrodynamic shaker

This paper presents the overall systems, the main performances and improving of test quality of such facilities. A particular attention will be paid to:

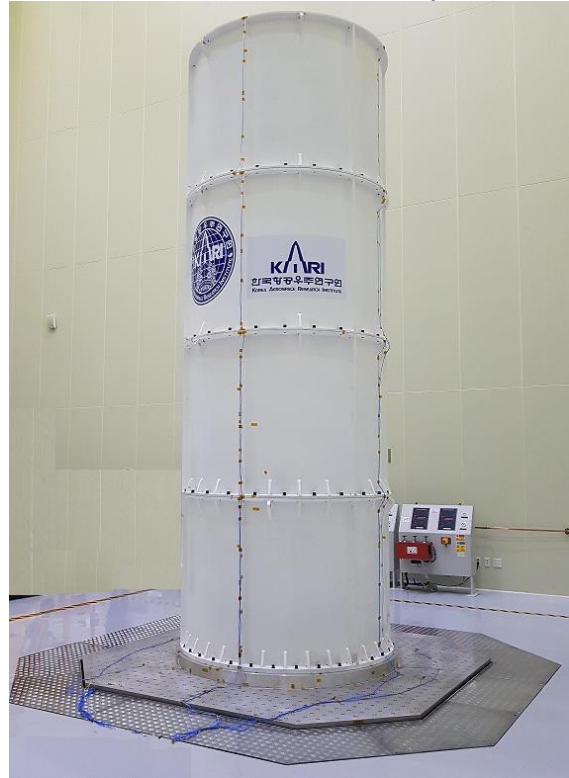
- New very high stiff SEREME YZ bearings which allow to improve dynamic performances of such tables
- Versatility of the slip table, with the possibility to easily install 2 plates in respecting ISO 8 clean room class.
- Easy installation on site due to factory alignment of the bearings on slip table stiff structure. No need to re align bearings on site.

- Very high stiff support structures; a cast structure for slip table and a concrete structure for QUAD system.
- Very high overturning moment capacity due to bearing capacity and arrangement.

Slip table in large configuration with 11 tons KARI dummy



Large vertical multi shaker system with 11 tons KARI dummy



Slip table without large plate (bearings view)



Vertical multi shaker without table (bearings and shaker view)

